Geosyntec consultants

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August 7, 2020

Adam Harris, LHG
Toxics Cleanup Program
Southwest Regional Office
Washington State Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

Subject: Gordon Trucking Biennial Groundwater Monitoring
151 Stewart Road SW, Pacific, WA
Facility/Site No.: 3393818
VCP Project No: SW0969
Geosyntec Project No: PNR0698

Dear Mr. Harris:

This letter has been prepared by Geosyntec Consultants (Geosyntec) to summarize results from the 2020 groundwater monitoring event at the Gordon Trucking Inc. (GTI) property in Pacific, WA (site). Groundwater monitoring is being conducted under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP), project number SW0969.

SITE HISTORY

In 2013, GTI was acquired by Heartland Express, Inc. (Heartland). The site remained under the ownership of the Gordon Family and was managed by L&V Properties LLC. Heartland leased the site as an operator until August 2017. Since then, the fuel tanks and island have not been in use. The site is currently being managed by Gordon Truck Centers, Inc. on behalf of L&V Properties LLC.

ENVIRONMENTAL BACKGROUND

In August 2007, GTI discovered petroleum-impacted soil during pipe repair work in the vicinity of a fuel island at their Pacific, Washington property (Figure 1). In response, approximately 150 tons of soil were removed from the site. Soil and groundwater samples were collected to characterize the lateral and vertical extent of soil contamination resulting from the release. In 2008 and 2009, five groundwater monitoring wells (MW-01 through MW-05) were installed at the site by WSP Environmental Strategies LLC (Figure 2). In 2009 R^2 Incorporated, on behalf of GTI,

implemented a remedial program to address remaining petroleum levels in the soil above Ecology Model Toxics Control Act (MTCA) Method A cleanup levels for diesel and heavy oil. Subsequent actions at the site included applying an in-situ microbial inoculant and the initiation of a groundwater sampling program to evaluate the effectiveness of the in-situ treatment. Additional microbial inoculant was applied in 2010 and oxygen release compound (ORC) filter socks were installed in monitoring wells where petroleum hydrocarbon remained in groundwater (MW-03 and MW-04). These ORC socks were removed in 2011. Semi-annual groundwater monitoring was performed at the site by R^2 Incorporated between 2008 and 2010.

Geosyntec began work at the site in 2011 performing semi-annual groundwater monitoring. On January 4, 2013, Geosyntec submitted a work plan to Ecology ("Gordon Trucking Groundwater Monitoring Work Plan for 2013") recommending that monitoring frequency change from semi-annual to annual, in addition to the installation of ORC socks in three monitoring wells. The work plan was approved on January 25, 2013, and ORC socks were installed in February 2013. Geosyntec performed annual groundwater sampling and ORC sock replacement between 2014 and 2016 during seasonal high-water levels.

In early 2017, the monitoring frequency was reduced from annual to biennial, and groundwater was most recently sampled by Geosyntec in 2018. ORC socks have been replaced on a yearly frequency since 2017 and were last replaced on May 24, 2019. In preparation for the 2020 groundwater sampling event, the ORC socks were removed on February 20, 2020 to allow the groundwater to return to its natural geochemical state.

GROUNDWATER MONITORING

On May 28, 2020, the five groundwater monitoring wells (MW-01 to MW-05) were gauged using an electronic water level probe capable of detecting water depth with a precision of 0.01 foot. Project personnel recorded static water levels prior to sampling (Table 1 and Figure 2). The observed groundwater elevations in the five monitoring wells, were comparable to the levels recorded in May 2018. The highest groundwater elevations were observed in MW-01 (62.41 feet above mean sea level [ft AMSL]).

Monitoring wells were sampled using low flow groundwater sampling methodology. Field parameters such as temperature, electrical conductivity, pH, oxidation-reduction potential (ORP), and dissolved oxygen were measured during well purging and are summarized in Table 1. Once field parameters stabilized, groundwater samples were collected, preserved and stored as directed by the analytical laboratory. Equipment decontamination protocols were implemented using low-phosphate detergent and distilled water to prevent cross-contamination between sampling

locations. One quality control sample was collected, comprising greater than ten percent of the total sample set submitted for laboratory analysis.

After the collection of groundwater samples was completed, new ORC socks were installed in wells MW-02, MW-03, and MW-04 and will remain in the wells until 2021.

Results

Groundwater samples were submitted to Analytical Resources, Inc. in Tukwila, Washington for analysis of diesel-range and motor oil-range petroleum hydrocarbons by the Northwest Total Petroleum Hydrocarbons diesel-extended method (NWTPH-Dx). The laboratory report is included as Attachment A. Analytical results and the corresponding MTCA cleanup levels are summarized in Table 2 and Figures 3 and 4. Calculated differences between field duplicate groundwater samples were ten percent or less and are considered acceptable (Table 3). The analytical results were as follows:

- Diesel-range petroleum hydrocarbons were only detected in wells MW-03 and MW-04, and MW-05 (Figures 3 and 4). Diesel-range petroleum hydrocarbons concentrations exceeded the MTCA Method A cleanup level of 500 µg/L in MW-03 (1,950 µg/L) and MW-04 (1,500 µg/L). The concentration of diesel-range constituents in MW-01, MW-02, and MW-05 were below regulatory cleanup levels.

- Motor-oil range constituent concentrations were detected at low levels in MW-03 and MW-04 and not detected in MW-01, MW-02, and MW-05 above laboratory reporting limits.

