

State of New Mexico  
Energy, Minerals and Natural Resources Department

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Cabinet Secretary

**Todd E. Leahy, JD, PhD**  
Deputy Cabinet Secretary

**Adrienne Sandoval**  
Director, Oil Conservation Division



**BY ELECTRONIC MAIL ONLY**

November 22, 2021

Mr. John Moore, PE  
Western Refining Southwest LLC  
92 Giant Crossing Road  
Gallup, NM 87301

**RE: Marathon Gallup Refinery –Notice of an Administratively Complete Discharge Permit Application**

Dear Mr. Moore:

The New Mexico Energy, Minerals and Natural Resource Department's (EMNRD) Oil Conservation Division (OCD) reviewed your November 8, 2021, amended Discharge Permit Application submittal for Western Refining Southwest LLC (Western Refining), Marathon Gallup Refinery. OCD has determined that the amended Discharge Permit Application is administratively complete.

Given OCD's determination, Western Refining must provide public notice within 30-days of receipt of this letter (e.g., December 22, 2021) in accordance with the requirements of Subsection F of 20.6.2.3108 NMAC to the general public in the locale of the Refinery by each of the methods listed below:

- (1) Prominently posting a synopsis of the public notice at least 2 feet by 3 feet in size, in English and in Spanish, at the entrance to the Marathon Gallup Refinery and at the Marathon Wingate Facility for 30 days;
- (2) Providing written notice of the discharge by mail or electronic mail, to owners of record of all properties within a 1/3 mile distance from the boundary of the property where the discharge site is located; if there are no properties other than properties owned by the discharger within a 1/3 mile distance from the boundary of property where the discharge site is located, Western Refining shall provide notice to owners of record of the next nearest adjacent properties not owned by the discharger;
- (3) Providing notice by certified mail, return receipt requested, to the owner of the discharge site if Western Refining is not the owner; and
- (4) Publishing a synopsis of the notice in English and in Spanish, in a display ad at least three inches by four inches not in the classified or legal advertisements section, in the Gallup Sun newspaper.



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As per 20.6.2.3108(F)(6) NMAC, the notice must also include the address and phone number within OCD by which interested persons may obtain information, submit comments, and request to be placed on a facility-specific mailing list for future notices. The below information must be included in the notice to satisfy this requirement:

OCD Contact: Chris Whitehead, 505-476-3441, [chris.whitehead@state.nm.us](mailto:chris.whitehead@state.nm.us)  
1220 South St. Francis Drive, Santa Fe, New Mexico, 87505

Within 15-days of completion of public notice, Western Refining must submit to the OCD proof of the notice, including affidavit of mailing(s) and the list of property owner(s), proof of publication, and an affidavit of posting, as appropriate.

If you have any questions, please do not hesitate to contact me by phone at (505) 670-5684 or by email at [LeighP.Barr@state.nm.us](mailto:LeighP.Barr@state.nm.us). On behalf of the OCD, I wish to thank you and your staff for your cooperation during this process.

Respectfully,

*Leigh Barr*

Leigh P. Barr - Administrative Permitting Supervisor

**Western Refining Southwest LLC**

A subsidiary of Marathon Petroleum Corporation

I-40 Exit 39

Jamestown, NM 87347

November 9, 2021

Ms. Leigh Barr  
EMNRD – Oil Conservation Division  
1220 St. Francis Drive  
Santa Fe, New Mexico 87505

**RE: Updated Discharge Permit Application  
Western Refining Southwest LLC  
Marathon Gallup Refinery  
EPA ID# NMD000333211**

Dear Ms. Barr:

Attached please find the Revised Discharge Plan Application for the Western Refining Southwest LLC, Marathon Gallup Refinery. If you have any questions or comments regarding the information contained herein, please do not hesitate to contact 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 of 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, Gallup Refinery

A handwritten signature in cursive script that reads 'Ruth A. Cade'.

Ruth Cade  
Vice-President

Enclosure

cc: D. Cobrain, NMED HWB  
K. Luka, Marathon Petroleum Company  
H. Jones, Trihydro Corporation

M. Suzuki, NMED HWB  
J. Moore, Marathon Gallup Refinery

**ATTACHMENT**



**OIL CONSERVATION DIVISION  
DISCHARGE PERMIT APPLICATION**



**WESTERN REFINING SOUTHWEST LLC  
GALLUP, NEW MEXICO  
EPA ID# NMD000333211<sup>1</sup>**

**NOVEMBER 9, 2021  
(UPDATED)**

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<sup>1</sup> EPA ID from Gallup Refinery Resource Conservation and Recovery Act (RCRA) Post-Closure Permit, October 2013, modified September 2017

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## **1.0 Discharge Type**

Western Refining Southwest LLC (d/b/a Marathon Gallup Refinery) owns a petroleum refinery located approximately 17 miles east of Gallup, McKinley County, New Mexico along the north side of Interstate Highway I-40 (Figure 1-1). The physical address is I-40, Exit #39, Jamestown, New Mexico 87347. The Gallup Refinery property covers approximately 810 acres. The Marathon Gallup Refinery has been indefinitely idled since August 2020.

The Refinery continues to operate its wastewater treatment plant (WWTP). The Refinery has a Facility Wide Groundwater Monitoring Work Plan (dated April 1, 2021) that is required pursuant to its Resource Conservation and Recovery Act (RCRA) Permit No. NM000333211. The Work Plan is updated annually with the New Mexico Environment Department (NMED), and fully characterizes the nature and extent of groundwater contamination at, and migrating from, the Refinery, and monitors the effectiveness of interim containment and remediation systems.

The Refinery is currently indefinitely idled and current operations of the Refinery are limited to the WWTP. There is no longer product stored at the Refinery and all processes have been temporarily shut down as part of the Refinery indefinitely idling. Oily water and stormwater sewers have been plugged and flushed and can be considered RCRA clean. Tanks and reactors have been cleaned and inspected and no longer store or contain material.

Remediation water is regulated under the Refinery's RCRA Permit that was issued by NMED. Collected groundwater is treated on-site at the Refinery's WWTP. Treated water is then transported to the non-discharging evaporation ponds where water is evaporated. No process water is discharged off-site or leaves the Refinery. Monitoring activities of the evaporation ponds are completed under the Facility Wide Groundwater Monitoring Plan and results are submitted annually to NMED and the Oil Conservation Division (OCD).

## 2.0 Facility Information

Information regarding the Gallup Refinery ownership is below:

Owner/Operator: Western Refining Southwest LLC (Postal Address)  
92 Giant Crossing Road  
Gallup, New Mexico 87301

Western Refining Southwest LLC (Physical Address)  
Marathon Gallup Refinery  
I-40, Exit 39  
Jamestown, New Mexico 87347

Correspondence regarding this discharge plan should be directed to John Moore, PE:

John Moore, PE  
Environmental Supervisor  
Western Refining Southwest LLC  
92 Giant Crossing Road  
Gallup, New Mexico 87301  
Phone: 505-879-7643

### **3.0 Location**

The Marathon Gallup Refinery is located on 810 acres that are largely located within the lower one quarter of Section 28 and throughout Section 33 of Township 15 North, Range 15 West of the New Mexico Prime Meridian. A small component of the property lies within northeastern one quarter of Section 4 of Township 14 North, Range 15 West (Figure 3-1).

## 4.0 Landowner Information

The landowner, operator, and legally responsible party is as follows:

Owner/Operator:	Western Refining Southwest LLC	(Postal Address)
	Marathon Gallup Refinery	
	92 Giant Crossing Road	
	Gallup, New Mexico 87301	



## 5.0 Facility Description

The Marathon Gallup Refinery was built in the 1950s within a rural and sparsely populated section of McKinley County in Jamestown, New Mexico, 17 miles east of Gallup, New Mexico. The nearest population centers are the Pilot Flying J Travel Center refueling plaza, the Interstate 40 highway corridor, and a small cluster of residential homes located on the south side of Interstate 40 approximately 2 miles southwest of the Refinery (Jamestown).

The Refinery is a petroleum refinery that processes crude oil transported by pipeline or tanker truck from the Four Corners region. The Refinery can receive natural gas feed stock from the Western Refining Southwest LLC – Wingate Plant. Process operations at the Refinery include: crude distillation, reformer, fluidized catalytic cracker, alkylation, sulfur recovery, merox treater, and hydrotreater. The refinery is capable of producing gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel. A diagram indicating location of fences, tanks, evaporation ponds, and monitoring wells at the Refinery are presented in Figure 5-1.

The Marathon Gallup Refinery has been indefinitely idled since August 2020. The current operations of the Refinery are limited to the WWTP. Product is not currently stored at the Refinery and all processes have been temporarily shut down as part of the refinery idling. All process tanks are empty and have been cleaned and inspected and no longer store or contain material.

The Refinery maintains compliance under the RCRA Post-Closure Permit issued October 2013, and modified in September 2017. As identified in Section 1.0, the Refinery is a non-discharging facility. Remediation water produced by the facility currently undergoes treatment at the Refinery's WWTP and then flows to a series of 12 evaporation ponds on-site (Figure 5-2).

## **6.0 Stored Materials**

The Refinery is currently indefinitely idled and there are no stored materials located at the Facility.

## 7.0 Effluent Sources

There are no effluent sources at the Refinery. Groundwater collected from remediation activities is treated at the WWTP and then sent to the evaporation ponds. No wastewater is currently discharged from the Refinery to surface waters of the state.

In March 2021, the Refinery submitted a Notice of Intent requesting continued coverage under the 2021 National Pollutant Discharge Elimination System Multi-Sector General Permit, which was approved on March 3, 2021 (NMR053168). The Refinery maintains a Stormwater Pollution Prevention Plan (SWPPP) that includes best management practices for effective stormwater pollution prevention. In addition, since the facility has been idled, the storm sewers have been capped off and pipes have been blinded in place. Stormwater is managed under the facilities SWPPP.

## 8.0 Water Collection, Treatment, and Disposal

Water produced from on-site remediation activities follows a path from Tank 35 to the WWTP and the New American Petroleum Institute separator (NAPIS) and then to the evaporation ponds. No water produced at the Refinery is discharged off-site.

### 8.1 Remediation Wastewater

Remediation wastewater is collected via vacuum truck stored in frac tanks on the bundle cleaning pad and then pumped to the lead tank, Tank 28, prior to being pumped to Tank 35 for equalization. The additional overflow tank, Tank 27, has been cleaned and is out of service. The remediation water from Tank 35 is routed to the NAPIS where oil is skimmed and shipped off-site for processing at a separate facility owned by an affiliate of Western Refining Southwest LLC. The remaining water is then routed to the WWTP where benzene is removed via granular activated carbon (GAC) canisters that are placed at the effluent of the dissolved gas flotation unit. WWTP operations alternate the configuration of these GAC canisters from a single setup to an in-series setup (i.e. primary and secondary canisters). To help monitor the breakthrough of these GAC canisters, several wastewater samples are taken at the effluent of the last GAC canister. Results from benzene analysis of the wastewater samples are monitored to manage the breakthrough from the GAC canisters. When benzene values exceed 0.4 parts per million, one or more of the following actions are taken: the GAC canister configuration is modified to an in-series set-up; the GAC canister is replaced with fresh carbon; and/or the GAC canister effluent is recirculated back through the WWTP. The treated water flows from the GAC canisters into pond STP-1. STP-1 is a dual lined leachate collection pond. STP-1 consists of two bays, north and south, and each bay is equipped with five aerators per bay. Uncontaminated effluent from STP-1 then flows into Evaporation Pond 2 and gravitates to the rest of the ponds.

As a result of the refinery being placed in indefinite idle mode, the stormwater lines and process water lines have been blinded from the wastewater system. Any stormwater collected within the process units is evaporated or managed under the SWPPP.

In accordance with the SWPPP, the Refinery continues to inspect the stormwater system and has constructed several new berms in various areas and improved outfalls (installed barrier dams equipped with gate valves) to minimize the possibility of potentially impacted runoff leaving the Facility and stormwater run-on entering the Facility from the I-40 interchange and the Pilot Travel Center.

The WWTP is routinely inspected for integrity and maintained. If problems are identified, on-site personnel are notified and repairs are scheduled.

### 8.2 Water Discharge

Once treated, uncontaminated remediation water flows to the evaporation ponds on-site. The flow of the treated water is presented in Figure 8-1. As stated above, the refinery is a non-discharging facility.

Estimated capacities for the evaporation ponds and volumetric flow rates for the NAPIS and WWTP are provided in Table 8-1 and Table 8-2, respectively.

All of the evaporation ponds were constructed early in the Refinery's operation, and therefore, records of their construction do not exist. As-builts are not available for the materials used. In general, native geologic materials in this area is a mixture of predominantly fine-grain particles consisting of clay, silt, sand (generally

referred to as clayey silty loam). The natural physical properties for these area-specific soil types are classified as having slow to moderately slow (0.20 to 0.60 inches/hour) permeability. These area-specific properties also demonstrate a moderate to high swelling potential which is consistent with the slow measured permeability (USDA 2005). In addition, a geotechnical engineering report was prepared for evaporation ponds 6, 7, and 9 that found that the liner material was consistent with natural geology, included clays and sands (Terracon 2020). It is assumed that other ponds are similarly constructed.

### 8.3 NAPIS Sludge

Oily sediment and sludge accumulates at the bottom of the NAPIS. The NAPIS is taken out of service as needed and the bottom sludge is removed via vacuum trucks. This sludge typically remains in the truck until it is shipped off-site for recycling.

The quantity of NAPIS sludge will vary depending on the quantity of purge water, SPH recovery, and remediation liquid wastes that are collected and sent through the system.

The NAPIS has leak detection monitoring wells installed in the interstitial space between the primary and secondary liner systems to identify potential leaks from the primary liner. It should be noted that this does not constitute a discharge to the environment as potential leaks would still be contained in the secondary liner system.

### 8.4 Waste Removal

Wastes that are shipped off-site are primarily sent to the following facilities:

- Motiva, Norco, LA
- Advanced Chemical Treatment (ACT), Albuquerque, NM
- US Ecology, Beatty, NV
- US Ecology, Robstown, TX
- Mesa Oil, Belen, NM
- Clean Harbors, Deer Trail, CO

## **9.0 Proposed Modifications of Existing Collection, Treatment, and Disposal Systems**

No modifications of the existing collection, treatment, and/or disposal systems are proposed at this time.

## **10. Inspection and Maintenance Plan**

Inspection and maintenance are an integral part of the WWTP. Inspection provides information critical to the safe and efficient operation of the system. Maintenance is key in the prevention of undesirable events and excessive downtime. Regular inspections of the WWTP are performed to assure safe and efficient operation. The system is monitored on a regular basis during the work week. Observations are recorded in a bound field logbook with the date, time, and person recording the information noted and maintained onsite.

If leaks are identified, the Refinery takes the following steps:

- Notify supervisor and, if necessary, applicable agencies (i.e., NMED and OCD)
- Evacuate personnel, if necessary
- Shut down WWTP, if necessary
- Barricade area
- Address leak

Weekly inspections occur in the control building, and at the storage tank, and NAPIS. All equipment is inspected for leaks and malfunctions. The operator is familiar with the location of underground lines and notes any surface indication of underground leaks. Leaks of any size are noted and immediately isolated and then repaired by on-site personnel. Readings from all water meters are observed and recorded in the logbook regularly, and comparisons to previous readings are made.

## 11. Spills and Release Contingency Plan

The Refinery has an Emergency Response Plan in place that includes steps for responding to releases. If a reportable quantity of oil or other water contaminant is released, OCD's Administrative Permitting Section and NMED Hazardous Waste Bureau will be notified in accordance with applicable regulations under the New Mexico Administrative Code 20.6.2.1203. Containment, clean-up, and reporting will commence as soon as practicable. Leaks shall be contained or redirected so that they can be picked up by pumps and/or vacuum trucks and placed back in storage. Discharges and/or releases meeting the definition of "major release" or "minor release" under 19.15.29.7 NMAC will be reported via OCD's E-Permitting System on Form C-141. In the event of such a spill or release at the Facility from the WWTP, the Environmental Supervisor will be notified and act as the response coordinator. If the Environmental Supervisor is not available, the next person noted in the following list of alternates will be notified.

### INTERNAL EMERGENCY NOTIFICATIONS

- John Moore – Environmental Supervisor
  - Mobile: 505-879-7643
  - Office: 915-775-7864
- Joe Leyba - Operations
  - Mobile: 505-870-5593
  - Office: 505-722-0288

### EMERGENCY RESPONSE CONTRACTORS

- Gallup Fire Department – Jesus Morales, Fire Chief
  - Office: 505-863-1380

### 11.1 Inspection

The stormwater system is inspected monthly and following all storm events. These inspections include observations of the stormwater and the Refinery outfalls. Any concerns will be reported to Operations and the Environmental Supervisor at the Refinery. The system is inspected following the procedures outlined in the Refinery's SWPPP. The Refinery's SWPPP is currently being revised to reflect the idled status. The current SWPPP can be found here:

<https://trihydrocorp.sharepoint.com/:f:/s/galluprefinery/Eo00vZ9K3JFEgakZ3pIVfLIBTzvW8Nt-cjMkyGw2AiSHaw?e=7XX4cl>.

Paving, curbing, catch basins, and trenches are routinely inspected for integrity. The oily sewer system was blocked as part of the idling process. The NAPIS is emptied and inspected annually. If a crack or seam is discovered, it is repaired before placing the NAPIS back into service.

### 11.2 Security

The facility is entirely fenced with chain link or barbed wire. Gates are locked and access is limited to facility personnel and supervised visitors and contractors. The refinery will continue to employ full time, on-site security (24/7) at the Refinery.



