

GW - 32

**REPORTS**

**YEAR(S):**

1995 → 1990

LEAKS + SPILLS



RECEIVED

JUN 22 1995

Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

June 20, 1995

Environmental Bureau  
Oil Conservation Division

Mr. Patricio W. Sanchez  
Environmental Bureau  
Oil Conservation Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

Dear Mr. Sanchez:

Enclosed with this letter is the written report on the May 31, 1995 gasoline tanker spill which occurred on Giant Refining's property just north of the Giant Travel Center. The spill was reported to OCD's Aztec field office on June 1, 1995. A synopsis of the incident is presented below.

At approximately 11:15 a.m. on Wednesday, May 31, 1995, a tanker truck carrying approximately 8,500 gallons of gasoline was forced off the access road between the Ciniza refinery and Interstate 40 by a tractor/trailer rig entering the roadway from the south. The tanker struck a guard rail on the north side of the road and rolled over upon leaving the north edge of the roadway. The tanker came to a rest on its left side with punctures in a 2,000 gallon gasoline storage compartment.

Emergency response personnel from numerous state and local agencies arrived at the scene within minutes. Giant Refining personnel built an earthen berm around the low lying, grassy area immediately north of the overturned tanker in order to contain any runoff of gasoline from the site. The affected area behind the berm consisted of approximately 1,500 square feet of damp, clay soil covered with dense native grass. Excavation of a bell-hole to facilitate product recovery showed hydrocarbon penetration into the soil to a depth of less than six inches. The damp nature (due to recent rains) and clay texture of the soil effectively restricted the vertical movement of the hydrocarbon into the soil. The dense grass cover held back the flow of product and minimized the horizontal extent of surface contamination.

Once the accident scene was secured, efforts began to upright the

tanker and off-load its cargo of gasoline. Though some additional product was lost during the off-loading/uprighting attempts, efforts to recover the bulk of the remaining product were successful. Of the 8,538 gallons of gasoline loaded on the tanker, 4,920 gallons were recovered during the off-loading operations. This indicated a total spill volume of approximately 3,618 gallons.

On June 1, 1995, the remaining free-standing product (approximately 1,800 gallons) was removed via vacuum truck and returned to the refinery for re-running. This indicates that the net amount of gasoline spilled and unrecovered was approximately 1,800 gallons (~ 43 bbls).

Giant will be making a determination of the hazardous/non-hazardous nature of the stained soil and will remove/remediate the material as necessary.

Should you require any further information regarding this incident, please do not hesitate to contact me at (505) 722-0217.

Sincerely,



David C. Pavlich  
Health, Safety, and Environmental Manager  
Giant Refining Company

DCP:sp

cc: Lynn Shelton, Senior Environmental Coordinator, Giant - Gallup  
Scott Matthew, Senior Transportation Manager, Giant - Gallup  
Jim Sumner, Safety Director, Giant Industries Arizona, Inc.  
Denny Foust, Oil Conservation Division, Aztec  
Nina Wells, NMED Surface Water Quality Bureau, Santa Fe

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR <b>GIANT REFINING COMPANY</b>					ADDRESS <b>RT. 3 BOX 7, GALLUP, N.M. 87301</b>		
REPORT OF	FIRE	BREAK	SPILL <input checked="" type="checkbox"/>	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY <input checked="" type="checkbox"/>	OTHER*
NAME OF FACILITY <b>CINIZA REFINERY</b>							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) <b>NE 1/4</b>					SEC. <b>33</b>	TWP. <b>15N</b>	RGE. <b>15W</b>
COUNTY <b>McKINLEY</b>							
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK <b>~17 MILES EAST OF GALLUP, N.M. AT EXIT 39, I-40</b>							
DATE AND HOUR OF OCCURENCE <b>5/31/95 @ ~11:15 a.m.</b>					DATE AND HOUR OF DISCOVERY <b>5/31/95 @ ~11:15 a.m.</b>		
WAS IMMEDIATE NOTICE GIVEN?	YES <input checked="" type="checkbox"/>	NO	NOT RE-QUIRED		IF YES, TO WHOM <b>Johnnie Robinson of NMOC</b>		
BY WHOM <b>David Pavlich</b>					DATE AND HOUR <b>6/1/95 @ 10:00 a.m.</b>		
TYPE OF FLUID LOST <b>Gasoline</b>					QUANTITY OF LOSS <b>86 BO</b>	VOLUME RE-COVERED <b>43 BO</b>	
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO <input checked="" type="checkbox"/>	QUANTITY			
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** <i>Tanker truck was forced off the road by a tractor/trailer rig entering the roadway. The tanker rolled onto its side and gasoline was lost through a penetrated compartment wall. Gasoline was contained by erecting an earthen berm around the spill area.</i>							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** <i>The area affected is a low-lying, grassy spot of approximately 1,500 square feet immediately north of the access road from Interstate 40 to the Giant Ciniza Refinery. The spill location is on Giant property. Free hydrocarbon was removed by vacuum truck. Bioremediation by tilling and fertilization of the affected soil is planned.</i>							
DESCRIPTION OF AREA	FARMING		GRAZING		URBAN		OTHER* <b>Rural, open land.</b>
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY <input checked="" type="checkbox"/>	ROCKY	WET <input checked="" type="checkbox"/>	DRY	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)** <i>Clear day, temperature in the 70's, light to moderate breeze from the southwest.</i>							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED <i>David C. Pavlich</i>					TITLE <b>HSE Manager</b>		DATE <b>6/1/95</b>

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

OIL CONSERVATION DIVISION

FEB 22 1994

OIL CONSERVATION DIVISION

OIL CON. DIV

STATE OF NEW MEXICO

P. O. BOX 2088

ENERGY AND MINERALS DEPARTMENT

SANTA FE, NEW MEXICO 87501

DIST. 3

## NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR GIANT REFINING COMPANY					ADDRESS RT. 3 BOX 7, GALLUP, N.M. 87301		
REPORT OF	FIRE	BREAK	SPILL	LEAK X	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*
NAME OF FACILITY CINIZA REFINERY							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) NE 1/4					SEC. 33	TWP. 15N	RGE. 15W
COUNTY MCKINLEY							
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK ~17 MILES EAST OF GALLUP, N.M. AT EXIT 39, I-40							
DATE AND HOUR OF OCCURENCE 1/16/94 p.m.				DATE AND HOUR OF DISCOVERY 1/17/94 5:00 a.m.			
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT REQUIRED		IF YES, TO WHOM Bobby Myers		
BY WHOM David Pavlich				DATE AND HOUR 1/18/94 9:45 a.m.			
TYPE OF FLUID LOST Unleaded Gasoline				QUANTITY OF LOSS 1-2 BO BW	VOLUME RECOVERED .5 BC BW		
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO X	QUANTITY			
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** A faulty valve on a tank water draw line failed to seat properly, allowing gasoline to leak onto the ground. Upon discovery, the standing gasoline was recovered using a vacuum truck. Stained soil was excavated and placed on plastic sheeting. Excavation was continued to expose and relocate the sewer piping and sewer drain cup directly beneath the water draw. The faulty drain valve was replaced.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** The pool of standing gasoline remained primarily around the water draw piping. The affected soil covered an area approximately 1 to 4 feet wide by 20 feet long (approximately 50 sq. ft.). After excavation, the stained soil was sampled for analysis and the area was backfilled with clean soil. A TCLP analysis of the excavated soil indicated that the soil was non-hazardous.							
DESCRIPTION OF AREA	FARMING		GRAZING		URBAN		OTHER* Rural industrial site
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY X	ROCKY	WET	DRY X	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)*							
Cool, dry, breezy.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED David C. Pavlich				TITLE Manager - H, S, & E DATE 2/16/94			

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

SF 3/1/94



NEW MEXICO OIL CONSERVATION DIVISION  
RECEIVED

MAR 7 1994 8 39

Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

March 4, 1994

Mr. Bobby Myers  
New Mexico Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87504-2088

Re: January 17, 1994 Gasoline Spill

Dear Mr. Myers:

As we discussed last week, the analysis of the soil sample associated with Giant Refining's gasoline leak of January 17, 1994 indicated that the soil was non-hazardous. Due to the non-hazardous nature of the excavated soil, the soil was removed from the plastic sheeting on which it had been placed and was spread out within the diked area from which it originated.

As you requested, I am enclosing a copy of the lab analysis for this soil for your records.

Thanks for your help in this matter. If you have any further questions regarding the above, please do not hesitate to contact me at (505) 722-0217.

Sincerely,

David C. Pavlich  
Health, Safety and Environmental Manager  
Giant Refining Company

DCP:sp

PAV\NMOC304



Analytical **Technologies**, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107  
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. 401371

February 15, 1994

Giant Refining  
Route 3, Box 7  
Gallup, NM 87301

Project Name/Number: None given

Attention: Lynn Shelton

On 01/26/94, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous** sample(s). The sample(s) were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

J indicates the value is estimated and below the reporting limit.

Due to matrix interferences, EPA method 8080 and 8150 analyses of sample TK 570 soil were performed at a dilution. The reporting limits have been raised accordingly.

The relative percent difference (RPD) for quality control duplicate analyses for cadmium meets ATI acceptance criteria; the results are <5X the reporting limit.

All analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Levitia Krakowski, Ph.D.  
Project Manager

H. Mitchell Rubenstein, Ph.D.  
Laboratory Manager

MR:jd

Enclosure



Analytical Technologies, Inc.

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)

DATE RECEIVED : 01/26/94

REPORT DATE : 02/15/94

ATI I.D. : 401371

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	TK 570 SOIL	SOIL	01/25/94

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	1

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.





Analytical Technologies, Inc.

# METALS RESULTS

ATI I.D. : 401371

CLIENT : GIANT REFINING CO.

DATE RECEIVED : 01/26/94

PROJECT # : (NONE)

PROJECT NAME : (NONE)

REPORT DATE : 02/15/94

PARAMETER	UNITS	01
SILVER (TCLP 1311/6010)	MG/L	<0.010
ARSENIC (TCLP 1311/6010)	MG/L	<0.1
BARIUM (TCLP 1311/6010)	MG/L	0.563
CADMIUM (TCLP 1311/6010)	MG/L	<0.005
CHROMIUM (TCLP 1311/6010)	MG/L	<0.010
MERCURY (TCLP 1311/7470)	MG/L	<0.0002
LEAD (TCLP 1311/6010)	MG/L	<0.10
SELENIUM (TCLP 1311/6010)	MG/L	<0.1



Analytical Technologies, Inc.

METALS - QUALITY CONTROL

CLIENT : GIANT REFINING CO.

PROJECT # : (NONE)

PROJECT NAME : (NONE)

ATI I.D. : 401371

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
SILVER (IN TCLP)	MG/L	40107001	<0.010	<0.010	NA	0.891	1.00	89
ARSENIC (IN TCLP)	MG/L	40107001	<0.1	<0.1	NA	1.0	1.0	100
BARIUM (IN TCLP)	MG/L	40107001	0.285	0.282	1	1.12	1.00	84
CADMIUM (IN TCLP)	MG/L	40107001	0.007	0.009	25	0.909	1.00	90
CHROMIUM (IN TCLP)	MG/L	40107001	0.092	0.093	1	0.964	1.00	87
MERCURY (IN TCLP)	MG/L	40107001	<0.0002	<0.0002	NA	0.0049	0.0050	98
LEAD (IN TCLP)	MG/L	40107001	0.50	0.51	2	1.39	1.00	89
SELENIUM (IN TCLP)	MG/L	40107001	<0.1	<0.1	NA	1.0	1.0	100

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



Analytical **Technologies**, Inc.

# GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 40137101

TEST : TCLP ORGANOCHLORINE PESTICIDES (EPA 1311/8080)

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
CLIENT I.D. : TK 570 SOIL  
SAMPLE MATRIX : SOIL

DATE SAMPLED : 01/25/94  
DATE RECEIVED : 01/26/94  
DATE EXTRACTED : 01/29/94  
DATE ANALYZED : 02/04/94  
UNITS : UG/L  
DILUTION FACTOR : 5

COMPOUNDS	RESULTS
CHLORDANE	<2.5
ENDRIN	<0.5
HEPTACHLOR	<0.25
HEPTACHLOR EPOXIDE	<0.25
GAMMA - BHC (LINDANE)	<0.25
METHOXYCHLOR	<2.5
TOXAPHENE	<5.0

## SURROGATE PERCENT RECOVERIES

TCMX (%)	86
DCBP (%)	56



Analytical **Technologies**, Inc.

## GAS CHROMATOGRAPHY - RESULTS

### REAGENT BLANK

TEST : TCLP ORGANOCHLORINE PESTICIDES (EPA 1311/8080)

CLIENT	: GIANT REFINING CO.	ATI I.D.	: 401371
PROJECT #	: (NONE)	DATE EXTRACTED	: 01/29/94
PROJECT NAME	: (NONE)	DATE ANALYZED	: 02/02/94
CLIENT I.D.	: REAGENT BLANK	UNITS	: UG/L
		DILUTION FACTOR	: N/A

COMPOUNDS	RESULTS
CHLORDANE	<0.5
ENDRIN	<0.1
HEPTACHLOR	<0.05
HEPTACHLOR EPOXIDE	<0.05
GAMMA - BHC (LINDANE)	<0.05
METHOXYCHLOR	<0.5
TOXAPHENE	<1.0

### SURROGATE PERCENT RECOVERIES

TCMX (%)	86
DCBP (%)	104



Analytical Technologies, Inc.

QUALITY CONTROL DATA

ATI I.D. : 401371

TEST : TCLP ORGANOCHLORINE PESTICIDES (EPA 1311/8080)

CLIENT : GIANT REFINING CO.

PROJECT # : (NONE)

DATE ANALYZED : 02/02/94

PROJECT NAME : (NONE)

SAMPLE MATRIX : NON-AQUEOUS

REF I.D. : 40249912

UNITS : UG/L

COMPOUNDS	SAMPLE CONC.		SPIKED SAMPLE	% REC.	DUP. SPIKED		RPD
	RESULT	SPIKED			SAMPLE	REC.	
LINDANE	<0.05	2.0	1.5	75	1.6	80	6
HEPTACHLOR	<0.05	2.0	1.2	60	1.3	65	8
HEPTACHLOR EPOXIDE	<0.05	2.0	1.7	85	1.8	90	6
METHOXYCHLOR	<0.5	2.0	1.8	90	1.9	95	5
ENDRIN	<0.1	2.0	1.7	85	1.8	90	6

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Spiked Sample Result} - \text{Duplicate Spike Sample Result})}{\text{Average of Spiked Sample}} \times 100$$



Analytical **Technologies**, Inc.