- Since 2012 concentrations of diesel- and motor oil-range organics in MW-02 and MW-05 have declined from above MTCA A regulatory cleanup levels to well below regulatory cleanup levels. This indicates that that groundwater plume has contracted to primarily encompass MW-03 and MW-04.

DISCUSSION

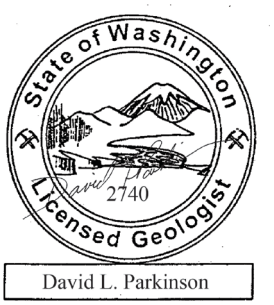
Overall, petroleum constituent concentrations in MW-03 have decreased significantly since 2012 when TPH groundwater concentrations were observed at historical maximums (Figure 4). However, these results indicate little change in conditions over the past two years, and suggest that while the concentrations are stable, there is little evidence of significant natural degradation or attenuation. The cause for this stagnation in concentrations could be either lack of sufficient aerobic conditions that are conducive to petroleum hydrocarbon degradation, or a continuing source of fuel in subsurface soils that continues discharge to groundwater.

Please contact Dave Parkinson at (206) 496-1446 or Nathan Schachtman at (206) 496-1457 if you have questions regarding this report.

Sincerely,

Dave Parkinson, PhD, L.G. (WA)
Principal Scientist

Nathan Schachtman, G.I.T. (WA)
Senior Staff Geologist



Attachments:

Table 1: Groundwater Field Parameters
Table 2: Groundwater Analytical Results
Table 3: Duplicate Sample Results

Figure 1: Location Map
Figure 2: DRO and ORO Concentrations in Groundwater, June 2020
Figure 3: MW-02 through MW-05 Monitoring Results
Figure 4: Groundwater Elevation and Diesel Results Through June 5, 2020

Attachment A: Laboratory Report

Tables

Table 1 - Groundwater Field Parameters

Gordon Trucking Facility

Pacific, WA

Monitoring Well	Date Measured	TOC Elevation (feet AMSL)	DTW, Measured from TOC (feet)	Groundwater Elevation (feet AMSL)	Water Temperature (°C)	Electrical Conductivity (mS/cm)	pH (standard units)	ORP (mV)	Dissolved Oxygen (mg/L)
MW-01	1/11/2008	67.39	3.92	63.47	9.1	0.187	6.7	12	2.1
	6/24/2009		4.81	62.58	16.7	0.357	6.6	-10	2.2
	9/24/2009		5.56	61.83	19.7	0.184	6.2	-129	1.0
	12/16/2009		3.77	63.62	12.9	0.062	6.6	42	3.8
	3/17/2010		3.94	63.45	11.7	0.072	6.5	100	3.4
	9/30/2010		5.09	62.30	19.0	0.083	5.6	134	3.0
	3/15/2011		2.60	64.79	9.1	0.238	6.0	213	6.2
	9/7/2011		6.01	61.38	18.4	0.057	6.0	109	8.8
	3/22/2012		2.82	64.57	9.7	0.063	5.6	180.1	5.6
	9/25/2012		6.14	61.25	19.4	0.059	5.4	147	0.5
	2/11/2013		4.28	63.11	10.4	0.045	5.6	179	1.8
	2/27/2014		3.27	64.12	11.0	0.080	5.6	206	4.0
	1/20/2015		3.58	63.81	12.2	0.062	5.4	151	1.3
	2/2/2016		3.58	63.81	12.2	0.102	5.3	104	0.0
	5/18/2018		4.93	62.46	15.2	0.146	6.3	-63	3.9
	5/28/2020		4.98	62.41	16.9	0.166	6.3	-1	0.5
MW-02	1/11/2008	65.60	1.89	63.71	7.2	0.087	5.9	148	6.3
	6/24/2009		3.32	62.28	13.9	0.272	7.0	83	2.9
	9/24/2009		4.06	61.54	18.0	0.385	6.2	17	1.2
	12/16/2009		2.31	63.29	6.7	0.061	6.5	117	9.8
	3/17/2010		2.51	63.09	9.2	0.062	6.1	131	1.5
	9/30/2010		3.70	61.90	16.8	0.288	5.9	21	1.4
	3/15/2011		1.50	64.10	8.2	0.298	6.5	9	4.8
	9/7/2011		4.81	60.79	19.6	0.347	6.6	-39	3.2
	3/22/2012		1.75	63.85	8.6	0.061	5.2	147	6.4
	9/25/2012		4.77	60.83	19.3	0.455	6.0	-17	0.4
	2/11/2013		2.98	62.62	9.2	0.220	9.4	-54	9.6
	2/27/2014		1.90	63.70	9.9	0.048	5.9	182	5.7

