FINAL - Data Summary Report for Annual Groundwater Monitoring for the Tidewater Fuel Leak Site, Pasco, Washington

Washington Department of Ecology Facility ID (FSID): 39378684

Cleanup Site ID (CSID): 2331

Prepared for

Tidewater Terminal Company

6305 NE Old Lower River Road
Vancouver, WA 98660

August 2018

JACOBS

999 W. Riverside Ave.
Spokane, WA 99201

August 24, 2018

Christer Loftenius, L.G., L.H.G
WA Department of Ecology
Eastern Regional Office
4601 N. Monroe Street
Spokane, WA 99205-1295

RE: **FINAL - 2018 Annual Compliance Monitoring Plan Groundwater Monitoring Report - Tidewater Fuel Leak Site**
2900 Sacajawea Park Road, Pasco, Washington 99301
Ecology Facility Site ID: 39378684; Cleanup Site ID: 2331

Dear Christer:

Please find the enclosed copy of the "2018 Annual Compliance Monitoring Ground-Water Monitoring Report" for the Tidewater Terminal Company Fuel Leak Site located on property within the Andeavor Pasco Bulk Terminal on Sacajawea Road in Pasco, Washington. This report has been prepared by Jacobs and is submitted on behalf of Tidewater Terminal Company.

Jacobs performed groundwater monitoring at the Tidewater Fuel Leak Site on May 1, 2018 in accordance with the Washington Department of Ecology-approved Compliance Monitoring Plan. Ecology approved the Compliance Monitoring Plan in December 2017. This report presents the groundwater monitoring results for the 2018 annual groundwater sampling event.

Please feel free to call me at 509-464-7215 if you have any questions.

Sincerely,

Reuben Greer
Project Manager

Contents

1.0 Introduction

This data summary report presents the results from groundwater monitoring conducted at the Tidewater Terminal Company (Tidewater) Fuel Leak Site (Site) in Pasco, Washington on May 1, 2018 (Figure 1). The field sampling was performed in accordance with the Compliance Monitoring Plan (CMP) dated November 30, 2017 (CH2M, 2017), and approved by the Washington Department of Ecology (Ecology) on December 8, 2017.

1.1 Purpose

Jacobs has prepared this data summary report to document the field observations and analytical results from the May 1, 2018, groundwater monitoring event conducted at the Tidewater site. As described in the CMP, the purpose of annual groundwater monitoring at the Tidewater Site is to monitor indicator substances and secondary indicator parameters for the effectiveness of natural attenuation (NA) as the selected cleanup action for the Site (CH2M, 2017). Indicator substances from the CMP include Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX), and Gas, Diesel, and Heavy Oil-range Total Petroleum Hydrocarbons (TPH). Secondary indicator parameters include ferrous iron, manganese, methane, and sulfate, and will be used in conjugation with field parameters dissolved oxygen, oxidation reduction potential, and pH to evaluate effectiveness of natural attenuation (NA) at the site. Table 1 (of the CMP) provides the cleanup levels for indicator substances for the site. Table A-2 of the Sampling and Analysis Plan (Appendix A of the CMP) provides a full list of analytical parameters.

1.2 Objectives

This data summary report has been prepared to describe the sampling approach and methods, and laboratory analytical methods and results. The sampling approach is described in the Sampling and Analysis Plan (Appendix A) of the CMP (CH2M, 2017) and was designed to collect samples from compliance wells located within the Tidewater Site monitoring network (Figure 2).

This data summary report includes the following:

- Summary of field activities, sampling methods and details, and field observations
- Summary of analytical results

All fieldwork and laboratory analyses were performed in general accordance with the Sampling and Analysis Plan as included in the 2017 CMP.

2.0 Field Summary

This section provides a summary of the sampling activities and field observations during groundwater monitoring activities. Groundwater monitoring was performed on May 1, 2018 and conducted in general accordance with the CMP.

2.1 Groundwater Measurements and Elevations

Groundwater levels were measured prior to pumping and sampling wells so as not to influence the relatively flat groundwater gradient at the Site. Groundwater measurements were collected from 11 site wells as listed in Table 2 of the CMP. Wells that have had historic measurable sheen, or historic high concentrations of indicator substances, were measured for the presence of sheen using an oil-water interface probe. The presence of a sheen was possibly indicated in five (5) wells for the Tidewater Site (AR-1, AR-7, AR-12, MW-7 and MW-8). Sheen thicknesses were measured at less than a hundredth of a foot in all wells were a sheen was possibly detected.

Groundwater levels were measured from the top of casing of each well. Groundwater measurements, including measurements for sheen, are provided in Table 1. Groundwater measurements were recorded on the groundwater field form, and well sample forms in Appendix A. Depths to water for all measured wells at the site ranged from 77.80 feet below ground surface (bgs) in MW-4 to 82.78 feet bgs in MW-7. Based on depth to water measurements, groundwater elevations were calculated and are shown in Table 1. Groundwater elevations at the site ranged from 344.47 feet above mean seal level (AMSL) in MW-7 to 344.59 feet AMSL in AR-8. The groundwater gradient for the site is flat, with only a 0.12 foot variation between all measured wells. These groundwater elevations are consistent with historical measurements and groundwater elevations and continue to support the inferred groundwater flow direction to the south.

Note that groundwater elevations are calculated from field depth to water measurements and surveyed top of well casing data. In 2010, a survey was performed for the wells at the site. Based on the 2010 survey, it has been determined that the survey data for AR-1 is incorrect so no groundwater elevation can be calculated. The field measured depth to water for AR-1 for the May 2018 event is consistent with historic depth to water readings. Well AR-1 will require field survey to determine the correct well head elevation so groundwater elevations can be calculated for subsequent monitoring events.

2.2 Groundwater Monitoring

After groundwater levels were measured, groundwater samples were collected from the six wells of the CMP network (Table 2 of the CMP). Groundwater samples were collected using a 2-inch diameter portable submersible pump operated by direct current (DC) power (car battery) with disposable polyethylene tubing. Prior to use, and between each well, the submersible pump was decontaminated using a phosphate-free detergent and rinsed with de-ionized water.

Wells were sampled in order, starting with the cleanest, and finishing with the wells with historically higher concentrations of indicator substances. Wells sampled for the 2018 annual sampling event are listed in Table 2 of the CMP and includes wells AR-4, AR-8, AR-11, MW-4, MW-6 and MW-8.

Well sampling was performed in accordance with the SAP using low-flow sampling techniques. Field parameters, including depth to water measurements, were recorded on field forms for each well and are summarized on Table 1. Well Sampling Forms are provided in Appendix A of this report. When stabilization of field parameters was indicated over three consecutive 5-minute intervals, sampling occurred.

Groundwater samples were collected in laboratory-provided sample containers. Ferrous Iron field measurements were collected during groundwater collection activities and recorded on the Well Sampling Forms (Appendix A) and are summarized in Table 2.

As per the Quality Assurance Project Plan (QAPP) (Appendix B of the CMP), field duplicates (FDs), matrix spike/matrix spike duplicate (MS/MSDs), and equipment blank (EBs) were collected for quality control and verification of field and laboratory procedures. A FD sample was collected from AR-8, and a MS/MSD sample was collected from AR-4.

Purge water was collected during sampling activities, contained, and labeled in a 55-gallon drum at the site within a secured section of the site, pending characterization by groundwater results and disposal by Tidewater.

3.0 Results

Groundwater samples were submitted to Anatek Laboratories in Spokane (Anatek), Washington on May 2, 2018 for analysis. Wells were analyzed for the parameters listed in Table 2 of the CMP.

3.1 Analytical Results

Groundwater results for indicator substances for the May 2018 monitoring event are listed for each well below. Analytical results are provided in Table 2. Analytical reports are provided in Appendix B.

- AR-11 – No indicator substances were detected above laboratory method detection limits (MDL). AR-11 is considered the upgradient well for the site and has not recorded detects of indicator substances.
- MW-4 – No indicator substances were detected above laboratory method detection limits (MDL). MW-4 is considered the down-gradient well for the site and does not have historic detects of indicator substances.
- MW-6 – Well MW-6 is considered a down/cross-gradient well for the site. No indicator substances were detected in MW-6 for the May 2018 event. No indicator substances have historically been detected in MW-6.
- AR-4 – BTEX, and TPH-Gx were detected for May 2018. Benzene was detected at 141 micrograms per liter (µg/L), exceeding the Model Toxics Control Act (MTCA) cleanup level of 5 µg/L. Toluene and ethylbenzene were detected in AR-4 at 15.4 µg/L and 280 µg/L, respectively, but did not exceed MTCA Cleanup levels. Total xylenes exceeded cleanup levels at 5,450 µg/L. Gasoline (TPH-G) was detected at 28,100 µg/L. The cleanup level for TPH-G is 800 µg/L.
- AR-8 – Ethylbenzene, total xylenes, and TPH-G were all detected above laboratory MDLs, but only TPH-G exceeded MTCA Cleanup levels at 4,970 µg/L.
- MW-8 – Only toluene and TPH-G was detected above MDLs in MW-8. TPH-G exceeded the MTCA Cleanup Level of 800 µg/L with a concentration of 3,450 µg/L.

Additionally, manganese, sulfate, nitrate, methane and ferrous iron were analyzed to determine if NA processes are still occurring at the site. Natural attenuation analytes are provided in Table 2. A short summary of NA parameters is below:

- Manganese – Manganese was detected in wells AR-11, MW-4 and MW-6 at 0.002 milligrams per liter (mg/L), 0.041 mg/L, and 0.008 mg/L, respectively. Manganese concentrations were higher in wells AR-4, AR-8, and MW-8 at 0.268 mg/L, 1.34 mg/L, and 2.1 mg/L, respectively, and are elevated within the area of groundwater concentrations of indicator substances.
- Sulfate – Sulfate concentrations ranged from 102 mg/L to 109 mg/L for wells AR-11, MW-4, and MW-6. Concentrations of sulfate were detected at 39.9 mg/L, 36.9 mg/L, and 84.1 mg/L in wells AR-4, AR-8, and MW-8, respectively. Sulfate concentrations are lower within wells containing indicator substances when compared with sulfate concentrations in wells without detected indicator substances.
- Nitrate – Concentrations of nitrate ranged from 28.5 mg/L to 25.3 mg/L for wells AR-11, MW-4, and MW-6. Concentrations of nitrate were detected at 20.5 mg/L, 1.44 mg/L, and 5.09 mg/L in wells MW-8, AR-8, and AR-4, respectively, and are lower than the wells at site that do not contain indicator substances. The groundwater at the site has elevated background concentrations of nitrate.

Biodegradation processes associated with natural attenuation have been shown to reduce nitrates as well as petroleum compounds.

- Methane – methane was not detected in wells other than AR-4 at a concentration of 814 µg/L, elevated in the highest groundwater concentrations of the indicator substances.

3.2 Quality Assurance Summary

A review of the laboratory data reports indicated two issues that were out of compliance of our approved sampling and handling procedures as described in the SAP and QAPP.

- The temperature for the cooler shipped by the primary analytical laboratory (Anatek) to a subcontracted laboratory to perform the RSK-175 (methane) analysis was measured at 14.1 degrees Celsius (C).

  Communication with the subcontracted laboratory indicate that the cooler was not adequately packed with ice by Anatek prior to shipment and resulted in warmer temperature. The laboratory chemist indicated no impact to data quality is anticipated for the methane analysis.

- Bubbles were observed in some methane sample bottles by the subcontract laboratory during receipt of samples from the analytical laboratory.

  Small bubbles were observed in three bottles containing samples for methane analysis by the subcontracted laboratory. A total of three (3) bottles are submitted for each methane sample. The laboratory's procedure is to not perform an analysis on a sample bottle that contains bubbles. If bubbles are present in all three bottles submitted for an analysis, the bottle with the smallest bubbles will be analyzed, and appropriately noted in the report. Jacobs confirmed that no methane samples were analyzed that contained bubbles.

The analytical results indicate that all laboratory quality control requirements were met for the analyses performed. For both the fuel volatiles (BTEX) and petroleum hydrocarbon (TPH-G and TPH-D) analyses, laboratory performance criteria for calibration, precision (as measured by laboratory duplicate samples), and accuracy (as measured by spike and surrogate recovery and laboratory control sample analysis) were met. The relative percent difference (RPD) for the field duplicate sample collected at AR-8 was within acceptable limits for all analytes. No analytes were detected for the equipment blank.

3.3 Water Quality and Field Parameters

During groundwater sampling, field parameters were recorded to provide additional details of water quality. Dissolved oxygen (DO), pH, and oxidation-reduction potential (ORP) were recorded and provide additional data as to if biodegradation processes are occurring. Negative ORP field values, which indicate the potential of reducing conditions were recorded in wells AR-4, AR-8, and MW-8. Low DO readings, which indicate increasing anaerobic conditions, were recorded in wells AR-4, AR-8, and MW-8. Field parameters are recorded on the well sampling field sheets in Appendix A. pH readings ranged from 7.24 (AR-4) to 7.68 (AR-11) with wells AR-4 (7.24), AR-8 (7.35) and MW-8 (7.37) showing slightly lower pH readings compared to the other wells.

During sampling, ferrous iron was measured using a field kit. Field ferrous iron readings were only detected in wells AR-4, AR-8, and MW-8 at 1.5 µg/L, 1.0 µg/L, and 1.0 µg/L, respectively.

4.0 Conclusions and Recommendations

4.1 Conclusions

Jacobs performed the first found of annual groundwater monitoring under the recently implemented CMP on May 1, 2018. The previous monitoring event for the Tidewater site conducted by Jacobs (CH2M) was performed in May 2014. Water levels were measured to determine groundwater elevations (Table 1), followed by sampling activities. Field parameters were collected while following low-flow sampling procedures. Once groundwater parameters stabilized, groundwater samples were collected and submitted to Anatek Laboratories in Spokane, Washington for analysis.

No indicator substances were detected in wells AR-11, MW-4, and MW-6 for the May 2018 event, providing data to support that indicator substances continue to be contained and not migrating offsite.

AR-4 has the most MTCA Cleanup Level exceedance for the site. Benzene, total xylenes, and TPH-G exceeded cleanup levels. Benzene was only detected in AR-4 and has decreased to the lowest concentration since June 2003. Historic groundwater data for indicator substances is provide in Appendix C. Total xylenes and TPH-G concentrations were both lower for May 2018 from the last sampling event in May 2014. Time-series plots for benzene are provided in Appendix D. BTEX constituents did not exceed cleanup levels in the other compliance wells monitored in 2018.

