LANDAU ASSOCIATES

INTERIM ACTION COMPLETION REPORT

Tiger Oil N 1st St Fmr 6013
Yakima, Washington

August 12, 2026

Prepared for

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Tiger Oil N 1st St Fmr 6013
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Date: August 12, 2026
Project No.: 1148010.010
File path: \\edmdata01\Projects\1148\010\R\Interim Action\Landau_Interim Action Completion_rpt Final 081226.docx
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LIST OF ABBREVIATIONS AND ACRONYMS

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
µs/cm	microSiemens per centimeter
AO	Agreed Order
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
City	City of Yakima
CUL	cleanup level
DO	dissolved oxygen
DRO	diesel-range organics
Ecology	Washington State Department of Ecology
EPA	US Environmental Protection Agency
ESA	environmental site assessment
Eurofins	Eurofins Environment Testing, LLC
ft	foot/feet
g/L	grams per liter
GeoEngineers	GeoEngineers, Inc.
GRO	gasoline-range organics
IA	interim action
IDW	investigation-derived waste
ISCO	*in situ* chemical oxidation
Landau	Landau Associates, Inc.
lb	pound
MTCA	Model Toxics Control Act
NAPL	non-aqueous phase liquid
NWTPH-DX	Northwest total petroleum hydrocarbon diesel-range extended analytical method
NWTPH-GX	NWTPH in the gasoline range
poly	polyurethane
Report	Interim Action Completion Report
RI	remedial investigation
RL	reporting limit
RRO	residual-range organics
Site	1808 North 1st Street in Yakima, Washington
UIC	Underground Injection Control
UST	underground storage tank
WAC	Washington Administrative Code

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1.0 INTRODUCTION

This Interim Action (IA) Completion Report (Report) was prepared by Landau Associates, Inc. (Landau) on behalf of the City of Yakima (City) and presents a description of, and a summary of findings from, the implementation of the IA at the Tiger Oil N 1st St Fmr 6013 site (Former Tiger Oil Site) located at 1808 North 1st Street in Yakima, Washington (Site; Facility ID No. 477; Cleanup Site ID No. 4922). The IA work was conducted in accordance with Agreed Order (AO) No. DE19882 between the City and the Washington State Department of Ecology (Ecology) and is consistent with the revised Scope of Work for the AO provided by Ecology in December 2021. This report is being prepared in accordance with Task 3d of the Updated AO Scope of Work and Schedule (Ecology 2021a).

The IA included replacement of groundwater monitoring wells and installation of groundwater injection wells, *in situ* chemical oxidation (ISCO) treatment, and groundwater monitoring. The purpose of the ISCO treatment was to remediate remaining petroleum hydrocarbon contamination in groundwater and smear zone soils from historical releases from underground storage tanks (USTs) associated with former gasoline station operations at the Site. Groundwater monitoring was performed prior to ISCO treatments and following each ISCO injection event to evaluate its performance. Work completed as a part of the IA was conducted in general accordance with Landau's Ecology-approved Tiger Oil Injection Work Plan (Landau 2022).

2.0 SITE DESCRIPTION AND BACKGROUND

The Site is located at the northern end of the City, south of the confluence of the Yakima and Naches rivers (Figure 1). The primary Site property is owned by the City but is under a lease-to-own agreement between the City and the current lessee. The property is currently occupied by a vacant former convenience store building in the southwest corner and an operational drive-through coffee kiosk in the east central portion of the property.

The primary Site property is a 0.65-acre parcel that was used as a gasoline station and convenience store between 1979 and 2001. Gasoline, diesel, waste oil, and heating oil were stored in USTs at the property. In 1982, a release of approximately 12,000 to 22,000 gallons of leaded and unleaded gasoline from the delivery lines between the USTs and fuel dispensers was reported (GeoEngineers 2017). Several phases of investigation have been completed at the Site following the release.

Three gasoline tanks (20,000, 8,000, and 10,000 gallons, respectively), one 6,000-gallon diesel tank, and associated fueling islands and piping were removed in 2005 (Tetra Tech 2005). Heating and waste oil USTs, both of unknown size, were removed in 2019 (Fulcrum 2019). No other USTs are known to have been present at the Site.

2.1 Geology and Hydrogeology

Subsurface soil at the Site generally consists of gravelly sand with cobbles and silt, with varying amounts of gravel and sand from ground surface to a depth of approximately 5 to 10 feet (ft) below ground surface (bgs), and sandy gravel with cobbles below. The shallow groundwater saturated zone mostly consists of gravels with cobbles, varying amounts of sand, and little fines.

Based on depth-to-groundwater measurements taken during previous investigations, Landau's supplemental investigation, and the implementation of the IA, unconfined shallow groundwater at the Site is encountered at a depth of approximately 10 to 15 ft bgs. Shallow groundwater flow is generally to the east with a gradient of approximately 0.002 ft per ft.

Irrigation season in the Yakima area generally begins each year on April 1 and ends on October 15. Irrigation in the Yakima River basin generally has the greatest influence on shallow groundwater levels in the area throughout the year; shallow groundwater elevations are generally higher during the irrigation season and lower during the period when no irrigation is occurring.

2.2 Previous Investigations

As stated above, several phases of investigation have been completed at the Site following the gasoline release in 1982. Investigations include a hydrogeologic evaluation conducted in 1984 and 1985 (Soil Exploration Company 1985), a study of the changes in areal extent of the plume of contaminated groundwater and contaminant concentrations between 1984 and 1989 (Wagner and Ebbert 1991), UST decommissioning and site assessment in 2005 (Tetra Tech 2005), a Phase II environmental site assessment (ESA) conducted in 2014 (GeoEngineers 2015), a remedial investigation (RI) conducted in 2016 (GeoEngineers 2017), and a UST assessment conducted in 2019 (Fulcrum 2019). Because they

provide useful background information for this report, brief summaries of the 2016 RI and the 2019 UST assessment are included below.

2.2.1 GeoEngineers Remedial Investigation

The RI report completed in 2017 documented the presence of vadose and smear zone soils and/or groundwater that contained petroleum hydrocarbons (gasoline- [GRO], diesel- [DRO], and residual-range organics [RRO]); benzene, toluene, ethylbenzene, and xylenes (BTEX); and naphthalenes above Model Toxics Control Act (MTCA; Washington Administrative Code [WAC] 173-340) Method A cleanup levels (CULs), which are likely associated with the 1982 gasoline release (GeoEngineers 2017).[1] During the Phase II ESA previously conducted by GeoEngineers, Inc. (GeoEngineers), monitoring wells N1MW-1, N1MW-2, N1MW-3, N1MW-4, and N1MW-5 were installed and soil borings N1DP-1 through N1DP-8 were drilled and sampled (GeoEngineers 2015). During the RI, monitoring wells N1MW-6, N1MW-7, and N1MW-8 were installed at the Site and soil borings N1DP-9 through N1DP-19 were drilled and sampled. Table 1 includes soil boring and well construction details for the soil borings and monitoring wells completed by GeoEngineers.

RI Figure 2 (hyperlink provided in Footnote 1) identifies the locations of monitoring wells N1MW-1 through N1MW-8 and soil borings N1DP-1 through N1DP-19. The inferred lateral extent of soil containing gasoline-range organics, BTEX, and/or naphthalenes at concentrations above the applicable MTCA Method A CULs is also shown, which represents the Site boundaries at the time of the RI.

2.2.2 Fulcrum Underground Storage Tank Assessment

In 2019, one heating oil UST and one waste oil UST, both of unknown size, were decommissioned, and soil samples for laboratory analysis were collected from the margins of the excavations. The preliminary UST assessment report in 2019 documented one sidewall soil sample collected from the heating oil UST excavation pit and one base soil sample collected from the waste oil UST excavation pit that contained GRO, DRO, and RRO; naphthalene; and/or BTEX concentrations above MTCA Method A CULs (Fulcrum 2019).

[1] https://apps.ecology.wa.gov/cleanupsearch/document/64365

3.0 LANDAU SUPPLEMENTAL INVESTIGATION

A supplemental investigation was conducted by Landau in October 2021 to evaluate Site conditions prior to proceeding with remedy planning as well as to replace several monitoring wells (GeoEngineers monitoring wells N1MW-1, N1MW-6, and N1MW-7) that appeared to have been destroyed and/or paved over during redevelopment of the Site. The work performed during the supplemental investigation satisfied the substantive requirements of Tasks 1 and 2 of the Updated AO Scope of Work and Schedule (Ecology 2021a).

The investigation included collecting soil samples for laboratory analysis from eight soil borings (HSB-1, HSB-2, HSB-3, HSB-4, HSB-5, N1MW-6R, N1MW-7R, and N1MW-9)[2] that were drilled using hollow-stem auger drilling methods. Monitoring wells were installed in three of the borings (N1MW-6R, N1MW-7R, and N1MW-9). Soil borings HSB-1, HSB-2, and HSB-3 were drilled in the vicinity of the former fueling island to evaluate current contaminant levels in vadose and smear zone soils as well as groundwater. Soil borings HSB-4 and HSB-5 were drilled at the approximate locations of the former waste oil UST and former heating oil UST, respectively, to evaluate the extent of contamination in soil discovered when the tanks were decommissioned in 2019 (see Section 2.2.2). Monitoring wells N1MW-6R and N1MW-7R were installed as replacement monitoring wells for former monitoring wells N1MW-6 and N1MW-7, which appear to have been destroyed or paved over during redevelopment of the Site with a coffee kiosk. Monitoring well N1MW-9 was installed to provide a monitoring location near the eastern property boundary between monitoring wells N1MW-6R and N1MW-7R. Note that monitoring well N1MW-1 appears to have also been destroyed or covered during construction of the coffee kiosk, which is on top of the former N1MW-1 location according to survey data. A replacement monitoring well for N1MW-1 was not constructed.

Top of casing and ground surface elevations, as well as horizontal coordinates of new and existing monitoring wells, were surveyed by a licensed land surveyor following installation of the new monitoring wells. Supplemental investigation locations, including existing monitoring wells N1MW-2, N1MW-3, N1MW-4, N1MW-5, and N1MW-8, are shown on Figure 2. Refer to Appendix A for supplemental investigation borings logs and Table 1 for soil boring and well construction details.

3.1 Soil and Groundwater Sample Collection

Soil samples for laboratory analysis from soil borings HSB-1, HSB-2, and HSB-3 were collected from the depth interval where field screening most strongly indicated the presence of contamination, which was generally within the lower portion of the vadose zone. Soil samples for laboratory analysis from soil borings HSB-4 and HSB-5 were collected from the approximate depth of the base of the waste oil and heating oil UST excavations, and additional samples were collected from each of these borings several feet below the base of the UST excavations.

[2] Note that soil and groundwater samples collected from monitoring well N1MW-9 were initially identified as N1MW-1R in field and lab reports but were renamed per Ecology request.

Soil samples from borings N1MW-6R, N1MW-7R, and N1MW-9 were collected for laboratory analysis from immediately above (N1MW-6R and N1MW-7R) or across (N1MW-9) the water table. One field duplicate soil sample collected from soil boring HSB-3 and an accompanying laboratory-supplied trip blank were also analyzed.

Groundwater samples were collected using low-flow purging and sampling procedures from existing monitoring wells N1MW-2, N1MW-3, N1MW-4, N1MW-5, and N1MW-8; new or replacement monitoring wells N1MW-6R, N1MW-7R, and N1MW-9; and temporary wells installed in soil borings HSB-1, HSB-2, and HSB-3. Each well was purged at a flow rate at or below 0.25 liters per minute using a peristaltic pump and dedicated low-density polyethylene tubing to maintain minimal drawdown. Water quality parameters were monitored until all parameters reached stabilization for three consecutive readings within the respective limits for each parameter (i.e., pH [± 0.1 standard units], temperature [degrees Celsius; ± 3 percent], conductivity [microSiemens per centimeter; ± 3 percent], dissolved oxygen [DO; milligrams per liter; ± 10 percent], oxidation-reduction potential [± 10 millivolts], and depth-to-water [± 0.3 ft]) before groundwater samples were collected. Turbidity was not measured during purging. A field duplicate groundwater sample from the temporary well installed in soil boring HSB-3 and an accompanying laboratory-supplied trip blank were also analyzed. Groundwater sample collection forms from the supplemental investigation are included in Appendix B.

All soil and groundwater samples were submitted to Eurofins Environment Testing, LLC (Eurofins) in Spokane Valley, Washington for the below-listed contaminants of concern. Per direction from Ecology, naphthalenes were not analyzed for during the supplemental investigation.

- GRO by Northwest total petroleum hydrocarbon gasoline-range extended analytical method (NWTPH-Gx).
- DRO and RRO by Northwest total petroleum hydrocarbon diesel-range extended analytical method (NWTPH-Dx).
- BTEX by US Environmental Protection Agency (EPA) Method 8260D.

Soil samples submitted for GRO and BTEX analysis were collected directly from split-spoon sample cores driven ahead of the hollow-stem auger to minimize the opportunity for volatilization; soil samples collected for DRO and RRO analysis were collected from soil over the entire sample interval that was homogenized in a decontaminated stainless-steel bowl.

Landau conducted an EPA Level IIA-equivalent validation and verification on all supplemental investigation laboratory analytical data. Validation of the data was performed in accordance with guidance from applicable portions of the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA 2020a), the *National Functional Guidelines for Organic Superfund Methods Data Review* (EPA 2020b), analytical methods, and Landau data-validation standard operating procedures. All laboratory data were deemed acceptable for project use. Groundwater analytical results were compared with their MTCA Method A CULs, and it was assumed that the GRO CUL of 800 micrograms per liter (µg/L) is applicable based on previous sampling events identifying the presence of benzene in groundwater at the Site. The laboratory analytical report is included in Appendix B.

3.1.1 Soil Analytical Results

The following summarizes analytical results for soil samples that exceeded their respective MTCA Method A CULs:

- GRO was detected above the CUL of 100 milligrams per kilogram (mg/kg)[3] in soil samples collected from soils borings HSB-1, HSB-3, N1MW-6R, N1MW-7R, and N1MW-9, with concentrations ranging from 110 mg/kg (collected from 16 to 17.5 ft bgs in N1MW-9 soil boring) to 9,700 mg/kg (collected from 14.5 to 16 ft bgs in N1MW-7R soil boring).
- Ethylbenzene was detected above the CUL of 6 mg/kg in the soil samples collected from soil borings HSB-1 (33 mg/kg; collected from 15.5 to 17 ft bgs) and N1MW-7R (110 mg/kg; collected from 14.5 to 16 ft bgs).
- Toluene was detected above the CUL of 7 mg/kg in a soil sample collected from soil boring HSB-1 (9.3 mg/kg; collected from 15.5 to 17 ft bgs).
- Total xylenes were detected above the CUL of 9 mg/kg in soil samples collected from soils borings HSB-1, HSB-3, N1MW-6R, N1MW-7R, and N1MW-9, with concentrations ranging from 10 mg/kg (collected from 16 to 17.5 ft bgs in N1MW-9 soil boring) to 710 mg/kg (collected from 14.5 to 16 ft bgs in N1MW-7R soil boring).

Soil analytical data from the supplemental investigation are summarized on Figure 3A and shown in Table 2.

Soil analytical results from the supplemental investigation indicated that contaminant concentrations had declined since the 2016 RI but exceedances of MTCA Method A CULs were still present in the vicinity of the former fueling island and the eastern/downgradient portion of the Site. Concentrations of benzene, DRO, and RRO were not detected in soil above CULs. During GeoEngineers' RI, benzene was detected in soil at concentrations above the CUL; however, DRO and RRO were not detected in soil at concentrations above the reporting limit during the RI.

No contaminants of concern were detected above MTCA Method A CULs in soil samples collected from borings HSB-2, HSB-4, or HSB-5, which were advanced at the approximate locations of the former waste oil UST and former heating oil UST, respectively.

3.1.2 Groundwater Analytical Results

The following summarizes analytical results for groundwater samples that exceeded their respective MTCA Method A CULs:

- GRO was detected above the CUL of 800 µg/L[4] in groundwater samples collected from temporary wells installed in soil borings HSB-1, HSB-2, and HSB-3 (and the duplicate sample collected from HSB-3) and monitoring wells N1MW-6R, N1MW-7R, and N1MW-9, with concentrations ranging from 11,000 µg/L (N1MW-7R) to 43,000 µg/L (HSB-2).

[3] The Method A CUL for GRO in soil is 100 mg/kg if a) benzene is not present in soil and b) the total of ethylbenzene, toluene, and xylene are less than 1 percent of the gasoline mixture. Otherwise, the CUL is 30 µg/L.
[4] The Method A CUL for GRO in groundwater is 1,000 µg/L if benzene is not present in groundwater and 800 µg/L if benzene is present in groundwater.

- DRO was detected above the CUL of 500 µg/L in groundwater samples collected from temporary wells installed in soil borings HSB-1, HSB-2, and HSB-3 (and the duplicate sample collected from HSB-3) and monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9, with concentrations ranging from 1,400 µg/L (N1MW-8) to 7,800 µg/L (HSB-2). Note that the CUL for DRO applies to the sum of the DRO and RRO concentrations; however, RRO was not detected above the laboratory reporting limit (RL) in any samples.
- Benzene was detected above the CUL of 5 µg/L in groundwater samples collected from the temporary well installed in soil boring HSB-2 and monitoring wells N1MW-8 and N1MW-9, with concentrations ranging from 6.2 µg/L (N1MW-9) to 9.2 µg/L (HSB-2).
- Ethylbenzene was detected above the CUL of 700 µg/L in groundwater samples collected from temporary wells installed in soil borings HSB-1, HSB-2, and HSB-3 (and the duplicate sample collected from HSB-3) as well as monitoring well N1MW-9, with concentrations ranging from 940 µg/L (HSB-1) to 2,900 µg/L (HSB-2).
- Total xylenes were detected above the CUL of 1,000 µg/L in groundwater samples collected from temporary wells installed in soil borings HSB-2 and HSB-3 (and the duplicate sample collected from HSB-3) and monitoring wells N1MW-6R, N1MW-7R, and N1MW-9, with concentrations ranging from 2,200 µg/L (N1MW-6R) to 12,000 µg/L (HSB-2).

Groundwater analytical data from the supplemental investigation are summarized on Figure 3B and shown in Table 3. Groundwater field parameters from the supplemental investigation are shown in Table 4, and depth-to-water measurements and associated calculated groundwater elevations from the supplemental investigation are shown in Table 5. Groundwater elevations contours generated from depth-to-water measurements taken in monitoring wells N1MW-2, N1MW-3, N1MW-4, N1MW-5, and N1MW-8 are shown on Figure 4.

Groundwater analytical results from the supplemental investigation indicated that contaminant concentrations may have declined since the 2016 RI, notably at the N1MW-8 location However, note that because several of the original Site monitoring wells were replaced, and one well (N1MW-1) is no longer in use, direct comparison between RI and supplemental investigation groundwater analytical data is not possible. Concentrations of m- & p-xylenes, o-xylenes, toluene, and RRO were not detected in groundwater at any location above CULs during the supplemental investigation. During GeoEngineers' RI, m- & p-xylenes, o-xylenes were detected in groundwater at concentrations above the CUL; however, toluene was not detected in groundwater at concentrations above the RL during the RI. Naphthalenes were not detected above laboratory RLs during GeoEngineers' RI.

No contaminants of concern were detected above MTCA Method A CULs in groundwater samples from monitoring wells N1MW-2, N1MW-3, N1MW-4, or N1MW-5.

3.2 Conclusions Based on Supplemental Investigation

The supplemental investigation indicated that significant contamination remained at the Site in soil and groundwater in the vicinity of the former fueling island and the eastern/downgradient portion of the Site. The depth of the remaining contamination as well as its proximity to underground and aboveground utilities and the coffee kiosk made excavation of contaminated soil, which was included in

the original AO scope of work, unfeasible (Ecology 2021b). In the original AO scope of work, oxygen injections were planned to follow a remedial excavation (Ecology 2021b). However, a supplemental evaluation of potential *in situ* treatments for groundwater and smear zone soils determined that the injection of a longer-lasting sodium persulfate oxidizer would be more effective than injection of oxygen based on the contaminant concentrations remaining at the Site and a larger treatment area that could be created using a sodium persulfate oxidizer. Klozur® One, a soluble activated persulfate,[5] was selected as the preferred persulfate injectate product for use at the Site.

The original AO scope of work also indicated that excavation of contaminated soil should be conducted where the 2019 UST assessment identified contamination around the former waste oil and heating oil USTs (Fulcrum 2019). However, no contaminants of concern were detected above their respective laboratory RLs (which are below MTCA Method A CULs) in the soil samples collected from the soil borings (HSB-4 and HSB-5) drilled at the approximate former locations of these USTs. The data indicate that the residual contamination encountered during the 2019 UST assessment is localized and do not support the need for excavation in these areas.

[5] Klozur One is produced by Evonik and is a proprietary blend of sodium persulfate and activator agents, including chelated iron and trace levels of permanganate.

4.0 INTERIM ACTION IMPLEMENTATION

IA activities were conducted in general accordance with Landau's Ecology-approved Injection Work Plan (Landau 2022) from August of 2022 through December of 2025 and included groundwater injection wells installation, persulfate injections, and groundwater monitoring. The work performed during the supplemental investigation satisfied the substantive requirements of Task 3a through 3c of the Updated AO Scope of Work and Schedule (Ecology 2021a).

Eighteen groundwater injection wells (IW-1 through IW-18) were installed in August and September of 2022 to accommodate the persulfate injections. Figure 5 identifies Site investigation locations, including RI soil borings and monitoring wells, supplemental investigation soil borings and monitoring wells, and injection wells. Figure 6 identifies injection and groundwater monitoring locations. Prior to injection wells being installed and injection work commencing, the injection wells were rule authorized by Ecology's Underground Injection Control (UIC) program per Chapter 173-218 of WAC (UIC Site Number 36713).

Three injections of Klozur One were performed at the Site in October 2022 (Injection 1), July 2023 (Injection 2), and September 2024 (Injection 3).

The target injection solution concentration for each injection was 67 grams of Klozur One-activated persulfate (persulfate) per liter. During all Site injections, persulfate was pre-mixed with tap water in 55-gallon polyurethane (poly) drums before being pumped, using a compressed air-driven dual diaphragm pump, into a 6,500-gallon poly tank containing tap water. The solution was then mixed in the poly tank to achieve the design concentration for the injections. Up to four injection wells received injectate simultaneously, and the pressure at each injection well was monitored and kept below 10 to 20 pounds per square inch to prevent short-circuiting of fluid to the surface ("daylighting") or nearby storm drains, or damaging the injection well screens. To monitor temporary groundwater mounding, depth-to-water was measured in monitoring wells and other injection wells proximate to the wells receiving injection solution before and during injections. Injections were temporarily stopped if mounding exceeded 5 ft to prevent potential contact of injection solution with underground utilities. Injections were then resumed at a decreased flow rate after the observed mounding decreased. Following each injection, approximately 100 gallons of tap water were injected into injection wells to push the injection fluid into the aquifer matrix and to flush the injection well screens to prevent clogging.

Depth-to-water was measured in all injection wells and monitoring wells prior to starting the second and third injection events to determine baseline water levels for monitoring mounding during injections and to evaluate groundwater flow direction at the time of the injections. Depth-to-water was measured in select monitoring wells prior to groundwater sampling during the pre-injection baseline and post-Injection 1 groundwater monitoring events and in all monitoring wells during the post-Injection 2, post-Injection 3, and fourth quarter 2025 groundwater monitoring events. Figures 7A through 7E are groundwater contour maps associated with depth-to-water measurements taken in monitoring wells throughout implementation of the IA. Table 5 summarizes depth-to-water measurements taken in

monitoring wells and calculated groundwater elevations. Injection wells were not surveyed and therefore were not used to calculate groundwater elevation contours. Note that depth-to-water was measured in all injection wells and in select monitoring wells prior to starting Injection 1, but the data collected was not sufficient for generating a groundwater contour map.

Pre-injection baseline groundwater samples were collected in September 2022 to characterize initial conditions prior to Injection 1. Post-injection groundwater monitoring was performed in January 2023, November 2023, and September 2024: approximately 3 to 4 months after completion of Injection 1 and Injection 2 and approximately 1 year after the completion of Injection 3 in order to evaluate post-injection groundwater conditions and to determine whether additional treatment was warranted.

Groundwater sampling locations and analytes for all monitoring events were determined in coordination with Ecology. Groundwater samples were collected using low-flow sampling techniques as described above in Section 3.1 but also including turbidity monitoring during purging (with stabilization limits of ± 10 percent or less than 5 nephelometric turbidity units). Table 4 summarizes groundwater quality field parameters recorded during all groundwater monitoring events conducted during the IA and includes groundwater quality field parameters recorded during sampling of monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9 during the supplemental investigation. Groundwater samples from each monitoring event were submitted to Eurofins for GRO analysis by NWTPH-Gx; and for the post-Injection 2, post-Injection 3, and fourth quarter 2025 groundwater monitoring events, groundwater samples were also analyzed for BTEX by EPA Method 8260. Total lead was analyzed by EPA Method 6010 in one sample collected from injection well IW-9 during the pre-injection baseline monitoring event for waste characterization purposes. Table 3 summarizes groundwater analytical results from all groundwater samples collected during the IA and includes groundwater analytical results for groundwater samples collected during the supplemental investigation.

Landau conducted an EPA Level IIA-equivalent validation and verification on all IA implementation laboratory analytical data. Validation of the data was performed in accordance with guidance from applicable portions of the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA 2020a), the *National Functional Guidelines for Organic Superfund Methods Data Review* (EPA 2020b), analytical methods, and Landau data-validation standard operating procedures. All laboratory data were deemed acceptable for project use. Groundwater analytical results were compared with their MTCA Method A CULs, and it was assumed that the GRO CUL of 800 µg/L was applicable based on previous sampling events identifying the presence of benzene in groundwater at the Site.

The sections below provide a more detailed summary of the completed groundwater injection activities that occurred at the Site during the IA, including installation of groundwater injection wells, baseline groundwater sampling, three groundwater injections, three post-injection groundwater monitoring events, and the fourth quarter 2025 groundwater monitoring event.

4.1 Installation of Groundwater Injection Wells

Groundwater injection wells IW-1 through IW-18 were installed in August and September of 2022 in preparation for the persulfate injection events. To ensure adequate overlap of the injection radius of influence at each injection well, the well locations were designed with a nominal well spacing of approximately 20 ft in the direction of groundwater flow and approximately 17 ft perpendicular to flow, and injection wells were placed at least 10 ft from Site monitoring wells. Injection wells were generally installed to a total depth of 20 ft bgs with 10 ft of 0.020-inch slot screen placed from 10 to 20 ft bgs with 12/20 silica sand backfilled up to at least 2 ft above the top of the well screen. The annular space above the sand pack was sealed using hydrated bentonite chips and concrete, and injection wells were completed with a flush-mount monument. Injection wells were developed at least 24 hours after construction using surge and pump methodology and a centrifugal submersible pump. Injection wells were not surveyed after being installed; the locations of injection wells shown on all figures are approximate. Appendix C includes injection well borings logs. Table 1 summarizes soil boring and well construction details. Figure 6 shows the locations of groundwater injection wells including the treatment area and the estimated radius of influence of each injection well.

Investigation-derived waste (IDW) soil cuttings were characterized as non-hazardous waste and were disposed of at a Subtitle D disposal facility. Development water IDW from installation of the groundwater injection wells was characterized in conjunction with the pre-injection baseline groundwater sampling event (see below) as non-hazardous waste and was disposed of at a Subtitle D disposal facility. IDW groundwater from the other groundwater monitoring events was also characterized as non-hazardous waste and disposed of at a Subtitle D disposal facility (Appendix D).

4.2 Pre-Injection Baseline Groundwater Monitoring

On September 7 and 8, 2022, groundwater samples were collected from monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9 and injection wells IW-1, IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, IW-14, IW-15, IW-17, and IW-18 prior to Injection 1. A groundwater contour figure was not generated for this monitoring event as sufficient depth-to-water data was not collected from the surveyed monitoring wells at the Site. Depth-to-water measurements recorded during this monitoring event and calculated groundwater elevations are included in Table 5.

4.2.1 Groundwater Analytical Results

Detections of GRO were reported above the laboratory RL and above the CUL of 800 µg/L in each groundwater sample, with concentrations ranging from 1,100 µg/L (IW-1) to 44,000 µg/L (IW-18). Concentrations were generally the highest both within and to the east of the former UST excavation area (Figure 8A; Table 3). The sample collected from IW-9 was also analyzed for total lead by EPA Method 6010D and for BTEX by EPA Method 8260D for waste characterization purposes. Analysis for benzene and lead is required by the Subtitle D disposal facility for IDW related to gasoline releases. Lead was not detected above the laboratory RL, and BTEX compounds were detected at levels both below their respective CULs and below the applicable hazardous waste designation thresholds (40 Code of

Federal Regulations Part 261.24 Table 1). The sample collection forms and laboratory analytical report are included as Appendix E.

4.3 Injection 1: October 2022

The first persulfate injection performed at the Site (Injection 1) took place from October 11 through October 19, 2022. It should be noted that the irrigation shutoff occurred during this injection event on October 14, 2022 (Smith 2022). Depth-to-water in monitoring wells was not measured prior to beginning injections; therefore, groundwater elevations are not included in Table 5 and groundwater contours were not produced. Injection 1 was designed such that each of the Site injection wells (IW-1 through IW-18) was to receive 2,500 gallons of injection solution (45,000 gallons total) mixed at the concentration specified above. The injection generally proceeded from downgradient (east; beginning with IW-3, IW-6, IW-7, and IW-16) to upgradient (west), with the three injection wells that had the highest concentrations of GRO during the pre-injection baseline groundwater sampling event (IW-8, IW-14, and IW-18) injected last.

Approximately 25,080 pounds (lbs) of persulfate in 45,410 gallons of solution (a concentration of approximately 66 grams per liter [g/L]) were injected. Injection solution volumes higher than the design volume were placed into injection wells IW-2, IW-4, IW-5, IW-6, IW-7, IW-9, IW-11, IW-16, and IW-18 due to slow injection rates and/or high pressures at injection wells IW-1, IW-8, IW-12, IW-14, and IW-17 that resulted in delivery of injection solution volumes less than the design volume. The wells that received additional volume of injection solution were selected based on pre-injection groundwater analytical results as well as flow rates and pressures observed during the injection. Table 6 summarizes the actual volume injected into each injection well.

During the persulfate injection at injection well IW-3, daylighting of injection fluids occurred at the gravel surface of the adjacent property to the north of the Site. The injection fluid that daylighted was immediately recovered using a wet-dry vacuum, placed in 55-gal poly drums, and later filtered to remove dirt and gravel and then re-injected. Minor daylighting occurred at IW-18 and IW-10 during injections, but the fluid either infiltrated into the subsurface immediately or evaporated quickly after injections were paused.

One drum of residual injectate was generated during this event and was disposed of at Chemical Waste Management of the Northwest near Arlington, Oregon, a Resource Conservation and Recovery Act of 1976 Subtitle C hazardous waste treatment, storage, and disposal facility. No residual injectate was generated during subsequent injection events.

4.4 Post-Injection 1 Groundwater Monitoring

On January 18 and 19, 2023, approximately 3 months following Injection 1, groundwater samples were collected from monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9 and injection wells IW-1, IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, IW-14, IW-15, IW-17, and IW-18 to evaluate post-Injection 1 Site conditions. Evidence that the injection solution was still present in groundwater, such as low pH and elevated conductivity values in groundwater, was observed during this monitoring event (see Table 4). A

groundwater contour figure was not generated for this monitoring event as sufficient depth-to-water data was not collected from the surveyed monitoring wells at the Site. Depth-to-water measurements recorded during this monitoring event are included in Table 5.

4.4.1 Groundwater Analytical Results

Detections of GRO were reported above the laboratory RL and above the CUL of 800 µg/L in groundwater samples collected from monitoring wells N1MW-6R and N1MW-9 and injection wells IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, and IW-18, with concentrations ranging from 840 µg/L (IW-3) to 15,000 µg/L (IW-4). Detections of GRO were reported above the laboratory RL but below the CUL in samples collected from monitoring wells N1MW-7R and N1MW-8 and injection wells IW-1, IW-15, and IW-17, with concentrations ranging from 190 µg/L (IW-17) to 690 µg/L (N1MW-7R). GRO was not detected above the laboratory RL (which is below the CUL) in the sample collected from IW-14. Concentrations were generally the highest within and to the east (downgradient) of the former UST excavation area (Figure 8B; Table 3). The sample collection forms and laboratory analytical report are included as Appendix F.

GRO concentrations were observed to have decreased from above to below the CUL after Injection 1 in monitoring wells N1MW-7R and N1MW-8 and injection wells IW-1, IW-14, IW-15, and IW-17. GRO concentrations decreased, but not to below the CUL, after Injection 1 in monitoring wells N1MW-6R and N1MW-9 and injection wells IW-2, IW-3, IW-8, IW-12 and IW-18. GRO concentrations increased from the pre-injection baseline sampling event in groundwater samples collected from injection wells IW-4 (from 2,300 µg/L to 15,000 µg/L), IW-9 (from 1,700 µg/L to 1,900 µg/L), and IW-10 (from 7,800 µg/L to 8,400 µg/L). Increases in dissolved phase total petroleum hydrocarbon concentrations are not uncommon following initial ISCO injection events as a result of ISCO-induced desorption processes from sorbed mass in smear zone soils or residual non-aqueous phase liquid (NAPL) trapped in pore spaces in the aquifer matrix.

4.5 Injection 2: July 2023

The second persulfate injection performed at the Site (Injection 2) took place from July 10 through July 13, 2023 and occurred during irrigation season (high-groundwater season). Figure 7A shows groundwater contours based on depth-to-water measurements from Site monitoring wells on July 10, 2023 (Table 5), before injection activities began. Injection 2 was designed for injection wells IW-2, IW-4, IW-5, IW-9, IW-10, IW-11, IW-12, IW-13, IW-14, and IW-18 to receive 2,500 gallons of injection solution (25,000 gallons total) mixed at the design concentration specified above. These injection points were selected in coordination with Ecology and were based on the groundwater analytical data following Injection 1 and their proximity to historical USTs (Winslow 2023). Injection 2 focused treatment on the area of the former UST excavation as most of the elevated GRO concentrations reported following Injection 1 were either within or immediately east/downgradient of this area. Injections generally progressed from the perimeter of the former UST excavation area toward the center of the excavation. Approximately 13,860 lbs of persulfate in 25,030 gallons of solution (a concentration of approximately 66 g/L) were injected. Similar to Injection 1, injection solution volumes higher than the design volume

were placed into injection wells IW-1 and IW-8 due to injection wells IW-10, IW-12, and IW-14 accepting less than the design volume of injection solution. Minor daylighting, which either infiltrated into the subsurface immediately or evaporated quickly after injections were paused, occurred at IW-10, IW-14, and IW-18 during injections. Table 6 summarizes the actual volume injected into each injection well.

4.6 Post-Injection 2 Groundwater Monitoring

On November 28 and 29, 2023, approximately 4 months following Injection 2, groundwater samples were collected from monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9 as well as injection wells IW-1, IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, IW-14, IW-15, IW-17, and IW-18. Because the injection solution appeared to be present and active during the post-Injection 1 groundwater sampling event (conducted 3 months after the injection), the post-Injection 2 sampling event was conducted 4 months after the second injection to allow the persulfate additional time to disperse and react with *in situ* contamination. However, evidence that the injection solution was still present and active in groundwater, such as low pH and elevated conductivity values, was again observed during this event. Figure 7B shows groundwater elevation contours generated using depth-to-water measurements recorded during this monitoring event, which are included in Table 5.

4.6.1 Groundwater Analytical Results

Detections of GRO were reported above the laboratory RL and above the CUL of 800 µg/L in groundwater samples collected from monitoring wells N1MW-6R, N1MW-7R, and N1MW-9 and injection wells IW-3, IW-4, IW-8, IW-10, and IW-17, with concentrations ranging from 870 µg/L (IW-10) to 4,000 µg/L (IW-8). Detections of GRO were reported above the laboratory RL, but below the CUL, in samples collected from monitoring well N1MW-8 and injection wells IW-1, IW-2, IW-9, IW-12 and IW-18, with concentrations ranging from 310 µg/L (IW-1) to 690 µg/L (IW-9). GRO was not detected above the laboratory RL in the samples collected from IW-14 and IW-15. Concentrations were generally highest at the eastern/downgradient end of the Site with all three monitoring wells in that area (N1MW-6R, N1MW-7R, and N1MW-9) having detections of GRO exceeding the CUL as well as injection wells IW-3 and IW-8, which are located upgradient of N1MW-6R and N1MW-9, respectively (Figure 8C; Table 3).

GRO concentrations decreased from above to below the CUL after Injection 2 in injection wells IW-2, IW-9, IW-12, and IW-18. GRO concentrations decreased from their post-Injection 1 values, but not below the CUL, after Injection 2 in injection wells IW-4 and IW-10. GRO concentrations increased from their post-Injection 1 values in injection wells IW-3 (from 840 µg/L to 3,900 µg/L), IW-8 (from 3,100 µg/L to 4,000 µg/L), and IW-17 (from 190 µg/L to 1,100 µg/L) and monitoring wells N1MW-6R (from 2,200 µg/L to 3,700 µg/L), N1MW-7R (from 690 µg/L to 1,200 µg/L), and N1MW-9 (from 1,400 µg/L to 1,500 µg/L). These results suggest additional or ongoing desorption of sorbed mass or residual NAPL in the smear zone/aquifer matrix occurring.

A detection of benzene was reported above the laboratory RL and above the CUL of 5 µg/L in the groundwater sample collected from injection well IW-8 at a concentration of 7.2 µg/L. Detections of benzene were reported above the laboratory RL but below the CUL in all other groundwater samples,

with concentrations ranging from 0.59 µg/L (IW-14) to 4.3 µg/L (IW-10), except the sample collected from IW-15 for which benzene was not detected above the laboratory RL.

Toluene was detected above the laboratory RL but below the CUL of 1,000 µg/L in groundwater samples collected from monitoring wells N1MW-6R, N1MW-7R, and N1MW-9 and injection wells IW-3, IW-8, and IW-17, with concentrations ranging from 1.1 µg/L (IW-17) to 200 µg/L (IW-8). Toluene was not detected above the laboratory RL in any other groundwater samples.

Ethylbenzene was detected above the laboratory RL but below the CUL of 700 µg/L in all groundwater samples, with concentrations ranging from 1.7 µg/L (IW-12) to 360 µg/L (IW-3). Total xylenes were detected above the CUL in groundwater samples collected from injection wells IW-3 (1,800 µg/L) and IW-8 (1,000 µg/L).

Total xylenes were detected above the laboratory RL but below the CUL of 1,000 µg/L in all groundwater samples except the samples collected from monitoring well N1MW-8 and injection well IW-12, where total xylenes were not detected above the laboratory RL, with concentrations ranging from 3.6 µg/L (IW-14) to 460 µg/L (N1MW-9).

The sample collection forms and laboratory analytical report for the post-Injection 2 groundwater monitoring events are included as Appendix G.

4.7 Injection 3: September 2024

The third persulfate injection performed at the Site took place from September 9 through September 13, 2024 (Injection 3) during irrigation season (high-groundwater season). Figure 7C shows groundwater contours based on depth-to-water measurements from Site monitoring wells on September 10, 2024 (Table 5), before injection activities began. Injection 3 was designed for injection wells IW-3, IW-4, IW-6, IW-7, IW-8, IW-10, IW-15, IW-16, IW-17, and IW-18 to receive 2,500 gallons of injection solution each (25,000 gallons total) mixed at the design concentration specified above. These injection points were selected, in coordination with Ecology, based on the groundwater analytical data collected following Injection 2 (Winslow 2024). This injection focused treatment on the eastern/downgradient area of the Site where most of the GRO concentrations above the CUL were located following Injection 2 (IW-3, IW-6, IW-7, IW-8, IW-15, and IW-16). Treatment was also applied to injection wells where GRO concentrations were above the CUL following Injection 2 (IW-4, IW-10, and IW-17). IW-18 was also injected (GRO following Injection 2 was below the CUL) given that its GRO concentration in the pre-injection baseline sampling event was the highest (44,000 µg/L) reported in Site wells. Approximately 13,940 lbs of persulfate in 25,680 gallons of solution (a concentration of approximately 65 g/L) were injected. Each injection well received +/- 10 percent of the design volume (2,500 gallons) with no injection solution needing to be placed in other injection wells. Minor daylighting, which either infiltrated into the subsurface immediately or evaporated quickly after injections were paused, occurred at IW-10 and IW-18 during injections. Table 6 summarizes the actual volume injected into each injection well.

4.8 Post-Injection 3 Groundwater Monitoring

On September 22 through 24, 2025, approximately 1 year following Injection 3, groundwater samples were collected from monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9 as well as injection wells IW-1, IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, IW-14, IW-15, IW-17, and IW-18. This monitoring event was intended to be the first of four planned quarterly post-Injection 3 groundwater monitoring events. Because the injection solution appeared to be present and active during the post-Injection 1 and post-Injection 2 groundwater monitoring events, which were conducted 3 and 4 months after Injections 1 and 2, respectively, the post-Injection 3 sampling event was conducted 1 year after Injection 3 to allow the persulfate additional time to disperse and react with *in situ* contamination.

During purging of the monitoring and injection wells, the conductivity of the groundwater first pumped from the casing was observed to be elevated (i.e., as high as 17,317 microSiemens per centimeter [µS/cm] in injection well IW-8) relative to pre-injection conditions, except for injection wells IW-9 and IW-15. At most of the wells, the conductivity of the extracted groundwater decreased throughout purging, and a significant volume of groundwater had to be removed from the wells (19 liters on average) before the conductivity stabilized for three consecutive readings. On average, the final conductivity reading was approximately 39 percent lower than the initial reading and, in several cases, the final conductivity measurement was more than 50 percent lower than the initial measured value. These findings indicate that residual impacts from Injection 3 were present in groundwater in the casing and filter pack of the wells and, to a lesser extent, in surrounding groundwater.

During purging at injection wells IW-12 and IW-14, a fine-grained dark colored material, which is thought to be residual persulfate product, was present in the purge water. At injection well IW-14, approximately 1.7 ft of injectate product material was measured using a water level meter at the base of the well; at IW-12, injectate product material was present in groundwater purged from the well. Both wells were able to be purged until the water became clear and groundwater quality parameters were stable. During purging at injection well IW-15, the initial turbidity of the purge water was elevated and throughout purging did not decrease to the level generally seen during purging of other injection and monitoring wells at the Site. After completion of this monitoring event, Landau recommended that injection wells IW-12, IW-14, and IW-15 be redeveloped prior to the collection of any future groundwater samples.

Refer to Figure 7D for groundwater elevation contours generated using depth-to-water measurements recorded during this monitoring event, which are included in Table 5.

4.8.1 Groundwater Analytical Results

Detections of GRO were reported above the laboratory RL and above the CUL of 800 µg/L in groundwater samples collected from monitoring wells N1MW-6R, N1MW-7R, and N1MW-8 and injection wells IW-2, IW-4, IW-8, IW-9, IW-10, IW-12, and IW-18, with concentrations ranging from 810 µg/L (IW-8) to 6,000 µg/L (IW-10). GRO was detected above the laboratory RL but below the CUL in groundwater samples collected from monitoring well N1MW-9 and injection wells IW-1, IW-3, IW-14, with concentrations ranging from 260 µg/L (N1MW-9) to 380 µg/L (IW-1). GRO was not detected above

the laboratory RL in groundwater samples collected from injection wells IW-15 and IW-17. Concentrations were generally the highest within and around the former UST excavation area, with the two highest concentrations of GRO being detected in groundwater samples collected from monitoring well N1MW-8 (3,600 µg/L) and IW-10 (6,000 µg/L), both of which are within the former UST excavation area (Figure 8D; Table 3).

GRO concentrations decreased from above to below the CUL after Injection 3 in monitoring well N1MW-9 and injection wells IW-3 and IW-17. GRO concentrations decreased from their post-Injection 2 Groundwater Monitoring values, but not below the CUL, after Injection 3 in monitoring well N1MW-6R and injection well IW-8. GRO concentrations increased from their post-Injection 2 values in monitoring wells N1MW-7R (1,200 µg/L to 2,700 µg/L) and N1MW-8 (430 µg/L to 3,600 µg/L) and injection wells IW-1 (310 µg/L to 380 µg/L), IW-2 (580 µg/L to 2,900 µg/L), IW-4 (840 µg/L to 920 µg/L), IW-9 (690 µg/L to 1,300 µg/L), IW-10 (870 µg/L to 6,000 µg/L), IW-12 (420 µg/L to 970 µg/L), and IW-18 (420 µg/L to 1,700 µg/L).

Benzene was not detected above the CUL of 5 µg/L in any groundwater sample. Benzene was detected above the laboratory RL but below the CUL in groundwater samples collected from monitoring wells N1MW-6R, N1MW-7R, and N1MW-8 and injection wells IW-2, IW-3, IW-4, IW-8, IW-10, IW-12, IW-14, and IW-18, with concentrations ranging from 0.7 µg/L (IW-18) to 4.1 µg/L (N1MW-8). Benzene was not detected above the laboratory RL, which is below the CUL, in groundwater samples collected from monitoring well N1MW-9 and injection wells IW-1, IW-9, IW-15, and IW-17.

Toluene was not detected above the CUL of 1,000 µg/L in any groundwater samples but was detected above the laboratory RL in groundwater samples collected from monitoring wells N1MW-7R and N1MW-8 and injection wells IW-2, IW-3, IW-8, IW-10, and IW-18, with concentrations ranging from 1.4 µg/L (IW-8) to 60 µg/L (N1MW-7R). Toluene was not detected above the laboratory RL in any other groundwater samples.

Ethylbenzene was not detected above the CUL of 700 µg/L in any groundwater samples but was detected above the laboratory RL in the groundwater samples collected from injection wells IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, IW-14, IW-17, and IW-18 and monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9, with concentrations ranging from 3.3 µg/L (IW-12) to 120 µg/L (N1MW-8). Ethylbenzene was not detected above the laboratory RL in any other groundwater samples.

Total xylenes were not detected above the CUL of 1,000 µg/L in any groundwater samples but were detected above the laboratory RL in every groundwater sample collected (except for the groundwater sample collected from injection well IW-15), with concentrations ranging from 3.5 µg/L (IW-17) to 710 µg/L (IW-10).

The sample collection forms and laboratory analytical report for the post-Injection 3 groundwater monitoring event are included as Appendix H.

4.9 Fourth Quarter 2025 Groundwater Monitoring

On December 30 and 31, 2025, approximately 1 year and 3 months following Injection 3, groundwater samples were collected from monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9 as well as injection wells IW-1, IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, IW-14, IW-15, IW-17, and IW-18. This monitoring event was intended to be the second of four planned quarterly post-Injection 3 groundwater monitoring events.

Before sampling began, injections wells IW-12, IW-14, and IW-15 were redeveloped to remove any residual persulfate product and/or turbidity from the wells. Each well was bailed using a stainless-steel bailer to remove any solids from the base of the well and then further developed using surge and pump techniques. These wells were not sampled until approximately 48 hours after redevelopment was completed.

During purging of the monitoring and injection wells, the conductivity of the groundwater first pumped from the casing was observed to be elevated (i.e., as high as 8,279 µs/cm in injection well IW-10) relative to pre-injection conditions, except for monitoring wells N1MW-7R, N1MW-8, and N1MW-9, but to a lesser extent than during the Post-Injection 3 groundwater monitoring event (see Section 4.8 above). At most of the wells, the conductivity of the extracted groundwater decreased throughout purging, except at monitoring wells N1MW-8 and N1MW-9 where conductivity increased throughout purging. These findings indicate that the residual impacts from Injection 3 were still present in the casing and filter pack of most of the wells, and to a lesser extent in surrounding groundwater. However, based on the changes in conductivity observed between the Post-Injection 3 groundwater monitoring event and this monitoring event, the residual impacts from Injection 3 are dissipating over time.

Refer to Figure 7E for groundwater elevation contours generated using depth-to-water measurements recorded during this monitoring event, which are included in Table 5.

4.9.1 Groundwater Analytical Results

Detections of GRO were reported above the laboratory RL and above the CUL of 800 µg/L in groundwater samples collected from monitoring wells N1MW-6R and N1MW-8 and injection wells IW-2, IW-8, IW-9, IW-10, IW-12, and IW-18, with concentrations ranging from 1,000 µg/L (IW-12) to 3,200 µg/L (IW-2). GRO was detected above the laboratory RL but below the CUL in groundwater samples collected from monitoring well N1MW-9 and injection wells IW-3, IW-4, and IW-15, with concentrations ranging from 310 µg/L (IW-3) to 790 µg/L (IW-15). GRO was not detected above the laboratory RL in groundwater samples collected from monitoring well N1MW-7R and injection wells IW-1, IW-14, and IW-17. Similar to the Post-Injection 3 groundwater monitoring event, concentrations were generally the highest within and around the former UST excavation area, with GRO exceeding the CUL in groundwater samples from only two wells (monitoring well N1MW-6R and injection well IW-8) to the east (downgradient) of the former UST excavation area (Figure 8E; Table 3).

GRO concentrations decreased from above to below the CUL from the Post-Injection 3 groundwater monitoring event to this monitoring event in monitoring well N1MW-7R and injection well IW-4. GRO

concentrations decreased from their post-Injection 3 groundwater monitoring values, but not below the CUL, in monitoring well N1MW-8 and injection well IW-10. GRO concentrations increased from their post-Injection 3 values in monitoring well N1MW-6R (1,100 µg/L to 1,600 µg/L) and injection wells IW-2 (2,900 µg/L to 3,200 µg/L), IW-8 (810 µg/L to 1,900 µg/L), IW-9 (1,300 µg/L to 2,500 µg/L), IW-12 (970 µg/L to 1,000 µg/L), and IW-18 (1,700 µg/L to 1,800 µg/L).

Benzene was not detected above the CUL of 5 µg/L in any groundwater samples. Benzene was detected above the laboratory RL but below the CUL in groundwater samples collected from monitoring wells N1MW-8 and N1MW-9 and injection wells IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, and IW-15, with concentrations ranging from 0.40 µg/L (IW-2) to 2.7 µg/L (IW-10). Benzene was not detected above the laboratory RL in groundwater samples collected from monitoring wells N1MW-6R and N1MW-7R and injection wells IW-1, IW-14, IW-17, and IW-18.

Toluene was not detected above the CUL of 1,000 µg/L in any groundwater samples but was detected above the laboratory RL in groundwater samples collected from monitoring wells N1MW-7R and N1MW-8 and injection wells IW-2, IW-3, IW-8, IW-9, and IW-10, with concentrations ranging from 1.0 µg/L (IW-9) to 6.6 µg/L (IW-8). Toluene was not detected above the laboratory RL in any other groundwater samples.

Ethylbenzene was not detected above the CUL of 700 µg/L in any groundwater samples but was detected above the laboratory RL in the groundwater samples collected from monitoring wells N1MW-6R, N1MW-7R, N1MW-8, and N1MW-9 and injection wells IW-2, IW-3, IW-4, IW-8, IW-9, IW-10, IW-12, IW-15, IW-17, and IW-18, with concentrations ranging from 1.1 µg/L (N1MW-7R) to 85 µg/L (IW-9). Ethylbenzene was not detected above the laboratory RL in any other groundwater samples.

Total xylenes were not detected above the CUL of 1,000 µg/L in any groundwater samples but were detected above the laboratory RL in every groundwater sample collected (except for the groundwater samples collected from injection wells IW-1 and IW-15), with concentrations ranging from 5.1 µg/L (N1MWW-7R) to 210 µg/L (IW-2).

The sample collection forms and laboratory analytical report for the fourth quarter 2025 groundwater monitoring event are included as Appendix I.

5.0 DISCUSSION

The IA, as described in the AO revised Scope of Work, outlined in Landau's injection work plan, and planned in coordination with Ecology, was successfully implemented at the Site, satisfying the requirements of the AO. A total of approximately 52,880 lbs of persulfate in 96,120 gallons of solution (an average concentration of approximately 66 g/L) was injected at the Site during the course of the three injection events between October 2022 and September 2024.

Fourth quarter 2025 groundwater monitoring results indicate that, on average, GRO concentrations in groundwater samples collected from Site injection and monitoring wells have decreased by 87 percent from baseline sampling conducted prior to the injections. Attachment 1 includes time-series plots showing the change in GRO concentrations over time for each injection well and groundwater monitoring well that has been sampled throughout the IA. Figure 9 shows the approximate current extent of contamination exceeding MTCA Method A CULs in groundwater at the Site, based on the results of the fourth quarter 2025 groundwater monitoring event.

6.0 USE OF THIS REPORT

This technical memorandum has been prepared for the exclusive use of the City of Yakima and Washington State Department of Ecology for specific application to the Former Tiger Oil Site. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. Landau makes no other warranty, either express or implied.

7.0 REFERENCES

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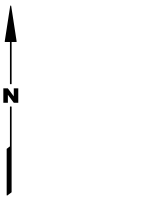
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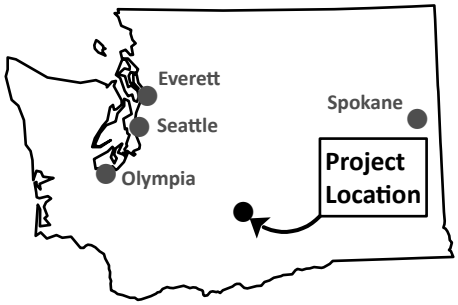
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Data Source: Esri

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Vicinity Map**	Figure 1



N

0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2014 and 2016)
- Former Monitoring Well
- Soil Boring (Landau 2021)
- Extent of UST Excavation

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
HSB = Hollow-Stem Boring

Note

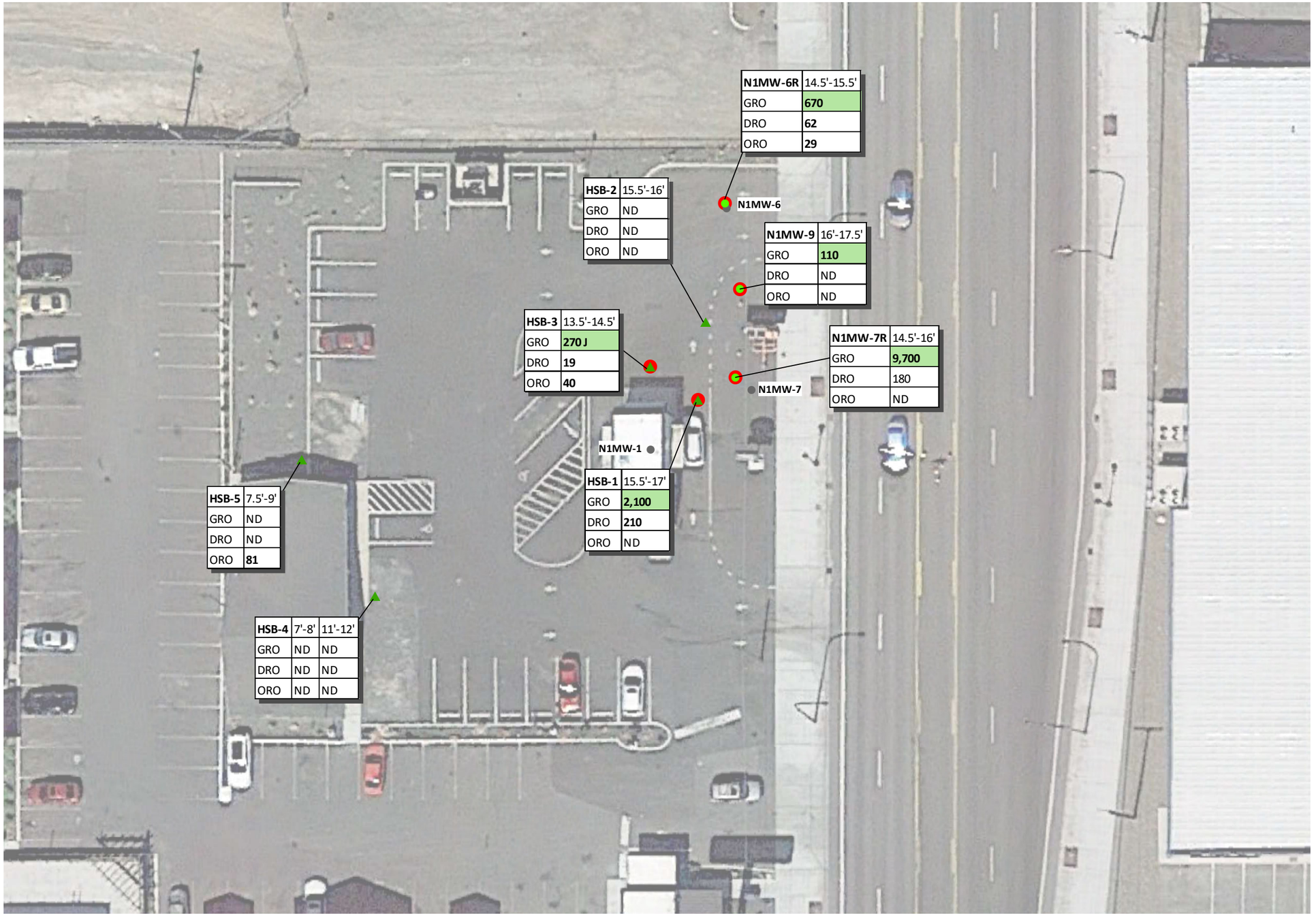
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021; GeoEngineers, 2015, 2017

Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Supplemental Investigation Locations**	Figure 2

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N

0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Former Monitoring Well
- Soil Boring (Landau 2021)
- Soil Concentrations Exceed MTCA Method A Cleanup Level

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
HSB = Hollow-Stem Boring
GRO = Gasoline range organics
DRO = Diesel range organics
ORO = Oil range organics
ND = Not Detected
MTCA = Model Toxics Control Act

Notes

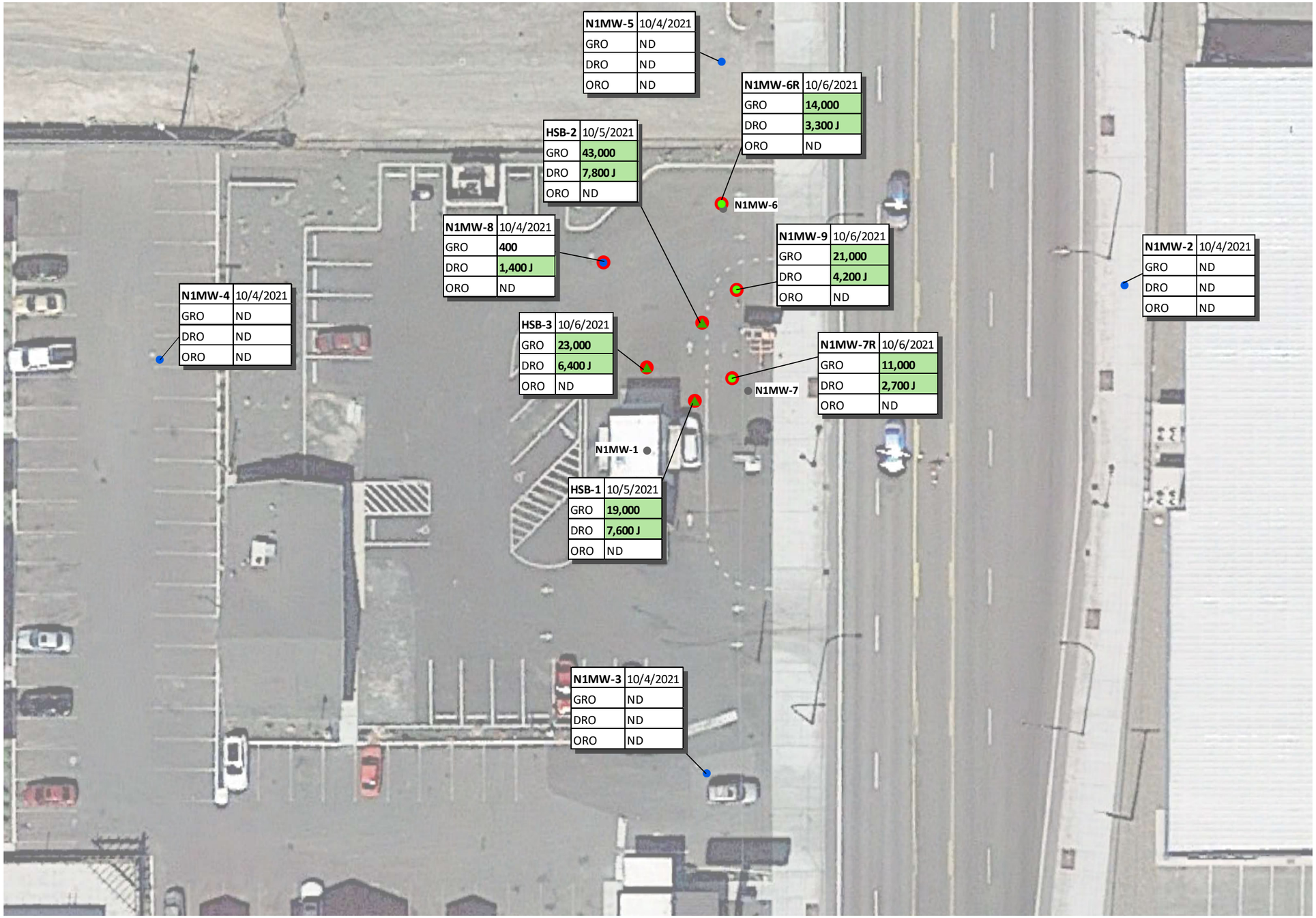
1. Analytical results for benzene, toluene, ethylbenzene, and xylenes not shown.
2. Results in mg/kg (milligrams per kilogram).
3. **Bold** indicates anaylte exceedance.
4. Green shading indicates detected analyte exceeds MTCA Method A cleanup level.
5. J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Supplemental Investigation Soil Analytical Results Map**	Figure 3A



N

0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2014 and 2016)
- Former Monitoring Well
- Soil Boring (Landau 2021)
- Groundwater Concentrations Exceed MTCA Method A Cleanup Level

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
HSB = Hollow-Stem Boring
GRO = Gasoline range organics
DRO = Diesel range organics
ORO = Oil range organics
ND = Not Detected
MTCA = Model Toxics Control Act

Notes

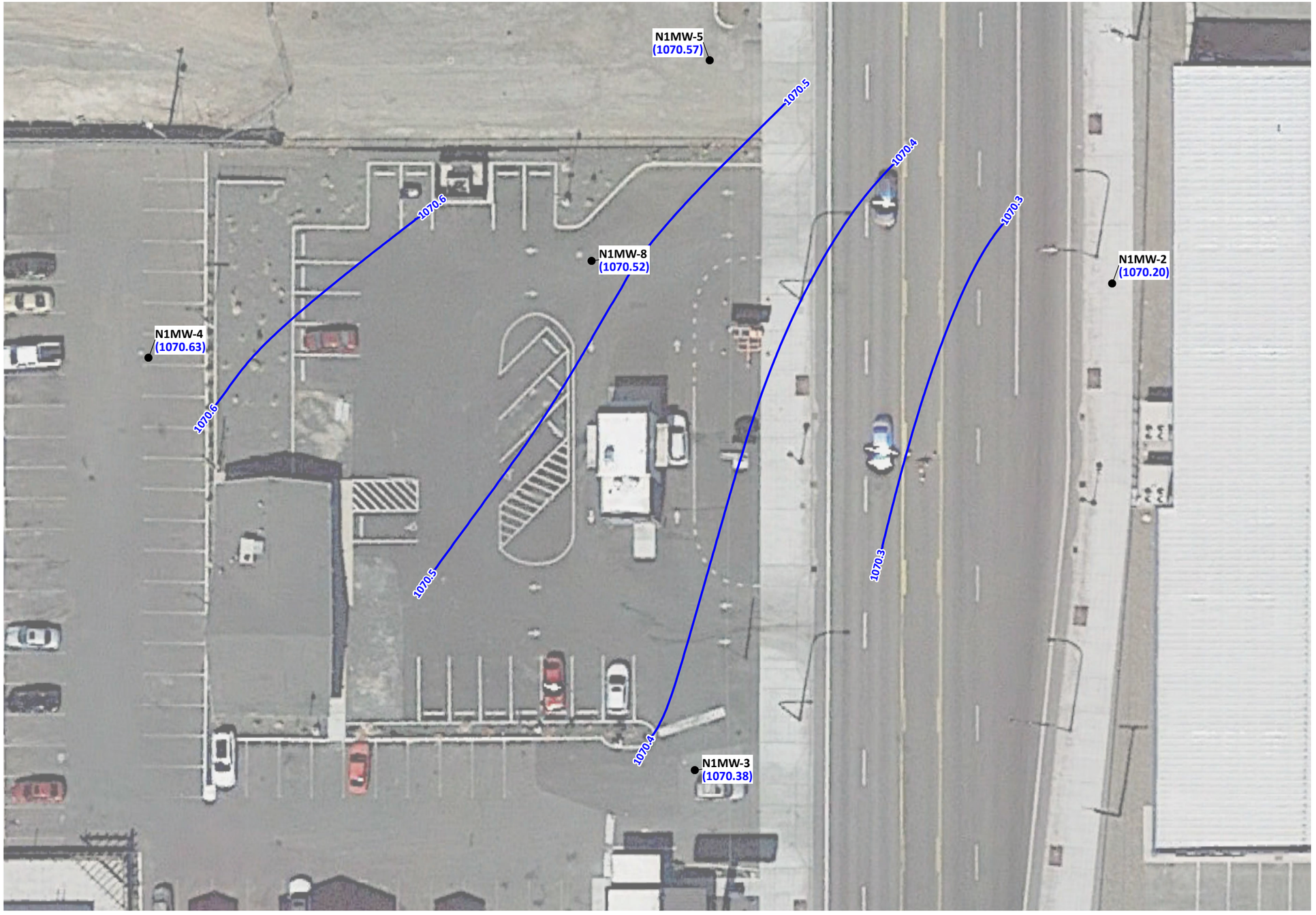
1. Analytical results for benzene, toluene, ethylbenzene, and xylenes not shown.
2. Results in µg/L (micrograms per liter).
3. **Bold** indicates anaylte exceedance.
4. Green shading indicates detected analyte exceeds MTCA Method A cleanup level.
5. J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Supplemental Investigation Groundwater Analytical Results Map**	Figure 3B



N

0 30 60

Scale in Feet

Legend

- RI Monitoring Well (GeoEngineers 2014 and 2016)
- Groundwater Elevation Contour

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
NAVD88 = North American Vertical Datum of 1988
TOC = Top of casing

Notes

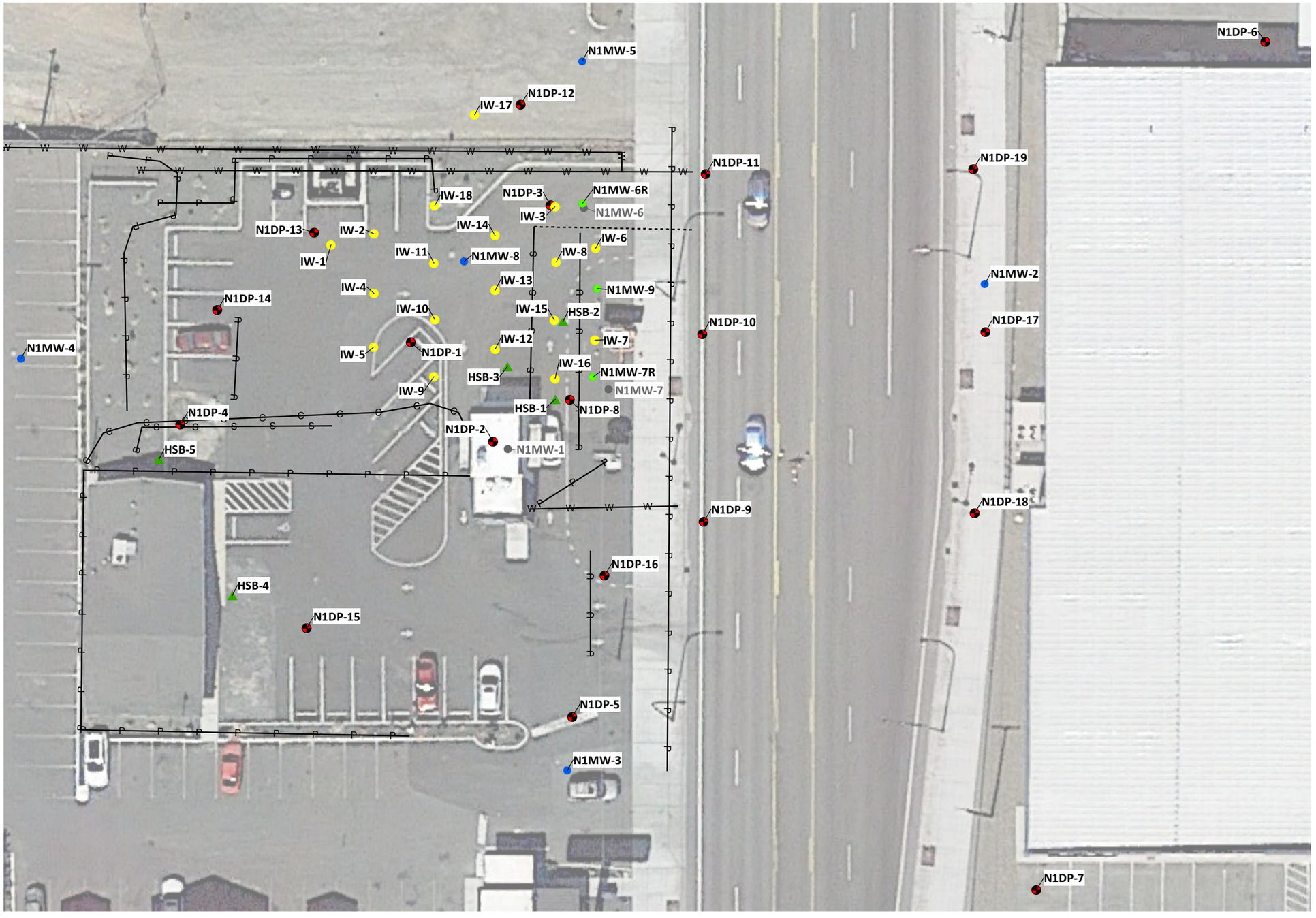
1. Depth-to-water measurements taken on 10/4/2021.
2. Elevations calculated based on TOC elevations surveyed by Gray Surveying under contract with Landau Associates in November 2021 and elevations reference NAVD88.
3. Injection wells were not used to calculate groundwater elevation contours.
4. Injection wells not surveyed and locations are approximate.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**October 4, 2021 Supplemental Investigation Groundwater Contours**	Figure 4



0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2014 and 2016)
- Former Monitoring Well
- Injection Well (Landau 2022)
- Soil Boring (Landau 2021)
- RI Boring (GeoEngineers 2016)
- Water
- Power
- Sewer/SW
- Comm
- Unknown
- Continuance

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
N1DP = North 1st Direct Push
HSB = Hollow-Stem Boring
RI = Remedial Investigation

Notes

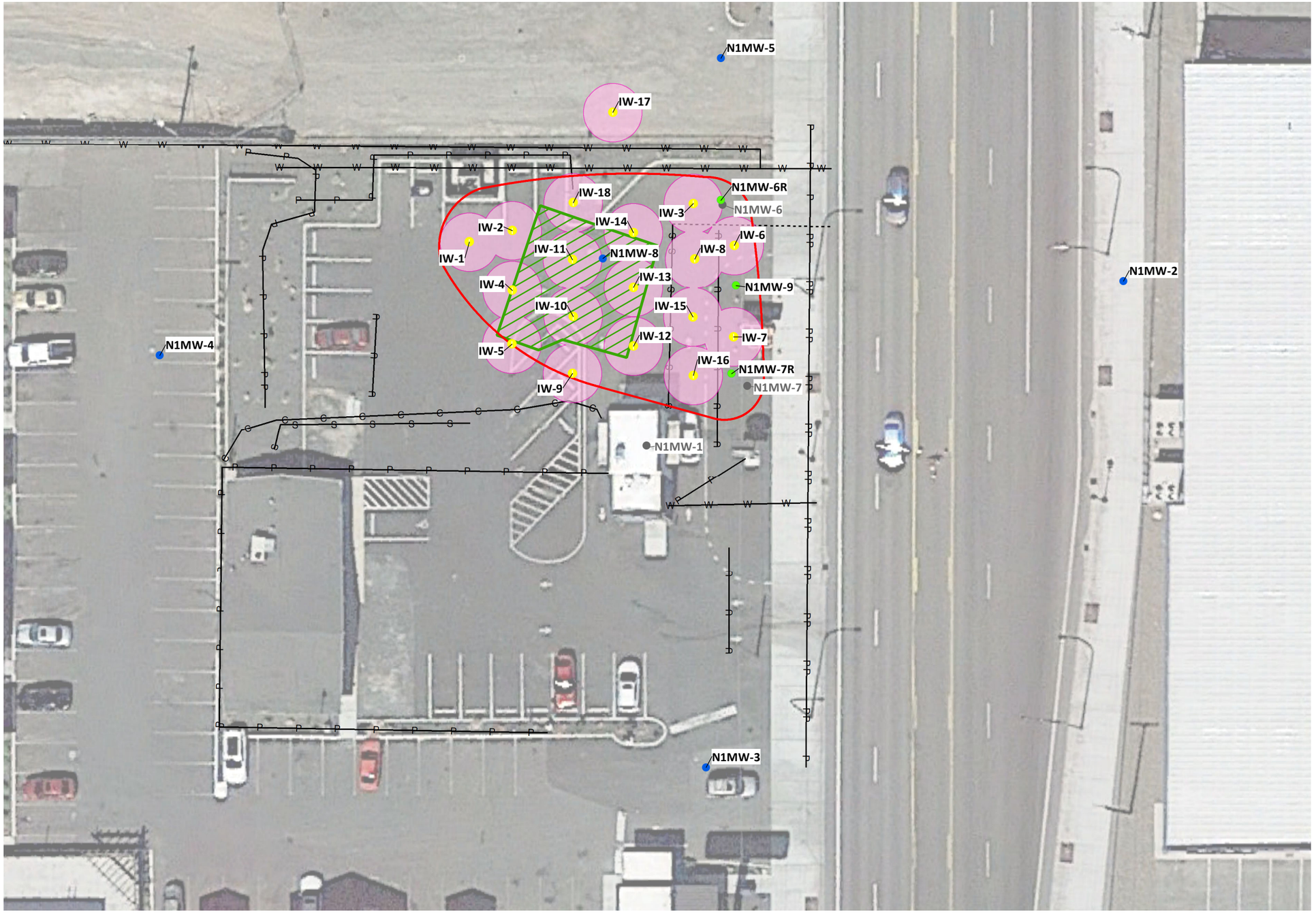
1. Injection wells not surveyed and locations are approximate.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Site Investigation Locations**	Figure 5



N

0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2014 and 2016)
- Former Monitoring Well
- Injection Well (Landau 2022)
- W — Water
- P — Power
- S — Sewer/Stormwater
- C — Comm
- U — Unknown
- Continuance
- Extent of UST Excavation
- Target Treatment Area
- Designed Injection Radius of Influence

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
UST = Underground storage tank

Notes

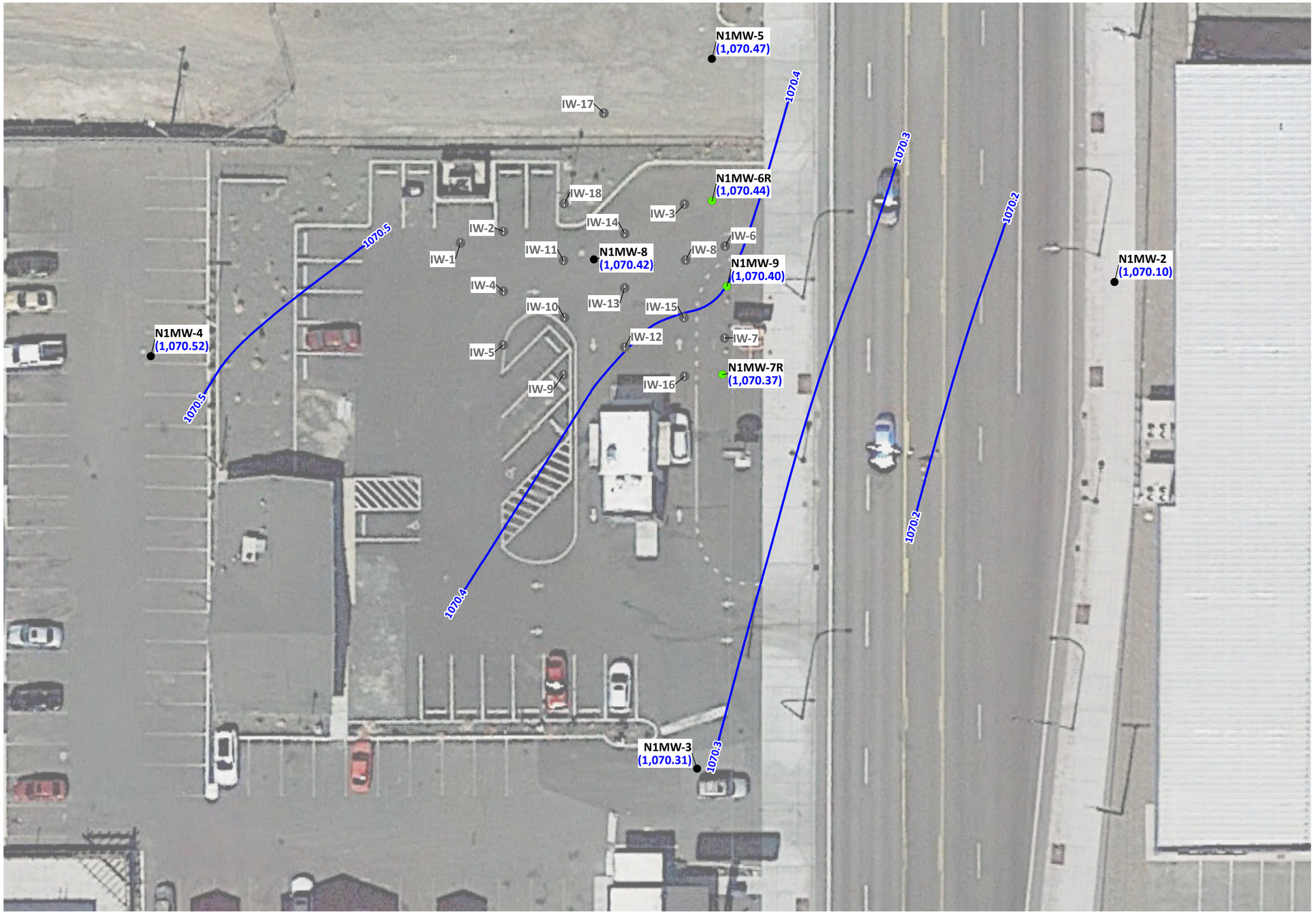
1. Injection wells not surveyed and locations are approximate.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Injection and Groundwater Monitoring Locations**	Figure 6



N

0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- RI Monitoring Well (GeoEngineers 2014 and 2016)
- Injection Well (Landau 2022; See Notes 3 and 4)
- Groundwater Elevation Contour

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
NAVD88 = North American Vertical Datum of 1988
TOC = Top of casing

Notes

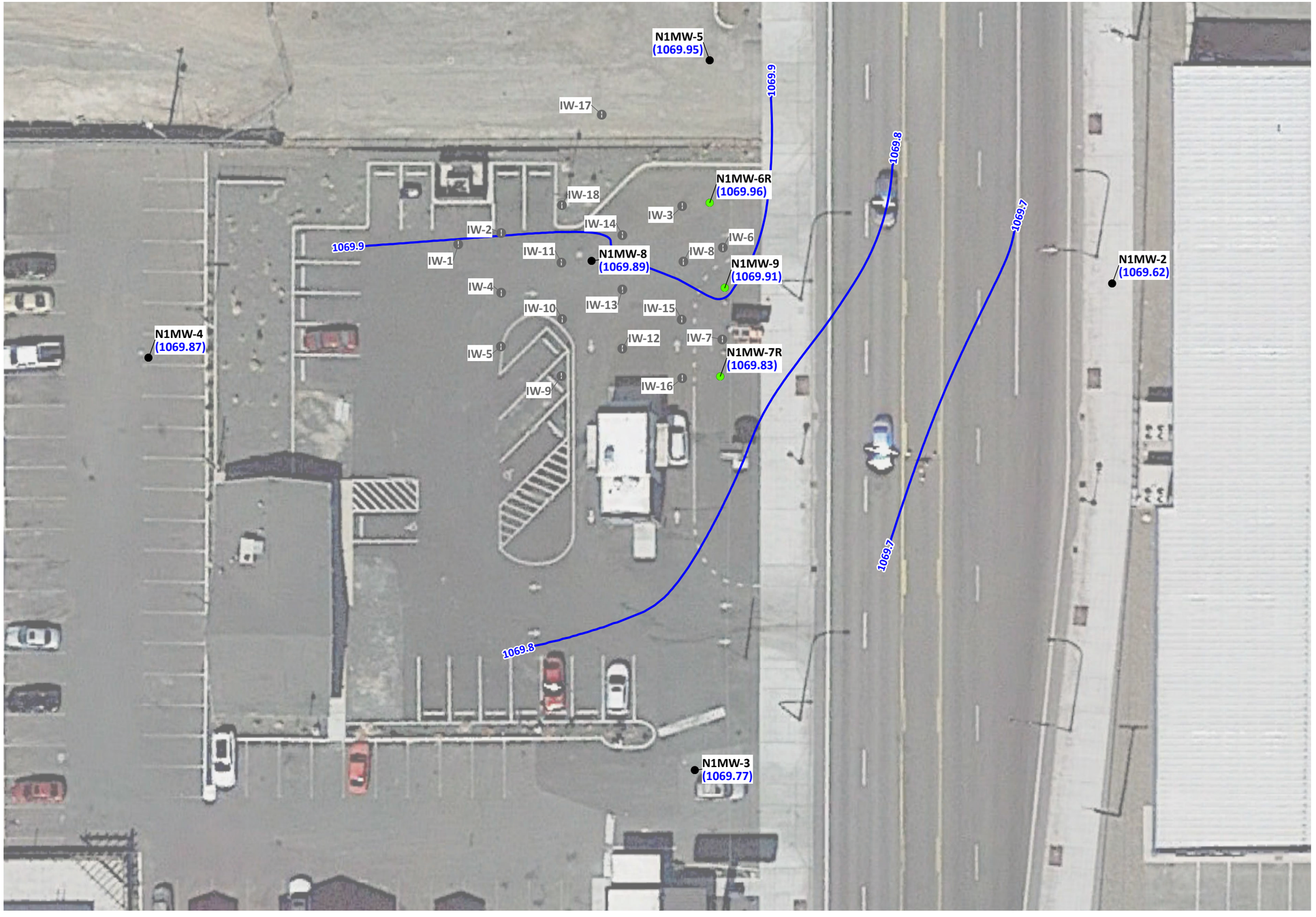
1. Depth-to-water measurements taken on 7/10/2023 prior to injection beginning.
2. Elevations calculated based on TOC elevations surveyed by Gray Surveying under contract with Landau Associates in November 2021 and elevations reference NAVD88.
3. Injection wells were not used to calculate groundwater elevation contours.
4. Injection wells not surveyed and locations are approximate.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