## 12. Geological/Hydrogeological Information

Local topography consists of gradually inclined down-slope from high ground in the southeast to a lowland fluvial plain in the northwest. The highest point on Refinery property is located at the southeast corner boundary (elevation approximately 7,040 feet) and the lowest point is located at the northwest corner boundary (elevation approximately 6,860 feet). The refinery is located on a flat man-made terrace at an elevation of approximately 6,950 feet.

### 12.1 Drainages

Surface water in the region consists of the man-made evaporation ponds and aeration basins located within the Refinery, a livestock watering pond (Jon Myer's Pond) located east of the Refinery, two small unnamed spring fed ponds located south of the Refinery, and the South Fork of the Rio Puerco and its tributary arroyos. The various ponds and basins typically contain water throughout the year. The South Fork of the Rio Puerco and its tributaries are intermittent and generally contain water only during and immediately after precipitation.

There are several stormwater conveyance ditches located throughout the Refinery. These ditches are directed to discharge into contained basins where stormwater is collected and recycled for use as process water for the refinery when it is operating, collected and allowed to evaporate, diverted around regulated industrial activity, or discharged into two designated outfalls located on the east and west section of the property, identified as Outfall 001 and Outfall 002 (Figure 12-1) which are permitted outfalls under the NPDES general permit. Outfall 001 is located directly south of Evaporation Pond 8 on the western edge of the Refinery's property boundary and equipped with four separate small diameter overflow pipelines, each with a manual flow valve for independent control. Outfall 002 is located north of the railroad loading rack on the eastern section of the Facility. This outfall consists of a concrete barrier with a valve to control discharges from a deep ditch that collects/ponds the runoff from the rail rack loading area.

Directly west of the crude tank area, there is a concrete barrier with a control valve that discharges from a culvert that carries stormwater flow from the Truck Loading Rack area. The flow from this concrete barrier continues in a north-northwest direction alongside the southern bermed areas of Evaporation Ponds 3, 4, 5, and 6 and outward towards the Outfall 001 area. At the wastewater treatment plant (WWTP), there are three storm drains located on the south, southwest, and west side of the WWTP. These drains are connected to an underground storm culvert that exits on the northwest section of STP-1 into a conveyance ditch along the northern edge of Evaporation Pond 2 and into a holding pond equipped with manual flow valves, located north of Evaporation Pond 3. The discharge from this holding pond then flows north-northwest towards the Outfall 001 area.

Uncontaminated surface water at the facility consists of evaporation ponds and aeration basins. The Refinery continues to monitor the evaporation ponds, including their water levels, as required under the Facility Wide Groundwater Monitoring Plan.

### 12.2 Presence and Flow Direction of Groundwater

Groundwater flow within the Petrified Forest Formation is extremely slow and typically averages less than  $10^{-10}$  centimeters per second (cm/s) or less than 0.01 feet per year. Groundwater flow within the surface soil layer above the Petrified Forest Formation is highly variable due to the presence of complex and irregular stratigraphy, including sand stringers, cobble beds, and dense clay layers. Hydraulic conductivity may range

from less than  $10^{-2}$  cm/s in the gravelly sands immediately overlying the Petrified Forest Formation down to  $10^{-8}$  cm/s in the clay soil layers located near the surface. Permeability throughout the Refinery and specifically underneath the evaporation ponds are very low due to the clay stones and siltstones. Due to the nature of the geology and rock formations, the Chinle Formation effectively serves as an aquitard.

Shallow groundwater located under the Refinery generally flows along the upper contact of the Petrified Forest Formation. The prevailing flow direction is from the southeast and toward the northwest.

The groundwater that is monitored at the Refinery is situated in three aquifers, Alluvial, Chinle, and Sonsela. Depth to water ranges from 1.45 feet below ground surface (ft bgs) to 46.45 ft bgs. Depth to water and product data for 2020 and the first half of 2021 are presented in Table 12-1.

### 12.3 Groundwater Quality

Groundwater is currently sampled on a quarterly, semiannual, and annual schedule as outlined in the Annual Groundwater Work Plan. Groundwater sampling includes fluid level gauging, field parameters, and analytical monitoring. The data are reviewed and discussed in the Annual Groundwater Monitoring Report, submitted on September 1 of each year. The annual report reviews any outlying data and includes recommendations for the following years sampling activities.

The monitoring well network is presented in Figure 12-2. This figure includes monitoring wells that are scheduled to be installed during 2021. Field parameter data for the annual groundwater monitoring event for September 2020 are provided in Table 12-2. Analytical data are presented in the Annual Groundwater Reports and are available upon request.

A brief summary of the Refinery's historical and current on-site groundwater contamination is provided below:

- In the Eastern Boundary wells, benzene, toluene, ethylbenzene, and total xylenes (BTEX) were not detected in the analytical data during 2020 with the exception of OW-56. OW-56 has historically had low level concentrations of benzene (less than 2.5 µg/L), however, during 2020 the benzene concentrations were detected at 547 µg/L during the fourth quarter of 2020. OW-56 will continue to be monitored quarterly and reported on in the annual groundwater monitoring report. Methyl tert butyl alcohol (MTBE) was detected in all of the Eastern Boundary monitoring wells that were sampled during 2020. MTBE detections and screening level exceedances are generally consistent with historical monitoring data.
- BTEX and MTBE in the Tank Farm monitoring wells were detected. Benzene and ethylbenzene exceeded the screening level during all monitoring events during 2020 in the Tank Farm monitoring wells, which is consistent with historic monitoring. Toluene was detected during the 2020 monitoring events below the screening level which is consistent with historical monitoring results. MTBE was detected and exceeded the screening level in OW-58 and OW-58A during 2020. OW-57 and OW-63 exceeded the screening level for MTBE in two of the three quarters of 2020.
- In the Marketing Tank Farm (MKTF) Area, benzene was consistently detected above the screening level in monitoring wells within areas near the presence of SPH. Detections of ethylbenzene, toluene, and total xylenes were generally present in monitoring wells with elevated benzene detections with the exception of MKTF-38 during the first quarter of 2020. MTBE was detected above the screening level in

the southeast and southwest portion of the MKTF area and in the north east area. These detections for benzene and MTBE are generally consistent with historical results. It should be noted that there are several instances where SPH is intermittently observed in the wells which prevents the collection of analytical samples.

- BTEX and MTBE have historically been detected in the wastewater treatment area monitoring wells. Monitoring wells that were sampled during 2020 continued to have elevated detections of benzene, ethylbenzene, and MTBE that are above the screening levels. The upgradient well NAPIS-1 has consistently had SPH and could not be sampled in 2020. In addition, it should be noted that benzene concentrations further upgradient in MKTF-49 and MKTF-50 are one to two orders of magnitude higher than concentrations observed in NAPIS-2 which had the highest benzene detects in the WWT area wells. Toluene and total xylenes were detected during 2020 but did not exceed the screening levels, similar to historic results.
- BTEX and MTBE were not detected in the solid waste management unit 1 monitoring wells during 2020. These monitoring wells historically have not had detections or exceedances of BTEX.
- BTEX and MTBE were not detected in the LTU Area monitoring wells with the exception of MTBE in SMW-2. MTBE did not exceed the screening level in SWM-2 during 2020. SWM-2 has historically had detections of MTBE less than the screening level.
- In the Evaporation Ponds and outfall locations, BTEX and MTBE were reported as not detected during the two semiannual monitoring events in 2020. This is generally consistent with historic results.
- BTEX has continued to be non-detect in the Western Boundary monitoring wells. MTBE was detected in monitoring wells BW-5B and BW-5C above the screening level during 2020. These results are consistent with previous monitoring events.
- BTEX was reported as non-detect in the deep monitoring wells with the exception of OW-12. OW-12 has historically not had detections of BTEX however, BTEX was detected during the third quarter of 2020. Benzene and ethylbenzene were detected above the screening level. OW-12 is located downgradient of the tank farm and will continue to be monitored for BTEX. MTBE was detected in all of the deep monitoring wells with the exception of OW-11. The MTBE monitoring data are generally consistent with historical analytical results.

## 12.4 Flooding Potential

There appears to be little threat of flooding to the Refinery. The Refinery, including all the process units and tank farms, sits on a topographic high where runoff runs away from the area. The lowest lying area is the evaporation ponds and they are bermed to prevent stormwater runoff in the area. The greatest threat of flooding is from the South Fork of the Rio Puerco River which is an ephemeral stream and located over 5 miles from the facility. In addition, a raised railroad bed to the north of the Refinery routes runoff around the Refinery but not does allow for a stormwater release from the area. According to the FEMA Flood Map (2021), the Refinery is not located within a floodplain (Figure 12-3).

### **13. Monitoring and Reporting**

Activities associated with routine groundwater monitories are outlined in the Facility Wide Groundwater Monitoring Plan. Groundwater sampling and analysis occurs on a quarterly, semiannual, and annual basis. An annual report detailing the previous years activities and results is submitted no later than September 1 of the following calendar year.

Activities associated with investigations are submitted to NMED and OCD following analysis of the results. These investigations are generally submitted within 90 days of field events. All records associated with the Refinery are maintained in an electronic database and are available for regulators and inspectors as requested. These records will be maintained for a minimum of five years.

The Gallup Refinery reports spills as required under applicable state and federal laws and regulations to the appropriate governmental agencies. The facility generates waste from routine activities as described in Sections 3 and 4.

As stated previously, the Refinery maintains compliance with its RCRA Post-Closure Permit. This includes submitting routine monitoring reports and investigation work plans and reports to NMED and OCD. Any deviations that occur, such as a spill or discovery of a seep, the Gallup Refinery is required under the Permit to immediately notify the appropriate agencies.

## **14. Facility Closure and Post-Closure Plan**

While the Refinery is currently indefinitely idled, it continues to employ at least a small staff of maintenance and operations personnel, maintains its permits and complies with all permit requirements.. If the Refinery is shut down, it will follow the requirements in the RCRA Post-Closure Permit. NMED and OCD would be notified of permanent shut down prior to completing any closure activities.

## 15. Public Notice

Western Refining will provide proof of notice, including affidavit of mailings and list of property owner(s), proof of publication, and affidavit of posting to OCD within 15 days of completion of the public notice requirements. The public notice will be published within 30 days of OCD deeming the application is administratively complete.

The public notice will be posted at the entrance to the Refinery and at the Marathon Wingate Facility, for a minimum of 30 days, no smaller than two feet by three feet in size. The public notice will also be published in the local daily newspaper, *Gallup Sun*, for a minimum of 14 days, no smaller than three inches by four inches in size. The notice will be published in both English and Spanish and will provide the following information.

Western Refining, Mr. John Moore, Refinery Environmental Supervisor, has submitted an application for a Discharge Permit for the Marathon Gallup Refinery located at I-40, Exit 39, Jamestown, New Mexico 87347. The Refinery is a non-discharging facility and water produced on-site is kept in Evaporation Ponds at the Refinery. The Refinery is currently indefinitely idled and produces less than 2.1 million gallons of processed water per month that is sent to the on-site evaporation ponds. The groundwater most likely to be affected by a discharge with the Refinery's current idled status is STP1-NW, STP1-SW, or OW-60 (near Evaporation Pond 2). The depth to water is approximately 20 feet below ground surface (ft bgs), 29 ft bgs, and 16 ft bgs, respectively. TDS concentrations range, when measured, from 4500 milligrams per liter (mg/L) to 4900 mg/L.

## **16. Permit Renewal**

After OCD issues a discharge permit for discharges that require a Water Quality Control Commission Discharge Permit, the permit will expire five years after OCD approval and notification of this application. The Refinery will prepare and submit an application for discharge permit renewal at least 120 days before the discharge permit expires. If the renewal application is submitted at least 120 days prior to expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved by OCD.

## **17. Permit Modifications**

In the case of Refinery operation changes or significant modifications that would result in the discharge of water, OCD will be notified in writing for review and approval prior to implementing the modification. An application and a description of the requested modifications will be included in the written notice.



## **18. References**

Terracon Consultants Inc. (Terracon). 2020. Geotechnical Engineering Report, Marathon Petroleum Company Gallup Refinery, Evaporation Ponds Nos. 6, 7, and 9. January 7.

United States Department of Agriculture (USDA). 2005. Soil Survey of McKinley County Area, New Mexico, McKinley County and Parts of Cibola and San Juan Counties.

## **Tables**

**TABLE 8-1. EVAPORATION PONDS AND TANK VOLUME CAPACITY  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Area (sq. ft)	Pond Depth (ft)	Capacity (ft <sup>3</sup> )	Capacity (gal)
EP-2	343,595	8	2,748,760	20,563,473.6
EP-3	150,056	8	1,200,448	8,980,551.5
EP-4, EP-5, EP-6	990,908	8	7,927,264	59,303,862.0
EP7, EP-8	1,278,579	8	10,228,632	76,520,396.0
EP-9	972,287	8	7,778,296	58,189,432.4
EP-11	873,190	8	6,985,520	52,258,675.1
EP-12A	317,658	8	2,541,264	19,011,196.0
EP-12B	179,098	8	1,432,784	10,718,657.1
Tank 28	NA	NA	NA	210,000
Tank 35	NA	NA	NA	976,920

Notes

Pond depth assumed to be 8 feet for each pond.

EP - Evaporation Pond

NA - Not Applicable

sq. ft - square feet

ft - feet

ft<sup>3</sup> - cubic feet

gal - gallons

**TABLE 8-2. WASTEWATER FLOW RATES**  
**WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Flow Rate (gpm)	
	Average	Maximum
STP-1 <sup>1</sup>	11.9	22.4
WWTP <sup>2</sup>	274	918
API <sup>2</sup>	274	918

Notes

gpm - gallons per minute

STP-1 - Sanitary Treatment Pond 1

WWTP - Wastewater Treatment Plant

API - American Petroleum Institute Separator

<sup>1</sup>Operates 24-hours per day

<sup>2</sup>Operates 10-hours per day, approximately 2 days per month

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Sonsela Wells</b>				
BW-1C	9/14/2020	13.89	ND	NA
BW-2C	9/14/2020	21.32	ND	NA
BW-3C	9/14/2020	8.52	ND	NA
BW-5C	3/05/2020	2.80	ND	NA
BW-5C	6/26/2020	3.38	ND	NA
BW-5C	9/14/2020	4.36	ND	NA
BW-5C	12/07/2020	4.27	ND	NA
BW-5C	2/27/2021	4.11	ND	NA
BW-5C	6/03/2021	4.30	ND	NA
MW-1	6/30/2020	7.25	ND	NA
MW-1	9/14/2020	7.72	ND	NA
MW-2	6/30/2020	9.29	ND	NA
MW-2	9/14/2020	9.74	ND	NA
MW-4	6/30/2020	7.50	ND	NA
MW-4	9/14/2020	8.00	ND	NA
MW-5	6/30/2020	11.46	ND	NA
MW-5	9/14/2020	11.99	ND	NA
OW-01	3/09/2020	1.70	ND	NA
OW-01	6/30/2020	1.60	ND	NA
OW-01	9/15/2020	1.45	ND	NA
OW-01	12/07/2020	1.75	ND	NA
OW-01	2/27/2021	1.76	ND	NA
OW-01	6/03/2021	1.40	ND	NA
OW-10	3/04/2020	5.43	ND	NA
OW-10	6/30/2020	6.75	ND	NA
OW-10	9/20/2020	7.70	ND	NA
OW-10	10/09/2020	7.70	ND	NA
OW-10	12/07/2020	7.61	ND	NA
OW-10	1/28/2021	7.84	ND	NA
OW-10	2/28/2021	7.85	ND	NA
OW-10	3/31/2021	7.68	ND	NA
OW-10	4/26/2021	7.67	ND	NA
OW-10	5/20/2021	7.59	ND	NA
OW-10	6/03/2021	7.89	ND	NA
OW-11	9/15/2020	18.51	ND	NA
OW-12	6/30/2020	Dry	ND	NA
OW-12	9/14/2020	46.45	ND	NA
OW-12	11/09/2020	46.49	ND	NA
OW-12	1/28/2021	46.20	ND	NA
OW-13	3/02/2020	19.91	ND	NA
OW-13	6/30/2020	22.16	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Sonsela Wells</b>				
OW-13	9/14/2020	20.99	ND	NA
OW-13	11/09/2020	20.38	ND	NA
OW-13	12/07/2020	20.24	ND	NA
OW-13	2/27/2021	20.38	ND	NA
OW-13	6/02/2021	20.20	ND	NA
<b>Pot Surface - Chinle</b>				
BW-1B	9/14/2020	Dry	ND	NA
BW-2B	9/14/2020	28.79	ND	NA
BW-3B	9/14/2020	34.24	ND	NA
BW-4B	3/09/2020	40.35	ND	NA
BW-4B	6/26/2020	NA	NA	NA
BW-4B	6/30/2020	44.75	ND	NA
BW-4B	9/14/2020	39.86	39.85	0.01
BW-4B	12/07/2020	35.86	ND	NA
BW-4B	2/27/2021	47.08	ND	NA
BW-4B	6/03/2021	45.58	ND	NA
BW-5B	3/05/2020	9.94	ND	NA
BW-5B	6/26/2020	10.21	ND	NA
BW-5B	9/14/2020	10.61	ND	NA
BW-5B	12/07/2020	10.53	ND	NA
BW-5B	2/27/2021	9.41	ND	NA
BW-5B	6/03/2021	10.25	ND	NA
SMW-2	6/30/2020	24.25	ND	NA
SMW-2	9/14/2020	24.70	ND	NA
SMW-4	6/30/2020	29.17	ND	NA
SMW-4	9/14/2020	29.15	ND	NA
OW-59	6/30/2020	23.67	ND	NA
OW-59	9/14/2020	24.06	ND	NA
OW-59	12/07/2020	23.91	ND	NA
OW-59	2/27/2021	23.64	ND	NA
OW-59	6/02/2021	23.70	ND	NA
OW-60	3/03/2020	16.14	ND	NA
OW-60	6/30/2020	16.50	ND	NA
OW-60	9/14/2020	16.57	ND	NA
OW-60	11/09/2020	16.35	ND	NA
OW-60	12/07/2020	16.55	ND	NA
OW-60	1/28/2021	16.45	ND	NA
OW-60	2/27/2021	16.47	ND	NA
OW-60	6/02/2021	16.66	ND	NA
OW-61	3/04/2020	21.09	18.28	2.81
OW-61	6/29/2020	18.04	17.17	0.87

