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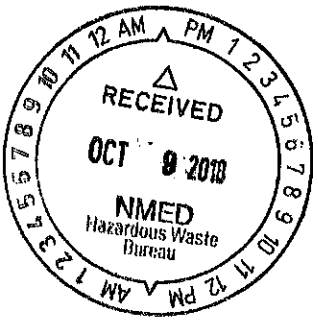


October 4, 2018

Mr. John E. Kieling, Chief

New Mexico Environmental Department 2905
Rodeo Park Drive East, Bldg. 1

Santa Fe, NM 87SOS-6303

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

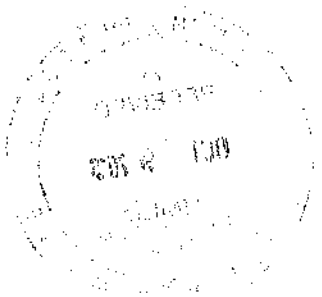
Dear Mr. Kieling:

Gallup Refinery is in receipt of your letter of August 10, 2018, which provided comments on the referenced Work Plan, dated May 31, 2018. The following responses address each of your comments.

NMED 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.

Gallup Refinery Response: Much of the pipeline immediately south of the lagoon has been excavated with the trench partially collapsed. The trench is deep, with depths possibly as great as 15 feet, thus it is a health and safety concern to collect samples from within this unshored excavation. In our recent meeting (September 19, 2018), we discussed this concern and a suggestion was made to attempt angled borings. The Work Plan has been revised to include additional locations along the pipeline south of the lagoon. We will attempt angled borings, but the rig will need to be placed a safe distance from the excavation and it likely will not be possible to actually collect soil samples from "directly below the depth of the pipe from the Sanitary Lagoon". The latest comment refers to collecting samples all the way back to "Area A." We recently submitted an Investigation Work Plan for Area of Concern (AOC) 35, which includes borings along



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the sanitary piping through the northern portion of the truck loading rack, back towards the area previously identified as "Area A." Therefore, this Investigation Work Plan is focused on the length of pipeline extending south from the lagoon to the northwestern portion of AOC 35 (i.e., the area northwest of the additive tanks).

Section 4.1 is revised to add six additional soil borings along the pipeline and Section 4.1.3 is revised to explain the process that will be used to locate the pipeline prior to installing borings in areas where the exact location and depth is unknown.

NMED 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.

Gallup Refinery Response: The hydroexcavation will not be conducted prior to the investigation.

NMED 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-feet intervals to depths that cross the water table.

Gallup Refinery Response: The lagoon dimensions have been added in Section 2.1.

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The Work Plan initially only included borings within the lagoon, thus the bottom of the lagoon is not and cannot be deeper than the land surface at these locations. Perhaps the comment is anticipating the additional borings being added along the pipeline to the southeast. The Work Plan calls for all borings completed with a hand auger to reach the depth of refusal or saturation, whichever occurs first. The borings completed with hollow-stem augers will be drilled to the depth of saturation. As the land surface rises significantly to the southeast, it is not practical or necessary to extend soil borings to depths that may be below the elevation of the bottom of the lagoon. We believe that extending borings to the depth of saturation will be more than adequate to evaluate any potential releases along the pipeline. In addition, the borings southeast of the lagoon will be a sufficient distance and up-gradient from the lagoon so as not to have been subject to impacts from the lagoon itself.

NMED 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.

Gallup Refinery Response: The discussion in Section 4.1.2 is revised to specifically include collection of soil samples at the top of saturation, if encountered. Section 4.1.4 has been revised to include the collection of groundwater samples that will be analyzed for chemical oxygen demand, biological oxygen demand, total coliform, and E. coli bacteria, if saturation is encountered. See the response to Comment 10 regarding not analyzing these groundwater samples for all constituents, as there are many existing monitoring wells all along the sanitary pipeline.

NMED 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.

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Gallup Refinery Response: First, we would note that the water is flowing through an open pipe and thus collection of the sample in the manner proposed in the Work Plan will not result in any additional loss of volatiles than may be occurring throughout the length of flow through the pipeline. Second, the New Mexico Oil Conservation Division (OCD) has directed that all discharge be stopped and the Gallup Refinery is making every effort to stop the discharge, thus there will likely not be any discharge to be sampled. Third, the sample bottles used for the VOC analyses come from the laboratory with an acid preservative. It is very important to not flush the preservative from the sample bottle and placing the small bottle directly under the discharge, if still active, could greatly increase the chance of compromising the sample preservation. Lastly, requiring someone to attempt to walk into the lagoon far enough to reach the end of the discharge pipe could subject them to sinking into a very soft bottom of the lagoon and greatly increase their risk of exposure to pathogens likely present in the septic discharge. This seems to be at odds with Comment 7 below, which recognizes the dangers the Agencies are subjecting the site investigation personnel to that conduct the requested sample collection. For all of these reasons, we request that the Agencies please reconsider this request.

NMED 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.

Gallup Refinery Response: The analyses for nitrate and nitrite have been added to the list of analytes in Section 4.1.9. In addition, a request is made to add "appropriate microbiological analyses" for soils. As we have no experience dealing with microbial impacts and cannot find any obviously relevant regulatory standards for New Mexico, we are uncertain what the appropriate microbiological analyses are for soils. Can you please specify the required analyses and the relevant regulatory standards in your approval letter so that we can add these analyses?

NMED 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.

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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.

Gallup Refinery Response: The immediate health and safety concern was simply getting stuck in the mud and not being able to get out of the lagoon. Certainly the risk of exposure to pathogens is greatly increased if the sampler cannot safely walk into and exit the lagoon. Section 4.1.1 has been revised to include collection of a surface water sample.

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.

Gallup Refinery Response: None required.

NMED 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 (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

Gallup Refinery Response: The list of analyses in Section 4.1.9 has been revised to include nitrate and nitrite.

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NMED 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.

Gallup Refinery Response: Groundwater samples are already collected on a quarterly basis at all of the subject monitoring wells and analyzed for the additional analyses requested above. We believe that the information that is already available, and that is continually being collected, will be sufficient to clearly establish concentrations of contaminants in the area.

Certification

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

Sincerely,

Daniel J Statile

VP Gallup Refinery

cc K. Van Horn NMED
C. Chavez NMOCD
L. King, EPA Region 6
S. Pullen, NMED GWQB
B. Moore Andeavor Gallup Refinery