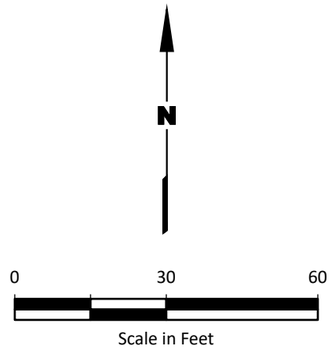
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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Injection 2 Groundwater Contours**	Figure 7A





Legend

- Monitoring Well (Landau 2021)
- RI Monitoring Well (GeoEngineers 2014 and 2016)
- Injection Well (Landau 2022; See Notes 3 and 4)
- Groundwater Elevation Contour

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
NAVD88 = North American Vertical Datum of 1988
TOC = Top of casing

Notes

1. Depth-to-water measurements taken on 11/28/2023.
2. Elevations calculated based on TOC elevations surveyed by Gray Surveying under contract with Landau Associates in November 2021 and elevations reference NAVD88.
3. Injection wells were not used to calculate groundwater elevation contours.
4. Injection wells not surveyed and locations are approximate.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

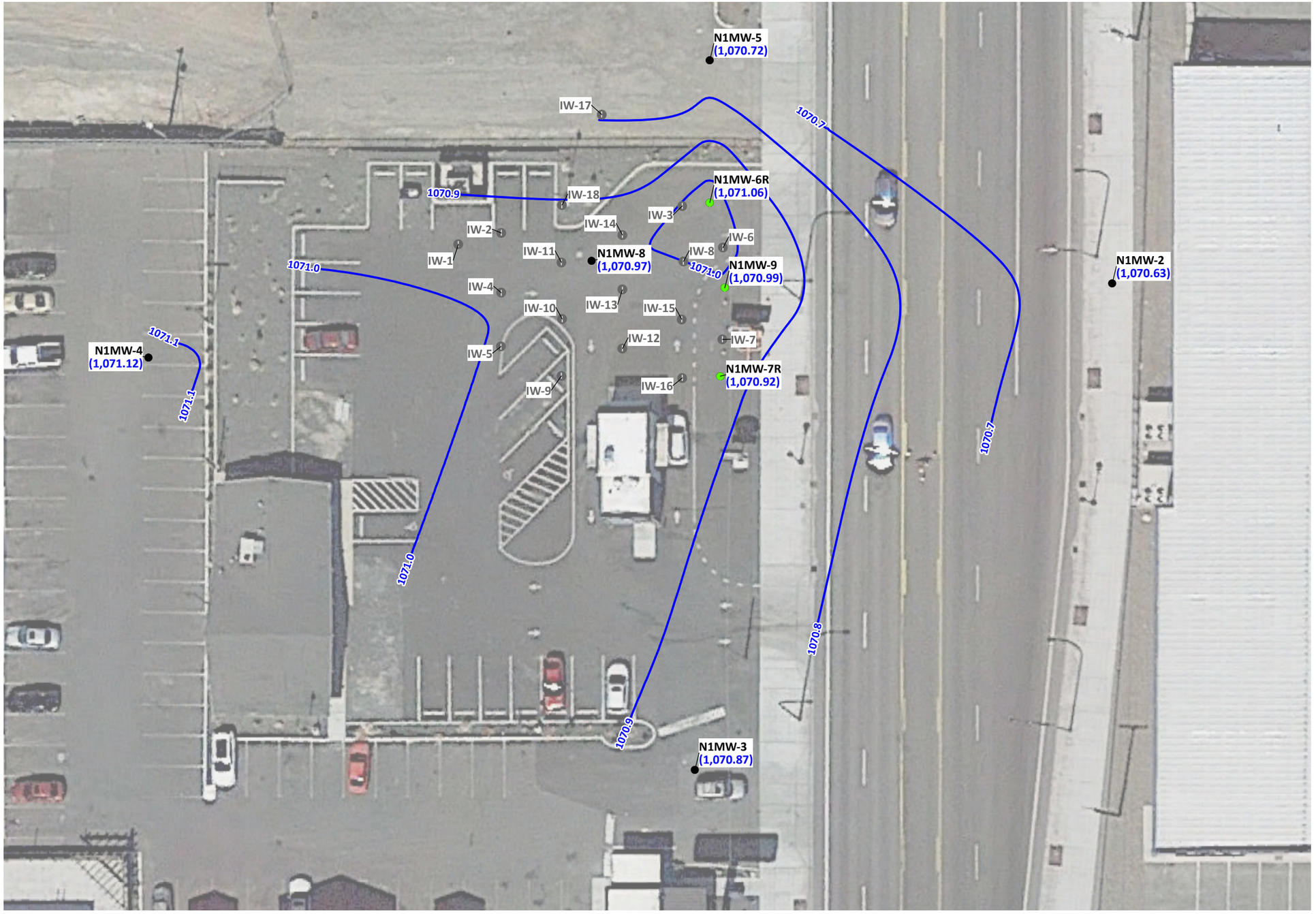
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Former Tiger Oil Site
1808 North 1st Street
Yakima, Washington

November 28, 2023 Post-Injection 2 Groundwater Contours

Figure
7B



N

0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- RI Monitoring Well (GeoEngineers 2014 and 2016)
- Injection Well (Landau 2022; See Notes 3 and 4)
- Groundwater Elevation Contour

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
NAVD88 = North American Vertical Datum of 1988
TOC = Top of casing

Notes

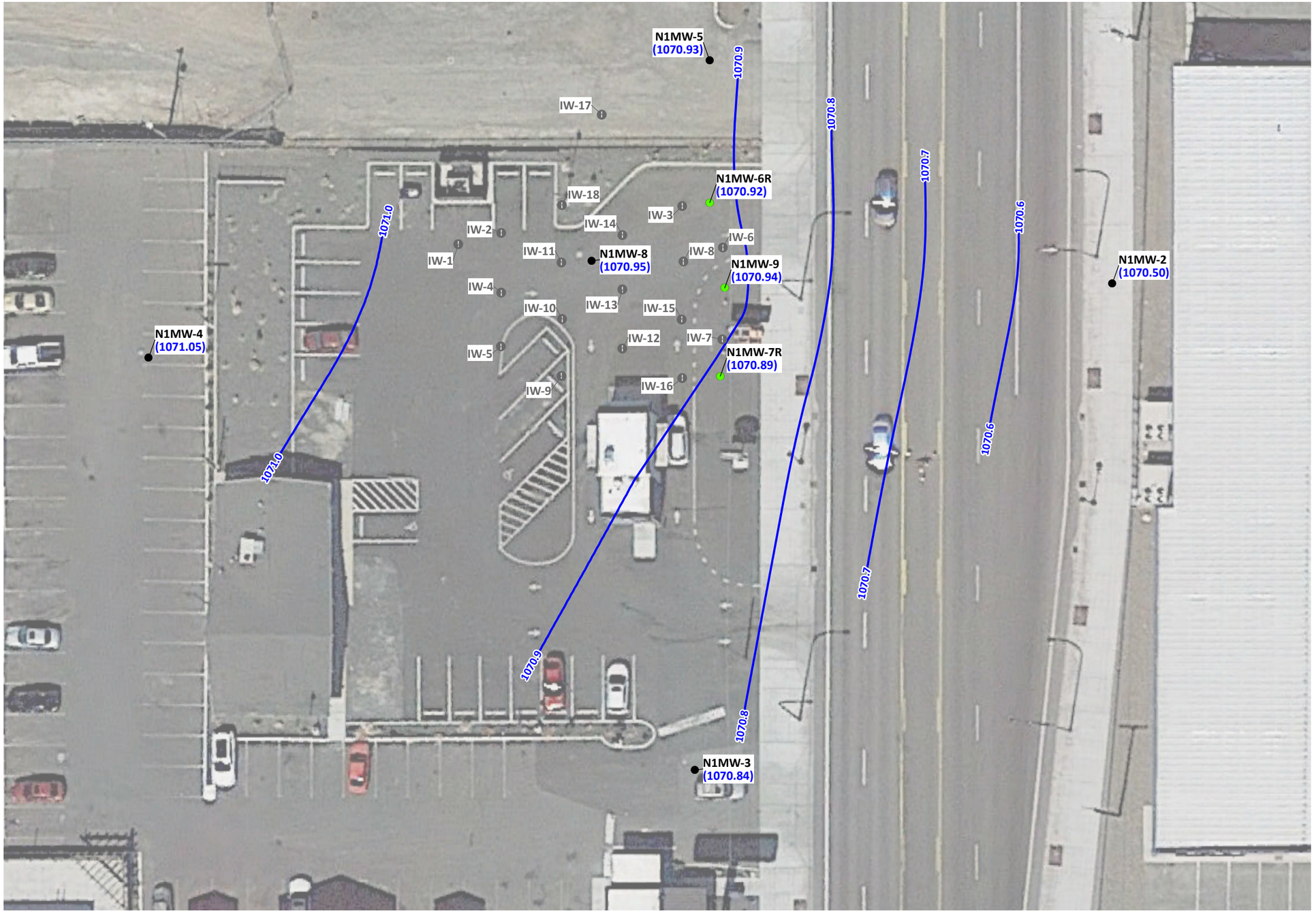
1. Depth-to-water measurements taken on 9/9/2024 prior to injection beginning.
2. Elevations calculated based on TOC elevations surveyed by Gray Surveying under contract with Landau Associates in November 2021 and elevations reference NAVD88.
3. Injection wells were not used to calculate groundwater elevation contours.
4. Injection wells not surveyed and locations are approximate.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

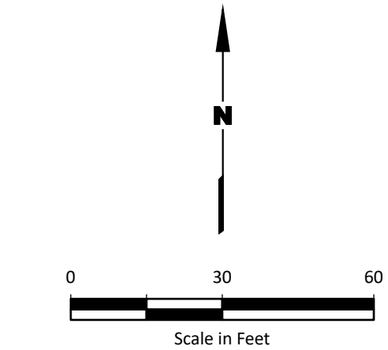
Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Injection 3 Groundwater Contours**	Figure 7C





Legend

- Monitoring Well (Landau 2021)
- RI Monitoring Well (GeoEngineers 2014 and 2016)
- Injection Well (Landau 2022; See Notes 3 and 4)
- Groundwater Elevation Contour

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
NAVD88 = North American Vertical Datum of 1988
TOC = Top of casing

Notes

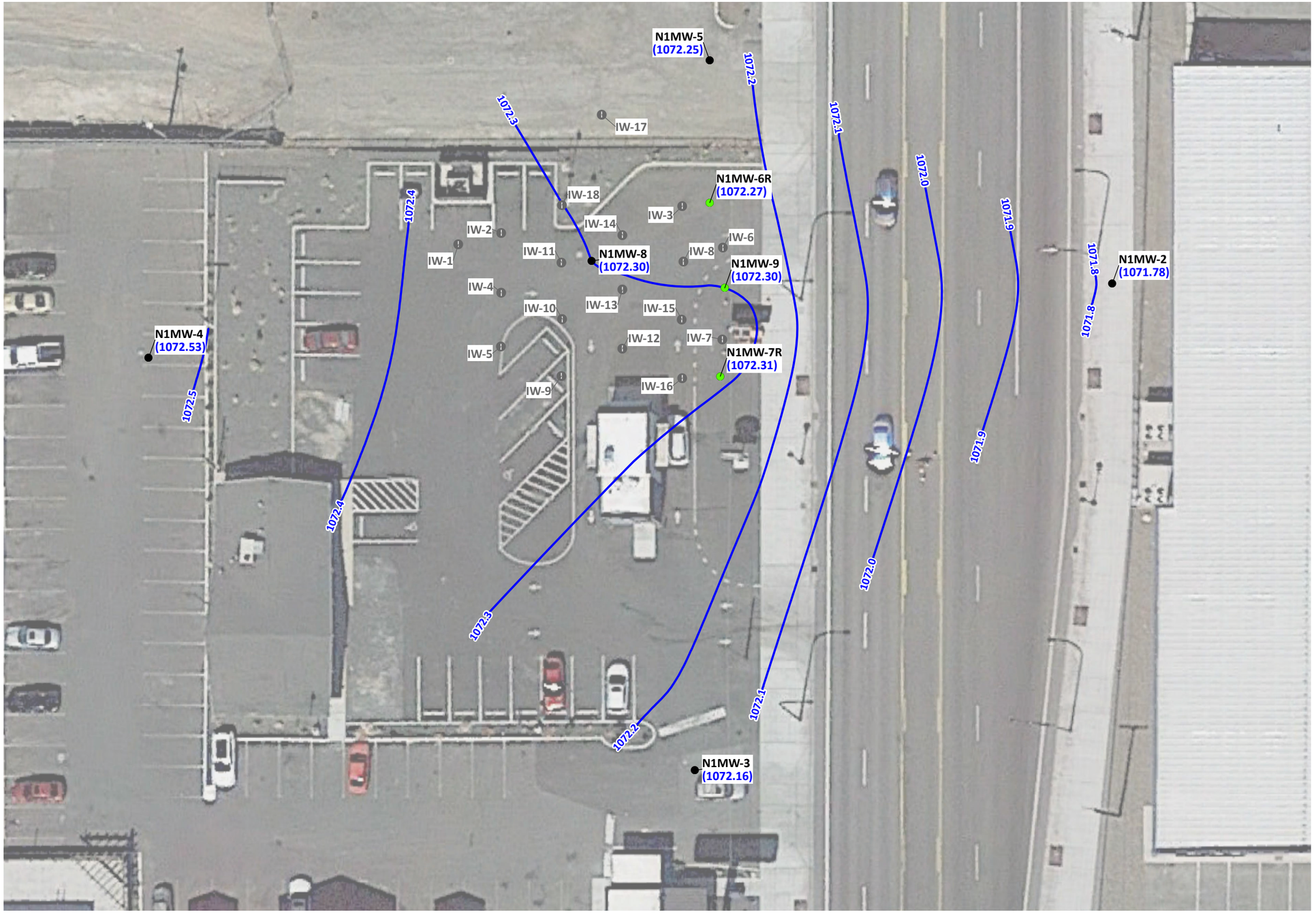
1. Depth-to-water measurements taken on 9/22/2025 prior to injection beginning.
2. Elevations calculated based on TOC elevations surveyed by Gray Surveying under contract with Landau Associates in November 2021 and elevations reference NAVD88.
3. Injection wells were not used to calculate groundwater elevation contours.
4. Injection wells not surveyed and locations are approximate.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

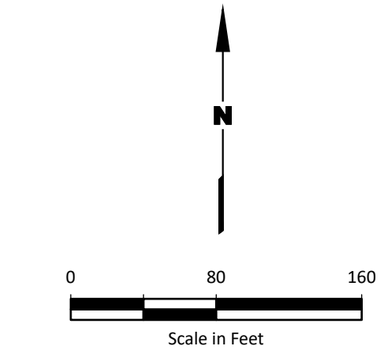
Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**September 22, 2025 Post-Injection 3 Groundwater Contours**	Figure 7D

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Legend

- Monitoring Well (Landau 2021)
- RI Monitoring Well (GeoEngineers 2014 and 2016)
- Injection Well (Landau 2022; See Notes 3 and 4)
- Groundwater Elevation Contour

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
NAVD88 = North American Vertical Datum of 1988
TOC = Top of casing

Notes

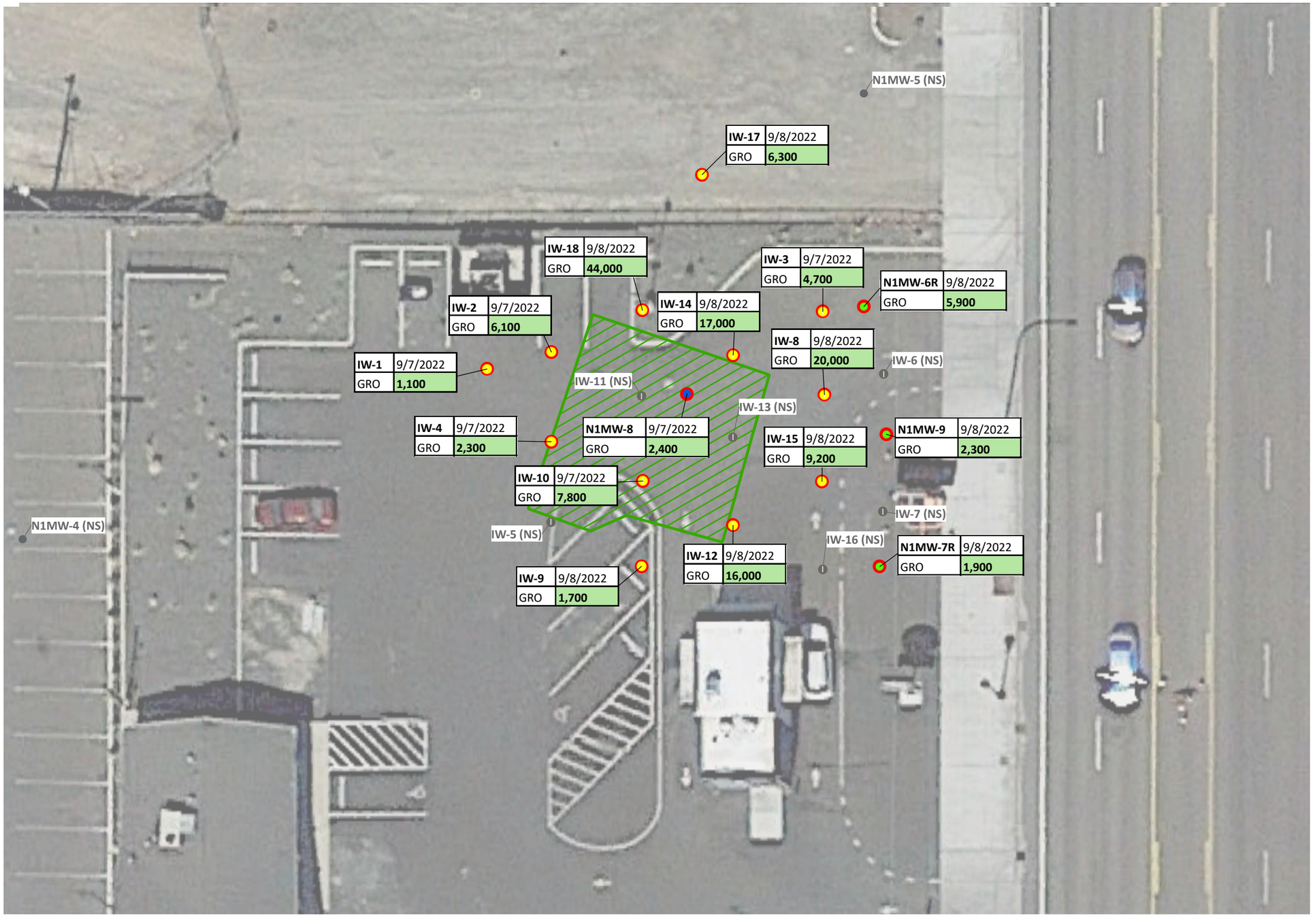
1. Depth-to-water measurements taken on 12/29/2025.
2. Elevations calculated based on TOC elevations surveyed by Gray Surveying under contract with Landau Associates in November 2021 and elevations reference NAVD88.
3. Injection wells were not used to calculate groundwater elevation contours.
4. Injection wells not surveyed and locations are approximate.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**December 29, 2025 Fourth Quarter Groundwater Contours**	Figure 7E



N

0 20 40

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2016)
- Injection Well (Landau 2022)
- Monitoring Well Not Used for Groundwater Monitoring (GeoEngineers 2014)
- Injection Well Not Used for Groundwater Monitoring (Landau 2022)
- Groundwater Concentrations Exceed MTCA Method A Cleanup Level
- Extent of UST Excavation

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
GRO= Gasoline range organics
MTCA = Model Toxics Control Act
NS = Not sampled
UST = Underground storage tank

Notes

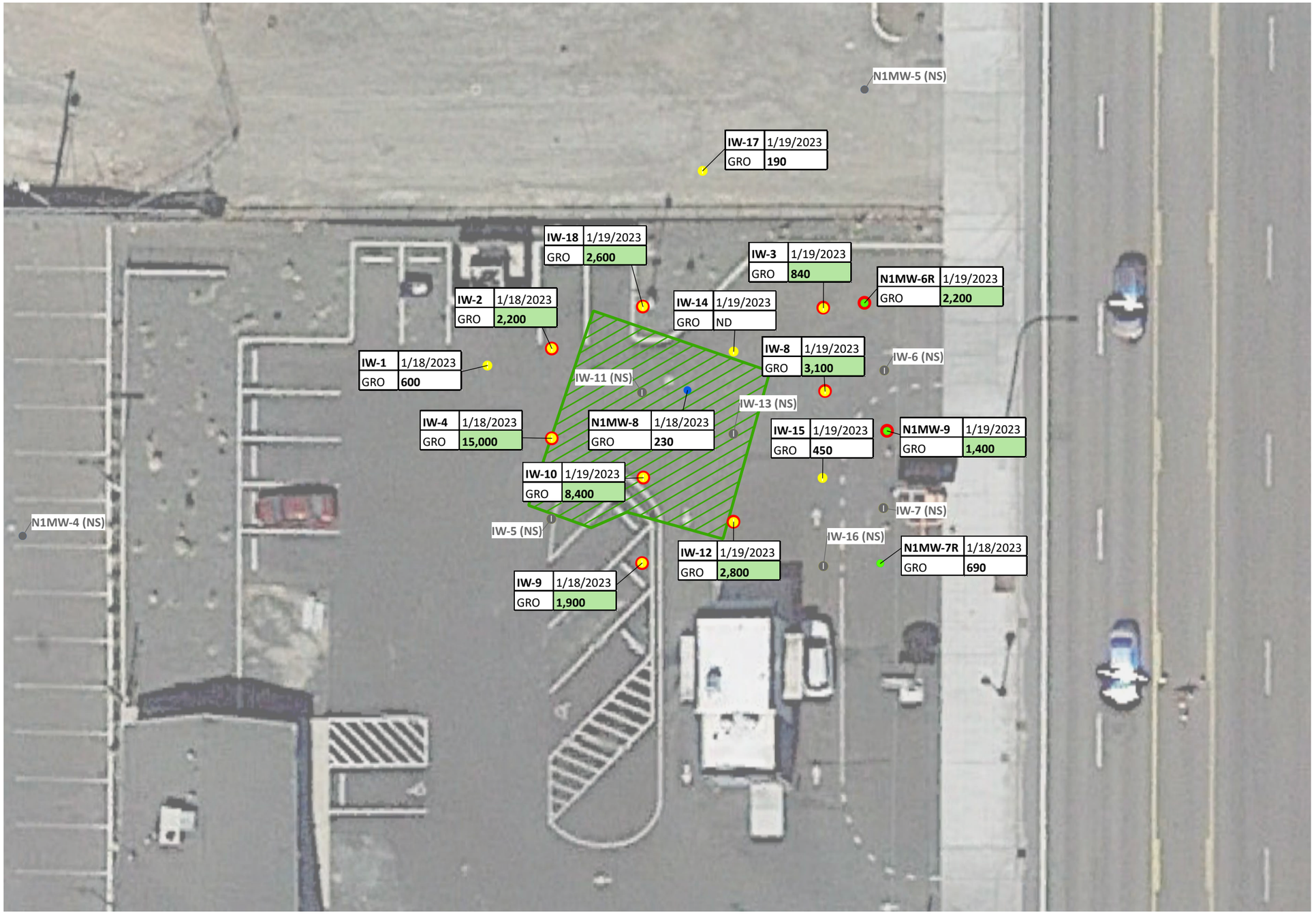
1. Analytical results for benzene, toluene, ethylbenzene, and xylenes not shown.
2. Results in µg/L (micrograms per liter).
3. **Bold** indicates analyte exceedance.
4. Green shading indicates detected analyte exceeds MTCA Method A cleanup level.
5. Injection wells not surveyed and locations are approximate.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

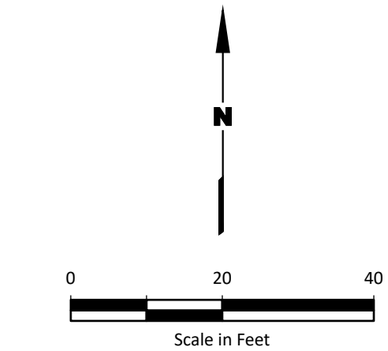
Source: Google Earth Pro, 2021; GeoEngineers, 2017

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Pre-Injection Baseline Groundwater Analytical Results Map**	Figure 8A





Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2016)
- Injection Well (Landau 2022)
- Monitoring Well Not Used for Groundwater Monitoring (GeoEngineers 2014)
- Injection Well Not Used for Groundwater Monitoring (Landau 2022)
- Groundwater Concentrations Exceed MTCA Method A Cleanup Level
- Extent of UST Excavation

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
GRO = Gasoline range organics
MTCA = Model Toxics Control Act
NS = Not sampled
UST = Underground storage tank

Notes

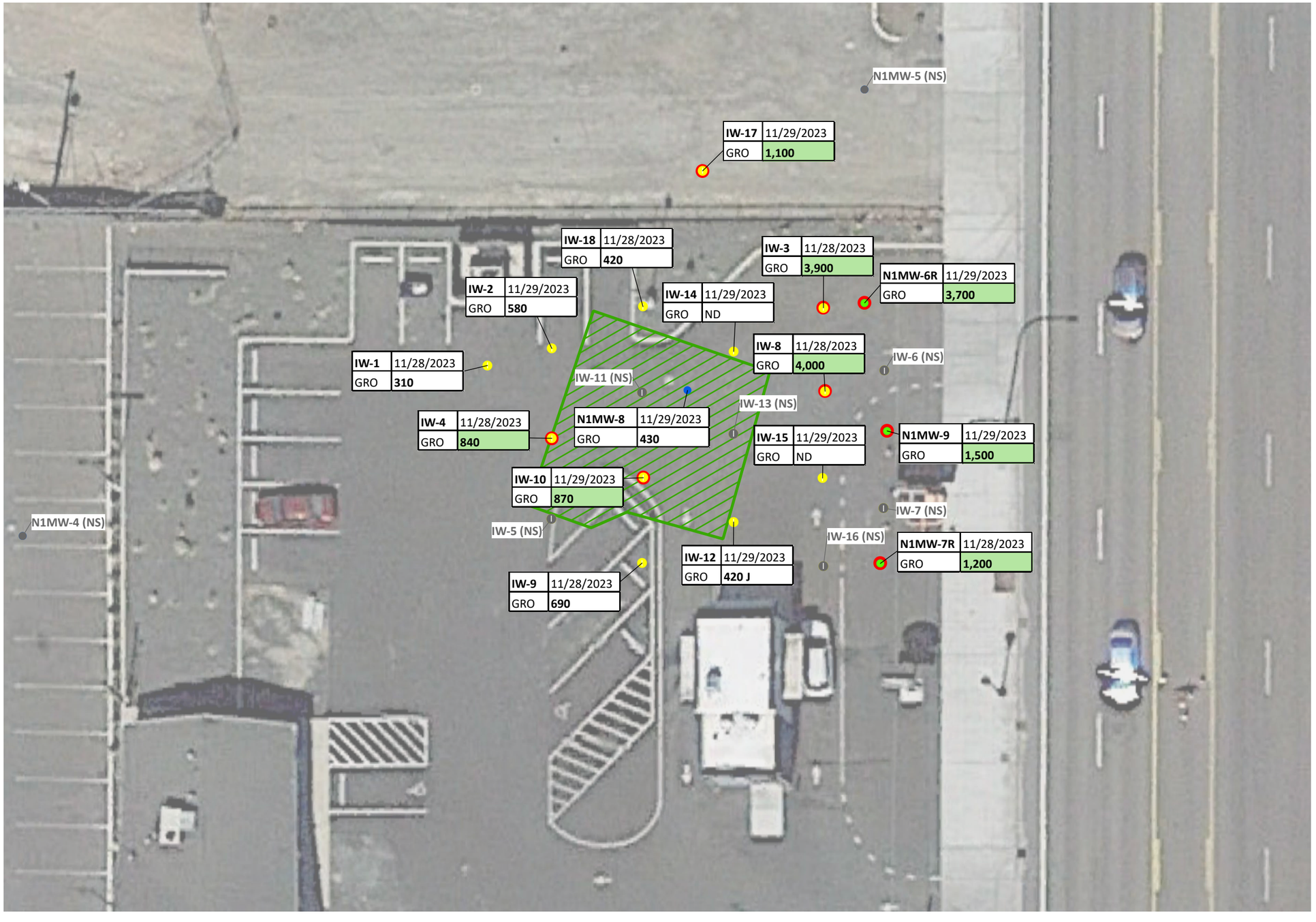
1. Analytical results for benzene, toluene, ethylbenzene, and xylenes not shown.
2. Results in µg/L (micrograms per liter).
3. **Bold** indicates analyte exceedance.
4. Green shading indicates detected analyte exceeds MTCA Method A cleanup level.
5. Injection wells not surveyed and locations are approximate.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021; GeoEngineers, 2017

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Post-Injection 1 Groundwater Analytical Results Map**	Figure 8B



N

0 20 40

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2016)
- Injection Well (Landau 2022)
- Monitoring Well Not Used for Groundwater Monitoring (GeoEngineers 2014)
- Injection Well Not Used for Groundwater Monitoring (Landau 2022)
- Groundwater Concentrations Exceed MTCA Method A Cleanup Level
- Extent of UST Excavation

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
GRO = Gasoline range organics
MTCA = Model Toxics Control Act
NS = Not sampled
UST = Underground storage tank

Notes

1. Analytical results for benzene, toluene, ethylbenzene, and xylenes not shown.
2. Results in µg/L (micrograms per liter).
3. **Bold** indicates analyte exceedance.
4. Green shading indicates detected analyte exceeds MTCA Method A cleanup level.
5. Injection wells not surveyed and locations are approximate.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021; GeoEngineers, 2017

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Post-Injection 2 Groundwater Analytical Results Map**	Figure 8C



N

0 20 40

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2016)
- Injection Well (Landau 2022)
- Monitoring Well Not Used for Groundwater Monitoring (GeoEngineers 2014)
- Injection Well Not Used for Groundwater Monitoring (Landau 2022)
- Groundwater Concentrations Exceed MTCA Method A Cleanup Level
- Extent of UST Excavation

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
GRO = Gasoline range organics
MTCA = Model Toxics Control Act
NS = Not sampled
UST = Underground storage tank

Notes

1. Analytical results for benzene, toluene, ethylbenzene, and xylenes not shown.
2. Results in µg/L (micrograms per liter).
3. **Bold** indicates analyte exceedance.
4. Green shading indicates detected analyte exceeds MTCA Method A cleanup level.
5. Injection wells not surveyed and locations are approximate.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021; GeoEngineers, 2017

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**September 2025** **Groundwater Analytical Results Map**	Figure 8D



N

0 20 40

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2016)
- Injection Well (Landau 2022)
- Monitoring Well Not Used for Groundwater Monitoring (GeoEngineers 2014)
- Injection Well Not Used for Groundwater Monitoring (Landau 2022)
- Groundwater Concentrations Exceed MTCA Method A Cleanup Level
- Extent of UST Excavation

Acronyms/Abbreviations

N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
GRO = Gasoline range organics
MTCA = Model Toxics Control Act
NS = Not sampled
UST = Underground storage tank

Notes

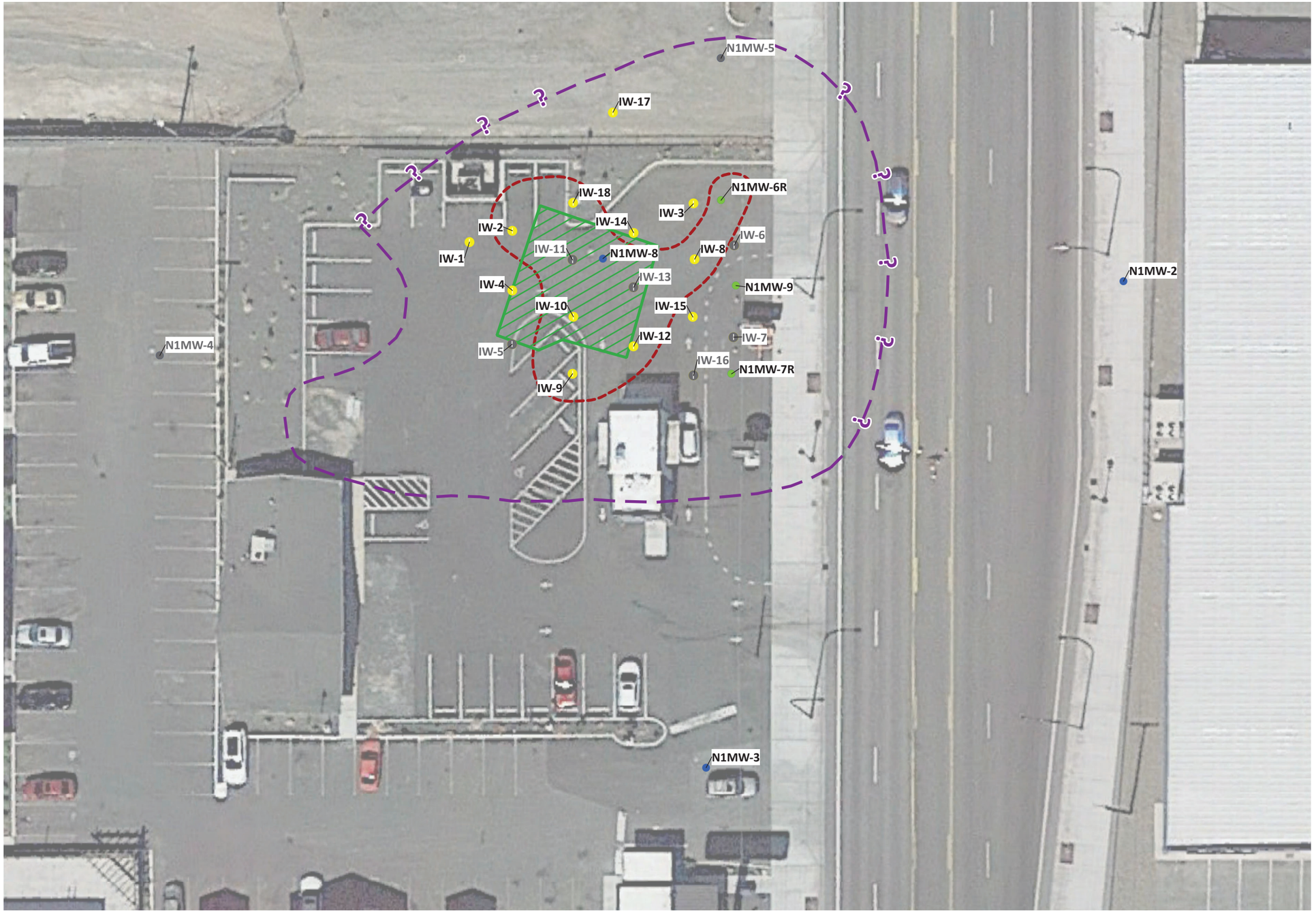
1. Analytical results for benzene, toluene, ethylbenzene, and xylenes not shown.
2. Results in µg/L (micrograms per liter).
3. **Bold** indicates analyte exceedance.
4. Green shading indicates detected analyte exceeds MTCA Method A cleanup level.
5. Injection wells not surveyed and locations are approximate.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021; GeoEngineers, 2017

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LANDAU ASSOCIATES

Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**December 2025 Fourth Quarter Groundwater Analytical Results Map**	Figure 8E



N

0 30 60

Scale in Feet

Legend

- Monitoring Well (Landau 2021)
- Monitoring Well (GeoEngineers 2016)
- Injection Well (Landau 2022)
- Monitoring Well Not Used for Groundwater Monitoring (GeoEngineers 2014)
- Injection Well Not Used for Groundwater Monitoring (Landau 2022)
- Extent of UST Excavation
- Approximate Current Extent of Contamination in Groundwater
- Former extent of GRO, BTEX, or naphthalene concentrations in soil greater than MTCA Method A (GeoEngineers 2017)

Acronyms/Abbreviations

BTEX = Benzene, Toluene, Ethylbenzene, Xylene
GRO = Gasoline Range Organics
N1MW = North 1st Monitoring Well
N1MW-#R = North 1st Replacement Monitoring Well
UST = Underground Storage Tank

Notes

1. Injection wells not surveyed and locations are approximate.
2. Approximate current extent of contamination in groundwater is based on the analytical results for the groundwater samples collected on December 30 and 31, 2025
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Google Earth Pro, 2021.

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Former Tiger Oil Site 1808 North 1st Street Yakima, Washington	**Approximate Current Extent of Contamination in Groundwater**	Figure 9

Table 1
Soil Boring and Well Construction Details
Former Tiger Oil Site
Yakima, Washington

Location ID	Boring Type	Date Installed	X Coordinate (easting)	Y Coordinate (northing)	Drilling Method	Total Boring Depth (ft bgs)	Ground Surface Elevation (ft NAVD88)	Total Well Depth (ft bgs)	Well Diameter/ Material/ Monument Type (inches)	Length of Screen (ft)	Top of Screen Interval (ft bgs)	Bottom of Screen Interval (ft bgs)	TOC Elevation (ft NAVD88)
N1MW-1*[b]	Monitoring Well	8/7/2014	1637341.7	470569	Rotosonic	20	1058.19	19.5	2 / PVC / Flush	10	9.5	19.5	1084.85
N1MW-2[a]	Monitoring Well	8/7/2014	1637480.028	470616.604	Rotosonic	20	1084.289	20	2 / PVC / Flush	10	10	20	1083.90
N1MW-3[a]	Monitoring Well	8/6/2014	1637358.732	470475.202	Rotosonic	20	1084.855	20	2 / PVC / Flush	10	10	20	1084.54
N1MW-4[a]	Monitoring Well	8/7/2014	1637199.855	470595.117	Rotosonic	20	1082.449	17	2 / PVC / Flush	10	7	17	1082.11
N1MW-5[a]	Monitoring Well	8/6/2014	1637362.962	470681.530	Rotosonic	20	1083.554	19	2 / PVC / Flush	10	9	19	1083.34
N1MW-6*[c]	Monitoring Well	10/17/2016	1637363.5	470639	Hollow-Stem Auger	20.5	1083.96	20	2 / PVC / Flush	10	10	20	1083.54
N1MW-6R[a]	Monitoring Well	10/4/2021	1637367.775	470639.445	Hollow-Stem Auger	20.5	1084.671	20	2 / PVC / Flush	10	10	20	1084.26
N1MW-7*[c]	Monitoring Well	10/18/2016	1637370.7	470586.4	Hollow-Stem Auger	19	1085.18	18.8	2 / PVC / Flush	10	8.8	18.8	1084.84
N1MW-7R[a]	Monitoring Well	10/4/2021	1637362.962	470581.530	Hollow-Stem Auger	20.5	1084.948	20	2 / PVC / Flush	10	10	20	1084.54
N1MW-8[a]	Monitoring Well	10/17/2016	1637328.275	470623.300	Hollow-Stem Auger	21	1085.517	20	2 / PVC / Flush	10	10	20	1084.42
N1MW-9[a]	Monitoring Well	10/5/2021	1637369.489	470614.814	Hollow-Stem Auger	20.5	1084.754	20	2 / PVC / Flush	10	10	20	1084.36
HSB-1[a]	Soil Boring	10/5/2021	1637359.308	470583.971	Hollow-Stem Auger	20	1085.158	-	-	-	-	-	-
HSB-2[a]	Soil Boring	10/5/2021	1637360.617	470603.488	Hollow-Stem Auger	20	1084.976	-	-	-	-	-	-
HSB-3[a]	Soil Boring	10/6/2021	1637343.428	470591.606	Hollow-Stem Auger	19.5	1085.516	-	-	-	-	-	-
HSB-4[a]	Soil Boring	10/6/2021	1637267.273	470515.372	Hollow-Stem Auger	17	1085.831	-	-	-	-	-	-
HSB-5[a]	Soil Boring	10/6/2021	1637242.545	470564.059	Hollow-Stem Auger	16.5	1086.533	-	-	-	-	-	-
IW-1	Injection Well	8/1/2022	NS	NS	Rotosonic	20.9	NS	20.9	2 / PVC / Flush	10	10.9	20.9	NS
IW-2	Injection Well	8/1/2022	NS	NS	Rotosonic	20.8	NS	20.8	2 / PVC / Flush	10	10.8	20.8	NS
IW-3	Injection Well	8/1/2022	NS	NS	Rotosonic	20.4	NS	20.4	2 / PVC / Flush	10	10.4	20.4	NS
IW-4	Injection Well	8/2/2022	NS	NS	Rotosonic	20.4	NS	20.4	2 / PVC / Flush	10	10.4	20.4	NS
IW-5	Injection Well	8/2/2022	NS	NS	Rotosonic	20.7	NS	20.7	2 / PVC / Flush	10	10.7	20.7	NS
IW-6	Injection Well	8/2/2022	NS	NS	Rotosonic	20	NS	20	2 / PVC / Flush	10	10	20	NS
IW-7	Injection Well	8/2/2022	NS	NS	Rotosonic	20.6	NS	20	2 / PVC / Flush	10	10	20	NS
IW-8	Injection Well	8/31/2022	NS	NS	Hollow-Stem Auger	20.5	NS	20	2 / PVC / Flush	10	10	20	NS
IW-9	Injection Well	8/29/2022	NS	NS	Hollow-Stem Auger	21	NS	20	2 / PVC / Flush	10	10	20	NS
IW-10	Injection Well	8/29/2022	NS	NS	Hollow-Stem Auger	20.5	NS	20	2 / PVC / Flush	10	10	20	NS
IW-11	Injection Well	8/29/2022	NS	NS	Hollow-Stem Auger	20.5	NS	20	2 / PVC / Flush	10	10	20	NS
IW-12	Injection Well	8/30/2022	NS	NS	Hollow-Stem Auger	20	NS	20	2 / PVC / Flush	10	10	20	NS
IW-13	Injection Well	8/30/2022	NS	NS	Hollow-Stem Auger	20.5	NS	20	2 / PVC / Flush	10	10	20	NS
IW-14	Injection Well	8/30/2022	NS	NS	Hollow-Stem Auger	21	NS	20	2 / PVC / Flush	10	10	20	NS
IW-15	Injection Well	8/31/2022	NS	NS	Hollow-Stem Auger	20.5	NS	20	2 / PVC / Flush	10	10	20	NS
IW-16	Injection Well	8/31/2022	NS	NS	Hollow-Stem Auger	20.5	NS	20	2 / PVC / Flush	10	10	20	NS
IW-17	Injection Well	9/1/2022	NS	NS	Hollow-Stem Auger	18.5	NS	18.5	2 / PVC / Flush	10	8.5	18.5	NS
IW-18	Injection Well	9/1/2022	NS	NS	Hollow-Stem Auger	20.5	NS	20	2 / PVC / Flush	10	10	20	NS

Table 1
Soil Boring and Well Construction Details
Former Tiger Oil Site
Yakima, Washington

Notes:

a. Elevations and coordinates surveyed by Gray Surveying under contract with Landau Associates in November 2021.
b. Elevations and coordinates surveyed by PLS under contract with GeoEngineers in August 2014.
c. Elevations and coordinates surveyed by PLS under contract with GeoEngineers in October 2016.
- = Not applicable
Vertical elevations are with respect to NAVD88. Horizontal northings and eastings are with respect to the Washington State Plane coordinate system, south zone (NAD83-1996).
* N1MW-1, N1MW-6, and N1MW-7 are presumed to have been paved over and/or underneath the current drive-through coffee hut at the Site, and there is no record of these wells being decomissioned.

Acronyms and Abbreviations:

bgs = below ground surface
ft = foot/feet
IW = Injection Well
N1DP = North 1st Direct Push
N1MW = North 1st Monitoring Well
NAVD88 = North American Vertical Datum of 1988
NS = not surveyed
PVC = polyvinyl chloride
TOC = top of casing

Table 2
Supplemental Investigation Soil Analytical Results
Former Tiger Oil Site
Yakima, Washington

Sample Location	Sample Depth Interval	Laboratory SDG	Sample Date	Sample Type	Analytical Method, Analyte, Unit of Measurement								
					NWTPH-Gx	NWTPH-Dx		SW-846 8260D					
					Gasoline Range Organics	Diesel Range Organics	Residual Range Organics	Benzene	Ethylbenzene	m-&p-Xylenes	o-Xylene	Toluene	Xylenes, Total
					mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
N1MW-6R	14.5-15	590-16086-1	10/4/2021	N	**670**	**62**	**29**	0.042 U	**3.4**	**12**	**0.43**	0.21 U	**12 J**
N1MW-7R	14.5-16	590-16086-1	10/4/2021	N	**9700**	**180**	27 U	0.039 U	**110 J**	**550 J**	**160 J**	**1.6**	**710 J**
N1MW-9*	16-17.5	590-16086-1	10/5/2021	N	**110**	11 U	27 U	0.039 U	**2.1**	**7.7**	**2.6**	**0.37**	**10**
HSB-1	15.5-17	590-16086-1	10/5/2021	N	**2100**	**210**	26 U	0.047 U	**33**	**180**	**57**	**9.3**	**230**
HSB-2	15.5-16	590-16086-1	10/5/2021	N	9.9 U	10 U	26 U	0.040 U	**0.035 J**	**0.14 J**	**0.052 J**	**0.030 J**	**0.19 J**
HSB-3	13.5-14.5	590-16086-1	10/6/2021	N	**270 J**	**19**	**40**	0.037 U	**3.2 J**	**11 J**	**3.6 J**	0.19 U	**15 J**
HSB-3	13.5-14.5	590-16086-1	10/6/2021	FD	**26 J**	**24**	**49**	0.057 U	**0.090 J**	**0.32 J**	**0.13 J**	0.28 U	**0.45 J**
HSB-4	7-8	590-16086-1	10/6/2021	N	12 U	12 U	29 U	0.049 U	0.25 U	0.99 U	0.49 U	0.25 U	1.5 U
HSB-4	11-12	590-16086-1	10/6/2021	N	12 U	10 U	25 U	0.047 U	0.23 U	0.93 U	0.47 U	0.23 U	1.4 U
HSB-5	7.5-9	590-16086-1	10/6/2021	N	11 U	10 U	**81**	0.045 U	0.22 U	0.90 U	0.45 U	0.22 U	1.3 U
MTCA Method A Cleanp Level					100[a]	2,000	2,000	0.03	6	N/A	N/A	7	9

Notes:

* = This sample was initially identified as N1MW-1R in field and lab reports but was renamed per Ecology Request

Bold text indicates detected analyte

Green shading indicates detected analyte exceeds applicable cleanup level

U = the analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentrations of the analyte in the sample.

a. MTCA Method A cleanup level is 100 mg/kg if benzene is not present and the total of ethylbenzene, toluene, and xylenes is less than 1% of the gasoline mixture; otherwise, the cleanup level is 30 mg/kg .

Acryonyms/Abbreviations:

mg/Kg = milligrams per kilogram

FD = field duplicate

N = primary sample

NWTPH - Northwest Total Petroleum Hydrocarbon

Table 3
Groundwater Analytical Results
Former Tiger Oil Site
Yakima, Washington

Sample Location	Field Sample ID	Laboratory SDG	Sample Date	Sample Type	Analytical Method, Analyte, Unit of Measurement, Sampling Event													
					NWTPH-Dx[a]		NWTPH-Gx						SW-846 6010D	SW-846 8260D				
					Diesel Range Organics	Residual Range Orangics	Gasoline Range Organics µg/L						Lead[h]	Benzene	Ethylbenzene	m-&p-Xylenes	o-Xylene	Toluene	Xylenes, Total
					µg/L	µg/L	Supplemental Investigation[b]	Pre-Injection Baseline Sampling[c]	Post-Injection 1[d]	Post-Injection 2[e]	Post-Injection 3[f]	Fourth Quarter 2025[g]	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
IW-1	IW-1	590-18585-1	9/7/2022	N	--	--	Well not yet installed	**1,100**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/18/2023	N	--	--		--	**600**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/28/2023	N	--	--		--	--	**310**	--	--	--	**0.96**	**6.0**	**4.6**	**1.6**	1.0 U	**6.2**
		590-33397-1	9/22/2025	N	--	--		--	--	--	**380**	--	--	0.40 U	1.0 U	**4.9**	1.0 U	1.0 U	**4.9**
		590-34935-1	12/30/2025	N	--	--		--	--	--	--	150 U	--	0.40 U	1.0 U	2.0 U	1.0 U	1.0 U	3.0 U
IW-2	IW-2	590-18585-1	9/7/2022	N	--	--	Well not yet installed	**6,100**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/18/2023	N	--	--		--	**2,200**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/29/2023	N	--	--		--	--	**580**	--	--	--	**0.94**	**3.8**	**9.7**	**3.5**	1.0 U	**13**
		590-33397-1	9/22/2025	N	--	--		--	--	--	**2,900**	--	--	**2.8**	**52**	**210**	**77**	**9.1**	**290**
		590-34935-1	12/30/2025	N	--	--		--	--	--	--	**3,200**	--	**0.40**	**39**	**140**	**70**	**3.7**	**210**
IW-3	IW-3	590-18585-1	9/7/2022	N	--	--	Well not yet installed	**4,700**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	**840**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/28/2023	N	--	--		--	--	**3,900**	--	--	--	**2.8**	**360**	**1,300**	**520**	**100**	**1,800**
		590-33397-1	9/24/2025	N	--	--		--	--	--	**340 H6**	--	--	**1.1**	**6**	**7.7**	**4.6**	**1.7**	**12**
		590-34935-1	12/30/2025	N	--	--		--	--	--	--	**310**	--	**0.69**	**11**	**17**	**9.4**	**2.9**	**26**
IW-4	IW-4	590-18585-1	9/7/2022	N	--	--	Well not yet installed	**2,300**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/18/2023	N	--	--		--	**15,000**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/28/2023	N	--	--		--	--	**840**	--	--	--	**1.3**	**12**	**5.8**	**1.8**	1.0 U	**7.6**
		590-33397-1	9/22/2025	N	--	--		--	--	--	**920**	--	--	**0.96**	**11**	**19**	**5**	1.0 U	**24**
		590-34935-1	12/30/2025	N	--	--		--	--	--	--	**720**	--	**0.51**	**5.2**	**4.3**	**1.9**	1.0 U	**6.2**
IW-8	IW-8	590-18585-1	9/8/2022	N	--	--	Well not yet installed	**20,000**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	**3,100**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/28/2023	N	--	--		--	--	**4,000**	--	--	--	**7.2**	**320**	**730**	**280**	**200**	**1,000**
		590-33397-1	9/24/2025	N	--	--		--	--	--	**810 H6**	--	--	**2.5**	**7.5**	**11**	**4.3**	**1.4**	**15**
		590-34935-1	12/31/2025	N	--	--		--	--	--	--	**1,900**	--	**2.5**	**48**	**94**	**38**	**6.6**	**130**
IW-9	IW-9	590-18585-1	9/8/2022	N	--	--	Well not yet installed	**1,700**	--	--	--	--	0.060 U	**3.5**	**77**	**120 J**	**18**	1.0 U	**140 J**
		590-19667-1	1/18/2023	N	--	--		--	**1,900**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/28/2023	N	--	--		--	--	**690**	--	--	--	**2.6**	**35**	**64**	**8.6**	1.0 U	**73**
		590-33397-1	9/22/2025	N	--	--		--	--	--	**1,300**	--	--	0.40 U	**29**	**110**	**24**	1.0 U	**130**
		590-34935-1	12/30/2025	N	--	--		--	--	--	--	**2,500**	--	**1.5**	**85**	**150**	**36**	**1.0**	**170**
IW-10	IW-10	590-18585-1	9/7/2022	N	--	--	Well not yet installed	**7,800**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	**8,400**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/29/2023	N	--	--		--	--	**870**	--	--	--	**4.3**	**36**	**19**	**2.6**	1.0 U	**21**
		590-33397-1	9/22/2025	N	--	--		--	--	--	**6,000**	--	--	**3.1**	**95**	**540**	**170**	**4.1**	**710**
		590-34935-1	12/30/2025	N	--	--		--	--	--	--	**3,100 J-**	--	**2.7**	**37**	**86 J**	**33**	**1.9**	**120 J**
		590-34935-1	12/30/2025	FD	--	--		--	--	--	--	**3,300**	--	**2.7**	**44**	**63 J**	**26**	**2.0**	**89 J**
IW-12	IW-12	590-18585-1	9/8/2022	N	--	--	Well not yet installed	**16,000**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	**2,800**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/29/2023	N	--	--		--	--	**420 J**	--	--	--	**0.94**	**1.7**	2.0 U	1.0 U	1.0 U	3.0 U
		590-33397-1	9/23/2025	N	--	--		--	--	--	**970**	--	--	**1.2**	**3.3**	**5**	**1.9**	1.0 U	**6.9**
		590-34935-1	12/31/2025	N	--	--		--	--	--	--	**1,000**	--	**1.2**	**15**	**15**	**4.7**	1.0 U	**20**

Table 3
Groundwater Analytical Results
Former Tiger Oil Site
Yakima, Washington

					Analytical Method, Analyte, Unit of Measurement, Sampling Event													
					NWTPH-Dx[a]		NWTPH-Gx						SW-846 6010D	SW-846 8260D					
					Diesel Range Organics	Residual Range Orangics	Gasoline Range Organics µg/L						Lead[h]	Benzene	Ethylbenzene	m-&p-Xylenes	o-Xylene	Toluene	Xylenes, Total
Sample Location	Field Sample ID	Laboratory SDG	Sample Date	Sample Type	µg/L	µg/L	Supplemental Investigation[b]	Pre-Injection Baseline Sampling[c]	Post-Injection 1[d]	Post-Injection 2[e]	Post-Injection 3[f]	Fourth Quarter 2025[g]	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
IW-14	IW-14	590-18585-1	9/8/2022	N	--	--	Well not yet installed	**17,000**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	150 U	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/29/2023	N	--	--		--	--	150 U	--	--	--	**0.59**	**10**	**2.2**	**1.3**	1.0 U	**3.6**
		590-33397-1	9/23/2025	N	--	--		--	--	--	**280**	--	--	**1.2**	**38**	**25**	**9.9**	1.0 U	**35**
		590-34935-1	12/31/2025	N	--	--		--	--	--	--	150 U	--	0.40 U	1.0 U	2.0 U	1.0 U	1.0 U	3.0 U
IW-15	IW-15	590-18585-1	9/8/2022	N	--	--	Well not yet installed	**9,200**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	**450**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/29/2023	N	--	--		--	--	150 U	--	--	--	0.40 U	**4.8**	**4.1**	**1.8**	1.0 U	**5.9**
		590-33397-1	9/23/2025	N	--	--		--	--	--	150 U	--	--	0.40 U	1.0 U	2.0 U	1.0 U	1.0 U	3.0 U
		590-34935-1	12/31/2025	N	--	--		--	--	--	--	**790**	--	**0.90**	**16**	**22**	**4.8**	1.0 U	**26**
IW-17	IW-17	590-18585-1	9/8/2022	N	--	--	Well not yet installed	**6,300**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	**190**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/29/2023	N	--	--		--	--	**1,100**	--	--	--	**1.2**	**91**	**89**	**13**	**1.1**	**100**
		590-33397-1	9/24/2025	N	--	--		--	--	--	150 U	--	--	0.40 U	**5.1**	**3.5**	1.0 U	1.0 U	**3.5**
		590-34935-1	12/31/2025	N	--	--		--	--	--	--	150 U	--	0.40 U	**5.1**	**5.0**	**1.3**	1.0 U	**6.3**
IW-18	IW-18	590-18585-1	9/8/2022	N	--	--	Well not yet installed	**44,000**	--	--	--	--	--	--	--	--	--	--	--
		590-19667-1	1/19/2023	N	--	--		--	**2,600**	--	--	--	--	--	--	--	--	--	--
		590-22377-1	11/28/2023	N	--	--		--	--	**420**	--	--	--	**0.75**	**4.8**	**4.9**	**1.9**	1.0 U	**6.8**
		590-33397-1	9/22/2025	N	--	--		--	--	--	**1,700**	--	--	**0.7**	**59**	**150**	**47**	**2.6**	**200**
		590-34935-1	12/30/2025	N	--	--		--	--	--	--	**1,800**	--	4.0 U	**18**	**62**	**20**	10 U	**81**
N1MW-2	N1MW-2	590-16086-1	10/4/2021	N	240 U	390 U	150 U	--	--	--	--	--	--	0.40 U	1.0 U	2.0 U	1.0 U	1.0 U	3.0 U
N1MW-3	N1MW-3	590-16086-1	10/4/2021	N	230 U	390 U	150 U	--	--	--	--	--	--	0.40 U	1.0 U	2.0 U	1.0 U	1.0 U	3.0 U
N1MW-4	N1MW-4	590-16086-1	10/4/2021	N	240U	390 U	150 U	--	--	--	--	--	--	0.40 U	1.0 U	2.0 U	1.0 U	1.0 U	3.0 U
N1MW-5	N1MW-5	590-16086-1	10/4/2021	N	240 U	390 U	150 U	--	--	--	--	--	--	0.40 U	1.0 U	2.0 U	1.0 U	1.0 U	3.0 U
N1MW-6R	N1MW-6R	590-16086-1	10/6/2021	N	**3300 J**	380 U	**14,000**	--	--	--	--	--	--	**0.85**	**550**	**2,100**	**170**	**1.8**	**2,200**
	MW-6R	590-18585-1	9/8/2022	N	--	--	--	**5,900**	--	--	--	--	--	--	--	--	--	--	--
	NMW-6R	590-19667-1	1/19/2023	N	--	--	--	--	**2,200**	--	--	--	--	--	--	--	--	--	--
	MW-6R	590-22377-1	11/29/2023	N	--	--	--	--	--	**3,700**	--	--	--	**1.1**	**140**	**280**	**25**	**1.2**	**300**
	N1MW-6R	590-33397-1	9/24/2025	N	--	--	--	--	--	--	**1,100**	--	--	**0.77**	**17**	**21**	**4.9**	1.0 U	**26**
	N1MW-6R	590-34935-1	12/30/2025	N	--	--	--	--	--	--	--	**1,600**	--	4.0 U	**11**	**24 J**	10 U	10 U	30 U
	N1MW-6R	590-34935-1	12/30/2025	FD	--	--	--	--	--	--	--	**1,500 J-**	--	0.40 U	**18**	**45 J**	**7.7**	1.0 U	**53**
N1MW-7R	N1MW-7R	590-16086-1	10/6/2021	N	**2700 J**	380 U	**11,000**	--	--	--	--	--	--	**2.0**	**640**	**2,700**	**1,000**	**380**	**3,700**
	MW-7R	590-18585-1	9/8/2022	N	--	--	--	**1,900**	--	--	--	--	--	--	--	--	--	--	--
	NMW-7R	590-19667-1	1/18/2023	N	--	--	--	--	**690**	--	--	--	--	--	--	--	--	--	--
	MW-7R	590-22377-1	11/28/2023	N	--	--	--	--	--	**1,200**	--	--	--	**1.7**	**40**	**74**	**66**	**38**	**140**
	N1MW-7R	590-33397-1	9/23/2025	N	--	--	--	--	--	--	**2,700**	--	--	**1**	**85**	**270**	**140**	**60**	**410**
	N1MW-7R	590-34935-1	12/31/2025	N	--	--	--	--	--	--	--	150 U	--	0.40 U	**1.1**	**3.4**	**1.7**	1.0 U	**5.1**
N1MW-8	N1MW-8	590-16086-1	10/4/2021	N	**1400 J**	390 U	**400**	--	--	--	--	--	--	**8.1**	**7.2**	**23**	**14**	**2.5**	**37**
	MW-8	590-18585-1	9/7/2022	N	--	--	--	**2,400**	--	--	--	--	--	--	--	--	--	--	--
	NMW-8	590-19667-1	1/18/2023	N	--	--	--	--	**230**	--	--	--	--	--	--	--	--	--	--
	MW-8	590-22377-1	11/29/2023	N	--	--	--	--	--	**430**	--	--	--	**1.1 J**	**1.4 J**	2.0 UJ	1.0 UJ	1.0 UJ	3.0 UJ
	N1MW-8	590-33397-1	9/23/2025	N	--	--	--	--	--	--	**3,600**	--	--	**4.1**	**120**	**410**	**140**	**4.6**	**540**
	N1MW-8	590-34935-1	12/30/2025	N	--	--	--	--	--	--	--	**1,400**	--	**1.5**	**43**	**72**	**27**	**2.5**	**100**

Table 3
Groundwater Analytical Results
Former Tiger Oil Site
Yakima, Washington

					Analytical Method, Analyte, Unit of Measurement, Sampling Event													
					NWTPH-Dx[a]		NWTPH-Gx						SW-846 6010D	SW-846 8260D				
					Diesel Range Organics	Residual Range Orangics	Gasoline Range Organics											
					µg/L		µg/L						Lead[h]	Benzene	Ethylbenzene	m-&p-Xylenes	o-Xylene	Toluene	Xylenes, Total
Sample Location	**Field Sample ID**	**Laboratory SDG**	**Sample Date**	**Sample Type**	µg/L	µg/L	Supplemental Investigation[b]	Pre-Injection Baseline Sampling[c]	Post-Injection 1[d]	Post-Injection 2[e]	Post-Injection 3[f]	Fourth Quarter 2025[g]	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
N1MW-9	N1MW-1R	590-16086-1	10/6/2021	N	**4200 J**	380 U	**21,000**	--	--	--	--	--	--	**6.2**	**1,800**	**6,200**	**2,700**	**660**	**8,900**
	MW-1R	590-18585-1	9/8/2022	N	--	--	--	**2,300**	--	--	--	--	--	--	--	--	--	--	--
	NMW-9	590-19667-1	1/19/2023	N	--	--	--	--	**1,400**	--	--	--	--	--	--	--	--	--	--
	MW-9	590-22377-1	11/29/2023	N	--	--	--	--	--	**1,500**	--	--	--	**1.1**	**94**	**340**	**130**	**33**	**460**
	N1MW-9	590-33397-1	9/24/2025	N	--	--	--	--	--	--	**260**	--	--	0.40 U	**3.5**	**11**	**4.6**	1.0 U	**16**
	N1MW-9	590-34935-1	12/31/2025	N	--	--	--	--	--	--	--	**400**	--	**0.90**	**12**	**13**	**13**	1.0 U	**26**
HSB-1[i]	HSB-1	590-16086-1	10/5/2021	N	**7600 J**	380 U	**19,000**	No well present					--	2.0 U	**940**	**380**	**150**	**550**	**530**
HSB-2[i]	HSB-2	590-16086-1	10/5/2021	N	**7800 J**	380 U	**43,000**						--	**9.2**	**2,900**	**8,700**	**3,600**	**180**	**12,000**
HSB-3[i]	HSB-3	590-16086-1	10/6/2021	N	**6400 J**	380 U	**23,000**						--	**4.1**	**1,600**	**4,500**	**1,800**	**22**	**6,300**
HSB-3	HSB-3	590-16086-1	10/6/2021	FD	**6000 J**	380 U	**24,000**						--	**4.0**	**1,500**	**4,300**	**1,700**	**22**	**6,000**
MTCA Method A Cleanup Level					500	500	800/1,000[j]						0.015	5	700	NL	NL	1,000	1,000

Notes:

Bold text indicates detected analyte**.**

Green shading indicates detected exceedance of associated screening level.

-- = not analyzed

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

J- = The result is an estimated quantity and the result may be biased low.

H6 = The laboratory noted the reported concentration is due to the presence of discrete peaks.

a. Diesel-range organics and residual-range organics were only analyzed during the supplemental investigation.

b. Supplemental investigation groundwater monitoring took place on October 4, 5, and 6, 2021.

c. Pre-injection baseline groundwater monitoring took place on September 7 and 8, 2022 after injection wells were installed and developed prior to any injections occurring at the site.

d. Post-Injection 1 groundwater monitoring conducted on January 18 and 19, 2023 following the first ISCO injection at the site, which occurred October 11-19, 2023.

e. Post-Injection 2 groundwater monitoring conducted on November 28 and 29, 2023 following the second ISCO injection at the site, which occurred July 10-13, 2023.

f. Post-Injection 3 groundwater monitoring was conducted on September 22, 23, and 24, 2025 following the third ISCO injection at the site, which occurred September 9-13, 2024. This was the first groundwater monitoring event conducted following the third ISCO injection.

g. Fourth Quarter 2025 groundwater monitoring was conducted on December 30 and 31, 2025 and was the second quarterly groundwater monitoring event following the third ISCO injection at the site.

h. Lead was only analyzed once during the pre-injection baseline sampling at the IW-9 location for waste characterization.

i. Groundwater samples collected at the HSB-1, HSB-2, and HSB-3 sampling locations were collected from a temporary well installed in a soil boring that was not completed as a monitoring well.

j. MTCA Method A cleanup level is 1000 µg/L if benzene is not present in groundwater and 800 µg/L if benzene is present in groundwater.

Abbreviations and Acronyms:

µg/L = micrograms per liter

FD = field duplicate

ID = identification

ISCO = *in situ* chemical oxidation

mg/L = milligrams per liter

MTCA = Model Toxics Control Act

N = primary sample

NL = not listed

NWTPH-Gx = Northwest total petroleum hydrocarbon gasoline-range extended

SDG = sample delivery group

Table 4
Groundwater Field Parameters
Former Tiger Oil Site
Yakima, Washington

		Field Parameters																											
		Temp (°C)						Conductivity (µS/cm)						Dissolved Oxygen (mg/L)						pH						Oxidation Reduction Potential (mV)						Turbidity (NTU)					
		Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	Post-Injection 3[e]	Fourth Quarter 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	Post-Injection 3[e]	Fourth Quarter 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	Post-Injection 3[e]	Fourth Quarter 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	Post-Injection 3[e]	Fourth Quarter 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	Post-Injection 3[e]	Fourth Quarter 2025[f]
IW-1	9/7/2022		16.82	--	--	--	--		569	--	--	--	--		6.15	--	--	--	--		6.55	--	--	--	--		-50.1	--	--	--	--		4.61	--	--	--	--	--
	1/18/2023		--	14.52	--	--	--		--	10,326	--	--	--		--	0.94	--	--	--		--	1.69	--	--	--		--	534	--	--	--		--	2.62	--	--	--	--
	11/28/2023	Well not yet installed	--	--	15.20	--	--	Well not yet installed	--	--	8,970	--	--	Well not yet installed	--	--	1.04	--	--	Well not yet installed	--	--	2.74	--	--	Well not yet installed	--	--	447.5	--	--	Well not yet installed	--	--	0.00	--	--
	9/22/2025		--	--	--	18.4	--		--	--	--	3,813	--		--	--	--	0.50	--		--	--	--	4.63	--		--	--	--	239.6	--		--	--	--	2.06	--
	12/30/2025		--	--	--	--	15.2		--	--	--	--	1,575		--	--	--	--	0.82		--	--	--	--	5.89		--	--	--	--	208.4		--	--	--	--	6.00
IW-2	9/7/2022		16.27	--	--	--	--		353	--	--	--	--		3.89	--	--	--	--		6.63	--	--	--	--		-52.1	--	--	--	--		1.93	--	--	--	--	--
	1/18/2023		--	14.85	--	--	--		--	2,817	--	--	--		--	1.71	--	--	--		--	3.15	--	--	--		--	415.2	--	--	--		--	1.88	--	--	--	--
	11/28/2023	Well not yet installed	--	--	15.27	--	--	Well not yet installed	--	--	4,180	--	--	Well not yet installed	--	--	0.44	--	--	Well not yet installed	--	--	3.28	--	--	Well not yet installed	--	--	440.9	--	--	Well not yet installed	--	--	0.93	--	--
	9/22/2025		--	--	--	17.6	--		--	--	--	4,493	--		--	--	--	0.36	--		--	--	--	3.75	--		--	--	--	494.8	--		--	--	--	2.36	--
	12/30/2025		--	--	--	--	15.3		--	--	--	--	4,797		--	--	--	--	0.35		--	--	--	--	4.07		--	--	--	--	456.8		--	--	--	--	4.63
IW-3	9/7/2022		16.16	--	--	--	--		359	--	--	--	--		2.34	--	--	--	--		6.69	--	--	--	--		-64.3	--	--	--	--		6.70	--	--	--	--	--
	1/19/2023		--	14.30	--	--	--		--	5,688	--	--	--		--	0.33	--	--	--		--	3.19	--	--	--		--	471.7	--	--	--		--	3.87	--	--	--	--
	11/29/2023	Well not yet installed	--	--	14.77	--	--	Well not yet installed	--	--	3,327	--	--	Well not yet installed	--	--	0.88	--	--	Well not yet installed	--	--	4.37	--	--	Well not yet installed	--	--	124.5	--	--	Well not yet installed	--	--	11.43	--	--
	9/24/2025		--	--	--	17.5	--		--	--	--	4,653	--		--	--	--	0.14	--		--	--	--	3.90	--		--	--	--	531.4	--		--	--	--	11.83	--
	12/30/2025		--	--	--	--	15.4		--	--	--	--	3,509		--	--	--	--	0.17		--	--	--	--	3.85		--	--	--	--	500.5		--	--	--	--	42.79
IW-4	9/7/2022		17.63	--	--	--	--		537	--	--	--	--		5.59	--	--	--	--		6.48	--	--	--	--		-100.8	--	--	--	--		1.25	--	--	--	--	--
	1/18/2023		--	15.35	--	--	--		--	6,111	--	--	--		--	0.56	--	--	--		--	1.87	--	--	--		--	354.8	--	--	--		--	1.30	--	--	--	--
	11/28/2023	Well not yet installed	--	--	16.15	--	--	Well not yet installed	--	--	10,853	--	--	Well not yet installed	--	--	0.40	--	--	Well not yet installed	--	--	2.69	--	--	Well not yet installed	--	--	517.9	--	--	Well not yet installed	--	--	3.89	--	--
	9/22/2025		--	--	--	18.1	--		--	--	--	3,882	--		--	--	--	0.06	--		--	--	--	3.50	--		--	--	--	540.8	--		--	--	--	2.22	--
	12/30/2025		--	--	--	--	16.1		--	--	--	--	3,314		--	--	--	--	0.16		--	--	--	--	3.20		--	--	--	--	571.6		--	--	--	--	0.18
IW-8	9/8/2022		16.83	--	--	--	--		473	--	--	--	--		1.32	--	--	--	--		6.46	--	--	--	--		-74.2	--	--	--	--		3.73	--	--	--	--	--
	1/19/2023		--	15.29	--	--	--		--	8,030	--	--	--		--	1.60	--	--	--		--	3.35	--	--	--		--	358.4	--	--	--		--	2.52	--	--	--	--
	11/29/2023	Well not yet installed	--	--	15.52	--	--	Well not yet installed	--	--	4,594	--	--	Well not yet installed	--	--	0.35	--	--	Well not yet installed	--	--	3.38	--	--	Well not yet installed	--	--	275.5	--	--	Well not yet installed	--	--	5.82	--	--
	9/24/2025		--	--	--	18.3	--		--	--	--	8,417	--		--	--	--	0.14	--		--	--	--	3.32	--		--	--	--	482.1	--		--	--	--	3.35	--
	12/30/2025		--	--	--	--	15.8		--	--	--	--	7,025		--	--	--	--	0.23		--	--	--	--	3.58		--	--	--	--	362.0		--	--	--	--	1.45
IW-9	9/8/2022		16.62	--	--	--	--		374	--	--	--	--		2.56	--	--	--	--		5.81	--	--	--	--		-29.5	--	--	--	--		1.22	--	--	--	--	--
	1/18/2023		--	14.35	--	--	--		--	845	--	--	--		--	0.50	--	--	--		--	5.14	--	--	--		--	-102.7	--	--	--		--	2.29	--	--	--	--
	11/28/2023	Well not yet installed	--	--	14.72	--	--	Well not yet installed	--	--	572	--	--	Well not yet installed	--	--	0.32	--	--	Well not yet installed	--	--	5.51	--	--	Well not yet installed	--	--	9.50	--	--	Well not yet installed	--	--	5.13	--	--
	9/22/2025		--	--	--	18.0	--		--	--	--	367.6	--		--	--	--	0.23	--		--	--	--	6.17	--		--	--	--	-1.30	--		--	--	--	1.88	--
	12/30/2025		--	--	--	--	15.6		--	--	--	--	908.0		--	--	--	--	0.16		--	--	--	--	6.22		--	--	--	--	16.20		--	--	--	--	1.26
IW-10	9/7/2022		17.32	--	--	--	--		352	--	--	--	--		3.25	--	--	--	--		6.44	--	--	--	--		-50.6	--	--	--	--		1.22	--	--	--	--	--
	1/19/2023		--	14.54	--	--	--		--	3,563	--	--	--		--	7.46	--	--	--		--	3.07	--	--	--		--	340.0	--	--	--		--	2.65	--	--	--	--
	11/30/2023	Well not yet installed	--	--	15.80	--	--	Well not yet installed	--	--	9,206	--	--	Well not yet installed	--	--	0.21	--	--	Well not yet installed	--	--	2.79	--	--	Well not yet installed	--	--	415.0	--	--	Well not yet installed	--	--	10.05	--	--
	9/22/2025		--	--	--	17.6	--		--	--	--	8,751	--		--	--	--	0.29	--		--	--	--	3.57	--		--	--	--	422.1	--		--	--	--	7.49	--
	12/30/2025		--	--	--	--	16.0		--	--	--	--	6,079		--	--	--	--	0.12		--	--	--	--	3.23		--	--	--	--	486.7		--	--	--	--	3.28
IW-12	9/8/2022		16.92	--	--	--	--		609	--	--	--	--		1.46	--	--	--	--		6.34	--	--	--	--		-58.6	--	--	--	--		0.58	--	--	--	--	--
	1/19/2023		--	14.84	--	--	--		--	12,605	--	--	--		--	2.47	--	--	--		--	3.23	--	--	--		--	499.2	--	--	--		--	4.52	--	--	--	--
	11/30/2023	Well not yet installed	--	--	15.13	--	--	Well not yet installed	--	--	9,374	--	--	Well not yet installed	--	--	0.21	--	--	Well not yet installed	--	--	3.00	--	--	Well not yet installed	--	--	452.6	--	--	Well not yet installed	--	--	9.12	--	--
	9/23/2025		--	--	--	17.4	--		--	--	--	3,271	--		--	--	--	0.37	--		--	--	--	4.06	--		--	--	--	404.5	--		--	--	--	16.33	--
	12/31/2025		--	--	--	--	15.1		--	--	--	--	2,545		--	--	--	--	0.21		--	--	--	--	5.68		--	--	--	--	124.6		--	--	--	--	2.92
IW-14	9/8/2022		16.57	--	--	--	--		536	--	--	--	--		1.63	--	--	--	--		6.45	--	--	--	--		-73.6	--	--	--	--		2.81	--	--	--	--	--
	1/19/2023		--	15.05	--	--	--		--	2,101	--	--	--		--	0.95	--	--	--		--	5.35	--	--	--		--	35	--	--	--		--	15.99	--	--	--	--
	11/29/2023	Well not yet installed	--	--	15.23	--	--	Well not yet installed	--	--	2,623	--	--	Well not yet installed	--	--	0.22	--	--	Well not yet installed	--	--	4.41	--	--	Well not yet installed	--	--	164.1	--	--	Well not yet installed	--	--	42.13	--	--
	9/23/2025		--	--	--	18.5	--		--	--	--	3,995	--		--	--	--	0.31	--		--	--	--	5.67	--		--	--	--	47.1	--		--	--	--	22.68	--
	12/31/2025		--	--	--	--	15.8		--	--	--	--	3,040		--	--	--	--	0.19		--	--	--	--	5.22		--	--	--	--	131.0		--	--	--	--	2.13
IW-15	9/8/2022		17.09	--	--	--	--		460	--	--	--	--		1.57	--	--	--	--		6.37	--	--	--	--		-89.8	--	--	--	--		3.56	--	--	--	--	--
	1/19/2023		--	15.12	--	--	--		--	1,015	--	--	--		--	0.46	--	--	--		--	3.86	--	--	--		--	369.7	--	--	--		--	4.61	--	--	--	--
	11/29/2023	Well not yet installed	--	--	15.74	--	--	Well not yet installed	--	--	712	--	--	Well not yet installed	--	--	0.34	--	--	Well not yet installed	--	--	5.39	--	--	Well not yet installed	--	--	-23.8	--	--	Well not yet installed	--	--	7.02	--	--
	9/23/2025		--	--	--	18.3	--		--	--	--	657	--		--	--	--	0.18	--		--	--	--	5.91	--		--	--	--	59.8	--		--	--	--	31.35	--
	12/31/2025		--	--	--	--	15.5		--	--	--	--	905		--	--	--	--	0.17		--	--	--	--	6.02		--	--	--	--	34.0		--	--	--	--	2.30
IW-17	9/8/2022		16.38	--	--	--	--		438	--	--	--	--		1.48	--	--	--	--		6.41	--	--	--	--		-8.6	--	--	--	--		2.79	--	--	--	--	--
	1/19/2023		--	12.75	--	--	--		--	1,829	--	--	--		--	0.58	--	--	--		--	5.25	--	--	--		--	11.9	--	--	--		--	NA	--	--	--	--
	11/29/2023	Well not yet installed	--	--	14.38	--	--	Well not yet installed	--	--	3,226	--	--	Well not yet installed	--	--	1.00	--	--	Well not yet installed	--	--	4.66	--	--	Well not yet installed	--	--	22.5	--	--	Well not yet installed	--	--	24.24	--	--
	9/24/2025		--	--	--	17.0	--		--	--	--	2,623	--		--	--	--	2.06	--		--	--	--	4.78	--		--	--	--	341.5	--		--	--	--	16.21	--
	12/31/2025		--	--	--	--	13.9		--	--	--	--	966		--	--	--	--	1.26		--	--	--	--	5.37		--	--	--	--	220.2		--	--	--	--	35.68

Table 4
Groundwater Field Parameters
Former Tiger Oil Site
Yakima, Washington

		Field Parameters																															
		Temp (°C)						Conductivity (µS/cm)						Dissolved Oxygen (mg/L)						pH						Oxidation Reduction Potential (mV)						Turbidity (NTU)					
		Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	September 2025[e]	December 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	September 2025[e]	December 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	September 2025[e]	December 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	September 2025[e]	December 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	September 2025[e]	December 2025[f]	Supplemental Investigation[a]	Pre-Injection Baseline Sampling[b]	Post-Injection 1[c]	Post-Injection 2[d]	September 2025[e]	December 2025[f]
IW-18	9/8/2022	Well not yet installed	17.36	--	--	--	--	Well not yet installed	559	--	--	--	--	Well not yet installed	2.18	--	--	--	--	Well not yet installed	6.36	--	--	--	--	Well not yet installed	-70.3	--	--	--	--	Well not yet installed	2.06	--	--	--	--
	1/19/2023		--	14.17	--	--	--		--	6,900	--	--	--		--	1.12	--	--	--		--	3.32	--	--	--		--	497.0	--	--	--		--	10.54	--	--	--
	11/28/2023		--	--	14.78	--	--		--	--	3,479	--	--		--	--	0.83	--	--		--	--	4.07	--	--		--	--	381.6	--	--		--	--	6.66	--	--
	9/22/2025		--	--	--	17.2	--		--	--	--	1,596	--		--	--	--	1.85	--		--	--	--	5.44	--		--	--	--	204.5	--		--	--	3.40	--
	12/31/2025		--	--	--	--	15.1		--	--	--	--	4,041		--	--	--	--	0.30		--	--	--	--	5.20		--	--	--	--	270.3		--	--	--	3.63
NIMW-2	10/4/2021	18.3	--	--	--	--	--	361.4	--	--	--	--	--	1.30	--	--	--	--	--	6.20	--	--	--	--	--	71.1	--	--	--	--	--	--	--	--	--	--	--
NIMW-3	10/4/2021	18.5	--	--	--	--	--	345.7	--	--	--	--	--	3.45	--	--	--	--	--	6.33	--	--	--	--	--	70.0	--	--	--	--	--	--	--	--	--	--	--
NIMW-4	10/4/2021	17.0	--	--	--	--	--	284.7	--	--	--	--	--	4.30	--	--	--	--	--	6.34	--	--	--	--	--	76.5	--	--	--	--	--	--	--	--	--	--	--
NIMW-5	10/4/2021	20.0	--	--	--	--	--	341.0	--	--	--	--	--	0.90	--	--	--	--	--	5.83	--	--	--	--	--	68.4	--	--	--	--	--	--	--	--	--	--	--
N1MW-6R	10/6/2021	19.0	--	--	--	--	--	436.5	--	--	--	--	--	1.89	--	--	--	--	--	6.51	--	--	--	--	--	-67.7	--	--	--	--	--	--	--	--	--	--	--
	9/8/2022	--	16.55	--	--	--	--	--	876.00	--	--	--	--	--	2.20	--	--	--	--	--	6.24	--	--	--	--	--	-50.90	--	--	--	--	--	2.64	--	--	--	--
	1/19/2023	--	--	14.09	--	--	--	--	--	5,017	--	--	--	--	--	0.48	--	--	--	--	--	3.15	--	--	--	--	--	422.9	--	--	--	--	--	10.75	--	--	--
	11/29/2023	--	--	--	14.34	--	--	--	--	--	2,504	--	--	--	--	--	1.36	--	--	--	--	--	4.27	--	--	--	--	--	-1.90	--	--	--	--	--	--	--	--
	9/24/2025	--	--	--	--	17.7	--	--	--	--	--	2,924	--	--	--	--	--	0.32	--	--	--	--	--	3.80	--	--	--	--	--	449.90	--	--	--	--	4.39	--
	12/30/2025	--	--	--	--	--	15.3	--	--	--	--	--	1,939	--	--	--	--	--	0.24	--	--	--	--	--	4.61	--	--	--	--	--	341.30	--	--	--	--	--	1.42
N1MW-7R	10/6/2021	17.8	--	--	--	--	--	507	--	--	--	--	--	2.60	--	--	--	--	--	6.53	--	--	--	--	--	-74.7	--	--	--	--	--	--	--	--	--	--	--
	9/8/2022	--	14.83	--	--	--	--	--	709.00	--	--	--	--	--	3.94	--	--	--	--	--	6.50	--	--	--	--	--	27.00	--	--	--	--	--	1.61	--	--	--	--
	1/18/2023	--	--	14.17	--	--	--	--	--	2,779	--	--	--	--	--	1.06	--	--	--	--	--	2.48	--	--	--	--	--	455.5	--	--	--	--	--	58.35	--	--	--
	11/28/2024	--	--	--	14.70	--	--	--	--	--	2,262	--	--	--	--	--	0.66	--	--	--	--	--	4.06	--	--	--	--	--	271.6	--	--	--	--	35.35	--	--	--
	9/23/2025	--	--	--	--	17.3	--	--	--	--	--	2,219	--	--	--	--	--	1.31	--	--	--	--	--	4.79	--	--	--	--	--	287.6	--	--	--	--	6.96	--
	12/31/2025	--	--	--	--	--	15.0	--	--	--	--	--	305.5	--	--	--	--	--	2.49	--	--	--	--	--	6.30	--	--	--	--	--	235.1	--	--	--	--	--	0.87
N1MW-8	10/4/2021	18.7	--	--	--	--	--	737	--	--	--	--	--	2.08	--	--	--	--	--	6.11	--	--	--	--	--	30.7	--	--	--	--	--	--	--	--	--	--	--
	9/7/2022	--	16.03	--	--	--	--	--	547.00	--	--	--	--	--	4.00	--	--	--	--	--	6.45	--	--	--	--	--	-35.50	--	--	--	--	--	2.68	--	--	--	--
	1/18/2023	--	--	14.74	--	--	--	--	--	1,916	--	--	--	--	--	0.41	--	--	--	--	--	4.38	--	--	--	--	--	93	--	--	--	--	--	7.15	--	--	--
	11/30/2023	--	--	--	15.35	--	--	--	--	--	10,907	--	--	--	--	--	0.46	--	--	--	--	--	2.78	--	--	--	--	--	505.8	--	--	--	--	8.81	--	--	--
	9/23/2025	--	--	--	--	16.6	--	--	--	--	--	6,918	--	--	--	--	--	0.54	--	--	--	--	--	3.69	--	--	--	--	--	395.7	--	--	--	--	5.57	--
	12/30/2025	--	--	--	--	--	15.9	--	--	--	--	--	2,675	--	--	--	--	--	0.19	--	--	--	--	--	4.61	--	--	--	--	--	260.2	--	--	--	--	--	1.85
N1MW-9*	10/6/2021	18.8	--	--	--	--	--	493.5	--	--	--	--	--	2.00	--	--	--	--	--	6.66	--	--	--	--	--	-86.5	--	--	--	--	--	--	--	--	--	--	--
	9/8/2022	--	15.77	--	--	--	--	--	803.00	--	--	--	--	--	2.12	--	--	--	--	--	6.46	--	--	--	--	--	-29.80	--	--	--	--	--	4.13	--	--	--	--
	1/19/2023	--	--	13.86	--	--	--	--	--	3,554	--	--	--	--	--	0.99	--	--	--	--	--	1.34	--	--	--	--	--	422.7	--	--	--	--	--	1.47	--	--	--
	11/29/2023	--	--	--	15.04	--	--	--	--	--	1,219	--	--	--	--	--	0.65	--	--	--	--	--	4.75	--	--	--	--	--	-67.1	--	--	--	--	10.04	--	--	--
	9/24/2025	--	--	--	--	17.4	--	--	--	--	--	766	--	--	--	--	--	0.22	--	--	--	--	--	5.52	--	--	--	--	--	83.7	--	--	--	--	3.71	--
	12/31/2025	--	--	--	--	--	15.0	--	--	--	--	--	2,121	--	--	--	--	--	0.23	--	--	--	--	--	5.77	--	--	--	--	--	154.5	--	--	--	--	--	56.36
HSB-1	10/5/2021	20.8	--	--	--	--	--	549	--	--	--	--	--	1.84	--	--	--	--	--	6.7	--	--	--	--	--	20.80	--	--	--	--	--	--	--	--	--	--	--
HSB-2	10/5/2021	21.7	--	--	--	--	--	703	--	--	--	--	--	0.39	--	--	--	--	--	6.58	--	--	--	--	--	-94.70	--	--	--	--	--	--	--	--	--	--	--
HSB-3	10/6/2021	21.2	--	--	--	--	--	789	--	--	--	--	--	0.57	--	--	--	--	--	6.58	--	--	--	--	--	-116.0	--	--	--	--	--	--	--	--	--	--	--
Average:		19.3	16.6	14.5	15.1	17.7	15.4	629.8	534.6	4693.5	4875.5	3709.1	2859.0	1.6	2.9	1.4	0.6	0.6	0.5	6.5	6.4	3.4	3.9	4.5	4.9	-53.4	-50.7	323.6	246.0	311.5	273.3	--	2.7	8.7	12.0	8.9	10.4

Notes:

-- = not measured

NA = not available

* = This sample was initially identified as N1MW-1R in field and lab reports but was renamed per Ecology Request

a. Supplemental investigation groundwater monitoring took place on October 4, 5, and 6, 2021.

b. Pre-injection baseline groundwater monitoring took place on September 7 and 8, 2022 after injection wells were installed and developed prior to any injections occurring at the site.

c. Post-Injection 1 groundwater monitoring conducted on January 18 and 19, 2023 following the first ISCO injection at the site, which occurred October 11-19, 2023.

d. Post-Injection 2 groundwater monitoring conducted on November 28 and 29, 2023 following the second ISCO injection at the site, which occurred July 10-13, 2023.

e. September 2025 groundwater monitoring was conducted on September 22, 23, and 24, 2025 following the third ISCO injection at the site, which occurred September 9-13, 2024. This was the first groundwater monitoring event conducted following the third ISCO injection.

f. December 2025 groundwater monitoring was conducted on December 30 and 31, 2025 and was the second quarterly groundwater monitoring event following the third ISCO injection at the site.