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
OW-61	9/15/2020	19.40	16.88	2.52
OW-61	11/09/2020	19.58	18.22	1.36
OW-61	12/08/2020	20.30	18.40	1.90
OW-61	1/28/2021	19.78	19.13	0.65
OW-61	2/27/2021	20.10	18.89	1.21
OW-61	3/31/2021	21.28	18.82	2.46
OW-61	4/26/2021	21.43	18.93	2.50
OW-61	5/20/2021	21.95	19.11	2.84
OW-61	6/02/2021	20.89	18.62	2.27
OW-62	3/10/2020	24.16	23.58	0.58
OW-62	6/30/2020	23.91	23.62	0.29
OW-62	9/15/2020	23.87	23.62	0.25
OW-62	11/09/2020	24.00	23.70	0.30
OW-62	12/08/2020	23.98	23.69	0.29
OW-62	1/28/2021	24.05	23.75	0.30
OW-62	2/27/2021	24.15	23.82	0.33
OW-62	3/31/2021	24.16	23.85	0.31
OW-62	4/26/2021	24.10	23.93	0.17
OW-62	5/20/2021	24.44	23.80	0.64
OW-62	6/02/2021	23.22	22.97	0.25
OW-63	3/04/2020	20.41	ND	NA
OW-63	6/29/2020	20.46	ND	NA
OW-63	9/14/2020	20.73	ND	NA
OW-63	11/09/2020	20.85	ND	NA
OW-63	12/08/2020	20.97	ND	NA
OW-63	1/28/2021	21.15	ND	NA
OW-63	2/27/2021	21.13	ND	NA
OW-63	3/31/2021	21.28	ND	NA
OW-63	4/26/2021	21.40	ND	NA
OW-63	5/20/2021	21.52	ND	NA
OW-63	6/02/2021	21.37	ND	NA
OW-64	3/04/2020	7.50	ND	NA
OW-64	6/30/2020	8.35	ND	NA
OW-64	9/14/2020	7.95	ND	NA
OW-64	11/09/2020	8.18	ND	NA
OW-64	12/07/2020	8.26	ND	NA
OW-64	1/28/2021	8.54	ND	NA
OW-64	2/27/2021	8.29	ND	NA
OW-64	3/31/2021	8.37	ND	NA
OW-64	4/26/2021	8.28	ND	NA
OW-64	5/20/2021	8.08	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
OW-64	6/02/2021	8.13	ND	NA
OW-65	3/04/2020	30.08	23.83	6.25
OW-65	6/29/2020	31.41	24.08	7.33
OW-65	9/14/2020	30.76	24.70	6.06
OW-65	11/09/2020	32.35	25.05	7.30
OW-65	12/08/2020	31.95	25.79	6.16
OW-65	1/28/2021	31.75	26.63	5.12
OW-65	2/27/2021	33.71	26.41	7.30
OW-65	3/31/2021	33.88	27.40	6.48
OW-65	4/26/2021	33.95	28.01	5.94
OW-65	5/20/2021	35.17	28.16	7.01
OW-65	6/02/2021	32.66	26.91	5.75
OW-14	3/02/2020	NA	NA	NA
OW-14	6/30/2020	22.75	ND	NA
OW-14	9/14/2020	NA	NA	NA
OW-14	12/07/2020	24.40	NA	NA
OW-14	2/27/2021	23.32	NA	NA
OW-14	6/02/2021	23.65	NA	NA
OW-29	2/24/2020	16.48	ND	NA
OW-29	6/30/2020	17.42	ND	NA
OW-29	9/14/2020	14.57	ND	NA
OW-29	11/09/2020	17.23	ND	NA
OW-29	12/07/2020	17.15	ND	NA
OW-29	2/27/2021	16.84	ND	NA
OW-29	2/27/2021	17.28	ND	NA
OW-30	3/02/2020	NA	NA	NA
OW-30	6/30/2020	22.33	ND	NA
OW-30	9/15/2020	NA	ND	NA
OW-30	12/07/2020	22.22	ND	NA
OW-30	6/02/2021	22.42	ND	NA
OW-57	3/04/2020	19.97	ND	NA
OW-57	6/30/2020	20.22	ND	NA
OW-57	9/14/2020	20.50	ND	NA
OW-57	11/09/2020	20.53	ND	NA
OW-57	12/07/2020	20.64	ND	NA
OW-57	1/28/2021	20.73	ND	NA
OW-57	2/27/2021	20.73	ND	NA
OW-57	3/31/2021	20.98	ND	NA
OW-57	4/26/2021	21.07	ND	NA
OW-57	5/20/2021	19.88	ND	NA
OW-57	6/02/2021	21.03	ND	NA



**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
OW-58	6/30/2020	24.12	ND	NA
OW-58	9/14/2020	23.55	ND	NA
OW-58	11/09/2020	23.31	ND	NA
OW-58	12/08/2020	24.32	ND	NA
OW-58	1/28/2021	24.29	ND	NA
OW-58	2/28/2021	23.80	ND	NA
OW-58	3/31/2021	24.40	ND	NA
OW-58	4/26/2021	24.83	ND	NA
OW-58	5/20/2021	23.33	ND	NA
OW-58	6/02/2021	24.63	ND	NA
OW-58A	3/05/2020	26.13	ND	NA
OW-58A	6/30/2020	26.50	ND	NA
OW-58A	9/15/2020	26.87	ND	NA
OW-58A	11/09/2020	24.31	ND	NA
OW-58A	12/08/2020	26.71	ND	NA
OW-58A	1/28/2021	26.66	ND	NA
OW-58A	2/28/2021	26.51	ND	NA
OW-58A	3/31/2021	26.78	ND	NA
OW-58A	4/26/2021	27.01	ND	NA
OW-58A	5/20/2021	26.31	ND	NA
OW-58A	6/02/2021	26.63	ND	NA
OW-55	3/02/2020	16.96	ND	NA
OW-55	6/30/2020	17.42	ND	NA
OW-55	9/14/2020	17.96	ND	NA
OW-55	10/09/2020	17.70	ND	NA
OW-55	12/07/2020	17.61	ND	NA
OW-55	6/02/2021	17.82	ND	NA
OW-56	3/02/2020	13.02	ND	NA
OW-56	6/30/2020	14.33	ND	NA
OW-56	9/14/2020	14.36	ND	NA
OW-56	11/09/2020	14.21	ND	NA
OW-56	12/07/2020	13.73	ND	NA
OW-56	2/27/2021	13.08	ND	NA
OW-56	6/02/2021	13.75	ND	NA
OW-50	3/02/2020	14.05	ND	NA
OW-50	6/30/2020	14.61	ND	NA
OW-50	9/14/2020	15.11	ND	NA
OW-50	11/09/2020	14.87	ND	NA
OW-50	12/07/2020	14.72	ND	NA
OW-50	2/28/2021	14.32	ND	NA
OW-50	2/28/2021	14.71	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
OW-52	3/02/2020	13.71	ND	NA
OW-52	6/30/2020	14.20	ND	NA
OW-52	9/14/2020	14.56	ND	NA
OW-52	10/09/2020	14.52	ND	NA
OW-52	12/07/2020	14.42	ND	NA
OW-52	2/27/2021	14.08	ND	NA
OW-52	6/02/2021	14.14	ND	NA
OW-53	3/02/2020	Dry	ND	NA
OW-53	6/30/2020	Dry	ND	NA
OW-53	9/14/2020	Dry	ND	NA
OW-53	11/09/2020	Dry	ND	NA
OW-53	12/07/2020	Dry	ND	NA
OW-53	2/27/2021	Dry	ND	NA
OW-53	6/02/2021	Dry	ND	NA
OW-54	3/02/2020	17.18	ND	NA
OW-54	6/30/2020	17.75	ND	NA
OW-54	9/14/2020	18.17	ND	NA
OW-54	10/09/2020	17.92	ND	NA
OW-54	12/07/2020	17.78	ND	NA
OW-54	2/27/2021	17.50	ND	NA
OW-54	6/02/2021	17.88	ND	NA
RW-1	3/04/2020	NA	NA	NA
RW-1	6/30/2020	29.50	28.25	1.25
RW-1	9/19/2020	30.20	28.07	2.13
RW-1	11/10/2020	30.33	29.50	0.83
RW-1	12/08/2020	30.33	29.50	0.83
RW-1	1/28/2021	30.33	29.98	0.35
RW-1	2/27/2021	31.05	29.75	1.30
RW-1	3/31/2021	32.01	29.90	2.11
RW-1	4/26/2021	31.89	29.81	2.08
RW-1	5/20/2021	33.23	30.05	3.18
RW-1	6/01/2021	33.42	30.33	3.09
RW-2	3/04/2020	NA	NA	NA
RW-2	6/30/2020	21.00	20.66	0.34
RW-2	9/19/2020	22.23	22.10	0.13
RW-2	11/09/2020	22.28	22.09	0.19
RW-2	12/08/2020	22.38	22.20	0.18
RW-2	1/28/2021	22.40	ND	NA
RW-2	2/27/2021	22.45	22.40	0.05
RW-2	3/31/2021	22.85	22.70	0.15
RW-2	4/26/2021	23.19	23.05	0.14

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
RW-2	5/20/2021	23.86	23.77	0.09
RW-2	6/01/2021	23.86	23.77	0.09
RW-5	3/04/2020	NA	NA	NA
RW-5	6/30/2020	32.05	28.65	3.40
RW-5	9/19/2020	32.81	29.59	3.22
RW-5	11/09/2020	33.03	29.86	3.17
RW-5	12/08/2020	39.51	33.15	6.36
RW-5	1/28/2021	33.98	32.42	1.56
RW-5	2/27/2021	31.65	31.02	0.63
RW-5	3/31/2021	31.59	30.10	1.49
RW-5	4/26/2021	31.76	30.43	1.33
RW-5	5/20/2021	30.90	30.76	0.14
RW-5	6/01/2021	31.86	31.20	0.66
RW-6	3/04/2020	NA	NA	NA
RW-6	6/30/2020	30.50	28.87	1.63
RW-6	9/19/2020	32.64	29.72	2.92
RW-6	11/09/2020	33.05	29.98	3.07
RW-6	12/08/2020	33.31	30.18	3.13
RW-6	1/28/2021	33.12	30.22	2.90
RW-6	2/27/2021	33.68	30.45	3.23
RW-6	3/31/2021	31.70	31.60	0.10
RW-6	4/26/2021	31.61	31.58	0.03
RW-6	5/20/2021	31.64	31.61	0.03
RW-6	6/01/2021	32.24	32.11	0.13
NAPIS-1	3/04/2020	7.74	7.69	0.05
NAPIS-1	7/01/2020	7.42	7.38	0.04
NAPIS-1	9/15/2020	6.71	6.70	0.01
NAPIS-1	11/10/2020	7.20	7.19	0.01
NAPIS-1	12/07/2020	7.44	ND	NA
NAPIS-1	1/28/2021	7.89	7.88	0.01
NAPIS-1	2/27/2021	7.95	7.90	0.05
NAPIS-1	3/31/2021	8.01	ND	NA
NAPIS-1	4/26/2021	7.82	ND	NA
NAPIS-1	5/20/2021	8.52	ND	NA
NAPIS-1	6/03/2021	7.85	ND	NA
NAPIS-2	3/03/2020	9.46	ND	NA
NAPIS-2	7/01/2020	9.12	ND	NA
NAPIS-2	9/15/2020	8.12	ND	NA
NAPIS-2	11/10/2020	8.51	ND	NA
NAPIS-2	12/07/2020	8.72	ND	NA
NAPIS-2	1/28/2021	9.16	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
NAPIS-2	2/27/2021	9.15	ND	NA
NAPIS-2	3/31/2021	9.32	ND	NA
NAPIS-2	4/26/2021	9.14	ND	NA
NAPIS-2	5/20/2021	8.96	ND	NA
NAPIS-2	6/03/2021	9.10	ND	NA
NAPIS-3	7/01/2020	10.10	ND	NA
NAPIS-3	9/15/2020	9.25	ND	NA
NAPIS-3	11/10/2020	9.47	ND	NA
NAPIS-3	12/07/2020	8.51	ND	NA
NAPIS-3	1/28/2021	9.00	ND	NA
NAPIS-3	2/28/2021	9.09	ND	NA
NAPIS-3	3/31/2021	9.27	ND	NA
NAPIS-3	4/26/2021	8.89	ND	NA
NAPIS-3	5/20/2021	9.30	ND	NA
NAPIS-3	6/03/2021	9.31	ND	NA
OAPIS-1	3/03/2020	12.46	ND	NA
OAPIS-1	7/01/2020	12.60	ND	NA
OAPIS-1	9/15/2020	11.90	ND	NA
OAPIS-1	11/10/2020	12.02	ND	NA
OAPIS-1	12/07/2020	12.31	ND	NA
OAPIS-1	1/28/2021	12.98	ND	NA
OAPIS-1	2/27/2021	12.96	ND	NA
OAPIS-1	3/31/2021	13.48	ND	NA
OAPIS-1	4/26/2021	13.24	ND	NA
OAPIS-1	5/20/2021	13.88	ND	NA
OAPIS-1	6/03/2021	13.08	ND	NA
GWM-1	3/03/2020	21.48	21.40	0.08
GWM-1	7/01/2020	20.37	20.82	-0.45
GWM-1	9/15/2020	21.40	20.73	0.67
GWM-1	11/09/2020	21.72	20.88	0.84
GWM-1	12/07/2020	21.85	20.91	0.94
GWM-1	1/28/2021	22.30	21.10	1.20
GWM-1	2/28/2021	22.57	21.19	1.38
GWM-1	3/31/2021	22.57	21.19	1.38
GWM-1	4/26/2021	22.98	22.14	0.84
GWM-1	5/20/2021	22.92	21.66	1.26
GWM-1	6/02/2021	22.67	21.26	1.41
GWM-2	3/03/2020	Dry	ND	NA
GWM-2	7/01/2020	Dry	ND	NA
GWM-2	9/15/2020	Dry	ND	NA
GWM-2	11/10/2020	Dry	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
GWM-2	12/07/2020	Dry	ND	NA
GWM-2	1/28/2021	Dry	ND	NA
GWM-2	2/28/2021	Dry	ND	NA
GWM-2	3/31/2021	Dry	ND	NA
GWM-2	4/26/2021	Dry	ND	NA
GWM-2	5/20/2021	Dry	ND	NA
GWM-2	6/03/2021	Dry	ND	NA
GWM-3	3/03/2020	Dry	ND	NA
GWM-3	7/01/2020	Dry	ND	NA
GWM-3	9/15/2020	Dry	ND	NA
GWM-3	10/11/2020	Dry	ND	NA
GWM-3	12/07/2020	Dry	ND	NA
GWM-3	1/28/2021	Dry	ND	NA
GWM-3	2/28/2021	Dry	ND	NA
GWM-3	3/31/2021	Dry	ND	NA
GWM-3	4/26/2021	Dry	ND	NA
GWM-3	5/20/2021	Dry	ND	NA
GWM-3	6/03/2021	Dry	ND	NA
STP1-NW	3/03/2020	20.27	ND	NA
STP1-NW	6/30/2020	20.67	ND	NA
STP1-NW	12/08/2020	20.78	ND	NA
STP1-NW	1/28/2021	20.76	ND	NA
STP1-NW	2/28/2021	20.60	ND	NA
STP1-NW	3/31/2021	21.95	ND	NA
STP1-NW	4/26/2021	20.81	ND	NA
STP1-NW	5/20/2021	22.19	ND	NA
STP1-NW	6/03/2021	22.16	ND	NA
STP1-SW	3/03/2020	NA	NA	NA
STP1-SW	12/08/2020	29.23	NA	NA
STP1-SW	2/28/2021	29.12	29.10	0.02
STP1-SW	3/31/2021	29.15	ND	NA
STP1-SW	4/26/2021	28.96	ND	NA
STP1-SW	5/22/2021	29.70	ND	NA
STP1-SW	6/03/2021	28.97	ND	NA
MKTF-01	2/24/2020	5.16	4.87	0.29
MKTF-01	6/26/2020	5.71	5.50	0.21
MKTF-01	9/15/2020	5.62	5.61	0.01
MKTF-01	11/10/2020	5.89	5.61	0.28
MKTF-01	12/03/2020	6.02	5.74	0.28
MKTF-01	1/28/2021	8.08	7.60	0.48
MKTF-01	2/28/2021	5.93	5.70	0.23