GAS CHROMATOGRAPHY - RESULTS

ATI I.D. : 40137101

TEST : TCLP CHLORINATED HERBICIDES (EPA 1311/8150)

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
CLIENT I.D. : TK 570 SOIL  
SAMPLE MATRIX : SOIL

DATE SAMPLED : 01/25/94  
DATE RECEIVED : 01/26/94  
DATE EXTRACTED : 01/31/94  
DATE ANALYZED : 02/03/94  
UNITS : UG/L  
DILUTION FACTOR : 5

-----  
COMPOUNDS

RESULTS  
-----

2,4-D	<2.0
2,4,5-TP (SILVEX)	<1.0

SURROGATE PERCENT RECOVERIES

DCAA (%)	69
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Analytical**Technologies**, Inc.

GAS CHROMATOGRAPHY - RESULTS

REAGENT BLANK

TEST : TCLP CHLORINATED HERBICIDES (EPA 1311/8150)

CLIENT	: GIANT REFINING CO.	ATI I.D.	: 401371
PROJECT #	: (NONE)	DATE EXTRACTED	: 01/31/94
PROJECT NAME	: (NONE)	DATE ANALYZED	: 02/03/94
CLIENT I.D.	: REAGENT BLANK	UNITS	: UG/L
		DILUTION FACTOR	: N/A

COMPOUNDS

RESULTS

2,4-D	<0.4
2,4,5-TP (SILVEX)	<0.2

SURROGATE PERCENT RECOVERIES

DCAA (%)	58
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Analytical Technologies, Inc.

QUALITY CONTROL DATA

TEST : TCLP CHLORINATED HERBICIDES (EPA 1311/8150)      ATI I.D. : 401371

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
REF I.D. : 40249912

DATE ANALYZED : 02/03/94  
SAMPLE MATRIX : NON-AQUEOUS  
UNITS : UG/L

COMPOUNDS	SAMPLE CONC. RESULT SPIKED	SPIKED % SAMPLE REC.	DUP. SPIKED % SAMPLE REC.	RPD
2,4-D	<0.4    17	11    65	12    71	9
2,4,5-TP	<0.2    8.3	5.2    63	5.9    71	13

% Recovery =  $\frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$

RPD (Relative % Difference) =  $\frac{(\text{Spiked Sample Result} - \text{Duplicate Spike Sample Result})}{\text{Average of Spiked Sample}} \times 100$





Analytical**Technologies**, Inc.

GCMS - RESULTS

ATI I.D. : 40137101

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
CLIENT I.D. : TK 570 SOIL  
SAMPLE MATRIX : SOIL

DATE SAMPLED : 01/25/94  
DATE RECEIVED : 01/26/94  
DATE EXTRACTED : 01/27/94  
DATE ANALYZED : 02/03/94  
UNITS : UG/L  
DILUTION FACTOR : 1

-----  
COMPOUNDS

RESULTS  
-----

BENZENE	<10
CARBON TETRACHLORIDE	<10
CHLOROBENZENE	<10
CHLOROFORM	<10
1,2-DICHLOROETHANE	<10
1,1-DICHLOROETHENE	<10
METHYL ETHYL KETONE	<100
TETRACHLOROETHENE	<10
TRICHLOROETHENE	<10
VINYL CHLORIDE	<10

SURROGATE PERCENT RECOVERIES

1,2-DICHLOROETHANE-D4 (%)	102
BROMOFLUOROBENZENE (%)	100
TOLUENE-D8 (%)	100



Analytical Technologies, Inc.

# GCMS - RESULTS

## REAGENT BLANK

TEST : EPA METHOD 8240 (TCLP 1311)

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
CLIENT I.D. : REAGENT BLANK

ATI I.D. : 401371  
DATE EXTRACTED : 01/27/94  
DATE ANALYZED : 02/03/94  
UNITS : UG/L  
DILUTION FACTOR : N/A

COMPOUNDS	RESULTS
BENZENE	<10
CARBON TETRACHLORIDE	<10
CHLOROBENZENE	<10
CHLOROFORM	<10
1,2-DICHLOROETHANE	<10
1,1-DICHLOROETHENE	<10
METHYL ETHYL KETONE	<100
TETRACHLOROETHENE	<10
TRICHLOROETHENE	<10
VINYL CHLORIDE	<10

## SURROGATE PERCENT RECOVERIES

1,2-DICHLOROETHANE-D4 (%)	102
BROMOFLUOROBENZENE (%)	100
TOLUENE-D8 (%)	99



Analytical Technologies, Inc.

# QUALITY CONTROL DATA

TEST : EPA METHOD 8240 (TCLP 1311)

ATI I.D. : 401371

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
REF I.D. : 40137101

DATE ANALYZED : 02/03/94  
SAMPLE MATRIX : SOIL  
UNITS : UG/L

COMPOUNDS	SAMPLE CONC.		SPIKED SAMPLE	% REC.	DUP.	DUP.	RPD
	RESULT	SPIKED			SPIKED SAMPLE	% REC.	
1,1-DICHLOROETHENE	<10	500	530	106	520	104	2
TRICHLOROETHENE	<10	500	520	104	500	100	4
CHLOROBENZENE	<10	500	510	102	490	98	4
BENZENE	<10	500	520	104	510	102	2

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Spiked Sample Result} - \text{Duplicate Spike Sample Result})}{\text{Average of Spiked Sample}} \times 100$$



Analytical Technologies, Inc.

# GCMS - RESULTS

ATI I.D. : 40137101

TEST : EPA METHOD 8270 (TCLP 1311)

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
CLIENT I.D. : TK 570 SOIL  
SAMPLE MATRIX : SOIL

DATE SAMPLED : 01/25/94  
DATE RECEIVED : 01/26/94  
DATE EXTRACTED : 01/29/94  
DATE ANALYZED : 02/02/94  
UNITS : UG/L  
DILUTION FACTOR : 2

## COMPOUNDS

## RESULTS

O-CRESOL	<40
M & P-CRESOL	21 J
1,4-DICHLOROBENZENE	<40
2,4-DINITROTOLUENE	<40
HEXACHLOROBENZENE	<40
HEXACHLOROBUTADIENE	<40
HEXACHLOROETHANE	<40
NITROBENZENE	<40
PENTACHLOROPHENOL	<200
2,4,5-TRICHLOROPHENOL	<200
2,4,6-TRICHLOROPHENOL	<40
PYRIDINE	<40

## SURROGATE PERCENT RECOVERIES

NITROBENZENE (%)	79
2-FLUOROBIPHENYL (%)	85
TERPHENYL (%)	80
PHENOL-D6 (%)	78
2-FLUOROPHENOL (%)	77
2,4,6-TRIBROMOPHENOL (%)	77



Analytical Technologies, Inc.

# GCMS - RESULTS

## REAGENT BLANK

TEST : EPA METHOD 8270 (TCLP 1311)

CLIENT : GIANT REFINING CO.  
PROJECT # : (NONE)  
PROJECT NAME : (NONE)  
CLIENT I.D. : REAGENT BLANK

ATI I.D. : 401371  
DATE EXTRACTED : 01/29/94  
DATE ANALYZED : 02/02/94  
UNITS : UG/L  
DILUTION FACTOR : N/A

COMPOUNDS	RESULTS
O-CRESOL	<20
M & P-CRESOL	<20
1,4-DICHLOROBENZENE	<20
2,4-DINITROTOLUENE	<20
HEXACHLOROBENZENE	<20
HEXACHLOROBUTADIENE	<20
HEXACHLOROETHANE	<20
NITROBENZENE	<20
PENTACHLOROPHENOL	<100
2,4,5-TRICHLOROPHENOL	<100
2,4,6-TRICHLOROPHENOL	<20
PYRIDINE	<20

## SURROGATE PERCENT RECOVERIES

NITROBENZENE (%)	82
2-FLUOROBIPHENYL (%)	85
TERPHENYL (%)	81
PHENOL-D6 (%)	76
2-FLUCROPHENOL (%)	75
2,4,6-TRIBROMOPHENOL (%)	71



Analytical Technologies, Inc.

QUALITY CONTROL DATA

TEST : EPA METHOD 8270 (TCLP 1311)

ATI I.D. : 401371

CLIENT : GIANT REFINING CO.

PROJECT # : (NONE)

PROJECT NAME : (NONE)

REF I.D. : 40249814

DATE ANALYZED : 02/02/94

SAMPLE MATRIX : NON-AQUEOUS

UNITS : UG/L

COMPOUNDS	SAMPLE CONC.		SPIKED RESULT	SPIKED SAMPLE	% REC.	DUP.	DUP.	RPD
	RESULT	SPIKED				SPIKED SAMPLE	% REC.	
2,4-DINITROTOLUENE	<20	100	46	46	45	45	45	2
1,4-DICHLOROBENZENE	<20	100	85	85	86	86	86	1
PENTACHLOROPHENOL	<100	200	150	75	150	75	75	0
O-CRESOL	<20	200	170	85	170	85	85	0

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Spiked Sample Result} - \text{Duplicate Spike Sample Result})}{\text{Average of Spiked Sample}} \times 100$$



State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505

STATE OF  
NEW MEXICO  
OIL  
CONSERVATION  
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time

9:00

Date

3/21/94

Originating Party

Other Parties

Dave Paulich - Giant Ciniza

Bobby Myers

Subject

refinery spill

Discussion

leak Sat nite

9:30

3/19/94

heating coil line split

200-250 bbl cat feed - crude tower bottoms

floating on rain water within dike - will get vacuum truck out today to start clean-up

Conclusions or Agreements

Starting cleanup today - Dave Paulich will call Aztec also

Distribution

Signed

*Bobby Myers*



OIL CONSERVATION DIVISION  
RECEIVED

'94 FEB 21 AM 8 35

Route 3, Box 7  
Gallup, New Mexico  
87301  
505  
722-3833

February 17, 1994

Mr. Roger Anderson  
Environmental Bureau Chief  
New Mexico Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87504-2088

Re: Gasoline Spill

Dear Mr. Anderson:

On January 18, 1994, I reported a gasoline leak at Giant Refining's Ciniza Refinery to Mr. Bobby Myers of your staff. This letter and the accompanying spill report form contain the details of the incident.

At approximately 5:00 a.m. on January 17, 1994, one of Giant's employees discovered and reported an apparent leak of gasoline coming from the water draw piping on a gasoline storage tank. The leak was determined to have been the result of a faulty water draw valve which had failed to fully reseal when operated the evening before the leak was discovered. Immediate steps were taken to replace the valve and stop the leak. A vacuum truck was then called in to recover the standing product which had pooled beneath the valve. Approximately one-half barrel of product was recovered in this fashion.

The stained soil remaining as a result of the leak was removed and placed on plastic sheeting to prevent it from contacting adjacent soil. The existing drain cup arrangement to the plant sewer system was then modified such that the drain cup would be located directly beneath the water draw piping. This new arrangement prevents any flows from the water draw piping from contacting the ground.

The excavated soil was sampled and analyzed for hazardous characteristics/constituents. Analysis results indicated that the soil was non-hazardous.

If you have any questions regarding the above or the attached report from, please do not hesitate to contact me at (505) 722-0217.

Sincerely,

*David C. Pavlich*

David C. Pavlich  
Manager - Health/Safety and Environment



DCP:sp

cc: Denny Foust - OCD District Office  
Ed Horst - HRMB  
Dennis McQuillan - GWPRB  
Kim Bullerdick - Giant Industries Arizona, Inc.

PA9\NHOCB217

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2086  
SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR <b>GIANT REFINING COMPANY</b>					ADDRESS <b>RT. 3 BOX 7, GALLUP, N.M. 87301</b>		
REPORT OF	FIRE	BREAK	SPILL	LEAK <input checked="" type="checkbox"/>	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY <input checked="" type="checkbox"/>	OTHER*
NAME OF FACILITY <b>CINIZA REFINERY</b>							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) <b>NE <math>\frac{1}{4}</math></b>					SEC. <b>33</b>	TWP. <b>15N</b>	RGE. <b>15W</b>
COUNTY <b>McKINLEY</b>							
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK <b>~17 MILES EAST OF GALLUP, N.M. AT EXIT 39, I-40</b>							
DATE AND HOUR OF OCCURENCE <b>1/16/94 p.m.</b>				DATE AND HOUR OF DISCOVERY <b>1/17/94 5:00 a.m.</b>			
WAS IMMEDIATE NOTICE GIVEN?	YES <input checked="" type="checkbox"/>	NO	NOT RE-QUIRED	IF YES, TO WHOM <b>Bobby Myers</b>			
BY WHOM <b>David Pavlich</b>				DATE AND HOUR <b>1/18/94 9:45 a.m.</b>			
TYPE OF FLUID LOST <b>Unleaded Gasoline</b>				QUANTITY OF LOSS <b>1-2 BO BW</b>	VOLUME RE-COVERED <b>.5 BO BW</b>		
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO <input checked="" type="checkbox"/>	QUANTITY			
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** A faulty valve on a tank water draw line failed to seat properly, allowing gasoline to leak onto the ground. Upon discovery, the standing gasoline was recovered using a vacuum truck. Stained soil was excavated and placed on plastic sheeting. Excavation was continued to expose and relocate the sewer piping and sewer drain cup directly beneath the water draw. The faulty drain valve was replaced.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** The pool of standing gasoline remained primarily around the water draw piping. The affected soil covered an area approximately 1 to 4 feet wide by 20 feet long (approximately 50 sq. ft.). After excavation, the stained soil was sampled for analysis and the area was backfilled with clean soil. A TCLP analysis of the excavated soil indicated that the soil was non-hazardous.							
DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* <b>Rural industrial site</b>			
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY <input checked="" type="checkbox"/>	ROCKY	WET	DRY <input checked="" type="checkbox"/>	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							
Cool, dry, breezy.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED <i>David C. Pavlich</i>				TITLE <b>Manager - H, S, &amp; E</b>		DATE <b>2/16/94</b>	

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY



OIL CONSERVATION DIVISION  
RECEIVED

94 JAN 13 AM 9 29

Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

January 6, 1994

Roger Anderson  
Environmental Bureau Chief  
New Mexico Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, NM 87504-2088

RE: JP-8 Spill

Dear Mr. Anderson:

On January 5, 1994, I spoke with you regarding a spill of JP-8 jet fuel which occurred earlier that day at Giant Refining's Ciniza facility. This letter is the follow-up written submittal to that telephonic report. Details of the spill are given below and on the attached OCD report form.