Abbreviations and Acronyms:

°C = degrees Celsius

µS/cm = microsiemens per centimeter

ISCO = *in situ* chemical oxidation

mg/L = milligrams per liter

mV = millivolts

NTU = nephelometric turbidity units

Table 5
Cumulative Groundwater-Level Elevation Measurements
Former Tiger Oil Site
Yakima, Washington

Monitoring Well		N1MW-2		N1MW-3		N1MW-4		N1MW-5		N1MW-6R		N1MR-7R		N1MW-8		N1MW-9	
TOC Elevation (ft)[a]		1,083.90		1,084.54		1,082.11		1,083.34		1,084.26		1,084.54		1,084.42		1,084.36	
Date Measured	Monitoring Event	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation
10/4/2021		13.70	1,070.20	14.16	1,070.38	11.48	1,070.63	12.77	1,070.57	Well not yet installed		Well not yet installed		13.90	1,070.52	Well not yet installed	
10/6/2021	Supplemental Investigation	-	-	-	-	-	-	-	-	13.66	1,070.60	14.03	1,070.51	-	-	13.80	1,070.56
9/8/2022	Pre-Injection Baseline Monitoring	-	-	-	-	-	-	-	-	14.23	1,070.03	14.60	1,069.94	14.45	1,069.97	14.37	1,069.99
1/18/2023	Post-Injection 1 Monitoring	-	-	-	-	-	-	-	-	13.71	1,070.55	14.03	1,070.51	13.36	1,071.06	13.85	1,070.51
7/10/2023	Injection 2	13.80	1,070.10	14.23	1,070.31	11.59	1,070.52	12.87	1,070.47	13.82	1,070.44	14.17	1,070.37	14.00	1,070.42	13.96	1,070.40
11/28/2023	Post-Injection 2 Monitoring	14.28	1,069.62	14.77	1,069.77	12.24	1,069.87	13.39	1,069.95	14.30	1,069.96	14.71	1,069.83	14.53	1,069.89	14.45	1,069.91
9/9/2024	Injection 3	13.27	1,070.63	13.67	1,070.87	10.99	1,071.12	12.62	1,070.72	13.20	1,071.06	13.62	1,070.92	13.45	1,070.97	13.37	1,070.99
9/22/2025	Post-Injection 3 Monitoring	13.40	1,070.50	13.70	1,070.84	11.06	1,071.05	12.41	1,070.93	13.34	1,070.92	13.65	1,070.89	13.47	1,070.95	13.42	1,070.94
12/29/2025	Fourth Quarter 2025 Monitoring	12.12	1,071.78	12.38	1,072.16	9.58	1,072.53	11.09	1,072.25	11.99	1,072.27	12.23	1,072.31	12.12	1,072.30	12.06	1,072.30

Notes:

- = not measured

Depth measured in ft below TOC.

Elevation datum in NAVD88.

a. TOC elevation surveyed by Gray Surveying under contract with Landau Associates in November 2021.

Abbreviations and Acronyms:

ft = feet

NAVD88 = North American Vertical Datum of 1988

TOC = top of casing

Table 6
Groundwater Injection Summary
Former Tiger Oil Site
Yakima, Washington

Injection Well ID	Injection Well Screen Interval (top - bottom; ft bgs)	Volume Injected (gal)							
		Injection 1 (10/11/22 - 10/19/22)		Injection 2 (7/10/23 - 7/13/23)		Injection 3 (9/9/24 - 9/13/24)		Totals	
		Design Volume	Volume Injected	Design Volume	Volume Injected	Design Volume	Volume Injected	Design Volume	Volume Injected
IW-1	10.9 - 20.9	2,500	1,114	NA	1,805	NA	NA	2,500	2,919
IW-2	10.8 - 20.8	2,500	3,196	2,500	2,988	NA	NA	5,000	6,184
IW-3	10.4 - 20.4	2,500	2,147	NA	NA	2,500	2,452	5,000	4,599
IW-4	10.4 - 20.4	2,500	3,215	2,500	3,453	2,500	2,430	7,500	9,098
IW-5	10.7 - 20.7	2,500	3,135	2,500	2,661	NA	NA	5,000	5,796
IW-6	10 - 20	2,500	3,770	NA	NA	2,500	2,735	5,000	6,506
IW-7	10 - 20	2,500	3,214	NA	NA	2,500	2,759	5,000	5,972
IW-8	10 - 20	2,500	1,319	NA	626	2,500	2,549	5,000	4,494
IW-9	10 - 20	2,500	3,182	2,500	2,805	NA	NA	5,000	5,986
IW-10	10 - 20	2,500	2,505	2,500	1,554	2,500	2,333	7,500	6,393
IW-11	10 - 20	2,500	3,386	2,500	2,736	NA	NA	5,000	6,122
IW-12	10 - 20	2,500	780	2,500	1,967	NA	NA	5,000	2,747
IW-13	10 - 20	2,500	2,559	2,500	2,712	NA	NA	5,000	5,271
IW-14	10 - 20	2,500	886	2,500	1,335	NA	NA	5,000	2,221
IW-15	10 - 20	2,500	3,174	NA	NA	2,500	2,709	5,000	5,883
IW-16	10 - 20	2,500	3,344	NA	NA	2,500	2,581	5,000	5,925
IW-17	8.5 - 18.5	2,500	972	NA	NA	2,500	2,355	5,000	3,327
IW-18	10 - 20	2,500	3,511	2,500	390	2,500	2,440	7,500	6,341
Totals:		45,000	45,410	25,000	25,032	25,000	25,343	95,000	95,785
Injectate Concentration (g/L)[a]:		66		66		65		66	

Notes:

a. Design injectate concentration was 67 g/L of Klozur One activated persulfate.

NA = Injection well either not included in given injection design or not injected into during given injection.

Abbreviations:

bgs = below ground surface

ft = feet

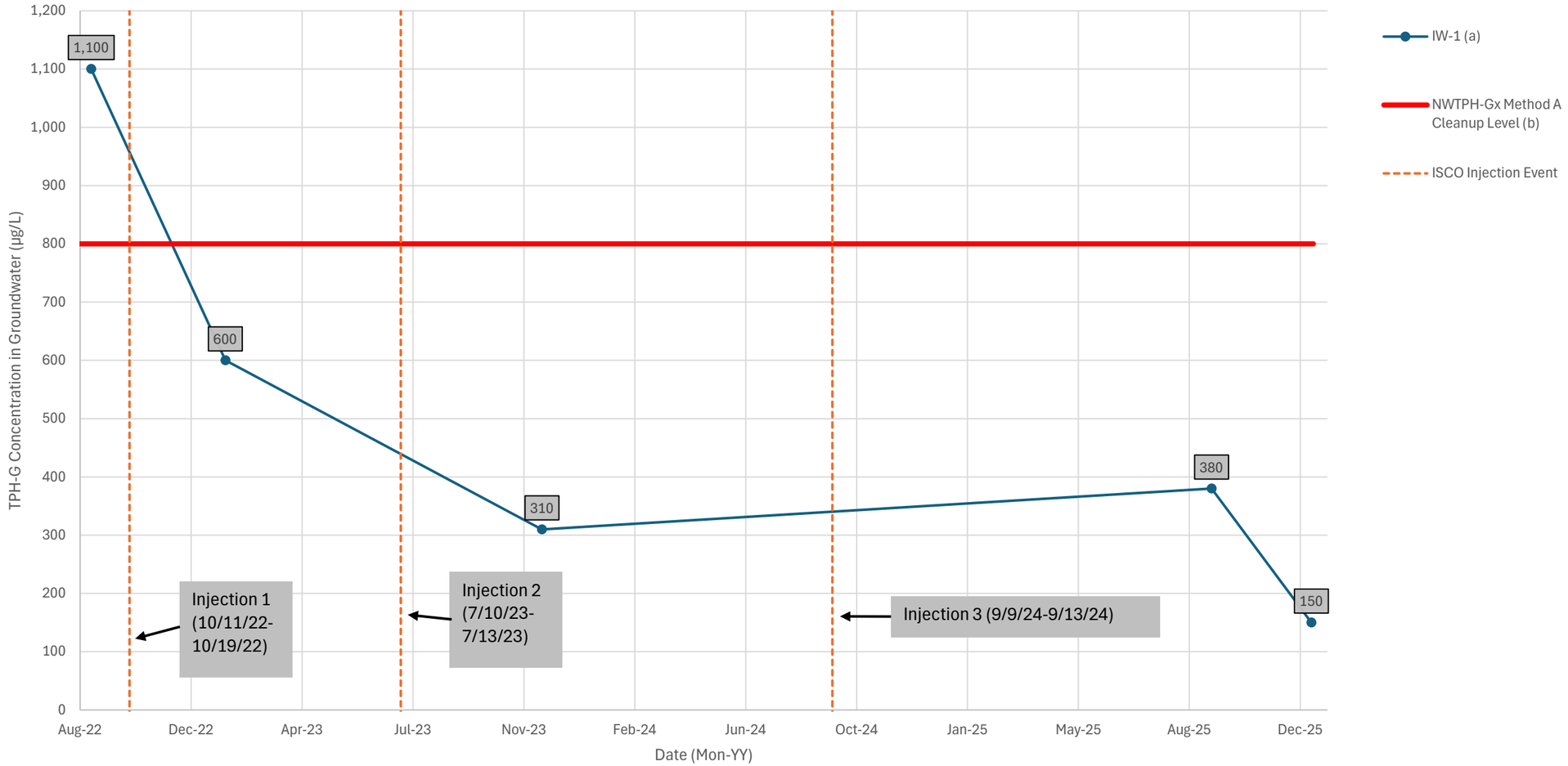
gal = gallons

g/L = grams per liter

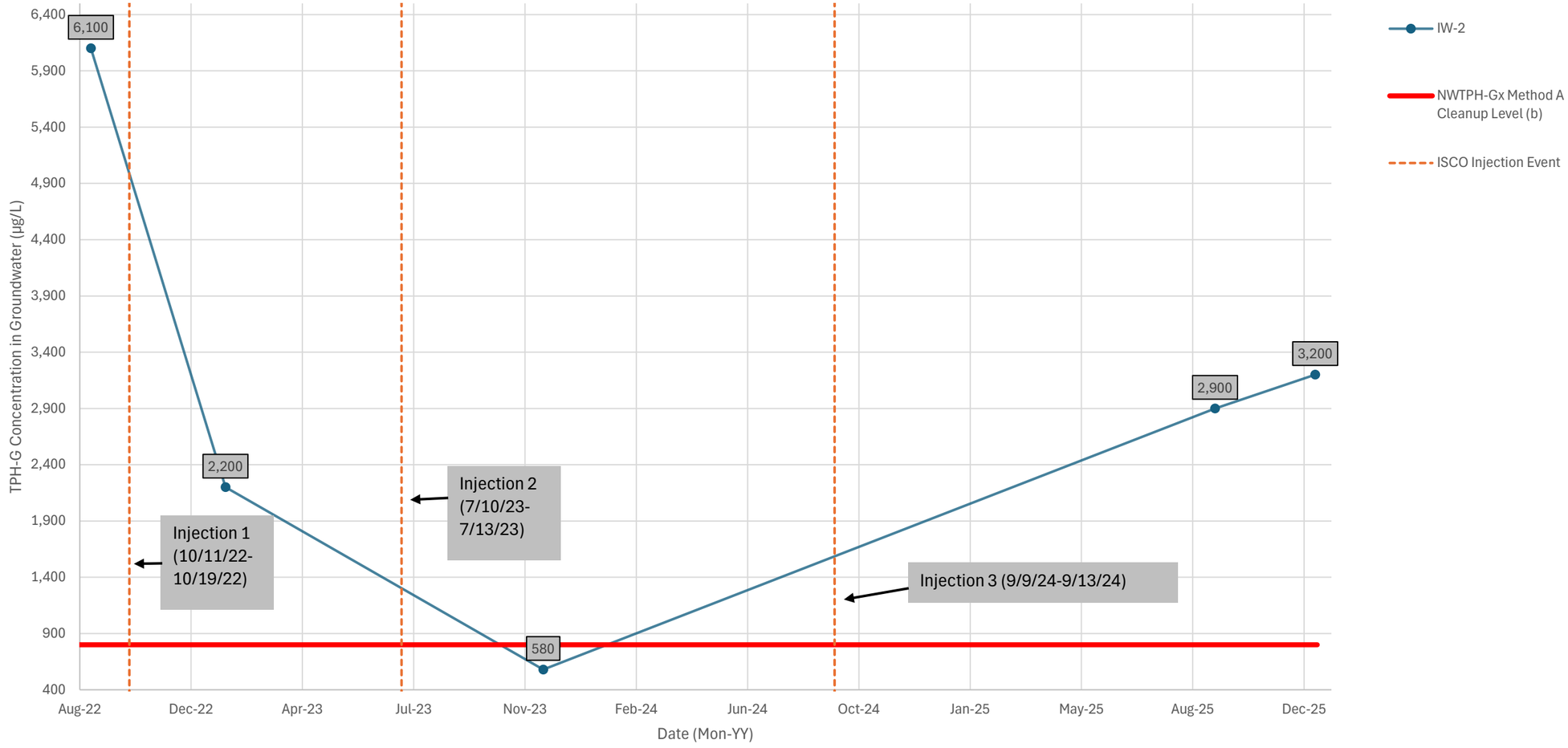
ATTACHMENT 1

Time-Series Plots of Gasoline-Range Organics Concentrations in Groundwater

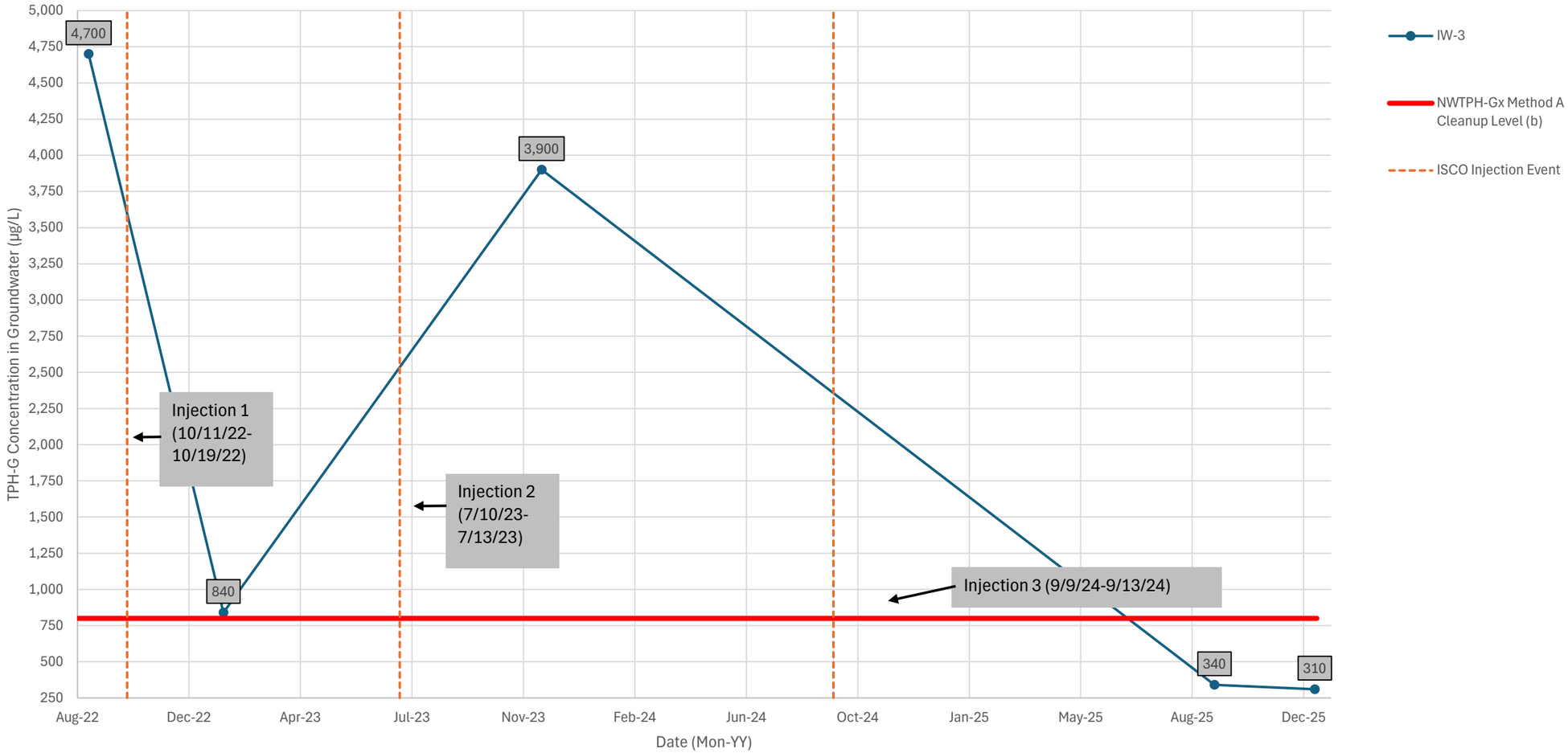
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-1
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



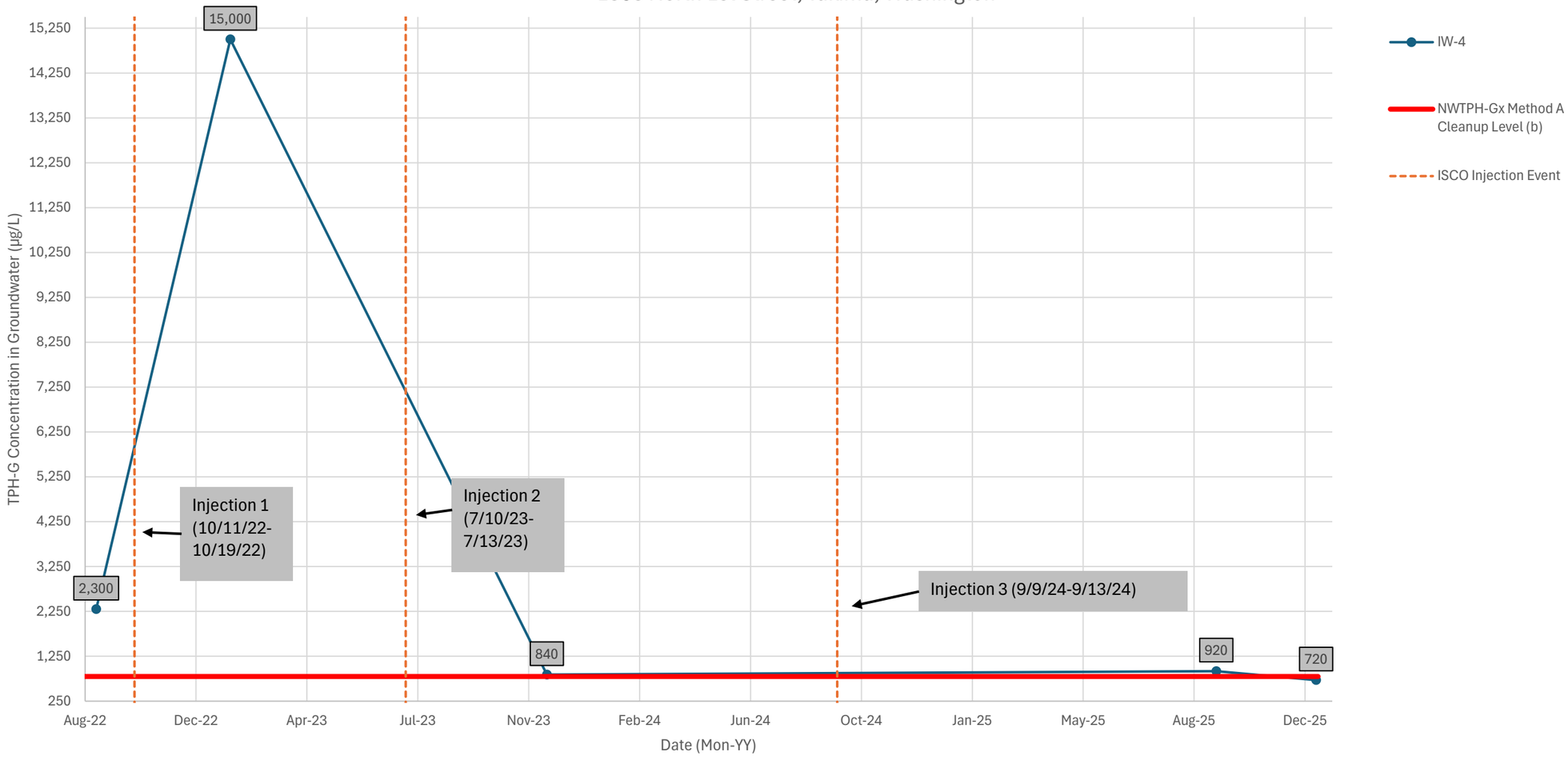
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-2
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



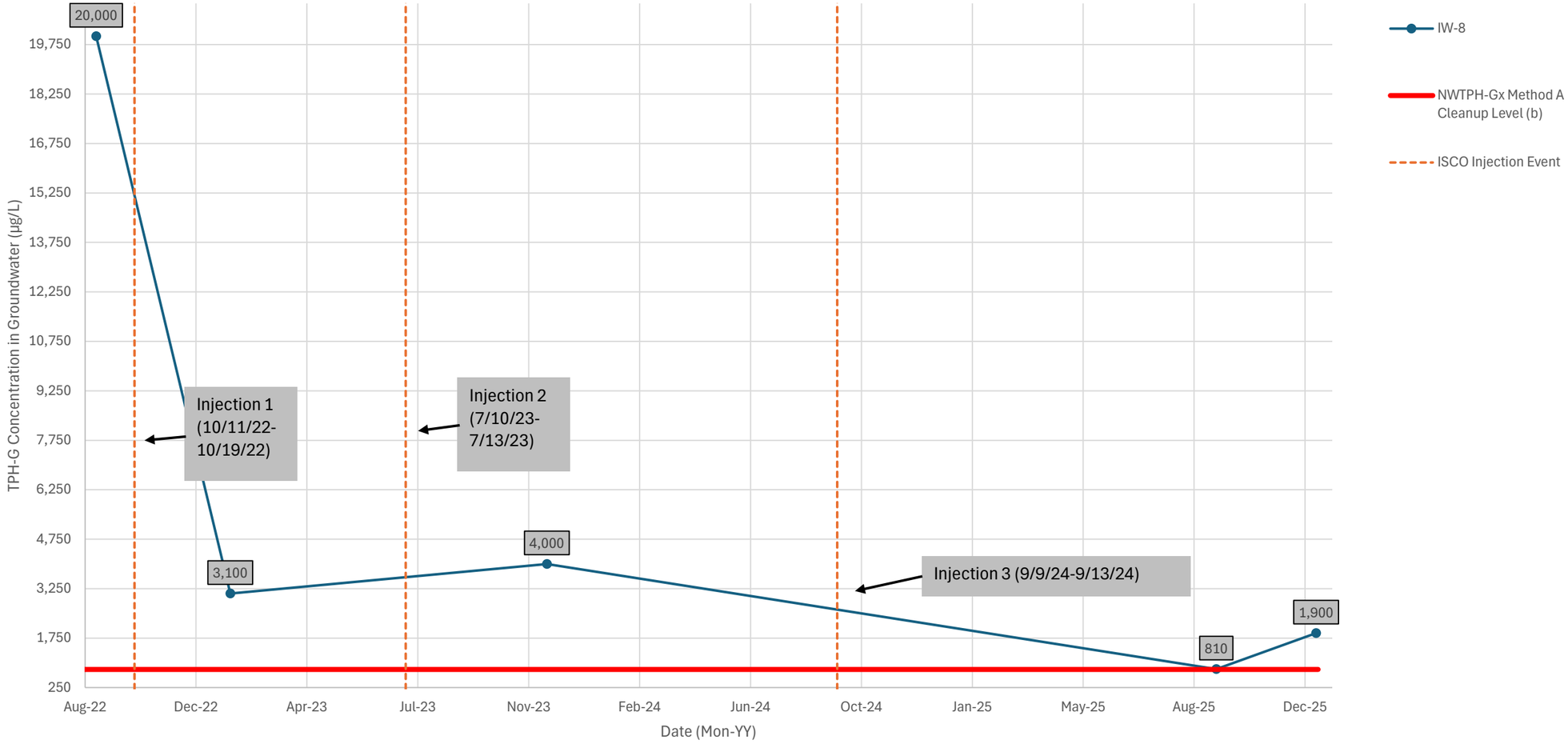
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-3
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



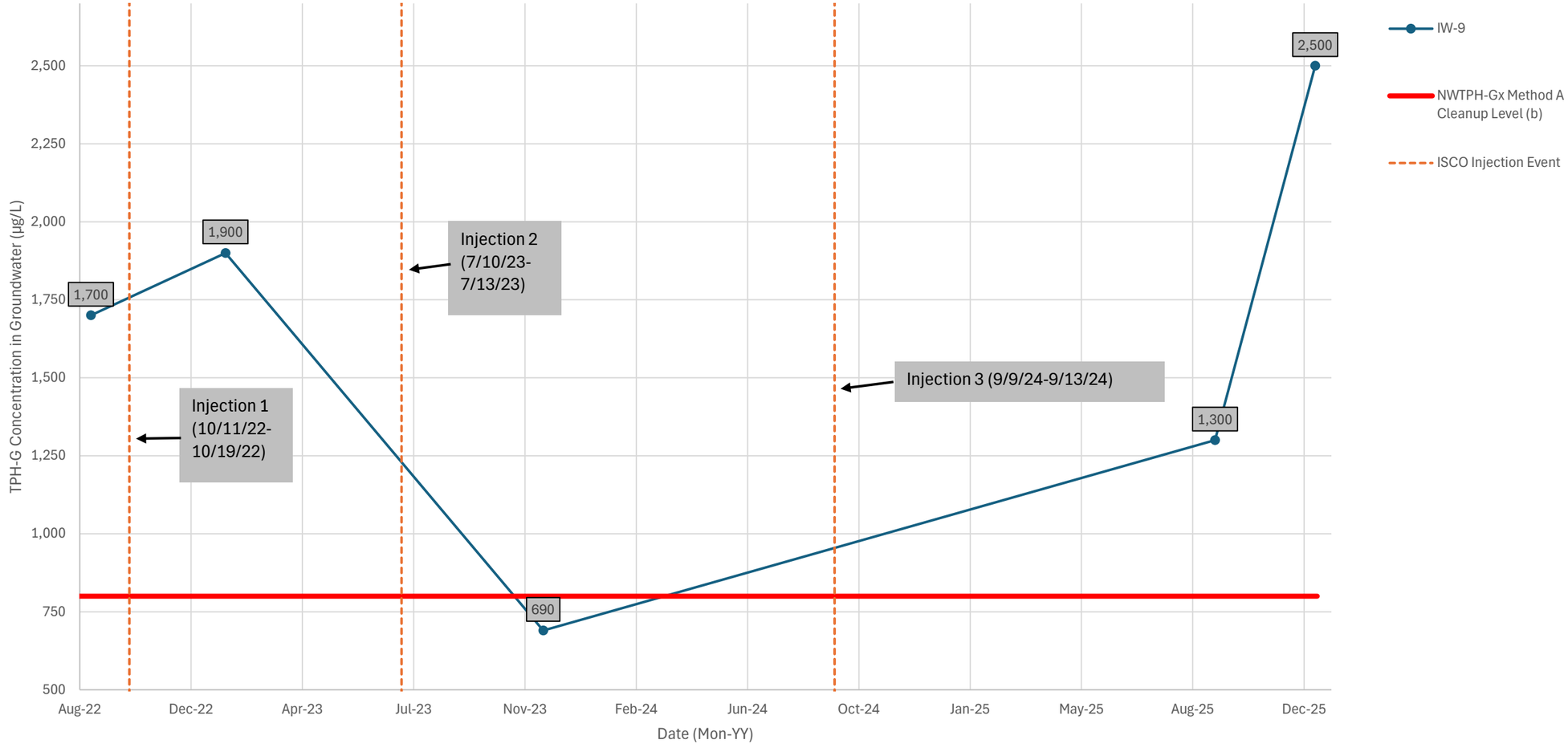
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-4
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



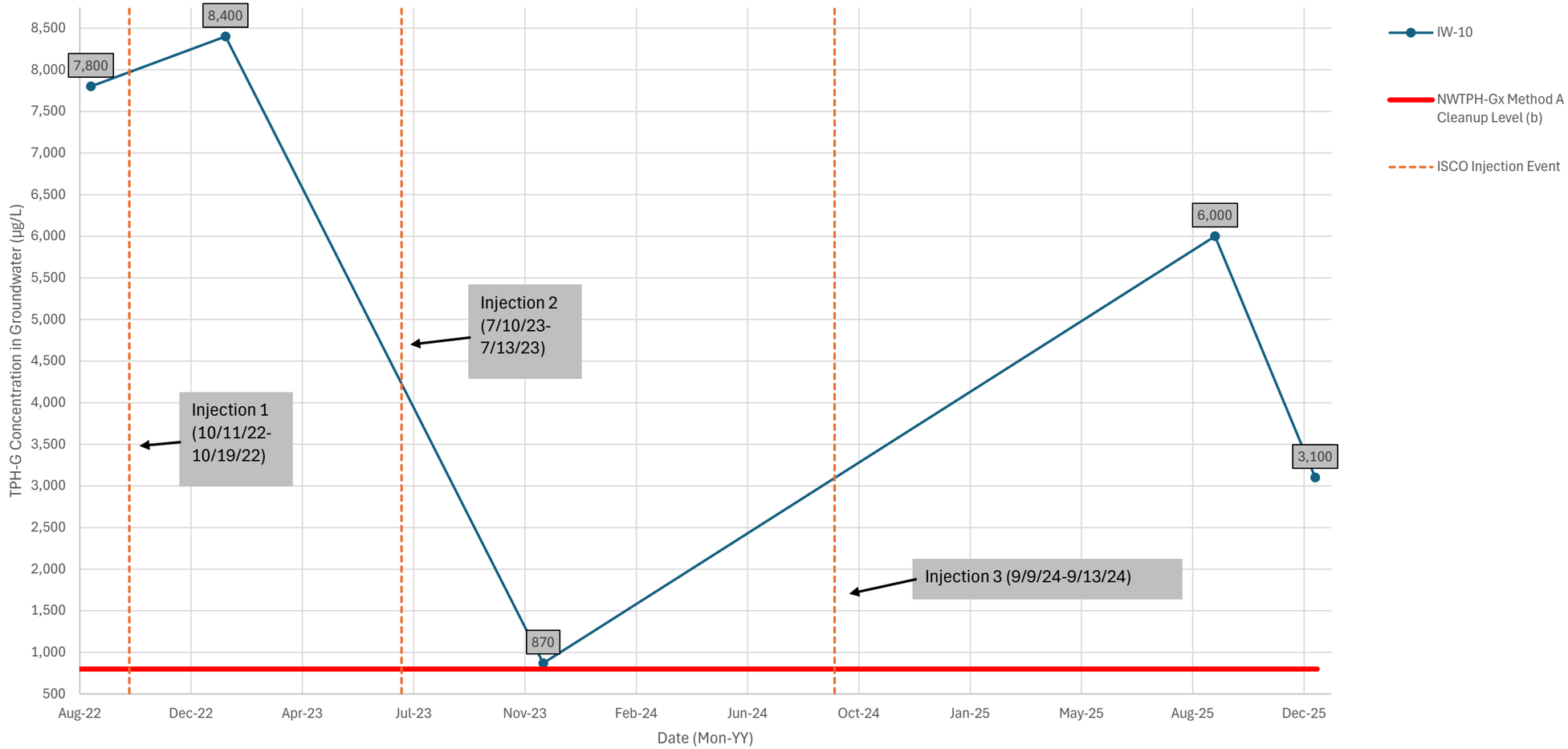
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-8
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



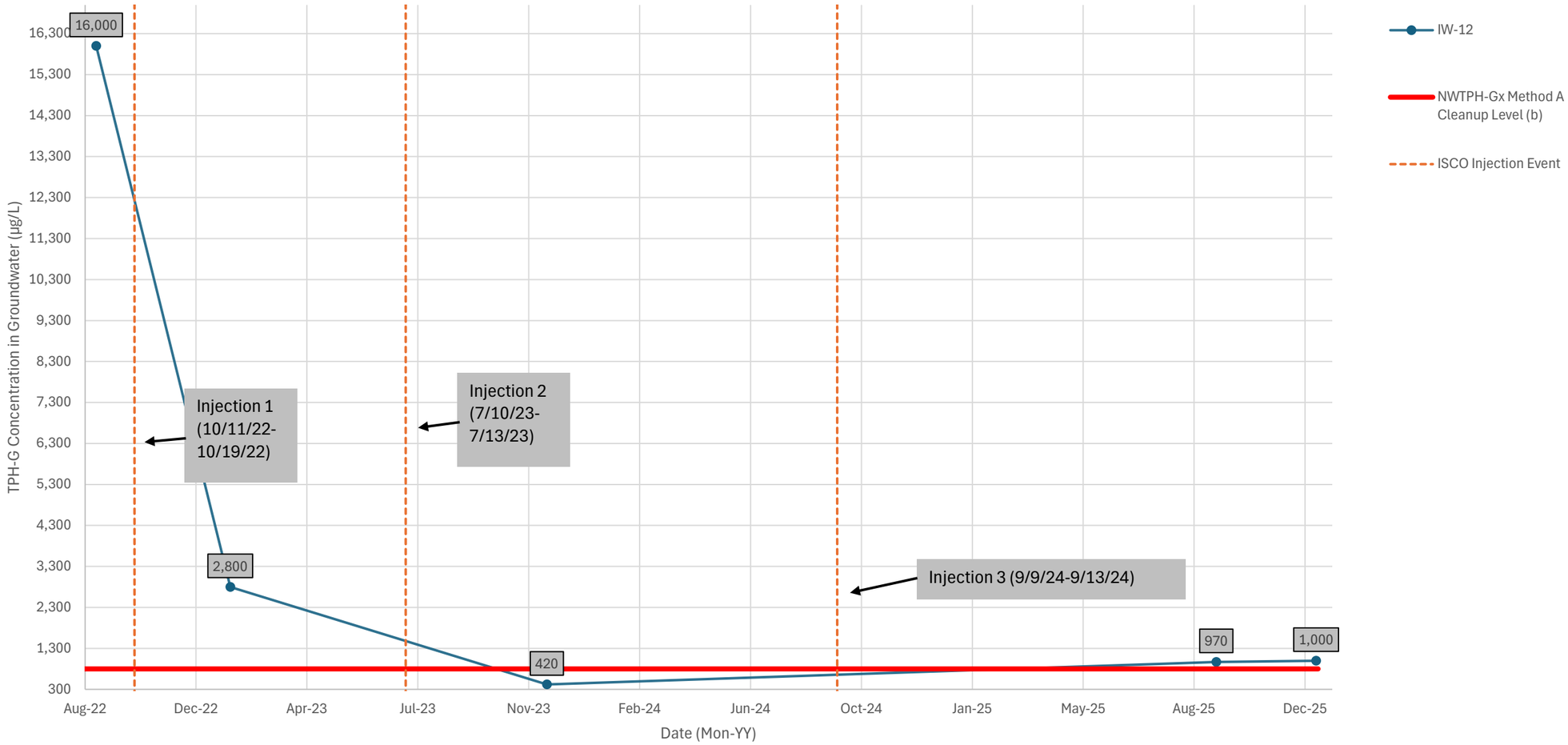
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-9
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



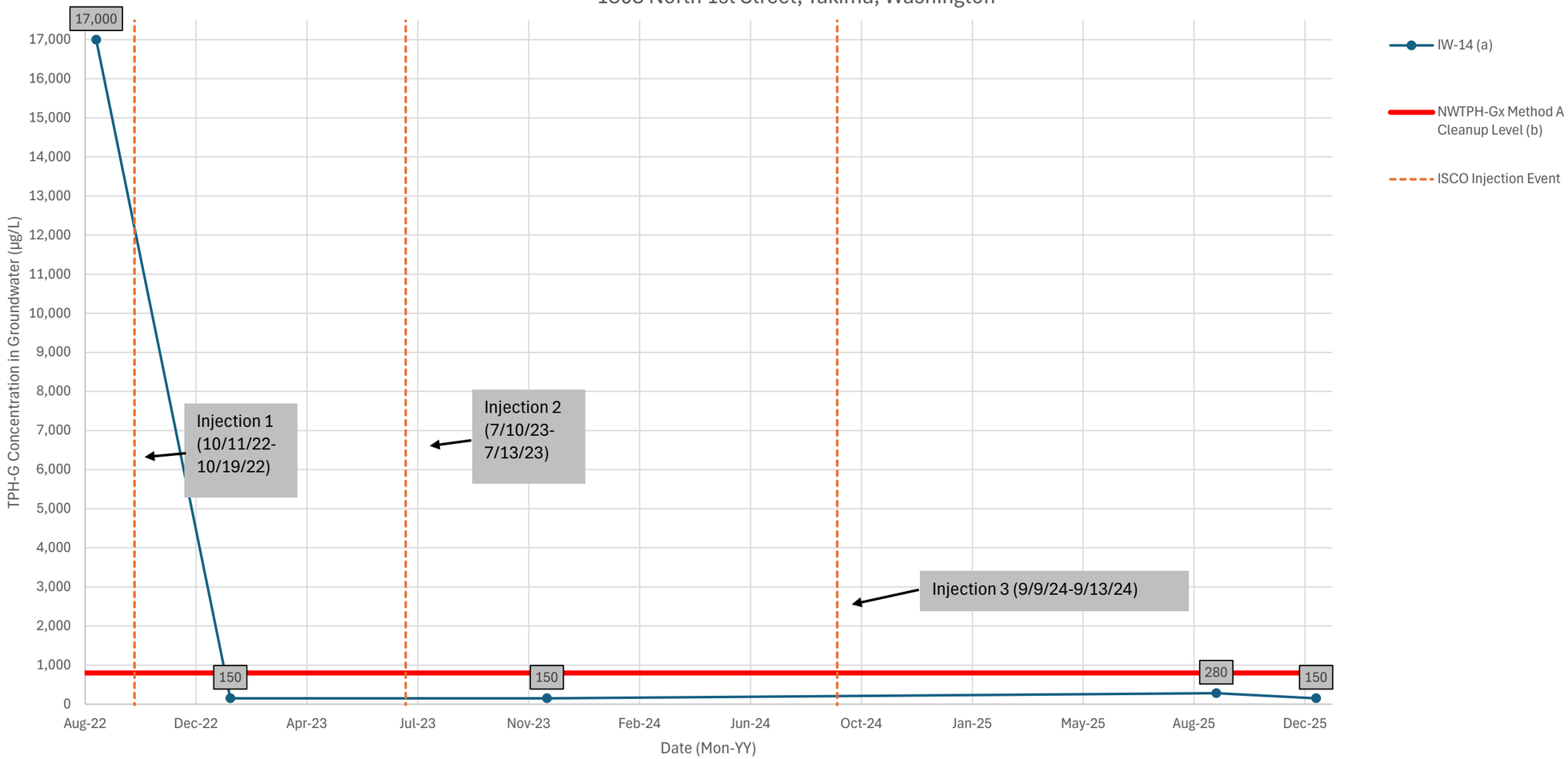
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-10
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



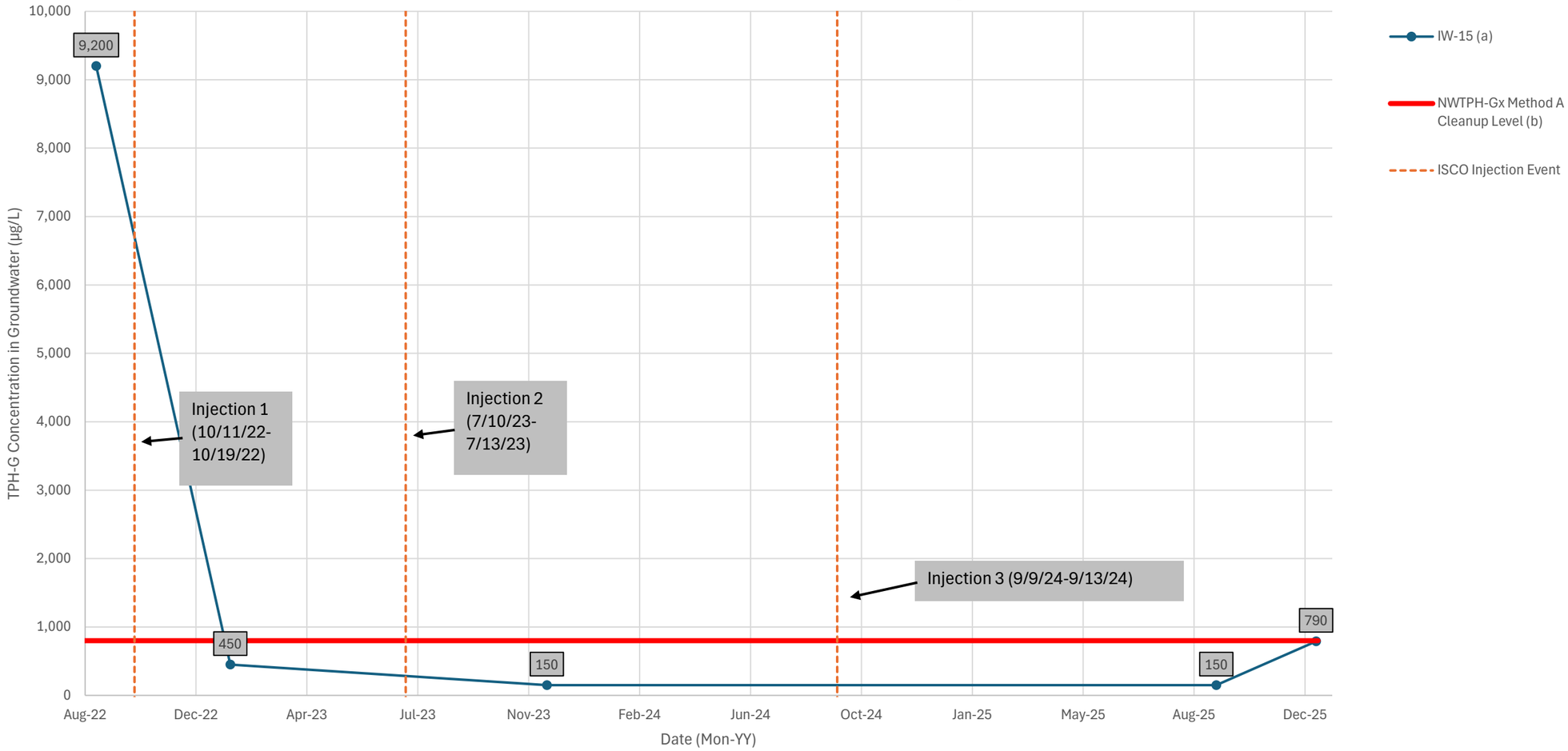
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-12
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



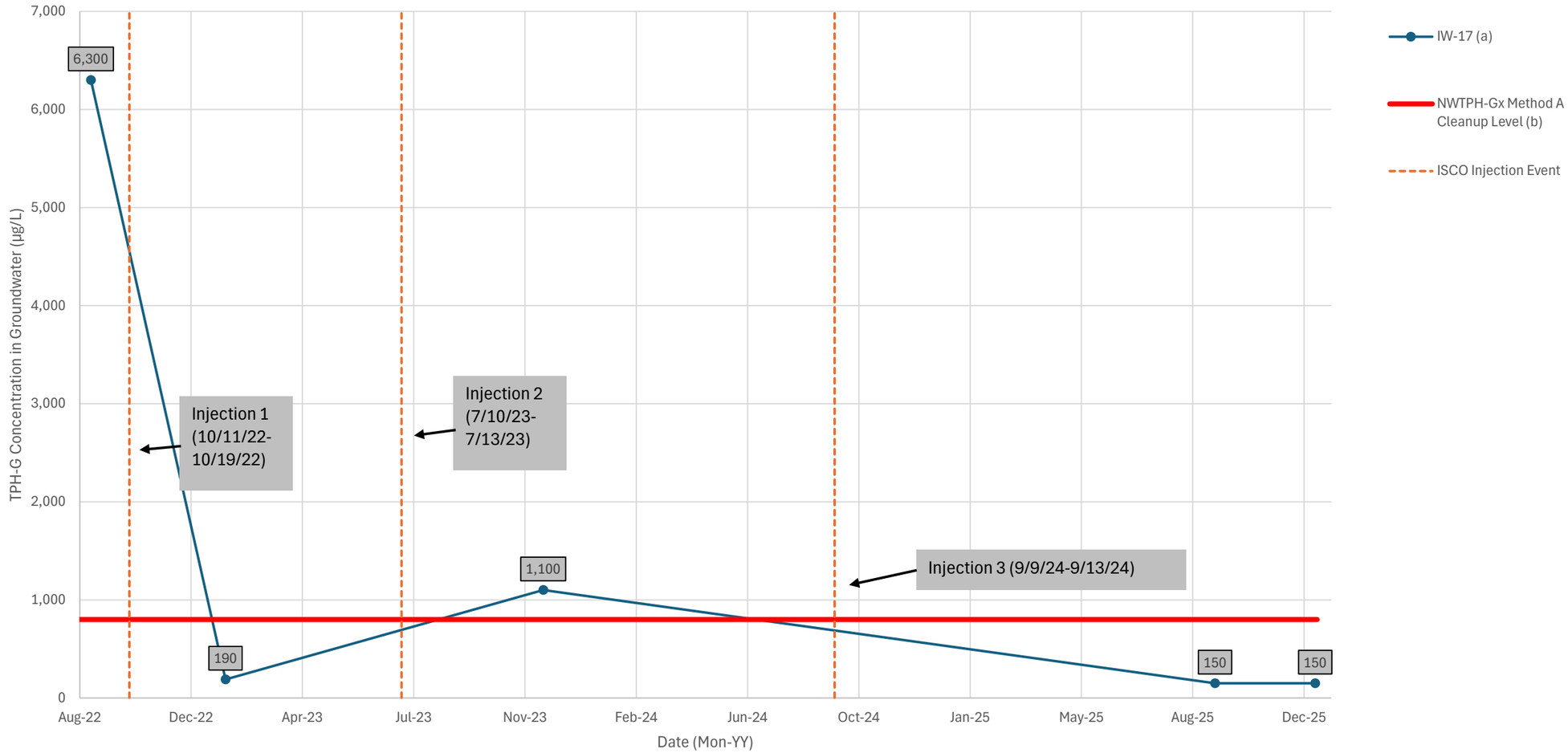
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-14
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



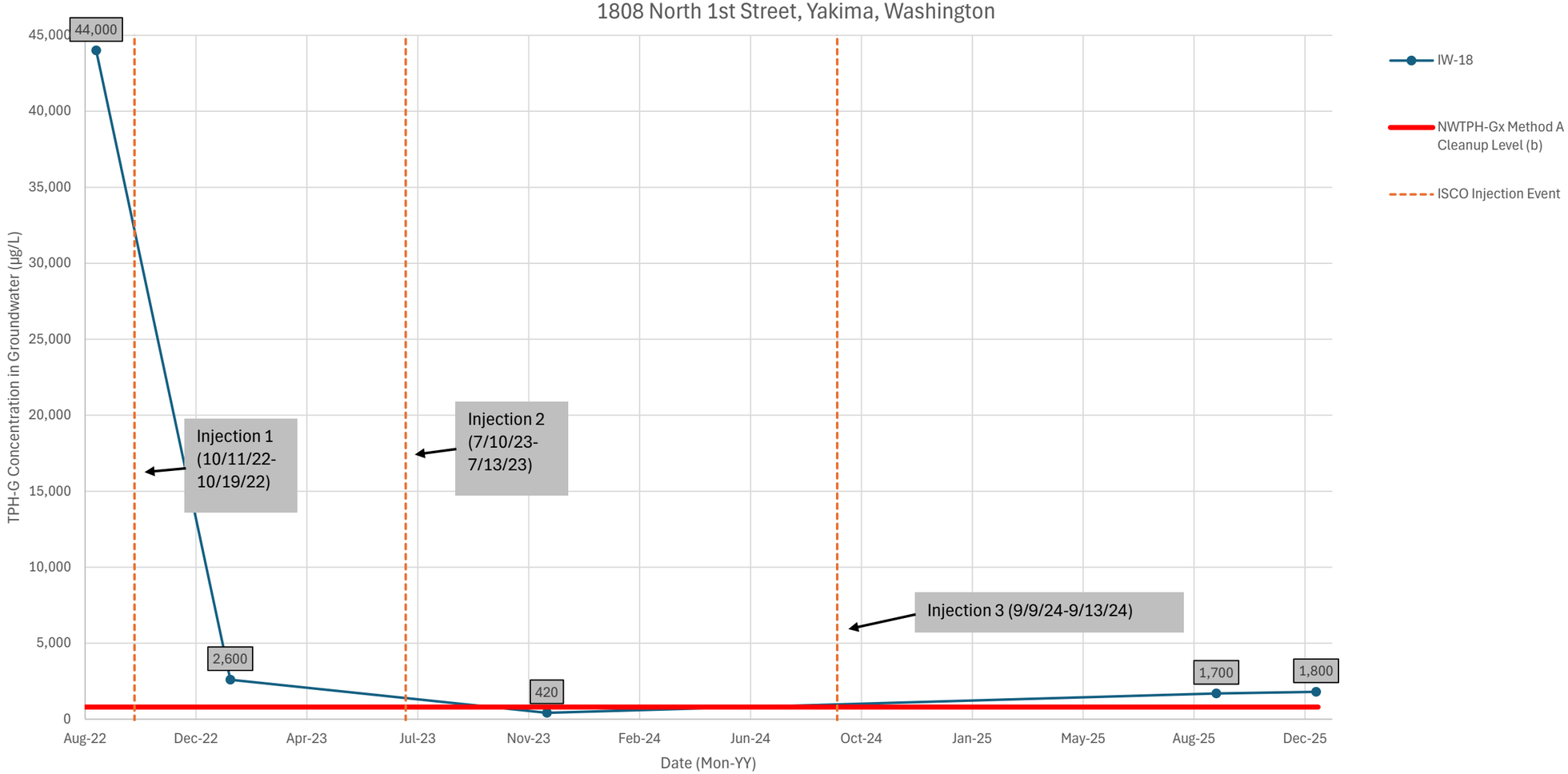
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-15
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



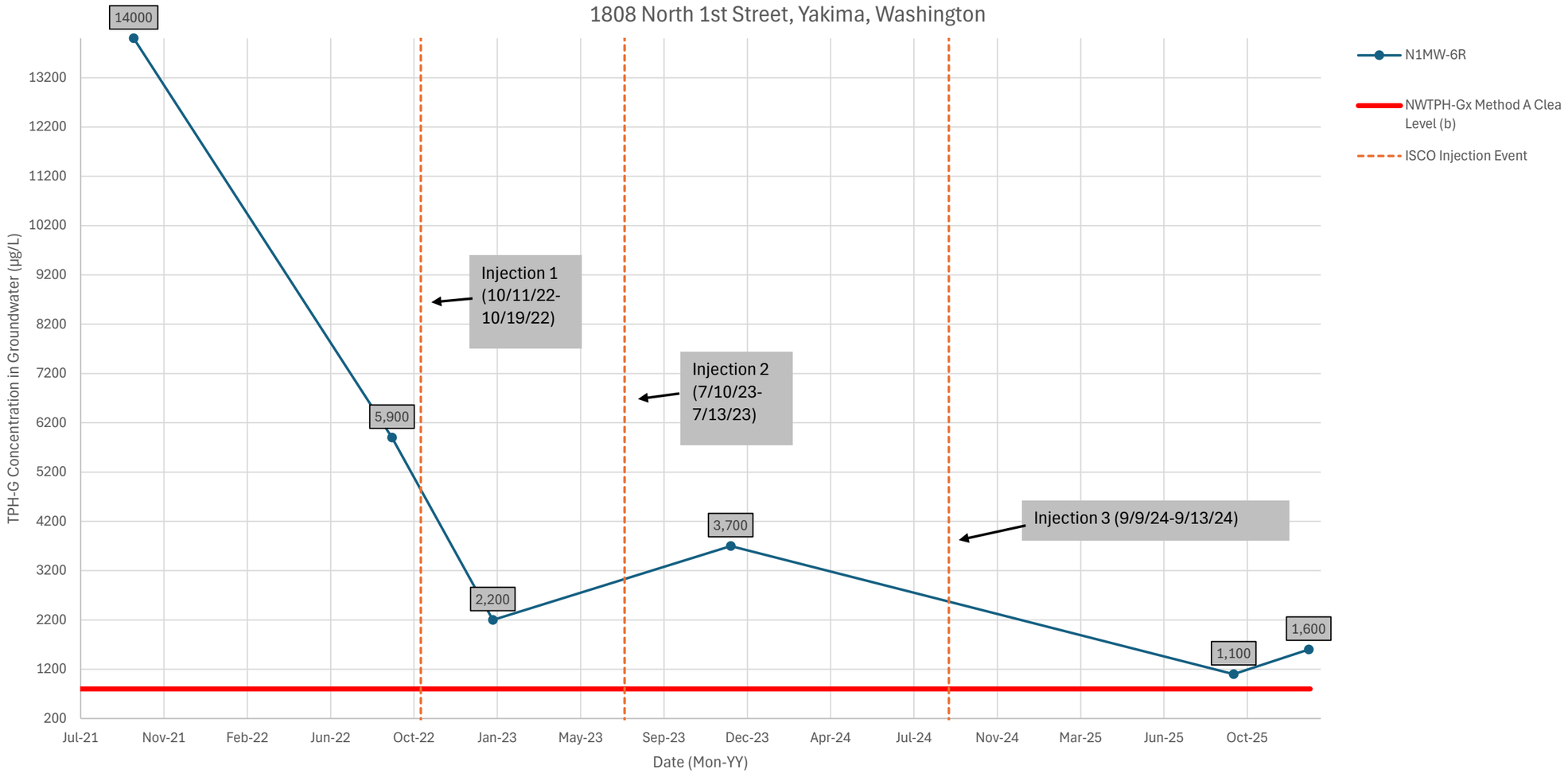
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-17
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



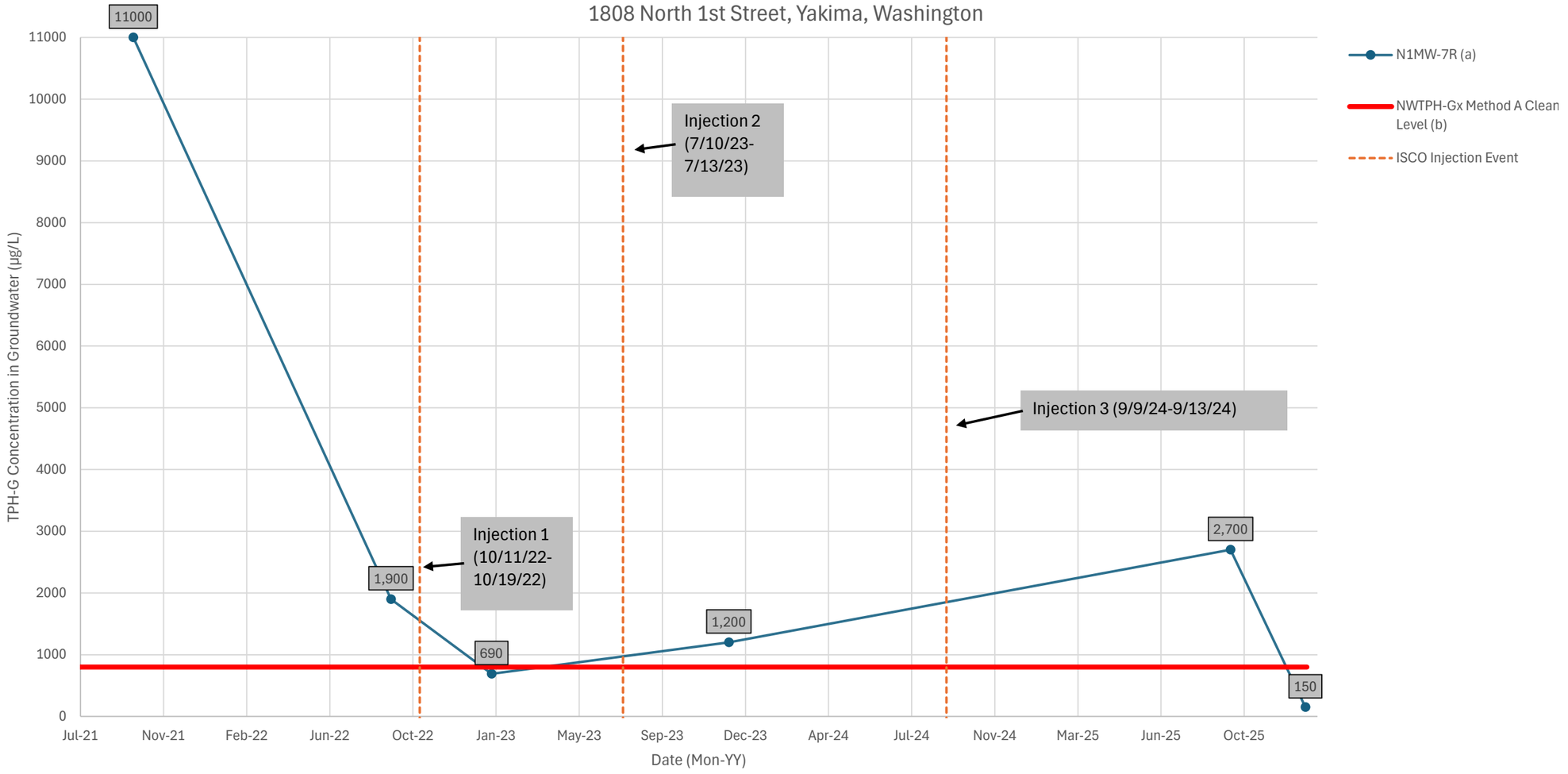
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Injection Well IW-18
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



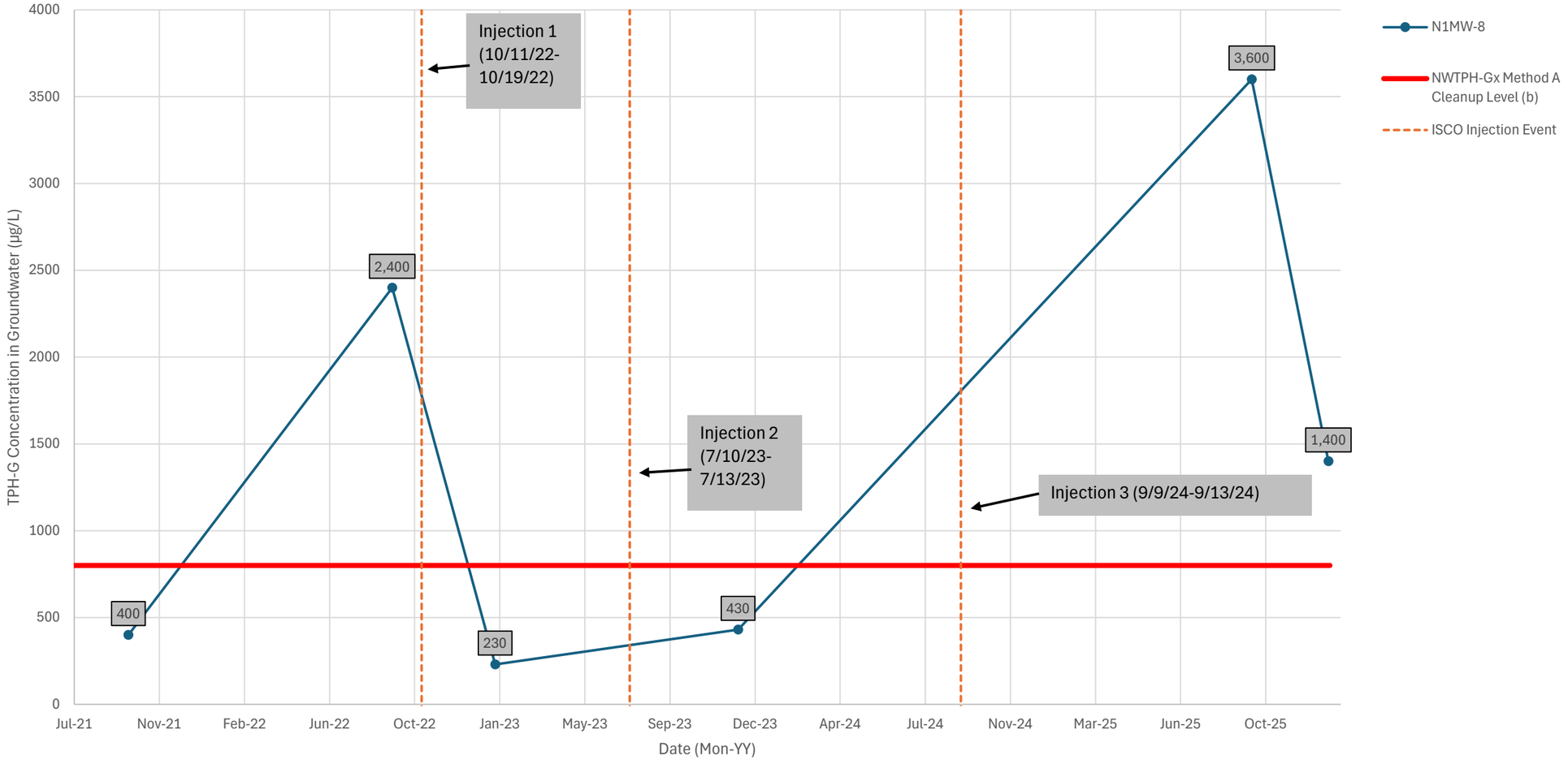
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Monitoring Well N1MW-6R
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



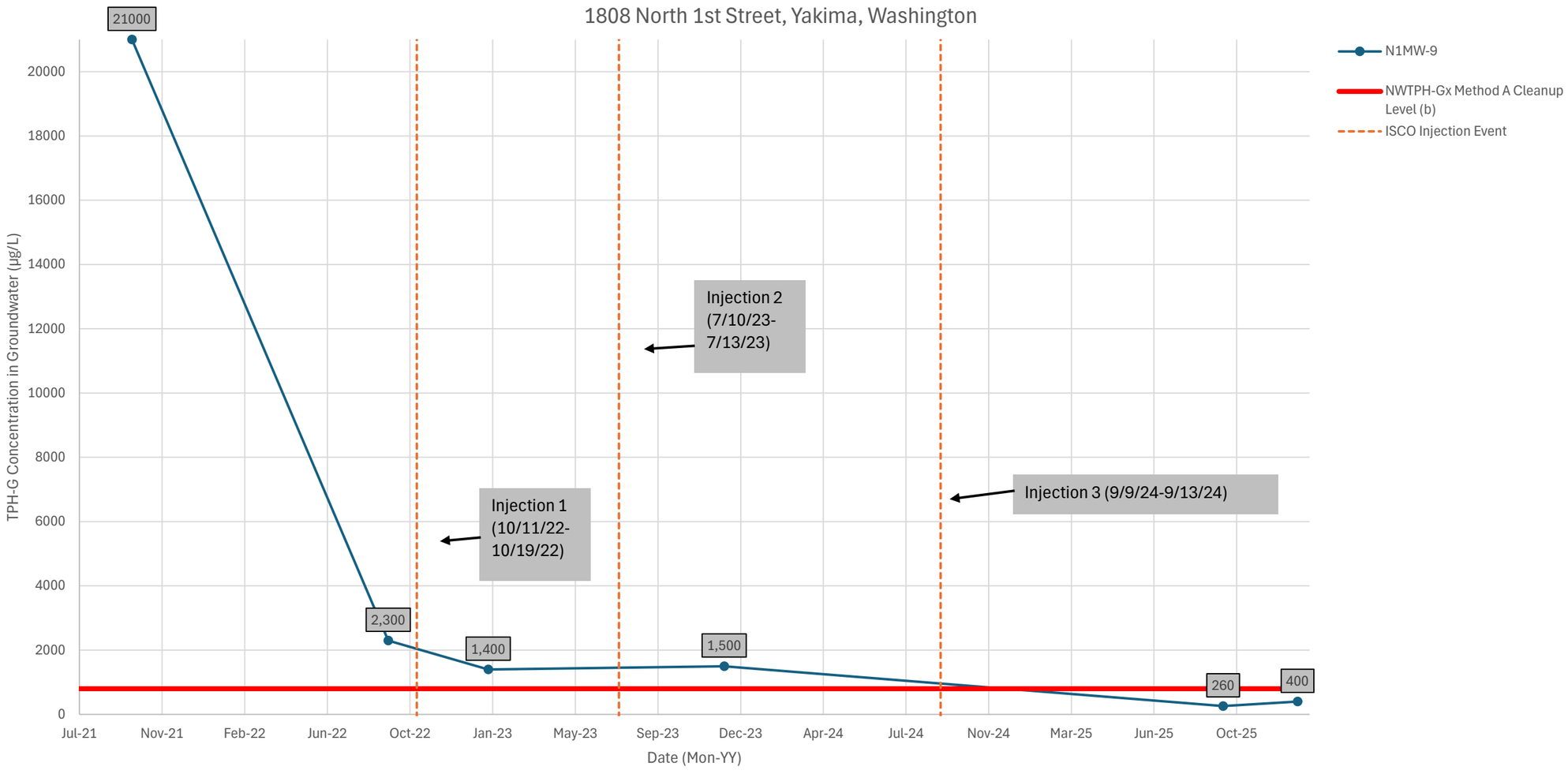
Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Monitoring Well N1MW-7R
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Monitoring Well N1MW-8
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



Time-series Plot of Gasoline-Range Organics Concentrations in Groundwater
Monitoring Well N1MW-9
Former Tiger Oil Site
1808 North 1st Street, Yakima, Washington



Notes:

[(a)] Charted results of 150 µg/L indicate that TPG-G was not detected above the laboratory reporting limit of 150 µg/L.

[(b)] MTCA Method A cleanup level is 800 µg/L based on previous sampling events identifying the presence of benzene in groundwater at the Site.