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-01	3/31/2021	6.33	6.09	0.24
MKTF-01	4/26/2021	6.22	5.88	0.34
MKTF-01	5/20/2021	6.77	6.41	0.36
MKTF-01	6/01/2021	6.12	5.81	0.31
MKTF-02	2/24/2020	6.52	ND	NA
MKTF-02	6/26/2020	7.70	ND	NA
MKTF-02	9/15/2020	7.88	ND	NA
MKTF-02	11/10/2020	7.43	ND	NA
MKTF-02	12/03/2020	7.72	ND	NA
MKTF-02	1/28/2021	7.75	ND	NA
MKTF-02	2/28/2021	7.14	ND	NA
MKTF-02	3/31/2021	7.84	ND	NA
MKTF-02	4/26/2021	7.78	ND	NA
MKTF-02	5/20/2021	8.11	ND	NA
MKTF-02	6/01/2021	8.02	ND	NA
MKTF-03	3/05/2020	7.84	6.47	1.37
MKTF-03	6/26/2020	8.63	7.36	1.27
MKTF-03	9/15/2020	7.09	7.08	0.01
MKTF-03	11/10/2020	8.43	7.13	1.30
MKTF-03	12/03/2020	8.62	7.46	1.16
MKTF-03	1/28/2021	8.73	7.80	0.93
MKTF-03	2/28/2021	8.39	7.46	0.93
MKTF-03	3/31/2021	8.23	7.20	1.03
MKTF-03	4/26/2021	7.91	7.11	0.80
MKTF-03	5/20/2021	8.37	7.28	1.09
MKTF-03	6/01/2021	8.46	7.33	1.13
MKTF-04	3/02/2020	8.47	ND	NA
MKTF-04	6/26/2020	9.75	ND	NA
MKTF-04	9/15/2020	9.40	9.39	0.01
MKTF-04	11/10/2020	9.20	ND	NA
MKTF-04	12/03/2020	9.71	9.70	0.01
MKTF-04	1/28/2021	10.14	ND	NA
MKTF-04	2/28/2021	9.96	9.84	0.12
MKTF-04	3/31/2021	9.23	9.21	0.02
MKTF-04	4/26/2021	9.22	9.20	0.02
MKTF-04	5/20/2021	9.38	9.28	0.10
MKTF-04	6/01/2021	9.22	9.19	0.03
MKTF-05	3/05/2020	13.72	13.58	0.14
MKTF-05	6/25/2020	14.80	14.06	0.74
MKTF-05	9/15/2020	14.68	13.65	1.03
MKTF-05	11/10/2020	14.90	14.02	0.88

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-05	12/03/2020	14.93	14.12	0.81
MKTF-05	1/28/2021	15.13	14.94	0.19
MKTF-05	2/28/2021	14.75	14.60	0.15
MKTF-05	3/31/2021	15.05	14.99	0.06
MKTF-05	4/26/2021	15.17	15.03	0.14
MKTF-05	5/20/2021	15.09	15.02	0.07
MKTF-05	6/01/2021	14.96	14.88	0.08
MKTF-06	3/05/2020	18.60	16.89	1.71
MKTF-06	6/25/2020	18.90	14.05	4.85
MKTF-06	9/15/2020	18.71	16.78	1.93
MKTF-06	11/10/2020	18.59	17.20	1.39
MKTF-06	12/03/2020	18.49	17.38	1.11
MKTF-06	1/28/2021	19.65	18.09	1.56
MKTF-06	2/28/2021	18.65	17.93	0.72
MKTF-06	3/31/2021	18.15	17.97	0.18
MKTF-06	4/26/2021	17.95	17.88	0.07
MKTF-06	5/20/2021	18.13	18.01	0.12
MKTF-06	6/01/2021	18.25	18.09	0.16
MKTF-07	3/05/2020	13.72	12.50	1.22
MKTF-07	6/25/2020	13.76	12.23	1.53
MKTF-07	9/18/2020	13.77	11.42	2.35
MKTF-07	11/10/2020	13.76	12.56	1.20
MKTF-07	12/03/2020	13.80	12.93	0.87
MKTF-07	1/28/2021	14.20	13.80	0.40
MKTF-07	2/28/2021	13.72	13.51	0.21
MKTF-07	3/31/2021	13.81	13.70	0.11
MKTF-07	4/26/2021	13.76	13.51	0.25
MKTF-07	5/20/2021	13.81	13.68	0.13
MKTF-07	6/01/2021	13.63	13.52	0.11
MKTF-08	3/05/2020	14.37	14.03	0.34
MKTF-08	6/25/2020	14.40	14.00	0.40
MKTF-08	9/18/2020	14.15	13.76	0.39
MKTF-08	11/10/2020	14.69	14.23	0.46
MKTF-08	12/03/2020	14.76	14.36	0.40
MKTF-08	1/28/2021	15.15	14.84	0.31
MKTF-08	2/28/2021	14.89	14.76	0.13
MKTF-08	3/31/2021	14.70	14.60	0.10
MKTF-08	4/26/2021	14.75	14.64	0.11
MKTF-08	5/20/2021	14.71	14.63	0.08
MKTF-08	6/01/2021	14.79	14.71	0.08
MKTF-09	3/02/2020	14.23	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-09	6/25/2020	14.55	ND	NA
MKTF-09	9/18/2020	14.20	14.19	0.01
MKTF-09	11/10/2020	14.62	14.61	0.01
MKTF-09	12/03/2020	14.76	14.75	0.01
MKTF-09	1/28/2021	15.11	ND	NA
MKTF-09	2/28/2021	14.89	14.76	0.13
MKTF-09	3/31/2021	14.87	14.85	0.02
MKTF-09	4/26/2021	14.84	14.79	0.05
MKTF-09	5/20/2021	15.16	14.98	0.18
MKTF-09	6/01/2021	14.95	14.92	0.03
MKTF-10	3/02/2020	7.67	ND	NA
MKTF-10	6/25/2020	7.07	ND	NA
MKTF-10	9/18/2020	7.53	7.52	0.01
MKTF-10	11/10/2020	7.79	ND	NA
MKTF-10	12/03/2020	7.80	ND	NA
MKTF-10	1/28/2021	7.91	ND	NA
MKTF-10	2/28/2021	7.89	ND	NA
MKTF-10	3/31/2021	7.74	ND	NA
MKTF-10	4/26/2021	8.03	ND	NA
MKTF-10	5/20/2021	7.92	ND	NA
MKTF-10	6/01/2021	7.69	ND	NA
MKTF-11	3/02/2020	7.89	ND	NA
MKTF-11	6/26/2020	7.68	7.67	0.01
MKTF-11	9/18/2020	7.60	7.59	0.01
MKTF-11	11/10/2020	7.61	ND	NA
MKTF-11	12/03/2020	7.91	7.89	0.02
MKTF-11	1/28/2021	7.88	ND	NA
MKTF-11	2/28/2021	7.84	ND	NA
MKTF-11	3/31/2021	7.63	ND	NA
MKTF-11	4/26/2021	7.70	ND	NA
MKTF-11	5/20/2021	7.67	ND	NA
MKTF-11	6/01/2021	7.56	ND	NA
MKTF-12	2/27/2020	17.92	17.84	0.08
MKTF-12	6/29/2020	19.25	19.13	0.12
MKTF-12	9/18/2020	18.65	18.64	0.01
MKTF-12	11/10/2020	18.00	17.97	0.03
MKTF-12	12/03/2020	19.06	18.90	0.16
MKTF-12	1/28/2021	19.63	19.46	0.17
MKTF-12	2/28/2021	18.92	18.82	0.10
MKTF-12	3/31/2021	18.63	18.59	0.04
MKTF-12	4/26/2021	18.60	18.49	0.11



**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-12	5/20/2021	18.73	18.70	0.03
MKTF-12	5/20/2021	19.08	19.03	0.05
MKTF-13	2/27/2020	17.31	11.13	6.18
MKTF-13	6/29/2020	18.21	12.67	5.54
MKTF-13	9/18/2020	16.92	12.55	4.37
MKTF-13	11/10/2020	16.36	11.98	4.38
MKTF-13	12/03/2020	16.65	12.84	3.81
MKTF-13	1/28/2021	17.26	13.25	4.01
MKTF-13	2/28/2021	16.90	12.60	4.30
MKTF-13	3/31/2021	16.65	12.21	4.44
MKTF-13	4/26/2021	16.33	12.25	4.08
MKTF-13	5/20/2021	16.70	12.11	4.59
MKTF-13	6/01/2021	15.67	11.93	3.74
MKTF-14	2/27/2020	5.65	5.35	0.30
MKTF-14	6/29/2020	8.58	6.38	2.20
MKTF-14	9/18/2020	8.16	6.18	1.98
MKTF-14	11/10/2020	6.28	5.98	0.30
MKTF-14	12/03/2020	7.06	6.79	0.27
MKTF-14	1/28/2021	7.41	7.11	0.30
MKTF-14	2/28/2021	6.98	6.64	0.34
MKTF-14	3/31/2021	6.26	6.14	0.12
MKTF-14	4/26/2021	6.18	6.11	0.07
MKTF-14	5/20/2021	6.31	6.20	0.11
MKTF-14	6/01/2021	5.97	5.81	0.16
MKTF-15	2/03/2020	13.11	13.02	0.09
MKTF-15	6/26/2020	13.17	13.11	0.06
MKTF-15	9/18/2020	13.03	13.00	0.03
MKTF-15	11/10/2020	13.60	13.39	0.21
MKTF-15	1/28/2021	13.75	13.54	0.21
MKTF-15	2/28/2021	13.52	13.45	0.07
MKTF-15	3/31/2021	13.42	13.39	0.03
MKTF-15	4/26/2021	13.32	13.11	0.21
MKTF-15	5/20/2021	13.58	13.51	0.07
MKTF-15	6/01/2021	13.47	13.43	0.04
MKTF-16	2/05/2020	9.68	ND	NA
MKTF-16	6/26/2020	9.54	ND	NA
MKTF-16	9/18/2020	9.19	9.18	0.01
MKTF-16	11/10/2020	7.20	ND	NA
MKTF-16	12/08/2020	9.70	ND	NA
MKTF-16	1/28/2021	6.15	ND	NA
MKTF-16	2/28/2021	8.84	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-16	3/31/2021	9.31	ND	NA
MKTF-16	4/26/2021	9.51	ND	NA
MKTF-16	5/20/2021	9.40	ND	NA
MKTF-16	6/01/2021	9.28	ND	NA
MKTF-16	6/23/2021	Dry	ND	NA
MKTF-17	2/03/2020	16.85	11.44	5.41
MKTF-17	6/29/2020	15.50	10.19	5.31
MKTF-17	9/14/2020	15.37	10.00	5.37
MKTF-17	11/10/2020	11.59	11.39	0.20
MKTF-17	12/04/2020	11.47	11.28	0.19
MKTF-17	1/28/2021	11.90	11.88	0.02
MKTF-17	2/28/2021	11.90	11.88	0.02
MKTF-17	3/31/2021	12.09	12.06	0.03
MKTF-17	4/26/2021	14.99	14.97	0.02
MKTF-17	5/20/2021	15.06	15.03	0.03
MKTF-17	6/01/2021	15.15	15.10	0.05
MKTF-18	2/05/2020	9.10	ND	NA
MKTF-18	6/30/2020	8.98	ND	NA
MKTF-18	9/18/2020	8.50	8.49	0.01
MKTF-18	11/10/2020	8.74	ND	NA
MKTF-18	12/04/2020	8.80	ND	NA
MKTF-18	1/28/2021	9.28	ND	NA
MKTF-18	2/28/2021	9.08	ND	NA
MKTF-18	3/31/2021	9.30	ND	NA
MKTF-18	4/26/2021	9.23	ND	NA
MKTF-18	5/20/2021	9.25	ND	NA
MKTF-18	6/01/2021	9.21	ND	NA
MKTF-19	2/03/2020	12.40	11.35	1.05
MKTF-19	6/29/2020	13.29	12.08	1.21
MKTF-19	9/14/2020	11.97	11.95	0.02
MKTF-19	11/10/2020	13.55	12.22	1.33
MKTF-19	12/04/2020	13.42	12.18	1.24
MKTF-19	1/28/2021	13.46	12.22	1.24
MKTF-19	2/28/2021	13.59	12.45	1.14
MKTF-19	3/31/2021	13.83	12.60	1.23
MKTF-19	4/26/2021	14.07	12.54	1.53
MKTF-19	5/20/2021	13.70	12.28	1.42
MKTF-19	6/01/2021	13.77	12.55	1.22
MKTF-20	2/05/2020	9.02	ND	NA
MKTF-20	6/26/2020	8.67	ND	NA
MKTF-20	9/15/2020	9.35	8.54	0.81

