



Western Refining Southwest LLC

I-40 Exit 39 A subsidiary of Marathon Petroleum Corporation
Jamestown, NM 87347

January 17, 2022

Mr. Kevin Pierard, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

**RE: Borrow Pit Interceptor Sumps Interim Measure Letter
Marathon Gallup Refinery
(dba Western Refining Southwest LLC)
EPA ID# NMD000333211**

Dear Mr. Pierard,

This interim measure (IM) letter report summarizes the monitoring data collected and the effectiveness of the Borrow Pit Area fluid collection system, as requested in Comment 1 of New Mexico Environment Department's (NMED) *Approval with Modifications, Borrow Pit Interceptor Sumps Installation Summary Letter*, dated August 17, 2021. In accordance with the IM provisions of the Final RCRA Permit No. NM000333211, Marathon Petroleum Company (MPC) submitted a previous letter summarizing the IM installation and initial operation of the Borrow Pit interceptor sumps on July 8, 2021. Although the IM is ongoing, data has been collected and summarized up to November 30, 2021 in this report. Future Borrow Pit IM data will be provided in the quarterly Hydrocarbon Seep IM reports as directed by NMED comment 7 of *Approval with Modifications, Borrow Pit Interceptor Sumps Installation Summary Letter*, dated August 17, 2021.

Background

Groundwater and separate-phase hydrocarbon (SPH) were first observed on the surface of the Borrow Pit area in 2020. Following a conversation with New Mexico Environment Department (NMED) (March 16, 2021), a plan was developed to intercept the groundwater and SPH. During the week of April 12, 2021, five recovery sumps and two piezometers were installed to intercept fluids within the Borrow Pit area. Figure 1 presents a site map with the surveyed sump and piezometer locations. Additional details of the installation were provided in the July 8, 2021 letter report referenced above. Survey data were not included in this letter but are included in Table 1 attached.

Summary of Results

Table 2 summarizes the sump and piezometer gauging data since installation, including depth to water, depth to SPH, SPH thickness, and water thickness. Starting the week of May 10, 2021, total fluids (SPH and groundwater) were removed from the sumps using a vac truck 3-4 times per week. Sumps S-1, S-2, and S-3 have contained measurable SPH (2.27 feet [ft] to 5.37 ft) since installation on April 16, 2021. Other sumps and the piezometers did not contain measurable SPH immediately after installation. SPH



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was first detected in S-4 and S-5 in September 2021 (Table 2) and has been increasing in thickness in S-4, with a current thickness of 0.4 ft measured on November 30, 2021. SPH thickness in S-5 has been limited to a film (0.01 ft thickness), and not been detected consistently since October. No SPH has been detected in PZ-1 or PZ-2 since installation.

A combined average of approximately 31 gallons of SPH per extraction have been evacuated from the sumps. Figure 2 presents graphs of SPH thickness and SPH recovered versus time. As of November 30, 2021, approximately 3,059 gallons of SPH and 12,500 gallons of water have been recovered from all sumps. Prior to November 2021, these volumes were estimated based on well construction dimensions, including borehole and casing diameter, and depths. As of November 2021, a more accurate method of measuring recovered volumes was implemented where groundwater and SPH are first stored in a tote tank so that an accurate measure of fluid volumes can be determined. Once the volume data are recorded, the recovered fluids are transferred to a frac tank. The tank is equipped with carbon filters to control fugitive volatile organic contaminant emissions. The SPH is recycled, and groundwater is treated in the refinery's wastewater treatment plant.

Summary of Problems Encountered

Weather and muddy conditions have periodically prevented fluid extraction from the sumps. No other problems have been encountered.

Summary of Interim Measure Effectiveness

Table 2 and Figure 2 present recovery data and graphs of fluid level trends, respectively. To date, the IM appears to be effective at recovering SPH in the Borrow Pit area. Fluid drawdowns have been observed in the piezometers and sumps (Table 2). The drawdown in piezometers to date has been approximately 0.6 ft and SPH has not been observed in the piezometers. SPH has been detected in all five sumps, though the SPH found in S-5 has not been consistent or of significant thickness. SPH thickness has been decreasing in S-1, S-2, and S-3 (Figure 2). SPH thickness detected in S-4 has been increasing since first detected with a maximum of 0.56 ft, as shown on Table 2 and in Figure 2. MPC will continue operation of the IM and evaluating the data for effectiveness. Future results will be included in the quarterly Hydrocarbon Seep IM reports.

