

TABLES

Table 1

Project No. 01-0410-R

Groundwater Elevation Measurements and LNAPL Levels

Boeing Field Chevron

10805 East Marginal Way South

Tukwila, Washington

Monitoring Well	Well Installation Date	Elevation Top of Well Casing (feet) ¹	Depth to Top of Well Screen (feet)	Depth to Bottom of Well Screen (feet)	Well Diameter (inches)	Water Level Date Measured	Depth to Water (feet) ²	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
Upper Saturated Zone										
AS-1	4/10/2019	20.83	12	14	2	8/15/2022	10.32	NM	NM	10.51
						9/7/2022	10.71	NM	NM	10.12
						9/27/2022	10.90	NM	NM	9.93
						10/17/2022	11.19	---	0	9.64
						2/22/2023	9.33	---	0	11.50
						4/24/2023	9.29	---	0	11.54
						7/19/2023	10.36	---	0	10.47
IP-4	4/19/2006	20.49	8	14	2	8/15/2022	10.04	NM	NM	10.45
						9/7/2022	10.49	NM	NM	10.00
						9/27/2022	10.69	---	0	9.80
						10/17/2022	10.95	NM	NM	9.54
						2/22/2023	9.12	---	0	11.37
						4/24/2023	9.01	---	0	11.48
						7/19/2023	10.08	---	0	10.41
SVE-1	4/11/2019	20.68	5	9	4	8/15/2022	DRY	NM	NM	DRY
						9/7/2022	DRY	NM	NM	DRY
						9/27/2022	DRY	NM	NM	DRY
						10/17/2022	DRY	NM	NM	DRY
						2/22/2023	DRY	NM	NM	DRY
						4/24/2023	DRY	NM	NM	DRY
						7/19/2023	DRY	NM	NM	DRY
TW-1	4/11/2019	20.59	5	9	2	8/15/2022	9.64	NM	NM	10.95
						9/7/2022	9.87	NM	NM	10.72
						9/27/2022	10.04	NM	NM	10.55
						10/17/2022	10.18	NM	NM	10.41
						2/22/2023	7.31	---	---	13.28
						4/24/2023	8.34	---	---	12.25
						7/19/2023	9.61	---	---	10.98
TW-2	4/11/2019	20.52	5	9	2	8/15/2022	9.29	NM	NM	11.23
						9/7/2022	9.46	NM	NM	11.06
						9/27/2022	9.63	NM	NM	10.89
						10/17/2022	9.84	NM	NM	10.68
						2/22/2023	8.49	---	---	12.03
						4/24/2023	8.26	---	---	12.26
						7/19/2023	9.54	---	---	10.98
TW-3	4/11/2019	20.38	5	9	2	8/15/2022	9.30	NM	NM	11.08
						9/7/2022	9.50	NM	NM	10.88
						9/27/2022	9.72	NM	NM	10.66
						10/17/2022	10.00	NM	NM	10.38
						2/22/2023	8.05	---	---	12.33
						4/24/2023	8.01	---	---	12.37
						7/19/2023	9.15	---	---	11.23
TW-4	8/12/2022	20.42	5	15	2	8/15/2022	10.26	NM	NM	10.16
						9/7/2022	10.64	NM	NM	9.78
						9/27/2022	10.76	NM	NM	9.66
						10/17/2022	11.03	NM	NM	9.39
						2/22/2023	9.00	---	---	11.42
						4/24/2023	8.67	---	---	11.75
						7/19/2023	10.09	---	---	10.33