After an increase in TPH-G concentrations in 2014, TPH-G concentrations have decreased for May 2018. TPH-G concentrations for MW-8 are the lowest observed since monitoring began in 2001. Time-series plots for TPH-G are provided in Appendix D.

Field parameter data indicate that wells with historic, and existing, indicator substances detections showed negative ORP values (indicating potential for reducing conditions), lower DO readings (indicating presence of anaerobic conditions), and lower pH.

Natural attenuation constituents indicate that biodegradation of petroleum indicator substances is occurring at the site. Manganese concentrations were much higher in wells with indicator substances as opposed to wells that have not had detections. Conversely, sulfate and nitrate concentrations were noticeably lower in wells AR-4, AR-8, and MW-8, than wells that have been historically non-detect for indicator substances. Methane was only detected in MW-8 in an area of highest elevated groundwater concentrations of indicator parameters and is indicative of biodegradation processes.

The results of the May 2018 sampling event continue to support the conclusions presented in the September 2011 Remedial Investigation/Feasibility Study Report (CH2M/URS, 2011) as follows:

- Petroleum hydrocarbons source has been addressed through remedial activities.
- Residual dissolved-phase petroleum hydrocarbons remain on site within localized areas of the former free product plume. These areas include AR-1, AR-4, and AR-7.
- The lateral extent of the dissolved-phase plume has generally continued to decrease since active remedial actions were discontinued.
- Measured concentrations of field parameters and analytical results of natural attenuation constituents, as well as the decreased lateral extent and concentration of petroleum hydrocarbons in sampled wells suggest that biodegradation processes are continuing at the Tidewater release site. Biodegradation and associated natural attenuation processes have contributed to the observed reduction in petroleum

concentrations. These processes are expected to continue, resulting in continued decreases in petroleum concentrations.

4.2 Recommendations

The next round of annual groundwater monitoring will occur in May 2019.

CH2M will perform a field survey of well AR-1 during the next groundwater monitoring event in 2019.

5.0 References

CH2M/URS 2011. *Remedial Investigation/Feasibility Study Report for the NWTC Pasco Terminal, Pasco, Washington.* September 29, 2011.

CH2M 2017. *Compliance Monitoring Plan for The Tidewater Fuel Leak Site, Pasco*. October 3.

Tables

Table 1. Groundwater Elevations and Field Parameter Readings

Tidewater Fuel Leak Site Compliance Monitoring Program

Well	Date Sampled	Reference Point Elevation (ft)	Depth to Water (ft btc)	Groundwater Elevation (ft)	Temp (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Conductivity (mS/cm)	Turbidity (NTU)	Comments
AR-4	5/1/2018	426.47	81.93	344.54	21.6	7.24	0.41	-134	0.871	12	--
AR-8	5/1/2018	423.02	78.43	344.59	20.3	7.35	0.41	-130	0.780	7.0	Also collected Field Duplicate
AR-11	5/1/2018	422.62	78.09	344.53	19.4	7.68	7.21	162	0.844	3.4	--
MW-4	5/1/2018	422.29	77.80	344.49	20.4	7.62	5.83	82	0.819	118	Also collected MS/MSD Lab QC Sample
MW-6	5/1/2018	422.50	77.98	344.52	19.2	7.67	7.11	155	0.808	13	--
MW-8	5/1/2018	427.15	82.61	344.54	19.2	7.37	4.40	-34	0.784	22	--
Water Levels Only											
AR-1	5/1/2018	N/A [1]	79.38	--	--	--	--	--	--	--	--
AR-7	5/1/2018	425.44	80.92	344.52	--	--	--	--	--	--	--
AR-12	5/1/2018	425.50	81.02	344.48	--	--	--	--	--	--	--
MW-5	5/1/2018	425.02	80.51	344.51	--	--	--	--	--	--	--
MW-7	5/1/2018	427.25	82.78	344.47	--	--	--	--	--	--	--

Notes:

1 - Reference Point Elevation not available - Groundwater elevation cannot be calculated

" -- " = Not applicable, not available, and/or not measured.

Reference point elevation is top of PVC casing; all elevations are in feet above mean sea level (NAVD88).

Field parameter readings represent final stabilized readings obtained during low-flow purge immediately prior to collection of water-quality sample

ft = feet

ft btc = feet below top of casing

C = degrees celcius

mg/L = milligrams per liter

mV = millivolts

uS/cm = microsiemens per centimeter

NTU = Nephelometric Turbidity Units

Table 2. Groundwater Quality Data

Tidewater Fuel Leak Site Compliance Monitoring Program

Well				**AR-11**	**MW-4**	**MW-6**	**MW-8**	**AR-8**	**FD (AR-8)**	**AR-4**
Sample ID				AR11-1805	MW4-1805	MW6-1805	MW8-1805	AR8-1805	FD-1805	AR4-1805
Sample Date				5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018
Analyte	**Method**	**Units**	**MTCA Cleanup Level**							
Field Parameters										
pH	Field Probe	units	-	7.68	7.62	7.67	7.37	7.35	7.35	7.24
Temperature	Field Probe	°C	-	19.4	20.4	19.2	19.2	20.3	20.3	21.6
Spec. Conductance	Field Probe	mS/cm	-	0.844	0.819	0.808	0.784	0.78	0.78	0.871
Dissolved Oxygen	Field Probe	mg/L	-	7.21	5.83	7.11	4.4	0.41	0.41	0.41
Oxygen Red. Potential	Field Probe	mV	-	162	82	155	-34	-130	-130	-134
Turbidity	Field Probe	NTU	-	3.4	118.0	13.2	22.0	7.0	7.0	11.6
Ferrous Iron	Field Screen	mg/L	-	0	0	0	0	1.0	1.0	1.5
Indicator Substances										
Benzene	EPA 8260C	ug/L	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***141***
Toluene	EPA 8260C	ug/L	320	<0.5	<0.5	<0.5	*3.8*	*0.9*	*0.94*	15.4
Ethylbenzene	EPA 8260C	ug/L	400	<0.5	<0.5	<0.5	<0.5	*145*	*150*	*280*
Total Xylenes	EPA 8260C	ug/L	1,600	<0.5	<0.5	<0.5	<0.5	*200*	*223*	***5,450***
TPH-Gasoline Range	NWTPH-Gx	ug/L	800	<100	<100	<100	***3,540***	***4,970***	***4,980***	***28,100***
TPH-Diesel Range	NWTPH-Dx	ug/L	500	<50	<50	<50	<50	<50	<50	<50
TPH-Heavy Range	NWTPH-Dx	ug/L	500	<250	<250	<250	<250	<250	<250	<250
MNA Parameters										
Manganese	EPA 200.8	mg/l	-	0.002	0.041	0.008	0.268	1.34	1.35	2.1
Sulfate	EPA 300.0	mg/l	-	109	105	102	84.1	36.9	39.1	39.9
Nitrate	EPA 300.0	mg/l	-	28.5	25.9	25.3	20.5	1.44	2.09	5.09
Methane	RSK-175 MOD	ug/L	-	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	814
Ferrous Iron	SM-3500	mg/l	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Notes:

Field parameters represent final stabilized readings obtained during sampling immediately prior to sample collection.

BOLD - Exceeds MTCA Cleanup Level

Non-detect values reported as "<" with the laboratory method detection limit.

°C = degrees celcius

mg/L = milligrams per liter

mV = millivolts

mS/cm = millisiemens per centimeter

NTU = Nephelometric Turbidity Units

Figures

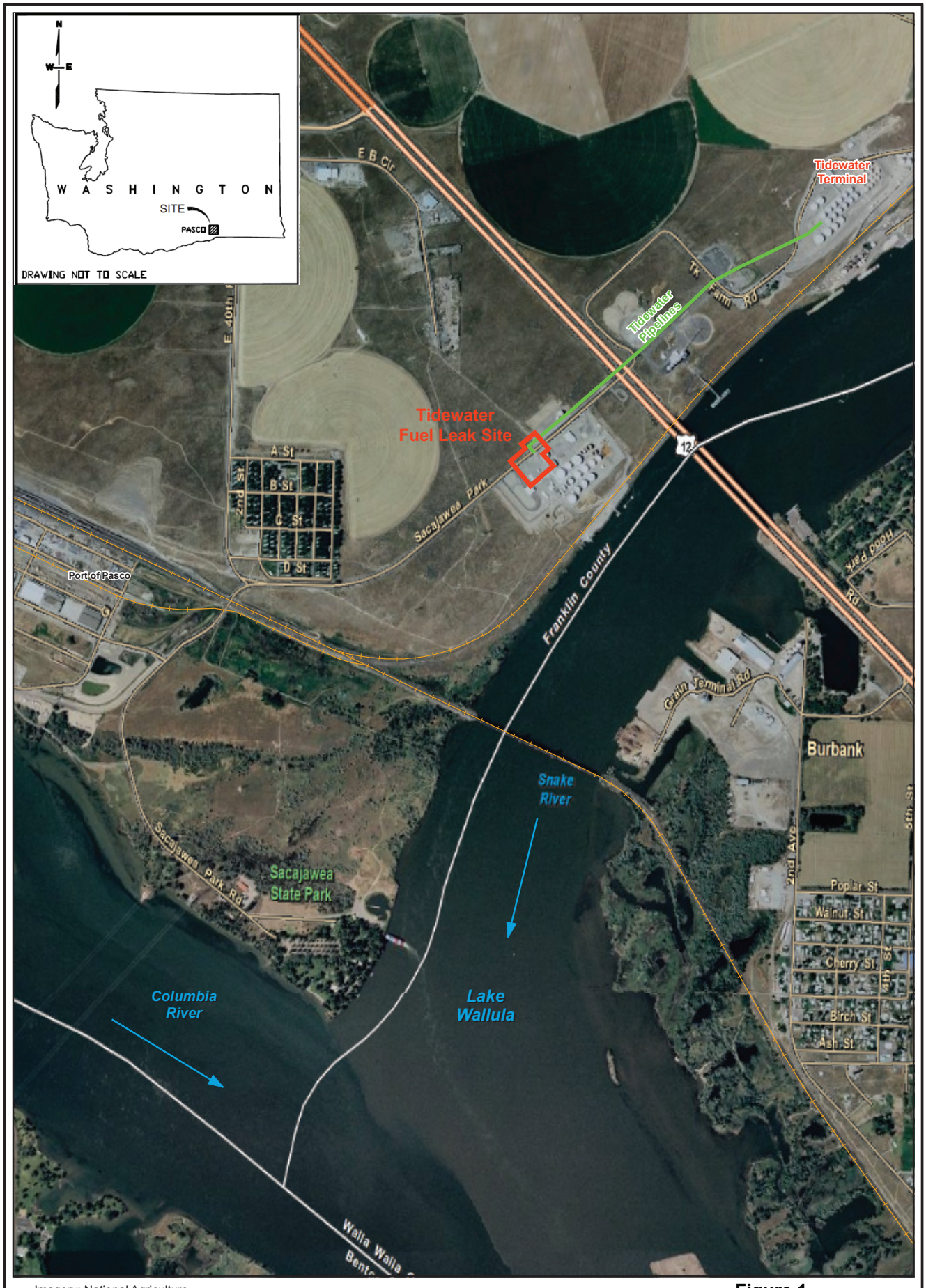

Figure 1
Site Location
Compliance Monitoring
Tidewater Fuel Leak Site
Pasco, WA

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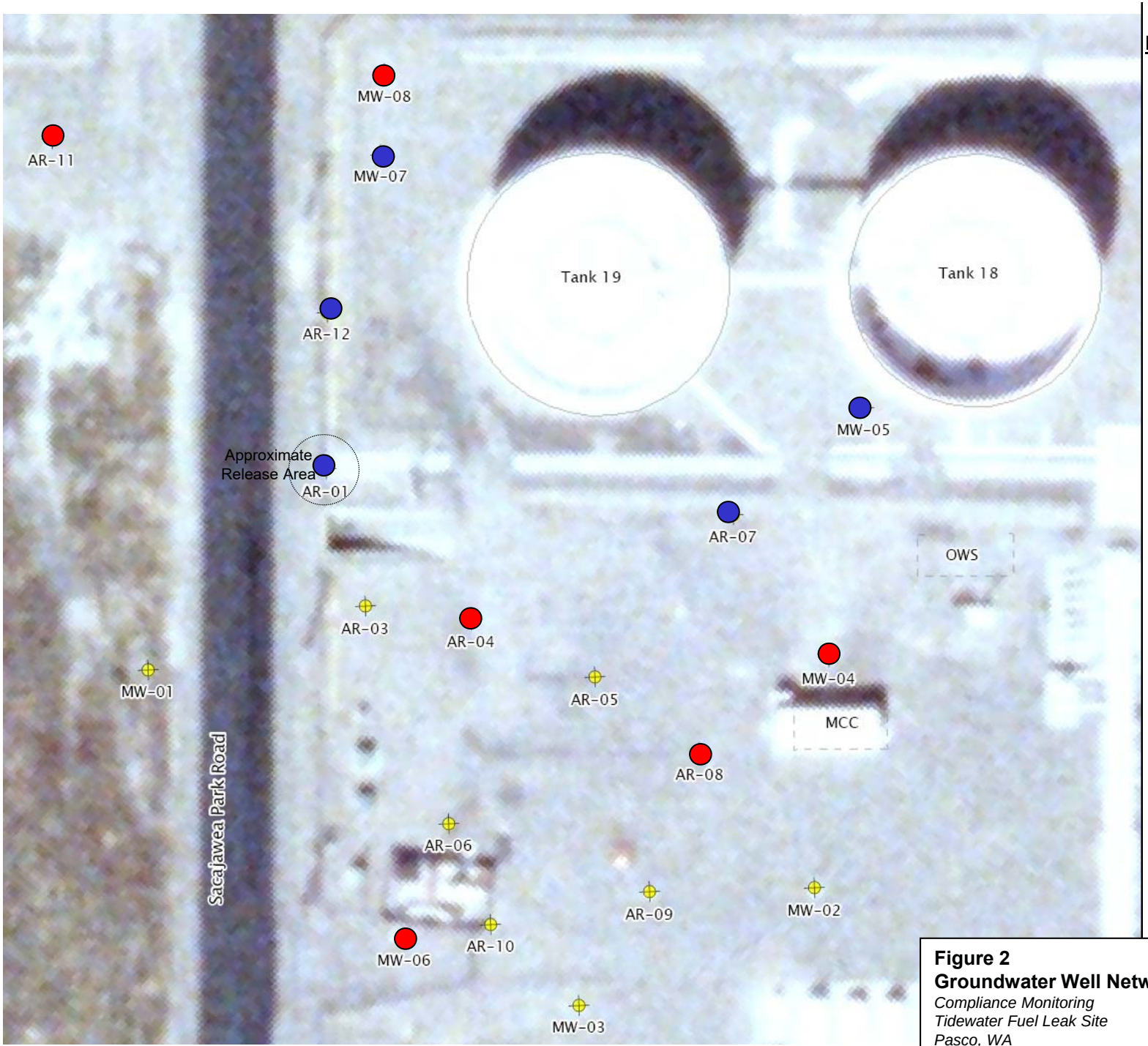
K:\ELM\25012081_CPL_Pasco_2009\GIS\MXD\Site_Aerial.mxd