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-20	11/10/2020	8.90	8.10	0.80
MKTF-20	12/08/2020	8.95	8.76	0.19
MKTF-20	1/28/2021	9.60	8.99	0.61
MKTF-20	2/28/2021	Dry	ND	NA
MKTF-20	3/31/2021	9.23	8.95	0.28
MKTF-20	4/26/2021	9.43	9.14	0.29
MKTF-20	5/20/2021	9.17	8.90	0.27
MKTF-20	6/01/2021	9.30	9.01	0.29
MKTF-21	2/05/2020	8.25	ND	NA
MKTF-21	6/26/2020	8.20	8.17	0.03
MKTF-21	9/15/2020	7.09	7.08	0.01
MKTF-21	11/10/2020	6.41	ND	NA
MKTF-21	12/04/2020	8.05	8.04	0.01
MKTF-21	1/28/2021	7.34	ND	NA
MKTF-21	2/28/2021	7.81	ND	NA
MKTF-21	3/31/2021	7.73	ND	NA
MKTF-21	4/26/2021	7.28	ND	NA
MKTF-21	5/20/2021	7.40	ND	NA
MKTF-21	6/01/2021	6.98	ND	NA
MKTF-22	2/27/2020	25.53	24.48	1.05
MKTF-22	6/29/2020	27.71	24.57	3.14
MKTF-22	9/14/2020	27.68	24.98	2.70
MKTF-22	11/10/2020	27.29	24.94	2.35
MKTF-22	12/04/2020	27.55	25.10	2.45
MKTF-22	1/28/2021	27.97	25.28	2.69
MKTF-22	2/28/2021	27.85	25.17	2.68
MKTF-22	3/31/2021	27.25	25.77	1.48
MKTF-22	4/26/2021	26.23	26.01	0.22
MKTF-22	5/20/2021	26.98	25.15	1.83
MKTF-22	6/01/2021	28.20	26.10	2.10
MKTF-23	2/27/2020	13.42	ND	NA
MKTF-23	6/29/2020	13.25	ND	NA
MKTF-23	9/19/2020	15.44	15.42	0.02
MKTF-23	11/10/2020	14.23	ND	NA
MKTF-23	12/04/2020	14.16	14.15	0.01
MKTF-23	1/28/2021	14.23	14.22	0.01
MKTF-23	2/28/2021	14.39	14.38	0.01
MKTF-23	3/31/2021	14.21	ND	NA
MKTF-23	4/26/2021	13.90	ND	NA
MKTF-23	5/20/2021	14.19	ND	NA
MKTF-23	6/01/2021	13.98	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-24	2/24/2020	22.17	ND	NA
MKTF-24	6/26/2020	22.80	ND	NA
MKTF-24	9/15/2020	23.35	ND	NA
MKTF-24	11/10/2020	23.32	ND	NA
MKTF-24	12/04/2020	23.22	ND	NA
MKTF-24	1/28/2021	23.26	ND	NA
MKTF-24	2/27/2021	22.97	ND	NA
MKTF-24	3/31/2021	23.16	ND	NA
MKTF-24	4/26/2021	24.16	ND	NA
MKTF-24	5/20/2021	23.21	ND	NA
MKTF-24	6/01/2021	23.40	ND	NA
MKTF-25	2/26/2020	12.94	ND	NA
MKTF-25	6/26/2020	13.33	ND	NA
MKTF-25	9/15/2020	13.90	ND	NA
MKTF-25	11/10/2020	13.75	ND	NA
MKTF-25	12/04/2020	13.62	ND	NA
MKTF-25	1/28/2021	13.54	ND	NA
MKTF-25	2/27/2021	13.46	ND	NA
MKTF-25	3/31/2021	13.41	ND	NA
MKTF-25	4/26/2021	14.14	ND	NA
MKTF-25	5/20/2021	13.32	ND	NA
MKTF-25	6/01/2021	13.32	ND	NA
MKTF-26	2/26/2020	9.11	8.35	0.76
MKTF-26	6/26/2020	9.50	8.61	0.89
MKTF-26	9/15/2020	9.56	8.81	0.75
MKTF-26	11/10/2020	9.36	8.65	0.71
MKTF-26	12/04/2020	9.39	7.67	1.72
MKTF-26	1/28/2021	9.20	8.93	0.27
MKTF-26	2/27/2021	9.05	8.88	0.17
MKTF-26	3/31/2021	9.11	9.00	0.11
MKTF-26	4/26/2021	8.92	8.81	0.11
MKTF-26	5/20/2021	9.14	9.02	0.12
MKTF-26	6/01/2021	9.19	9.10	0.09
MKTF-27	2/24/2020	3.61	ND	NA
MKTF-27	6/30/2020	6.70	ND	NA
MKTF-27	9/15/2020	6.21	ND	NA
MKTF-27	11/10/2020	6.72	ND	NA
MKTF-27	12/04/2020	6.47	ND	NA
MKTF-27	1/28/2021	6.62	ND	NA
MKTF-27	2/28/2021	5.51	ND	NA
MKTF-27	3/31/2021	6.48	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-27	4/26/2021	6.18	ND	NA
MKTF-27	5/20/2021	6.52	ND	NA
MKTF-27	6/01/2021	6.69	ND	NA
MKTF-28	2/24/2020	4.53	ND	NA
MKTF-28	6/30/2020	4.84	ND	NA
MKTF-28	9/15/2020	4.59	ND	NA
MKTF-28	11/10/2020	8.81	ND	NA
MKTF-28	12/04/2020	7.13	ND	NA
MKTF-28	1/28/2021	9.74	ND	NA
MKTF-28	2/28/2021	8.18	ND	NA
MKTF-28	3/31/2021	8.51	ND	NA
MKTF-28	4/26/2021	8.47	ND	NA
MKTF-28	5/20/2021	7.94	ND	NA
MKTF-28	6/01/2021	7.87	ND	NA
MKTF-29	2/24/2020	4.49	ND	NA
MKTF-29	6/26/2020	6.42	ND	NA
MKTF-29	9/15/2020	8.01	ND	NA
MKTF-29	11/10/2020	6.98	ND	NA
MKTF-29	12/04/2020	6.40	ND	NA
MKTF-29	1/28/2021	5.61	ND	NA
MKTF-29	2/28/2021	5.31	ND	NA
MKTF-29	3/31/2021	5.20	ND	NA
MKTF-29	4/26/2021	4.92	ND	NA
MKTF-29	5/20/2021	5.21	ND	NA
MKTF-29	6/01/2021	4.12	ND	NA
MKTF-30	2/26/2020	15.31	ND	NA
MKTF-30	6/26/2020	16.19	ND	NA
MKTF-30	9/15/2020	16.66	ND	NA
MKTF-30	11/10/2020	16.87	ND	NA
MKTF-30	12/04/2020	16.76	ND	NA
MKTF-30	1/28/2021	16.79	ND	NA
MKTF-30	2/28/2021	16.33	ND	NA
MKTF-30	3/31/2021	16.40	ND	NA
MKTF-30	4/26/2021	16.20	ND	NA
MKTF-30	5/20/2021	16.39	ND	NA
MKTF-30	6/01/2021	16.32	ND	NA
MKTF-31	2/24/2020	8.10	ND	NA
MKTF-31	6/26/2020	8.25	ND	NA
MKTF-31	9/15/2020	8.75	ND	NA
MKTF-31	11/10/2020	8.79	ND	NA
MKTF-31	12/04/2020	8.73	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-31	1/28/2021	8.62	ND	NA
MKTF-31	2/28/2021	8.53	ND	NA
MKTF-31	3/31/2021	8.61	ND	NA
MKTF-31	4/26/2021	8.40	ND	NA
MKTF-31	5/20/2021	8.51	ND	NA
MKTF-31	6/01/2021	8.43	ND	NA
MKTF-32	2/26/2020	13.78	ND	NA
MKTF-32	6/29/2020	14.25	ND	NA
MKTF-32	9/14/2020	14.58	ND	NA
MKTF-32	11/10/2020	14.31	ND	NA
MKTF-32	12/04/2020	14.25	ND	NA
MKTF-32	1/28/2021	14.08	14.08	0
MKTF-32	2/27/2021	14.02	14.01	0.01
MKTF-32	3/31/2021	14.11	ND	NA
MKTF-32	4/26/2021	13.90	ND	NA
MKTF-32	5/20/2021	14.15	ND	NA
MKTF-32	6/01/2021	13.86	ND	NA
MKTF-33	2/27/2020	22.71	ND	NA
MKTF-33	6/29/2020	21.17	ND	NA
MKTF-33	9/14/2020	28.02	21.61	6.41
MKTF-33	11/10/2020	27.81	21.65	6.16
MKTF-33	12/04/2020	27.77	21.69	6.08
MKTF-33	1/28/2021	25.96	22.58	3.38
MKTF-33	2/27/2021	23.75	23.00	0.75
MKTF-33	3/31/2021	23.41	23.19	0.22
MKTF-33	4/26/2021	24.77	24.16	0.61
MKTF-33	5/20/2021	23.52	23.21	0.31
MKTF-33	6/01/2021	23.45	23.07	0.38
MKTF-34	2/05/2020	17.78	ND	NA
MKTF-34	6/29/2020	19.06	19.04	0.02
MKTF-34	9/14/2020	19.09	ND	NA
MKTF-34	11/10/2020	19.08	ND	NA
MKTF-34	12/04/2020	18.92	18.91	0.01
MKTF-34	1/28/2021	19.39	ND	NA
MKTF-34	2/28/2021	18.41	18.40	0.01
MKTF-34	3/31/2021	20.61	ND	NA
MKTF-34	4/26/2021	22.61	ND	NA
MKTF-34	5/20/2021	20.60	ND	NA
MKTF-34	6/01/2021	20.23	ND	NA
MKTF-35	2/05/2020	9.28	ND	NA
MKTF-35	6/30/2020	9.25	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-35	9/14/2020	8.59	ND	NA
MKTF-35	11/10/2020	8.86	ND	NA
MKTF-35	12/04/2020	9.03	9.02	0.01
MKTF-35	1/28/2021	9.46	ND	NA
MKTF-35	2/28/2021	9.17	ND	NA
MKTF-35	3/31/2021	9.50	ND	NA
MKTF-35	4/26/2021	10.33	ND	NA
MKTF-35	5/20/2021	9.60	ND	NA
MKTF-35	6/01/2021	9.47	ND	NA
MKTF-36	2/03/2020	8.44	7.89	0.55
MKTF-36	6/30/2020	8.25	8.04	0.21
MKTF-36	9/14/2020	7.87	ND	NA
MKTF-36	11/10/2020	8.03	7.98	0.05
MKTF-36	12/04/2020	8.17	8.10	0.07
MKTF-36	1/28/2021	8.18	8.13	0.05
MKTF-36	2/28/2021	8.27	8.26	0.01
MKTF-36	3/31/2021	8.36	ND	NA
MKTF-36	4/26/2021	8.91	ND	NA
MKTF-36	5/20/2021	8.30	ND	NA
MKTF-36	6/01/2021	8.11	ND	NA
MKTF-37	2/03/2020	9.89	9.77	0.12
MKTF-37	6/30/2020	9.63	9.61	0.02
MKTF-37	9/14/2020	8.76	ND	NA
MKTF-37	11/10/2020	9.37	9.36	0.01
MKTF-37	12/04/2020	9.65	9.64	0.01
MKTF-37	1/28/2021	9.65	9.64	0.01
MKTF-37	2/28/2021	9.67	9.65	0.02
MKTF-37	3/31/2021	9.85	9.83	0.02
MKTF-37	4/26/2021	10.13	10.10	0.03
MKTF-37	5/20/2021	9.82	9.79	0.03
MKTF-37	6/01/2021	9.90	9.86	0.04
MKTF-38	3/04/2020	9.61	ND	NA
MKTF-38	6/26/2020	9.38	ND	NA
MKTF-38	9/14/2020	8.55	ND	NA
MKTF-38	11/10/2020	9.12	ND	NA
MKTF-38	12/04/2020	9.36	9.35	0.01
MKTF-38	2/28/2021	9.22	ND	NA
MKTF-38	2/28/2021	9.17	ND	NA
MKTF-38	3/31/2021	9.30	ND	NA
MKTF-38	4/26/2021	8.86	ND	NA
MKTF-38	5/20/2021	9.31	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-38	5/20/2021	8.95	ND	NA
MKTF-39	2/03/2020	10.10	ND	NA
MKTF-39	6/26/2020	9.63	ND	NA
MKTF-39	9/15/2020	9.58	ND	NA
MKTF-39	11/10/2020	10.05	ND	NA
MKTF-39	12/04/2020	10.15	ND	NA
MKTF-39	1/28/2021	11.58	9.45	2.13
MKTF-39	2/28/2021	10.02	9.31	0.71
MKTF-39	3/31/2021	10.20	9.38	0.82
MKTF-39	4/26/2021	11.19	11.16	0.03
MKTF-39	5/20/2021	10.22	9.36	0.86
MKTF-39	6/01/2021	10.06	9.27	0.79
MKTF-40	2/27/2020	13.23	ND	NA
MKTF-40	6/26/2020	12.75	ND	NA
MKTF-40	9/15/2020	13.39	ND	NA
MKTF-40	11/10/2020	13.71	ND	NA
MKTF-40	12/04/2020	13.99	ND	NA
MKTF-40	1/28/2021	14.22	ND	NA
MKTF-40	2/28/2021	14.17	ND	NA
MKTF-40	3/31/2021	14.65	ND	NA
MKTF-40	4/26/2021	15.65	ND	NA
MKTF-40	5/20/2021	14.63	ND	NA
MKTF-40	6/01/2021	14.70	ND	NA
MKTF-41	2/26/2020	20.15	ND	NA
MKTF-41	6/29/2020	19.77	ND	NA
MKTF-41	9/14/2020	20.72	ND	NA
MKTF-41	11/10/2020	21.01	ND	NA
MKTF-41	12/04/2020	20.90	ND	NA
MKTF-41	1/28/2021	21.21	ND	NA
MKTF-41	2/27/2021	21.11	ND	NA
MKTF-41	3/31/2021	21.41	ND	NA
MKTF-41	4/26/2021	21.41	ND	NA
MKTF-41	5/20/2021	21.40	ND	NA
MKTF-41	6/01/2021	21.14	ND	NA
MKTF-42	2/26/2020	16.79	ND	NA
MKTF-42	6/30/2020	16.25	ND	NA
MKTF-42	9/14/2020	16.35	ND	NA
MKTF-42	11/10/2020	15.30	ND	NA
MKTF-42	12/04/2020	16.41	ND	NA
MKTF-42	1/28/2021	16.85	ND	NA
MKTF-42	2/27/2021	16.83	ND	NA



**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-42	3/31/2021	17.17	ND	NA
MKTF-42	4/26/2021	18.91	ND	NA
MKTF-42	5/20/2021	17.10	ND	NA
MKTF-42	6/01/2021	17.07	ND	NA
MKTF-43	2/26/2020	6.33	ND	NA
MKTF-43	6/30/2020	5.50	ND	NA
MKTF-43	9/14/2020	6.45	ND	NA
MKTF-43	11/10/2020	7.48	ND	NA
MKTF-43	12/04/2020	8.12	ND	NA
MKTF-43	1/28/2021	8.69	ND	NA
MKTF-43	2/27/2021	8.67	ND	NA
MKTF-43	3/31/2021	8.49	ND	NA
MKTF-43	4/26/2021	8.66	ND	NA
MKTF-43	5/20/2021	8.47	ND	NA
MKTF-43	6/01/2021	8.61	ND	NA
MKTF-44	3/04/2020	30.34	ND	NA
MKTF-44	6/26/2020	33.08	ND	NA
MKTF-44	9/14/2020	28.00	ND	NA
MKTF-44	12/04/2020	39.59	ND	NA
MKTF-44	2/28/2021	38.50	ND	NA
MKTF-44	3/31/2021	45.28	ND	NA
MKTF-44	4/26/2021	45.33	ND	NA
MKTF-44	5/20/2021	45.11	ND	NA
MKTF-44	6/01/2021	44.28	ND	NA
MKTF-45	2/03/2020	18.62	9.60	9.02
MKTF-45	6/30/2020	19.08	11.08	8.00
MKTF-45	9/14/2020	18.43	13.14	5.29
MKTF-45	11/10/2020	14.76	12.94	1.82
MKTF-45	12/04/2020	14.51	12.66	1.85
MKTF-45	1/28/2021	16.13	16.00	0.13
MKTF-45	2/27/2021	13.56	13.55	0.01
MKTF-45	3/31/2021	15.57	15.55	0.02
MKTF-45	4/26/2021	16.37	16.34	0.03
MKTF-45	5/20/2021	16.01	15.50	0.51
MKTF-45	6/01/2021	16.05	16.03	0.02
MKTF-46	3/05/2020	10.93	ND	NA
MKTF-46	6/30/2020	11.08	ND	NA
MKTF-46	9/14/2020	10.18	ND	NA
MKTF-46	11/10/2020	10.57	ND	NA
MKTF-46	12/04/2020	10.77	ND	NA
MKTF-46	1/28/2021	11.32	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-46	2/27/2021	10.82	ND	NA
MKTF-46	3/31/2021	10.90	ND	NA
MKTF-46	4/26/2021	11.13	ND	NA
MKTF-46	5/20/2021	11.03	ND	NA
MKTF-46	6/01/2021	11.09	ND	NA
MKTF-47	3/05/2020	9.89	ND	NA
MKTF-47	6/29/2020	9.50	ND	NA
MKTF-47	9/15/2020	8.54	8.53	0.01
MKTF-47	11/10/2020	9.33	ND	NA
MKTF-47	12/04/2020	9.59	9.58	0.01
MKTF-47	1/28/2021	9.34	ND	NA
MKTF-47	2/27/2021	9.15	ND	NA
MKTF-47	3/31/2021	Dry	ND	NA
MKTF-47	4/26/2021	Dry	ND	NA
MKTF-47	5/20/2021	Dry	ND	NA
MKTF-47	6/01/2021	Dry	ND	NA
MKTF-48	3/03/2020	12.82	12.66	0.16
MKTF-48	6/29/2020	11.58	ND	NA
MKTF-48	9/15/2020	11.86	11.85	0.01
MKTF-48	11/10/2020	12.51	12.40	0.11
MKTF-48	12/04/2020	13.10	12.77	0.33
MKTF-48	1/28/2021	12.20	12.19	0.01
MKTF-48	2/27/2021	12.25	12.19	0.06
MKTF-48	3/31/2021	12.65	12.41	0.24
MKTF-48	4/26/2021	13.95	13.71	0.24
MKTF-48	5/20/2021	12.52	12.38	0.14
MKTF-48	6/01/2021	12.88	12.64	0.24
MKTF-49	3/04/2020	20.27	ND	NA
MKTF-49	6/30/2020	20.65	ND	NA
MKTF-49	9/15/2020	20.33	ND	NA
MKTF-49	11/10/2020	20.75	ND	NA
MKTF-49	12/04/2020	20.81	ND	NA
MKTF-49	1/28/2021	21.05	ND	NA
MKTF-49	2/28/2021	21.05	ND	NA
MKTF-49	3/31/2021	21.15	ND	NA
MKTF-49	4/26/2021	20.11	ND	NA
MKTF-49	5/20/2021	21.21	ND	NA
MKTF-49	6/01/2021	20.92	ND	NA
MKTF-49	6/16/2021	22.08	21.40	0.68
MKTF-50	3/04/2020	15.87	ND	NA
MKTF-50	6/30/2020	16.00	ND	NA

**TABLE 12-1. 2020-2021 FLUID LEVEL DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Measured	Depth to Water (ft-bmp)	Depth to Product (ft-bmp)	Product Thickness (ft)
<b>Pot Surface - Chinle</b>				
MKTF-50	9/15/2020	15.37	15.36	0.01
MKTF-50	11/10/2020	16.03	ND	NA
MKTF-50	12/04/2020	16.17	ND	NA
MKTF-50	1/28/2021	16.43	ND	NA
MKTF-50	2/28/2021	16.38	ND	NA
MKTF-50	3/31/2021	16.48	ND	NA
MKTF-50	4/26/2021	16.19	ND	NA
MKTF-50	5/20/2021	16.47	ND	NA
MKTF-50	6/01/2021	16.66	ND	NA
MKTF-50	6/16/2021	16.85	16.68	0.17
KA-3	3/03/2020	9.30	ND	NA
KA-3	7/01/2020	8.75	ND	NA
KA-3	12/07/2020	9.56	ND	NA
KA-3	1/28/2021	10.50	ND	NA
KA-3	2/28/2021	10.55	ND	NA
KA-3	3/31/2021	10.68	ND	NA
KA-3	4/26/2021	9.82	ND	NA
KA-3	5/20/2021	11.03	ND	NA
KA-3	6/03/2021	10.40	ND	NA
<b>Pot Surface - Alluvial</b>				
BW-1A	9/14/2020	Dry	ND	NA
BW-2A	9/14/2020	32.93	ND	NA
BW-3A	9/14/2020	Dry	ND	NA
BW-4A	3/09/2020	38.34	ND	NA
BW-4A	6/30/2020	Dry	ND	NA
BW-4A	9/14/2020	Dry	ND	NA
BW-4A	12/07/2020	Dry	ND	NA
BW-4A	2/27/2021	Dry	ND	NA
BW-4A	6/03/2021	Dry	ND	NA
BW-5A	3/05/2020	Dry	ND	NA
BW-5A	6/26/2020	23.21	ND	NA
BW-5A	9/14/2020	Dry	ND	NA
BW-5A	12/07/2020	23.27	ND	NA
BW-5A	2/27/2021	23.23	ND	NA
BW-5A	6/03/2021	Dry	ND	NA

