GRCC

NEW MEXICO
ENVIRONMENT DEPARTMENT

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 15, 2007

Mr. Ed Riege
Environmental Superintendent
Giant Refining Company
Route 3, Box 7
Gallup, New Mexico 87301

RE: NOTICE OF DISAPPROVAL
MONITORING WELL INSTALLATION REPORT
GIANT REFINING COMPANY, GALLUP REFINERY
NMED ID # NMD000333211
HWB-GRCC-07-001

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has received Giant Refining Company's, Gallup Refinery (Permittee) *Monitoring Well Installation Report* (Report) dated August 7, 2007. The Report describes the installation of three monitoring wells in the vicinity of the New API separator (NAPIS). NMED hereby issues this Notice of Disapproval (NOD) and provides the following comments.

Comment 1

In future reports, the Permittee must compare soil analytical results to the New Mexico Soil Screening Levels (NMSSLs) found on the Hazardous Waste Bureau's (HWB) website: http://www.nmenv.state.nm.us/hwb/guidance.html. Soil and groundwater diesel range organic (DRO) analytical results must be compared to NMED's guidance document *New Mexico Environment Department TPH Screening Guidelines* posted on the same web address. Groundwater analytical results must be compared to the lower of the Water Quality Control Commission (WQCC) standards or EPA's maximum contaminant levels (MCLs). The EPA

Region VI Human Health Medium-Specific Screening Levels (Region VI) for Tap Water must be applied if a WQCC standard or MCL has not been established for a compound.

Comment 2

The Permittee states in Section 2.2 (Monitoring Well Installation and Groundwater Sampling) on page 4, paragraph 4 that "[t]he temperature, specific conductivity, and pH were measured and logged at regular intervals using a YSI-556 water quality meter. These recorded values are included with the field notes in Appendix B."

The Permittee must submit the water quality parameters in tabular format. Appendix B made reference to the collection of water quality parameters but the values were not included.

Comment 3

In Section 2.3 (Site Survey), the Permittee discusses "Investigation Derived Waste Management" for soil but does not identify what laboratory analyses were conducted for the soil samples, nor does it address disposal of water.

The New Mexico Oil Conservation Division (OCD) must approve disposal of soil in an OCD-approved landfarm. All wastewater generated during monitoring well installation and sampling activities must be placed in the refinery wastewater treatment system, upgradient of the NAPIS. In addition, the Permittee must also identify what analytical methods were performed on soils to determine disposal options.

Investigation-Derived Waste Management described in Appendix A of the *Work Plan for Monitoring Well Installation* states "[s]oil borings identified through field-screening procedures as containing 100 ppm or greater volatile organic compounds (VOCs) will be placed in 55-gallon drums and disposed of at a regulated disposal facility." The use of a photo ionization detector to determine which soils are to be placed in a 55-gallon drum for disposal is not appropriate and also does not account for soils containing heavy end contaminants such as diesel range organics (DRO). In the future, field screening cannot be the only method for determining how soils will be disposed.

Comment 4

The objective of the installation of deep monitoring well KA-3 was not achieved. This well should have been screened within the confining layer that underlies the uppermost water bearing zone and also should have been hydraulically isolated from the overlying saturated zone. The purpose of this well is to evaluate the downward migration of the water and determine if the overlying water bearing zone infiltrates into the confining layer. The Permittee states in the *Work Plan for Monitoring Well Installation* (Work Plan) dated May 24, 2007, page 4, paragraph 2 that "[d]eep monitoring well KA-3 will be constructed with 10 feet of screen slightly below the top of

present up to approximately 22 feet bgs. From this information and the boring logs for wells KA-1 and KA-2, it appears these wells were not drilled into the confining unit and the screened interval intersects only the uppermost portion of the water table, resulting in a very limited section of the well screen intersecting the saturated zone. NMED requested that the Permittee collect water table measurements during the week of September 17, 2007; KA-1 measured 8.89 feet bgs, KA-2 9.51 bgs, and KA-3 8.95 feet bgs. The well logs for KA-1 and KA-2 identify these wells as being ten foot in depth. It is therefore difficult to determine whether the water in KA-1 and KA-2 is formation water or standing water in the end cap. The current screened intervals for KA-1 and KA-2 do not appear to be screened to accommodate seasonal water table fluctuations.