Additional Plans for Borrow Pit Interim Measure

The IM in the Borrow Pit will be expanded in the 1st quarter of 2022 as directed in Comments 1 and 2 of NMED's *Approval with Modifications, Borrow Pit Interceptor Sumps Installation Summary Letter*, dated August 17, 2021. The expansion includes installing two soil borings north of S-1 to further define the extent of SPH north of S-1. The borings will be placed between S-1 and the toe of the Borrow Pit slope (a distance of approximately 100 ft). The borings will be 40 to 50 ft apart, with the first boring approximately 40 ft north of S-1 (Figure 3). If SPH is indicated within a boring, that boring will be converted into a 4-inch diameter sump that will be added to the routine vacuum truck recovery schedule. Additionally, a new 4-inch diameter sump will be installed between MKTF-LIF-77 and MKTF-LIF-90 (Figure 3) to prevent possible SPH migration to the southwest of the Borrow Pit. The additional sumps will be included in the vacuum truck evacuation schedule of approximately four times per week.



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MPC is developing a site wide groundwater treatment system that will include the collection and treatment of fluids recovered from the Borrow Pit area. Vacuum trucks will no longer be used to recover fluid from the Borrow Pit sumps once the ground water treatment system is active. The system is expected to be online by December 31, 2022.

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. John Moore of my staff at 505-879-7643.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Western Refining Southwest LLC, D/B/A Marathon Gallup Refinery

