Western Refining Southwest LLC
A subsidiary of Marathon Petroleum Corporation
I-40 Exit 39
Jamestown, NM 87347

April 30, 2021

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

RE: Response to Comments Approval with Modifications
Flare KOD Pump Sodium Hydroxide Release Investigation Work Plan
Marathon Petroleum Company LP, Gallup Refinery
(dba Western Refining Southwest LLC)
EPA ID# NMD000333211
HWB-WRG-20-020

Dear Mr. Pierard:

Marathon Petroleum Company LP (dba Western Refining Southwest, LLC) Gallup Refinery is submitting this *Response to Comments Approval with Modifications Flare KOD Pump Sodium Hydroxide Release Investigation Work Plan,* dated December 21, 2020. If there are any questions, please call Mr. John Moore 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,
Marathon Petroleum Company LP, Gallup Refinery

Robert S. Hanks
Refinery General Manager

Enclosure

cc: D. Cobrain, NMED HWB
C. Chavez, NMOCD
L. King, EPA Region 6
K. Luka, Marathon Petroleum Corporation
H. Jones, Trihydro Corporation
M. Suzuki, NMED HWB
T. McDill, NMOCD
G. McCartney, Marathon Petroleum Corporation
J. Moore, Marathon Gallup Refinery

Attachment A: Response to Comment

New Mexico Environment Department to Marathon Petroleum Company Comment Letter "Response to Approval with Modifications Flare KOD Pump Sodium Hydroxide Release Investigation Work Plan" (December 21, 2020)

New Mexico Environment Department (NMED) Comment	Marathon Petroleum Company (MPC) Response
Comment 1:	**Response 1:**
In the *Scope of Activities Section, Field Screening*, page 6 of 10, the Permittee states, "the sample will also be wetted, and a field pH will be taken." Appendix A, *Standard Operating Procedure - Soil Sampling*, indicates that a soil pH meter will be used for field screening and calibrated according to manufacturer's recommendations. Provide a more detailed description of the pH screening procedures in a response letter. In addition, the soil pH meter used for this investigation must be capable of reading pH values above 12.5. One of the calibration points must include pH greater than 12.5 and the linearity of the calibration curve must be demonstrated for the instrument. Otherwise, EPA Method 9045B must be used for soil pH measurement. In this case, a low-sodium—error electrode must be used to compensate for inaccurate readings associated with very high pH that may be present in the areas where sodium hydroxide was released. Include the provision in the revised Work Plan and provide replacement pages, as appropriate.	Prior to the soil sample being placed in a Ziploc® bag, the sample will be wetted with deionized water at the depth of interest for in situ soil pH measurement. The pH meter probe will be placed on the wetted area and allowed to equilibrate (stabilize). The pH and temperature will be recorded as well as the date, time, sample location, and depth. Once the pH and temperature have been recorded the soils will be allowed to warm to approximately 70 degrees Fahrenheit (F) and be transferred to a Ziploc® bag. The head space will then be measured for petroleum hydrocarbons with a photo-ionization detector (PID). The soil pH meter to be used for this project is an ExStick pH Meter, Model PH100 or equivalent. This pH meter is cable of reading soil pH measurements between 0.00 and 14. A CAL alert feature ensures consistently accurate readings by alerting users when to recalibrate. Using a 1-, 2-, or 3-point calibration, the unit automatically recognizes buffer solutions. The unit will be calibrated at least once daily using buffer solutions with pH of 7, 10, and 13. The calibration results will be recorded in a field notebook. The calibration results will be graphed to confirm linearity or error of the calibration. If the unit cannot show linearity of the calibration curve, the sample(s) will be analyzed by EPA Method 9045B with a low sodium-error electrode. This provision will be included in the revised Work Plan and the revised pages are also included with this letter as Attachment A.

New Mexico Environment Department to Marathon Petroleum Company Comment Letter "Response to Approval with Modifications Flare KOD Pump Sodium Hydroxide Release Investigation Work Plan" (December 21, 2020)

New Mexico Environment Department (NMED) Comment	Marathon Petroleum Company (MPC) Response
Comment 2:	**Response 2:**
In the *Investigation Method Section, Sample Collection Procedures*, page 7 of 10, the Permittee states, "[s]amples will be collected in accordance with the soil sampling Standard Operating Procedure (SOP) (Appendix B) and screened in accordance with the soil screening SOP (Appendix B)." Appendix B is not included in the Work Plan. Resolve the discrepancy and provide replacement pages.	Appendix B will be included in the revised Work Plan and the revised pages are also included with this letter as Attachment A.
Comment 3:	**Response 3:**
The *Data Quality and Validation* Section, page 9 of 10, provides a detailed description of quality assurance and quality control criteria. However, the criteria are presumed to be only described for total petroleum hydrocarbons analyses. Quality assurance and quality control related to pH measurements are equally important for this investigation. Accordingly, include a description of such criteria for pH measurement in the revised Work Plan and provide replacement pages.	For the field screening, a pH field duplicate will be measured and recorded at least once per day or for every 10 samples. The field duplicate will be measured by placing the pH sensor upon a wetted area immediately adjacent to the original sample location and recording the measurement. In addition, an equipment blank will be used to measure pH by rinsing the cleaned trowel or hand auger with distilled water and collecting the water in a clean glass jar. The rinsate will then be measured for pH and recorded in the field notebook. Equipment blanks will be collected at least once per day or every 10 samples. A description of the quality assurance and quality control criteria will be included in the revised Work Plan and the revised pages are also included with this letter.

