



ZENITH ENERGY TERMINALS HOLDINGS LLC

3900 Essex Lane, Suite 700
Houston, Texas 77027

January 30, 2023

Jim Orr
Project Manager
Northwest Region
Oregon Department of Environmental Quality
700 NE Multnomah Street
Suite 600
Portland, Oregon 97232-4100

RE: Naphtha Release Area Fourth Quarter of 2022 Status Report
Zenith Energy Terminals Portland
5501 NW Front Avenue
Portland, Oregon 97210

Mr. Orr:

Zenith Energy Terminals Holdings LLC (Zenith Energy) is submitting this quarterly status report on the naphtha release area at Zenith Energy's Portland, Oregon Terminal (ESCI ID No. 1281).

Groundwater Monitoring

Since the last status update on July 21, 2022, the naphtha release area monitoring wells were gauged on September 24, 2022 and November 29, 2022. Currently, the only naphtha release area monitoring wells that do not meet the closure criteria, "free product be reduced to below 0.01-foot of for a minimum of one year" are W-31 and W-34. Monitor well W-31's free product thickness has been between 0.61 and 1.79 feet during the past year. Monitor Well 34 had free product appear during the third quarter and fourth quarter gauging events. The measured free product thicknesses during each event was 0.11 feet. Prior to September 24, 2022, the last appearance of free product in monitor well W-34 was on November 10, 2011. Additionally, it was stated in the July 21, 2022 update letter that monitor well S-8 did not meet the previous closure criteria. Free product has not appeared in monitor well S-8 since November 10, 2021. It; therefore, meets the current closure criteria.

Updated groundwater monitoring data for the naphtha release area are provided in the following attachments:

- Attachment 1 – Groundwater Monitoring Maps
- Attachment 2 – Monitoring Well Gauging Data
- Attachment 3 – Graphs of Measured Groundwater Elevations and Free Product Thickness versus Time

Product Recovery Summary

A free product recovery system installed in monitoring well W-31 was proposed as a means to achieve the current closure criteria for the naphtha release area. Since the signing of the Voluntary Cleanup Program (VCP) agreement for the naphtha release area on October 3, 2022, the following work has been completed on the product recovery system in the fourth quarter of 2022:

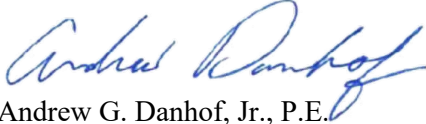
1. The free product recovery system was designed (see Attachment 4),
2. Bids were issued to recovery system equipment vendors, and
3. An equipment vendor was chosen.

The recovery system equipment was purchased in January, the equipment is expected to be delivered in mid-February, and start-up of the recovery system is expected to occur in late February/early March.

Closing

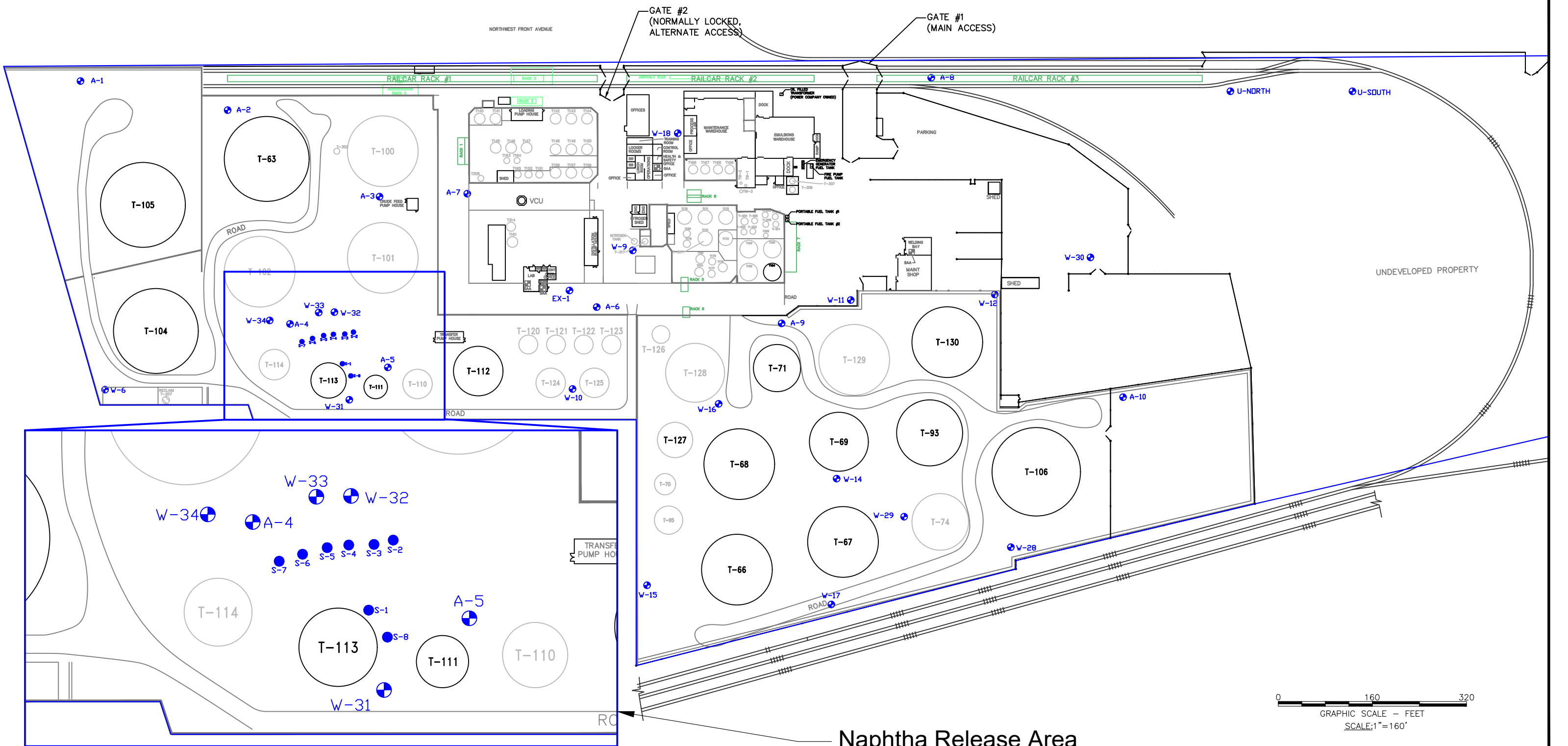
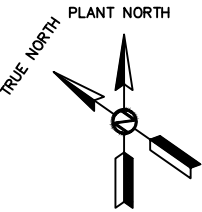
Please do not hesitate to contact Mr. Shannon Caldwell Zenith Energy's Vice President of Health, Safety, Environmental & Regulatory at (713) 395-6231 or me at (713) 395-6238 if you have any additional questions on this matter.

Sincerely,

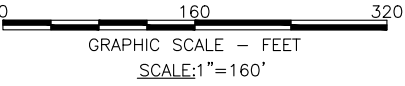
A handwritten signature in blue ink, reading "Andrew Danhof". The signature is fluid and cursive, with the first name "Andrew" and last name "Danhof" clearly visible.