LEGEND

- Compliance Monitoring Well
- Water Level Well
- Existing Tidewater Well

North

0 inch 1
0 feet 90

Figure 2
Groundwater Well Network
Compliance Monitoring
Tidewater Fuel Leak Site
Pasco, WA

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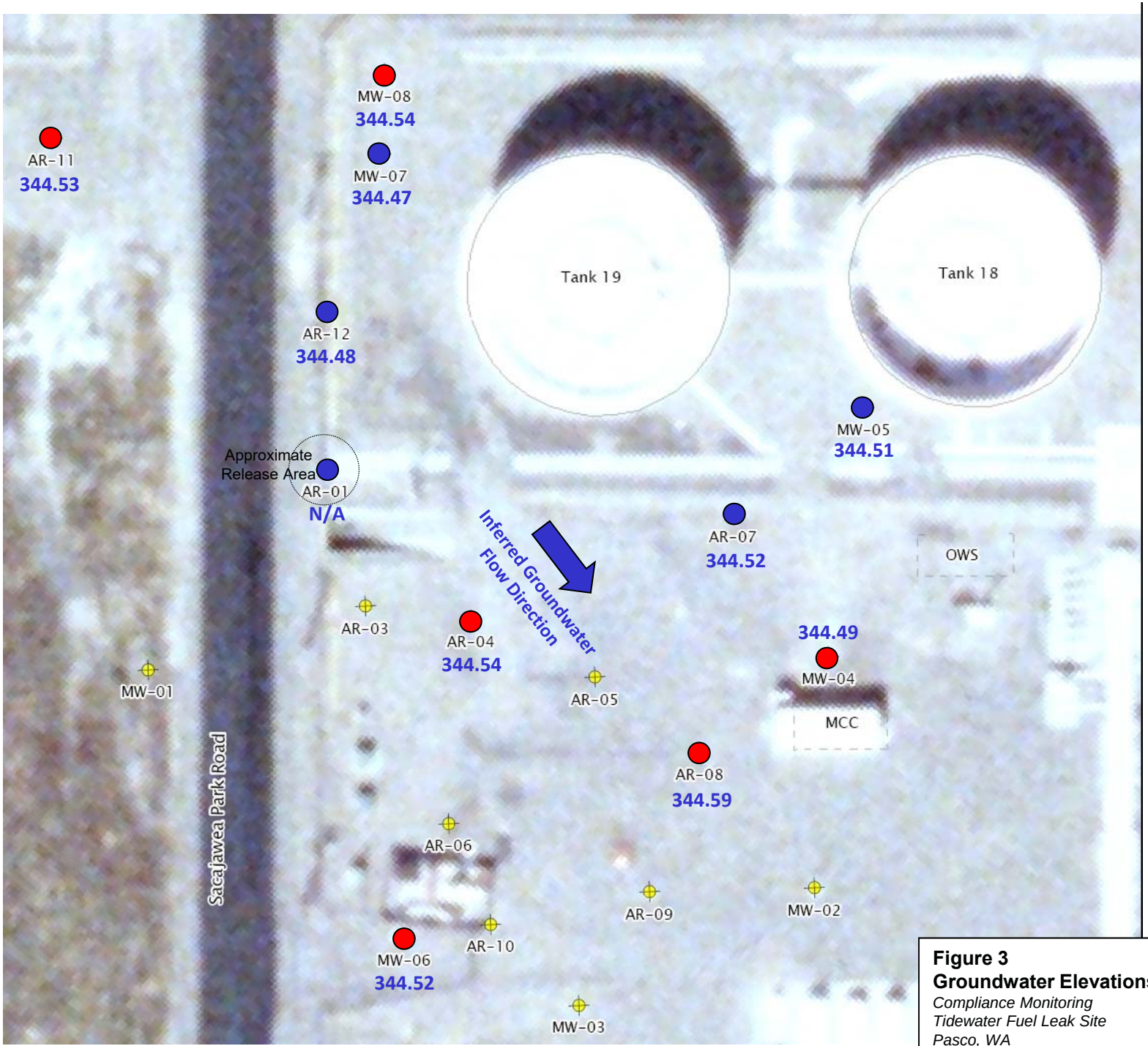

LEGEND

- Compliance Monitoring Well
- Water Level Well
- Existing Tidewater Well

344.53 Groundwater Elevation in Feet Above Mean Sea Level (amsl)

N/A Groundwater Elevation Not Available

µg/L – micrograms per liter
BOLD = MCL exceedance
ND = Analyte not detected

B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes
TPH-G = Gasoline
TPH-D = Diesel

North

0 inch 1
0 feet 90

Figure 3
Groundwater Elevations - May 2018
Compliance Monitoring
Tidewater Fuel Leak Site
Pasco, WA

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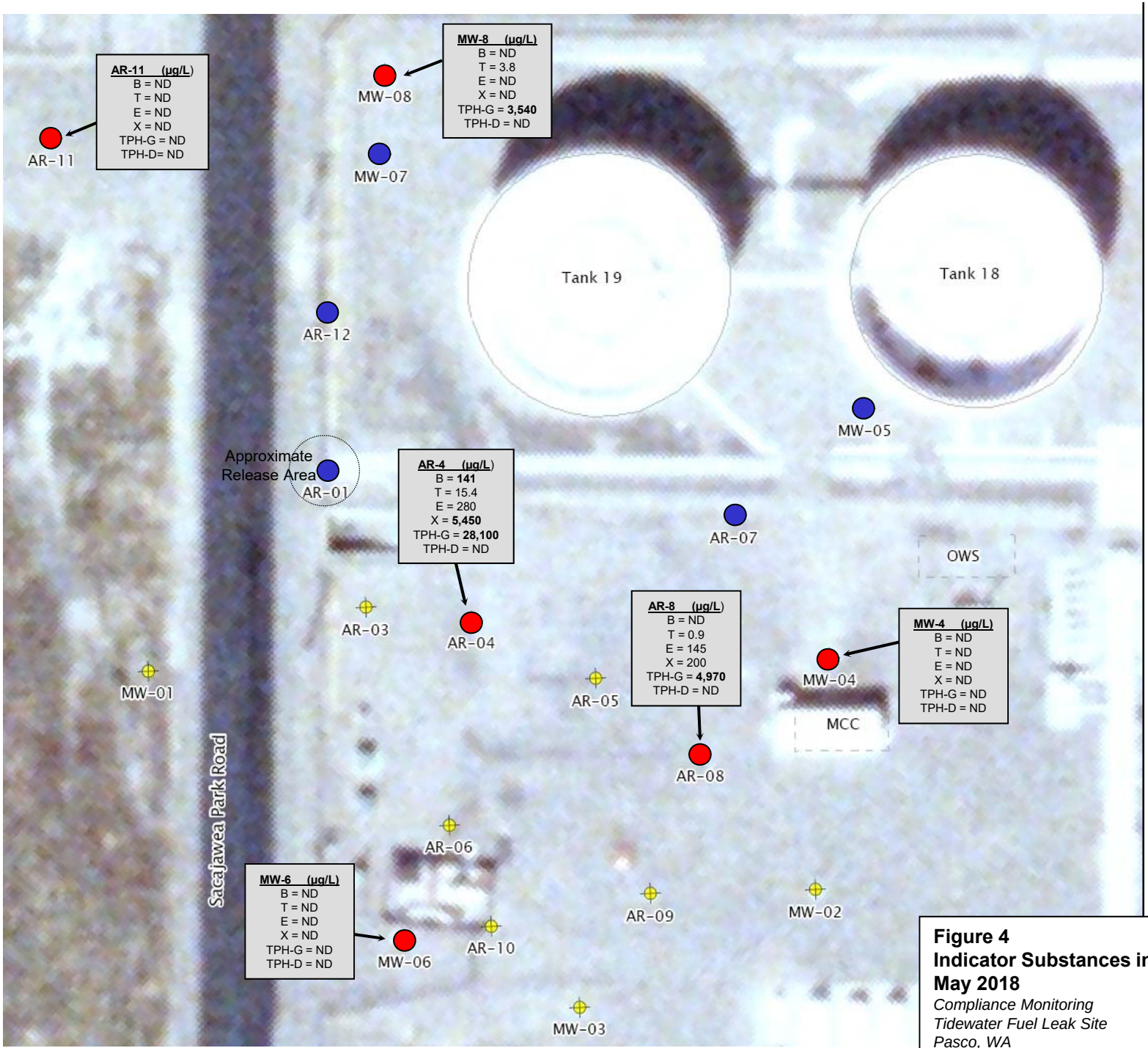

LEGEND

- Compliance Monitoring Well
- Water Level Well
- Existing Tidewater Well

µg/L – micrograms per liter
BOLD = MCL exceedance
ND = Analyte not detected

B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes
TPH-G = Gasoline
TPH-D = Diesel

North

0 inch 1
0 feet 90

Figure 4
Indicator Substances in Groundwater
May 2018
Compliance Monitoring
Tidewater Fuel Leak Site
Pasco, WA

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Appendix A
Field Forms

Tidewater Monitoring Wells - Screen and Field Measurements

CH2MHILL

Field Team: GREER | BROWN

Date: 5-1-18

Well	Order	As-built TD (bgs)	Screen Interval (bgs)	Well in Good Condition?	Sheen?	Depth to Free Product	DTW (btc)	TD (btc)	FP thick	WL Elev.	Screen Mid-point	Notes/Comments
AR-11	1	88	73 - 88	OK	NO	—	78.09	86.76				
MW-4	3	90	75 - 90	OK	NO	—	77.80	89.27				NO BOLTS
MW-6	4	90	75 - 90	OK	NO	-	77.98	88.36				
MW-5	8	90	75 - 90	OK	NO	-	80.51	91.32				
AR-8	12	88	73 - 88	OK	NO	-	78.43					SEE NOTE
AR-4	13	88	73 - 88	OK	NO	—	81.93	90.26				NOT SOFT BOTTOM
MW-8	14	90	75 - 90	OK	POSSIBLY		82.69	~~83.40~~ 92.80		-	-	SOFT BOTTOM
MW-7	15	90	75 - 90	OK	POSSIBLY	—	82.78	92.12				SOFT BOTTOM
AR-12	16	88	73 - 88	OK	POSSIBLY	81.01	81.02 ~~DRY~~ JB	81.40				
AR-7	17	88	73 - 88	OK	POSSIBLY	80.92	80.92	90.16				SOFT BOTTOM, SLIGHT PETROLEUM ODOR
AR-1	?	88	73 - 88	OK	POSSIBLY	79.37	79.38	86.45	0.01			SOFT BOTTOM SLIGHT ODOR

Notes WELL NEAR AR1 - DRY. TD 70.45'

AR-8 - WELL IS FLUSH TO GRAVEL SURFACE. SPONGE/FILTER MISSING IN WELL

Shaded = Free product/sheen in well (2006)

Groundwater Purging and Sampling Form

SITE: Tidewater Fuel Leak Site Project Number 703907.18.01 **Well ID:** AR 11

Field Team: GREER/BROWN Date: 5-1-18

Weather/Temp: MOSTLY SUNNY 60° BREEZY Arrival Time to Well: 1050

Purge Method: ☒ Submersible ☐ Peristaltic ☐ Grab ☐ Other: _____ **Initial DTW (ft btc):** 78.09

Notes: _____ FP Depth: — Total Well Depth (ft btc): 86.76

Field Parameters									
Time [1]	DTW [2]	Purge Vol. (gal)	pH	Sp. Cond. (mS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
1108	*Begin Pumping*								
1110	78.06	0.8	7.44	0.844	8.71	18.1	143	991	VERY TURBID
1115	78.08	1.5	7.51	0.849	8.31	18.3	144	927	
1120	78.07	2.0	7.56	0.836	6.28	19.3	145	1000	VERY TURBID
1125	78.03	2.2	7.48	0.838	7.18	19.1	156	988	
1130	78.03	2.4	7.51	0.848	7.31	19.2	155	549	
1135	78.03	2.6	7.58	0.844	7.03	19.6	152	478	
1140	78.03	2.8	7.69	0.845	7.32	19.27	148	254	
1145	78.03	3.0	7.71	0.846	7.36	19.31	149	119	
1150	78.03	3.2	7.79	0.848	7.46	19.0	145	54.6	
1155	78.03	3.4	7.81	0.849	7.43	18.6	145	16.2	
1200	78.03	3.6	7.71	0.844	6.64	19.2	153	11.2	
1205	78.03	3.8	7.69	0.846	7.28	18.9	160	5.2	
1210	78.03	4.0	7.68	0.849	7.25	19.4	161	4.9	
1215	78.03	4.2	7.68	0.844	7.21	19.4	162	3.4	
Stabilization Criteria [3]	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% [4]	-

[1] Collect field parameters in consistent 3-5 minute intervals for Low-Flow method [2] DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

[3] Stabilization achieved once field parameters stabilize for 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

[4] For turbidity readings > 10 NTUs [5] Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: AR11 1805 **Sample Time:** 12:15