Monitoring Well	Date Measured	TOC Elevation (feet AMSL)	DTW, Measured from TOC (feet)	Groundwater Elevation (feet AMSL)	Water Temperature (°C)	Electrical Conductivity (mS/cm)	pH (standard units)	ORP (mV)	Dissolved Oxygen (mg/L)
	1/20/2015		2.18	63.42	9.7	0.027	5.4	123	4.9
	2/2/2016		2.20	63.40	10.8	0.033	5.5	186	5.7
	5/18/2018		3.57	62.03	13.4	0.052	5.7	112.6	3.7
	5/28/2020		3.78	61.82	17.3	0.790	5.6	126	0.7
MW-03	1/11/2008	67.82	4.17	63.65	10.6	1.127	6.9	-64	0.5
	6/24/2009		5.31	62.51	14.6	2.213	6.6	-134	0.4
	9/24/2009		6.11	61.71	17.6	1.295	6.5	-125	0.2
	12/16/2009		4.51	63.31	13.3	1.263	6.6	-108	1.0
	3/17/2010		4.48	63.34	11.4	1.676	6.7	-106	1.1
	9/30/2010		5.92	61.90	17.1	1.310	6.2	-76	1.1
	3/15/2011		3.77	64.05	9.4	2.179	6.5	-87	1.6
	9/7/2011		6.87	60.95	19.1	1.310	6.6	-48	1.8
	3/22/2012		3.52	64.30	9.5	3.385	6.5	-75	2.7
	9/25/2012		6.46	61.36	17.6	1.38	6.5	-91	0.3
	2/11/2013		4.89	62.93	10.4	1.52	6.7	-78	0.4
	2/27/2014		3.90	63.92	11.7	1.28	6.3	-134	2.3
	1/20/2015		4.20	63.62	12.2	0.71	6.6	-183	2.3
	2/2/2016*		4.11	63.71	12.3	1.29	5.8	-116	2.3
	5/18/2018		5.25	62.57	13.5	0.810	6.4	-76	3.4
	5/28/2020		5.69	62.13	17.6	1.080	6.3	-122	0.6
MW-04	1/11/2008	67.29	3.68	63.61	11.2	0.887	6.3	-16	2.1
	6/24/2009		4.72	62.57	14.2	1.394	6.4	-106	0.8
	9/24/2009		5.59	61.70	18.3	1.295	6.5	-123	0.2
	12/16/2009		3.97	63.32	12.9	0.967	6.4	-56	1.5
	3/17/2010		4.00	63.29	11.1	0.965	6.5	-82	2.0
	9/30/2010		5.22	62.07	17.0	0.983	6.1	-66	1.0
	3/15/2011		2.83	64.46	9.6	0.860	6.2	-75	1.5
	9/7/2011		5.91	61.38	19.0	0.685	6.6	-64	8.4
	3/22/2012		3.06	64.23	9.6	1.028	6.4	-75	3.1
	9/25/2012		6.12	61.17	17.9	0.735	6.5	-92	2.2
	2/11/2013		4.47	62.82	9.9	0.811	6.7	-66	0.8
	2/27/2014		3.36	63.93	10.1	0.561	6.2	-99	0.8

Monitoring Well	Date Measured	TOC Elevation (feet AMSL)	DTW, Measured from TOC (feet)	Groundwater Elevation (feet AMSL)	Water Temperature (°C)	Electrical Conductivity (mS/cm)	pH (standard units)	ORP (mV)	Dissolved Oxygen (mg/L)
	1/20/2015		3.67	63.62	10.8	0.349	6.4	-163	2.0
	2/2/2016		3.59	63.70	11.3	0.789	6.6	-97	0.7
	5/18/2018		4.91	62.38	13.6	0.515	6.4	-99	3.4
	5/28/2020		5.06	62.23	21.1	7.920	6.2	-153	0.5
MW-05	6/24/2009	67.79	5.20	62.59	13.3	1.746	6.5	-111	1.3
	9/24/2009		5.99	61.80	16.2	1.142	6.5	-96	0.5
	1/21/2010		3.75	64.04	12.7	1.128	6.6	-103	0.9
	3/17/2010		4.36	63.43	12.3	1.132	6.6	-103	1.4
	9/30/2010		5.58	62.21	16.0	1.121	6.2	-116	0.8
	3/15/2011		3.17	64.62	11.3	1.101	6.2	-80	3.8
	9/7/2011		6.23	61.56	16.5	0.705	6.7	-64	7.8
	3/22/2012		3.39	64.40	11.2	1.002	6.5	-90	3.1
	2/11/2013		5.05	62.74	11.6	0.847	6.8	-104	1.1
	2/27/2014		3.73	64.06	12.0	1.01	6.5	-153	3.5
	1/20/2015		3.97	63.82	11.3	0.652	6.3	-171	3.3
	2/2/2016		3.91	63.88	13.4	1.17	6.1	-134	3.5
	5/18/2018		5.47	62.32	13.7	0.829	6.4	-125	3.4
	5/28/2020		5.39	62.40	17.0	1.000	6.4	-161	0.4

Notes:

* MW-03 was gauged on 2/2/16 but water quality parameters were collected on 2/4/16 due to sampling equipment failure.

TOC - Top of Casing

AMSL - Above Mean Sea Level

DTW - Depth to Water

ORP - Oxygen Reduction Potential (mV = millivolts)

