GW - 028

Upgradient/ Background Wells

2009

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NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

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RON CURRY
Secretary

Certified Mail - Return Receipt Requested

February 10, 2010

Darrell Moore
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211-0159

RE: NMED RESPONSE TO RECEIPT OF THE REVISED INSTALLATION OF UPGRADIENT WELLS STATUS REPORT NAVAJO REFINING COMPANY, ARTESIA REFINERY EPA ID No. NMD048918817 HWB-NRC-08-006

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has received the Navajo Refining Company, Artesia Refinery's (the Permittee) *Installation of Upgradient Wells Status Report,* Revised and dated November 24, 2009 (Report). The Permittee also responded to NMED's July 28, 2009 Notice of Disapproval in a response letter (Response Letter) dated November 25, 2009.

Throughout the Response Letter, the Permittee makes references to these two statements: "[the upgradient well locations are located on City property, upgradient from the permitted facility. It is not appropriate for Navajo to make comparisons to clean up standards on non-permitted, upgradient, City owned property, and the investigation was not a Corrective Action Investigation subject to the requirements of the Permit" and "[t]he soil samples were obtained from off-site, upgradient locations, not under the jurisdiction of the Facility's Post Closure Care Permit. The purpose of the investigation per the approved Work Plan was to install three upgradient monitoring wells to collect groundwater samples. It was not a Corrective Action Investigation at or related to the Facility."

Comment 1
NMED does not concur with the above statements and has the following points:

a. The Post-Closure Care Permit (Permit) applies to environmental activities (e.g., installation of monitoring wells, advancement of soil borings, collection of samples, etc.) whether conducted on - or off-site. Moreover, the upgradient wells fall under Permit Section 3.2.2 (Groundwater Monitoring).

b. The upgradient wells (UG-1, UG-2, and UG-3R) were installed for the purpose of monitoring upgradient water quality, on a long term basis, for comparison of upgradient water quality to on-site water quality, and for monitoring any potential releases at the facility. If the Permittee does not monitor upgradient water quality, then the source of all impacts to water quality beneath the Facility may be assumed to be solely from the Permittee.

Comment 2
In Section 7 (Recommendations) of the Report (also addressed in the Permittee's Response Letter, Comment 34), the Permittee states "[u]pgradient groundwater conditions have been evaluated and compared to on-site groundwater conditions. The upgradient wells should be plugged and abandoned by a New Mexico licensed water well driller. Navajo requests permission to plug and abandon the three upgradient wells."

It is unclear why the Permittee wants to abandon monitoring wells UG-1, UG-2, and UG-3R as these wells monitor water quality upgradient from the facility. In addition, the Permittee has referenced the groundwater data from these wells in other documents, the *AOC Group 2 Corrective Action Investigation Report* March 2009. NMED does not approve the request to abandon monitoring wells UG-1, UG-2, and UG-3R. NMED requires these wells to be maintained and added to the Facility Wide Groundwater Monitoring Plan. UG-1, UG-2, and UG-3R must be sampled annually, starting in April 2010. Analyses must include RCRA 8 metals (totals), benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyltertiary-butylether (MTBE), diesel range organics (DRO), gasoline range organics (GRO), and general chemistry parameters.

The Permittee is not required to submit a response or a revised report. If you have any 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
H. Monzeglio, NMED HWB
C. Chavez, OCD
J. Lackey, NRC
P. Krueger, Arcadis
File: Reading File and NRC 2009
HWB-NRC-08-006

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RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 29, 2009

Darrell Moore
Navajo Refining Company
P.O. Box 159
Artesia, New Mexico 88211-0159

RE: NOTICE OF DISAPPROVAL
INSTALLATION OF UPGRADIENT WELLS STATUS REPORT
NAVAJO REFINING COMPANY, ARTESIA REFINERY
EPA ID No. NMD048918817
HWB-NRC-08-006

Dear Mr. Moore:

The New Mexico Environment Department (NMED) has received the Navajo Refining Company, Artesia Refinery's (Permittee) *Installation of Upgradient Wells Status Report* (Report), dated October 13, 2008. NMED has determined the Report to be technically deficient and hereby issues this Notice of Disapproval (NOD). The Permittee must address all comments contained in this NOD.