Acronyms and abbreviations:

µg/L = micrograms per liter
ISCO = in-situ chemical oxidation
IW = Injection Well
Mon = month
MTCA = Model Toxics Control Act
N1MW = north 1st monitoring well
NWTPH-Gx = Northwest total petroleum hydrocarbon gasoline-range extended
TPH-G = total petroleum hydrocarbon gasoline-range
YY = year

APPENDIX A

Supplemental Investigation Boring Logs

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS [2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50%	"GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50%	"very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30%	"gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15%	"with gravel," "with sand," "with silt," etc.
	≤ 5%	"with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

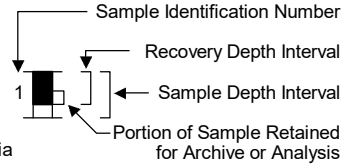
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Single-Tube Core Barrel
f	Double-Tube Core Barrel
g	2.50-inch O.D., 2.00-inch I.D. WSDOT
h	3.00-inch O.D., 2.375-inch I.D. Mod. California
i	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Vibrocore (Rotosonic/Geoprobe)
5	Other - See text if applicable

SAMPLE NUMBER & INTERVAL



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

▽ Approximate water level at time of drilling (ATD)

▼ Approximate water level at time after drilling/excavation/well

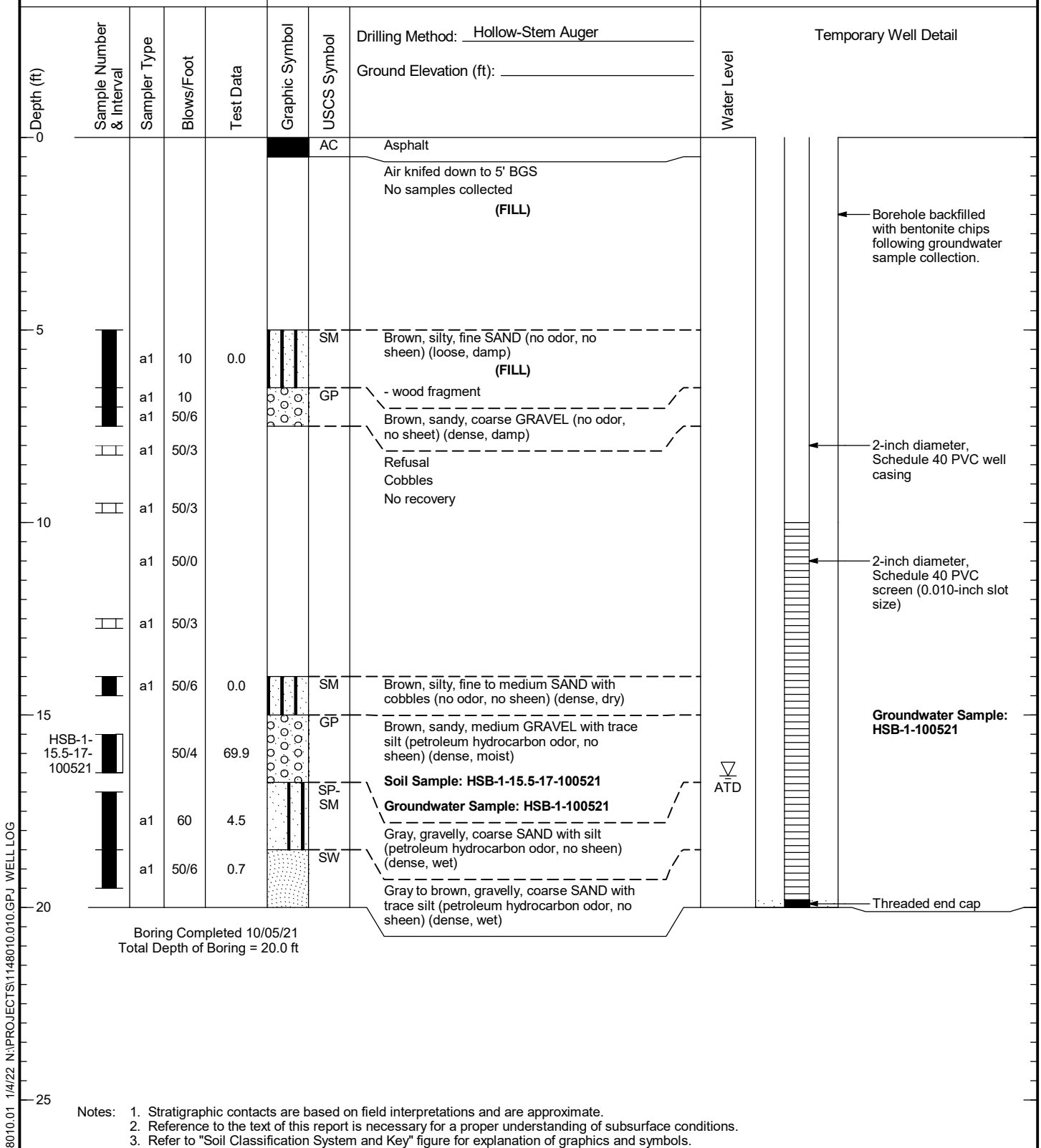
LANDAU ASSOCIATES

Tiger Oil
Yakima, WA

Soil Classification System and Key

Figure
A-1

HSB-1



Boring Completed 10/05/21
Total Depth of Boring = 20.0 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ WELL LOG

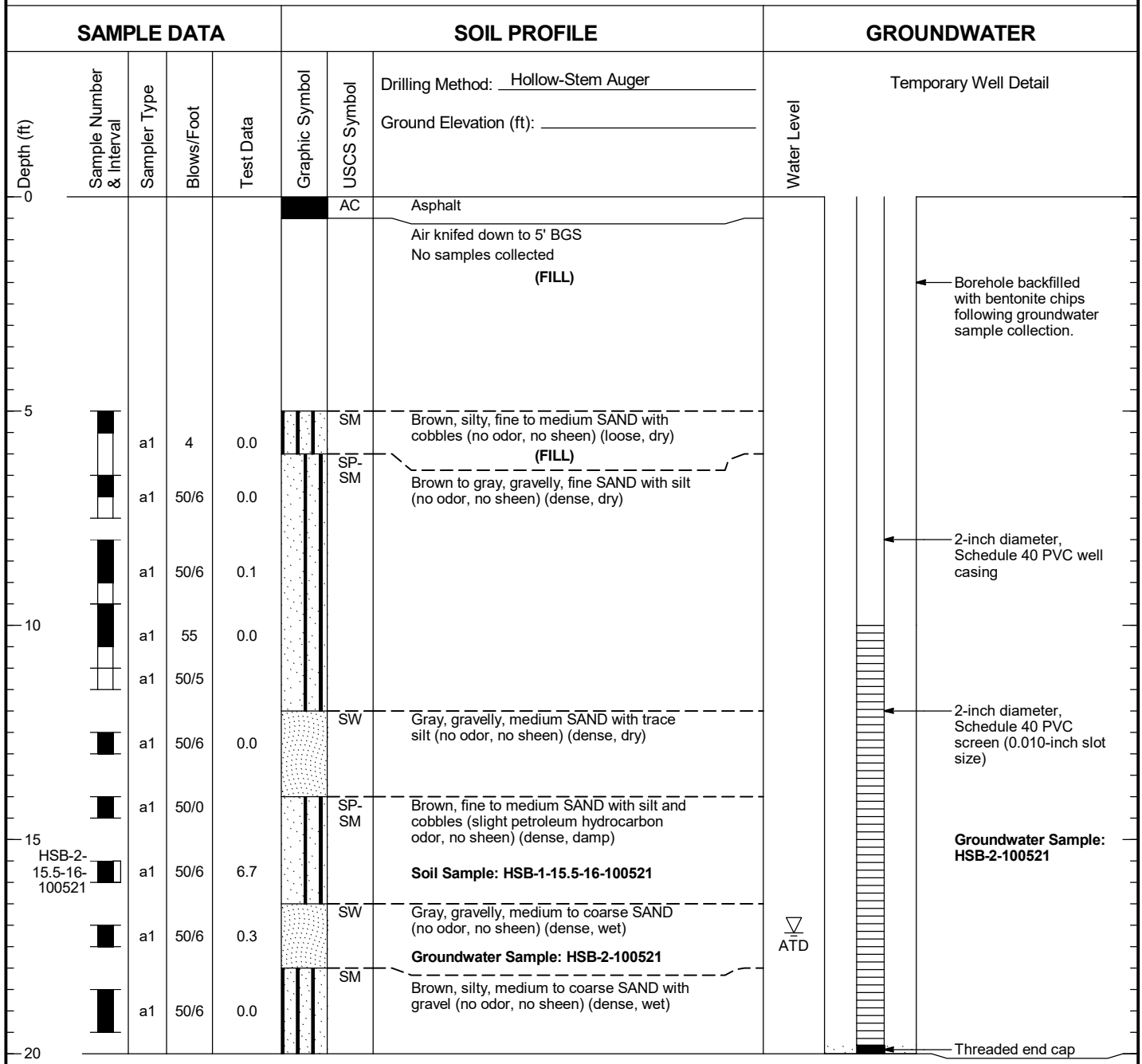
LANDAU ASSOCIATES

Tiger Oil
Yakima, WA

Log of Temporary Well HSB-1

Figure
A-2

HSB-2



Boring Completed 10/05/21
Total Depth of Boring = 20.0 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Temporary Well HSB-2	Figure A-3

HSB-3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft):	Water Level
0						AC	Asphalt	
						SM	Brown, silty, fine SAND (no odor, no sheen) (loose, damp) **(FILL)**	
		a1	6	0.0				
		a1	8	0.0				
5		a1	9	0.0				
		a1	73	0.0				
		a1	50/6	0.0		SW-SM	Brown, gravelly, fine to medium SAND with silt (no odor, no sheen) (dense, damp)	
		a1					Refusal Cobbles No recovery	
10		a1						
		a1	50/6	0.0		SW-SM	Brown to gray, gravelly, fine to medium SAND with silt (no odor, no sheen) (dense, damp)	
	HSB-3-13.5-14.5-100621	a1	50/6	29.1		SP-SM	Brown, fine to medium SAND with silt and cobbles (petroleum hydrocarbon odor, no sheen) (dense, dry)	
15		a1	50/5	8.5		SW-SM	**Soil Sample: HSB-3-13.5-14.5-100621** Brown, gravelly, medium to coarse SAND with silt (light petroleum hydrocarbon odor, no sheen) (dense, wet)	ATD
		a1	50/6	8.6		SW	Gray, gravelly, medium to coarse SAND with trace silt (slight petroleum hydrocarbon odor, no sheen) (dense, wet)	
		a1	50/6	1.6				
20								
25								

Temporary Well Detail

- Borehole backfilled with bentonite chips following groundwater sample collection.
- 2-inch diameter, Schedule 40 PVC well casing
- 2-inch diameter, Schedule 40 PVC screen (0.010-inch slot size)
- **Groundwater Sample: HSB-3-100621**
- Threaded end cap

Boring Completed 10/06/21
Total Depth of Boring = 19.5 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil
Yakima, WA

Log of Temporary Well HSB-3

Figure
A-4

HSB-4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft):	Water Level
0						GM	Gravel	
						SM	Brown, silty, fine SAND with cobbles (no odor, no sheen) (loose to medium dense, damp) **(FILL)**	
5		a1	14	0.0				
	HSB-4-7-8-100621	a1	50	0.0		SP-SM	Brown, fine to medium SAND with silt and cobbles (no odor, no sheen) (dense, dry) **Soil Sample: HSB-4-7-8-100621**	
10		a1	50/6	0.0				
	HSB-4-11-12-100621		50/6	0.0			**Soil Sample: HSB-4-11-12-100621**	
		a1	50/6	0.0				
		a1	50/6			SP-SM	Brown, gravelly, medium to coarse SAND with silt (no odor, no sheen) (dense, wet)	
15								▽ ATD
		a1	60	0.0				
20								
25								

Boring Completed 10/06/21
Total Depth of Boring = 17.0 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Boring HSB-4	Figure A-5

HSB-5

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft):	Water Level
0						GM	Coarse gravel	
		a1	4	0.0		SM	Brown, silty, fine to medium SAND (no odor, no sheen) (loose, damp) **(FILL)**	
		a1	6	0.0				
5		a1	4	0.0				
		a1	4	0.0				
	HSB-5-7.5-9-100621		50/6	0.0			- with gravel	
						SP-SM	Brown to gray, medium SAND with silt and cobbles (no odor, no sheen) (dense, dry) **Soil Sample: HSB-5-7.5-9-100621**	
10		a1	50/6	0.0				
		a1	50/4	0.0				
		a1	50/0					
	HSB-5-13.5-14.5-100621		57	0.0		SW	Brown to light brown, gravelly, medium to coarse SAND with trace silt (no odor, no sheen) (dense, dry) **Soil Sample: HSB-5-13.5-14.5-100621**	
15		a1	60	0.0				ATD
20								
25								

Boring Completed 10/06/21
Total Depth of Boring = 16.5 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Boring HSB-5	Figure A-6

NIMW-6R

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft):	Water Level
0						AC	Asphalt Air knifed down to 5' BGS No samples collected **(FILL)**	
5							Refusal - No lithologic data collected due to hard drilling	
10		a1	50/6	0.0		SP-SM	Gray, fine to medium SAND with silt and cobbles (no odor) (loose, dry)	
		a1	50/6	0.0		SP	Brown, gravelly, coarse SAND with trace silt (no odor) (loose, dry)	
		a1	50/6	68.5				
15	NIMW-6R-14.5-15-100421	a1	45	1.5		GW	**Soil Sample: NIMW-6R-14.5-15-100421** Brown, sandy, coarse GRAVEL (petroleum hydrocarbon odor, no sheen) (loose, wet)	ATD
		a1	50/6	6.1		SP	Brown, gravelly, coarse SAND (no odor, no sheen) (loose, wet)	
						SP-SM	Brown, medium to coarse SAND with silt and cobbles (no odor, no sheen) (loose, wet)	
		a1	50/6	0.0				
20								
25								

Monitoring Well Detail
(DOE#: BMM-919)

- Flush-mounted monument with locking cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40 PVC well casing
- 2/12 silica sand pack
- 2-inch diameter, Schedule 40 PVC screen (0.010-inch slot size)
- Threaded end cap
- Native Backfill

Boring Completed 10/04/21
Total Depth of Boring = 20.5 ft

Monitoring Well Completed 10/04/21
Total Depth of Monitoring Well = 20.0 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ WELL LOG

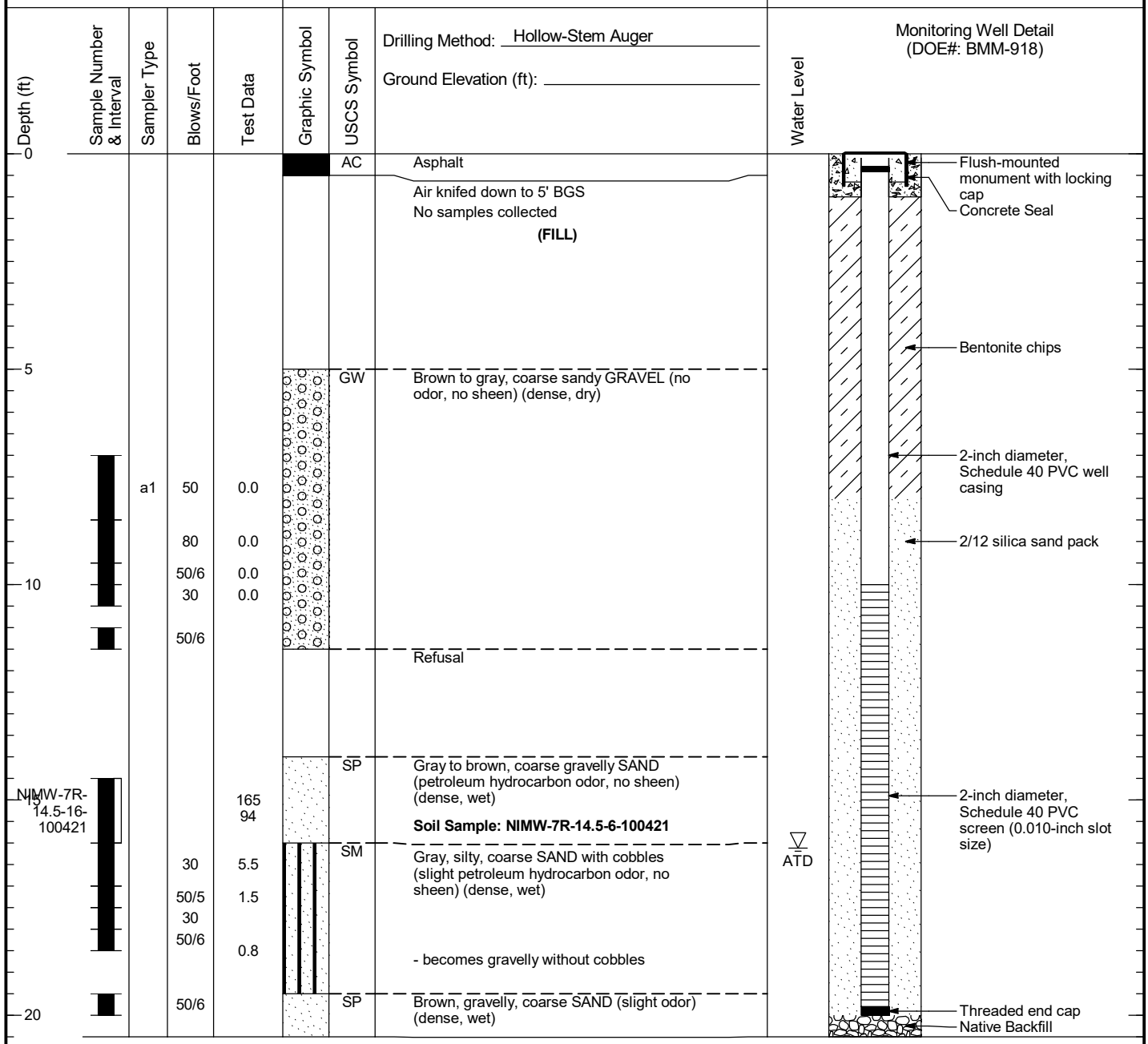
LANDAU ASSOCIATES

Tiger Oil
Yakima, WA

Log of Monitoring Well NIMW-6R

Figure
A-7

NIMW-7R



Boring Completed 10/04/21
Total Depth of Boring = 20.5 ft

Monitoring Well Completed 10/04/21
Total Depth of Monitoring Well = 20.0 ft

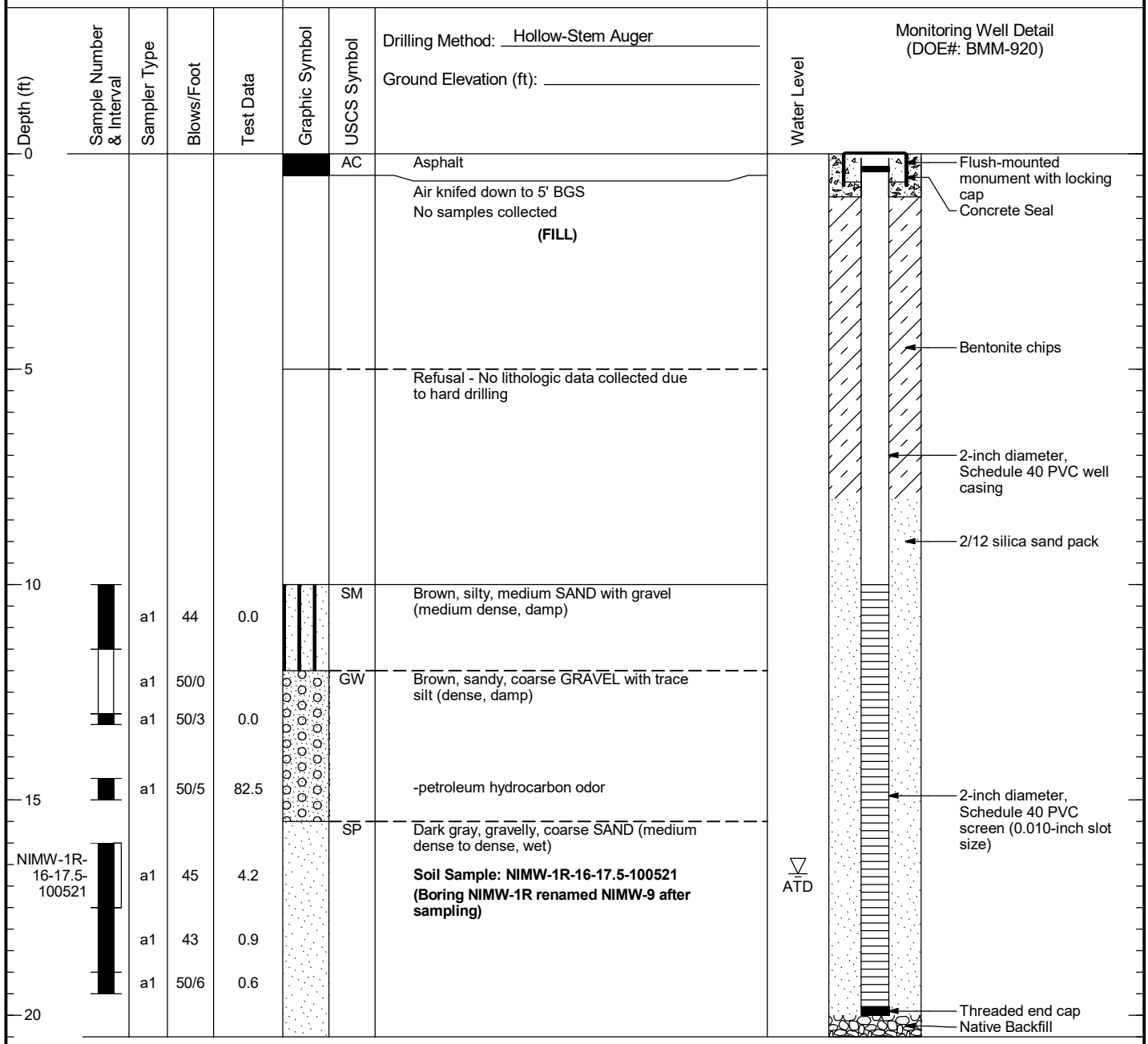
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Monitoring Well NIMW-7R	Figure A-8

NIMW-9



Boring Completed 10/05/21
Total Depth of Boring = 20.5 ft

Monitoring Well Completed 10/05/21
Total Depth of Monitoring Well = 20.0 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 1/4/22 N:\PROJECTS\1148010.010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Monitoring Well NIMW-9	Figure A-9

APPENDIX B

Supplemental Investigation Groundwater Monitoring Sample Collection Forms and Laboratory Analytical Report

NIMW-2

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil
Project Number: 1148010.010.012
Event: Baseline / MW Installs
Date/Time: 10/4/21 @ 17:05
Sample Number: NIMW-2-100421
Weather: 65-75°F, sunny, windy
Landau Representative: SAR

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or ~~NO~~) Damaged (~~YES~~ or NO) Describe:
DTW Before Purging (ft) 13.70 Time: 16:27 Flow through cell vol.
Begin Purge: Date/Time: 10/4/21 @ 1630 End Purge: Date/Time: 10/4/21 @ 1700 GW Meter No.(s) 9-Slope
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other Gallons Purged: ~2

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	**+/- 3%**	**+/- 3%**	**+/- 10%**	**+/- 0.1 units**	**+/- 10 mV**	**+/- 10%**	**<0.3 ft**	**>/= 1 flow through cell**	
1635	18.0	376.5	0.81	6.09	83.8	—	13.70	<0.50	
1640	18.2	368.2	1.04	6.19	875.4	—		<0.75	
1645	18.3	363.5	1.18	6.24	71.2	—			
1650	18.2	361.0	1.22	6.20	70.8	—		<1.00	
1655	18.2	361.2	1.23	6.21	70.7				

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): clear, colorless, no odor, no sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	18.3	360.7	1.27	6.20	71.0				
2	18.3	362.1	1.28	6.20	71.1				
3	18.3	361.1	1.30	6.20	71.2				
4	18.3	361.5	1.30	6.20	71.1				
Average:	18.3	361.4	1.30	6.20	71.1	—			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (~~TSS~~) (~~BOD~~) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F) WA ☐ OR ☐
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
3	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): N/A
Comments:
Signature: Date: 10/4/21

NIMW-3

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil | Project Number: 1148010.010.012
Event: Baseline/MW Install 2 | Date/Time: 10/4/21 @ 1615
Sample Number: NIMW-3-100421 | Weather: 65-75°F, Sunny, windy
Landau Representative: SAR

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or ~~NO~~) Damaged (~~YES~~ or NO) Describe:
DTW Before Purging (ft): 14.12 Time: 1519 Flow through cell vol. GW Meter No.(s): 9-Slope
Begin Purge: Date/Time: 10/4/21 @ 1523 End Purge: Date/Time: 10/4/21 @ ~~1542~~ 1605 Gallons Purged: 2.0
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	>/= 1 flow through cell	
1528	19.2	356.6	3.22	6.10	73.3	—	14.14	0.25	
1533	19.5	360.7	3.65	6.16	74.7	—	14.14	0.50	
1538	19.3	358.3	3.13	6.23	70.0	—	—	0.75	
1543	19.0	354.3	3.41	6.21	70.5	—	—	1.00	
1548	18.7	350.4	3.43	6.22	71.3				
1553	18.5	346.7	3.87	6.22	72.9				
1558	18.5	345.3	3.59	6.27	71.9				
1603	18.5	345.1	3.48	6.29	71.2				

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): Clear, colorless, no odor, no sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	18.5	347.1	3.39	6.29	71.4	—			
2	18.5	345.5	3.48	6.33	70.0				
3	18.5	345.0	3.40	6.33	69.4				
4	18.5	343.0	3.52	6.33	69.3				
Average:	18.5	345.7	3.45	6.33	70.0				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
13	
	others

Duplicate Sample No(s): N/A
Comments: D.O. Didn't fully stabilize
Signature: Date: 10/4/21

LANDAU ASSOCIATES

NIMW-4

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil
Project Number: 1148010.010.012
Event: Base Line/MW Install
Date/Time: 10/4/21 @ 1750
Sample Number: NIMW-4-100421
Weather: 60-65°F, Sunny but in Shade
Landau Representative: SAR

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or ~~NO~~) Damaged (~~YES~~ or NO) Describe: concrete close to top of casing
DTW Before Purging (ft) 11.48 Time: 1716 Flow through cell vol.
Begin Purge: Date/Time: 10/4/21 @1718 End Purge: Date/Time: 10/4/21 @ 1740 GW Meter No.(s) 9-Slope
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other Gallons Purged: ~2.0

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal) >/= 1 flow through cell	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1723	17.1	287.2	4.63	6.22	88.4	—	11.48	<0.25	
1728	17.1	286.1	4.32	6.24	83.8	—	11.48	<0.50	
1733	17.0	285.5	4.34	6.29	79.3	—	—	<0.75	
1738	17.0	284.6	4.30	6.33	76.8	—	—	<1.00	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☑ Pump/Pump Type peristaltic
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☒ ~~Dedicated~~
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ ~~Dedicated~~
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): Clear, colorless, no odor, no sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	17.0	284.7	4.39	6.34	76.5				
2	17.0	285.1	4.29	6.34	76.6				
3	17.0	284.5	4.25	6.34	76.4				
4	17.0	284.3	4.27	6.34	76.5				
Average:	17.0	284.7	4.30	6.34	76.5				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
3	
	others

Duplicate Sample No(s): N/A
Comments:
Signature: [signature] Date: 10/4/21

NIMW-5

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil | Project Number: 1148010.010.012
Event: Baseline/MW Installs | Date/Time: 10/4/21 @ 1455
Sample Number: NIMW-5-100421 | Weather: 65-75°F, Sunny
Landau Representative: SAR

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES ~~or NO~~) Damaged ~~(YES or NO)~~ Describe:
DTW Before Purging (ft): 12.77 Time: 1410 Flow through cell vol. GW Meter No.(s): 9-Slope
Begin Purge: Date/Time: 10/4/21 @ 1414 End Purge: Date/Time: 10/4/21 @ 1450 Gallons Purged: ~2.8
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	**+/- 3%**	**+/- 3%**	**+/- 10%**	**+/- 0.1 units**	**+/- 10 mV**	**+/- 10%**	**< 0.3 ft**	**>/= 1 flow through cell**	
1419	20.2	363.6	0.47	5.78	77.4	clear	12.77	~0.25	
1424	20.3	359.8	0.64	5.81	71.0	"	12.75	~0.5	
1429	20.3	355.5	0.73	5.86	67.2	"	—	~0.75	
1434	20.0	345.6	0.90	5.81	67.5	"	—	~1.00	Windy
1439	20.0	344.0	0.90	5.84	67.5	"	—	~1.25	
1444	19.9	341.2	0.89	5.79	69.5	"	—	~1.50	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): clear, colorless, no odor, no sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	20.0	340.0	0.88	5.82	68.6	—			
2	20.0	341.2	0.89	5.82	68.5				
3	20.0	341.4	0.90	5.83	68.2				
4	20.1	341.2	0.90	5.83	68.3				
Average:	20.0	341.0	0.90	5.83	68.4	—			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
3	
	others

Duplicate Sample No(s): N/A
Comments:
Signature: [signature] Date: 10/4/21

NIMW-8

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil | Project Number: 1148010.010.012
Event: Baseline/well installs | Date/Time: 10/4/21 @ 1345
Sample Number: NIMW-8-100421 | Weather: 65-75, Sunny
Landau Representative: SAR

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) | Damaged (YES or NO) | Describe: Xtra monument (Raised to grade)
DTW Before Purging (ft): 13.90 | Time: 1255 | Flow through cell vol. | GW Meter No.(s): 9-Slope
Begin Purge: Date/Time: 10/4/21 @ 1301 | End Purge: Date/Time: 10/4/21 @ 1342 | Gallons Purged: ~2
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	>/=1 flow through cell	
1306	19.0	1328	0.59	6.12	58.5	clear	14.06	<0.25	clear
1311	19.7	1134	1.32	6.11	52.6	"	13.91	<0.5	
1316	18.7	1033	1.65	6.10	48.8	"	—	<0.75	
1322	18.6	896	1.89	6.12	43.5	"	—	<1.00	
1327	18.9	827	1.98	6.13	34.1	"	—	<1.25	
1330	18.8	777	2.09	6.13	33.2	"	—	<1.25	
1335	18.8	754	2.12	6.14	31.5	"	—	<1.50	
1338	18.7	744	2.08	6.11	31.3	"	—	<1.75	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): clear w/ yellow particles (insects?), no odor, no sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	18.7	739	2.07	6.11	30.9				
2	18.7	736	2.07	6.11	30.7				
3	18.7	736	2.08	6.10	30.7				
4	18.6	735	2.09	6.11	30.6				
Average:	18.7	737	2.08	6.11	30.7				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☒ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☒ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
3	
	others

Duplicate Sample No(s): N/A
Comments: Xtra monument on old monument; conductivity didn't fully stabilize
Signature: [signature] Date: 10/4/21

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil
Project Number: 1148010.010.012
Event: Task 2 - Drilling
Date/Time: 10/5/21 @ 1425
Sample Number: HSB-1-100521
Weather: Overcast, Windy
Landau Representative: JAN

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Temp boring
DTW Before Purging (ft) 14.56 Time: 1337 Flow through cell vol.
Begin Purge: Date/Time: 10/5/21 @ 1341 End Purge: Date/Time: 10/5/21 @ 1422 GW Meter No.(s) 0
Purge water disposed to: ☐ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other Gallons Purged: 2

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits								>/= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1346	21.8	595	1.02	6.80	77.7	High	14.72		
1351	22.0	600	1.19	6.63	28.7	High	14.91		
1356	21.6	638	1.30	6.70	27.3	High	14.98		
1401	21.4	631	1.48	6.72	26.1	High	15.04		
1406	21.2	614	1.63	6.72	24.9	High	15.04		
1411	21.1	596	1.73	6.73	23.3	High	15.04		
1416	20.9	570	1.78	6.71	22.0	High-Med	15.04		
1421	20.8	553	1.85	6.70	20.9	Med	15.04		

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type Peri
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☒ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): Brown, High turb, slight odor, no sheen, silty.

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	20.8	551	1.84	6.70	20.8				
2	20.8	550	1.85	6.70	20.8				
3	20.8	548	1.84	6.70	20.8				
4	20.8	548	1.85	6.70	20.8				
Average:	20.8	549	1.84	6.70	20.8		15.04		

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☒ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☒ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
3	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 10/5/21

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil
Project Number: 148010.010.012
Event: Task 2 - Drilling
Date/Time: 10/5/21 @ 1620
Sample Number: HSB-2-100521
Weather: Overcast, windy
Landau Representative: JAN

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Temp Boring
DTW Before Purging (ft) 14.33 Time: 1534 Flow through cell vol.
Begin Purge: Date/Time: 10/5/21 @ 1535 End Purge: Date/Time: 10/5/21 @ 1616
GW Meter No.(s) 0
Gallons Purged: 2
Purge water disposed to: ☐ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	<0.3 ft	>/= 1 flow through cell	
1540	22.5	498.9	0.12	6.85	-47.9	High	14.74		
1545	22.5	511	0.06	6.79	-65.8	High	14.74		
1550	22.5	543	0.11	6.82	-71.6	High	14.74		
1555	22.4	639	0.26	6.77	-79.7	Med.			
1600	22.3	749	0.46	6.69	-73.8	Low			
1605	22.1	733	0.43	6.64	-80.9	Low			
1610	21.8	713	0.38	6.60	-88.7	Low			
1615	21.7	705	0.38	6.57	-93.8	Low			

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type Peri
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☒ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☒ Alconox Wash ☐ Tap Rinse ☒ DI Water ☐ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): No color, low turb, slight odor, no sheen.

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	21.7	703	0.39	6.58	-94.3				
2	21.7	703	0.39	6.58	-94.6				
3	21.7	703	0.40	6.58	-94.9				
4	21.7	703	0.39	6.58	-95.1				
Average:	21.7	703	0.39	6.58	-94.7	Low			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
3	
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 10/5/21

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil
Project Number: 148816.010.012
Event: Task 2 - Drilling
Date/Time: 10/6/21 @ 1130
Sample Number: HSB-3-100621
Weather: Sunny
Landau Representative: JAN

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Temp Boring
DTW Before Purging (ft) 15.85 Time: 1041 Flow through cell vol. GW Meter No.(s) 0
Begin Purge: Date/Time: 10/6/21 @ 1042 End Purge: Date/Time: 10/6/21 @ Gallons Purged: 2.0
Purge water disposed to: 55-gal Drum Storage Tank Ground Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	>/= 1 flow through cell	
1047	21.9	449.4	0.18	7.02	-101.5	High	15.76		
1052	21.3	444.5	0.10	7.00	-122.0	High	15.79		
1057	21.6	462.8	0.05	7.02	-135.7	High	15.79		
1102	21.8	514	0.12	6.98	-139.7	High	15.79		
1107	21.8	745	0.41	6.70	-117.5	med.			
1112	21.6	747	0.43	6.63	-115.3	Low-mod.			
1117	21.4	787	0.52	6.60	-115.0	low			
1122	21.3	788	0.56	6.58	-115.9	Low			

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type Peri
Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
(By Numerical Order) Other
Sample Description (color, turbidity, odor, sheen, etc.): Tanish, Low-mod. Turb, slight odor, No sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	21.3	789	0.55	6.55	-116.0				
2	21.3	790	0.57	6.58	-116.0				
3	21.2	789	0.57	6.57	-116.0				
4	21.2	788	0.56	6.59	-116.2				
Average:	21.2	789	0.57	6.58	-116.0				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
4	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
2	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
6	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): DUP-GW-100621
Comments:
Signature: Date: 10/6

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tyler Oil
Project Number: 1148010.010.012
Event: Tank 2 - Drilling
Date/Time: 10/6/21 @ 900
Sample Number: DUP-GW-100621
Weather: Sunny
Landau Representative: TAN

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe:
DTW Before Purging (ft) Time: Flow through cell vol. GW Meter No.(s)
Begin Purge: Date/Time: End Purge: Date/Time: Gallons Purged:
Purge water disposed to: ☐ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>/= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
				DUPLICATE					

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type Peri
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☒ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☒ Alconox Wash ☐ Tap Rinse ☒ DI Water ☐ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): Tanish, low - med turb, slight odor, No sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	21.1	788	0.54	6.58	-116.2				
2	21.1	788	0.55	6.57	-116.2				
3	21.1	788	0.56	6.57	-116.1				
4	21.1	790	0.56	6.57	-116.0				
Average:	21.1	788	0.55	6.57	-116.1				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments: Duplicate to HSB-3-100621
Signature: Date: 10/6/21

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil | Project Number: 1148010.010.012
Event: Task 2 - Drilling | Date/Time: 10/6/21 @ 1620
Sample Number: NIMW-PR-100621 | Weather: Sunny
Landau Representative: JAN

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) | Damaged (YES or NO) | Describe: Flushmount
DTW Before Purging (ft): 13.80 | Time: 1558 | Flow through cell vol. | GW Meter No.(s): O
Begin Purge: Date/Time: 10/6/21 @ 1559 | End Purge: Date/Time: 10/6/21 @ 1615 | Gallons Purged: 1
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	>/= 1 flow through cell	
1604	18.8	488.1	2.11	6.71	-82.3		14.09		
1609	18.8	492.4	2.07	6.68	-85.0		14.14		
1614	18.8	492.5	2.01	6.66	-86.5		14.18		
~~1619~~									

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type Peri
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☒ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): No color, Low-Mod Turb, slight odor, No sheen

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	18.8	493.3	~~2.02~~	6.66	-86.5				
2	18.8	493.3	2.01	6.66	-86.5				
3	18.8	493.7	1.99	6.66	-86.5				
4	18.8	492.8	1.98	6.66	-86.5				
Average:	18.8	493.5	2.00	6.66	-86.5				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
3	
	others

Duplicate Sample No(s):
Comments:
Signature: | Date: 10/6/21

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tyler GS1 | Project Number: 148010.010.012
Event: Task 2 - Drilling | Date/Time: 10/6/21 @ 1505
Sample Number: NIMW-GR-100621 | Weather: Sunny
Landau Representative: JAN

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flushmount
DTW Before Purging (ft) 13.66 Time: 1443 Flow through cell vol. GW Meter No.(s) 0
Begin Purge: Date/Time: 10/6/21 @ 1447 End Purge: Date/Time: 10/6/21 @ Gallons Purged: 1
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	>/= 1 flow through cell	
1452	19.1	434.5	1.87	6.55	-59.1		14.32		
1457	18.9	434.0	1.92	6.51	-59.0		14.45		
1502	19.1	436.6	1.88	6.52	-66.7		14.59		

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type Peri
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☒ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): No color, Low Turb, NO/NS.

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	19.0	436.8	1.84	6.50	-67.4				
2	19.0	436.7	1.93	6.51	-67.6				
3	19.1	436.6	1.94	6.51	-67.7				
4	19.1	435.9	1.87	6.51	-68.0				
Average:	19.0	436.5	1.89	6.51	-67.7				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ☐ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
3	
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 10/6/21

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: Tiger Oil
Project Number: 1148010.010.012
Event: Task 2 - Drilling
Date/Time: 10/6/21 @ 1555
Sample Number: NIMW-7R-100621
Weather: Sunny
Landau Representative: JAN

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flushmount
DTW Before Purging (ft) 14.03 Time: 1514 Flow through cell vol. GW Meter No.(s) 0
Begin Purge: Date/Time: 10/6/21 @ 1515 End Purge: Date/Time: 10/6/21 @ 1551 Gallons Purged: 2
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	>/= 1 flow through cell	
1520	18.5	679	1.42	6.62	-86.2		14.19		
1525	18.1	607	1.99	6.57	-85.1		14.19		
1530	18.0	554	2.47	6.55	-79.1		14.19		
1535	17.9	521	2.64	6.55	-76.1				
1540	17.9	506	2.60	6.56	-75.6				
1545	17.9	498.1	2.54	6.55	-74.5				
1550	17.8	505	2.54	6.53	-74.3				

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type Peri
Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☒ Polyethylene ☐ Other ☒ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
(By Numerical Order) ☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): No color, Low turb, NO/NS.

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1	17.8	506	2.65	6.53	-74.5				
2	17.8	507	~~2.65~~ 2.63	6.53	-74.6				
3	17.8	508	2.56	6.53	-74.8				
4	17.8	509	2.56	6.53	-75.0				
Average:	17.8	507	2.60	6.53	-74.7				

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-G) (BTEX) WA ☐ OR ☐
1	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
3	
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 10/6/21

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins TestAmerica, Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-16086-1
Client Project/Site: Tiger Oil/1148010.010.012
Revision: 1

For:
Landau & Associates, Inc.
10 North Post Street, Suite 218
Spokane, Washington 99201

Attn: Shane Kostka

Randee Arrington

Authorized for release by:
10/26/2021 11:36:32 AM

Randee Arrington, Lab Director
(509)924-9200
Randee.Arrington@Eurofinset.com

LINKS

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

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

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Job ID: 590-16086-1

Laboratory: Eurofins TestAmerica, Spokane

Narrative

Revision
The report being provided is a revision of the original report sent on 10/22/2021. The report (revision 1) is being revised due to: Client sample IDs were revised per the client's request..

Receipt
The samples were received on 10/8/2021 8:55 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS VOA
Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 590-33521.

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit: (MB 590-33556/1-A). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: Surrogate recovery for the following sample was outside control limits: NIMW-7R-14.5-16-100421 (590-16086-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit. Client sample was ND for the affected analytes, therefore the data was reported. (LCS 590-33556/2-A)

Method NWTPH-Gx: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 590-33520.

Method NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 590-33509 recovered above the upper control limit for Gasoline. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: NIMW-5-100421 (590-16086-3), NIMW-3-100421 (590-16086-5), NIMW-2-100421 (590-16086-6), NIMW-4-100421 (590-16086-7), RB-55-100521 (590-16086-10) and (CCV 590-33509/4).

Method NWTPH-Gx: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 590-33509 recovered outside control limits for the following analytes: Gasoline. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

GC Semi VOA
Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap as well as heavily weathered diesel and/or biogenic interference in the following sample: NINW-8-100421 (590-16086-2).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap in the following samples: HSB-1-100521 (590-16086-11), HSB-2-100521 (590-16086-13), HSB-3-100621 (590-16086-15), DUP-GW-100621 (590-16086-17), NIMW-6R-100621 (590-16086-22), NIMW-7R-100621 (590-16086-23) and NIMW-1R-100621 (590-16086-24).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to a heavy gas/light diesel range component in the following samples: NIMW-7R-14.5-16-100421 (590-16086-1), NIMW-6R-14.5-15-100421 (590-16086-4), HSB-1-15.5-17-100521 (590-16086-9), HSB-3-13.5-14.5-100621 (590-16086-14) and DUP-5-100621 (590-16086-16).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to oil overlap in the following sample: WASTE-100621 (590-16086-25).

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

Metals
Method 6010D: The low level initial calibration verification (ICVL) associated with batch 590-33528 recovered above the upper control limit

Job ID: 590-16086-1 (Continued)

Laboratory: Eurofins TestAmerica, Spokane (Continued)

for Chromium. The samples associated with this ICV were either 10x or non-detects for the affected analytes; therefore, the data have been reported.

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

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

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

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

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.

Glossary

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

Sample Summary

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010.010.012

Job ID: 590-16086-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-16086-1	N1MW-7R-14.5-16-100421	Solid	10/04/21 12:30	10/08/21 08:55
590-16086-2	N1MW-8-100421	Water	10/04/21 13:45	10/08/21 08:55
590-16086-3	N1MW-5-100421	Water	10/04/21 14:55	10/08/21 08:55
590-16086-4	N1MW-6R-14.5-15-100421	Solid	10/04/21 15:30	10/08/21 08:55
590-16086-5	N1MW-3-100421	Water	10/04/21 16:15	10/08/21 08:55
590-16086-6	N1MW-2-100421	Water	10/04/21 17:05	10/08/21 08:55
590-16086-7	N1MW-4-100421	Water	10/04/21 17:50	10/08/21 08:55
590-16086-8	N1MW-1R-16-17.5-100521	Solid	10/05/21 09:45	10/08/21 08:55
590-16086-9	HSB-1-15.5-17-100521	Solid	10/05/21 13:00	10/08/21 08:55
590-16086-10	RB-55-100521	Water	10/05/21 13:20	10/08/21 08:55
590-16086-11	HSB-1-100521	Water	10/05/21 14:25	10/08/21 08:55
590-16086-12	HSB-2-15.5-16-100521	Solid	10/05/21 14:50	10/08/21 08:55
590-16086-13	HSB-2-100521	Water	10/05/21 16:20	10/08/21 08:55
590-16086-14	HSB-3-13.5-14.5-100621	Solid	10/06/21 10:00	10/08/21 08:55
590-16086-15	HSB-3-100621	Water	10/06/21 11:30	10/08/21 08:55
590-16086-16	DUP-5-100621	Solid	10/06/21 08:30	10/08/21 08:55
590-16086-17	DUP-GW-100621	Water	10/06/21 09:00	10/08/21 08:55
590-16086-18	HSB-4-7-8-100621	Solid	10/06/21 11:50	10/08/21 08:55
590-16086-19	HSB-4-11-12-100621	Solid	10/06/21 12:15	10/08/21 08:55
590-16086-20	HSB-5-7.5-9-100621	Solid	10/06/21 14:20	10/08/21 08:55
590-16086-22	N1MW-6R-100621	Water	10/06/21 15:05	10/08/21 08:55
590-16086-23	N1MW-7R-100621	Water	10/06/21 15:55	10/08/21 08:55
590-16086-24	N1MW-1R-100621	Water	10/06/21 16:20	10/08/21 08:55
590-16086-25	WASTE-100621	Solid	10/06/21 17:00	10/08/21 08:55
590-16086-26	Trip Blank	Solid	10/06/21 08:00	10/08/21 08:55
590-16086-27	Trip Blank	Water	10/06/21 08:00	10/08/21 08:55

Chain-of-Custody Record

LANDAU ASSOCIATES

North Seattle (206) 631-8660 | Tacoma (253) 926-2493 | Olympia (360) 791-3178
Spokane (509) 327-9737 | Portland (503) 542-1080

Date 10/4/21 Page 1 of 2

Turnaround Time: Standard X Accelerated

Project Name: Tiger Oil
Project No.: 1148010.010.012
Project Location/Event: Task 2 - Drilling Exploration
Sampler's Name: Jered Newcomb
Project Contact: Jeffrey Menken
Send Results To: Jeffrey Menken, Shane Kostka

Special Handling Requirements:
Shipment Method: Drop off
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	NWTPH-Dx	NWTPH-Gx	BTEX - 8260D	Observations/Comments
NMW-7R-14.5-16-100421	10/4/21	1230	Soil	3	X	X	X	
NMW-8-100421		1345	AQ	3	X	X	X	
NMW-5-100421		1455	AQ	3	X	X	X	
NMW-6R-14.5-15-100421		1530	Soil	3	X	X	X	
NMW-3-100421		1615	AQ	3	X	X	X	
NMW-2-100421		1705	AQ	3	X	X	X	
NMW-4-100421	↓	1750	AQ	3	X	X	X	
~~NMW-1R-100521~~								
MW-1R-16-17.5-100521	10/5/21	945	Soil	3	X	X	X	
HSB-1-15.5-17-100521		1300	Soil	3	X	X	X	
RB-5-100521		1320	AQ	3	X	X	X	
HSB-1-100521		1425	AQ	3	X	X	X	
HSB-2-15.5-16-100521		1450	Soil	3	X	X	X	
HSB-2-100521	↓	1620	AQ	3	X	X	X	
HSB-3-13.5-14.5-100621	10/6/21	1000	Soil	3	X	X	X	
HSB-3-100621		1130	AQ	3	X	X	X	
DUP-5-100621		830	Soil	3	X	X	X	
DUP-GW-100621		900	AQ	3	X	X	X	
HSB-4-7-8-100621		1150	Soil	3	X	X	X	
HSB-4-11-12-100621		1215	Soil	3	X	X	X	
HSB-5-7.5-9-100621		1420	Soil	3	X	X	X	
HSB-5-13.5-14.5-100621*	↓	1430	Soil	3	X	X	X	

Testing Parameters

Allow water samples to settle, collect aliquot from clear portion ☐
NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
Dissolved metal samples were field filtered

Other * Place sample on hold for analysis

590-16086 Chain of Custody

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Jered Newcomb	Printed Name Madison	Printed Name	Printed Name
Company LAE	Company ETA SPO	Company	Company
Date 10/8/21 Time 8:55	Date 10/8/21 Time 8:55	Date Time	Date Time

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

2.5 2.6 1R006

10/2018

10/26/2021 (Rev. 1)

Chain-of-Custody Record

LANDAU ASSOCIATES

North Seattle (206) 631-8660 | Spokane (509) 327-9737
Tacoma (253) 926-2493 | Portland (503) 542-1080
Olympia (360) 791-3178

Date 10/4/21
Page 2 of 2

Turnaround Time: Standard X | Accelerated

Project Name: Tiger Oil
Project No.: 1148010.010.012
Project Location/Event: Task 2 - Drilling Exploration
Sampler's Name: Jered Newcomb
Project Contact: Jeffrey Menken
Send Results To: Jeffrey Menken, Shane Kastka

Special Handling Requirements:
Shipment Method: Dropoff
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	NWTPH-Dx	NWTPH-Gx	BTEX - 8260D	RCRA Metals	Observations/Comments
NIMW-6R-100621	10/6/21	1505	AQ	3	X	X	X		
NIMW-7R-100621	↓	1555	AQ	3	X	X	X		
NIMW-1R-100621	↓	1620	AQ	3	X	X	X		
WASTE-100621	10/6/21	1700	Soil	4	X	X	X	X	
Trip Blanks	—	—	Soil	1		X	X		
Trip Blank	—	—	AQ	1		X	X		

Testing Parameters

__ Allow water samples to settle, collect aliquot from clear portion ☐
__ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
__ Dissolved metal samples were field filtered

Other

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name: Jered Newcomb	Printed Name: Madison	Printed Name	Printed Name
Company: LAI	Company: ESA SBO	Company	Company
Date: 10/8/21 Time: 8:55	Date: 10/11/21 Time: 8:55	Date Time	Date Time

WHITE COPY - Laboratory | YELLOW COPY - Project File | PINK COPY - Client Representative

10/2018

2.5 2.6 1 Rock

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-16086-1

Login Number: 16086
List Number: 1
Creator: Vaughan, Madison 1

List Source: Eurofins TestAmerica, Spokane

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

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

Client Sample ID: N1MW-7R-14.5-16-100421
Date Collected: 10/04/21 12:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-1
Matrix: Solid
Percent Solids: 91.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.039	0.020	mg/Kg	☼	10/14/21 11:11	10/14/21 13:03	1
Ethylbenzene	**110**		20	3.2	mg/Kg	☼	10/14/21 11:11	10/18/21 12:37	100
m,p-Xylene	**550**		79	5.6	mg/Kg	☼	10/14/21 11:11	10/18/21 12:37	100
o-Xylene	**160**		39	4.5	mg/Kg	☼	10/14/21 11:11	10/18/21 12:37	100
Toluene	**1.6**		0.20	0.026	mg/Kg	☼	10/14/21 11:11	10/14/21 13:03	1
Xylenes, Total	**710**		120	10	mg/Kg	☼	10/14/21 11:11	10/18/21 12:37	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 129*	*10/14/21 11:11*	*10/14/21 13:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 129*	*10/14/21 11:11*	*10/18/21 12:37*	*100*
4-Bromofluorobenzene (Surr)	*71*	*S1-*	*76 - 122*	*10/14/21 11:11*	*10/14/21 13:03*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 122*	*10/14/21 11:11*	*10/18/21 12:37*	*100*
Dibromofluoromethane (Surr)	*92*		*80 - 120*	*10/14/21 11:11*	*10/14/21 13:03*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*	*10/14/21 11:11*	*10/18/21 12:37*	*100*
Toluene-d8 (Surr)	*95*		*80 - 120*	*10/14/21 11:11*	*10/14/21 13:03*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*	*10/14/21 11:11*	*10/18/21 12:37*	*100*

Client Sample ID: N1MW-8-100421
Date Collected: 10/04/21 13:45
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**8.1**		0.40		ug/L			10/12/21 11:56	1
Ethylbenzene	**7.2**		1.0		ug/L			10/12/21 11:56	1
m,p-Xylene	**23**		2.0		ug/L			10/12/21 11:56	1
o-Xylene	**14**		1.0		ug/L			10/12/21 11:56	1
Toluene	**2.5**		1.0		ug/L			10/12/21 11:56	1
Xylenes, Total	**37**		3.0		ug/L			10/12/21 11:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*		*10/12/21 01:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*10/12/21 11:56*	*1*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*		*10/12/21 01:25*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*10/12/21 11:56*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/12/21 01:25*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*10/12/21 11:56*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/21 01:25*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/12/21 11:56*	*1*

Client Sample ID: N1MW-5-100421
Date Collected: 10/04/21 14:55
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/12/21 02:06	1
Ethylbenzene	ND		1.0		ug/L			10/12/21 02:06	1
m,p-Xylene	ND		2.0		ug/L			10/12/21 02:06	1
o-Xylene	ND		1.0		ug/L			10/12/21 02:06	1
Toluene	ND		1.0		ug/L			10/12/21 02:06	1
Xylenes, Total	ND		3.0		ug/L			10/12/21 02:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*10/12/21 02:06*	*1*

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

Client Sample ID: N1MW-5-100421
Date Collected: 10/04/21 14:55
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-3
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*10/12/21 02:06*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/12/21 02:06*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/12/21 02:06*	*1*

Client Sample ID: N1MW-6R-14.5-15-100421
Date Collected: 10/04/21 15:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-4
Matrix: Solid
Percent Solids: 91.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.042	0.021	mg/Kg	☼	10/14/21 11:11	10/14/21 13:44	1
Ethylbenzene	**3.4**		0.21	0.034	mg/Kg	☼	10/14/21 11:11	10/14/21 13:44	1
m,p-Xylene	**12**		8.4	0.60	mg/Kg	☼	10/14/21 11:11	10/18/21 12:58	10
o-Xylene	**0.43**		0.42	0.048	mg/Kg	☼	10/14/21 11:11	10/14/21 13:44	1
Toluene	ND		0.21	0.028	mg/Kg	☼	10/14/21 11:11	10/14/21 13:44	1
Xylenes, Total	**12**	**J**	13	1.1	mg/Kg	☼	10/14/21 11:11	10/18/21 12:58	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 129*	*10/14/21 11:11*	*10/14/21 13:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 129*	*10/14/21 11:11*	*10/18/21 12:58*	*10*
4-Bromofluorobenzene (Surr)	*92*		*76 - 122*	*10/14/21 11:11*	*10/14/21 13:44*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 122*	*10/14/21 11:11*	*10/18/21 12:58*	*10*
Dibromofluoromethane (Surr)	*89*		*80 - 120*	*10/14/21 11:11*	*10/14/21 13:44*	*1*
Dibromofluoromethane (Surr)	*89*		*80 - 120*	*10/14/21 11:11*	*10/18/21 12:58*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*	*10/14/21 11:11*	*10/14/21 13:44*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*	*10/14/21 11:11*	*10/18/21 12:58*	*10*

Client Sample ID: N1MW-3-100421
Date Collected: 10/04/21 16:15
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/12/21 02:27	1
Ethylbenzene	ND		1.0		ug/L			10/12/21 02:27	1
m,p-Xylene	ND		2.0		ug/L			10/12/21 02:27	1
o-Xylene	ND		1.0		ug/L			10/12/21 02:27	1
Toluene	ND		1.0		ug/L			10/12/21 02:27	1
Xylenes, Total	ND		3.0		ug/L			10/12/21 02:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*10/12/21 02:27*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*10/12/21 02:27*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*10/12/21 02:27*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/12/21 02:27*	*1*

Client Sample ID: N1MW-2-100421
Date Collected: 10/04/21 17:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/12/21 02:47	1
Ethylbenzene	ND		1.0		ug/L			10/12/21 02:47	1
m,p-Xylene	ND		2.0		ug/L			10/12/21 02:47	1
o-Xylene	ND		1.0		ug/L			10/12/21 02:47	1

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

Client Sample ID: N1MW-2-100421
Date Collected: 10/04/21 17:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0		ug/L			10/12/21 02:47	1
Xylenes, Total	ND		3.0		ug/L			10/12/21 02:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*10/12/21 02:47*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/12/21 02:47*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/12/21 02:47*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*10/12/21 02:47*	*1*

Client Sample ID: N1MW-4-100421
Date Collected: 10/04/21 17:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/12/21 03:08	1
Ethylbenzene	ND		1.0		ug/L			10/12/21 03:08	1
m,p-Xylene	ND		2.0		ug/L			10/12/21 03:08	1
o-Xylene	ND		1.0		ug/L			10/12/21 03:08	1
Toluene	ND		1.0		ug/L			10/12/21 03:08	1
Xylenes, Total	ND		3.0		ug/L			10/12/21 03:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*10/12/21 03:08*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 03:08*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/12/21 03:08*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/12/21 03:08*	*1*

Client Sample ID: N1MW-1R-16-17.5-100521
Date Collected: 10/05/21 09:45
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-8
Matrix: Solid
Percent Solids: 90.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.039	0.019	mg/Kg	☼	10/14/21 11:11	10/14/21 15:08	1
Ethylbenzene	**2.1**		0.19	0.031	mg/Kg	☼	10/14/21 11:11	10/14/21 15:08	1
m,p-Xylene	**7.7**		0.77	0.056	mg/Kg	☼	10/14/21 11:11	10/14/21 15:08	1
o-Xylene	**2.6**		0.39	0.045	mg/Kg	☼	10/14/21 11:11	10/14/21 15:08	1
Toluene	**0.37**		0.19	0.026	mg/Kg	☼	10/14/21 11:11	10/14/21 15:08	1
Xylenes, Total	**10**		1.2	0.10	mg/Kg	☼	10/14/21 11:11	10/14/21 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 129*	*10/14/21 11:11*	*10/14/21 15:08*	*1*
4-Bromofluorobenzene (Surr)	*104*		*76 - 122*	*10/14/21 11:11*	*10/14/21 15:08*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*	*10/14/21 11:11*	*10/14/21 15:08*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*	*10/14/21 11:11*	*10/14/21 15:08*	*1*

Client Sample ID: HSB-1-15.5-17-100521
Date Collected: 10/05/21 13:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-9
Matrix: Solid
Percent Solids: 95.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.047	0.024	mg/Kg	☼	10/14/21 11:11	10/14/21 15:28	1
Ethylbenzene	**33**		2.4	0.38	mg/Kg	☼	10/14/21 11:11	10/18/21 13:19	10
m,p-Xylene	**180**		95	6.8	mg/Kg	☼	10/14/21 11:11	10/18/21 14:43	100
o-Xylene	**57**		47	5.4	mg/Kg	☼	10/14/21 11:11	10/18/21 14:43	100

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

Client Sample ID: HSB-1-15.5-17-100521
Date Collected: 10/05/21 13:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-9
Matrix: Solid
Percent Solids: 95.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**9.3**		0.24	0.031	mg/Kg	☼	10/14/21 11:11	10/14/21 15:28	1
Xylenes, Total	**230**		140	12	mg/Kg	☼	10/14/21 11:11	10/18/21 14:43	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 129*	*10/14/21 11:11*	*10/14/21 15:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 129*	*10/14/21 11:11*	*10/18/21 13:19*	*10*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 129*	*10/14/21 11:11*	*10/18/21 14:43*	*100*
4-Bromofluorobenzene (Surr)	*97*		*76 - 122*	*10/14/21 11:11*	*10/14/21 15:28*	*1*
4-Bromofluorobenzene (Surr)	*105*		*76 - 122*	*10/14/21 11:11*	*10/18/21 13:19*	*10*
4-Bromofluorobenzene (Surr)	*94*		*76 - 122*	*10/14/21 11:11*	*10/18/21 14:43*	*100*
Dibromofluoromethane (Surr)	*83*		*80 - 120*	*10/14/21 11:11*	*10/14/21 15:28*	*1*
Dibromofluoromethane (Surr)	*86*		*80 - 120*	*10/14/21 11:11*	*10/18/21 13:19*	*10*
Dibromofluoromethane (Surr)	*90*		*80 - 120*	*10/14/21 11:11*	*10/18/21 14:43*	*100*
Toluene-d8 (Surr)	*102*		*80 - 120*	*10/14/21 11:11*	*10/14/21 15:28*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*	*10/14/21 11:11*	*10/18/21 13:19*	*10*
Toluene-d8 (Surr)	*110*		*80 - 120*	*10/14/21 11:11*	*10/18/21 14:43*	*100*

Client Sample ID: RB-55-100521
Date Collected: 10/05/21 13:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/12/21 03:28	1
Ethylbenzene	ND		1.0		ug/L			10/12/21 03:28	1
m,p-Xylene	ND		2.0		ug/L			10/12/21 03:28	1
o-Xylene	ND		1.0		ug/L			10/12/21 03:28	1
Toluene	ND		1.0		ug/L			10/12/21 03:28	1
Xylenes, Total	ND		3.0		ug/L			10/12/21 03:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*10/12/21 03:28*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/12/21 03:28*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/12/21 03:28*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/12/21 03:28*	*1*

Client Sample ID: HSB-1-100521
Date Collected: 10/05/21 14:25
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			10/12/21 03:49	5
Ethylbenzene	**940**		10		ug/L			10/12/21 12:17	10
m,p-Xylene	**380**		20		ug/L			10/12/21 16:29	10
o-Xylene	**150**		10		ug/L			10/12/21 16:29	10
Toluene	**550**		10		ug/L			10/12/21 12:17	10
Xylenes, Total	**530**		30		ug/L			10/12/21 16:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*10/12/21 03:49*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*10/12/21 12:17*	*10*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*10/12/21 16:29*	*10*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 03:49*	*5*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 12:17*	*10*

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

Client Sample ID: HSB-1-100521
Date Collected: 10/05/21 14:25
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-11
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 16:29*	*10*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/12/21 03:49*	*5*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*10/12/21 12:17*	*10*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*10/12/21 16:29*	*10*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/12/21 03:49*	*5*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/21 12:17*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/12/21 16:29*	*10*

Client Sample ID: HSB-2-15.5-16-100521
Date Collected: 10/05/21 14:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-12
Matrix: Solid
Percent Solids: 95.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.040	0.020	mg/Kg	☼	10/14/21 11:11	10/14/21 15:49	1
Ethylbenzene	**0.035**	**J**	0.20	0.032	mg/Kg	☼	10/14/21 11:11	10/14/21 15:49	1
m,p-Xylene	**0.14**	**J**	0.79	0.057	mg/Kg	☼	10/14/21 11:11	10/14/21 15:49	1
o-Xylene	**0.052**	**J**	0.40	0.045	mg/Kg	☼	10/14/21 11:11	10/14/21 15:49	1
Toluene	**0.030**	**J**	0.20	0.026	mg/Kg	☼	10/14/21 11:11	10/14/21 15:49	1
Xylenes, Total	**0.19**	**J**	1.2	0.10	mg/Kg	☼	10/14/21 11:11	10/14/21 15:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 129*	*10/14/21 11:11*	*10/14/21 15:49*	*1*
4-Bromofluorobenzene (Surr)	*104*		*76 - 122*	*10/14/21 11:11*	*10/14/21 15:49*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*	*10/14/21 11:11*	*10/14/21 15:49*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*	*10/14/21 11:11*	*10/14/21 15:49*	*1*

Client Sample ID: HSB-2-100521
Date Collected: 10/05/21 16:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**9.2**		0.40		ug/L			10/12/21 04:09	1
Ethylbenzene	**2900**		100		ug/L			10/12/21 12:59	100
m,p-Xylene	**8700**		200		ug/L			10/12/21 12:59	100
o-Xylene	**3600**		100		ug/L			10/12/21 12:59	100
Toluene	**180**		100		ug/L			10/12/21 12:59	100
Xylenes, Total	**12000**		300		ug/L			10/12/21 12:59	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*10/12/21 04:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*10/12/21 12:59*	*100*
4-Bromofluorobenzene (Surr)	*110*		*80 - 120*		*10/12/21 04:09*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 12:59*	*100*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*10/12/21 04:09*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*10/12/21 12:59*	*100*
Toluene-d8 (Surr)	*109*		*80 - 120*		*10/12/21 04:09*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/21 12:59*	*100*

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

Client Sample ID: HSB-3-13.5-14.5-100621
Date Collected: 10/06/21 10:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-14
Matrix: Solid
Percent Solids: 93.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.037	0.019	mg/Kg	☼	10/14/21 11:11	10/14/21 16:10	1
Ethylbenzene	**3.2**		0.19	0.030	mg/Kg	☼	10/14/21 11:11	10/14/21 16:10	1
m,p-Xylene	**11**		7.4	0.53	mg/Kg	☼	10/14/21 11:11	10/18/21 13:40	10
o-Xylene	**3.6**		0.37	0.043	mg/Kg	☼	10/14/21 11:11	10/14/21 16:10	1
Toluene	ND		0.19	0.025	mg/Kg	☼	10/14/21 11:11	10/14/21 16:10	1
Xylenes, Total	**15**		11	0.96	mg/Kg	☼	10/14/21 11:11	10/18/21 13:40	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 129*	*10/14/21 11:11*	*10/14/21 16:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 129*	*10/14/21 11:11*	*10/18/21 13:40*	*10*
4-Bromofluorobenzene (Surr)	*91*		*76 - 122*	*10/14/21 11:11*	*10/14/21 16:10*	*1*
4-Bromofluorobenzene (Surr)	*105*		*76 - 122*	*10/14/21 11:11*	*10/18/21 13:40*	*10*
Dibromofluoromethane (Surr)	*103*		*80 - 120*	*10/14/21 11:11*	*10/14/21 16:10*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*10/14/21 11:11*	*10/18/21 13:40*	*10*
Toluene-d8 (Surr)	*105*		*80 - 120*	*10/14/21 11:11*	*10/14/21 16:10*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*	*10/14/21 11:11*	*10/18/21 13:40*	*10*

Client Sample ID: HSB-3-100621
Date Collected: 10/06/21 11:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**4.1**		0.40		ug/L			10/12/21 04:30	1
Ethylbenzene	**1600**		100		ug/L			10/12/21 13:41	100
m,p-Xylene	**4500**		200		ug/L			10/12/21 13:41	100
o-Xylene	**1800**		100		ug/L			10/12/21 13:41	100
Toluene	**22**		1.0		ug/L			10/12/21 04:30	1
Xylenes, Total	**6300**		300		ug/L			10/12/21 13:41	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*10/12/21 04:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*10/12/21 13:20*	*10*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*10/12/21 13:41*	*100*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/12/21 04:30*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 13:20*	*10*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*10/12/21 13:41*	*100*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*10/12/21 04:30*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*10/12/21 13:20*	*10*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*10/12/21 13:41*	*100*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/12/21 04:30*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/12/21 13:20*	*10*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/12/21 13:41*	*100*

Client Sample ID: DUP-5-100621
Date Collected: 10/06/21 08:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-16
Matrix: Solid
Percent Solids: 92.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.057	0.028	mg/Kg	☼	10/14/21 11:11	10/14/21 16:31	1
Ethylbenzene	**0.090**	**J**	0.28	0.046	mg/Kg	☼	10/14/21 11:11	10/14/21 16:31	1
m,p-Xylene	**0.32**	**J**	1.1	0.081	mg/Kg	☼	10/14/21 11:11	10/14/21 16:31	1
o-Xylene	**0.13**	**J**	0.57	0.065	mg/Kg	☼	10/14/21 11:11	10/14/21 16:31	1

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

Client Sample ID: DUP-5-100621
Date Collected: 10/06/21 08:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-16
Matrix: Solid
Percent Solids: 92.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		0.28	0.038	mg/Kg	☼	10/14/21 11:11	10/14/21 16:31	1
Xylenes, Total	**0.45**	**J**	1.7	0.15	mg/Kg	☼	10/14/21 11:11	10/14/21 16:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 129*	*10/14/21 11:11*	*10/14/21 16:31*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 122*	*10/14/21 11:11*	*10/14/21 16:31*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*	*10/14/21 11:11*	*10/14/21 16:31*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*	*10/14/21 11:11*	*10/14/21 16:31*	*1*

Client Sample ID: DUP-GW-100621
Date Collected: 10/06/21 09:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**4.0**		0.40		ug/L			10/12/21 04:51	1
Ethylbenzene	**1500**		100		ug/L			10/12/21 14:02	100
m,p-Xylene	**4300**		200		ug/L			10/12/21 14:02	100
o-Xylene	**1700**		100		ug/L			10/12/21 14:02	100
Toluene	**22**		1.0		ug/L			10/12/21 04:51	1
Xylenes, Total	**6000**		300		ug/L			10/12/21 14:02	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*10/12/21 04:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*10/12/21 14:02*	*100*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 04:51*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 14:02*	*100*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/12/21 04:51*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*10/12/21 14:02*	*100*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/12/21 04:51*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/12/21 14:02*	*100*

Client Sample ID: HSB-4-7-8-100621
Date Collected: 10/06/21 11:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-18
Matrix: Solid
Percent Solids: 82.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.049	0.025	mg/Kg	☼	10/14/21 11:11	10/14/21 16:52	1
Ethylbenzene	ND		0.25	0.040	mg/Kg	☼	10/14/21 11:11	10/14/21 16:52	1
m,p-Xylene	ND		0.99	0.071	mg/Kg	☼	10/14/21 11:11	10/14/21 16:52	1
o-Xylene	ND		0.49	0.057	mg/Kg	☼	10/14/21 11:11	10/14/21 16:52	1
Toluene	ND		0.25	0.033	mg/Kg	☼	10/14/21 11:11	10/14/21 16:52	1
Xylenes, Total	ND		1.5	0.13	mg/Kg	☼	10/14/21 11:11	10/14/21 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 129*	*10/14/21 11:11*	*10/14/21 16:52*	*1*
4-Bromofluorobenzene (Surr)	*80*		*76 - 122*	*10/14/21 11:11*	*10/14/21 16:52*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*	*10/14/21 11:11*	*10/14/21 16:52*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*	*10/14/21 11:11*	*10/14/21 16:52*	*1*

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

Client Sample ID: HSB-4-11-12-100621
Date Collected: 10/06/21 12:15
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-19
Matrix: Solid
Percent Solids: 94.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.047	0.023	mg/Kg	☼	10/14/21 11:11	10/14/21 17:12	1
Ethylbenzene	ND		0.23	0.038	mg/Kg	☼	10/14/21 11:11	10/14/21 17:12	1
m,p-Xylene	ND		0.93	0.067	mg/Kg	☼	10/14/21 11:11	10/14/21 17:12	1
o-Xylene	ND		0.47	0.053	mg/Kg	☼	10/14/21 11:11	10/14/21 17:12	1
Toluene	ND		0.23	0.031	mg/Kg	☼	10/14/21 11:11	10/14/21 17:12	1
Xylenes, Total	ND		1.4	0.12	mg/Kg	☼	10/14/21 11:11	10/14/21 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 129*	*10/14/21 11:11*	*10/14/21 17:12*	*1*
4-Bromofluorobenzene (Surr)	*131*	*S1+*	*76 - 122*	*10/14/21 11:11*	*10/14/21 17:12*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*	*10/14/21 11:11*	*10/14/21 17:12*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*	*10/14/21 11:11*	*10/14/21 17:12*	*1*

Client Sample ID: HSB-5-7.5-9-100621
Date Collected: 10/06/21 14:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-20
Matrix: Solid
Percent Solids: 92.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.045	0.022	mg/Kg	☼	10/14/21 11:11	10/14/21 17:33	1
Ethylbenzene	ND		0.22	0.036	mg/Kg	☼	10/14/21 11:11	10/14/21 17:33	1
m,p-Xylene	ND		0.90	0.065	mg/Kg	☼	10/14/21 11:11	10/14/21 17:33	1
o-Xylene	ND		0.45	0.052	mg/Kg	☼	10/14/21 11:11	10/14/21 17:33	1
Toluene	ND		0.22	0.030	mg/Kg	☼	10/14/21 11:11	10/14/21 17:33	1
Xylenes, Total	ND		1.3	0.12	mg/Kg	☼	10/14/21 11:11	10/14/21 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 129*	*10/14/21 11:11*	*10/14/21 17:33*	*1*
4-Bromofluorobenzene (Surr)	*79*		*76 - 122*	*10/14/21 11:11*	*10/14/21 17:33*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*	*10/14/21 11:11*	*10/14/21 17:33*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*10/14/21 11:11*	*10/14/21 17:33*	*1*

Client Sample ID: N1MW-6R-100621
Date Collected: 10/06/21 15:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-22
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.85**		0.40		ug/L			10/12/21 05:11	1
Ethylbenzene	**550**		10		ug/L			10/12/21 14:23	10
m,p-Xylene	**2100**		200		ug/L			10/12/21 16:51	100
o-Xylene	**170**		100		ug/L			10/12/21 16:51	100
Toluene	**1.8**		1.0		ug/L			10/12/21 05:11	1
Xylenes, Total	**2200**		300		ug/L			10/12/21 16:51	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*10/12/21 05:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*10/12/21 14:23*	*10*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*10/12/21 16:51*	*100*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*10/12/21 05:11*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 14:23*	*10*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/12/21 16:51*	*100*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*10/12/21 05:11*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*10/12/21 14:23*	*10*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*10/12/21 16:51*	*100*

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

Client Sample ID: N1MW-6R-100621
Date Collected: 10/06/21 15:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-22
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/12/21 05:11*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/12/21 14:23*	*10*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/12/21 16:51*	*100*

Client Sample ID: N1MW-7R-100621
Date Collected: 10/06/21 15:55
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-23
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2.0**		0.40		ug/L			10/12/21 05:52	1
Ethylbenzene	**640**		10		ug/L			10/12/21 15:05	10
m,p-Xylene	**2700**		200		ug/L			10/12/21 17:12	100
o-Xylene	**1000**		100		ug/L			10/12/21 17:12	100
Toluene	**380**		10		ug/L			10/12/21 15:05	10
Xylenes, Total	**3700**		300		ug/L			10/12/21 17:12	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*10/12/21 05:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*10/12/21 15:05*	*10*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*10/12/21 17:12*	*100*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/12/21 05:52*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/12/21 15:05*	*10*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/12/21 17:12*	*100*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*10/12/21 05:52*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*10/12/21 15:05*	*10*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*10/12/21 17:12*	*100*
Toluene-d8 (Surr)	*105*		*80 - 120*		*10/12/21 05:52*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*10/12/21 15:05*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/12/21 17:12*	*100*

Client Sample ID: N1MW-1R-100621
Date Collected: 10/06/21 16:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-24
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**6.2**		0.40		ug/L			10/12/21 06:13	1
Ethylbenzene	**1800**		100		ug/L			10/12/21 15:47	100
m,p-Xylene	**6200**		200		ug/L			10/12/21 15:47	100
o-Xylene	**2700**		100		ug/L			10/12/21 15:47	100
Toluene	**660**		10		ug/L			10/12/21 15:26	10
Xylenes, Total	**8900**		300		ug/L			10/12/21 15:47	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*10/12/21 06:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*10/12/21 15:26*	*10*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*10/12/21 15:47*	*100*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/12/21 06:13*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/12/21 15:26*	*10*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/12/21 15:47*	*100*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*10/12/21 06:13*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*10/12/21 15:26*	*10*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*10/12/21 15:47*	*100*

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

Client Sample ID: N1MW-1R-100621
Date Collected: 10/06/21 16:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-24
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*108*		*80 - 120*		*10/12/21 06:13*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/12/21 15:26*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/12/21 15:47*	*100*

Client Sample ID: WASTE-100621
Date Collected: 10/06/21 17:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-25
Matrix: Solid
Percent Solids: 91.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.048	0.024	mg/Kg	☼	10/14/21 11:11	10/14/21 17:54	1
Ethylbenzene	ND		0.24	0.039	mg/Kg	☼	10/14/21 11:11	10/14/21 17:54	1
m,p-Xylene	**0.087**	**J**	0.96	0.069	mg/Kg	☼	10/14/21 11:11	10/14/21 17:54	1
o-Xylene	ND		0.48	0.055	mg/Kg	☼	10/14/21 11:11	10/14/21 17:54	1
Toluene	ND		0.24	0.032	mg/Kg	☼	10/14/21 11:11	10/14/21 17:54	1
Xylenes, Total	**0.12**	**J**	1.4	0.12	mg/Kg	☼	10/14/21 11:11	10/14/21 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 129*	*10/14/21 11:11*	*10/14/21 17:54*	*1*
4-Bromofluorobenzene (Surr)	*80*		*76 - 122*	*10/14/21 11:11*	*10/14/21 17:54*	*1*
Dibromofluoromethane (Surr)	*120*		*80 - 120*	*10/14/21 11:11*	*10/14/21 17:54*	*1*
Toluene-d8 (Surr)	*91*		*80 - 120*	*10/14/21 11:11*	*10/14/21 17:54*	*1*

Client Sample ID: Trip Blank
Date Collected: 10/06/21 08:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-26
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	0.010	mg/Kg		10/14/21 11:11	10/14/21 18:15	1
Ethylbenzene	ND		0.10	0.016	mg/Kg		10/14/21 11:11	10/14/21 18:15	1
m,p-Xylene	ND		0.40	0.029	mg/Kg		10/14/21 11:11	10/14/21 18:15	1
o-Xylene	ND		0.20	0.023	mg/Kg		10/14/21 11:11	10/14/21 18:15	1
Toluene	ND		0.10	0.013	mg/Kg		10/14/21 11:11	10/14/21 18:15	1
Xylenes, Total	ND		0.60	0.052	mg/Kg		10/14/21 11:11	10/14/21 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*75 - 129*	*10/14/21 11:11*	*10/14/21 18:15*	*1*
4-Bromofluorobenzene (Surr)	*118*		*76 - 122*	*10/14/21 11:11*	*10/14/21 18:15*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 120*	*10/14/21 11:11*	*10/14/21 18:15*	*1*
Toluene-d8 (Surr)	*80*		*80 - 120*	*10/14/21 11:11*	*10/14/21 18:15*	*1*

Client Sample ID: Trip Blank
Date Collected: 10/06/21 08:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-27
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/12/21 16:08	1
Ethylbenzene	ND		1.0		ug/L			10/12/21 16:08	1
m,p-Xylene	ND		2.0		ug/L			10/12/21 16:08	1
o-Xylene	ND		1.0		ug/L			10/12/21 16:08	1
Toluene	ND		1.0		ug/L			10/12/21 16:08	1
Xylenes, Total	ND		3.0		ug/L			10/12/21 16:08	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		10/12/21 16:08	1
4-Bromofluorobenzene (Surr)	107		80 - 120		10/12/21 16:08	1
Dibromofluoromethane (Surr)	102		80 - 120		10/12/21 16:08	1
Toluene-d8 (Surr)	100		80 - 120		10/12/21 16:08	1

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

Client Sample ID: N1MW-7R-14.5-16-100421 — **Lab Sample ID: 590-16086-1**
Date Collected: 10/04/21 12:30 — **Matrix: Solid**
Date Received: 10/08/21 08:55 — **Percent Solids: 91.8**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	9700		980		mg/Kg	☼	10/14/21 11:11	10/18/21 12:37	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		41.5 - 162	10/14/21 11:11	10/18/21 12:37	100

Client Sample ID: N1MW-8-100421 — **Lab Sample ID: 590-16086-2**
Date Collected: 10/04/21 13:45 — **Matrix: Water**
Date Received: 10/08/21 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	400		150		ug/L			10/12/21 11:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		68.7 - 141		10/12/21 01:25	1
4-Bromofluorobenzene (Surr)	97		68.7 - 141		10/12/21 11:56	1

Client Sample ID: N1MW-5-100421 — **Lab Sample ID: 590-16086-3**
Date Collected: 10/04/21 14:55 — **Matrix: Water**
Date Received: 10/08/21 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	*+	150		ug/L			10/12/21 02:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		68.7 - 141		10/12/21 02:06	1

Client Sample ID: N1MW-6R-14.5-15-100421 — **Lab Sample ID: 590-16086-4**
Date Collected: 10/04/21 15:30 — **Matrix: Solid**
Date Received: 10/08/21 08:55 — **Percent Solids: 91.8**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	670		100		mg/Kg	☼	10/14/21 11:11	10/18/21 12:58	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		41.5 - 162	10/14/21 11:11	10/18/21 12:58	10

Client Sample ID: N1MW-3-100421 — **Lab Sample ID: 590-16086-5**
Date Collected: 10/04/21 16:15 — **Matrix: Water**
Date Received: 10/08/21 08:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	*+	150		ug/L			10/12/21 02:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		68.7 - 141		10/12/21 02:27	1

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

Client Sample ID: N1MW-2-100421
Date Collected: 10/04/21 17:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	*+	150		ug/L			10/12/21 02:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*10/12/21 02:47*	*1*

Client Sample ID: N1MW-4-100421
Date Collected: 10/04/21 17:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	*+	150		ug/L			10/12/21 03:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/12/21 03:08*	*1*

Client Sample ID: N1MW-1R-16-17.5-100521
Date Collected: 10/05/21 09:45
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-8
Matrix: Solid
Percent Solids: 90.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**110**		9.7		mg/Kg	☼	10/14/21 11:11	10/14/21 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 15:08*	*1*

Client Sample ID: HSB-1-15.5-17-100521
Date Collected: 10/05/21 13:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-9
Matrix: Solid
Percent Solids: 95.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2100**		120		mg/Kg	☼	10/14/21 11:11	10/18/21 13:19	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*41.5 - 162*	*10/14/21 11:11*	*10/18/21 13:19*	*10*

Client Sample ID: RB-55-100521
Date Collected: 10/05/21 13:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	*+	150		ug/L			10/12/21 03:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*10/12/21 03:28*	*1*

Client Sample ID: HSB-1-100521
Date Collected: 10/05/21 14:25
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**19000**		1500		ug/L			10/12/21 12:17	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/12/21 12:17*	*10*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/12/21 16:29*	*10*

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

Client Sample ID: HSB-2-15.5-16-100521
Date Collected: 10/05/21 14:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-12
Matrix: Solid
Percent Solids: 95.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		9.9		mg/Kg	☼	10/14/21 11:11	10/14/21 15:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 15:49*	*1*

Client Sample ID: HSB-2-100521
Date Collected: 10/05/21 16:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**43000**		15000		ug/L			10/12/21 12:59	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/12/21 12:59*	*100*

Client Sample ID: HSB-3-13.5-14.5-100621
Date Collected: 10/06/21 10:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-14
Matrix: Solid
Percent Solids: 93.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**270**		9.3		mg/Kg	☼	10/14/21 11:11	10/14/21 16:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 16:10*	*1*

Client Sample ID: HSB-3-100621
Date Collected: 10/06/21 11:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**23000**		15000		ug/L			10/12/21 13:41	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*10/12/21 13:41*	*100*

Client Sample ID: DUP-5-100621
Date Collected: 10/06/21 08:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-16
Matrix: Solid
Percent Solids: 92.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**26**		14		mg/Kg	☼	10/14/21 11:11	10/14/21 16:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 16:31*	*1*

Client Sample ID: DUP-GW-100621
Date Collected: 10/06/21 09:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**24000**		15000		ug/L			10/12/21 14:02	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/12/21 14:02*	*100*

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

Client Sample ID: HSB-4-7-8-100621
Date Collected: 10/06/21 11:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-18
Matrix: Solid
Percent Solids: 82.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12		mg/Kg	☼	10/14/21 11:11	10/14/21 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 16:52*	*1*

Client Sample ID: HSB-4-11-12-100621
Date Collected: 10/06/21 12:15
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-19
Matrix: Solid
Percent Solids: 94.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12		mg/Kg	☼	10/14/21 11:11	10/14/21 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*131*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 17:12*	*1*

Client Sample ID: HSB-5-7.5-9-100621
Date Collected: 10/06/21 14:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-20
Matrix: Solid
Percent Solids: 92.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		11		mg/Kg	☼	10/14/21 11:11	10/14/21 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 17:33*	*1*

Client Sample ID: N1MW-6R-100621
Date Collected: 10/06/21 15:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-22
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**14000**		1500		ug/L			10/12/21 14:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/12/21 14:23*	*10*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*10/12/21 16:51*	*100*

Client Sample ID: N1MW-7R-100621
Date Collected: 10/06/21 15:55
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-23
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**11000**		1500		ug/L			10/12/21 15:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/12/21 15:05*	*10*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*10/12/21 17:12*	*100*

Client Sample ID: N1MW-1R-100621
Date Collected: 10/06/21 16:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-24
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**21000**		1500		ug/L			10/12/21 15:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*10/12/21 15:26*	*10*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*10/12/21 15:47*	*100*

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

Client Sample ID: WASTE-100621
Date Collected: 10/06/21 17:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-25
Matrix: Solid
Percent Solids: 91.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		12		mg/Kg	☼	10/14/21 11:11	10/14/21 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 17:54*	*1*

Client Sample ID: Trip Blank
Date Collected: 10/06/21 08:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-26
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		10/14/21 11:11	10/14/21 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 18:15*	*1*

Client Sample ID: Trip Blank
Date Collected: 10/06/21 08:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-27
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			10/12/21 16:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*68.7 - 141*		*10/12/21 16:08*	*1*

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

Client Sample ID: N1MW-7R-14.5-16-100421
Date Collected: 10/04/21 12:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-1
Matrix: Solid
Percent Solids: 91.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**180**		11		mg/Kg	☼	10/12/21 13:22	10/13/21 03:20	1
Residual Range Organics (RRO) (C25-C36)	ND		27		mg/Kg	☼	10/12/21 13:22	10/13/21 03:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*10/12/21 13:22*	*10/13/21 03:20*	*1*
n-Triacontane-d62	*94*		*50 - 150*	*10/12/21 13:22*	*10/13/21 03:20*	*1*

Client Sample ID: N1MW-8-100421
Date Collected: 10/04/21 13:45
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**1.4**		0.24		mg/L		10/12/21 09:41	10/12/21 18:12	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		10/12/21 09:41	10/12/21 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*10/12/21 09:41*	*10/12/21 18:12*	*1*
n-Triacontane-d62	*99*		*50 - 150*	*10/12/21 09:41*	*10/12/21 18:12*	*1*

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

Client Sample ID: N1MW-5-100421
Date Collected: 10/04/21 14:55
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		10/12/21 09:41	10/12/21 18:33	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		10/12/21 09:41	10/12/21 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*10/12/21 09:41*	*10/12/21 18:33*	*1*
n-Triacontane-d62	*99*		*50 - 150*	*10/12/21 09:41*	*10/12/21 18:33*	*1*

Client Sample ID: N1MW-6R-14.5-15-100421
Date Collected: 10/04/21 15:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-4
Matrix: Solid
Percent Solids: 91.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**62**		10		mg/Kg	☼	10/12/21 13:22	10/13/21 03:40	1
Residual Range Organics (RRO) (C25-C36)	**29**		26		mg/Kg	☼	10/12/21 13:22	10/13/21 03:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*99*		*50 - 150*	*10/12/21 13:22*	*10/13/21 03:40*	*1*
n-Triacontane-d62	*105*		*50 - 150*	*10/12/21 13:22*	*10/13/21 03:40*	*1*

Client Sample ID: N1MW-3-100421
Date Collected: 10/04/21 16:15
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.23		mg/L		10/12/21 09:41	10/12/21 18:53	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		10/12/21 09:41	10/12/21 18:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*50 - 150*	*10/12/21 09:41*	*10/12/21 18:53*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*10/12/21 09:41*	*10/12/21 18:53*	*1*

Client Sample ID: N1MW-2-100421
Date Collected: 10/04/21 17:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		10/12/21 09:41	10/12/21 19:14	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		10/12/21 09:41	10/12/21 19:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*10/12/21 09:41*	*10/12/21 19:14*	*1*
n-Triacontane-d62	*100*		*50 - 150*	*10/12/21 09:41*	*10/12/21 19:14*	*1*

Client Sample ID: N1MW-4-100421
Date Collected: 10/04/21 17:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		10/12/21 09:41	10/12/21 19:34	1

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

Client Sample ID: N1MW-4-100421
Date Collected: 10/04/21 17:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		10/12/21 09:41	10/12/21 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*50 - 150*	*10/12/21 09:41*	*10/12/21 19:34*	*1*
n-Triacontane-d62	*94*		*50 - 150*	*10/12/21 09:41*	*10/12/21 19:34*	*1*

Client Sample ID: N1MW-1R-16-17.5-100521
Date Collected: 10/05/21 09:45
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-8
Matrix: Solid
Percent Solids: 90.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		11		mg/Kg	☼	10/12/21 13:22	10/13/21 04:00	1
Residual Range Organics (RRO) (C25-C36)	ND		27		mg/Kg	☼	10/12/21 13:22	10/13/21 04:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*10/12/21 13:22*	*10/13/21 04:00*	*1*
n-Triacontane-d62	*98*		*50 - 150*	*10/12/21 13:22*	*10/13/21 04:00*	*1*

Client Sample ID: HSB-1-15.5-17-100521
Date Collected: 10/05/21 13:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-9
Matrix: Solid
Percent Solids: 95.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**210**		10		mg/Kg	☼	10/12/21 13:22	10/13/21 04:20	1
Residual Range Organics (RRO) (C25-C36)	ND		26		mg/Kg	☼	10/12/21 13:22	10/13/21 04:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*101*		*50 - 150*	*10/12/21 13:22*	*10/13/21 04:20*	*1*
n-Triacontane-d62	*101*		*50 - 150*	*10/12/21 13:22*	*10/13/21 04:20*	*1*

Client Sample ID: RB-55-100521
Date Collected: 10/05/21 13:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.23		mg/L		10/12/21 09:41	10/12/21 19:54	1
Residual Range Organics (RRO) (C25-C36)	ND		0.39		mg/L		10/12/21 09:41	10/12/21 19:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*50 - 150*	*10/12/21 09:41*	*10/12/21 19:54*	*1*
n-Triacontane-d62	*92*		*50 - 150*	*10/12/21 09:41*	*10/12/21 19:54*	*1*

Client Sample ID: HSB-1-100521
Date Collected: 10/05/21 14:25
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**7.6**		0.23		mg/L		10/12/21 09:41	10/12/21 20:35	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		10/12/21 09:41	10/12/21 20:35	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*92*		*50 - 150*	*10/12/21 09:41*	*10/12/21 20:35*	*1*
n-Triacontane-d62	*97*		*50 - 150*	*10/12/21 09:41*	*10/12/21 20:35*	*1*

Client Sample ID: HSB-2-15.5-16-100521
Date Collected: 10/05/21 14:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-12
Matrix: Solid
Percent Solids: 95.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg	☼	10/12/21 13:22	10/13/21 04:40	1
Residual Range Organics (RRO) (C25-C36)	ND		26		mg/Kg	☼	10/12/21 13:22	10/13/21 04:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*88*		*50 - 150*	*10/12/21 13:22*	*10/13/21 04:40*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*10/12/21 13:22*	*10/13/21 04:40*	*1*

Client Sample ID: HSB-2-100521
Date Collected: 10/05/21 16:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**7.8**		0.23		mg/L		10/12/21 09:41	10/12/21 20:55	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		10/12/21 09:41	10/12/21 20:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*88*		*50 - 150*	*10/12/21 09:41*	*10/12/21 20:55*	*1*
n-Triacontane-d62	*94*		*50 - 150*	*10/12/21 09:41*	*10/12/21 20:55*	*1*

Client Sample ID: HSB-3-13.5-14.5-100621
Date Collected: 10/06/21 10:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-14
Matrix: Solid
Percent Solids: 93.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**19**		10		mg/Kg	☼	10/12/21 13:22	10/13/21 05:00	1
Residual Range Organics (RRO) (C25-C36)	**40**		26		mg/Kg	☼	10/12/21 13:22	10/13/21 05:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*96*		*50 - 150*	*10/12/21 13:22*	*10/13/21 05:00*	*1*
n-Triacontane-d62	*107*		*50 - 150*	*10/12/21 13:22*	*10/13/21 05:00*	*1*

Client Sample ID: HSB-3-100621
Date Collected: 10/06/21 11:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**6.4**		0.23		mg/L		10/12/21 09:41	10/12/21 21:16	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		10/12/21 09:41	10/12/21 21:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*92*		*50 - 150*	*10/12/21 09:41*	*10/12/21 21:16*	*1*
n-Triacontane-d62	*98*		*50 - 150*	*10/12/21 09:41*	*10/12/21 21:16*	*1*

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

Client Sample ID: DUP-5-100621
Date Collected: 10/06/21 08:30
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-16
Matrix: Solid
Percent Solids: 92.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**24**		10		mg/Kg	☼	10/12/21 13:22	10/13/21 05:20	1
Residual Range Organics (RRO) (C25-C36)	**49**		26		mg/Kg	☼	10/12/21 13:22	10/13/21 05:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*10/12/21 13:22*	*10/13/21 05:20*	*1*
n-Triacontane-d62	*103*		*50 - 150*	*10/12/21 13:22*	*10/13/21 05:20*	*1*

Client Sample ID: DUP-GW-100621
Date Collected: 10/06/21 09:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**6.0**		0.23		mg/L		10/12/21 09:41	10/12/21 21:36	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		10/12/21 09:41	10/12/21 21:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*10/12/21 09:41*	*10/12/21 21:36*	*1*
n-Triacontane-d62	*95*		*50 - 150*	*10/12/21 09:41*	*10/12/21 21:36*	*1*

Client Sample ID: HSB-4-7-8-100621
Date Collected: 10/06/21 11:50
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-18
Matrix: Solid
Percent Solids: 82.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		12		mg/Kg	☼	10/12/21 13:22	10/13/21 05:41	1
Residual Range Organics (RRO) (C25-C36)	ND		29		mg/Kg	☼	10/12/21 13:22	10/13/21 05:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*10/12/21 13:22*	*10/13/21 05:41*	*1*
n-Triacontane-d62	*94*		*50 - 150*	*10/12/21 13:22*	*10/13/21 05:41*	*1*