At approximately 6 a.m. on January 5, a leak of JP-8 from a pressure relief device was discovered. Upon discovery, steps were immediately taken to eliminate the flow of jet fuel from the pressure relief pop valve and to determine the extent of the leak. Investigation into the cause of the leak was also undertaken.

Plugging in a JP-8 filter pot was found to have caused an associated pressure relief pop valve to lift from its seat. This resulted in the discharge of product to the oily water sewer. Some of this product (approximately 20 bbls) spilled onto the soil underneath the pop valve and flowed down a pipe rack chase. The material was entirely contained onsite. Since there was some standing water under the piperack and the surface flow of fluid was through a relatively narrow channel (a few inches to a foot or so), the area of soil stained by the spill was minimized.

In cleaning up the spill, the area under the piperack was carefully flushed with additional water, and the water and spilled JP-8 were then recovered using a vacuum truck.

The current pressure relief device piping for this and similar locations is being examined to determine alternatives which will reduce the likelihood of a similar incident occurring in the future.

Mr. Roger Anderson  
Page 2  
January 6, 1994

Depending upon the accessibility of particular patches of stained soils, Giant proposes to land farm or treat in place the stained soils from this incident.

Should you have any questions regarding the above, please do not hesitate to contact me at (505) 722-0217.

Sincerely,



David C. Pavlich  
Manager Health, Safety, and Environment

cc: Denny Foust - OCD District Office  
Ed Horst - NMED, HRMB  
Dennis McQuillan - NMED, GWQB  
Kim Bullerdick - Giant Industries Arizona, Inc.

DCP\Anderson.002

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR					ADDRESS				
GIANT REFINING COMPANY					RT. 3 BOX 7, GALLUP, N.M. 87301				
REPORT OF	FIRE	BREAK	SPILL	LEAK	BLOWOUT	OTHER*			
			X						
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY	OTHER*		
						X			
NAME OF FACILITY									
CINIZA REFINERY									
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC.	TWP.	RGE.	COUNTY	
NE $\frac{1}{4}$					33	15N	15W	McKINLEY	
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK									
~17 MILES EAST OF GALLUP, N.M. AT EXIT 39, I-40									
DATE AND HOUR OF OCCURENCE					DATE AND HOUR OF DISCOVERY				
1/5/94 5:00 A.M.					1/5/94 6:00 A.M.				
WAS IMMEDIATE NOTICE GIVEN?		YES	NO	NOT RE-QUIRED	IF YES, TO WHOM				
		X			ROGER ANDERSON, OCD				
BY WHOM					DATE AND HOUR				
David Pavlich					1/5/94 11:15 A.M.				
TYPE OF FLUID LOST					QUANTITY OF LOSS	VOLUME RECOVERED			
JP-8					20 BO	15-18 BO			
					BW	COVERED		BW	
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO	QUANTITY					
			X						
IF YES, DESCRIBE FULLY**									
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**									
Plugging of a JP-8 filter pot resulted in release of JP-8 from an attached pressure relief device. Flow to the filter was stopped. This stopped the JP-8 discharge. The filter plug was cleared. The discharge piping on these relief devices is being evaluated for possible changes to address this situation.									
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**									
The spill flowed down the pipe rack chase and collected in a low lying ditch. The pipe rack area was carefully flushed of JP-8 and standing water using plant fire water. This material was then recovered using a vacuum truck. Stained soils will be land farmed or treated in place depending on soil accessibility.									
DESCRIPTION OF AREA		FARMING	GRAZING	URBAN	OTHER*				
					Rural Industrial Site				
SURFACE CONDITIONS		SANDY	SANDY LOAM	CLAY	ROCKY	WET	DRY	SNOW	
				X					
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**									
Conditions were cold, dry , and breezy.									
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF									
SIGNED					TITLE		DATE		
David C. Pavlich					Manager, HS & E		1/6/94		

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

OIL CONSERVATION DIVISION  
RECEIVED



94 JAN 11 AM 9 30

Route 3, Box 7  
Gallup, New Mexico  
87301

January 5, 1993

505  
722-3833

Roger Anderson  
Environmental Bureau Chief  
State of New Mexico Oil Conservation Division  
P.O. Box 2088  
State Land Office Bldg.  
Santa Fe, NM 87504-2088

RE: Diesel Fuel Spill Report

Dear Mr. Anderson:

This letter is a written follow-up to a telephone report to you on December 29, 1993 by John Stokes advising the OCD of a spill of diesel fuel which occurred at Giant Refining Company's Ciniza facility on that day. The details regarding the diesel spill are set forth below and in the attached OCD reporting form.

On December 29, 1993, a diesel transfer line at the Ciniza refinery developed a leak due to corrosion. Upon discovery of the leak, the line was immediately blocked in, and the flow of product was contained. The corroded piping was then replaced; and the accumulated product was recovered via vacuum truck. The volume of material leaked from the transfer line was estimated to be approximately 50 barrels.

Because of the difficulty in accessing the soil stained during this incident (the material flowed underneath a low-lying pipe rack), Giant proposes to treat the stained soils in place.

If you have any questions regarding the above, please do not hesitate to contact me at (505) 722-0217.

Sincerely,

A handwritten signature in cursive script that reads "David C. Pavlich".

David C. Pavlich  
Manager Health, Safety, & Environment

DCP:smb

cc: Denny Foust - OCD District Office  
Ed Horst - NMED, HRMB  
Dennis McQuillan - NMED, GWQB  
Kim Bullerdick - Giant Industries Arizona, Inc.

DCP:Anderson.001

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR <b>GIANT REFINING COMPANY</b>					ADDRESS <b>RT. 3 BOX 7, GALLUP, N.M. 87301</b>		
REPORT OF	FIRE	BREAK	SPILL	LEAK X	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*
NAME OF FACILITY <b>CINIZA REFINERY</b>							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) <b>NE <math>\frac{1}{4}</math></b>					SEC. <b>33</b>	TWP. <b>15N</b>	RGE. <b>15W</b>
COUNTY <b>McKINLEY</b>							
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK <b>~17 MILES EAST OF GALLUP, N.M. AT EXIT 39, I-40</b>							
DATE AND HOUR OF OCCURENCE <b>12/29/93</b>				DATE AND HOUR OF DISCOVERY <b>12/29/93 6:00 A.M.</b>			
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT REQUIRED		IF YES, TO WHOM <b>ROGER ANDERSON, OCD</b>		
BY WHOM	<b>JOHN STOKES</b>			DATE AND HOUR <b>12/29/93 9:30 A.M.</b>			
TYPE OF FLUID LOST <b>DIESEL FUEL</b>	QUANTITY <b>~50</b> BO			VOLUME RE- OF LOSS <b>~48</b> BW		COVERED <b>~48</b> BW	
DID ANY FLUIDS REACH A WATERCOURSE?	YES	NO X	QUANTITY				
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**							
Leak in a diesel transfer line caused by corrosion. Affected portion of line was replaced.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** The spill was contained within the pipe rack chaseway. The spilled material was recovered using a vacuum truck. The stained soil, due to the proximity of the pipe rack to the soil surface, will be treated in place.							
DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Rural Industrial Site			
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY X	ROCKY	WET	DRY	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							
Prevailing weather was dry & cold.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED <i>David C. Ruelich</i>				TITLE <b>Manager, HS &amp; E</b>		DATE <b>1/6/94</b>	

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

OIL CONSERVATION DIVISION  
RECEIVED

'93 MAR 31 AM 9 02

**GIANT**  
INDUSTRIES, INC.

Route 3, Box 7  
Gallup, New Mexico  
87301

March 29, 1993

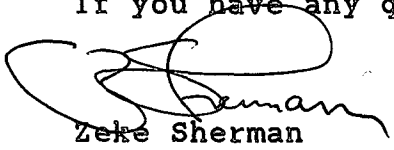
Mr. Roger Anderson  
Environmental Bureau Chief  
Oil Conservation Division  
Land Office Building  
P.O. Box 2088  
Santa Fe, NM 87504-2088

RE: Notification of Spill, Ciniza Refinery,  
GW - Discharge  
Permit #32

Dear Mr. Anderson:

The attached notification outlines the details associated with the API oil and water spill.

If you have any questions, contact me at (505) 722-3833.



Zeke Sherman  
Environmental Manager  
Ciniza Refinery  
Giant Industries Arizona, Inc.

ZRS:smb

cc: Mr. Toby Muckelroy, NM Env Dept Hazardous Waste Bureau  
Ms. Barbara Driscoll, United States Env. Protection Agency,  
Region VI



DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III  
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico  
Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

SUBMIT 2 COPIES TO  
APPROPRIATE DISTRICT  
OFFICE IN ACCORDANCE  
WITH RULE 116 PRINTED  
ON BACK SIDE OF FORM

### NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

OPERATOR GIANT REFINING COMPANY					ADDRESS RT 3, BX 7, GALLUP, NM 87301		TELEPHONE # (505) 722-3833	
REPORT OF	FIRE	BREAK	SPILL X	LEAK	BLOWOUT	OTHER*		
TYPE OF FACILITY	DRUG WELL	PROD WELL	TANK BTRY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*	
FACILITY NAME: CINIZA REFINERY								
LOCATION OF FACILITY Qtr/Sec. or Footage					SEC. 33	TWP. 15N	RGE. 15W	COUNTY McKinley
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK 17 miles east of Gallup, N.M. on I 40 at Exit #39								
DATE AND HOUR OF OCCURRENCE 7 P.M. 3-20-93					DATE AND HOUR OF DISCOVERY 8 A.M. 3-22-93			
WAS IMMEDIATE NOTICE GIVEN?		YES X	NO	NOT REQUIRED	IF YES, TO WHOM Roger Anderson			
BY WHOM Zeke Sherman					DATE AND HOUR 3-23-93 10:45 A.M.			
TYPE OF FLUID LOST API, OIL, & WATER					QUANTITY OF LOSS 5-10 Bbls		VOLUME RECOVERED 90%	
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO X	QUANTITY N.A.				
IF YES, DESCRIBE FULLY**  N. A.								
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** A steam lance accidentally left adjacent to the surface of the API was turned on and left unattended. The steam blew oil and water from the API's surface over the concrete wall of the API.								
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** The water and oil from the API collected in a natural depression on the south side of the API. The water and oil were vacuummed back into the API. The stained soil was shoveled onto plastic and a sample was taken for TC testing.								
DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER*				
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY X	ROCKY	WET	DRY X	SNOW	
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)** The weather was cool and dry.								
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF								
SIGNED		PRINTED NAME AND TITLE Zeke Sherman, ENV. Mgr.					DATE 3-29-93	

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

OIL CONSERVATION DIVISION  
RECEIVED

**GIANT**  
REFINING CO.

'93 MAR 22 AM 10 55  
Route 3, Box 7  
Gallup, New Mexico  
87301

March 17, 1993

505  
722-3833

Roger Anderson  
Bureau Chief  
Environmental Bureau  
Oil Conservation Division  
P.O. Box 2088  
Land Office Building  
Santa Fe, New Mexico 87504-2088

Re: Crude Oil Release

Dear Mr. Anderson:

Please find enclosed a spill notification form and site map that provides the details of the crude oil release reported to Mr. Bill Olson, of your staff, on March 12, 1993.

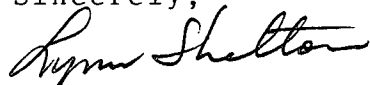
Approximately 10 barrels of raw crude oil were released into the area shown on the site map, in an area 200' long and from 1' to 4' wide. A berm was pushed up to prevent any runoff, but was unnecessary. Pockets of free standing liquid were vacuumed up and placed in the process wastewater sewer system (approximately 1-2 barrels). The stained soil will be fertilized and tilled in place to promote bacterial degradation of the hydrocarbon.

Penetration of the crude oil into the soil was observed to be approximately 2" before the drop in temperature began to gel the crude oil and prevented further migration.

Remediation of the spill should be completed by Thursday, March 18, 1993.

If you require additional information, please contact me at (505) 722-0227.

