State of New Mexico
ENVIRONMENT DEPARTMENT
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DEPUTY SECRETARY

GRCC 92

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

February 18, 1992

Mr. John Stokes, Manager
Giant Refining Company
Route 3, Box 7
Gallup, New Mexico 87301

Dear Mr. Stokes:

Enclosed herein is an **ADMINISTRATIVE ORDER** issued to Giant Refining Company, Incorporated ("Respondent") pursuant to the New Mexico Hazardous Waste Act, Section 74-4-10.1., NMSA 1978. The Administrative Order concludes that Giant Refining Company's Ciniza Refinery Land Treatment Unit may present a danger to the public health and the environment. The Order directs Giant Refining Company, Incorporated to submit a proposal for assessing the possible hazards presented by this Land Treatment Unit.

The Administrative Order sets forth an acceptable schedule of compliance. The Respondent must submit either the attached compliance schedule or its own proposal in response to this Order within thirty (30) days of the receipt of this Order. The Respondent may be subject to civil penalties of up to five thousand dollars ($5,000) per day for failure to comply with this Order, as set forth in Section 74-4-10.1.E., NMSA 1978. This Administrative Order becomes effective with the signature of the Director unless the Respondent submits a written request for a public hearing to the Secretary of NMED no later than fifteen (15) days after receipt of the Order.

Inquiries should be directed to Tracy Hughes, NMED, Office of General Counsel, at (505) 827-2990.

Sincerely,

Kathleen M. Sisneros, Director
Water and Waste Management Division
New Mexico Environment Department

KMS/sma

cc: Lynn Prince, U.S.EPA Region VI (6H-HS)
Garth Graves, District I, NMED
Tracy Hughes, HED Office of General Counsel
Bruce Swanton, NMED
Steve Alexander, NMED

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

IN THE MATTER OF:
GIANT REFINING COMPANY, INC.

ADMINISTRATIVE ORDER
REQUIRING TESTING AND ANALYSIS

This Administrative Order is issued to Giant Refining Company ("Respondent"), pursuant to the New Mexico Hazardous Waste Act ("HWA"), Section 74-4-10.1.A., NMSA 1978. The authority to issue this Order has been delegated by the Secretary of the Environment Department (NMED) to the NMED Water and Waste Management Division Director (Director).

FINDINGS

1. Respondent is Giant Refining Company, Incorporated a corporation incorporated under the laws of the State of New Mexico.

2. Respondent owns and operates an oil refinery ("facility") located approximately 17 miles east of Gallup, New Mexico, immediately north of Interstate 40 in Sections 28 and 33, T15N, R15W, McKinley County.

3. The facility overlies a portion of a freshwater aquifer.

4. Respondent has a New Mexico Hazardous Waste Permit to land apply hazardous materials to a land treatment unit ("LTU") at

its facility.

5. On November 27, 1990, Giant Refining Company, Incorporated submitted analysis of soil pore moisture samples taken from lysimeters located beneath the LTU to the New Mexico Environment Department that indicate Acetone, 2-Butanone (MEK) and 1,1,1-trichloroethane (TCA) have migrated below the five-foot deep treatment zone beneath the LTU. Acetone, 2-Butanone and 1,1,1-trichloroethane are designated as "hazardous waste" pursuant to the New Mexico Hazardous Waste Act, Section 74-4-3.I.(1) and the New Mexico Hazardous Waste Management Regulations (HWMR-6), 40 CFR, Section 261.11.

6. Under the New Mexico Hazardous Waste Management Regulations (HWMR-6), 40 CFR, Section 264.271(c)(1) all hazardous constituents must be immobilized or degraded within the upper five feet of the LTU.

7. On March 5 and 6, ~~1990~~ 1991 and September 24, 1991 Giant Refining Company, Incorporated sampled groundwater from the predetection groundwater monitoring well series (SMW-1, SMW-2, SMW-3, SMW-4, SMW-5 and SMW-6), the groundwater monitoring well series (MW-1, MW-2, MW-4 and MW-5) and the proposed background groundwater monitoring well OW-11. Chromium (Cr) and lead (Pb) concentrations detected in the predetection groundwater monitoring well series were greater than those detected in both the existing background groundwater monitoring well MW-4 and the proposed background groundwater monitoring well OW-11. Chromium and lead are designated as "hazardous waste" pursuant to the New Mexico

Hazardous Waste Act, Section 74-4-3.I.(1) and the New Mexico Hazardous Waste Management Regulations (HWMR-6), 40 CFR, Section 261.11.