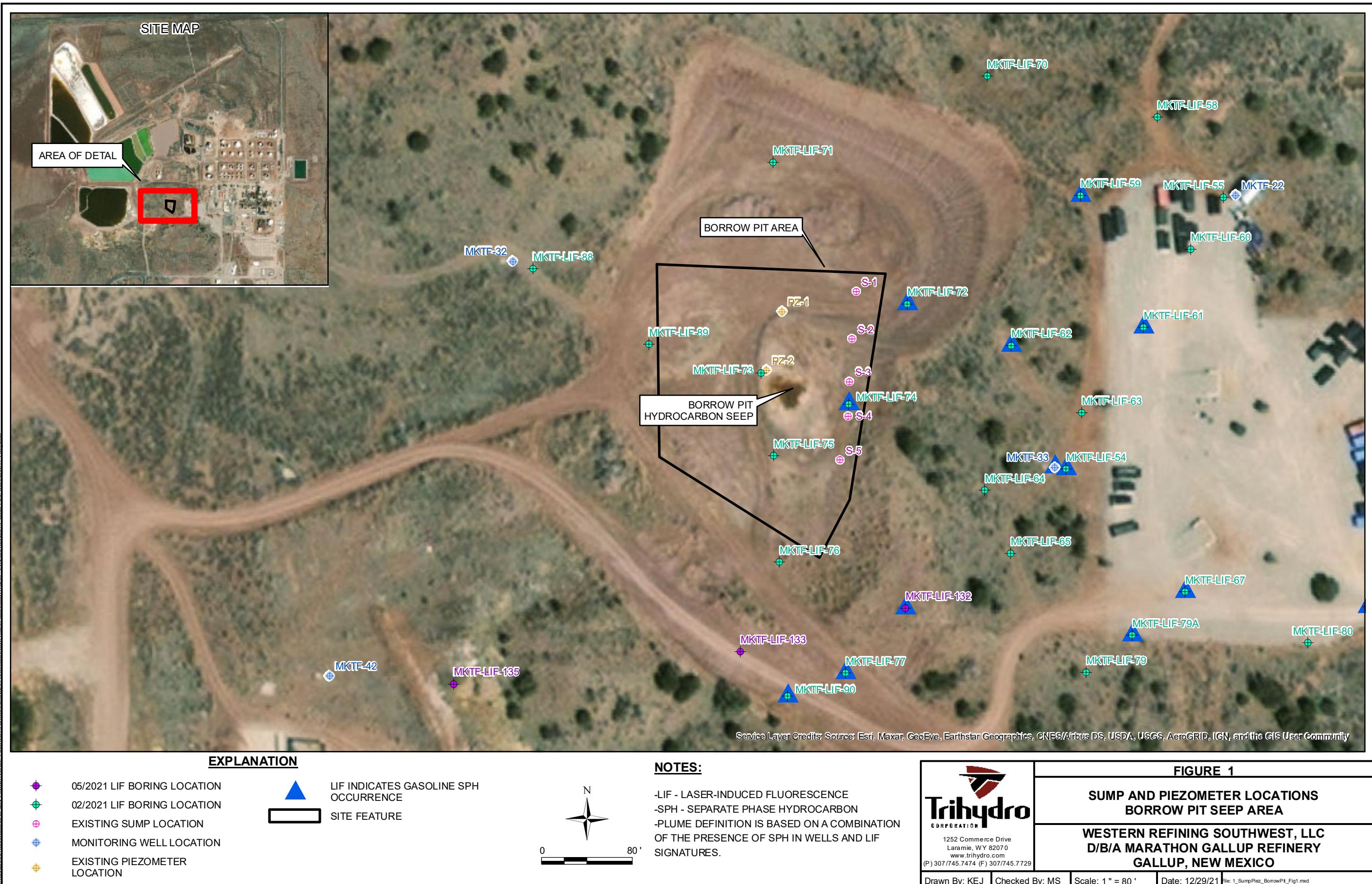
Ruth A Cade

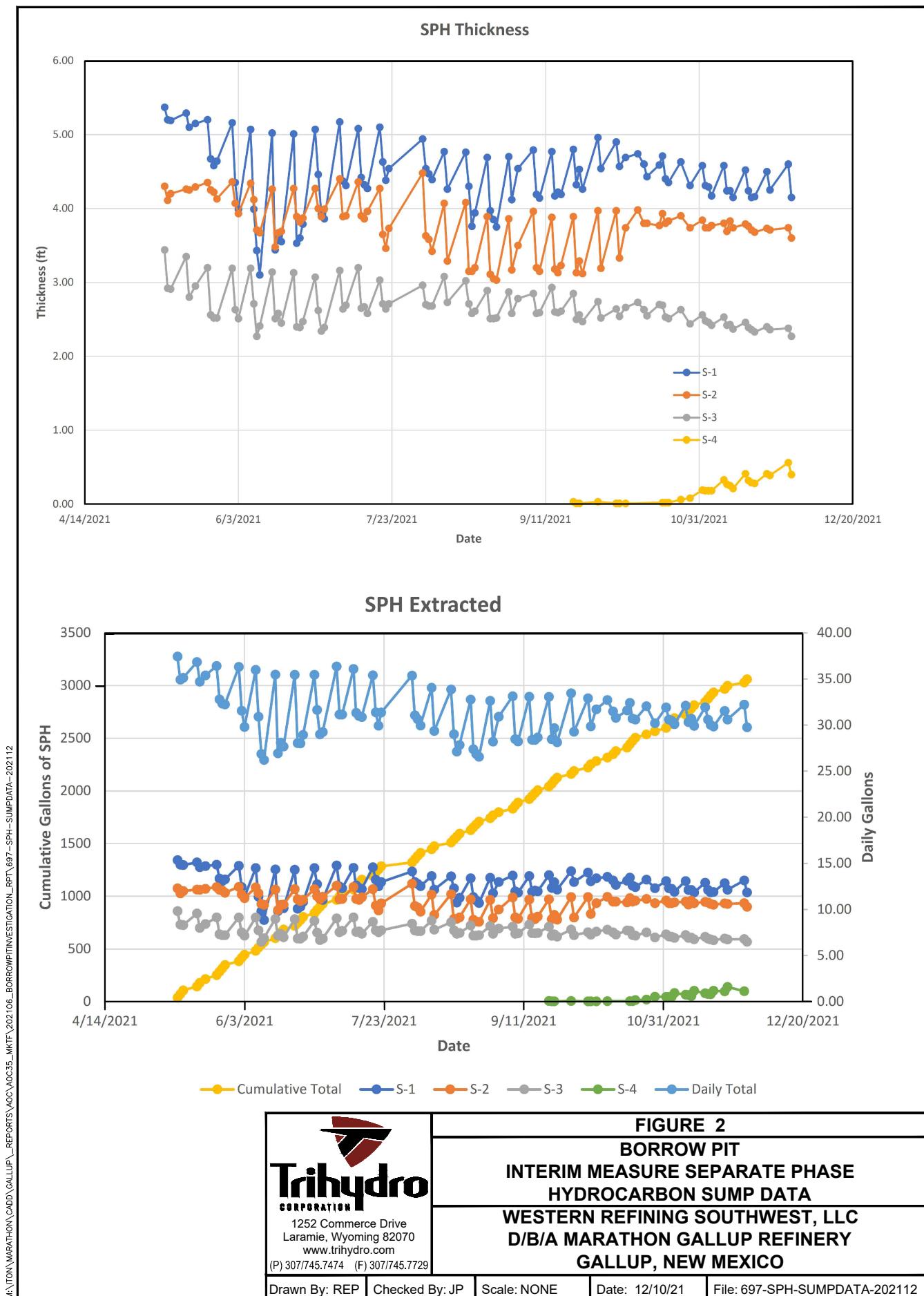
Ruth Cade
Vice-President

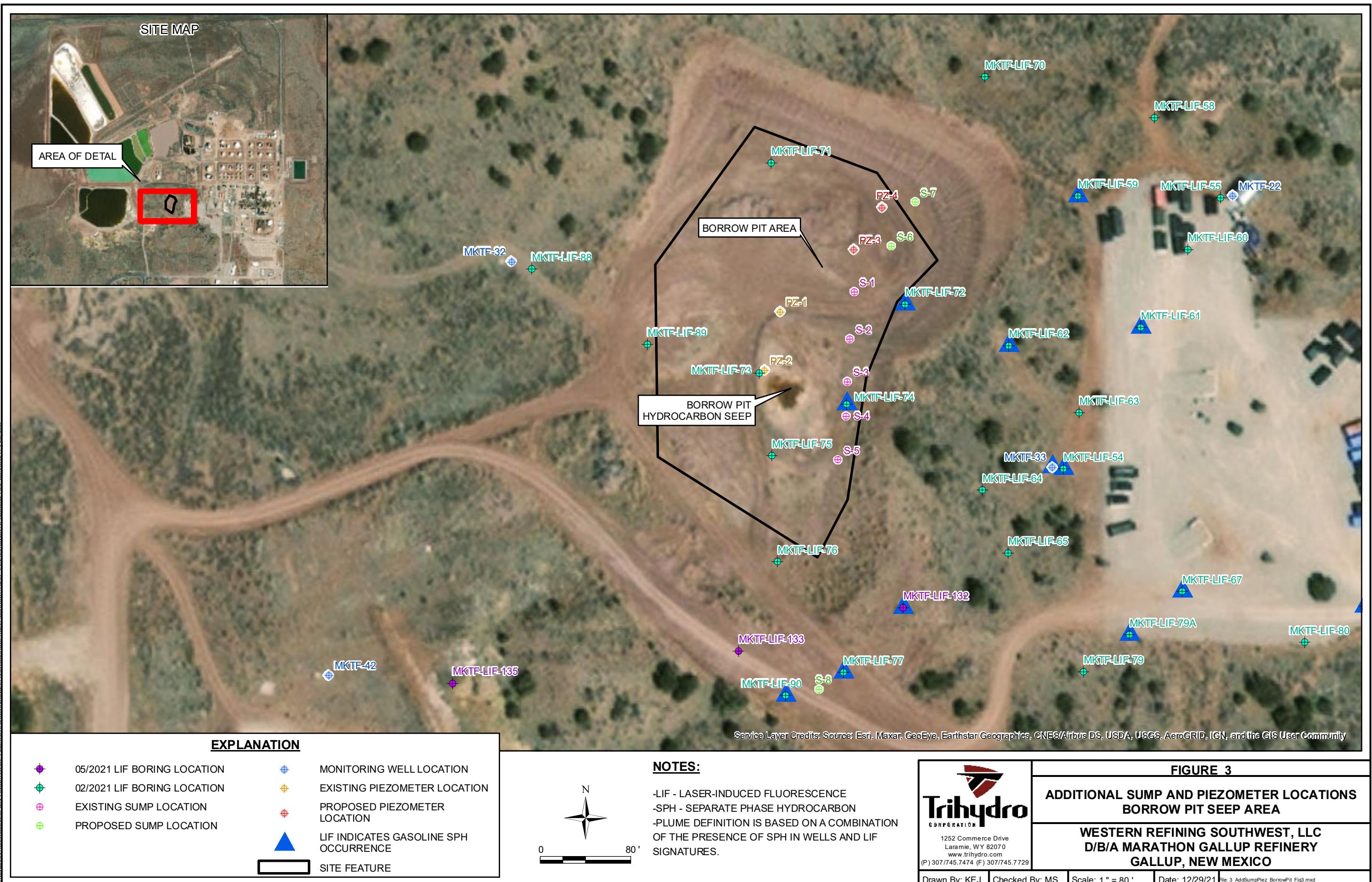
Attachments

cc: D. Cobrain, NMED HWB
 M. Suzuki, NMED HWB
 L. Barr, OCD
 M. Bracey, Marathon Petroleum Company
 K. Luka, Marathon Petroleum Company
 J. Moore, Marathon Gallup Refinery
 H. Jones, Trihydro Corporation

Figures







Tables

TABLE 1. BORROW PIT INTERCEPTOR SUMPS - SURVEY DATA
WESTERN REFINING SOUTHWEST, LLC
D/B/A MARATHON GALLUP REFINERY
GALLUP, NEW MEXICO