Attachment B: Revised Pages

MARATHON PETROLEUM CORPORATION

GALLUP REFINING DIVISION

FLARE KOD PUMP CAUSTIC RELEASE

SOIL SAMPLING INVESTIGATION WORK PLAN

NOVEMBER 30, 2020

REVISED APRIL 30, 2021

The purpose of this Investigation Work Plan is to collect soil samples to delineate the horizontal and vertical extent of any contamination and determine if further investigation or remediation is necessary.

Site Conditions

Surface Conditions

Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain to the northwest. Elevations on the refinery property range from 6,860 feet (ft) above mean sea level (amsl) to 7,040 ft amsl. The area near the flare KOD pump caustic release area is approximately 6,920 ft amsl.

Subsurface Conditions

The shallow subsurface soil (alluvium) is comprised of clay and silt with some inter-bedded sand layers. Beneath the alluvium is the Petrified Forest Member of the Chinle Group, which primarily consists of interbedded mudstone, siltstone, and sandstone. The Alluvium/Chinle interface is as little as 15 ft below ground surface (bgs) to over 32 ft bgs.

Scope of Activities

The investigative activities of the flare KOD pump caustic release area will be completed in order to delineate horizontal and vertical caustic and hydrocarbon impacts and collect soil samples. Pending New Mexico Environment Department (NMED) approval, MPC anticipates investigation work to be completed by the second quarter of 2021.

Field Screening

Soil samples will be collected using a hand trowel or a hand auger. Samples will be collected at 1 ft bgs and wetted with deionized water for in situ soil pH measurement. The area of soil needing wetting will be approximately a 2-inch (in) by 2-in area. The pH meter probe will be placed on the wetted area and allowed to equilibrate (stabilize). The pH and temperature will be recorded as well as the date, time, sample location, and depth. Once the pH and temperature have been recorded the soils will be allowed to warm to approximately 70 degrees Fahrenheit (F) and be transferred to a Ziploc® bag. The head space will then be measured for petroleum hydrocarbons with a photo-ionization detector (PID). The total organic vapor (TOV) and measured pH will be recorded on the field log. Lastly, a field paint filter test will be collected for saturated samples to

determine the percentage of free liquids in the waste and to establish whether the waste is hazardous based on the corrosivity (20% free liquids or more).

The soil pH meter to be used for this project is an ExStick pH Meter, Model PH100 or equivalent. This pH meter is cable of reading soil pH measurements between 0.00 and 14. A CAL alert feature ensures consistently accurate readings by alerting users when to recalibrate. Using a 1-, 2-, or 3-point calibration, the unit automatically recognizes buffer solutions. The unit will be calibrated at least once daily using buffer solutions with pH of 7, 10, and 13. The calibration results will be recorded in a field notebook. The calibration results will be graphed to confirm linearity or error of the calibration. If the unit cannot show linearity of the calibration curve, the sample(s) will be analyzed by EPA Method 9045B with a low sodium-error electrode.

If the soil pH field screening is greater than or equal to 12.5 at the proposed sampling locations soil samples will be collected at two and a half ft intervals and screened for pH until the pH no longer exceeds 12.5. Once the sampling location's pH no longer exceeds 12.5, a soil sample will be collected for laboratory hydrocarbon analysis.

Laboratory Analysis

Soil samples will be collected at the shallowest depth with a pH of less than 12.5. These samples will be packaged and shipped to a laboratory to be analyzed for hydrocarbon impacts via Method 8015M/D (total petroleum hydrocarbons-diesel range organics [TPH-DRO] and TPH-oil range organics [TPH-ORO]), Method 8015D (TPH-gasoline range organics [TPH-GRO]).

Investigation Methods

The proposed field screening and soil sampling locations are shown on Figure 2. The proposed locations include 10 primary screening and 10 secondary soil screening sample locations around the old API separator and the KOD area. The secondary samples are to verify that the release extent did not extend past the anticipated area and will only be collected if the primary soil screening sample pH field results at 1-ft depth are greater than or equal to 12.5.

Soils obtained will be visually inspected and classified in general accordance with American Society for Testing and Materials (ASTM) D2487 (Unified Soil Classification System) and D2488 (Description and Identification of Soils). Detailed sample logs will be completed in the field by qualified field staff. Samples will be field

equipment blanks, trip blanks, and other quality control samples will be included at the rate of one quality control sample per 10 soil samples. Before shipment, each cooler will be packed with ice and one temperature blank. A chain of custody (CoC) form will accompany each sample shipment. Coolers will be sealed and shipped overnight to Eurofins Environment Testing in Pensacola, Florida.

Laboratory Sample Frequency

Laboratory samples will be collected at the shallowest depth at which the field pH is less than 12.5. This equates to one laboratory sample per location.