Sincerely,



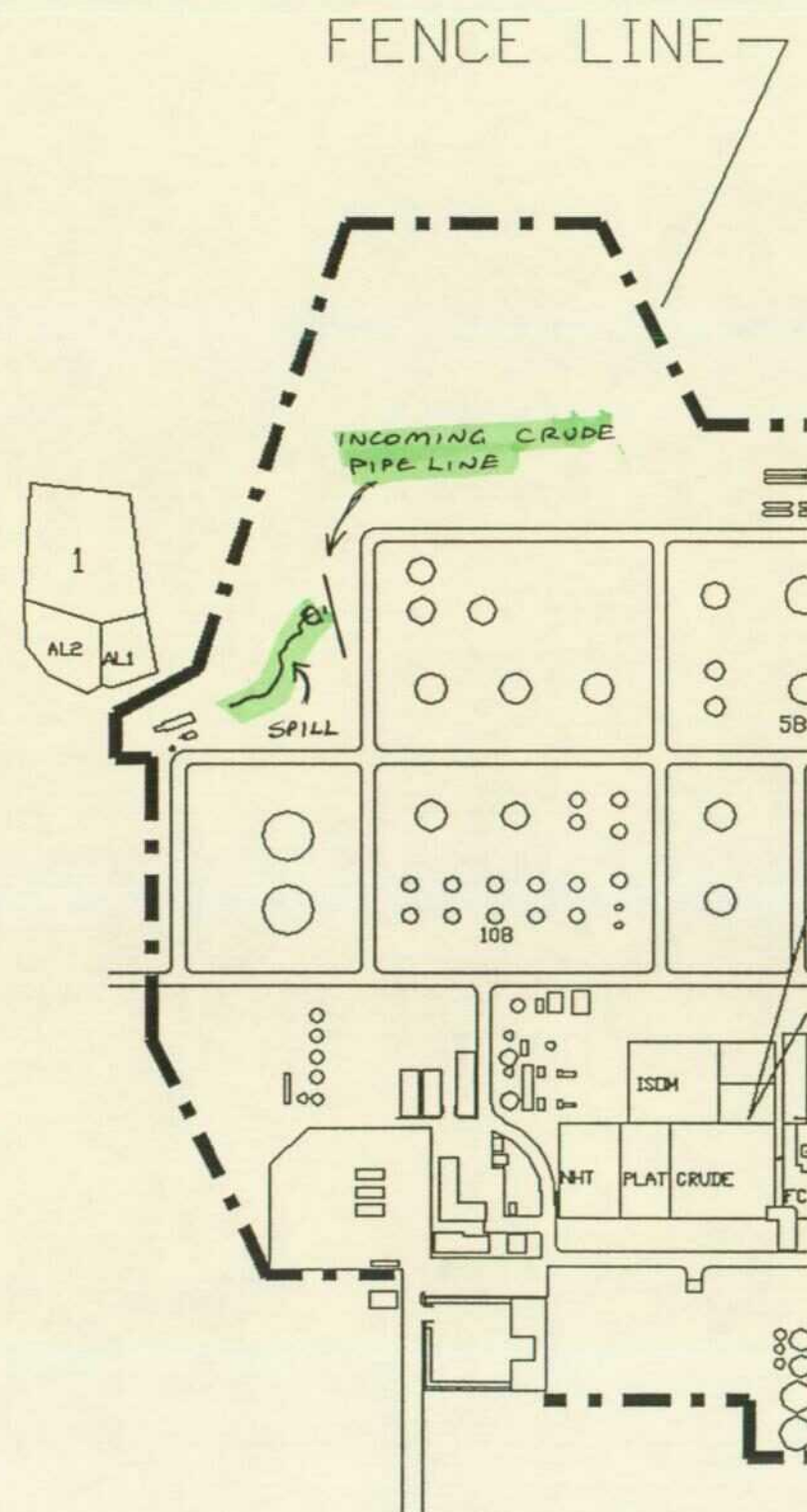
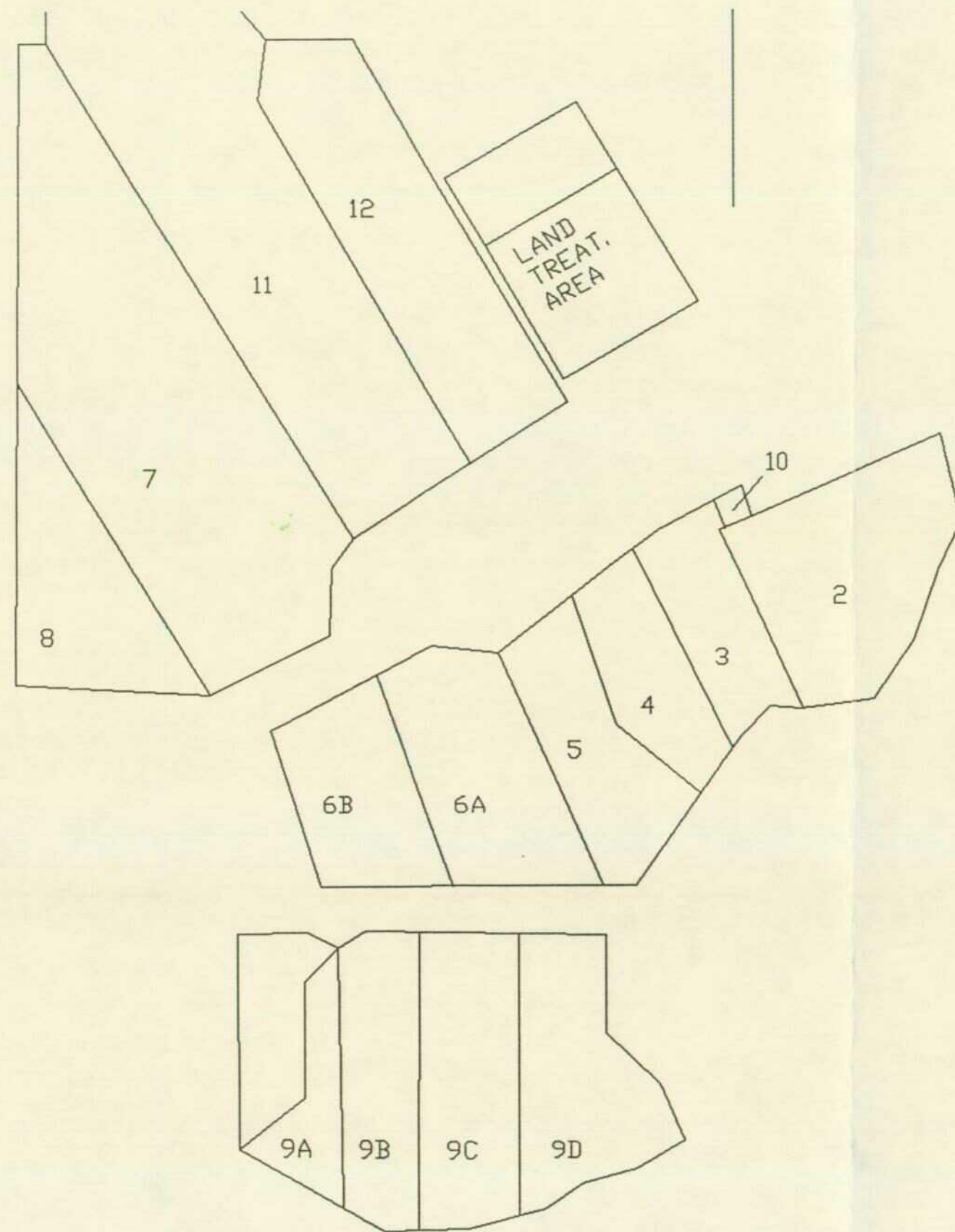
Lynn Shelton  
Environmental Assistant  
Giant Refining Company - Ciniza

cc w/attachments:

Ed Horst  
Program Manager  
Hazardous and Radioactive Materials Bureau  
New Mexico Environment Department

John Stokes  
Refinery Manager  
Giant Refining Company

Kim Bullerdick  
Corporate Counsel  
Giant Industries Arizona, Inc.



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR					ADDRESS				
GIANT REFINING COMPANY					ROUTE 3 BOX 7 GALLUP, NEW MEXICO 87301				
REPORT OF	FIRE	BREAK	SPILL	LEAK	BLOWOUT	OTHER*			
TYPE OF FACILITY	ORLG WELL	PROD WELL	TANK BTTY	PIPE LINE	GASO PLNT	OIL RFY	OTHER*		
NAME OF FACILITY									
CINIZA REFINERY									
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC.	TWP.	RGE.	COUNTY	
					33	15N	15W	McKINLEY	
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK									
17 MILES EAST OF GALLUP, NEW MEXICO									
DATE AND HOUR OF OCCURENCE					DATE AND HOUR OF DISCOVERY				
3-12-93 12:30 p.m.					3-12-93 12:40 p.m.				
WAS IMMEDIATE NOTICE GIVEN?		YES	NO	NOT REQUIRED		IF YES, TO WHOM			
		X				Bill Olson, OCD			
BY WHOM					DATE AND HOUR				
Lynn Shelton					3-12-93 3:30 p.m.				
TYPE OF FLUID LOST					QUANTITY OF LOSS		VOLUME RECOVERED		
Crude Oil					80 BW		80 BW		
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO	QUANTITY					
			X						
IF YES, DESCRIBE FULLY**									
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**									
While proving a meter on the incoming crude oil pipeline, Ciniza Pipeline personnel inadvertently left a small bleeder valve open. While working on another meter, personnel noticed release and shut in valve.									
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**									
Crude Oil ran into semi-flat area just west of incoming pipeline area. Backhoe was used to push up a soil barrier to prevent runoff. Free liquid was vacuumed up. Stained soil will be tilled and fertilized in place.									
DESCRIPTION OF AREA		FARMING		GRAZING		URBAN		OTHER*	
								REFINERY	
SURFACE CONDITIONS		SANDY		SANDY LOAM		CLAY		ROCKY	
						X			
						WET		DRY	
								X	
								SNOW	
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**									
Clear, 55°F; WSW wind at 5-10 mph. Dry.									
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF									
SIGNED					TITLE			DATE	
Lynn Shelton					Environmental Assistant			3-16-93	

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY



State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505

STATE OF  
NEW MEXICO  
OIL  
CONSERVATION  
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Personal	Time 1540	Date 3/12/93
---	-----------	--------------

Originating Party	Other Parties
Lynn Shelton - Giant Co. Inc.	Bill Olson - Envir. Bureau

Subject

Spill Notification

Discussion

Bleeder valve left open at plant on crude pipeline feeding the plant  
approx 10 bbls crude lost  
picked up contaminated soils, placed on plastic  
raining, ITC analysis

Conclusions or Agreements

If non haz will put on land farm at refinery

Distribution

file  
OCD Axtan

Signed

Bill Olson



OIL CONSERVATION DIVISION  
RECEIVED

March 8, 1993

'93 MAR 22 AM 10 55

Route 3, Box 7  
Gallup, New Mexico  
87301

Mr. Roger Anderson  
Environmental Bureau Chief  
State of New Mexico Oil Conservation Division  
P.O. Box 2088  
Land Office Building  
Santa Fe, NM 87501-2088

RE: Evaporation Pond Water Release,  
Discharge Permit No. 32

Dear Mr. Anderson:

Giant Refining Company is submitting the following report concerning the accidental release of pond water at our Ciniza Refinery. The report summarizes the events surrounding the release including actions taken to respond to the release, the pond water and Rio Puerco analytical data, and the measures that Ciniza intends to undertake to minimize the possibility of such happening again.

This submittal is also a preliminary notification of a groundwater discharge permit modification. Giant Refining company desires to modify certain conditions of its discharge permit to alleviate the potential for accidental releases of evaporation pond water. The specific modifications to the permit are summarized later on in this submittal.

During the weekend of February 20th and 21st, approximately eight feet of the berm between evaporation pond #7 and #8 (see figure #1) failed, apparently by wave erosion. This failure resulted in pond #7 flowing into pond #8, with pond #8 subsequently overflowing. The water leaving pond #8 was conveyed from the property by natural drainage (See figure 2). This natural drainage conveyance forms a tributary to the South Fork of the Puerco River.

The pond water release was discovered Monday morning, 22 February and work to stop the loss of water began immediately. The work was hampered by the extremely muddy conditions at and around the point where the berms of pond #8 were overtopped. The release of water ceased by approximately 15:30 hours on 22 February after pond #7 had equalized with pond #8. Sometime during the night of 22 February, a small stream of water began to overflow pond #8's berm at the same point as previously. After the stream was sampled the next day, several shovels of dirt were placed to permanently stop the flow.

## Evaporation Pond Water Release

Page 2

The appropriate State, Federal, and Tribal agencies were notified of the release Monday, 22 February. The following is a list of the agencies contacted and the date, approximate time, and person contacted with the release information:

<u>Agency</u>	<u>Date</u>	<u>Time</u>	<u>Contact</u>
1. NMOCD	2/22/93	3:00 p.m.	Roger Anderson
2. Surface Water Division	2/22/93	3:30 p.m.	Bill Bartel
3. EPA Hotline	2/22/93	4:00 p.m.	Petty Officer Lyod
4. EPA Region VI	2/22/93	3:45 p.m.	David Neleigh
5. NM Game & Fish	2/22/93	4:30 p.m.	Jill Castillo-Silvey
6. Navajo EPA	2/23/93	9:30 a.m.	Bonnie Cook
7. Region VI, Water Management Division	2/22/93	3:55 p.m.	Ruth Gibson
8. Region VI, Water Management Division	2/23/93	10:30 a.m.	Cecillia Kevmodle
9. Arizona Department of Env. Quality	2/23/93	2:00 p.m.	Peter Hyde
10. OCD, Aztec Field Office	2/24/93	8:00 a.m.	Denny Foust

By Tuesday, 23 February, conditions had improved enough that heavy equipment could be used to begin a more substantial repair of the breach point on pond #7 berm and the eroded point on the berm of pond #8. Additionally, since another weather front was expected to move through the area within 48 hours, the berms of pond #8 and the berm separating pond #7 from #8 were raised from one to two feet above the existing elevations. Also, over 1,000 bags of sand were shipped to the site for use to protect and reinforce the pond berms.

On Wednesday, 24 February, a high capacity pump was placed in service to transfer water from pond #8 to an adjacent pond. This served to further reduce the effective level in the pond and increase the freeboard of pond #8 dikes. At this time, the company believes that the situation has been corrected and that the potential for any further releases from ponds #7 and #8 have been alleviated.

### Sampling Activities

On Tuesday, 23 February, samples of pond water overflowing from pond #8 and samples of the Puerco river water were obtained. Analysis performed on the samples included: SW-846 methods 8010 for Halogenated Aromatics, 8020 for Volatile Aromatics; EPA 200.7 ICP scan for priority pollutant metals and major cations/anions for



general chemistry (See Appendix A). The water samples were retrieved from the overflow point on pond #8 and from the points on the Puerco River just upstream and just downstream from where the natural drainage carrying the water from the release entered. There were no detections of organic constituents. The metal scan results have been summarized for comparison purposes in Table #1. Specific conductance readings were also made at the sampling sites and are shown below.

Pond #8	- 3820 umhos
Puerco River	- 360 umhos

Additional samples were taken from four points within pond #8 on Thursday, 25 February. Those samples were analyzed using SW-846 methods 8020 Volatile Aromatics and 8270 - Semivolatiles, ICP scan and general chemistry. Those results are shown in Appendix B. There were no detections of organic constituents - except for one laboratory contaminant. The metal scan results have been summarized for comparison purposes in Table #2.

#### Release Response Actions

To minimize the future potential for accidental releases from our evaporation ponds, Giant is proposing the following actions:

- I. A permit modification to change the frequency of pond inspection to daily from weekly. The proposed inspection program will require visual inspection of all pond berms on a daily basis. Included in the inspection will be the requirements to record pond levels in regards to their freeboards and to document the inspection including responses to deficiencies observed during the inspection. The proposal will include requirements to maintain records for 3 years and a requirement to notify the OCD when certain problems are discovered such as maximum freeboards exceeded or moderate to severe berm erosion.
- II. A permit modification to adopt a revised contingency plan. The proposed revised contingency plan would provide greater detail concerning the response efforts to releases. The plan would also clearly identify the person(s) responsible for initiating the plan and will also provide the authority for that person to expend whatever resources are necessary to respond to a release.
- III. A permit modification to adopt a waste water reduction program. The proposed waste water reduction program would characterize existing conditions as a baseline for annual flow rate reductions and set reasonable goals for the refinery to achieve.

- IV. Giant will conduct a structural integrity inspection of all the evaporation pond berms. Those not meeting certain standards based on the State Engineer's code for impoundments will be upgraded during this year's summer season.
- V. Giant will develop a plan to lower the existing pond levels to the required freeboards as soon as possible. Giant may seek permission to construct a temporary impoundment to which water from existing ponds may be pumped.

Giant is aware of the seriousness of this situation and intends to completely cooperate with the Oil Conservation Division and all other agencies in their review of these circumstances. Further, Giant is committed to taking all the necessary steps to prevent an accidental pond water release from occurring again.

We encourage the Division and any other agency who may have questions concerning the accident to contact us at (505) 722-3833.