**NOTES:**

ft-bmp - feet below measuring point

ft - feet

ND - Not Detected

NA - Not applicable

**TABLE 12-2. 2020 FIELD PARAMETERS DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location ID	Date Sampled	Specific Conductance Field (umhos/cm)	Dissolved Oxygen, Field (mg/L)	ORP, Field (mV)	pH, Field (Std Units)	Solids, Total Dissolved, Field (mg/L)	Temperature, Field (oC)
BW-1C	09/20/20	1480	0.66	189	8.99	962	15.4
BW-2A	09/20/20	1500	0.55	34.6	7.95	975	15
BW-2B	09/21/20	2390	0.75	231.7	8.11	1553.8	13.7
BW-2C	09/22/20	8790.2	2.41	245.9	9.62	923	14.5
BW-3B	09/21/20	1640	0.49	75.8	8.36	1066	14.1
BW-3C	09/22/20	7922.3	1.19	205.5	9.51	1040	13.9
BW-5B	09/20/20	2890	2.41	245.6	8.71	1878	14.4
BW-5C	09/19/20	6700	1.24	65.8	8.01	4361	12.6
KA-3	09/22/20	2220	1.06	-30.2	7.61	1443	25
MKTF-02	09/15/20	--	--	--	6.72	--	--
	09/21/20	5271	0.21	285.1	6.72	4297	14.76
MKTF-09	09/20/20	6019	1.7	210.5	7.07	4627	16.89
MKTF-23	09/18/20	2183	1.76	206.1	6.23	1881	12.2
MKTF-24	09/15/20	--	--	--	7.55	--	--
	09/19/20	3454	2.65	238.9	7.55	2960	12.35
MKTF-25	09/19/20	4060	11.68	86.3	5.51	3341	14.01
MKTF-27	09/15/20	--	--	--	6.81	--	--
	09/20/20	1089	1.79	324.1	6.81	8099	18.46
MKTF-28	09/15/20	--	--	--	7.35	--	--
	09/20/20	3278	3.36	260.1	7.35	2502	21.08
MKTF-29	09/15/20	--	--	--	7.07	--	--
MKTF-30	09/15/20	--	--	--	7.52	--	--
	09/20/20	3814	4.06	277.4	7.52	3070	14.91
MKTF-31	09/15/20	--	--	--	6.43	--	--
	09/19/20	2765	2.11	113.5	6.43	2013	19.32
MKTF-32	09/14/20	--	--	--	7.91	--	--
	09/20/20	2310	0.23	362.5	7.91	1881	14.4
MKTF-34	09/14/20	--	--	--	7.42	--	--
	09/16/20	2237	2.27	227.5	7.42	1830	14.22
MKTF-35	09/14/20	--	--	--	6.72	--	--
	09/16/20	2305	1.18	91.4	6.72	1642	20.42
MKTF-36	09/14/20	1868	2.85	31.1	6.87	1334	20.33
MKTF-37	09/14/20	--	--	--	7.04	--	--
	09/17/20	1629	3.14	56.1	7.04	1213	18.34
MKTF-38	09/14/20	--	--	--	7.8	--	--

## Notes:

umhos/cm - micromhos per centimeter

mg/L - milligrams per liter

mV - millivolts

deg. C - degrees Celsius

**TABLE 12-2. 2020 FIELD PARAMETERS DATA  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location ID	Date Sampled	Specific Conductance Field (umhos/cm)	Dissolved Oxygen, Field (mg/L)	ORP, Field (mV)	pH, Field (Std Units)	Solids, Total Dissolved, Field (mg/L)	Temperature, Field (oC)
MKTF-38	09/19/20	2764	1.98	165.2	7.8	2022	19.2
MKTF-39	09/15/20	--	--	--	6.74	--	--
MKTF-40	09/19/20	1314	4.04	147.5	6.74	1314	19.04
	09/15/20	--	--	--	7.01	--	--
MKTF-41	09/19/20	8303	5.01	128.5	7.01	6555	15.7
	09/14/20	--	--	--	8.23	--	--
MKTF-42	09/21/20	2794	1.83	335.2	8.23	2359	12.96
	09/14/20	--	--	--	8.27	--	--
MKTF-43	09/21/20	3167	1.52	338.4	8.27	2611	13.89
	09/14/20	--	--	--	6.86	--	--
MKTF-44	09/21/20	21280	1.53	326.5	6.86	16310	16.97
	09/14/20	--	--	--	7.91	--	--
MKTF-46	09/21/21	3409	5.05	339.7	7.91	2865	13.08
	09/14/20	2452	3.56	181.5	7.15	1853	17.68
MKTF-49	09/15/20	--	--	--	6.91	--	--
	09/20/20	4778	2.52	308.4	6.91	3916	14.17
MW-1	09/22/20	10306.4	0.62	219.9	9.83	773.5	14.5
MW-2	09/18/20	1240	0.98	221.8	7.01	806	14.5
MW-4	09/18/20	1290	3.29	216.7	8.9	838.5	14.3
MW-5	09/21/20	1220	0.47	209.7	9.29	806	14.3
NAPIS-2	09/22/20	6406.2±0	6.96	146.5±0	8.23±0	975	26.9±0
NAPIS-3	09/22/20	3757.5	2.67	209	8.16	1696.5	24.6
OAPIS-1	09/22/20	1383±0	0.81	248.2±0	8.02±0	4426	17.7±0
OW-01	09/20/20	1620	0.86	232.2	8.56	1058	14.9
OW-10	09/20/20	3190	0.54	166	7.7	2067	13.3
OW-11	09/20/20	3200	0.69	176.6	8.64	2080	15
OW-12	09/17/20	1230	2.57	251.7	9.95	799.5	17.5
OW-13	09/17/20	1410	0.93	182.1	8.61	916.5	13.3
OW-29	09/17/20	2.27	0.54	60	7.91	1432	13.6
OW-50	09/17/20	1350	0.41	147.5	8.62	884	13.1
OW-52	09/17/20	1.13	0.46	114.3	8.72	734.5	12.7
OW-56	09/21/20	3170	5.22	145.3	7.95	2067	15.5
OW-57	09/18/20	1930	0.97	89	7.66	641.25	15
OW-58	09/17/20	2100	1.22	-49.6	7.85	1358.5	15.1
OW-58A	09/18/20	2560	0.89	69.9	7.49	1664	14.1

## Notes:

umhos/cm - micromhos per centimeter

mg/L - milligrams per liter

mV - millivolts

deg. C - degrees Celsius

**TABLE 12-2. 2020 FIELD PARAMETERS DATA**  
**WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location ID	Date Sampled	Specific Conductance Field (umhos/cm)	Dissolved Oxygen, Field (mg/L)	ORP, Field (mV)	pH, Field (Std Units)	Solids, Total Dissolved, Field (mg/L)	Temperature, Field (oC)
OW-59	09/19/20	12030	2.03	279.4	7.38	780.6	15.9
OW-60	09/21/20	7440	4.11	217.3	8.23	484.2	15.1
OW-63	09/22/20	1800	0.53	-76.4	7.67	1163.5	14.3
OW-64	09/22/20	5493.3	2.53	224.5	8.5	1404	16.8
SMW-2	09/19/20	12880	2.46	224.6	7.64	841.8	15.1
SMW-4	09/20/20	1340	1.04	190	8.7	902.7	16.1

Notes:  
umhos/cm - micromhos per centimeter  
mg/L - milligrams per liter  
mV - millivolts  
deg. C - degrees Celsius

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**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
BW-1C	9/20/2020	962	13.89	ND
BW-2A	9/20/2020	975	32.93	ND
BW-2B	9/21/2020	1,553.80	28.79	ND
BW-2C	9/22/2020	923	21.32	ND
BW-3B	9/21/2020	1,066	34.24	ND
BW-3C	9/22/2020	1,040	8.52	ND
BW-4B	12/7/2020	1,001	35.86	ND
BW-5B	3/5/2020	1,735.50	9.94	ND
BW-5B	9/20/2020	1,878	10.25	ND
BW-5B	12/7/2020	1,599	10.53	ND
BW-5C	3/5/2020	3,750.50	2.8	ND
BW-5C	9/19/2020	4,361	4.3	ND
BW-5C	12/7/2020	3,763	4.27	ND
EP-1	10/16/2013	5,120	NA	NA
EP-1	3/5/2014	5,830	NA	NA
EP-11	10/16/2013	16,600	NA	NA
EP-11	3/5/2014	23,600	NA	NA
EP-11	11/12/2014	108,000	NA	NA
EP-11	3/23/2015	67,600	NA	NA
EP-11	9/1/2015	93,000	NA	NA
EP-11	8/30/2016	113,000	NA	NA
EP-11	3/30/2017	104,000	NA	NA
EP-11	10/24/2017	248,000	NA	NA
EP-11	3/1/2018	102,000	NA	NA
EP-11	9/14/2018	442,000	NA	NA
EP-11	4/29/2019	107,000	NA	NA
EP-11	12/22/2020	312,000	NA	NA
EP-11	12/22/2020	153,270	NA	NA
EP-12	3/1/2018	10,800	NA	NA
EP-12A	10/16/2013	5,440	NA	NA
EP-12A	3/5/2014	5,220	NA	NA
EP-12A	11/12/2014	7,740	NA	NA
EP-12A	3/23/2015	5,890	NA	NA
EP-12A	9/1/2015	10,600	NA	NA
EP-12A	8/30/2016	12,200	NA	NA
EP-12A	3/30/2017	13,600	NA	NA
EP-12A	10/24/2017	23,600	NA	NA
EP-12A	12/22/2020	34,400	NA	NA
EP-12A	12/22/2020	31,310	NA	NA
EP-12B	10/16/2013	4,270	NA	NA
EP-12B	3/5/2014	5,670	NA	NA
EP-12B	11/12/2014	5,410	NA	NA
EP-12B	3/23/2015	6,150	NA	NA
EP-12B	9/1/2015	6,690	NA	NA
EP-12B	8/30/2016	7,520	NA	NA

**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
EP-12B	3/30/2017	10,600	NA	NA
EP-12B	10/24/2017	8,790	NA	NA
EP-12B	3/1/2018	6,500	NA	NA
EP-12B	9/14/2018	15,900	NA	NA
EP-12B	4/29/2019	16,600	NA	NA
EP-12B	9/18/2020	22,100	NA	NA
EP-12B	12/22/2020	19,700	NA	NA
EP-12B	7/18/2020	20,000	NA	NA
EP-12B	12/22/2020	18,850	NA	NA
EP-2	10/16/2013	4,300	NA	NA
EP-2	3/5/2014	5,310	NA	NA
EP-2	11/12/2014	5,800	NA	NA
EP-2	11/12/2014	6,210	NA	NA
EP-2	3/23/2015	5,910	NA	NA
EP-2	9/1/2015	6,730	NA	NA
EP-2	3/30/2017	9,430	NA	NA
EP-2	10/24/2017	9,350	NA	NA
EP-2	3/1/2018	5,750	NA	NA
EP-2	9/14/2018	5,190	NA	NA
EP-2	4/30/2019	4,410	NA	NA
EP-2	12/21/2020	6,220	NA	NA
EP-2	9/17/2020	9,448	NA	NA
EP-2	12/21/2020	7,352	NA	NA
EP-3	10/16/2013	10,600	NA	NA
EP-3	3/5/2014	8,150	NA	NA
EP-3	11/12/2014	8,200	NA	NA
EP-3	3/23/2015	8,720	NA	NA
EP-3	9/1/2015	10,200	NA	NA
EP-3	8/30/2016	11,500	NA	NA
EP-3	3/30/2017	10,800	NA	NA
EP-3	10/24/2017	9,760	NA	NA
EP-3	3/1/2018	5,750	NA	NA
EP-3	9/14/2018	5,770	NA	NA
EP-3	4/30/2019	5,300	NA	NA
EP-3	12/21/2020	13,900	NA	NA
EP-3	9/16/2020	10,090	NA	NA
EP-3	12/21/2020	14,580	NA	NA
EP-4	10/16/2013	11,700	NA	NA
EP-4	3/5/2014	9,520	NA	NA
EP-4	11/12/2014	8,940	NA	NA
EP-4	3/23/2015	15,800	NA	NA
EP-4	9/1/2015	10,700	NA	NA
EP-4	8/30/2016	12,300	NA	NA
EP-4	3/30/2017	10,300	NA	NA
EP-4	10/24/2017	10,300	NA	NA



**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
EP-4	3/1/2018	9,960	NA	NA
EP-4	9/14/2018	6,360	NA	NA
EP-4	4/30/2019	7,170	NA	NA
EP-4	9/17/2020	22,800	NA	NA
EP-4	12/21/2020	17,900	NA	NA
EP-4	9/17/2020	21,510	NA	NA
EP-4	12/21/2020	18,180	NA	NA
EP-5	10/16/2013	12,300	NA	NA
EP-5	3/5/2014	10,500	NA	NA
EP-5	11/12/2014	23,300	NA	NA
EP-5	3/23/2015	16,000	NA	NA
EP-5	9/1/2015	16,600	NA	NA
EP-5	8/30/2016	20,400	NA	NA
EP-5	3/30/2017	17,500	NA	NA
EP-5	10/24/2017	19,200	NA	NA
EP-5	3/1/2018	14,500	NA	NA
EP-5	9/14/2018	12,000	NA	NA
EP-5	4/30/2019	8,660	NA	NA
EP-5	9/17/2020	17,900	NA	NA
EP-5	12/21/2020	19,000	NA	NA
EP-5	9/17/2020	18,200	NA	NA
EP-5	12/21/2020	19,175	NA	NA
EP-6	10/16/2013	22,300	NA	NA
EP-6	3/5/2014	15,100	NA	NA
EP-6	11/12/2014	25,300	NA	NA
EP-6	3/23/2015	14,800	NA	NA
EP-6	9/1/2015	19,300	NA	NA
EP-6	8/30/2016	22,300	NA	NA
EP-6	3/30/2017	19,200	NA	NA
EP-6	10/24/2017	19,100	NA	NA
EP-6	3/1/2018	14,700	NA	NA
EP-6	9/14/2018	14,600	NA	NA
EP-6	4/29/2019	8,510	NA	NA
EP-6	9/17/2020	18,300	NA	NA
EP-6	12/21/2020	18,900	NA	NA
EP-6	9/17/2020	121,600	NA	NA
EP-6	12/21/2020	19,519	NA	NA
EP-7	10/16/2013	85,500	NA	NA
EP-7	3/5/2014	83,700	NA	NA
EP-7	11/12/2014	96,600	NA	NA
EP-7	3/23/2015	69,700	NA	NA
EP-7	9/1/2015	94,800	NA	NA
EP-7	8/30/2016	106,000	NA	NA
EP-7	3/30/2017	105,000	NA	NA
EP-7	10/24/2017	150,000	NA	NA

**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
EP-7	3/1/2018	98,900	NA	NA
EP-7	9/14/2018	187,000	NA	NA
EP-7	4/29/2019	100,000	NA	NA
EP-7	9/17/2020	331,000	NA	NA
EP-7	12/21/2020	283,000	NA	NA
EP-7	9/17/2020	1,537	NA	NA
EP-7	12/21/2020	157,105	NA	NA
EP-8	10/16/2013	231,000	NA	NA
EP-8	3/5/2014	79,300	NA	NA
EP-8	11/12/2014	92,400	NA	NA
EP-8	3/23/2015	68,600	NA	NA
EP-8	9/1/2015	96,700	NA	NA
EP-8	8/30/2016	131,000	NA	NA
EP-8	3/30/2017	99,100	NA	NA
EP-8	10/24/2017	142,000	NA	NA
EP-8	3/1/2018	105,000	NA	NA
EP-8	9/14/2018	120,000	NA	NA
EP-8	4/29/2019	101,000	NA	NA
EP-8	9/17/2020	276,000	NA	NA
EP-8	12/22/2020	309,000	NA	NA
EP-8	9/17/2020	1,501	NA	NA
EP-8	12/22/2020	151,060	NA	NA
EP-9	10/16/2013	121,000	NA	NA
EP-9	3/5/2014	105,000	NA	NA
EP-9	11/13/2014	182,000	NA	NA
EP-9	3/23/2015	61,400	NA	NA
EP-9	9/1/2015	88,800	NA	NA
EP-9	8/30/2016	243,000	NA	NA
EP-9	3/30/2017	88,800	NA	NA
EP-9	10/24/2017	294,000	NA	NA
EP-9	3/1/2018	69,700	NA	NA
EP-9	9/14/2018	96,500	NA	NA
EP-9	4/29/2019	75,900	NA	NA
EP-9	9/17/2020	302,000	NA	NA
EP-9	12/21/2020	300,000	NA	NA
EP-9	9/17/2020	152.8	NA	NA
EP-9	12/21/2021	160,550	NA	NA
EP9-3	7/18/2013	118,000	NA	NA
EP9-7	7/18/2013	117,000	NA	NA
KA-3	3/3/2020	1,326	9.3	ND
KA-3	9/22/2020	1,443	8.08	ND
KA-3	12/7/2020	1,521	9.56	ND
LDU - East	12/7/2020	1,777	NM	NM
LDU - West	12/7/2020	860	NM	NM
MKTF-02	9/21/2020	2,760	7.88	ND

**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
MKTF-02	2/24/2020	3,112	6.52	ND
MKTF-02	9/21/2020	4,297	7.88	ND
MKTF-02	12/3/2020	6,214	7.72	ND
MKTF-04	3/2/2020	1,307	8.47	ND
MKTF-09	3/2/2020	1,259	14.23	ND
MKTF-09	9/20/2020	4,627	14.2	14.19
MKTF-10	3/2/2020	2,394	7.67	ND
MKTF-10	12/3/2020	6,804	7.8	ND
MKTF-11	3/2/2020	3,327	7.89	ND
MKTF-16	12/8/2020	1,864	9.7	ND
MKTF-18	2/5/2020	1,248	9.1	ND
MKTF-18	12/9/2020	1,124	8.5	8.49
MKTF-23	9/18/2020	1,881	15.44	15.42
MKTF-24	2/24/2020	2,555	22.17	ND
MKTF-24	9/19/2020	2,960	23.35	ND
MKTF-24	12/4/2020	2,541	23.22	ND
MKTF-25	2/26/2020	2,505	12.94	ND
MKTF-25	9/19/2020	3,341	13.9	ND
MKTF-25	12/4/2020	2,483	13.62	ND
MKTF-27	9/20/2020	6,820	6.21	ND
MKTF-27	2/24/2020	12,260	3.61	ND
MKTF-27	9/20/2020	8,099	6.21	ND
MKTF-27	12/4/2020	7,104	6.47	ND
MKTF-28	9/20/2020	1,870	4.59	ND
MKTF-28	2/24/2020	1,919	4.53	ND
MKTF-28	9/20/2020	2,502	4.59	ND
MKTF-28	12/4/2020	1,830	7.13	ND
MKTF-29	9/20/2020	4,010	8.01	ND
MKTF-29	2/24/2020	3,447	4.49	ND
MKTF-29	12/4/2020	3,802	6.4	ND
MKTF-30	9/20/2020	2,430	16.66	ND
MKTF-30	2/26/2020	2,279	15.31	ND
MKTF-30	9/20/2020	3,070	16.66	ND
MKTF-30	12/4/2020	3,763	16.76	ND
MKTF-31	2/24/2020	1,929	8.1	ND
MKTF-31	9/19/2020	2,013	8.75	ND
MKTF-31	12/4/2020	1,555	8.73	ND
MKTF-32	9/21/2020	1,480	14.58	ND
MKTF-32	2/26/2020	1,584	13.78	ND
MKTF-32	9/20/2020	1,881	14.58	ND
MKTF-32	12/4/2020	1,508	14.25	ND
MKTF-33	2/27/2020	939	22.71	ND
MKTF-34	2/5/2020	1,774.50	17.78	ND
MKTF-34	2/27/2020	1,540	17.78	ND
MKTF-34	9/16/2020	1,830	19.09	ND