Data Quality and Validation

Quality assurance/quality control (QA/QC) samples will be collected during sampling to monitor the validity of the sample collection procedures. Field duplicates will be collected at a rate of 10 percent (%) of all samples collected. Equipment blanks will be collected from re-usable equipment at a rate of 10%; if disposable sampling equipment is used, the blanks shall be collected at a frequency of one per day. Field blank samples will also be collected once a day. The field duplicate and blank samples will be submitted to the laboratory along with the soil samples.

For the field screening, a pH field duplicate will be measured and recorded at least once per day or for every 10 samples. The field duplicate will be measured by placing the pH sensor upon a wetted area immediately adjacent to the original sample location and recording the measurement. In addition, an equipment blank will be used to measure pH by rinsing the cleaned trowel or hand auger with distilled water and collecting the water in a clean glass jar. The rinsate will then be measured for pH and recorded in the field notebook. Equipment blanks will be collected at least once per day or every 10 samples.

QA/QC samples will be recorded on the field forms and CoCs. All data will undergo Tier II data validation.

Data Evaluation

The soil confirmation sampling results will be compared to NMED Industrial SSLs to help delineate the extent of contamination from the KOD release and determine if excavation is necessary. Soil recovered during sampling will be placed in roll-off boxes or drums, labeled, and stored within the area of the flare KOD and characterized prior to disposal within 90 days.

Attachment C: Appendix B Soil Screening SOP

memorandum

To: Trihydro Employees
From: Project Manager – Heidi Jones
Date: March 26, 2013
Re: Standard Operating Procedure – Field Screening of Soil Samples

1.0 INTRODUCTION

The purpose of this Standard Operating Procedure (SOP) is to establish procedures for conducting field screening of soil samples. Field screening of soil samples involves the qualitative and quantitative field assessment of various indicators of potential contamination. Field-screening procedures employed will include scanning the soil core and measurement of sample headspace for total organic vapors (TOV) using a photoionization detector (PID) and observing visual/olfactory indicators.

Other soil field-screening methods—such as the use of pH meters, chemical-specific detector tubes (Draeger tubes), soil-gas test kits, fiber optic chemical sensors, colormetric test kits, immunoassay test kits, portable infrared detectors (IR), and gas chromatography/mass spectrometry (GC/MS)--are also available. However, Trihydro Corporation does not routinely use these methods for field screening. If specific Work Plans require their use, procedures will be specified in the project Work Plans.

The PID uses an ultraviolet light source to ionize components of an incoming source. The ionization potential of the light source relative to the target compound governs the instrument sensitivity. Select a bulb having an ionization potential (commonly 8.4, 9.5, 10.2, and 11.7 electron volts [eV]) that is approximately equal to or greater than the target compounds. The PID will commonly detect compounds having ionization potentials up to 0.3 eV greater than the bulb value.

Use a PID when the presence of carbon-based volatile organic compounds is suspected to be present. Target compounds include hydrocarbons (e.g., benzene, toluene, etc.), halocarbons (e.g., carbon tetrachloride, vinyl chloride, Freon, etc.), solvents (e.g., tetrachloroethylene, trichloroethylene, etc.), and oxygenates (e.g., acetone, MTBE, etc.) that volatilize in air. PID readings are not recommended for saturated soils because groundwater constituents can cause anomalously high TOV readings if groundwater is impacted, and the presence of liquid could affect the soil-to-gaseous phase volatilization rate.

2.0 PROCEDURES

Soil field-screening procedures are listed below:

Step 1: Immediately after exposing the soil core, collect approximately 100 grams of soil from each sampling interval using a clean, decontaminated stainless-steel safety knife or spatula. **Do not use a fixed open-bladed knife for this task of the other field-screening tasks described in the steps below. Only**

safety knives can be used for Trihydro work. Use the proper hand protection for this task and the other field-screening tasks described in the steps below.

Step 2: Place the soil sample in a resealable plastic bag (e.g., one quart) and seal the bag. Place the sealed container in a covered area (not in direct sunlight) for 15 minutes to allow organic constituents to volatilize to the headspace.

Step 3: Insert the PID probe tip into the resealable plastic bag. Avoid contacting the soil or any fluids that may have collected in the sample container with the probe tip.

Step 4: Allow the instrument to stabilize, usually within 5 seconds of exposure to the headspace gas, and note the highest measured instrument reading. Record the reading in field notes.

If there are erratic readings (e.g., due to high TOV or moisture), obtain additional readings to obtain a representative headspace measurement.

Step 5: Allow the instrument to "zero out" before taking a measurement for subsequent samples or re-measuring a sample.

Step 6: Note the presence of any visual indicators of contamination (e.g., staining, discoloration, and/or sheen). Note the presence of any phase-separated liquids. Document the observations in field notes.

Step 7: Note and characterize the presence of any unusual odors in the working space over the sample. Describe odors in generic terms such as "gasoline-like," "musty," "sweet," "pungent," etc.

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
Phone:(575) 748-1283 Fax:(575) 748-9720
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 25542

CONDITIONS

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 25542
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
jburdine	Accepted for Record Retention Purposes-Only	11/21/2022