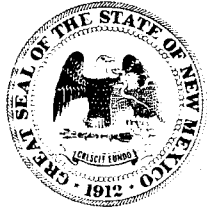


GRCC



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Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 24, 2010

Mr. Ed Riege  
Environmental Manager  
Western Refining, Southwest Inc., Gallup Refinery  
Route 3, Box 7  
Gallup, New Mexico 87301

**RE: APPROVAL WITH MODIFICATIONS  
PROCESS DESIGN REPORT FOR THE WASTEWATER TREATMENT  
PLANT WORK PLAN (ALTERNATIVE DESIGN, REVISION A)  
WESTERN REFINING COMPANY SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-GRCC-09-006**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has completed its review of the *Response to Notice of Disapproval Process Design Report for the Wastewater Treatment Plant Work Plan (Alternative Design, Revision A)* (Work Plan), dated April, 30, 2010, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (the Permittee). NMED hereby approves this Work Plan with the following modifications.

**Comment 1**

In Section 2.2 (Refinery Wastewaters), page 4, the Permittee states “[i]n addition, two non-oil refinery wastewaters are discharged directly to Evaporation Pond No. 2 (EP-2). These sources are the water softener system and the reverse osmosis (RO) system.”

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### **NMED Response**

The water softener and reverse osmosis effluent entering into EP-2 must be routed through the wastewater treatment system upstream of the API separator. Any alternatives that would discharge these waste streams to a location other than the wastewater treatment system must be approved by the New Mexico Energy, Minerals and Natural Resource Department Oil Conservation Division (OCD).

### **Comment 2**

In Section 1.4 (Treatment Objectives), page 3, the Permittee states “[t]he treatment objectives for the WWTP upgrade are to provide water quality that is suitable for discharge to the unlined EP-1. Specifically, the objectives are for there to be no visible free oil, <0.5 mg/L benzene, and a wastewater quality that meets the definition of EPA RCRA non-hazardous.”

### **NMED Response**

Effluent entering into Evaporation Pond 1 (EP-1) must be compliant with both the surface and groundwater quality regulations in accordance the NMAC 20.6.2 and 20.6.4. The effluent must meet the total petroleum hydrocarbon (TPH) levels found in Table 2a (TPH Screening Guidelines for Potable Groundwater (GW-1)) of NMED’s TPH Screening Guidelines (October 2006 and as updated). The Permittee must also comply with any other applicable state and federal regulations.

### **Comment 3**

In Section 4.2.1 (Combined Process Sewer and Process Area Storm Sewer), page 8, the Permittee states “[c]leanouts will be installed on the gravity sewer to T27 and T28. Cleaning events will be scheduled on a regular, recurring basis with collected material managed along with similar material collected from the API Separator.”

### **NMED Response**

The Permittee did not provide the frequency of regular cleaning (e.g., weekly, monthly, quarterly). The Permittee must notify NMED and OCD in writing of the cleanout details and schedule once they have been determined. The Permittee is responsible for documenting the cleanout operations and demonstrating they comply with the regulations. The documentation must be kept in the Facility operating record and be available for NMED and OCD review upon request.

### **Comment 4**

The Permittee addresses the Equalization Tank (EQ) in Section 4.2.3 and on page 11, states “[s]olids entering the EQ tank will accumulate as a sludge layer, which will require removal periodically, currently expected to be every three to five years.”

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**NMED Response**

All sludges removed from the Equalization Tank must be managed as hazardous waste.

**Comment 5**

In Section 4.2.5 (DGR System), page 12, the Permittee states “[t]he [Dissolved Gas Flotation] DGF float material will be skimmed from the top of the DGF using a variable speed scraping mechanism. The skimmed float will be sent to the DGF float management system, which will consist of “Float Tanks.” The purpose of the tanks will be to provide storage capacity and reduce the volume of oily solids through gravity separation. Oily solids collected in the Float Tanks will be recycled to the refining process (on-site or off-site).”

**NMED Response**

The DGF float is K048 listed waste. Therefore, any float from the DGF management system that is not recycled through the refining process must be managed as a hazardous waste.

**Comment 6**

In Section 4.2.7 (Pilot Travel Center Pretreatment), page 13, the Permittee discusses biologically treating the sanitary wastewater in an aeration lagoon system that will discharge by gravity to Evaporation Pond 2.

