AP - 001

STAGE 1 & 2 REPORTS

DATE: Dec 18, 1995

MSELKE@BDM.COM

SITE CHARACTERIZATION

AND

RISK ASSESSMENT

FOR THE

FORMER BRICKLAND REFINERY

STRUCTURE OF THE REPORT

- INTRO
- RESULTS OF THE SITE CHARACTERIZATION
- RESULTS OF THE RISK ASSESSMENT
- CONCLUSIONS
- RECOMMENDATIONS

HGHLIGHTS OF SITE CHARACTERIZATION

- MOVEMENT OF FLUIDS IN SUBSURFACE IS IMPEDED BY INTERBEDDED NATURE OF SEDIMENTS
- FREE PHASE HYDROCARBONS TRAPPED IN LOCALIZED PODS
- MINOR BENZENE FOUND IN MW-6S, OTHERWISE CONTAINED WITHIN PROPERTY BOUNDS
- METALS ARE IMMOBILIZED IN SURFACE SOILS
- RIO GRANDE IS NOT IMPACTED
- PHYSICAL CONDITIONS AT SITE RENDER REALISTIC REMEDIATION TECHNOLOGIES INFEASIBLE, EXCEPT FOR SOURCE CONTROL BY REMOVING FREE-PHASE

HIGHLIGHTS OF THE RISK ASSESSMENT

- HI FOR NON-CANCER RISK LESS THAN 1
- INCREMENTAL CANCER RISK IS BORDERLINE FOR SEVERAL SCENARIOS, BENZENE IS THE DRIVER
- ADMINISTRATIVE/ENGINEERING CONTROLS REDUCE RISK TO EPA ACCEPTABLE LEVELS
- NATURAL ATTENUATION OF BENZENE OVER TIME WILL REDUCE INCREMENTAL CANCER RISK TO EPA ACCEPTABLE LEVELS WITHOUT ADMINISTRATIVE/ENGINEERING CONTROLS - 3 PPM BENZENE IS THE THRESHOLD

RECOMMENDATIONS

- CONTINUE TO RESTRICT ACCESS TO THE SITE
- REMOVE PRODUCT FROM MW-10
- MONITOR OFF-SITE AND SELECTED ON-SITE WELLS ON A SEMI-ANNUAL BASIS
- WHEN HIGHEST BENZENE CONCENTRATION REACHES 3 PPM OR LESS FOR 4 CONSECUTIVE SAMPLING EVENTS CEASE MONITORING

