

State of New Mexico  
Energy, Minerals and Natural Resources Department

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FEBRUARY 21, 2017

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

Mr. Riege:

**Re: "Work Plan SMW-2 Area Investigation & Boundary Well Installations" dated October 2016**

The New Mexico Oil Conservation Division (OCD) has completed its review of the Gallup Refinery (AP-111) above subject Western Refining Southwest, Inc. (Western) Work Plan (plan). Please find below New Mexico OCD review observations, comments and requirements.

**Observations:**

- 1) The purpose of this plan is to determine the source of the elevated concentrations of chloride and sulfate detected in groundwater samples collected at SMW-2 and to provide additional groundwater monitoring locations down-gradient of the southwestern evaporation ponds (Ponds 6 and 9). The investigation activities will be conducted in accordance with Section IV.H.5 of the Post-Closure Care Permit, but this section was not included in the plan.
- 2) Western plans to plug and abandon SMW-2 after sampling due to concerns over long screen and interconnection or cross-contamination between aquifer systems there. OCD is not in agreement with the plan at this time. Western shall put forth a formal request with basis for the request to OCD for approval.
- 3) Western plans to focus on SMW-2, SMW-4, and the nearby 7 new permanent MWs, and per No. 2 above is planning to plug SMW-2 after sampling evaluation, but does not propose a replacement MW at the location.
- 4) Sec. 4.3.1: Ten feet well screens may be too long based on the hydrogeology of SMW-2. Core sampling should assist the driller with the selection of screen lengths installed at the well locations to prevent cross-contamination between aquifer systems.

**Comments:**

- 1) Sec. 4.2: OCD notices PW-2 (raw water production well) is located hydrogeologically upgradient from OW-1. If PW-2 is under continuous production, it may be preventing groundwater contaminant migration from the evaporation ponds from detection at OW-1? Although, OW-1 is screened deep into another aquifer system. Western will need to comply with EPA QA/QC and DQO to address OCD WQCC Regulations. OCD notices Western appears to be focused on the SWMU under RCRA, but must also address OCD WQCC Requirements.
- 2) OCD requires SSLs to meet the DAF20 at the facility, and Western will need to determine site-specific criteria for Sulfate, Chlorides, etc. with OCD when required.

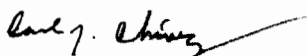
- 3) **Sec. 4.8: Data quality objective (DQOs) include more than what is mentioned, i.e., DLs < RLs, sample receipt, refrigerated samples, preservatives, etc.**

**Requirements:**

- 1) **Western shall add any installed monitor wells with semi-annual monitoring schedule to the Facility-Wide Groundwater Monitoring Plan.**
- 2) **Western's investigation activities for OCD shall adhere to EPA QA/QC and DQO environmental sampling and analytical standards. Water quality shall meet WQCC water quality standards.**
- 3) **The drilling methods shall allow for undisturbed core sampling at drill locations, and is required to accurately document lithologic sections, and assist with screen length selection.**
- 4) **Sec. 4.3: vapor screening for VOCs in the field shall follow OCD's spill guidance and use of PID/FID with proper calibration immediately prior to use. The eV of the lamp shall be in spec to detect VOCs, SVOCs, i.e., BTEX. The proposed foil method for head space is not acceptable. In addition, a combustible gas indicator (CGI) cannot be used as substitution for VOC field screening. Calibration records shall be maintained and submitted with any final report. Foil is not acceptable for headspace monitoring. OCD has guidance on PID headspace in its spill/release guidance 1993.**
- 5) **Sec. 4.3.1: driller may shorten screen length based on core sampling site-specific considerations and concerns about cross-contamination with long screens between aquifer systems present at any given boring location (see "Observations" No. 2 above). The SMW-2 boring log indicates a saturated sand unit exists from 33 – 38 ft. bgl with an artesian non-flowing head at 29 ft. bgl with pH of 7.1. A formal request with basis shall be submitted to OCD for approval of any plug and abandonment of MWs request at the facility.**
- 6) **Sec. 4.4: groundwater samples should also be collected at existing wells in proximity to drilling activities, i.e., OW-1, PW-2, etc. (see "Comments" No. 1 above) boring installation, monitor well installation, etc.**
- 7) **Secs. 4.1 and 4.4: a replacement MW seated in the shallowest aquifer present is recommended if SMW-2 is plugged.**
- 8) **Sec. 4.5: equipment requiring calibration checks shall be recalibrated prior to use each day.**
- 9) **Sec. 4.6: all field activities shall be recorded and included in the final report.**
- 10) **Sec. 4.7: general chemistry of the water shall also be tested. Ground water field measurements, etc. shall be recorded and included in the final report.**
- 11) **Sec. 4.8: The permittee is focused on the RCRA water quality criteria, but must also address WQCC water quality criteria. All environmental lab detection limits shall be less than the WQCC water quality criteria.**
- 12) **Sec. 4.8: add SWMU and WQCC specific conditions.**

Please contact me at (505) 476-3490 or E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us) if you have questions. Thank you.

Sincerely,



Carl J. Chávez,

XC: Jim Griswold, OCD Santa Fe  
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