



*State of New Mexico*  
**ENVIRONMENT DEPARTMENT**

**Hazardous Waste Bureau**

SUSANA MARTINEZ  
 Governor  
 JOHN A. SANCHEZ  
 Lieutenant Governor

2905 Rodeo Park Drive East, Building 1  
 Santa Fe, New Mexico 87505-6313  
 Phone (505) 476-6000 Fax (505) 476-6030  
 www.env.nm.gov

BUTCH TONGATE  
 Cabinet Secretary  
 J. C. BORREGO  
 Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

August 10, 2018

Jessica L. O'Brien  
 Environmental Supervisor  
 Western Refining, Southwest Inc., Gallup Refinery  
 92 Giant Crossing Road  
 Gallup, New Mexico 87301

**RE: DISAPPROVAL  
 INVESTIGATION WORK PLAN  
 SANITARY LAGOON  
 WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
 EPA ID # NMD000333211  
 HWB-WRG-18-004**

Dear Ms. O'Brien:

The New Mexico Environment Department (NMED) has reviewed the *Investigation Work Plan Sanitary Lagoon* (Work Plan), dated May 2018, submitted on behalf of Western Refining, Southwest Inc., Gallup Refinery (the Permittee). The Work Plan was submitted as a part of the Permittee's *Response to NMED Disapproval Sanitary Lagoon Investigation*, dated May 31, 2018. NMED hereby issues this Disapproval of the Work Plan. The Permittee must address the following comments provided by both NMED and the New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division (OCD).

**Comment 1**

Comment 10 in NMED's March 15, 2018 *Disapproval* states, "[t]he Permittee must propose to collect soil samples from within the sanitary lagoon and along the pipe where the holes were discovered." The proposed locations of soil boring are all depicted within the boundary of the Sanitary Lagoon in Figure 3, *Sanitary Lagoon Proposed Soil Sample Locations*. As stated in the comment, the Permittee must also propose to collect multiple soil samples along the pipeline from depths directly below the depth of the pipe from the Sanitary Lagoon back to the potential

source area identified as Area A in the *Response to NMED Disapproval Sanitary Lagoon Investigation*, dated May 31, 2018. Provide a figure showing the proposed sampling locations along the pipeline.

### **Comment 2**

In its May 31, 2018 letter, the Permittee proposes to hydro-excavate the pipeline. The Agencies do not approve hydro-excavation of the pipeline at this time. By hydro-excavating the pipelines, the facility may generate a large volume of hazardous waste and obscure source areas, which may make it difficult to conduct corrective action effectively. Although the discussion regarding excavation of the pipeline was not included in the Work Plan, the discussion is relevant to the investigation. The investigation required by Comment 1 will help to identify the areas of potential soil contamination along the pipeline where discharge water escaped through leaks or where contaminants potentially entered the pipeline. Once the pipeline is hydro-excavated, the areas of soil contamination will likely be impossible to locate. The pipeline may be removed by hydro-excavation after the investigation is completed.

### **Comment 3**

Section 2.1, *Sanitary Lagoon*, page 2-1, briefly discusses background information for the Sanitary Lagoon; however, the discussion lacks information pertinent to the investigation. For example, the Permittee proposes soil borings to be installed at depths greater than 2.5 feet below ground surface (bgs) in Section 4.1.2. However, if the bottom of the Sanitary Lagoon is deeper than 2.5 feet bgs, the Permittee must indicate that borings will be advanced to a greater depth taking into consideration the depth of the Sanitary Lagoon in the Work Plan. Provide information relevant to the investigation such as the lagoon dimensions in the revised Work Plan. In addition, the Permittee must advance the soil borings to the water table and collect samples at 2.5-foot intervals to depths that cross the water table.

### **Comment 4**

Section 4.1, *Investigation*, page 4-1, bullet point two states, “[t]he drilling at each location will cease if saturated soil conditions are encountered that prevent sample collection with the hand auger.” If saturation or water is encountered, the Permittee must collect a water sample. The analytical parameters of the water sample must be consistent with ones for a discharge water sample. Address the sampling requirement in the revised Work Plan. Also, it is not clear how saturation would prevent sampling using a hand auger. Section 3.2, *Subsurface Conditions*, states that much of the shallow subsurface soils consist of fluvial and alluvial deposits comprised of clay and silt with minor inter-bedded sand layers; therefore, even if soil is saturated, collection of soil samples is likely feasible with a hand auger. Therefore, please retain all soil samples for chemical analysis, and either revise the statement or provide further explanation in the revised Work Plan.