mS/cm - microSiemens per centimenter

Table 2 - Groundwater Analytical Results
Gordon Trucking Facility
Pacific, WA

Well Name	Date Sampled	Diesel Range Organics (µg/L)	Oil Range Organics (µg/L)
MW-01	1/11/2008	<236	<472
	6/24/2009	<236	<472
	9/24/2009	<120	<240
	12/16/2009	<120	240
	3/18/2010	<120	<240
	9/30/2010	<120	<240
	3/15/2011	<120	<240
	9/7/2011	130	<240
	3/22/2012	<120	<240
	9/25/2012	<120	<240
	2/13/2013	<120	<240
	2/27/2014	<130	270
	1/20/2015	<130	<260
	2/2/2016	<110	<250
	5/18/2018	<100	<200
	5/28/2020	<100	<200
MW-02	1/11/2008	<236	<472
	6/24/2009	387	<472
	9/24/2009	490	450
	12/16/2009	270	**500**
	3/18/2010	270	**550**
	9/30/2010	<120	<240
	3/15/2011	200	<240
	9/7/2011	**1100**	**980**
	3/22/2012	260	<240
	9/25/2012	**1,300**	**940**
	2/13/2013	440	330
	2/27/2014	190	290
	1/20/2015	140	<240
	2/2/2016	<110	<250
	5/18/2018	<100	<200
	5/28/2020	<100	<200
MW-03	1/11/2008	**958**	<472
	6/24/2009	**9,200**	<472
	9/24/2009	**6,000**	**1,000**
	12/16/2009	**5,300**	**1,300**
	3/18/2010	**15,000**	**3,200**
	9/30/2010	**2,500**	<240
	3/15/2011	**13,000**	**2,500**
	9/7/2011	**5,100**	**1,500**
	3/22/2012	**17,000**	**4,900**
	9/25/2012	**4,300**	**1,700**
	2/13/2013	**8,700**	**2,500**
	2/27/2014	**2,100**	**720**
	1/20/2015	**4,200**	**1,000**
	2/25/2016	**2,000**	360
	5/18/2018	**1,920**	<200
	5/28/2020	**1,950**	370

Well Name	Date Sampled	Diesel Range Organics (µg/L)	Oil Range Organics (µg/L)
MW-04	1/11/2008	<236	<472
	6/24/2009	**836**	<472
	9/24/2009	**1,300**	**700**
	12/16/2009	**1,400**	**820**
	3/18/2010	**2,200**	**1,300**
	9/30/2010	200	<240
	3/15/2011	**2,000**	<1200
	9/7/2011	**2,300**	**1,100**
	3/22/2012	**2,300**	**1,000**
	9/25/2012	**2,100**	**810**
	2/13/2013	**1,900**	**720**
	2/27/2014	**950**	**500**
	1/20/2015	**1,400**	**530**
	2/2/2016	**750**	<250
	5/18/2018	**1,400**	<200
	5/28/2020	**1,500**	231
MW-05	6/24/2009	448	<472
	9/24/2009	490	420
	12/16/2009	**670**	**710**
	1/21/2010	**540**	**550**
	3/18/2010	**570**	**760**
	9/30/2010	<120	<240
	3/15/2011	**1,200**	500
	9/7/2011	500	460
	3/22/2012	**840**	**550**
	9/25/2012	**590**	**620**
	2/13/2013	390	370
	2/27/2014	300	310
	2/20/2015	340	<240
	2/2/2016	300	<250
	5/18/2018	<100	<200
	5/28/2020	111	<200
Method A Cleanup Levels		**500**	**500**

Notes:

1 - Sample analyzed per NWTPH-Dx Method

2 - Cleanup Levels per Table 720-1, WAC 173-340-900

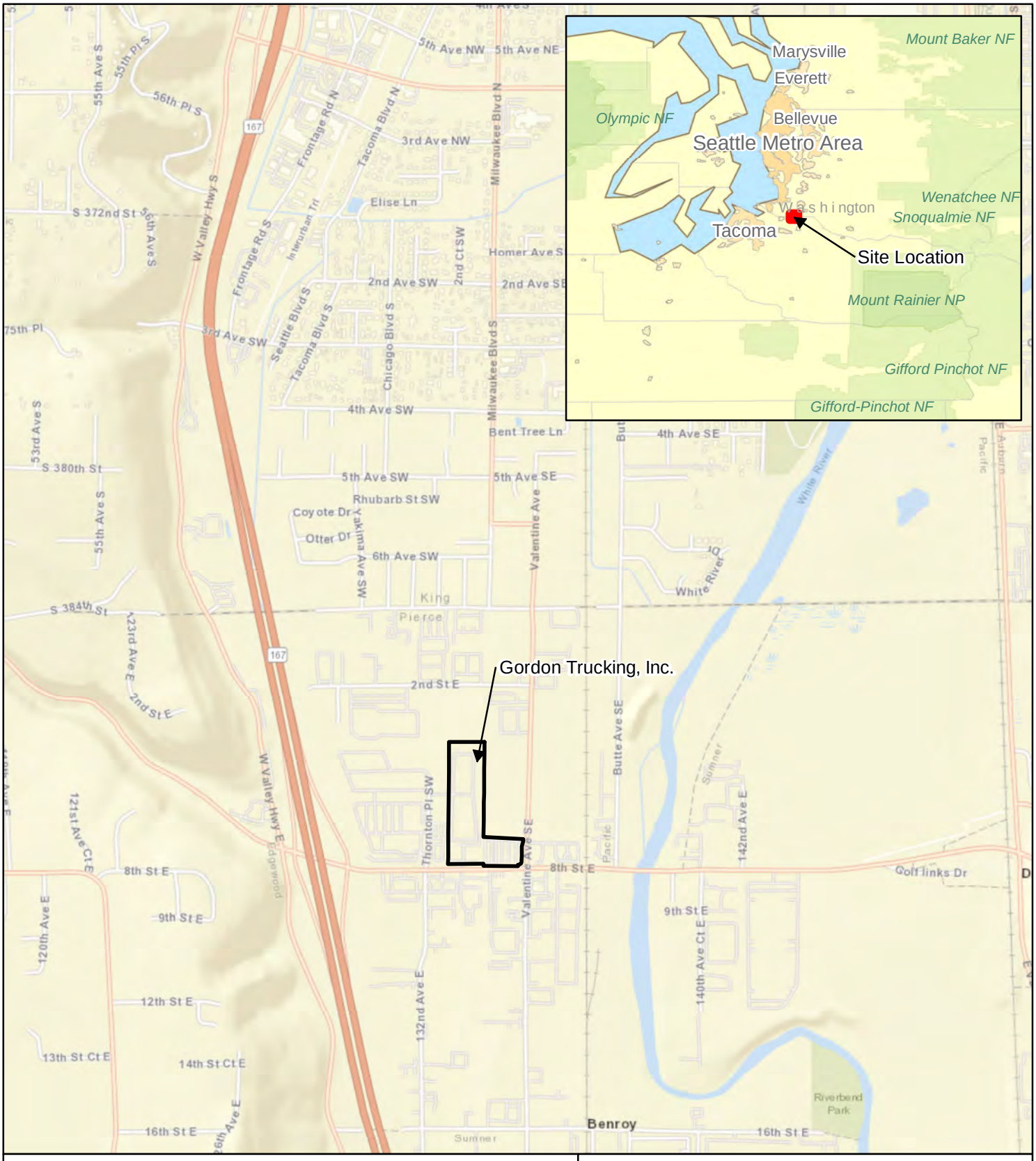
bold - Result concentration exceeds Method A Cleanup Lev