ID	Latitude	Longitude	Northing US Survey Foot	Easting US Survey Foot	Elevation US Survey Foot
S1 Top of PVC-North	N35°29'16.2572121"	W108°25'51.9184268"	1633414.737	2545146.065	6936.300
S1 Ground	N35°29'16.2630786"	W108°25'51.9174020"	1633415.329	2545146.154	6933.900
S2 Top of PVC-North	N35°29'15.8413069"	W108°25'51.9595660"	1633372.707	2545142.409	6936.270
S2 Ground	N35°29'15.8460127"	W108°25'51.9606013"	1633373.183	2545142.326	6933.590
S3 Top of PVC-North	N35°29'15.4706675"	W108°25'51.9782961"	1633335.242	2545140.633	6937.430
S3 Ground	N35°29'15.4748488"	W108°25'51.9809304"	1633335.666	2545140.418	6934.990
S4 Top of PVC-North	N35°29'15.1696194"	W108°25'51.9913317"	1633304.811	2545139.371	6923.530
S4 Ground	N35°29'15.1748525"	W108°25'51.9921608"	1633305.340	2545139.305	6935.830
S5 Top of PVC-North	N35°29'14.7877276"	W108°25'52.0735687"	1633266.240	2545132.336	6922.640
S5 Ground	N35°29'14.7932816"	W108°25'52.0740821"	1633266.802	2545132.297	6920.150

TABLE 2. SUMMARY OF BORROW PIT INTERIM MEASURE DATA
 WESTERN REFINING SOUTHWEST, LLC
 D/B/A MARATHON GALLUP REFINERY
 GALLUP, NEW MEXICO

