GW - 1

REPORTS

YEAR(S):

1996

GIANT REFINING CO.

50 Road 4990
P.O. Box 159
Bloomfield, New Mexico 87413
505
632-8013

August 15, 1996

Roger Anderson
Environmental Bureau Chief
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Re: Permit Revision, Discharge Permit GW-001
Closure of Affected Units

Dear Mr. Anderson:

As stated in Section 6.1.4 of the above referenced permit, Giant Refining Company - Bloomfield submits a closure plan for the Unlined Evaporation Lagoons and the Spray Evaporation Area at this facility and requests a permit revision to remove these units from the discharge permit.

Since this is an existing permit and these actions perform an activity required by the permit, Giant requests a waiver of the flat fee as noted in Section 3-114.B.5 of the WQCC Regulations.

If you require additional information, please contact me at (505) 632 8013.

Sincerely:

Lynn Shelton
Environmental Manager
Giant Refining Company - Bloomfield

TLS/tls

Enclosure

cc: Denny Foust, Deputy Oil & Gas Inspector, OCD Aztec

cc w/o enclosure:
John Stokes, Refinery Manager
Kim Bullerdick, Corporate Counsel

RECEIVED
AUG 1 9 1996
Environmental Bureau
Oil Conservation Division

CLOSURE PLAN
FOR THE
UNLINED EVAPORATION LAGOONS
AND THE
SPRAY EVAPORATION AREA

GIANT REFINING COMPANY - BLOOMFIELD
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

PREPARED FOR:

NEW MEXICO OIL CONSERVATION DIVISION

PREPARED BY:

LYNN SHELTON
ENVIRONMENTAL MANAGER
GIANT REFINING COMPANY - BLOOMFIELD

AUGUST 13, 1996

TABLE OF CONTENTS

CLOSURE PLAN FOR THE UNLINED EVAPORATION LAGOONS AND THE SPRAY EVAPORATION AREA

GIANT REFINING COMPANY - BLOOMFIELD DISCHARGE PLAN GW-001

I. INTRODUCTION:

The Unlined Evaporation Lagoons and the Spray Evaporation Area (see Site Plan, Attachment A) have been identified in the Discharge Plan as units to be closed. Giant Refining Company - Bloomfield (GRC) has assumed the responsibility for entering into closure of those units. This closure plan will outline the closure activities and the subsequent uses of those units.

II. GENERAL INFORMATION:

1. Name of Discharger, Operator, and Owner

San Juan Refining Company
P.O. Box 159
Bloomfield, New Mexico 87413
(505) 632 8013

2. Facility Contacts

Lynn Shelton, Environmental Manager

3. Location of Facility

286.93 acres, more or less, being that portion of the NW1/4 NE1/4 and the S1/2 NE1/4 and the N1/2 NE1/4 SE1/4 of Section 27, and the S1/2 NW1/4 and the N1/2 NW1/4 SW1/4 and the SE1/4 NW1/4 SW1/4 and the NE1/4 SW1.4 of Section 26, Township 29 North, Range 11 West, NMPM, San Juan County, New Mexico.

4. Type of Operation

Giant Refining Company - Bloomfield (GRC) is a petroleum refinery with a nominal crude capacity in barrels per calendar day (bpcd) of 18,000. Processing units include crude desalting, crude distillation, catalytic hydrotreating, catalytic reforming, fluidized catalytic cracking, catalytic polymerization, diesel hydrodesulfurization, gas concentration and treating, and sulfur recovery.

Crude supplies are delivered by pipeline and tank trucks. Products are sold, via tank trucks, from a product terminal operated by GRC.

III. BACKGROUND INFORMATION:

The Unlined Evaporation Lagoons consist of two earthen dike lagoons (lined with 4-6 inches of bentonite) of approximately 2.5 acres each. The process wastewater effluent flowed from the

North Oily Water Pond into the north Unlined Lagoon and then into the south Unlined Lagoon. The water evaporated in place or was transferred to the Spray Evaporation Area to enhance evaporation. Studies showed the lagoons to seep water at a rate of 10 to 20 gallons per minute. Monitor Well MW-1, which is immediately down-gradient of the lagoons, has traditionally been sampled semi-annually to detect any contamination of the uppermost perched water table that might be associated with the seepage from these lagoons.

After completion of the Class I injection well, the ponds were decommissioned in 1994 and scheduled for closure. The water remaining in the ponds was allowed to evaporate. Soil samples around the lagoons were collected and analyzed in 1993 during the RCRA Facility Investigation and found to be non-hazardous.

The Spray Evaporation Area was used to spray process water from the Unlined Evaporation Lagoons to enhance evaporation. Although diked to prevent runoff, the area did not typically store water. Because of the dikes, the RFI study concluded that the Spray Evaporation Area as well as the Unlined Evaporation Lagoons were unlikely to allow runoff to contaminate surface waters. Monitor Well MW-5 is immediately down-gradient of the evaporation area and has been traditionally sampled semi-annually to detect any contamination to the uppermost perch water table as a result from seepage from the spray evaporation activities.

The Spray Evaporation Area was decommissioned in 1994.

GRC is preparing this Closure Plan as required by the facility's Discharge Plan GW-001, Section 6.1.4 and the Attachment To The Discharge Plan GW-001 Approval Letter, dated January 29, 1996.

IV. GEOLOGY / HYDROLOGY:

mnb
GW.001 8-14-96

Geology and hydrology at the refinery are amply documented in the Discharge Permit ~~GD~~-001, Section 9.0, Site Characteristics, and is included here by reference.

V. SAMPLING AND ANALYSIS:

GRC arranged for a technician from Philip Environmental to sample the Unlined Evaporation Lagoons, the Spray Evaporation Area, and a background sample on July 10, 1996. The samples were collected according to standard SW-846 protocol at sampling points selected by GRC and approved by the Oil Conservation Division. The sampling event of July 10, 1996 was witnessed by Mr. Denny Foust of the OCD Aztec office.

A copy of the sampling site drawings, the Soil Sample Identification Numbering System, the WQCC constituent list (including both the WQCC standard and the lab reporting limits), the approval letter from OCD dated June 20, 1996, and the soil sampling report from Philip Environmental are included as Attachment B.

The soil samples were analyzed by Inter-Mountain Laboratories, Inc. in Farmington, New Mexico. The results of those analyses were tabulated to expedite reference. The original and tabulated analytical data is presented in Attachment C.

VI. DISCUSSION OF ANALYTICAL RESULTS:

Analytical data indicates that no organic hydrocarbons were detected in either the Unlined Evaporation Lagoons or the Spray Evaporation Area. Elevated levels of some metals over the background sample were observed, particularly Iron and Aluminum. Chromium and Lead were detected at very near background levels, with Selenium not being detected in any sample. Inorganic Chloride and Sulfate were observed at slightly above background levels. pH was observed at relatively neutral levels.

GRC concludes that the analytical data does not present any justification for additional cleanup activities prior to closure and reuse of the affected areas.

VII. CLOSURE:

GRC proposes to enter into clean closure of both the Unlined Evaporation Lagoons and the Spray Evaporation Area. Sampling and analysis performed in 1993 and 1996 has demonstrated that there is no evidence of potential releases at the facility from any future use of either unit. Future uses of the units, which is described below, either make beneficial use of the unit (Unlined Evaporation Lagoons) or require site work at the unit (Spray Evaporation Area) that is similar to what would be performed in normal closure.

Based on the above conclusions, GRC proposes that no additional closure activity other than those described below will be required. Furthermore, GRC proposes that the semi-annual sampling and analysis of monitoring wells MW-1 and MW-5 be discontinued.

VIII. FUTURE USE OF THE UNITS:

GRC proposes to use the decommissioned Unlined Evaporation Lagoons as fresh water make-up ponds. These two lagoons would replace the two smaller make-up ponds that are presently in service. The additional capacity of the new lagoons would provide GRC with additional flexibility in the use of the river water make-up via additional settling time for suspended solids, particularly when the river is turbid, and additional capacity in case of river pump failure. The use of the unlined evaporation lagoons will not create an increased possibility of contamination to the uppermost perched water table. Furthermore, the seepage rates of the two sets of lagoons are nearly identical.

GRC proposes to use the Spray Evaporation Area as the site for Giant's Pipeline and Transportation truck shop and parking area as well as an office complex. Civil work performed at the site will be essentially the same as would be performed by installing and grading a soil cap under normal closure activities. The entire site would be graded and profiled to provide for construction of the new facilities which would eliminate the dikes in the spray evaporation area.

IX. CONCLUSION:

GRC has provided analytical data that corroborates the 1993 RFI data that indicates that no concentrations of hazardous constituents exist in either the Unlined Evaporation Lagoons or the Spray Evaporation Area that would require extraordinary closure activities. The future uses of the affected units will make beneficial use of the land that are occupied by the two units.

ATTACHMENT A

ATTACHMENT B

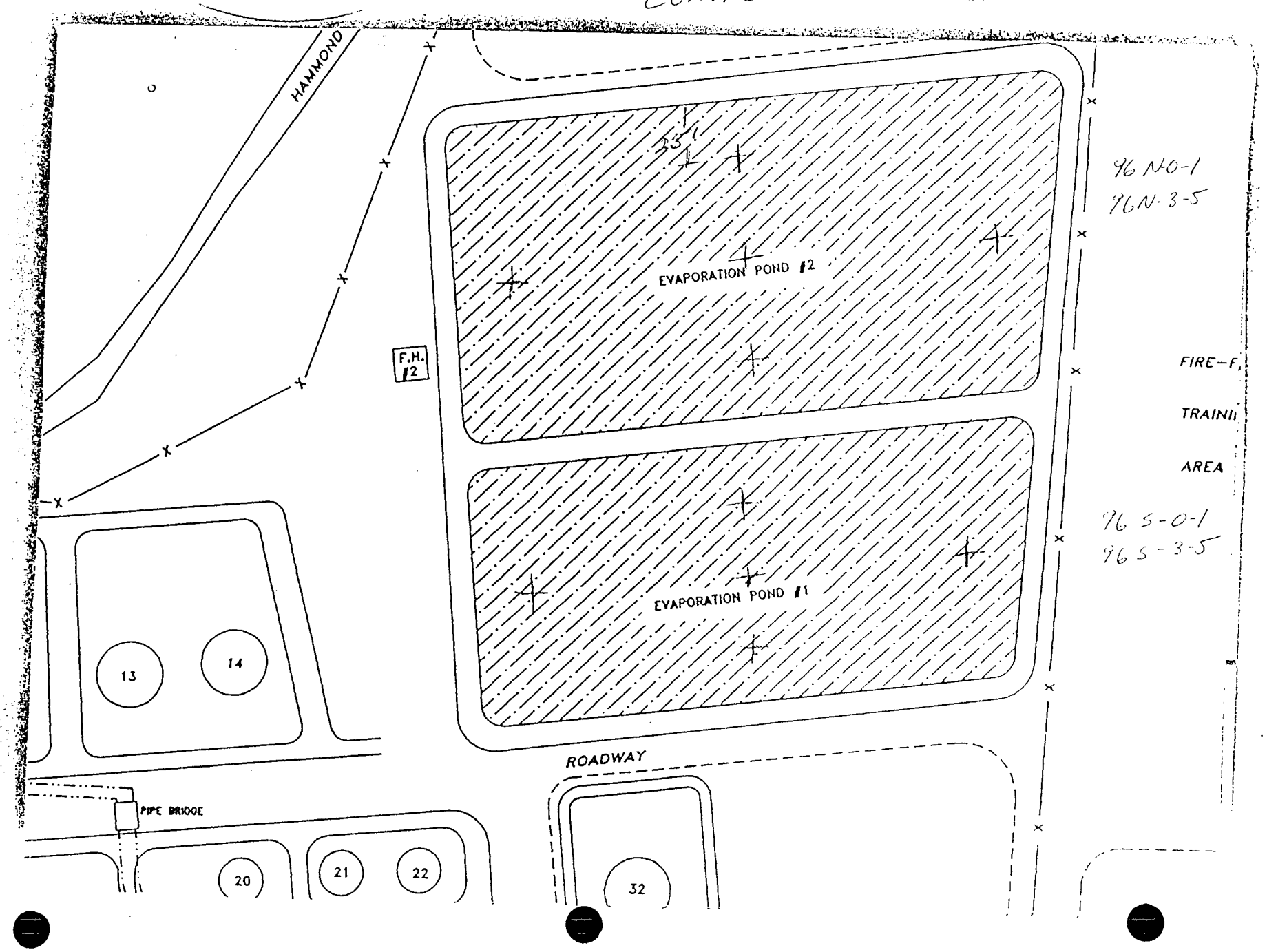
GIANT REFINING - BLOOMFIELD

7/1/96

SAMPLE LOCATION MAP

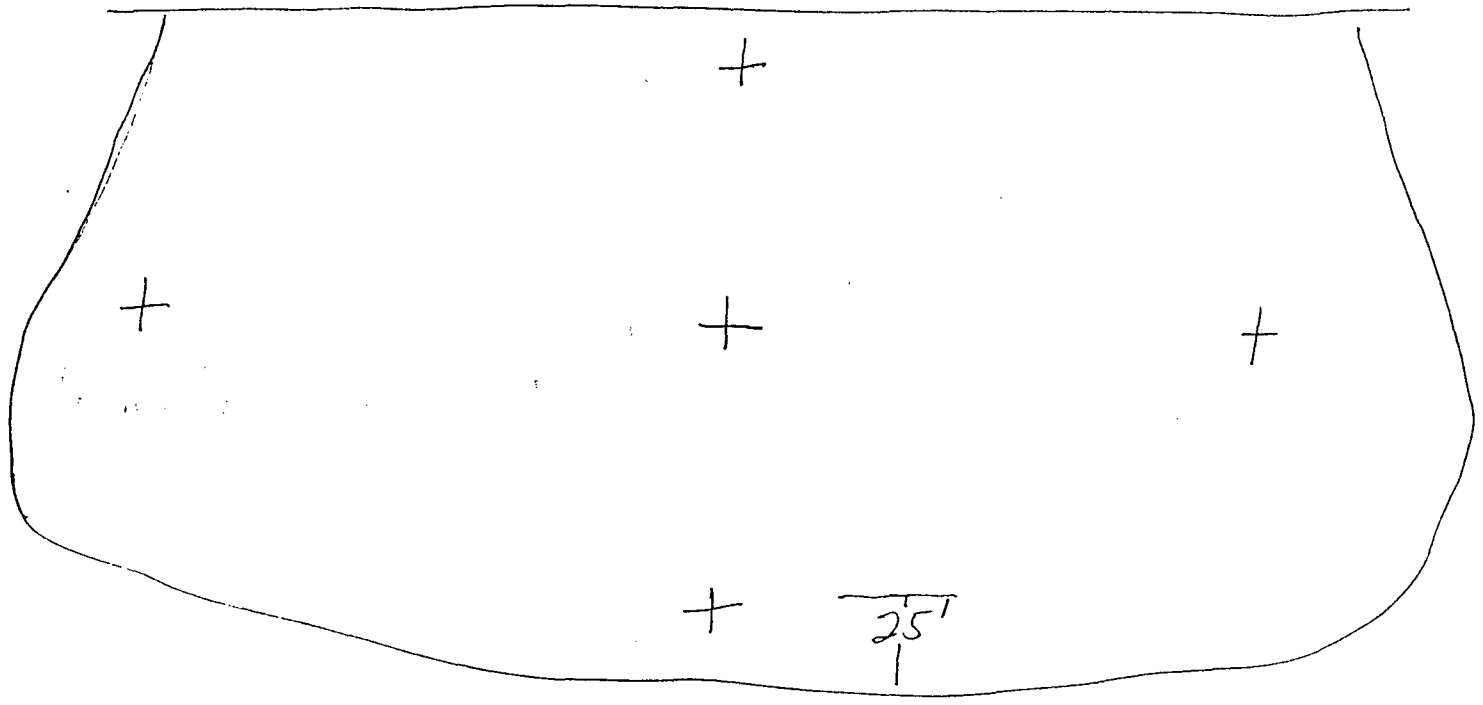
COMPOSITE AT SURFACE

COMPOSITE AT 3.0 - 3.5'