Andrew G. Danhof, Jr., P.E.
Manager, Environmental and Regulatory

Attachment 1
Groundwater Monitoring Maps



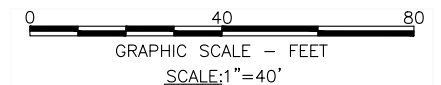
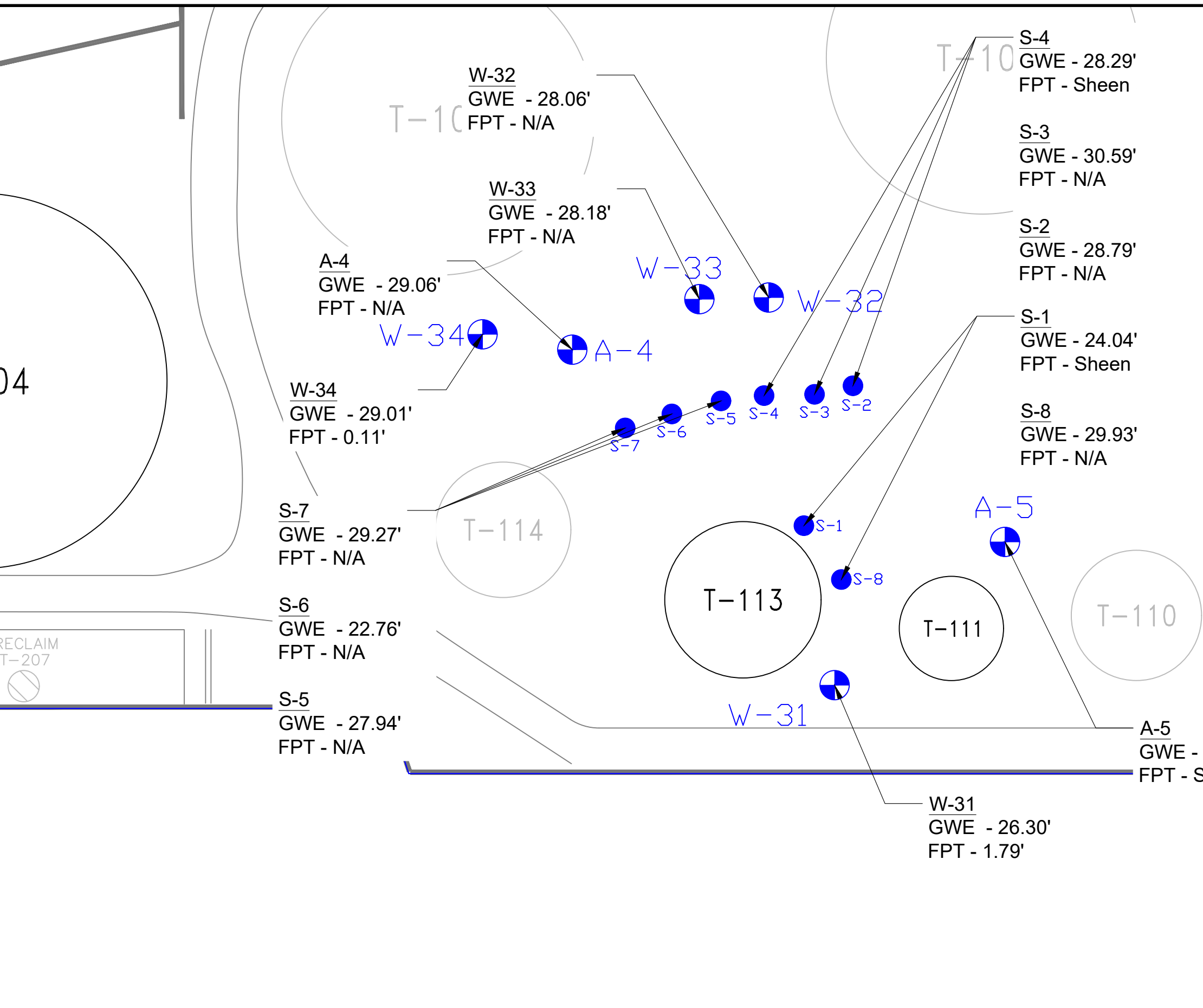
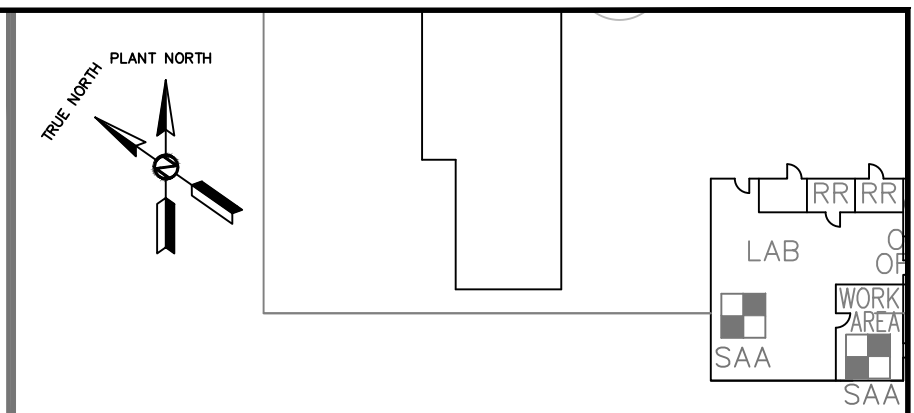
Naphtha Release Area



REV.	DESCRIPTION	DATE	BY	CHK'D



Zenith Energy Terminals 5501 NW Front Avenue Portland, OR 97210		PROJECT Naphtha Release Area Free Product Recovery		TITLE Facility-Wide Monitoring Well Network	
SCALE 1"=160'	DRAWN BY AGD	DATE 6/15/2020	SHEET NUMBER 1 OF 1	SIZE ANSI B	REV. 1
JOB NO.	CHECKED BY	DATE 6/15/2020	DRAWING NUMBER PRT-GWM-04/2020		



REV.	DESCRIPTION	DATE	BY	CHK'D



Zenith Energy Terminals
5501 NW Front Avenue
Portland, OR 97210

PROJECT

Napththa Release Area
Free Product Recovery

TITLE

Fourth Quarter 2022 Groundwater Gauging

SCALE 1"=40'	DRAWN BY AGD	DATE 1/20/2022	SHEET NUMBER 1 OF 1	SIZE ANSI B	REV. 1
JOB NO.	CHECKED BY	DATE	DRAWING NUMBER PRT-GWM-Q4 2022		

