

GRCB 2003

State of New Mexico
ENVIRONMENT DEPARTMENT



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RON CURRY
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DERRITH WATCHMAN-MOORE
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**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

January 6, 2003

Mr. Barry Holman
Environmental Manager
Giant Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413

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

**SUBJECT: CORRECTIVE MEASURES STUDY AND
CORRECTIVE MEASURES IMPLEMENTATION
(SITE INVESTIGATION AND ABATEMENT PLAN)
GIANT REFINING COMPANY, BLOOMFIELD REFINERY
EPA ID NO. NMD089416416
HWB-GRCB-01-001**

Dear Mr. Holman and Mr. Riege:

The Hazardous Waste Bureau of the New Mexico Environment Department (NMED) has completed its review of the above-referenced Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI) report for technical adequacy as required under 20.4.2.201.7 NMAC. The CMS was submitted in September 2001 to fulfill the requirements of a 1992 EPA Administrative Order on Consent for the refinery. Giant submitted a supplement providing additional information for the CMS and CMI in September 2002. The consent order required that contamination be addressed on a facility-wide basis. The primary areas of concern were the San Juan River, the process areas, the tank farm, the fuel loading facilities and off-site, downgradient of the Refinery. Solid Waste Management Units (SWMUs) were not directly addressed in the Consent Order, but status summaries were included in this CMS at the request of the NMED.

NMED hereby approves the CMS/CMI. Giant Refining Company must fulfill the requirements specified in Attachment A of this document as part of the Corrective Measures Implementation.

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The CMS/CMI will be made available for public comment in accordance with 20.4.1.901. The requirements of Attachment A will be made available for public comment along with the CMS. NMED may require additional corrective action based on an evaluation of public comments submitted during the public comment period.

Please call this office at 505-428-2553 if you have questions or need additional information regarding this approval or the attached conditions.

Sincerely,



Dave Cobrain
Project Leader

Attachment

cc: James Bearzi, NMED HWB
John Kieling, NMED HWB
Pam Allen, NMED HWB
Bob Wilkinson, EPA Region VI
Wayne Price, NMOCD
Bill Olson, NMOCD

file: Red/CMS-CMI/01-06-03/approval/GRCB-01-001

ATTACHMENT A
REQUIREMENTS FOR LONG-TERM GROUND WATER MONITORING
CORECTIVE MEASURES STUDY AND IMPLEMENTATION (CMS/CMI)
(DISCHARGE PLAN - ABATEMENT PLAN)
SEPTEMBER 2001

GIANT REFINING COMPANY BLOOMFIELD REFINERY
EPA ID NO. NMD089416416

The NMED requires that Giant implement the following investigation and ground water monitoring actions in order to complete the Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI):

1. Giant shall install three monitoring wells (MW-44, MW-45 and MW-46) at the locations shown in the Giant Refining Company memorandum dated December 18, 2002. The monitoring well installation and subsequent ground water monitoring and sampling must fulfill the requirements listed below.
2. Giant shall collect soil samples at five-foot intervals and at the base of monitoring well borings MW-44 and MW-45 during drilling. Submit the soil samples to an analytical laboratory for analysis of volatile organic compounds (VOCs) using EPA Method 8260 and for gasoline-, diesel- and oil-range organics (GRO, DRO and ORO, respectively) using modified EPA Method 8015.
3. Giant shall collect a soil sample from the top of the water table from background monitoring well boring MW-46. Submit the soil sample obtained from the boring for laboratory analysis of VOCs by EPA Method 8260, GRO, DRO and ORO by modified EPA Method 8015, Water Quality Control Commission (WQCC [see 20.6.2.3103 NMAC]) metals using EPA Methods 6000 and 7000 series and for semivolatile organic compounds (SVOCs) using EPA Method 8270.
4. Giant shall complete proposed monitoring wells MW- 44, MW-45 and MW-46 as follows:
 - a. Approximately 20 feet of well screen shall be placed across the water table interface with at least 5 feet of well screen above the water table.
 - b. An appropriately sized sand filter pack shall be set in the annulus around the well screen from the bottom of the hole to no more than two feet above the top of the well screen.
 - c. A 2-3 feet thick bentonite plug shall be placed in the well annulus above the sand filter pack.
 - d. The remainder of the hole shall be grouted to the surface with a cement-bentonite grout containing 3-5% bentonite.

- e. A concrete pad and locking well cover shall be placed around the well casing at the ground surface.
5. Giant shall develop the monitoring wells must be developed by pumping, surging, bailing, or a combination of these methods after construction. Development of each well must continue until the water is as free of sediment as practicable with respect to the composition of the subsurface materials within the screened interval. The removal rate and amount of ground water removed must be recorded during well development procedures. Water quality parameters, pH, electrical conductance and temperature should be monitored during development. The monitoring wells should be considered satisfactorily developed when the pH, conductivity and temperature values do not vary by more than 10 percent for at least three measurements, and at least five borehole volumes of water have been removed from the well.
6. Giant shall purge and sample monitoring wells MW-44, MW-45 and MW-46 no less than 24 hours after the wells are developed. The ground water samples shall be analyzed for concentrations of aromatic and halogenated VOCs using EPA Method 8260, SVOCs using EPA Method 8310, both dissolved and total WQCC metals using EPA Methods 6000 and 7000 series, and total dissolved solids (TDS) and major cations and anions using approved EPA analytical methods and quality assurance/quality control (QA/QC) procedures.
7. Giant shall provide the construction details for monitoring point S-5. Giant shall replace monitoring point S-5 if the well casing either does not contain a screened interval or is not screened across the water table. If replacement of monitoring point S-5 is required, a design for the replacement of S-5 must be submitted to the New Mexico Environment Department Hazardous Waste Bureau (NMED), the New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division (OCD) and the U.S. Environmental Protection Agency (EPA) for approval.
8. Giant shall submit a long-term ground water monitoring work plan that specifies the wells to be sampled and the methods for conducting semi-annual and annual ground water monitoring and sampling to the NMED, OCD and EPA for approval. The work plan must be submitted within 180 days of the receipt of this approval and must fulfill the ground water monitoring and sampling requirements listed below.
9. Giant shall measure the depths to water/product from the well casing rims in all facility wells on a semi-annual basis. The water/product levels must be measured to an accuracy of 0.01 foot. Giant shall calculate water table elevations by subtracting the depth to water from the surveyed well casing rim elevations. Giant shall provide a corrected water table elevation in wells containing phase-separated hydrocarbons by adding 0.8 times the measured product thickness to the calculated water table elevation. Giant shall prepare a facility site plan for each ground water monitoring event that presents the well locations, calculated water table elevations, phase-