EVAPORATION SPRAY AREA

96E-0-1
96E-3-5



NOT TO SCALE TLS 7/1/96

SOIL SAMPLE IDENTIFICATION NUMBERING SYSTEM

OCD SOIL SAMPLING EVENT
JULY 10, 1996
GIANT REFINING COMPANY - BLOOMFIELD

EXAMPLE:

96 N - 0-1

96	=	1996 Sampling Event
N	=	North Evaporation Lagoon
S	=	South Evaporation Lagoon
E	=	Spray Evaporation Area
B	=	Background Sample
0-1	=	Surface to 1 foot depth interval
3-5	=	Three to five feet depth interval

Total of eight samples, each location composited.

WQCC CONSTITUENT LIST

1996 OCD SAMPLING EVENT

JULY 10, 1996

Parameter	WQCC Standard (mg/l)	Lab Reporting Limit (mg/kg)
Arsenic	0.1	0.25
Barium	1.0	1.0
Cadmium	0.01	0.05
Chromium	0.05	0.5
Cyanide	0.2	0.2
Flouride	1.6	1.6
Lead	0.05	0.25
Total Mercury	0.002	0.2
Nitrate (NO3 as N)	10.0	10.0
Selenium	0.05	0.25
Silver	0.05	0.5
Uranium	5.0	10.0
Benzene	0.01	0.2
Toluene	0.75	0.2
Carbon Tetrachloride	0.01	0.2
1,2-Dichloroethane	0.01	0.2
1,1-Dichloroethylene	0.005	0.2
1,1,2,2-Tetrachloroethylene	0.02	0.2
1,1,2-Trichloroethylene	0.1	0.2
Ethylbenzene	0.75	0.2
Total Xylenes	0.62	0.2
Methylene Chloride	0.1	0.2
Chloroform	0.1	0.2
1,1-Dichloroethane	0.025	0.2
Ethylene Dibromide	0.0001	0.2
1,1,1-Trichloroethane	0.06	0.2
1,1,2-Trichlorethane	0.01	0.2
1,1,2,2-Tetrachloroethane	0.01	0.2
Vinyl Chloride	0.001	0.2
PAHs: total Naphthalene plus monomethylnaphthalenes	0.03	0.6
Benzo(a)pyrene	0.0007	0.5
Chloride	250	250
Copper	1.0	1.0
Iron	1.0	1.25
Manganese	0.2	0.5
Phenols	0.005	1.0
Sulfate (SO4)	600	600
Zinc	10	10.0
pH	6 to 9	6 to 9
Aluminum	5.0	5.0
Boron	0.75	2.5
Cobalt	0.05	0.5
Molybdenum	1.0	1.0
Nickel	0.2	0.5

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

June 20, 1996

CERTIFIED MAIL
RETURN RECEIPT NO.P-594-835-145

Mr. Lynn Shelton
Environmental Manager
Giant Industries
P.O. Box 159
Bloomfield, NM 87413

RE: Soil Sampling Parameters
Faxed to OCD on May 6, 1996

Dear Mr. Shelton:

The New Mexico Oil Conservation Division (OCD) has reviewed the Fax submitted from Giant regarding the sampling of the soil underlying the evaporation lagoons. The OCD approves of the list with the requirement that only WQCC 3103 A, B, and C constituents be analyzed for in the soils utilizing approved sample collection and analysis methods as outlined in SW-846 and approved by the EPA. The OCD will require Giant to contact the Santa Fe Office at (505)-827-7156 and Mr. Denny Foust with the District at 334- 6178 one week before the soil samples are taken so that the OCD may have a representative at the site during the sample collection.

Please submit the results with a cover letter discussing the course of action Giant wishes to pursue with the area that are being sampled for these parameters outlined above to the Santa Fe OCD office for approval with a copy sent to Mr. Denny Foust with the Aztec District OCD office.

If Giant has any questions regarding this matter please feel free to call me at (505)-827-7156.

Sincerely,

Patricio W. Sanchez
Petroleum Engineering Specialist

XC: Mr. Denny Foust

PHILIP ENVIRONMENTAL

Environmental Services Group
Southern Region

July 22, 1996

Project 16633

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

RE: Report for Soil Sampling at Giant Refining Company's Evaporation Spray Areas at the Bloomfield Refinery, Bloomfield, New Mexico

Dear Mr. Shelton:

On July 10, 1996, Philip Environmental Services Corporation (Philip) initiated field work for soil sampling at Giant Refining Company's (Giant) Bloomfield Refinery, Bloomfield, New Mexico. Composite soil samples were collected within two separate Evaporation Lagoons and one Evaporation Spray Area, located at the Bloomfield Refinery, in addition to the collection of two composite background samples.

Sampling activities were conducted in the presence of representatives from Giant and the New Mexico Oil Conservation Division. Samples were preserved on ice and hand delivered by Giant, under chain of custody, to Inter-Mountain Laboratories Inc., in Farmington, New Mexico and were analyzed for New Mexico Water Quality Control Commission (WQCC) parameters, which are presented in Attachment A.

METHODOLOGY

Five-point composite soil samples were collected from two distinct layers within each evaporation Lagoon. One sample point was located in the middle of the Lagoon, with the other four sample points at locations 25 feet from each side of the containment dike in each Lagoon. Sample locations are presented in Attachment B. The first five-point composite sample was collected from the surface to approximately 1 foot below ground surface (bgs). The second five-point composite sample was collected from approximately 3 -5 feet bgs.

In addition to the samples collected within the three Evaporation Lagoons, two background samples were collected from an area upgradient of the Evaporation Lagoons. The background samples were collected from two separate borings, which were composited at intervals of 0 -1 foot bgs and 3 -5 foot bgs.

Samples were collected from each boring by advancing a stainless steel hand auger to the desired depth, and placing the soil in a stainless steel bowl. After soil was collected from the specified interval from each of the five separate borings within the Lagoon, it was then composited and containerized. Sample containers were labeled with a unique identification number, depth of collection, and sample time and date. Samples were then preserved on ice prior to delivery to the laboratory.

Prior to sample collection, all sampling equipment was decontaminated with an Alconox™ detergent and potable water wash, followed by a propanol rinse. When not in use, sampling equipment was kept covered to avoid potential contamination.

SUMMARY

A total of six five-point composite samples were collected from the Evaporation Lagoons, with two five-point composite samples collected from the background area. Sample identification numbers, locations, and soil descriptions are presented in Soil Sampling Data Sheets in Attachment C. Soil collected from the North Evaporation Lagoon from the 0 -1 foot and 3 -5 foot bgs intervals exhibited a black discolored sandy clay interval. Soil collected form the South Evaporation Lagoon exhibited a dark gray discolored sandy clay interval within the 0 -1 foot bgs sample interval. Samples collected from the spray evaporation area and the background area did not exhibit any visible discoloration.

If you have any questions or require further information, please feel free to contact Cory M. Chance at Philip's Farmington, New Mexico office at (505) 326-2262.

Sincerely,

PHILIP ENVIRONMENTAL SERVICES CORPORATION

Cory M. Chance

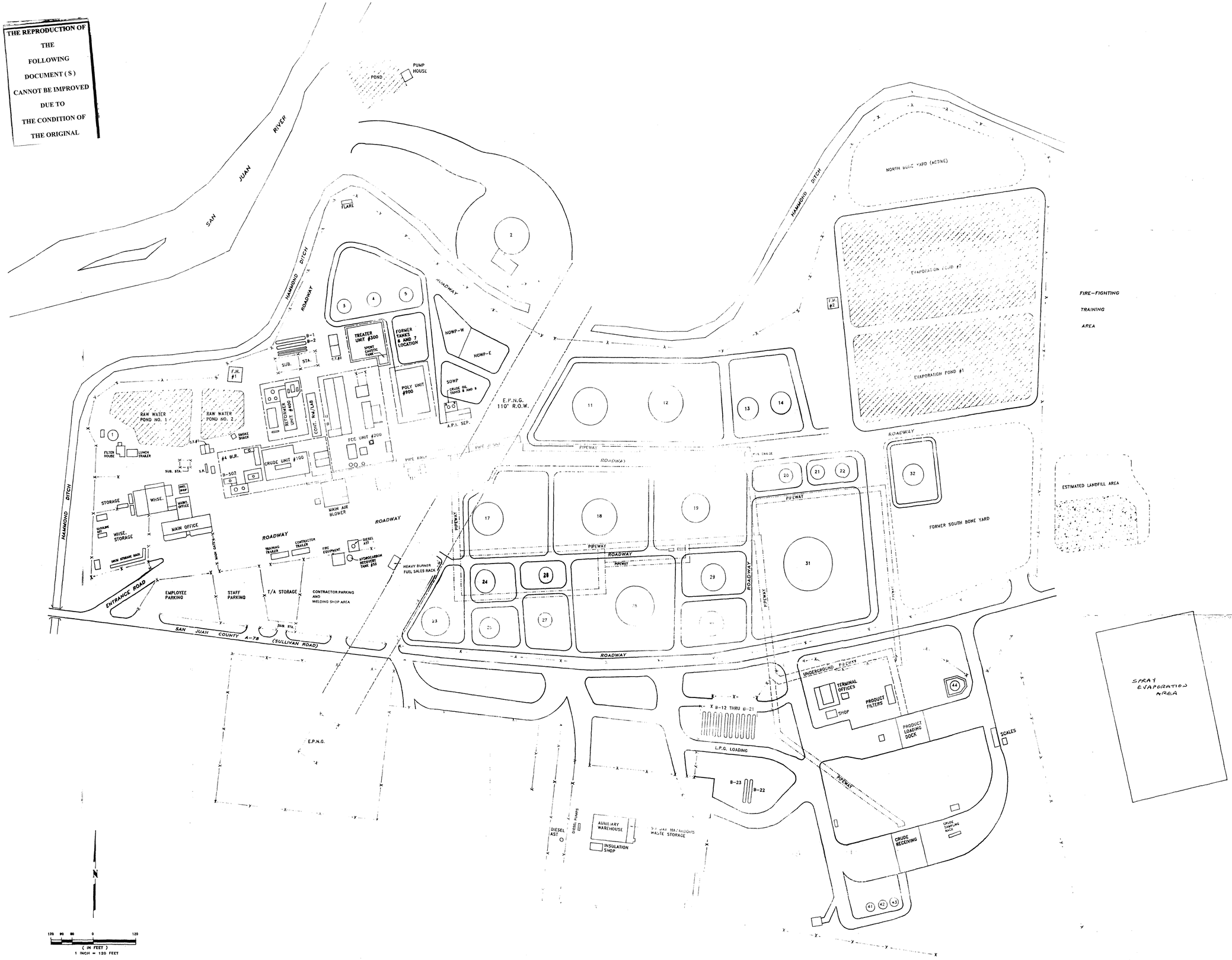
Cory M. Chance
Geologist

Attachments:

A. WQCC Analytical Parameters
B. Sample Locations
C. Soil Sampling Data forms

J:16633\report

ATTACHMENT A



LEGEND

- PIPEWAY
- UNDERGROUND PIPEWAY
- FENCE

SIGNATURE	DATE
PROJECT GEO:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990 BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NEW MEXICO 87106
(505) 242-3113

SITE PLAN

DESIGNED BY:	DRAFTED BY:	CHECKED BY:
	J. ML	

DATE:	FILE:
FEBRUARY-1993	SITEPLAN.DWG
PROJECT NO.: 023353014	CONTRACT:
DRAWING:	REVISION:

FIGURE 4

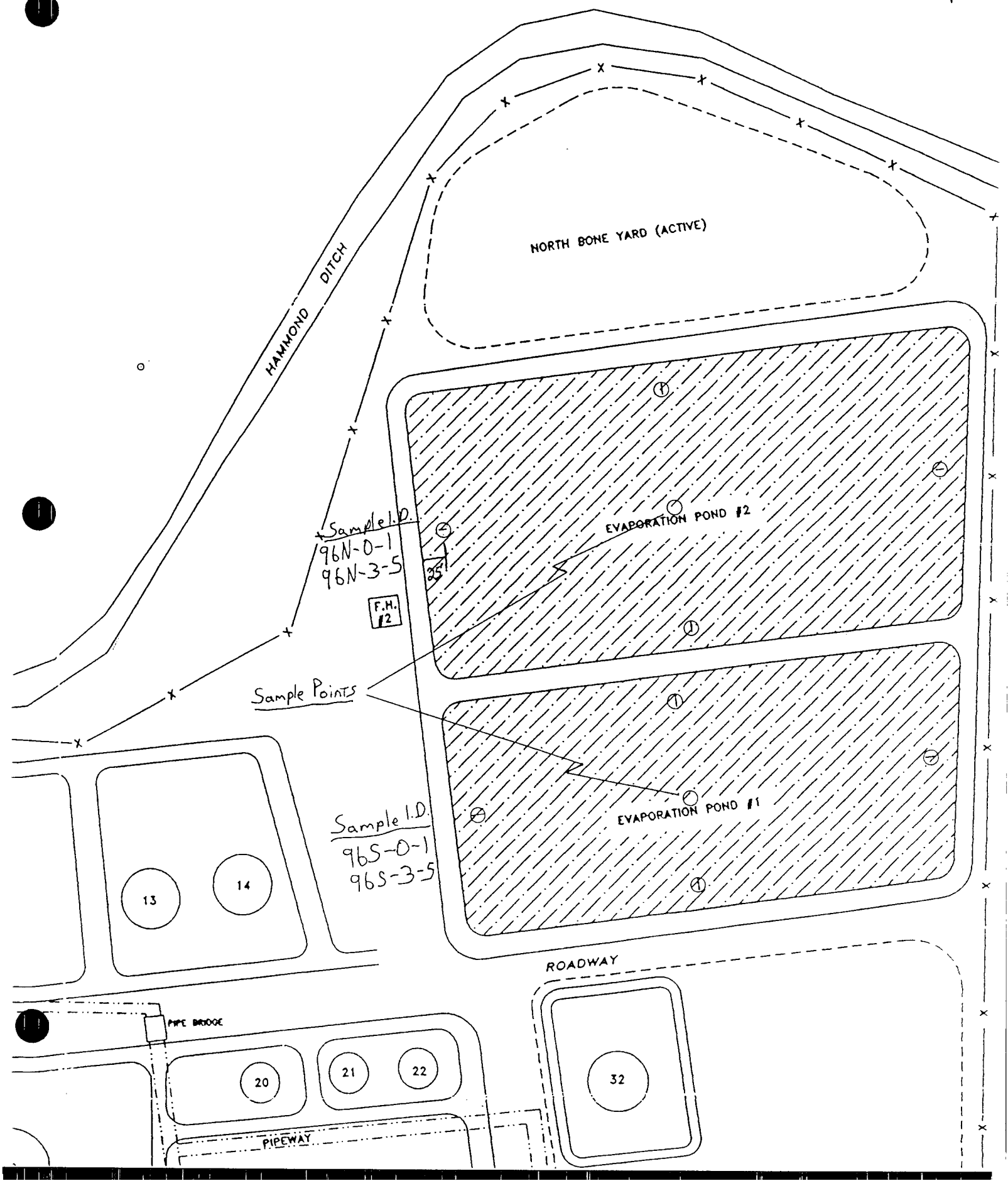
WQCC CONSTITUENT LIST

1996 OCD SAMPLING EVENT

JULY 10, 1996

Parameter	WQCC Standard (mg/l)	Lab Reporting Limit (mg/kg)
Arsenic	0.1	0.25
Barium	1.0	1.0
Cadmium	0.01	0.05
Chromium	0.05	0.5
Cyanide	0.2	0.2
Flouride	1.6	1.6
Lead	0.05	0.25
Total Mercury	0.002	0.2
Nitrate (NO3 as N)	10.0	10.0
Selenium	0.05	0.25
Silver	0.05	0.5
Uranium	5.0	10.0
Benzene	0.01	0.2
Toluene	0.75	0.2
Carbon Tetrachloride	0.01	0.2
1,2-Dichloroethane	0.01	0.2
1,1-Dichloroethylene	0.005	0.2
1,1,2,2-Tetrachloroethylene	0.02	0.2
1,1,2-Trichloroethylene	0.1	0.2
Ethylbenzene	0.75	0.2
Total Xylenes	0.62	0.2
Methylene Chloride	0.1	0.2
Chloroform	0.1	0.2
1,1-Dichloroethane	0.025	0.2
Ethylene Dibromide	0.0001	0.2
1,1,1-Trichloroethane	0.06	0.2
1,1,2-Trichlorethane	0.01	0.2
1,1,2,2-Tetrachloroethane	0.01	0.2
Vinyl Chloride	0.001	0.2
PAHs: total Naphthalene plus monomethylnaphthalenes	0.03	0.6
Benzo(a)pyrene	0.0007	0.5
Chloride	250	250
Copper	1.0	1.0
Iron	1.0	1.25
Manganese	0.2	0.5
Phenols	0.005	1.0
Sulfate (SO4)	600	600
Zinc	10	10.0
pH	6 to 9	6 to 9
Aluminum	5.0	5.0
Boron	0.75	2.5
Cobalt	0.05	0.5
Molybdenum	1.0	1.0
Nickel	0.2	0.5

ATTACHMENT B


N
NORTH BONE YARD (ACTIVE)
HAMMOND DITCH
Sample I.D.
96N-0-1
96N-3-5
25'
F.H. #2
EVAPORATION POND #2
Sample Points
EVAPORATION POND #1
Sample I.D.
96S-0-1
96S-3-5
13
14
ROADWAY
PIPE BRIDGE
20
21
22
32
PIPEWAY

PHILIP ENVIRONMENTAL

SITE SKETCH

Serial No. SS- Title Evaporation Spray Area + Background

Project Name Giant Soil Sampling Project No. 16633

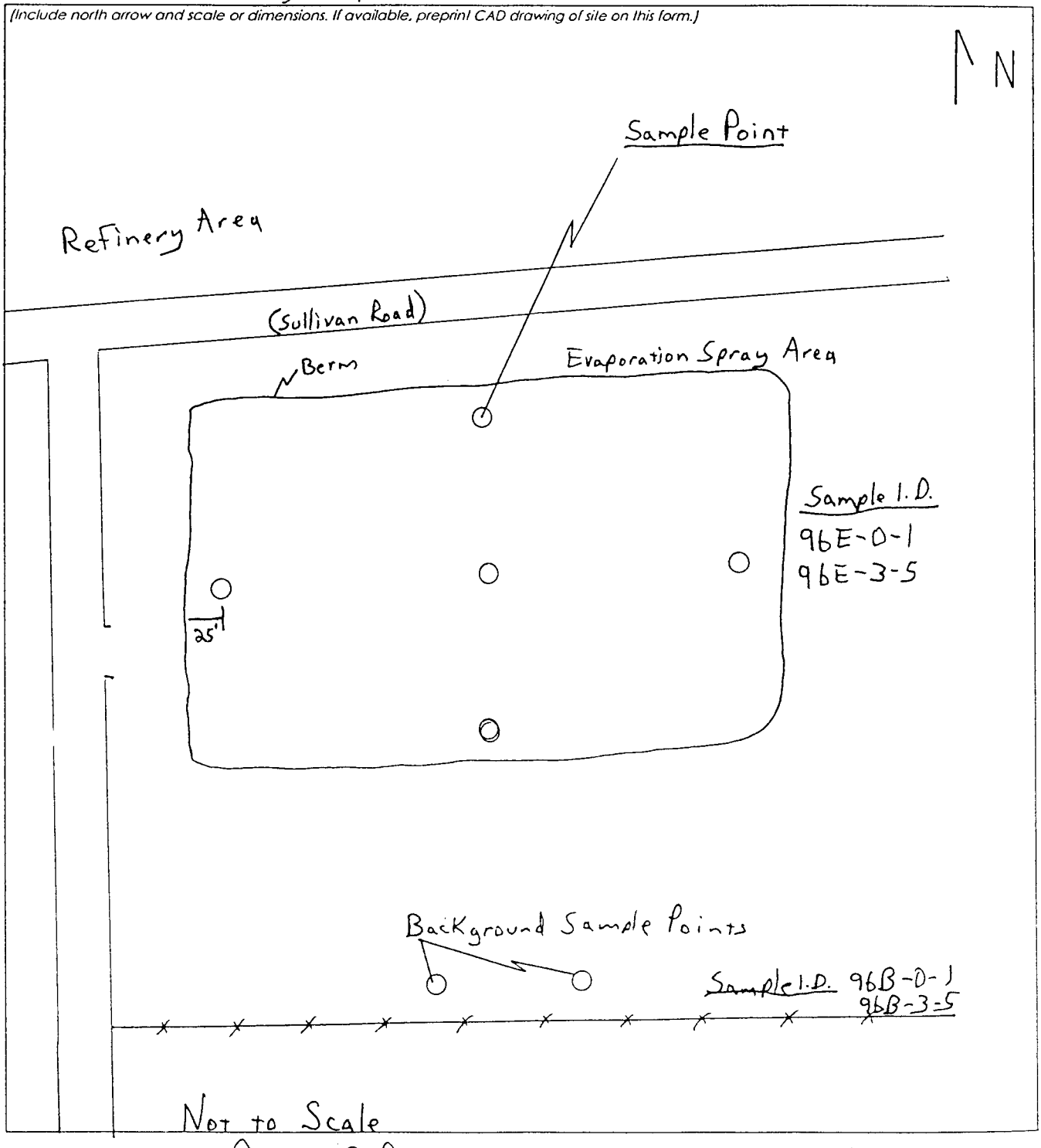
Project Manager CM Chance Phase.Task No. 1000.77

Client Company Giant Refining Co.

Site Name Bloomfield Refinery

Site Address Bloomfield, NM

(Include north arrow and scale or dimensions. If available, preprint CAD drawing of site on this form.)



Sketched by (signature) Cory Chance Date 7/11/96

ATTACHMENT C

PHILIP ENVIRONMENTAL

SOIL/SEDIMENT/SLUDGE SAMPLING DATA

Serial No. SSSSD

Date 7/10/96

Project Name Giant Soil Sampling

Project No. 16633

Project Manager CM Chance

Phase.Task No. 1000 .77

Client Company Giant

Site Name Giant Refinery

Site Address Bloomfield, New Mexico

Sampling Method
- ☑ Hand Auger
- ☐ Spoon
- ☐ Backhoe
- ☐ Drill Rig
- ☐ Other

QA
- ☐ Primary
- ☐ Duplicate

Reason For Collection
- ☑ Lab Analysis
- ☐ On-Site Headspace
- ☐ Physical Testing
- ☐ Other

Type of Sample
- ☐ Grab
- ☑ Composite

Portable Screening Instrument Used ☐ None

Type	Manufacturer	Model
☐ PID (Lamp ____ eV)		
☐ FID		
☐ CGI		
☐ Other		
☐ Other		

Sample No.	Location	Time Collected	Sample Type: Soil	Sample Type: Sed.	Sample Type: Slg.	Volume Collected	Field Instrument Reading
96N-0-1	North Evaporation Lagoon	1015	✓			3-500 ml 1-1000 ml	
	Lt br-br silty SAND abnt clay, F-med, tr gravel, BIK clayey sand						
96N-3-5	A/A	1130	✓			A/A	
96S-0-1	South Evaporation Lagoon	1345	✓			A/A	
	DK Gry, sandy clay, wet, odor						
96S-3-5	lt br sand, vf-f sand, mod clay, sl moist, tr gravel	1430	✓			A/A	

Chain-of-Custody Form Number _____

Comments _____

Signature Cory M Chance Date 7/10/96 Reviewer _____ Date _____

PHILIP ENVIRONMENTAL

SOIL/SEDIMENT/SLUDGE SAMPLING DATA

Serial No. SSSSD

Date 7/11/96

Project Name Giant Soil Sampling

Project No. 16633

Project Manager CM Chance

Phase.Task No. 1000.77

Client Company Giant

Site Name Giant Refinery (Bloomfield Refinery)

Site Address Bloomfield, New Mexico

Sampling Method
- ☑ Hand Auger
- ☐ Spoon
- ☐ Backhoe
- ☐ Drill Rig
- ☐ Other

QA
- ☐ Primary
- ☐ Duplicate

Reason For Collection
- ☑ Lab Analysis
- ☐ On-Site Headspace
- ☐ Physical Testing
- ☐ Other

Portable Screening Instrument Used ☐ None

Type	Manufacturer	Model
☐ PID (Lamp ____ eV)		
☐ FID		
☐ CGI		
☐ Other		
☐ Other		

Type of Sample
- ☐ Grab
- ☑ Composite

Sample No.	Location	Time Collected	Sample Type			Volume Collected	Field Instrument Reading
			Soil	Sed.	Slg.		
96E-0-1	Spray Evaporation Area	0945	✓			3-500 ml 1-1000 ml	
	Lt Br SiLT, tr f-med sand, tr-mod clay, dry						
96E-3-5	Lt Br silty CLAY, tr f-med sand, dry	1045	✓			A/A	
96B-0-1	Background (S. of Evap. Area along S. fenceline)	1145	✓			A/A	
	lt br silty, tr vf-f sand, clay, loose, dry						
96B-3-5	Lt br silty sand, vf-f sand, tr clay, loose, dry	1200	✓			A/A	

