



**Western Refining Southwest, Inc.**

A subsidiary of Marathon Petroleum Corporation  
92 Giant Crossing Road  
Jamestown, NM 87347  
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April 20, 2020

Mr. Kevin Pierard, Chief  
New Mexico Environmental Department 2905  
Rodeo Park Drive East, Bldg. 1  
Santa Fe, NM 87505-6303

**RE: Approval with Modifications  
OW-61 Through OW-65 Well Installation Report  
Marathon Petroleum Company LP, Gallup Refinery  
(dba Western Refining Southwest, Inc.)  
EPA ID# NMD000333211  
HWB-WRG-19-020**

Dear Mr. Pierard:

Gallup Refinery is submitting the enclosed response to comments received from NMED on January 29, 2020 regarding the referenced Report. If there are any questions, please call Brian Moore at 505-726-9745.

**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,  
**Marathon Petroleum Company LP, Gallup Refinery**

Robert S. Hanks  
Refinery General Manager

Enclosure

- cc D. Cobrain NMED
- C. Chavez NMOCD
- B. Moore Marathon Gallup Refinery

**RESPONSE TO COMMENTS**  
**January 29, 2020 Approval with Modifications**  
**OW-61 Through OW-65 Well Installation Report**  
**(November 2019)**

**NMED Comment 1:**

In the Executive Summary, the Permittee states, "[t]hese wells [OW-61, OW-62, OW-63, OW- 64, and OW-65] were installed in March 2018 on a voluntary basis after hydrocarbons were observed in the French drain near the pond STP-1." These wells were advanced within and in close vicinity of the Tank Farm (SWMU 6); however, based on the results of shallow excavation near pond STP-1 hydrocarbons were also observed in soils above the water table near pond STP-1. The observation of SPH in shallow soils suggests that a source may also be present near pond STP-1 in addition to potential leaky tanks in the Tank Farm. Unless a source closer to STP-1 was identified through the Laser Induced Fluorescence (LIF) study or other investigations, the source of shallow soil contamination near pond STP-1 must be investigated.

**MPC Response 1:**

The comment is acknowledged and at this time the LIF study is still on-going, so final conclusions as to potential sources near STP-1 are not yet available.

**NMED Comment 2:**

In Section 2, *Background*, the Permittee states, "[s]ix locations were selected as shown on Figure 1 for the installation of soil borings to search for the presence of SPH." There is a typographical error in the statement. Figure 1 depicts the location of the site. The pertinent figure is Figure 2, *Well Location Map*. No revision required.

**MPC Response 2:**

The comment is acknowledged.

**NMED Comment 3:**

In Section 4.3.1, *Well Installation*, the Permittee states that discrete soil samples were not retained for laboratory analysis. NMED requires soil sampling from every soil boring for laboratory analysis. A minimum of three soil samples should have been collected from each boring at the vadose zone with the highest PID reading, at the water table, and the boring termination depth. Include the provision for all future soil investigations conducted at the Facility. No revision required.

**MPC Response 3:**

The comment is acknowledged.

**NMED Comment 4:**

In Section 4.3.1, *Well Installation*, *OW-61*, the Permittee states that a strong chemical odor was detected at 10-12 feet below ground surface (bgs). There was no data to evaluate presence or absence of contamination above 10 feet bgs, because hydro-excavation was used during the installation of the soil boring. Since soil contamination was present in the soils at the depth of 10 feet bgs (PID reading= 1,563 ppm), the Permittee must assume soil contamination above 10 feet bgs in the vicinity of well OW-61. The transport mechanism of soil contamination may be limited to groundwater flow in the vicinity of well OW-61; however, the shallow soils were contaminated. Evaluate and explain potential causes of the shallow soil contamination (e.g., potential leaks from nearby tanks, volatilization of chemicals from smear zone) in a response

letter.