separated hydrocarbon thicknesses (where present) and facility features including aboveground storage tanks (ASTs) and process units.

10. Giant shall collect ground water samples on a semi-annual basis from wells MW-1, MW-6, MW-12, MW-13, MW-20, MW-24, MW-32, MW-33, MW-35, MW-37, MW-38, MW-44, MW-45, seep S-5 piezometers P-4, P-5 and all Hammond Ditch french drain outfalls along the refinery property. Giant shall submit the samples to an analytical laboratory for chemical analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tertiary butyl ether (MTBE).
11. Giant shall collect ground water samples on an annual basis from the wells listed in Item 10 above and wells RW-1, RW-15, RW-18, MW-3, MW-4, MW-5, MW-8, MW-9, MW-26, MW-27, MW-28, MW-36, MW-42, MW-43 and the background well. Giant shall submit the ground water samples collected on an annual basis to an analytical laboratory for chemical analysis of VOCs by EPA Method 8260, total and dissolved chromium by EPA Method 7191, total and dissolved lead by EPA Method 7421, and TDS and major cations and anions using approved EPA analytical methods and quality assurance/quality control (QA/QC) procedures.
12. The wells must be purged prior to sample collection. Water quality parameters, pH, electrical conductance and temperature must be monitored during purging of the monitoring wells. The monitoring wells should be considered satisfactorily purged when the pH, conductivity and temperature values do not vary by more than 10 percent for at least three measurements, and at least three well casing volumes of water have been removed from the well. Purge water must be collected and disposed through the refinery wastewater treatment system.
13. Giant shall test the ground water samples collected on an annual basis for the following natural attenuation parameters: dissolved iron, dissolved manganese, sulfate, nitrate/nitrite, dissolved oxygen, carbon dioxide and oxidation-reduction potential (ORP) using approved field testing and measurement procedures or EPA analytical methods.
14. Giant shall prepare an initial annual ground water monitoring report for submittal to NMED and OCD that summarizes the semi-annual and annual ground water chemical analytical data results and the results of the ground water natural attenuation parameter measurements, a description of the monitoring well installation activities, the monitoring well installation boring logs, well construction diagrams and soil field screening and chemical analytical data.
15. The initial annual ground water monitoring report, and all annual ground water monitoring reports submitted thereafter by Giant, shall include a comprehensive report on all investigation, remediation and monitoring activities. The report shall be submitted to the NMOCD Santa Fe Office and to the NMED Hazardous Waste

Bureau by April 1 of each respective year with a copy provided to the EPA and the NMOCD Aztec District Office. The annual report shall include:

- a. A description of all soil and ground water remediation and monitoring activities which have occurred during the previous calendar year including conclusions and recommendations.
 - b. Semi-annual water table potentiometric surface maps showing well locations, corrected water table elevations, pertinent site features, the direction of ground water flow and the hydraulic gradient.
 - c. Semi-annual product thickness maps showing well locations, measured product thickness in each well and pertinent site features.
 - d. Semi-annual isopleth maps for BTEX, MTBE and other detected contaminants of concern including the concentrations detected at the sampled monitoring wells.
 - e. Summary tables of all soil and ground water quality sampling results during the past calendar year that compares detected contaminant concentrations to applicable cleanup standards or screening levels and copies of the laboratory analytical data reports and associated QA/QC data for the reporting period.
 - f. Summary tables of the estimated volume of fluids recovered from each recovery well during each semi-annual reporting period and the total volume recovered to date.
 - g. Concentration versus time-plots of BTEX, MTBE and other contaminants of concern for each monitoring well.
 - h. The disposition of all wastes generated.
 - i. The results of any below grade line testing.
 - j. The results of any investigation actions conducted during the prior calendar year.
16. Giant shall notify the NMOCD and the NMED at least 15 days prior to all scheduled activities such that the NMOCD and the NMED have the opportunity to witness the events and collect split samples.
17. Giant shall notify the NMOCD and the NMED of the discovery of separate-phase hydrocarbons or the exceedance of a WQCC standard or EPA maximum contaminant level (MCL) in any monitoring well where separate-phase hydrocarbons were not present or where contaminant concentrations did not exceed WQCC standards or MCLs during

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the preceding monitoring event. The reporting to both agencies must be in accordance with NMOCD Rule 116.

18. Giant shall evaluate the status of Solid Waste Management Units (SWMUs) 1 through 12 and provide a SWMU assessment report to NMED within 360 days of receipt of this correspondence. The SWMU assessment report shall include historical site use, investigation results and corrective actions for each SWMU. Based on the current status and corrective action history for each SWMU, NMED will determine the need for further action on a unit-by unit basis.