Respectfully yours,

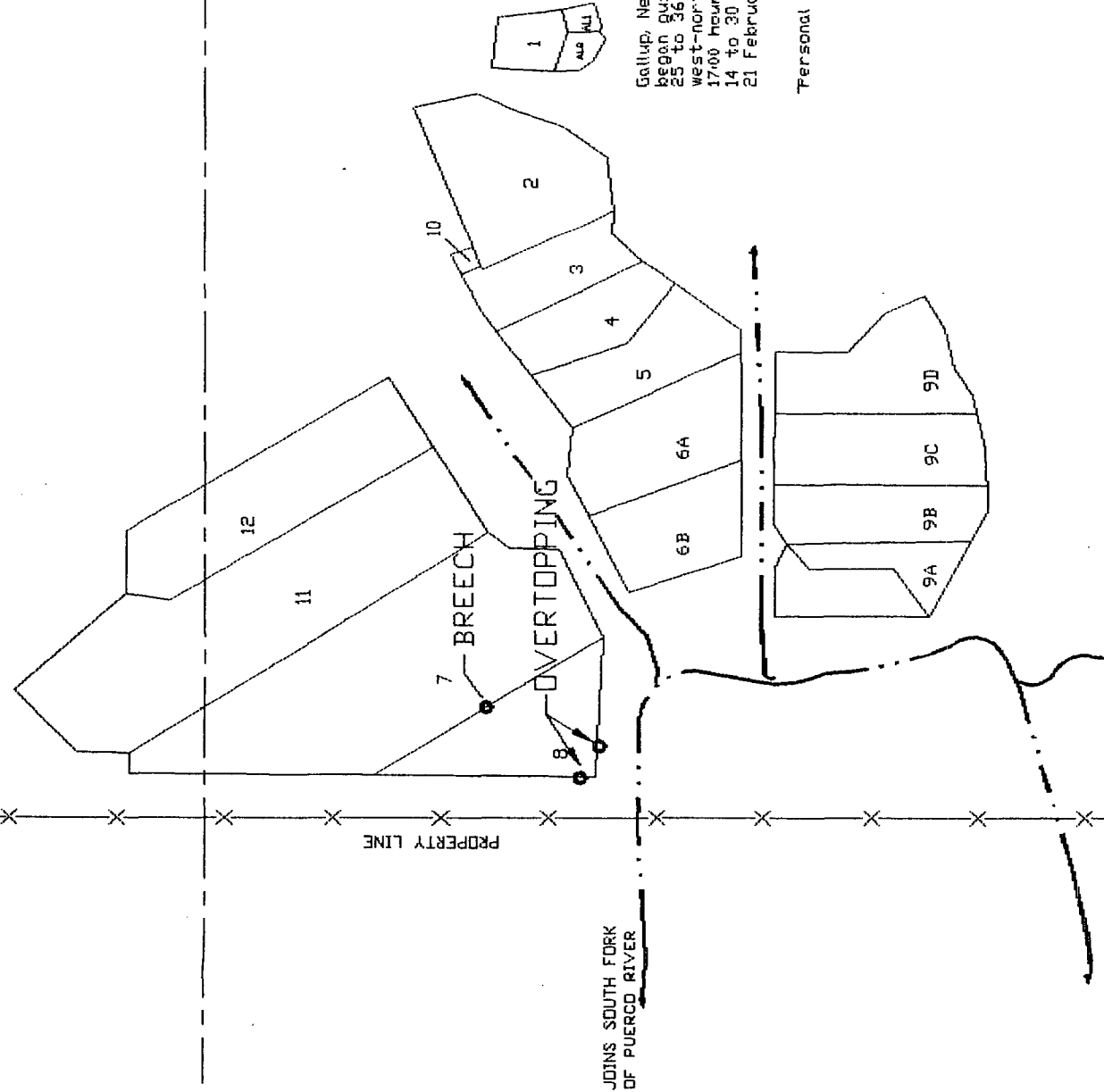


Zeke Sherman  
Environmental Manager  
Ciniza Refinery  
Giant Industries Arizona, Inc.

cc w/o: Carl Shook, Vice President of Refining  
John Stokes, Refinery Manager  
Lynn Shelton, Environmental Supervisor

cc w/: Kim Bullerdick, Corporate Counsel  
Roger Anderson, NMOCD, Santa Fe  
Denny Foust, NMOCD, Aztec  
Bill Bartel, NM Surface Water Division  
Bonnie Cook, Navajo Tribe EPA  
Jill Castillo-Silvey, NM Game & Fish  
Cecillia Kevmodle, EPA Region VI Water Mgmt. Div.  
Peter Hyde, Arizona Dept. of Env. Quality  
Barbara Driscoll, EPA Region VI, HSWA

SECTION 28 T16N R15W  
SECTION 33 T15N R15W



Gallup, New Mexico, Flight Service Station reports that surface winds began gusting at 0130 hours 20 February. Wind speeds ranged from 25 to 36 knots (29 to 42 mph) from the west-southwest and west-northwest direction. These speeds were sustained to approximately 1700 hours at which time windspeeds were reduced to a range of 14 to 30 knots (16 to 35 mph). Surface winds continued to gust through 21 February averaging 10 to 17 knots (12 to 20 mph).-

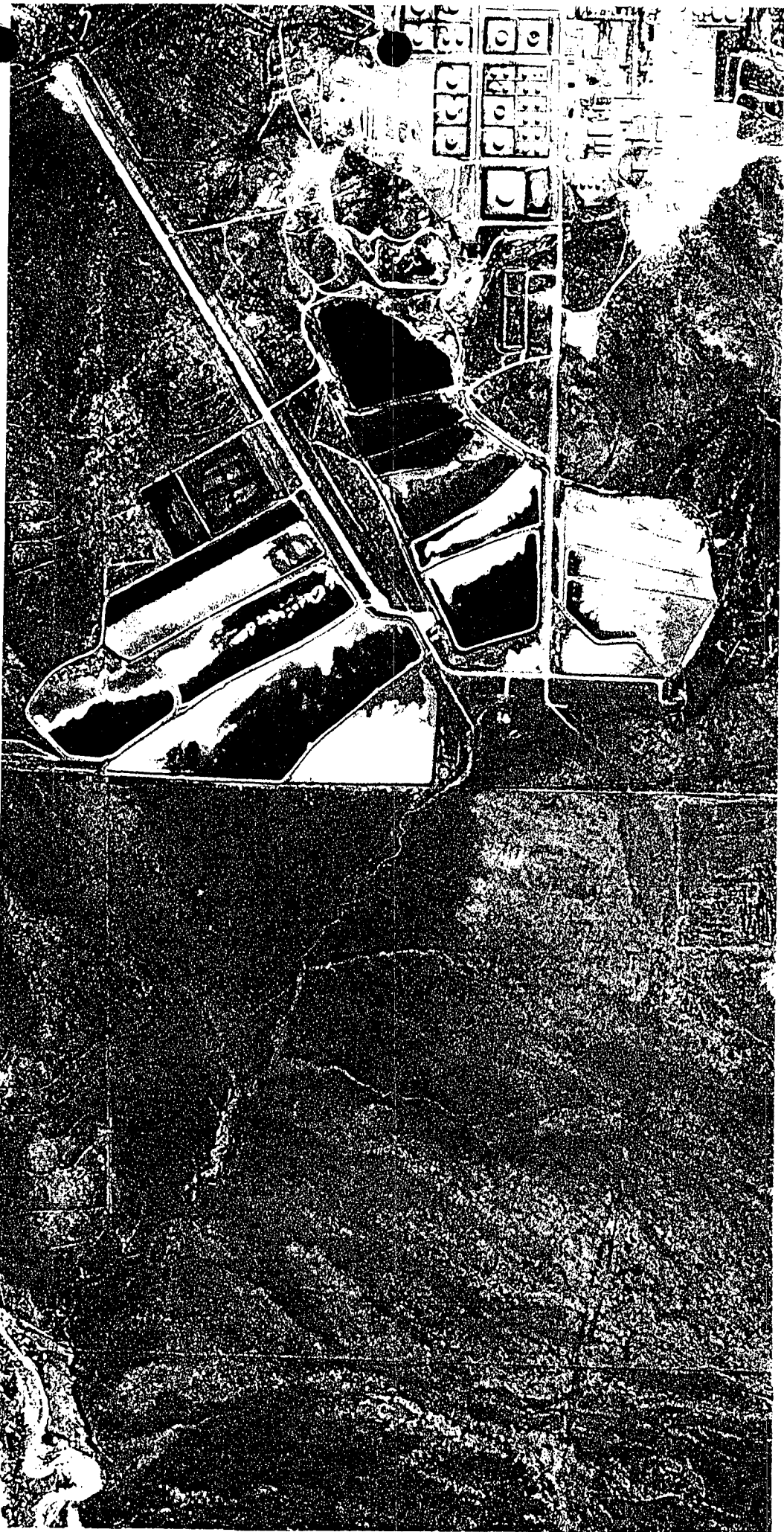
Personal communication- Mr. Martin Molina, FSS-Gallup, (505) 722-4302.

<b>GIANT</b>	
CINIZA REFINING CO	GALLUP, NEW MEXICO
A DIVISION OF MOUNTAIN STATES INDUSTRIES, INC.	
<b>CINIZA REFINERY WASTE WATER LAGOONS</b>	
SCALE: NONE	APPROVED
DRN. BY: SPS	APPROVED
DATE: 3-5-93 DWG NO. 2-02-143	

FIG. 1

Figure 2

On the 22nd and 23rd of February, the flow in the South Fork of the Puerco River and its tributaries were running at approximately 80 percent of flood stage. This is a visual estimate by Ciniza staff members. The Army Corp. of Engineers (Rio Grande Water Shed District) reports that there are no active gauging stations on the South Fork of the Puerco River.



**APPENDIX A**

TABLE #1

## GIANT REFINING – CINIZA

## ICP METALS ANALYSIS

POND #8 – RELEASE

23 FEB 1993

Parameter	Pond #8	Pond #8-DUP	Upstream	Downstream	WQCC Limits
Aluminum	1.0	0.62	270	32	----
Antimony	<.05	<.05	<.05	<.05	----
Arsenic	0.11	0.11	0.08	<.05	.1
Barium	0.09	0.09	1.8	0.40	1.0
Beryllium	<.05	<.05	<.05	<.05	----
Cadmium	<.05	<.05	<.05	<.05	.01
Calcium	780	840	430	250	----
Chromium	<.05	<.05	0.13	<.05	.05
Copper	<.05	<.05	<.05	<.05	1.0
Iron	1.2	1.4	140	20	1.0
Lead	<.05	<.05	0.09	<.05	.05
Magnesium	370	400	230	120	----
Manganese	3.5	3.6	3.9	1.3	.2
Mercury	<.001	<.001	<.001	<.001	.002
Nickel	<.05	<.05	0.10	<.05	----
Potassium	200	190	130	45	----
Selenium	<.05	<.05	<.05	<.05	----
Sodium	7200	7900	3200	2200	----
Tin	<.05	0.12	<.05	<.05	----
Vanadium	<.05	<.05	0.29	0.06	----
Zinc	0.06	0.07	0.47	0.29	10.0
Platinum	14	15	<10	<10	----



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Phoenix, Arizona 85040  
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304477  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND #8  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE ..: 02-24-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0

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*M. Gaudin*  
Managing Director



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REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 2

CLIENT SAMPLE ID : POND #8  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE ..: 02-24-93

Method 8010 - Halogenated Volatile Organics

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Bromochloromethane .....	<1.0	ug/L	1.0
Bromodichloromethane .....	<1.0	ug/L	1.0
Bromoform .....	<1.0	ug/L	1.0
Bromomethane .....	<1.0	ug/L	1.0
Carbon tetrachloride .....	<0.5	ug/L	0.5
Chlorobenzene .....	<1.0	ug/L	1.0
Chloroethane .....	<1.0	ug/L	1.0
Chloroform .....	<0.5	ug/L	0.5
Chloromethane .....	<1.0	ug/L	1.0
Dibromochloromethane .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Dichlorodifluoromethane .....	<1.0	ug/L	1.0
1,1-Dichloroethane .....	<0.5	ug/L	0.5
1,2-Dichloroethane .....	<0.5	ug/L	0.5
1,1-Dichloroethene .....	<0.5	ug/L	0.5
cis 1,2-Dichloroethene .....	<0.5	ug/L	0.5
trans 1,2-Dichloroethene .....	<1.0	ug/L	1.0
1,2-Dichloropropane .....	<0.5	ug/L	0.5
trans 1,3-Dichloropropene .....	<0.5	ug/L	0.5
cis 1,3-Dichloropropene .....	<0.5	ug/L	0.5
Dichloromethane .....	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethane .....	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethene .....	<0.5	ug/L	0.5
1,1,1-Trichloroethane .....	<0.5	ug/L	0.5
1,1,2-Trichloroethane .....	<0.5	ug/L	0.5
Trichloroethene .....	<0.5	ug/L	0.5
Trichlorofluoromethane .....	<1.0	ug/L	1.0
Vinyl chloride .....	<1.0	ug/L	1.0

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*M. G. G. G.*  
Managing Director





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SAMPLE NO. : 9304477  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 2 OF 2

D A T A      T A B L E				(Cont.)
Parameter	Result	Unit	Detection Limit	
2-Chloroethylvinyl Ether .....	<200.	ug/L	200.	