Table 3 - Duplicate Sample Results
Gordon Trucking Facility
Pacific, WA

Sample Name	Date Sampled	Diesel Range Organics (µg/L)	Oil Range Organics (µg/L)
MW-03	5/28/2020	**1,950**	335
MW-DUP	5/28/2020	**1,920**	370
RPD[1]		2%	10%

Notes:
RPD - Relative Percent Difference

Figures



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Site Location

N

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

0 750 1,500 3,000 Feet

Location Map,
Gordon Trucking, Inc.
151 Stewart Road SW,
Pacific, Washington

Geosyntec consultants

GORDON TRUCK CENTERS

PNR0698-02	August 2020	**Figure 1**

P:\CAD_GIS\Projects\PNR0698-02_Gordon Trucking\MXDs\Figure 1 Site Location Map.mxd 6/18/2020 10:05:40 AM

Legend

- Monitoring Well
- Approximate Site Boundary

Notes:
< = Analyte not detected above the laboratory reporting limit.
1 = Analyzed by NWTPH-Dx; micrograms per liter.
DRO = Diesel-range organics.
ORO = Oil-range organics.
Bold = Concentration exceeds the Washington State Model Toxics Control Act (MTCA) Method A Cleanup Level o- 500 ug/L.
Blue = Groundwater elevations measured on 5/28/2020.