Date	Depth to SPH, ft							Depth to Water, ft							SPH Thickness, ft					Recovered gal/d/well, SPH					Total gal/d, SPH	Total Gal, SPH	Water Thickness, ft (Total Sump Depths Provided in Notes Section)							Total gal/d, Water	Total Gal, Water			
	S-1	S-2	S-3	S-4	S-5	PZ-1	PZ-2	S-1	S-2	S-3	S-4	S-5	PZ-1	PZ-2	S-1	S-2	S-3	S-4	S-5	S-1	S-2	S-3	S-4	S-5	S-1	S-2	S-3	S-4	S-5	S-1	S-2	S-3	S-4	S-5				
5/10/2021	3.56	3.41	4.5	ND	ND	ND	ND	8.93	7.71	7.94	6.36	5.84	2.81	3.99	5.37	4.30	3.44	0.00	0.00	15.34	12.28	9.82	0.00	0.00	37.44	37.44	1.47	2.69	2.46	4.04	4.56	4.20	7.68	7.03	11.54	13.02	124.15	124.15
5/11/2021	3.63	3.46	4.68	ND	ND	ND	ND	8.83	7.57	7.60	6.39	5.08	2.82	3.98	5.20	4.11	2.92	0.00	0.00	14.85	11.74	8.34	0.00	0.00	34.93	72.37	1.57	2.83	2.80	4.01	5.32	4.48	8.08	8.00	11.45	15.19	134.84	258.99
5/12/2021	3.65	3.45	4.68	ND	ND	ND	ND	8.84	7.65	7.59	6.42	5.10	2.85	4.00	5.19	4.20	2.91	0.00	0.00	14.82	12.00	8.31	0.00	0.00	35.13	107.50	1.56	2.75	2.81	3.98	5.30	4.46	7.85	8.03	11.37	15.14	133.78	392.76
5/17/2021	3.62	3.5	4.56	ND	ND	ND	ND	8.91	7.76	7.91	6.39	5.11	2.89	4.04	5.29	4.26	3.35	0.00	0.00	15.11	12.17	9.57	0.00	0.00	36.84	144.35	1.49	2.64	2.49	4.01	5.29	4.26	7.54	7.11	11.45	15.11	129.86	522.62
5/18/2021	3.69	3.51	4.73	ND	ND	ND	ND	8.79	7.76	7.53	6.46	5.14	2.91	4.10	5.10	4.25	2.80	0.00	0.00	14.57	12.14	8.00	0.00	0.00	34.70	179.05	1.61	2.64	2.87	3.94	5.26	4.60	7.54	8.20	11.25	15.02	133.12	655.75
5/20/2021	3.71	3.53	4.72	ND	ND	ND	ND	8.86	7.82	7.67	6.48	5.21	2.98	4.18	5.15	4.29	2.95	0.00	0.00	14.71	12.25	8.43	0.00	0.00	35.39	214.43	1.54	2.58	2.73	3.92	5.19	4.40	7.37	7.80	11.20	14.82	130.19	785.93
5/24/2021	3.76	3.56	4.71	ND	ND	ND	ND	8.96	7.91	7.91	6.51	5.20	3.06	4.24	5.20	4.35	3.20	0.00	0.00	14.85	12.42	9.14	0.00	0.00	36.41	250.85	1.44	2.49	2.49	3.89	5.20	4.11	7.11	7.11	11.11	14.85	126.52	912.45
5/25/2021	3.88	3.59	4.86	ND	ND	ND	ND	8.55	7.84	7.42	6.52	5.21	3.08	4.26	4.67	4.25	2.56	0.00	0.00	13.34	12.14	7.31	0.00	0.00	32.79	283.64	1.85	2.56	2.98	3.88	5.19	5.28	7.31	8.51	11.08	14.82	134.27	1046.72
5/26/2021	3.91	3.6	4.88	ND	ND	ND	ND	8.49	7.82	7.40	6.53	5.22	3.08	4.26	4.58	4.22	2.52	0.00	0.00	13.08	12.05	7.20	0.00	0.00	32.33	315.97	1.91	2.58	3.00	3.87	5.18	5.46	7.37	8.57	11.05	14.79	134.92	1181.63
5/27/2021	3.88	3.63	4.9	ND	ND	ND	ND	8.52	7.76	7.42	6.54	5.24	3.08	4.29	4.64	4.13	2.52	0.00	0.00	13.25	11.80	7.20	0.00	0.00	32.24	348.21	1.88	2.64	2.98	3.86	5.16	5.37	7.54	8.51	11.02	14.74	134.75	1316.39
6/1/2021	3.79	3.61	4.79	ND	ND	ND	ND	8.95	7.97	7.98	6.58	5.26	3.10	4.33	5.16	4.36	3.19	0.00	0.00	14.74	12.45	9.11	0.00	0.00	36.30	384.51	1.45	2.43	2.42	3.82	5.14	4.14	6.94	6.91	10.91	14.68	124.48	1440.87
6/2/2021	3.97	3.65	4.89	ND	ND	ND	ND	8.32	7.72	7.52	6.58	5.26	3.11	4.33	4.35	4.07	2.63	0.00	0.00	12.42	11.62	7.51	0.00	0.00	31.56	416.07	2.08	2.68	2.88	3.82	5.14	5.94	7.65	8.23	10.91	14.68	135.41	1576.27
6/3/2021	4.06	3.7	4.96	ND	ND	ND	ND	8.05	7.63	7.47	6.59	5.28	3.12	4.35	3.99	3.93	2.51	0.00	0.00	11.40	11.22	7.17	0.00	0.00	29.79	445.86	2.35	2.77	2.93	3.81	5.12	6.71	7.91	8.37	10.88	14.62	138.51	1714.78
6/7/2021	3.82	3.63	4.79	ND	ND	ND	ND	8.89	7.97	7.98	6.60	5.29	3.13	4.38	5.07	4.34	3.19	0.00	0.00	14.48	12.40	9.11	0.00	0.00	35.99	481.85	1.51	2.43	2.42	3.80	5.11	4.31	6.94	6.91	10.85	14.59	124.56	1839.34
6/8/2021	4.09	3.7	4.94	ND	ND	ND	ND	8.08	7.82	7.65	6.63	5.33	3.13	4.40	3.99	4.12	2.71	0.00	0.00	11.40	11.77	7.74	0.00	0.00	30.90	512.75	2.32	2.58	2.75	3.77	5.07	6.63	7.37	7.85	10.77	14.48	134.51	1973.85
6/9/2021	4.24	3.81	5.08	ND	ND	ND	ND	7.67	7.52	7.35	6.66	5.34	3.15	4.41	3.43	3.71	2.27	0.00	0.00	9.80	10.60	6.48	0.00	0.00	26.88	539.62	2.73	2.88	3.05	3.74	5.06	7.80	8.23	8.71	10.68	14.45	142.42	2116.27
6/10/2021	4.34	3.81	5.01	ND	ND	ND	ND	7.44	7.48	7.42	6.65	5.34	3.16	4.02	3.10	3.67	2.41	0.00	0.00	8.85	6.88	0.0																