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SAMPLE NO. : 9304477  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *LEN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND #8  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ....: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	1.0	mg/L	0.05	02-26-93
Total Antimony .....	<0.05	mg/L	0.05	02-26-93
Total Arsenic .....	0.11	mg/L	0.05	02-26-93
Total Barium .....	0.09	mg/L	0.05	02-26-93
Total Beryllium .....	<0.05	mg/L	0.05	02-26-93
Total Cadmium .....	<0.05	mg/L	0.05	02-26-93
Total Calcium .....	780.	mg/L	0.05	02-28-93
Total Chromium .....	<0.05	mg/L	0.05	02-26-93
Total Copper .....	<0.05	mg/L	0.05	02-26-93
Total Iron .....	1.2	mg/L	0.05	02-26-93
Total Lead .....	<0.05	mg/L	0.05	02-26-93
Total Magnesium .....	370.	mg/L	0.10	02-28-93
Total Manganese .....	3.5	mg/L	0.05	02-26-93
Total Mercury .....	<0.001	mg/L	0.001	02-26-93
Total Nickel .....	<0.05	mg/L	0.05	02-26-93
Total Potassium .....	200.	mg/L	1.0	02-26-93
Total Selenium .....	<0.05	mg/L	0.05	02-26-93
Total Sodium .....	7200.	mg/L	0.05	02-28-93
Total Tin .....	<0.05	mg/L	0.05	02-26-93
Total Vanadium .....	<0.05	mg/L	0.05	02-26-93
Total Zinc .....	0.06	mg/L	0.05	02-26-93
Total Platinum .....	14.	mg/L	10.	03-02-93

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*M. Grubel*  
Managing Director



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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304477  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *ALN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND #8  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	780.	mg/L	0.05	02-28-93
Total Magnesium .....	370.	mg/L	0.10	02-28-93
Total Potassium .....	200.	mg/L	1.0	02-26-93
Total Sodium .....	7200.	mg/L	0.05	02-28-93
Dissolved Calcium .....	870.	mg/L	0.05	02-28-93
Dissolved Magnesium .....	420.	mg/L	0.10	02-28-93
Dissolved Sodium .....	8300.	mg/L	0.05	02-28-93
Carbonate .....	<2.0	mg/L	2.0	02-25-93
Bicarbonate .....	120.	mg/L	2.0	02-25-93
Hydroxide .....	<2.0	mg/L	2.0	02-25-93
Alkalinity, Total .....	120.	mg/L	2.0	02-25-93
Hardness .....	3700.	mg/L	0.53	02-28-93

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*M. Gussil*  
Managing Director



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(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304478  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : UPSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE ..: 02-24-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0

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*M. Guehl*  
Managing Director



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GALLUP, NM 87301

SAMPLE NO. : 9304478  
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REPORT DATE: 03-01-93  
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PAGE : 1 OF 2

CLIENT SAMPLE ID : UPSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE ..: 02-24-93

Method 8010 - Halogenated Volatile Organics

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Bromochloromethane .....	<1.0	ug/L	1.0
Bromodichloromethane .....	<1.0	ug/L	1.0
Bromoform .....	<1.0	ug/L	1.0
Bromomethane .....	<1.0	ug/L	1.0
Carbon tetrachloride .....	<0.5	ug/L	0.5
Chlorobenzene .....	<1.0	ug/L	1.0
Chloroethane .....	<1.0	ug/L	1.0
Chloroform .....	<0.5	ug/L	0.5
Chloromethane .....	<1.0	ug/L	1.0
Dibromochloromethane .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Dichlorodifluoromethane .....	<1.0	ug/L	1.0
1,1-Dichloroethane .....	<0.5	ug/L	0.5
1,2-Dichloroethane .....	<0.5	ug/L	0.5
1,1-Dichloroethene .....	<0.5	ug/L	0.5
cis 1,2-Dichloroethene .....	<0.5	ug/L	0.5
trans 1,2-Dichloroethene .....	<1.0	ug/L	1.0
1,2-Dichloropropane .....	<0.5	ug/L	0.5
trans 1,3-Dichloropropene .....	<0.5	ug/L	0.5
cis 1,3-Dichloropropene .....	<0.5	ug/L	0.5
Dichloromethane .....	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethane .....	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethene .....	<0.5	ug/L	0.5
1,1,1-Trichloroethane .....	<0.5	ug/L	0.5
1,1,2-Trichloroethane .....	<0.5	ug/L	0.5
Trichloroethene .....	<0.5	ug/L	0.5
Trichlorofluoromethane .....	<1.0	ug/L	1.0
Vinyl chloride .....	<1.0	ug/L	1.0

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*M. Gungor*  
Managing Director



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(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304478  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 2 OF 2

D A T A      T A B L E      (Cont.)

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Detection Limit</u>
2-Chloroethylvinyl Ether .....	<200.	ug/L	200.



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GALLUP, NM 87301

SAMPLE NO. : 9304478  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : UPSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	270.	mg/L	0.05	02-26-93
Total Antimony .....	<0.05	mg/L	0.05	02-26-93
Total Arsenic .....	0.08	mg/L	0.05	02-26-93
Total Barium .....	1.8	mg/L	0.05	02-26-93
Total Beryllium .....	<0.05	mg/L	0.05	02-26-93
Total Cadmium .....	<0.05	mg/L	0.05	02-26-93
Total Calcium .....	430.	mg/L	0.05	02-28-93
Total Chromium .....	0.14	mg/L	0.05	02-26-93
Total Copper .....	<0.05	mg/L	0.05	02-26-93
Total Iron .....	140.	mg/L	0.05	02-26-93
Total Lead .....	0.09	mg/L	0.05	02-26-93
Total Magnesium .....	230.	mg/L	0.10	02-28-93
Total Manganese .....	3.9	mg/L	0.05	02-26-93
Total Mercury .....	<0.001	mg/L	0.001	02-26-93
Total Nickel .....	0.10	mg/L	0.05	02-26-93
Total Potassium .....	130.	mg/L	1.0	02-26-93
Total Selenium .....	<0.05	mg/L	0.05	02-26-93
Total Sodium .....	3200.	mg/L	0.05	02-28-93
Total Tin .....	<0.05	mg/L	0.05	02-26-93
Total Vanadium .....	0.29	mg/L	0.05	02-26-93
Total Zinc .....	0.47	mg/L	0.05	02-26-93
Total Platinum .....	<10.	mg/L	10.	03-02-93

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Managing Director



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GALLUP, NM 87301

SAMPLE NO. : 9304478  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *ALN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : UPSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Inorganic Chemistry - Dissolved Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Dissolved Chromium .....	<0.005	mg/L	0.005	03-03-93

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Managing Director





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GALLUP, NM 87301

SAMPLE NO. : 9304478  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *ASN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : UPSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	430.	mg/L	0.05	02-28-93
Total Magnesium .....	230.	mg/L	0.10	02-28-93
Total Potassium .....	130.	mg/L	1.0	02-26-93
Total Sodium .....	3200.	mg/L	0.05	02-28-93
Dissolved Calcium .....	390.	mg/L	0.05	02-28-93
Dissolved Magnesium .....	180.	mg/L	0.10	02-28-93
Dissolved Sodium .....	3500.	mg/L	0.05	02-28-93
Carbonate .....	<2.0	mg/L	2.0	02-25-93
Bicarbonate .....	140.	mg/L	2.0	02-25-93
Hydroxide .....	<2.0	mg/L	2.0	02-25-93
Alkalinity, Total .....	140.	mg/L	2.0	02-25-93
Hardness .....	2000.	mg/L	0.53	02-28-93
Dissolved Chromium .....	<0.02	mg/L	0.02	03-03-93

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Managing Director



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GALLUP, NM 87301

SAMPLE NO. : 9304479  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *ASW*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : DOWNSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ....: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	32.	mg/L	0.05	02-26-93
Total Antimony .....	<0.05	mg/L	0.05	02-26-93
Total Arsenic .....	<0.05	mg/L	0.05	02-26-93
Total Barium .....	0.40	mg/L	0.05	02-26-93
Total Beryllium .....	<0.05	mg/L	0.05	02-26-93
Total Cadmium .....	<0.05	mg/L	0.05	02-26-93
Total Calcium .....	250.	mg/L	0.05	02-28-93
Total Chromium .....	<0.05	mg/L	0.05	02-26-93
Total Copper .....	<0.05	mg/L	0.05	02-26-93
Total Iron .....	20.	mg/L	0.05	02-26-93
Total Lead .....	<0.05	mg/L	0.05	02-26-93
Total Magnesium .....	120.	mg/L	0.10	02-28-93
Total Manganese .....	1.3	mg/L	0.05	02-26-93
Total Mercury .....	<0.001	mg/L	0.001	02-26-93
Total Nickel .....	<0.05	mg/L	0.05	02-26-93
Total Potassium .....	45.	mg/L	1.0	02-26-93
Total Selenium .....	<0.05	mg/L	0.05	02-26-93
Total Sodium .....	2200.	mg/L	0.05	02-28-93
Total Tin .....	<0.05	mg/L	0.05	02-26-93
Total Vanadium .....	0.06	mg/L	0.05	02-26-93
Total Zinc .....	0.29	mg/L	0.05	02-26-93
Total Platinum .....	<10.	mg/L	10.	03-02-93

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Managing Director



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ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304479  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : DOWNSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE .....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	250.	mg/L	0.05	02-28-93
Total Magnesium .....	120.	mg/L	0.10	02-28-93
Total Potassium .....	45.	mg/L	1.0	02-26-93
Total Sodium .....	2200.	mg/L	0.05	02-28-93
Dissolved Calcium .....	320.	mg/L	0.05	02-28-93
Dissolved Magnesium .....	150.	mg/L	0.10	02-28-93
Dissolved Sodium .....	2900.	mg/L	0.05	02-28-93
Carbonate .....	<2.0	mg/L	2.0	02-25-93
Bicarbonate .....	120.	mg/L	2.0	02-25-93
Hydroxide .....	<2.0	mg/L	2.0	02-25-93
Alkalinity, Total .....	120.	mg/L	2.0	02-25-93
Hardness .....	1100.	mg/L	0.53	02-28-93



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INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 2

CLIENT SAMPLE ID : DOWNSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE ..: 02-24-93

Method 8010 - Halogenated Volatile Organics

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Bromochloromethane .....	<1.0	ug/L	1.0
Bromodichloromethane .....	<1.0	ug/L	1.0
Bromoform .....	<1.0	ug/L	1.0
Bromomethane .....	<1.0	ug/L	1.0
Carbon tetrachloride .....	<0.5	ug/L	0.5
Chlorobenzene .....	<1.0	ug/L	1.0
Chloroethane .....	<1.0	ug/L	1.0
Chloroform .....	<0.5	ug/L	0.5
Chloromethane .....	<1.0	ug/L	1.0
Dibromochloromethane .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Dichlorodifluoromethane .....	<1.0	ug/L	1.0
1,1-Dichloroethane .....	<0.5	ug/L	0.5
1,2-Dichloroethane .....	<0.5	ug/L	0.5
1,1-Dichloroethene .....	<0.5	ug/L	0.5
cis 1,2-Dichloroethene .....	<0.5	ug/L	0.5
trans 1,2-Dichloroethene .....	<1.0	ug/L	1.0
1,2-Dichloropropane .....	<0.5	ug/L	0.5
trans 1,3-Dichloropropene .....	<0.5	ug/L	0.5
cis 1,3-Dichloropropene .....	<0.5	ug/L	0.5
Dichloromethane .....	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethane .....	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethene .....	<0.5	ug/L	0.5
1,1,1-Trichloroethane .....	<0.5	ug/L	0.5
1,1,2-Trichloroethane .....	<0.5	ug/L	0.5
Trichloroethene .....	<0.5	ug/L	0.5
Trichlorofluoromethane .....	<1.0	ug/L	1.0
Vinyl chloride .....	<1.0	ug/L	1.0

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*M. Gushik*  
Managing Director



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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304479  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 2 OF 2

D A T A      T A B L E      (Cont.)

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Detection Limit</u>
2-Chloroethylvinyl Ether .....:	<200.	ug/L	200.



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SAMPLE NO. : 9304479  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : DOWNSTREAM  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE .: 02-24-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0



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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304480  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND #8-DUP  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	0.62	mg/L	0.05	02-26-93
Total Antimony .....	<0.05	mg/L	0.05	02-26-93
Total Arsenic .....	0.11	mg/L	0.05	02-26-93
Total Barium .....	0.09	mg/L	0.05	02-26-93
Total Beryllium .....	<0.05	mg/L	0.05	02-26-93
Total Cadmium .....	<0.05	mg/L	0.05	02-26-93
Total Calcium .....	840.	mg/L	0.05	02-28-93
Total Chromium .....	<0.05	mg/L	0.05	02-26-93
Total Copper .....	<0.05	mg/L	0.05	02-26-93
Total Iron .....	1.4	mg/L	0.05	02-26-93
Total Lead .....	<0.05	mg/L	0.05	02-26-93
Total Magnesium .....	400.	mg/L	0.10	02-28-93
Total Manganese .....	3.6	mg/L	0.05	02-26-93
Total Mercury .....	<0.001	mg/L	0.001	02-26-93
Total Nickel .....	<0.05	mg/L	0.05	02-26-93
Total Potassium .....	190.	mg/L	1.0	02-26-93
Total Selenium .....	<0.05	mg/L	0.05	02-26-93
Total Sodium .....	7900.	mg/L	0.05	02-28-93
Total Tin .....	0.12	mg/L	0.05	02-26-93
Total Vanadium .....	<0.05	mg/L	0.05	02-26-93
Total Zinc .....	0.07	mg/L	0.05	02-26-93
Total Platinum .....	15.	mg/L	1.0	03-02-93

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Managing Director



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ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304480  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND #8-DUP  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	840.	mg/L	0.05	02-28-93
Total Magnesium .....	400.	mg/L	0.10	02-28-93
Total Potassium .....	190.	mg/L	1.0	02-26-93
Total Sodium .....	7900.	mg/L	0.05	02-28-93
Dissolved Calcium .....	860.	mg/L	0.05	02-28-93
Dissolved Magnesium .....	430.	mg/L	0.10	02-28-93
Dissolved Sodium .....	8400.	mg/L	0.05	02-28-93
Carbonate .....	<2.0	mg/L	2.0	02-25-93
Bicarbonate .....	120.	mg/L	2.0	02-25-93
Hydroxide .....	<2.0	mg/L	2.0	02-25-93
Alkalinity, Total .....	120.	mg/L	2.0	02-25-93
Hardness .....	3700.	mg/L	0.53	02-28-93

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Managing Director





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SAMPLE NO. : 9304480  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 2

CLIENT SAMPLE ID : POND #8-DUP  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE .: 02-24-93

Method 8010 - Halogenated Volatile Organics

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Bromochloromethane .....	<1.0	ug/L	1.0
Bromodichloromethane .....	<1.0	ug/L	1.0
Bromoform .....	<1.0	ug/L	1.0
Bromomethane .....	<1.0	ug/L	1.0
Carbon tetrachloride .....	<0.5	ug/L	0.5
Chlorobenzene .....	<1.0	ug/L	1.0
Chloroethane .....	<1.0	ug/L	1.0
Chloroform .....	<0.5	ug/L	0.5
Chloromethane .....	<1.0	ug/L	1.0
Dibromochloromethane .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Dichlorodifluoromethane .....	<1.0	ug/L	1.0
1,1-Dichloroethane .....	<0.5	ug/L	0.5
1,2-Dichloroethane .....	<0.5	ug/L	0.5
1,1-Dichloroethene .....	<0.5	ug/L	0.5
cis 1,2-Dichloroethene .....	<0.5	ug/L	0.5
trans 1,2-Dichloroethene .....	<1.0	ug/L	1.0
1,2-Dichloropropane .....	<0.5	ug/L	0.5
trans 1,3-Dichloropropene .....	<0.5	ug/L	0.5
cis 1,3-Dichloropropene .....	<0.5	ug/L	0.5
Dichloromethane .....	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethane .....	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethene .....	<0.5	ug/L	0.5
1,1,1-Trichloroethane .....	<0.5	ug/L	0.5
1,1,2-Trichloroethane .....	<0.5	ug/L	0.5
Trichloroethene .....	<0.5	ug/L	0.5
Trichlorofluoromethane .....	<1.0	ug/L	1.0
Vinyl chloride .....	<1.0	ug/L	1.0

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*M. Engel*  
Managing Director



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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304480  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGN*  
PAGE : 2 OF 2

D A T A T A B L E

(Cont.)