Analysis:
- ☒ BTEX (8260B)
- ☒ NWTPH-Gx
- ☒ NWTPH-Dx
- ☒ NWTPH-Rx
- ☒ SO4, NO3 (300.0)
- ☒ Manganese (6010B)
- ☒ Methane (RSK-175)
- ☒ Ferrous Iron (SM3500)
- ☐ _____
- ☐ _____

Fe2+ Field Screen Result: 0

QC SAMPLE : ☐ *Field Duplicate* ☐ *MS/MSD* ☐ *EQ Rinsate Blank* TOTAL PURGED (GAL): _____

QC Sample ID : _____ *QC Sample Time:* _____

Comments: _____

Groundwater Purging and Sampling Form

SITE: Tidewater Fuel Leak Site Project Number 703907.18.01 **Well ID:** MW6

Field Team: GREER/BROWN Date: 5-1-18

Weather/Temp: MOSTLY SUNNY 70° BREEZY Arrival Time to Well: 12:40

Purge Method: ☒ Submersible ☐ Peristaltic ☐ Grab ☐ Other: _____ **Initial DTW (ft btc):** 77.98

Notes: _____ FP Depth: _____ Total Well Depth (ft btc): 88.36

Field Parameters									
Time [1]	DTW [2]	Purge Vol. (gal)	pH	Sp. Cond. (mS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
12:55	*Begin Pumping*								
13:00	77.94	0.1	7.82	0.777	8.13	20.70	130	85.8	Slightly cloudy/gray
13:05	77.94	0.4	7.87	0.805	7.41	19.0	129	77.5	
13:10	77.94	1.0	7.71	0.808	7.37	19.0	142	43.9	
13:15	77.94	2.0	7.71	0.808	7.34	19.1	146	26.7	
13:20	77.94	2.5	7.69	0.808	7.32	19.0	150	19.5	
13:25	77.94	3.0	7.68	0.810	7.27	19.0	152	15.8	
13:30	77.94	3.5	7.67	0.808	7.11	19.2	155	13.2	
~~13:35~~									
Stabilization Criteria [3]	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% [4]	-

[1] Collect field parameters in consistent 3-5 minute intervals for Low-Flow method [2] DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method
[3] Stabilization achieved once field parameters stabilize for 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO
[4] For turbidity readings > 10 NTUs [5] Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: MW6-1805 **Sample Time:** 13:35

Analysis:
- ☒ BTEX (8260B)
- ☒ NWTPH-Gx
- ☒ NWTPH-Dx
- ☒ NWTPH-Rx
- ☒ SO4, NO3 (300.0)
- ☒ Manganese (6010B)
- ☒ Methane (RSK-175)
- ☒ Ferrous Iron (SM3500)
- ☐ _____
- ☐ _____

Fe2+ Field Screen Result: 0

QC SAMPLE : ☐ *Field Duplicate* ☐ *MS/MSD* ☐ *EQ Rinsate Blank* TOTAL PURGED (GAL): _____

QC Sample ID : _____ *QC Sample Time:* _____

Comments: _____

Groundwater Purging and Sampling Form

SITE: Tidewater Fuel Leak Site Project Number 703907.18.01 **Well ID:** MW 4

Field Team: GREER / BROWN Date: 5-1-18

Weather/Temp: CLEAR, 70° Arrival Time to Well: 1405

Purge Method: ☒ Submersible ☐ Peristaltic ☐ Grab ☐ Other: _____ **Initial DTW (ft btc):** 77.80

Notes: FP Depth: N/A Total Well Depth (ft btc): 89.27

Field Parameters									
Time [1]	DTW [2]	Purge Vol. (gal)	pH	Sp. Cond. (mS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
1420	*Begin Pumping*								
1426	77.78	0.5	7.72	0.809	6.90	22.4	128	526	WATER SLIGHTLY TURBID
1431	77.79	0.8	7.64	0.813	6.00	20.5	115	261	GETTING CLEARER
1436	77.78	2.0	7.64	0.820	5.97	20.3	111	188	
1441	77.79	2.5	7.64	0.820	5.88	20.3	112	133	MOSTLY CLEAR
1446	77.79	3.0	7.62	0.819	5.83	20.4	82	118	CLEAR
Stabilization Criteria [3]	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% [4]	-

[1] Collect field parameters in consistent 3-5 minute intervals for Low-Flow method [2] DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

[3] Stabilization achieved once field parameters stabilize for 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

[4] For turbidity readings > 10 NTUs [5] Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: MW4-1805 **Sample Time:** 1450

Analysis:
- ☒ BTEX (8260B)
- ☒ NWTPH-Gx
- ☑ NWTPH-Dx
- ☒ NWTPH-Rx
- ☒ SO4, NO3 (300.0)
- ☒ Manganese (6010B)
- ☑ Methane (RSK-175)
- ☒ Ferrous Iron (SM3500)
- ☐ _____
- ☐ _____

Fe2+ Field Screen Result: _____

QC SAMPLE : ☐ *Field Duplicate* ☒ *MS/MSD* ☐ *EQ Rinsate Blank* TOTAL PURGED (GAL): _____

QC Sample ID : _____ *QC Sample Time:* _____

Comments: _____

Groundwater Purging and Sampling Form

SITE: Tidewater Fuel Leak Site Project Number 703907.18.01 **Well ID:** AR8

Field Team: GREER/BROWN Date: 5-1-18

Weather/Temp: CLEAR 75° Arrival Time to Well: 15:30

Purge Method: ☒ Submersible ☐ Peristaltic ☐ Grab ☐ Other: _____ **Initial DTW (ft btc):** 78.43

Notes: _____ FP Depth: _____ Total Well Depth (ft btc): 83.88

Field Parameters									
Time [1]	DTW [2]	Purge Vol. (gal)	pH	Sp. Cond. (mS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
15:38	*Begin Pumping*								
15:44	78.47	0.3	7.71	0.748	3.57	22.4	-116	126	
15:49	78.51	0.5	7.47	0.767	2.26	20.1	-141	63.4	POSSIBLE PETRO ODOR-
1554	78.51	0.7	7.44	0.773	0.95	20.2	-142	28.5	
1559	78.51	2.0	7.42	0.775	1.05	20.2	-138	11.0	
16:04	78.51	2.4	7.39	0.776	0.41	20.3	-135	8.2	
16:09	78.51	3.0	7.37	0.778	0.18	20.4	-132	8.3	
16:14	78.51	3.5	7.35	0.780	0.41	20.3	-130	7.0	
Stabilization Criteria [3]	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% [4]	-

[1] Collect field parameters in consistent 3-5 minute intervals for Low-Flow method [2] DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

[3] Stabilization achieved once field parameters stabilize for 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

[4] For turbidity readings > 10 NTUs [5] Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: AR8-1805 **Sample Time:** 16:15

Analysis:
- ☒ BTEX (8260B)
- ☒ NWTPH-Gx
- ☒ NWTPH-Dx
- ☒ NWTPH-Rx
- ☒ SO4, NO3 (300.0)
- ☒ Manganese (6010B)
- ☒ Methane (RSK-175)
- ☒ Ferrous Iron (SM3500)
- ☐ _____
- ☐ _____

Fe2+ Field Screen Result: 1.0

QC SAMPLE : ☒ *Field Duplicate* ☐ *MS/MSD* ☐ *EQ Rinsate Blank* TOTAL PURGED (GAL): _____

QC Sample ID : FD-1805 *QC Sample Time:* 18:00

Comments: _____

Groundwater Purging and Sampling Form

SITE: Tidewater Fuel Leak Site Project Number 703907.18.01 **Well ID:** AR-4

Field Team: GREER / BROWN Date: 5-1-18

Weather/Temp: SUNNY 75° BREEZY Arrival Time to Well: 16:50

Purge Method: ☒ Submersible ☐ Peristaltic ☐ Grab ☐ Other: _____ **Initial DTW (ft btc):** 81.93

Notes: _____ FP Depth: _____ Total Well Depth (ft btc): 90.26

Field Parameters									
Time [1]	DTW [2]	Purge Vol. (gal)	pH	Sp. Cond. (mS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
16:58	*Begin Pumping*								
17:04	81.93	0.1	7.60	0.845	5.19	22.5	-129	219	water is black
17:09	81.98	0.3	7.29	0.872	3.45	21.2	-116	316	
17:14	81.98	0.5	7.23	0.888	2.85	21.8	-111	378	
17:19	81.98	0.8	7.18	0.897	2.61	21.3	-110	301	
17:24	81.98	1.0	7.13	0.897	3.37	21.5	-114	214	
17:29	81.97	1.3	7.07	0.893	1.83	21.7	-111	122	
17~~26~~ 34	81.98	1.7	7.04	0.891	1.46	21.4	-112	65	
1739	81.98	2.2	7.04	0.885	1.32	21.5	-119	43.0	
1744	81.98	2.8	7.07	0.882	1.05	22.0	-124	32.7	
1749	81.98	3.2	7.09	0.872	0.77	21.6	-127	24.0	
1754	81.98	4.0	7.20	0.877	1.05	21.3	-131	21.6	
1759	81.98	4.5	7.19	0.876	0.60	21.6	-132	15.6	
1804	81.98	4.7	7.24	0.875	0.47	21.7	-135	14.4	
1809	81.98	4.9	7.24	0.871	0.41	21.6	-134	11.6	
Stabilization Criteria [3]	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% [4]	-

[1] Collect field parameters in consistent 3-5 minute intervals for Low-Flow method [2] DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method
[3] Stabilization achieved once field parameters stabilize for 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO
[4] For turbidity readings > 10 NTUs [5] Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: AR4-1805 **Sample Time:** 17:40

Analysis:
- ☒ BTEX (8260B)
- ☒ NWTPH-Gx
- ☒ NWTPH-Dx
- ☒ NWTPH-Rx
- ☑ SO4, NO3 (300.0)
- ☒ Manganese (6010B)
- ☒ Methane (RSK-175)
- ☒ Ferrous Iron (SM3500)
- ☐ _____
- ☐ _____

Fe2+ Field Screen Result: 1.5

QC SAMPLE : ☐ *Field Duplicate* ☐ *MS/MSD* ☐ *EQ Rinsate Blank* TOTAL PURGED (GAL): _____

QC Sample ID : _____ *QC Sample Time:* _____

Comments: _____

Groundwater Purging and Sampling Form

SITE: Tidewater Fuel Leak Site Project Number 703907.18.01 **Well ID:** MW8

Field Team: GREER/BROWN Date: 5-1-18

Weather/Temp: SUNNY 70° BREEZY Arrival Time to Well: 1835

Purge Method: ☒ Submersible ☐ Peristaltic ☐ Grab ☐ Other: _____ **Initial DTW (ft btc):** ~~82.68~~ 82.61

Notes: _____ FP Depth: _____ Total Well Depth (ft btc): 92.80

Field Parameters									
Time [1]	DTW [2]	Purge Vol. (gal)	pH	Sp. Cond. (mS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
18:53	*Begin Pumping*								
18:58	82.62	0.1	7.61	0.708	3.46	21.2	-55	57.5	some sediment at beginning
19:03	82.62	0.2	7.52	0.719	2.57	20.3	-58	64.2	
19:08	82.62	0.4	7.49	0.714	2.74	19.3	-48	65.4	
19:13	82.62	0.6	7.44	0.745	3.95	19.1	-49	47.5	
19:18	82.62	1.0	7.42	0.766	4.17	19.4	-46	40.7	
19:23	82.62	1.5	7.38	0.780	4.22	19.4	-40	31.3	
1928	82.62	2.0	7.37	0.784	4.40	19.2	-34	22.0	
Stabilization Criteria [3]	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% [4]	-

[1] Collect field parameters in consistent 3-5 minute intervals for Low-Flow method [2] DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

[3] Stabilization achieved once field parameters stabilize for 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

[4] For turbidity readings > 10 NTUs [5] Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: MW8-1805 **Sample Time:** 1940

Analysis:
- ☒ BTEX (8260B)
- ☒ NWTPH-Gx
- ☒ NWTPH-Dx
- ☒ NWTPH-Rx
- ☒ SO4, NO3 (300.0)
- ☒ Manganese (6010B)
- ☒ Methane (RSK-175)
- ☒ Ferrous Iron (SM3500)
- ☐ _____
- ☐ _____

Fe2+ Field Screen Result: _____

QC SAMPLE : ☐ *Field Duplicate* ☐ *MS/MSD* ☒ *EQ Rinsate Blank* TOTAL PURGED (GAL): _____

QC Sample ID : EB-1805 QC Sample Time: 2000

Comments: * EQUIPMENT BLANK COLLECTED FOR BTEX, TPH Gx, + TPH Dx AFTER SAMPLING COMPLETED

Appendix B
Laboratory Data Report

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-001
Client Sample ID AR11-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 12:15 PM
Sample Location AR11

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Manganese	0.00233	mg/L	0.001	5/4/2018 3:37:00 PM	KNP	EPA 200.8	
Methane	ND	ug/L	0.65	5/8/2018 2:17:00 PM	SUB	RSK 175 MOD	
NO3/N	28.5	mg/L	0.5	5/2/2018 6:41:00 PM	BAG	EPA 300.0	
Sulfate	109	mg/L	0.5	5/2/2018 6:41:00 PM	BAG	EPA 300.0	
Diesel	ND	mg/L	0.1	5/10/2018 4:24:00 PM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	0.5	5/10/2018 4:24:00 PM	LMD	NWTPHDX	
Gasoline	<0.1	mg/L	0.1	5/2/2018 7:11:00 PM	ARY	NWTPHG	
Benzene	ND	ug/L	0.5	5/3/2018 1:37:00 PM	ARY	EPA 8260C	
Ethylbenzene	ND	ug/L	0.5	5/3/2018 1:37:00 PM	ARY	EPA 8260C	
m+p-Xylene	ND	ug/L	1	5/3/2018 1:37:00 PM	ARY	EPA 8260C	
o-Xylene	ND	ug/L	0.5	5/3/2018 1:37:00 PM	ARY	EPA 8260C	
Toluene	ND	ug/L	0.5	5/3/2018 1:37:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-001

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	108.8	70-130
4-Bromofluorobenzene	EPA 8260C	93.0	70-130
Toluene-d8	EPA 8260C	102.4	70-130
hexacosane	NWTPHDX	79.0	50-150
4-Bromofluorobenzene	NWTPHG	105.0	50-150