**MPC Response 4:**

As noted, hydro-excavation was used to clear beneath utilities in the area of OW-61 before drilling could commence with the drilling rig. Based on the PID reading of 1,563 ppm in the 10 – 12' interval, it is likely that soils are also impacted at shallower depths, but the extent is unknown. Based on the available information collected during the installation of OW-61 and subsequent fluid level readings, it is not possible to know for certain how much of the observed volatiles in the 10 – 12' interval are the result of volatilization from the underlying impacts. We would note, that as presented in Table 9.1 of the 2018 Annual Ground Water Monitoring Report, the measured product thickness increased up to 4.7 feet in the third quarter of 2018. A sample of the PSH was collected on April 9, 2019 and analyzed by method 8015B with the laboratory characterizing the PSH as fairly fresh gasoline with a small amount of diesel. The light end components of gasoline would be expected to contribute to vapor phase impacts in the overlying soils.

While there are no tanks in the immediate vicinity, there is a major pipeline rack adjacent to OW-61 that conveys petroleum hydrocarbons.

**NMED Comment 5:**

In Section 4.3.1, *Well Installation, OW-65*, hydro-excavation was not used at the location of boring OW-65. The investigation method was appropriate at this location. It was confirmed that there was no soil contamination present above 10 feet bgs. This is the only location where hydro-excavation was not used during the installation of borings. Explain why this location did not require use of hydro-excavation for clearance in the response letter.

**MPC Response 5:**

At the time these wells were installed, new safety measures had been implemented by the refinery that required all subsurface penetrations first be cleared to prevent impacts to underground utilities (e.g., electrical or refinery pipelines). Asphalt was present at the land surface at the location of OW-65 and the party responsible for clearing the locations using hydro-excavation failed to clear this location. Upon arriving at this location and finding it was not cleared, it was decided to clear the location manually with a hand auger, which was completed to a depth of five feet.

**NMED Comment 6:**

In Section 5, Site Impacts, the Permittee states, "[t]he measured SPH thickness increased in OW-61 from the first through the third quarter of 2018, with a decrease in the last quarter of 2018. The measured SPH thickness in OW-65 increased from the first quarter to the second quarter of 2018, but decreased in the third quarterly, only to increase to an even greater thickness in the fourth quarter of 2018." The SPH thicknesses measured in wells OW-61 and OW-65 are recorded as 4.05 feet and 7.75 feet, respectively, during November 2018 according to Table 2, 2018 Quarterly Fluid Level Measurements. The increase may indicate that the hydrocarbon release is potentially on-going. In the response letter, provide a table that shows the SPH thicknesses in wells OW-61 and OW-65 measured during the 2019 quarterly monitoring events.

**MPC Response 6:**

A Table is enclosed that show the SPH thickness measurements in wells OW-61 through OW-65 for 2018 and 2019. The SPH thickness measured in OW-61 began to decrease in 2019, but remained at a minimum measured thickness of 2.73 feet. The SPH thickness measured in OW-65 increased to a

maximum of 9.27 feet in February 2019. An LIF investigation is being conducted to evaluate potential sources within the tank farm.

**NMED Comment 7:**

In Section 5, *Site Impacts*, the Permittee states, "(t]he laboratory interpreted the results to show that the product collected at OW-61 was " mostly fresh [to] fairly fresh gasoline with a small amount of diesel range hydrocarbons present as well." The laboratory interpreted the results to show that the product collected at OW-65 was " fairly fresh gasoline mixed with diesel range hydrocarbons." It appears SPH collected from wells OW-61 and OW-65 is similar. SPH observed in the wells likely originates from the same source. Include a discussion regarding the potential source of SPH detected in wells OW-61 and OW-65 in the response letter.

**MPC Response 7:**

As observed by the laboratory, the SPH collected from OW-61 and OW-65 are similar in composition, thus suggesting potentially a common source. A comprehensive investigation of the subject area is being conducted using LIF and the results of this study should help to identify historical and any active sources of SPH. It is noted that evidence of leaks at tanks 569 and 570, which are up-gradient of OW-65, have been previously reported.