Attachment 2
Monitoring Well Gauging Data

Well Gauging Data
Zenith Energy Management
5501 NW Front Avenue
Portland, Oregon

Sump or Monitoring Well No.	Sample Date	Casing Elevation (feet msl) ¹	Depth to Water (feet) ²	Depth to LNAPL (feet) ²	LNAPL Thickness in Well (feet)	Groundwater Elevation (feet msl)	Corrected Groundwater Elevation ³ (feet msl)
A-4	5/20/2013	37.25	8.12	--	0.01	29.13	29.13
	10/14/2013		7.48	--		29.77	29.77
	2/3/2014		8.49	--		28.76	28.76
	5/16/2014		6.31	--		30.94	30.94
	9/29/2015		10.39	--		26.86	26.86
	12/15/2015		4.80	--		32.45	32.45
	3/16/2016		3.65	--		33.60	33.60
	6/29/2016		8.24	--		29.01	29.02
	9/28/2016		10.10	--		27.15	27.15
	12/29/2016		5.62	--		31.63	31.63
	3/14/2017		3.94	--		33.31	33.31
	7/7/2017		7.45	--		29.80	29.80
	9/20/2017		9.19	--		28.06	28.06
	12/29/2017		6.46	--		30.79	30.79
	3/30/2018		6.34	--		30.91	30.91
	6/29/2018		8.52	--		28.73	28.73
	9/26/2018		9.97	--		27.28	27.28
	6/21/2019		8.51	--		28.74	28.74
	9/23/2019		9.51	--		27.74	27.74
	12/23/2019		8.93	--		28.32	28.32
	2/12/2020						
	4/23/2020		7.58	--		29.67	29.67
	7/14/2020		8.95	--		28.30	28.30
	11/11/2020		9.40	--		27.85	27.85
	3/3/2021		6.08	--		31.17	31.17
	6/21/2021		8.75	--		28.50	28.50
	11/10/2021		8.34	--		28.91	28.91
	3/26/2022		6.54	--		30.71	30.71
	6/30/2022		6.71	--		30.54	30.54
	3/26/2022		6.54	--		30.71	30.71
	6/30/2022		6.71	--		30.54	30.54
	9/24/2022		8.28	--		28.97	28.97
	11/29/2022		8.19	--		29.06	29.06
A-5	9/23/2019	36.52	8.01	--		28.51	28.51
	12/23/2019		7.50	--		29.02	29.02
	2/12/2020		4.50	--		32.02	32.02
	4/9/2020		5.33	--		31.19	31.19
	4/23/2020		7.58	--		28.94	28.94
	7/14/2020		7.00	--		29.52	29.52
	11/11/2020		8.50	--		28.02	28.02
	3/3/2021		5.75	--		30.77	30.77
	6/21/2021		6.25	--		30.27	30.27
	11/10/2021		7.15	--		29.37	29.37
	3/26/2022		4.33	--		32.19	32.19
	6/30/2022		4.19	Sheen		32.33	32.33
	9/24/2022		7.16	--		29.36	29.36
	11/29/2022		6.95	Sheen		29.57	29.57

Well Gauging Data
Zenith Energy Management
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Portland, Oregon

Sump or Monitoring Well No.	Sample Date	Casing Elevation (feet msl) ¹	Depth to Water (feet) ²	Depth to LNAPL (feet) ²	LNAPL Thickness in Well (feet)	Groundwater Elevation (feet msl)	Corrected Groundwater Elevation ³ (feet msl)
W-31	12/15/2015	37.08	5.69	5.41	0.28	31.39	31.61
	3/16/2016		3.55	3.46	0.09	33.53	33.60
	6/29/2016		12.69	12.40	0.29	24.39	24.62
	9/28/2016		12.95	12.46	0.49	24.13	24.52
	12/29/2016		5.26	5.24	0.02	31.82	31.84
	3/14/2017		3.20	--	--	33.88	33.88
	7/7/2017		10.45	10.33	0.12	26.63	26.73
	9/20/2017		12.58	12.12	0.46	24.50	24.87
	12/29/2017		12.84	12.79	0.05	24.24	24.28
	3/30/2018	37.08	12.28	--	--	24.80	24.80
	6/29/2018		12.13	8.47	3.66	24.95	27.88
	9/26/2018		12.55	11.76	0.79	24.53	25.16
	6/21/2019		12.75	11.93	0.82	24.33	24.99
	9/23/2019		12.45	11.66	0.79	24.63	25.26
	12/23/2019		12.40	12.33	0.07	24.68	24.74
	2/12/2020						
	4/23/2020		--	9.00	--	--	--
	7/14/2020		13.00	10.10	2.90	24.08	26.40
	11/11/2020		12.85	12.00	0.85	24.23	24.91
	3/3/2021		5.42	5.17	0.25	31.66	31.86
	6/21/2021		12.00	9.25	2.75	25.08	27.28
	11/10/2021		12.71	11.45	1.26	24.37	25.38
	3/26/2022		6.59	5.98	0.61	30.49	30.98
	6/30/2022		8.82	7.51	1.31	28.26	29.31
	9/24/2022		12.26	10.81	1.45	24.82	25.98
	11/29/2022		12.21	10.42	1.79	24.87	26.30
W-32	5/20/2013	34.56	5.34	--		29.22	29.22
	10/14/2013		5.03	--		29.53	29.53
	2/3/2014		5.78	--		28.78	28.78
	5/16/2014		3.66	--		30.90	30.90
	9/29/2015		7.81	--		26.75	26.75
	12/15/2015		3.43	--		31.13	31.13
	3/16/2016		2.32	--		32.24	32.24
	6/29/2016		5.45	--		29.11	29.11
	9/28/2016		7.28	--		27.28	27.28
	12/29/2016		3.30	--		31.26	31.26
	3/14/2017		1.72	--		32.84	32.84
	7/7/2017		4.71	--		29.85	29.85
	9/20/2017		6.45	--		28.11	28.11
	12/29/2017		4.40	--		30.16	30.16
	3/30/2018		3.88	--		30.68	30.68
	6/29/2018		5.63	--		28.93	28.93
	9/26/2018		7.25	--		27.31	27.31
	6/21/2019		5.62	--		28.94	28.94
	9/23/2019		7.05	--		27.51	27.51
	12/23/2019		7.00	--		27.56	27.56
	2/12/2020						
	4/23/2020		5.17	--		29.39	29.39
	7/14/2020		6.50	--		28.06	28.06
	11/11/2020		7.90	--		26.66	26.66
	3/3/2021		2.58	--		31.98	31.98
	6/21/2021		6.50	--		28.06	28.06
	11/10/2021		6.57	--		27.99	27.99
	3/26/2022		3.82	--		30.74	30.74
	6/30/2022		3.89	--		30.67	30.67
	9/24/2022		3.82	--		30.74	30.74
	11/29/2022		6.50	--		28.06	28.06