QUESTIONS/ANSWERS

NMOCD RESPONSE TIMING

OCD 12/18/95
Roswell meeting
handout #1

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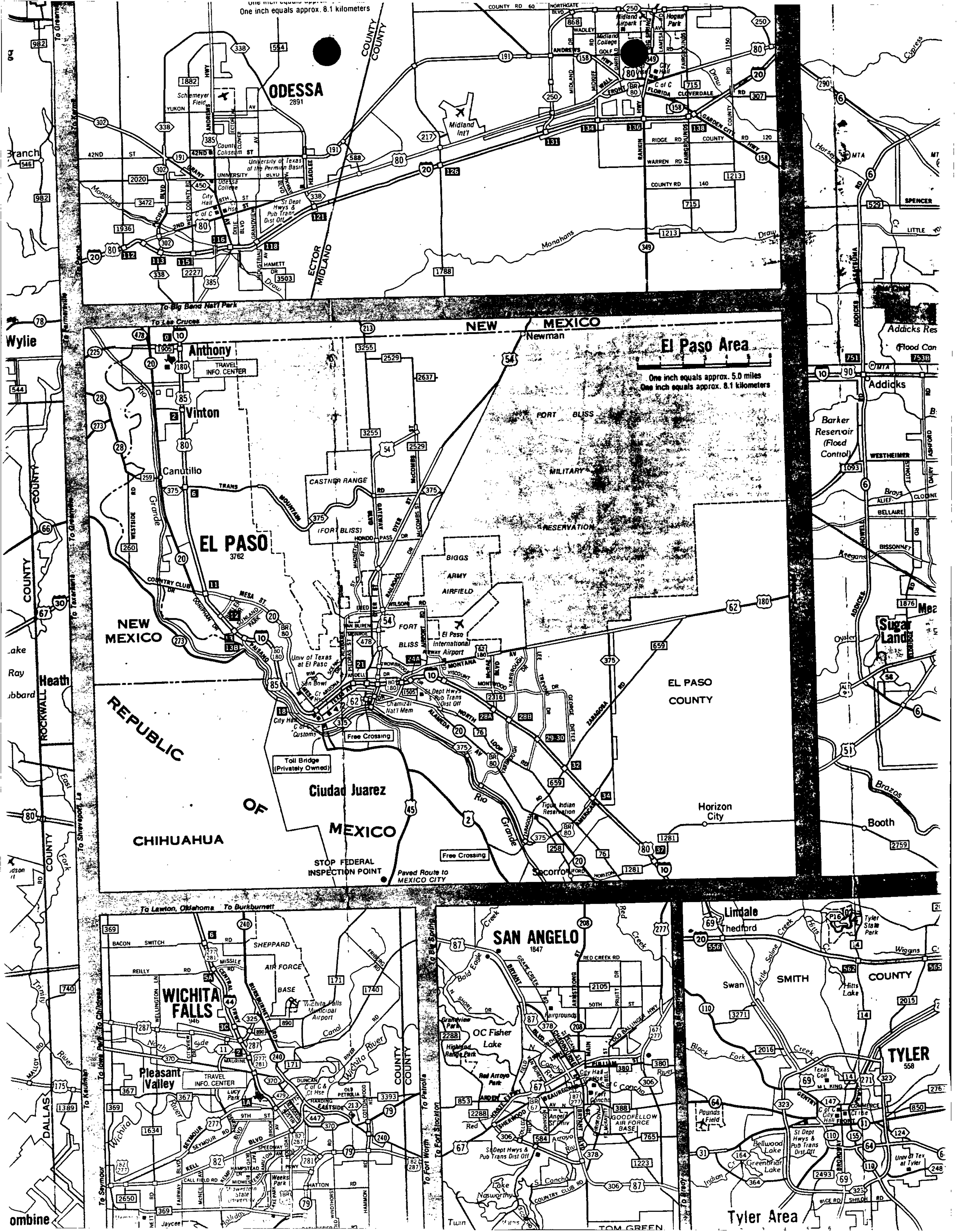
One inch equals approx. 8.1 kilometers
ODESSA
2891
Schlemeyer Field
County Coliseum
University of Texas of the Permian Basin
Odessa College
City Hall
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Midland Int'l
Midland Airpark
Midland College
Hogan Park
City Hall
Monahans Draw
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MIDLAND
COUNTY
To Big Bend Nat'l Park
To Las Cruces
NEW MEXICO
Newman
El Paso Area
One inch equals approx. 5.0 miles
One inch equals approx. 8.1 kilometers
Anthony
TRAVEL INFO. CENTER
Vinton
Canutillo
CASTNER RANGE
(FORT BLISS)
FORT BLISS
MILITARY
RESERVATION
EL PASO
3762
BIGGS
ARMY
AIRFIELD
FORT
BLISS
El Paso International Airport
Univ of Texas at El Paso
Sun Bowl
City Hall
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Customs
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St Dept Hwys & Pub Trans Dist Off
Free Crossing
Toll Bridge (Privately Owned)
Ciudad Juarez
REPUBLIC OF MEXICO
CHIHUAHUA
NEW MEXICO
Rio Grande
EL PASO
COUNTY
Horizon City
Tigua Indian Reservation
Free Crossing
STOP FEDERAL INSPECTION POINT
Paved Route to MEXICO CITY
Socorro
Wylie
Branch
ROCKWALL
COUNTY
DALLAS
COUNTY
Heath
To Greenville
To Shreveport La
To Texarkana
To Kaufman
Combine
Addicks
Barker Reservoir (Flood Control)
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Sugar Land
Booth
Brazos
SPENCER
WESTHEIMER
BELLAIRE
BISSONNET
To Lawton, Oklahoma
To Burkburnett
SHEPPARD
AIR FORCE
BASE
Wichita Falls Municipal Airport
WICHITA FALLS
94b
Pleasant Valley
TRAVEL INFO. CENTER
Lucy Park
Wichita River
Midwestern State University
C of C & Ct Hse
COUNTY
To Seymour
To Petrolia
SAN ANGELO
1847
OC Fisher Lake
Fairgrounds
City Hall
C of C
GOODFELLOW AIR FORCE BASE
St Dept Hwys & Pub Trans Dist Off
Lake Nasworthy
TOM GREEN
To Fort Worth
To Fort Stockton
To Big Spring
Lindale
Thedford
Tyler State Park
SMITH
COUNTY
Swan
Hitts Lake
TYLER
558
Texas Coll
Pounds Field
Bellwood Lake
Greenbriar Lake
St Dept Hwys & Pub Trans Dist Off
Univ of Tex at Tyler
Tyler Area

GCL
Environmental Science and Engineering
A BDM International Company

505 Marquette NW, Ste. 1100 • Albuquerque, NM 87102
(505) 842-0001 • FAX: (505) 842-0595

November 30, 1995

Bill Olson
OilConservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Dear Mr. Olson:

Enclosed you will find the analytical results for the 6th and 7th quarterly groundwater sampling events for June and September 1995, respectively. If you have any questions please feel free to contact me or Mr. Michael Selke at (505) 842-0001.