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-002
Client Sample ID MW6-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 1:35 PM
Sample Location MW6

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Manganese	0.00799	mg/L	0.001	5/4/2018 3:39:00 PM	KNP	EPA 200.8	
Methane	ND	ug/L	0.65	5/8/2018 5:33:00 PM	SUB	RSK 175 MOD	
NO3/N	25.3	mg/L	0.5	5/3/2018 8:08:00 PM	BAG	EPA 300.0	
Sulfate	102	mg/L	0.5	5/3/2018 8:08:00 PM	BAG	EPA 300.0	
Diesel	ND	mg/L	0.1	5/10/2018 5:20:00 PM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	0.5	5/10/2018 5:20:00 PM	LMD	NWTPHDX	
Gasoline	<0.1	mg/L	0.1	5/2/2018 7:49:00 PM	ARY	NWTPHG	
Benzene	ND	ug/L	0.5	5/3/2108 2:10:00 PM	ARY	EPA 8260C	
Ethylbenzene	ND	ug/L	0.5	5/3/2108 2:10:00 PM	ARY	EPA 8260C	
m+p-Xylene	ND	ug/L	1	5/3/2108 2:10:00 PM	ARY	EPA 8260C	
o-Xylene	ND	ug/L	0.5	5/3/2108 2:10:00 PM	ARY	EPA 8260C	
Toluene	ND	ug/L	0.5	5/3/2108 2:10:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-002

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	112.2	70-130
4-Bromofluorobenzene	EPA 8260C	93.2	70-130
Toluene-d8	EPA 8260C	102.2	70-130
hexacosane	NWTPHDX	84.8	50-150
4-Bromofluorobenzene	NWTPHG	105.0	50-150

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-003
Client Sample ID MW4-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 2:50 PM
Sample Location MW4

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Manganese	0.0412	mg/L	0.001	5/4/2018 3:42:00 PM	KNP	EPA 200.8	
Methane	ND	ug/L	0.65	5/8/2018 2:45:00 PM	SUB	RSK 175 MOD	
NO3/N	25.9	mg/L	0.5	5/3/2018 8:58:00 PM	BAG	EPA 300.0	
Sulfate	105	mg/L	0.5	5/3/2018 8:58:00 PM	BAG	EPA 300.0	
Diesel	ND	mg/L	0.1	5/10/2018 6:15:00 PM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	0.5	5/10/2018 6:15:00 PM	LMD	NWTPHDX	
Gasoline	<0.1	mg/L	0.1	5/2/2018 8:27:00 PM	ARY	NWTPHG	
Benzene	ND	ug/L	0.5	5/3/2018 1:04:00 PM	ARY	EPA 8260C	
Ethylbenzene	ND	ug/L	0.5	5/3/2018 1:04:00 PM	ARY	EPA 8260C	
m+p-Xylene	ND	ug/L	1	5/3/2018 1:04:00 PM	ARY	EPA 8260C	
o-Xylene	ND	ug/L	0.5	5/3/2018 1:04:00 PM	ARY	EPA 8260C	
Toluene	ND	ug/L	0.5	5/3/2018 1:04:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-003

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	105.6	70-130
4-Bromofluorobenzene	EPA 8260C	97.2	70-130
Toluene-d8	EPA 8260C	103.0	70-130
hexacosane	NWTPHDX	85.2	50-150
4-Bromofluorobenzene	NWTPHG	105.0	50-150

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-004
Client Sample ID AR8-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 4:15 PM
Sample Location AR8

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Manganese	1.34	mg/L	0.01	5/4/2018 4:10:00 PM	KNP	EPA 200.8	
Methane	ND	ug/L	0.65	5/8/2018 2:59:00 PM	SUB	RSK 175 MOD	
NO3/N	1.44	mg/L	0.5	5/2/2018 8:21:00 PM	BAG	EPA 300.0	
Sulfate	36.9	mg/L	0.5	5/2/2018 8:21:00 PM	BAG	EPA 300.0	
Diesel	ND	mg/L	0.1	5/11/2018 6:59:00 AM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	0.5	5/11/2018 6:59:00 AM	LMD	NWTPHDX	
Gasoline	4.97	mg/L	0.1	5/2/2018 9:05:00 PM	ARY	NWTPHG	
Benzene	ND	ug/L	0.5	5/3/2018 2:43:00 PM	ARY	EPA 8260C	
Ethylbenzene	145	ug/L	25	5/3/2018 2:43:00 PM	ARY	EPA 8260C	
m+p-Xylene	70.4	ug/L	50	5/3/2018 2:43:00 PM	ARY	EPA 8260C	
o-Xylene	130	ug/L	25	5/3/2018 2:43:00 PM	ARY	EPA 8260C	
Toluene	0.90	ug/L	0.5	5/3/2018 2:43:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-004

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	96.8	70-130
4-Bromofluorobenzene	EPA 8260C	95.0	70-130
Toluene-d8	EPA 8260C	97.8	70-130
hexacosane	NWTPHDX	83.2	50-150
4-Bromofluorobenzene	NWTPHG	90.4	50-150

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-005
Client Sample ID AR4-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 5:40 PM
Sample Location AR4

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Manganese	2.10	mg/L	0.01	5/4/2018 4:12:00 PM	KNP	EPA 200.8	
Methane	814	ug/L	0.65	5/8/2018 4:45:00 PM	SUB	RSK 175 MOD	
NO3/N	5.09	mg/L	0.5	5/2/2018 8:38:00 PM	BAG	EPA 300.0	
Sulfate	39.9	mg/L	0.5	5/2/2018 8:38:00 PM	BAG	EPA 300.0	
Diesel	ND	mg/L	1	5/10/2018 7:11:00 PM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	5	5/10/2018 7:11:00 PM	LMD	NWTPHDX	
Gasoline	28.1	mg/L	2	5/3/2018 1:04:00 PM	ARY	NWTPHG	
Benzene	141	ug/L	50	5/3/2018 3:17:00 PM	ARY	EPA 8260C	
Ethylbenzene	280	ug/L	50	5/3/2018 3:17:00 PM	ARY	EPA 8260C	
m+p-Xylene	2780	ug/L	100	5/3/2018 3:17:00 PM	ARY	EPA 8260C	
o-Xylene	2690	ug/L	50	5/3/2018 3:17:00 PM	ARY	EPA 8260C	
Toluene	15.4	ug/L	0.5	5/3/2018 3:17:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-005

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	96.0	70-130
4-Bromofluorobenzene	EPA 8260C	123.0	70-130
Toluene-d8	EPA 8260C	87.4	70-130
hexacosane	NWTPHDX	98.4	50-150
4-Bromofluorobenzene	NWTPHG	106.0	50-150

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-006
Client Sample ID FD-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 6:00 PM
Sample Location FD

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Manganese	1.35	mg/L	0.01	5/4/2018 4:14:00 PM	KNP	EPA 200.8	
Methane	ND	ug/L	0.65	5/8/2018 3:26:00 PM	SUB	RSK 175 MOD	
NO3/N	2.09	mg/L	0.2	5/3/2018 7:51:00 PM	BAG	EPA 300.0	
Sulfate	39.1	mg/L	0.2	5/3/2018 7:51:00 PM	BAG	EPA 300.0	
Diesel	ND	mg/L	0.1	5/10/2018 8:06:00 PM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	0.5	5/10/2018 8:06:00 PM	LMD	NWTPHDX	
Gasoline	4.98	mg/L	0.1	5/2/2018 10:20:00 PM	ARY	NWTPHG	
Benzene	ND	ug/L	0.5	5/3/2018 3:50:00 PM	ARY	EPA 8260C	
Ethylbenzene	150	ug/L	25	5/3/2018 3:50:00 PM	ARY	EPA 8260C	
m+p-Xylene	77.9	ug/L	50	5/3/2018 3:50:00 PM	ARY	EPA 8260C	
o-Xylene	145	ug/L	25	5/3/2018 3:50:00 PM	ARY	EPA 8260C	
Toluene	0.94	ug/L	0.5	5/3/2018 3:50:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-006

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	95.4	70-130
4-Bromofluorobenzene	EPA 8260C	109.8	70-130
Toluene-d8	EPA 8260C	97.2	70-130
hexacosane	NWTPHDX	90.0	50-150
4-Bromofluorobenzene	NWTPHG	90.3	50-150

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-007
Client Sample ID MW8-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 7:40 PM
Sample Location MW8

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Manganese	0.268	mg/L	0.001	5/4/2018 4:07:00 PM	KNP	EPA 200.8	
Methane	ND	ug/L	0.65	5/8/2018 3:40:00 PM	SUB	RSK 175 MOD	
NO3/N	20.5	mg/L	0.5	5/2/2018 8:54:00 PM	BAG	EPA 300.0	
Sulfate	84.1	mg/L	0.5	5/2/2018 8:54:00 PM	BAG	EPA 300.0	
Diesel	ND	mg/L	0.1	5/10/2018 9:01:00 PM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	0.5	5/10/2018 9:01:00 PM	LMD	NWTPHDX	
Gasoline	3.54	mg/L	0.1	5/2/2018 10:58:00 PM	ARY	NWTPHG	
Benzene	ND	ug/L	0.5	5/3/2018 4:24:00 PM	ARY	EPA 8260C	
Ethylbenzene	ND	ug/L	0.5	5/3/2018 4:24:00 PM	ARY	EPA 8260C	
m+p-Xylene	ND	ug/L	1	5/3/2018 4:24:00 PM	ARY	EPA 8260C	
o-Xylene	ND	ug/L	0.5	5/3/2018 4:24:00 PM	ARY	EPA 8260C	
Toluene	3.80	ug/L	0.5	5/3/2018 4:24:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-007

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	94.0	70-130
4-Bromofluorobenzene	EPA 8260C	105.2	70-130
Toluene-d8	EPA 8260C	99.0	70-130
hexacosane	NWTPHDX	88.2	50-150
4-Bromofluorobenzene	NWTPHG	97.9	50-150

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Sample Number 180502031-008
Client Sample ID EB-1805
Matrix Water
Comments Ferrous Iron = 0.1 mg/L

Sampling Date 5/1/2018
Sampling Time 8:00 PM
Sample Location EB

Date/Time Received 5/2/2018 12:00 PM
Extraction Date

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Diesel	ND	mg/L	0.1	5/10/2018 9:56:00 PM	LMD	NWTPHDX	
Lube Oil	ND	mg/L	0.5	5/10/2018 9:56:00 PM	LMD	NWTPHDX	
Gasoline	<0.1	mg/L	0.1	5/2/2018 11:36:00 PM	ARY	NWTPHG	
Benzene	ND	ug/L	0.5	5/3/2018 4:58:00 PM	ARY	EPA 8260C	
Ethylbenzene	ND	ug/L	0.5	5/3/2018 4:58:00 PM	ARY	EPA 8260C	
m+p-Xylene	ND	ug/L	1	5/3/2018 4:58:00 PM	ARY	EPA 8260C	
o-Xylene	ND	ug/L	0.5	5/3/2018 4:58:00 PM	ARY	EPA 8260C	
Toluene	ND	ug/L	0.5	5/3/2018 4:58:00 PM	ARY	EPA 8260C	

Surrogate Data

Sample Number 180502031-008

Surrogate Standard	Method	Percent Recovery	Control Limits
1,2-Dichlorobenzene-d4	EPA 8260C	100.6	70-130
4-Bromofluorobenzene	EPA 8260C	104.0	70-130
Toluene-d8	EPA 8260C	102.0	70-130
hexacosane	NWTPHDX	78.8	50-150
4-Bromofluorobenzene	NWTPHG	112.0	50-150

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client:	JACOBS	**Batch #:**	180502031
Address:	999 W RIVERSIDE AVE #500 SPOKANE, WA 99201	**Project Name:**	TIDEWATER CMP
Attn:	REUBEN GREER		

Analytical Results Report

Authorized Signature

Kathleen A. Sattler, Lab Manager

MCL	EPA's Maximum Contaminant Level
ND	Not Detected
PQL	Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Toluene	5.30	µg/L	5	106.0	80-120	5/3/2018	5/3/2018
Sulfate	3.92	mg/L	4	98.0	90-110	5/3/2018	5/3/2018
Sulfate	3.94	mg/L	4	98.5	90-110	5/2/2018	5/2/2018
o-Xylene	4.85	µg/L	5	97.0	80-120	5/3/2018	5/3/2018
NO3/N	4.06	mg/L	4	101.5	90-110	5/3/2018	5/3/2018
NO3/N	4.13	mg/L	4	103.3	90-110	5/2/2018	5/2/2018
Methane	704	ug/L	656	107.3	80-120	5/8/2018	5/8/2018
Manganese	0.0522	mg/L	0.05	104.4	85-115	5/3/2018	5/4/2018
Gasoline	2.53	mg/L	2.91	86.9	70-130	5/2/2018	5/2/2018
Ethylbenzene	4.94	µg/L	5	98.8	80-120	5/3/2018	5/3/2018
Diesel	0.757	mg/L	1	75.7	50-150	5/10/2018	5/10/2018
Diesel	0.810	mg/L	1	81.0	50-150	5/9/2018	5/10/2018
Benzene	5.44	µg/L	5	108.8	80-120	5/3/2018	5/3/2018

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Methane	743	ug/L	656	113.3	5.4	0-20	5/8/2018	5/8/2018

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
180502031-003	Toluene	ND	10.3	µg/L	10	103.0	70-130	5/3/2018	5/3/2018
180502031-003	o-Xylene	ND	11.1	µg/L	10	111.0	70-130	5/3/2018	5/3/2018
180502031-003	Ethylbenzene	ND	10.4	µg/L	10	104.0	70-130	5/3/2018	5/3/2018
180502031-003	Benzene	ND	10.2	µg/L	10	102.0	70-130	5/3/2018	5/3/2018
180502031-003	Gasoline	<0.1	2.35	mg/L	2.91	80.8	70-130	5/2/2018	5/2/2018
180502031-003	Diesel	ND	0.937	mg/L	1	93.7	50-150	5/9/2018	5/10/2018
180419041-009A	Sulfate	16.4	20.8	mg/L	4	110.0	80-120	5/2/2018	5/2/2018
180503027-002A	Sulfate	6.09	9.91	mg/L	4	95.5	80-120	5/3/2018	5/3/2018
180503027-002A	NO3/N	<0.1	4.31	mg/L	4	107.8	80-120	5/3/2018	5/3/2018
180419041-009A	NO3/N	0.151	4.55	mg/L	4	110.0	80-120	5/2/2018	5/2/2018
180502031-003C	Manganese	0.0412	0.0972	mg/L	0.05	112.0	70-130	5/3/2018	5/4/2018