**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
MKTF-35	2/5/2020	1,235	9.28	ND
MKTF-35	9/16/2020	1,642	8.59	ND
MKTF-36	9/18/2020	1,040	7.87	ND
MKTF-36	9/14/2020	1,334	7.87	ND
MKTF-37	9/17/2020	985	8.76	ND
MKTF-37	9/17/2020	1,213	8.76	ND
MKTF-38	3/4/2020	1,360	9.61	ND
MKTF-38	9/19/2020	2,022	8.55	ND
MKTF-39	2/3/2020	1,578	10.1	ND
MKTF-39	9/19/2020	1,314	9.58	ND
MKTF-39	12/4/2020	11,453	10.15	ND
MKTF-40	2/27/2020	6,140	13.23	ND
MKTF-40	9/19/2020	6,555	13.39	ND
MKTF-40	12/4/2020	6,485	13.99	ND
MKTF-41	9/21/2020	1,750	20.72	ND
MKTF-41	2/26/2020	1,910	20.15	ND
MKTF-41	9/21/2020	2,359	20.72	ND
MKTF-41	12/4/2020	1,885	20.9	ND
MKTF-42	9/21/2020	1,990	16.35	ND
MKTF-42	2/26/2020	2,179	16.79	ND
MKTF-42	9/21/2020	2,611	16.35	ND
MKTF-42	12/4/2020	2,080	16.41	ND
MKTF-43	9/21/2020	14,500	6.45	ND
MKTF-43	2/26/2020	9,083	6.33	ND
MKTF-43	9/21/2020	16,310	6.45	ND
MKTF-43	12/4/2020	12,992	8.12	ND
MKTF-44	9/21/2020	2,280	28	ND
MKTF-44	3/4/2020	2,487	30.34	ND
MKTF-44	12/4/2020	1,299.50	39.59	ND
MKTF-44	9/21/2020	2,865	28	ND
MKTF-46	3/5/2020	1,887	10.93	ND
MKTF-46	9/14/2020	1,853	10.18	ND
MKTF-46	12/4/2020	1,645	10.77	ND
MKTF-47	3/5/2020	1,658	9.89	ND
MKTF-49	9/20/2020	2,870	20.33	ND
MKTF-49	3/4/2020	3,110	20.27	ND
MKTF-49	9/20/2020	3,916	20.33	ND
MKTF-49	12/4/2020	3,501	20.81	ND
MKTF-50	3/3/2020	1,377	7.74	7.69
MKTF-50	12/4/2020	1,842	16.17	ND
MW-1	9/22/2020	773.5	7.72	ND
MW-2	9/18/2020	806	9.74	ND
MW-4	9/18/2020	838.5	8	ND
MW-5	9/21/2020	806	11.99	ND
NAPIS-2	3/3/2020	849	9.46	ND

**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
NAPIS-2	9/22/2020	975	8.12	ND
NAPIS-2	12/7/2020	454.5	8.72	ND
NAPIS-3	3/3/2020	1,977	10.62	ND
NAPIS-3	9/22/2020	1,696.50	9.25	ND
NAPIS-3	12/7/2020	1,090	8.51	ND
OW-01	3/9/2020	994.5	1.7	ND
OW-01	9/20/2020	1,058	11.9	ND
OW-01	12/7/2020	870	1.75	ND
OW-10	3/4/2020	2,444	5.43	ND
OW-10	9/20/2020	2,067	7.7	ND
OW-10	12/7/2020	2,189	7.61	ND
OW-11	9/20/2020	2,080	18.51	ND
OW-12	9/17/2020	799.5	46.45	ND
OW-13	3/2/2020	890.5	19.91	ND
OW-13	9/17/2020	916.5	20.99	ND
OW-13	12/7/2020	747	20.24	ND
OW-29	2/24/2020	1,352	16.48	ND
OW-29	9/17/2020	1,432	17.57	ND
OW-29	12/7/2020	1,176	17.15	ND
OW-50	12/9/2020	804	14.72	ND
OW-50	3/2/2020	838.5	14.05	ND
OW-50	9/17/2020	884	15.11	ND
OW-50	12/7/2020	721	14.72	ND
OW-52	12/9/2020	626	14.42	ND
OW-52	3/2/2020	747.5	13.71	ND
OW-52	9/17/2020	734.5	15.11	ND
OW-52	12/7/2020	604	14.42	ND
OW-56	3/2/2020	1,956.50	13.02	ND
OW-56	9/21/2020	2,067	14.36	ND
OW-56	12/7/2020	1,722	13.73	ND
OW-57	3/4/2020	1,202.50	19.97	ND
OW-57	9/18/2020	641.25	20.5	ND
OW-57	12/7/2020	2,072.50	20.64	ND
OW-58	9/17/2020	1,358.50	24.45	ND
OW-58	12/7/2020	1,748	24.32	ND
OW-58A	3/5/2020	1,701	26.13	ND
OW-58A	9/18/2020	1,664	26.87	ND
OW-58A	12/7/2020	1,479	26.71	ND
OW-59	3/3/2020	7,618	23.53	ND
OW-59	9/19/2020	780.6	24.06	ND
OW-59	12/7/2020	6,614	23.91	ND
OW-60	3/3/2020	4,927	16.14	ND
OW-60	9/21/2020	484.2	24.06	ND
OW-60	12/7/2020	4,101	16.57	ND
OW-63	3/4/2020	1,137.50	20.41	ND

**TABLE 12-3. TOTAL DISSOLVED SOLIDS AND GROUNDWATER DEPTH MEASUREMENTS  
WESTERN REFINING SOUTHWEST LLC, GALLUP REFINERY, GALLUP, NEW MEXICO**

Location	Date Sampled	TDS mg/L	DTW ft bgs	DTP ft bgs
OW-63	9/22/2020	1,163.50	20.73	ND
OW-63	12/8/2020	936	20.97	ND
OW-64	3/4/2020	1,254.50	7.5	ND
OW-64	9/22/2020	1,404	7.95	ND
OW-64	12/7/2020	1,098	8.26	ND
PW-2	12/20/2020	395.8	NM	NM
PW-3	12/28/2020	949	NM	NM
SMW-4	9/20/2020	902.7	29.15	ND
STP-1 to EP-2	12/21/2020	1,880	NA	NA
STP-1 to EP-2	9/5/2013	2,340	NA	NA
STP-1 to EP-2	3/5/2014	2,780	NA	NA
STP-1 to EP-2	9/10/2014	2,590	NA	NA
STP-1 to EP-2	8/24/2015	2,420	NA	NA
STP-1 to EP-2	6/8/2016	4,400	NA	NA
STP-1 to EP-2	8/30/2016	5,100	NA	NA
STP-1 to EP-2	11/17/2016	4,810	NA	NA
STP-1 to EP-2	3/30/2017	3,760	NA	NA
STP-1 to EP-2	6/2/2017	3,680	NA	NA
STP-1 to EP-2	9/7/2017	3,520	NA	NA
STP-1 to EP-2	12/12/2017	2,550	NA	NA
STP-1 to EP-2	2/12/2018	2,380	NA	NA
STP-1 to EP-2	5/6/2018	3,630	NA	NA
STP-1 to EP-2	8/31/2018	2,730	NA	NA
STP-1 to EP-2	11/8/2018	3,220	NA	NA
STP-1 to EP-2	2/7/2019	3,550	NA	NA
STP-1 to EP-2	5/29/2019	4,350	NA	NA
STP-1 to EP-2	10/9/2019	2,630	NA	NA
STP-1 to EP-2	11/21/2019	3,140	NA	NA
STP-1 to EP-2	9/16/2020	6,110	NA	NA
STP-1 to EP-2	12/21/2020	1,930	NA	NA
STP-1 to EP-2	9/16/2020	7,667	NA	NA
STP-1 to EP-2	12/21/2020	2,008	NA	NA

## Notes:

TDS = Total Dissolved Solids

mg/L = milligrams per liter

DTW = Depth to Water

DTP = Depth to Separate Phase Hydrocarbon

ft bgs = feet below ground surface

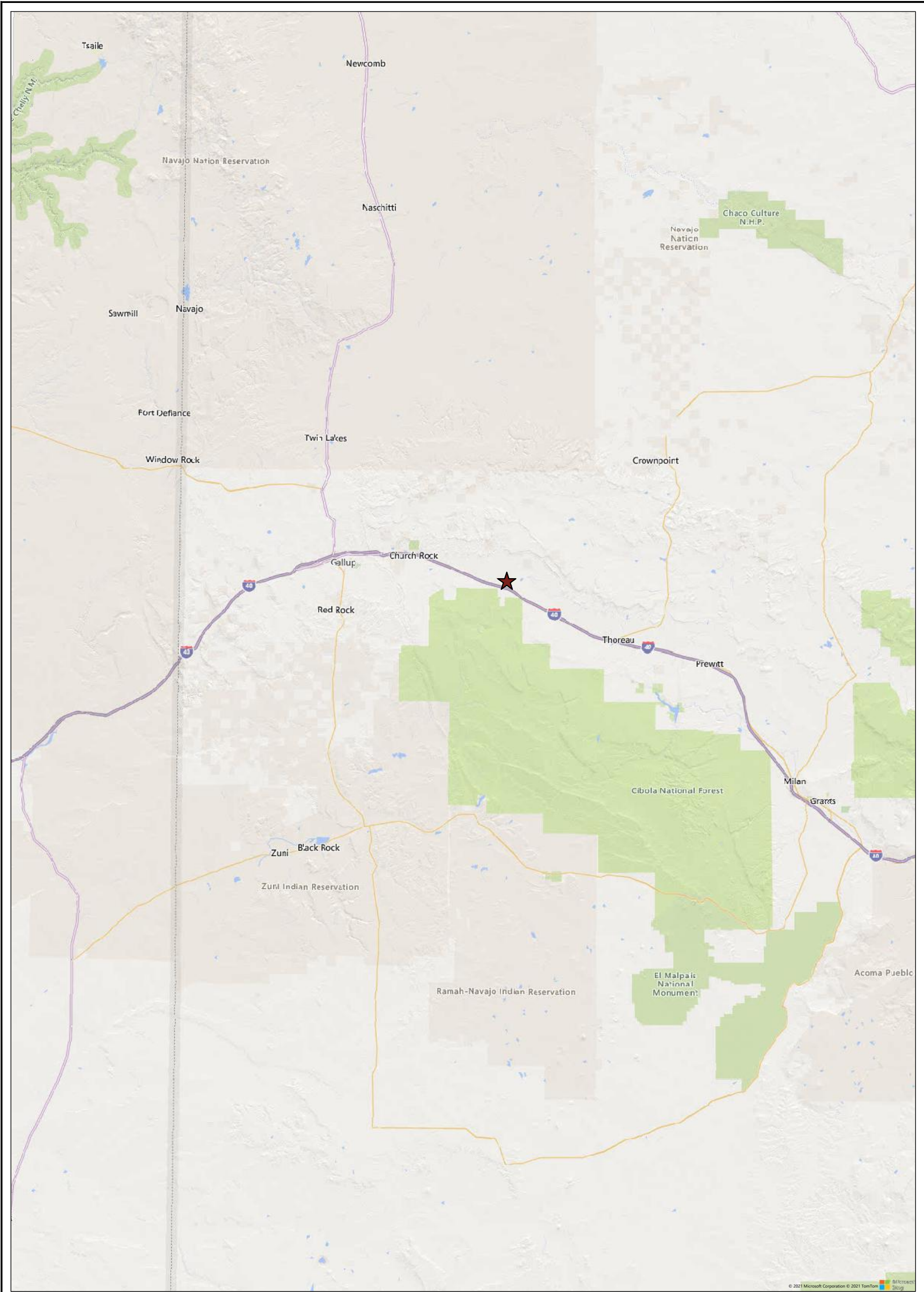
NA = Not applicable

NM = Not Measured

ND = Not Detected

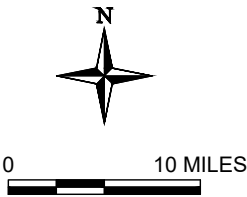
## **Figures**





**EXPLANATION**

 GALLUP REFINERY LOCATION





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CORPORATION

1252 Commerce Drive  
Laramie, Wyoming 82070  
www.trihydro.com  
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**FIGURE 1-1**

**REGIONAL MAP**

**WESTERN REFINING SOUTHWEST, LLC  
GALLUP REFINERY  
GALLUP, NEW MEXICO**

Drawn By: REP | Checked By: MS | Scale: 1" = 10 MI | Date: 1/8/21 | File: 697-GA OCD-REGIONMAP



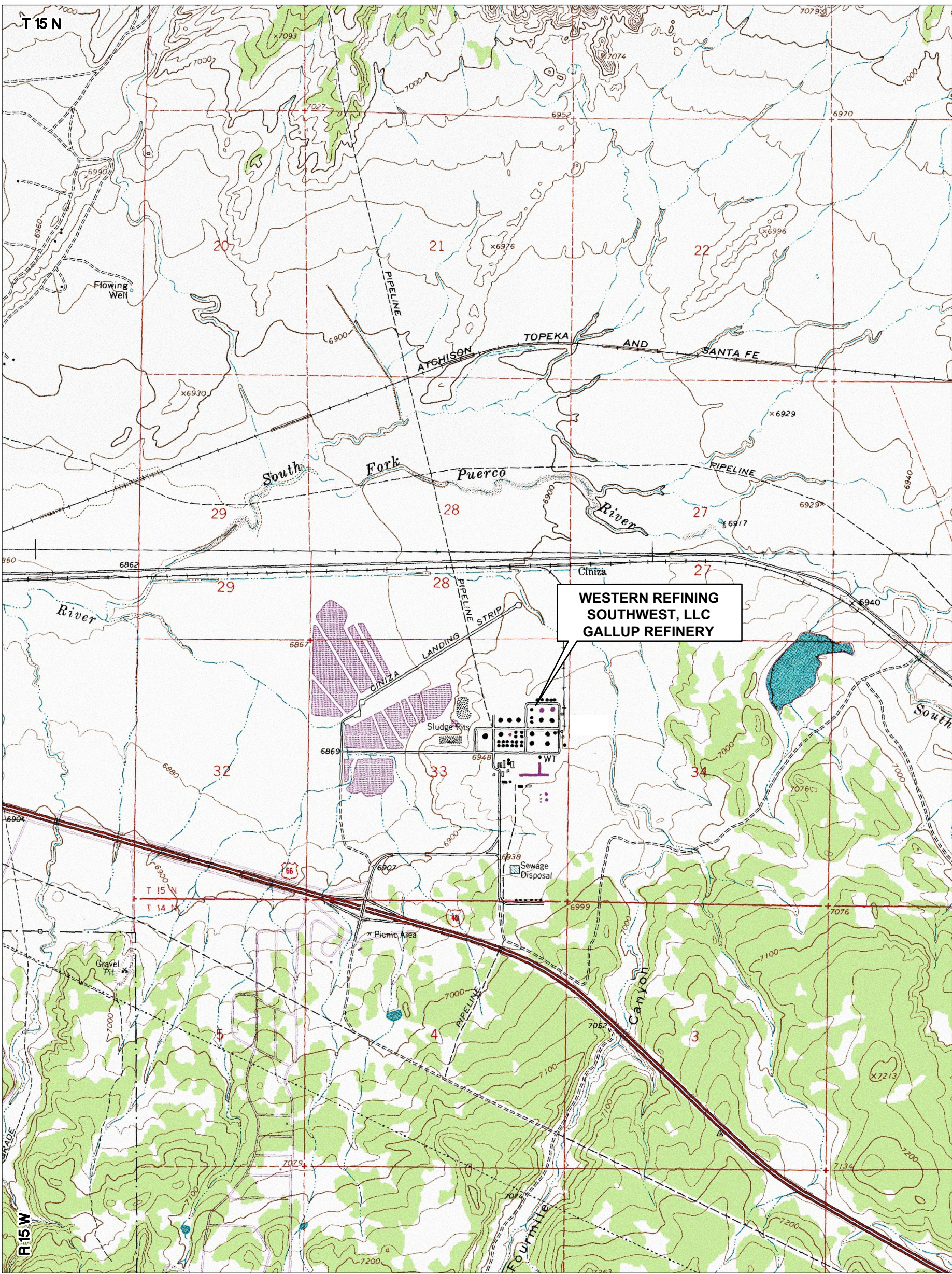
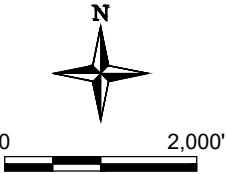


Image Cite: U.S. Geological Survey, 1:24,000—Scale 7.5 Minute Digital Raster Graphic Quadrangle, McKinley County, Publication: 2004

**NOTE:**  
SITE LEGAL DESCRIPTION - TOWNSHIP 15 NORTH,  
RANGE 15 WEST, SECTION 33, LOWER QUARTER  
SECTION 28, AND NORTHEAST QUARTER SECTION 4.