8. Operations at the Giant Refining Company, Incorporated facility include, or have included, handling, treatment, storage and/or disposal of materials which contain some of the hazardous wastes, or display the characteristics of a hazardous waste, listed previously in the paragraphs above. Due to the location of the Giant Refining Company, Incorporated facility a release of hazardous waste could reach the groundwater beneath the facility.

9. Ingestion of contaminated groundwater containing the above enumerated hazardous wastes may cause illness, disease, or other harmful effects to humans, as well as plant and other animal life.

DETERMINATION

10. Analytical results indicate that hazardous waste has been detected beneath the five-foot treatment zone of the facility land treatment unit. The release of hazardous waste from Giant Refining Company's LTU may present a substantial hazard to human health or the environment.

11. The Director has determined that additional monitoring, testing, analysis and reporting at the LTU is required of Giant Refining Company, Incorporated pursuant to the New Mexico Hazardous Waste Act, Section 74-4-10.1., NMSA 1978. The terms of this Order are reasonable and necessary in order to ascertain the nature and extent of the substantial hazard to human health or the environment

that may be present at the Giant Refining Company, Incorporated facility.

ORDER

Based on the foregoing Determinations and Findings the Respondent shall do the following:

1. Verify that all refinery wastes applied to the land treatment unit (LTU) have been immobilized within the treatment zone to a depth not exceeding more than 1.5 meters (5 feet) below the original soil surface.

2. Collect soil samples from beneath the LTU and the background plot for evaluation of all parameters listed in Appendix IX to 40 CRF of Section 264, including Acetone. For all parameters a method of analysis must be chosen which has a Method Detection Limit (MDL) which is lower than the Practical Quantitation limit (PQL) for that constituent as listed in the most current edition of U.S.EPA document "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW-846".

3. Verify that the soil samples taken from below the LTU and the background plot were obtained from between 5 feet and 5.5 feet below the original soil surface.

4. Follow sampling and analysis and laboratory quality control procedures as per Attachment C and the most current edition of U.S.EPA document "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW-846".

5. Submit a proposal for carrying out the requirements

listed above, in accordance with the New Mexico Hazardous Waste Act, Section 74-4-10.1.C., NMSA 1978, within thirty (30) days from the receipt of this Order. Attachment A represents a proposal which may enable the Respondent to determine whether migration has occurred below the five foot treatment zone at the LTU. The Respondent must submit either the proposal set forth in Attachment A or the Respondent's version of what it deems to be an acceptable proposal. NMED will review the proposal and either approve or modify said proposal. NMED will transmit to the Respondent, in writing, either the accepted proposal or the proposal as modified by NMED. The schedule will begin five (5) days after the date of transmittal.

6. Respondent shall be afforded an opportunity to confer with NMED regarding the proposal required in paragraph 5 above in accordance with Section 74-4-10.1.C., NMSA 1978.

7. Notify NMED personnel at least two weeks in advance of sample collection and samples will be split with NMED if NMED personnel are present.

8. Submit to NMED raw data sheets from the Respondent's laboratory including data for all samples collected in the background plot and in the LTU.

9. Submit to NMED the statistical calculations and narrative conclusions on the comparison for metals between the background plot and each of the plots in the LTU.

10. Reimburse NMED for the costs of actions deemed reasonable by NMED to ascertain the nature and extent of the hazard

at the property and/or facility of the Respondent if NMED determines that the Respondent is not able to conduct the activities required by this Order in a satisfactory manner, is not able to conduct the activities contained in an NMED approved proposal, or if actions carried out are deemed unsatisfactory pursuant to Section 74-4-10.1.D., NMSA 1978.

11. Provide access to the property and/or its facility to NMED employees, contractors and consultants at all reasonable times and shall permit such persons to be present and move freely in the areas in which work is being conducted pursuant to this Order.

12. Insure that all actions required by this Order are undertaken in compliance with all applicable federal, state and local laws.

13. Exchange routine verbal communications, in person or by telephone, with NMED to facilitate the orderly conduct of work required by this Order. No such communication shall alter or waive any rights and/or obligations of the parties under this Order.