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Detection Limit</u>
2-Chloroethylvinyl Ether .....	<200.	ug/L	200.



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GALLUP, NM 87301

SAMPLE NO. : 9304480  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *AGW*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND #8-DUP  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: --  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE .: 02-24-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0

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SAMPLE NO. : 9304481  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
REVIEWED BY: *ASW*  
PAGE : 1 OF 2

CLIENT SAMPLE ID : TRIP BLANK  
SAMPLE TYPE .....: D.I. WATER  
SAMPLED BY .....: WL/PERSONNEL  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: WESTECH LABS.  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-23-93  
SUBMITTAL DATE : 02-24-93  
EXTRACTION DATE: 02-24-93  
ANALYSIS DATE .: 02-24-93

Method 8010 - Halogenated Volatile Organics

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Bromochloromethane .....	<1.0	ug/L	1.0
Bromodichloromethane .....	<1.0	ug/L	1.0
Bromoform .....	<1.0	ug/L	1.0
Bromomethane .....	<1.0	ug/L	1.0
Carbon tetrachloride .....	<0.5	ug/L	0.5
Chlorobenzene .....	<1.0	ug/L	1.0
Chloroethane .....	<1.0	ug/L	1.0
Chloroform .....	<0.5	ug/L	0.5
Chloromethane .....	<1.0	ug/L	1.0
Dibromochloromethane .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Dichlorodifluoromethane .....	<1.0	ug/L	1.0
1,1-Dichloroethane .....	<0.5	ug/L	0.5
1,2-Dichloroethane .....	<0.5	ug/L	0.5
1,1-Dichloroethene .....	<0.5	ug/L	0.5
cis 1,2-Dichloroethene .....	<0.5	ug/L	0.5
trans 1,2-Dichloroethene .....	<1.0	ug/L	1.0
1,2-Dichloropropane .....	<0.5	ug/L	0.5
trans 1,3-Dichloropropene .....	<0.5	ug/L	0.5
cis 1,3-Dichloropropene .....	<0.5	ug/L	0.5
Dichloromethane .....	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethane .....	<0.5	ug/L	0.5
1,1,2,2-Tetrachloroethene .....	<0.5	ug/L	0.5
1,1,1-Trichloroethane .....	<0.5	ug/L	0.5
1,1,2-Trichloroethane .....	<0.5	ug/L	0.5
Trichloroethene .....	<0.5	ug/L	0.5
Trichlorofluoromethane .....	<1.0	ug/L	1.0
Vinyl chloride .....	<1.0	ug/L	1.0

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SAMPLE NO. : 9304481  
INVOICE NO.: 22130625  
REPORT DATE: 03-01-93  
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PAGE : 2 OF 2

D A T A      T A B L E      (Cont.)

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Detection Limit</u>
2-Chloroethylvinyl Ether .....	<200.	ug/L	200.

**APPENDIX B**

TABLE #2

## GIANT REFINING - CINIZA

## ICP METALS ANALYSIS

POND #8 - RELEASE

23 FEB 1993

Parameter	Pond #8-1	Pond #8-2	Pond #8-3	Pond #8-4	WQCC Limits
Aluminum	1.3	1.1	1.4	2.5	----
Antimony	<.05	<.05	<.05	<.05	----
Arsenic	0.10	0.10	0.10	0.13	.1
Barium	0.09	0.09	0.09	0.11	1.0
Beryllium	<.05	<.05	<.05	<.05	----
Cadmium	<.05	<.05	<.05	<.05	.01
Calcium	790	770	750	740	----
Chromium	<.05	<.05	<.05	<.05	.05
Copper	<.05	<.05	<.05	<.05	1.0
Iron	0.70	0.64	0.77	1.0	1.0
Lead	<.05	<.05	0.05	<.05	.05
Magnesium	470	460	450	500	----
Manganese	3.9	4.0	4.0	4.5	.2
Mercury	<.001	<.001	<.001	<.001	.002
Nickel	<.05	<.05	<.05	<.05	----
Potassium	240	240	240	290	----
Selenium	<.05	<.05	<.05	<.05	----
Sodium	9600	9800	9600	10000	----
Tin	<.05	<.05	<.05	<.05	----
Vanadium	<.05	<.05	<.05	<.05	----
Zinc	<.05	<.05	<.05	<.05	10.0
Platinum	13	13	12	20	----



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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304834  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-1  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	790.	mg/L	0.05	03-04-93
Total Magnesium .....	470.	mg/L	0.10	03-04-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Sodium .....	9600.	mg/L	0.05	03-04-93
Total Silicon .....	15.	mg/L	0.10	03-03-93
Total Iron .....	0.70	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Chloride .....	22000.	mg/L	1.0	03-03-93
Sulfate .....	3300.	mg/L	5.0	03-03-93
Nitrate Nitrogen .....	<10.	mg/L	10.	03-03-93
Carbonate .....	<2.0	mg/L	2.0	03-02-93
Bicarbonate .....	98.	mg/L	2.0	03-02-93
Hydroxide .....	<2.0	mg/L	2.0	03-02-93
Alkalinity, Total .....	98.	mg/L	2.0	03-02-93
Hardness .....	3900.	mg/L	0.53	03-04-93
Total Aluminum .....	1.3	mg/L	0.05	03-03-93
Total Manganese .....	3.9	mg/L	0.05	03-03-93

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SAMPLE NO. : 9304834  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-1  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	1.3	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.10	mg/L	0.05	03-03-93
Total Barium .....	0.09	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	790.	mg/L	0.05	03-04-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	0.70	mg/L	0.05	03-03-93
Total Lead .....	<0.05	mg/L	0.05	03-03-93
Total Magnesium .....	470.	mg/L	0.10	03-04-93
Total Manganese .....	3.9	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	9600.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	13.	mg/L	1.0	03-05-93

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Managing Director



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To: Lynn  
Fr: Kim  
your T-Cr result  
3-12 4pgs

CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

**DRAFT**

SAMPLE NO. : 9304834  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY:  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-1  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ....: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	1.3	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.10	mg/L	0.05	03-03-93
Total Barium .....	0.09	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	790.	mg/L	0.05	03-04-93
Total Chromium .....	<0.05	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	0.70	mg/L	0.05	03-03-93
Total Lead .....	<0.05	mg/L	0.05	03-03-93
Total Magnesium .....	470.	mg/L	0.10	03-04-93
Total Manganese .....	3.9	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	9600.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	13.	mg/L	1.0	03-05-93



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SAMPLE NO. : 9304834  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGW*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-1  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-02-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0



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SAMPLE NO. : 9304834  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *REN*  
PAGE : 1 OF 3

CLIENT SAMPLE ID : POND 8-1  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8  
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-03-93

Semi-Volatiles by Gas Chromatography/ Mass Spectrometry

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Phenol .....	<10.	ug/L	10.
Bis(2-chloroethyl)ether .....	<10.	ug/L	10.
2-Chlorophenol .....	<10.	ug/L	10.
1,3-Dichlorobenzene .....	<10.	ug/L	10.
1,4-Dichlorobenzene .....	<10.	ug/L	10.
1,2-Dichlorobenzene .....	<10.	ug/L	10.
2-Methylphenol .....	<10.	ug/L	10.
Bis(2-chloroisopropyl)ether .....	<10.	ug/L	10.
4-Methylphenol .....	<10.	ug/L	10.
N,N-Nitroso-di-n-Propylamine .....	<20.	ug/L	20.
Hexachloroethane .....	<10.	ug/L	10.
Nitrobenzene .....	<10.	ug/L	10.
Isophorone .....	<10.	ug/L	10.
2-Nitrophenol .....	<10.	ug/L	10.
2,4-Dimethylphenol .....	<10.	ug/L	10.
Bis(2-chloroethoxy)methane .....	<10.	ug/L	10.
2,4-Dichlorophenol .....	<10.	ug/L	10.
1,2,4-Trichlorobenzene .....	<10.	ug/L	10.
Napthalene .....	<10.	ug/L	10.
4-Chloroaniline .....	<20.	ug/L	20.
Hexachlorobutadiene .....	<10.	ug/L	10.
4-Chloro-3-methylphenol .....	<20.	ug/L	20.
2-Methylnaphthalene .....	<10.	ug/L	10.
Hexachlorocyclopentadiene .....	<10.	ug/L	10.
2,4,6-Trichlorophenol .....	<10.	ug/L	10.
2,4,5-Trichlorophenol .....	<10.	ug/L	10.
2-Chloronaphthalene .....	<10.	ug/L	10.
2-Nitroaniline .....	<50.	ug/L	50.
Dimethyl Phthalate .....	<10.	ug/L	10.
Acenaphthylene .....	<10.	ug/L	10.

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SAMPLE NO. : 9304834  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
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PAGE : 2 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
3-Nitroaniline .....	<50.	ug/L	50.
Acenaphthene .....	<10.	ug/L	10.
2,4-Dinitrophenol .....	<50.	ug/L	50.
4-Nitrophenol .....	<50.	ug/L	50.
Dibenzofuran .....	<10.	ug/L	10.
2,4-Dinitrotoluene .....	<10.	ug/L	10.
2,6-Dinitrotoluene .....	<10.	ug/L	10.
Diethyl Phthalate .....	<10.	ug/L	10.
4-Chlorophenyl phenyl ether .....	<10.	ug/L	10.
Fluorene .....	<10.	ug/L	10.
4-Nitroaniline .....	<20.	ug/L	20.
2-Methyl-4,6-dinitrophenol .....	<30.	ug/L	30.
N-Nitrosodiphenylamine .....	<20.	ug/L	20.
4-Bromophenyl phenyl ether .....	<10.	ug/L	10.
Hexachlorobenzene .....	<10.	ug/L	10.
Pentachlorophenol .....	<50.	ug/L	50.
3-Methylphenol .....	<10.	ug/L	10.
2,6-Dichlorophenol .....	<10.	ug/L	10.
N,N-Nitrosodi-n-Butylamine .....	<20.	ug/L	20.
N,N-Nitrosodiethylamine .....	<20.	ug/L	20.
Phenanthrene .....	<10.	ug/L	10.
Anthracene .....	<10.	ug/L	10.
Di-n-Butyl Phthalate .....	<10.	ug/L	10.
Fluoranthene .....	<10.	ug/L	10.
Pyrene .....	<10.	ug/L	10.
Butyl Benzyl Phthalate .....	<10.	ug/L	10.
3,3'-Dichlorobenzidine .....	<20.	ug/L	20.
Benzo(a)anthracene .....	<10.	ug/L	10.
Bis(2-ethylhexyl) Phthalate .....	<10.	ug/L	10.
Chrysene .....	<10.	ug/L	10.
Di-n-Octyl Phthalate .....	<10.	ug/L	10.
Benzo(b)fluoranthene .....	<10.	ug/L	10.
Benzo(k)fluoranthene .....	<10.	ug/L	10.
Benzo(a)pyrene .....	<10.	ug/L	10.
Indeno(1,2,3-cd)pyrene .....	<10.	ug/L	10.
Dibenzo(a,h)anthracene .....	<10.	ug/L	10.
Benzo(ghi)perylene .....	<10.	ug/L	10.
alpha-BHC .....	<10.	ug/L	10.



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GALLUP, NM 87301

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INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *REN*  
PAGE : 3 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
beta-BHC .....	<10.	ug/L	10.
gamma-BHC .....	<10.	ug/L	10.
delta-BHC .....	<10.	ug/L	10.
Heptachlor .....	<10.	ug/L	10.
Chlordanes (alpha and gamma) .....	<10.	ug/L	10.
Aldrin .....	<10.	ug/L	10.
Heptachlor epoxide .....	<10.	ug/L	10.
Dieldrin .....	<10.	ug/L	10.
Endrin .....	<10.	ug/L	10.
Endrin Aldehyde .....	<10.	ug/L	10.
Endrin Ketone .....	<10.	ug/L	10.
4,4'-DDD .....	<10.	ug/L	10.
4,4'-DDE .....	<10.	ug/L	10.
4,4'-DDT .....	<10.	ug/L	10.
Endosulfan I .....	<10.	ug/L	10.
Endosulfan II .....	<20.	ug/L	20.
Endosulfan sulfate .....	<20.	ug/L	20.
Methoxychlor .....	<25.	ug/L	25.
Toxaphene .....	<100.	ug/L	100.
PCB 1016 .....	<100.	ug/L	100.
PCB 1221 .....	<100.	ug/L	100.
PCB 1232 .....	<100.	ug/L	100.
PCB 1242 .....	<100.	ug/L	100.
PCB 1248 .....	<100.	ug/L	100.
PCB 1254 .....	<100.	ug/L	100.
PCB 1260 .....	<100.	ug/L	100.