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Boeing Field Chevron

10805 East Marginal Way South

Tukwila, Washington

Monitoring Well	Well Installation Date	Elevation Top of Well Casing (feet) ¹	Depth to Top of Well Screen (feet)	Depth to Bottom of Well Screen (feet)	Well Diameter (inches)	Water Level Date Measured	Depth to Water (feet) ²	Depth to Product (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
TW-5	8/12/2022	20.35	7	12	2	8/15/2022	9.93	NM	NM	10.42
						9/7/2022	10.26	NM	NM	10.09
						9/27/2022	10.42	NM	NM	9.93
						10/17/2022	10.67	NM	NM	9.68
						2/22/2023	8.98	---	---	11.37
						4/24/2023	8.85	---	---	11.50
						7/19/2023	9.93	---	---	10.42
Lower Saturated Zone										
IP-3	4/19/2006	20.28	18	24	2	8/15/2022	14.06	NM	NM	6.22
						9/7/2022	15.87	---	0	4.41
						9/27/2022	14.15	NM	NM	6.13
						10/17/2022	14.65	NM	NM	5.63
						2/22/2023	12.81	---	---	7.47
						4/24/2023	12.91	---	---	7.37
						7/19/2023	14.22	---	---	6.06
IP-5	4/26/2006	21.08	18	24	2	8/15/2022	12.13	NM	NM	8.95
						9/7/2022	16.45	---	0	4.63
						9/27/2022	14.92	NM	NM	6.16
						10/17/2022	15.41	NM	NM	5.67
						2/22/2023	13.63	---	---	7.45
						4/24/2023	13.52	---	---	7.56
						7/19/2023	14.97	---	---	6.11
IP-7*	8/4/2006	20.31	17	23	2	8/15/2022	13.93	12.93	2.33	6.38
						9/7/2022	15.67	15.26	2.05	4.64
						9/27/2022	14.10	13.43	0.67	6.21
						10/7/2022 ³	12.27	15.34	2.37	8.04
						10/17/2022	14.47	14.14	1.66	5.84
						12/16/2022 ³	10.16	13.27	2.14	10.15
						12/19/2022	10.16	13.10	0.17	10.15
						1/20/2023 ³	9.78	12.23	0.35	10.53
						2/22/2023	12.79	12.62	0.84	7.52
						4/24/2023	12.77	12.32	2.23	7.54
						7/19/2023	14.16	13.63	2.66	6.15

Notes:

- ¹ Elevations based on subject property specific datum established during previous well installation program
- ² Depth to water measured from the top of the well casing
- ³ Extraction Event
-
- No product detected
- DRY Dry well, depth to water greater than well depth
- NM Not measured
- IP-7* Depth to water corrected for product DTW-(DTW-DTP) x 0.8
- DTW Depth to Water
- DTP Depth to Product
- 0 No product detected with interface probe
- LNAPL Light nonaqueous-phase liquids

TABLE 2
Groundwater Sample Analytical Results
Boeing Field Chevron
10805 East Marginal Way
Tukwila, Washington