Comments: METHANE SUBCONTRACTED TO ARI

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: JACOBS
Address: 999 W RIVERSIDE AVE #500
SPOKANE, WA 99201
Attn: REUBEN GREER

Batch #: 180502031
Project Name: TIDEWATER CMP

Analytical Results Report

Quality Control Data

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Toluene	10.5	µg/L	10	105.0	1.9	0-20	5/3/2018	5/3/2018
o-Xylene	11.3	µg/L	10	113.0	1.8	0-20	5/3/2018	5/3/2018
Ethylbenzene	10.5	µg/L	10	105.0	1.0	0-20	5/3/2018	5/3/2018
Benzene	10.3	µg/L	10	103.0	1.0	0-20	5/3/2018	5/3/2018
Gasoline	2.41	mg/L	2.91	82.8	2.5	0-20	5/2/2018	5/2/2018
Diesel	1.16	mg/L	1	116.0	21.3	0-50	5/9/2018	5/10/2018
Sulfate	20.6	mg/L	4	105.0	1.0	0-20	5/2/2018	5/2/2018
Sulfate	10.0	mg/L	4	97.8	0.9	0-20	5/3/2018	5/3/2018
NO3/N	4.30	mg/L	4	107.5	0.2	0-20	5/3/2018	5/3/2018
NO3/N	4.39	mg/L	4	106.0	3.6	0-20	5/2/2018	5/2/2018
Manganese	0.0941	mg/L	0.05	105.8	3.2	0-20	5/3/2018	5/4/2018

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzene	ND	ug/L	0.5	5/3/2018	5/3/2018
Diesel	ND	mg/L	0.1	5/9/2018	5/10/2018
Diesel	ND	mg/L	0.1	5/10/2018	5/10/2018
Ethylbenzene	ND	ug/L	0.5	5/3/2018	5/3/2018
Gasoline	<0.1	mg/L	0.1	5/2/2018	5/2/2018
Lube Oil	ND	mg/L	0.5	5/10/2018	5/10/2018
Lube Oil	ND	mg/L	0.5	5/9/2018	5/10/2018
m+p-Xylene	ND	ug/L	1	5/3/2018	5/3/2018
Manganese	ND	mg/L	0.001	5/3/2018	5/4/2018
Methane	ND	ug/L	0.65	5/8/2018	5/8/2018
NO3/N	ND	mg/L	0.1	5/2/2018	5/2/2018
NO3/N	ND	mg/L	0.1	5/3/2018	5/3/2018
o-Xylene	ND	ug/L	0.5	5/3/2018	5/3/2018
Sulfate	ND	mg/L	0.1	5/2/2018	5/2/2018
Sulfate	ND	mg/L	0.1	5/3/2018	5/3/2018
Toluene	ND	ug/L	0.5	5/3/2018	5/3/2018

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments: METHANE SUBCONTRACTED TO ARI

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Login Report

Customer Name: JACOBS
999 W RIVERSIDE AVE #500
SPOKANE WA 99201

Order ID: 180502031
Order Date: 5/2/2018

Contact Name: REUBEN GREER
Project Name: TIDEWATER CMP

Comment: METHANE SUBCONTRACTED TO

Sample #: 180502031-001 **Customer Sample #:** AR11-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 11 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 12:15 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Sample #: 180502031-002 **Customer Sample #:** MW6-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 11 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 1:35 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Customer Name: JACOBS
999 W RIVERSIDE AVE #500
SPOKANE WA 99201

Order ID: 180502031
Order Date: 5/2/2018

Contact Name: REUBEN GREER
Project Name: TIDEWATER CMP

Comment: METHANE SUBCONTRACTED TO

Sample #: 180502031-003 **Customer Sample #:** MW4-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 11 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 2:50 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Sample #: 180502031-003A **Customer Sample #:** MW4-1805MS

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 5 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 2:50 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC RBCA 8260 SPO	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Sample #: 180502031-003B **Customer Sample #:** MW4-1805MSD

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 5 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 2:50 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***

Customer Name: JACOBS
999 W RIVERSIDE AVE #500
SPOKANE WA 99201

Order ID: 180502031
Order Date: 5/2/2018

Contact Name: REUBEN GREER
Project Name: TIDEWATER CMP

Comment: METHANE SUBCONTRACTED TO

TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Sample #: 180502031-004 **Customer Sample #:** AR8-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 11 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 4:15 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Sample #: 180502031-005 **Customer Sample #:** AR4-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 11 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 5:40 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Customer Name: JACOBS
999 W RIVERSIDE AVE #500
SPOKANE WA 99201

Order ID: 180502031
Order Date: 5/2/2018

Contact Name: REUBEN GREER
Project Name: TIDEWATER CMP

Comment: METHANE SUBCONTRACTED TO

Sample #: 180502031-006 **Customer Sample #:** FD-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 11 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 6:00 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Sample #: 180502031-007 **Customer Sample #:** MW8-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 11 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 7:40 PM
Comment:

Test	Lab	Method	Due Date	Priority
MANGANESE SPO	S	EPA 200.8	5/14/2018	***Normal (~10 Days)***
METHANE	S	RSK 175 MOD	5/14/2018	***Normal (~10 Days)***
NITRATE/N	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
SULFATE	S	EPA 300.0	5/14/2018	***Normal (~10 Days)***
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Sample #: 180502031-008 **Customer Sample #:** EB-1805

Recv'd: ☑ **Matrix:** Water **Collector:** REUBEN GREER **Date Collected:** 5/1/2018
Quantity: 5 **Date Received:** 5/2/2018 12:00:00 PM **Time Collected:** 8:00 PM
Comment:

Test	Lab	Method	Due Date	Priority
TPHDX-NW	S	NWTPHDX	5/14/2018	***Normal (~10 Days)***
TPHG-NW-SPO	S	NWTPHG	5/14/2018	***Normal (~10 Days)***
VOC 8260 RBCA	S	EPA 8260C	5/14/2018	***Normal (~10 Days)***

Customer Name: JACOBS

999 W RIVERSIDE AVE #500

SPOKANE WA 99201

Order ID: 180502031

Order Date: 5/2/2018

Contact Name: REUBEN GREER

Project Name: TIDEWATER CMP

Comment: METHANE SUBCONTRACTED TO

SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature of the sample(s)? (°C)	5.1/5.2
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	Yes
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes
Total number of containers?	92

Analytical Resources, Incorporated
Analytical Chemists and Consultants

15 May 2018

Kathy Sattler
Anatek Labs, Inc.
504 East Sprague, Suite D
Spokane, WA 99202

RE: 180502031 CH2R

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
18E0129	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in it entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

18E0129

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

Company Name:	Anatek Labs	Project Manager:	Kathy Sattler
Address:	504 E Sprague Ave, Ste D	Project Name & # :	180502031 CH2R
City: Spokane	State: WA Zip: 99202	Email Address :	kathy@anateklabs.com
Phone:	(509) 838-3999	Purchase Order #:	
Fax:		Sampler Name & phone:	

Turn Around Time & Reporting

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

✓ Normal
__ Next Day*
__ 2nd Day*
__ Other*_____

*All rush order requests must be prior approved.

__ Phone
__ Mail
__ Fax
__ Email

Provide Sample Description / List Analyses Requested

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative: METHANE
	180502031-001	5/1/18 1215	W	3		x
	180502031-002	5/1/18 1335	W	3		x
	180502031-003	5/1/18 1450	W	3		x
	180502031-004	5/1/18 1615	W	3		x
	180502031-005	5/1/18 1740	W	3		x
	180502031-006	5/1/18 1800	W	3		x
	180502031-007	5/1/18 1940	W	3		x

Note Special Instructions/Comments

UPS - ARI

Inspection Checklist

Received Intact?	Y	N
Labels & Chains Agree?	Y	N
Containers Sealed?	Y	N
VOC Head Space?	Y	N

Temperature (°C): 14.1
Preservative:
Date & Time:
Inspected By:

	Printed Name	Signature	Company	Date	Time
Relinquished by	Wendy Oz	Wendy Oz	Anatek	5/7/18	1600
Received by	Stephanie Fiene	Stephanie Fiene	AR	5/8/18	0955
Relinquished by					
Received by					
Relinquished by					
Received by					

Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
180502031-001	18E0129-01	Water	01-May-2018 12:15	08-May-2018 09:55
180502031-002	18E0129-02	Water	01-May-2018 13:35	08-May-2018 09:55
180502031-003	18E0129-03	Water	01-May-2018 14:50	08-May-2018 09:55
180502031-004	18E0129-04	Water	01-May-2018 16:15	08-May-2018 09:55
180502031-005	18E0129-05	Water	01-May-2018 17:40	08-May-2018 09:55
180502031-006	18E0129-06	Water	01-May-2018 18:00	08-May-2018 09:55
180502031-007	18E0129-07	Water	01-May-2018 19:40	08-May-2018 09:55

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

Case Narrative

Revised Report - May 15, 2018

This report was revised to update ORELAP accreditation expiration date. There was no lapse in accreditation.

Volatile Gases - MEE by RSK175

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

WORK ORDER

18E0129

Client: Anatek Labs, Inc.	**Project Manager: Shelly Fishel**
Project: 180502031 CH2R	**Project Number: 180502031 CH2R**

Preservation Confirmation

Container ID	Container Type	pH
18E0129-01 A	VOA Vial, Clear, 40 mL	Bubble
18E0129-01 B	VOA Vial, Clear, 40 mL	Bubble
18E0129-01 C	VOA Vial, Clear, 40 mL	"
18E0129-02 A	VOA Vial, Clear, 40 mL	"
18E0129-02 B	VOA Vial, Clear, 40 mL	"
18E0129-02 C	VOA Vial, Clear, 40 mL	"
18E0129-03 A	VOA Vial, Clear, 40 mL	"
18E0129-03 B	VOA Vial, Clear, 40 mL	"
18E0129-03 C	VOA Vial, Clear, 40 mL	"
18E0129-04 A	VOA Vial, Clear, 40 mL	"
18E0129-04 B	VOA Vial, Clear, 40 mL	"
18E0129-04 C	VOA Vial, Clear, 40 mL	"
18E0129-05 A	VOA Vial, Clear, 40 mL	"
18E0129-05 B	VOA Vial, Clear, 40 mL	"
18E0129-05 C	VOA Vial, Clear, 40 mL	"
18E0129-06 A	VOA Vial, Clear, 40 mL	Bubble
18E0129-06 B	VOA Vial, Clear, 40 mL	"
18E0129-06 C	VOA Vial, Clear, 40 mL	"
18E0129-07 A	VOA Vial, Clear, 40 mL	"
18E0129-07 B	VOA Vial, Clear, 40 mL	"
18E0129-07 C	VOA Vial, Clear, 40 mL	"

JSW
Preservation Confirmed By

05/08/18
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anatek Labs
Project Name: 180502031 CH2R
COC No(s): _____ NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Assigned ARI Job No: 18E0129
Tracking No: 1Z2E0E280371869950 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 14.1
Time: 0955
If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: D002563

Cooler Accepted by: Sef Date: 5/8/18 Time: 0955

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Was Sample Split by ARI : NA YES Date/Time: _____ Equipment: _____ Split by: _____

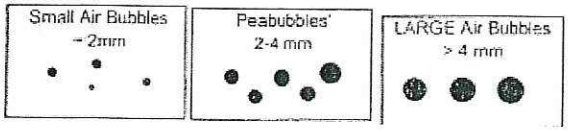
Samples Logged by: JSV Date: 05/08/18 Time: 1142

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:
vials with air bubbles will be marked on preservation sheet. lab to determine size.

By: JSV Date: 05/08/18



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

ARI Work Order: 18E0129

Cooler#: _____ **Temperature(°C):** 14.1

Sample ID	Bottle Count	Bottle Type
Samples received above 6°		

Cooler#: _____ **Temperature(°C):** _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ **Temperature(°C):** _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ **Temperature(°C):** _____

Sample ID	Bottle Count	Bottle Type

Completed by: Set Date: 5/8/18 Time: 0955

Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

180502031-001

18E0129-01 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/01/2018 12:15

Instrument: FID6 — Analyzed: 08-May-2018 14:17

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 — Sample Size: 10 mL
Prepared: 08-May-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

180502031-002

18E0129-02 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/01/2018 13:35

Instrument: FID6 — Analyzed: 08-May-2018 17:33

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 — Sample Size: 10 mL
Prepared: 08-May-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

180502031-003

18E0129-03 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/01/2018 14:50

Instrument: FID6 — Analyzed: 08-May-2018 14:45

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 — Sample Size: 10 mL
Prepared: 08-May-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

180502031-004

18E0129-04 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/01/2018 16:15

Instrument: FID6 — Analyzed: 08-May-2018 14:59

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 — Sample Size: 10 mL
Prepared: 08-May-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

180502031-005

18E0129-05 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/01/2018 17:40

Instrument: FID6 — Analyzed: 08-May-2018 16:45

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 — Sample Size: 10 mL
Prepared: 08-May-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	**814**	ug/L	

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

180502031-006

18E0129-06 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/01/2018 18:00

Instrument: FID6 — Analyzed: 08-May-2018 15:26

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 — Sample Size: 10 mL
Prepared: 08-May-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

180502031-007

18E0129-07 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/01/2018 19:40

Instrument: FID6 — Analyzed: 08-May-2018 15:40

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 — Sample Size: 10 mL
Prepared: 08-May-2018 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U

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Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

Dissolved Gases - Quality Control

Batch BGE0082 - No Prep - Volatiles

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0082-BLK1)				Prepared: 08-May-2018 Analyzed: 08-May-2018 10:04						
Methane	ND	0.65	ug/L							U
LCS (BGE0082-BS1)				Prepared: 08-May-2018 Analyzed: 08-May-2018 09:04						
Methane	704		ug/L	656		107	80-120			
LCS Dup (BGE0082-BSD1)				Prepared: 08-May-2018 Analyzed: 08-May-2018 09:18						
Methane	743		ug/L	656		113	80-120	5.39	30	

Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

Certified Analyses included in this Report

Analyte	Certifications
EPA RSK-175 in Water	
Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/11/2018
CALAP	California Department of Public Health CAELAP	2748	06/30/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018

Anatek Labs, Inc.	Project: 180502031 CH2R	
504 East Sprague, Suite D	Project Number: 180502031 CH2R	**Reported:**
Spokane WA, 99202	Project Manager: Kathy Sattler	15-May-2018 09:55

Notes and Definitions

U	This analyte is not detected above the applicable reporting or detection limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Anatek Labs, Inc.