14. Respondent is advised that NMED may, in accordance with Section 74-4-10.1.E., NMSA 1978, commence a civil action in the district court if the Respondent fails or refuses to comply with this Order. Such Court shall have jurisdiction to require compliance with this Order and to assess a civil penalty of up to five-thousand dollars ($5,000) per day if such failure or refusal occurs.

15. Nothing contained in this Order shall be construed as limiting any rights or authority that NMED may now, or hereafter,

have under the Hazardous Waste Act or any other law, statute or regulation. NMED specifically reserves the right to take appropriate removal, remedial, cost recovery and/or enforcement action pursuant to any law, statute or regulation, including, but not limited to the right to seek and obtain civil relief and/or penalties for any violation of law or this Order.

16. This Administrative Order becomes effective with the signature of the Director unless the Respondent submits a written request for a public hearing to the Secretary of NMED no later than fifteen (15) days after receipt of the Order.

17. This Order shall terminate when the Respondent certifies that all requirements of this Order have been completed, and NMED has approved such certification in writing.

Dated, entered, and effective as of this____day of February, 1992.

_____
Kathleen Sisneros
Director, Water and Waste Management Division

ATTACHMENT A TO
FEBRUARY, 1992 ADMINISTRATIVE ORDER

Item Number	Days to Completion	Action
1	10	GRC submits to NMED, from a selected laboratory, a complete listing of parameters to be included in the analysis done on fifty (50) soil samples taken from the LTU and background plots, including the method detection limit (MDL) and Practical Quantitation Limit (PQL) for each. The MDL is defined as the estimated concentration at which the signal generated by a known constituent is three standard deviations above the signal generated by a blank, and represents the 99% confidence level that the constituent does exist in the sample. The PQL is defined as that level of a target compound in the sample at which the actual concentration can be quantified. NMED will review this listing for adequacy of MDL's and PQL's and completeness of the parameters list.
2	10	GRC submits to NMED verification that: 1) it will use the background test plot identified in Figure 3, of Attachment B, for establishing background values for the regulated metals and 2) refinery wastes have never been applied to the background plot or to plot number three of the LTU. GRC verifies that it will establish background using ten samples taken from evenly distributed locations within the background plot at a depth of from 5 to 5 1/2 feet below the surface level. Background values for the organic contaminants will be the Method Detection Limits (MDL) values listed in U.S.EPA document "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW-846".

ATTACHMENT A TO
FEBRUARY, 1992 ADMINISTRATIVE ORDER

Item Number	Days to Completion	Action
1	10	GRC submits to NMED, from a selected laboratory, a complete listing of parameters to be included in the analysis done on fifty (50) soil samples taken from the LTU and background plots, including the method detection limit (MDL) and Practical Quantitation Limit (PQL) for each. The MDL is defined as the estimated concentration at which the signal generated by a known constituent is three standard deviations above the signal generated by a blank, and represents the 99% confidence level that the constituent does exist in the sample. The PQL is defined as that level of a target compound in the sample at which the actual concentration can be quantified. NMED will review this listing for adequacy of MDL's and PQL's and completeness of the parameters list.
2	10	GRC submits to NMED verification that: 1) it will use the background test plot identified in Figure 3, of Attachment B, for establishing background values for the regulated metals and 2) refinery wastes have never been applied to the background plot or the inactive cell of the LTU. GRC verifies that it will establish background using ten samples taken from evenly distributed locations within the background plot at a depth of from 5 to 5 1/2 feet below the surface level. Background values for the organic contaminants will be the Method Detection Limits (MDL) values listed in U.S.EPA document "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW-846".

Item Number	Days to Completion	Action
3	30	GRC submits to NMED New Mexico Coordinate System survey data which includes the following information:

A. The surveyed elevation, above sea level, of twenty (20) surveyed locations within each of the two active treatment plots of the LTU and the surveyed elevations of ten (10) locations within the background plot identified in Figures 1, 2, and 3 of Attachment B. The elevations must be to the one-tenth of a foot (0.10'). Each surveyed location must be assigned an identifying code or number. The locations must be selected within each plot such that the distances between selected points are approximately equal. Points selected at the perimeter of the LTU plots must be no nearer the perimeter than 20 feet. The elevation survey must be performed by a licensed surveyor unaffiliated with GRC.

B. A map drawn to scale of the LTU, including the background plot, with scale and north arrow, indicating the surveyed location and surveyed elevation of each sampling point. A copy of the map must be submitted with one-foot contours using data from the survey conducted for the purpose of this Order. Also, the locations and code name or number of each of the 50 sample locations described in item 3.A, above, must be included.