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Date	Depth to SPH, ft							Depth to Water, ft							SPH Thickness, ft					Recovered gal/d/well, SPH					Total gal/d, SPH	Total Gal, SPH	Water Thickness, ft (Total Sump Depths Provided in Notes Section)					Recovered gal/d/well, Water					Total gal/d, Water	Total Gal, Water
	S-1	S-2	S-3	S-4	S-5	PZ-1	PZ-2	S-1	S-2	S-3	S-4	S-5	PZ-1	PZ-2	S-1	S-2	S-3	S-4	S-5	S-1	S-2	S-3	S-4	S-5	S-1	S-2	S-3	S-4	S-5	S-1	S-2	S-3	S-4	S-5				
8/30/2021	4.11	3.96	5.16	ND	ND	ND	ND	8.81	7.82	8.03	6.86	5.55	3.29	4.32	4.70	3.86	2.87	0.00	0.00	13.42	11.02	8.20	0.00	0.00	32.64	1740.28	1.59	2.58	2.37	3.54	4.85	4.54	7.37	6.77	10.11	13.85	121.79	7078.47
8/31/2021	4.24	4.12	5.21	ND	ND	ND	ND	8.36	7.29	7.79	6.87	5.55	3.27	4.31	4.12	3.17	2.58	0.00	0.00	11.77	9.05	7.37	0.00	0.00	28.19	1768.47	2.04	3.11	2.61	3.53	4.85	5.83	8.88	7.45	10.08	13.85	131.66	7210.12
9/2/2021	4.19	4.09	5.22	ND	ND	ND	ND	8.73	7.59	8.00	6.91	5.57	3.30	4.33	4.54	3.50	2.78	0.00	0.00	12.97	10.00	7.94	0.00	0.00	30.90	1799.37	1.67	2.81	2.40	3.49	4.83	4.77	8.03	6.85	9.97	13.79	123.99	7334.11
9/7/2021	4.12	3.97	5.17	ND	ND	ND	ND	8.91	7.93	8.02	6.88	5.56	3.32	4.39	4.79	3.96	2.85	0.00	0.00	13.68	11.31	8.14	0.00	0.00	33.13	1832.51	1.49	2.47	2.38	3.52	4.84	4.26	7.05	6.80	10.05	13.82	119.91	7454.02
9/8/2021	4.28	4.17	5.25	ND	ND	ND	ND	8.47	7.37	7.83	6.91	5.58	3.34	4.42	4.19	3.20	2.58	0.00	0.00	11.97	9.14	7.37	0.00	0.00	28.47	1860.98	1.93	3.03	2.57	3.49	4.82	5.51	8.65	7.34	9.97	13.77	129.21	7583.23
9/9/2021	4.29	4.18	5.24	ND	ND	ND	ND	8.43	7.33	7.83	6.90	5.59	3.39	4.42	4.14	3.15	2.59	0.00	0.00	11.82	9.00	7.40	0.00	0.00	28.22	1889.20	1.97	3.07	2.57	3.50	4.81	5.63	8.77	7.34	10.00	13.74	129.86	7713.09
9/13/2021	4.16	4.02	5.18	ND	ND	ND	ND	8.93	7.90	8.11	6.93	5.62	3.38	4.49	4.77	3.88	2.93	0.00	0.00	13.62	11.08	8.37	0.00	0.00	33.07	1922.27	1.47	2.50	2.29	3.47	4.78	4.20	7.14	6.54	9.91	13.65	118.36	7831.45
9/14/2021	4.32	4.21	5.29	ND	ND	ND	ND	8.49	7.39	7.89	6.95	5.62	3.40	4.52	4.17	3.18	2.60	0.00	0.00	11.91	9.08	7.43	0.00	0.00	28.42	1950.69	1.91	3.01	2.51	3.45	4.78	5.46	8.60	7.17	9.85	13.65	127.74	7959.19