Chain-of-Custody Form Number _____

Comments _____

Signature Cory M. Chance Date 7/11/96 Reviewer _____ Date _____

ATTACHMENT C

TABULATED ANALYTICAL DATA FOR CLOSURE ACTIVITIES

GIANT REFINING COMPANY - BLOOMFIELD

JULY, 1996

NORTH UNLINED LAGOON

Parameter	Units	0-1 Foot Result	3-5 Feet Result	WQCC Standard	Laboratory Limit
Aluminum	mg/kg	6,144.00	6,020.00	5.00	5.00
Arsenic	mg/kg	<0.50	<0.50	0.10	0.25
Barium	mg/kg	99.40	93.20	1.00	1.00
Boron	mg/kg	49.50	47.30	0.75	2.50
Cadmium	mg/kg	<0.10	<0.10	0.01	0.05
Chromium	mg/kg	8.00	5.80	0.05	0.50
Cobalt	mg/kg	3.38	3.01	0.05	0.50
Copper	mg/kg	6.09	4.68	1.00	1.00
Iron	mg/kg	7,722.00	8,416.00	1.00	1.25
Lead	mg/kg	7.22	6.80	0.05	0.25
Manganese	mg/kg	140.00	173.00	0.20	0.50
Mercury	mg/kg	<0.10	<0.10	0.002	0.20
Molybdenum	mg/kg	<1.00	<1.00	1.00	1.00
Nickel	mg/kg	5.64	5.46	0.20	0.50
Selenium	mg/kg	<0.50	<0.50	0.05	0.25
Silver	mg/kg	<1.00	<1.00	0.05	0.50
Uranium	mg/kg	54.90	60.40	5.00	10.00
Zinc	mg/kg	30.30	23.30	10.00	10.00
Lab pH	s.u.	6.90	8.00	6 to 9	6 to 9
Fluoride	ppm	0.53	1.25	1.60	1.60
Chloride	ppm	3783.00	998.00	250.00	250.00
Sulfate	ppm	3638.00	370.00	600.00	600.00
Cyanide	mg/Kg	<0.10	<0.10	0.20	0.20
Nitrate as Nitrogen	ppm	0.46	0.05	10.00	10.00
Benzene	mg/kg	ND	ND	0.01	0.20
Toluene	mg/kg	ND	ND	0.75	0.20
Carbon Tetrachloride	mg/kg	ND	ND	0.01	0.20
1,2-Dichloroethane	mg/kg	ND	ND	0.01	0.20
1,1-Dichloroethylene	mg/kg	ND	ND	0.0005	0.20
1,1,2,2-Tetrachloroethylene	mg/kg	ND	ND	0.02	0.20
1,1,2-Trichloroethylene	mg/kg	ND	ND	0.1	0.20
Ethylbenzene	mg/kg	ND	ND	0.75	0.20
Total Xylenes	mg/kg	ND	ND	0.62	0.20
Methylene Chloride	mg/kg	ND	ND	0.1	0.20
Chloroform	mg/kg	ND	ND	0.1	0.20
1,1-Dichloroethane	mg/kg	ND	ND	0.025	0.20
Ethylene Dibromide	mg/kg	ND	ND	0.0001	0.20
1,1,1-Trichloroethane	mg/kg	ND	ND	0.06	0.20
1,1,2-Trichloroethane	mg/kg	ND	ND	0.01	0.20
1,1,2,2-Tetrachloroethane	mg/kg	ND	ND	0.01	0.20
Vinyl Chloride	mg/kg	ND	ND	0.01	0.20
PAHs: total Naphthalene plus	mg/kg				
monomethylnaphthalenes	mg/kg	ND	ND	0.03	0.60
Benzo(a)pyrene	mg/kg	ND	ND	0.0007	0.50

TABULATED ANALYTICAL DATA FOR CLOSURE ACTIVITIES

GIANT REFINING COMPANY - BLOOMFIELD

JULY, 1996

SOUTH UNLINED LAGOON

Parameter	Units	0-1 Foot Result	3-5 Feet Result	WQCC Standard	Laboratory Limit
Aluminum	mg/kg	7,646.00	3,820.00	5.00	5.00
Arsenic	mg/kg	<0.50	<0.50	0.10	0.25
Barium	mg/kg	154.00	48.10	1.00	1.00
Boron	mg/kg	47.60	40.80	0.75	2.50
Cadmium	mg/kg	<0.10	<0.10	0.01	0.05
Chromium	mg/kg	30.90	4.20	0.05	0.50
Cobalt	mg/kg	3.99	1.78	0.05	0.50
Copper	mg/kg	10.70	3.46	1.00	1.00
Iron	mg/kg	10,486.00	5,068.00	1.00	1.25
Lead	mg/kg	7.72	4.93	0.05	0.25
Manganese	mg/kg	230.00	107.00	0.20	0.50
Mercury	mg/kg	<0.10	<0.10	0.002	0.20
Molybdenum	mg/kg	<1.00	<1.00	1.00	1.00
Nickel	mg/kg	8.34	3.04	0.20	0.50
Selenium	mg/kg	<0.50	<0.50	0.05	0.25
Silver	mg/kg	3.11	<1.00	0.05	0.50
Uranium	mg/kg	69.50	29.50	5.00	10.00
Zinc	mg/kg	52.30	15.70	10.00	10.00
Lab pH	s.u.	7.10	7.90	6 to 9	6 to 9
Fluoride	ppm	0.35	2.71	1.60	1.60
Chloride	ppm	2711.00	445.00	250.00	250.00
Sulfate	ppm	3193.00	469.00	600.00	600.00
Cyanide	mg/Kg	0.25	<0.10	0.20	0.20
Nitrate as Nitrogen	ppm	0.69	0.08	10.00	10.00
Benzene	mg/kg	ND	ND	0.01	0.20
Toluene	mg/kg	ND	ND	0.75	0.20
Carbon Tetrachloride	mg/kg	ND	ND	0.01	0.20
1,2-Dichloroethane	mg/kg	ND	ND	0.01	0.20
1,1-Dichloroethylene	mg/kg	ND	ND	0.0005	0.20
1,1,2,2-Tetrachloroethylene	mg/kg	ND	ND	0.02	0.20
1,1,2-Trichloroethylene	mg/kg	ND	ND	0.1	0.20
Ethylbenzene	mg/kg	ND	ND	0.75	0.20
Total Xylenes	mg/kg	ND	ND	0.62	0.20
Methylene Chloride	mg/kg	ND	ND	0.1	0.20
Chloroform	mg/kg	ND	ND	0.1	0.20
1,1-Dichloroethane	mg/kg	ND	ND	0.025	0.20
Ethylene Dibromide	mg/kg	ND	ND	0.0001	0.20
1,1,1-Trichloroethane	mg/kg	ND	ND	0.06	0.20
1,1,2-Trichloroethane	mg/kg	ND	ND	0.01	0.20
1,1,2,2-Tetrachloroethane	mg/kg	ND	ND	0.01	0.20
Vinyl Chloride	mg/kg	ND	ND	0.01	0.20
PAHs: total Naphthalene plus	mg/kg				
monomethylnaphthalenes	mg/kg	ND	ND	0.03	0.60
Benzo(a)pyrene	mg/kg	ND	ND	0.0007	0.50

TABULATED ANALYTICAL DATA FOR CLOSURE ACTIVITIES

GIANT REFINING COMPANY - BLOOMFIELD

JULY, 1996

SPRAY EVAPORATION AREA

Parameter	Units	0-1 Foot Result	3-5 Feet Result	WQCC Standard	Laboratory Limit
Aluminum	mg/kg	10,122.00	7,102.00	5.00	5.00
Arsenic	mg/kg	1.16	0.53	0.10	0.25
Barium	mg/kg	195.00	189.00	1.00	1.00
Boron	mg/kg	55.80	56.90	0.75	2.50
Cadmium	mg/kg	0.16	<0.10	0.01	0.05
Chromium	mg/kg	9.48	7.48	0.05	0.50
Cobalt	mg/kg	5.06	4.11	0.05	0.50
Copper	mg/kg	3.58	2.32	1.00	1.00
Iron	mg/kg	13,097.00	10,569.00	1.00	1.25
Lead	mg/kg	11.60	7.69	0.05	0.25
Manganese	mg/kg	223.00	240.00	0.20	0.50
Mercury	mg/kg	<0.10	<0.10	0.002	0.20
Molybdenum	mg/kg	<1.00	1.05	1.00	1.00
Nickel	mg/kg	1.16	7.38	0.20	0.50
Selenium	mg/kg	<0.50	<0.50	0.05	0.25
Silver	mg/kg	<1.00	<1.00	0.05	0.50
Uranium	mg/kg	86.40	66.40	5.00	10.00
Zinc	mg/kg	45.30	30.60	10.00	10.00
Lab pH	s.u.	7.60	7.80	6 to 9	6 to 9
Fluoride	ppm	1.15	1.76	1.60	1.60
Chloride	ppm	2582.00	1235.00	250.00	250.00
Sulfate	ppm	2156.00	724.00	600.00	600.00
Cyanide	mg/Kg	<0.10	<0.10	0.20	0.20
Nitrate as Nitrogen	ppm	6.42	0.51	10.00	10.00
Benzene	mg/kg	ND	ND	0.01	0.20
Toluene	mg/kg	ND	ND	0.75	0.20
Carbon Tetrachloride	mg/kg	ND	ND	0.01	0.20
1,2-Dichloroethane	mg/kg	ND	ND	0.01	0.20
1,1-Dichloroethylene	mg/kg	ND	ND	0.0005	0.20
1,1,2,2-Tetrachloroethylene	mg/kg	ND	ND	0.02	0.20
1,1,2-Trichloroethylene	mg/kg	ND	ND	0.1	0.20
Ethylbenzene	mg/kg	ND	ND	0.75	0.20
Total Xylenes	mg/kg	ND	ND	0.62	0.20
Methylene Chloride	mg/kg	ND	ND	0.1	0.20
Chloroform	mg/kg	ND	ND	0.1	0.20
1,1-Dichloroethane	mg/kg	ND	ND	0.025	0.20
Ethylene Dibromide	mg/kg	ND	ND	0.0001	0.20
1,1,1-Trichloroethane	mg/kg	ND	ND	0.06	0.20
1,1,2-Trichloroethane	mg/kg	ND	ND	0.01	0.20
1,1,2,2-Tetrachloroethane	mg/kg	ND	ND	0.01	0.20
Vinyl Chloride	mg/kg	ND	ND	0.01	0.20
PAHs: total Naphthalene plus	mg/kg				
monomethylnaphthalenes	mg/kg	ND	ND	0.03	0.60
Benzo(a)pyrene	mg/kg	ND	ND	0.0007	0.50

TABULATED ANALYTICAL DATA FOR CLOSURE ACTIVITIES

GIANT REFINING COMPANY - BLOOMFIELD

JULY, 1996

BACKGROUND SAMPLE

Parameter	Units	0-1 Foot Result	3-5 Feet Result	WQCC Standard	Laboratory Limit
Aluminum	mg/kg	6,199.00	3,266.00	5.00	5.00
Arsenic	mg/kg	<0.50	<0.50	0.10	0.25
Barium	mg/kg	166.00	56.00	1.00	1.00
Boron	mg/kg	55.00	51.90	0.75	2.50
Cadmium	mg/kg	0.10	<0.10	0.01	0.05
Chromium	mg/kg	6.85	3.16	0.05	0.50
Cobalt	mg/kg	3.84	1.83	0.05	0.50
Copper	mg/kg	2.18	3.87	1.00	1.00
Iron	mg/kg	9,401.00	4,751.00	1.00	1.25
Lead	mg/kg	8.00	4.99	0.05	0.25
Manganese	mg/kg	205.00	113.00	0.20	0.50
Mercury	mg/kg	<0.10	<0.10	0.002	0.20
Molybdenum	mg/kg	<1.00	<1.00	1.00	1.00
Nickel	mg/kg	7.27	3.46	0.20	0.50
Selenium	mg/kg	<0.50	<0.50	0.05	0.25
Silver	mg/kg	<1.00	<1.00	0.05	0.50
Uranium	mg/kg	84.10	31.10	5.00	10.00
Zinc	mg/kg	33.20	*	10.00	10.00
Lab pH	s.u.	7.50	8.20	6 to 9	6 to 9
Fluoride	ppm	0.77	0.38	1.60	1.60
Chloride	ppm	1054.00	324.00	250.00	250.00
Sulfate	ppm	2790.00	395.00	600.00	600.00
Cyanide	mg/Kg	<0.10	<0.10	0.20	0.20
Nitrate as Nitrogen	ppm	14.20	<0.05	10.00	10.00
Benzene	mg/kg	ND	ND	0.01	0.20
Toluene	mg/kg	ND	ND	0.75	0.20
Carbon Tetrachloride	mg/kg	ND	ND	0.01	0.20
1,2-Dichloroethane	mg/kg	ND	ND	0.01	0.20
1,1-Dichloroethylene	mg/kg	ND	ND	0.0005	0.20
1,1,2,2-Tetrachloroethylene	mg/kg	ND	ND	0.02	0.20
1,1,2-Trichloroethylene	mg/kg	ND	ND	0.1	0.20
Ethylbenzene	mg/kg	ND	ND	0.75	0.20
Total Xylenes	mg/kg	ND	ND	0.62	0.20
Methylene Chloride	mg/kg	ND	ND	0.1	0.20
Chloroform	mg/kg	ND	ND	0.1	0.20
1,1-Dichloroethane	mg/kg	ND	ND	0.025	0.20
Ethylene Dibromide	mg/kg	ND	ND	0.0001	0.20
1,1,1-Trichloroethane	mg/kg	ND	ND	0.06	0.20
1,1,2-Trichloroethane	mg/kg	ND	ND	0.01	0.20
1,1,2,2-Tetrachloroethane	mg/kg	ND	ND	0.01	0.20
Vinyl Chloride	mg/kg	ND	ND	0.01	0.20
PAHs: total Naphthalene plus	mg/kg				
monomethylnaphthalenes	mg/kg	ND	ND	0.03	0.60
Benzo(a)pyrene	mg/kg	ND	ND	0.0007	0.50

Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

5 August 1996

Lynn Shelton
Giant Refining Co.
P. O. Box 159
Bloomfield, NM 87413

Mr. Shelton:

Enclosed please find the report for the samples received by our laboratory for analysis on July 10, 1996.

If you have any questions about the results of these analyses, please don't hesitate to call me at your convenience.

