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MEMORANDUM

TO: Tom Tatkin, RCRA Permitting Program

THROUGH: ^{7"}Steve Alexander, RCRA Technical Compliance Program Manager

- FROM: Ron Kern, Technical Compliance Program
- DATE: February 4, 1994
- SUBJECT: Analytical Data Indicating the Presence of Hazardous Constituents Below the Treatment Zone of the Land Treatment Unit, Giant Refining Co., Gallup, New Mexico

The Technical Compliance Program was requested by the RCRA Permitting Program to compile analytical data pertinent to whether there has been a statistically significant increase of hazardous constituents within the unsaturated zone below the treatment zone of the Land Treatment Unit (LTU) at Giant Refining Company (GRC).

GRCs LTU Permit (NMD 000333211) addresses Permit requirements if a statistically significant increase of any hazardous constituent below the treatment zone occurs (III.M.1). The Permit also requires that any hazardous constituent placed in or on the treatment zone of the LTU must be degraded, transformed, or immobilized within the treatment zone (III.F.1.a).

Statistical significance is not a concern for non-metal hazardous constituents because none of the organic compounds detected at the LTU occur naturally within the unsaturated zone. For RCRA regulated metals, however, some may occur naturally within the unsaturated zone at concentrations which are denoted as "background"; background must be accounted for in determining the anomalous presence of any hazardous waste metal.

The following list indicates hazardous constituents detected within the unsaturated zone below the treatment zone of the LTU as indicated by GRC analytical data from soil core and/or lysimeter samples:

1. In a report dated November 27, 1990, GRC LTU analytical data for lysimeter samples indicated that Acetone, 2-Butanone (Methyl Ethyl Ketone), 1,1,1-Trichloroethane, and Carbon Disulfide were detected in soil-pore water of the unsaturated zone below the treatment zone of the LTU.

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GRC - LTU Analytical Data February 4, 1994 Page 2

2. Data submitted on March 4, 1992 indicated that soil samples from below the treatment zone contained m & p-Cresol(s).

3. In a November 11, 1992 report (prepared to comply with a July 22, 1992 agreement for GRC to further characterize the potential migration of hazardous constituents below the treatment zone), GRC analytical data for soil samples from below the treatment zone of the LTU indicated that Acetone, Methylene Chloride, 4-Nitrophenol, and Methapyrilene were detected. Chromium and Lead were also detected at statistically significant concentrations within the same soil samples. GRC analytical data for lysimeter samples in the same report indicated the presence of Acetone, 2-Butanone, bis(2-Ethylhexyl)phthalate, Benzyl Methylene Chloride, Alcohol, and Ethylbenzene in soil-pore water of the unsaturated zone below the treatment zone.

4. In a November 10, 1993 report detailing special sampling activities at the LTU, GRC analyzed soil core samples for organic compounds and metals. The analytical data indicated the presence of Acetone, Benzene, bis(2-Ethylhexyl)phthalate, Tetrachloroethene, Dichloromethane (Methylene Chloride), 2-Butanone, and statistically significant levels of Chromium. GRC further acknowledged in this report that "it is clear that some contamination has migrated below the treatment zone."

cc: Barbara Hoditschek, RCRA Permitting Program Manager