**FLUID LEVEL MEASUREMENTS - OW-61 THROUGH OW-65**

Date of Installation	Well ID Number	Inspection or Sample Date	Casing Diameter (Inch)	Ground Level Elevation (ft)	Well Casing Rim Elevation (ft)	Stick-up length (ft)	Well Casing Bottom Elevation (ft)	Total Well Depth (ft)	Depth to SPH (ft)	SPH Column Thickness (ft)	Depth to Water (ft)	Ground water Elevation (ft)	Corrected Water Table <sup>1</sup> Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
03/14/18	OW-61	03/21/18	4.00	6,960.91	6,963.57	2.66	6,992.59	31.68	16.71	0.09	16.80	6,946.77	6,946.84	8 - 28
		04/24/18	4.00	6,960.91	6,963.57	2.66	6,992.58	31.67	17.22	0.82	18.04	6,945.53	6,946.19	8 - 28
		08/16/18	4.00	6,960.91	6,963.57	2.66	6,992.61	31.70	17.40	4.70	22.10	6,941.47	6,945.23	8 - 28
		11/29/18	4.00	6,960.91	6,963.57	2.66	6,992.91	32.00	17.95	4.05	22.00	6,941.57	6,944.81	8 - 28
		02/19/19	4.00	6,959.29	6,961.88	2.59	6,991.29	32.00	18.00	4.09	22.09	6,939.79	6943.06	8 - 28
		05/15/19	4.00	6,959.29	6,961.88	2.59	6,991.29	32.00	17.62	3.51	21.13	6,940.75	6943.56	8 - 28
		08/20/19	4.00	6,959.29	6,961.88	2.59	6,990.99	31.70	17.42	2.73	20.15	6,941.73	6943.91	8 - 28
		11/04/19	4.00	6,959.29	6,961.88	2.59	6,991.29	32.00	17.54	3.09	20.63	6,941.25	6943.722	8 - 28
03/15/18	OW-62	03/21/18	4.00	6,934.73	6,937.36	2.63	6,966.30	31.57	ND	NA	22.93	6,914.43	NA	8 - 28
		04/24/18	4.00	6,934.73	6,937.36	2.63	6,966.31	31.58	ND	NA	23.14	6,914.22	NA	8 - 28
		08/15/18	4.00	6,934.73	6,937.36	2.63	6,966.32	31.59	ND	NA	23.70	6,913.66	NA	8 - 28
		11/29/18	4.00	6,934.73	6,937.36	2.63	6,966.32	31.59	ND	NA	23.99	6,913.37	NA	8 - 28
		02/19/19	4.00	6,933.21	6,936.09	2.88	6,964.68	31.47	23.75	1.20	24.95	6,911.14	6912.10	8 - 28
		05/15/19	4.00	6,933.21	6,936.09	2.88	6,964.68	31.47	23.40	0.60	24.00	6,912.09	6912.57	8 - 28
		08/20/19	4.00	6,933.21	6,936.09	2.88	6,964.68	31.47	23.86	0.43	24.29	6,911.80	6912.14	8 - 28
		11/18/19	4.00	6,933.21	6,936.09	2.88	6,964.68	31.47	23.72	0.62	24.34	6,911.75	6912.25	8 - 28
03/14/18	OW-63	03/21/18	4.00	6,932.34	6,935.06	2.72	6,964.52	32.18	ND	NA	20.19	6,914.87	NA	9 - 29
		04/24/18	4.00	6,932.34	6,935.06	2.72	6,964.52	32.18	ND	NA	20.33	6,914.73	NA	9 - 29
		08/16/18	4.00	6,932.34	6,935.06	2.72	6,964.54	32.20	ND	NA	20.60	6,914.46	NA	9 - 29
		11/29/18	4.00	6,932.34	6,935.06	2.72	6,964.34	32.00	ND	NA	20.95	6,914.11	NA	9 - 29
		02/19/19	4.00	6,930.87	6,933.87	3.00	6,962.87	32.00	ND	NA	20.74	6,913.13	NA	9 - 29
		05/15/19	4.00	6,930.87	6,933.87	3.00	6,962.87	32.00	ND	NA	20.35	6,913.52	NA	9 - 29
		08/19/19	4.00	6,930.87	6,933.87	3.00	6,963.07	32.20	ND	NA	20.12	6,913.75	NA	9 - 29
		11/18/19	4.00	6,930.87	6,933.87	3.00	6,962.87	32.00	ND	NA	20.30	6,913.57	NA	9 - 29
03/16/18	OW-64	03/21/18	4.00	6,945.07	6,947.40	2.33	6,972.69	27.62	ND	NA	7.72	6,939.68	NA	4 - 24
		04/24/18	4.00	6,945.07	6,947.40	2.33	6,972.70	27.63	ND	NA	7.85	6,939.55	NA	4 - 24
		08/16/18	4.00	6,945.07	6,947.40	2.33	6,972.42	27.35	ND	NA	7.51	6,939.89	NA	4 - 24
		11/29/18	4.00	6,945.07	6,947.40	2.33	6,972.42	27.35	8.06	0.05	8.11	6,939.29	6,939.33	4 - 24
		02/19/19	4.00	6,943.32	6,946.09	2.77	6,970.95	27.63	7.00	0.02	7.02	6,939.07	6939.09	4 - 24
		05/15/19	4.00	6,943.32	6,946.09	2.77	6,970.95	27.63	ND	NA	6.83	6,939.26	NA	4 - 24
		08/19/19	4.00	6,943.32	6,946.09	2.77	6,970.67	27.35	ND	NA	7.10	6,938.99	NA	4 - 24
		11/18/19	4.00	6,943.32	6,946.09	2.77	6,970.67	27.35	ND	NA	8.40	6,937.69	NA	4 - 24