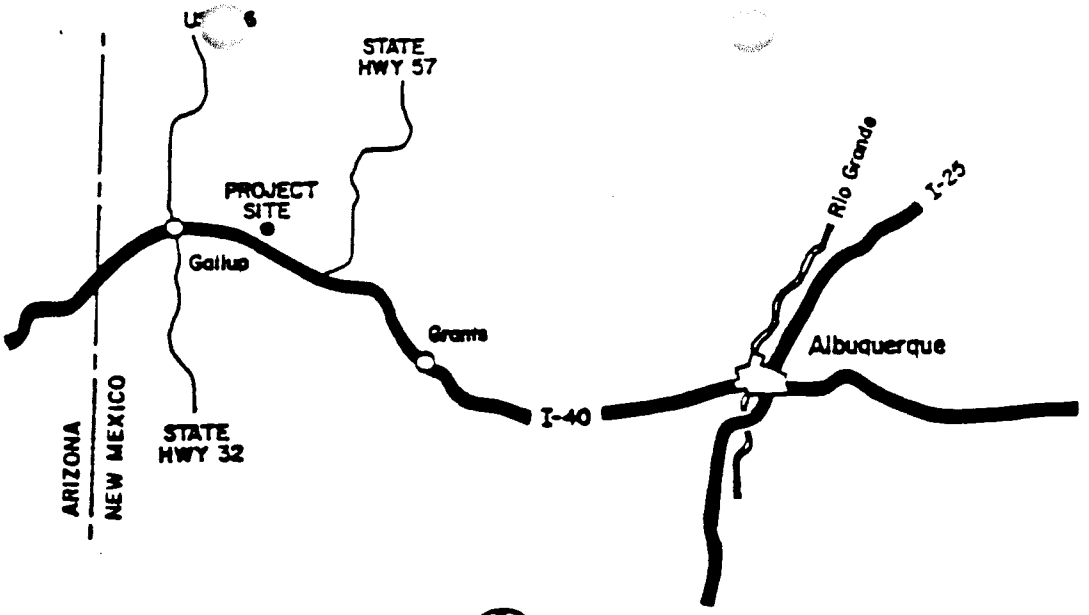
C. The name and affiliation of the licensed surveyor referred to in item 3.A, above.

Item Number	Days to Completion	Action
4	45	GRC submits analytical reports to NMED. 1) The fifty (50) coring samples from the background plot and the LTU must be evaluated for all parameters listed in Appendix IX to 40 CFR of Section 264, including Acetone and excluding dioxanes and furans. Core samples must be collected at each of the 20 surveyed points in each of the two active plots of the LTU. Samples taken within the LTU will be collected in the zone between 5 and 5.5 feet below the original surface level. GRC must document its procedure to ensure that the samples are collected at this depth. 2) One trip blank for volatiles must be included. 3) QA/QC procedures must be as per Attachment C and U.S.EPA document "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods, SW-846". The analytical report must include: 1) All constituents identified above the Method Detection Limit. 2) All raw laboratory data sheets organized by sample number including data for all samples collected in the background plot and in the LTU. The laboratory data sheets must include data for all of the parameters referred to in item 1. 3) Summaries for each sample of any constituent identified above the MDL. 4) The report must have all pages consecutively numbered and include a comprehensive table of contents.