N

0 150 Feet

DRO and ORO Concentrations in Groundwater, June 2020

151 Stewart Road SW,
Paci-ic, Washington

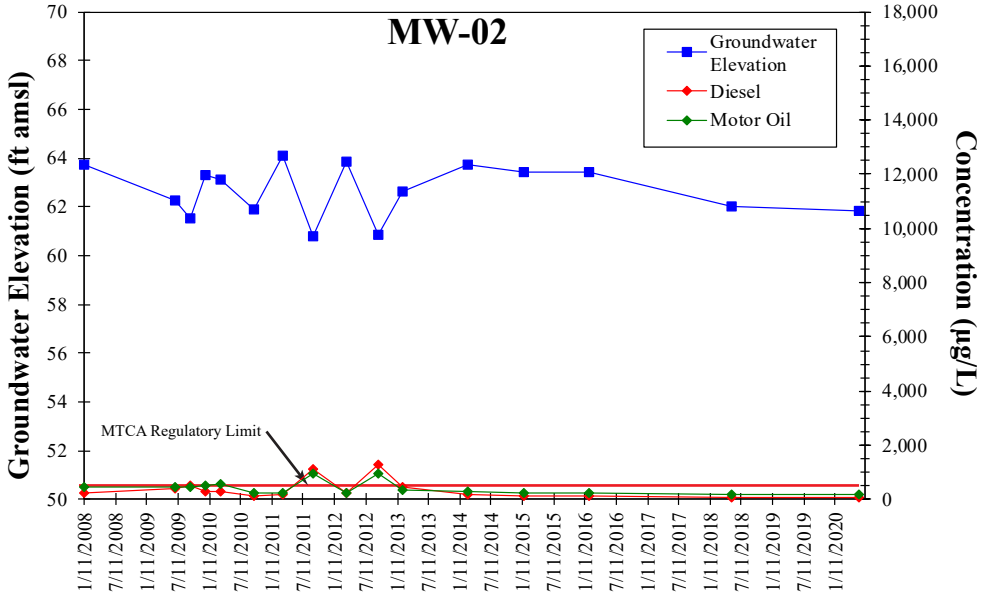
Geosyntec consultants

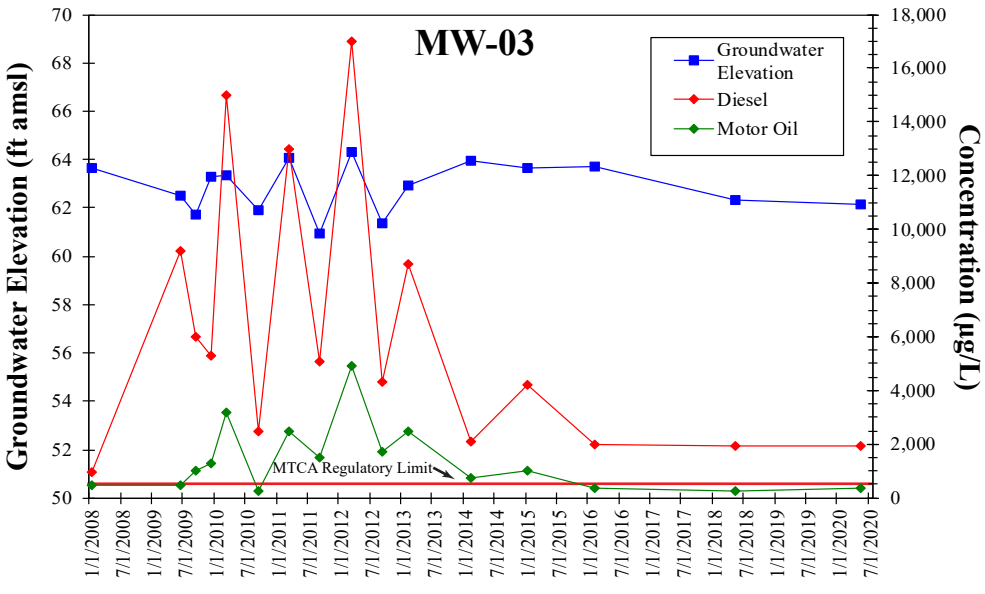
GORDON TRUCK CENTERS

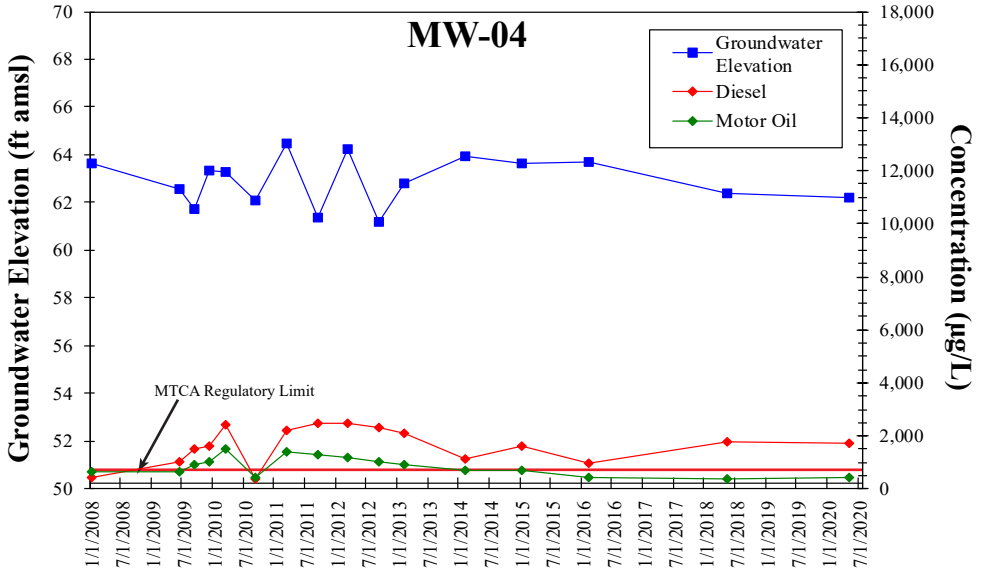
PNR0698-02 | August 2020

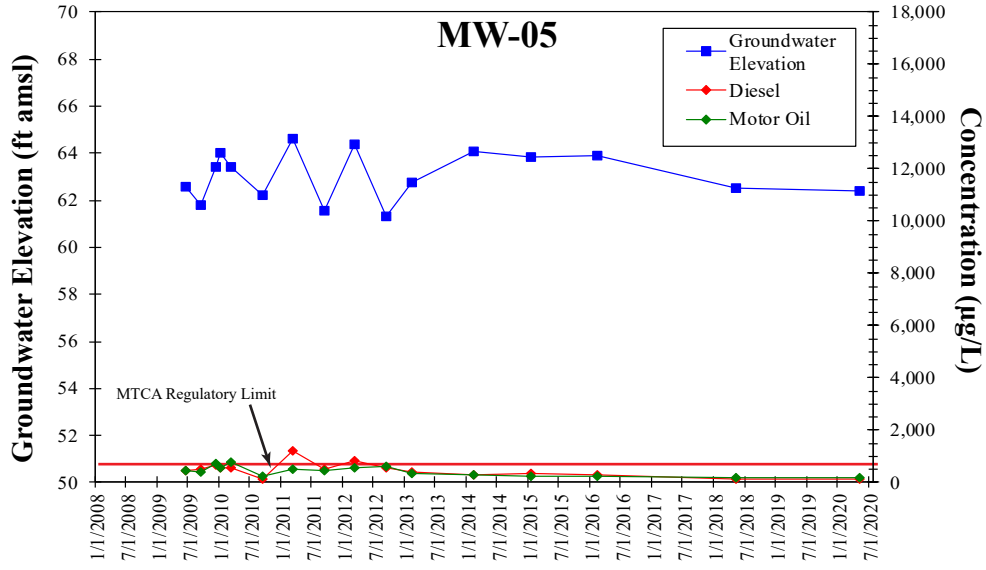
Figure 2

P:\CAD_GIS\Projects\PNR0698-02_Gordon Trucking\MXDs\Figure 2 DRO and ORO Concentrations in Groundwater.mxd 6/19/2020 5:54:40 AM