QUADRANGLE LOCATION





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FIGURE 3-1			
TOPOGRAPHIC MAP			
WESTERN REFINING SOUTHWEST, LLC GALLUP REFINERY GALLUP, NEW MEXICO			
Drawn By: REP	Checked By: MS	Scale: 1" = 2,000'	Date: 1/8/21
		File: 697-GA OCD-TOPOMAP	



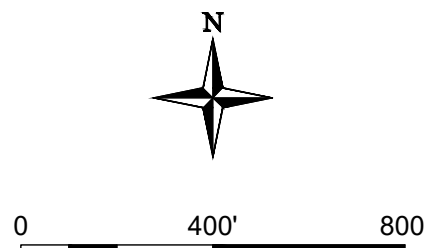
\\M:\TON\MARATHON CAD\GALLUP\REPORTS\OILCONSERVATION\DIVISION DISCHARGE\APPLICATION\697-GAOC-SITEMAP



Image Cite: DigitalGlobe © CNES (2019) Distribution Airbus DS © Microsoft Corporation, BING Imagery

**EXPLANATION**

- OW-59 CHINLE/ALLUVIUM INTERFACE MONITORING WELL
- BW-5A ALLUVIAL/FLUVIAL UPPER SAND MONITORING WELL
- MKTF-23(SPH) SPH MONITORING WELL
- MW-4 SONSELA MONITORING WELL
- PW-4 RAW WATER PRODUCTION WELL AND DESIGNATION
- PROPERTY BOUNDARY (APPROXIMATE)
- SPH SEPARATE - PHASE HYDROCARBON



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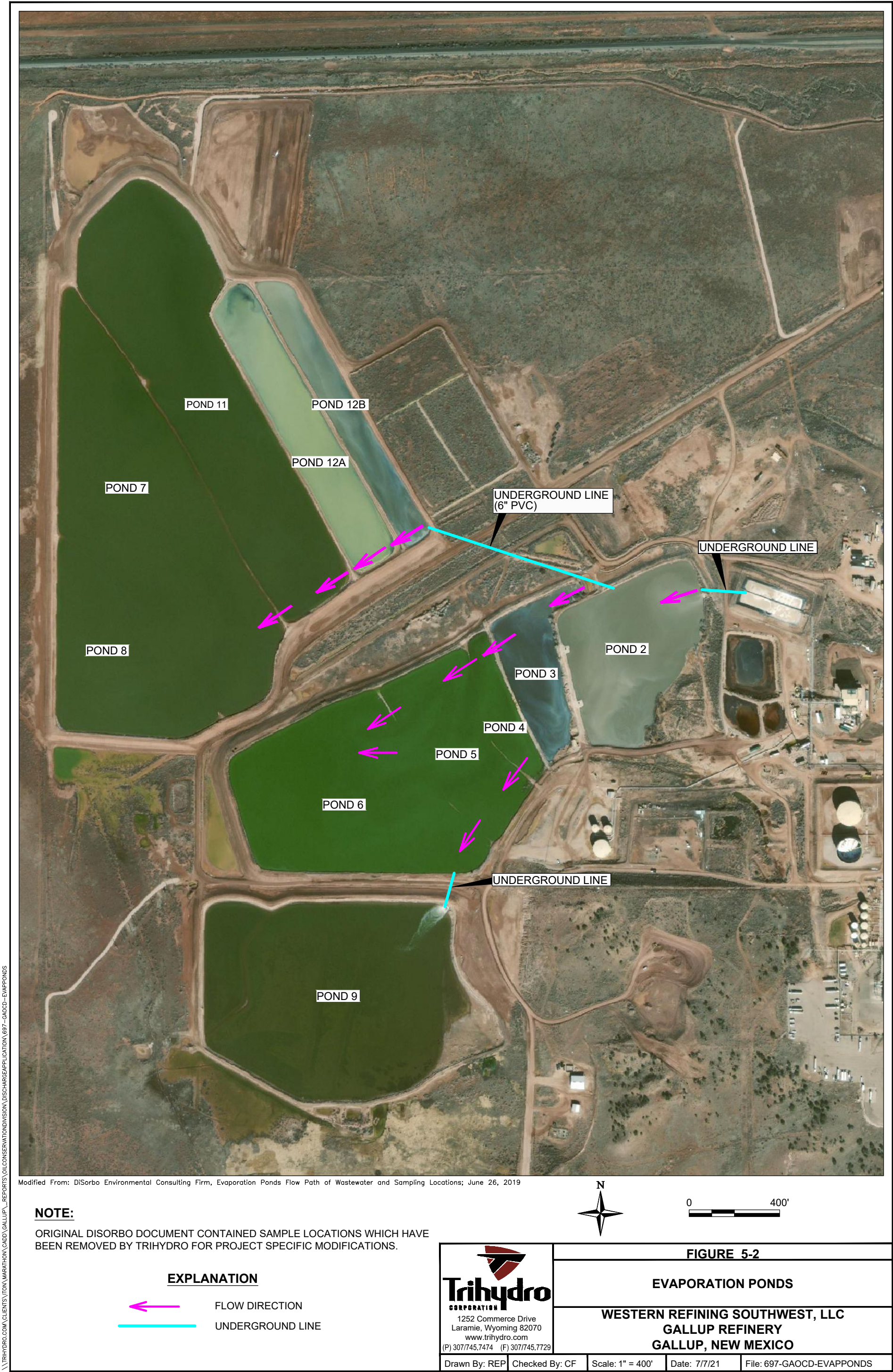
**FIGURE 5-1**

**SITE PLAN**

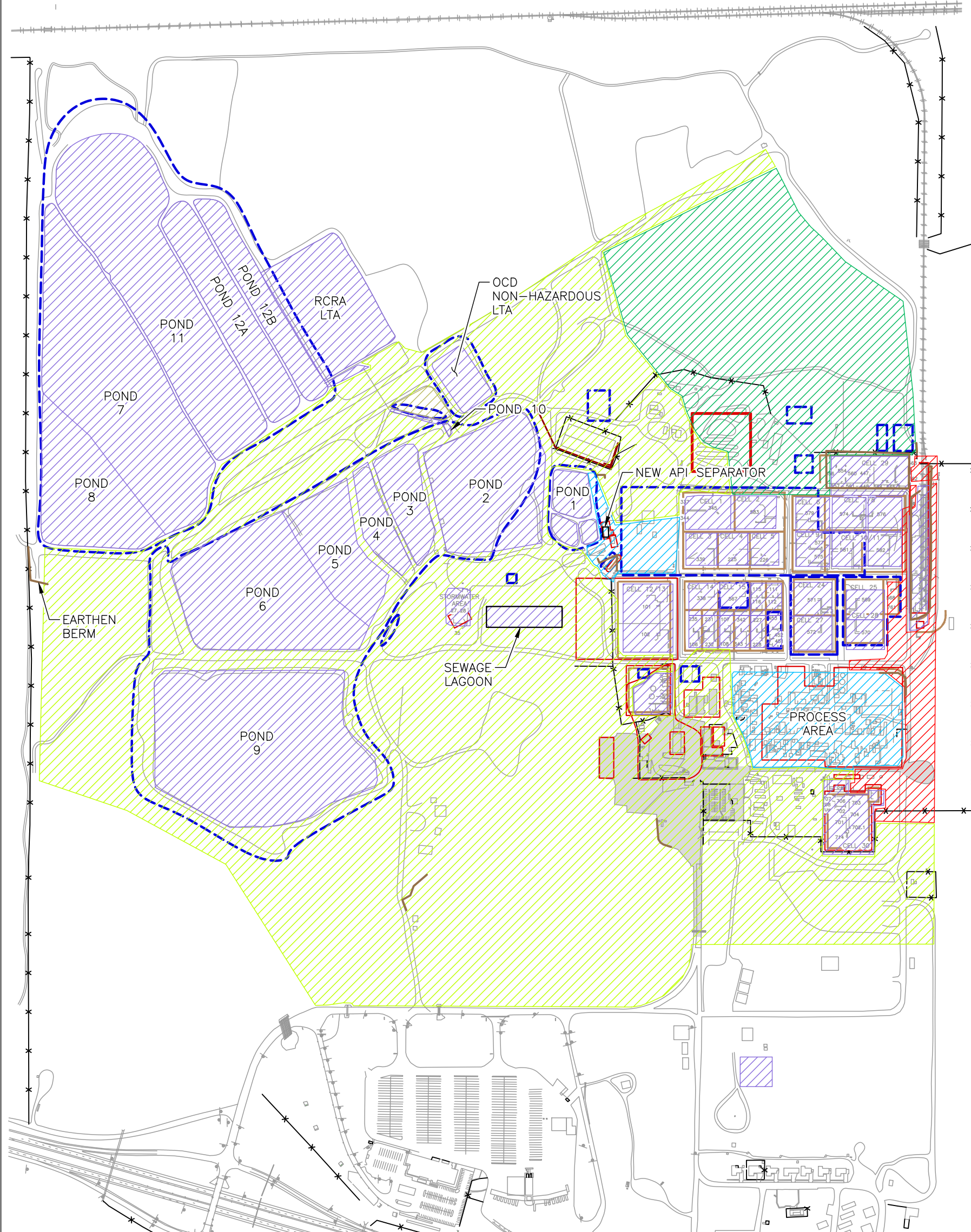
**WESTERN REFINING SOUTHWEST LLC  
MARATHON GALLUP REFINERY  
GALLUP, NEW MEXICO**

Drawn By: REP	Checked By: CF	Scale: 1" = 400'	Date: 4/21/2021	File: 697-GAOC-SITEMAP
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EXPLANATION

- NEW FACILITY BOUNDARY
- EARTHEN BERM
- CONTAINED/BERMED AREA, NO STORMWATER RUN OFF DISCHARGED TO ANOTHER POINT
- AREA CONTRIBUTING FLOW TO OUTFALL 2
- DRAINS TO GRASSY AREA, DOES NOT LEAVE SITE
- NEW STORMWATER COLLECTION BASIN
- AREA CONTRIBUTING FLOW TO OUTFALL 1
- PROCESS AREA, STORMWATER DRAINS TO POND 1
- IMPERVIOUS SURFACE

NOTE:

IMPERVIOUS AREAS ARE IDENTIFIED FOR DISCHARGING AREAS ONLY. IMPERVIOUS SURFACES WITHIN AREAS WHERE STORMWATER DOES NOT DISCHARGE HAVE NOT BEEN IDENTIFIED, CONSIDERING THESE AREAS DO NOT PRODUCE REGULATED STORMWATER DISCHARGES.

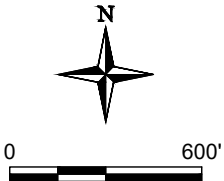


FIGURE 12-1

STORMWATER CATCH BASINS  
2021

WESTERN REFINING SOUTHWEST, LLC  
GALLUP REFINERY  
GALLUP, NEW MEXICO

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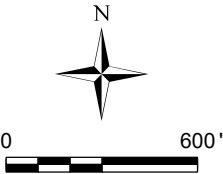




Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**EXPLANATION**

- EXISTING MONITORING WELL LOCATION
- PROPOSED REPLACEMENT OF EXISTING MONITORING WELL LOCATION
- PROPOSED NEW MONITORING WELL

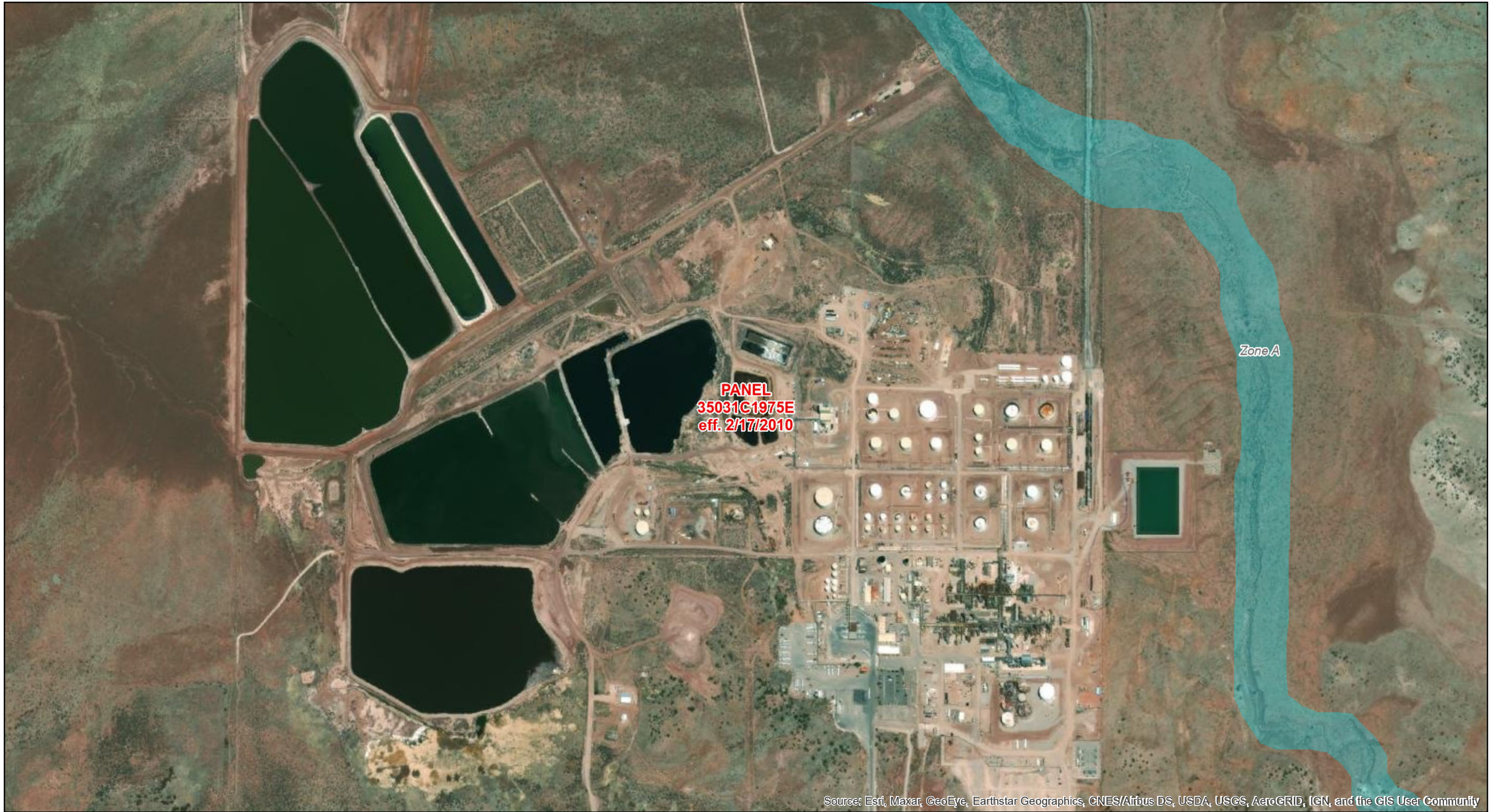




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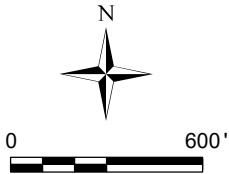
FIGURE 12-2			
MONITORING WELLS AND PROPOSED WELL LOCATIONS			
WESTERN REFINING SOUTHWEST, LLC GALLUP REFINERY GALLUP, NEW MEXICO			
Drawn By: KEJ	Checked By: CF	Scale: 1" = 600'	Date: 7/16/21
File: 2-4_Addnl_Well_Install2021_Fig2-4.mxd			






**EXPLANATION**

- |   |   |
|---|---|
|  1% ANNUAL CHANCE FLOOD HAZARD     |  0.2% ANNUAL CHANCE FLOOD HAZARD                 |
|  REGULATORY FLOODWAY               |  FUTURE CONDITIONS 1% ANNUAL CHANCE FLOOD HAZARD |
|  SPECIAL FLOODWAY                  |  AREA WITH REDUCED RISK DUE TO LEVEE             |
|  AREA OF UNDETERMINED FLOOD HAZARD |  AREA WITH RISK DUE TO LEVEE                     |



 1252 Commerce Drive Laramie, WY 82070 www.trihydro.com (P) 307/745.7474 (F) 307/745.7729	<b>FIGURE 12-3</b>			
	<b>FLOODPLAIN MAP</b>			
	<b>WESTERN REFINING SOUTHWEST, LLC MARATHON GALLUP REFINERY GALLUP, NEW MEXICO</b>			
Drawn By: BR	Checked By: CF	Scale: 1" = 600'	Date: 9/17/21	File: 12-3_Floodplain_Fig12-3.mxd

\\TRIHYRO.COM\CLIENTS\MARATHON\GIS\PROJECTS\GALLUP\REFINERY\GDD\_QILCONSERVATION\DIVISION\DISCHARGE\APPLICATION\2021\12-3\_FLOODPLAIN\_FIG12-3.mxd



**District I**

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**District II**

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**District IV**

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

CONDITIONS

Action 38431

**CONDITIONS**

Operator: Western Refining Southwest LLC 539 South Main Street Findlay, OH 45840	OGRID: 267595
	Action Number: 38431
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

**CONDITIONS**

Created By	Condition	Condition Date
scwells	Accepted for Record Retention Purposes-Only	11/22/2022