**NMED Response**

As part of this Approval with Modifications, the Permittee must provide documentation that demonstrates the Permittee has obtained approval from the NMED Liquid Waste Program to operate the aeration basins and discharge the treated sanitary wastewater to the Evaporation Ponds. This documentation must be provided in the Response Letter. In addition, the Permittee must comply with their Biohazard Plan and update the plan as necessary to reflect any changes resulting from the new wastewater treatment system.

**Comment 7**

In Section 4.2.8 (Evaporation Pond1), page 13, the Permittee states “[t]he [Macro Porous Polymer Extraction] MPPE clean wastewater effluent will be free of floating oil and will have a benzene concentration of 0.5 mg/L and will be RCRA non-hazardous.”

**NMED Response**

The benzene concentration of the MPPE effluent must be less than 0.5 mg/L and meet the water quality standards discussed in Comment 2.

**Comment 8**

In Section 4.4 (Management of Off-Spec Wastewater), page 14, the Permittee states “[t]he MPPE process monitoring will consist primarily of two daily measurements (at approximately 7:00 am

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and 7:00 pm) of benzene in samples of wastewater. These samples will be analyzed at Gallup Refinery's on-site testing laboratory using Gas Chromatograph/Mass Spectrometer (GC/MS). The results will be available almost immediately – that is, within a few hours of sample collection. To account for the fact that our on-site method is not identical to the EPA-approved method, and to divert proactively, we will use 0.4 Mg/L of benzene as a trigger for diversion.”

### **NMED Response**

In addition to the sample collection described above, the Permittee must also collect one duplicate sample a week, selected at random for analysis by an off-site certified laboratory for diesel range organics (DRO extended), benzene, toluene, ethylbenzene, total xylenes (BTEX), general chemistry parameters as defined by OCD, and pH (pH can be analyzed either by the laboratory or in the field). The Permittee must submit laboratory results received by the last Friday of each month to NMED and OCD (submittal by e-mail is acceptable). If any effluent sample results detect hazardous waste, the Permittee must notify NMED within one business day of this discovery. If the sample results exceed the cleanup standard referenced in Comment 1, NMED and OCD must be notified within five business days of discovery. See also Comment 17 for sampling and monitoring startup requirements.

### **Comment 9**

In Section 5 (Project Schedule), the Permittee provides a schedule to complete the construction of the Wastewater Treatment Plant upgrade. The schedule indicates the system will take 24 months to install.

### **NMED Response**

NMED does not approve the proposed schedule. The Wastewater Treatment System must be installed and operational on or before September 4, 2010 as required by NMED's September 1, 2009 *Approval with Modification Process Design Report for Wastewater Treatment Plant Upgrade (REV. A)*. As a reminder, the Permittee submitted a work plan *Process Design Report For Wastewater Treatment Plant Upgrade* dated February 26, 2009, which was revised (*Process Design Report For Wastewater Treatment Plant Upgrade (REV. A)*), dated May 26, 2009) and approved by NMED and OCD on September 1, 2009 and September 3, 2009, respectively. It was the Permittee's choice to propose an alternate design to the wastewater treatment system rather than the system already approved by NMED; therefore, this is not good cause to propose a two-year extension. Further, the Permittee could have taken immediate action upon the September 1 and 3, 2009 approvals, but instead submitted an alternative design on September 25, 2009. NMED provided the Permittee with a Notice of Disapproval on October 27, 2009; again, the Permittee could have taken immediate action subsequent to receiving the comments, but submitted a response to this NOD over six months later (received by NMED on May 3, 2010). The Permittee's delay in providing NMED and OCD the appropriate documents for the wastewater treatment system does not constitute reason to extend the deadline.

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**Comment 10**

In Attachment D (Process Design Report, Western Refining Southwest Inc., January 21, 2010), Section 1 (Introduction), page 3, the Permittee discusses how effluent from the MPPE system contained benzene concentrations less than 0.5 mg/l.

**NMED Response**

The Permittee must clarify in the Response Letter if samples were analyzed by the on-site laboratory or a certified off-site laboratory, identify the analytical method and provide the final laboratory report.