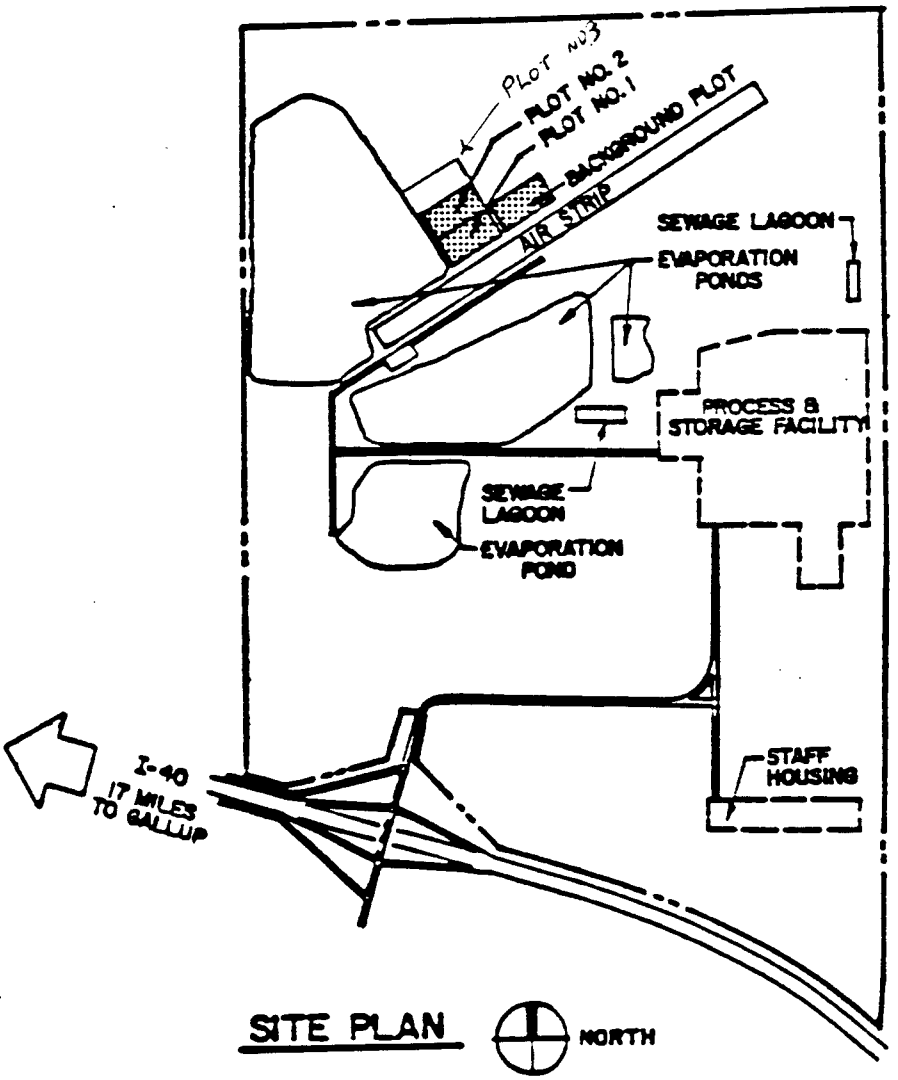
Item Number	Days to Completion	Action
5	75	GRC submits to NMED statistical calculations and narrative conclusions on the comparison for metals between the background plot and the below-treatment-zone soil cores from the two plots in the LTU. Statistical comparisons will be made for each of the regulated metals between the background plot and each of the two land application plots using Cochran's Approximation to the Behrens-Fisher Student-t test at the 0.05 level of confidence.