Sincerely,
Geoscience Consultants, Ltd. (GCL)

Trent H. Thomas
Program Manager

\QTRSUM.LTR

Enclosures

GCL
Environmental Science and Engineering
A BDM International Company

505 Marquette NW, Ste. 1100 • Albuquerque, NM 87102
(505) 842-0001 • FAX: (505) 842-0595

November 15, 1995

Mr. William C. Olson, Hydrogeologist
Environmental Bureau
Oil Conservation Division
New Mexico Energy, Minerals and
Natural Resources Dept.
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: FINAL SITE CHARACTERIZATION AND RISK ASSESSMENT FOR THE FORMER BRICKLAND REFINERY

Dear Mr. Olson:

Enclosed you will find the final report for the site investigations conducted by Geoscience Consultants, Ltd. and the risk assessment based on those findings. Rexene Corporation would like to meet with you next week to discuss the results and recommendations presented in this report and give you a brief overview of site history, current conditions, and future activities at the site. I will contact you to verify the date of this meeting and look forward to seeing you again.

Very truly yours,
Geoscience Consultants, Ltd. (GCL)

Trent H. Thomas
Program Manager

\REXWORK\NMOCD.FIN

Enclosures

cc: Todd Carver, Rexene Corporation
Rob Sutphen, Rexene Corporation
Roger Martin, Rexene Corporation
Ned Kendrick, Montgomery & Andrews
Kerrie Neet, NMED
NMOCD, Artesia

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. Pacheco
Santa Fe, New Mexico 87505

August 24, 1995

Mr. Trent Thomas
Geoscience Consultants, Ltd.
505 Marquette NW, Suite 1100
Albuquerque, New Mexico 87102

RE: SAMPLE ANALYSES
BRICKLAND REFINERY
DONA ANA COUNTY, NEW MEXICO

Dear Mr. Thomas:

Enclosed you will find the laboratory analytical results of the New Mexico Oil Conservation Division's (OCD) June 21, 1995 monitor well sampling at the Brickland Refinery.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

Enclosure

GCL
Environmental Science and Engineering
A BDM International Company

505 Marquette NW, Ste. 1100 • Albuquerque, NM 87102
(505) 842-0001 • FAX: (505) 842-0595

August 8, 1995

REX113.LTR

Mr. Bill Olson
Hydrogeologist
Environmental Bureau
Oil Conservation Division
Energy, Minerals And Natural Resources Department
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: REMOVAL AND DISPOSAL OF OILY WASTES AND WASTEWATER AT THE BRICKLAND REFINERY SITE

Dear Mr. Olson:

As we discussed on August 7, 1995, Rexene Corporation is interested in removing waste oil and oily wastewater from several locations at the Brickland Refinery site. These wastes include the free phase hydrocarbon present in MW-10 (approximately 3 to 5 gallons), waste motor oil currently found in the metal culvert sunk into the ground (approximately 20 gallons), and a mixture of oil and water contained in the cement cistern (approximately 50 to 100 gallons). Arrangements have been made with Rinchem Company, Inc. to remove, containerize, and transport these materials for disposal at Environmental Systems Company of El Dorado, Arkansas. All activities will be conducted in accordance with applicable New Mexico, Federal, and local regulations.

If the Oil Conservation Division does not object to this proposed course of action, I would suggest we proceed upon your verbal agreement. If I can provide any additional information, please feel to contact me at your convenience.

Sincerely,
Geoscience Consultants, Ltd. (GCL)

Trent H. Thomas
Program Manager

54159/REX113.LTR

cc: Todd Carver, Rexene Corporation
Rob Sutphen, Rexene Corporation
Roger Martin, Rexene Corporation
Edmund Kendricks, Montgomery & Andrews

Verbal approval to Trent Thomas on 8/29/95
Bill Olson

GCL
Environmental Science and Engineering
A BDM International Company

505 Marquette NW, Ste. 1100 • Albuquerque, NM 87102
(505) 842-0001 • FAX: (505) 842-0595

May 30, 1995

REX109.LTR

RECEIVED
MAY 3 0 1995
Environmental Bureau
Oil Conservation Division

Mr. William C. Olson
Hydrogeologist
Environmental Bureau
New Mexico Oil Conservation Division
2040 Pacheco
Santa Fe, New Mexico 87505

SUBJECT: QUARTERLY REPORT - MAY 1995

Dear Mr. Olson:

This letter report summarizes the Brickland Refinery activities of the past quarter and includes the data requested in your correspondence of January 30, 1995 and April 14, 1995. The analytical results, plates, etc., are enclosed as a set of bound appendices for your convenience.