Sincerely,

Anna Schaerer

Anna Schaerer
Organic Analyst/IML-Farmington

Enclosure

xc: File

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96S-0-1	Date Reported:	08/05/96
Laboratory ID:	0396G01318	Date Sampled:	07/10/96
Sample Matrix:	Soil	Time Sampled:	1:30 PM
Condition:	Cool/Intact	Date Received:	07/10/96

Parameter	Analytical Result	Units
Lab pH	7.1	s.u.
Fluoride	0.35	ppm
Chloride	2,711	ppm
Sulfate	3,193	ppm
Cyanide	0.25	mg/Kg
Nitrate as Nitrogen	0.69	ppm
Trace Metals (Total)		
Aluminum	7,646	mg/Kg
Arsenic	<0.5	mg/Kg
Barium	154	mg/Kg
Boron	47.6	mg/Kg
Cadmium	<0.10	mg/Kg
Chromium	30.9	mg/Kg
Cobalt	3.99	mg/Kg
Copper	10.7	mg/Kg
Iron	10,486	mg/Kg
Lead	7.72	mg/Kg
Manganese	230	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	<1.00	mg/Kg
Nickel	8.34	mg/Kg
Selenium	<0.50	mg/Kg
Silver	3.11	mg/Kg
Uranium	69.5	mg/Kg
Zinc	52.3	mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96S-3-5	Date Reported:	08/05/96
Laboratory ID:	0396G01319	Date Sampled:	07/10/96
Sample Matrix:	Soil	Time Sampled:	2:30 PM
Condition:	Cool/Intact	Date Received:	07/10/96

Parameter	Analytical Result	Units
Lab pH	7.9	s.u.
Fluoride	2.71	ppm
Chloride	445	ppm
Sulfate	469	ppm
Cyanide	<0.10	mg/Kg
Nitrate as Nitrogen	0.08	ppm
Trace Metals (Total)		
Aluminum	3,820	mg/Kg
Arsenic	<0.50	mg/Kg
Barium	48.1	mg/Kg
Boron	40.8	mg/Kg
Cadmium	<0.10	mg/Kg
Chromium	4.20	mg/Kg
Cobalt	1.78	mg/Kg
Copper	3.46	mg/Kg
Iron	5,068	mg/Kg
Lead	4.93	mg/Kg
Manganese	107	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	<1.0	mg/Kg
Nickel	3.04	mg/Kg
Selenium	<0.50	mg/Kg
Silver	<1.0	mg/Kg
Uranium	29.5	mg/Kg
Zinc	15.7	mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96N-0-1	Date Reported:	08/05/96
Laboratory ID:	0396G01320	Date Sampled:	07/10/96
Sample Matrix:	Soil	Time Sampled:	10:11 AM
Condition:	Cool/Intact	Date Received:	07/10/96

Parameter	Analytical Result	Units
Lab pH	6.9	s.u.
Fluoride	0.53	ppm
Chloride	3,783	ppm
Sulfate	3,638	ppm
Cyanide	<0.10	mg/Kg
Nitrate as Nitrogen	0.46	ppm
Trace Metals (Total)		
Aluminum	6,144	mg/Kg
Arsenic	<0.50	mg/Kg
Barium	99.4	mg/Kg
Boron	49.5	mg/Kg
Cadmium	<0.10	mg/Kg
Chromium	8.00	mg/Kg
Cobalt	3.38	mg/Kg
Copper	6.09	mg/Kg
Iron	7,722	mg/Kg
Lead	7.22	mg/Kg
Manganese	140	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	<1.00	mg/Kg
Nickel	5.64	mg/Kg
Selenium	<0.50	mg/Kg
Silver	<1.0	mg/Kg
Uranium	54.9	mg/Kg
Zinc	30.3	mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96N-3-5	Date Reported:	08/05/96
Laboratory ID:	0396G01321	Date Sampled:	07/10/96
Sample Matrix:	Soil	Time Sampled:	11:30 AM
Condition:	Cool/Intact	Date Received:	07/10/96

Parameter	Analytical Result	Units
Lab pH	8.0	s.u.
Fluoride	1.25	ppm
Chloride	998	ppm
Sulfate	370	ppm
Cyanide	<0.10	mg/Kg
Nitrate as Nitrogen	0.05	ppm
Trace Metals (Total)		
Aluminum	6,020	mg/Kg
Arsenic	<0.50	mg/Kg
Barium	93.2	mg/Kg
Boron	47.3	mg/Kg
Cadmium	<0.10	mg/Kg
Chromium	5.80	mg/Kg
Cobalt	3.01	mg/Kg
Copper	4.68	mg/Kg
Iron	8,416	mg/Kg
Lead	6.80	mg/Kg
Manganese	173	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	<1.0	mg/Kg
Nickel	5.46	mg/Kg
Selenium	<0.50	mg/Kg
Silver	<1.0	mg/Kg
Uranium	60.4	mg/Kg
Zinc	23.3	mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis

Total Metals

Client:	**Giant Refining**	Date Reported:	08/05/96
Project:	Bloomfield	Date Sampled:	07/10/96
Lab ID:	0396G01318-22	Date Received:	07/10/96
Matrix:	Soil		
Condition:	Cool / Intact		

Known Analysis

Parameter	Found Result	Known Result	Units	Percent Recovery
Aluminum	0.94	1.00	mg/L	**94%**
Arsenic	0.009	0.010	mg/L	**90%**
Barium	0.91	1.00	mg/L	**91%**
Boron	0.95	1.00	mg/L	**95%**
Cadmium	0.004	0.004	mg/L	**100%**
Chromium	1.02	1.00	mg/L	**102%**
Cobalt	0.91	1.00	mg/L	**91%**
Copper	0.005	0.005	mg/L	**100%**
Iron	0.96	1.00	mg/L	**96%**
Lead	0.040	0.040	mg/L	**100%**
Manganese	1.01	1.00	mg/L	**101%**
Mercury	0.440	0.400	mg/L	**110%**
Molybdenum	1.01	1.00	mg/L	**101%**
Nickel	1.01	1.00	mg/L	**101%**
Selenium	0.010	0.010	mg/L	**100%**
Silver	0.004	0.004	mg/L	**98%**
Uranium	1.19	1.00	mg/L	**119%**
Zinc	1.01	1.00	mg/L	**101%**

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported By: _____ Reviewed By: _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis

Total Metals

Client:	**Giant Refining**	Date Reported:	08/05/96
Project:	Bloomfield	Date Sampled:	07/10/96
Lab ID:	0396G01318-22	Date Received:	07/10/96
Matrix:	Soil		
Condition:	Cool / Intact		

Spike Analysis

Parameter	Spiked Sample Result (mg/L	Sample Result (mg/L	Spike Added (mg/L	Percent Recovery
Aluminum	9.14	<0.05	10.0	**91%**
Arsenic	0.029	0.001	0.030	**93%**
Barium	1.26	0.88	0.50	**92%**
Boron	0.89	0.44	0.50	**99%**
Cadmium	0.002	<0.001	0.002	**108%**
Chromium	0.58	0.07	0.50	**103%**
Cobalt	0.47	0.03	0.50	**89%**
Copper	0.007	0.002	0.005	**106%**
Iron	9.28	<0.025	10.00	**93%**
Lead	0.032	0.010	0.025	**106%**
Manganese	1.63	1.24	0.50	**98%**
Mercury	0.55	<0.10	0.50	**98%**
Molybdenum	0.53	<0.10	0.50	**105%**
Nickel	0.56	0.05	0.50	**103%**
Selenium	0.024	0.001	0.025	**92%**
Silver	0.003	<0.001	0.003	**108%**
Uranium	0.95	0.49	0.50	**102%**
Zinc	0.79	0.27	0.50	**109%**

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported By: _____ Reviewed By: _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Blank Analysis
Total Metals

Client: **Giant Refining**
Project: Bloomfield
Lab ID: 0396G01318-22
Matrix: Soil
Condition: Cool / Intact

Date Reported: 08/05/96
Date Sampled: 07/10/96
Date Received: 07/10/96

Blank Analysis

Parameter	Result	Detection Limit (mg/L)
Aluminum	ND	5.00
Arsenic	ND	0.50
Barium	ND	1.00
Boron	ND	5.00
Cadmium	ND	0.10
Chromium	ND	1.00
Cobalt	ND	1.00
Copper	ND	0.10
Iron	ND	2.50
Lead	ND	0.50
Manganese	ND	1.00
Mercury	ND	0.10
Molybdenum	ND	1.00
Nickel	ND	1.00
Selenium	ND	0.50
Silver	ND	1.00
Uranium	ND	20.0
Zinc	ND	5.00

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by: _____

Reviewed by: _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: 96 S-0-1
Project ID: Bloomfield, NM
Lab ID: B965796 0396G01318
Matrix: Soil

Date Reported: 07/30/96
Date Sampled: 07/10/96
Date Received: 07/12/96
Date Extracted: 07/16/96
Date Analyzed: 07/18/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg

Continued

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1160 Research Drive
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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		
Sample ID:	96 S-0-1		
Project ID:	Bloomfield, NM		
Lab ID:	B965796	0396G01318	
Matrix:	Soil		

Date Reported:	07/30/96
Date Sampled:	07/10/96
Date Received:	07/12/96
Date Extracted:	07/16/96
Date Analyzed:	07/18/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	94	70 - 121
Bromofluorobenzene	107	74 - 121
Toluene-d8	109	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D. 7/31/96

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	**GIANT REFINING COMPANY**		Date Reported:	07/25/96
Sample ID:	96 S-0-1		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965796	0396G01318	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/22/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	5.0	mg/kg
1,2-Dichlorobenzene	ND	5.0	mg/kg
1,3-Dichlorobenzene	ND	5.0	mg/kg
1,4-Dichlorobenzene	ND	5.0	mg/kg
2,4,5-Trichlorophenol	ND	10	mg/kg
2,4,6-Trichlorophenol	ND	10	mg/kg
2,4-Dichlorophenol	ND	5.0	mg/kg
2,4-Dimethylphenol	ND	5.0	mg/kg
2,4-Dinitrophenol	ND	10	mg/kg
2,4-Dinitrotoluene	ND	5.0	mg/kg
2,6-Dinitrotoluene	ND	5.0	mg/kg
2-Chloronaphthalene	ND	5.0	mg/kg
2-Chlorophenol	ND	5.0	mg/kg
2-Methylnaphthalene	ND	5.0	mg/kg
2-Methylphenol	ND	5.0	mg/kg
2-Nitroaniline	ND	25	mg/kg
2-Nitrophenol	ND	5.0	mg/kg
3,3'-Dichlorobenzidine	ND	10	mg/kg
3-Methylphenol/4-Methylphenol	ND	5.0	mg/kg
3-Nitroaniline	ND	25	mg/kg
4,6-Dinitro-2-methylphenol	ND	25	mg/kg
4-Bromophenyl-phenylether	ND	5.0	mg/kg
4-Chloro-3-methylphenol	ND	10	mg/kg
4-Chloroaniline	ND	10	mg/kg
4-Chlorophenyl-phenylether	ND	5.0	mg/kg
4-Nitroaniline	ND	10	mg/kg
4-Nitrophenol	ND	10	mg/kg
Acenaphthene	ND	5.0	mg/kg

Continued

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client: **GIANT REFINING COMPANY**
Sample ID: 96 S-0-1
Project ID: Bloomfield, NM
Lab ID: B965796 0396G01318
Matrix: Soil

Date Reported: 07/25/96
Date Sampled: 07/10/96
Date Received: 07/12/96
Date Extracted: 07/17/96
Date Analyzed: 07/22/96

Parameter	Result	PQL	Units
Continued			
Acenaphthylene	ND	5.0	mg/kg
Anthracene	ND	5.0	mg/kg
Benzo(a)anthracene	ND	5.0	mg/kg
Benzo(a)pyrene	ND	5.0	mg/kg
Benzo(b)fluoranthene	ND	5.0	mg/kg
Benzo(g,h,i)perylene	ND	5.0	mg/kg
Benzo(k)fluoranthene	ND	5.0	mg/kg
Benzoic Acid	ND	25	mg/kg
Benzyl Alcohol	ND	10	mg/kg
bis(2-Chloroethoxy)methane	ND	5.0	mg/kg
bis(2-Chloroethyl)ether	ND	5.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	5.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	25	mg/kg
Butylbenzylphthalate	ND	5.0	mg/kg
Chrysene	ND	5.0	mg/kg
Di-n-Butylphthalate	ND	25	mg/kg
Di-n-Octylphthalate	ND	25	mg/kg
Dibenz(a,h)anthracene	ND	5.0	mg/kg
Dibenzofuran	ND	5.0	mg/kg
Diethylphthalate	ND	5.0	mg/kg
Dimethylphthalate	ND	5.0	mg/kg
Fluoranthene	ND	5.0	mg/kg
Fluorene	ND	5.0	mg/kg
Hexachlorobenzene	ND	10	mg/kg
Hexachlorobutadiene	ND	10	mg/kg
Hexachlorocyclopentadiene	ND	5.0	mg/kg
Hexachloroethane	ND	10	mg/kg
Indeno(1,2,3-cd)pyrene	ND	5.0	mg/kg

Continued

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	**GIANT REFINING COMPANY**		Date Reported:	07/25/96
Sample ID:	96 S-0-1		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965796	0396G01318	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/22/96

Parameter	Result	PQL	Units
Continued			
Isophorone	ND	5.0	mg/kg
N-Nitrosodi-n-propylamine	ND	5.0	mg/kg
N-Nitrosodiphenylamine	ND	5.0	mg/kg
Naphthalene	ND	5.0	mg/kg
Nitrobenzene	ND	5.0	mg/kg
Pentachlorophenol	ND	25	mg/kg
Phenanthrene	ND	5.0	mg/kg
Phenol	ND	5.0	mg/kg
Pyrene	ND	5.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	52	19 - 122
2-Fluorobiphenyl	65	30 - 115
2-Fluorophenol	46	25 - 121
Nitrobenzene-d5	53	23 - 120
Phenol-d6	51	24 - 113
Terphenyl-d14	47	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst RRA

Reviewed WS

Inter·Mountain Laboratories, Inc.