Client Sample ID: HSB-4-11-12-100621
Date Collected: 10/06/21 12:15
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-19
Matrix: Solid
Percent Solids: 94.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg	☼	10/12/21 13:22	10/13/21 06:01	1
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg	☼	10/12/21 13:22	10/13/21 06:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*89*		*50 - 150*	*10/12/21 13:22*	*10/13/21 06:01*	*1*
n-Triacontane-d62	*96*		*50 - 150*	*10/12/21 13:22*	*10/13/21 06:01*	*1*

Client Sample ID: HSB-5-7.5-9-100621
Date Collected: 10/06/21 14:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-20
Matrix: Solid
Percent Solids: 92.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg	☼	10/12/21 13:22	10/13/21 06:41	1

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

Client Sample ID: HSB-5-7.5-9-100621
Date Collected: 10/06/21 14:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-20
Matrix: Solid
Percent Solids: 92.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Residual Range Organics (RRO) (C25-C36)	**81**		26		mg/Kg	☼	10/12/21 13:22	10/13/21 06:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*50 - 150*	*10/12/21 13:22*	*10/13/21 06:41*	*1*
n-Triacontane-d62	*98*		*50 - 150*	*10/12/21 13:22*	*10/13/21 06:41*	*1*

Client Sample ID: N1MW-6R-100621
Date Collected: 10/06/21 15:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-22
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**3.3**		0.23		mg/L		10/12/21 09:41	10/13/21 11:55	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		10/12/21 09:41	10/13/21 11:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*50 - 150*	*10/12/21 09:41*	*10/13/21 11:55*	*1*
n-Triacontane-d62	*97*		*50 - 150*	*10/12/21 09:41*	*10/13/21 11:55*	*1*

Client Sample ID: N1MW-7R-100621
Date Collected: 10/06/21 15:55
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-23
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**2.7**		0.23		mg/L		10/12/21 09:41	10/12/21 22:17	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		10/12/21 09:41	10/12/21 22:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91*		*50 - 150*	*10/12/21 09:41*	*10/12/21 22:17*	*1*
n-Triacontane-d62	*95*		*50 - 150*	*10/12/21 09:41*	*10/12/21 22:17*	*1*

Client Sample ID: N1MW-1R-100621
Date Collected: 10/06/21 16:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-24
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**4.2**		0.23		mg/L		10/12/21 09:41	10/12/21 22:37	1
Residual Range Organics (RRO) (C25-C36)	ND		0.38		mg/L		10/12/21 09:41	10/12/21 22:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*10/12/21 09:41*	*10/12/21 22:37*	*1*
n-Triacontane-d62	*99*		*50 - 150*	*10/12/21 09:41*	*10/12/21 22:37*	*1*

Client Sample ID: WASTE-100621
Date Collected: 10/06/21 17:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-25
Matrix: Solid
Percent Solids: 91.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	**30**		11		mg/Kg	☼	10/12/21 13:22	10/13/21 07:01	1
Residual Range Organics (RRO) (C25-C36)	**350**		27		mg/Kg	☼	10/12/21 13:22	10/13/21 07:01	1

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*50 - 150*	*10/12/21 13:22*	*10/13/21 07:01*	*1*
n-Triacontane-d62	*116*		*50 - 150*	*10/12/21 13:22*	*10/13/21 07:01*	*1*

Method: 6010D - Metals (ICP)

Client Sample ID: WASTE-100621
Date Collected: 10/06/21 17:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-25
Matrix: Solid
Percent Solids: 91.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.0**		0.97		mg/Kg	☼	10/11/21 10:04	10/12/21 13:59	1
Barium	**98**		0.97		mg/Kg	☼	10/11/21 10:04	10/12/21 13:59	1
Cadmium	ND		0.77		mg/Kg	☼	10/11/21 10:04	10/12/21 13:59	1
Chromium	**17**	**^1+**	0.97		mg/Kg	☼	10/11/21 10:04	10/12/21 13:59	1
Lead	**24**		2.3		mg/Kg	☼	10/11/21 10:04	10/12/21 13:59	1
Selenium	ND		3.9		mg/Kg	☼	10/11/21 10:04	10/12/21 13:59	1
Silver	ND		0.97		mg/Kg	☼	10/11/21 10:04	10/12/21 13:59	1

Method: 7471B - Mercury (CVAA)

Client Sample ID: WASTE-100621
Date Collected: 10/06/21 17:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-25
Matrix: Solid
Percent Solids: 91.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		48		ug/Kg	☼	10/11/21 10:02	10/11/21 17:16	1

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

Lab Sample ID: MB 590-33510/5
Matrix: Water
Analysis Batch: 33510

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/11/21 22:19	1
Ethylbenzene	ND		1.0		ug/L			10/11/21 22:19	1
m,p-Xylene	ND		2.0		ug/L			10/11/21 22:19	1
o-Xylene	ND		1.0		ug/L			10/11/21 22:19	1
Toluene	ND		1.0		ug/L			10/11/21 22:19	1
Xylenes, Total	ND		3.0		ug/L			10/11/21 22:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*10/11/21 22:19*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/11/21 22:19*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*10/11/21 22:19*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/11/21 22:19*	*1*

Lab Sample ID: LCS 590-33510/1002
Matrix: Water
Analysis Batch: 33510

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			10.0	11.0		ug/L		110	80 - 126		
Ethylbenzene			10.0	10.7		ug/L		107	80 - 128		
m,p-Xylene			10.0	10.5		ug/L		105	80 - 127		
o-Xylene			10.0	11.1		ug/L		111	80 - 126		
Toluene			10.0	10.6		ug/L		106	80 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*

Lab Sample ID: LCSD 590-33510/3
Matrix: Water
Analysis Batch: 33510

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	11.2		ug/L		112	80 - 126	2	18
Ethylbenzene			10.0	10.8		ug/L		108	80 - 128	1	18
m,p-Xylene			10.0	11.1		ug/L		111	80 - 127	5	18
o-Xylene			10.0	11.5		ug/L		115	80 - 126	3	17
Toluene			10.0	11.0		ug/L		110	80 - 129	4	18

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 590-33521/6
Matrix: Water
Analysis Batch: 33521

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/12/21 11:13	1
Ethylbenzene	ND		1.0		ug/L			10/12/21 11:13	1
m,p-Xylene	ND		2.0		ug/L			10/12/21 11:13	1
o-Xylene	ND		1.0		ug/L			10/12/21 11:13	1
Toluene	ND		1.0		ug/L			10/12/21 11:13	1
Xylenes, Total	ND		3.0		ug/L			10/12/21 11:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*10/12/21 11:13*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/12/21 11:13*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*10/12/21 11:13*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/12/21 11:13*	*1*

Lab Sample ID: LCS 590-33521/1003
Matrix: Water
Analysis Batch: 33521

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	11.1		ug/L		111	80 - 126
Ethylbenzene	10.0	10.6		ug/L		106	80 - 128
m,p-Xylene	10.0	11.0		ug/L		110	80 - 127
o-Xylene	10.0	11.0		ug/L		110	80 - 126
Toluene	10.0	10.5		ug/L		105	80 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 590-33521/4
Matrix: Water
Analysis Batch: 33521

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	11.1		ug/L		111	80 - 126	0	18
Ethylbenzene	10.0	10.4		ug/L		104	80 - 128	2	18
m,p-Xylene	10.0	11.0		ug/L		110	80 - 127	1	18
o-Xylene	10.0	11.9		ug/L		119	80 - 126	8	17
Toluene	10.0	10.8		ug/L		108	80 - 129	3	18

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 590-33556/1-A
Matrix: Solid
Analysis Batch: 33552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33556

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020	0.010	mg/Kg		10/14/21 11:11	10/14/21 11:39	1
Ethylbenzene	ND		0.10	0.016	mg/Kg		10/14/21 11:11	10/14/21 11:39	1
m,p-Xylene	ND		0.40	0.029	mg/Kg		10/14/21 11:11	10/14/21 11:39	1
o-Xylene	ND		0.20	0.023	mg/Kg		10/14/21 11:11	10/14/21 11:39	1
Toluene	ND		0.10	0.013	mg/Kg		10/14/21 11:11	10/14/21 11:39	1
Xylenes, Total	ND		0.60	0.052	mg/Kg		10/14/21 11:11	10/14/21 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 129*	*10/14/21 11:11*	*10/14/21 11:39*	*1*
4-Bromofluorobenzene (Surr)	*89*		*76 - 122*	*10/14/21 11:11*	*10/14/21 11:39*	*1*
Dibromofluoromethane (Surr)	*121*	*S1+*	*80 - 120*	*10/14/21 11:11*	*10/14/21 11:39*	*1*
Toluene-d8 (Surr)	*112*		*80 - 120*	*10/14/21 11:11*	*10/14/21 11:39*	*1*

Lab Sample ID: LCS 590-33556/2-A
Matrix: Solid
Analysis Batch: 33552

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33556

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.500	0.544		mg/Kg		109	76 - 129
Ethylbenzene	0.500	0.542		mg/Kg		108	77 - 126
m,p-Xylene	0.500	0.509		mg/Kg		102	78 - 130
o-Xylene	0.500	0.452		mg/Kg		90	77 - 129
Toluene	0.500	0.421		mg/Kg		84	77 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 129*
4-Bromofluorobenzene (Surr)	*144*	*S1+*	*76 - 122*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*80*		*80 - 120*

Lab Sample ID: 590-16086-4 MS
Matrix: Solid
Analysis Batch: 33552

Client Sample ID: N1MW-6R-14.5-15-100421
Prep Type: Total/NA
Prep Batch: 33556

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		1.05	1.01		mg/Kg	☼	96	76 - 129
Ethylbenzene	3.4		1.05	4.51		mg/Kg	☼	110	77 - 126
m,p-Xylene	12	E	1.05	12.8	E 4	mg/Kg	☼	96	78 - 130
o-Xylene	0.43		1.05	1.53		mg/Kg	☼	106	77 - 129
Toluene	ND		1.05	1.10		mg/Kg	☼	105	77 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 129*
4-Bromofluorobenzene (Surr)	*86*		*76 - 122*
Dibromofluoromethane (Surr)	*85*		*80 - 120*
Toluene-d8 (Surr)	*94*		*80 - 120*

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

Lab Sample ID: 590-16086-4 MSD
Matrix: Solid
Analysis Batch: 33552

Client Sample ID: N1MW-6R-14.5-15-100421
Prep Type: Total/NA
Prep Batch: 33556

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		1.05	0.926		mg/Kg	☼	88	76 - 129	8	25
Ethylbenzene	3.4		1.05	4.45		mg/Kg	☼	104	77 - 126	1	25
m,p-Xylene	12	E	1.05	12.8	E 4	mg/Kg	☼	91	78 - 130	0	23
o-Xylene	0.43		1.05	1.53		mg/Kg	☼	106	77 - 129	0	25
Toluene	ND		1.05	1.04		mg/Kg	☼	100	77 - 131	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 129*
4-Bromofluorobenzene (Surr)	*94*		*76 - 122*
Dibromofluoromethane (Surr)	*83*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

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

Lab Sample ID: MB 590-33509/5
Matrix: Water
Analysis Batch: 33509

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			10/11/21 22:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*10/11/21 22:19*	*1*

Lab Sample ID: LCS 590-33509/1004
Matrix: Water
Analysis Batch: 33509

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	1270	*+	ug/L		127	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*

Lab Sample ID: LCSD 590-33509/1015
Matrix: Water
Analysis Batch: 33509

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	1280	*+	ug/L		128	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*68.7 - 141*

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

Lab Sample ID: MB 590-33520/6
Matrix: Water
Analysis Batch: 33520

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			10/12/21 11:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*10/12/21 11:13*	*1*

Lab Sample ID: LCS 590-33520/1005
Matrix: Water
Analysis Batch: 33520

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	1040		ug/L		104	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*68.7 - 141*

Lab Sample ID: LCSD 590-33520/1016
Matrix: Water
Analysis Batch: 33520

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	1010		ug/L		101	80 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*

Lab Sample ID: MB 590-33556/1-A
Matrix: Solid
Analysis Batch: 33551

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33556

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		10/14/21 11:11	10/14/21 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*41.5 - 162*	*10/14/21 11:11*	*10/14/21 11:39*	*1*

Lab Sample ID: LCS 590-33556/3-A
Matrix: Solid
Analysis Batch: 33551

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33556

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			50.2	50.2		mg/Kg		100	74.4 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*41.5 - 162*

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

Lab Sample ID: MB 590-33516/1-A
Matrix: Water
Analysis Batch: 33518

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33516

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		10/12/21 09:41	10/12/21 16:49	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40		mg/L		10/12/21 09:41	10/12/21 16:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*90*		*50 - 150*	*10/12/21 09:41*	*10/12/21 16:49*	*1*
n-Triacontane-d62	*90*		*50 - 150*	*10/12/21 09:41*	*10/12/21 16:49*	*1*

Lab Sample ID: LCS 590-33516/2-A
Matrix: Water
Analysis Batch: 33518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33516

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.25		mg/L		78	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.65		mg/L		103	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*96*		*50 - 150*
n-Triacontane-d62	*100*		*50 - 150*

Lab Sample ID: LCSD 590-33516/3-A
Matrix: Water
Analysis Batch: 33518

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33516

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.19		mg/L		75	50 - 150	4	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.59		mg/L		100	50 - 150	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*96*		*50 - 150*
n-Triacontane-d62	*101*		*50 - 150*

Lab Sample ID: MB 590-33527/1-A
Matrix: Solid
Analysis Batch: 33518

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33527

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		10		mg/Kg		10/12/21 13:22	10/12/21 23:18	1
Residual Range Organics (RRO) (C25-C36)	ND		25		mg/Kg		10/12/21 13:22	10/12/21 23:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*10/12/21 13:22*	*10/12/21 23:18*	*1*

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

Lab Sample ID: MB 590-33527/1-A
Matrix: Solid
Analysis Batch: 33518

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33527

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Triacontane-d62	97		50 - 150	10/12/21 13:22	10/12/21 23:18	1

Lab Sample ID: LCS 590-33527/2-A
Matrix: Solid
Analysis Batch: 33518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33527

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (DRO) (C10-C25)			66.7	66.0		mg/Kg		99	50 - 150		
Residual Range Organics (RRO) (C25-C36)			66.7	69.3		mg/Kg		104	50 - 150		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	106		50 - 150
n-Triacontane-d62	110		50 - 150

Lab Sample ID: LCSD 590-33527/3-A
Matrix: Solid
Analysis Batch: 33518

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 33527

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)			66.7	70.4		mg/Kg		106	50 - 150	6	25
Residual Range Organics (RRO) (C25-C36)			66.7	73.4		mg/Kg		110	50 - 150	6	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	110		50 - 150
n-Triacontane-d62	120		50 - 150

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-33499/2-A
Matrix: Solid
Analysis Batch: 33528

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33499

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.3		mg/Kg		10/11/21 10:04	10/12/21 11:29	1
Barium	ND		1.3		mg/Kg		10/11/21 10:04	10/12/21 11:29	1
Cadmium	ND		1.0		mg/Kg		10/11/21 10:04	10/12/21 11:29	1
Chromium	ND	^1+	1.3		mg/Kg		10/11/21 10:04	10/12/21 11:29	1
Lead	ND		3.0		mg/Kg		10/11/21 10:04	10/12/21 11:29	1
Selenium	ND		5.0		mg/Kg		10/11/21 10:04	10/12/21 11:29	1
Silver	ND		1.3		mg/Kg		10/11/21 10:04	10/12/21 11:29	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 590-33499/1-A
Matrix: Solid
Analysis Batch: 33528

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33499

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	100		mg/Kg		100	80 - 120
Barium	100	97.8		mg/Kg		98	80 - 120
Cadmium	50.0	48.9		mg/Kg		98	80 - 120
Chromium	50.0	49.5	^1+	mg/Kg		99	80 - 120
Lead	50.0	53.6		mg/Kg		107	80 - 120
Selenium	100	101		mg/Kg		101	80 - 120
Silver	5.00	4.53		mg/Kg		91	80 - 120

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 590-33498/9-A
Matrix: Solid
Analysis Batch: 33511

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 33498

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		50	3.6	ug/Kg		10/11/21 10:01	10/11/21 16:32	1

Lab Sample ID: LCS 590-33498/8-A
Matrix: Solid
Analysis Batch: 33511

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 33498

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	200	199		ug/Kg		100	80 - 120

Client Sample ID: N1MW-7R-14.5-16-100421

Lab Sample ID: 590-16086-1

Date Collected: 10/04/21 12:30

Matrix: Solid

Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: N1MW-7R-14.5-16-100421

Lab Sample ID: 590-16086-1

Date Collected: 10/04/21 12:30

Matrix: Solid

Date Received: 10/08/21 08:55

Percent Solids: 91.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 13:03	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33603	10/18/21 12:37	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	33602	10/18/21 12:37	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 03:20	NMI	TAL SPK

Client Sample ID: N1MW-8-100421

Lab Sample ID: 590-16086-2

Date Collected: 10/04/21 13:45

Matrix: Water

Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 01:25	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33521	10/12/21 11:56	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33509	10/12/21 01:25	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33520	10/12/21 11:56	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 18:12	NMI	TAL SPK

Client Sample ID: N1MW-5-100421

Lab Sample ID: 590-16086-3

Date Collected: 10/04/21 14:55

Matrix: Water

Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 02:06	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33509	10/12/21 02:06	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 18:33	NMI	TAL SPK

Client Sample ID: N1MW-6R-14.5-15-100421

Lab Sample ID: 590-16086-4

Date Collected: 10/04/21 15:30

Matrix: Solid

Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: N1MW-6R-14.5-15-100421

Lab Sample ID: 590-16086-4
Date Collected: 10/04/21 15:30
Matrix: Solid
Date Received: 10/08/21 08:55
Percent Solids: 91.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 13:44	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33603	10/18/21 12:58	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	33602	10/18/21 12:58	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 03:40	NMI	TAL SPK

Client Sample ID: N1MW-3-100421

Lab Sample ID: 590-16086-5
Date Collected: 10/04/21 16:15
Matrix: Water
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 02:27	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33509	10/12/21 02:27	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 18:53	NMI	TAL SPK

Client Sample ID: N1MW-2-100421

Lab Sample ID: 590-16086-6
Date Collected: 10/04/21 17:05
Matrix: Water
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 02:47	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33509	10/12/21 02:47	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 19:14	NMI	TAL SPK

Client Sample ID: N1MW-4-100421

Lab Sample ID: 590-16086-7
Date Collected: 10/04/21 17:50
Matrix: Water
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 03:08	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33509	10/12/21 03:08	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 19:34	NMI	TAL SPK

Client Sample ID: N1MW-1R-16-17.5-100521

Lab Sample ID: 590-16086-8
Date Collected: 10/05/21 09:45
Matrix: Solid
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010.010.012

Job ID: 590-16086-1

Client Sample ID: N1MW-1R-16-17.5-100521

Lab Sample ID: 590-16086-8
Date Collected: 10/05/21 09:45
Matrix: Solid
Date Received: 10/08/21 08:55
Percent Solids: 90.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 15:08	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 15:08	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 04:00	NMI	TAL SPK

Client Sample ID: HSB-1-15.5-17-100521

Lab Sample ID: 590-16086-9
Date Collected: 10/05/21 13:00
Matrix: Solid
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: HSB-1-15.5-17-100521

Lab Sample ID: 590-16086-9
Date Collected: 10/05/21 13:00
Matrix: Solid
Date Received: 10/08/21 08:55
Percent Solids: 95.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 15:28	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33603	10/18/21 13:19	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33603	10/18/21 14:43	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	33602	10/18/21 13:19	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 04:20	NMI	TAL SPK

Client Sample ID: RB-55-100521

Lab Sample ID: 590-16086-10
Date Collected: 10/05/21 13:20
Matrix: Water
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 03:28	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33509	10/12/21 03:28	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 19:54	NMI	TAL SPK

Client Sample ID: HSB-1-100521

Lab Sample ID: 590-16086-11
Matrix: Water
Date Collected: 10/05/21 14:25
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		5	33510	10/12/21 03:49	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33521	10/12/21 12:17	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33521	10/12/21 16:29	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	33520	10/12/21 12:17	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	33520	10/12/21 16:29	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 20:35	NMI	TAL SPK

Client Sample ID: HSB-2-15.5-16-100521

Lab Sample ID: 590-16086-12
Matrix: Solid
Date Collected: 10/05/21 14:50
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: HSB-2-15.5-16-100521

Lab Sample ID: 590-16086-12
Matrix: Solid
Date Collected: 10/05/21 14:50
Date Received: 10/08/21 08:55
Percent Solids: 95.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 15:49	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 15:49	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 04:40	NMI	TAL SPK

Client Sample ID: HSB-2-100521

Lab Sample ID: 590-16086-13
Matrix: Water
Date Collected: 10/05/21 16:20
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 04:09	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33521	10/12/21 12:59	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	33520	10/12/21 12:59	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 20:55	NMI	TAL SPK

Client Sample ID: HSB-3-13.5-14.5-100621

Lab Sample ID: 590-16086-14
Matrix: Solid
Date Collected: 10/06/21 10:00
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010.010.012

Job ID: 590-16086-1

Client Sample ID: HSB-3-13.5-14.5-100621

Lab Sample ID: 590-16086-14
Date Collected: 10/06/21 10:00
Matrix: Solid
Date Received: 10/08/21 08:55
Percent Solids: 93.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 16:10	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33603	10/18/21 13:40	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 16:10	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 05:00	NMI	TAL SPK

Client Sample ID: HSB-3-100621

Lab Sample ID: 590-16086-15
Date Collected: 10/06/21 11:30
Matrix: Water
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 04:30	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33521	10/12/21 13:20	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33521	10/12/21 13:41	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	33520	10/12/21 13:41	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 21:16	NMI	TAL SPK

Client Sample ID: DUP-5-100621

Lab Sample ID: 590-16086-16
Date Collected: 10/06/21 08:30
Matrix: Solid
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: DUP-5-100621

Lab Sample ID: 590-16086-16
Date Collected: 10/06/21 08:30
Matrix: Solid
Date Received: 10/08/21 08:55
Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 16:31	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 16:31	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 05:20	NMI	TAL SPK

Client Sample ID: DUP-GW-100621

Lab Sample ID: 590-16086-17

Date Collected: 10/06/21 09:00

Matrix: Water

Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 04:51	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33521	10/12/21 14:02	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	33520	10/12/21 14:02	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 21:36	NMI	TAL SPK

Client Sample ID: HSB-4-7-8-100621

Lab Sample ID: 590-16086-18

Date Collected: 10/06/21 11:50

Matrix: Solid

Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: HSB-4-7-8-100621

Lab Sample ID: 590-16086-18

Date Collected: 10/06/21 11:50

Matrix: Solid

Date Received: 10/08/21 08:55

Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 16:52	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 16:52	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 05:41	NMI	TAL SPK

Client Sample ID: HSB-4-11-12-100621

Lab Sample ID: 590-16086-19

Date Collected: 10/06/21 12:15

Matrix: Solid

Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: HSB-4-11-12-100621

Lab Sample ID: 590-16086-19

Date Collected: 10/06/21 12:15

Matrix: Solid

Date Received: 10/08/21 08:55

Percent Solids: 94.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 17:12	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 17:12	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 06:01	NMI	TAL SPK

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010.010.012

Job ID: 590-16086-1

Client Sample ID: HSB-5-7.5-9-100621
Date Collected: 10/06/21 14:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: HSB-5-7.5-9-100621
Date Collected: 10/06/21 14:20
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-20
Matrix: Solid
Percent Solids: 92.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 17:33	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 17:33	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 06:41	NMI	TAL SPK

Client Sample ID: N1MW-6R-100621
Date Collected: 10/06/21 15:05
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-22
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 05:11	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33521	10/12/21 14:23	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33521	10/12/21 16:51	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	33520	10/12/21 14:23	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	33520	10/12/21 16:51	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 11:55	NMI	TAL SPK

Client Sample ID: N1MW-7R-100621
Date Collected: 10/06/21 15:55
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-23
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 05:52	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33521	10/12/21 15:05	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33521	10/12/21 17:12	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	33520	10/12/21 15:05	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	33520	10/12/21 17:12	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 22:17	NMI	TAL SPK

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010.010.012

Job ID: 590-16086-1

Client Sample ID: N1MW-1R-100621

Lab Sample ID: 590-16086-24
Matrix: Water
Date Collected: 10/06/21 16:20
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33510	10/12/21 06:13	JSP	TAL SPK
Total/NA	Analysis	8260D		10	33521	10/12/21 15:26	JSP	TAL SPK
Total/NA	Analysis	8260D		100	33521	10/12/21 15:47	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	33520	10/12/21 15:26	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		100	33520	10/12/21 15:47	JSP	TAL SPK
Total/NA	Prep	3510C			33516	10/12/21 09:41	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/12/21 22:37	NMI	TAL SPK

Client Sample ID: WASTE-100621

Lab Sample ID: 590-16086-25
Matrix: Solid
Date Collected: 10/06/21 17:00
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	33507	10/11/21 14:11	KBZ	TAL SPK

Client Sample ID: WASTE-100621

Lab Sample ID: 590-16086-25
Matrix: Solid
Date Collected: 10/06/21 17:00
Date Received: 10/08/21 08:55
Percent Solids: 91.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 17:54	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 17:54	JSP	TAL SPK
Total/NA	Prep	3550C			33527	10/12/21 13:22	KBZ	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1	33518	10/13/21 07:01	NMI	TAL SPK
Total/NA	Prep	3050B			33499	10/11/21 10:04	AMB	TAL SPK
Total/NA	Analysis	6010D		1	33528	10/12/21 13:59	AMB	TAL SPK
Total/NA	Prep	7471B			33498	10/11/21 10:02	AMB	TAL SPK
Total/NA	Analysis	7471B		1	33512	10/11/21 17:16	AMB	TAL SPK

Client Sample ID: Trip Blank

Lab Sample ID: 590-16086-26
Matrix: Solid
Date Collected: 10/06/21 08:00
Date Received: 10/08/21 08:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	8260D		1	33552	10/14/21 18:15	JSP	TAL SPK
Total/NA	Prep	5035			33556	10/14/21 11:11	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33551	10/14/21 18:15	JSP	TAL SPK

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010.010.012

Job ID: 590-16086-1

Client Sample ID: Trip Blank

Date Collected: 10/06/21 08:00
Date Received: 10/08/21 08:55

Lab Sample ID: 590-16086-27

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	33521	10/12/21 16:08	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	33520	10/12/21 16:08	JSP	TAL SPK

Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 590-16086-1
Project/Site: Tiger Oil/1148010.010.012

Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids
NWTPH-Dx	3510C	Water	Residual Range Organics (RRO) (C25-C36)
NWTPH-Dx	3550C	Solid	Residual Range Organics (RRO) (C25-C36)

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010.010.012

Job ID: 590-16086-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
6010D	Metals (ICP)	SW846	TAL SPK
7471B	Mercury (CVAA)	SW846	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK
3050B	Preparation, Metals	SW846	TAL SPK
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
3550C	Ultrasonic Extraction	SW846	TAL SPK
5030C	Purge and Trap	SW846	TAL SPK
5035	Closed System Purge and Trap	SW846	TAL SPK
7471B	Preparation, Mercury	SW846	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

APPENDIX C

Injection Well Boring Logs

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS [2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with low plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand; elastic silt
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30% - "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15% - "with gravel," "with sand," "with silt," etc.
	≤ 5% - "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

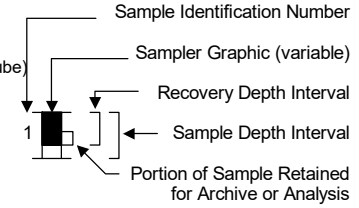
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE & METHOD

Graphic	Code	Description
☒	a	3.25-in OD, 2.42-in ID Split Spoon
⧓	b	2.00-in OD, 1.50-in ID Split Spoon
◧	c	Thin-Wall Sampler (aka Shelby Tube)
◪	d	Grab Sample
◧	e	Single-Tube Core Barrel
◧	f	Double-Tube Core Barrel
☒	g	2.50-in OD, 2.00-in ID WSDOT
☒	h	3.00-in OD, 2.37-in ID Mod. Calif.
☒	i	Other - See text if applicable
	1	300-lb Hammer, 30-inch Drop
	2	140-lb Hammer, 30-inch Drop
	3	Direct Push
	4	Vibrocore
	5	Other - See text if applicable
	6	Piston Extraction

SAMPLE NUMBER & INTERVAL



Groundwater

- ▽ Approximate water level at time of drilling (ATD)
- ▼ Approximate water level at time after drilling/excavation/well

Field and Lab Test Data

Code	Description
WOR	Weight of Rod
WOH	Weight of Hammer
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
UU	Triaxial Unconsolidated Undrained (UU) Strength
CU	Triaxial Consolidated Undrained (CU) Strength
Consol	1-D Consolidation Test
Perm	Permeability Test
CA	Chemical Analysis

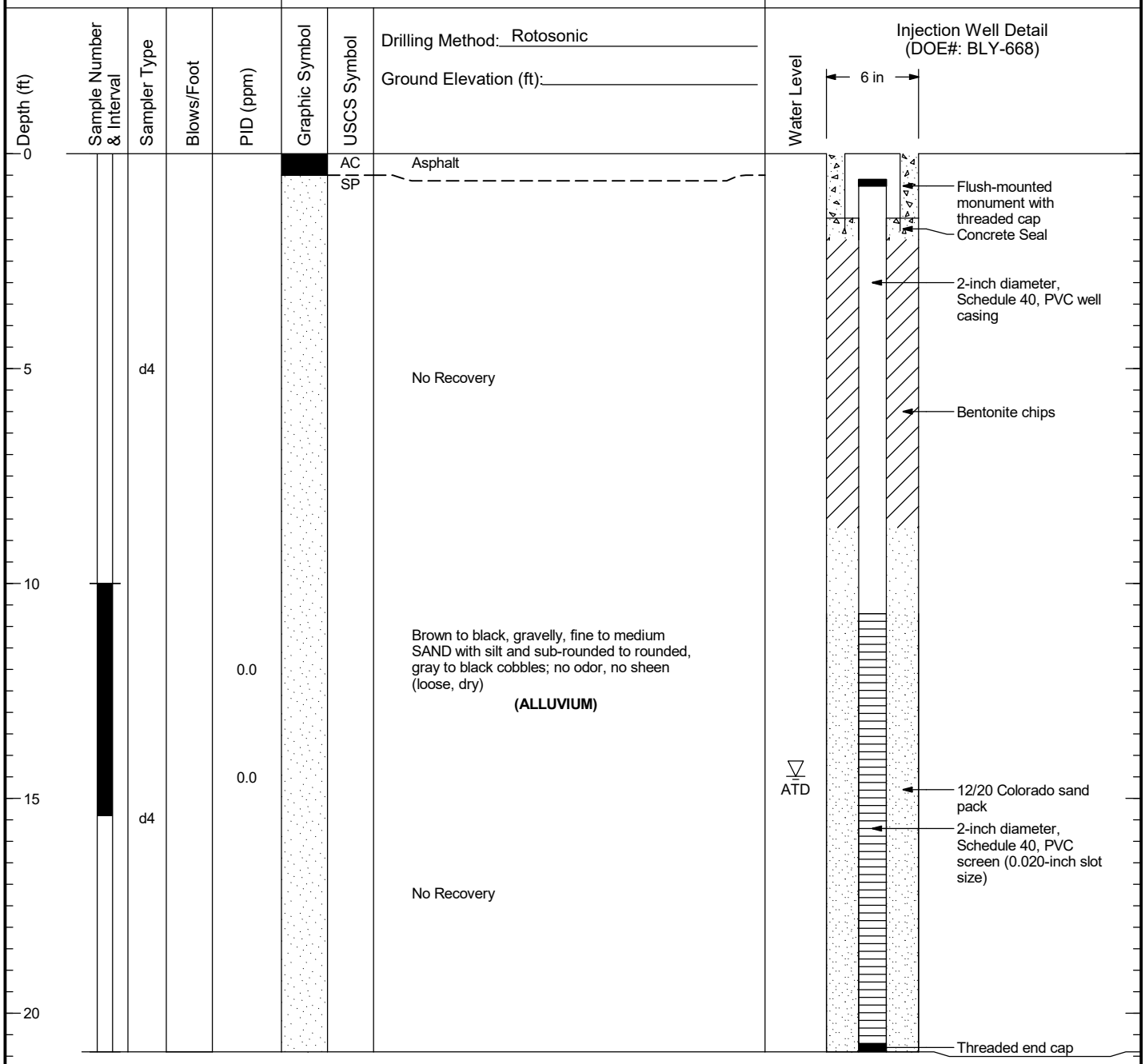
LANDAU ASSOCIATES

Tiger Oil
Yakima, WA

Soil Classification System and Key

Figure C-1

IW-1



Boring Completed 08/01/22
Total Depth of Boring = 20.9 ft.

Injection Well Completed 08/01/22
Total Depth of Injection Well = 20.9 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 10/28/24 N:\PROJECTS\1148010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-1	Figure C-2

IW-2

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): _____

Injection Well Detail
(DOE#: BLY-667)

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0				0.1		AC	
						ML	
				0.8		GM	
5							
10		d4					
15							ATD
20							
25							

Asphalt

Black, gravelly SILT with asphalt; no odor, no sheen (stiff to very stiff, moist)
(FILL)

Brown to black, silty GRAVEL with cobbles; no odor, no sheen (loose, moist to wet)
(ALLUVIUM)

No recovery

6 in

Flush-mounted monument with threaded cap

Concrete Seal

2-inch diameter, Schedule 40, PVC well casing

Bentonite chips

12/20 Colorado sand pack

2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)

Threaded end cap

Boring Completed 08/01/22
Total Depth of Boring = 20.8 ft.

Injection Well Completed 08/01/22
Total Depth of Injection Well = 20.8 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 10/28/24 N:\PROJECTS\1148010.GPJ WELL LOG

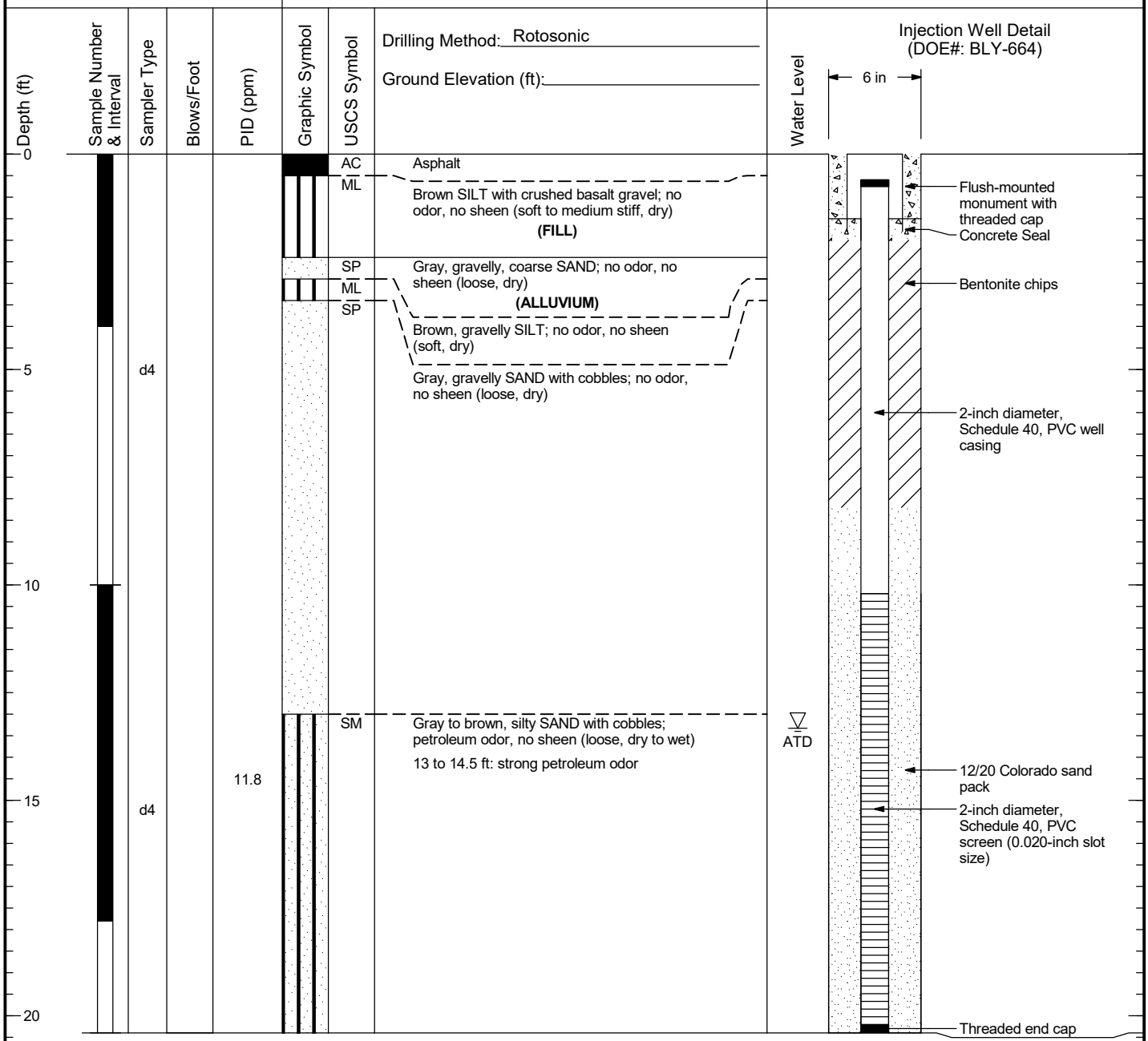
LANDAU ASSOCIATES

Tiger Oil
Yakima, WA

Log of Injection Well IW-2

Figure
C-3

IW-3



Boring Completed 08/01/22
Total Depth of Boring = 20.4 ft.

Injection Well Completed 08/01/22
Total Depth of Injection Well = 20.4 ft.

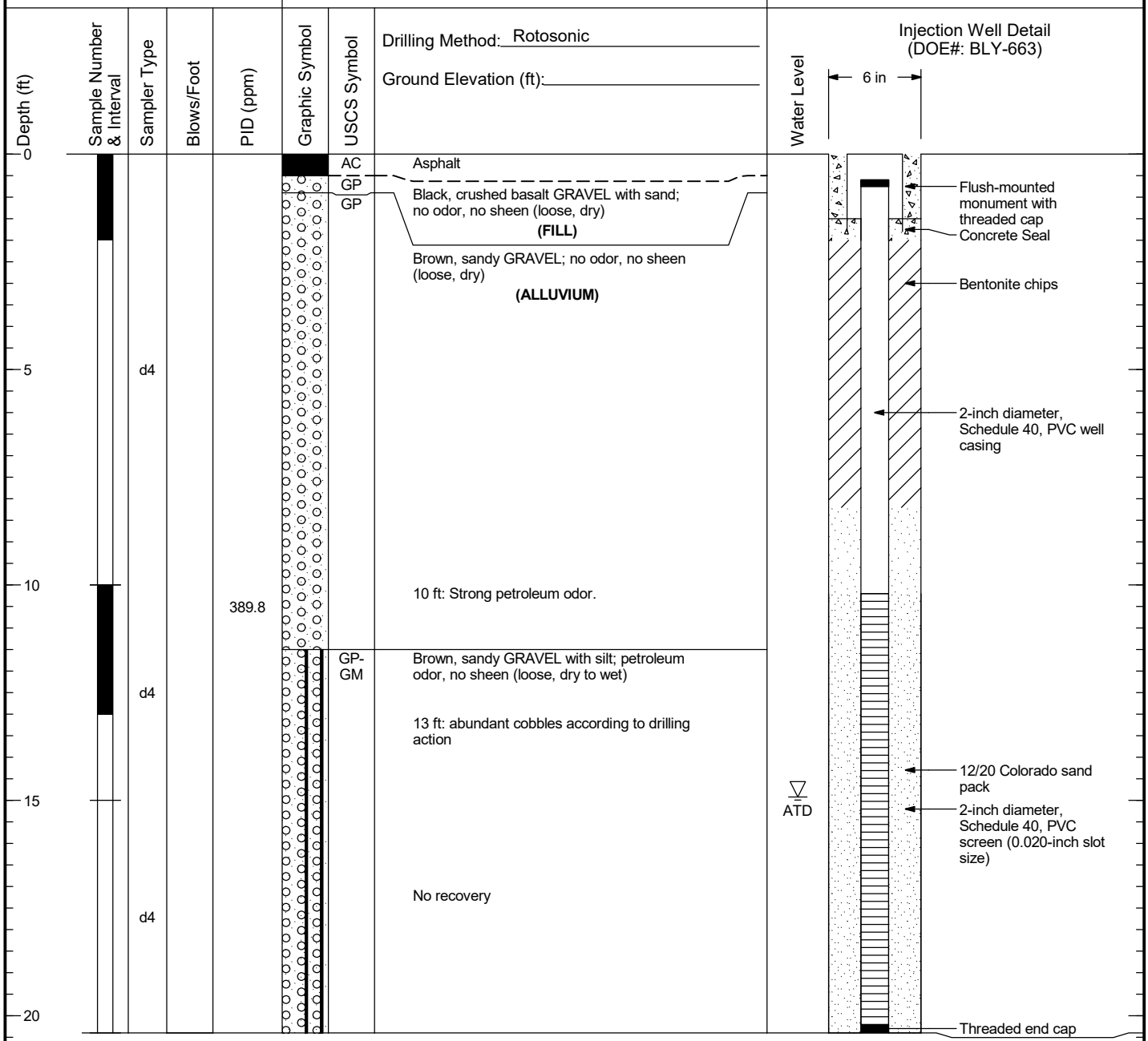
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-3	Figure C-4

IW-4



Boring Completed 08/02/22
Total Depth of Boring = 20.4 ft.

Injection Well Completed 08/02/22
Total Depth of Injection Well = 20.4 ft.

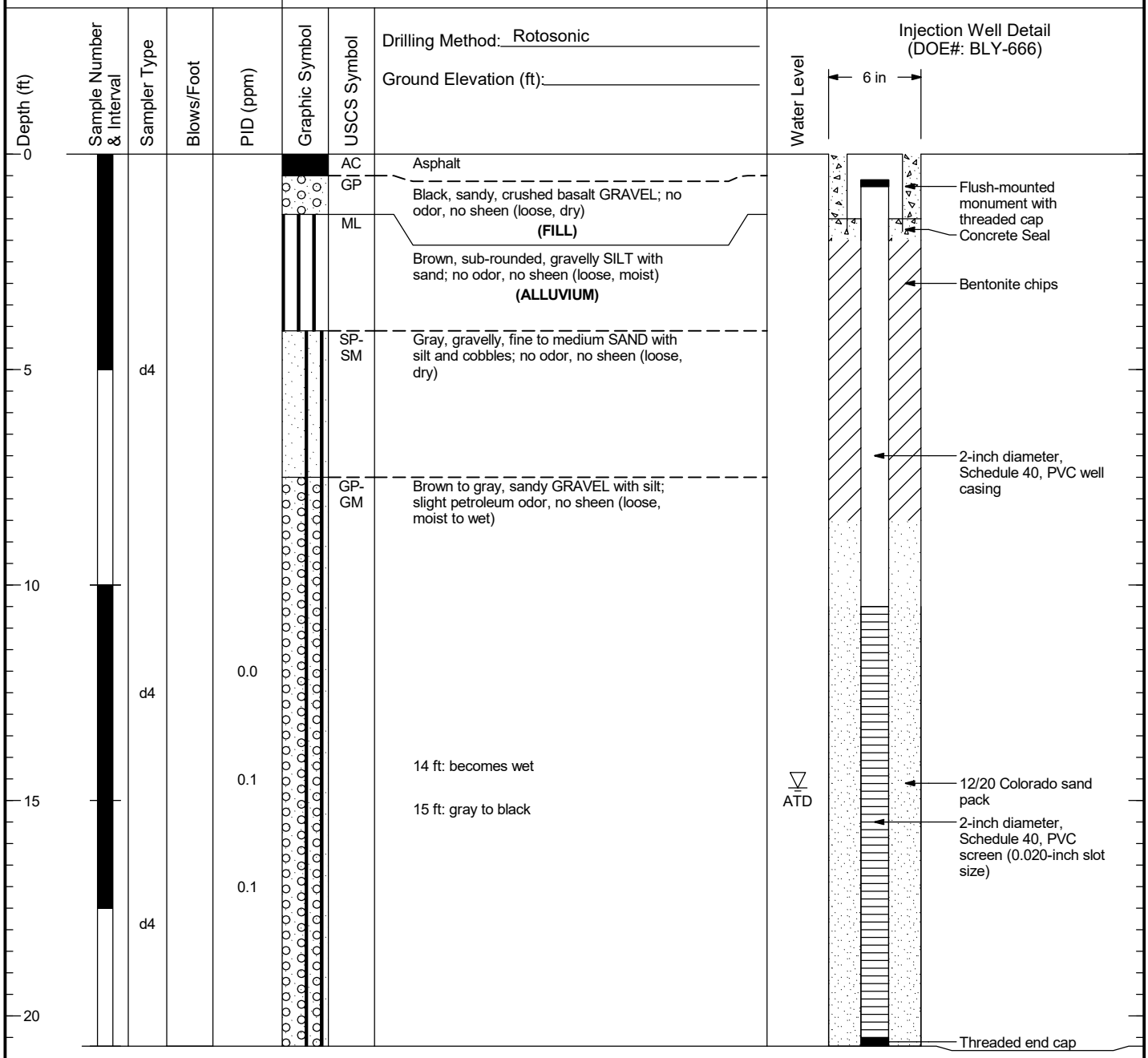
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-4	Figure C-5

IW-5



Boring Completed 08/02/22
Total Depth of Boring = 20.7 ft.

Injection Well Completed 08/02/22
Total Depth of Injection Well = 20.7 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-5	Figure C-6

IW-6

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Rotosonic

Ground Elevation (ft): _____

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						GP	Brown, sandy, crushed basalt GRAVEL; no odor, no sheen (loose, wet) **(FILL)**
		d4					
						ML	Brown SILT with trace sand; no odor, no sheen (medium stiff, dry) **(ALLUVIUM)**
5						SP	Gravy, gravelly, fine to medium SAND with cobbles; no odor, no sheen (loose, wet)
		d4					
10		d4					
				339		GP	Gray, very sandy GRAVEL with cobbles; petroleum odor, no sheen (loose, wet)
15				339			
		d4					
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BLY-665)

6 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 4-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/02/22
Total Depth of Boring = 20.0 ft.

Injection Well Completed 08/02/22
Total Depth of Injection Well = 20.0 ft.

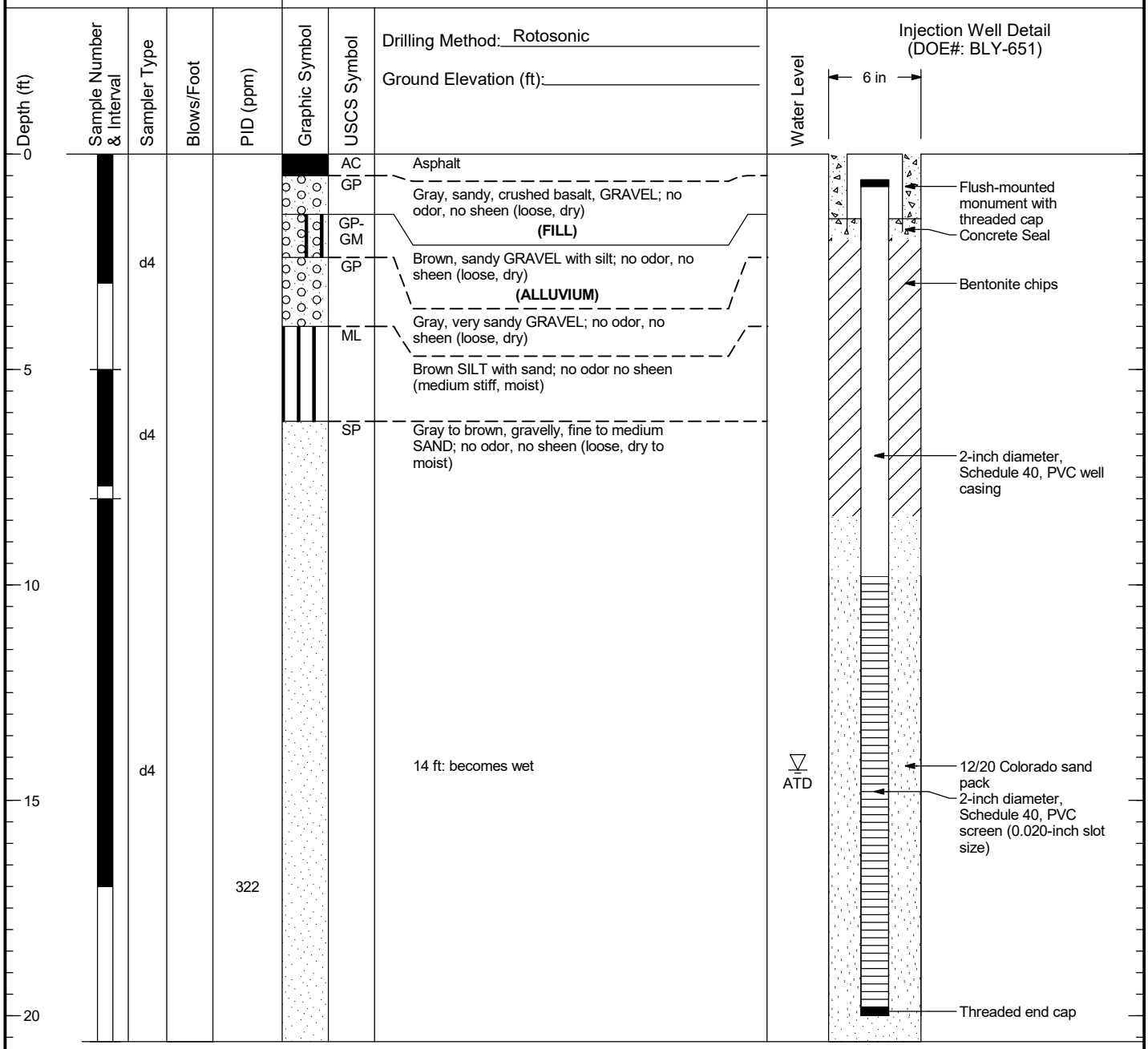
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-6	Figure C-7

IW-7



Boring Completed 08/02/22
Total Depth of Boring = 20.6 ft.

Injection Well Completed 08/03/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-7	Figure C-8

IW-8

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						GP	Gray, sandy, crushed basalt GRAVEL; no odor, no sheen (loose, dry) **(FILL)**
						SP	Tan, fine to medium SAND with gravel; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5							5 to 9 ft: Gravelly and with cobbles
						GP	Tan to brown GRAVEL with sand; no odor, no sheen (loose, dry to moist)
10				0.0			
				0.0			
							14 ft: petroleum odor
15				149.4			
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-723)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/31/22
Total Depth of Boring = 20.5 ft.

Injection Well Completed 08/31/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-8	Figure C-9

IW-9

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						GP	Black, sandy, crushed basalt GRAVEL; no odor, no sheen (loose, dry) **(FILL)**
						ML	Brown, gravelly SILT with sand; no odor no sheen (medium stiff, moist) **(ALLUVIUM)**
5						SP-SM	Gray, gravelly, fine to medium SAND with silt; no odor, no sheen (loose, dry)
10						GP	Gray to black GRAVEL with sand and cobbles; slight petroleum odor no sheen (loose, dry to moist)
15							Very little fines recovery in cuttings, not enough volume for PID samples
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-727)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/29/22
Total Depth of Boring = 21.0 ft.

Injection Well Completed 08/29/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-9	Figure C-10

IW-10

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						GP	Black, crushed basalt GRAVEL sand; no odor, no sheen (loose, dry) **(FILL)**
						GP	Brown, very sandy GRAVEL; no odor, no sheen (loose, dry) **(ALLUVIUM)**
10						GP	Gray to black, sandy GRAVEL with cobbles; slight petroleum odor, no sheen (loose, dry to moist)
15							Very little fines recovery in cuttings, not enough volume for PID samples
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-728)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/29/22
Total Depth of Boring = 20.5 ft.

Injection Well Completed 08/29/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-10	Figure C-11

IW-11

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						GP	Black, crushed basalt GRAVEL with sand; no odor, no sheen (loose, dry) **(FILL)**
						SP	Tan to brown, fine to medium SAND with gravel; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5							
						GP	Gray to black, sandy GRAVEL; slight petroleum odor, no sheen (loose, dry to moist)
10							
15							Very little fines recovery in cuttings, not enough volume for PID samples
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-729)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/29/22
Total Depth of Boring = 20.5 ft.

Injection Well Completed 08/29/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-11	Figure C-12

IW-12

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

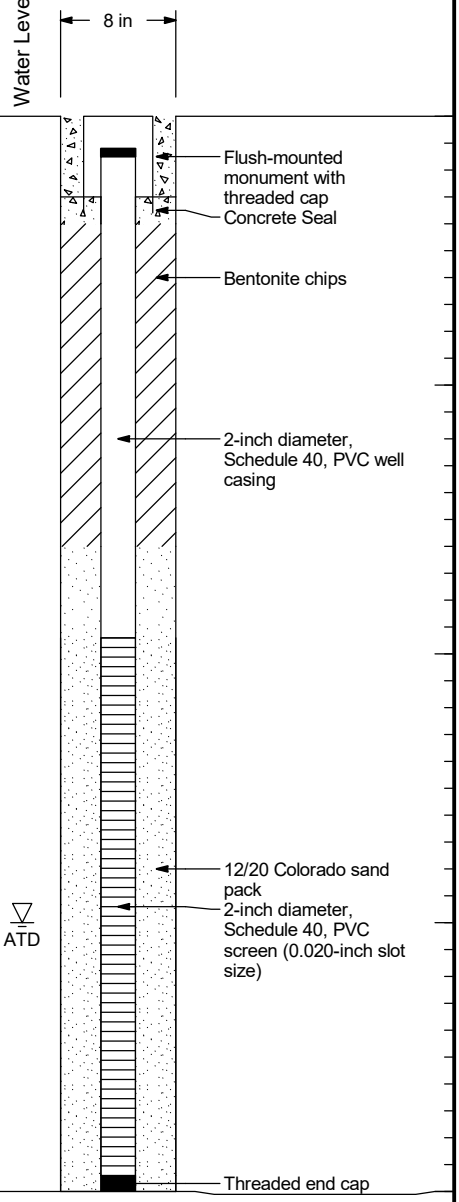
Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	PID (ppm)	USCS Symbol	
0		AC	Asphalt
		GP	Gray, sandy, crushed basalt GRAVEL; no odor, no sheen (loose, dry) **(FILL)**
		SP	Gray to brown, fine to medium SAND with gravel and cobbles; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5			
		GP	Gray to black GRAVEL with sand and cobbles; petroleum odor, no sheen (loose, dry to moist)
10	0.0		
	0.3		
15	49		16 ft: Petroleum odor
			ATD
20			
25			

Injection Well Detail
(DOE#: BNE-730)



Boring Completed 08/30/22
Total Depth of Boring = 20.0 ft.

Injection Well Completed 08/30/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-12	Figure C-13

IW-13

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						GP	Gray, sandy, crushed basalt GRAVEL; no odor, no sheen (loose, dry) **(FILL)**
						SP	Tan to brown, fine to medium SAND with gravel; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5				0.0		GP	Gray to black, sandy GRAVEL with cobbles; slight petroleum odor, no sheen (loose, dry to moist)
10							
15				1.2			Very little fines recovery in cuttings, not enough volume for PID sample at depth
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-731)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/30/22
Total Depth of Boring = 20.5 ft.

Injection Well Completed 08/30/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-13	Figure C-14

IW-14

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						ML	Brown SILT with crushed basalt gravel; no odor, no sheen (medium stiff, moist) **(FILL)**
						SP	Gray, coarse SAND with gravel; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5						GP	Gray to black, GRAVEL with sand and cobbles; petroleum odor, no sheen (loose, dry to moist)
				0.0			
10							
15				55			
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-732)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/30/22
Total Depth of Boring = 21.0 ft.

Injection Well Completed 08/30/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-14	Figure C-15

IW-15

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						GP	Gray, sandy, crushed basalt GRAVEL; no odor, no sheen (loose, dry) **(FILL)**
						SP	Gray, very gravelly, fine to medium SAND; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5						GP	Gray to black, sandy GRAVEL with cobbles; slight petroleum odor, no sheen (loose, dry to wet)
				0.0			
10							
				7.3			
15							
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-734)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/31/22
Total Depth of Boring = 20.5 ft.

Injection Well Completed 08/31/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 10/28/24 N:\PROJECTS\1148010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-15	Figure C-16

IW-16

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	USCS Symbol	Description
0	AC	Asphalt
	GP	Gray, sandy, crushed basalt GRAVEL; no odor, no sheen (loose, dry) **(FILL)**
	GP	Gray, very gravelly, fine to medium SAND; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5	GP	Gray to black, sandy GRAVEL with cobbles; sligth petroleum odor, no sheen (loose, dry to wet)
10		0.0
15		21.3
20		
25		

ATD

Injection Well Detail
(DOE#: BNE-735)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 08/31/22
Total Depth of Boring = 20.5 ft.

Injection Well Completed 08/31/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 10/28/24 N:\PROJECTS\1148010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-16	Figure C-17

IW-17

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Heavily weathered asphalt
						ML	Brown SILT with gravel and fine to medium sand; no odor, no sheen (medium stiff, moist) **(ALLUVIUM)**
5						SP	Gray to black, very gravelly SAND with cobbles; sligth petroleum odor, no sheen (loose, dry to moist)
10				0.0			
				1.1			
				6.0			
15							
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-736)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 09/01/22
Total Depth of Boring = 18.5 ft.

Injection Well Completed 09/01/22
Total Depth of Injection Well = 18.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 10/28/24 N:\PROJECTS\1148010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-17	Figure C-18

IW-18

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): _____

No samples collected. Lithology based on proximate borings/wells as well as soil cuttings.

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Description
0						AC	Asphalt
						ML	Brown SILT with crushed basalt gravel; no odor, no sheen (soft to medium stiff, moist) **(FILL)**
						SP	Gray, gravelly, fine to medium SAND with cobbles; no odor, no sheen (loose, dry) **(ALLUVIUM)**
5							
						GP	Gray to black, sandy GRAVEL with cobbles; petroleum odor, no sheen (loose, dry to moist)
10				100.4			
15				50.0			
20							
25							

Water Level: ATD

Injection Well Detail (DOE#: BNE-737)

8 in

- Flush-mounted monument with threaded cap
- Concrete Seal
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 12/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap

Boring Completed 09/01/22
Total Depth of Boring = 20.5 ft.

Injection Well Completed 09/02/22
Total Depth of Injection Well = 20.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1148010.01 10/28/24 N:\PROJECTS\1148010.GPJ WELL LOG

LANDAU ASSOCIATES

Tiger Oil Yakima, WA	Log of Injection Well IW-18	Figure C-19

APPENDIX D

Injection Well Installation
Soil and Groundwater Waste Characterization
Laboratory Analytical Report

eurofins | Environment Testing



ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-18586-1
Client Project/Site: City of Yakima-Tiger Oil
Revision: 2

For:
Landau & Associates, Inc.
10 North Post Street, Suite 218
Spokane, Washington 99201

Attn: Shane Kostka

Authorized for release by:
11/1/2022 4:02:58 PM

Randee Arrington, Lab Director
(509)924-9200
Randee.Arrington@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

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

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

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Case Narrative

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18586-1

Job ID: 590-18586-1

Laboratory: Eurofins Spokane

Narrative

Revision
The report being provided is a revision of the original report sent on 10/4/2022. The report (revision 2) is being revised due to: The QC data for method NWTPH-Gx for analytical batch 38152 was omitted from the original report..

Report revision history
Revision 1 - 11/1/2022 - Reason - The percent recoveries and RPD values were not reproted for LCSD 590-38363/4 for method 8260D.

Receipt
The samples were received on 9/9/2022 12:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.4º C.

GC/MS VOA
Method 8260D: Reanalysis of the following sample was performed outside of the analytical holding time due to dilution required : IW-9-090822 (590-18586-1).

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

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

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

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

Definitions/Glossary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18586-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

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

Sample Summary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18586-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-18586-1	IW-9-090822	Water	09/08/22 17:34	09/09/22 12:10
590-18586-2	TO-10W-Soil-090922	Solid	09/09/22 07:45	09/09/22 12:10

Chain-of-Custody Record

LANDAU ASSOCIATES

- [X] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542 1080
- [ ] _____

Date 09/08/22

Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name City of Yakima-Tiger Oil Project No 114801.0

Project Location/Event Tiger Oil 1st Qtr / waste characterization sampling

Sampler's Name Weston Boardman

Project Contact Jeff Menken jmenken@landauinc.com

Send Results To _____

Special Handling Requirements: _____

Shipment Method: _____

Stored on ice: (Yes) / No

Sample I D	Date	Time	Matrix	No. of Containers	NWTPH-Dx	BTEX	Total Pb 6010	Observations/Comments
TW-9-090822	9/8/22	17:34	W	3	X	X	X	
TO-10W-Soil-090922	9/9/22	07:45	soil	3	X	X	X	

Testing Parameters

__ Allow water samples to settle, collect aliquot from clear portion ☐

__ NWTPH-Dx Acid wash cleanup ☐ Silica gel cleanup ☐

__ Dissolved metal samples were field filtered

Other TW-9-090822 also included on separate COC for NWTPH-Dx analysis. We requesting it to also be included on this report with the dissolved analysis

questions: Weston Boardman 303-815-9967

04°C Iced 12006

590-18586 Chain of Custody

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Weston Boardman	Printed Name M Madison	Printed Name	Printed Name
Company Landau Associates	Company ECI SPA	Company	Company
Date 09/09/2022 Time 1210	Date 9/9/22 Time 12:10	Date Time	Date Time

WHITE COPY Laboratory YELLOW COPY Project File PINK COPY Client Representative

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-18586-1

Login Number: 18586
List Number: 1
Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

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

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-9-090822
Date Collected: 09/08/22 17:34
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18586-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3.5**		0.40		ug/L			09/20/22 20:02	1
Ethylbenzene	**77**		1.0		ug/L			09/20/22 20:02	1
m,p-Xylene	**120**	**H**	20		ug/L			09/30/22 23:23	10
o-Xylene	**18**		1.0		ug/L			09/20/22 20:02	1
Toluene	ND		1.0		ug/L			09/20/22 20:02	1
Xylenes, Total	**140**	**H**	30		ug/L			09/30/22 23:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*09/20/22 20:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*09/30/22 23:23*	*10*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*09/20/22 20:02*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*09/30/22 23:23*	*10*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*09/20/22 20:02*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*09/30/22 23:23*	*10*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/20/22 20:02*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/30/22 23:23*	*10*

Client Sample ID: TO-10W-Soil-090922
Date Collected: 09/09/22 07:45
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18586-2
Matrix: Solid
Percent Solids: 87.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021		mg/Kg	☼	09/15/22 12:06	09/15/22 18:08	1
Ethylbenzene	ND		0.11		mg/Kg	☼	09/15/22 12:06	09/15/22 18:08	1
m,p-Xylene	ND		0.42		mg/Kg	☼	09/15/22 12:06	09/15/22 18:08	1
o-Xylene	ND		0.21		mg/Kg	☼	09/15/22 12:06	09/15/22 18:08	1
Toluene	ND		0.11		mg/Kg	☼	09/15/22 12:06	09/15/22 18:08	1
Xylenes, Total	ND		0.63		mg/Kg	☼	09/15/22 12:06	09/15/22 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 129*	*09/15/22 12:06*	*09/15/22 18:08*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 122*	*09/15/22 12:06*	*09/15/22 18:08*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*	*09/15/22 12:06*	*09/15/22 18:08*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*	*09/15/22 12:06*	*09/15/22 18:08*	*1*

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

Client Sample ID: IW-9-090822
Date Collected: 09/08/22 17:34
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18586-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1700**		150		ug/L			09/20/22 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*		*09/20/22 20:02*	*1*

Client Sample ID: TO-10W-Soil-090922
Date Collected: 09/09/22 07:45
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18586-2
Matrix: Solid
Percent Solids: 87.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.3		mg/Kg	☼	09/15/22 12:06	09/16/22 14:01	1

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*41.5 - 162*	*09/15/22 12:06*	*09/16/22 14:01*	*1*

Method: SW846 6010D - Metals (ICP)

Client Sample ID: TO-10W-Soil-090922 — **Lab Sample ID: 590-18586-2**
Date Collected: 09/09/22 07:45 — **Matrix: Solid**
Date Received: 09/09/22 12:10 — **Percent Solids: 87.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		10		mg/Kg	☼	09/16/22 10:30	09/19/22 21:21	5

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Client Sample ID: IW-9-090822 — **Lab Sample ID: 590-18586-1**
Date Collected: 09/08/22 17:34 — **Matrix: Water**
Date Received: 09/09/22 12:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060		mg/L		09/26/22 09:38	09/26/22 15:14	1

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

Lab Sample ID: MB 590-38089/1-A
Matrix: Solid
Analysis Batch: 38084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		09/15/22 12:06	09/15/22 12:48	1
Ethylbenzene	ND		0.10		mg/Kg		09/15/22 12:06	09/15/22 12:48	1
m,p-Xylene	ND		0.40		mg/Kg		09/15/22 12:06	09/15/22 12:48	1
o-Xylene	ND		0.20		mg/Kg		09/15/22 12:06	09/15/22 12:48	1
Toluene	ND		0.10		mg/Kg		09/15/22 12:06	09/15/22 12:48	1
Xylenes, Total	ND		0.60		mg/Kg		09/15/22 12:06	09/15/22 12:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 129*	*09/15/22 12:06*	*09/15/22 12:48*	*1*
4-Bromofluorobenzene (Surr)	*95*		*76 - 122*	*09/15/22 12:06*	*09/15/22 12:48*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*	*09/15/22 12:06*	*09/15/22 12:48*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*	*09/15/22 12:06*	*09/15/22 12:48*	*1*

Lab Sample ID: LCS 590-38089/2-A
Matrix: Solid
Analysis Batch: 38084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.500	0.533		mg/Kg		107	76 - 139
Ethylbenzene	0.500	0.572		mg/Kg		114	77 - 135
m,p-Xylene	0.500	0.560		mg/Kg		112	78 - 130
o-Xylene	0.500	0.552		mg/Kg		110	77 - 129
Toluene	0.500	0.571		mg/Kg		114	77 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 129*
4-Bromofluorobenzene (Surr)	*97*		*76 - 122*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: 590-18586-2 DU
Matrix: Solid
Analysis Batch: 38084

Client Sample ID: TO-10W-Soil-090922
Prep Type: Total/NA
Prep Batch: 38089

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		mg/Kg	☼	NC	25
Ethylbenzene	ND		ND		mg/Kg	☼	NC	25
m,p-Xylene	ND		ND		mg/Kg	☼	NC	23
o-Xylene	ND		ND		mg/Kg	☼	NC	25
Toluene	ND		ND		mg/Kg	☼	NC	25
Xylenes, Total	ND		ND		mg/Kg	☼	NC	25

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 129*
4-Bromofluorobenzene (Surr)	*91*		*76 - 122*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

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

Lab Sample ID: MB 590-38151/6
Matrix: Water
Analysis Batch: 38151

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/20/22 15:00	1
Ethylbenzene	ND		1.0		ug/L			09/20/22 15:00	1
m,p-Xylene	ND		2.0		ug/L			09/20/22 15:00	1
o-Xylene	ND		1.0		ug/L			09/20/22 15:00	1
Toluene	ND		1.0		ug/L			09/20/22 15:00	1
Xylenes, Total	ND		3.0		ug/L			09/20/22 15:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*09/20/22 15:00*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/20/22 15:00*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*09/20/22 15:00*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*09/20/22 15:00*	*1*

Lab Sample ID: LCS 590-38151/1003
Matrix: Water
Analysis Batch: 38151

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.9		ug/L		109	80 - 126
Ethylbenzene	10.0	9.91		ug/L		99	80 - 128
m,p-Xylene	10.0	10.1		ug/L		101	80 - 127
o-Xylene	10.0	10.1		ug/L		101	80 - 126
Toluene	10.0	10.8		ug/L		108	80 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: MB 590-38363/6
Matrix: Water
Analysis Batch: 38363

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/30/22 22:39	1
Ethylbenzene	ND		1.0		ug/L			09/30/22 22:39	1
m,p-Xylene	ND		2.0		ug/L			09/30/22 22:39	1
o-Xylene	ND		1.0		ug/L			09/30/22 22:39	1
Toluene	ND		1.0		ug/L			09/30/22 22:39	1
Xylenes, Total	ND		3.0		ug/L			09/30/22 22:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*09/30/22 22:39*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*09/30/22 22:39*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*09/30/22 22:39*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*09/30/22 22:39*	*1*

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

Lab Sample ID: LCS 590-38363/4
Matrix: Water
Analysis Batch: 38363

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			10.0	10.6		ug/L		106	80 - 126		
Ethylbenzene			10.0	9.96		ug/L		100	80 - 128		
m,p-Xylene			10.0	9.64		ug/L		96	80 - 127		
o-Xylene			10.0	8.99		ug/L		90	80 - 126		
Toluene			10.0	11.2		ug/L		112	80 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: LCSD 590-38363/1003
Matrix: Water
Analysis Batch: 38363

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			10.0	10.1		ug/L		101	80 - 126	5	18
Ethylbenzene			10.0	9.34		ug/L		93	80 - 128	6	18
m,p-Xylene			10.0	8.90		ug/L		89	80 - 127	8	18
o-Xylene			10.0	8.44		ug/L		84	80 - 126	6	17
Toluene			10.0	12.0		ug/L		120	80 - 129	7	18

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*
Toluene-d8 (Surr)	*118*		*80 - 120*

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

Lab Sample ID: MB 590-38089/1-A
Matrix: Solid
Analysis Batch: 38085

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		09/15/22 12:06	09/15/22 12:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*41.5 - 162*	*09/15/22 12:06*	*09/15/22 12:48*	*1*

Lab Sample ID: LCS 590-38089/3-A
Matrix: Solid
Analysis Batch: 38085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38089

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			50.2	51.6		mg/Kg		103	74.4 - 124		

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

Lab Sample ID: LCS 590-38089/3-A
Matrix: Solid
Analysis Batch: 38085

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38089

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*41.5 - 162*

Lab Sample ID: MB 590-38152/6
Matrix: Water
Analysis Batch: 38152

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/20/22 15:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*09/20/22 15:00*	*1*

Lab Sample ID: LCS 590-38152/1005
Matrix: Water
Analysis Batch: 38152

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	1010		ug/L		101	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*

Lab Sample ID: LCSD 590-38152/1028
Matrix: Water
Analysis Batch: 38152

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	1020		ug/L		101	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-38105/2-A
Matrix: Solid
Analysis Batch: 38183

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 38105

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		3.0		mg/Kg		09/16/22 10:30	09/19/22 19:34	1

Lab Sample ID: LCS 590-38105/1-A
Matrix: Solid
Analysis Batch: 38183

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 38105

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Lead			50.0	49.7		mg/Kg		99	80 - 120		

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: MB 590-38237/2-A
Matrix: Water
Analysis Batch: 38252

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 38237

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060		mg/L		09/26/22 09:37	09/26/22 15:10	1

Lab Sample ID: LCS 590-38237/1-A
Matrix: Water
Analysis Batch: 38252

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 38237

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Lead			1.00	0.987		mg/L		99	80 - 120		

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18586-1

Client Sample ID: IW-9-090822
Date Collected: 09/08/22 17:34
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18586-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	38151	JSP	EET SPK	09/20/22 20:02
Total/NA	Analysis	8260D		10	38363	JSP	EET SPK	09/30/22 23:23
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 20:02
Total Recoverable	Prep	3005A			38237	AMB	EET SPK	09/26/22 09:38
Total Recoverable	Analysis	6010D		1	38252	AMB	EET SPK	09/26/22 15:14

Client Sample ID: TO-10W-Soil-090922
Date Collected: 09/09/22 07:45
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18586-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	37998	NMI	EET SPK	09/12/22 08:40

Client Sample ID: TO-10W-Soil-090922
Date Collected: 09/09/22 07:45
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18586-2
Matrix: Solid
Percent Solids: 87.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			38089	JSP	EET SPK	09/15/22 12:06
Total/NA	Analysis	8260D		1	38084	JSP	EET SPK	09/15/22 18:08
Total/NA	Prep	5035			38089	JSP	EET SPK	09/15/22 12:06
Total/NA	Analysis	NWTPH-Gx		1	38109	JSP	EET SPK	09/16/22 14:01
Total/NA	Prep	3050B			38105	AMB	EET SPK	09/16/22 10:30
Total/NA	Analysis	6010D		5	38183	AMB	EET SPK	09/19/22 21:21

Laboratory References:
EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18586-1

Laboratory: Eurofins Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18586-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
6010D	Metals (ICP)	SW846	EET SPK
Moisture	Percent Moisture	EPA	EET SPK
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET SPK
3050B	Preparation, Metals	SW846	EET SPK
5030C	Purge and Trap	SW846	EET SPK
5035	Closed System Purge and Trap	SW846	EET SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

APPENDIX E

Pre-Injection Baseline Groundwater Monitoring Sample Collection Forms and Laboratory Analytical Report

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/07/2022; 13:19
Sample Number: IW-1-090722
Weather: 29C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.34 Time: 12:27 Flow through cell vol. 500mL Avg. Flow Rate 0.24 L/min
Begin Purge: Date/Time: 09/07/2022; 12:37 End Purge: Date/Time: 09/07/2022; 13:17 Liters Purged: 9.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
12:43	17.75	768	1.38	6.70	-68.5	13.65	15.36	1.0	
12:47	17.37	751	1.74	6.61	-71.9	14.48	15.36	2.0	
12:51	17.03	729	6.17	6.60	-70.6	13.60	15.36	3.0	
12:55	16.88	692	8.97	6.56	-65.8	14.89	15.36	4.0	
12:59	17.06	667	8.40	6.53	-61.9	13.68	15.36	5.0	
13:03	16.89	645	8.06	6.54	-59.0	8.91	15.36	6.0	
13:07	16.87	620	7.51	6.55	-56.6	8.13	15.36	7.0	
13:11	16.93	602	6.93	6.55	-53.9	5.44	15.36	8.0	
13:13	16.88	583	6.64	6.55	-52.3	4.70	15.36	8.5	
13:15	16.82	579	6.47	6.55	-51.5	3.97	15.36	9.0	
13:17	16.82	569	6.15	6.55	-50.1	4.61	15.36	9.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): clear, no turbidity, petro odor/NS

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)	
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)	
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)	
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)	
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)	
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica	
	VOC (Boeing short list)	
	Methane Ethane Ethene Acetylene	
	others	

Duplicate Sample No(s):
Comments:
Signature: Date: 09/07/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/07/2022; 14:09
Sample Number: IW-2-090722
Weather: 30C Sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.34 Time: 13:36 Flow through cell vol. 500mL Avg. Flow Rate 0.24 L/min
Begin Purge: Date/Time: 09/07/2022; 13:41 End Purge: Date/Time: 09/07/2022; 14:06 Liters Purged: 6
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
13:46	18.58	466	5.65	6.75	-80.3	3.89	15.36	1.0	
13:50	16.97	382	2.98	6.63	-68.9	3.13	15.35	2.0	
13:54	16.54	364	3.21	6.67	-66.0	3.15	15.35	3.0	
13:58	16.35	357	3.83	6.67	-60.9	1.85	15.35	4.0	
14:02	16.29	354	3.97	6.64	-56.0	2.12	15.35	5.0	
14:06	16.27	353	3.89	6.63	-52.1	1.93	15.35	6.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: Date: 09/07/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/07/2022; 18:25
Sample Number: IW-3-090722
Weather: 29C partly cloudy breezy
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.54 Time: 17:32 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/07/2022; 17:37 End Purge: Date/Time: 09/07/2022; 18:21 Liters Purged: 11
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
17:41	17.53	474	1.41	6.74	-81.0	92.46	14.56	1.0	
17:45	16.96	420	1.02	6.65	-81.5	78.55	14.56	2.0	
17:49	16.78	398	1.18	6.75	-85.0	54.42	14.56	3.0	
17:53	16.73	389	1.55	6.76	-82.0	34.95	14.56	4.0	
17:57	16.71	382	1.93	6.76	-79.8	23.10	14.56	5.0	
18:01	16.43	376	2.09	6.74	-76.3	16.88	14.56	6.0	
18:05	16.24	374	2.13	6.71	-75.3	12.93	14.56	7.0	
18:09	16.26	368	2.18	6.70	-71.5	10.91	14.56	8.0	
18:11	16.19	365	2.23	6.71	-70.2	10.10	14.56	8.5	
18:13	16.13	363	2.26	6.71	-69.3	7.24	14.56	9.0	
18:17	16.08	360	2.35	6.70	-66.3	7.16	14.56	10.0	
18:21	16.16	359	2.34	6.69	-64.3	6.70	14.56	11.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 09/07/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/07/2022; 15:02
Sample Number: IW-4-090722
Weather: 32C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.62 Time: 14:26 Flow through cell vol. 500mL Avg. Flow Rate 0.24 L/min
Begin Purge: Date/Time: 09/07/2022; 14:30 End Purge: Date/Time: 09/07/2022; 14:59 Liters Purged: 7
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
14:35	18.19	525	2.19	6.41	-69.2	17.18	15.64	1.0	
14:39	17.91	549	1.06	6.42	-87.7	8.46	15.64	2.0	
14:43	17.84	561	3.22	6.49	-98.2	4.40	15.64	3.0	
14:47	17.92	556	6.65	6.49	-99.9	3.07	15.64	4.0	
14:51	17.77	547	6.13	6.49	-99.4	2.17	15.64	5.0	
14:55	17.74	543	5.84	6.48	-100.1	1.35	15.64	6.0	
14:59	17.63	537	5.59	6.48	-100.8	1.25	15.64	7.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 09/07/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 11:53
Sample Number: IW-8-090822
Weather: 23C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.51 Time: 11:07 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/08/2022; 11:13 End Purge: Date/Time: 09/08/2022; 11:49 Liters Purged: 9
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
11:18	18.19	637	1.79	6.45	-57.1	28.51	14.54	1.0	
11:22	17.18	556	1.13	6.38	-54.5	25.97	14.54	2.0	
11:26	17.03	537	1.15	6.45	-61.5	18.02	14.54	3.0	
11:30	17.04	522	1.11	6.48	-66.9	10.53	14.54	4.0	
11:34	16.92	505	1.13	6.48	-70.5	7.44	14.54	5.0	
11:38	16.84	492	1.16	6.48	-72.5	6.37	14.54	6.0	
11:42	16.83	482	1.24	6.46	-73.7	3.97	14.54	7.0	
11:46	16.85	474	1.29	6.46	-74.1	3.91	14.54	8.0	
11:49	16.83	473	1.32	6.46	-74.2	3.73	14.54	9.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Weston Boardman Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 17:34
Sample Number: IW-9-090822
Weather: 27C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.05 Time: 16:55 Flow through cell vol. 500mL Avg. Flow Rate
Begin Purge: Date/Time: 09/08/2022; 17:05 End Purge: Date/Time: 09/08/2022; 17:30 Liters Purged:
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
17:10	17.73	420	5.46	5.91	-31.2	7.88	15.07	1.0	
17:14	17.00	391	4.48	5.71	-31.8	4.69	15.06	2.0	
17:18	16.87	385	3.20	5.78	-34.4	2.85	15.06	3.0	
17:22	16.76	380	2.74	5.80	-33.8	1.94	15.06	4.0	
17:26	16.65	377	2.59	5.81	-31.6	1.67	15.06	5.0	
17:30	16.62	374	2.56	5.81	-29.5	1.22	15.06	6.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: Date:

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/07/2022; 16:12
Sample Number: IW-10-090722
Weather: 32C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.07 Time: 15:33 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/07/2022; 15:37 End Purge: Date/Time: 09/07/2022; 16:09 Liters Purged: 8
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
15:41	18.79	377	1.41	6.54	-69.7	52.74	15.09	1.0	yellow fibrous material
15:45	17.76	355	1.06	6.43	-55.6	17.59	15.09	2.0	suspended in water
15:49	17.56	351	0.96	6.47	-55.0	9.22	15.09	3.0	
15:53	17.31	350	1.00	6.48	-53.6	4.27	15:09	4.0	
15:57	17.16	351	1.78	6.47	-52.2	2.58	15:09	5.0	
16:01	17.39	351	3.25	6.46	-51.6	1.60	15.09	6.0	
16:05	17.23	352	3.40	6.45	-50.7	2.00	15.09	7.0	
16:09	17.32	352	3.25	6.44	-50.6	1.22	15.09	8.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, yellow fibrous material present first 2 liters of purge, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: Date: 09/07/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 15:27
Sample Number: IW-12-090822 pg 1 of 2
Weather: 26C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.00 Time: 14:22 Flow through cell vol. 500mL Avg. Flow Rate 0.24 L/min
Begin Purge: Date/Time: 09/08/2022; 14:26 End Purge: Date/Time: 09/08/2022; 15:25 Liters Purged: 15
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
14:30	18.35	819	1.58	6.23	-53.0	10.74	15.03	1.0	
14:34	17.39	856	1.50	6.31	-57.0	8.13	15.03	2.0	
14:37	17.20	855	1.30	6.33	-60.3	6.61	15.03	3.0	
14:41	17.22	846	1.23	6.35	-66.2	5.43	15.03	4.0	
14:45	17.10	828	1.24	6.35	-69.4	4.78	15.03	5.0	
14:49	17.04	806	1.23	6.34	-69.1	3.48	15.03	6.0	
14:53	17.06	779	1.26	6.34	-67.5	3.03	15.03	7.0	
14:57	16.97	752	1.31	6.33	-65.5	2.42	15.03	8.0	
14:59	17.00	739	1.33	6.33	-64.8	2.10	15.03	8.5	
15:01	17.04	727	1.30	6.33	-64.0	2.17	15.03	9.0	
15:03	17.06	717	1.31	6.33	-63.5	1.12	15.03	9.5	
15:05	17.06	703	1.33	6.33	-63.0	1.60	15.03	10.0	
15:09	17.02	681	1.34	6.33	-62.2	0.92	15.03	11.0	
15:11	17.07	671	1.37	6.34	-61.8	0.97	15.03	11.5	
15:13	17.08	662	1.51	6.34	-61.4	1.39	15.03	12.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: Weston Boardman Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 15:27
Sample Number: IW-12-090822 pg 2 of 2
Weather: 26C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument

DTW Before Purging (ft) 15.00 Time: 14:22 Flow through cell vol. 500mL Avg. Flow Rate 0.24 L/min

Begin Purge: Date/Time: 09/08/2022;14:26 End Purge: Date/Time: 09/08/2022; 15:25 Liters Purged: 15

Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
15:17	16.98	639	1.46	6.34	-60.3	0.93	15.03	13.0	
15:21	16.95	622	1.41	6.34	-59.5	0.99	15.03	14.0	
15:23	17.00	614	1.41	6.34	-59.0	0.99	15.03	14.5	
15:25	16.92	609	1.46	6.34	-58.6	0.58	15.03	15.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump

Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated

Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated

☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):

Comments:

Signature: Weston Boardman Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 16:26
Sample Number: IW-14-090822
Weather: 27C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.60 Time: 15:49 Flow through cell vol. 500mL Avg. Flow Rate
Begin Purge: Date/Time: 09/08/2022; 15:54 End Purge: Date/Time: 09/08/2022; 16:22 Liters Purged:
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
15:58	17.76	559	1.51	6.36	-43.3	13.24	14.67	1.0	
16:02	17.00	549	0.99	6.35	-46.1	12.35	14.67	2.0	
16:06	16.69	547	1.17	6.42	-55.4	7.40	14.67	3.0	
16:10	16.64	543	1.49	6.45	-62.4	5.61	14.67	4.0	
16:14	16.58	543	1.66	6.44	-67.4	4.09	14.67	5.0	
16:18	16.66	542	1.62	6.45	-71.0	3.32	14.67	6.0	
16:22	16.57	536	1.63	6.45	-73.6	2.81	14.67	7.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)	
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)	
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)	
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)	
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)	
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica	
	VOC (Boeing short list)	
	Methane Ethane Ethene Acetylene	
	others	

Duplicate Sample No(s):
Comments:
Signature: Date:

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 12:51
Sample Number: IW-15-090822
Weather: 24C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.53 Time: 12:08 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/08/2022; 12:12 End Purge: Date/Time: 09/08/2022; 12:48 Liters Purged: 9
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
12:16	17.87	527	1.68	6.44	-86.6	14.10	14.55	1.0	
12:20	17.37	532	1.17	6.28	-82.4	14.22	14.55	2.0	
12:24	17.27	523	1.18	6.33	-85.4	14.61	14.55	3.0	
12:28	17.16	509	1.17	6.36	-87.4	10.80	14.55	4.0	
12:32	17.11	491	1.28	6.37	-88.5	5.03	14.55	5.0	
12:36	17.10	479	1.38	6.37	-89.1	5.16	14.55	6.0	
12:40	17.02	470	1.50	6.37	-89.3	3.42	14.55	7.0	
12:44	17.15	465	1.53	6.37	-89.2	2.80	14.55	8.0	
12:48	17.09	460	1.57	6.37	-89.8	3.56	14.55	9.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 18:26
Sample Number: IW-17-090822
Weather: 27C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 12.87 Time: 17:48 Flow through cell vol. 500mL Avg. Flow Rate
Begin Purge: Date/Time: 09/08/2022; 17:52 End Purge: Date/Time: 09/08/2022; 18:21 Liters Purged:
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
17:56	17.13	413	1.74	6.15	-24.2	19.50	12.93	1.0	
18:01	16.56	416	1.22	6.21	-8.1	13.50	12.93	2.0	
18:05	16.51	421	1.29	6.30	-6.6	8.62	12.93	3.0	
18:09	16.33	441	1.37	6.36	-6.5	5.93	12.93	4.0	
18:13	16.32	449	1.45	6.39	-7.0	4.63	12.93	5.0	
18:17	16.37	448	1.47	6.40	-8.0	4.10	12.93	6.0	
18:21	16.38	438	1.48	6.41	-8.6	2.79	12.93	7.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date:

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 14:06
Sample Number: IW-18-090822
Weather: 26C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.23 Time: 13:15 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/08/2022; 13:19 End Purge: Date/Time: 09/08/2022; 14:03 Liters Purged: 11
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
13:23	19.51	589	1.94	6.41	-56.5	18.01	15.25	1.0	
13:27	17.83	628	1.48	6.24	-42.3	22.98	15.25	2.0	
13:31	17.48	634	1.59	6.34	-46.0	11.20	15.25	3.0	
13:35	17.35	634	1.38	6.36	-50.5	7.89	15.25	4.0	
13:39	17.39	630	1.45	6.36	-55.1	6.75	15.25	5.0	
13:43	17.34	624	1.60	6.36	-60.0	4.95	15.25	6.0	
13:47	17.44	617	1.77	6.36	-63.4	3.10	15.25	7.0	
13:51	17.38	601	1.90	6.35	-66.4	3.36	15.25	8.0	
13:55	17.35	589	1.93	6.36	-67.9	2.12	15.25	9.0	
13:59	17.36	574	2.19	6.36	-69.2	1.98	15.25	10.0	
14:01	17.34	566	2.18	6.36	-69.9	1.60	15.25	10.5	
14:03	17.36	559	2.18	6.36	-70.3	2.06	15.25	11.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)	
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)	
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)	
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)	
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)	
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica	
	VOC (Boeing short list)	
	Methane Ethane Ethene Acetylene	
	others	

Duplicate Sample No(s):
Comments:
Signature: Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 09:35
Sample Number: MW-1R-090822
Weather: 18C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.37 Time: 08:42 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/08/2022; 08:44 End Purge: Date/Time: 09/08/2022; 09:31 Liters Purged: 12
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
08:47	15.69	1244	3.29	6.39	42.4	37.78	14.92	1.0	
08:51	15.85	1411	1.68	6.39	37.6	33.11	15.21	2.0	
08:55	15.94	1406	2.24	6.43	5.1	18.42	15.40	3.0	
08:59	15.96	1353	2.37	6.47	-13.0	12.63	15.60	4.0	
09:03	15.92	1237	2.52	6.50	-18.3	8.79	15.71	5.0	
09:07	15.91	1079	2.30	6.52	-20.3	9.61	15.82	6.0	
09:11	15.88	943	2.20	6.52	-23.4	9.29	15.90	7.0	
09:15	15.85	918	2.17	6.51	-25.6	8.98	15.97	8.0	
09:17	15.84	900	2.11	6.51	-26.7	9.48	15.98	8.5	
09:21	15.81	851	2.13	6.50	-28.6	7.74	16.03	9.5	
09:23	15.81	834	2.09	6.49	-29.1	7.30	16.04	10.0	
09:25	15.82	827	2.17	6.48	-29.7	6.31	16.05	10.5	
09:27	15.82	821	2.12	6.47	-29.9	4.67	16.05	11.0	
09:29	15.81	814	2.11	6.47	-30.0	4.55	16.06	11.5	
09:31	15.77	803	2.12	6.46	-29.8	4.13	16.08	12.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 10:49
Sample Number: MW-6R-090822
Weather: 22C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.23 Time: 09:50 Flow through cell vol. 500mL Avg. Flow Rate 0.21 L/min
Begin Purge: Date/Time: 09/08/2022; 09:52 End Purge: Date/Time: 09/08/2022; 10:45 Liters Purged: 11
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
09:56	17.13	959	1.66	6.30	-59.8	9.11	15.09	1.0	
10:01	16.81	1011	1.15	6.15	-67.1	16.73	15.75	2.0	
10:05	16.68	1019	1.19	6.22	-77.0	15.28	16.13	3.0	
10:09	16.42	1008	3.67	6.18	-68.3	58.58	16.70	4.0	YSI turned off (DO reset...)
10:13	16.40	1005	2.70	6.19	-67.5	89.24	17.20	5.0	turbidity increase
10:17	16.20	993	2.65	6.18	-67.5	59.21	17.55	6.0	slowed pump rate
10:21	16.27	988	2.53	6.19	-68.7	61.56	17.70	6.75	due to drawdown
10:25	16.31	972	2.44	6.21	-65.3	25.11	17.76	7.5	
10:29	16.35	959	2.36	6.22	-59.9	16.73	17.76	8.25	
10:33	16.33	937	2.42	6.23	-56.4	7.76	17.75	9.0	
10:36	16.42	921	2.33	6.24	-54.6	4.83	17.75	9.5	
10:39	16.44	904	2.26	6.23	-53.1	3.64	17.72	10.0	
10:42	16.55	888	2.22	6.24	-51.9	2.88	17.68	10.5	
10:45	16.55	876	2.20	6.24	-50.9	2.64	17.65	11.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/08/2022; 08:30
Sample Number: MW-7R-090822
Weather: 12C sunny
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.60 Time: 07:22 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/08/2022; 07:30 End Purge: Date/Time: 09/08/2022; 08:27 Liters Purged: 14
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
07:35	15.64	2374	1.59	6.66	33.9	49.44	15.39	1.0	turbid
07:39	15.36	2153	2.74	6.51	29.6	30.20	15.53	2.0	
07:43	15.19	1773	4.72	6.54	26.2	21.98	15.59	3.0	
07:47	15.04	1513	4.15	6.57	22.8	12.17	15.63	4.0	
07:51	14.94	1291	3.84	6.61	20.4	7.48	15.64	5.0	
07:55	14.87	1136	3.76	6.60	20.7	6.74	15.65	6.0	
07:59	14.84	1041	3.79	6.60	20.7	5.18	15.65	7.0	
08:03	14.83	952	3.76	6.61	21.5	3.98	15.65	8.0	
08:07	14.81	865	3.76	6.61	22.9	3.77	15.65	9.0	
08:11	14.83	815	3.78	6.61	24.0	3.43	15.65	10.0	
08:15	14.81	776	3.83	6.60	25.7	2.42	15.65	11.0	
08:19	14.81	747	3.84	6.59	26.4	1.74	15.65	12.0	
08:23	14.80	728	3.92	6.59	27.0	1.97	15.65	13.0	
08:25	14.82	714	3.93	6.59	27.6	1.63	15.65	13.5	
08:27	14.83	709	3.94	6.50	27.0	1.61	15.65	14.0	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
clear, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: Date: 09/08/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Pre-injection Sampling
Date/Time: 09/07/2022; 17:17
Sample Number: MW-8-090722
Weather: 32C partly cloudy, breezy
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument (paved over casing 1.2' bgs)
DTW Before Purging (ft) 14.45 Time: 16:32 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min
Begin Purge: Date/Time: 09/07/2022; 16:35 End Purge: Date/Time: 09/07/2022; 17:13 Liters Purged: 9.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
16:39	17.83	789	1.41	6.35	-59.8	30.29	14.61	1.0	
16:43	16.78	760	4.18	6.38	-56.5	28.10	14.65	2.0	
16:47	16.39	707	6.58	6.43	-52.6	16.74	14.65	3.0	
16:51	16.18	652	5.77	6.46	-47.2	11.04	14.65	4.0	
16:55	16.21	614	5.38	6.46	-43.2	8.61	14.65	5.0	
16:59	16.20	590	5.02	6.47	-41.7	5.10	14.65	6.0	
17:03	16.12	572	4.65	6.46	-39.4	5.82	14.65	7.0	
17:07	16.13	554	4.38	6.46	-37.3	3.68	14.65	8.0	
17:11	16.08	544	4.12	6.46	-35.5	3.76	14.65	9.0	
17:13	16.03	547	4.00	6.45	-35.5	2.68	14.65	9.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
clear, slightly turbid (red particles), petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)	
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)	
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)	
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)	
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)	
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica	
	VOC (Boeing short list)	
	Methane Ethane Ethene Acetylene	
	others	

Duplicate Sample No(s):
Comments:
Signature: Date: 09/07/2022

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

Laboratory Job ID: 590-18585-1
Client Project/Site: City of Yakima-Tiger Oil

For:
Landau & Associates, Inc.
10 North Post Street, Suite 218
Spokane, Washington 99201

Attn: Shane Kostka

Randee Arrington

Authorized for release by:
9/23/2022 4:21:42 PM

Randee Arrington, Lab Director
(509)924-9200
Randee.Arrington@et.eurofinsus.com

LINKS

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www.eurofinsus.com/Env

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

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

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Case Narrative

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Job ID: 590-18585-1

Laboratory: Eurofins Spokane

Narrative

Receipt
The samples were received on 9/9/2022 12:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.4º C.