9/15/2021	4.32	4.23	5.3	ND	ND	ND	ND	8.54	7.36	7.89	6.97	5.64	3.45	4.56	4.22	3.13	2.59	0.00	0.00	12.05	8.94	7.40	0.00	0.00	28.39	1979.08	1.86	3.04	2.51	3.43	4.76	5.31	8.68	7.17	9.80	13.59	127.25	8086.44
9/16/2021	4.35	4.24	5.33	ND	ND	ND	ND	8.54	7.47	7.94	6.99	5.66	3.47	4.59	4.19	3.23	2.61	0.00	0.00	11.97	9.23	7.45	0.00	0.00	28.65	2007.72	1.86	2.93	2.46	3.41	4.74	5.31	8.37	7.03	9.74	13.54	125.62	8212.06
9/20/2021	4.27	4.1	5.25	6.99	ND	ND	ND	9.07	7.99	8.10	7.02	5.65	3.56	4.68	4.80	3.89	2.85	0.03	0.00	13.71	11.11	8.14	0.09	0.00	33.04	2040.77	1.33	2.41	2.30	3.38	4.75	3.80	6.88	6.57	9.65	13.57	115.59	8327.64
9/21/2021	4.42	4.34	5.43	7.05	ND	ND	ND	8.74	7.47	7.93	7.06	5.69	3.63	4.76	4.32	3.13	2.50	0.01	0.00	12.34	8.94	7.14	0.03	0.00	28.45	2069.22	1.66	2.93	2.47	3.34	4.71	4.74	8.37	7.05	9.54	13.45	123.25	8450.90
9/22/2021	4.36	4.27	5.4	7.03	ND	ND	ND	8.89	7.56	7.96	7.04	5.69	3.66	4.80	4.53	3.29	2.56	0.01	0.00	12.94	9.40	7.31	0.03	0.00	29.67	2098.89	1.51	2.84	2.44	3.36	4.71	4.31	8.11	6.97	9.60	13.45	121.21	8572.11
9/23/2021	4.51	4.33	5.38	ND	ND	ND	ND	8.77	7.45	7.85	7.01	5.68	3.66	4.79	4.26	3.12	2.47	0.00	0.00	12.17	8.91	7.05	0.00	0.00	28.13	2127.02	1.63	2.95	2.55	3.39	4.72	4.66	8.43	7.28	9.68	13.48	124.31	8696.42
9/28/2021	4.26	4.13	5.33	6.99	5.65	ND	ND	9.22	8.10	8.07	7.02	5.66	3.63	4.58	4.96	3.97	2.74	0.03	0.01	14.17	11.34	7.83	0.09	0.03	33.44	2160.47	1.18	2.30	2.33	3.38	4.74	3.37	6.57	6.65	9.65	13.54	113.63	8810.05
9/29/2021	4.37	4.33	5.4	ND	ND	ND	ND	8.91	7.52	7.92	7.03	5.67	3.63	4.54	4.54	3.19	2.52	0.00	0.00	12.97	9.11	7.20	0.00	0.00	29.27	2189.74	1.49	2.88	2.48	3.37	4.73	4.26	8.23	7.08	9.62	13.51	121.95	8932.00
10/4/2021	4.19	4.05	5.29	6.94	ND	ND	ND	9.09	8.02	7.93	6.95	5.58	3.47	4.30	4.90	3.97																						

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 72945

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 72945
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
scwells	Accepted for Record Retention Purposes-Only	11/23/2022