ATTACHMENT B TO

FEBRUARY 1992 ADMINISTRATIVE ORDER

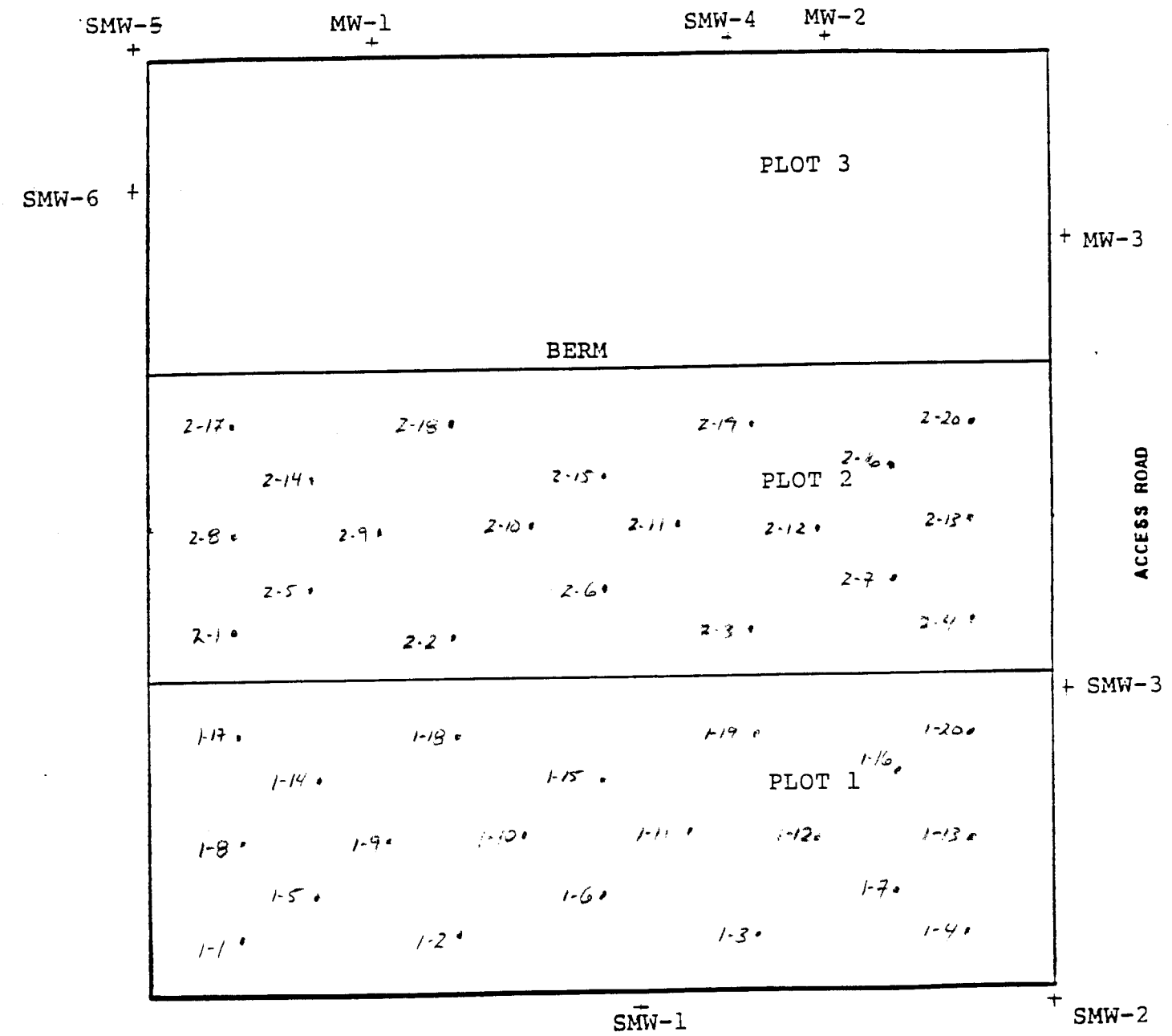


VICINITY MAP NORTH



SITE PLAN NORTH

GIANT REFINING COMPANY - GALLUP, NM
LAND TREATMENT
VICINITY & SITE PLAN



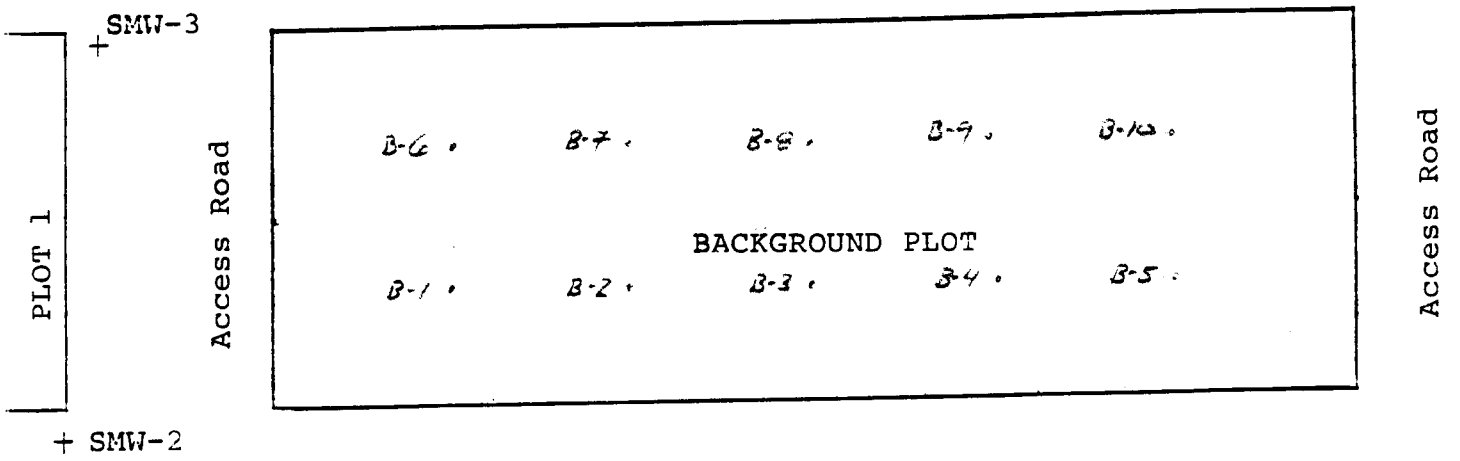
ACCESS ROAD

AREA PLAN NORTH

LTU SAMPLE POINTS
MONITORING WELLS +

0 100

SCALE IN FEET



AREA PLAN NORTH

LTU SAMPLE POINTS
MONITORING WELLS +

0 100

SCALE IN FEET

GIANT REFINING COMPANY - GALLUP, NM

FIGURE 3

ATTACHMENT C TO
FEBRUARY 1992 ADMINISTRATIVE ORDER

Components of an Adequate Laboratory Quality Assurance/Quality Control Plan

1. All constituents identified above the MDL must be reported.

   The Method Detection Limit is defined as the estimated concentration at which the signal generated by a known constituent is three standard deviations above the signal generated by a blank, and represents the 99% confidence level that the constituent does exist in the sample.

2. The "tune" of the GC/MS for volatile organic constituents must be checked and adjusted (if necessary) each twelve (12) hour shift by purging 50 ng of a 4-bromofluorobenzene (BFB) standard. The resultant mass spectra must meet the criteria given in Table 1 before sample analysis proceeds.

3. The "tune" of the GC/MS for semi-volatile organic constituents must be checked and adjusted (if necessary) each twelve (12) hour shift by injecting 50 ng of a Decafluorotriphenylphosphine (DFTPP) standard. The resultant mass spectra must meet the criteria given in Table 2 before analysis proceeds.

4. For every 20 samples perform and report:

   A. Duplicate spike for organics.

   B. Duplicate sample analysis for inorganics.

   C. Reagent blank, results provided for organic work.

   D. Surrogate and spike recoveries. See item 10.

   E. One check sample at or near the Practical Quantitation Limit for a subset of the parameters.

5. Analytical results must not be "blank corrected."

6. Any deviation from EPA-approved methodology must have a Written Standard Operating Procedure and NMED approval.