The Permittee must drill replacement wells next to KA-1 and KA-2. Assuming the depths of the formation contacts identified in the well logs are accurate, the Permittee must:

a. Install the monitoring wells so that the screened interval intersects the water table approximately midway along the length of the well screen. Pending similar conditions to what was encountered in drilling KA-1 and KA-2, the screen should be installed from approximately four to 14 feet bgs.

b. Soil samples do not need to be collected during the installation process.

c. Develop the wells within one week of installation.

d. If the Permittee chooses, KA-1 and KA-2 may be abandoned. Well abandonment procedures must be conducted in accordance with *Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells [19.27.4 NMAC]*.

e. See Comment 6 for sampling requirements.

f. Install the monitoring wells by December 31, 2007.

Comment 6

Based on the information provided in this Report, it appears the NAPIS is leaking. Shallow groundwater generally flows in a west-northwest direction at this location. The groundwater chemical analytical results obtained from monitoring well KA-1 located on the upgradient side (east) of the NAPIS did not indicate the presence of contamination. However, the groundwater chemical analytical results from monitoring wells KA-2 and KA-3 located on the downgradient side (west) of the NAPIS indicated the presence of benzene, toluene, ethylbenzene, xylenes (BTEX), DRO and gasoline range organics (GRO). Based on the information provided in the

the Chinle Group contact, estimated 25 to 15 feet [bgs] [below ground surface]." The Work Plan also refers to the requirements established in NMED's March 23, 2007 letter which states in paragraph 2 "[t]he other well [KA-3] must be constructed so that the screened interval intersects the confining layer located directly below the uppermost water bearing zone to evaluate for the downward migration of groundwater."

The well log for KA-3 identifies the Chinle formation starting at 20 feet bgs, including wet fractured Chinle Formation from approximately 18 to 22 feet bgs. Therefore, the screened interval should have been set below this not within the water-bearing zone between 15 and 25 feet bgs.

The Permittee must drill a replacement well next to KA-3. Assuming the depths of the formation contacts identified in the well log are accurate, the Permittee must:

a. Install the monitoring well so that the screened interval is placed within the confining layer, in dry strata, below the overlying water-bearing zone. The well must be constructed so that it is not hydraulically connected to the overlying water–bearing zone.

b. If the Permittee chooses, install five feet of screen. In reference to the well log for KA-3, it appears the screened interval should be set at approximately 25 feet to 30 feet bgs (conditions pending).

c. Soil samples do not need to be collected during the well installation process.

d. Monitor the well for the presence of fluids. Both NMED and OCD must be notified within 24 hours if fluids are present in the well.

e. Install the monitoring well by December 31, 2007.

Comment 5

The Permittee states in Section 2.2 (Monitoring Well Installation and Groundwater Sampling) on page 4, paragraph 2 of the Report that "[m]onitoring wells KA-1 and KA-2 were constructed with the screened interval set from 4.5 to 9.5 ft bgs in order to intersect the water table. Since KA-1 and KA-2 were advanced into the confining unit, the bottom of each boring was backfilled with hydrated bentonite chips to prevent downward migration of fluids through the confining unit."

According to the boring log for well KA-3, the saturated zone appears to extend into the upper portion of the Chinle Formation to approximately 20 feet bgs, with moist to wet conditions

Report and upon the installation of the replacement monitoring wells, the Permittee must implement the following:

a. Monitor and collect groundwater samples from replacement monitoring wells for KA-1 and KA-2 within two weeks, one month, three months, and quarterly thereafter from the date of completion of well development.

b. The initial sampling event must include laboratory analyses of groundwater samples collected from KA-1 and KA-2 replacement wells for VOCs using EPA Method 8260, semi-volatile organic compounds (SVOCs) using EPA Method 8310, GRO, DRO extended, and RCRA metals. The following sampling events must include chemical analyses of water samples for BTEX plus methyl tertbutyl ether (MTBE) using EPA Method 8021B, GRO, DRO extended, and general chemistry in accordance with item19 of OCD's Discharge Plan. The sampling suite may be modified by NMED and in concurrence with OCD upon review of the laboratory reports.

c. The Permittee must submit the laboratory results from each sampling event to NMED and OCD within seven business days upon receipt of the final laboratory report.

d. According to the Permittee, the liner for the NAPIS should be installed between mid November and December 31, 2007. The Permittee must notify NMED and OCD within one week of the completion of all repair work and installation of liners at the NAPIS.

The Permittee must submit a letter confirming their intent to complete all monitoring well installation requirements. All well installation activities must be documented and may be reported in either letter or report format to include a summary of the field activities, the installation process, and well logs. This information must be submitted to NMED and OCD on or before January 31, 2008.

If you have any questions regarding this letter please call Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
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