Comment 1
The Permittee did not include Table 3 (IDW Analytical Results) in the Table of Contents. The Permittee must revise the Table of Contents to include this table.

Comment 2
Appendix A (Proposed Monitoring Well Locations) contains Figure 1 (Approximate Monitoring Well Location for One Well) and Figure 2 (Approximate Monitoring Well Location for Two Wells). The Permittee must revise the Appendix A of the Report to include two figures. One

figure must include the locations for all the monitoring wells as proposed in the Work Plan and the second figure must include the actual surveyed locations of the monitoring wells as installed. The Figures must also indicate the locations of UG-3 and UG-3R. Both maps use the same scale and the well locations must be clearly labeled.

Comment 3

In Section 2.0 (Background), page 3, last paragraph, the Permittee states "[t]he monitoring well to be drilled south of Yucca Avenue between 15th and 16th streets was drilled into a documented hydrogeologic low (water table depression) and therefore not an upgradient location." The Report does not contain detailed information of the drilling, construction or abandonment for this monitoring well. The Permittee must revise the Report to include detailed information of the drilling, construction, contaminant field screening, water level observations and abandonment of UG-3, including the boring and/or well logs.

Comment 4

The Permittee's description of the monitoring well completions in Section 4.1 (Monitor Well Installation) on page 4 and in Appendix B (Monitor Well Installation) do not match the monitoring well completion logs provided in Appendix C of the Report. For example, the text in Section 4.1 and in Appendix B, discuss how the wells were completed to a depth of approximately 30 feet with 15 feet of screen. However, the Well Logs presented in Appendix C indicate well depth in UG-1 as 23 feet, UG-3R as 37.5 feet and the screen length in UG-3R as 20 feet. The Permittee must revise the Report as to accurately present all data throughout the document, and resolve this discrepancy.

Comment 5

In the Installation of Upgradient Wells Work Plan (Work Plan) dated January 8, 2008, page 16, Appendix C – (Investigative Derived Waste), paragraph two, the Permittee states "[b]ased on the results of the sample analyses the soil cuttings will either be disposed of at an approved waste disposal facility or will be spread on-site." In Section 4.4 (Investigative Derived Wastes), paragraph two, page 6 of the Report, the Permittee states "[b]ased on the results of the sample analyses the soil cuttings were disposed at Controlled Recovery Inc., an approved disposal facility." According to Table 3 (IDW Analytical Results), the soil cuttings were not contaminated. The Permittee must explain why it was necessary to dispose of the soil cuttings off site rather than spreading on site if they were not contaminated.

Comment 6

In the Workplan, page 16, Appendix C – (Investigative Derived Waste), paragraph three, the Permittee states "[a]ll water generated during sampling and decontamination activities will be temporarily stored in labeled 55-gallon drums. A water sample from each drum will be collected and submitted for laboratory analysis for [volatile organic compounds] VOCs, [semi-volatile organic compounds] SVOCs and [Resource Conservation and Recovery Act] RCRA metals.

Based on the results of the sample analyses the water will either be disposed of at an approved waste disposal facility, used as process water at the refinery or will be emptied on-site." Section 4.4 (Investigative Derived Wastes), paragraph three, page 6, the Permittee states: "[a]ll water generated during sampling and decontamination activities has been temporarily stored in labeled 55-gallon drums. A water sample from each drum was collected and submitted for laboratory analysis for VOCs, SVOCs and RCRA metals. Based on the results of the sample analysis the water was used as process water at the Refinery." The analytical results for the water generated during sampling and decontamination activities were not found in Table 3 (IDW Analytical Results) or on the CD ROM containing analytical results included with the Report. The Permittee must revise the Report to include all of the analytical results for the purge water generated on-site. The Permittee must also clarify where the purge water was disposed of within the refinery (e.g., upstream from the API separator).