Well Gauging Data
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W-33	5/20/2013	34.66	5.69	--		28.97	28.97
	10/14/2013		5.24	--		29.42	29.42
	2/3/2014		6.12	--		28.54	28.54
	5/16/2014		4.07	--		30.59	30.59
	9/29/2015		7.58	--		27.08	27.08
	12/15/2015		3.07	--		31.59	31.59
	3/16/2016		2.03	--		32.63	32.63
	6/29/2016		5.82	--		28.84	28.84
	9/28/2016		7.50	--		27.16	27.16
	12/29/2016		3.49	--		31.17	31.17
	3/14/2017		1.85	--		32.81	32.81
	7/7/2017		5.14	--		29.52	29.52
	9/20/2017		6.66	--		28.00	28.00
	12/29/2017		4.58	--		30.08	30.08
	3/30/2018		4.26	--		30.40	30.40
	6/29/2018		5.99	--		28.67	28.67
	9/26/2018		7.42	--		27.24	27.24
	6/21/2019		6.05	--		28.61	28.61
	9/23/2019		7.09	--		27.57	27.57
	12/23/2019		6.87	--		27.79	27.79
	2/12/2020						
	4/23/2020		5.48	--		29.18	29.18
	7/14/2020		6.60	--		28.06	28.06
	11/11/2020		7.70	--		26.96	26.96
	3/3/2021		4.00	--		30.66	30.66
	6/21/2021		7.00	--		27.66	27.66
	11/10/2021		6.43	--		28.23	28.23
	3/26/2022		4.33	--		30.33	30.33
	6/30/2022		4.42	--		30.24	30.24
	9/24/2022		6.53	--		28.13	28.13
	11/29/2022		6.48	--		28.18	28.18
W-34	5/20/2013	34.13	4.88	--		29.25	29.25
	10/14/2013		4.32	--		29.81	29.81
	2/3/2014		5.26	--		28.87	28.87
	5/16/2014		3.32	--		30.81	30.81
	9/29/2015		7.34	--		26.79	26.79
	12/15/2015		1.56	--		32.57	32.57
	3/16/2016		0.70	--		33.43	33.43
	6/29/2016		5.01	--		29.12	29.12
	9/28/2016		6.76	--		27.37	27.37
	12/29/2016		2.55	--		31.58	31.58
	3/14/2017		0.97	--		33.16	33.16
	7/7/2017		4.32	--		29.81	29.81
	9/20/2017		5.80	--		28.33	28.33
	12/29/2017		3.38	--		30.75	30.75
	3/30/2018		3.28	--		30.85	30.85
	6/29/2018		5.22	--		28.91	28.91
	9/26/2018		6.60	--		27.53	27.53
	6/21/2019		5.19	--		28.94	28.94
	9/23/2019		6.06	--		28.07	28.07
	12/23/2019		5.60	--		28.53	28.53
	2/12/2020						
	4/23/2020		4.58	4.50	0.08	29.55	29.61
	7/14/2020		5.82	--		28.31	28.31
	11/11/2020		6.90	--		27.23	27.23
	3/3/2021		3.08	--		31.05	31.05
	6/21/2021		5.58	--		28.55	28.55
	11/10/2021		5.15	5.07	0.08	28.98	29.04
	3/26/2022		3.41	--		30.72	30.72
	6/30/2022		3.69	--		30.44	30.44
	9/24/2022		5.26	5.15	0.11	28.87	28.96
	11/29/2022		5.21	5.10	0.11	28.92	29.01

Well Gauging Data
Zenith Energy Management
5501 NW Front Avenue
Portland, Oregon

Sump or Monitoring Well No.	Sample Date	Casing Elevation (feet msl) ¹	Depth to Water (feet) ²	Depth to LNAPL (feet) ²	LNAPL Thickness in Well (feet)	Groundwater Elevation (feet msl)	Corrected Groundwater Elevation ³ (feet msl)
S-1	5/20/2013	36.25	6.10	6.05	0.05	30.15	30.19
	10/14/2013		5.38	--		30.87	30.87
	2/3/2014		6.17	--		30.08	30.08
	5/16/2014		4.08	--		32.17	32.17
	9/29/2015		9.03	9.00	0.03	27.22	27.24
	12/15/2015		4.10	4.10		32.15	32.15
	3/16/2016		2.42	--		33.83	33.83
	6/29/2016		6.00	--		30.25	30.25
	9/28/2016		8.56	8.48	0.08	27.69	27.75
	12/29/2016		3.81	--		32.44	32.44
	3/14/2017		2.39	--		33.86	33.86
	7/7/2017		5.65	--		30.60	30.60
	9/20/2017		7.32	7.31	0.01	28.93	28.94
	12/29/2017		4.80	--		31.45	31.45
	3/30/2018		4.34	--		31.91	31.91
	6/29/2018		6.30	--		29.95	29.95
	9/26/2018		8.61	8.60	0.01	27.64	27.65
	6/21/2019		6.33	--		29.92	29.92
	12/23/2019		8.02	--		28.23	28.23
	2/12/2020						
	4/9/2020						
	7/14/2020		7.82	--		28.43	28.43
	11/11/2020		9.10	8.90	0.20	27.15	27.31
	3/3/2021		4.25	4.17	0.08	32.00	32.07
	6/21/2021		6.42	--		29.83	29.83
	11/10/2021		7.12	--		29.13	29.13
	3/26/2022		4.19	--		32.06	32.06
	6/30/2022		4.39	--		31.86	31.86
	9/24/2022		7.14	--		29.11	29.11
	11/29/2022		12.21	--		24.04	24.04
S-2	5/20/2013	35.87	5.88	--		29.99	29.99
	10/14/2013		5.67	--		30.20	30.20
	2/3/2014		6.23	--		29.64	29.64
	5/16/2014		4.18	--		31.69	31.69
	9/29/2015		8.23	8.21	0.02	27.64	27.66
	12/15/2015		4.07	--		31.80	31.80
	3/16/2016		2.40	--		33.47	33.47
	6/29/2016		5.90	--		29.97	29.97
	9/28/2016		7.83	7.82	0.01	28.04	28.05
	12/29/2016		3.95	--		31.92	31.92
	3/14/2017		2.50	--		33.37	33.37
	7/7/2017		5.23	--		30.64	30.64
	9/20/2017		7.00	--		28.87	28.87
	12/29/2017		5.13	--		30.74	30.74
	3/30/2018		4.44	--		31.43	31.43
	6/29/2018		6.08	--		29.79	29.79
	9/26/2018		7.92	--		27.95	27.95
	6/21/2019		6.05	--		29.82	29.82
	12/23/2019		7.50	--		28.37	28.37
	2/12/2020						
	4/9/2020						
	7/14/2020		6.90	--		28.97	28.97
	11/11/2020		8.10	--		27.77	27.77
	3/3/2021		4.08	--		31.79	31.79
	6/21/2021		6.33	--		29.54	29.54
	11/10/2021		7.10	--		28.77	28.77
	3/26/2022		4.36	--		31.51	31.51
	6/30/2022		4.45	--		31.42	31.42
	9/24/2022		7.12	--		28.75	28.75
	11/29/2022		7.08	--		28.79	28.79