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

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

Definitions/Glossary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Glossary

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

Sample Summary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-18585-1	IW-1-090722	Water	09/07/22 13:19	09/09/22 12:10
590-18585-2	IW-2-090722	Water	09/07/22 14:09	09/09/22 12:10
590-18585-3	IW-4-090722	Water	09/07/22 15:02	09/09/22 12:10
590-18585-4	IW-10-090722	Water	09/07/22 16:12	09/09/22 12:10
590-18585-5	MW-8-090722	Water	09/07/22 17:17	09/09/22 12:10
590-18585-6	IW-3-090722	Water	09/07/22 18:25	09/09/22 12:10
590-18585-7	MW-7R-090822	Water	09/08/22 08:30	09/09/22 12:10
590-18585-8	MW-1R-090822	Water	09/08/22 09:35	09/09/22 12:10
590-18585-9	MW-6R-090822	Water	09/08/22 10:49	09/09/22 12:10
590-18585-10	IW-8-090822	Water	09/08/22 11:53	09/09/22 12:10
590-18585-11	IW-15-090822	Water	09/08/22 12:51	09/09/22 12:10
590-18585-12	IW-18-090822	Water	09/08/22 14:06	09/09/22 12:10
590-18585-13	IW-12-090822	Water	09/08/22 15:27	09/09/22 12:10
590-18585-14	IW-14-090822	Water	09/08/22 16:26	09/09/22 12:10
590-18585-15	IW-9-090822	Water	09/08/22 17:34	09/09/22 12:10
590-18585-16	IW-17-090822	Water	09/08/22 18:26	09/09/22 12:10

Chain-of-Custody Record

LANDAU ASSOCIATES

- [x] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] _____

Date 09/07/2022 Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name ~~Ty~~ of Yakima - Tiger Oil Project No 1148010

Project Location/Event Tiger Oil 1st Sf / Pre-injection GW sampling

Sampler's Name Weston Boardman

Project Contact Jeff Menken jmenken@landauinc.com

Send Results To _____

Special Handling Requirements: _____

Shipment Method: _____

Stored on ice: (Yes) / No

Testing Parameters: NWTPH-Dx

Sample I D	Date	Time	Matrix	No of Containers	Observations/Comments
IW-1-090722	9/7/22	13 19	W	2	
IW-2-090722		14 09			
IW-4-090722		15 02			
IW-10-090722		16 12			
MW-8-090722		17 17			
IW-3-090722		18 25			
MW-7R-090822	9/8/22	08 30			
MW-1R-090822		09.35			
MW-6R-090822		10 49			
IW-8-090822		11.53			
IW-15-090822		12.51			
IW-18-090822		14.06			
IW-12-090822		15.27			
IW-14-090822		16 26			
IW-9-090822		17.34			
IW-17-090822		18.26			

- ___ Allow water samples to settle, collect aliquot from clear portion ☐
- ___ NWTPH-Dx Acid wash cleanup ☐ Silica gel cleanup ☐
- ___ Dissolved metal samples were field filtered

Other _____

590-18585 Chain of Custody

0.4°C on ice 120006

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Weston Boardman	Printed Name Madison	Printed Name	Printed Name
Company Landau Associates	Company EA	Company	Company
Date 09/09/2022 Time 12 10	Date 9/9/22 Time 12:10	Date Time	Date Time

WHITE COPY Laboratory YELLOW COPY Project File PINK COPY Client Representative

10/2018

9/23/2022

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-18585-1

Login Number: 18585
List Number: 1
Creator: Vaughan, Madison 1

List Source: Eurofins Spokane

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

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

Client Sample ID: IW-1-090722
Date Collected: 09/07/22 13:19
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1100		150		ug/L			09/19/22 23:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*09/19/22 23:10*	*1*

Client Sample ID: IW-2-090722
Date Collected: 09/07/22 14:09
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	6100		150		ug/L			09/19/22 23:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*09/19/22 23:31*	*1*

Client Sample ID: IW-4-090722
Date Collected: 09/07/22 15:02
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2300		150		ug/L			09/20/22 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*68.7 - 141*		*09/20/22 15:22*	*1*

Client Sample ID: IW-10-090722
Date Collected: 09/07/22 16:12
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	7800		150		ug/L			09/20/22 00:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*68.7 - 141*		*09/20/22 00:14*	*1*

Client Sample ID: MW-8-090722
Date Collected: 09/07/22 17:17
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2400		150		ug/L			09/20/22 00:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*09/20/22 00:35*	*1*

Client Sample ID: IW-3-090722
Date Collected: 09/07/22 18:25
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	4700		150		ug/L			09/20/22 00:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*68.7 - 141*		*09/20/22 00:56*	*1*

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

Client Sample ID: MW-7R-090822
Date Collected: 09/08/22 08:30
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1900		150		ug/L			09/20/22 01:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*09/20/22 01:18*	*1*

Client Sample ID: MW-1R-090822
Date Collected: 09/08/22 09:35
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2300		150		ug/L			09/20/22 02:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*09/20/22 02:01*	*1*

Client Sample ID: MW-6R-090822
Date Collected: 09/08/22 10:49
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	5900		150		ug/L			09/20/22 02:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*68.7 - 141*		*09/20/22 02:22*	*1*

Client Sample ID: IW-8-090822
Date Collected: 09/08/22 11:53
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	20000		1500		ug/L			09/21/22 13:55	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*68.7 - 141*		*09/20/22 18:16*	*1*
4-Bromofluorobenzene (Surr)	*94*		*68.7 - 141*		*09/21/22 13:55*	*10*

Client Sample ID: IW-15-090822
Date Collected: 09/08/22 12:51
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	9200		150		ug/L			09/20/22 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*09/20/22 18:37*	*1*

Client Sample ID: IW-18-090822
Date Collected: 09/08/22 14:06
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	44000		1500		ug/L			09/21/22 14:16	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*09/20/22 18:58*	*1*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*09/21/22 14:16*	*10*

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

Client Sample ID: IW-12-090822
Date Collected: 09/08/22 15:27
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	16000		1500		ug/L			09/21/22 14:37	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*09/20/22 19:19*	*1*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*09/21/22 14:37*	*10*

Client Sample ID: IW-14-090822
Date Collected: 09/08/22 16:26
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	17000		1500		ug/L			09/21/22 14:59	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*68.7 - 141*		*09/20/22 19:41*	*1*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*09/21/22 14:59*	*10*

Client Sample ID: IW-9-090822
Date Collected: 09/08/22 17:34
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1700		150		ug/L			09/20/22 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*		*09/20/22 20:02*	*1*

Client Sample ID: IW-17-090822
Date Collected: 09/08/22 18:26
Date Received: 09/09/22 12:10

Lab Sample ID: 590-18585-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	6300		150		ug/L			09/20/22 20:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*		*09/20/22 20:23*	*1*

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

Lab Sample ID: MB 590-38146/6
Matrix: Water
Analysis Batch: 38146

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/19/22 18:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*09/19/22 18:14*	*1*

Lab Sample ID: LCS 590-38146/1005
Matrix: Water
Analysis Batch: 38146

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	1120		ug/L		112	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*68.7 - 141*

Lab Sample ID: LCSD 590-38146/1016
Matrix: Water
Analysis Batch: 38146

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	995		ug/L		99	80 - 120	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*

Lab Sample ID: MB 590-38152/6
Matrix: Water
Analysis Batch: 38152

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/20/22 15:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*09/20/22 15:00*	*1*

Lab Sample ID: LCS 590-38152/1005
Matrix: Water
Analysis Batch: 38152

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	1010		ug/L		101	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*

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

Lab Sample ID: LCSD 590-38152/1028
Matrix: Water
Analysis Batch: 38152

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	1020		ug/L		101	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*

Lab Sample ID: MB 590-38164/6
Matrix: Water
Analysis Batch: 38164

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/22 13:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*68.7 - 141*		*09/21/22 13:33*	*1*

Lab Sample ID: LCS 590-38164/1005
Matrix: Water
Analysis Batch: 38164

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	1110		ug/L		110	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*68.7 - 141*

Lab Sample ID: LCSD 590-38164/1016
Matrix: Water
Analysis Batch: 38164

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	1090		ug/L		109	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Client Sample ID: IW-1-090722
Lab Sample ID: 590-18585-1
Date Collected: 09/07/22 13:19
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/19/22 23:10

Client Sample ID: IW-2-090722
Lab Sample ID: 590-18585-2
Date Collected: 09/07/22 14:09
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/19/22 23:31

Client Sample ID: IW-4-090722
Lab Sample ID: 590-18585-3
Date Collected: 09/07/22 15:02
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 15:22

Client Sample ID: IW-10-090722
Lab Sample ID: 590-18585-4
Date Collected: 09/07/22 16:12
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/20/22 00:14

Client Sample ID: MW-8-090722
Lab Sample ID: 590-18585-5
Date Collected: 09/07/22 17:17
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/20/22 00:35

Client Sample ID: IW-3-090722
Lab Sample ID: 590-18585-6
Date Collected: 09/07/22 18:25
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/20/22 00:56

Client Sample ID: MW-7R-090822
Lab Sample ID: 590-18585-7
Date Collected: 09/08/22 08:30
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/20/22 01:18

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Client Sample ID: MW-1R-090822
Lab Sample ID: 590-18585-8
Date Collected: 09/08/22 09:35
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/20/22 02:01

Client Sample ID: MW-6R-090822
Lab Sample ID: 590-18585-9
Date Collected: 09/08/22 10:49
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38146	JSP	EET SPK	09/20/22 02:22

Client Sample ID: IW-8-090822
Lab Sample ID: 590-18585-10
Date Collected: 09/08/22 11:53
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 18:16
Total/NA	Analysis	NWTPH-Gx		10	38164	JSP	EET SPK	09/21/22 13:55

Client Sample ID: IW-15-090822
Lab Sample ID: 590-18585-11
Date Collected: 09/08/22 12:51
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 18:37

Client Sample ID: IW-18-090822
Lab Sample ID: 590-18585-12
Date Collected: 09/08/22 14:06
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 18:58
Total/NA	Analysis	NWTPH-Gx		10	38164	JSP	EET SPK	09/21/22 14:16

Client Sample ID: IW-12-090822
Lab Sample ID: 590-18585-13
Date Collected: 09/08/22 15:27
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 19:19
Total/NA	Analysis	NWTPH-Gx		10	38164	JSP	EET SPK	09/21/22 14:37

Client Sample ID: IW-14-090822
Lab Sample ID: 590-18585-14
Date Collected: 09/08/22 16:26
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 19:41

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Client Sample ID: IW-14-090822
Lab Sample ID: 590-18585-14
Date Collected: 09/08/22 16:26
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		10	38164	JSP	EET SPK	09/21/22 14:59

Client Sample ID: IW-9-090822
Lab Sample ID: 590-18585-15
Date Collected: 09/08/22 17:34
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 20:02

Client Sample ID: IW-17-090822
Lab Sample ID: 590-18585-16
Date Collected: 09/08/22 18:26
Matrix: Water
Date Received: 09/09/22 12:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	38152	JSP	EET SPK	09/20/22 20:23

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Laboratory: Eurofins Spokane

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-23

Method Summary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil

Job ID: 590-18585-1

Method	Method Description	Protocol	Laboratory
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
5030C	Purge and Trap	SW846	EET SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

APPENDIX F

Post-Injection 1 Groundwater Monitoring Sample Collection Forms and Laboratory Analytical Report

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/18/2022; 11:23
Sample Number: IW-1-011823
Weather: 1C Overcast
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument

DTW Before Purging (ft) 14.80 Time: 10:17 Flow through cell vol. 500mL Avg. Flow Rate 0.21

Begin Purge: Date/Time: 01/18/2022; 10:24 End Purge: Date/Time: 01/18/2022; 11:20 Liters Purged: 11.5

Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
10:32	13.61	9288	2.09	1.90	387.0	20.58	14.86	1.5	
10:38	14.16	8836	1.80	1.97	367.4	17.00	14.85	2.5	
10:42	14.33	8832	1.26	1.78	462.5	10.80	14.87	3.5	pause to re-cal pH
10:57	13.78	9972	1.69	1.76	515.3	10.96	14.90	6.5	kept pump running
11:02	14.14	10152	1.32	1.70	526.9	8.42	14.87	7.5	
11:07	14.32	10247	1.12	1.69	528.6	5.50	14.89	8.5	
11:11	14.43	10294	1.06	1.69	531.2	5.16	14.88	9.5	
11:16	14.51	10328	0.98	1.69	533.1	3.64	14.87	10.5	
11:20	14.52	10326	0.94	1.69	534.0	2.62	14.87	11.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump

Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated

Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated

☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
Orange, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):

Comments:

Signature: Date: 01/18/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/18/2022; 12:38
Sample Number: IW-2-011823
Weather: 1C overcast
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.79 Time: 11:38 Flow through cell vol. 500mL Avg. Flow Rate 0.24
Begin Purge: Date/Time: 01/18/2023; 11:42 End Purge: Date/Time: 01/18/2023; 12:35 Liters Purged: 12.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
11:49	14.36	6124	0.89	2.26	483.0	3.89	14.88	1.5	
11:54	14.67	5366	0.77	2.39	467.1	3.31	14.88	2.5	
11:58	14.76	4710	1.34	2.49	459.3	1.55	14.87	3.5	
12:02	14.80	4007	1.00	2.62	452.1	1.68	14.87	4.5	
12:07	14.82	3504	1.06	2.75	444.0	1.56	14.86	5.5	
12:11	14.79	3263	1.15	2.84	440.1	1.62	14.86	6.5	
12:15	14.79	3121	1.24	2.91	436.6	1.74	14.86	7.5	
12:19	14.81	3006	1.36	2.99	431.1	1.27	14.86	8.5	
12:23	14.87	2942	1.46	3.04	426.9	1.47	14.86	9.5	
12:27	14.81	2891	1.54	3.08	422.6	1.41	14.86	10.5	
12:31	14.85	2843	1.65	3.13	418.7	1.25	14.86	11.5	
12:35	14.85	2817	1.71	3.15	415.2	1.88	14.86	12.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 01/18/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 11:43
Sample Number: IW-3-011923
Weather: 2C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.03 Time: 10:55 Flow through cell vol. 500mL Avg. Flow Rate
Begin Purge: Date/Time: 01/19/2023; 10:57 End Purge: Date/Time: 01/19/2023; Liters Purged:
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
11:05	13.88	8951	0.56	3.00	492.4	14.12	14.29	1.5	
11:09	13.90	8657	0.56	3.03	483.8	13.51	14.27	2.5	
11:14	14.05	8185	0.45	3.05	484.6	10.50	14.28	3.5	
11:18	14.14	7704	0.41	3.07	483.7	7.50	14.30	4.5	
11:22	14.25	7250	0.38	3.11	482.0	6.76	14.32	5.5	
11:25	14.23	6897	0.36	3.12	479.6	5.98	14.35	6.5	
11:29	14.27	6480	0.35	3.14	477.9	5.16	14.32	7.5	
11:32	14.30	6156	0.33	3.16	476.0	4.83	14.32	8.5	
11:36	14.35	5880	0.33	3.17	474.4	4.81	14.32	9.5	
11:40	14.30	5688	0.33	3.19	471.7	3.87	14.33	10.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date:

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/18/2022; 13:17
Sample Number: IW-4-011823
Weather: 1C overcast int. light rain
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 15.05 Time: 12:47 Flow through cell vol. 500mL Avg. Flow Rate 0.25
Begin Purge: Date/Time: 01/18/2022; 12:56 End Purge: Date/Time: 01/18/2022; 13:14 Liters Purged: 4.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
13:02	14.95	6085	0.73	1.93	352.8	1.47	15.24	1.5	
13:06	15.29	6224	0.59	1.84	360.8	1.10	15.25	2.5	
13:10	15.36	6231	0.61	1.84	359.6	0.87	15.25	3.5	
13:14	15.35	6111	0.56	1.87	354.8	1.30	15.25	4.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: [signature] Date: 01/18/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 12:32
Sample Number: IW-8-011923
Weather: 4C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.13 Time: 11:59 Flow through cell vol. 500mL Avg. Flow Rate 0.25
Begin Purge: Date/Time: 01/19/2023; 12:01 End Purge: Date/Time: 01/19/2023; 12:29 Liters Purged: 7.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
12:07	15.22	11035	3.62	3.19	365.2	11.11	14.43	1.5	
12:11	15.23	10807	3.28	3.24	356.6	7.69	14.47	2.5	
12:15	15.26	9991	2.36	3.28	352.6	4.76	14.49	3.5	
12:18	15.37	9417	2.07	3.30	350.6	3.53	14.51	4.5	
12:23	15.34	8463	1.74	3.34	354.2	3.16	14.50	5.75	
12:25	15.30	8280	1.69	3.34	355.4	2.64	14.50	6.5	
12:29	15.29	8030	1.60	3.35	358.4	2.52	14.49	7.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
slightly orange, not turbid, petro odor, NS. All parameters but conductivity stable (erratic readings).

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 01/19/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/18/2023; 14:22
Sample Number: IW-9-011823
Weather: 1C overcast
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.59 Time: 15:33 Flow through cell vol. 500mL Avg. Flow Rate 0.25
Begin Purge: Date/Time: 01/18/2023; 15:39 End Purge: Date/Time: 01/18/2022; 14:17 Liters Purged: 9.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
13:45	13.85	725	8.69	4.22	46.5	8.27	14.59	1.5	
13:49	14.05	576	8.48	4.61	-26.7	2.68	14.59	2.5	
13:52	14.18	505	8.35	4.85	-58.8	2.51	14.59	3.5	
13:56	14.25	484	8.29	4.95	-73.3	2.38	14.59	4.5	probe not fully in flow thru...
14:04	14.39	862	0.61	5.09	-92.3	1.15	14.59	6.5	
14:09	14.39	859	0.51	5.12	-97.3	1.34	14.59	7.5	
14:13	14.36	851	0.46	5.13	-100.0	1.41	14.59	8.5	
14:17	14.35	845	0.50	5.14	-102.7	2.29	14.59	9.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 01/18/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 16:10
Sample Number: IW-10-011923
Weather: 8C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.67 Time: 15:41 Flow through cell vol. 500mL Avg. Flow Rate 0.23
Begin Purge: Date/Time: 01/19/2023; 15:43 End Purge: Date/Time: 01/19/2023; 16:07 Liters Purged: 5.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
15:50	14.46	3508	8.83	3.04	357.0	11.19	14.71	1.5	
15:54	14.50	3558	8.44	3.04	350.1	7.76	14.71	2.5	
15:58	14.62	3577	7.98	3.05	344.9	5.96	14.70	3.5	
16:03	14.54	3564	7.72	3.07	340.8	3.83	14.69	4.5	
16:07	14.54	3563	7.46	3.07	340.0	2.65	14.69	5.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.): yellow, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: [signature] Date: 01/19/2022

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 14:20
Sample Number: IW-12-011923
Weather: 8C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.57 Time: 13:53 Flow through cell vol. 500mL Avg. Flow Rate 0.21
Begin Purge: Date/Time: 01/19/2023; 13:55 End Purge: Date/Time: 01/19/2023; 14:16 Liters Purged: 4.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
14:01	14.67	12883	2.98	3.27	490.9	10.85	14.78	1.5	
14:06	14.80	13126	3.02	3.25	493.8	6.70	14.81	2.5	
14:11	14.88	13002	3.04	3.24	497.2	4.19	14.82	3.5	
14:16	14.84	12605	2.47	3.23	499.2	4.52	14.80	4.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
light orange, not turbid, petro odor, NS. All parameters except for conductivity (very erratic) stable.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)	
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)	
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)	
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)	
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)	
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica	
	VOC (Boeing short list)	
	Methane Ethane Ethene Acetylene	
	others	

Duplicate Sample No(s):
Comments:
Signature: Date: 01/19/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 15:28
Sample Number: IW-14-011923
Weather: 8C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument

DTW Before Purging (ft) 14.13 Time: 14:28 Flow through cell vol. 500mL Avg. Flow Rate 0.21

Begin Purge: Date/Time: 01/19/2023; 14:31 End Purge: Date/Time: 01/19/2023; 15:25 Liters Purged: 11.5

Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
14:37	15.06	3456	0.72	4.92	200.8	199.7	14.78	1.5	
14:43	15.03	2779	0.77	5.19	108.1	202.2	14.83	2.5	
14:47	15.03	2619	0.77	5.24	82.5	145.2	14.87	3.5	
14:52	15.06	2488	0.74	5.26	65.5	111.0	14.87	4.5	
14:57	15.10	2333	0.76	5.29	52.6	70.97	14.87	5.5	
15:02	15.04	2247	0.79	5.33	42.8	53.08	14.83	6.5	
15:07	15.04	2199	0.80	5.33	40.9	38.06	14.82	7.5	
15:11	15.05	2194	0.89	5.31	42.7	30.79	14.83	8.5	
15:16	15.03	2144	0.90	5.34	36.8	23.10	14.83	9.5	
15:20	15.04	2121	0.94	5.34	35.4	19.70	14.83	10.5	
15:25	15.05	2101	0.95	5.35	35.0	15.99	14.83	11.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump

Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated

Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated

☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
Light yellow, turbid, petro odor, no sheen. Parameters did not stabilize; sampled after 1 hour.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):

Comments:

Signature: Date: 01/19/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 13:43
Sample Number: IW-15-011923
Weather: 4C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.01 Time: 12:40 Flow through cell vol. 500mL Avg. Flow Rate 0.22
Begin Purge: Date/Time: 01/19/2023; 12:43 End Purge: Date/Time: 01/19/2023; 13:40 Liters Purged: 12.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
12:50	15.17	1193	0.65	4.67	179.3	107.8	14.10	1.5	
12:55	15.25	952	0.53	4.67	160.8	63.72	14.12	2.5	
12:59	15.31	968	0.51	4.49	208.8	52.60	14.12	3.5	
13:03	15.28	1027	0.51	4.31	250.8	32.63	14.11	4.5	
13:08	15.31	1078	0.50	4.12	289.6	16.41	14.10	5.5	
13:12	15.13	1152	0.50	3.98	336.7	11.47	14.10	6.5	
13:17	15.07	1121	0.49	3.92	354.4	10.16	14.09	7.5	
13.22	15.09	1089	0.48	3.94	355.6	6.83	14.12	8.5	
13:26	15.13	1063	0.47	3.89	363.5	5.61	14.11	9.5	
13:31	15.08	1048	0.47	3.88	365.8	4.46	14.10	10.5	
13.35	15.14	1027	0.46	3.88	365.0	5.90	14.10	11.5	
13:40	15.12	1015	0.46	3.86	369.7	4.61	14.10	12.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
light orange, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date: 01/19/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 18:25
Sample Number: IW-17-011923
Weather: 4C clear/dark
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 12.43 Time: 17:31 Flow through cell vol. 500mL Avg. Flow Rate 0.23
Begin Purge: Date/Time: 01/19/2023; 17:35 End Purge: Date/Time: 01/19/2023; 18:21 Liters Purged: 10.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
17:42	12.30	2123	1.35	4.95	176.4	out of range high	13.62	1.5	very turbid/tan
17:45	12.40	1913	1.23	5.25	103.9	out of range high	13.90	2.5	
17:50	12.53	1800	1.10	5.39	54.0	716.5	14.10	3.5	
17:55	12.56	1735	0.95	5.45	19.0	704.1	14.25	4.5	
17:59	12.61	1729	0.84	5.43	6.1	885.5	14.29	5.5	
18:03	12.64	1742	0.74	5.41	-0.7	out of range high	14.36	6.5	
18:09	12.60	1766	0.66	5.36	-2.3	out of range high	14.37	7.5	
18:13	12.66	1789	0.61	5.33	2.3	out of range high	14.55	8.5	
18:17	12.71	1810	0.59	5.29	6.7	out of range high	14.65	9.5	
18:21	12.75	1829	0.58	5.25	11.9	out of range high	14.69	10.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
tan, extremely turbid, petro odor, NS. All parameters stable except turbidity which is out of range high.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)	
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)	
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)	
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)	
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)	
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica	
	VOC (Boeing short list)	
	Methane Ethane Ethene Acetylene	
	others	

Duplicate Sample No(s):
Comments:
Signature: Date: 01/19/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 17:21
Sample Number: IW-18-011923
Weather: 7C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 14.80 Time: 16:20 Flow through cell vol. 500mL Avg. Flow Rate 0.20
Begin Purge: Date/Time: 01/19/2023; 16:25 End Purge: Date/Time: 01/19/2023; 17:17 Liters Purged: 11.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
16:31	13.75	8143	0.42	3.36	459.7	23.22	14.93	1.5	
16:36	13.91	9086	0.44	3.28	473.6	33.97	14.93	2.5	
16:40	14.00	8985	0.55	3.27	490.0	52.44	14.93	3.5	
16:45	14.05	8603	0.63	3.27	496.5	47.60	14.93	4.5	
16:50	14.10	8220	0.71	3.28	498.2	39.20	14.93	5.5	
16:54	14.19	7895	0.85	3.30	501.3	30.06	14.93	6.5	
16:59	14.19	7540	1.00	3.30	502.3	22.18	14.95	7.5	
17:03	14.24	7342	1.05	3.31	494.8	18.41	14.96	8.5	
17:08	14.20	7139	1.13	3.32	495.0	14.72	14.96	9.5	
17:12	14.15	7020	1.09	3.32	496.4	13.02	14.96	10.5	
17:17	14.17	6900	1.12	3.32	497.0	10.54	14.97	11.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
Very neon yellow, slightly turbid, petro odor, no sheen. Parameters did not stabilize; sampled after 1 hour.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)	
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)	
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)	
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)	
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)	
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica	
	VOC (Boeing short list)	
	Methane Ethane Ethene Acetylene	
	others	

Duplicate Sample No(s):
Comments:
Signature: Date: 01/19/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 10:36
Sample Number: N1MW-6R-011923
Weather: -3C clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 13.71 Time: 09:25 Flow through cell vol. 500mL Avg. Flow Rate
Begin Purge: Date/Time: 01/19/2023; 09:35 End Purge: Date/Time: 01/19/2023; Liters Purged:
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits									
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
09:42	12.94	7547	1.00	2.87	458.9	16.84	14.88	1.5	
09:46	13.43	7445	0.70	2.88	497.1	16.51	15.27	2.5	
09:50	13.55	7162	0.62	2.93	513.0	11.47	15.58	3.5	
09:54	13.66	7094	0.54	2.93	508.1	9.96	15.85	4.5	
09:58	13.70	7014	0.49	2.92	496.6	7.63	16.07	5.5	
10:02	13.85	6857	0.43	2.93	474.3	6.63	16.24	6.5	
10:06	13.94	6552	0.40	2.96	446.2	6.71	16.43	7.5	
10:09	14.00	6260	0.38	3.01	431.8	5.03	16.72	8.5	
10:17	14.04	5549	0.42	3.09	421.1	5.77	17.10	10.5	
10:20	14.05	5402	0.47	3.10	423.3	18.65	17.15	11.5	
10:24	14.05	5372	0.50	3.10	430.4	24.34	17.00	12.5	
10:29	14.11	5146	0.46	3.13	426.3	17.83	16.87	13.5	
10:33	14.09	5017	0.48	3.15	422.9	10.75	16.86	14.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other
Sample Description (color, turbidity, odor, sheen, etc.):
Slightly orange, not turbid, petro odor, NS.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):
Comments:
Signature: Date:

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/18/21023; 17:00
Sample Number: N1MW-7R-011823
Weather: 4C overcast
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument

DTW Before Purging (ft) 14.03 Time: 15:51 Flow through cell vol. 500mL Avg. Flow Rate 0.23 l/min

Begin Purge: Date/Time: 01/18/2023; 15:53 End Purge: Date/Time: 01/18/2023; 16:55 Liters Purged: 14.5

Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
16:00	13.92	5832	0.78	3.89	213.6	117.2	14.47	1.5	
16:04	14.03	5502	0.80	3.64	324.8	98.42	14.73	2.5	
16:08	13.97	4920	0.91	3.42	374.5	91.64	14.92	3.5	
16:13	14.08	4635	0.88	3.18	404.7	80.67	15.81	4.5	
16.17	14.20	4272	0.91	3.00	428.7	56.23	15.86	5.5	
16:21	14.26	3969	0.93	2.85	439.6	47.05	15.89	6.5	
16:25	14.26	3648	0.93	2.74	449.6	39.39	15.84	7.5	
16:29	14.30	3439	0.97	2.68	452.2	34.41	15.80	8.5	
16:34	14.13	3249	1.01	2.60	455.8	37.57	15.85	9.5	
16:37	14.21	3131	1.01	2.56	463.6	41.28	15.84	10.5	
16:42	14.25	3016	1.03	2.53	459.7	44.64	15.74	11.5	
16:46	14.20	2946	1.03	2.51	458.3	48.53	15.72	12.5	
16:51	14.17	2840	1.07	2.50	458.3	53.02	15.70	13.5	
16:55	14.17	2779	1.06	2.48	455.5	58.35	15.70	14.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump

Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated

Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated

☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
clear, turbid (iron/rust particles?), petro odor, NS. turbidity not stable. sampled after 1 hr.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA ■ OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA ☐ OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s):

Comments:

Signature: Date: 01/18/2023

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/18/2023; 15:37
Sample Number: N1MW-8-011823
Weather: 3C partly cloudy
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument

DTW Before Purging (ft) 13.86 Time: 14:35 Flow through cell vol. 500mL Avg. Flow Rate 0.25 L/min

Begin Purge: Date/Time: 01/18/2023; 14:38 End Purge: Date/Time: 01/18/2023; 15:34 Liters Purged: 13.5

Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
14:46	14.43	2580	2.11	4.36	153.8	59.30	14.48	1.5	
14:50	14.64	2522	0.83	4.39	135.8	52.21	14.54	2.5	
14.54	14.83	2367	0.73	4.42	124.4	38.56	14.54	3.5	
14:59	14.89	2238	0.68	4.42	66.7	32.66	14.54	4.5	
15:03	14.83	2113	0.61	4.43	79.9	21.78	14.55	5.5	
15:07	14.74	2058	0.56	4.42	101.8	16.69	14.55	6.5	
15:11	14.84	1986	0.54	4.41	101.2	13.83	14.59	7.5	
15:15	14.92	1950	0.55	4.41	99.5	10.72	14.60	8.5	
15:20	14.92	1961	0.53	4.40	99.5	9.50	14.62	9.75	
15:23	14.89	1943	0.51	4.40	98.4	7.92	14.63	10.5	
15:26	14.93	1946	0.47	4.39	99.0	6.99	14.66	11.5	
15:30	14.83	1944	0.47	4.39	95.6	7.44	14.57	12.5	
15:34	14.74	1916	0.41	4.38	93.0	7.15	14.53	13.5	

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump

Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated

Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated

☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
clear, turbid (iron/rust particles?), petro odor, no sheen

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):

Comments:

Signature: [signature] Date: 01/18/2023

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: City of Yakima - Tiger Oil 1st St
Project Number: 1148010
Event: Post-injection Sampling
Date/Time: 01/19/2023; 09:06
Sample Number: N1MW-9-011923
Weather: -4C Clear
Landau Representative: Weston Boardman

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: Flush mount monument
DTW Before Purging (ft) 13.85 Time: 07:50 Flow through cell vol. 500mL Avg. Flow Rate 0.25
Begin Purge: Date/Time: 01/19/2023; 07:59 End Purge: Date/Time: 01/19/2023; 09:02 Liters Purged: 15.5
Purge water disposed to: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Vol (L)	Comments/ Observations
	Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
08:08	12.17	6309	2.01	1.06	525.8	42.92	14.44	1.5	
08:13	12.87	6281	1.89	1.05	529.1	21.28	14.54	2.5	pH strip 3...
08:17	13.28	6101	1.52	1.05	520.5	18.67	14.58	3.5	
08:21	13.20	5879	1.27	1.05	508.8	15.20	14.60	4.5	
08:25	13.36	5500	1.08	1.06	488.0	11.60	14.62	5.5	
08:28	13.62	5201	0.91	1.08	475.4	9.10	14.62	6.5	
08:32	13.75	4804	0.78	1.12	460.5	6.82	14.61	7.5	
08:36	13.92	4517	0.71	1.15	440.5	6.06	14.58	8.5	
08:40	13.96	4231	0.66	1.19	441.0	3.96	14.59	9.5	
08:44	14.02	4008	0.63	1.23	434.9	3.60	14.62	10.5	
08:47	14.00	3884	0.62	1.25	431.1	3.19	14.63	11.5	
08:51	13.98	3763	0.58	1.28	429.0	2.52	14.66	12.5	
08:54	13.98	3684	0.56	1.30	427.1	2.27	14.68	13.5	
08:58	13.87	3625	0.54	1.32	425.1	1.94	14.68	14.5	
09:02	13.86	3554	0.99	1.34	422.7	1.47	14.69	15.5	pH strip 3-4

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☒ Pump/Pump Type peristaltic pump
Made of: ☐ Stainless Steel ☐ PVC ☒ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated
Decon Procedure: ☐ Liquinox Wash ☐ Tap Rinse ☐ DI Water ☒ Dedicated
☐ Other

Sample Description (color, turbidity, odor, sheen, etc.):
clear, not turbid, petro odor, NS. Did not stabilizie, sampled after 1 hr.

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
2	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ■	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s):
Comments:
Signature: Date: 01/19/2023

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Shane Kostka
Landau & Associates, Inc.
10 North Post Street, Suite 218
Spokane, Washington 99201

Generated 1/30/2023 10:57:38 AM

JOB DESCRIPTION

Tiger Oil/1148010

JOB NUMBER

590-19667-1

Eurofins Spokane
11922 East 1st Ave
Spokane WA 99206

See page two for job notes and contact information.

my EOL

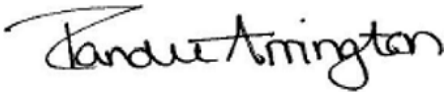
Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



Generated
1/30/2023 10:57:38 AM

Authorized for release by
Randee Arrington, Business Unit Manager
Randee.Arrington@et.eurofinsus.com
(509)924-9200

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Case Narrative

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Job ID: 590-19667-1

Laboratory: Eurofins Spokane

Narrative

Receipt
The samples were received on 1/20/2023 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.4º C.

GC/MS VOA
Method NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: (CCV 590-39941/13). Evidence of matrix interference from carryover is present; therefore, re-extraction and/or re-analysis was not performed. The surrogate recoveries for all samples associated with the CCV were within acceptable limits.

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

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

Definitions/Glossary

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Glossary

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

Sample Summary

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-19667-1	IW-1-011823	Water	01/18/23 11:23	01/20/23 11:00
590-19667-2	IW-2-011823	Water	01/18/23 12:38	01/20/23 11:00
590-19667-3	IW-4-011823	Water	01/18/23 13:17	01/20/23 11:00
590-19667-4	IW-9-011823	Water	01/18/23 14:22	01/20/23 11:00
590-19667-5	NMW-8-011823	Water	01/18/23 15:37	01/20/23 11:00
590-19667-6	NMW-7R-011823	Water	01/18/23 17:00	01/20/23 11:00
590-19667-7	NMW-9-011923	Water	01/19/23 09:06	01/20/23 11:00
590-19667-8	NMW-6R-011923	Water	01/19/23 10:36	01/20/23 11:00
590-19667-9	IW-3-011923	Water	01/19/23 11:43	01/20/23 11:00
590-19667-10	IW-8-011923	Water	01/19/23 12:32	01/20/23 11:00
590-19667-11	IW-15-011923	Water	01/19/23 13:43	01/20/23 11:00
590-19667-12	IW-12-011923	Water	01/19/23 14:26	01/20/23 11:00
590-19667-13	IW-14-011923	Water	01/19/23 15:28	01/20/23 11:00
590-19667-14	IW-10-011923	Water	01/19/23 16:10	01/20/23 11:00
590-19667-15	IW-18-011923	Water	01/19/23 17:21	01/20/23 11:00
590-19667-16	IW-17-011923	Water	01/19/23 18:25	01/20/23 11:00

Chain-of-Custody Record

LANDAU ASSOCIATES

- [x] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [x] Portland (503) 542-1080
- [ ] _____

Date 01/19/2023

Page 1 of 1

Turnaround Time: Standard X / Accelerated

Project Name City of Tacoma-Tyler St Project No 1148010

Project Location/Event Tyler St 1st Qtr 2023 groundwater sampling

Sampler's Name Weston Boardman

Project Contact Jeff Menken

Send Results To

Special Handling Requirements:

Shipment Method:

Stored on ice: (Yes) No

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters: NWTPH-Dx	Observations/Comments
TW-1-011823	1/18/23	11 43	W	2	X	
TW-2 011823		12 38			X	
TW-4-011823		13 17			X	
TW-9 011823		14 22			X	
MMW-8-011823		15 37			X	
MMW-7R 011823		17 06			X	
MMW-9 011923	1/19/23	09 06			X	
MMW-6R 011923		10 36			X	
TW-3-011923		11.43			X	
TW 8-011923		12 32			X	
TW-15-011923		13 43			X	
TW-12-011923		14.20			X	
TW-14-011923		15 28			X	
TW-10 011923		16 10			X	
TW 18 011923		17.21			X	
TW-17-011923		18 25			X	

- [ ] Allow water samples to settle, collect aliquot from clear portion
- [ ] NWTPH-Dx Acid wash cleanup / Silica gel cleanup
- [ ] Dissolved metal samples were field filtered

Other 41 4,4 DDMO 1 PCB

590-19667 Chain of Custody

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Weston Boardman	Printed Name	Printed Name	Printed Name
Company Landau Associates	Company EE180	Company	Company
Date 01/20/23 Time 11 00	Date 1/20/23 Time 1100	Date Time	Date Time

WHITE COPY Laboratory YELLOW COPY Project File PINK COPY Client Representative

10/2018

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-19667-1

Login Number: 19667
List Number: 1
Creator: Fettig, Riley

List Source: Eurofins Spokane

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

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

Client Sample ID: IW-1-011823
Date Collected: 01/18/23 11:23
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	600		150		ug/L			01/24/23 23:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*		*01/24/23 23:09*	*1*

Client Sample ID: IW-2-011823
Date Collected: 01/18/23 12:38
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2200		150		ug/L			01/24/23 23:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*68.7 - 141*		*01/24/23 23:30*	*1*

Client Sample ID: IW-4-011823
Date Collected: 01/18/23 13:17
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	15000		1500		ug/L			01/25/23 12:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*68.7 - 141*		*01/25/23 12:51*	*10*

Client Sample ID: IW-9-011823
Date Collected: 01/18/23 14:22
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1900		150		ug/L			01/25/23 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*01/25/23 00:13*	*1*

Client Sample ID: NMW-8-011823
Date Collected: 01/18/23 15:37
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	230		150		ug/L			01/25/23 00:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*68.7 - 141*		*01/25/23 00:34*	*1*

Client Sample ID: NMW-7R-011823
Date Collected: 01/18/23 17:00
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	690		150		ug/L			01/25/23 00:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*68.7 - 141*		*01/25/23 00:55*	*1*

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

Client Sample ID: NMW-9-011923
Date Collected: 01/19/23 09:06
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1400		150		ug/L			01/25/23 01:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*68.7 - 141*		*01/25/23 01:16*	*1*

Client Sample ID: NMW-6R-011923
Date Collected: 01/19/23 10:36
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2200		150		ug/L			01/25/23 01:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*68.7 - 141*		*01/25/23 01:37*	*1*

Client Sample ID: IW-3-011923
Date Collected: 01/19/23 11:43
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	840		150		ug/L			01/25/23 01:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*68.7 - 141*		*01/25/23 01:58*	*1*

Client Sample ID: IW-8-011923
Date Collected: 01/19/23 12:32
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3100		150		ug/L			01/25/23 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*01/25/23 02:41*	*1*

Client Sample ID: IW-15-011923
Date Collected: 01/19/23 13:43
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	450		150		ug/L			01/25/23 03:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*68.7 - 141*		*01/25/23 03:02*	*1*

Client Sample ID: IW-12-011923
Date Collected: 01/19/23 14:26
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2800		150		ug/L			01/25/23 03:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*		*01/25/23 03:44*	*1*

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

Client Sample ID: IW-14-011923
Date Collected: 01/19/23 15:28
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/25/23 04:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*68.7 - 141*		*01/25/23 04:05*	*1*

Client Sample ID: IW-10-011923
Date Collected: 01/19/23 16:10
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**8400**		1500		ug/L			01/25/23 13:13	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*68.7 - 141*		*01/25/23 13:13*	*10*

Client Sample ID: IW-18-011923
Date Collected: 01/19/23 17:21
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2600**		150		ug/L			01/25/23 04:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*68.7 - 141*		*01/25/23 04:47*	*1*

Client Sample ID: IW-17-011923
Date Collected: 01/19/23 18:25
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**190**		150		ug/L			01/25/23 05:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*68.7 - 141*		*01/25/23 05:08*	*1*

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

Lab Sample ID: MB 590-39926/6
Matrix: Water
Analysis Batch: 39926

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/24/23 22:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*68.7 - 141*		*01/24/23 22:48*	*1*

Lab Sample ID: LCS 590-39926/1005
Matrix: Water
Analysis Batch: 39926

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	921		ug/L		92	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*68.7 - 141*

Lab Sample ID: LCSD 590-39926/1016
Matrix: Water
Analysis Batch: 39926

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	966		ug/L		97	80 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*68.7 - 141*

Lab Sample ID: MB 590-39941/7
Matrix: Water
Analysis Batch: 39941

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/25/23 12:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*68.7 - 141*		*01/25/23 12:30*	*1*

Lab Sample ID: LCS 590-39941/1006
Matrix: Water
Analysis Batch: 39941

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	947		ug/L		95	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*68.7 - 141*

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

Lab Sample ID: LCSD 590-39941/1013
Matrix: Water
Analysis Batch: 39941

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	917		ug/L		92	80 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*128*		*68.7 - 141*

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Client Sample ID: IW-1-011823
Date Collected: 01/18/23 11:23
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/24/23 23:09

Client Sample ID: IW-2-011823
Date Collected: 01/18/23 12:38
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/24/23 23:30

Client Sample ID: IW-4-011823
Date Collected: 01/18/23 13:17
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		10	39941	JSP	EET SPK	01/25/23 12:51

Client Sample ID: IW-9-011823
Date Collected: 01/18/23 14:22
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 00:13

Client Sample ID: NMW-8-011823
Date Collected: 01/18/23 15:37
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 00:34

Client Sample ID: NMW-7R-011823
Date Collected: 01/18/23 17:00
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 00:55

Client Sample ID: NMW-9-011923
Date Collected: 01/19/23 09:06
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 01:16

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Client Sample ID: NMW-6R-011923
Lab Sample ID: 590-19667-8
Date Collected: 01/19/23 10:36
Matrix: Water
Date Received: 01/20/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 01:37

Client Sample ID: IW-3-011923
Lab Sample ID: 590-19667-9
Date Collected: 01/19/23 11:43
Matrix: Water
Date Received: 01/20/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 01:58

Client Sample ID: IW-8-011923
Lab Sample ID: 590-19667-10
Date Collected: 01/19/23 12:32
Matrix: Water
Date Received: 01/20/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 02:41

Client Sample ID: IW-15-011923
Lab Sample ID: 590-19667-11
Date Collected: 01/19/23 13:43
Matrix: Water
Date Received: 01/20/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 03:02

Client Sample ID: IW-12-011923
Lab Sample ID: 590-19667-12
Date Collected: 01/19/23 14:26
Matrix: Water
Date Received: 01/20/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 03:44

Client Sample ID: IW-14-011923
Lab Sample ID: 590-19667-13
Date Collected: 01/19/23 15:28
Matrix: Water
Date Received: 01/20/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 04:05

Client Sample ID: IW-10-011923
Lab Sample ID: 590-19667-14
Date Collected: 01/19/23 16:10
Matrix: Water
Date Received: 01/20/23 11:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		10	39941	JSP	EET SPK	01/25/23 13:13

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Client Sample ID: IW-18-011923
Date Collected: 01/19/23 17:21
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 04:47

Client Sample ID: IW-17-011923
Date Collected: 01/19/23 18:25
Date Received: 01/20/23 11:00

Lab Sample ID: 590-19667-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	39926	JSP	EET SPK	01/25/23 05:08

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Laboratory: Eurofins Spokane

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-07-24

Method Summary

Client: Landau & Associates, Inc.
Project/Site: Tiger Oil/1148010

Job ID: 590-19667-1

Method	Method Description	Protocol	Laboratory
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
5030C	Purge and Trap	SW846	EET SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

APPENDIX G

Post-Injection 2 Groundwater Monitoring Sample Collection Forms and Laboratory Analytical Report

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-1
Weather:	0C Overcast	Sample ID:	IW-1- 231128
Landau Representative:	Weston Boardman	Date: 11/28/23	Time: 11:20

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 15.48 — Time: 10:36 — Describe: Flush Mount

Static DTW (ft): 15.48 — Time: 10:43 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/28/23 @ 10:44 — End Purge (Date/Time): 11/28/23 @ 11:14 — Gallons Purged: 2.3

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
10:47	13.6	2.05	9064	2.79	491.4	24.76	15.53	Yes	
10:50	14.3	1.74	9056	2.71	491.6	16.08	15.57	Yes	
10:53	14.7	1.61	8967	2.71	447.5	9.61	15.65	Yes	
10:56	15.0	1.37	8872	2.72	438.7	5.39	15.68	Yes	
10:59	15.1	1.24	8829	2.72	437.1	2.62	15.72	Yes	
11:02	15.2	1.03	8825	2.72	436.1	3.56	15.73	Yes	
11:05	15.2	0.92	8859	2.73	438.1	1.78	15.73	Yes	
11:08	15.3	1.03	8884	2.73	439.5	1.46	15.73	Yes	
11:11	15.3	1.03	8923	2.74	441.9	0.61	15.73	Yes	
11:14	15.2	1.04	8970	2.74	447.5	0	15.74	Yes	
11:17									
11:20									

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, very slightly orange/yellow, slight chemical odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments:

Signature:  Date: 11/28/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-2
Weather:	1C overcast	Sample ID:	IW-2- 231128
Landau Representative:	Weston Boardman	Date: 11/28/23	Time: 12:10

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 15.45 — Time: 11:30 — Describe: Flush Mount

Static DTW (ft): 15.44 — Time: 11:34 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/28/23 @ 11:35 — End Purge (Date/Time): 11/28/23 @ 12:05 — Gallons Purged: 2.5

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
11:38	14.3	1.32	6686	2.94	495.8	12.9	15.63	Yes	
11:41	15.2	0.86	5849	3.08	469.9	11.63	15.70	Yes	
11:44	15.4	0.80	5549	3.13	455.5	7.23	15.73	Yes	
11:47	15.5	0.65	5265	3.16	449	5.45	15.75	Yes	
11:50	15.4	0.56	5064	3.18	446.2	3.7	15.75	Yes	
11:53	15.4	0.51	4876	3.20	443.6	3.03	15.75	Yes	
11:56	15.4	0.49	4677	3.23	442.3	2.18	15.75	Yes	
11:59	15.4	0.45	4462	3.25	444.5	0.38	15.75	Yes	
12:02	15.4	0.44	4326	3.26	441.4	0.83	15.75	Yes	
12:05	15.3	0.44	4180	3.28	440.9	0.93	15.75	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, colorless, slight organic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Sampled after 30 min of purging, conductivity not stable.

Signature: [signature] Date: 11/28/23

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-18
Weather:	1C Overcast	Sample ID:	IW-18- 231128
Landau Representative:	Weston Boardman	Date: 11/28/23	Time: 13:40

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 15.46 — Time: 12:32 — Describe: Flush Mount

Static DTW (ft): 15.45 — Time: 12:35 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/28/23 @ 12:35 — End Purge (Date/Time): 11/28/23 @ — Gallons Purged: 6.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
12:38	13.4	1.85	7059	1.60	471.2	25.37	15.62	Yes	
12:41	14.5	0.63	8642	3.00	474.8	18.06	15.64	Yes	
12:44	14.8	0.59	8792	2.97	478.8	30.81	15.65	Yes	
12:47	14.8	0.56	8176	2.97	479.8	29.36	15.65	Yes	
12:50	14.7	0.49	7095	3.02	476.3	23.41	15.65	Yes	
12:53	14.7	0.47	6381	3.09	472.6	16.72	15.65	Yes	
12:56	14.8	0.50	5563	3.21	466.7	12.58	15.65	Yes	
12:59	14.8	0.53	5107	3.31	461.5	9.92	15.65	Yes	
13:02	14.8	0.57	4742	3.40	455.7	4.37	15.66	Yes	
13:05	14.8	0.61	4528	3.48	451.6	3.25	15.66	Yes	
13:08	14.8	0.64	4320	3.57	444.5	4.09	15.66	Yes	
13:11	14.8	0.70	4083	3.68	435.2	1.68	15.65	Yes	
13:14	14.8	0.73	3922	3,.77	425.4	1.99	15.65	Yes	
13:17	14.8	0.75	3855	3.83	417.7	2.3	15.66	Yes	
13:20	14.8	0.76	3772	3.88	411.2	2.51	15.66	Yes	
13:23	14.8	0.79	3694	3.92	404.5	4.9	15.66	Yes	
13:26	14.8	0.80	3629	3.97	398.7	5.37	15.67	Yes	
13:29	14.8	0.81	3552	4.01	391.5	5.97	15.67	Yes	
13:32	14.8	0.83	3509	4.04	385.2	10.08	15.67	Yes	
13:35	14.8	0.83	3479	4.07	381.6	6.66	15.67	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, colorless, organic odor, no sheen

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: All parameters but turbidity stable, sampled after 1 hr.

Signature:  Date: 11/28/23

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-4
Weather:	1C Overcast	Sample ID:	IW-4- 231128
Landau Representative:	Weston Boardman	Date: 11/28/23	Time: 14:50

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 15.73 — Time: 13:53 — Describe: Flush Mount

Static DTW (ft): 15.72 — Time: 13:55 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/28/23 @ 13:55 — End Purge (Date/Time): 11/28/23 @ 14:43 — Gallons Purged: 5.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
13:58	14.6	2.65	9303	2.88	504.6	31.91	16.18	Yes	
14:01	15.8	0.58	12191	2.72	514.1	43.48	16.24	Yes	
14:04	16.1	0.54	12666	2.69	511.2	38.77	16.23	Yes	
14:07	16.0	0.46	13011	2.68	517.4	27.09	16.33	Yes	
14:10	15.9	0.44	13227	2.68	518.9	21.65	16.37	Yes	
14:13	16.0	0.43	13225	2.68	519.4	24.17	16.40	Yes	
14:16	16.2	0.42	13008	2.68	517.6	18.87	16.40	Yes	
14:19	16.3	0.42	12707	2.70	517	14.83	16.42	Yes	
14:22	16.2	0.41	12540	2.69	516.4	12.11	16.40	Yes	
14:25	16.2	0.41	12258	2.70	517	8.82	16.42	Yes	
14:28	16.3	0.41	11917	2.70	516.4	4.7	16.40	Yes	
14:31	16.3	0.41	11643	2.70	516.5	4.13	16.40	Yes	
14:34	16.2	0.41	11395	2.70	517.4	3.5	16.40	Yes	
14:37	16.2	0.40	11139	2.70	516.8	3.62	16.40	Yes	
14:40	16.2	0.40	10981	2.70	517.2	3.85	16.40	Yes	
14:43	16.2	0.40	10853	2.69	517.9	3.89	16.40	Yes	
14:46									
14:49									
14:52									
14:55									

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, slightly yellow/orange, organic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments:

Signature: Date: 11/28/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-9
Weather:	1C overcast	Sample ID:	IW-9- 231128
Landau Representative:	Weston Boardman	Date: 11/28/23	Time: 15:35

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 15.31 — Time: 14:59 — Describe: Flush Mount

Static DTW (ft): 15.28 — Time: 15:02 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/28/23 @ 15:02 — End Purge (Date/Time): 11/28/23 @ 15:29 — Gallons Purged: 3.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
15:05	13.8	1.57	4343	3.65	362.2	38.47	15.28	Yes	
15:08	14.5	0.55	1122	4.66	144.9	38.17	15.28	Yes	
15:11	14.6	0.47	741	5.09	69	15.93	15.28	Yes	
15:14	14.7	0.47	627	5.28	39.6	7.53	15.28	Yes	
15:17	14.7	0.42	596	5.39	26.6	4.73	15.28	Yes	
15:20	14.7	0.38	585	5.44	20.5	3.19	15.28	Yes	
15:23	14.7	0.35	579	5.47	15.8	3.69	15.28	Yes	
15:26	14.7	0.33	575	5.49	12.1	3.82	15.28	Yes	
15:29	14.7	0.32	572	5.51	9.5	5.13	15.28	Yes	
15:32									

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, colorless, weathered petroleum-like odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments:

Signature:  Date: 11/28/23

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	MW-7R
Weather:	0C Overcast	Sample ID:	MW-7R- 231128
Landau Representative:	Weston Boardman	Date: 11/28/23	Time: 16:50

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 8.80 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 14.69 — Time: 15:46 — Describe: Flush Mount

Static DTW (ft): 14.70 — Time: 15:47 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/28/23 @ 15:49 — End Purge (Date/Time): 11/28/23 @ — Gallons Purged: 6.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
15:52	14.1	2.78	4929	5.09	86.9	125.2	15.12	Yes	
15:55	14.8	0.54	6326	4.90	115.4	143.1	16.32	Yes	
15:58	15.0	0.63	6284	4.85	128.3	147.6	16.63	Yes	
16:01	14.9	0.62	5492	4.70	175.1	107.9	16.89	Yes	
16:04	14.9	0.58	4899	4.47	218.6	87.16	16.93	Yes	
16:07	14.9	0.55	4365	4.21	259.1	62.47	17.02	Yes	
16:10	14.8	0.54	3956	3.99	289.4	49.83	17.07	Yes	
16:13	14.9	0.55	3703	3.87	307.1	37.96	17.10	Yes	
16:16	14.9	0.56	3290	3.78	321.2	30.09	17.13	Yes	
16:19	14.9	0.56	3107	3.75	324.7	28.6	17.15	Yes	
16:22	14.8	0.58	2884	3.76	324.9	28.07	17.17	Yes	
16:25	14.7	0.61	2760	3.78	321.5	27.66	17.17	Yes	
16:28	14.8	0.62	2638	3.80	317.9	29.2	17.17	Yes	
16:31	14.8	0.63	2572	3.84	311	29.32	17.15	Yes	
16:34	14.8	0.64	2482	3.88	304.8	29.91	17.15	Yes	
16:37	14.7	0.65	2406	3.92	297.3	32.49	17.15	Yes	
16:40	14.7	0.65	2340	3.97	288	33.51	17.15	Yes	
16:43	14.7	0.66	2304	4.01	278.1	33.53	17.15	Yes	
16:46	14.7	0.66	2262	4.06	271.6	35.35	17.15	Yes	
16:49									

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Slightly turbid, sightly yellow, weathered petroleum-like odor, no sheen

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments:

Signature:  Date: 11/28/23

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil
Project Number: 1148010.01
Event: Injection #2 post-injection groundwater sampling
Well Name: MW-9
Weather: -2C Overcast
Sample ID: MW-9- 231129
Landau Representative: Weston Boardman
Date: 11/29/23 Time: 8:00

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft):
Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 14.49 Time: 7:14 Describe: Flush Mount
Static DTW (ft): 14.48 Time: 7:15 Flow-Thru Cell Vol.: 500 mL WLM No.:
Begin Purge (Date/Time): 11/29/23 @ 7:16 End Purge (Date/Time): 11/29/23 @ 7:55 Gallons Purged: 5.0
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
7:19	13.7	5.05	1757	5.23	5.8	25.99	14.97	Yes	
7:22	14.3	1.47	1610	4.40	-27.6	21.2	15.08	Yes	
7:25	14.6	1.13	1363	4.45	-47	18.09	15.16	Yes	
7:28	14.9	1.25	1309	4.49	-56.5	14.42	15.16	Yes	
7:31	14.9	1.19	1333	4.48	-59.9	13.76	15.19	Yes	
7:34	15.0	1.02	1330	4.49	-62.4	10.85	15.30	Yes	
7:37	15.1	0.91	1316	4.50	-64.3	12.34	15.33	Yes	
7:40	15.1	0.82	1293	4.55	-66.6	13.51	15.34	Yes	
7:43	15.1	0.77	1293	4.57	-67.5	14.29	15.35	Yes	
7:46	15.0	0.73	1275	4.61	-68.1	12.32	15.37	Yes	
7:49	15.0	0.69	1256	4.66	-68.4	11.1	15.37	Yes	
7:52	15.0	0.67	1239	4.71	-67.7	10.45	15.37	Yes	
7:55	15.0	0.65	1219	4.75	-67.1	10.04	15.37	yes	
7:58									
8:01									
8:04									
8:07									
8:10									
8:13									
8:16									

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):
Sample Description (turbidity, color, odor, sheen, etc.): Clear, colorless, slight organic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:
Comments:
Signature:
Date: 11/29/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	MW-6R
Weather:	-2C Overcast	Sample ID:	MW-6R- 231129
Landau Representative:	Weston Boardman	Date: 11/29/23	Time: 9:25

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 14.32 — Time: 8:20 — Describe: Flush Mount

Static DTW (ft): 14.32 — Time: 8:21 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/29/23 @ 8:21 — End Purge (Date/Time): 11/29/23 @ 9:21 — Gallons Purged: 6.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
8:24	12.7	2.64	3047	4.31	-19.5	9.23	15.11	Yes	
8:27	14.1	0.85	3840	4.00	-5.1	6.43	15.61	Yes	
8:30	14.5	0.88	3927	3.99	-4.1	6.77	15.95	Yes	
8:33	14.7	0.88	3925	4.05	-5.8	7.17	16.29	Yes	
8:36	14.6	0.83	3899	4.09	-6.3	7.05	16.69	Yes	
8:39	14.6	0.77	3709	4.19	-8.8	6.43	17.11	Yes	
8:42	14.6	0.83	3312	4.35	-14.1	8.28	17.40	Yes	
8:45	14.5	1.47	3823	3.92	14.2	6.69	17.69	Yes	
8:48	14.3	1.26	4021	3.77	25.6	6.88	17.78	Yes	
8:51	14.3	1.21	3592	3.84	21.6	6.47	17.81	Yes	
8:54	14.3	1.23	3316	3.88	18.8	9.7	17.83	Yes	
8:57	14.3	1.29	3166	3.90	17.6	8.7	17.83	Yes	
9:00	14.3	1.28	3021	3.94	16.4	8.81	17.84	Yes	
9:03	14.3	1.29	2875	4.00	13.3	8.12	17.84	Yes	
9:06	14.3	1.29	2805	4.05	10.9		17.84	Yes	Meter dead
9:09	14.3	1.32	2712	4.11	8.5		17.84	Yes	Was reading
9:12	14.3	1.33	2650	4.15	5.9		17.84	Yes	incorrectly due to low
9:15	14.3	1.33	2603	4.18	4.3		17.84	Yes	battery
9:18	14.3	1.35	2545	4.24	0.9		17.84	Yes	
9:21	14.3	1.36	2504	4.27	-1.9		17.84	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

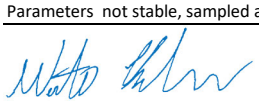
Sample Description (turbidity, color, odor, sheen, etc.): Clear, colorless, weathered petroleum-like odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Parameters not stable, sampled after 60 min.

Signature:  Date: 11/29/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-3
Weather:		Sample ID:	IW-3- 231129
Landau Representative:	Weston Boardman	Date: 11/29/23	Time: 11:15

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☐ Yes — Damaged? ☐ No ☐ Yes

DTW After Cap Opened (ft): 14.65 — Time: 10:07 — Describe: Flush Mount

Static DTW (ft): 14.65 — Time: 10:08 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/29/23 @ 10:08 — End Purge (Date/Time): 11/29/23 @ 11:08 — Gallons Purged:

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
10:11	12.1	4.81	6069	3.22	157.5	21.64	14.93	Yes	
10:14	14.1	1.42	8571	3.17	266.5	39.02	15.09	Yes	
10:17	14.7	1.39	8744	3.16	274.7	54.11	15.22	Yes	
10:20	14.7	1.50	8080	3.21	272.5	61	15.29	Yes	
10:23	14.8	1.29	7393	3.28	270.4	53.75	15.33	Yes	
10:26	14.8	1.09	6725	3.37	264.9	39.36	15.36	Yes	
10:29	14.8	1.01	6111	3.46	259.6	39.77	15.37	Yes	
10:32	14.8	0.97	5581	3.56	252.4	33.63	15.38	Yes	
10:35	14.7	0.94	5131	3.66	245.9	27.65	15.38	Yes	
10:38	14.8	0.91	4766	3.77	237.6	23.86	15.37	Yes	
10:41	14.8	0.89	4382	3.91	224.1	22.51	15.37	Yes	
10:44	14.8	0.88	4244	3.97	215.3	19.97	15.37	Yes	
10:47	14.8	0.87	4064	4.05	204.7	18.89	15.37	Yes	
10:50	14.8	0.86	3847	4.13	193.4	17.37	15.36	Yes	
10:53	14.7	0.86	3718	4.19	184.2	16.36	15.36	Yes	
10:56	14.8	0.84	3629	4.23	174.2	15.28	15.36	Yes	
10:59	14.8	0.85	3544	4.27	164.4	14.12	15.36	Yes	
11:02	14.8	0.86	3440	4.31	147.3	12.01	15.36	Yes	
11:05	14.8	0.87	3330	4.35	135.1	11.67	15.37	Yes	
11:08	14.8	0.88	3327	4.37	124.5	11.43	15.37	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, colorless, weathered petroleum-like odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Parameters not stable, sampled after 60 min.

Signature: Date: 11/29/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-17
Weather:	-1C Overcast	Sample ID:	IW-17- 231129
Landau Representative:	Weston Boardman	Date: 11/29/23	Time: 12:45

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 13.08 — Time: 11:41 — Describe: Flush Mount

Static DTW (ft): 13.08 — Time: 11:42 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/29/23 @ 11:42 — End Purge (Date/Time): 11/29/23 @ — Gallons Purged:

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
11:45	13.5	2.03	3441	4.19	79.7	23.53	14.33	Yes	
11:48	14.3	1.06	3398	3.94	94	104	14.80	Yes	
11:51	13.9	1.38	3860	3.93	79	122.9	14.97	Yes	
11:54	14.4	1.47	4041	4.05	64.3	93.98	15.43	Yes	
11:57	14.5	0.95	4070	4.17	47.9	91.69	15.81	Yes	
12:00	14.5	0.85	4010	4.28	36	92.34	16.05	Yes	
12:03	14.6	1.07	3905	4.37	26.8	102.6	16.18	Yes	Paused for new tubing
12:06	14.0	4.65	3900	4.38	32.9	111.1	15.68	Yes	b/c too short
12:09	14.2	0.79	4385	4.18	55	78.47	15.85	Yes	
12:12	14.3	0.65	4080	4.29	38.8	65.32	16.08	Yes	
12:15	14.3	0.69	3805	4.39	30.4	41.92	16.25	Yes	
12:18	14.3	0.74	3553	4.50	23.2	27.62	16.39	Yes	
12:21	14.4	0.78	3437	4.57	20.2	27.29	16.50	Yes	
12:24	14.4	0.82	3382	4.59	19.8	34.82	16.57	Yes	
12:27	14.3	0.86	3330	4.62	17.9	32.97	16.65	Yes	
12:30	14.3	0.90	3301	4.63	18.5	31.16	16.70	Yes	
12:33	14.3	0.93	3287	4.64	20.7	25.24	16.76	Yes	
12:36	14.4	0.96	3252	4.65	21.6	24.03	16.80	Yes	
12:39	14.4	1.00	3226	4.66	22.5	24.24	16.84	Yes	
12:42									

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Slightly turbid, colorless, organic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments:

Signature:  Date: 11/29/23

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-8
Weather:		Sample ID:	IW-8- 231129
Landau Representative:	Weston Boardman	Date: 11/29/23	Time: 14:35

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☐ Yes — Damaged? ☐ No ☐ Yes

DTW After Cap Opened (ft): 14.72 — Time: 13:28 — Describe: Flush Mount

Static DTW (ft): 14.70 — Time: 13:31 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/29/23 @ 13:32 — End Purge (Date/Time): 11/29/23 @ 14:32 — Gallons Purged: 5.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
13:35	13.1	7.33	6592	3.51	179.4	34.7	14.95	Yes	
13:38	15.0	2.15	7722	3.27	266.4	22.05	15.05	Yes	
13:41	15.5	1.99	7993	3.21	270.8	18.59	15.13	Yes	
13:44	15.5	1.41	8017	3.18	274.3	14.29	15.19	Yes	
13:47	15.6	0.89	7763	3.17	276.5	12.67	15.24	Yes	
13:50	15.6	0.68	7498	3.17	277.6	10.5	15.24	Yes	
13:53	15.6	0.56	7157	3.18	278.1	10.3	15.25	Yes	
13:56	15.6	0.48	6793	3.20	278.5	9.23	15.27	Yes	
13:59	15.6	0.44	6505	3.21	278.9	9.1	15.28	Yes	
14:02	15.6	0.41	6172	3.23	278.8	8.74	15.28	Yes	
14:05	15.6	0.39	5908	3.24	278.7	7.79	15.28	Yes	
14:08	15.6	0.37	5668	3.26	278	8.46	15.32	Yes	
14:11	15.6	0.36	5550	3.27	278.2	8.23	15.31	Yes	
14:14	15.6	0.35	5360	3.29	277.6	7.8	15.31	Yes	
14:17	15.6	0.35	5153	3.31	277.7	7.19	15.30	Yes	
14:20	15.5	0.34	4977	3.32	277.4	6.41	15.29	Yes	
14:23	15.5	0.35	4849	3.34	276.5	5.77	15.30	Yes	
14:26	15.5	0.35	4755	3.35	276.1	5.75	15.31	Yes	
14:29	15.5	0.35	4660	3.37	275.1	5.81	15.30	Yes	
14:32	15.5	0.35	4594	3.38	275.5	5.82	15.31	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

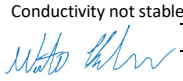
Sample Description (turbidity, color, odor, sheen, etc.): Clear, slightly yellow, organic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Conductivity not stable, sampled after 60 min.

Signature:  Date: 11/29/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-15
Weather:	0C Overcast	Sample ID:	IW-15- 231129
Landau Representative:	Weston Boardman	Date: 11/29/23	Time: 15:35

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 14.69 — Time: 14:44 — Describe: Flush Mount

Static DTW (ft): 14.67 — Time: 14:58 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/29/23 @ 14:58 — End Purge (Date/Time): 11/29/23 @ 15:31 — Gallons Purged: 3.3

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
15:01	12.9	3.04	2193	4.13	153.6	96.43	14.72	Yes	
15:04	15.1	0.64	910	4.89	50.6	43.33	14.72	Yes	
15:07	15.4	0.57	776	5.09	36.2	24.72	14.73	Yes	
15:10	15.6	0.57	719	5.22	21.7	15.43	14.72	Yes	
15:13	15.6	0.57	708	5.30	10.1	11.61	14.72	Yes	
15:16	15.7	0.52	705	5.34	2.1	9.27	14.72	Yes	
15:19	15.8	0.44	707	5.36	-5.4	8.33	14.72	Yes	
15:22	15.9	0.39	708	5.38	-11.2	7.66	14.72	Yes	
15:25	15.8	0.34	710	5.39	-15.1	7.72	14.72	Yes	
15:28	15.8	0.34	711	5.39	-19.7	7.35	14.72	Yes	
15:31	15.7	0.34	712	5.39	-23.8	7.02	14.73	Yes	
15:34									
15:37									
15:40									
15:43									
15:46									
15:49									
15:52									
15:55									
15:58									

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, slightly yellow, organic/septic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments:

Signature: — Date: 11/29/23

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-14
Weather:	0C Overcast	Sample ID:	IW-14- 231129
Landau Representative:	Weston Boardman	Date: 11/29/23	Time: 17:05

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 14.82 — Time: 15:55 — Describe: Flush Mount

Static DTW (ft): 14.82 — Time: 15:59 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/29/23 @ 15:59 — End Purge (Date/Time): 11/29/23 @ 16:59 — Gallons Purged: 5.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
16:02	13.5	3.43	2856	4.71	165.5	78	15.05	Yes	
16:05	15.3	0.86	4212	3.85	256.7	670.3	15.39	Yes	very turbid and tan
16:08	15.6	0.54	4583	3.65	257.8	679.6	15.64	Yes	
16:11	15.8	0.59	4749	3.58	265	664.5	15.93	Yes	
16:14	15.8	0.52	4783	3.56	266.3	687.5	16.27	Yes	
16:17	15.7	0.45	4685	3.59	257	665.8	16.49	Yes	
16:20	15.7	0.42	4505	3.65	240.3	651.4	16.74	Yes	
16:23	15.6	0.41	4205	3.75	231.6	656	16.88	Yes	
16:26	15.5	0.38	3927	3.91	229.2	628.6	17.00	Yes	
16:29	15.5	0.39	3599	4.02	235	631.5	17.08	Yes	
16:32	15.5	0.34	3411	4.11	215.1	602.5	17.15	Yes	
16:35	15.5	0.33	3283	4.15	217.9	474.3	17.19	Yes	
16:38	15.4	0.31	3120	4.20	203.5	406.2	17.23	Yes	
16:41	15.4	0.31	3047	4.16	219	604.3	17.20	Yes	
16:44	15.3	0.30	2871	4.24	200.1	296.6	17.18	Yes	
16:47	15.3	0.29	2772	4.31	186.8	154.1	17.17	Yes	
16:50	15.3	0.25	2723	4.35	180.8	121.8	17.16	Yes	
16:53	15.2	0.25	2689	4.37	175.4	80.12	17.15	Yes	
16:56	15.2	0.23	2651	4.39	171.7	58.33	17.15	Yes	
16:59	15.2	0.22	2623	4.41	164.1	42.13	17.17	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Slightly turbid, slightly yellow, organic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Not all parameters stable, sampled after 60 min.

Signature: Date: 11/29/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	MW-8
Weather:	-2C Overcast	Sample ID:	MW-8- 231130
Landau Representative:	Weston Boardman	Date: 11/30/23	Time: 8:20

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 14.57 — Time: 7:05 — Describe: Flush Mount

Static DTW (ft): 14.57 — Time: 7:12 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/30/23 @ 7:13 — End Purge (Date/Time): 11/30/23 @ — Gallons Purged: 4.5

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
7:16	15.1	7.56	15222	2.78	469.9	43.88	15.54	Yes	
7:19	15.4	3.28	15089	2.78	480.5	53.4	15.81	Yes	
7:22	15.5	1.89	15970	2.73	490.4	70.48	15.93	Yes	
7:25	15.4	1.42	16442	2.70	492.3	59.83	15.97	Yes	
7:28	15.3	1.18	16347	2.70	491.9	63.37	16.00	Yes	
7:31	15.4	0.99	15920	2.72	495.9	50.6	16.00	Yes	
7:34	15.4	0.84	15516	2.72	496.9	41.49	16.00	Yes	
7:37	15.4	0.73	15124	2.73	499.7	30.13	16.00	Yes	
7:40	15.4	0.67	14718	2.73	502.2	24.95	16.00	Yes	
7:43	15.3	0.62	15271	2.73	503.1	20.19	16.00	Yes	
7:46	15.3	0.58	13954	2.74	506.9	16.08	16.00	Yes	
7:49	15.4	0.55	13587	2.74	507.4	14.63	16.00	Yes	
7:52	15.4	0.53	13163	2.74	505.1	19.49	16.00	Yes	
7:55	15.3	0.53	12855	2.75	504.9	19.18	16.00	Yes	
7:58	15.4	0.52	12400	2.76	504.2	15.65	16.00	Yes	
8:01	15.4	0.50	12009	2.76	504	12.36	16.00	Yes	
8:04	15.5	0.51	11780	2.77	506	10.05	16.00	Yes	
8:07	15.4	0.50	11449	2.77	505.9	10.76	16.00	Yes	
8:10	15.4	0.48	11264	2.78	505.6	9.17	16.00	Yes	
8:13	15.4	0.46	10907	2.78	505.8	8.81	16.00	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, colorless, weathered petroleum-like odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Not all parameters stable, sampled after 60 min.