MW-02 through MW-05 Monitoring Results
Gordon Trucking, Pacific, WA
May 28, 2020

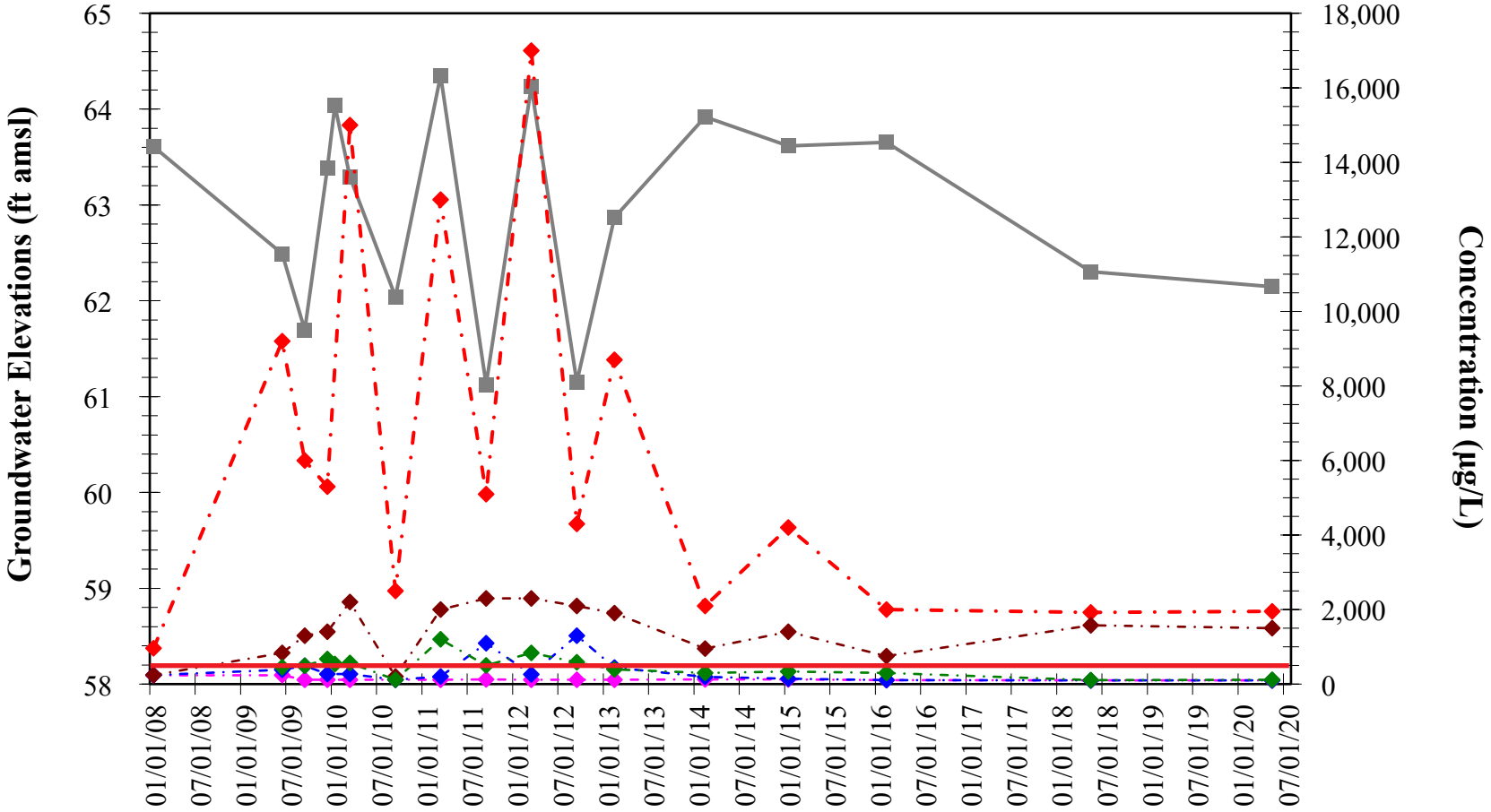
Geosyntec consultants

Seattle, WA

GORDON TRUCK CENTERS

August 2020

Figure 3



Legend

- Average Monitoring Well Groundwater Elevation
- MTCA A Regulatory Limit

Diesel Concentrations

- MW-01
- MW-02
- MW-03
- MW-04
- MW-05

Notes

ft amsl = feet above mean sea level

µg/L = micrograms per liter

Groundwater Elevation and Diesel Results Through June 5, 2020

Geosyntec consultants

GORDON TRUCK CENTERS

Seattle, WA

August 2020

Figure 4

Appendix A
Laboratory Analytical Report

Analytical Resources, Incorporated
Analytical Chemists and Consultants

11 June 2020

Dave Parkinson
Geosyntec Consultants
520 Pike Street, Suite 1375
Seattle, WA 98101

RE: Gordon Trucking

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)
20E0325	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 its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20E0325	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: Geosyntec	Phone: 206-496-1446	Date: 5/28/2020	Ice Present? Yes
Client Contact: Dave Parkinson	dparkinson@geosyntec.com	No. of Coolers: 1	Cooler Temps: 3.1 °C
Client Project Name: Gordon Trucking			
Client Project #: PNR0698	Samplers: N. Schachtman		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: NWTPH-Dx	Notes/Comments
MW01-052820	5/28/20	0930	Water	2	X	
MW05-052820		1025				
NS 5/28/20 ~~MW-02~~ MW02-052820		1115				
MW04-052820		1230				
MW03-052820		1330				
MWDup-052820		1200				

NS 5/28/20

NS 5/28/20

NS 5/28/20

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Nathan Schachtman	Printed Name: Jacob Leite	Printed Name:	Printed Name:
	Company: Geosyntec	Company: ARI	Company:	Company:
	Date & Time: 5/28/20 1530	Date & Time: 05/28/2020 1530	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01-052820	20E0325-01	Water	28-May-2020 09:30	28-May-2020 15:30
MW05-052820	20E0325-02	Water	28-May-2020 10:25	28-May-2020 15:30
MW02-052820	20E0325-03	Water	28-May-2020 11:15	28-May-2020 15:30
MW04-052820	20E0325-04	Water	28-May-2020 12:30	28-May-2020 15:30
MW03-052820	20E0325-05	Water	28-May-2020 13:30	28-May-2020 15:30
MWDUP-052820	20E0325-06	Water	28-May-2020 12:00	28-May-2020 15:30

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Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

Work Order Case Narrative

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed 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.