**Comment 11**

In Attachment D (Process Design Report, Western Refining Southwest Inc., January 21, 2010), page 5, the Permittee states “[t]his historical data is visually displayed in appendices 7-10.”

**NMED Response**

Attachment D does not contain Appendices 8-10. The Permittee must submit the missing Appendices 8-10 to complete the record.

**Comment 12**

In Attachment D (Process Design Report, Western Refining Southwest Inc., January 21, 2010), page 7, Section 2.1 (MPPE process description), the Permittee states “[d]uring the pilot plant trial, the unit was periodically sampled by Western Refining. Each morning and evening the unit was switched from fire water to process waste water and vice versa.”

**NMED Response**

It is not clear why the Permittee used fire water in this pilot study instead of a continuous use of process wastewater. In the response letter, the Permittee must provide an explanation for the use of fire water instead of process wastewater.

**Comment 13**

In Attachment D (Process Design Report, Western Refining Southwest Inc., January 21, 2010), page 21, the Permittee provides the conclusions of the MPPE pilot study. The Permittee concluded the “MPPE technology proved to be very capable of lowering the benzene concentrations well below the by EPA required level of 0.5 mg/l” and “can also remove other dissolved hydrocarbons like Toluene, Ethylbenzene, Xylenes, VPH and EPH (both aliphatics and aromatics) to any level required.” NMED has the following concerns regarding Appendix D:

- a. Page 8 states, “[i]s it important to note that many of the results were below the detection range of the test method and lab equipment. This is important as the values with the (>) symbol are depicting a worse case scenario.” This statement cannot be

verified because the detection range of the test method and laboratory instrument was not provided, nor was the laboratory results.

- b. Page 8 states “[i]t is unknown as to exactly how far the effluent result is below the detection limit. Therefore, the range could vary from say 9% to as great as 99% removal efficiency. However, the removal efficiencies are calculated for informational purposes.” Again, the detection limit was not provided. The range of 9% to 99 % removal of hydrocarbons is broad and implies the system capabilities are variable in the extent of removal of hydrocarbons. The calculations used to determine the removal efficiencies were not included and it is not clear how the percentages were determined.
- c. The summary tables are not presented in a clear manner. For example, Table 3.2 provides volatiles in concentrations in mg/l with alternating inlet and outlet results. The alternating inlet and outlet data is not clear, and the rows should be labeled accordingly. In addition, Table 3.4 provides alternating VPH-1 inlet and outlet data; the outlet concentrations are higher than the inlet concentration (e.g., the inlet sample QA24L collected on 11-30-09 states <500 µg/L MTBE and the outlet samples QA24E collected on 11-30-09 states 5.7 µg/L; this data would imply the system was not operating correctly).

It is the Permittee’s responsibility to install a system that is capable of meeting the effluent discharge requirements and all other applicable regulations. The Permittee must demonstrate that the MPPE system treats the process wastewater in compliance with established standards and is protective of human health and the environment. No revision is necessary; however, the Permittee must take the above comments into consideration when designing and installing the system.

#### **Comment 14**

Page 6 of the Permittee’s *Response to Notice of Disapproval Process Design Report for the Wastewater Treatment Plant Work Plan (Alternative Design)*, dated April 30, 2010, the Permittee’s response to Comment 8, item d states “[w]e do not understand NMED’s basis for limiting the accumulation of solids in the bottom of T27/T28 to less than 2 feet. The resuspension mixing described under Item b and in the revised Work Plan will ensure that the 90-day accumulation period is not exceeded. Therefore, the amount of sludge that accumulates in the interim is not relevant to complying with this requirement. We request relief from the requirement that solids accumulation be limited to less than 2 feet.”

#### **NMED Response**

The Permittee is relieved of the two foot accumulation. If Tanks T27 and T28 are cleaned out by

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any method other than the mixing method described in the Work Plan, all removed solids accumulated in the bottom of the Tanks must be managed as hazardous waste.

**Comment 15**

Page 11 of the Permittee's *Response to Notice of Disapproval Process Design Report for the Wastewater Treatment Plant Work Plan (Alternative Design)*, dated April 30, 2010, Comment 18 states "[i]n Section 4.5 9Tank Design, Secondary Containment, and Leak Detection, page 11, the Permittee states "In the event that there are new tank(s) or ancillary equipment not covered by the CAFO, such as those upstream of the API separator, those systems will be designed to the standards in accordance with GW-032 and related OCD requirements."