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: 96 S-3-5
Project ID: Bloomfield, NM
Lab ID: B965797 0396G01319
Matrix: Soil

Date Reported: 07/30/96
Date Sampled: 07/10/96
Date Received: 07/12/96
Date Extracted: 07/16/96
Date Analyzed: 07/18/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg

Continued

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	07/30/96
Sample ID:	96 S-3-5		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965797	0396G01319	Date Extracted:	07/16/96
Matrix:	Soil		Date Analyzed:	07/18/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	90	70 - 121
Bromofluorobenzene	100	74 - 121
Toluene-d8	102	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst F.D. 7/31/96

Reviewed WS

Inter·Mountain Laboratories, Inc.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	07/25/96
Sample ID:	96 S-3-5		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965797	0396G01319	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/23/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,2-Dichlorobenzene	ND	1.0	mg/kg
1,3-Dichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
2,4,5-Trichlorophenol	ND	2.0	mg/kg
2,4,6-Trichlorophenol	ND	2.0	mg/kg
2,4-Dichlorophenol	ND	1.0	mg/kg
2,4-Dimethylphenol	ND	1.0	mg/kg
2,4-Dinitrophenol	ND	2.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2,6-Dinitrotoluene	ND	1.0	mg/kg
2-Chloronaphthalene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
2-Methylnaphthalene	ND	1.0	mg/kg
2-Methylphenol	ND	1.0	mg/kg
2-Nitroaniline	ND	5.0	mg/kg
2-Nitrophenol	ND	1.0	mg/kg
3,3'-Dichlorobenzidine	ND	2.0	mg/kg
3-Methylphenol/4-Methylphenol	ND	1.0	mg/kg
3-Nitroaniline	ND	5.0	mg/kg
4,6-Dinitro-2-methylphenol	ND	5.0	mg/kg
4-Bromophenyl-phenylether	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Chloroaniline	ND	2.0	mg/kg
4-Chlorophenyl-phenylether	ND	1.0	mg/kg
4-Nitroaniline	ND	2.0	mg/kg
4-Nitrophenol	ND	2.0	mg/kg
Acenaphthene	ND	1.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	**GIANT REFINING COMPANY**			
Sample ID:	96 S-3-5		Date Reported:	07/25/96
Project ID:	Bloomfield, NM		Date Sampled:	07/10/96
Lab ID:	B965797	0396G01319	Date Received:	07/12/96
Matrix:	Soil		Date Extracted:	07/17/96
			Date Analyzed:	07/23/96

Parameter	Result	PQL	Units
Continued			
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Benzoic Acid	ND	5.0	mg/kg
Benzyl Alcohol	ND	2.0	mg/kg
bis(2-Chloroethoxy)methane	ND	1.0	mg/kg
bis(2-Chloroethyl)ether	ND	1.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	1.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	5.0	mg/kg
Butylbenzylphthalate	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Di-n-Butylphthalate	ND	5.0	mg/kg
Di-n-Octylphthalate	ND	5.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Dibenzofuran	ND	1.0	mg/kg
Diethylphthalate	ND	1.0	mg/kg
Dimethylphthalate	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Hexachlorobenzene	ND	2.0	mg/kg
Hexachlorobutadiene	ND	2.0	mg/kg
Hexachlorocyclopentadiene	ND	1.0	mg/kg
Hexachloroethane	ND	2.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	07/25/96
Sample ID:	96 S-3-5		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965797	0396G01319	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/23/96

Parameter	Result	PQL	Units
Continued			
Isophorone	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	ND	1.0	mg/kg
N-Nitrosodiphenylamine	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Nitrobenzene	ND	1.0	mg/kg
Pentachlorophenol	ND	5.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Phenol	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	55	19 - 122
2-Fluorobiphenyl	62	30 - 115
2-Fluorophenol	58	25 - 121
Nitrobenzene-d5	63	23 - 120
Phenol-d6	64	24 - 113
Terphenyl-d14	47	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst RBD

Reviewed WS

Inter·Mountain Laboratories, Inc.

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		Date Reported:	07/30/96
Sample ID:	96 N-0-1		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965798	0396G01320	Date Extracted:	07/16/96
Matrix:	Soil		Date Analyzed:	07/18/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	92	70 - 121
Bromofluorobenzene	107	74 - 121
Toluene-d8	105	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D. 7/31/96

Reviewed WS

Inter·Mountain Laboratories, Inc.

1160 Research Drive
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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client: **GIANT REFINING COMPANY**
Sample ID: 96 N-0-1
Project ID: Bloomfield, NM
Lab ID: B965798 0396G01320
Matrix: Soil

Date Reported: 07/25/96
Date Sampled: 07/10/96
Date Received: 07/12/96
Date Extracted: 07/17/96
Date Analyzed: 07/22/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	5.0	mg/kg
1,2-Dichlorobenzene	ND	5.0	mg/kg
1,3-Dichlorobenzene	ND	5.0	mg/kg
1,4-Dichlorobenzene	ND	5.0	mg/kg
2,4,5-Trichlorophenol	ND	10	mg/kg
2,4,6-Trichlorophenol	ND	10	mg/kg
2,4-Dichlorophenol	ND	5.0	mg/kg
2,4-Dimethylphenol	ND	5.0	mg/kg
2,4-Dinitrophenol	ND	10	mg/kg
2,4-Dinitrotoluene	ND	5.0	mg/kg
2,6-Dinitrotoluene	ND	5.0	mg/kg
2-Chloronaphthalene	ND	5.0	mg/kg
2-Chlorophenol	ND	5.0	mg/kg
2-Methylnaphthalene	ND	5.0	mg/kg
2-Methylphenol	ND	5.0	mg/kg
2-Nitroaniline	ND	25	mg/kg
2-Nitrophenol	ND	5.0	mg/kg
3,3'-Dichlorobenzidine	ND	10	mg/kg
3-Methylphenol/4-Methylphenol	ND	5.0	mg/kg
3-Nitroaniline	ND	25	mg/kg
4,6-Dinitro-2-methylphenol	ND	25	mg/kg
4-Bromophenyl-phenylether	ND	5.0	mg/kg
4-Chloro-3-methylphenol	ND	10	mg/kg
4-Chloroaniline	ND	10	mg/kg
4-Chlorophenyl-phenylether	ND	5.0	mg/kg
4-Nitroaniline	ND	10	mg/kg
4-Nitrophenol	ND	10	mg/kg
Acenaphthene	ND	5.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	07/25/96
Sample ID:	96 N-0-1		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965798	0396G01320	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/22/96

Parameter	Result	PQL	Units
Continued			
Isophorone	ND	5.0	mg/kg
N-Nitrosodi-n-propylamine	ND	5.0	mg/kg
N-Nitrosodiphenylamine	ND	5.0	mg/kg
Naphthalene	ND	5.0	mg/kg
Nitrobenzene	ND	5.0	mg/kg
Pentachlorophenol	ND	25	mg/kg
Phenanthrene	ND	5.0	mg/kg
Phenol	ND	5.0	mg/kg
Pyrene	ND	5.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	49	19 - 122
2-Fluorobiphenyl	58	30 - 115
2-Fluorophenol	44	25 - 121
Nitrobenzene-d5	49	23 - 120
Phenol-d6	49	24 - 113
Terphenyl-d14	42	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst RRD

Reviewed

Inter·Mountain Laboratories, Inc.

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Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: 96 N-3-5
Project ID: Bloomfield, NM
Lab ID: B965799 0396G01321
Matrix: Soil

Date Reported: 07/30/96
Date Sampled: 07/10/96
Date Received: 07/12/96
Date Extracted: 07/16/96
Date Analyzed: 07/17/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg

Continued

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	07/30/96
Sample ID:	96 N-3-5		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965799	0396G01321	Date Extracted:	07/16/96
Matrix:	Soil		Date Analyzed:	07/17/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	99	70 - 121
Bromofluorobenzene	110	74 - 121
Toluene-d8	111	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D. 7/31/96

Reviewed

Inter·Mountain Laboratories, Inc.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	**GIANT REFINING COMPANY**		Date Reported:	07/25/96
Sample ID:	96 N-3-5		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965799	0396G01321	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/23/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,2-Dichlorobenzene	ND	1.0	mg/kg
1,3-Dichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
2,4,5-Trichlorophenol	ND	2.0	mg/kg
2,4,6-Trichlorophenol	ND	2.0	mg/kg
2,4-Dichlorophenol	ND	1.0	mg/kg
2,4-Dimethylphenol	ND	1.0	mg/kg
2,4-Dinitrophenol	ND	2.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2,6-Dinitrotoluene	ND	1.0	mg/kg
2-Chloronaphthalene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
2-Methylnaphthalene	ND	1.0	mg/kg
2-Methylphenol	ND	1.0	mg/kg
2-Nitroaniline	ND	5.0	mg/kg
2-Nitrophenol	ND	1.0	mg/kg
3,3'-Dichlorobenzidine	ND	2.0	mg/kg
3-Methylphenol/4-Methylphenol	ND	1.0	mg/kg
3-Nitroaniline	ND	5.0	mg/kg
4,6-Dinitro-2-methylphenol	ND	5.0	mg/kg
4-Bromophenyl-phenylether	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Chloroaniline	ND	2.0	mg/kg
4-Chlorophenyl-phenylether	ND	1.0	mg/kg
4-Nitroaniline	ND	2.0	mg/kg
4-Nitrophenol	ND	2.0	mg/kg
Acenaphthene	ND	1.0	mg/kg

Continued

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	07/25/96
Sample ID:	96 N-3-5		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965799	0396G01321	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/23/96

Parameter	Result	PQL	Units
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Benzoic Acid	ND	5.0	mg/kg
Benzyl Alcohol	ND	2.0	mg/kg
bis(2-Chloroethoxy)methane	ND	1.0	mg/kg
bis(2-Chloroethyl)ether	ND	1.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	1.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	5.0	mg/kg
Butylbenzylphthalate	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Di-n-Butylphthalate	ND	5.0	mg/kg
Di-n-Octylphthalate	ND	5.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Dibenzofuran	ND	1.0	mg/kg
Diethylphthalate	ND	1.0	mg/kg
Dimethylphthalate	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Hexachlorobenzene	ND	2.0	mg/kg
Hexachlorobutadiene	ND	2.0	mg/kg
Hexachlorocyclopentadiene	ND	1.0	mg/kg
Hexachloroethane	ND	2.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg

Continued

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	07/25/96
Sample ID:	96 N-3-5		Date Sampled:	07/10/96
Project ID:	Bloomfield, NM		Date Received:	07/12/96
Lab ID:	B965799	0396G01321	Date Extracted:	07/17/96
Matrix:	Soil		Date Analyzed:	07/23/96

Parameter	Result	PQL	Units
Continued			
Isophorone	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	ND	1.0	mg/kg
N-Nitrosodiphenylamine	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Nitrobenzene	ND	1.0	mg/kg
Pentachlorophenol	ND	5.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Phenol	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	51	19 - 122
2-Fluorobiphenyl	51	30 - 115
2-Fluorophenol	44	25 - 121
Nitrobenzene-d5	49	23 - 120
Phenol-d6	50	24 - 113
Terphenyl-d14	46	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst RAD

Reviewed WS

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QUALITY ASSURANCE / QUALITY CONTROL

Inter·Mountain Laboratories, Inc.

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Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: **07/18/96**
Lab ID: IBS006200
Matrix:

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg
2-Hexanone	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: **07/18/96**
Lab ID: IBS006200
Matrix:

Parameter	Result	PQL	Units
Continued			
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
Bromofluorobenzene	106	74 - 121
1,2-Dichloroethane-d4	89	70 - 121
Toluene-d8	107	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst E.D. 7/31/96

Reviewed

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LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: **07/17/96**
Lab ID: IBS006199
Matrix:

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg
2-Hexanone	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: **07/17/96**
Lab ID: IBS006199
Matrix:

Parameter	Result	PQL	Units
Continued			
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
Bromofluorobenzene	111	74 - 121
1,2-Dichloroethane-d4	92	70 - 121
Toluene-d8	110	81 - 117

Analyst E.O. 7/31/96

Reviewed

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LAB QA/QC
EPA METHOD 8240
METHOD BLANK

Date Analyzed: **07/17/96**
Lab ID: MBS006198
Matrix: Sand
Date Extracted: 07/16/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8240
METHOD BLANK

Date Analyzed: **07/17/96**
Lab ID: MBS006198
Matrix: Sand
Date Extracted: 07/16/96

Parameter	Result	PQL	Units
Continued			
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	95	70 - 121
Bromofluorobenzene	105	74 - 121
Toluene-d8	110	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst E.O. 7/31/96

Reviewed WS

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LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: **07/20/96**
Lab ID: MBS96199
Matrix: Soil
Date Extracted: 07/17/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,2-Dichlorobenzene	ND	1.0	mg/kg
1,3-Dichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
2,4,5-Trichlorophenol	ND	2.0	mg/kg
2,4,6-Trichlorophenol	ND	2.0	mg/kg
2,4-Dichlorophenol	ND	1.0	mg/kg
2,4-Dimethylphenol	ND	1.0	mg/kg
2,4-Dinitrophenol	ND	2.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2,6-Dinitrotoluene	ND	1.0	mg/kg
2-Chloronaphthalene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
2-Methylnaphthalene	ND	1.0	mg/kg
2-Methylphenol	ND	1.0	mg/kg
2-Nitroaniline	ND	5.0	mg/kg
2-Nitrophenol	ND	1.0	mg/kg
3,3'-Dichlorobenzidine	ND	2.0	mg/kg
3-Methylphenol/4-Methylphenol	ND	1.0	mg/kg
3-Nitroaniline	ND	5.0	mg/kg
4,6-Dinitro-2-methylphenol	ND	5.0	mg/kg
4-Bromophenyl-phenylether	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Chloroaniline	ND	2.0	mg/kg
4-Chlorophenyl-phenylether	ND	1.0	mg/kg
4-Nitroaniline	ND	2.0	mg/kg
4-Nitrophenol	ND	2.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: **07/20/96**
Lab ID: MBS96199
Matrix: Soil
Date Extracted: 07/17/96

Parameter	Result	PQL	Units
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Benzoic Acid	ND	5.0	mg/kg
Benzyl Alcohol	ND	2.0	mg/kg
bis(2-Chloroethoxy)methane	ND	1.0	mg/kg
bis(2-Chloroethyl)ether	ND	1.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	1.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	5.0	mg/kg
Butylbenzylphthalate	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Di-n-Butylphthalate	ND	5.0	mg/kg
Di-n-Octylphthalate	ND	5.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Dibenzofuran	ND	1.0	mg/kg
Diethylphthalate	ND	1.0	mg/kg
Dimethylphthalate	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Hexachlorobenzene	ND	2.0	mg/kg
Hexachlorobutadiene	ND	2.0	mg/kg
Hexachlorocyclopentadiene	ND	1.0	mg/kg
Hexachloroethane	ND	2.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg
Isophorone	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	ND	1.0	mg/kg
N-Nitrosodiphenylamine	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Nitrobenzene	ND	1.0	mg/kg
Pentachlorophenol	ND	5.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Phenol	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: **07/20/96**
Lab ID: MBS96199
Matrix: Soil
Date Extracted: 07/17/96

Parameter	Result	PQL	Units

Continued

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	56	19 - 122
2-Fluorobiphenyl	53	30 - 115
2-Fluorophenol	46	25 - 121
Nitrobenzene-d5	51	23 - 120
Phenol-d6	56	24 - 113
Terphenyl-d14	45	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst RA

Reviewed WS

Inter·Mountain Laboratories, Inc.