Comment 7

In Section 4.3 (Monitor Well Groundwater Samples), page 5, bullet four, the Permittee states groundwater samples will be analyzed for "RCRA 8 metals by EPA Method 6010/7471." Table 2 (Monitor Well Sampling Analytical Results) shows that RCRA 8 metals were detected in each sample. However, the Permittee provided no explanation in Section 5.2 (Groundwater Sampling Chemical Analytical Results) regarding detection of metals in the groundwater samples, nor was there a discussion of the comparison of these levels to cleanup standards or concentrations detected at the Facility. The Permittee must revise the Report to include a discussion in the text regarding the presence of RCRA 8 metals in the groundwater samples obtained from the background monitoring wells.

Comment 8

In Section 4.5 (Decontamination Procedures), pages 6 and 7, the Permittee states "...the drilling equipment (auger flites) were dedicated to a single monitoring well boring" and "the drilling contractor had a sufficient number of auger flites on-site that they were not reused and did not require decontamination during drilling." The Permittee then states in Appendix B, page 1, last paragraph, that "[a]ll augers were decontaminated prior to drilling, and between advancement of each borehole using dry-scrubbing, a heated pressure washer and laboratory-grade soap solution." Then on the CD ROM included with the hardcopy of the submitted Report, Appendix B states "the drilling equipment (auger flites) were dedicated to a single monitoring well boring..." and "[t]he drilling contractor had a sufficient number of auger flites on-site that they were not reused and did not require decontamination during drilling." The Permittee must clarify if the auger flites were decontaminated and document it consistently throughout the revised Report. The Permittee must also ensure the electronic copy of the revised Report is an exact copy of the revised Report.

Comment 9
In Appendix B (Monitor Well Installation), page 2, paragraph 2, the Permittee states "blank casing of similar construction was added to each well to reach approximately three feet above surface grade." The Permittee also states in the same paragraph that "the casing was extended in a flush mounted well vault." The Permittee must revise the Report to clarify how the monitoring wells were completed (e.g., flush mount or with a three-foot extension above grade).

Comment 10
In the last paragraph of Appendix B (Monitor Well Installation), the Permittee states that the North side of each well casing is marked. In the revised Report, the Permittee must explain how the wells are marked (e.g., with a notch or permanent marker).

Comment 11
In Appendix B (Monitor Well Installation), last paragraph, the Permittee states "[a] New Mexico-licensed surveyor surveyed the datum for each well." The survey data were not included in the Report. The Permittee must revise the Report to include a figure containing the survey data for each well on a map.

Comment 12
The well logs included in Appendix C of the Report do not contain all of the necessary information. The Permittee must revise the well logs to include static water levels, surface elevations, top of casing elevations, blow counts for the split spoon samples and the date drilled or explain why this information was not included on the well logs.

Comment 13
The information provided in the well log for UG-3R is not consistent with what is provided in the text of Section 4.1 (Monitor Well Installation), which states that the wells were completed to a depth of 30 feet with 15 feet of screen. Well log UG-3R indicates the well was constructed with 20 feet of well screen. The Permittee must revise the Report to clarify that 20 feet of screen was used to construct UG-3R instead of 15 feet of screen, or otherwise resolve the discrepancy. In addition the Permittee must accurately and consistently describe field based conditions throughout the Report and describe all deviations.

Comment 14
The Well Logs in Appendix C do not provide static water level data, making it difficult to determine if the wells are screened properly. The Permittee must include accurate data of well screen intervals and static water levels for each monitoring well in the revised Report. See Comments 12 and 13.

Comment 15
In section 4.2 (Monitor Well Soil Samples), page 5 of the Report, last paragraph, the Permittee states that "[h]eadspace vapor screening...involved placing a soil sample in a plastic bag or a foil-sealed container..." In the revised Report the Permittee must clarify which field screening method(s) were used in the field.