FLUID LEVEL MEASUREMENTS - OW-61 THROUGH OW-65

Date of Installation	Well ID Number	inspection or Sample Date	Casing Diameter (Inch)	Ground Level Elevation (ft)	Well Casing Rim Elevation (ft)	Stick-up length (ft)	Well Casing Bottom Elevation (ft)	Total Well Depth (ft)	Depth to SPH (ft)	SPH Column Thickness (ft)	Depth to Water (ft)	Ground water Elevation (ft)	Corrected Water Table <sup>1</sup> Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
03/12/18	OW-65	03/21/18	4.00	6,951.62	6,954.05	2.43	6,993.28	41.66	23.40	0.20	23.60	6,930.45	6,930.61	17 - 37
		04/24/18	4.00	6,951.62	6,954.05	2.43	6,993.27	41.65	23.61	2.74	26.35	6,927.70	6,929.89	17 - 37
		08/16/18	4.00	6,951.62	6,954.05	2.43	6,993.28	41.66	24.96	1.68	26.64	6,927.41	6,928.75	17 - 37
		11/29/18	4.00	6,951.62	6,954.05	2.43	6,991.62	40.00	24.05	7.75	31.80	6,922.25	6,928.45	17 - 37
		02/19/19	4.00	6,949.95	6,952.83	2.88	6,989.95	40.00	22.24	9.27	31.51	6,921.32	6,928.74	17 - 37
		05/15/19	4.00	6,949.95	6,952.83	2.88	6,989.95	40.00	23.47	8.74	32.21	6,920.62	6,927.61	17 - 37
		08/20/19	4.00	6,949.95	6,952.83	2.88	6,991.61	41.66	21.97	9.18	31.15	6,921.68	6,929.02	17 - 37
		11/04/19	4.00	6,949.95	6,952.83	2.88	6,989.95	40.00	22.30	8.55	30.85	6,921.98	6,928.82	17 - 37