Signature: _____ Date: 11/30/23

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-10
Weather:	-1C Overcast/light snow	Sample ID:	IW-10- 231130
Landau Representative:	Weston Boardman	Date: 11/30/23	Time: 9:40

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 15.36 — Time: 8:34 — Describe: Flush Mount

Static DTW (ft): 15.36 — Time: 8:37 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/30/23 @ 8:37 — End Purge (Date/Time): 11/30/23 @ 9:37 — Gallons Purged: 5.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
8:40	13.8	0.83	15014	2.75	488.2	55.15	15.51	Yes	
8:43	15.2	0.47	16284	2.74	486.8	57.03	15.55	Yes	
8:46	15.4	0.42	16470	2.73	487.9	46.93	15.57	Yes	
8:49	15.7	0.39	16257	2.72	488.9		15.57	Yes	
8:52	15.7	0.33	16033	2.72	488	24.6	15.58	Yes	
8:55	15.7	0.29	15712	2.72	487	21.97	15.58	Yes	
8:58	15.7	0.27	15263	2.72	482	16.55	15.58	Yes	
9:01	15.7	0.25	14757	2.72	477.8	16.08	15.58	Yes	
9:04	15.8	0.23	14135	2.73	472.3	17.23	15.58	Yes	
9:07	15.8	0.23	13607	2.73	462.6	17.13	15.58	Yes	
9:10	15.8	0.23	12835	2.74	458.3	17.41	15.55	Yes	
9:13	15.8	0.22	12290	2.74	451.7	14.99	15.55	Yes	
9:16	15.8	0.22	11956	2.74	449.2	13.54	15.54	Yes	
9:19	15.8	0.22	11463	2.75	442.8	13.5	15.54	Yes	
9:22	15.8	0.22	10961	2.75	438	11.71	15.54	Yes	
9:25	15.8	0.21	10547	2.76	432.6	10.95	15.54	Yes	
9:28	15.9	0.21	10141	2.76	428.8	11.1	15.54	Yes	
9:31	15.9	0.21	9805	2.77	424	9.91	15.54	Yes	
9:34	15.8	0.21	9503	2.78	420.3	10.1	15.54	Yes	
9:37	15.8	0.21	9206	2.79	415	10.05	15.54	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump — Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.): Clear, slightly yellow, organic odor, no sheen.

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Not all parameters stable, sampled after 60 min.

Signature: _____ Date: 11/30/23

LANDAU ASSOCIATES

// GROUNDWATER SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil	Project Number:	1148010.01
Event:	Injection #2 post-injection groundwater sampling	Well Name:	IW-12
Weather:	-1C Overcast/light snow	Sample ID:	IW-12- 231130
Landau Representative:	Weston Boardman	Date: 11/30/23	Time: 11:00

WELL INFORMATION & PURGE DATA

Top of Screen Depth (ft): 10.00 — Well Secure? ☐ No ☑ Yes — Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): 15.28 — Time: 9:52 — Describe: Flush Mount

Static DTW (ft): 15.25 — Time: 9:55 — Flow-Thru Cell Vol.: 500 mL — WLM No.:

Begin Purge (Date/Time): 11/30/23 @ 9:55 — End Purge (Date/Time): 11/30/23 @ 10:55 — Gallons Purged: 5.0

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Purge Vol. ≥ 1 flow-thru cell vol.	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.00 ft	(Yes/No)	
9:58	14.3	0.36	13463	2.88	477.2	23.07	15.69	Yes	
10:01	14.6	0.31	14354	2.93	459.4	28.41	15.83	Yes	
10:04	15.0	0.31	14096	2.94	455.8	29.04	15.88	Yes	
10:07	15.2	0.27	13985	2.94	454.2	25.74	15.92	Yes	
10:10	15.2	0.25	13960	2.94	455.2	25.33	15.94	Yes	
10:13	15.2	0.28	13811	2.94	455	21.32	15.95	Yes	
10:16	15.0	0.39	13584	2.94	455.2	17.64	15.97	Yes	
10:19	15.1	0.33	13150	2.95	454.8	14.58	15.97	Yes	
10:22	15.0	0.38	12757	2.95	454.7	13.62	15.97	Yes	
10:25	15.0	0.29	12368	2.95	456	11.09	15.97	Yes	
10:28	15.0	0.27	11950	2.96	455.1	10.86	15.97	Yes	
10:31	15.0	0.25	11544	2.96	454.6	9.74	15.98	Yes	
10:34	15.0	0.24	11231	2.97	454.6	9.9	15.98	Yes	
10:37	15.0	0.23	10939	2.97	454.5	10.22	15.98	Yes	
10:40	15.1	0.22	10628	2.98	453.9	7.62	15.98	Yes	
10:43	15.1	0.21	10330	2.98	453.3	8.57	15.98	Yes	
10:46	15.1	0.22	10062	2.98	454.1	8.14	15.99	Yes	
10:49	15.1	0.21	9821	2.99	453	7.17	15.99	Yes	
10:52	15.1	0.21	9594	2.99	452.8	8.69	15.99	Yes	
10:55	15.1	0.21	9374	3.00	452.6	9.12	15.99	Yes	

SAMPLE COLLECTION DATA

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Sample Description (turbidity, color, odor, sheen, etc.):

Replicate No.	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Time	Comments/Observations/Fe^{2+}
1									
2									
3									
4									
Average									

Bottles	Analysis Requested (Circle/Bold Applicable)
	(8260) (8260D-SIM) (8010) (8020) (Boeing VOC Short List) (VOC-Boeing 38 list)
2	(NWTPH-G) **(NWTPH-Gx)** **(BETX)** (NWTPH-HCID) (NWTPH-Dx) (NWTPH-Dx w/SGC)
	(8270) (8270E-SIM) (PAH) (8081) (8141) (Oil & Grease)
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total 6010) (Total 6020) (Diss 6010) (Diss 6020) (Total 7471)
	(Total Metals) (Dissolved Metals) List:

Duplicate Sample ID:

Comments: Not all parameters stable, sampled after 60 min.

Signature: Date: 11/30/23

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Shane Kostka
Landau & Associates, Inc.
10 North Post Street, Suite 218
Spokane, Washington 99201

Generated 12/13/2023 3:23:45 PM

JOB DESCRIPTION

City of Yakima-Tiger Oil/1148010.010

JOB NUMBER

590-22377-1

Eurofins Spokane
11922 East 1st Ave
Spokane WA 99206

See page two for job notes and contact information.

my EOL

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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12/13/2023 3:23:45 PM

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Method Summary 28

Case Narrative

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil/1148010.010

Job ID: 590-22377-1

Job ID: 590-22377-1

Laboratory: Eurofins Spokane

Narrative

Receipt
The samples were received on 11/30/2023 4:26 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.1º C.

GC/MS VOA
Method 8260D: Surrogate recovery for the following sample was outside control limits: MW-8-231129 (590-22377-15). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method NWTPH-Gx: The Gasoline Range Organics (GRO) concentration reported for the following samples is due to the presence of discrete peaks: IW-1-231128 (590-22377-2), MW-9-231129 (590-22377-8), MW-8-231129 (590-22377-15) and IW-10-231129 (590-22377-16). Gasoline

Method NWTPH-Gx: The following sample shows signs of uncommon matrix interference, thus Gasoline results are biased high.

IW-12-231129 (590-22377-17)

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

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

Definitions/Glossary

Client: Landau & Associates, Inc. Job ID: 590-22377-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

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

Sample Summary

Client: Landau & Associates, Inc.
Job ID: 590-22377-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-22377-1	Trip Blank	Water	11/28/23 00:00	11/30/23 16:26
590-22377-2	IW-1-231128	Water	11/28/23 11:20	11/30/23 16:26
590-22377-3	IW-2-231128	Water	11/28/23 12:10	11/30/23 16:26
590-22377-4	IW-18-231128	Water	11/28/23 13:40	11/30/23 16:26
590-22377-5	IW-4-231128	Water	11/28/23 14:50	11/30/23 16:26
590-22377-6	IW-9-231128	Water	11/28/23 15:35	11/30/23 16:26
590-22377-7	MW-7R-231128	Water	11/28/23 16:50	11/30/23 16:26
590-22377-8	MW-9-231129	Water	11/29/23 08:00	11/30/23 16:26
590-22377-9	MW-6R-231129	Water	11/29/23 09:25	11/30/23 16:26
590-22377-10	IW-3-231129	Water	11/29/23 11:15	11/30/23 16:26
590-22377-11	IW-17-231129	Water	11/29/23 12:45	11/30/23 16:26
590-22377-12	IW-8-231129	Water	11/29/23 14:35	11/30/23 16:26
590-22377-13	IW-15-231129	Water	11/29/23 15:35	11/30/23 16:26
590-22377-14	IW-14-231129	Water	11/29/23 17:05	11/30/23 16:26
590-22377-15	MW-8-231129	Water	11/29/23 08:20	11/30/23 16:26
590-22377-16	IW-10-231129	Water	11/29/23 09:40	11/30/23 16:26
590-22377-17	IW-12-231129	Water	11/29/23 11:00	11/30/23 16:26

LANDAU ASSOCIATES — Chain-of-Custody Record

☐ North Seattle (206) 631-8660 ☐ Tacoma (253) 926-2493 ☐ Olympia (360) 791-3178
☒ Spokane (509) 327-9737 ☐ Portland (503) 542-1080 ☐ _____

Date 11/28/2023 Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name ~~City of Yakima-Tiger Oil~~ Project No. 1145010.010
Project Location/Event Tiger Oil N 1st St / Post Injection 2 sampling
Sampler's Name Weston Boardman
Project Contact Shane Kastleg
Send Results To " " dataalandaumc.com

Special Handling Requirements: _____
Shipment Method: _____
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters: MVPH-Lo, BTEX 8260	Observations/Comments
TRIP BLANK	NA	NA	water	1	X X	
IW-1-231128	11/28/23	11:20		2	X X	
IW-2-231128		12:10			X X	
IW-18-231128		13:40			X X	
IW-4-231128		14:50			X X	
IW-9-231128		15:35			X X	
MW-7R-231128		16:50			X X	
MW-9-231129	11/29/23	08:00			X X	
MW-6R-231129		09:25			X X	
IW-3-231129		11:15			X X	
IW-17-231129		12:45			X X	
IW-8-231129		14:35			X X	
IW-15-231129		15:35			X X	
IW-14-231129		17:05			X X	
MW-8-231130		08:20			X X	
IW-10-231130		09:40			X X	
IW-12-231130		11:00			X X	

☐ Allow water samples to settle, collect aliquot from clear portion ☐
☐ NWTPH-Dx - Acid wash cleanup ☐ - Silica gel cleanup ☐
☐ Dissolved metal samples were field filtered

Other RL's below MTCA cleanup levels:
GRO: 800 µg/L or 1000 µg/L (no Benzene)
B: 5 µg/L
T: 1,000 µg/L
E: 700 µg/L
X: 1,000 µg/L (total xylenes)

4.0, 4.1 corr IR006

Relinquished by	Received by	Relinquished by	Received by
Signature [signature]	Signature [signature]	Signature	Signature
Printed Name Weston Boardman	Printed Name Mackay Lewis	Printed Name	Printed Name
Company Landau Associates	Company LAI	Company	Company
Date 11/30/23 Time 16:30	Date 11/30/23 Time 16:26	Date Time	Date Time

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

10/2018

Chain-of-Custody Record

LANDAU ASSOCIATES

☐ North Seattle (206) 631-8660 ☒ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 11/28/2023 Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name City of Yakima-Tiger Oil Project No. 1148010.010
Project Location/Event Tiger Oil 4/1st St / Post Injection 2 sampling
Sampler's Name Weston Boardman
Project Contact Sherrie Kastka
Send Results To " " data@landauinc.com

Special Handling Requirements: _____
Shipment Method: _____
Stored on ice: (Yes) / No

Sample I D.	Date	Time	Matrix	No. of Containers	NWTPH-Dx	BTEX 8260	Observations/Comments
TRIP BLANK	NA	NA	water	1	X	X	
IW-1-231128	11/28/23	11 20		2	X	X	
IW-2-231128		12 10			X	X	
IW-18-231128		13 40			X	X	
IW-4-231128		14 50			X	X	
IW 9-231128		15 35			X	X	
MW-7R-231128		16 50			X	X	
MW-9-231129	11/29/23	08.00			X	X	
MW-6R-231129		09 25			X	X	
IW-3-231129		11 15			X	X	
IW-17-231129		12 45			X	X	
IW-8-231129		14 35			X	X	
IW-15-231129		15.35			X	X	
IW-14-231129		17.05			X	X	
MW 8-231130		08 20			X	X	
IW-10-231130		09.40			X	X	
IW-12-231130		11 00			X	X	

Testing Parameters

☐ Allow water samples to settle, collect aliquot from clear portion ☐

☐ NWTPH-Dx Acid wash cleanup ☐ Silica gel cleanup ☐

☐ Dissolved metal samples were field filtered

Other RLs below MTCA cleanup levels.
GRO. 800 µg/L or 1000 µg/L (no Benzene)
B 5 µg/L
T 1,000 µg/L
E 700 µg/L
X. 1,000 µg/L (total xylenes)

.04.1 corr IR006

590-22377 Chain of Custody

Relinquished by	Received by	Relinquished by	Received by
Signature [signature]	Signature [signature]	Signature	Signature
Printed Name Weston Boardman	Printed Name Mackey Mullins	Printed Name	Printed Name
Company Landau Associates	Company EET SEA	Company	Company
Date 11/30/23 Time 16:30	Date 11/30/23 Time 16:26	Date Time	Date Time

WHITE COPY Laboratory YELLOW COPY Project File PINK COPY Client Representative

10/2018

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 590-22377-1

Login Number: 22377
List Number: 1
Creator: Morris, Mackenzie 1

List Source: Eurofins Spokane

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

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: Trip Blank
Date Collected: 11/28/23 00:00
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			12/05/23 12:23	1
Ethylbenzene	ND		1.0		ug/L			12/05/23 12:23	1
m,p-Xylene	ND		2.0		ug/L			12/05/23 12:23	1
o-Xylene	ND		1.0		ug/L			12/05/23 12:23	1
Toluene	ND		1.0		ug/L			12/05/23 12:23	1
Xylenes, Total	ND		3.0		ug/L			12/05/23 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/05/23 12:23*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*12/05/23 12:23*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 123*		*12/05/23 12:23*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*12/05/23 12:23*	*1*

Client Sample ID: IW-1-231128
Date Collected: 11/28/23 11:20
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.96**		0.40		ug/L			12/05/23 12:45	1
Ethylbenzene	**6.0**		1.0		ug/L			12/05/23 12:45	1
m,p-Xylene	**4.6**		2.0		ug/L			12/05/23 12:45	1
o-Xylene	**1.6**		1.0		ug/L			12/05/23 12:45	1
Toluene	ND		1.0		ug/L			12/05/23 12:45	1
Xylenes, Total	**6.2**		3.0		ug/L			12/05/23 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/05/23 12:45*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*12/05/23 12:45*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/05/23 12:45*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*12/05/23 12:45*	*1*

Client Sample ID: IW-2-231128
Date Collected: 11/28/23 12:10
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.94**		0.40		ug/L			12/05/23 13:07	1
Ethylbenzene	**3.8**		1.0		ug/L			12/05/23 13:07	1
m,p-Xylene	**9.7**		2.0		ug/L			12/05/23 13:07	1
o-Xylene	**3.5**		1.0		ug/L			12/05/23 13:07	1
Toluene	ND		1.0		ug/L			12/05/23 13:07	1
Xylenes, Total	**13**		3.0		ug/L			12/05/23 13:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*12/05/23 13:07*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/05/23 13:07*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 123*		*12/05/23 13:07*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/05/23 13:07*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-18-231128
Date Collected: 11/28/23 13:40
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.75		0.40		ug/L			12/05/23 13:29	1
Ethylbenzene	4.8		1.0		ug/L			12/05/23 13:29	1
m,p-Xylene	4.9		2.0		ug/L			12/05/23 13:29	1
o-Xylene	1.9		1.0		ug/L			12/05/23 13:29	1
Toluene	ND		1.0		ug/L			12/05/23 13:29	1
Xylenes, Total	6.8		3.0		ug/L			12/05/23 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*12/05/23 13:29*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/05/23 13:29*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 123*		*12/05/23 13:29*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*12/05/23 13:29*	*1*

Client Sample ID: IW-4-231128
Date Collected: 11/28/23 14:50
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.3		0.40		ug/L			12/05/23 13:51	1
Ethylbenzene	12		1.0		ug/L			12/05/23 13:51	1
m,p-Xylene	5.8		2.0		ug/L			12/05/23 13:51	1
o-Xylene	1.8		1.0		ug/L			12/05/23 13:51	1
Toluene	ND		1.0		ug/L			12/05/23 13:51	1
Xylenes, Total	7.6		3.0		ug/L			12/05/23 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*12/05/23 13:51*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*		*12/05/23 13:51*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 123*		*12/05/23 13:51*	*1*
Toluene-d8 (Surr)	*88*		*80 - 120*		*12/05/23 13:51*	*1*

Client Sample ID: IW-9-231128
Date Collected: 11/28/23 15:35
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.6		0.40		ug/L			12/05/23 14:14	1
Ethylbenzene	35		1.0		ug/L			12/05/23 14:14	1
m,p-Xylene	64		2.0		ug/L			12/05/23 14:14	1
o-Xylene	8.6		1.0		ug/L			12/05/23 14:14	1
Toluene	ND		1.0		ug/L			12/05/23 14:14	1
Xylenes, Total	73		3.0		ug/L			12/05/23 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*12/05/23 14:14*	*1*
4-Bromofluorobenzene (Surr)	*103*		*76 - 120*		*12/05/23 14:14*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/05/23 14:14*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/05/23 14:14*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: MW-7R-231128
Date Collected: 11/28/23 16:50
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.7		0.40		ug/L			12/05/23 14:35	1
Ethylbenzene	40		1.0		ug/L			12/05/23 14:35	1
m,p-Xylene	74		2.0		ug/L			12/05/23 14:35	1
o-Xylene	66		1.0		ug/L			12/05/23 14:35	1
Toluene	38		1.0		ug/L			12/05/23 14:35	1
Xylenes, Total	140		3.0		ug/L			12/05/23 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/05/23 14:35*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/05/23 14:35*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 123*		*12/05/23 14:35*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/05/23 14:35*	*1*

Client Sample ID: MW-9-231129
Date Collected: 11/29/23 08:00
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.1		0.40		ug/L			12/05/23 14:57	1
Ethylbenzene	94		1.0		ug/L			12/05/23 14:57	1
m,p-Xylene	340		20		ug/L			12/08/23 13:01	10
o-Xylene	130		10		ug/L			12/08/23 13:01	10
Toluene	33		1.0		ug/L			12/05/23 14:57	1
Xylenes, Total	460		30		ug/L			12/08/23 13:01	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/05/23 14:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*12/08/23 13:01*	*10*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/05/23 14:57*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*		*12/08/23 13:01*	*10*
Dibromofluoromethane (Surr)	*99*		*80 - 123*		*12/05/23 14:57*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 123*		*12/08/23 13:01*	*10*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/05/23 14:57*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/08/23 13:01*	*10*

Client Sample ID: MW-6R-231129
Date Collected: 11/29/23 09:25
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.1		0.40		ug/L			12/05/23 15:19	1
Ethylbenzene	140		10		ug/L			12/08/23 13:23	10
m,p-Xylene	280		20		ug/L			12/08/23 13:23	10
o-Xylene	25		10		ug/L			12/08/23 13:23	10
Toluene	1.2		1.0		ug/L			12/05/23 15:19	1
Xylenes, Total	300		30		ug/L			12/08/23 13:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*12/05/23 15:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*12/08/23 13:23*	*10*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*		*12/05/23 15:19*	*1*
4-Bromofluorobenzene (Surr)	*104*		*76 - 120*		*12/08/23 13:23*	*10*
Dibromofluoromethane (Surr)	*94*		*80 - 123*		*12/05/23 15:19*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Client Sample ID: MW-6R-231129 **Lab Sample ID: 590-22377-9**
Date Collected: 11/29/23 09:25 **Matrix: Water**
Date Received: 11/30/23 16:26

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	101		80 - 123		12/08/23 13:23	10
Toluene-d8 (Surr)	94		80 - 120		12/05/23 15:19	1
Toluene-d8 (Surr)	98		80 - 120		12/08/23 13:23	10

Client Sample ID: IW-3-231129 **Lab Sample ID: 590-22377-10**
Date Collected: 11/29/23 11:15 **Matrix: Water**
Date Received: 11/30/23 16:26

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.8		0.40		ug/L			12/05/23 16:03	1
Ethylbenzene	360		10		ug/L			12/08/23 13:45	10
m,p-Xylene	1300		200		ug/L			12/11/23 19:11	100
o-Xylene	520		100		ug/L			12/11/23 19:11	100
Toluene	100		10		ug/L			12/08/23 13:45	10
Xylenes, Total	1800		300		ug/L			12/11/23 19:11	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		12/05/23 16:03	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/08/23 13:45	10
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/11/23 19:11	100
4-Bromofluorobenzene (Surr)	104		76 - 120		12/05/23 16:03	1
4-Bromofluorobenzene (Surr)	99		76 - 120		12/08/23 13:45	10
4-Bromofluorobenzene (Surr)	98		76 - 120		12/11/23 19:11	100
Dibromofluoromethane (Surr)	99		80 - 123		12/05/23 16:03	1
Dibromofluoromethane (Surr)	103		80 - 123		12/08/23 13:45	10
Dibromofluoromethane (Surr)	104		80 - 123		12/11/23 19:11	100
Toluene-d8 (Surr)	98		80 - 120		12/05/23 16:03	1
Toluene-d8 (Surr)	99		80 - 120		12/08/23 13:45	10
Toluene-d8 (Surr)	100		80 - 120		12/11/23 19:11	100

Client Sample ID: IW-17-231129 **Lab Sample ID: 590-22377-11**
Date Collected: 11/29/23 12:45 **Matrix: Water**
Date Received: 11/30/23 16:26

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.2		0.40		ug/L			12/05/23 16:25	1
Ethylbenzene	91		1.0		ug/L			12/05/23 16:25	1
m,p-Xylene	89		2.0		ug/L			12/05/23 16:25	1
o-Xylene	13		1.0		ug/L			12/05/23 16:25	1
Toluene	1.1		1.0		ug/L			12/05/23 16:25	1
Xylenes, Total	100		3.0		ug/L			12/05/23 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		12/05/23 16:25	1
4-Bromofluorobenzene (Surr)	95		76 - 120		12/05/23 16:25	1
Dibromofluoromethane (Surr)	102		80 - 123		12/05/23 16:25	1
Toluene-d8 (Surr)	97		80 - 120		12/05/23 16:25	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-8-231129
Date Collected: 11/29/23 14:35
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**7.2**		0.40		ug/L			12/05/23 16:47	1
Ethylbenzene	**320**		10		ug/L			12/08/23 14:07	10
m,p-Xylene	**730**		20		ug/L			12/08/23 14:07	10
o-Xylene	**280**		10		ug/L			12/08/23 14:07	10
Toluene	**200**		10		ug/L			12/08/23 14:07	10
Xylenes, Total	**1000**		30		ug/L			12/08/23 14:07	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*12/05/23 16:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/08/23 14:07*	*10*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*12/05/23 16:47*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*		*12/08/23 14:07*	*10*
Dibromofluoromethane (Surr)	*98*		*80 - 123*		*12/05/23 16:47*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 123*		*12/08/23 14:07*	*10*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/05/23 16:47*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*12/08/23 14:07*	*10*

Client Sample ID: IW-15-231129
Date Collected: 11/29/23 15:35
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			12/05/23 17:09	1
Ethylbenzene	**4.8**		1.0		ug/L			12/05/23 17:09	1
m,p-Xylene	**4.1**		2.0		ug/L			12/05/23 17:09	1
o-Xylene	**1.8**		1.0		ug/L			12/05/23 17:09	1
Toluene	ND		1.0		ug/L			12/05/23 17:09	1
Xylenes, Total	**5.9**		3.0		ug/L			12/05/23 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/05/23 17:09*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*12/05/23 17:09*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 123*		*12/05/23 17:09*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*12/05/23 17:09*	*1*

Client Sample ID: IW-14-231129
Date Collected: 11/29/23 17:05
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.59**		0.40		ug/L			12/05/23 17:31	1
Ethylbenzene	**10**		1.0		ug/L			12/05/23 17:31	1
m,p-Xylene	**2.2**		2.0		ug/L			12/05/23 17:31	1
o-Xylene	**1.3**		1.0		ug/L			12/05/23 17:31	1
Toluene	ND		1.0		ug/L			12/05/23 17:31	1
Xylenes, Total	**3.6**		3.0		ug/L			12/05/23 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*12/05/23 17:31*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*		*12/05/23 17:31*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/05/23 17:31*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/05/23 17:31*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: MW-8-231129
Date Collected: 11/29/23 08:20
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.1**		0.40		ug/L			12/05/23 17:53	1
Ethylbenzene	**1.4**		1.0		ug/L			12/05/23 17:53	1
m,p-Xylene	ND		2.0		ug/L			12/05/23 17:53	1
o-Xylene	ND		1.0		ug/L			12/05/23 17:53	1
Toluene	ND		1.0		ug/L			12/05/23 17:53	1
Xylenes, Total	ND		3.0		ug/L			12/05/23 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/05/23 17:53*	*1*
4-Bromofluorobenzene (Surr)	*94*		*76 - 120*		*12/05/23 17:53*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/05/23 17:53*	*1*
Toluene-d8 (Surr)	*77*	*S1-*	*80 - 120*		*12/05/23 17:53*	*1*

Client Sample ID: IW-10-231129
Date Collected: 11/29/23 09:40
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**4.3**		0.40		ug/L			12/05/23 18:15	1
Ethylbenzene	**36**		1.0		ug/L			12/05/23 18:15	1
m,p-Xylene	**19**		2.0		ug/L			12/05/23 18:15	1
o-Xylene	**2.6**		1.0		ug/L			12/05/23 18:15	1
Toluene	ND		1.0		ug/L			12/05/23 18:15	1
Xylenes, Total	**21**		3.0		ug/L			12/05/23 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*12/05/23 18:15*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*12/05/23 18:15*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/05/23 18:15*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*12/05/23 18:15*	*1*

Client Sample ID: IW-12-231129
Date Collected: 11/29/23 11:00
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.94**		0.40		ug/L			12/05/23 18:37	1
Ethylbenzene	**1.7**		1.0		ug/L			12/05/23 18:37	1
m,p-Xylene	ND		2.0		ug/L			12/05/23 18:37	1
o-Xylene	ND		1.0		ug/L			12/05/23 18:37	1
Toluene	ND		1.0		ug/L			12/05/23 18:37	1
Xylenes, Total	ND		3.0		ug/L			12/05/23 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*12/05/23 18:37*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*12/05/23 18:37*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/05/23 18:37*	*1*
Toluene-d8 (Surr)	*90*		*80 - 120*		*12/05/23 18:37*	*1*

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

Client Sample ID: Trip Blank
Date Collected: 11/28/23 00:00
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			12/05/23 12:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*12/05/23 12:23*	*1*

Client Sample ID: IW-1-231128
Date Collected: 11/28/23 11:20
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**310**		150		ug/L			12/05/23 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*12/05/23 12:45*	*1*

Client Sample ID: IW-2-231128
Date Collected: 11/28/23 12:10
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**580**		150		ug/L			12/05/23 13:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/05/23 13:07*	*1*

Client Sample ID: IW-18-231128
Date Collected: 11/28/23 13:40
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**420**		150		ug/L			12/05/23 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/05/23 13:29*	*1*

Client Sample ID: IW-4-231128
Date Collected: 11/28/23 14:50
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**840**		150		ug/L			12/05/23 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*12/05/23 13:51*	*1*

Client Sample ID: IW-9-231128
Date Collected: 11/28/23 15:35
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**690**		150		ug/L			12/05/23 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*12/05/23 14:14*	*1*

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

Client Sample ID: MW-7R-231128
Date Collected: 11/28/23 16:50
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1200		150		ug/L			12/05/23 14:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/05/23 14:35*	*1*

Client Sample ID: MW-9-231129
Date Collected: 11/29/23 08:00
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1500		150		ug/L			12/05/23 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/05/23 14:57*	*1*

Client Sample ID: MW-6R-231129
Date Collected: 11/29/23 09:25
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3700		150		ug/L			12/05/23 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*12/05/23 15:19*	*1*

Client Sample ID: IW-3-231129
Date Collected: 11/29/23 11:15
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3900		150		ug/L			12/05/23 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*		*12/05/23 16:03*	*1*

Client Sample ID: IW-17-231129
Date Collected: 11/29/23 12:45
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1100		150		ug/L			12/05/23 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*		*12/05/23 16:25*	*1*

Client Sample ID: IW-8-231129
Date Collected: 11/29/23 14:35
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	4000		150		ug/L			12/05/23 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*12/05/23 16:47*	*1*

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

Client Sample ID: IW-15-231129
Date Collected: 11/29/23 15:35
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			12/05/23 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*12/05/23 17:09*	*1*

Client Sample ID: IW-14-231129
Date Collected: 11/29/23 17:05
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			12/05/23 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*		*12/05/23 17:31*	*1*

Client Sample ID: MW-8-231129
Date Collected: 11/29/23 08:20
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**430**		150		ug/L			12/05/23 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*68.7 - 141*		*12/05/23 17:53*	*1*

Client Sample ID: IW-10-231129
Date Collected: 11/29/23 09:40
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**870**		150		ug/L			12/05/23 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*12/05/23 18:15*	*1*

Client Sample ID: IW-12-231129
Date Collected: 11/29/23 11:00
Date Received: 11/30/23 16:26
Lab Sample ID: 590-22377-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**420**		150		ug/L			12/08/23 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*		*12/08/23 14:29*	*1*

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

Lab Sample ID: MB 590-44931/6
Matrix: Water
Analysis Batch: 44931

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			12/05/23 12:01	1
Ethylbenzene	ND		1.0		ug/L			12/05/23 12:01	1
m,p-Xylene	ND		2.0		ug/L			12/05/23 12:01	1
o-Xylene	ND		1.0		ug/L			12/05/23 12:01	1
Toluene	ND		1.0		ug/L			12/05/23 12:01	1
Xylenes, Total	ND		3.0		ug/L			12/05/23 12:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*12/05/23 12:01*	*1*
4-Bromofluorobenzene (Surr)	*91*		*76 - 120*		*12/05/23 12:01*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 123*		*12/05/23 12:01*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/05/23 12:01*	*1*

Lab Sample ID: LCS 590-44931/1003
Matrix: Water
Analysis Batch: 44931

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			10.0	10.3		ug/L		103	80 - 120		
Ethylbenzene			10.0	10.4		ug/L		104	80 - 122		
m,p-Xylene			10.0	10.7		ug/L		107	80 - 125		
o-Xylene			10.0	10.3		ug/L		103	80 - 130		
Toluene			10.0	9.87		ug/L		99	80 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 123*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 590-44931/4
Matrix: Water
Analysis Batch: 44931

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			10.0	10.3		ug/L		103	80 - 120	0	15
Ethylbenzene			10.0	10.1		ug/L		101	80 - 122	3	35
m,p-Xylene			10.0	10.2		ug/L		102	80 - 125	4	35
o-Xylene			10.0	10.1		ug/L		101	80 - 130	2	35
Toluene			10.0	9.41		ug/L		94	80 - 129	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 590-45001/7
Matrix: Water
Analysis Batch: 45001

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			12/08/23 12:39	1
Ethylbenzene	ND		1.0		ug/L			12/08/23 12:39	1
m,p-Xylene	ND		2.0		ug/L			12/08/23 12:39	1
o-Xylene	ND		1.0		ug/L			12/08/23 12:39	1
Toluene	ND		1.0		ug/L			12/08/23 12:39	1
Xylenes, Total	ND		3.0		ug/L			12/08/23 12:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*80 - 120*		*12/08/23 12:39*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*12/08/23 12:39*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 123*		*12/08/23 12:39*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*12/08/23 12:39*	*1*

Lab Sample ID: LCS 590-45001/1004
Matrix: Water
Analysis Batch: 45001

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.3		ug/L		103	80 - 120
Ethylbenzene	10.0	10.6		ug/L		106	80 - 122
m,p-Xylene	10.0	10.8		ug/L		108	80 - 125
o-Xylene	10.0	10.9		ug/L		109	80 - 130
Toluene	10.0	9.84		ug/L		98	80 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 123*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 590-45001/5
Matrix: Water
Analysis Batch: 45001

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.96		ug/L		100	80 - 120	4	15
Ethylbenzene	10.0	10.2		ug/L		102	80 - 122	4	35
m,p-Xylene	10.0	10.4		ug/L		104	80 - 125	4	35
o-Xylene	10.0	10.5		ug/L		105	80 - 130	4	35
Toluene	10.0	9.33		ug/L		93	80 - 129	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*
Dibromofluoromethane (Surr)	*101*		*80 - 123*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 590-45044/6
Matrix: Water
Analysis Batch: 45044

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			12/11/23 18:49	1
Ethylbenzene	ND		1.0		ug/L			12/11/23 18:49	1
m,p-Xylene	ND		2.0		ug/L			12/11/23 18:49	1
o-Xylene	ND		1.0		ug/L			12/11/23 18:49	1
Toluene	ND		1.0		ug/L			12/11/23 18:49	1
Xylenes, Total	ND		3.0		ug/L			12/11/23 18:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*12/11/23 18:49*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*12/11/23 18:49*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 123*		*12/11/23 18:49*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/11/23 18:49*	*1*

Lab Sample ID: LCS 590-45044/1003
Matrix: Water
Analysis Batch: 45044

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			10.0	10.5		ug/L		105	80 - 120		
Ethylbenzene			10.0	10.4		ug/L		104	80 - 122		
m,p-Xylene			10.0	10.6		ug/L		106	80 - 125		
o-Xylene			10.0	10.9		ug/L		109	80 - 130		
Toluene			10.0	9.61		ug/L		96	80 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 123*
Toluene-d8 (Surr)	*97*		*80 - 120*

Lab Sample ID: LCSD 590-45044/4
Matrix: Water
Analysis Batch: 45044

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			10.0	10.2		ug/L		102	80 - 120	3	15
Ethylbenzene			10.0	9.95		ug/L		100	80 - 122	5	35
m,p-Xylene			10.0	10.0		ug/L		100	80 - 125	5	35
o-Xylene			10.0	10.2		ug/L		102	80 - 130	7	35
Toluene			10.0	9.31		ug/L		93	80 - 129	3	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 123*
Toluene-d8 (Surr)	*99*		*80 - 120*

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

Lab Sample ID: MB 590-44932/6
Matrix: Water
Analysis Batch: 44932

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			12/05/23 12:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*68.7 - 141*		*12/05/23 12:01*	*1*

Lab Sample ID: LCS 590-44932/1005
Matrix: Water
Analysis Batch: 44932

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	895		ug/L		90	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*

Lab Sample ID: LCSD 590-44932/1016
Matrix: Water
Analysis Batch: 44932

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	924		ug/L		92	80 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*

Lab Sample ID: MB 590-45002/7
Matrix: Water
Analysis Batch: 45002

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			12/08/23 12:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*12/08/23 12:39*	*1*

Lab Sample ID: LCS 590-45002/1006
Matrix: Water
Analysis Batch: 45002

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	884		ug/L		88	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*68.7 - 141*

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

Lab Sample ID: LCSD 590-45002/1017
Matrix: Water
Analysis Batch: 45002

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	913		ug/L		91	80 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil/1148010.010

Job ID: 590-22377-1

Client Sample ID: Trip Blank
Lab Sample ID: 590-22377-1
Date Collected: 11/28/23 00:00
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 12:23
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 12:23

Client Sample ID: IW-1-231128
Lab Sample ID: 590-22377-2
Date Collected: 11/28/23 11:20
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 12:45
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 12:45

Client Sample ID: IW-2-231128
Lab Sample ID: 590-22377-3
Date Collected: 11/28/23 12:10
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 13:07
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 13:07

Client Sample ID: IW-18-231128
Lab Sample ID: 590-22377-4
Date Collected: 11/28/23 13:40
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 13:29
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 13:29

Client Sample ID: IW-4-231128
Lab Sample ID: 590-22377-5
Date Collected: 11/28/23 14:50
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 13:51
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 13:51

Client Sample ID: IW-9-231128
Lab Sample ID: 590-22377-6
Date Collected: 11/28/23 15:35
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 14:14
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 14:14

Client Sample ID: MW-7R-231128
Date Collected: 11/28/23 16:50
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 14:35
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 14:35

Client Sample ID: MW-9-231129
Date Collected: 11/29/23 08:00
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 14:57
Total/NA	Analysis	8260D		10	45001	JSP	EET SPK	12/08/23 13:01
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 14:57

Client Sample ID: MW-6R-231129
Date Collected: 11/29/23 09:25
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 15:19
Total/NA	Analysis	8260D		10	45001	JSP	EET SPK	12/08/23 13:23
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 15:19

Client Sample ID: IW-3-231129
Date Collected: 11/29/23 11:15
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 16:03
Total/NA	Analysis	8260D		10	45001	JSP	EET SPK	12/08/23 13:45
Total/NA	Analysis	8260D		100	45044	JSP	EET SPK	12/11/23 19:11
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 16:03

Client Sample ID: IW-17-231129
Date Collected: 11/29/23 12:45
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 16:25
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 16:25

Client Sample ID: IW-8-231129
Date Collected: 11/29/23 14:35
Date Received: 11/30/23 16:26

Lab Sample ID: 590-22377-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 16:47

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil/1148010.010

Job ID: 590-22377-1

Client Sample ID: IW-8-231129
Lab Sample ID: 590-22377-12
Date Collected: 11/29/23 14:35
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	45001	JSP	EET SPK	12/08/23 14:07
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 16:47

Client Sample ID: IW-15-231129
Lab Sample ID: 590-22377-13
Date Collected: 11/29/23 15:35
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 17:09
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 17:09

Client Sample ID: IW-14-231129
Lab Sample ID: 590-22377-14
Date Collected: 11/29/23 17:05
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 17:31
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 17:31

Client Sample ID: MW-8-231129
Lab Sample ID: 590-22377-15
Date Collected: 11/29/23 08:20
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 17:53
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 17:53

Client Sample ID: IW-10-231129
Lab Sample ID: 590-22377-16
Date Collected: 11/29/23 09:40
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 18:15
Total/NA	Analysis	NWTPH-Gx		1	44932	JSP	EET SPK	12/05/23 18:15

Client Sample ID: IW-12-231129
Lab Sample ID: 590-22377-17
Date Collected: 11/29/23 11:00
Matrix: Water
Date Received: 11/30/23 16:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	44931	JSP	EET SPK	12/05/23 18:37
Total/NA	Analysis	NWTPH-Gx		1	45002	JSP	EET SPK	12/08/23 14:29

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 590-22377-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Laboratory: Eurofins Spokane

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-07-24

Method Summary

Client: Landau & Associates, Inc.
Project/Site: City of Yakima-Tiger Oil/1148010.010

Job ID: 590-22377-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
5030C	Purge and Trap	SW846	EET SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

APPENDIX H

Post-Injection 3 Groundwater Monitoring Sample Collection Forms and Laboratory Analytical Report

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-1
Weather: 17C Clear
Sample ID: IW-1- 250922
Landau Rep.: WMB
Date: 09/22/25 Time: 11:35

WELL INFORMATION

Screened Interval: Top (ft): 10.90 Bottom (ft): 20.90 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133
Static DTW (ft): 14.35 Time: 10:37 Flow-Thru Cell Vol.: 250 mL Liters Purged: 10.25
Begin Purge (Date/Time): 9/22/2025 10:45 End Purge (Date/Time): 9/22/2025 11:29 Flow Rate (mL/min): 233
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
10:50	17.8	0.66	4058	4.38	236.0	12.84	14.37	1.25	
10:55	17.9	0.53	3739	4.42	244.5	7.58	14.38	2.25	
11:00	18.3	0.48	2838	4.64	236.0	4.59	14.38	3.25	
11:03	18.3	0.48	2973	4.56	236.5	3.53	14.38	4.25	
11:07	18.4	0.49	3184	4.64	236.6	3.01	14.38	5.25	
11:11	18.4	0.50	3377	4.64	237.3	2.73	14.39	6.25	
11:15	18.4	0.50	3597	4.64	237.6	3.45	14.39	7.25	
11:20	18.4	0.51	3733	4.63	238.3	2.72	14.40	8.25	
11:25	18.4	0.51	3774	4.63	239.3	1.84	14.40	9.25	
11:29	18.4	0.50	3813	4.63	239.6	2.06	14.40	10.25	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, mild organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 09/22/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-2
Weather: 19C Clear
Sample ID: IW-2- 250922
Landau Rep.: WMB
Date: 09/22/25 Time: 12:55

WELL INFORMATION

Screened Interval: Top (ft): 10.80 Bottom (ft): 20.80
Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount WQM No.: 0133
Static DTW (ft): 14.35 Time: 11:47
Flow-Thru Cell Vol.: 250 mL Liters Purged: 14.00
Begin Purge (Date/Time): 9/22/2025 11:48
End Purge (Date/Time): 9/22/2025 12:49
Flow Rate (mL/min): 230
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
11:52	17.9	0.40	6359	3.68	473.3	3.43	14.57	1.00	
11:56	17.9	0.39	6203	3.68	495.4	4.90	14.61	2.00	
12:00	17.9	0.38	5960	3.69	500.0	3.85	14.63	3.00	
12:05	17.8	0.38	5693	3.70	500.7	3.80	14.65	4.00	
12:09	17.7	0.38	5446	3.71	499.3	4.23	14.65	5.00	
12:13	17.7	0.37	5286	3.72	498.4	3.65	14.65	6.00	
12:18	17.7	0.37	5085	3.72	496.8	3.00	14.65	7.00	
12:22	17.6	0.37	4935	3.73	496.1	2.01	14.65	8.00	
12:26	17.5	0.37	4850	3.73	495.1	2.68	14.65	9.00	
12:30	17.6	0.37	4764	3.73	493.8	2.14	14.65	10.00	
12:36	17.7	0.36	4671	3.74	494.8	3.16	14.65	11.00	
12:40	17.6	0.35	4596	3.74	494.5	1.92	14.65	12.00	
12:44	17.5	0.36	4524	3.74	494.9	2.34	14.65	13.00	
12:49	17.6	0.36	4493	3.75	494.8	2.36	14.65	14.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 09/22/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil N 1st St Remediation	Project Number:	1148010.010
Event:	Post Injection 3 Groundwater Monitoring	Well ID:	IW-18
Weather:	22C Clear	Sample ID:	IW-18- 250922
Landau Rep.:	WMB	Date: 09/22/25	Time: 14:35

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133

Static DTW (ft): 14.35 Time: 13:07 Flow-Thru Cell Vol.: 250 mL Liters Purged: 20.00

Begin Purge (Date/Time): 9/22/2025 13:08 End Purge (Date/Time): 9/22/2025 14:32 Flow Rate (mL/min): 238

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
13:12	18.1	0.69	4707	3.98	378.1	7.15	14.51	1.00	
13:17	17.7	0.46	4494	4.02	371.6	20.05	14.51	2.00	
13:22	18.0	0.49	4256	4.12	362.1	18.20	14.52	3.00	
13:26	17.7	0.59	3904	4.32	348.9	14.3	14.52	4.00	
13:31	17.7	0.76	3377	4.55	332.6	9.96	14.52	5.00	
13:35	17.5	0.92	3023	4.74	319.7	7.62	14.53	6.00	
13:39	17.5	1.04	2786	4.85	309.4	6.41	14.53	7.00	
13:44	17.4	1.24	2407	5.01	293.3	5.60	14.53	8.00	
13:48	17.2	1.39	2256	5.09	280.4	5.15	14.53	9.00	
13:52	17.4	1.51	2109	5.16	267.7	3.97	14.53	10.00	
13:56	17.3	1.61	2020	5.20	258.2	4.52	14.53	11.00	
14:00	17.3	1.68	1895	5.25	249.1	3.99	14.53	12.00	
14:05	17.1	1.74	1800	5.29	239.5	4.84	14.53	13.00	
14:09	17.3	1.77	1767	5.33	232.1	4.36	14.53	14.00	
14:16	17.1	1.82	1697	5.37	224.1	4.32	14.53	16.00	
14:20	17.2	1.82	1673	5.39	219.0	4.18	14.53	17.00	
14:24	17.3	1.82	1626	5.42	213.0	4.17	14.54	18.00	
14:28	17.2	1.85	1615	5.42	208.8	3.46	14.54	19.00	
14:32	17.2	1.85	1596	5.44	204.5	3.40	14.53	20.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen

Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD

Comments:

Signature: Weston Boadman Date: 09/22/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-9
Weather: 23C Clear
Sample ID: IW-9- 250922
Landau Rep.: WMB
Date: 09/22/25 Time: 15:25

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 14.21 Time: 14:56
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 6.00
Begin Purge (Date/Time): 9/22/2025 14:56
End Purge (Date/Time): 9/22/2025 15:20
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
15:00	17.6	0.31	453.8	6.08	25.9	11.38	14.21	1.00	
15:04	18.0	0.26	366.8	6.13	14.7	10.62	14.21	2.00	
15:08	18.0	0.25	361.8	6.16	5.9	4.10	14.21	3.00	
15:12	18.0	0.24	363.2	6.17	2.6	3.10	14.21	4.00	
15:16	18.1	0.24	366.7	6.17	0.3	1.98	14.21	5.00	
15:20	18.0	0.23	367.6	6.17	-1.3	1.88	14.21	6.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, strong organic odor, no sheen
Fe 2^{+} (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 09/22/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-10
Weather: 23C Clear
Sample ID: IW-10- 250922
Landau Rep.: WMB
Date: 09/22/25 Time: 16:45

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133
Static DTW (ft): 14.21 Time: 15:38 Flow-Thru Cell Vol.: 250 mL Liters Purged: 15.00
Begin Purge (Date/Time): 9/22/2025 15:39 End Purge (Date/Time): 9/22/2025 16:42 Flow Rate (mL/min): 238
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
15:43	18.1	0.42	12341	3.42	485.9	74.63	14.50	1.00	Turbid and slightly orange
15:48	18.2	0.35	11870	3.46	477.4	161.8	14.54	2.00	
15:53	17.9	0.33	11429	3.49	443.4	279.2	14.55	3.00	
15:57	17.8	0.32	11050	3.51	433.4	144.8	14.55	4.00	
16:01	17.7	0.32	10624	3.51	429.5	71.19	14.57	5.00	Becomes colorless
16:05	17.7	0.31	10357	3.52	428.8	39.86	14.58	6.00	
16:09	17.8	0.31	10146	3.53	428.1	27.76	14.58	7.00	
16:13	17.7	0.30	9944	3.54	426.9	19.93	14.58	8.00	
16:17	17.8	0.30	9734	3.54	425.1	14.81	14.57	9.00	
16:21	17.9	0.30	9612	3.55	424.2	12.39	14.57	10.00	
16:25	17.7	0.30	9410	3.55	423.7	10.84	14.58	11.00	
16:29	17.6	0.30	9199	3.55	423.0	7.75	14.58	12.00	
16:34	17.6	0.30	8966	3.56	421.8	7.02	14.58	13.00	
16:38	17.6	0.29	8852	3.56	421.8	7.23	14.58	14.00	
16:42	17.6	0.29	8751	3.57	422.1	7.49	14.58	15.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, strong organic/acidic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 09/22/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation | Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring | Well ID: IW-4
Weather: 23C Clear | Sample ID: IW-4- 250922
Landau Rep.: WMB | Date: 09/22/25 | Time: 18:20

WELL INFORMATION

Screened Interval: Top (ft): 10.40 | Bottom (ft): 20.40 | Well Secure? ☐ No ☑ Yes | Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM | Time: | Describe: flush-mount | WQM No.: 0133
Static DTW (ft): 14.64 | Time: 17:02 | Flow-Thru Cell Vol.: 250 mL | Liters Purged: 18.00
Begin Purge (Date/Time): 9/22/2025 17:03 | End Purge (Date/Time): 9/22/2025 18:17 | Flow Rate (mL/min): 243
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
17:06	19.3	0.39	5755	3.46	552.1	10.89	14.91	1.00	
17:12	18.8	0.36	5529	3.47	555.4	3.84	15.04	2.00	
17:16	18.7	0.33	5552	3.43	555.2	3.89	15.08	3.00	
17:20	18.9	0.32	5493	3.48	556.8	3.77	15.08	4.00	
17:25	19.0	0.31	5385	3.47	556.8	3.41	15.06	5.00	
17:30	18.7	0.31	5175	3.47	557.0	3.52	15.09	6.00	
17:34	18.7	0.30	5024	3.47	558.2	2.18	15.09	7.00	
17:39	18.4	0.30	4860	3.47	560.4	2.19	15.12	8.00	
17:43	18.3	0.30	4694	3.48	560.3	3.05	15.17	9.00	
17:47	18.4	0.29	4571	3.49	555.6	3.48	15.19	10.00	
17:51	18.2	0.28	4417	3.49	552.6	2.63	15.22	11.00	
17:55	18.2	0.28	4339	3.49	549.6	2.03	15.23	12.00	
17:58	18.2	0.28	4242	3.49	546.8	1.77	15.23	13.00	
18:02	18.1	0.28	4148	3.49	545.6	1.81	15.24	14.00	
18:06	18.1	0.27	4063	3.50	545.2	1.72	15.24	15.00	
18:10	18.1	0.06	3981	3.49	543.3	3.46	15.24	16.00	
18:13	18.1	0.06	3930	3.50	541.6	2.15	15.22	17.00	
18:17	18.1	0.06	3882	3.50	540.8	2.22	15.21	18.00	

Sample Description (turbidity, color, odor, sheen): Clear, coloress, organic odor, no sheen. | Fe 2^{+} (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump | Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

	Scheduled Analysis (Circle/Bold Applicable)						Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman | Date: 09/22/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: N1MW-8
Weather: 9C Clear, breezy
Sample ID: N1MW-8- 250923
Landau Rep.: WMB
Date: 09/23/25 Time: 8:05

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 13.45 Time: 6:52
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 13.25
Begin Purge (Date/Time): 9/23/2025 7:06
End Purge (Date/Time): 9/23/2025 7:59
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
7:10	16.8	0.69	7093	3.73	376.6	20.61	14.10	1.25	
7:15	17.0	0.57	5123	4.62	308.8	33.20	14.58	2.25	
7:19	17.2	0.55	4531	4.95	279.3	64.45	14.69	3.25	
7:23	16.8	0.53	6556	4.17	335.1	29.11	14.78	4.25	
7:27	16.5	0.54	6767	3.97	364.6	21.52	14.73	5.25	
7:31	16.5	0.54	6903	3.85	377.0	24.54	14.80	6.25	
7:35	16.4	0.54	6966	3.77	387.0	14.73	14.78	7.25	
7:39	16.4	0.51	7027	3.70	392.8	17.52	14.78	8.25	
7:43	16.4	0.59	7003	3.72	392.3	7.83	14.78	9.25	
7:47	16.4	0.57	6967	3.71	394.5	7.46	14.78	10.25	
7:51	16.4	0.56	6961	3.68	396.6	5.38	14.78	11.25	
7:55	16.5	0.56	6959	3.73	394.1	5.25	14.78	12.25	
7:59	16.6	0.54	6918	3.69	395.7	5.57	14.78	13.25	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen.
$Fe\ 2^{+}$ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 09/23/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-14
Weather: 11C Clear
Sample ID: IW-14- 250923
Landau Rep.: WMB
Date: 09/23/25 Time: 10:45

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133
Static DTW (ft): 13.74 Time: 8:34 Flow-Thru Cell Vol.: 250 mL Liters Purged: 13.00
Begin Purge (Date/Time): 9/23/2025 8:35 End Purge (Date/Time): 9/23/2025 10:40 Flow Rate (mL/min): 97
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
8:39	17.4	0.63	2690	5.47	148.7	105.9	14.92	1.00	Purge water cloudy
8:43	17.7	0.50	2301	5.52	103.2	708.7	15.45	2.00	
8:47	17.6	0.47	2205	5.51	91.8	942.6	16.12	3.00	
8:52	17.6	0.41	2266	5.52	87.4	713.4	16.73	4.00	
8:56	17.4	0.80	3004	5.57	83.2	359.9	17.02	5.00	Becomes brown
9:01	17.1	0.44	2978	5.62	72.2	809.4	17.02	6.00	
9:28									09:05 pause to install longer tubing in well. Intake set at approx. 18 ft btoc. 09:07 pump back on. 09:15 Well running dry and significant sediment being pumped out. TD 18.3 ft btoc with soft bottom. Pump off.
9:35	17.3	0.57	3969	5.70	72.3	117.0	16.29	0.50	9:28 resume purge at lower flow rate. Well recharged 2.5 ft after pump being turned off. Suspect screen may be compromised allowing sediment to come in.
9:40	17.4	0.42	3942	5.70	69.4	85.61	16.43	1.00	
9:45	17.6	0.40	3797	5.67	70.7	55.22	16.54	1.50	
9:50	17.8	0.39	3771	5.66	70.4	39.53	16.59	2.00	
9:55	17.8	0.42	3758	5.67	-1.2	37.63	16.66	2.50	
10:00	17.8	0.37	3744	5.66	33.8	34.10	16.72	3.00	
10:05	18.0	0.36	3804	5.67	40.5	31.10	16.78	3.50	
10:10	18.1	0.36	3867	5.67	42.9	27.03	16.81	4.00	
10:15	18.2	0.35	3928	5.68	44.0	26.10	16.83	4.50	
10:20	18.3	0.50	3980	5.67	45.5	38.70	16.84	5.00	
10:25	18.2	0.40	4067	5.67	46.7	31.90	16.88	5.50	
10:30	18.3	0.29	4089	5.68	46.5	24.70	16.92	6.00	
10:35	18.3	0.29	4060	5.68	46.6	24.66	16.97	6.50	
10:40	18.5	0.31	3995	5.67	47.1	22.68	17.01	7.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen. $Fe\ 2^{+}$ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on when purge was re-started at 9:28.
Signature: Weston Boardman Date: 09/23/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-12
Weather: 21C Clear
Sample ID: IW-12- 250923
Landau Rep.: WMB
Date: 09/23/25 Time: 13:30

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 14.12 Time: 11:14
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 43.50
Begin Purge (Date/Time): 9/23/2025 11:15
End Purge (Date/Time): 9/23/2025 13:23
Flow Rate (mL/min): 237
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
11:19	18.7	0.53	6590	5.61	97.6	132.2	14.50	1.00	Dark, fine (silty), substance present in purge water. Water colorless.
11:24	18.6	0.31	6571	5.33	152.7	89.03	14.71	2.00	
11:29	18.4	0.29	6519	5.19	175.8	111.9	14.85	3.00	
11:34	18.2	0.27	6464	4.63	227.2	1100	14.94	4.00	
									11:36 purge water becomes dark purple/black with abundant silty substance (same as above). Flow-through disconnected and purge w/o flow through until clears up at max flow rate 320 ml/min). Substance is suspected to be undissolved Klozur One. TD is approx. 20 ft bgs with soft bottom.
12:08						200.1	15.37	17.00	Clarity improving. Substance still present.
12:16						222.1	15.37	20.00	Same appearance as at 12:08.
12:29						127.0	15.37	26.00	
12:36						79.86	15.37	29.00	
12:42						68.74	15.37	32.00	
12:51						74.17	15.37	36.00	
13:04								39.00	Switch back to low flow
13:08	17.3	0.71	3612	4.04	309.7	49.85	14.96	1.00	
13:12	17.3	0.48	3510	4.03	355.6	29.31	14.88	2.00	
13:15	17.2	0.43	3412	4.04	376.2	24.88	14.85	2.50	
13:17	17.2	0.41	3357	4.05	385.3	24.55	14.83	3.00	
13:19	17.2	0.38	3307	4.05	394.6	17.54	14.82	3.50	
13:21	17.3	0.40	3284	4.05	401.7	17.38	14.82	4.00	
13:23	17.4	0.37	3271	4.06	404.5	16.33	14.82	4.50	

Sample Description (turbidity, color, odor, sheen): Turbid (black/purple particles), slightly orange, organic odor, no sheen.

Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Sampled without turbidity reaching stabilization. Flow rate based on low-flow which was resumed at 13:04.
Signature: Weston Boardman Date: 09/23/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name:	City of Yakima - Tiger Oil N 1st St Remediation	Project Number:	1148010.010
Event:	Post Injection 3 Groundwater Monitoring	Well ID:	N1MW-7R
Weather:	24C Clear	Sample ID:	N1MW-7R- 250923
Landau Rep.:	WMB	Date: 09/23/25	Time: 15:30

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes

DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133

Static DTW (ft): 13.62 Time: 13:47 Flow-Thru Cell Vol.: 250 mL Liters Purged: 24.00

Begin Purge (Date/Time): 9/23/2025 13:48 End Purge (Date/Time): 9/23/2025 15:28 Flow Rate (mL/min): 240

Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
13:52	18.0	0.29	6402	4.46	310.0	37.94	14.62	1.00	
13:56	17.8	0.33	6372	4.37	313.2	14.84	14.83	2.00	
14:00	17.8	0.41	5932	4.36	322.5	18.81	14.94	3.00	
14:04	17.8	0.44	5359	4.40	333.8	20.24	15.01	4.00	
14:08	17.9	0.45	5196	4.60	314.0	32.79	15.06	5.00	
14:12	17.7	0.48	4796	4.58	314.0	20.66	15.13	6.00	
14:16	17.8	0.48	4552	4.57	316.3	19.70	15.19	7.00	
14:20	17.5	0.51	4130	4.54	324.2	18.26	15.23	8.00	
14:24	17.5	0.53	3914	4.52	326.6	12.14	15.24	9.00	
14:28	17.4	0.56	3498	4.51	331.3	11.99	15.28	10.00	
14:32	17.4	0.58	3362	4.51	331.8	9.87	15.28	11.00	
14:36	17.5	0.59	3225	4.51	331.5	9.51	15.28	12.00	
14:40	17.5	0.61	3057	4.52	328.9	12.93	15.28	13.00	
14:44	17.4	0.64	2942	4.55	325.1	10.58	15.28	14.00	
14:48	17.2	1.05	2764	4.62	325.0	19.95	15.28	15.00	
14:52	17.2	1.08	2673	4.60	322.7	5.75	15.28	16.00	
14:56	17.2	1.12	2589	4.61	319.4	7.59	15.28	17.00	
15:00	17.2	1.12	2579	4.62	316.2	6.06	15.28	18.00	
15:04	17.2	1.15	2502	4.66	310.8	6.87	15.28	19.00	
15:08	17.4	1.20	2443	4.68	306.3	6.57	15.28	20.00	
15:12	17.3	1.25	2343	4.72	301.7	6.15	15.28	21.00	
15:16	17.3	1.27	2333	4.73	299.0	6.84	15.28	22.00	
15:20	17.5	1.30	2265	4.76	294.1	6.87	15.28	23.00	
15:24	17.1	1.33	2216	4.80	289.5	5.96	15.28	23.00	
15:28	17.3	1.31	2219	4.79	287.6	6.96	15.28	24.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, mild organic odor, no sheen. **Fe 2^+ (mg/L):** NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic

Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated

☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD

Comments: Stabuility not reached for turbidity.

Signature: Weston Boardman Date: 09/23/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-15
Weather: 26C Clear
Sample ID: IW-15- 250923
Landau Rep.: WMB
Date: 09/23/25 Time: 16:30

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 13.58 Time: 15:50
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 8.00
Begin Purge (Date/Time): 9/23/2025 15:51
End Purge (Date/Time): 9/23/2025 16:25
Flow Rate (mL/min): 235
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
15:56	18.7	0.29	812	6.00	97.9	329.0	13.76	1.00	Orange colored
16:01	18.5	0.19	686	6.01	71.3	94.8	13.78	2.00	
16:05	18.4	0.20	661	5.98	66.0	58.50	13.78	3.00	Colorless
16:09	18.4	0.19	659	5.97	61.6	36.32	13.78	4.00	
16:13	18.3	0.19	657	5.95	60.2	37.25	13.78	5.00	
16:17	18.2	0.18	654	5.94	59.8	33.6	13.78	6.00	
16:21	18.2	0.18	656	5.93	59.7	31.71	13.78	7.00	
16:25	18.3	0.18	657	5.91	59.8	31.35	13.78	8.00	

Sample Description (turbidity, color, odor, sheen): Slightly turbid, colorless, organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 09/23/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: N1MW-9
Weather: 10C Clear
Sample ID: N1MW-9- 250924
Landau Rep.: WMB
Date: 09/24/25 Time: 8:05

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133
Static DTW (ft): 13.42 Time: 7:03 Flow-Thru Cell Vol.: 250 mL Liters Purged: 14.25
Begin Purge (Date/Time): 9/24/2025 7:04 End Purge (Date/Time): 9/24/2025 8:03 Flow Rate (mL/min): 242
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
7:09	17.2	0.51	680	5.57	66.3	29.67	13.85	1.25	
7:14	17.6	0.43	689	5.60	64.3	30.69	13.97	2.25	
7:19	17.5	0.52	699	5.58	67.0	21.89	14.08	3.25	
7:23	17.5	0.51	707	5.58	68.6	19.92	14.12	4.25	
7:27	17.6	0.43	718	5.58	69.9	13.44	14.16	5.25	
7:30	17.5	0.38	728	5.57	71.6	12.27	14.16	6.25	
7:34	17.4	0.34	730	5.57	72.4	8.91	14.15	7.25	
7:39	17.5	0.31	732	5.57	73.1	6.78	14.18	8.25	
7:43	17.4	0.29	739	5.54	75.8	6.13	14.21	9.25	
7:47	17.4	0.27	742	5.54	77.9	6.09	14.20	10.25	
7:51	17.4	0.26	752	5.52	80.9	4.87	14.19	11.25	
7:55	17.4	0.24	755	5.52	81.3	4.01	14.18	12.25	
7:59	17.4	0.23	760	5.51	83.0	3.79	14.18	13.25	
8:03	17.4	0.22	766	5.52	83.7	3.71	14.18	14.25	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, mild weathered petroleum-like and organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 09/24/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-17
Weather: 13C Clear
Sample ID: IW-17- 250924
Landau Rep.: WMB
Date: 09/24/25 Time: 10:45

WELL INFORMATION

Screened Interval: Top (ft): 8.50 Bottom (ft): 18.50 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133
Static DTW (ft): 12.05 Time: 8:32 Flow-Thru Cell Vol.: 250 mL Liters Purged: 29.00
Begin Purge (Date/Time): 9/24/2025 8:33 End Purge (Date/Time): 9/24/2025 10:39 Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
8:37	17.1	0.42	6368	4.21	236.9	207.0	12.28	1.00	Orange colored
8:43	16.9	0.26	6690	4.19	283.5	318.4	12.31	2.00	
8:47	16.7	0.24	6191	4.20	313.2	310.6	12.30	3.00	
8:51	16.6	0.26	5466	4.26	329.4	208.2	12.30	4.00	
8:55	16.7	0.29	4747	4.47	315.9	138.4	12.29	5.00	
8:59	16.6	0.42	4621	4.39	342.5	85.46	12.29	6.00	
9:07	16.5	0.62	4232	4.46	352.1	34.1	12.28	8.00	
9:11	16.5	0.73	4091	4.49	355.3	19.62	12.29	9.00	
9:15	16.6	0.83	3949	4.53	356.2	10.75	12.28	10.00	
9:19	16.6	0.89	3867	4.55	355.9	10.98	12.28	11.00	
9:23	16.7	0.98	3764	4.58	354.6	7.19	12.28	12.00	
9:28	16.7	1.08	3649	4.60	353.1	7.03	12.28	13.00	
9:32	16.7	1.13	3574	4.62	352.3	4.93	12.28	14.00	
9:36	16.7	1.27	3478	4.63	359.8	7.70	12.28	15.00	
9:40	16.8	1.32	3392	4.66	360.1	4.98	12.28	16.00	
9:44	16.8	1.37	3332	4.67	360.3	5.56	12.28	17.00	
9:48	16.8	1.45	3241	4.68	360.1	5.23	12.28	18.00	
9:52	16.8	1.55	3157	4.70	359.7	5.49	12.28	19.00	
9:56	16.8	1.65	3087	4.71	358.3	5.65	12.28	20.00	
10:00	16.8	1.81	3017	4.73	355.5	5.30	12.28	21.00	
10:04	16.8	1.94	2962	4.74	353.1	4.93	12.28	22.00	Pump on high for 8 minutes.
10:11									Low flow start again
10:13	16.9	1.90	2880	4.72	348.3	241.9	12.27	0.50	
10:17	17.0	1.75	2872	4.69	350.2	228.4	12.25	1.50	
10:21	16.9	1.75	2849	4.70	351.3	122.8	12.27	2.50	
10:25	16.9	1.82	2802	4.72	349.6	59.00	12.28	3.50	
10:29	17.0	1.85	2761	4.75	349.6	47.29	12.28	4.50	
10:33	17.0	1.93	2694	4.77	346.6	17.52	12.28	5.50	
10:37	17.0	2.05	2636	4.79	342.5	15.31	12.27	6.50	
10:39	17.0	2.06	2623	4.78	341.5	16.21	12.27	7.00	

Sample Description (turbidity, color, odor, sheen): Slightly turbid, colorless, mild organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow resuming at 10:11
Signature: Weston Boardman Date: 09/24/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-3
Weather: 19C Clear
Sample ID: IW-3- 250924
Landau Rep.: WMB
Date: 09/24/25 Time: 11:55

WELL INFORMATION

Screened Interval: Top (ft): 10.40 Bottom (ft): 20.40 Well Secure? ☑ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time: Describe: flush-mount WQM No.: 0133
Static DTW (ft): 13.63 Time: 10:55 Flow-Thru Cell Vol.: 250 mL Liters Purged: 20.00
Begin Purge (Date/Time): 9/24/2025 10:56 End Purge (Date/Time): 9/24/2025 11:49 Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
11:00	18.6	0.31	12293	3.44	536.7	18.38	14.14	1.00	Slightly orange colored
									Pump at max speed to purge 15 L
11:33								16.00	Resume low flow
11:37	17.3	0.15	4797	3.92	525.8	12.02	14.40	1.00	
11:41	17.4	0.15	4711	3.91	529.3	10.83	14.28	2.00	
11:45	17.5	0.14	4675	3.91	530.8	11.48	14.18	3.00	
11:49	17.5	0.14	4653	3.90	531.4	11.83	14.14	4.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow resumed at 11:33.
Signature: Weston Boardman Date: 09/24/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: N1MW-6R
Weather: 23C Clear
Sample ID: N1MW-6R- 250924
Landau Rep.: WMB
Date: 09/24/25 Time: 12:55

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☑ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 13.28 Time: 12:05
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 14.00
Begin Purge (Date/Time): 9/24/2025 12:06
End Purge (Date/Time): 9/24/2025 12:50
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
12:10	17.9	0.33	4062	3.57	436.2	6.98	14.08	1.00	
									Pump at max speed to purge 6 L
12:22								7.00	Resume low flow
12:26	17.7	0.28	3667	3.62	448.2	6.01	15.65	1.00	
12:30	17.7	0.28	3530	3.67	449.7	4.67	15.40	2.00	
12:34	17.7	0.28	3274	3.71	448.7	5.02	15.23	3.00	
12:38	17.5	0.28	3154	3.74	448.5	5.25	15.18	4.00	
12:42	17.6	0.30	2995	3.77	448.6	3.25	15.14	5.00	
12:46	17.5	0.31	2971	3.78	449.6	2.76	15.12	6.00	
12:50	17.7	0.32	2924	3.80	449.9	4.39	15.12	7.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow started at 12:22
Signature: Weston Boardman Date: 09/24/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: Post Injection 3 Groundwater Monitoring
Well ID: IW-8
Weather: 25C Clear
Sample ID: IW-8- 250924
Landau Rep.: WMB
Date: 09/24/25 Time: 14:55

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☑ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 13.68 Time: 13:09
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 38.00
Begin Purge (Date/Time): 9/24/2025 13:10
End Purge (Date/Time): 9/24/2025 14:51
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
13:14	19.9	0.46	17317	3.18	570.6	32.14	14.07	1.00	
									Pump at max speed to purge 26 L
14:13								27.00	Resume low flow
14:17	18.2	0.14	9325	3.29	485.2	4.79	15.22	1.00	
14:21	18.3	0.15	9151	3.30	485.3	3.68	15.15	2.00	
14:25	19.0	0.13	8967	3.30	484.9	3.46	15.08	3.00	
									Pump at max speed to purge 4 L
14:35								7.00	Resume low flow
14:39	18.5	0.13	8782	3.31	483.9	3.00	15.05	1.00	
14:43	18.2	0.14	8525	3.32	482.6	4.59	14.98	2.00	
14:47	18.3	0.14	8449	3.32	482.0	2.25	14.92	3.00	
14:51	18.3	0.14	8417	3.32	482.1	3.35	14.89	4.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow started at 14:35.
Signature: Weston Boardman Date: 09/24/25

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1 2 3 4 5 6 7 8 9 10 11 12

ANALYTICAL REPORT

PREPARED FOR

Attn: Dan Gray
Landau Associates, Inc.
10 North Post Street, Suite 218
Spokane, Washington 99201

Generated 10/7/2025 2:46:44 PM Revision 1

JOB DESCRIPTION

City of Yakima-Tiger Oil/1148010.010

JOB NUMBER

590-33397-1

Eurofins Spokane
11922 East 1st Ave
Spokane WA 99206

See page two for job notes and contact information.

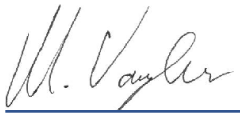
myEOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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10/7/2025 2:46:44 PM
Revision 1

Authorized for release by
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Table of Contents

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Job Narrative
590-33397-1

REVISION

The report being provided is a revision of the original report sent on 10/3/2025. The report (revision 1) is being revised due to Changing the project name to City of Yakima.

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/25/2025 4:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.7°C.

Gasoline Range Organics
Method NWTPH_Gx_MS: The Gasoline Range Organics (GRO) concentration reported for the following samples is due to the presence of discrete peaks: IW-3-250924 (590-33397-15) and IW-8-250924 (590-33397-17). Gasoline

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

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

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

Definitions/Glossary

Client: Landau Associates, Inc. Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Glossary

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

Sample Summary

Client: Landau Associates, Inc.
Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
590-33397-1	Trip Blank	Water	09/22/25 00:00	09/25/25 16:46	Washington
590-33397-2	IW-1-250922	Water	09/22/25 11:35	09/25/25 16:46	Washington
590-33397-3	IW-2-250922	Water	09/22/25 12:55	09/25/25 16:46	Washington
590-33397-4	IW-18-250922	Water	09/22/25 14:35	09/25/25 16:46	Washington
590-33397-5	IW-9-250922	Water	09/22/25 15:25	09/25/25 16:46	Washington
590-33397-6	IW-10-250922	Water	09/22/25 16:45	09/25/25 16:46	Washington
590-33397-7	IW-4-250922	Water	09/22/25 18:20	09/25/25 16:46	Washington
590-33397-8	N1MW-8-250923	Water	09/23/25 08:05	09/25/25 16:46	Washington
590-33397-9	IW-14-250923	Water	09/23/25 10:45	09/25/25 16:46	Washington
590-33397-10	IW-12-250923	Water	09/23/25 13:30	09/25/25 16:46	Washington
590-33397-11	N1MW-7R-250923	Water	09/23/25 15:30	09/25/25 16:46	Washington
590-33397-12	IW-15-250923	Water	09/23/25 16:30	09/25/25 16:46	Washington
590-33397-13	N1MW-9-250924	Water	09/24/25 08:05	09/25/25 16:46	Washington
590-33397-14	IW-17-250924	Water	09/24/25 10:45	09/25/25 16:46	Washington
590-33397-15	IW-3-250924	Water	09/24/25 11:55	09/25/25 16:46	Washington
590-33397-16	N1MW-6R-250924	Water	09/24/25 12:55	09/25/25 16:46	Washington
590-33397-17	IW-8-250924	Water	09/24/25 14:55	09/25/25 16:46	Washington
590-33397-18	Lead-Comp--250924	Water	09/24/25 15:30	09/25/25 16:46	Washington

Chain-of-Custody Record

LANDAU ASSOCIATES

☐ North Seattle (206) 631-8660 ☐ Tacoma (253) 926-2493 ☐ Olympia (360) 791-3178
☒ Spokane (509) 327-9737 ☐ Portland (503) 542-1080 ☐ _____

Date 9/22/25 Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name City of Yelm - Tigard Project No. 148010.010
Project Location/Event N 1st St Tigard / Post Drg - 3 GW Sampling
Sampler's Name Weston Boardman
Project Contact Shane Kastka
Send Results To skastka@landauinc.com + dtodd@landauinc.com

Special Handling Requirements: _____
Shipment Method: _____
Stored on ice: (Yes) / No

Testing Parameters: Manganese - 6010 / Boron 6010 / Lead 6010

Sample I D.	Date	Time	Matrix	No. of Containers	Mn	B	Pb	Observations/Comments
TRIP BLANK	NA	—	W	2	X	X		
IW-1-250922	9/22/25	11:35			X	X		
IW-2-250922		12:55			X	X		
IW-18-250922		14.35			X	X		
IW-9-250922		15.25			X	X		
IW-10-250922		16.15			X	X		
SW-4-250922		18:20			X	X		
NIMW-8 250923	9/23/25	08:25			X	X		
IW-14-250923		10:45			X	X		
IW-12-250923		13.30			X	X		
NIMW-7R-250923		15:30			X	X		
IW-15-250923		16:30			X	X		
NIMW-9-250924	9/24/25	08.05			X	X		
IW-17-250924		10:45			X	X		
IW-3-250924		11:55			X	X		
NIMW-6R-250924		12:55			X	X		
IW-8-250924		14.55			X	X		
Lead - Comp-250924*		15:30					X	

☐ Allow water samples to settle, collect aliquot from clear portion
☐ NWTPH-Dx Acid wash cleanup ☐ Silica gel cleanup
☐ Dissolved metal samples were field filtered

Other
* sample in 3x 4oz unpreserved soil jars

590-33397 Chain of Custody

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Weston Boardman	Printed Name Carson Desimone	Printed Name	Printed Name
Company Landau	Company TETRA TECH	Company	Company
Date 9/25/25 Time 16.46	Date 9/25/25 Time 16:46	Date Time	Date Time

WHITE COPY Laboratory YELLOW COPY Project File PINK COPY Client Representative

4,6,4 7 1 R006

Login Sample Receipt Checklist

Client: Landau Associates, Inc.