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

30502 031 **CH2R** Last Due 5/14/2018
1st SAMP 5/1/2018 1st RCVD 5/2/2018
TIDEWATER CMP

Company Name: CH2M HILL	Project Manager: REUBEN GREER
Address: 999 W RIVERSIDE AVE SUITE 500	Project Name & #: TIDEWATER CMP
City: SPOKANE State: WA Zip: 99201	Email Address: rgreer@ch2m.com
Phone: 509-464-7215	Purchase Order #:
Fax:	Sampler Name & phone: REUBEN GREER 509-464-7215

Turn Around Time & Reporting

Please refer to our normal turn around times at:
http://www.anateklabs.com/services/guidelines/reporting.asp

X Normal
__Next Day*
__2nd Day*
__Other*_____

*All rush order requests must be prior approved.

__Phone
__Mail
__Fax
__Email

Provide Sample Description / **List Analyses Requested**

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Preservative	BTEX 8260B	NW TPH Gx	NW TPH Dx	Ferrous Iron	Mn	SO4, NO3	Methane RSK175	NW TPH Dx Heavy Oil		
1	AR11-1805	5/18/1215	W	11			X	X	X	X	X	X	X	X		
2	MW6-1805	5/18/1335	W	11			X	X	X	X	X	X	X	X		
3	MW4-1805	5/18/1345	W	21			X	X	X	X	X	X	X	X		
4	ARB-1805	5/18/1615	W	11			X	X	X	X	X	X	X	X		
5	AR4-1805	5/18/1740	W	11			X	X	X	X	X	X	X	X		
6	FD-1805	5/18/1800	W	11			X	X	X	X	X	X	X	X		
7	MW8-1805	5/18/1940	W	11			X	X	X	X	X	X	X	X		
8	EB-1805	5/18/2000	W	5			X	X	X					X		

Note Special Instructions/Comments

SWBS
ARI-methane

MS/MSD

Inspection Checklist

Received Intact?	(Y)	N
Labels & Chains Agree?	(Y)	N
Containers Sealed?	(Y)	N
VOC Head Space?	Y	(N)

2 coolers/hd/ice

Temperature (°C): 5.1/5.2° 6.1°/6.2°
Preservative: HCl 5716D+R341-342 IR#1
pH P16230-7K
Date & Time: 5-2-18 1416
Inspected By: NVG

	Printed Name	Signature	Company	Date	Time
Relinquished by	REUBEN GREER		CH2M HILL	5/2/18	1200
Received by	RScott		anatek	5/2/18	1200
Relinquished by					
Received by					
Relinquished by					
Received by					

Appendix C
Historical Data

Appendix C
Tidewater Fuel Leak Site Historical Groundwater Monitoring Results
Pasco, Washington

Well ID	Date	Benzene (µg/L) MCL 5	Toluene (µg/L) MCL 1,000	Ethylbenzene (µg/L) MCL 700	Total Xylenes (µg/L) 1,000	TPH-G (µg/L) MCL 800/1,000	TPH-D (µg/L) MCL 500	TPH-D - Heavy Oil (µg/L) MCL 500
AR-1	Feb-03	**191**	**2,130**	153	**4,570**	**31,700**	NA	NA
	Jun-03	**77**	**1,340**	179	**3,590**	**20,000**	NA	NA
	Jun-10	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS
	May-14	NS	NS	NS	NS	NS	NS	NS
AR-3	Feb-03	**754**	**3,870**	148	**6,350**	**38,900**	NA	NA
	Jun-03	**6,750**	**6,270**	649	**7,170**	**37,400**	NA	NA
	Mar-06	NS	NS	NS	NS	NS	NS	NS
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS
	May-14	NS	NS	NS	NS	NS	NS	NS
AR-4	Apr-02	**52**	337	13.9	**1,989**	**10,500**	NA	NA
	Jul-02	**90**	816	10.7	705	**6,400**	NA	NA
	Nov-02	**10.3**	118	5.5	345	**3,080**	NA	NA
	Feb-03	*1 U*	*1 U*	*1 U*	4.8	195	NA	NA
	Jun-03	**10.1**	66	10	326	**5,090**	NA	NA
	Sep-03	**797**	70	27	321	**3,430**	NA	NA
	Mar-06	**2,210**	**3,430**	481	**5,600**	**26,600**	**4,400**	NA
	Nov-07	**640**	**2,800**	220	**4,400**	**28,000**	**4,500**	**1,400**
	Oct-08	**340**	**2,100**	170	**2,700**	**17,000**	**2,500**	**5,900**
	Jun-10	**380**	**1,900**	270	**4,400**	**21,000**	**5,300**	**650**
MW-11 (AR-4 Dup)	Jun-10	**370**	**1,800**	250	**4,000**	**20,000**	**3,700**	440
	Dec-10	**350**	**1,400**	230	**3,600**	**17,000**	**3,700**	*260 U*
	May-14	**535**	789	385	**10,290**	**45,900**	*20 U*	*50 U*
	May-18	**141**	15.4	280	**5,450**	**28,100**	*50 U*	*250 U*
AR-5	Jul-02	**379**	**1,010**	17.5	**3,850**	**39,000**	NA	NA
	Nov-02	0.7	10.6	*ND*	124	**2,900**	NA	NA
	Feb-03	4.3	12.2	1	90	**830**	NA	NA
	Jun-03	**15.2**	8.8	3.4	136	**1,740**	NA	NA
	Sep-03	**8.5**	4.6	1.3	33	557	NA	NA
	Dec-03	*1 U*	26.1	14.1	739	**6,010**	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	0.57	250	NA	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	*0.9 U*	*0.9 U*	*0.5 U*	10	65	120	*95 U*
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*250 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	260	730	*270 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	2.09	*100 U*	*20 U*	*50 U*
AR-6	Nov-01	**29.8**	**402**	82	**2,800**	**2,390**	NA	NA
	Apr-02	**713**	559	27	**2,060**	**17,700**	NA	NA
	Jul-02	**1,820**	**3,100**	85	**4,780**	**24,700**	NA	NA
	Nov-02	**104**	289	67	**2,886**	**11,900**	NA	NA
	Feb-03	**531**	**1,280**	93	**2,900**	**23,700**	NA	NA
	Jun-03	**475**	**2,340**	110	**3,750**	**23,500**	NA	NA
	Sep-03	**221**	**3,140**	241	**4,610**	**25,000**	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	6.7	330	260	NA
	Nov-07	0.6	2.5	0.7	73	670	**1,500**	**990**
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	2.4	*50 U*	*120 U*	*250 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	8.6	81	*120 U*	*240 U*
	May-14	*1.0 U*	*1.0 U*	21.2	331	**4,640**	*20 U*	*50 U*
AR-7	Mar-06	NS	NS	NS	NS	NS	NS	NS
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS
	May-14	*1.0 U*	1.4	21	86	1280 J	*20 U*	*50 U*
FD-2 (AR-7 Dup)	May-14	*1.0 U*	*1.0 U*	16	65	883 J	*20 U*	*50 U*
AR-8	Jul-02	**47.3**	229	32	918	**5,330**	NA	NA
	Nov-02	**19.2**	**1,070**	384	**4,170**	**57,400**	NA	NA
	Feb-03	**43.8**	577	276	**3,410**	**59,600**	NA	NA
	Jun-03	**1470**	**2,050**	651	**2,760**	**22,700**	NA	NA
	Sep-03	**3,350**	**1,740**	**1,480**	**2,520**	**16,000**	NA	NA
	Mar-06	NS	NS	NS	NS	NS	NS	NS
	Nov-07	**8.0**	46	35	610	**7,400**	**23,000**	**<4700**
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	2.0	15	99	420	**3,300**	**2,000**	250
	Dec-10	1.7	26	100	460	**3,700**	**1,500**	*260 U*
FD-1 (AR-8 Dup)	Dec-10	1.7	36	100	590	**3,500**	**1,500**	*280 U*
	May-14	*1.0 U*	11	280	755	**9,570**	*20 U*	*50 U*
FD-1 (AR-8 Dup)	May-14	*1.0 U*	12	312	812	**9,880**	*20 U*	*50 U*
	May-18	*0.5 U*	0.90	145	200	**4,970**	*50 U*	*250 U*
FD (AR-8 Dup)	May-18	*0.5 U*	0.94	150	223	**4,980**	*50 U*	*250 U*

Appendix C
Tidewater Fuel Leak Site Historical Groundwater Monitoring Results
Pasco, Washington

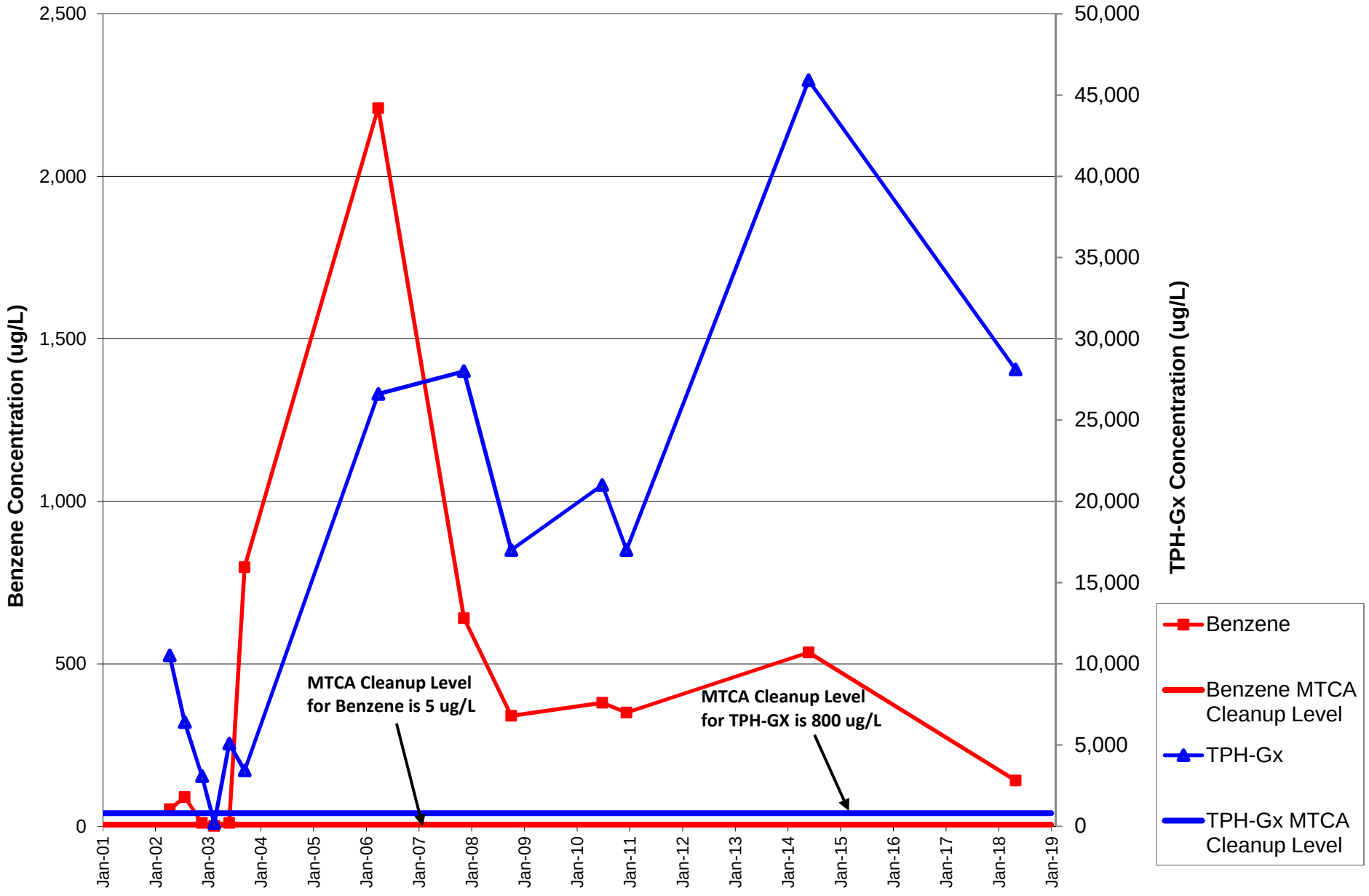
Well ID	Date	Benzene (µg/L) MCL 5	Toluene (µg/L) MCL 1,000	Ethylbenzene (µg/L) MCL 700	Total Xylenes (µg/L) 1,000	TPH-G (µg/L) MCL 800/1,000	TPH-D (µg/L) MCL 500	TPH-D - Heavy Oil (µg/L) MCL 500
AR-9	Nov-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
MW-12 (AR-9 dup)	Nov-01	*1 U*	*1 U*	*1.1*	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Dec-03	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	*250 U*	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*130 U*	*270 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*
AR-10	Nov-01	**54**	13.7	*ND*	221	311	NA	NA
	Apr-02	3.1	*1 U*	3.5	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	78	NA	NA
	Feb-03	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Jun-03	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Sep-03	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	*250 U*	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*
AR-11	Mar-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	*230 U*	*560 U*
	Aug-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Dec-03	*1 U*	1.9	*1 U*	1.1	*50 U*	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	*250 U*	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	NS	NS	NS	NS	*NS*	*NS*	*NS*
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*
	May-18	*0.5 U*	*0.5 U*	*0.5 U*	*0.5 U*	*100 U*	*50 U*	*250 U*
AR-12	Feb-03	**3,860**	**10,400**	**1,000**	**13,560**	**84,700**	NA	NA
	Jun-03	**3,810**	**8,060**	**731**	**9,190**	**55,100**	NA	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS
	Dec-10	NS	NS	NS	NS	NS	NS	NS
	May-14	NS	NS	NS	NS	NS	NS	NS
MW-1	Mar-01	**20**	21	*1 U*	*2 U*	110	*230 U*	*580 U*
	Aug-01	**1,890**	**1,900**	9.5	**1,109**	**5,980**	NA	NA
	Nov-01	**336**	**88**	1 U	**211**	321	NA	NA
	Apr-02	**880**	33	5.3	43	667	NA	NA
	Jul-02	**1,040**	22	41	40	**1,600**	NA	NA
	Nov-02	**434**	36	57	131	**1,040**	NA	NA
	Nov-02	**385**	31	38	95	712	NA	NA
MW-19 (MW-1dup)	Feb-03	**453**	19.7	43	43.8	263	NA	NA
	Feb-03	**369**	15	32	33.8	240	NA	NA
MW-9 (MW-1 dup)	Jun-03	**240**	131	78	257	**841**	NA	NA
	Jun-03	**131**	68	35	128	**1,420**	NA	NA
MW-9 (MW-1 dup)	Sep-03	**149**	77	38	145	589	NA	NA
	Sep-03	**112**	69	26	NR	431	NA	NA
MW-9 (MW-1 dup)	Dec-03	**20.2**	58	3.1	26	102	NA	NA
	Dec-03	**8.0**	22	1.2	9.3	143	NA	NA
	Mar-06	0.5 U	0.71	8.4	8.7	250	250 U	NA
MW-11 (MW-1 dup)	Mar-06	0.5 U	0.69	6.8	6.1	250	250 U	NA
	Nov-07	*0.2 U*	0.20	0.5	*0.6 U*	*50 U*	*190*	**670**
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*
MW-2	Mar-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	*220 U*	*540 U*
	Aug-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	82	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	*250 U*	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	*0.2 U*	*0.2 U*	*0.2 U*	*0.6 U*	*50 U*	78	*96 U*
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*250 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*130 U*	*260 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*