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LAB QA/QC
EPA METHOD 8240
BLANK SPIKE / BLANK SPIKE DUPLICATE SUMMARY

Date Analyzed: **07/17/96**
Lab ID: BSS60198
Matrix: Sand
Date Extracted: 07/16/96

Original Sample Parameters

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	BS Recovery %	QC Limits Rec.
1,1-Dichloroethene	10	0	8.44	84	59 - 172
Benzene	10	0	9.77	98	62 - 137
Chlorobenzene	10	0	10.7	107	66 - 142
Toluene	10	0	10.8	108	59 - 139
Trichloroethene (TCE)	10	0	10.3	103	60 - 133

Duplicate Sample Parameters

Parameter	Spike Added (mg/kg)	BSD Result (mg/kg)	BSD Recovery %	RPD %	QC Limits RPD	QC Limits Rec.
1,1-Dichloroethene	10	10.2	102	19	22	59 - 172
Benzene	10	10.1	101	3	24	62 - 137
Chlorobenzene	10	10.8	108	1	21	66 - 142
Toluene	10	10.8	108	0	21	59 - 139
Trichloroethene (TCE)	10	10.5	105	2	21	60 - 133

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 0 out of 10 outside QC limits.
RPD: 0 out of 5 outside QC limits.

Analyst E.O. 7/31/96

Reviewed

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Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8270
BLANK SPIKE / BLANK SPIKE DUPLICATE SUMMARY

Date Analyzed: **07/20/96**
Lab ID: BSS96199
Matrix: Soil
Date Extracted: 07/17/96

Original Sample Parameters

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	BS Recovery %	QC Limits Rec.
1,2,4-Trichlorobenzene	10	0	4.0	40	38 - 107
1,4-Dichlorobenzene	10	0	4.2	42	28 - 104
2,4-Dinitrotoluene	10	0	6.8	68	28 - 89
2-Chlorophenol	20	0	8.3	42	25 - 102
4-Chloro-3-methylphenol	20	0	12	60	26 - 103
4-Nitrophenol	20	0	11	55	11 - 114
Acenaphthene	10	0	6.2	62	31 - 137
N-Nitrosodi-n-propylamine	10	0	8.0	80	41 - 126
Pentachlorophenol	20	0	13	65	17 - 109
Phenol	20	0	8.3	42	26 - 90
Pyrene	10	0	5.1	51	35 - 142

Duplicate Sample Parameters

Parameter	Spike Added (mg/kg)	BSD Result (mg/kg)	BSD Recovery %	RPD %		QC Limits RPD	QC Limits Rec.
1,2,4-Trichlorobenzene	10	5.8	58	37	*	23	38 - 107
1,4-Dichlorobenzene	10	5.9	59	34	*	27	28 - 104
2,4-Dinitrotoluene	10	7.0	70	3		47	28 - 89
2-Chlorophenol	20	12	60	36		50	25 - 102
4-Chloro-3-methylphenol	20	13	65	8		33	26 - 103
4-Nitrophenol	20	12	60	9		50	11 - 114
Acenaphthene	10	6.8	68	9		19	31 - 137
N-Nitrosodi-n-propylamine	10	8.5	85	6		38	41 - 126
Pentachlorophenol	20	14	70	7		47	17 - 109
Phenol	20	12	60	36	*	35	26 - 90
Pyrene	10	5.4	54	6		36	35 - 142

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 0 out of 22 outside QC limits.
RPD: 3 out of 11 outside QC limits.

Analyst RRD

Reviewed WS

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8270
MATRIX SPIKE

Date Analyzed: **07/23/96**
Lab ID: 0596H05797 SK1 0396G01319
Matrix: Soil
Date Extracted: 07/17/96

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	MS Recovery %	QC Limits Rec.
1,2,4-Trichlorobenzene	10	0	5.4	54	38 -107
1,4-Dichlorobenzene	10	0	5.1	51	28 -104
2,4-Dinitrotoluene	10	0	6.4	64	28 - 89
2-Chlorophenol	20	0	12	60	25 -102
4-Chloro-3-methylphenol	20	0	13	65	26 -103
4-Nitrophenol	20	0	11	55	11 -114
Acenaphthene	10	0	6.5	65	31 -137
N-Nitrosodi-n-propylamine	10	0	8.5	85	41 -126
Pentachlorophenol	20	0	12	60	17 -109
Phenol	20	0	12	60	26 - 90
Pyrene	10	0	5.1	51	35 -142

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	59	19 -122
2-Fluorobiphenyl	66	30 -115
2-Fluorophenol	60	25 -121
Nitrobenzene-d5	68	23 -120
Phenol-d6	67	24 -113
Terphenyl-d14	44	18 -137

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 0 out of 11 outside QC limits.

Analyst RAD

Reviewed

Inter- Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
GIANT REFINING CO - BLOMFLD		
Sampler: (Signature)	**Chain of Custody Tape No.**	
LYNN SHELTON		

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	WQCC List				Remarks
96 S-0-1	7/10/96	1330		SOIL	4	X				
96 S-3-5	7/10/96	1430			4	X				
96 N-0-1	7/10/96	1011			4	X				
96 N-3-5	7/10/96	1130			4	X				
										cool + intact

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Lynn Shelton	7/10/96	5:34PM	Chris Rayner	7-10-96	1734
Relinquished by: (Signature)	**Date**	**Time**	**Received by: (Signature)**	**Date**	**Time**
Relinquished by: (Signature)	**Date**	**Time**	**Received by laboratory: (Signature)**	**Date**	**Time**

Inter-Mountain Laboratories, Inc.

37672

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945

☐ 1701 Phillips Circle, Gillette, Wyoming 82718, Telephone (307) 682-8945

☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

☐ 1160 Research Dr., Bozeman, Montana 59715, Telephone (406) 586-8450

☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945

☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

5 August 1996

Lynn Shelton
Giant Refining Co.
P. O. Box 159
Bloomfield, NM 87413

Mr. Shelton:

Enclosed please find the report for the samples received by our laboratory for analysis on July 11, 1996.

If you have any questions about the results of these analyses, please don't hesitate to call me at your convenience.

Sincerely,

Anna Schaerer

Anna Schaerer
Organic Analyst/IML-Farmington

Enclosure

xc: File

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

CASE NARRATIVE

Client: GIANT REFINING COMPANY
Project: Bloomfield, NM Received on: 07/16/96
Set ID: 0596H05846 # samples: 4

Suites: 8240 Standard, 8270 PAHs

Samples were received for analysis at Inter-Mountain Laboratories (IML), Bozeman, Montana. Enclosed are the results of these analyses.

Limits of detection for each instrument/analysis are determined by sample matrix effects, instrument performance under standard conditions, and dilution requirements to maintain chromatography output within calibration ranges. Quantitations have been calculated on an as received basis.

Jack Felkey
IML-Bozeman

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96E-0-1	Date Reported:	08/05/96
Laboratory ID:	0396G01328	Date Sampled:	07/11/96
Sample Matrix:	Soil	Time Sampled:	9:45 AM
Condition:	Cool/Intact	Date Received:	07/11/96

Parameter	Analytical Result	Units
Lab pH	7.6	s.u.
Fluoride	1.15	ppm
Chloride	2,582	ppm
Sulfate	2,156	ppm
Cyanide	<0.10	mg/Kg
Nitrate as Nitrogen	6.42	ppm
Trace Metals (Total)		
Aluminum	10,122	mg/Kg
Arsenic	1.16	mg/Kg
Barium	195	mg/Kg
Boron	55.8	mg/Kg
Cadmium	0.158	mg/Kg
Chromium	9.48	mg/Kg
Cobalt	5.06	mg/Kg
Copper	3.58	mg/Kg
Iron	13,097	mg/Kg
Lead	11.6	mg/Kg
Manganese	223	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	<1.00	mg/Kg
Nickel	1.16	mg/Kg
Selenium	<0.50	mg/Kg
Silver	<1.00	mg/Kg
Uranium	86.4	mg/Kg
Zinc	45.3	mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96E-3-5	Date Reported:	08/05/96
Laboratory ID:	0396G01329	Date Sampled:	07/11/96
Sample Matrix:	Soil	Time Sampled:	10:45 AM
Condition:	Cool/Intact	Date Received:	07/11/96

Parameter	Analytical Result	Units
Lab pH	7.8	s.u.
Fluoride	1.76	ppm
Chloride	1,235	ppm
Sulfate	724	ppm
Cyanide	<0.10	mg/Kg
Nitrate as Nitrogen	0.51	ppm
Trace Metals (Total)		
Aluminum	7,102	mg/Kg
Arsenic	0.527	mg/Kg
Barium	189	mg/Kg
Boron	56.9	mg/Kg
Cadmium	<0.10	mg/Kg
Chromium	7.48	mg/Kg
Cobalt	4.11	mg/Kg
Copper	2.32	mg/Kg
Iron	10,569	mg/Kg
Lead	7.69	mg/Kg
Manganese	240	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	1.05	mg/Kg
Nickel	7.38	mg/Kg
Selenium	<0.50	mg/Kg
Silver	<1.00	mg/Kg
Uranium	66.4	mg/Kg
Zinc	30.6	mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96B-0-1	Date Reported:	08/05/96
Laboratory ID:	0396G01330	Date Sampled:	07/11/96
Sample Matrix:	Soil	Time Sampled:	11:45 AM
Condition:	Cool/Intact	Date Received:	07/11/96

Parameter	Analytical Result	Units
Lab pH	7.5	s.u.
Fluoride	0.77	ppm
Chloride	1,054	ppm
Sulfate	2,790	ppm
Cyanide	<0.10	mg/Kg
Nitrate as Nitrogen	14.2	ppm
Trace Metals (Total)		
Aluminum	6,199	mg/Kg
Arsenic	<0.50	mg/Kg
Barium	166	mg/Kg
Boron	55.0	mg/Kg
Cadmium	0.104	mg/Kg
Chromium	6.85	mg/Kg
Cobalt	3.84	mg/Kg
Copper	2.18	mg/Kg
Iron	9,401	mg/Kg
Lead	8.00	mg/Kg
Manganese	205	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	<1.00	mg/Kg
Nickel	7.27	mg/Kg
Selenium	<0.50	mg/Kg
Silver	<1.00	mg/Kg
Uranium	84.1	mg/Kg
Zinc	33.2	mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Co.**		
Project:	Bloomfield		
Sample ID:	96B-3-5	Date Reported:	08/05/96
Laboratory ID:	0396G01331	Date Sampled:	07/11/96
Sample Matrix:	Soil	Time Sampled:	12:30 PM
Condition:	Cool/Intact	Date Received:	07/11/96

Parameter	Analytical Result	Units
Lab pH	8.2	s.u.
Fluoride	0.38	ppm
Chloride	324	ppm
Sulfate	395	ppm
Cyanide	<0.10	mg/Kg
Nitrate as Nitrogen	<0.05	ppm
Trace Metals (Total)		
Aluminum	3,266	mg/Kg
Arsenic	<0.50	mg/Kg
Barium	56.0	mg/Kg
Boron	51.9	mg/Kg
Cadmium	<0.10	mg/Kg
Chromium	3.16	mg/Kg
Cobalt	1.83	mg/Kg
Copper	3.87	mg/Kg
Iron	4,751	mg/Kg
Lead	4.99	mg/Kg
Manganese	113	mg/Kg
Mercury	<0.10	mg/Kg
Molybdenum	<1.00	mg/Kg
Nickel	3.46	mg/Kg
Selenium	<0.50	mg/Kg
Silver	<1.00	mg/Kg
Uranium	31.1	mg/Kg
Zinc		mg/Kg

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by _____ Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis

Total Metals

Client: **Giant Refining**
Project: Bloomfield
Lab ID: 0396G01328-31
Matrix: Soil
Condition: Cool / Intact

Date Reported: 08/05/96
Date Sampled: 07/11/96
Date Received: 07/11/96

Spike Analysis

Parameter	Spiked Sample Result (mg/L	Sample Result (mg/L	Spike Added (mg/L	Percent Recovery
Aluminum	9.14	<0.05	10.0	**91%**
Arsenic	0.029	0.001	0.030	**93%**
Barium	1.26	0.88	0.50	**92%**
Boron	0.89	0.44	0.50	**99%**
Cadmium	0.002	<0.001	0.002	**108%**
Chromium	0.58	0.07	0.50	**103%**
Cobalt	0.47	0.03	0.50	**89%**
Copper	0.007	0.002	0.005	**106%**
Iron	9.28	<0.025	10.00	**93%**
Lead	0.032	0.010	0.025	**106%**
Manganese	1.63	1.24	0.50	**98%**
Mercury	0.55	<0.10	0.50	**98%**
Molybdenum	0.53	<0.10	0.50	**105%**
Nickel	0.56	0.05	0.50	**103%**
Selenium	0.024	0.001	0.025	**92%**
Silver	0.003	<0.001	0.003	**108%**
Uranium	0.95	0.49	0.50	**102%**
Zinc	0.79	0.27	0.50	**109%**

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported By: _____

Reviewed By: _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis

Total Metals

Client: **Giant Refining**
Project: Bloomfield
Lab ID: 0396G01328-31
Matrix: Soil
Condition: Cool / Intact

Date Reported: 08/05/96
Date Sampled: 07/11/96
Date Received: 07/11/96

Known Analysis

Parameter	Found Result	Known Result	Units	Percent Recovery
Aluminum	0.94	1.00	mg/L	**94%**
Arsenic	0.009	0.010	mg/L	**90%**
Barium	0.91	1.00	mg/L	**91%**
Boron	0.95	1.00	mg/L	**95%**
Cadmium	0.004	0.004	mg/L	**100%**
Chromium	1.02	1.00	mg/L	**102%**
Cobalt	0.91	1.00	mg/L	**91%**
Copper	0.005	0.005	mg/L	**100%**
Iron	0.96	1.00	mg/L	**96%**
Lead	0.040	0.040	mg/L	**100%**
Manganese	1.01	1.00	mg/L	**101%**
Mercury	0.440	0.400	mg/L	**110%**
Molybdenum	1.01	1.00	mg/L	**101%**
Nickel	1.01	1.00	mg/L	**101%**
Selenium	0.010	0.010	mg/L	**100%**
Silver	0.004	0.004	mg/L	**98%**
Uranium	1.19	1.00	mg/L	**119%**
Zinc	1.01	1.00	mg/L	**101%**

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported By: _____

Reviewed By: _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Blank Analysis
Total Metals

Client: **Giant Refining**
Project: Bloomfield
Lab ID: 0396G01328-31
Matrix: Soil
Condition: Cool / Intact

Date Reported: 08/05/96
Date Sampled: 07/11/96
Date Received: 07/11/96

Blank Analysis

Parameter	Result	Detection Limit (mg/L)
Aluminum	ND	5.00
Arsenic	ND	0.50
Barium	ND	1.00
Boron	ND	5.00
Cadmium	ND	0.10
Chromium	ND	1.00
Cobalt	ND	1.00
Copper	ND	0.10
Iron	ND	2.50
Lead	ND	0.50
Manganese	ND	1.00
Mercury	ND	0.10
Molybdenum	ND	1.00
Nickel	ND	1.00
Selenium	ND	0.50
Silver	ND	1.00
Uranium	ND	20.0
Zinc	ND	5.00

Reference: "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", SW-846, United States Environmental Protection Agency, November, 1986.
"Test Methods for Evaluating Solid Wastes", Method 3050, SW-846, 3rd ed., November 1992.