Comment 16
The Well Logs located in Appendix C indicate that samples were collected from drill cuttings with a shovel and used for headspace readings and laboratory analysis. Soil samples collected in this manner were not obtained in accordance with Section 6.1 (Monitor Well Installation), page 9 of the Work Plan. In addition, the field screening and sample collection methods do not comply with the requirements found in Appendix C, C.2.b.ii (Soil Sampling) of the Facility's Post Closure Care Permit (Permit). The Permittee must revise the Report to explain the deviation from soil sample collection methods outlined in both the Workplan and Permit.

Comment 17
In Section 6.1 (Monitor Well Installation), page 9 of the Workplan, the Permittee states "[m]onitor well borings will be continuously sampled using a split spoon sampling device or similar methods." According to the data presented in Appendix C (Monitor Well Completion Logs), the "Sampling Method" column for UG-1 and UG-2 indicates that borings were not continuously cored. Rather, the borings were mostly sampled from drill cuttings with a shovel. In all future subsurface investigations, the procedures outlined in Section C.2.b (Drilling and Soil Sampling) of the Permit must be followed.

Comment 18
According to Table 1 (Monitor Well Soil Sampling Analytical Results), sample UG-2, collected between 18 and 20 feet below ground surface, was analyzed for VOCs. According to the Well Log for UG-2 in Appendix C, this sample was collected with a shovel from the drill cuttings. This sample is not valid as the VOCs had ample heat and time to volatilize from the drill cuttings before the sample was collected. In addition, the Permittee cannot be certain of the depth where the cuttings were generated.

Comment 19
The tables in the Report are difficult to read due to the small type size. The Permittee must revise the tables in the Report to be readable, preferably using a 10 point or larger font. In addition the units of measure for the results must be clearly legible.

Comment 20
The Permittee titles Appendix D "Groundwater Sampling Methodology" indicating the appendix will only discuss groundwater sampling. However, the first paragraph of this Appendix discusses soil sampling and references Permit, Section 3.2.3a which pertains to the North Colony

Landfarm (NCL). Soil sampling is unrelated to Appendix D and the Permit requirements for the NCL are irrelevant to this Report. The Permittee must revise Appendix D to include "groundwater sampling methodology" and include the analytical methods for which the groundwater samples were analyzed.

Comment 21
The Permittee must revise Appendix D of the Report to include the QA/QC data that were actually collected during the installation of monitoring wells and provide explanations for any deviations from the Work Plan (e.g., changes to the number of equipment rinsate blanks, field blanks, trip blanks) and include all laboratory results.

Comment 22
In Appendix D (Groundwater Sampling Methodology), (Sample Handling), item 2, the Permittee states "[s]ome water samples (equipment blanks, etc.) required chemical preservation after collection to adjust their pH level..." In the revised Report the Permittee must describe the criteria used to determine which samples required chemical preservation and state which chemical preservatives were used in the water samples.

Comment 23
In Appendix D (Groundwater Sampling Methodology), (Sample Handling), item 4, the Permittee states "[a]ll samples were submitted to the laboratory soon enough to allow the laboratory to conduct the analyses within the method holding times." However, the Permittee provides a footnote in Table 2 (Monitoring Well Sampling Analytical Results) that states pH was "analyzed outside of Hold Time" indicated by the qualifier "H". This occurred with groundwater samples UG-1, UG-2, and UG-3. The Permittee must discuss the effect of exceeding the holding time for pH analyses.

Appendix D contradicts the footnote in Table 2. The Permittee must revise the Report to clarify the discrepancy.

Comment 24
In Table 3 (IDW Analytical Results), footnotes A11 and A25 state "[the] presence [of contaminants] in field samples may be an artifact of sample collection, transport, laboratory storage or analysis." The Permittee must clarify in the revised report why these footnotes were added when the compounds were not detected.