7. Detection limits must be generally in line with those listed in Appendix IX to §264.

8. The laboratory must document:

   A. That all samples were extracted, distilled, digested, or prepared (if appropriate) and analyzed within specified holding times.

   B. That if a sample for volatile analysis is received with headspace, this is reported.

   C. The date of sample receipt, extraction and analysis for each sample.

   D. Any problems or anomalies with the analysis.

   E. That all solids were analyzed dry and that the reported results are corrected to reflect a dry weight basis.

9. The name and signature of the lab manager must appear on each report.

10. The laboratory's historical surrogate and spike recoveries should fall within plus or minus 20% of the true value. The reported surrogate and spike recoveries must fall within: 1. the historical (statistically based) acceptance limits, generated at the laboratory or 2. the limits tabulated by the appropriate method from the current edition of SW-846, whichever limit is narrower. The actual historical recoveries must be submitted to HRMB with the analysis.

TABLE 1

BFB KEY IONS AND ABUNDANCE CRITERIA

Mass	Ion Abundance Criteria
50	15.0 - 40.0 percent of the base peak
75	30.0 - 60.0 percent of the base peak
95	base peak, 100 percent relative abundance
96	5.0 - 9.0 percent of the base peak
173	less than 2.0 percent of mass 174
174	greater than 50.0 percent of the base peak
175	5.0 - 9.0 percent of mass 174
176	greater than 95.0 percent but less than 101.0 percent of mass 174
177	5.0 - 9.0 percent of mass 176

TABLE 2

BFB KEY IONS AND ABUNDANCE CRITERIA

Mass	Ion Abundance Criteria
51	30.0 - 60.0 percent of mass 198
68	less than 2.0 percent of mass 69
70	less than 2.0 percent of mass 69
127	40.0 - 60.0 percent of mass 198
197	less than 1.0 percent of mass 198
198	base peak, 100 percent relative abundance
199	5.0 - 9.0 percent of mass 198
275	10.0 - 30.0 percent of mass 198
365	greater than 1.00 percent of mass 198
441	present but less than mass 443
442	greater than 40.0 percent of mass 198
443	17.0 - 23.0 percent of mass 4421