Job Number: 590-33397-1

Login Number: 33397
List Number: 1
Creator: Desimone, Carson

List Source: Eurofins Spokane

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

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: Trip Blank
Date Collected: 09/22/25 00:00
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/26/25 19:11	1
Ethylbenzene	ND		1.0		ug/L			09/26/25 19:11	1
m,p-Xylene	ND		2.0		ug/L			09/26/25 19:11	1
o-Xylene	ND		1.0		ug/L			09/26/25 19:11	1
Toluene	ND		1.0		ug/L			09/26/25 19:11	1
Xylenes, Total	ND		3.0		ug/L			09/26/25 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*09/26/25 19:11*	*1*
4-Bromofluorobenzene (Surr)	*92*		*76 - 120*		*09/26/25 19:11*	*1*
Dibromofluoromethane (Surr)	*100*		*74 - 131*		*09/26/25 19:11*	*1*
Toluene-d8 (Surr)	*101*		*88 - 120*		*09/26/25 19:11*	*1*

Client Sample ID: IW-1-250922
Date Collected: 09/22/25 11:35
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/26/25 19:33	1
Ethylbenzene	ND		1.0		ug/L			09/26/25 19:33	1
m,p-Xylene	**4.9**		2.0		ug/L			09/26/25 19:33	1
o-Xylene	ND		1.0		ug/L			09/26/25 19:33	1
Toluene	ND		1.0		ug/L			09/26/25 19:33	1
Xylenes, Total	**4.9**		3.0		ug/L			09/26/25 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*09/26/25 19:33*	*1*
4-Bromofluorobenzene (Surr)	*88*		*76 - 120*		*09/26/25 19:33*	*1*
Dibromofluoromethane (Surr)	*102*		*74 - 131*		*09/26/25 19:33*	*1*
Toluene-d8 (Surr)	*101*		*88 - 120*		*09/26/25 19:33*	*1*

Client Sample ID: IW-2-250922
Date Collected: 09/22/25 12:55
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2.8**		0.40		ug/L			09/26/25 19:54	1
Ethylbenzene	**52**		1.0		ug/L			09/26/25 19:54	1
m,p-Xylene	**210**		20		ug/L			10/02/25 15:39	10
o-Xylene	**77**		10		ug/L			10/02/25 15:39	10
Toluene	**9.1**		1.0		ug/L			09/26/25 19:54	1
Xylenes, Total	**290**		30		ug/L			10/02/25 15:39	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*71 - 127*		*09/26/25 19:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*10/02/25 15:39*	*10*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*09/26/25 19:54*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*10/02/25 15:39*	*10*
Dibromofluoromethane (Surr)	*100*		*74 - 131*		*09/26/25 19:54*	*1*
Dibromofluoromethane (Surr)	*101*		*74 - 131*		*10/02/25 15:39*	*10*
Toluene-d8 (Surr)	*96*		*88 - 120*		*09/26/25 19:54*	*1*
Toluene-d8 (Surr)	*98*		*88 - 120*		*10/02/25 15:39*	*10*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-18-250922
Date Collected: 09/22/25 14:35
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.70**		0.40		ug/L			09/26/25 20:16	1
Ethylbenzene	**59**		1.0		ug/L			09/26/25 20:16	1
m,p-Xylene	**150**		20		ug/L			10/02/25 16:01	10
o-Xylene	**47**		10		ug/L			10/02/25 16:01	10
Toluene	**2.6**		1.0		ug/L			09/26/25 20:16	1
Xylenes, Total	**200**		30		ug/L			10/02/25 16:01	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*71 - 127*		*09/26/25 20:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*10/02/25 16:01*	*10*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*09/26/25 20:16*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*10/02/25 16:01*	*10*
Dibromofluoromethane (Surr)	*101*		*74 - 131*		*09/26/25 20:16*	*1*
Dibromofluoromethane (Surr)	*100*		*74 - 131*		*10/02/25 16:01*	*10*
Toluene-d8 (Surr)	*93*		*88 - 120*		*09/26/25 20:16*	*1*
Toluene-d8 (Surr)	*96*		*88 - 120*		*10/02/25 16:01*	*10*

Client Sample ID: IW-9-250922
Date Collected: 09/22/25 15:25
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/26/25 20:37	1
Ethylbenzene	**29**		1.0		ug/L			09/26/25 20:37	1
m,p-Xylene	**110**		20		ug/L			10/02/25 16:23	10
o-Xylene	**24**		10		ug/L			10/02/25 16:23	10
Toluene	ND		1.0		ug/L			09/26/25 20:37	1
Xylenes, Total	**130**		30		ug/L			10/02/25 16:23	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*		*09/26/25 20:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*10/02/25 16:23*	*10*
4-Bromofluorobenzene (Surr)	*95*		*76 - 120*		*09/26/25 20:37*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*10/02/25 16:23*	*10*
Dibromofluoromethane (Surr)	*106*		*74 - 131*		*09/26/25 20:37*	*1*
Dibromofluoromethane (Surr)	*103*		*74 - 131*		*10/02/25 16:23*	*10*
Toluene-d8 (Surr)	*96*		*88 - 120*		*09/26/25 20:37*	*1*
Toluene-d8 (Surr)	*96*		*88 - 120*		*10/02/25 16:23*	*10*

Client Sample ID: IW-10-250922
Date Collected: 09/22/25 16:45
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3.1**		0.40		ug/L			09/26/25 20:59	1
Ethylbenzene	**95**		1.0		ug/L			09/26/25 20:59	1
m,p-Xylene	**540**		20		ug/L			10/02/25 16:44	10
o-Xylene	**170**		10		ug/L			10/02/25 16:44	10
Toluene	**4.1**		1.0		ug/L			09/26/25 20:59	1
Xylenes, Total	**710**		30		ug/L			10/02/25 16:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*79*		*71 - 127*		*09/26/25 20:59*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Client Sample ID: IW-10-250922
Date Collected: 09/22/25 16:45
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-6
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*10/02/25 16:44*	*10*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*		*09/26/25 20:59*	*1*
4-Bromofluorobenzene (Surr)	*96*		*76 - 120*		*10/02/25 16:44*	*10*
Dibromofluoromethane (Surr)	*93*		*74 - 131*		*09/26/25 20:59*	*1*
Dibromofluoromethane (Surr)	*101*		*74 - 131*		*10/02/25 16:44*	*10*
Toluene-d8 (Surr)	*97*		*88 - 120*		*09/26/25 20:59*	*1*
Toluene-d8 (Surr)	*98*		*88 - 120*		*10/02/25 16:44*	*10*

Client Sample ID: IW-4-250922
Date Collected: 09/22/25 18:20
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.96**		0.40		ug/L			09/26/25 21:21	1
Ethylbenzene	**11**		1.0		ug/L			09/26/25 21:21	1
m,p-Xylene	**19**		2.0		ug/L			09/26/25 21:21	1
o-Xylene	**5.0**		1.0		ug/L			09/26/25 21:21	1
Toluene	ND		1.0		ug/L			09/26/25 21:21	1
Xylenes, Total	**24**		3.0		ug/L			09/26/25 21:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*71 - 127*		*09/26/25 21:21*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*09/26/25 21:21*	*1*
Dibromofluoromethane (Surr)	*97*		*74 - 131*		*09/26/25 21:21*	*1*
Toluene-d8 (Surr)	*96*		*88 - 120*		*09/26/25 21:21*	*1*

Client Sample ID: N1MW-8-250923
Date Collected: 09/23/25 08:05
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**4.1**		0.40		ug/L			09/26/25 22:04	1
Ethylbenzene	**120**		10		ug/L			10/02/25 17:06	10
m,p-Xylene	**410**		20		ug/L			10/02/25 17:06	10
o-Xylene	**140**		10		ug/L			10/02/25 17:06	10
Toluene	**4.6**		1.0		ug/L			09/26/25 22:04	1
Xylenes, Total	**540**		30		ug/L			10/02/25 17:06	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*		*09/26/25 22:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/02/25 17:06*	*10*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*09/26/25 22:04*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*10/02/25 17:06*	*10*
Dibromofluoromethane (Surr)	*116*		*74 - 131*		*09/26/25 22:04*	*1*
Dibromofluoromethane (Surr)	*102*		*74 - 131*		*10/02/25 17:06*	*10*
Toluene-d8 (Surr)	*95*		*88 - 120*		*09/26/25 22:04*	*1*
Toluene-d8 (Surr)	*95*		*88 - 120*		*10/02/25 17:06*	*10*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-14-250923
Date Collected: 09/23/25 10:45
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.2		0.40		ug/L			09/26/25 22:25	1
Ethylbenzene	38		1.0		ug/L			09/26/25 22:25	1
m,p-Xylene	25		2.0		ug/L			09/26/25 22:25	1
o-Xylene	9.9		1.0		ug/L			09/26/25 22:25	1
Toluene	ND		1.0		ug/L			09/26/25 22:25	1
Xylenes, Total	35		3.0		ug/L			09/26/25 22:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*75*		*71 - 127*		*09/26/25 22:25*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*09/26/25 22:25*	*1*
Dibromofluoromethane (Surr)	*93*		*74 - 131*		*09/26/25 22:25*	*1*
Toluene-d8 (Surr)	*99*		*88 - 120*		*09/26/25 22:25*	*1*

Client Sample ID: IW-12-250923
Date Collected: 09/23/25 13:30
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.2		0.40		ug/L			09/26/25 22:46	1
Ethylbenzene	3.3		1.0		ug/L			09/26/25 22:46	1
m,p-Xylene	5.0		2.0		ug/L			09/26/25 22:46	1
o-Xylene	1.9		1.0		ug/L			09/26/25 22:46	1
Toluene	ND		1.0		ug/L			09/26/25 22:46	1
Xylenes, Total	6.9		3.0		ug/L			09/26/25 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*81*		*71 - 127*		*09/26/25 22:46*	*1*
4-Bromofluorobenzene (Surr)	*95*		*76 - 120*		*09/26/25 22:46*	*1*
Dibromofluoromethane (Surr)	*99*		*74 - 131*		*09/26/25 22:46*	*1*
Toluene-d8 (Surr)	*98*		*88 - 120*		*09/26/25 22:46*	*1*

Client Sample ID: N1MW-7R-250923
Date Collected: 09/23/25 15:30
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0		0.40		ug/L			09/26/25 23:08	1
Ethylbenzene	85		1.0		ug/L			09/26/25 23:08	1
m,p-Xylene	270		20		ug/L			10/02/25 17:27	10
o-Xylene	140		10		ug/L			10/02/25 17:27	10
Toluene	60		1.0		ug/L			09/26/25 23:08	1
Xylenes, Total	410		30		ug/L			10/02/25 17:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*74*		*71 - 127*		*09/26/25 23:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*		*10/02/25 17:27*	*10*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*09/26/25 23:08*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*10/02/25 17:27*	*10*
Dibromofluoromethane (Surr)	*93*		*74 - 131*		*09/26/25 23:08*	*1*
Dibromofluoromethane (Surr)	*99*		*74 - 131*		*10/02/25 17:27*	*10*
Toluene-d8 (Surr)	*98*		*88 - 120*		*09/26/25 23:08*	*1*
Toluene-d8 (Surr)	*93*		*88 - 120*		*10/02/25 17:27*	*10*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-15-250923
Date Collected: 09/23/25 16:30
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/26/25 23:29	1
Ethylbenzene	ND		1.0		ug/L			09/26/25 23:29	1
m,p-Xylene	ND		2.0		ug/L			09/26/25 23:29	1
o-Xylene	ND		1.0		ug/L			09/26/25 23:29	1
Toluene	ND		1.0		ug/L			09/26/25 23:29	1
Xylenes, Total	ND		3.0		ug/L			09/26/25 23:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*71 - 127*		*09/26/25 23:29*	*1*
4-Bromofluorobenzene (Surr)	*96*		*76 - 120*		*09/26/25 23:29*	*1*
Dibromofluoromethane (Surr)	*99*		*74 - 131*		*09/26/25 23:29*	*1*
Toluene-d8 (Surr)	*98*		*88 - 120*		*09/26/25 23:29*	*1*

Client Sample ID: N1MW-9-250924
Date Collected: 09/24/25 08:05
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/26/25 23:51	1
Ethylbenzene	**3.5**		1.0		ug/L			09/26/25 23:51	1
m,p-Xylene	**11**		2.0		ug/L			09/26/25 23:51	1
o-Xylene	**4.6**		1.0		ug/L			09/26/25 23:51	1
Toluene	ND		1.0		ug/L			09/26/25 23:51	1
Xylenes, Total	**16**		3.0		ug/L			09/26/25 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*09/26/25 23:51*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*09/26/25 23:51*	*1*
Dibromofluoromethane (Surr)	*98*		*74 - 131*		*09/26/25 23:51*	*1*
Toluene-d8 (Surr)	*97*		*88 - 120*		*09/26/25 23:51*	*1*

Client Sample ID: IW-17-250924
Date Collected: 09/24/25 10:45
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/27/25 00:13	1
Ethylbenzene	**5.1**		1.0		ug/L			09/27/25 00:13	1
m,p-Xylene	**3.5**		2.0		ug/L			09/27/25 00:13	1
o-Xylene	ND		1.0		ug/L			09/27/25 00:13	1
Toluene	ND		1.0		ug/L			09/27/25 00:13	1
Xylenes, Total	**3.5**		3.0		ug/L			09/27/25 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*		*09/27/25 00:13*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*09/27/25 00:13*	*1*
Dibromofluoromethane (Surr)	*100*		*74 - 131*		*09/27/25 00:13*	*1*
Toluene-d8 (Surr)	*96*		*88 - 120*		*09/27/25 00:13*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-3-250924
Date Collected: 09/24/25 11:55
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.1		0.40		ug/L			09/27/25 00:34	1
Ethylbenzene	6.0		1.0		ug/L			09/27/25 00:34	1
m,p-Xylene	7.7		2.0		ug/L			09/27/25 00:34	1
o-Xylene	4.6		1.0		ug/L			09/27/25 00:34	1
Toluene	1.7		1.0		ug/L			09/27/25 00:34	1
Xylenes, Total	12		3.0		ug/L			09/27/25 00:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*09/27/25 00:34*	*1*
4-Bromofluorobenzene (Surr)	*96*		*76 - 120*		*09/27/25 00:34*	*1*
Dibromofluoromethane (Surr)	*98*		*74 - 131*		*09/27/25 00:34*	*1*
Toluene-d8 (Surr)	*95*		*88 - 120*		*09/27/25 00:34*	*1*

Client Sample ID: N1MW-6R-250924
Date Collected: 09/24/25 12:55
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.77		0.40		ug/L			09/27/25 00:55	1
Ethylbenzene	17		1.0		ug/L			09/27/25 00:55	1
m,p-Xylene	21		2.0		ug/L			09/27/25 00:55	1
o-Xylene	4.9		1.0		ug/L			09/27/25 00:55	1
Toluene	ND		1.0		ug/L			09/27/25 00:55	1
Xylenes, Total	26		3.0		ug/L			09/27/25 00:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*71 - 127*		*09/27/25 00:55*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*09/27/25 00:55*	*1*
Dibromofluoromethane (Surr)	*97*		*74 - 131*		*09/27/25 00:55*	*1*
Toluene-d8 (Surr)	*97*		*88 - 120*		*09/27/25 00:55*	*1*

Client Sample ID: IW-8-250924
Date Collected: 09/24/25 14:55
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.5		0.40		ug/L			09/27/25 01:17	1
Ethylbenzene	7.5		1.0		ug/L			09/27/25 01:17	1
m,p-Xylene	11		2.0		ug/L			09/27/25 01:17	1
o-Xylene	4.3		1.0		ug/L			09/27/25 01:17	1
Toluene	1.4		1.0		ug/L			09/27/25 01:17	1
Xylenes, Total	15		3.0		ug/L			09/27/25 01:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*09/27/25 01:17*	*1*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*09/27/25 01:17*	*1*
Dibromofluoromethane (Surr)	*97*		*74 - 131*		*09/27/25 01:17*	*1*
Toluene-d8 (Surr)	*96*		*88 - 120*		*09/27/25 01:17*	*1*

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

Client Sample ID: Trip Blank
Date Collected: 09/22/25 00:00
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/26/25 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*68.7 - 141*		*09/26/25 19:11*	*1*

Client Sample ID: IW-1-250922
Date Collected: 09/22/25 11:35
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**380**		150		ug/L			09/26/25 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*68.7 - 141*		*09/26/25 19:33*	*1*

Client Sample ID: IW-2-250922
Date Collected: 09/22/25 12:55
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2900**		150		ug/L			09/26/25 19:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*09/26/25 19:54*	*1*

Client Sample ID: IW-18-250922
Date Collected: 09/22/25 14:35
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1700**		150		ug/L			09/26/25 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*09/26/25 20:16*	*1*

Client Sample ID: IW-9-250922
Date Collected: 09/22/25 15:25
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1300**		150		ug/L			09/26/25 20:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*		*09/26/25 20:37*	*1*

Client Sample ID: IW-10-250922
Date Collected: 09/22/25 16:45
Date Received: 09/25/25 16:46
Lab Sample ID: 590-33397-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**6000**		150		ug/L			09/26/25 20:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*68.7 - 141*		*09/26/25 20:59*	*1*

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

Client Sample ID: IW-4-250922
Date Collected: 09/22/25 18:20
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	920		150		ug/L			09/26/25 21:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*09/26/25 21:21*	*1*

Client Sample ID: N1MW-8-250923
Date Collected: 09/23/25 08:05
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3600		150		ug/L			09/26/25 22:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*09/26/25 22:04*	*1*

Client Sample ID: IW-14-250923
Date Collected: 09/23/25 10:45
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	280		150		ug/L			09/26/25 22:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*09/26/25 22:25*	*1*

Client Sample ID: IW-12-250923
Date Collected: 09/23/25 13:30
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	970		150		ug/L			09/26/25 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*		*09/26/25 22:46*	*1*

Client Sample ID: N1MW-7R-250923
Date Collected: 09/23/25 15:30
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2700		150		ug/L			09/26/25 23:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*09/26/25 23:08*	*1*

Client Sample ID: IW-15-250923
Date Collected: 09/23/25 16:30
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/26/25 23:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*68.7 - 141*		*09/26/25 23:29*	*1*

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

Client Sample ID: N1MW-9-250924
Date Collected: 09/24/25 08:05
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	260		150		ug/L			09/26/25 23:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*09/26/25 23:51*	*1*

Client Sample ID: IW-17-250924
Date Collected: 09/24/25 10:45
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/27/25 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*09/27/25 00:13*	*1*

Client Sample ID: IW-3-250924
Date Collected: 09/24/25 11:55
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	340		150		ug/L			09/27/25 00:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*68.7 - 141*		*09/27/25 00:34*	*1*

Client Sample ID: N1MW-6R-250924
Date Collected: 09/24/25 12:55
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1100		150		ug/L			09/27/25 00:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*09/27/25 00:55*	*1*

Client Sample ID: IW-8-250924
Date Collected: 09/24/25 14:55
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	810		150		ug/L			09/27/25 01:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*68.7 - 141*		*09/27/25 01:17*	*1*

Method: SW846 6010D - Metals (ICP) - Total Recoverable

Client Sample ID: Lead-Comp--250924
Date Collected: 09/24/25 15:30
Date Received: 09/25/25 16:46

Lab Sample ID: 590-33397-18
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.30		mg/L		10/02/25 10:52	10/03/25 12:25	5

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

Lab Sample ID: MB 590-56674/10
Matrix: Water
Analysis Batch: 56674

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/26/25 18:07	1
Ethylbenzene	ND		1.0		ug/L			09/26/25 18:07	1
m,p-Xylene	ND		2.0		ug/L			09/26/25 18:07	1
o-Xylene	ND		1.0		ug/L			09/26/25 18:07	1
Toluene	ND		1.0		ug/L			09/26/25 18:07	1
Xylenes, Total	ND		3.0		ug/L			09/26/25 18:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*71 - 127*		*09/26/25 18:07*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*09/26/25 18:07*	*1*
Dibromofluoromethane (Surr)	*101*		*74 - 131*		*09/26/25 18:07*	*1*
Toluene-d8 (Surr)	*100*		*88 - 120*		*09/26/25 18:07*	*1*

Lab Sample ID: LCS 590-56674/1005
Matrix: Water
Analysis Batch: 56674

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.1		ug/L		101	80 - 120
Ethylbenzene	10.0	9.35		ug/L		94	80 - 122
m,p-Xylene	10.0	9.59		ug/L		96	80 - 109
o-Xylene	10.0	8.89		ug/L		89	72 - 106
Toluene	10.0	9.56		ug/L		96	80 - 117

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*71 - 127*
4-Bromofluorobenzene (Surr)	*91*		*76 - 120*
Dibromofluoromethane (Surr)	*94*		*74 - 131*
Toluene-d8 (Surr)	*91*		*88 - 120*

Lab Sample ID: LCSD 590-56674/6
Matrix: Water
Analysis Batch: 56674

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.62		ug/L		96	80 - 120	5	15
Ethylbenzene	10.0	9.10		ug/L		91	80 - 122	3	35
m,p-Xylene	10.0	8.98		ug/L		90	80 - 109	7	35
o-Xylene	10.0	8.50		ug/L		85	72 - 106	4	35
Toluene	10.0	9.05		ug/L		91	80 - 117	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*
4-Bromofluorobenzene (Surr)	*93*		*76 - 120*
Dibromofluoromethane (Surr)	*93*		*74 - 131*
Toluene-d8 (Surr)	*92*		*88 - 120*

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

Lab Sample ID: MB 590-56800/10
Matrix: Water
Analysis Batch: 56800

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			10/02/25 14:55	1
Ethylbenzene	ND		1.0		ug/L			10/02/25 14:55	1
m,p-Xylene	ND		2.0		ug/L			10/02/25 14:55	1
o-Xylene	ND		1.0		ug/L			10/02/25 14:55	1
Toluene	ND		1.0		ug/L			10/02/25 14:55	1
Xylenes, Total	ND		3.0		ug/L			10/02/25 14:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*10/02/25 14:55*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*		*10/02/25 14:55*	*1*
Dibromofluoromethane (Surr)	*101*		*74 - 131*		*10/02/25 14:55*	*1*
Toluene-d8 (Surr)	*96*		*88 - 120*		*10/02/25 14:55*	*1*

Lab Sample ID: LCS 590-56800/1005
Matrix: Water
Analysis Batch: 56800

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	9.62		ug/L		96	80 - 120
Ethylbenzene	10.0	9.65		ug/L		96	80 - 122
m,p-Xylene	10.0	10.0		ug/L		100	80 - 109
o-Xylene	10.0	9.21		ug/L		92	72 - 106
Toluene	10.0	9.60		ug/L		96	80 - 117

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*
Dibromofluoromethane (Surr)	*100*		*74 - 131*
Toluene-d8 (Surr)	*94*		*88 - 120*

Lab Sample ID: LCSD 590-56800/6
Matrix: Water
Analysis Batch: 56800

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.49		ug/L		95	80 - 120	1	15
Ethylbenzene	10.0	9.47		ug/L		95	80 - 122	2	35
m,p-Xylene	10.0	9.64		ug/L		96	80 - 109	4	35
o-Xylene	10.0	9.31		ug/L		93	72 - 106	1	35
Toluene	10.0	9.54		ug/L		95	80 - 117	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*
Dibromofluoromethane (Surr)	*96*		*74 - 131*
Toluene-d8 (Surr)	*94*		*88 - 120*

Client: Landau Associates, Inc.
Project/Site: City of Yakima-Tiger Oil/1148010.010

Job ID: 590-33397-1

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

Lab Sample ID: MB 590-56673/10
Matrix: Water
Analysis Batch: 56673

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/26/25 18:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*		*09/26/25 18:07*	*1*

Lab Sample ID: LCS 590-56673/1009
Matrix: Water
Analysis Batch: 56673

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	808		ug/L		81	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*68.7 - 141*

Lab Sample ID: LCSD 590-56673/1020
Matrix: Water
Analysis Batch: 56673

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	846		ug/L		85	80 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*68.7 - 141*

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 590-56801/2-A
Matrix: Water
Analysis Batch: 56806

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 56801

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.060		mg/L		10/02/25 10:52	10/02/25 14:24	1

Lab Sample ID: LCS 590-56801/1-A
Matrix: Water
Analysis Batch: 56806

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 56801

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Lead			1.00	1.02		mg/L		102	80 - 120		

Lab Chronicle

Client: Landau Associates, Inc.
Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: Trip Blank
Lab Sample ID: 590-33397-1
Date Collected: 09/22/25 00:00
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 19:11
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 19:11

Client Sample ID: IW-1-250922
Lab Sample ID: 590-33397-2
Date Collected: 09/22/25 11:35
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 19:33
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 19:33

Client Sample ID: IW-2-250922
Lab Sample ID: 590-33397-3
Date Collected: 09/22/25 12:55
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 19:54
Total/NA	Analysis	8260D		10	56800	JSP	EET SPK	10/02/25 15:39
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 19:54

Client Sample ID: IW-18-250922
Lab Sample ID: 590-33397-4
Date Collected: 09/22/25 14:35
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 20:16
Total/NA	Analysis	8260D		10	56800	JSP	EET SPK	10/02/25 16:01
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 20:16

Client Sample ID: IW-9-250922
Lab Sample ID: 590-33397-5
Date Collected: 09/22/25 15:25
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 20:37
Total/NA	Analysis	8260D		10	56800	JSP	EET SPK	10/02/25 16:23
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 20:37

Client Sample ID: IW-10-250922
Lab Sample ID: 590-33397-6
Date Collected: 09/22/25 16:45
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 20:59
Total/NA	Analysis	8260D		10	56800	JSP	EET SPK	10/02/25 16:44

Lab Chronicle

Client: Landau Associates, Inc.
Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: IW-10-250922
Lab Sample ID: 590-33397-6
Date Collected: 09/22/25 16:45
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 20:59

Client Sample ID: IW-4-250922
Lab Sample ID: 590-33397-7
Date Collected: 09/22/25 18:20
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 21:21
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 21:21

Client Sample ID: N1MW-8-250923
Lab Sample ID: 590-33397-8
Date Collected: 09/23/25 08:05
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 22:04
Total/NA	Analysis	8260D		10	56800	JSP	EET SPK	10/02/25 17:06
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 22:04

Client Sample ID: IW-14-250923
Lab Sample ID: 590-33397-9
Date Collected: 09/23/25 10:45
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 22:25
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 22:25

Client Sample ID: IW-12-250923
Lab Sample ID: 590-33397-10
Date Collected: 09/23/25 13:30
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 22:46
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 22:46

Client Sample ID: N1MW-7R-250923
Lab Sample ID: 590-33397-11
Date Collected: 09/23/25 15:30
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 23:08
Total/NA	Analysis	8260D		10	56800	JSP	EET SPK	10/02/25 17:27
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 23:08

Lab Chronicle

Client: Landau Associates, Inc.
Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: IW-15-250923
Lab Sample ID: 590-33397-12
Date Collected: 09/23/25 16:30
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 23:29
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 23:29

Client Sample ID: N1MW-9-250924
Lab Sample ID: 590-33397-13
Date Collected: 09/24/25 08:05
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/26/25 23:51
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/26/25 23:51

Client Sample ID: IW-17-250924
Lab Sample ID: 590-33397-14
Date Collected: 09/24/25 10:45
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/27/25 00:13
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/27/25 00:13

Client Sample ID: IW-3-250924
Lab Sample ID: 590-33397-15
Date Collected: 09/24/25 11:55
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/27/25 00:34
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/27/25 00:34

Client Sample ID: N1MW-6R-250924
Lab Sample ID: 590-33397-16
Date Collected: 09/24/25 12:55
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/27/25 00:55
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/27/25 00:55

Client Sample ID: IW-8-250924
Lab Sample ID: 590-33397-17
Date Collected: 09/24/25 14:55
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	56674	JSP	EET SPK	09/27/25 01:17
Total/NA	Analysis	NWTPH-Gx		1	56673	JSP	EET SPK	09/27/25 01:17

Lab Chronicle

Client: Landau Associates, Inc.
Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: Lead-Comp--250924
Lab Sample ID: 590-33397-18

Date Collected: 09/24/25 15:30
Matrix: Water
Date Received: 09/25/25 16:46

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			56801	AMB	EET SPK	10/02/25 10:52
Total Recoverable	Analysis	6010D		5	56829	AMB	EET SPK	10/03/25 12:25

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau Associates, Inc. Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Laboratory: Eurofins Spokane

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-26

Method Summary

Client: Landau Associates, Inc.
Job ID: 590-33397-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
6010D	Metals (ICP)	SW846	EET SPK
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET SPK
5030C	Purge and Trap	SW846	EET SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

APPENDIX I

Fourth Quarter 2025 Groundwater Monitoring Sample Collection Forms and Laboratory Analytical Report

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: N1MW-4
Weather: 0C Clear
Sample ID: N1MW-4- 251229
Landau Rep.: Weston Boardman
Date: 12/29/25 Time: 17:50

WELL INFORMATION

Screened Interval: Top (ft): 7.00 Bottom (ft): 17.00
Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): NM Time:
Describe: flush-mount WQM No.: 0133
Static DTW (ft): 9.58 Time: 17:22
Flow-Thru Cell Vol.: 250 mL Liters Purged: 5.25
Begin Purge (Date/Time): 12/29/2025 17:24 End Purge (Date/Time): 12/29/2025 17:47 Flow Rate (mL/min): 228
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
17:29	13.9	5.01	231.0	6.36	103.8	3.50	9.58	1.25	
17:34	13.9	5.14	233.8	6.46	110.6	4.24	9.58	2.25	
17:39	14.1	5.12	234.8	6.52	114.0	3.82	9.58	3.25	
17:43	14.2	5.11	235.3	6.57	117.2	3.91	9.58	4.25	
17:47	14.2	5.07	235.3	6.59	119.4	4.87	9.58	5.25	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, no odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

	Scheduled Analysis (Circle/Bold Applicable)						Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Sample placed on separate COC from rest of samples collected during this event.
Signature: Weston Boardman Date: 12/29/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-1
Weather: -5C Clear
Sample ID: IW-1- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 7:40

WELL INFORMATION

Screened Interval: Top (ft): 10.90 Bottom (ft): 20.90 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.96 Time: 6:45 Describe: flush-mount WQM No.: 0133
Static DTW (ft): 12.93 Time: 6:50 Flow-Thru Cell Vol.: 250 mL Liters Purged: 7.25
Begin Purge (Date/Time): 12/30/2025 7:01 End Purge (Date/Time): 12/30/2025 Flow Rate (mL/min): 227
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
7:08	13.9	1.14	1502	5.81	184.3	14.09	12.96	1.25	
7:13	14.9	0.80	1649	5.76	200.1	6.99	12.97	2.25	
7:17	15.0	0.81	1658	5.80	203.5	5.88	12.97	3.25	
7:21	15.1	0.93	1500	5.92	195.4	5.23	12.98	4.25	
7:25	15.0	0.88	1543	5.89	204.6	5.55	12.98	5.25	
7:29	15.1	0.84	1566	5.90	206.6	5.15	12.98	6.25	
7:33	15.2	0.82	1575	5.89	208.4	6.00	12.98	7.25	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, mild organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

	Scheduled Analysis (Circle/Bold Applicable)						Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/30/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-2
Weather: -4C Clear
Sample ID: IW-2- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 8:40

WELL INFORMATION

Screened Interval: Top (ft): 10.80 Bottom (ft): 20.80
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 13.02 Time: 7:58
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 13.01 Time: 8:02
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 7.00
Begin Purge (Date/Time): 12/30/2025 8:03
End Purge (Date/Time): 12/30/2025 8:35
Flow Rate (mL/min): 219
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
8:07	14.5	0.50	4653	4.03	405.0	7.04	13.11	1.00	
8:14	15.1	0.40	4814	4.05	433.5	7.60	13.14	2.00	
8:18	15.2	0.41	4699	4.16	433.8	6.88	13.15	3.00	
8:22	15.1	0.39	4717	4.08	442.7	6.91	13.17	4.00	
8:26	15.3	0.36	4755	4.07	449.6	5.77	13.18	5.00	
8:31	15.3	0.36	4781	4.07	453.4	5.43	13.18	6.00	
8:35	15.3	0.35	4797	4.07	456.8	4.63	13.18	7.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, mild organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/30/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-18
Weather: -3C Clear
Sample ID: IW-18- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 9:35

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 13.01 Time: 8:56
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 13.03 Time: 8:57
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 7.00
Begin Purge (Date/Time): 12/30/2025 8:58
End Purge (Date/Time): 12/30/2025 9:26
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☑ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
9:02	15.0	0.40	4172	5.14	314.0	31.17	13.18	1.00	
9:06	14.9	0.33	4206	5.20	291.8	23.25	13.19	2.00	
9:10	14.8	0.32	4176	5.20	288.0	11.92	13.19	3.00	
9:14	15.1	0.29	4156	5.19	282.7	11.25	13.19	4.00	
9:18	15.1	0.29	4136	5.20	276.8	3.78	13.19	5.00	
9:22	14.9	0.30	4077	5.20	272.6	4.20	13.19	6.00	
9:26	15.1	0.30	4041	5.20	270.3	3.63	13.19	7.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, mild organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/30/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-4
Weather: 2C Clear
Sample ID: IW-4- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 11:25

WELL INFORMATION

Screened Interval: Top (ft): 10.40 Bottom (ft): 20.40 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 13.27 Time: 9:51 Describe: flush-mount WQM No.: 0133
Static DTW (ft): 13.27 Time: 9:53 Flow-Thru Cell Vol.: 250 mL Liters Purged: 29.00
Begin Purge (Date/Time): 12/30/2025 9:53 End Purge (Date/Time): 12/30/2025 11:22 Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
9:57	15.0	0.36	1944	3.37	411.0	4.39	13.45	1.00	
10:01	15.5	0.24	1885	3.34	425.0	3.12	13.47	2.00	
10:05	15.4	0.23	1891	3.33	430.9	1.11	13.48	3.00	
10:09	15.6	0.22	1922	3.32	438.3	0.69	13.48	4.00	
10:13	15.5	0.21	1971	3.30	449.3	0.18	13.49	5.00	
10:17	15.7	0.21	2024	3.28	460.1	0.57	13.29	6.00	
10:21	15.8	0.20	2069	3.25	474.6	0.19	13.50	7.00	
10:25	15.8	0.19	2143	3.21	493.2	0.48	13.50	8.00	
10:29	15.8	0.18	2207	3.20	502.5	0.07	13.50	9.00	Pump at max speed to purge 17 L
11:10								26.00	Resume low flow
11:14	16.1	0.15	3335	3.18	567.0	0.21	13.52	1.00	
11:18	16.0	0.16	3263	3.19	565.0	0.16	13.52	2.00	
11:22	16.1	0.16	3314	3.20	571.6	0.18	13.51	3.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

	Scheduled Analysis (Circle/Bold Applicable)						Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow resumed at 11:10.
Signature: Weston Boardman Date: 12/30/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-10
Weather: 3C Clear
Sample ID: IW-10- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 12:55

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.86 Time: 11:46 Describe: flush-mount WQM No.: 0133
Static DTW (ft): 12.89 Time: 11:48 Flow-Thru Cell Vol.: 250 mL Liters Purged: 24.00
Begin Purge (Date/Time): 12/30/2025 11:48 End Purge (Date/Time): 12/30/2025 12:52 Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
11:52	16.1	0.17	8279	3.70	520.4	103.0	13.13	1.00	
11:56	16.1	0.13	8262	3.61	495.0	76.3	13.15	2.00	
12:00								3.00	Data for 12:00 reading lost due to computer issue.
12:00								3.00	Pump at max speed to purge 17 L
12:36								20.00	Resume low flow
12:40	16.2	0.12	6397	3.24	483.3	6.71	13.13	1.00	
12:44	16.0	0.12	6212	3.24	482.9	5.18	13.10	2.00	
12:48	16.0	0.12	6094	3.23	485.1	5.04	13.09	3.00	
12:52	16.0	0.12	6079	3.23	486.7	3.28	13.09	4.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: DUP1-251230 @10:30 ☐ MS/MSD
Comments: Flow rate based on low flow resumed at 12:40.
Signature: Weston Boardman Date: 12/30/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-9
Weather: 3C Clear
Sample ID: IW-9- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 13:45

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.89 Time: 13:07
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 12.88 Time: 13:09
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 7.00
Begin Purge (Date/Time): 12/30/2025 13:09
End Purge (Date/Time): 12/30/2025 12:39
Flow Rate (mL/min): 233
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
13:13	15.5	0.21	1366	5.73	148.5	11.38	12.89	1.00	
13:19	15.8	0.15	970	6.12	54.4	3.10	12.89	2.00	
13:23	15.8	0.15	946	6.17	39.6	1.49	12.89	3.00	
13:27	15.7	0.15	926	6.20	30.2	1.47	12.89	4.00	
13:31	15.8	0.15	916	6.21	24.1	1.51	12.89	5.00	
13:35	15.8	0.16	913	6.22	19.7	1.23	12.90	6.00	
13:39	15.6	0.16	908	6.22	16.2	1.26	12.90	7.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/30/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: N1MW-8
Weather: 3C Clear
Sample ID: N1MW-8- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 15:05

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.13 Time: 13:59
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 12.13 Time: 14:01
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 6.00
Begin Purge (Date/Time): 12/30/2025 14:01
End Purge (Date/Time): 12/30/2025 15:03
Flow Rate (mL/min): 231
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
14:06	15.7	0.30	370.9	5.80	100.0	54.04	12.68	1.00	
14:11	16.0	0.22	298.6	5.62	146.2	49.14	12.92	2.00	Pump at max speed to purge 11 L
14:37								13.00	Resume low flow
14:41	15.9	0.19	2224	4.75	244.3	7.99	13.68	1.00	
14:46	16.0	0.19	2422	4.68	252.9	4.24	13.35	2.00	
14:51	16.0	0.19	2544	4.64	258.4	2.38	13.35	3.00	
14:55	16.0	0.19	2627	4.62	260.1	2.00	13.32	4.00	
14:59	15.9	0.19	2672	4.61	260.4	2.00	13.32	5.00	
15:03	15.9	0.19	2675	4.61	260.2	1.85	13.31	6.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow resumed at 14:37.
Signature: Weston Boardman Date: 12/30/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-3
Weather: 1C Clear
Sample ID: IW-3- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 16:45

WELL INFORMATION

Screened Interval: Top (ft): 10.40 Bottom (ft): 20.40
Well Secure? ☑ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.32 Time: 15:37
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 12.32 Time: 15:39
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 5.00
Begin Purge (Date/Time): 12/30/2025 15:39
End Purge (Date/Time): 12/30/2025
Flow Rate (mL/min): 238
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
15:43	15.1	0.40	7544	3.65	490.7	7.83	12.68	1.00	
15:48	15.2	0.27	7665	3.64	510.0	5.25	12.78	2.00	
15:52	15.3	0.25	7569	3.66	515.6	6.35	12.82	3.00	
15:56	15.4	0.23	7189	3.67	520.5	6.54	12.85	4.00	Pump at max speed to purge 9 L
16:19								13.00	Resume low flow
16:23	15.3	0.17	3975	3.90	487.3	31.65	13.01	1.00	
16:27	15.3	0.17	3690	3.88	490.7	36.12	12.93	2.00	
16:32	15.2	0.17	3545	3.86	495.9	40.88	12.87	3.00	
16:36	15.3	0.17	3511	3.85	500.1	41.96	12.85	4.00	
16:40	15.4	0.17	3509	3.85	500.5	42.79	12.84	5.00	Appears clearer than indicated by turbidity readings.

Sample Description (turbidity, color, odor, sheen): Clear, colorless, strong organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow resumed at 16:19.
Signature: Weston Boardman Date: 12/30/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: N1MW-6R
Weather: 0C Clear
Sample ID: N1MW-6R- 251230
Landau Rep.: Weston Boardman
Date: 12/30/25 Time: 17:40

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☑ No ☐ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 11.98 Time: 17:07 Describe: flush-mount WQM No.: 0133
Static DTW (ft): 11.98 Time: 17:09 Flow-Thru Cell Vol.: 250 mL Liters Purged: 7.00
Begin Purge (Date/Time): 12/30/2025 17:09 End Purge (Date/Time): 12/30/2025 17:37 Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
17:13	15.1	0.30	2523	3.87	421.0	8.26	12.15	1.00	
17:17	15.4	0.23	2260	4.04	408.7	11.36	12.20	2.00	
17:21	15.3	0.23	2146	4.11	400.3	3.77	12.22	3.00	
17:25	15.3	0.23	1993	4.36	374.2	1.79	12.25	4.00	
17:29	15.4	0.25	1932	4.60	346.6	1.67	12.27	5.00	
17:33	15.3	0.25	1922	4.60	342.9	1.67	12.28	6.00	
17:37	15.3	0.24	1939	4.61	341.3	1.42	12.28	7.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: DUP2-251230 @ 16:00 ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/30/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: N1MW-7R
Weather: -5C Clear
Sample ID: N1MW-7R- 251231
Landau Rep.: Weston Boardman
Date: 12/31/25 Time: 8:00

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☑ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.22 Time: 7:20
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 12.22 Time: 7:22
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 7.25
Begin Purge (Date/Time): 12/31/2025 7:22
End Purge (Date/Time): 12/31/2025 7:53
Flow Rate (mL/min): 234
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
7:28	14.0	2.21	321.0	5.86	293.3	10.17	12.22	1.25	
7:33	14.8	2.41	308.3	6.10	271.0	4.70	12.22	2.25	
7:37	15.2	2.37	308.9	6.21	258.4	3.32	12.23	3.25	
7:41	15.0	2.49	306.2	6.26	249.5	1.76	12.23	4.25	
7:45	14.7	2.58	302.2	6.29	243.1	1.02	12.23	5.25	
7:49	15.2	2.38	304.2	6.30	238.7	1.83	12.23	6.25	
7:53	15.0	2.49	305.5	6.30	235.1	0.87	12.23	7.25	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, mild organic odor, no sheen.
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/31/25

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: N1MW-9
Weather: -4C Clear
Sample ID: N1MW-9- 251231
Landau Rep.: Weston Boardman
Date: 12/31/25 Time: 9:15

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☑ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.06 Time: 8:13
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 12.08 Time: 8:15
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 20.00
Begin Purge (Date/Time): 12/31/2025 8:15
End Purge (Date/Time): 12/31/2025 9:12
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
8:19	14.0	0.34	506	5.92	94.2	14.33	12.18	1.00	
8:23	14.0	0.37	663	5.90	89.5	17.97	12.23	2.00	
8:27	14.0	0.39	808	5.90	91.7	29.68	12.26	3.00	Pump at max speed to purge 13 L
8:56								16.00	Resume low flow
9:00	15.3	0.23	2074	5.80	143.6	49.22	12.32	1.00	
9:04	15.3	0.23	2133	5.79	149.2	52.53	12.30	2.00	
9:08	15.3	0.24	2182	5.78	153.8	53.54	12.29	3.00	
9:12	15.0	0.23	2121	5.77	154.5	56.36	12.29	4.00	

Sample Description (turbidity, color, odor, sheen): Slightly turbid, light yellow, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow resumed at 08:56.
Signature: Weston Boardman Date: 12/31/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-17
Weather: 0C Clear
Sample ID: IW-17- 251231
Landau Rep.: Weston Boardman
Date: 12/31/25 Time: 10:45

WELL INFORMATION

Screened Interval: Top (ft): 8.50 Bottom (ft): 18.50
Well Secure? ☑ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 10.74 Time: 9:35
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 10.73 Time: 9:37
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 21.00
Begin Purge (Date/Time): 12/31/2025 9:37
End Purge (Date/Time): 12/31/2025 10:39
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
9:41	13.0	1.50	792	6.00	195.3	276.8	11.00	1.00	
9:47	13.7	1.50	616	5.93	213.2	363.8	11.02	2.00	Pump at max speed to purge 16 L
10:27								18.00	Resume low flow
10:31	13.7	1.17	973	5.35	222.2	45.76	10.96	1.00	
10:35	13.9	1.25	976	5.36	220.6	41.64	10.95	2.00	
10:39	13.9	1.26	966	5.37	220.2	35.68	10.95	3.00	

Sample Description (turbidity, color, odor, sheen): Sligyhtly turbid, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

	Scheduled Analysis (Circle/Bold Applicable)						Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments: Flow rate based on low flow resumed at 10:27. Turbdity did not reach stabilization.
Signature: Weston Boardman Date: 12/31/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-8
Weather: 0C Clear
Sample ID: IW-8- 251231
Landau Rep.: Weston Boardman
Date: 12/31/25 Time: 11:35

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.37 Time: 11:06
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 12.36 Time: 11:08
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 5.25
Begin Purge (Date/Time): 12/31/2025 11:08
End Purge (Date/Time): 12/31/2025 11:29
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
11:13	15.5	0.24	7100	3.55	373.2	2.25	12.69	1.25	
11:17	15.5	0.21	7134	3.56	368.8	2.09	12.79	2.25	
11:21	15.9	0.25	7143	3.57	365.7	1.31	12.90	3.25	
11:25	16.1	0.25	7143	3.57	363.5	1.13	12.98	4.25	
11:29	15.8	0.23	7025	3.58	362.0	1.45	13.03	5.25	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odoe, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/31/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-12
Weather: 1C Clear
Sample ID: IW-12- 251231
Landau Rep.: Weston Boardman
Date: 12/31/25 Time: 12:30

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00
Well Secure? ☐ No ☑ Yes
Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.79 Time: 11:58
Describe: flush-mount
WQM No.: 0133
Static DTW (ft): 12.83 Time: 12:00
Flow-Thru Cell Vol.: 250 mL
Liters Purged: 7.00
Begin Purge (Date/Time): 12/31/2025 12:00
End Purge (Date/Time): 12/31/2025 12:28
Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
12:04	14.2	0.48	2928	5.47	208.9	8.25	12.87	1.00	
12:08	15.0	0.28	2657	5.65	153.8	8.48	12.88	2.00	
12:12	15.2	0.24	2653	5.66	143.7	6.32	12.88	3.00	
12:16	15.3	0.22	2631	5.66	136.5	3.65	12.89	4.00	
12:20	15.2	0.22	2599	5.67	131.6	3.77	12.90	5.00	
12:24	14.7	0.22	2549	5.68	127.2	3.40	12.90	6.00	
12:28	15.1	0.21	2545	5.68	124.6	2.92	12.90	7.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odoe, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/31/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-14
Weather: 2C Clear
Sample ID: IW-14- 251231
Landau Rep.: Weston Boardman
Date: 12/31/25 Time: 13:15

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.48 Time: 12:47 Describe: flush-mount WQM No.: 0133
Static DTW (ft): 12.49 Time: 12:49 Flow-Thru Cell Vol.: 250 mL Liters Purged: 6.00
Begin Purge (Date/Time): 12/31/2025 12:49 End Purge (Date/Time): 12/31/2025 13:13 Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
12:53	15.3	0.43	2433	5.07	162.4	7.63	12.56	1.00	
12:57	15.6	0.24	2819	5.14	146.8	3.85	12.58	2.00	
13:01	15.7	0.22	3105	5.19	139.2	2.63	12.58	3.00	
13:05	15.5	0.20	3101	5.21	134.9	2.92	12.58	4.00	
13:09	15.5	0.19	3069	5.22	132.8	2.59	12.58	5.00	
13:13	15.8	0.19	3040	5.22	131.0	2.13	12.58	6.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/31/25

LANDAU ASSOCIATES

// GROUNDWATER LOW-FLOW SAMPLE COLLECTION FORM

Project Name: City of Yakima - Tiger Oil N 1st St Remediation
Project Number: 1148010.010
Event: 4th Quarter 2025 Groundwater Monitoring
Well ID: IW-15
Weather: 2C Clear
Sample ID: IW-15- 251231
Landau Rep.: Weston Boardman
Date: 12/31/25 Time: 14:00

WELL INFORMATION

Screened Interval: Top (ft): 10.00 Bottom (ft): 20.00 Well Secure? ☐ No ☑ Yes Damaged? ☑ No ☐ Yes
DTW After Cap Opened (ft): 12.33 Time: 13:28 Describe: flush-mount WQM No.: 0133
Static DTW (ft): 12.32 Time: 13:30 Flow-Thru Cell Vol.: 250 mL Liters Purged: 6.00
Begin Purge (Date/Time): 12/31/2025 13:30 End Purge (Date/Time): 12/31/2025 13:54 Flow Rate (mL/min): 250
Water Disposal: ☑ 55-gal drum ☐ Storage tank ☐ Ground ☐ Other:

PURGE DATA

Cell shading indicating purge stabilization is for informational purposes only.

Time	Temp (°C)	DO (mg/L)	Cond (µS/cm)	pH (S.U)	ORP (mV)	Turbidity (NTU)	DTW (ft)	Cumulative Purge Volume (L)	Comments/ Observations
Stabilization →	± 3%	± 10%	± 3%	± 0.1 units	± 10 mV	± 10%	± 0.3 ft		
13:34	15.3	0.30	1161	5.96	60.6	7.48	12.33	1.00	
13:38	15.6	0.21	991	6.01	44.4	6.92	12.34	2.00	
13:42	15.5	0.18	942	6.02	39.6	6.23	12.34	3.00	
13:46	15.5	0.18	928	6.02	37.3	3.64	12.33	4.00	
13:50	15.6	0.18	918	6.02	35.7	3.43	12.33	5.00	
13:54	15.5	0.17	905	6.02	34.0	2.30	12.33	6.00	

Sample Description (turbidity, color, odor, sheen): Clear, colorless, organic odor, no sheen
Fe 2^+ (mg/L): NM

PUMP AND MATERIAL INFORMATION

Collection Method: ☐ Bailer ☑ Pump Type: Peristaltic
Material: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☑ Dedicated
Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☑ Dedicated
☐ Other (describe sequence):

Scheduled Analysis (Circle/Bold Applicable)							Bottle Information	
							Number	Type
Volatiles:	**8260**	8260 SIM	8021	524	624		2	40 ml HCL VOA
Semivolatiles:	8270	8270 SIM	8011	625				
Petroleum Hydrocarbons:	NWTPH-HCID	**NWTPH-Gx**	NWTPH-Dx	NWTPH-Dx SGC				see above
Total/Dissolved Metals:	6010	6020	200.7	200.8	7471	☐ Field Filtered		
PCBs & Nitroaromatics:	8082	1668	608	8330				
Dioxin-Furans:	1613	8290						
PFAS:	1633	537.1	533	SOP				
Conventionals:	300.0	SM2450C	SM2450D	SM5310C	RSK175			
Other:								

Duplicate or Parent Sample ID: ☐ MS/MSD
Comments:
Signature: Weston Boardman Date: 12/31/25

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ANALYTICAL REPORT

PREPARED FOR

Attn: Dan Gray
Landau Associates Inc
10 North Post Street, Suite 218
Spokane, Washington 99201

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JOB DESCRIPTION

City of Yakima-Tiger Oil/1148010.010

JOB NUMBER

590-34935-1

Eurofins Spokane
11922 East 1st Ave
Spokane WA 99206

See page two for job notes and contact information.

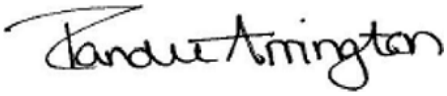
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Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



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Revision 2

Authorized for release by
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Job Narrative
590-34935-1

REVISION

The report being provided is a revision of the original report sent on 1/8/2026. The report (revision 2) is being revised to include inital and re-analysis NWTPH-Gx results for the following samples: DUP1-251230 (590-34935-6), IW-10-251230 (590-34935-7), N1MW-6R-251230 (590-34935-11) and DUP2-251230 (590-34935-12).

Report revision history
Revision 1 - 1/26/2026 - Reason - re-analyzing samples DUP1-251230 (590-34935-6), IW-10-251230 (590-34935-7), N1MW-6R-251230 (590-34935-11) and DUP2-251230 (590-34935-12) for GRO result verification. Results for samples DUP1-251230 (590-34935-6) and N1MW-6R-251230 (590-34935-11) confirmed. Results of the re-analysis of samples IW-10-251230 (590-34935-7) and DUP2-251230 (590-34935-12) have been reported.

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 1/2/2026 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.0°C.

Receipt Exceptions
One HCL voa vial for the following sample(s) was received broken: Sample 15 (IW-17-251231). Sufficient volume remains to proceed with analysis.

Gasoline Range Organics
Method NWTPH-Gx: Reanalysis of the following samples were performed outside of the analytical holding time due to client request : DUP1-251230 (590-34935-6), IW-10-251230 (590-34935-7), N1MW-6R-251230 (590-34935-11) and DUP2-251230 (590-34935-12).

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

GC/MS VOA
Method 8260D: The following sample was diluted due to the nature of the sample matrix: IW-18-251230 (590-34935-4). Elevated reporting limits (RLs) are provided.

Method 8260D: The following sample was diluted due to the nature of the sample matrix: N1MW-6R-251230 (590-34935-11). Elevated reporting limits (RLs) are provided.

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

Definitions/Glossary

Client: Landau Associates Inc
Job ID: 590-34935-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.

Glossary

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

Sample Summary

Client: Landau Associates Inc
Job ID: 590-34935-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
590-34935-1	Trip Blank	Water	12/30/25 00:00	01/02/26 09:45	Washington
590-34935-2	IW-1-251230	Water	12/30/25 07:40	01/02/26 09:45	Washington
590-34935-3	IW-2-251230	Water	12/30/25 08:40	01/02/26 09:45	Washington
590-34935-4	IW-18-251230	Water	12/30/25 09:35	01/02/26 09:45	Washington
590-34935-5	IW-4-251230	Water	12/30/25 11:25	01/02/26 09:45	Washington
590-34935-6	DUP1-251230	Water	12/30/25 10:30	01/02/26 09:45	Washington
590-34935-7	IW-10-251230	Water	12/30/25 12:55	01/02/26 09:45	Washington
590-34935-8	IW-9-251230	Water	12/30/25 13:45	01/02/26 09:45	Washington
590-34935-9	N1MW-8-251230	Water	12/30/25 15:05	01/02/26 09:45	Washington
590-34935-10	IW-3-251230	Water	12/30/25 16:45	01/02/26 09:45	Washington
590-34935-11	N1MW-6R-251230	Water	12/30/25 17:40	01/02/26 09:45	Washington
590-34935-12	DUP2-251230	Water	12/30/25 16:00	01/02/26 09:45	Washington
590-34935-13	N1MW-7R-251231	Water	12/31/25 08:00	01/02/26 09:45	Washington
590-34935-14	N1MW-9-251231	Water	12/31/25 09:15	01/02/26 09:45	Washington
590-34935-15	IW-17-251231	Water	12/31/25 10:45	01/02/26 09:45	Washington
590-34935-16	IW-8-251231	Water	12/31/25 11:35	01/02/26 09:45	Washington
590-34935-17	IW-12-251231	Water	12/31/25 12:30	01/02/26 09:45	Washington
590-34935-18	IW-14-251231	Water	12/31/25 13:15	01/02/26 09:45	Washington
590-34935-19	IW-15-251231	Water	12/31/25 14:00	01/02/26 09:45	Washington

Chain-of-Custody Record

LIATES

☐ North Seattle (206) 631-8660 ☐ Tacoma (253) 926-2493 ☐ Olympia (360) 791-3178
☒ Spokane (509) 327-9737 ☐ Portland (503) 542 1080 ☐ _____

Date 12/~~31~~30/25 Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name City of Yakima Tiger Dr Project No. 148010.010

Project Location/Event N 1st St Tiger 01 / 4825 GW

Sampler's Name Weston Boardman

Project Contact Shane Kastka

Send Results To skastka+wboardman+jda@landauinc.com

Special Handling Requirements: _____

Shipment Method: _____

Stored on ice: (Yes) / No

Testing Parameters: NWTPH-Dx; BTEX 8260

Sample I.D.	Date	Time	Matrix	No. of Containers	NWTPH-Dx	BTEX 8260	Observations/Comments
TRIP BLANK	NA	NA	W	1	X	X	
~~NSMW-4-251229~~	~~12/29/25~~	~~12.50~~		~~1~~	~~X~~	~~X~~	
IW-1-251230	12/30/25	07.40	W	2	X	X	
IW-2-251230		08.40			X	X	
IW-18-251230		09.35			X	X	
IW-4-251230		11.25			X	X	
DUP1-251230		10.30			X	X	
IW-10-251230		12.55			X	X	
IW-9-251230		13.45			X	X	
NIMW-8-251230		16.05			X	X	
IW-3-251230		16:45			X	X	
NIMW-6R-251230		17.40			X	X	
DUP2-251230		16.00			X	X	
NIMW 7R-251231	12/31/25	08.00			X	X	
NIMW 9-251231		09:15			X	X	
IW-17-251231		10.45			X	X	
IW-5-251231		11.35			X	X	
IW-12-251231		12.30			X	X	
IW-14-251231		13.15			X	X	
IW-15-251231		14.00			X	X	

Allow water samples to settle, collect aliquot from clear portion ☐

NWTPH-Dx Acid wash cleanup ☐ Silica gel cleanup ☐

Dissolved metal samples were field filtered

Other _____

590-34935 Chain of Custody

Relinquished by	Received by	Relinquished by	Received by
Signature [signature]	Signature [signature]	Signature	Signature
Printed Name Weston Boardman	Printed Name Carson Desimone	Printed Name	Printed Name
Company Landau	Company ETSP	Company	Company
Date 1/2/26 Time 09:45	Date 1/2/2026 Time 9:45	Date Time	Date Time

WHITE COPY Laboratory YELLOW COPY Project File PINK COPY Client Representative

5, 6, 6,10 I PAOC

Login Sample Receipt Checklist

Client: Landau Associates Inc

Job Number: 590-34935-1

Login Number: 34935
List Number: 1
Creator: Desimone, Carson

List Source: Eurofins Spokane

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

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: Trip Blank
Date Collected: 12/30/25 00:00
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/06/26 21:05	1
Ethylbenzene	ND		1.0		ug/L			01/06/26 21:05	1
m,p-Xylene	ND		2.0		ug/L			01/06/26 21:05	1
o-Xylene	ND		1.0		ug/L			01/06/26 21:05	1
Toluene	ND		1.0		ug/L			01/06/26 21:05	1
Xylenes, Total	ND		3.0		ug/L			01/06/26 21:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*01/06/26 21:05*	*1*
4-Bromofluorobenzene (Surr)	*98*		*76 - 120*		*01/06/26 21:05*	*1*
Dibromofluoromethane (Surr)	*112*		*74 - 131*		*01/06/26 21:05*	*1*
Toluene-d8 (Surr)	*103*		*88 - 120*		*01/06/26 21:05*	*1*

Client Sample ID: IW-1-251230
Date Collected: 12/30/25 07:40
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/06/26 21:26	1
Ethylbenzene	ND		1.0		ug/L			01/06/26 21:26	1
m,p-Xylene	ND		2.0		ug/L			01/06/26 21:26	1
o-Xylene	ND		1.0		ug/L			01/06/26 21:26	1
Toluene	ND		1.0		ug/L			01/06/26 21:26	1
Xylenes, Total	ND		3.0		ug/L			01/06/26 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 127*		*01/06/26 21:26*	*1*
4-Bromofluorobenzene (Surr)	*95*		*76 - 120*		*01/06/26 21:26*	*1*
Dibromofluoromethane (Surr)	*111*		*74 - 131*		*01/06/26 21:26*	*1*
Toluene-d8 (Surr)	*104*		*88 - 120*		*01/06/26 21:26*	*1*

Client Sample ID: IW-2-251230
Date Collected: 12/30/25 08:40
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.40**		0.40		ug/L			01/06/26 21:47	1
Ethylbenzene	**39**		1.0		ug/L			01/06/26 21:47	1
m,p-Xylene	**140**		20		ug/L			01/07/26 18:08	10
o-Xylene	**70**		10		ug/L			01/07/26 18:08	10
Toluene	**3.7**		1.0		ug/L			01/06/26 21:47	1
Xylenes, Total	**210**		30		ug/L			01/07/26 18:08	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*01/06/26 21:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*121*		*71 - 127*		*01/07/26 18:08*	*10*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*01/06/26 21:47*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 120*		*01/07/26 18:08*	*10*
Dibromofluoromethane (Surr)	*106*		*74 - 131*		*01/06/26 21:47*	*1*
Dibromofluoromethane (Surr)	*127*		*74 - 131*		*01/07/26 18:08*	*10*
Toluene-d8 (Surr)	*98*		*88 - 120*		*01/06/26 21:47*	*1*
Toluene-d8 (Surr)	*95*		*88 - 120*		*01/07/26 18:08*	*10*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-18-251230
Date Collected: 12/30/25 09:35
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.0		ug/L			01/07/26 18:28	10
Ethylbenzene	**18**		10		ug/L			01/07/26 18:28	10
m,p-Xylene	**62**		20		ug/L			01/07/26 18:28	10
o-Xylene	**20**		10		ug/L			01/07/26 18:28	10
Toluene	ND		10		ug/L			01/07/26 18:28	10
Xylenes, Total	**81**		30		ug/L			01/07/26 18:28	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*01/07/26 18:28*	*10*
4-Bromofluorobenzene (Surr)	*105*		*76 - 120*		*01/07/26 18:28*	*10*
Dibromofluoromethane (Surr)	*113*		*74 - 131*		*01/07/26 18:28*	*10*
Toluene-d8 (Surr)	*90*		*88 - 120*		*01/07/26 18:28*	*10*

Client Sample ID: IW-4-251230
Date Collected: 12/30/25 11:25
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.51**		0.40		ug/L			01/06/26 22:28	1
Ethylbenzene	**5.2**		1.0		ug/L			01/06/26 22:28	1
m,p-Xylene	**4.3**		2.0		ug/L			01/06/26 22:28	1
o-Xylene	**1.9**		1.0		ug/L			01/06/26 22:28	1
Toluene	ND		1.0		ug/L			01/06/26 22:28	1
Xylenes, Total	**6.2**		3.0		ug/L			01/06/26 22:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 127*		*01/06/26 22:28*	*1*
4-Bromofluorobenzene (Surr)	*107*		*76 - 120*		*01/06/26 22:28*	*1*
Dibromofluoromethane (Surr)	*102*		*74 - 131*		*01/06/26 22:28*	*1*
Toluene-d8 (Surr)	*99*		*88 - 120*		*01/06/26 22:28*	*1*

Client Sample ID: DUP1-251230
Date Collected: 12/30/25 10:30
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2.7**		0.40		ug/L			01/06/26 22:49	1
Ethylbenzene	**44**		1.0		ug/L			01/06/26 22:49	1
m,p-Xylene	**63**		20		ug/L			01/07/26 18:49	10
o-Xylene	**26**		10		ug/L			01/07/26 18:49	10
Toluene	**2.0**		1.0		ug/L			01/06/26 22:49	1
Xylenes, Total	**89**		30		ug/L			01/07/26 18:49	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*71 - 127*		*01/06/26 22:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 127*		*01/07/26 18:49*	*10*
4-Bromofluorobenzene (Surr)	*100*		*76 - 120*		*01/06/26 22:49*	*1*
4-Bromofluorobenzene (Surr)	*104*		*76 - 120*		*01/07/26 18:49*	*10*
Dibromofluoromethane (Surr)	*94*		*74 - 131*		*01/06/26 22:49*	*1*
Dibromofluoromethane (Surr)	*108*		*74 - 131*		*01/07/26 18:49*	*10*
Toluene-d8 (Surr)	*100*		*88 - 120*		*01/06/26 22:49*	*1*
Toluene-d8 (Surr)	*96*		*88 - 120*		*01/07/26 18:49*	*10*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: IW-10-251230
Date Collected: 12/30/25 12:55
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.7		0.40		ug/L			01/06/26 23:10	1
Ethylbenzene	37		1.0		ug/L			01/06/26 23:10	1
m,p-Xylene	86		2.0		ug/L			01/06/26 23:10	1
o-Xylene	33		1.0		ug/L			01/06/26 23:10	1
Toluene	1.9		1.0		ug/L			01/06/26 23:10	1
Xylenes, Total	120		3.0		ug/L			01/06/26 23:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*71 - 127*		*01/06/26 23:10*	*1*
4-Bromofluorobenzene (Surr)	*115*		*76 - 120*		*01/06/26 23:10*	*1*
Dibromofluoromethane (Surr)	*91*		*74 - 131*		*01/06/26 23:10*	*1*
Toluene-d8 (Surr)	*105*		*88 - 120*		*01/06/26 23:10*	*1*

Client Sample ID: IW-9-251230
Date Collected: 12/30/25 13:45
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.5		0.40		ug/L			01/06/26 23:31	1
Ethylbenzene	85		1.0		ug/L			01/06/26 23:31	1
m,p-Xylene	150		20		ug/L			01/07/26 19:10	10
o-Xylene	36		1.0		ug/L			01/06/26 23:31	1
Toluene	1.0		1.0		ug/L			01/06/26 23:31	1
Xylenes, Total	170		30		ug/L			01/07/26 19:10	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*71 - 127*		*01/06/26 23:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*01/07/26 19:10*	*10*
4-Bromofluorobenzene (Surr)	*105*		*76 - 120*		*01/06/26 23:31*	*1*
4-Bromofluorobenzene (Surr)	*105*		*76 - 120*		*01/07/26 19:10*	*10*
Dibromofluoromethane (Surr)	*99*		*74 - 131*		*01/06/26 23:31*	*1*
Dibromofluoromethane (Surr)	*112*		*74 - 131*		*01/07/26 19:10*	*10*
Toluene-d8 (Surr)	*98*		*88 - 120*		*01/06/26 23:31*	*1*
Toluene-d8 (Surr)	*95*		*88 - 120*		*01/07/26 19:10*	*10*

Client Sample ID: N1MW-8-251230
Date Collected: 12/30/25 15:05
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.5		0.40		ug/L			01/06/26 23:52	1
Ethylbenzene	43		1.0		ug/L			01/06/26 23:52	1
m,p-Xylene	72		20		ug/L			01/07/26 19:31	10
o-Xylene	27		10		ug/L			01/07/26 19:31	10
Toluene	2.5		1.0		ug/L			01/06/26 23:52	1
Xylenes, Total	100		30		ug/L			01/07/26 19:31	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*01/06/26 23:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 127*		*01/07/26 19:31*	*10*
4-Bromofluorobenzene (Surr)	*103*		*76 - 120*		*01/06/26 23:52*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*01/07/26 19:31*	*10*
Dibromofluoromethane (Surr)	*93*		*74 - 131*		*01/06/26 23:52*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Client Sample ID: N1MW-8-251230
Date Collected: 12/30/25 15:05
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-9
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*122*		*74 - 131*		*01/07/26 19:31*	*10*
Toluene-d8 (Surr)	*103*		*88 - 120*		*01/06/26 23:52*	*1*
Toluene-d8 (Surr)	*97*		*88 - 120*		*01/07/26 19:31*	*10*

Client Sample ID: IW-3-251230
Date Collected: 12/30/25 16:45
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.69**		0.40		ug/L			01/07/26 00:34	1
Ethylbenzene	**11**		1.0		ug/L			01/07/26 00:34	1
m,p-Xylene	**17**		2.0		ug/L			01/07/26 00:34	1
o-Xylene	**9.4**		1.0		ug/L			01/07/26 00:34	1
Toluene	**2.9**		1.0		ug/L			01/07/26 00:34	1
Xylenes, Total	**26**		3.0		ug/L			01/07/26 00:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*71 - 127*		*01/07/26 00:34*	*1*
4-Bromofluorobenzene (Surr)	*105*		*76 - 120*		*01/07/26 00:34*	*1*
Dibromofluoromethane (Surr)	*100*		*74 - 131*		*01/07/26 00:34*	*1*
Toluene-d8 (Surr)	*97*		*88 - 120*		*01/07/26 00:34*	*1*

Client Sample ID: N1MW-6R-251230
Date Collected: 12/30/25 17:40
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.0		ug/L			01/07/26 19:52	10
Ethylbenzene	**11**		10		ug/L			01/07/26 19:52	10
m,p-Xylene	**24**		20		ug/L			01/07/26 19:52	10
o-Xylene	ND		10		ug/L			01/07/26 19:52	10
Toluene	ND		10		ug/L			01/07/26 19:52	10
Xylenes, Total	ND		30		ug/L			01/07/26 19:52	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*71 - 127*		*01/07/26 19:52*	*10*
4-Bromofluorobenzene (Surr)	*99*		*76 - 120*		*01/07/26 19:52*	*10*
Dibromofluoromethane (Surr)	*118*		*74 - 131*		*01/07/26 19:52*	*10*
Toluene-d8 (Surr)	*99*		*88 - 120*		*01/07/26 19:52*	*10*

Client Sample ID: DUP2-251230
Date Collected: 12/30/25 16:00
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/07/26 01:16	1
Ethylbenzene	**18**		1.0		ug/L			01/07/26 01:16	1
m,p-Xylene	**45**		2.0		ug/L			01/07/26 01:16	1
o-Xylene	**7.7**		1.0		ug/L			01/07/26 01:16	1
Toluene	ND		1.0		ug/L			01/07/26 01:16	1
Xylenes, Total	**53**		3.0		ug/L			01/07/26 01:16	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		71 - 127		01/07/26 01:16	1
4-Bromofluorobenzene (Surr)	101		76 - 120		01/07/26 01:16	1
Dibromofluoromethane (Surr)	95		74 - 131		01/07/26 01:16	1
Toluene-d8 (Surr)	100		88 - 120		01/07/26 01:16	1

Client Sample ID: N1MW-7R-251231
Date Collected: 12/31/25 08:00
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/07/26 01:37	1
Ethylbenzene	**1.1**		1.0		ug/L			01/07/26 01:37	1
m,p-Xylene	**3.4**		2.0		ug/L			01/07/26 01:37	1
o-Xylene	**1.7**		1.0		ug/L			01/07/26 01:37	1
Toluene	ND		1.0		ug/L			01/07/26 01:37	1
Xylenes, Total	**5.1**		3.0		ug/L			01/07/26 01:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		71 - 127		01/07/26 01:37	1
4-Bromofluorobenzene (Surr)	105		76 - 120		01/07/26 01:37	1
Dibromofluoromethane (Surr)	103		74 - 131		01/07/26 01:37	1
Toluene-d8 (Surr)	98		88 - 120		01/07/26 01:37	1

Client Sample ID: N1MW-9-251231
Date Collected: 12/31/25 09:15
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.90**		0.40		ug/L			01/07/26 01:58	1
Ethylbenzene	**12**		1.0		ug/L			01/07/26 01:58	1
m,p-Xylene	**13**		2.0		ug/L			01/07/26 01:58	1
o-Xylene	**13**		1.0		ug/L			01/07/26 01:58	1
Toluene	ND		1.0		ug/L			01/07/26 01:58	1
Xylenes, Total	**26**		3.0		ug/L			01/07/26 01:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		71 - 127		01/07/26 01:58	1
4-Bromofluorobenzene (Surr)	104		76 - 120		01/07/26 01:58	1
Dibromofluoromethane (Surr)	91		74 - 131		01/07/26 01:58	1
Toluene-d8 (Surr)	97		88 - 120		01/07/26 01:58	1

Client Sample ID: IW-17-251231
Date Collected: 12/31/25 10:45
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/07/26 02:19	1
Ethylbenzene	**5.1**		1.0		ug/L			01/07/26 02:19	1
m,p-Xylene	**5.0**		2.0		ug/L			01/07/26 02:19	1
o-Xylene	**1.3**		1.0		ug/L			01/07/26 02:19	1
Toluene	ND		1.0		ug/L			01/07/26 02:19	1
Xylenes, Total	**6.3**		3.0		ug/L			01/07/26 02:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		71 - 127		01/07/26 02:19	1
4-Bromofluorobenzene (Surr)	105		76 - 120		01/07/26 02:19	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Client Sample ID: IW-17-251231
Date Collected: 12/31/25 10:45
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-15
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*74 - 131*		*01/07/26 02:19*	*1*
Toluene-d8 (Surr)	*99*		*88 - 120*		*01/07/26 02:19*	*1*

Client Sample ID: IW-8-251231
Date Collected: 12/31/25 11:35
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2.5**		0.40		ug/L			01/07/26 02:40	1
Ethylbenzene	**48**		1.0		ug/L			01/07/26 02:40	1
m,p-Xylene	**94**		20		ug/L			01/07/26 20:13	10
o-Xylene	**38**		10		ug/L			01/07/26 20:13	10
Toluene	**6.6**		1.0		ug/L			01/07/26 02:40	1
Xylenes, Total	**130**		30		ug/L			01/07/26 20:13	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*79*		*71 - 127*		*01/07/26 02:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*71 - 127*		*01/07/26 20:13*	*10*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*		*01/07/26 02:40*	*1*
4-Bromofluorobenzene (Surr)	*103*		*76 - 120*		*01/07/26 20:13*	*10*
Dibromofluoromethane (Surr)	*88*		*74 - 131*		*01/07/26 02:40*	*1*
Dibromofluoromethane (Surr)	*120*		*74 - 131*		*01/07/26 20:13*	*10*
Toluene-d8 (Surr)	*101*		*88 - 120*		*01/07/26 02:40*	*1*
Toluene-d8 (Surr)	*95*		*88 - 120*		*01/07/26 20:13*	*10*

Client Sample ID: IW-12-251231
Date Collected: 12/31/25 12:30
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.2**		0.40		ug/L			01/07/26 03:01	1
Ethylbenzene	**15**		1.0		ug/L			01/07/26 03:01	1
m,p-Xylene	**15**		2.0		ug/L			01/07/26 03:01	1
o-Xylene	**4.7**		1.0		ug/L			01/07/26 03:01	1
Toluene	ND		1.0		ug/L			01/07/26 03:01	1
Xylenes, Total	**20**		3.0		ug/L			01/07/26 03:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*01/07/26 03:01*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*		*01/07/26 03:01*	*1*
Dibromofluoromethane (Surr)	*92*		*74 - 131*		*01/07/26 03:01*	*1*
Toluene-d8 (Surr)	*101*		*88 - 120*		*01/07/26 03:01*	*1*

Client Sample ID: IW-14-251231
Date Collected: 12/31/25 13:15
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-18
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/07/26 03:22	1
Ethylbenzene	ND		1.0		ug/L			01/07/26 03:22	1
m,p-Xylene	ND		2.0		ug/L			01/07/26 03:22	1
o-Xylene	ND		1.0		ug/L			01/07/26 03:22	1
Toluene	ND		1.0		ug/L			01/07/26 03:22	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Client Sample ID: IW-14-251231
Date Collected: 12/31/25 13:15
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-18
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		3.0		ug/L			01/07/26 03:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*71 - 127*		*01/07/26 03:22*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*		*01/07/26 03:22*	*1*
Dibromofluoromethane (Surr)	*99*		*74 - 131*		*01/07/26 03:22*	*1*
Toluene-d8 (Surr)	*100*		*88 - 120*		*01/07/26 03:22*	*1*

Client Sample ID: IW-15-251231
Date Collected: 12/31/25 14:00
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-19
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.90**		0.40		ug/L			01/07/26 03:43	1
Ethylbenzene	**16**		1.0		ug/L			01/07/26 03:43	1
m,p-Xylene	**22**		2.0		ug/L			01/07/26 03:43	1
o-Xylene	**4.8**		1.0		ug/L			01/07/26 03:43	1
Toluene	ND		1.0		ug/L			01/07/26 03:43	1
Xylenes, Total	**26**		3.0		ug/L			01/07/26 03:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*71 - 127*		*01/07/26 03:43*	*1*
4-Bromofluorobenzene (Surr)	*103*		*76 - 120*		*01/07/26 03:43*	*1*
Dibromofluoromethane (Surr)	*95*		*74 - 131*		*01/07/26 03:43*	*1*
Toluene-d8 (Surr)	*101*		*88 - 120*		*01/07/26 03:43*	*1*

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

Client Sample ID: Trip Blank
Date Collected: 12/30/25 00:00
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/06/26 21:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*68.7 - 141*		*01/06/26 21:05*	*1*

Client Sample ID: IW-1-251230
Date Collected: 12/30/25 07:40
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/06/26 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*68.7 - 141*		*01/06/26 21:26*	*1*

Client Sample ID: IW-2-251230
Date Collected: 12/30/25 08:40
Date Received: 01/02/26 09:45

Lab Sample ID: 590-34935-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**3200**		150		ug/L			01/06/26 21:47	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		68.7 - 141		01/06/26 21:47	1

Client Sample ID: IW-18-251230 — **Lab Sample ID: 590-34935-4**
Date Collected: 12/30/25 09:35 — **Matrix: Water**
Date Received: 01/02/26 09:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1800		150		ug/L			01/06/26 22:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		68.7 - 141		01/06/26 22:07	1

Client Sample ID: IW-4-251230 — **Lab Sample ID: 590-34935-5**
Date Collected: 12/30/25 11:25 — **Matrix: Water**
Date Received: 01/02/26 09:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	720		150		ug/L			01/06/26 22:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		68.7 - 141		01/06/26 22:28	1

Client Sample ID: DUP1-251230 — **Lab Sample ID: 590-34935-6**
Date Collected: 12/30/25 10:30 — **Matrix: Water**
Date Received: 01/02/26 09:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3300		150		ug/L			01/06/26 22:49	1
Gasoline	3200	H	1500		ug/L			01/20/26 23:22	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		68.7 - 141		01/06/26 22:49	1
4-Bromofluorobenzene (Surr)	88		68.7 - 141		01/20/26 23:22	10

Client Sample ID: IW-10-251230 — **Lab Sample ID: 590-34935-7**
Date Collected: 12/30/25 12:55 — **Matrix: Water**
Date Received: 01/02/26 09:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1900		150		ug/L			01/06/26 23:10	1
Gasoline	3100	H	1500		ug/L			01/20/26 23:43	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		68.7 - 141		01/06/26 23:10	1
4-Bromofluorobenzene (Surr)	90		68.7 - 141		01/20/26 23:43	10

Client Sample ID: IW-9-251230 — **Lab Sample ID: 590-34935-8**
Date Collected: 12/30/25 13:45 — **Matrix: Water**
Date Received: 01/02/26 09:45

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2500		150		ug/L			01/06/26 23:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		68.7 - 141		01/06/26 23:31	1

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

Client Sample ID: N1MW-8-251230
Date Collected: 12/30/25 15:05
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1400		150		ug/L			01/06/26 23:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*01/06/26 23:52*	*1*

Client Sample ID: IW-3-251230
Date Collected: 12/30/25 16:45
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	310		150		ug/L			01/07/26 00:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*01/07/26 00:34*	*1*

Client Sample ID: N1MW-6R-251230
Date Collected: 12/30/25 17:40
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1600		150		ug/L			01/07/26 00:55	1
Gasoline	1600	H	1500		ug/L			01/21/26 00:04	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*68.7 - 141*		*01/07/26 00:55*	*1*
4-Bromofluorobenzene (Surr)	*89*		*68.7 - 141*		*01/21/26 00:04*	*10*

Client Sample ID: DUP2-251230
Date Collected: 12/30/25 16:00
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1300		150		ug/L			01/07/26 01:16	1
Gasoline	1500	H	1500		ug/L			01/21/26 00:25	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*68.7 - 141*		*01/07/26 01:16*	*1*
4-Bromofluorobenzene (Surr)	*90*		*68.7 - 141*		*01/21/26 00:25*	*10*

Client Sample ID: N1MW-7R-251231
Date Collected: 12/31/25 08:00
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/07/26 01:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*01/07/26 01:37*	*1*

Client Sample ID: N1MW-9-251231
Date Collected: 12/31/25 09:15
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	400		150		ug/L			01/07/26 01:58	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		68.7 - 141		01/07/26 01:58	1

Client Sample ID: IW-17-251231
Date Collected: 12/31/25 10:45
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/07/26 02:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		68.7 - 141		01/07/26 02:19	1

Client Sample ID: IW-8-251231
Date Collected: 12/31/25 11:35
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1900**		150		ug/L			01/07/26 02:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		68.7 - 141		01/07/26 02:40	1

Client Sample ID: IW-12-251231
Date Collected: 12/31/25 12:30
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1000**		150		ug/L			01/07/26 03:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		68.7 - 141		01/07/26 03:01	1

Client Sample ID: IW-14-251231
Date Collected: 12/31/25 13:15
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-18
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/07/26 03:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		68.7 - 141		01/07/26 03:22	1

Client Sample ID: IW-15-251231
Date Collected: 12/31/25 14:00
Date Received: 01/02/26 09:45
Lab Sample ID: 590-34935-19
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**790**		150		ug/L			01/07/26 03:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		68.7 - 141		01/07/26 03:43	1

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

Lab Sample ID: MB 590-58605/10
Matrix: Water
Analysis Batch: 58605

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/06/26 20:44	1
Ethylbenzene	ND		1.0		ug/L			01/06/26 20:44	1
m,p-Xylene	ND		2.0		ug/L			01/06/26 20:44	1
o-Xylene	ND		1.0		ug/L			01/06/26 20:44	1
Toluene	ND		1.0		ug/L			01/06/26 20:44	1
Xylenes, Total	ND		3.0		ug/L			01/06/26 20:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*01/06/26 20:44*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*		*01/06/26 20:44*	*1*
Dibromofluoromethane (Surr)	*112*		*74 - 131*		*01/06/26 20:44*	*1*
Toluene-d8 (Surr)	*103*		*88 - 120*		*01/06/26 20:44*	*1*

Lab Sample ID: LCS 590-58605/1005
Matrix: Water
Analysis Batch: 58605

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.3		ug/L		103	80 - 120
Ethylbenzene	10.0	9.80		ug/L		98	80 - 112
m,p-Xylene	10.0	9.53		ug/L		95	80 - 109
o-Xylene	10.0	8.70		ug/L		87	72 - 106
Toluene	10.0	9.68		ug/L		97	80 - 117

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 127*
4-Bromofluorobenzene (Surr)	*104*		*76 - 120*
Dibromofluoromethane (Surr)	*103*		*74 - 131*
Toluene-d8 (Surr)	*94*		*88 - 120*

Lab Sample ID: LCSD 590-58605/6
Matrix: Water
Analysis Batch: 58605

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	10.2		ug/L		102	80 - 120	1	15
Ethylbenzene	10.0	9.53		ug/L		95	80 - 112	3	35
m,p-Xylene	10.0	9.39		ug/L		94	80 - 109	2	35
o-Xylene	10.0	8.56		ug/L		86	72 - 106	2	35
Toluene	10.0	9.59		ug/L		96	80 - 117	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 127*
4-Bromofluorobenzene (Surr)	*103*		*76 - 120*
Dibromofluoromethane (Surr)	*102*		*74 - 131*
Toluene-d8 (Surr)	*97*		*88 - 120*

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

Lab Sample ID: MB 590-58625/10
Matrix: Water
Analysis Batch: 58625

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			01/07/26 13:56	1
Ethylbenzene	ND		1.0		ug/L			01/07/26 13:56	1
m,p-Xylene	ND		2.0		ug/L			01/07/26 13:56	1
o-Xylene	ND		1.0		ug/L			01/07/26 13:56	1
Toluene	ND		1.0		ug/L			01/07/26 13:56	1
Xylenes, Total	ND		3.0		ug/L			01/07/26 13:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*		*01/07/26 13:56*	*1*
4-Bromofluorobenzene (Surr)	*103*		*76 - 120*		*01/07/26 13:56*	*1*
Dibromofluoromethane (Surr)	*103*		*74 - 131*		*01/07/26 13:56*	*1*
Toluene-d8 (Surr)	*102*		*88 - 120*		*01/07/26 13:56*	*1*

Lab Sample ID: LCS 590-58625/1005
Matrix: Water
Analysis Batch: 58625

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	10.0	10.2		ug/L		102	80 - 120
Ethylbenzene	10.0	9.48		ug/L		95	80 - 112
m,p-Xylene	10.0	9.76		ug/L		98	80 - 109
o-Xylene	10.0	8.50		ug/L		85	72 - 106
Toluene	10.0	10.2		ug/L		102	80 - 117

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*
4-Bromofluorobenzene (Surr)	*101*		*76 - 120*
Dibromofluoromethane (Surr)	*102*		*74 - 131*
Toluene-d8 (Surr)	*97*		*88 - 120*

Lab Sample ID: LCSD 590-58625/6
Matrix: Water
Analysis Batch: 58625

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	10.0	9.99		ug/L		100	80 - 120	2	15
Ethylbenzene	10.0	9.17		ug/L		92	80 - 112	3	35
m,p-Xylene	10.0	9.62		ug/L		96	80 - 109	2	35
o-Xylene	10.0	8.46		ug/L		85	72 - 106	0	35
Toluene	10.0	9.97		ug/L		100	80 - 117	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*71 - 127*
4-Bromofluorobenzene (Surr)	*102*		*76 - 120*
Dibromofluoromethane (Surr)	*101*		*74 - 131*
Toluene-d8 (Surr)	*96*		*88 - 120*

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

Lab Sample ID: MB 590-58604/10
Matrix: Water
Analysis Batch: 58604

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/06/26 20:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*01/06/26 20:44*	*1*

Lab Sample ID: LCS 590-58604/1009
Matrix: Water
Analysis Batch: 58604

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	853		ug/L		85	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*68.7 - 141*

Lab Sample ID: LCSD 590-58604/1020
Matrix: Water
Analysis Batch: 58604

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	870		ug/L		87	80 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*68.7 - 141*

Lab Sample ID: MB 590-58857/10
Matrix: Water
Analysis Batch: 58857

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			01/20/26 15:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*68.7 - 141*		*01/20/26 15:41*	*1*

Lab Sample ID: LCS 590-58857/1009
Matrix: Water
Analysis Batch: 58857

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline			1000	1100		ug/L		110	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*68.7 - 141*

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

Lab Sample ID: LCSD 590-58857/1020
Matrix: Water
Analysis Batch: 58857

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline			1000	1110		ug/L		111	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*68.7 - 141*

Lab Chronicle

Client: Landau Associates Inc
Job ID: 590-34935-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: Trip Blank
Lab Sample ID: 590-34935-1
Date Collected: 12/30/25 00:00
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 21:05
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 21:05

Client Sample ID: IW-1-251230
Lab Sample ID: 590-34935-2
Date Collected: 12/30/25 07:40
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 21:26
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 21:26

Client Sample ID: IW-2-251230
Lab Sample ID: 590-34935-3
Date Collected: 12/30/25 08:40
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 21:47
Total/NA	Analysis	8260D		10	58625	JSP	EET SPK	01/07/26 18:08
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 21:47

Client Sample ID: IW-18-251230
Lab Sample ID: 590-34935-4
Date Collected: 12/30/25 09:35
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	58625	JSP	EET SPK	01/07/26 18:28
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 22:07

Client Sample ID: IW-4-251230
Lab Sample ID: 590-34935-5
Date Collected: 12/30/25 11:25
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 22:28
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 22:28

Client Sample ID: DUP1-251230
Lab Sample ID: 590-34935-6
Date Collected: 12/30/25 10:30
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 22:49
Total/NA	Analysis	8260D		10	58625	JSP	EET SPK	01/07/26 18:49
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 22:49
Total/NA	Analysis	NWTPH-Gx		10	58857	JSP	EET SPK	01/20/26 23:22

Lab Chronicle

Client: Landau Associates Inc
Job ID: 590-34935-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: IW-10-251230
Lab Sample ID: 590-34935-7
Date Collected: 12/30/25 12:55
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 23:10
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 23:10
Total/NA	Analysis	NWTPH-Gx		10	58857	JSP	EET SPK	01/20/26 23:43

Client Sample ID: IW-9-251230
Lab Sample ID: 590-34935-8
Date Collected: 12/30/25 13:45
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 23:31
Total/NA	Analysis	8260D		10	58625	JSP	EET SPK	01/07/26 19:10
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 23:31

Client Sample ID: N1MW-8-251230
Lab Sample ID: 590-34935-9
Date Collected: 12/30/25 15:05
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/06/26 23:52
Total/NA	Analysis	8260D		10	58625	JSP	EET SPK	01/07/26 19:31
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/06/26 23:52

Client Sample ID: IW-3-251230
Lab Sample ID: 590-34935-10
Date Collected: 12/30/25 16:45
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 00:34
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 00:34

Client Sample ID: N1MW-6R-251230
Lab Sample ID: 590-34935-11
Date Collected: 12/30/25 17:40
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	58625	JSP	EET SPK	01/07/26 19:52
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 00:55
Total/NA	Analysis	NWTPH-Gx		10	58857	JSP	EET SPK	01/21/26 00:04

Client Sample ID: DUP2-251230
Lab Sample ID: 590-34935-12
Date Collected: 12/30/25 16:00
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 01:16

Lab Chronicle

Client: Landau Associates Inc
Job ID: 590-34935-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: DUP2-251230
Lab Sample ID: 590-34935-12
Date Collected: 12/30/25 16:00
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 01:16
Total/NA	Analysis	NWTPH-Gx		10	58857	JSP	EET SPK	01/21/26 00:25

Client Sample ID: N1MW-7R-251231
Lab Sample ID: 590-34935-13
Date Collected: 12/31/25 08:00
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 01:37
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 01:37

Client Sample ID: N1MW-9-251231
Lab Sample ID: 590-34935-14
Date Collected: 12/31/25 09:15
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 01:58
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 01:58

Client Sample ID: IW-17-251231
Lab Sample ID: 590-34935-15
Date Collected: 12/31/25 10:45
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 02:19
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 02:19

Client Sample ID: IW-8-251231
Lab Sample ID: 590-34935-16
Date Collected: 12/31/25 11:35
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 02:40
Total/NA	Analysis	8260D		10	58625	JSP	EET SPK	01/07/26 20:13
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 02:40

Client Sample ID: IW-12-251231
Lab Sample ID: 590-34935-17
Date Collected: 12/31/25 12:30
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 03:01
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 03:01

Lab Chronicle

Client: Landau Associates Inc
Job ID: 590-34935-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Client Sample ID: IW-14-251231
Lab Sample ID: 590-34935-18
Date Collected: 12/31/25 13:15
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 03:22
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 03:22

Client Sample ID: IW-15-251231
Lab Sample ID: 590-34935-19
Date Collected: 12/31/25 14:00
Matrix: Water
Date Received: 01/02/26 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	58605	JSP	EET SPK	01/07/26 03:43
Total/NA	Analysis	NWTPH-Gx		1	58604	JSP	EET SPK	01/07/26 03:43

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Landau Associates Inc
Job ID: 590-34935-1
Project/Site: City of Yakima-Tiger Oil/1148010.010

Laboratory: Eurofins Spokane

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

Authority	Program	Identification Number	Expiration Date
Washington	State	C569	01-06-26 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Landau Associates Inc
Project/Site: City of Yakima-Tiger Oil/1148010.010

Job ID: 590-34935-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	EET SPK
5030C	Purge and Trap	SW846	EET SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SPK = Eurofins Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200