Comment 25
In Appendix D (Groundwater Sampling Methodology), the Permittee included "Monitor Well Sampling Forms" for UG-1 and UG-2, but not for UG-3. In the revised Report the Permittee must submit the Well Sampling Form for the field monitoring of monitoring well UG-3R.

Comment 26
The heading of column 2 of Table 2 (Monitor Well Sampling Analytical Results), indicates that monitoring well UG-1 was sampled on September 8, 2008. However, the well sampling form for UG-1 found in Appendix D (Groundwater Sampling Methodology) and the laboratory results section included on the CD ROM states that the groundwater sample for UG-1 was collected on August 8, 2008 The Permittee must address this discrepancy in the revised Report.

Comment 27
The laboratory data on the CD ROM detected Matrix Spike and Matrix Spike Duplicate recoveries for samples from several batches of analyses that were outside of Quality Control limits. In accordance with Appendix D.5 (Laboratory Reporting, Documentation, data Reduction and Corrective Action) and Appendix E.3.n.iii (Chemical Analytical Program) of the Permit, the Permittee must provide a summary of data quality exceptions and their effect on the acceptability of the laboratory analytical data with regard to the investigation. This was not included in the Report. The Permittee must revise the Report to discuss all laboratory data quality exceptions.

Comment 28
The Permittee must revise all tables within the Report to include a column or row that provides the standards to which the analytical results are compared. The Permittee must also revised the Tables to define the acronym "RL."

Comment 29
The Permittee must revise the Report to define all acronyms and include an acronym page.

Comment 30
It is not clear in Table 3 (IDW Analytical Results) if the acronym "ND" indicates the analyte was not detected at the "reporting limit" or if the analyte was not detected at the "method detection limit" or both. The Permittee must revise Table 3 and specify in each case which definition is appropriate. See Comment 29.

Comment 31
In Table 1 (Monitor Well Soil Sampling Analytical Results) and Table 3 (IDW Analytical Results), the Permittee provides a column labeled "RL" which is not defined within the tables. In Tables 1 and 3, the RL is different for the same analyte (e.g., benzene) at each sample location. For example, in Table 3, the RL for benzene at locations "Drum UG-A1," "Drum UG-1B," and "Drum UG-2A" are 5.5, 6.15, and 5.65, respectively.

The Permittee must revise the Report to define "RL" in all tables and provide an explanation why the "RL" values are different for the same analyte at each location. All laboratory deviations must be explained within the Report. The Permittee must also refer to Comment 19 and 29 regarding units in the tables and acronyms.

Comment 32
In Section 4.4 (Investigation Derived Wastes), paragraph two, page 6, the Permittee states "[p]rior to placing in drums, a discreet soil sample representative of the contents of each drum was collected and submitted for laboratory analysis for VOCs, SVOCs, TPH and RCRA metals." According to Table 3 (IDW Analytical Results) drums UG-3A through UG-3F were not analyzed for TPH. In the revised Report, the Permittee must submit results of TPH analysis for all drums or provide an explanation of why TPH analyses were not conducted.

Comment 33
Total xylenes are part of the VOCs suite of analyses. In Table 2 (Monitor Well Water Sampling Analytical Results) results were not reported for total xylenes for sample UG-3R. The Permittee must revise Table 2 to include the analytical results for total xylenes in the revised Report.

Comment 34
In Section 7.0 (Recommendations), page 8, the Permittee states "[t]he upgradient wells should be plugged and abandoned by a New Mexico Licensed water well driller." The Permittee shall not abandon the wells without permission from NMED.

The Permittee must address all comments contained in this NOD and submit a revised Report. The revised Report must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, an electronic version of the revised Report must be submitted identifying where all changes were made to the Report in red-line strikeout format. The revised Report must be submitted to NMED no later than November 30, 2009.

If you have any questions regarding this letter, please contact 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
H. Monzeglio, NMED HWB
C. Chavez, OCD
J. Lackey, NRC
P. Krueger, Arcadis
File: Reading File and NRC 2009
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