1. Quarterly Sampling:

   On March 27-28, 1995, samples were collected from 14 monitoring wells and 20 well-points as per the "MODIFICATIONS TO THE QUARTERLY GROUNDWATER MONITORING PROGRAM FOR THE BRICKLAND REFINERY SITE" submitted to NMOCD on March 2, 1995. Surface water samples from the Rio Grande were also collected from locations down-gradient of the MW-3 and MW-6 well clusters and up-gradient from MW-12.

2. Quarterly Results:

   The tabulated data for this sampling event are found in Appendix A and include quarterly summary sheets and individual well summaries for the last five quarters. Laboratory data sheets are found in Appendix B and the QA/QC packages can be provided if you wish. Time versus concentration plots (Appendix C) were prepared for the on- and off-site wells of concern and also include historical water level plots for comparison. Historical water level data for all monitor wells and well points are also provided in this appendix for you reference.
   The quarterly groundwater sampling was completed before the receipt of your April 14, 1995 correspondence. Therefore, not all constituents in Items 1 and 2 were included in the sampling program. Additional sampling of MW-15 for BTEX constituents and the collection of a surface water sample downgradient of the MW-6 cluster for PAH's will be conducted in the June 1995 sampling event. This will be repeated sometime early in August 1995 to provide two quarterly samples for comparison.

A water level elevation map (Appendix D) was also completed using the elevation data collected in March 1995. Because of the hydrogeologic conditions at the site, only the data from the monitor wells and points illustrated in the diagram in Appendix D were used to construct the elevation map since they are completed in stratigraphic units that correlate.

A product thickness map and contaminant isoconcentration maps (Appendix E) were also prepared using available data and analytical results from the March 1995 sampling event. The concentration maps were generated using total constituent concentrations (e.g., total BTEX, total PAH, total Phenols) since the specific analytes do not occur consistently in wells and well points across the site.

Nothing unusual was observed in the analytical data. The concentrations continue to fluctuate over time with the river stage. The monitor wells installed during the site investigation in the summer of 1994 have generally exhibited decreasing concentrations over time and appear to be a result of equilibration with the existing hydrogeologic system.

3. Additional Information:

As requested in your January 30, 1995 correspondence I am providing additional information that was not included in the December 1, 1994 Remedial Investigation Report.

a. Photoionization Measurements:
Borehole logs with the results of the photoionization measurements have been provided in Appendix F. The results for the trenches can be found in Appendix A of the Remedial Investigation Report.

b. TCLP and Waste Characterizations of Stockpiled Soils:
Analytical results of the TCLP analysis of borehole cuttings and trench excavations are found in Appendix G. As indicated, one sample No. 9406241110 (composite of TR-4 and TR-5) exceeded the interim guidance action level for sulfide (500 ppm, SW-846). Another sample, No. 9406241045 (composite of TR-1, TR-2, TR-3, and TR-6) exceeded the TCLP level for lead (5 ppm). All six trenches were resampled to verify the results and to try to minimize the amount of waste shipped off-site. Subsequent results indicated that TR-6 exceeded the TCLP level for lead. A provisional generator's ID number was obtained from the New Mexico Environment Department and the excavated soils from TR-6 were shipped to Texas Ecologists, Inc. (TXD069452340) in Robbstown, Texas for stabilization and disposal. Approximately 10 cubic yards of soil were removed.

All other soils from the boreholes and remaining trenches are currently stored on-site. They only contain hydrocarbon residuals, and it is proposed that they be spread out on the ground at the site to enhance degradation.

If I can provide any additional information please feel free to contact me at your convenience. I will contact you during the week of June 5-9, 1995 regarding the June sampling event.

Very truly yours,
Geoscience Consultants, Ltd. (GCL)

Trent H. Thomas
Program Manager

THT/54159/REX109.LTR

cc w/enclosures: Todd Carver, Rexene Corporation
Roger Martin, Rexene Corporation
OCD Artesia Office
Kerrie E. Neet, NMED Superfund Program Manager
Edmund Kendrick, Montgomery & Andrews