Project No. 01-0410-R

		Total Petroleum Hydrocarbons (µg/L)			Volatile Organic Compounds (µg/L)				Total Organic Carbon (mg/L)
Sample Identification	Sample Date	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Benzene	Toluene	Ethylbenzene	Total Xylenes ¹	
MTCA Method A Cleanup Level ²		1,000/800 ³	500	500	5	1,000	700	1,000	NE
AS-1	8/15/2022	474	617	478	5.98	<0.750	31.8	26.7	---
	9/27/2022	5,780 D	3,610	<93.0	104 D	14.8 D	464 D	240 D	---
	9/27/2022*	5,960	3,990	<92.6	109 D	15.1 D	486 DE	250	---
	2/23/2023	6,000	2,900 M	620	32	36	310	710	---
	2/23/2023*	9,200	4,400 M	740	43	44	390	870	---
	4/25/2023	3,000	<450 M1 Q U1	<220 Q	16	15	150	350	---
	7/20/2023	2,900	720 MQ	<220 Q	25	18	150	380	---
IP-3	8/15/2022	4,450 D	277	612	1,080 DE	21.9	43.1 D	92.1 D	8.43
	8/15/2022*	4,540 D	306	<94.4	1,070 DE	20.9	43.3	106	9.56
	2/23/2023	29,000	2,100 M	480	3,100	4,700	1,200	3,410	---
	4/25/2023	21,000	<930 M1 Q U1	<210 Q	2,100	3,700	1,200	3,720	---
	7/20/2023	20,000	1600 MQ	400	1,100	1,600	1,300	3,200	---
IP-4	8/15/2022	126,000 DE	9,500	<1,110	54.6 D	2,140 DE	5,100 DE	14,500 DE	---
	9/27/2022	114,000 D	17,300	<92.7	47.2 JD	2,420 D	4,110 D	17,600 D	---
	2/23/2023	63,000	3,300 M	530	27	81	1,600	6,600	---
	4/25/2023	57,000	<4,500 M1 U1	320	26	110	3,100	10,800	---
	7/20/2023	66,000	6300 M	570	41	340	4,800	12,100	---
IP-5	8/15/2022	13,200 D	625	<95.7	1,940 D	346 D	358 D	916 D	7.94
	2/22/2023	21,000	3,400 M	550	3,000	350	1,100	2,990	---
	4/24/2023	14,000	<2,000 M1 U1	460	1,700	190	860	2,050	---
	7/19/2023	25,000	2,600	430	4,900	3,000	1,400	3,240	---
IP-7	8/15/2022	111,000 D	49,300 D	<93.9	1,040 D	3,620 D	2,920 D	15,300 D	20.7
	2/23/2023	82,000	16,000 M	680	850	6,700	2,600	13,600	---
	4/25/2023	53,000	<2,200 M1 U1	260	450	4,400	2,300	11,900	---
	7/20/2023	54,000	4,000	380	840	5,300	2,500	12,500	---
TW-1	8/15/2022	NS	NS	NS	NS	NS	NS	NS	---
	2/22/2023	<100	130	350	<0.20	<1.0	<0.20	<0.40	---
	4/24/2023	<100	<210	<220	<0.20	<1.0	<0.20	<0.40	---
	4/24/2023*	<100	<210	<220	<0.20	<1.0	<0.20	<0.40	---
	7/19/2023	<100	170	300	0.30	1.1	0.89	4.9	---
	7/19/2023*	<100	230	570	0.33	1.2	0.99	5.5	---
TW-2	8/15/2022	NS	NS	NS	NS	NS	NS	NS	---
	2/22/2023	100	110 M	310	0.24	9.3	7.5	42	---
	4/24/2023	330	<210	<220	<0.40	7.1	5.6	31	---
	7/19/2023	7,400	170	600	1.3	28	18	90	---
TW-3	8/15/2022	NS	NS	NS	NS	NS	NS	NS	---
	9/27/2022	NS	NS	NS	NS	NS	NS	NS	---
	2/22/2023	14,000	4,800 M	620	2,800	<100	1,500	1,200	---
	4/24/2023	13,000	<3,700 M1 U1	350	2,400	96	1,600	1,900	---
TW-4	8/15/2022	139	561	<94.7	<0.440	4.25	0.811	4.88	---
	9/27/2022	133	381	<91.9	<0.440	6.35	0.978	4.20	---
	2/22/2023	<100	<120	310	<0.20	1.1	0.30	1.28	---
	4/24/2023	<100	<230	<230	<0.40	<2.0	0.86	4.40	---
	7/19/2023	<100	120	300	<0.20	<1.0	<0.20	0.41	---

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Groundwater Sample Analytical Results
Boeing Field Chevron
10805 East Marginal Way
Tukwila, Washington

		Total Petroleum Hydrocarbons (µg/L)			Volatile Organic Compounds (µg/L)				Total Organic Carbon (mg/L)
Sample Identification	Sample Date	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Benzene	Toluene	Ethylbenzene	Total Xylenes ¹	
MTCA Method A Cleanup Level ²		1,000/800 ³	500	500	5	1,000	700	1,000	NE
TW-5	8/15/2022	214,000 DE	8,850	<94.2	351 D	38,400 DE	6,000 DE	23,800 DE	---
	9/27/2022	178,000 D	8,520	<94.2	258 JD	30,600 D	3,890 D	20,900 D	---
	2/22/2023	140,000	9,200 QM	540 Q	220	24,000	4,200	21,000	---
	4/24/2023	150,000	<4,400 M1 U1	330	220	25,000	5,400	26,700	---
	7/19/2023	150,000	3400 QM	440 Q	340	41,000	5,800	29,000	---

Notes:

Only those analytes detected or specifically targeted for evaluation are included in the table. Refer to the laboratory reports in Appendix C for full list of analytes and analytical methods.