Well Gauging Data
Zenith Energy Management
5501 NW Front Avenue
Portland, Oregon

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S-3	5/20/2013	35.73	5.83	5.83		29.90	29.90
	10/14/2013		5.55	5.54	0.01	30.18	30.19
	2/3/2014		6.19	6.19		29.54	29.54
	5/16/2014		4.05	4.03	0.02	31.68	31.70
	9/29/2015		8.28	8.25	0.03	27.45	27.47
	12/15/2015		3.84	--		31.89	31.89
	3/16/2016		2.21	--		33.52	33.52
	6/29/2016		5.89	5.87	0.02	29.84	29.86
	9/28/2016		7.80	7.79	0.01	27.93	27.94
	12/29/2016		3.76	--		31.97	31.97
	3/14/2017		2.56	--		33.17	33.17
	7/7/2017		5.18	--		30.55	30.55
	9/20/2017		7.01	7.00	0.01	28.72	28.73
	12/29/2017		4.96	--		30.77	30.77
	3/30/2018		4.33	--		31.40	31.40
	6/29/2018		5.65	--		30.08	30.08
	9/26/2018		7.95	7.86	0.09	27.78	27.85
	6/21/2019		6.05	6.04	0.01	29.68	29.69
	12/23/2019		7.56	--		28.17	28.17
	2/12/2020						
	4/9/2020						
	7/14/2020		7.50	--		28.23	28.23
	11/11/2020		8.20	8.10	0.10	27.53	27.61
	3/3/2021		4.17	--		31.56	31.56
	6/21/2021		6.33	--		29.40	29.40
	11/10/2021		5.54	--		30.19	30.19
	3/26/2022		4.30	--		31.43	31.43
	6/30/2022		4.39	--		31.34	31.34
	9/24/2022		5.44	--		30.29	30.29
	11/29/2022		5.14	--		30.59	30.59
S-4	5/20/2013	35.80	6.45	--		29.35	29.35
	10/14/2013		5.92	--		29.88	29.88
	2/3/2014		6.81	--		28.99	28.99
	5/16/2014		4.53	4.53		31.27	31.27
	9/29/2015		8.43	8.42	0.01	27.37	27.38
	12/15/2015		4.00	4.00		31.80	31.80
	3/16/2016		2.37	Trace		33.43	33.43
	6/29/2016		6.51	6.48	0.03	29.29	29.31
	9/28/2016		8.40	8.39	0.01	27.40	27.41
	12/29/2016		4.12	--		31.68	31.68
	3/14/2017		2.77	--		33.03	33.03
	7/7/2017		5.75	5.70	0.05	30.05	30.09
	9/20/2017		7.59	--		28.21	28.21
	12/29/2017		5.40	--		30.40	30.40
	3/30/2018		4.83	--		30.97	30.97
	6/29/2018		6.69	--		29.11	29.11
	9/26/2018		8.38	8.36	0.02	27.42	27.44
	6/21/2019		6.68	6.67	0.01	29.12	29.13
	12/23/2019		8.17	8.16	0.01	27.63	27.64
	2/12/2020						
	4/9/2020						
	7/14/2020		8.17	8.16	0.01	27.63	27.64
	11/11/2020		8.60	8.58	0.02	27.20	27.22
	3/3/2021		4.50	4.33	0.17	31.30	31.43
	6/21/2021		7.13	6.81	0.31	28.68	28.93
	11/10/2021		7.54	--		28.26	28.26
	3/26/2022		4.86	--		30.94	30.94
	6/30/2022		4.92	Sheen		30.88	30.88
	9/24/2022		7.55	Sheen		28.25	28.25
	11/29/2022		7.51	Sheen		28.29	28.29

Well Gauging Data
Zenith Energy Management
5501 NW Front Avenue
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Sump or Monitoring Well No.	Sample Date	Casing Elevation (feet msl) ¹	Depth to Water (feet) ²	Depth to LNAPL (feet) ²	LNAPL Thickness in Well (feet)	Groundwater Elevation (feet msl)	Corrected Groundwater Elevation ³ (feet msl)
S-5	5/20/2013	35.63	6.54	6.54		29.09	29.09
	10/14/2013		5.92	--		29.71	29.71
	2/3/2014		6.92	--		28.71	28.71
	5/16/2014		4.52	--		31.11	31.11
	9/29/2015		8.91	8.87	0.04	26.72	26.75
	12/15/2015		3.60	--		32.03	32.03
	3/16/2016		2.16	--		33.47	33.47
	6/29/2016		6.55	6.52	0.03	29.08	29.10
	9/28/2016		8.47	8.40	0.07	27.16	27.22
	12/29/2016		3.99	--		31.64	31.64
	3/14/2017		2.52	--		33.11	33.11
	7/7/2017		5.75	--		29.88	29.88
	9/20/2017		7.65	--		27.98	27.98
	12/29/2017		5.37	--		30.26	30.26
	3/30/2018		4.80	--		30.83	30.83
	6/29/2018		6.75	--		28.88	28.88
	9/26/2018		8.43	8.40	0.03	27.20	27.22
	6/21/2019		6.76	6.75	0.01	28.87	28.88
	12/23/2019		8.10	8.05	0.05	27.53	27.57
	2/12/2020						
	4/9/2020						
	7/14/2020		8.20	8.05	0.05	27.43	27.47
	11/11/2020		8.60	8.58	0.03	27.03	27.05
	3/3/2021		5.33	5.25	0.08	30.30	30.36
	6/21/2021		7.00	--		28.63	28.63
	11/10/2021		7.61	--		28.02	28.02
	3/26/2022		4.87	--		30.76	30.76
	6/30/2022		4.94	--		30.69	30.69
	9/24/2022		7.63	--		28.00	28.00
	11/29/2022		7.69	--		27.94	27.94
S-6	5/20/2013	35.30	6.35	6.34	0.01	28.95	28.96
	10/14/2013		5.99	5.98	0.01	29.31	29.32
	2/3/2014		6.71	6.70	0.01	28.59	28.60
	5/16/2014		4.32	--		30.98	30.98
	9/29/2015		8.76	8.73	0.03	26.54	26.56
	12/15/2015		3.09	--		32.21	32.21
	3/16/2016		1.78	--		33.52	33.52
	6/29/2016		6.35	--		28.95	28.95
	9/28/2016		8.35	8.17	0.18	26.95	27.09
	12/29/2016		3.65	--		31.65	31.65
	3/14/2017		2.05	--		33.25	33.25
	7/7/2017		5.52	--		29.78	29.78
	9/20/2017		6.62	--		28.68	28.68
	12/29/2017		4.78	--		30.52	30.52
	3/30/2018		4.46	--		30.84	30.84
	6/29/2018		6.53	--		28.77	28.77
	9/26/2018		8.05	--		27.25	27.25
	6/21/2019		6.56	--		28.74	28.74
	12/23/2019		7.19	7.16	0.03	28.11	28.13
	2/12/2020						
	4/9/2020						
	7/14/2020		7.30	--		28.00	28.00
	11/11/2020		9.10	--		26.20	26.20
	3/3/2021		4.25	--		31.05	31.05
	6/21/2021		6.50	--		28.80	28.80
	11/10/2021		7.23	--		28.07	28.07
	3/26/2022		4.58	--		30.72	30.72
	6/30/2022		4.75	--		30.55	30.55
	9/24/2022		7.21	--		28.09	28.09
	11/29/2022		12.54	--		22.76	22.76