The LCS percent recoveries were within control limits.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: GeoSyntec

Project Name: Garden Tracking

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 20E0325

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the 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)

Time 1530 3.1°C

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00506

Cooler Accepted by: JSh Date: 05/28/2020 Time: 1530

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
How were bottles sealed in plastic bags?	Individually	Grouped	Not
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 JSh	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: JSh Date: 05/29/2020 Time: 0944 Labels checked by: JSh

*** 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:

By: Date:

Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

MW01-052820

20E0325-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 05/28/2020 09:30

Instrument: FID4 Analyst: CTO/JGR — Analyzed: 06/04/2020 22:47

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20E0325-01 A 01

Preparation Batch: BIF0018 — Sample Size: 500 mL

Prepared: 06/02/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*90.1*	*%*	

Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

MW05-052820

20E0325-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 05/28/2020 10:25

Instrument: FID4 Analyst: CTO/JGR — Analyzed: 06/05/2020 23:06

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20E0325-02 A 01

Preparation Batch: BIF0018 — Sample Size: 500 mL

Prepared: 06/02/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	0.100	0.111	mg/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*90.1*	*%*	

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Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

MW02-052820

20E0325-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 05/28/2020 11:15

Instrument: FID4 Analyst: CTO/JGR — Analyzed: 06/05/2020 23:25

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20E0325-03 A 01

Preparation Batch: BIF0018 — Sample Size: 500 mL

Prepared: 06/02/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	0.100	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	0.200	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*91.6*	*%*	

Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

MW04-052820

20E0325-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 05/28/2020 12:30

Instrument: FID4 Analyst: CTO/JGR — Analyzed: 06/05/2020 23:45

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20E0325-04 A 01

Preparation Batch: BIF0018 — Sample Size: 500 mL

Prepared: 06/02/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	0.100	1.50	mg/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	0.200	0.231	mg/L	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*82.1*	*%*	

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Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

MW03-052820

20E0325-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 05/28/2020 13:30

Instrument: FID4 Analyst: CTO/JGR — Analyzed: 06/05/2020 00:04

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20E0325-05 A 01

Preparation Batch: BIF0018 — Sample Size: 500 mL

Prepared: 06/02/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	0.100	1.95	mg/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	0.200	0.335	mg/L	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*91.4*	*%*	

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Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

MWDUP-052820

20E0325-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 05/28/2020 12:00

Instrument: FID4 Analyst: CTO/JGR — Analyzed: 06/05/2020 00:24

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20E0325-06 A 01

Preparation Batch: BIF0018 — Sample Size: 500 mL

Prepared: 06/02/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	0.100	1.92	mg/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	0.200	0.370	mg/L	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*89.0*	*%*	

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Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

Petroleum Hydrocarbons - Quality Control

Batch BIF0018 - EPA 3510C SepF

Instrument: FID4 Analyst: CTO/JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIF0018-BLK1)				Prepared: 02-Jun-2020	Analyzed: 04-Jun-2020 21:48					
Diesel Range Organics (C12-C24)	ND	0.100	mg/L							U
Motor Oil Range Organics (C24-C38)	ND	0.200	mg/L							U
Surrogate: o-Terphenyl	0.172		mg/L	*0.225*		*76.5*	*50-150*			
LCS (BIF0018-BS1)				Prepared: 02-Jun-2020	Analyzed: 04-Jun-2020 22:08					
Diesel Range Organics (C12-C24)	2.69	0.100	mg/L	3.00		89.7	56-120			
Surrogate: o-Terphenyl	0.199		mg/L	*0.225*		*88.6*	*50-150*			
LCS Dup (BIF0018-BSD1)				Prepared: 02-Jun-2020	Analyzed: 04-Jun-2020 22:27					
Diesel Range Organics (C12-C24)	2.80	0.100	mg/L	3.00		93.4	56-120	3.99	30	
Surrogate: o-Terphenyl	0.206		mg/L	*0.225*		*91.6*	*50-150*			

Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

Certified Analyses included in this Report

Analyte	Certifications
NWTPH-Dx in Water	
Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C12-C24)	DoD-ELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,WADOE
Diesel Range Organics (C12-C22)	DoD-ELAP
Diesel Range Organics (C12-C22)	DoD-ELAP
Diesel Range Organics (C12-C25)	DoD-ELAP
Diesel Range Organics (C12-C25)	DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,WADOE
Residual Range Organics (C23-C32)	DoD-ELAP
Residual Range Organics (C23-C32)	DoD-ELAP
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE

Geosyntec Consultants	Project: Gordon Trucking	
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Jet-A Range Organics (C10-C18)	DoD-ELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
WADOE	WA Dept of Ecology	C558	06/30/2020
WA-DW	Ecology - Drinking Water	C558	06/30/2020

Geosyntec Consultants	Project: Gordon Trucking	
520 Pike Street, Suite 1375	Project Number: PNR0698	**Reported:**
Seattle WA, 98101	Project Manager: Dave Parkinson	11-Jun-2020 10:30

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
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.