¹ Results for xylenes is the sum of m,p-xylenes and o-xylenes, as indicated in the laboratory analytical package

² MTCA Standard Method A Groundwater Cleanup Levels for Unrestricted Land Uses

³ Lower cleanup level applies to groundwater with detectable benzene

--- Sample not analyzed

<5.02 The analyte was not detected at a concentration above the indicated reporting limit

27.2 Bold value indicates contaminant detected

3,490 Bold value and yellow shading indicates concentration exceeds applicable cleanup level

D The sample was diluted; detection limits were raised and surrogate recoveries may not be meaningful

E Value is above the quantitation range

M Hydrocarbons in the gasoline range are impacting the diesel range result

M1 Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample

MTCA Washington State Model Toxics Control Act

NE Not established

Q Surrogate recovery is out of the control limits

U1 The practical quantitation limit is elevated due to interferences present in the sample

NS Not sampled due to insufficient volume of water in the well to collect a sample

* Field duplicate sample

mg/L Milligrams per liter

µg/L Micrograms per liter

Table 3

Project No. 01-0410-R

Groundwater Field Parameter Measurements

Boeing Field Chevron

10805 East Marginal Way South

Tukwila, Washington

Monitoring Well	Observation Date	pH	Conductivity (microsiemens per centimeter)	Turbidity (nephelometric turbidity units)	Temperature (degrees Celsius)	Oxidation-Reduction Potential (millivolts)	Dissolved Oxygen (milligrams per liter)
AS-1	8/15/2022	6.60	900	NM	17.10	-0.9	0.54
	9/27/2022	7.67	3,254	NM	17.5	-240.4	0.10
	2/23/2023	7.85	2,679	378.75	10.0	-258.9	8.09
	4/25/2023	7.01	3,343	37.90	12.2	-73.3	0.68
	7/20/2023	7.23	2,554	55.74	16.5	520.9	0.41
IP-3	8/15/2022	6.35	400	NM	15.9	-37.1	0.24
	2/23/2023	9.39	3,353	590.60	10.4	-319.4	13.05
	4/25/2023	7.75	3,526	8.37	13.6	-133.5	0.35
	7/20/2023	7.44	3,342	121.39	15.4	237.2	0.55
IP-4	8/15/2022	6.53	992	NM	16.6	-115.5	0.32
	9/27/2022	6.66	1,100	NM	17.3	-134.7	0.16
	2/23/2023	7.34	1,071	33.40	8.5	-98.5	8.06
	4/25/2023	6.77	1,838	27.73	12.5	-56.1	0.43
	7/20/2023	6.70	1,000	2.94	16.4	368.4	0.70
IP-5	8/15/2022	5.89	222.8	NM	15.5	31.0	0.34
	2/22/2023	10.38	4,682	76.67	11.8	-147.9	7.20
	4/24/2023	9.06	3,037	12.37	14.4	-307.1	0.29
	7/19/2023	7.62	2,975	240.66	16.8	268.9	0.30
IP-7	2/23/2023	6.58	501	118.75	11.4	-103.9	14.14
	4/25/2023	6.32	679	5.41	13.3	-15.5	0.45
	7/20/2023	6.52	574	86.24	17.3	398.6	0.54
TW-1	2/22/2023	9.31	1,259	135.34	8.9	37.7	7.20
	4/24/2023	8.39	1,510	7.16	11.50	80.1	3.08
	7/19/2023	8.13	1,593	0.29	18.5	450.6	0.69
TW-2	2/22/2023	7.82	1,517	26.96	8.3	89.7	16.09
	4/24/2023	7.05	1,667	18.32	11.3	106.9	6.56
	7/19/2023	6.90	1,428	19.63	20.2	497.3	1.72
TW-3	2/22/2023	6.82	954	3.55	9.8	-134.1	8.25
	4/24/2023	6.52	1,364	4.60	12.1	-86.2	0.60
	7/19/2023	6.75	1,318	0.55	20.7	325.5	0.59
TW-4	8/15/2022	6.73	864	NM	18.2	-54.9	0.60
	9/27/2022	6.73	734	NM	18.0	-88.1	0.26
	2/22/2023	9.52	1,441	166.40	10.0	-7.3	9.17
	4/24/2023	7.84	1,406	19.01	12.4	-35.2	7.34
	7/19/2023	7.50	1,640	0.78	19.6	299.2	0.47
TW-5	8/15/2022	6.62	829	NM	16.6	-87.9	1.18
	9/27/2022	6.42	812	NM	17.2	-147.9	0.25
	2/22/2023	9.78	7,786	213.89	10.3	-428.6	5.47
	4/24/2023	8.74	7,506	95.29	12.8	-383.6	0.25
	7/19/2023	8.87	3,958	0.14	16.8	-246.3	0.26