Well Gauging Data
Zenith Energy Management
5501 NW Front Avenue
Portland, Oregon

Sump or Monitoring Well No.	Sample Date	Casing Elevation (feet msl) ¹	Depth to Water (feet) ²	Depth to LNAPL (feet) ²	LNAPL Thickness in Well (feet)	Groundwater Elevation (feet msl)	Corrected Groundwater Elevation ³ (feet msl)
S-7	5/20/2013	36.23	7.25	7.19	0.06	28.98	29.03
	10/14/2013		6.43	6.42	0.01	29.80	29.81
	2/3/2014		7.46	7.42	0.04	28.77	28.80
	5/16/2014		5.14	5.14		31.09	31.09
	9/29/2015		9.35	9.27	0.08	26.88	26.94
	12/15/2015		3.95	--		32.28	32.28
	3/16/2016		2.66	--		33.57	33.57
	6/29/2016		7.18	--		29.05	29.05
	9/28/2016		9.01	8.94	0.07	27.22	27.28
	12/29/2016		4.55	--		31.68	31.68
	3/14/2017		2.90	--		33.33	33.33
	7/7/2017		6.49	6.36	0.13	29.74	29.84
	9/20/2017		8.30	8.20	0.10	27.93	28.01
	12/29/2017		5.63	--		30.60	30.60
	3/30/2018		5.21	--		31.02	31.02
	6/29/2018		7.33	--		28.90	28.90
	9/26/2018		8.92	8.90	0.02	27.31	27.33
	6/21/2019		7.43	--		28.80	28.80
	12/23/2019		7.72	--		28.51	28.51
	2/12/2020						
	4/9/2020						
	7/14/2020		8.30	--		27.93	27.93
	11/11/2020		8.70	--		27.53	27.53
	3/3/2021		5.17	--		31.06	31.06
	6/21/2021		7.38	7.33	0.04	28.86	28.89
	11/10/2021		7.20	--		29.03	29.03
	3/26/2022		5.37	--		30.86	30.86
	6/30/2022		5.54	--		30.69	30.69
	9/24/2022		7.15	--		29.08	29.08
	11/29/2022		6.96	--		29.27	29.27
S-8	5/20/2013	36.88	6.28	6.27	0.01	30.60	30.61
	10/14/2013		6.48	6.47	0.01	30.40	30.41
	2/3/2014		6.83	6.82	0.01	30.05	30.06
	5/16/2014		4.76	4.63	0.13	32.12	32.22
	9/29/2015		9.80	9.74	0.06	27.08	27.13
	12/15/2015		6.87	--		30.01	30.01
	3/16/2016		3.00	--		33.88	33.88
	6/29/2016		6.39	6.31	0.08	30.49	30.55
	9/28/2016		9.29	9.01	0.28	27.59	27.81
	12/29/2016		4.52	--		32.36	32.36
	3/14/2017		2.97	--		33.91	33.91
	7/7/2017		6.30	--		30.58	30.58
	9/20/2017		8.05	7.91	0.14	28.83	28.94
	12/29/2017		5.98	--		30.90	30.90
	3/30/2018		4.96	4.95	0.01	31.92	31.93
	6/29/2018		6.56	6.54	0.02	30.32	30.34
	9/26/2018		9.40	9.29	0.11	27.48	27.57
	6/21/2019		6.60	6.53	0.07	30.28	30.34
	12/23/2019		9.76	9.56	0.20	27.12	27.28
	2/12/2020						
	4/9/2020						
	7/14/2020		7.75	7.65	0.10	29.13	29.21
	11/11/2020		10.00	9.70	0.30	26.88	27.12
	3/3/2021		4.50	--		32.38	32.38
	6/21/2021		7.08	6.67	0.42	29.80	30.13
	11/10/2021		9.00	8.10	0.90	27.88	28.60
	3/26/2022		4.80	--		32.08	32.08
	6/30/2022		4.94	--		31.94	31.94
	9/24/2022		10.86	Sheen		26.02	26.02
	11/29/2022		6.95	--		29.93	29.93

Well Gauging Data
Zenith Energy Management
5501 NW Front Avenue
Portland, Oregon

Sump or Monitoring Well No.	Sample Date	Casing Elevation (feet msl) ¹	Depth to Water (feet) ²	Depth to LNAPL (feet) ²	LNAPL Thickness in Well (feet)	Groundwater Elevation (feet msl)	Corrected Groundwater Elevation ³ (feet msl)
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Notes:

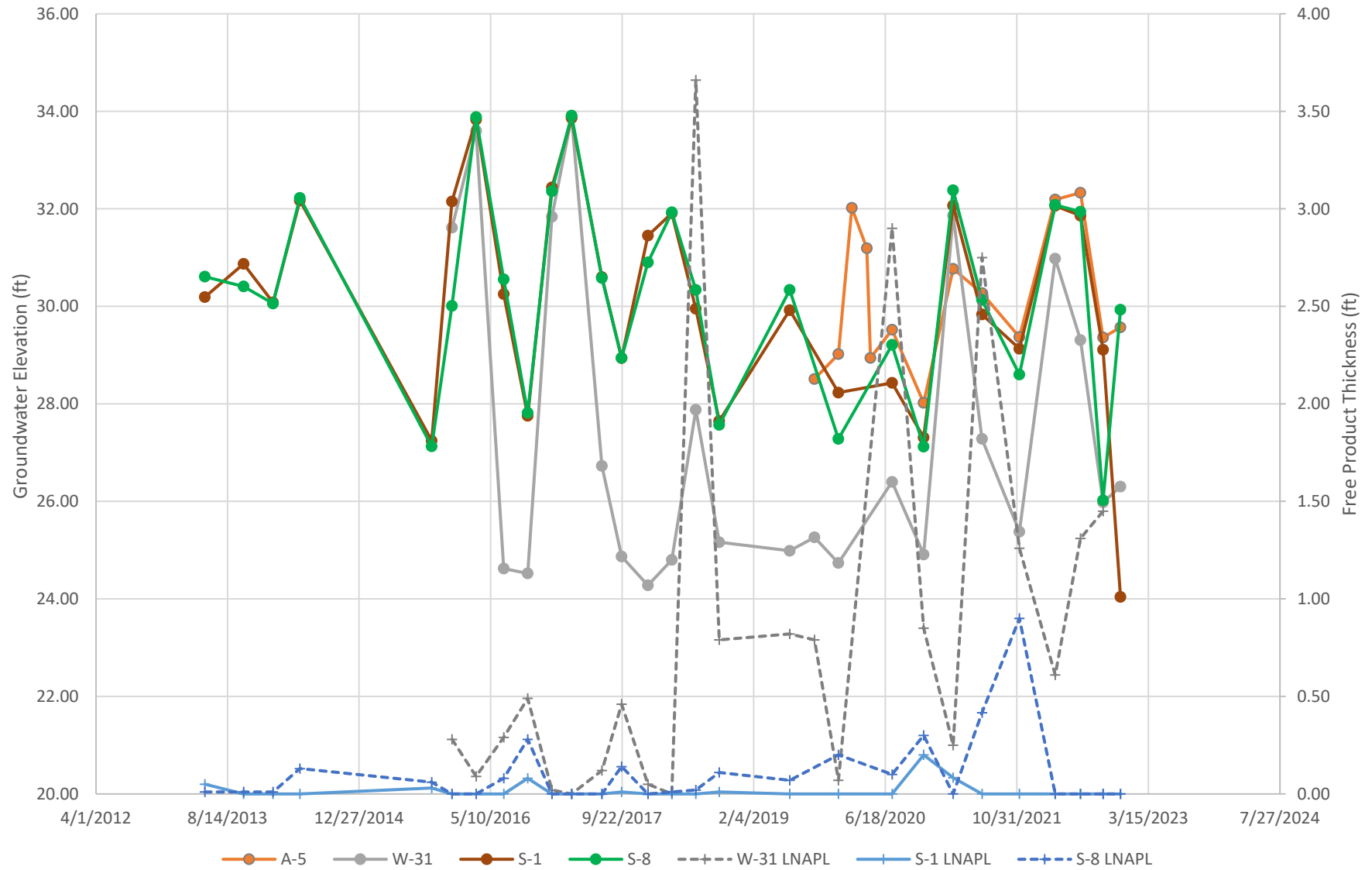
1. "Depth to Water" and "Depth to LNAPL" are measured from a surveyed reference elevation at the top of the sump or well casing.
2. Where LNAPL was present, a groundwater elevation correction was calculated using a specific gravity of 0.80 for the LNAPL.
3. feet bgs = feet below ground surface.
4. msl = mean sea level
5. LNAPL = light non-aqueous phase liquid
6. -- = Not applicable, or no measurable LNAPL present.