**NMED Response**

The secondary containment must be able to contain a volume equal to 1 1/3 of the tank capacity and/or volume of all interconnected tanks. The Permittee must comply with all OCD requirements.

**Comment 16**

Page 10 of NMED's *Notice of Disapproval Process Design Report for the Wastewater Treatment Plant Work Plan (Alternative Design)*, dated October 27, 2009, NMED states "[i]n addition, an electronic version of the revised Work Plan must be submitted with all changes shown in red-line strikeout."

**NMED Response**

An electronic version with red-line strikeout was not submitted. The Permittee is required to submit an electronic version in red-line strikeout and this was not provided; an explanation for not providing the documentation must be included in the Response Letter.

**Comment 17**

**System Startup Requirements:** The Permittee must implement the following sampling requirements upon initial startup to the wastewater treatment system:

- a. The Permittee must collect daily duplicate effluent samples from the MPPE for the first fifteen days from startup. One sample must be sent to a certified offsite laboratory for the analyses of DRO extended, BTEX, general chemistry parameters as defined by OCD, and pH (pH can either be analyzed by the laboratory or in the field). The other effluent sample must be analyzed for the same constituents at the refinery on-site laboratory for comparison purposes.
- b. The Permittee must collect duplicate effluent samples from the MPPE two times a week for 90 days after the initial 15 day period of continuous operation. One sample

must be sent to a certified offsite laboratory for analyses of DRO extended, BTEX, general chemistry parameters as defined by OCD, and pH (pH can either be analyzed by the laboratory or in the field). The other effluent sample must be analyzed at the refineries on-site laboratory for comparison purposes. In addition, the Permittee must also analyze an effluent sample once a month during this 90-day period for priority pollutant metals and semi-volatile organics (SVOCs) by a certified off-site laboratory.

- c. After the 90-day sampling period, the Permittee may collect duplicate samples weekly for chemical analyses specified in Comment 7. NMED will evaluate the need for additional analysis after the 90-day startup period. see item h of this Comment.
- d. The Permittee must collect flow rate measurements from the flow meters at the influent location to the API separator and effluent from downstream of the MPPE daily for the first 15 days of startup, two times a week during the following 90 days and weekly thereafter.
- e. The Permittee must collect air samples two times a month for the initial two months, once a month for the third month, and quarterly thereafter. The samples must be collected from the sample location labeled "ATM" from the "carbon" box located in Figure 1 (Wastewater Treatment Plan Work Plan Flow Diagram). The samples must be analyzed for VOCs using EPA Method TO15.
- f. The Permittee must submit all received laboratory results and flow meter data by the last Friday of each month beginning with the initial system startup to NMED and OCD (submittal by e-mail is sufficient). NMED and OCD must be notified within one business day of discovery if the effluent samples are determined to be hazardous. NMED and OCD must be notified within five business days if the effluent samples exceed the cleanup standards as referenced in Comment 1.
- g. The Permittee must monitor and record all occasions when the Surge Tanks (Tanks T27 and T28) are used and describe the event that caused these Tanks to be used. This information must also be submitted on the last Friday of each month.
- h. Following the initial 90 days of startup, NMED and OCD will establish long-term monitoring and sampling requirements and a schedule for submittal of monitoring reports for the wastewater treatment system.

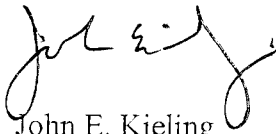


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The Permittee must respond to all comments requiring a response in a response letter. The response letter must be submitted to NMED on or before **June 18, 2010**. OCD must be copied on all correspondence. As indicated in Comment 8, the Permittee must have the upgrade to the wastewater treatment system in operation on or before **September 4, 2010**.

If you have questions regarding this letter please contact Hope Monzeglio of my staff at 505-476-6045.

Sincerely,



John E. Kieling  
Program Manager  
Permits Management Program  
Hazardous Waste Bureau

cc: D. Cobrain NMED HWB  
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File: Reading File and WRG 2010 File  
HWB-GRCC-09-006