### **Comment 5**

In Section 4.1.1, *Discharge Water Sampling*, page 4-2, the Permittee states, “[t]he sample will be collected in a decontaminated water scoop. Sample collection methods will be documented in the field monitoring reports. The samples will be transferred to the appropriate, clean, laboratory-prepared containers provided by the analytical laboratory.” The discharge water

sample must be analyzed for volatile organic compounds (VOCs). However, the proposed sample collection method may result in loss of VOCs. Propose to collect the samples directly from the outfall to provide a more representative sample in the revised Work Plan.

**Comment 6**

Section 4.1.2, *Soil Sample Field Screening and Logging*, page 4-2, proposes a screening method that is appropriate for the detection of petroleum hydrocarbons. The project goals are established to determine and evaluate the presence, nature, and extent of releases of contaminants at the Sanitary Lagoon. However, the contents of the release are not limited to petroleum hydrocarbons; untreated sewage may be the primary contaminant of concern at the Sanitary Lagoon. The Permittee must also investigate the presence of untreated sewage in the soils. Untreated sewage contains disease-causing organisms such as bacteria, viruses and parasites. The growth of such microorganisms is sustained as long as water is present in the soils. Propose appropriate microbiological analyses for the soils in the Sanitary Lagoon in the revised Work Plan. Additionally, the nitrate and nitrite concentrations in the areas where soils were exposed to untreated sewage will likely be elevated. Propose to include nitrate and nitrite analyses for the soil samples collected within the Sanitary Lagoon in the revised Work Plan.

**Comment 7**

In Section 4.1.3, *Drilling Activities*, page 4-3, the Permittee states, “[w]here is not possible to complete soil borings due to health and safety concerns gaining access for sample collection, other mechanical means will be utilized (e.g., a long-reach track hoe).” Provide an explanation for how the Permittee determines the conditions where it would not be possible to complete soil borings due to health and safety concerns. Disease-causing organisms may not exhibit any obvious signs of presence in the soil or water. If any stagnant water (e.g., as shown on a photograph “Northside of Lagoon Looking South” in Appendix A, *Photographs*) is present on the surface of the Sanitary Lagoon, collect the water for screening microbiological activity (e.g., total coliform bacteria concentrations). If the results indicate that potential health hazard exists in the area, suspend the investigation and contact NMED.

**Comment 8**

In Section 4.1.6, *Collection and Management of Investigation Derived Waste*, page 4-6, the Permittee states, “[a]ll purged groundwater and decontamination water will be characterized prior to disposal unless it is disposed in the refinery wastewater treatment system upstream of the API Separator.” During a May 2, 2018 meeting, the Permittee indicated to NMED and OCD that the API Separator was repaired and the documentation demonstrating the completion of repairs was submitted on July 16, 2018. The repairs were satisfactory and NMED hereby approves the practice; however, the Permittee must continue to monitor all leak detection units (LDUs) in accordance with the monitoring schedule in the *2018 Facility Wide Ground Water Monitoring Work Plan*, dated March 31, 2018 and continue to evaluate the effectiveness of the repairs to the API Separator.

**Comment 9**

Section 4.1.9, *Chemical Analyses*, page 4-8, proposes that discharge water samples will be analyzed for VOCs, semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons

Ms. O'Brien  
August 10, 2018  
Page 4

(TPH), gasoline range organics (GRO), diesel range organics (DRO), motor oil range organics (ORO), metals, chloride, fluoride, sulfate, COD, BOD, total coliform, and E. coli bacteria. The discharge water sample may contain elevated nitrate and nitrite concentrations; therefore, propose revise the Work Plan to also analyze the samples for nitrate and nitrite .

**Comment 10**

In Section 4.1.9, *Chemical Analyses*, page 4-9, the Permittee states, “[g]roundwater samples will be analyzed for COD, BOD, total coliform, and E. coli bacteria.” The groundwater sampling parameters must be consistent with discharge water sampling parameters so that the extent of groundwater contamination due to the discharge may be evaluated. In addition to the analyses for COD, BOD, total coliform and e-coli, the groundwater samples must be analyzed for VOCs, SVOCs, TPH-GRO, DRO and ORO, metals, nitrate, nitrite, chloride, fluoride and sulfate. Revise the Work Plan accordingly.

The Permittee must address all comments in this Disapproval and submit a revised Work Plan. Two hard copies and an electronic version must be submitted to NMED. Include a red-line strikeout version in electronic format showing where all revisions to the Work Plan have been made. The revised Work Plan must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. The revised Work Plan must be submitted to NMED no later than **October 9, 2018**.

If you have questions regarding this letter, please contact Kristen Van Horn of my staff at 505-476-6046.

Sincerely,



John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: K. Van Horn, NMED HWB  
M. Suzuki, NMED HWB  
C. Chavez, OCD  
S. Pullen, NMED GWQB  
L. King, EPA Region 6

File: Reading File and WRG 2018 File  
HWB-WRG-18-004