Comments:

Reported by: _____ Reviewed by: _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: 96B-0-1
Project ID: Bloomfield, NM
Lab ID: B965848 0396G01328
Matrix: Soil

Date Reported: 07/31/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/25/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		
Sample ID:	96B-0-1		
Project ID:	Bloomfield, NM		
Lab ID:	B965848	0396G01328	
Matrix:	Soil		

Date Reported:	07/31/96
Date Sampled:	07/11/96
Date Received:	07/16/96
Date Extracted:	07/23/96
Date Analyzed:	07/25/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	90	70 - 121
Bromofluorobenzene	118	74 - 121
Toluene-d8	113	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E. D. 7/31/96

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8270
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: **GIANT REFINING COMPANY**
Sample ID: 96B-0-1
Project ID: Bloomfield, NM
Lab ID: B965848 0396G01328
Matrix: Soil

Date Reported: 07/29/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/26/96

Parameter	Result	PQL	Units
3-Methylcholanthrene	ND	1.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	65	19 - 122
2-Fluorobiphenyl	57	30 - 115
2-Fluorophenol	49	25 - 121
Nitrobenzene-d5	50	23 - 120
Phenol-d6	69	24 - 113
Terphenyl-d14	47	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst RRD

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: 96B-3-5
Project ID: Bloomfield, NM
Lab ID: B965849 0396G01328
Matrix: Soil

Date Reported: 07/31/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/25/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg

Continued

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: 96B-3-5
Project ID: Bloomfield, NM
Lab ID: B965849 0396G01328
Matrix: Soil

Date Reported: 07/31/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/25/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	94	70 - 121
Bromofluorobenzene	110	74 - 121
Toluene-d8	109	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D. 7/31/96

Reviewed

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EPA METHOD 8270
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: **GIANT REFINING COMPANY**
Sample ID: 96B-3-5
Project ID: Bloomfield, NM
Lab ID: B965849 0396G01328
Matrix: Soil

Date Reported: 07/29/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/26/96

Parameter	Result	PQL	Units
3-Methylcholanthrene	ND	1.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	62	19 - 122
2-Fluorobiphenyl	51	30 - 115
2-Fluorophenol	44	25 - 121
Nitrobenzene-d5	45	23 - 120
Phenol-d6	64	24 - 113
Terphenyl-d14	49	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst _____ Reviewed _____

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: 96E-0-1
Project ID: Bloomfield, NM
Lab ID: B965846 0396G01328
Matrix: Soil

Date Reported: 07/31/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/25/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	7.0	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg

Continued

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: 96E-0-1
Project ID: Bloomfield, NM
Lab ID: B965846 0396G01328
Matrix: Soil

Date Reported: 07/31/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/25/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	89	70 - 121
Bromofluorobenzene	119	74 - 121
Toluene-d8	110	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D. 7/31/96

Reviewed

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EPA METHOD 8270
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: **GIANT REFINING COMPANY**
Sample ID: 96E-0-1
Project ID: Bloomfield, NM
Lab ID: B965846 0396G01328
Matrix: Soil

Date Reported: 07/29/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/26/96

Parameter	Result	PQL	Units
3-Methylcholanthrene	ND	1.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	65	19 - 122
2-Fluorobiphenyl	62	30 - 115
2-Fluorophenol	57	25 - 121
Nitrobenzene-d5	58	23 - 120
Phenol-d6	75	24 - 113
Terphenyl-d14	46	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst RRD

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: 96E-3-5
Project ID: Bloomfield, NM
Lab ID: B965847 0396G01328
Matrix: Soil

Date Reported: 07/31/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/25/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg

Continued

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EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: 96E-3-5
Project ID: Bloomfield, NM
Lab ID: B965847 0396G01328
Matrix: Soil

Date Reported: 07/31/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/25/96

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	95	70 - 121
Bromofluorobenzene	110	74 - 121
Toluene-d8	109	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D. 7/31/96

Reviewed

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EPA METHOD 8270
POLYNUCLEAR AROMATIC HYDROCARBONS

Client: **GIANT REFINING COMPANY**
Sample ID: 96E-3-5
Project ID: Bloomfield, NM
Lab ID: B965847 0396G01328
Matrix: Soil

Date Reported: 07/29/96
Date Sampled: 07/11/96
Date Received: 07/16/96
Date Extracted: 07/23/96
Date Analyzed: 07/26/96

Parameter	Result	PQL	Units
3-Methylcholanthrene	ND	1.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	64	19 - 122
2-Fluorobiphenyl	53	30 - 115
2-Fluorophenol	49	25 - 121
Nitrobenzene-d5	49	23 - 120
Phenol-d6	72	24 - 113
Terphenyl-d14	47	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst RRD

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LAB QA/QC
EPA METHOD 8240
METHOD BLANK

Date Analyzed: **07/26/96**
Lab ID: MBS06205
Matrix: Sand
Date Extracted: 07/23/96

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
2-Hexanone	ND	1.0	mg/kg
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/kg
Acetone	ND	5.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8240
METHOD BLANK

Date Analyzed: **07/26/96**
Lab ID: MBS06205
Matrix: Sand
Date Extracted: 07/23/96

Parameter	Result	PQL	Units
Continued			
Vinyl Chloride	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	100	70 - 121
Bromofluorobenzene	106	74 - 121
Toluene-d8	105	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst E.D. 7/31/96

Reviewed

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LAB QA/QC
EPA METHOD 8240
LAB CONTROL SAMPLE

Date Analyzed: **07/26/96**
Lab ID: LCS96205
Matrix: Sand
Date Extracted 07/23/96

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	LCS Result (mg/kg)	LCS % Recovery	QC Limits Rec.
1,4-Dichlorobenzene	2.0	0	1.5	75	70 -130
1,1,2-Trichloroethane	2.0	0	2.0	100	70 -130
1,2-Dibromoethane (EDB)	2.0	0	1.8	90	70 -130
1,2-Dichloroethane	2.0	0	1.8	90	70 -130
1,2-Dichloropropane	2.0	0	1.7	85	70 -130
Benzene	2.0	0	1.8	90	70 -130
Bromoform	2.0	0	1.1	55 *	70 -130
Carbon Tetrachloride	2.0	0	1.5	75	70 -130
cis-1,3-Dichloropropene	2.0	0	1.7	85	70 -130
Tetrachloroethene (PCE)	2.0	0	1.6	80	70 -130
Trichloroethene (TCE)	2.0	0	2.0	100	70 -130
Vinyl Chloride	2.0	0	1.2	60 *	70 -130

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
Bromofluorobenzene	121	74 -121
1,2-Dichloroethane-d4	94	70 -121
Toluene-d8	109	81 -117

Spike Recovery: 2 out of 12 outside QC limits.
Surrogates: Surrogate Recoveries within QC Limits.

Analyst E.D. 7/31/96

Reviewed

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LAB QA/QC
EPA METHOD 8240
INSTRUMENT BLANK

Date Analyzed: **07/25/96**
Lab ID: IBS96207
Matrix:

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	1.0	mg/kg
1,1,2,2-Tetrachloroethane	ND	1.0	mg/kg
1,1,2-Trichloroethane	ND	1.0	mg/kg
1,1-Dichloroethane	ND	1.0	mg/kg
1,1-Dichloroethene	ND	1.0	mg/kg
1,2-Dichloroethane	ND	1.0	mg/kg
1,2-Dichloropropane	ND	1.0	mg/kg
Benzene	ND	1.0	mg/kg
Bromodichloromethane	ND	1.0	mg/kg
Bromoform	ND	1.0	mg/kg
Bromomethane	ND	1.0	mg/kg
Carbon Tetrachloride	ND	1.0	mg/kg
Chlorobenzene	ND	1.0	mg/kg
Chloroethane	ND	1.0	mg/kg
Chloroform	ND	1.0	mg/kg
Chloromethane	ND	1.0	mg/kg
cis-1,3-Dichloropropene	ND	1.0	mg/kg
Dibromochloromethane	ND	1.0	mg/kg
Ethylbenzene	ND	1.0	mg/kg
m,p-Xylene	ND	1.0	mg/kg
Methylene chloride	ND	5.0	mg/kg
o-Xylene	ND	1.0	mg/kg
Styrene	ND	1.0	mg/kg
Tetrachloroethene (PCE)	ND	1.0	mg/kg
Toluene	ND	1.0	mg/kg
trans-1,2-Dichloroethene	ND	1.0	mg/kg
trans-1,3-Dichloropropene	ND	1.0	mg/kg
Trichloroethene (TCE)	ND	1.0	mg/kg
Vinyl Chloride	ND	1.0	mg/kg
2-Butanone (MEK)	ND	5.0	mg/kg
Carbon Disulfide	ND	1.0	mg/kg
Xylenes (total)	ND	1.0	mg/kg
2-Hexanone	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: **07/26/96**
Lab ID: MBS96204A
Matrix: Soil
Date Extracted: 07/23/96

Parameter	Result	PQL	Units
3-Methylcholanthrene	ND	1.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	66	19 - 122
2-Fluorobiphenyl	65	30 - 115
2-Fluorophenol	59	25 - 121
Nitrobenzene-d5	66	23 - 120
Phenol-d6	73	24 - 113
Terphenyl-d14	45	18 - 137

Analyst RRD

Reviewed

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LAB QA/QC
EPA METHOD 8270
BLANK SPIKE / BLANK SPIKE DUPLICATE SUMMARY

Date Analyzed: **07/27/96**
Lab ID: BSS96204
Matrix: Soil
Date Extracted: 07/23/96

Original Sample Parameters

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	BS Recovery %	QC Limits Rec.
1,2,4-Trichlorobenzene	10	0	4.3	43	38 - 107
1,4-Dichlorobenzene	10	0	3.1	31	28 - 104
2,4-Dinitrotoluene	10	0	6.1	61	28 - 89
2-Chlorophenol	20	0	12	60	25 - 102
4-Chloro-3-methylphenol	20	0	13	65	26 - 103
4-Nitrophenol	20	0	12	60	11 - 114
Acenaphthene	10	0	6.2	62	31 - 137
N-Nitrosodi-n-propylamine	10	0	8.1	81	41 - 126
Pentachlorophenol	20	0	16	80	17 - 109
Phenol	20	0	11	55	26 - 90
Pyrene	10	0	4.6	46	35 - 142

Duplicate Sample Parameters

Parameter	Spike Added (mg/kg)	BSD Result (mg/kg)	BSD Recovery %		RPD %		QC Limits RPD	QC Limits Rec.
1,2,4-Trichlorobenzene	10	3.3	33	*	26	*	23	38 - 107
1,4-Dichlorobenzene	10	2.2	22	*	34	*	27	28 - 104
2,4-Dinitrotoluene	10	6.0	60		2		47	28 - 89
2-Chlorophenol	20	9.2	46		26		50	25 - 102
4-Chloro-3-methylphenol	20	12	60		8		33	26 - 103
4-Nitrophenol	20	11	55		9		50	11 - 114
Acenaphthene	10	5.5	55		12		19	31 - 137
N-Nitrosodi-n-propylamine	10	7.0	70		15		38	41 - 126
Pentachlorophenol	20	15	75		6		47	17 - 109
Phenol	20	9.8	49		12		35	26 - 90
Pyrene	10	4.6	46		0		36	35 - 142

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 2 out of 22 outside QC limits.
RPD: 2 out of 11 outside QC limits.

Analyst RRD

Reviewed

imi
Inter- Mountain
Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES / PARAMETERS
GIANT REF - BLMFLD		
Sampler: (Signature) LYNN SHELTON	**Chain of Custody Tape No.**	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	WQCU LIST	Remarks
96E-0-1	7/11/96	0945		SOIL	4	X	
96E-3-5		1045			4	X	
96B-0-1		1145			4	X	
96B-3-5		1230			4	X	
							cool + intact

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Lynn Shelton	7/11/96	4:00	Chris Rayner	7-11-96	1600
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue
Sheridan, Wyoming 82801
Telephone (307) 672-8945

☐ 1701 Phillips Circle
Gillette, Wyoming 82718
Telephone (307) 682-8945

☒ 2506 West Main Street
Farmington, NM 87401
Telephone (505) 326-4737

☐ 1160 Research Dr.
Bozeman, Montana 59715
Telephone (406) 586-8450

☐ 11183 SH 30
College Station, TX 77845
Telephone (409) 776-8945

☐ 3304 Longmire Drive
College Station, TX 77845
Telephone (409) 774-4999

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