Attachment 3

Graphs of Measured Groundwater Elevations and Free Product Thicknesses versus Time

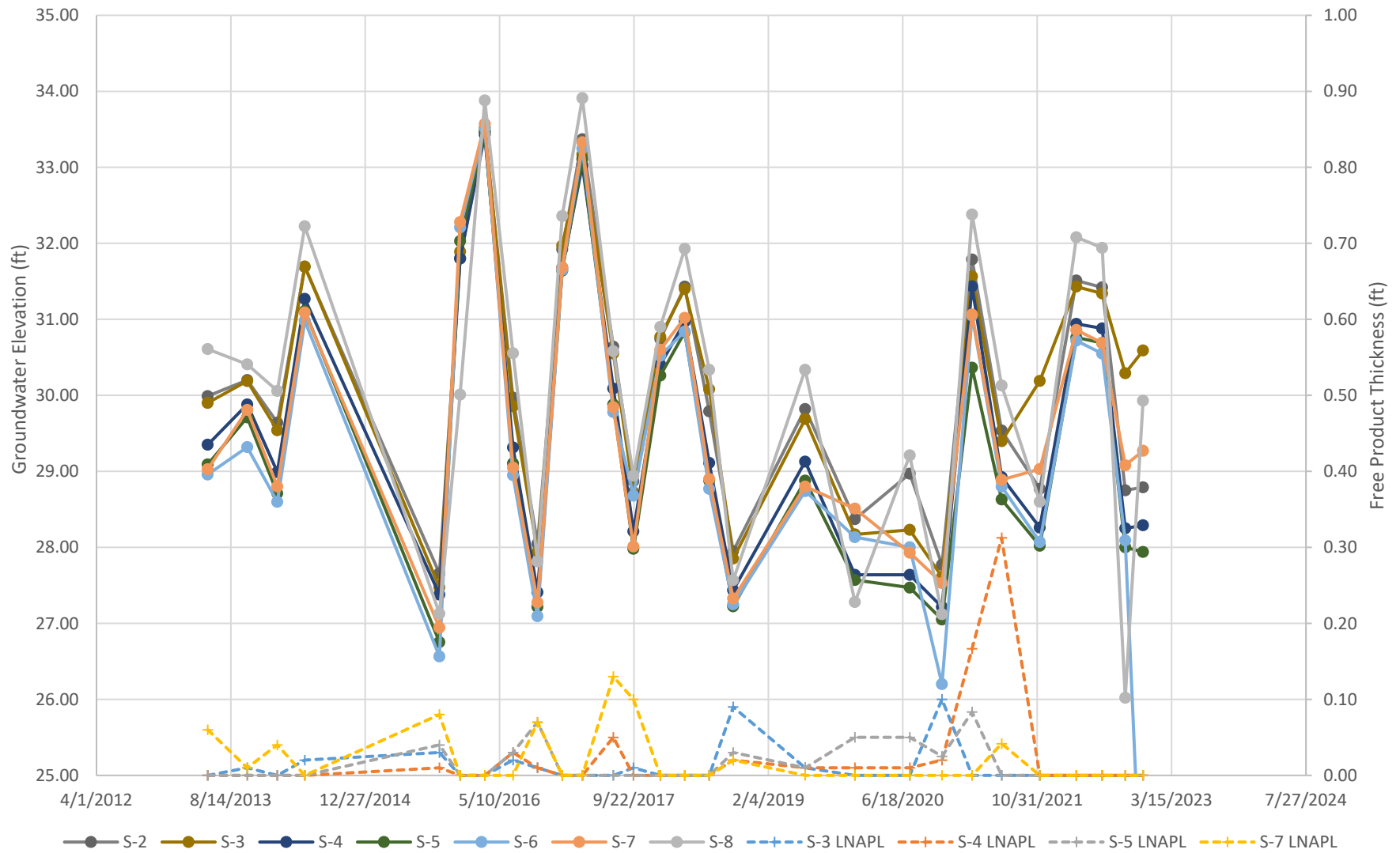
Naphtha Release Area Upgradient Well Groundwater Elevation & Free Product Thickness