Appendix C
Tidewater Fuel Leak Site Historical Groundwater Monitoring Results
Pasco, Washington

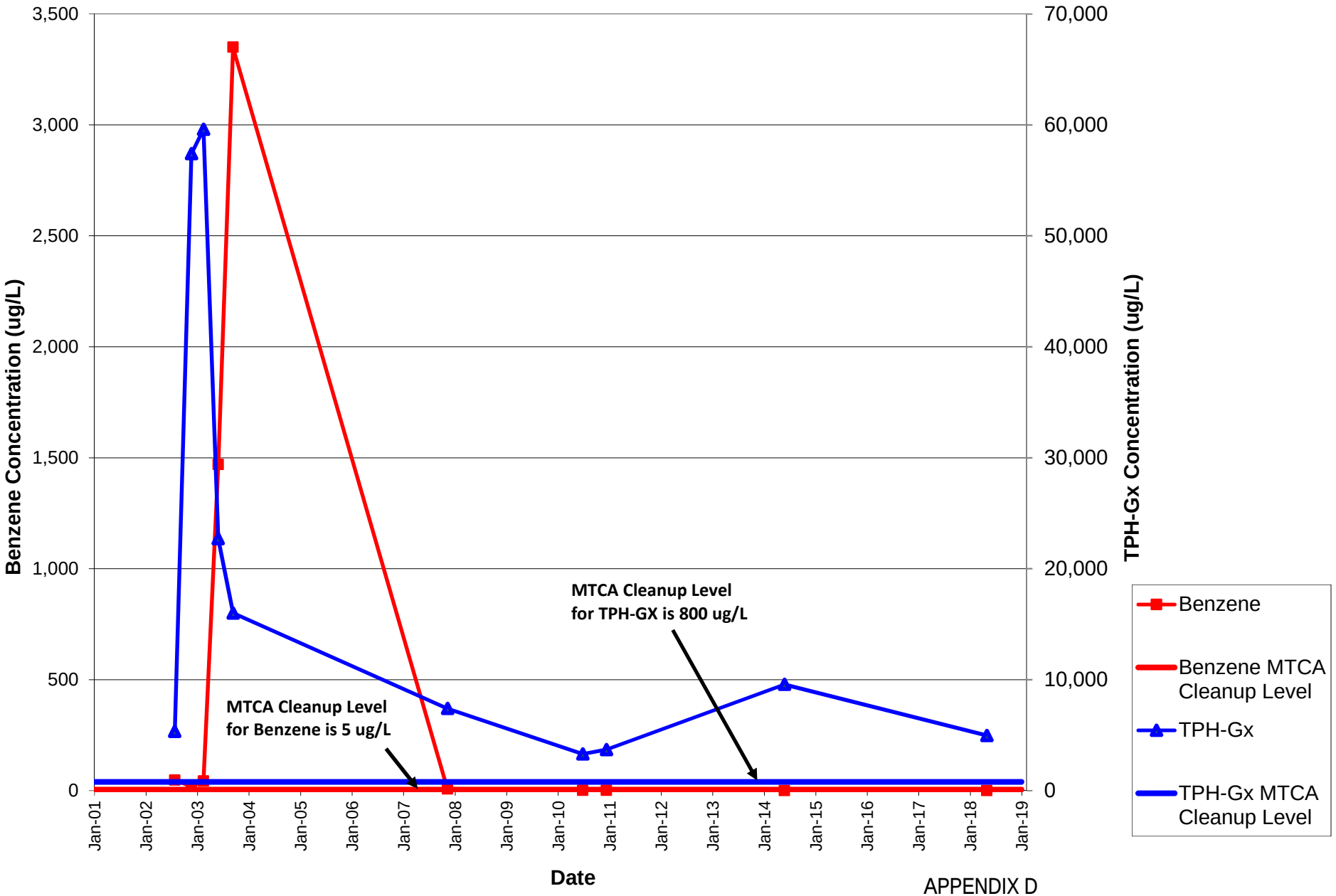
Well ID	Date	Benzene (µg/L) MCL 5	Toluene (µg/L) MCL 1,000	Ethylbenzene (µg/L) MCL 700	Total Xylenes (µg/L) 1,000	TPH-G (µg/L) MCL 800/1,000	TPH-D (µg/L) MCL 500	TPH-D - Heavy Oil (µg/L) MCL 500
MW-3	Mar-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	270	NA
	Aug-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	117	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	*250 U*	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	*0.2 U*	*0.2 U*	*0.2 U*	*0.6 U*	*50 U*	*80 U*	*100 U*
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*140*	*270 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*250 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*
MW-4	Mar-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	*200 U*	*680 U*
	Aug-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	55	NA	NA
	Dec-03	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	*250 U*	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	*0.2 U*	*0.2 U*	*0.2 U*	*0.6 U*	*50 U*	*77 U*	*97 U*
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*250 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*140 U*	*280 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*
	May-18	*0.5 U*	*0.5 U*	*0.5 U*	*0.5 U*	*100 U*	*50 U*	*250 U*
MW-5	Mar-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	*200 U*	NA
	Aug-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	**954**	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	**4,300**	NA
	Nov-07	*0.2 U*	*0.2 U*	*0.2 U*	*0.6 U*	*50 U*	**1,300**	**1,100**
	Oct-08	*0.2 U*	*0.2 U*	*0.2 U*	*0.6 U*	*50 U*	91	*98 U*
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*250 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*130 U*	*260 U*
	May-14							
MW-6	Mar-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	*190 U*	*480 U*
	Aug-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-01	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Nov-02	*1 U*	*1 U*	*1 U*	*2 U*	62	NA	NA
	Sep-03	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Dec-03	*1 U*	*1 U*	*1 U*	*2 U*	*50 U*	NA	NA
	Mar-06	*0.5 U*	*0.5 U*	*0.5 U*	*1 U*	*250 U*	*250 U*	NA
	Nov-07	NS	NS	NS	NS	NS	NS	NS
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	Dec-10	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*50 U*	*120 U*	*240 U*
	May-14	*1.0 U*	*1.0 U*	*1.0 U*	*2.0 U*	*100 U*	*20 U*	*50 U*
	May-18	*0.5 U*	*0.5 U*	*0.5 U*	*0.5 U*	*100 U*	*50 U*	*250 U*
MW-7	Mar-01	**990**	**3,000**	130	**1,260**	**11,000,000**	**1,240**	**510**
	Mar-09	NS	NS	NS	NS	NS	NS	NS
	Nov-07	**70**	530	53	930	**7,000**	**2,000**	300
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS
	Dec-10	*1.0 U*	4.1	*1.0 U*	27	350	*120 U*	*240 U*
	May-14	**88**	**1,910**	133	**2,702**	**19,200**	*20 U*	*50 U*
MW-8	Mar-01	**5,300**	**17,000**	**1,500**	**10,800**	**77,000,000**	**72,400**	**1,210**
	Feb-03	**3,630**	**8,540**	**931**	**8,450**	**51,500**	NA	NA
	Jun-03	**6,490**	**14,500**	**1,320**	**12,590**	**80,900**	NA	NA
	Mar-06	**183**	**5,440**	452	**5,140**	**25,700**	**8,400**	NA
	Nov-07	**29**	**2,200**	**410**	**5,500**	**36,000**	**6,500**	**<1,900**
	Oct-08	NS	NS	NS	NS	NS	NS	NS
	Jun-10	NS	NS	NS	NS	NS	NS	NS
	Dec-10	2.4	500	210	**2,000**	**9,900**	**2,500**	*260 U*
	May-14	*1.0 U*	286	462	**4,920**	**27,000**	*20 U*	*50 U*
	May-18	*0.5 U*	3.8	*0.5 U*	*0.5 U*	**3,540**	*50 U*	*250 U*

Notes:
MCL - Maximum Contaminant Level. Based on Washington Department of Ecology Method A cleanup levels in Table 720-1 of the Model Toxics Control Act, Oct 2007.
µg/L - Micrograms per liter
BOLD - Exceeds MCL
U = Analyte not detected
J = Analyte value is estimated
NS = Not Sampled for one of the following reasons: insufficient water in well, presence of liquid hydrocarbons, inaccessibility, date was between sampling events, or well no longer in sampling program.
N/A = Not applicable or not available

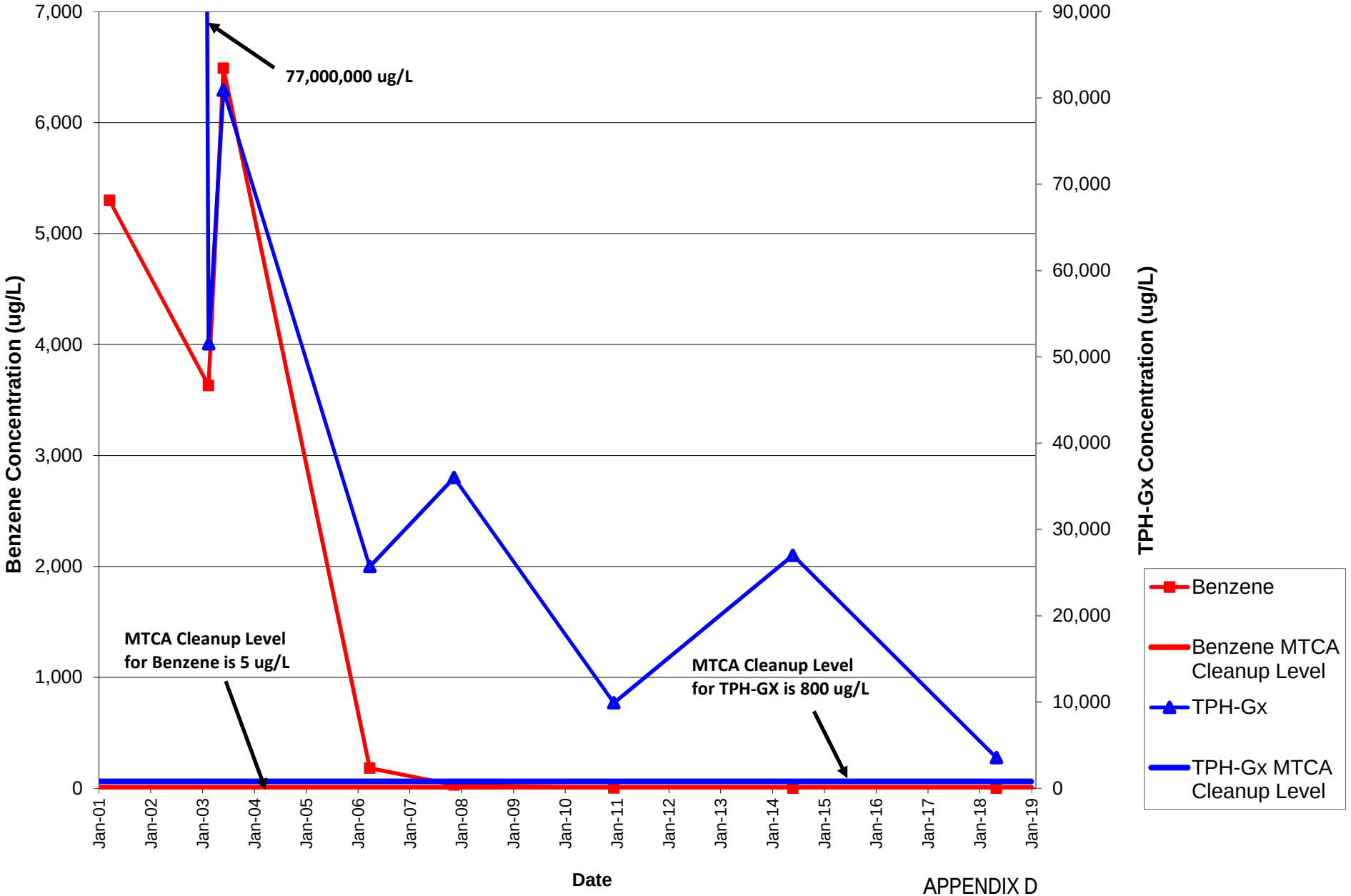
Appendix D
TPH-G and Benzene Time Series



APPENDIX D
AR-4 Benzene and TPH-GX Concentrations
Tidewater Fuel Leak Site



APPENDIX D
AR-8 Benzene and TPH-Gx Concentrations
Tidewater Fuel Leak Site



APPENDIX D
MW-8 Benzene and TPH-GX Concentrations
Tidewater Fuel Leak Site