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PETER MAGGIORE
SECRETARY

ENTERED

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 28, 2002

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

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

**SUBJECT: REQUEST FOR SUPPLEMENTAL INFORMATION (RSI)
CORRECTIVE MEASURES STUDY (SITE INVESTIGATION AND
ABATEMENT PLAN)
GIANT REFINING COMPANY, BLOOMFIELD REFINERY
EPA ID# NMD089416416
HWB-GRCB-01-001**

Dear Mr. Holman and Mr. Pavlich:

The Hazardous Waste Bureau of the New Mexico Environment Department (NMED) has completed a review of the above-referenced Corrective Measures Study (CMS) for technical adequacy as required under 20.4.2.201.7 NMAC. The CMS was submitted to fulfill the requirements of a 1992 EPA Administrative Order on Consent for the refinery. 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 Order but are included in this CMS at the request of the NMED.

NMED understands that the Hammond Ditch irrigation canal has been lined and that a groundwater recovery system was installed in conjunction with the lining of the ditch. After notification of the Hammond Ditch construction activities and reviewing the CMS, NMED requests additional information. The information that must be addressed is described in Attachment A.

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The requested information must be submitted to NMED within ninety days of receipt of this RSI. Failure to respond within this time period will result in issuance of a Notice of Deficiency.

Please call this office at 505-428-2553 if you have questions or need additional information regarding this RSI.

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/RSI/05-29-02/CMS report/GRCB-01-001

**ATTACHMENT A
REQUEST FOR SUPPLEMENTAL INFORMATION
TECHNICAL ADEQUACY REVIEW**

**CORRECTIVE MEASURES STUDY
(SITE INVESTIGATION AND ABATEMENT PLAN)
SEPTEMBER 2001**

**GIANT REFINING COMPANY BLOOMFIELD REFINERY
EPA ID NO. NMD089416416**

May 28, 2002

The NMED requests the following general information in order to complete its assessment of the Corrective Measures Study (CMS):

1. A facility map that includes monitoring well locations and refinery features including labeled process units, ASTs and other refinery and terminal features.
2. As-built construction drawings of the Hammond Ditch presenting the groundwater recovery system, the groundwater treatment system (the refinery wastewater treatment system) and all ancillary equipment and piping.
3. Site plans presenting monitoring well locations, significant refinery features and water/product level measurements obtained since 2001. A site plan should be included for each monitoring event.
4. The results of all groundwater recovery and treatment system monitoring and sampling. The results must include treatment system influent and effluent sampling analytical results, remediation system flow rates and volume estimates, product recovery volume estimates and all groundwater quality field measurements and laboratory chemical analytical results.
5. A site plan presenting the locations of proposed monitoring wells to be placed downgradient of the Hammond Ditch to monitor the effectiveness of the groundwater recovery and treatment system.
6. An updated groundwater monitoring and sampling plan that includes facility-wide groundwater monitoring and incorporates monitoring of the newly installed groundwater recovery and treatment system.
7. A site plan that includes the location(s) or proposed locations of monitoring wells in the vicinity of the barrier at the San Juan River to monitor for BETX, TPH as GRO and DRO, and OCD general chemistry parameters (major cations and anions).

Please provide the following additional information corresponding to the CMS section number:

- 3.1.1 A map showing Hammond Ditch sediment sample locations and the locations of San Juan River and Hammond Ditch water sample collection points.
- 3.1.2 Eight borings were drilled in the vicinity of the river in 1997 at an artificially low river stage but soil samples were obtained for laboratory analysis from only two of the borings. Total petroleum hydrocarbon (TPH) analytical results are reported for the two samples. Identify whether additional chemical analyses were conducted on the two soil samples or on samples obtained from the other borings and the results of the additional analyses, if available. Provide the title and date of the investigation report that summarizes the results of the investigation. Provide a copy of the report to NMED if one was not previously submitted.
- 3.1.3 Soil samples obtained from beneath the aeration lagoon liners in 1985 were likely composite samples therefore a lack of significant volatile organic compound (VOC) detections is not unexpected. TPH and VOCs were detected during drilling investigations conducted within the process areas; however, no site plan is provided showing the boring locations relative to facility features including the aeration lagoons. Provide a site plan presenting facility features and boring locations. In addition, Boring SHB-2 is not shown on Plate 10 (boring locations). Please add Boring SHB-2 to Plate 10.
- 3.2.2 The text and Table 6 reference 1999 groundwater sampling. Provide the results of all monitoring and sampling conducted since 1999. Submit copies of all groundwater monitoring reports generated since 1999 to the NMED.
 - 3.2.2.1 Plate 20 presents year 2000 benzene isopleths. Provide a summary table presenting the 2000 data groundwater sampling data.

The last paragraph in the "Naphthalene" section mentions a reduction in dissolved iron concentrations as being indicative of biodegradation of hydrocarbons along with decreased dissolved oxygen, nitrate and sulfate. Iron and manganese reducing bacteria transform these metals from an insoluble to a more soluble state which would result in increased dissolved iron concentrations therefore decreased dissolved iron concentrations are not indicative of biodegradation.

Background concentrations for RCRA metals and OCD groundwater quality parameters must be established in soil and groundwater. Background sampling should be conducted at a location upgradient of the new evaporation ponds. In addition, the causes for the detection of elevated concentrations of constituents in groundwater samples obtained from monitoring well MW-8 should be discussed.

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- 4.3.3 New exposure pathways were the only pathways considered in the remedial options evaluation instead of all exposure pathways. The CMS cites the evaluation summarized in the 1995 Groundwater Technologies, Inc. risk assessment as the reason for not discussing exposure pathways and receptors beyond considering those associated with each remedial option. Provide an updated discussion of potential receptors and exposure pathways.
- 4.7.2 Biodegradation is occurring at the site but its effectiveness is not directly measurable. The stable/shrinking plume described in the CMS is more likely the result of the continuing total fluids and product recovery and the containment caused by the formerly unlined Hammond ditch. The total fluids recovery system that is currently operating is likely an effective method for product recovery. Giant Refining Company should collect site-wide dissolved oxygen and oxidation-reduction potential (ORP) measurements to determine whether biodegradation is occurring. In addition, dissolved iron and manganese, nitrate, sulfate, dissolved carbon dioxide and methane concentrations could be measured to document the existence of some of the types of microbial activity occurring beneath the site. Background well measurements of biodegradation parameters must be obtained to determine whether biodegradation of hydrocarbons is occurring beneath the facility.