vs
Time



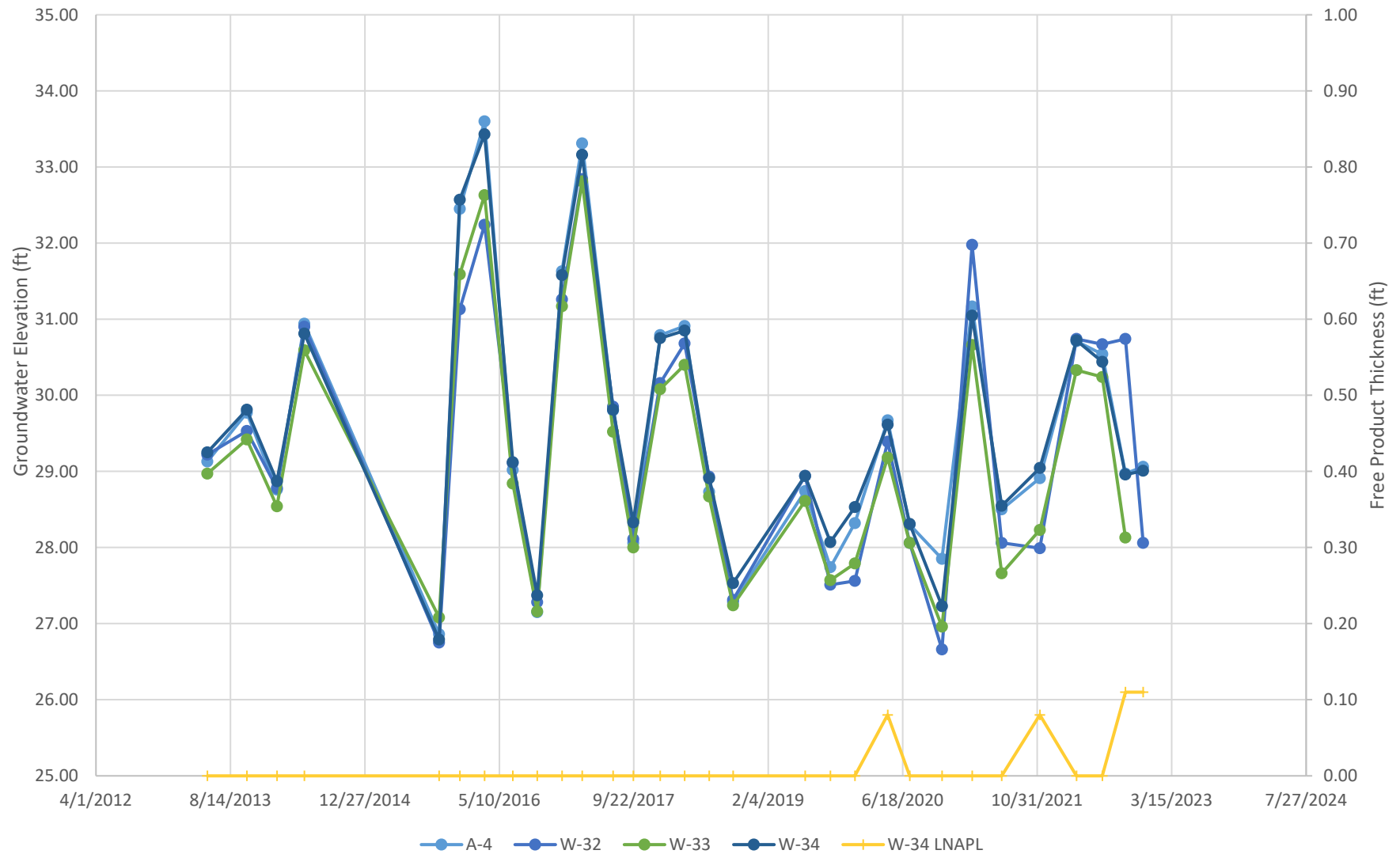
Naphtha Release Area Group 1 Downgradient Monitoring Well Groundwater Elevation & Free Product Thickness

vs
Time

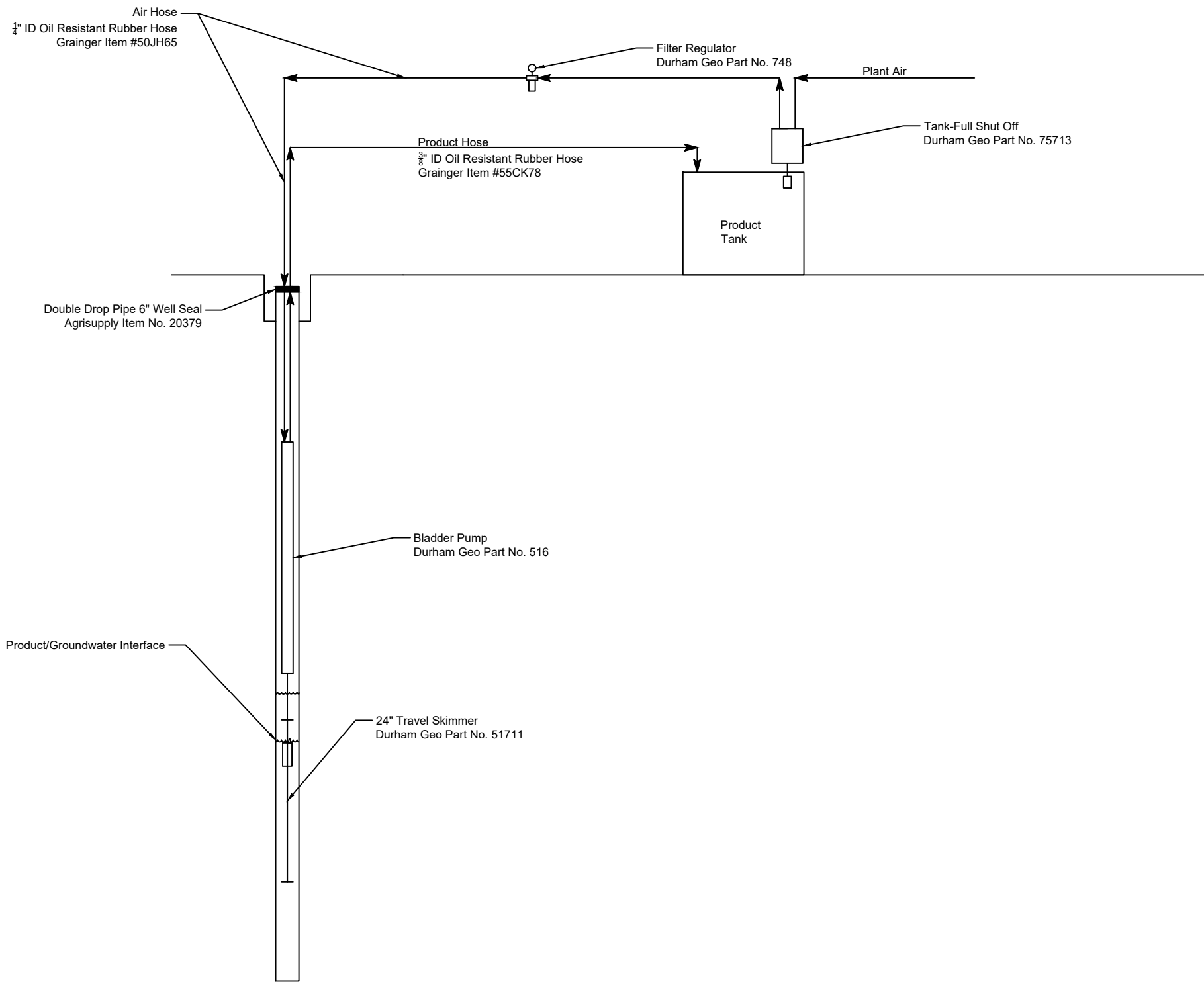


Naphtha Release Area Group 2 Downgradient Monitoring Well Groundwater Elevation & Free Product Thickness

vs
Time



Attachment 4
Free Product Recovery System Schematic



REV.	DESCRIPTION	DATE	BY	CHK'D



5501 NW Front Avenue
Portland, OR 97210

PROJECT	
Portland Terminal W-31 Product Skimmer	

TITLE					
Free Product Recovery System Schematic					
SCALE	DRAWN BY	DATE	SHEET NUMBER OF	SIZE ANSI B	REV.
JOB NO.	CHECKED BY	DATE	DRAWING NUMBER		