Notes:

Groundwater field parameters measured with YSI ProDss-10 Multiparameter Digital Water Quality Meter with flow-through cell

NM Not measured

Table 4
Groundwater Elevation Changes
Boeing Field Chevron
10805 East Marginal Way South
Tukwila, Washington

Project No. 01-0410-R

Monitoring Well	Well Installation Date	Elevation Top of Well Casing (feet) ¹	Depth to Top of Well Screen (feet)	Depth to Bottom of Well Screen (feet)	Well Diameter (inches)	Water Level Date Measured	Depth to Water (feet): Pre-Event ²	Groundwater Elevation: Pre-Event (feet)	Depth to Water (feet): Post-Event ²	Groundwater Elevation: Post-Event (feet)	Difference in Groundwater Elevation	Tide Cycle Pre/Post	Tidal Effect per RI Report ⁵
Upper Saturated Zone													
AS-1	4/10/2019	20.83	12	14	2	9/7/2022 ³	10.71	10.12	9.72	11.11	0.99	Falling/Rising	No
IP-4	4/19/2006	20.49	8	14	2	9/7/2022 ³	10.49	10.00	10.60	9.89	-0.11	Falling/Rising	No
SVE-1	4/11/2019	20.68	5	9	4	9/7/2022	DRY	DRY	DRY	DRY	DRY	Falling/Rising	NA
TW-1	4/11/2019	20.59	5	9	2	9/7/2022 ³	9.87	10.72	9.86	10.73	0.01	Falling/Rising	No
TW-2	4/11/2019	20.52	5	9	2	9/7/2022 ³	9.46	11.06	9.44	11.08	0.02	Falling/Rising	No
TW-3	4/11/2019	20.38	5	9	2	9/7/2022 ³	9.50	10.88	8.25	12.13	1.25	Falling/Rising	No
						10/7/2022 ⁴	9.96	10.42	9.96	10.42	0.00	Rising/Rising	
TW-4	8/12/2022	20.42	5	15	2	9/7/2022 ³	10.64	9.78	10.06	10.36	0.58	Falling/Rising	No
TW-5	8/12/2022	20.35	7	12	2	9/7/2022 ³	10.26	10.09	9.82	10.53	0.44	Falling/Rising	No
Lower Saturated Zone													
IP-3	4/19/2006	20.28	18	24	2	9/7/2022 ³	15.87	4.41	14.28	6.00	1.59	Falling/Rising	Yes
IP-5	4/26/2006	21.08	18	24	2	9/7/2022 ³	15.41	5.67	13.25	7.83	2.16	Falling/Rising	Yes
						10/7/2022 ^{4, 7}	16.54	4.54	NA	NA	NA	Rising/Rising	
									17.02	4.06	-0.48	Rising/Rising	
									17.30	3.78	-0.76	Rising/Rising	
									17.39	3.69	-0.85	Rising/Rising	
									17.49	3.59	-0.95	Rising/Rising	
									17.57	3.51	-1.03	Rising/Rising	
									17.30	3.78	-0.76	Rising/Rising	
IP-7 ⁶	8/4/2006	20.31	17	23	2	9/7/2022	15.67	4.64	13.66	6.65	2.01	Falling/Rising	Yes
						10/7/2022 ⁴	12.27	8.04	16.84	3.47	-1.07	Rising/Rising	

Notes:

- ¹ Elevations based on subject property specific datum established during previous well installation program
- ² Depth to water measured from the top of the well casing
- ³ Injection Event
- ⁴ Extraction Event
- ⁵ Section 2.7 of the G Logics. 2020. *Remedial Investigation Report, Boeing Field Chevron, 10805 East Marginal Way South, Tukwila, Washington 98168*. October 7, 2020.
- ⁶ Depth to water corrected for product DTW-(DTW-DTP) x 0.8 when measurable LNAPL was present; measurable LNAPL not present in IP-7 after extraction event
- ⁷ Depth to water collected over time during extraction event

DTW Depth to water
DTP Depth to product
LNAPL Light nonaqueous-phase liquid
NA Not Applicable