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MEMORANDUM

TO: Tom Tatkin, RCRA Permitting Program

THROUGH: Steve Alexander, RCRA Technical Compliance Program Manager

FROM: Ron Kern, Technical Compliance Program *RAK*

DATE: April 22, 1994

SUBJECT: **Land Treatment Unit Characterization Plan, Giant Refining Company - Ciniza, Gallup**

The RCRA Technical Compliance Program was requested by the RCRA Permitting Program to review the March, 1994 document "**Land Treatment Unit Characterization**", prepared by the Ciniza refinery facility of Giant Refining Company (GRC), Gallup, New Mexico. This submittal was prepared to comply with a February, 1994 HRMB requirement for GRC to characterize the treatment zone and below treatment zone of the Land Treatment Unit (LTU). HRMB technical comments and recommendations are included on the attached pages (Attachment I).

cc: Barbara Hoditschek, RCRA Permitting Program Manager
File: GRC/Red/94

ATTACHMENT I

The following technical comments from the Hazardous and Radioactive Materials Bureau (HRMB), New Mexico Environment Department, relate to the March, 1994 document "**Land Treatment Unit Characterization**". This document was prepared by Giant Refining Company (GRC) to comply with a February, 1994 HRMB requirement for GRC to characterize the concentrations and distributions of hazardous constituents within the treatment zone and below treatment zone of the Land Treatment Unit (LTU) at the Ciniza facility for partial or full closure.

Language in bold print enclosed within parentheses is quoted directly from the text of the March, 1994 LTU characterization report. Following the quotes are comments from the Technical Compliance Program of HRMB.

ITEM

- 1 Introduction, Paragraph 2: (**Characterization of chromium and lead migration has been adequately addressed by previous sampling events.**). Various solid wastes were also listed hazardous wastes (K049, K050, K051, and K052), due to the presence of chromium (Cr) and lead (Pb), which GRC was permitted to apply to the LTU (Permit Number NMD 000333211-2). As a characterization requirement for full or partial closure of the LTU, GRC must procure sufficient soil at each sampling site and analyze, at a minimum, all soil samples for Cr, Pb, and the organic compounds listed in Tables III-1 (Hazardous Constituents to be Degraded) and III-2 (Treatment Limiting Constituents) of the LTU Permit.

- 2 Coring, Paragraph 1: (**Giant proposes to core six additional points in Cells #1 and #2...and three points along the boundary of Cells #2 and #3...**).
 - a) HRMB understands that one of the Data Quality Objectives (DQO) for the LTU Characterization Plan is characterization of the migration of hazardous constituents Below the Treatment Zone (BTZ). Three soil borings per cell, sited centrally in Cells #1 and #2, may be insufficient to adequately fulfill this DQO. GRC must provide statistical information to ensure that sampling within the BTZ of Cells #1 and #2 can adequately characterize (at the 95% confidence level) the concentrations and distributions of hazardous constituents. This statistical approach to numbers and siting of samples should be described and include all assumptions (e.g. spatial variability of hazardous constituents in the BTZ).

b) HRMB understands that the DQO for characterization of the BTZ of Cell #3 is to determine if lateral migration of hazardous constituents has occurred from Cells #1 and/or #2. HRMB considers that the proposal for coring locations in Cell #3, distributed along the interface of Cells #2 and #3, is adequate (refer also to Items 3a and 3b below).

c) Additionally, to fulfill the requirements of an adequate characterization for closure, GRC should be aware that, if contaminants are detected within the BTZ in the current program, additional investigation may be required to define the nature and extent of any plume of contamination. Although not necessarily required as part of the current characterization plan (e.g. Phase I), the possibility of additional work (e.g. Phase II) to determine nature, rate, and extent of contaminant(s) should also be addressed.

3 **Sampling, Paragraph 2: (Samples taken within the ZOI [Zone of Incorporation] will be composited into two samples (three points each) for analysis of TCLP constituents...TCLP constituent analysis will indicate the presence and concentrations of hazardous constituents within the ZOI and will be instrumental in developing treatment practices...).**

a) Although compositing of ZOI samples from the LTU may be appropriate (if the entire thickness of the ZOI is sampled at each boring point), GRC must ensure that the numbers and locations of sampling points are sufficient to adequately characterize the ZOI (refer to Item 2a above). GRC must also ensure that compositing of samples does not enhance the loss of Volatile Organic Compounds (VOC) from the samples (refer also to Item 7 below).

b) The ZOI, as defined in the Permit (III.E.2) is only the upper twelve inches of the Treatment Zone; the Treatment Zone extends from the original soil surface to a depth of not greater than five feet. GRC must address characterization of soils within the entire Treatment Zone.

c) TCLP analysis is used to determine whether a particular solid waste is also a hazardous waste. If a TCLP standard is exceeded, the material would have to be "treated" or managed as a hazardous waste. A remedial "treatment", however, would not necessarily be predicated upon whether a TCLP standard was exceeded, except in the case of disposal as a hazardous waste. Therefore, although TCLP analyses may be appropriate for samples from the ZOI and Treatment Zone, totals analyses must be conducted for samples from the ZOI and Treatment Zone of Cells #1 and #2 for an adequate characterization related to partial or full closure.

- 4 Sampling, Paragraph 4: (**...samples will be collected at the ten, fifteen, twenty, and twenty-five foot depths...**). Although previous investigations of the LTU have resulted in detection of contaminants within the BTZ to a depth of seven and one-half feet, those investigations are not directly applicable to the current LTU characterization requirements for closure. An adequate set of data, collected during the current sampling and analysis program, must be obtained to ensure proper characterization of hazardous constituent distributions for closure. Therefore, please clarify the DQO for vertical characterization within the BTZ and how the proposed sampling intervals adequately fulfill that DQO.
- 5 General, Paragraph 1: (**...Giant assumes that the levels, if any, of organics at the deeper depths [ten, fifteen, twenty, and twenty-five foot depths] are normally distributed and that background data for organics at the 0-5' depth interval will be utilized.**). Please clarify, within this particular sampling and analysis plan, the basis for establishing background for organic constituents. Please also clarify the rationale for assuming that "background" for organics at shallow depth are relatable to organic concentrations at deeper depths.
- 6 Appendix 1, Sampling Plan, Section 3.1: (**Preparation for a sampling event should be initiated at least two weeks prior to the anticipated sampling date...**). HRMB must also be given at least two weeks advance notification of the specific field activities associated with LTU characterization.
- 7 Appendix 1, Sampling Plan, Section 3.3.1: (**After the tube is pulled from the soil, it is...opened to remove the soil core.**). Because these soil cores will be analyzed for constituents including VOCs, it is imperative that samples be transferred as rapidly as possible to sample bottles and sealed so as to ensure minimal loss of VOCs by agitation and/or excessive handling of cores.
- 8 Appendix 1, Sampling Plan, Section 3.3.3: (**Lithologic Logging**). Please clarify on what basis (e.g. cuttings or core) lithological logging will be done. If soil cores are to be lithologically logged, sample(s) for VOCs should be obtained prior to any logging.
- 9 Appendix 1, Sampling Plan, Section 7.3: (**Sample container selection...[is] listed in Table 2.**). Please clarify the abbreviation "G" in the container column of Table 2.