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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304835  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGA*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-2  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	1.1	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.10	mg/L	0.05	03-03-93
Total Barium .....	0.09	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	770.	mg/L	0.05	03-04-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	0.64	mg/L	0.05	03-03-93
Total Lead .....	<0.05	mg/L	0.05	03-03-93
Total Magnesium .....	460.	mg/L	0.10	03-04-93
Total Manganese .....	4.0	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	9800.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	13.	mg/L	1.0	03-05-93



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SAMPLE NO. : 9304835  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY:  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-2  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

### Inorganic Chemistry - Total Metals

#### D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	1.1	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.10	mg/L	0.05	03-03-93
Total Barium .....	0.09	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	770.	mg/L	0.05	03-04-93
Total Chromium .....	<0.05	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	0.64	mg/L	0.05	03-03-93
Total Lead .....	<0.05	mg/L	0.05	03-03-93
Total Magnesium .....	460.	mg/L	0.10	03-04-93
Total Manganese .....	4.0	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	9800.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	13.	mg/L	1.0	03-05-93





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SAMPLE NO. : 9304835  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-2  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	770.	mg/L	0.05	03-04-93
Total Magnesium .....	460.	mg/L	0.10	03-04-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Sodium .....	9800.	mg/L	0.05	03-04-93
Total Silicon .....	15.	mg/L	0.10	03-03-93
Chloride .....	22000.	mg/L	1.0	03-03-93
Sulfate .....	3400.	mg/L	5.0	03-03-93
Nitrate Nitrogen .....	<10.	mg/L	10.	03-03-93
Carbonate .....	<2.0	mg/L	2.0	03-02-93
Bicarbonate .....	93.	mg/L	2.0	03-02-93
Hydroxide .....	<2.0	mg/L	2.0	03-02-93
Alkalinity, Total .....	93.	mg/L	2.0	03-02-93
Hardness .....	3800.	mg/L	0.53	03-04-93
Total Iron .....	0.64	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Aluminum .....	1.1	mg/L	0.05	03-03-93
Total Manganese .....	4.0	mg/L	0.05	03-03-93

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*M. Gindoff*  
Managing Director



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SAMPLE NO. : 9304835  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-2  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ...: POND #8  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-02-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0

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*M. G. Gagliardi*  
Managing Director



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REPORT DATE: 03-08-93  
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PAGE : 1 OF 3

CLIENT SAMPLE ID : POND 8-2  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8  
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-03-93

Semi-Volatiles by Gas Chromatography/ Mass Spectrometry

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Phenol .....	<10.	ug/L	10.
Bis(2-chloroethyl) ether .....	<10.	ug/L	10.
2-Chlorophenol .....	<10.	ug/L	10.
1,3-Dichlorobenzene .....	<10.	ug/L	10.
1,4-Dichlorobenzene .....	<10.	ug/L	10.
1,2-Dichlorobenzene .....	<10.	ug/L	10.
2-Methylphenol .....	<10.	ug/L	10.
Bis(2-chloroisopropyl) ether .....	<10.	ug/L	10.
4-Methylphenol .....	<10.	ug/L	10.
N,N-Nitroso-di-n-Propylamine .....	<20.	ug/L	20.
Hexachloroethane .....	<10.	ug/L	10.
Nitrobenzene .....	<10.	ug/L	10.
Isophorone .....	<10.	ug/L	10.
2-Nitrophenol .....	<10.	ug/L	10.
2,4-Dimethylphenol .....	<10.	ug/L	10.
Bis(2-chloroethoxy) methane .....	<10.	ug/L	10.
2,4-Dichlorophenol .....	<10.	ug/L	10.
1,2,4-Trichlorobenzene .....	<10.	ug/L	10.
Napthalene .....	<10.	ug/L	10.
4-Chloroaniline .....	<20.	ug/L	20.
Hexachlorobutadiene .....	<10.	ug/L	10.
4-Chloro-3-methylphenol .....	<20.	ug/L	20.
2-Methylnaphthalene .....	<10.	ug/L	10.
Hexachlorocyclopentadiene .....	<10.	ug/L	10.
2,4,6-Trichlorophenol .....	<10.	ug/L	10.
2,4,5-Trichlorophenol .....	<10.	ug/L	10.
2-Chloronaphthalene .....	<10.	ug/L	10.
2-Nitroaniline .....	<50.	ug/L	50.
Dimethyl Phthalate .....	<10.	ug/L	10.
Acenaphthylene .....	<10.	ug/L	10.

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*M. Gough*  
Managing Director



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SAMPLE NO. : 9304835  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 2 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
3-Nitroaniline .....	<50.	ug/L	50.
Acenaphthene .....	<10.	ug/L	10.
2,4-Dinitrophenol .....	<50.	ug/L	50.
4-Nitrophenol .....	<50.	ug/L	50.
Dibenzofuran .....	<10.	ug/L	10.
2,4-Dinitrotoluene .....	<10.	ug/L	10.
2,6-Dinitrotoluene .....	<10.	ug/L	10.
Diethyl Phthalate .....	<10.	ug/L	10.
4-Chlorophenyl phenyl ether .....	<10.	ug/L	10.
Fluorene .....	<10.	ug/L	10.
4-Nitroaniline .....	<20.	ug/L	20.
2-Methyl-4,6-dinitrophenol .....	<30.	ug/L	30.
N-Nitrosodiphenylamine .....	<20.	ug/L	20.
4-Bromophenyl phenyl ether .....	<10.	ug/L	10.
Hexachlorobenzene .....	<10.	ug/L	10.
Pentachlorophenol .....	<50.	ug/L	50.
3-Methylphenol .....	<10.	ug/L	10.
2,6-Dichlorophenol .....	<10.	ug/L	10.
N,N-Nitrosodi-n-Butylamine .....	<20.	ug/L	20.
N,N-Nitrosodiethylamine .....	<20.	ug/L	20.
Phenanthrene .....	<10.	ug/L	10.
Anthracene .....	<10.	ug/L	10.
Di-n-Butyl Phthalate .....	<10.	ug/L	10.
Fluoranthene .....	<10.	ug/L	10.
Pyrene .....	<10.	ug/L	10.
Butyl Benzyl Phthalate .....	<10.	ug/L	10.
3,3'-Dichlorobenzidine .....	<20.	ug/L	20.
Benzo(a)anthracene .....	<10.	ug/L	10.
Bis(2-ethylhexyl) Phthalate .....	<10.	ug/L	10.
Chrysene .....	<10.	ug/L	10.
Di-n-Octyl Phthalate .....	<10.	ug/L	10.
Benzo(b)fluoranthene .....	<10.	ug/L	10.
Benzo(k)fluoranthene .....	<10.	ug/L	10.
Benzo(a)pyrene .....	<10.	ug/L	10.
Indeno(1,2,3-cd)pyrene .....	<10.	ug/L	10.
Dibenzo(a,h)anthracene .....	<10.	ug/L	10.
Benzo(ghi)perylene .....	<10.	ug/L	10.
alpha-BHC .....	<10.	ug/L	10.



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GALLUP, NM 87301

SAMPLE NO. : 9304835  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 3 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
beta-BHC .....	<10.	ug/L	10.
gamma-BHC .....	<10.	ug/L	10.
delta-BHC .....	<10.	ug/L	10.
Heptachlor .....	<10.	ug/L	10.
Chlordanes (alpha and gamma) .....	<10.	ug/L	10.
Aldrin .....	<10.	ug/L	10.
Heptachlor epoxide .....	<10.	ug/L	10.
Dieldrin .....	<10.	ug/L	10.
Endrin .....	<10.	ug/L	10.
Endrin Aldehyde .....	<10.	ug/L	10.
Endrin Ketone .....	<10.	ug/L	10.
4,4'-DDD .....	<10.	ug/L	10.
4,4'-DDE .....	<10.	ug/L	10.
4,4'-DDT .....	<10.	ug/L	10.
Endosulfan I .....	<10.	ug/L	10.
Endosulfan II .....	<20.	ug/L	20.
Endosulfan sulfate .....	<20.	ug/L	20.
Methoxychlor .....	<25.	ug/L	25.
Toxaphene .....	<100.	ug/L	100.
PCB 1016 .....	<100.	ug/L	100.
PCB 1221 .....	<100.	ug/L	100.
PCB 1232 .....	<100.	ug/L	100.
PCB 1242 .....	<100.	ug/L	100.
PCB 1248 .....	<100.	ug/L	100.
PCB 1254 .....	<100.	ug/L	100.
PCB 1260 .....	<100.	ug/L	100.



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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
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GALLUP, NM 87301

SAMPLE NO. : 9304836  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-3  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	750.	mg/L	0.05	03-04-93
Total Magnesium .....	450.	mg/L	0.10	03-04-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Sodium .....	9600.	mg/L	0.05	03-04-93
Total Silicon .....	15.	mg/L	0.10	03-03-93
Chloride .....	22000.	mg/L	1.0	03-03-93
Sulfate .....	3000.	mg/L	5.0	03-03-93
Nitrate Nitrogen .....	<10.	mg/L	10.	03-03-93
Carbonate .....	<2.0	mg/L	2.0	03-02-93
Bicarbonate .....	120.	mg/L	2.0	03-02-93
Hydroxide .....	<2.0	mg/L	2.0	03-02-93
Alkalinity, Total .....	120.	mg/L	2.0	03-02-93
Hardness .....	3700.	mg/L	0.53	03-04-93
Total Iron .....	0.77	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Aluminum .....	1.4	mg/L	0.05	03-03-93
Total Manganese .....	4.0	mg/L	0.05	03-03-93



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REPORT DATE: 03-08-93  
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PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-3  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	1.4	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.10	mg/L	0.05	03-03-93
Total Barium .....	0.09	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	750.	mg/L	0.05	03-04-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	0.77	mg/L	0.05	03-03-93
Total Lead .....	0.05	mg/L	0.05	03-03-93
Total Magnesium .....	450.	mg/L	0.10	03-04-93
Total Manganese .....	4.0	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	9600.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	12.	mg/L	1.0	03-05-93

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*M. G. G. G.*  
Managing Director



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CLIENT GIANT REFINING COMPANY  
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GALLUP, NM 87301

**DRAFT**

SAMPLE NO. : 9304836  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY:  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-3  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	1.4	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.10	mg/L	0.05	03-03-93
Total Barium .....	0.09	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	750.	mg/L	0.05	03-04-93
Total Chromium .....	<0.05	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	0.77	mg/L	0.05	03-03-93
Total Lead .....	0.05	mg/L	0.05	03-03-93
Total Magnesium .....	450.	mg/L	0.10	03-04-93
Total Manganese .....	4.0	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	240.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	9600.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	12.	mg/L	1.0	03-05-93





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CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304836  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-3  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-02-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0



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REPORT DATE: 03-08-93  
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PAGE : 1 OF 3

CLIENT SAMPLE ID : POND 8-3  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8  
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-03-93

Semi-Volatiles by Gas Chromatography/ Mass Spectrometry

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Phenol .....	<10.	ug/L	10.
Bis(2-chloroethyl) ether .....	<10.	ug/L	10.
2-Chlorophenol .....	<10.	ug/L	10.
1,3-Dichlorobenzene .....	<10.	ug/L	10.
1,4-Dichlorobenzene .....	<10.	ug/L	10.
1,2-Dichlorobenzene .....	<10.	ug/L	10.
2-Methylphenol .....	<10.	ug/L	10.
Bis(2-chloroisopropyl) ether .....	<10.	ug/L	10.
4-Methylphenol .....	<10.	ug/L	10.
N,N-Nitroso-di-n-Propylamine .....	<20.	ug/L	20.
Hexachloroethane .....	<10.	ug/L	10.
Nitrobenzene .....	<10.	ug/L	10.
Isophorone .....	<10.	ug/L	10.
2-Nitrophenol .....	<10.	ug/L	10.
2,4-Dimethylphenol .....	<10.	ug/L	10.
Bis(2-chloroethoxy) methane .....	<10.	ug/L	10.
2,4-Dichlorophenol .....	<10.	ug/L	10.
1,2,4-Trichlorobenzene .....	<10.	ug/L	10.
Napthalene .....	<10.	ug/L	10.
4-Chloroaniline .....	<20.	ug/L	20.
Hexachlorobutadiene .....	<10.	ug/L	10.
4-Chloro-3-methylphenol .....	<20.	ug/L	20.
2-Methylnaphthalene .....	<10.	ug/L	10.
Hexachlorocyclopentadiene .....	<10.	ug/L	10.
2,4,6-Trichlorophenol .....	<10.	ug/L	10.
2,4,5-Trichlorophenol .....	<10.	ug/L	10.
2-Chloronaphthalene .....	<10.	ug/L	10.
2-Nitroaniline .....	<50.	ug/L	50.
Dimethyl Phthalate .....	<10.	ug/L	10.
Acenaphthylene .....	<10.	ug/L	10.

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*M. English*  
Managing Director



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ATTN: LYNN SHELTON  
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GALLUP, NM 87301

SAMPLE NO. : 9304836  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 2 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
3-Nitroaniline .....	<50.	ug/L	50.
Acenaphthene .....	<10.	ug/L	10.
2,4-Dinitrophenol .....	<50.	ug/L	50.
4-Nitrophenol .....	<50.	ug/L	50.
Dibenzofuran .....	<10.	ug/L	10.
2,4-Dinitrotoluene .....	<10.	ug/L	10.
2,6-Dinitrotoluene .....	<10.	ug/L	10.
Diethyl Phthalate .....	<10.	ug/L	10.
4-Chlorophenyl phenyl ether .....	<10.	ug/L	10.
Fluorene .....	<10.	ug/L	10.
4-Nitroaniline .....	<20.	ug/L	20.
2-Methyl-4,6-dinitrophenol .....	<30.	ug/L	30.
N-Nitrosodiphenylamine .....	<20.	ug/L	20.
4-Bromophenyl phenyl ether .....	<10.	ug/L	10.
Hexachlorobenzene .....	<10.	ug/L	10.
Pentachlorophenol .....	<50.	ug/L	50.
3-Methylphenol .....	<10.	ug/L	10.
2,6-Dichlorophenol .....	<10.	ug/L	10.
N,N-Nitrosodi-n-Butylamine .....	<20.	ug/L	20.
N,N-Nitrosodiethylamine .....	<20.	ug/L	20.
Phenanthrene .....	<10.	ug/L	10.
Anthracene .....	<10.	ug/L	10.
Di-n-Butyl Phthalate .....	<10.	ug/L	10.
Fluoranthene .....	<10.	ug/L	10.
Pyrene .....	<10.	ug/L	10.
Butyl Benzyl Phthalate .....	<10.	ug/L	10.
3,3'-Dichlorobenzidine .....	<20.	ug/L	20.
Benzo(a)anthracene .....	<10.	ug/L	10.
Bis(2-ethylhexyl) Phthalate .....	14.	ug/L	10.
Chrysene .....	<10.	ug/L	10.
Di-n-Octyl Phthalate .....	<10.	ug/L	10.
Benzo(b)fluoranthene .....	<10.	ug/L	10.
Benzo(k)fluoranthene .....	<10.	ug/L	10.
Benzo(a)pyrene .....	<10.	ug/L	10.
Indeno(1,2,3-cd)pyrene .....	<10.	ug/L	10.
Dibenzo(a,h)anthracene .....	<10.	ug/L	10.
Benzo(ghi)perylene .....	<10.	ug/L	10.
alpha-BHC .....	<10.	ug/L	10.



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GALLUP, NM 87301

SAMPLE NO. : 9304836  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 3 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
beta-BHC .....	<10.	ug/L	10.
gamma-BHC .....	<10.	ug/L	10.
delta-BHC .....	<10.	ug/L	10.
Heptachlor .....	<10.	ug/L	10.
Chlordanes (alpha and gamma) .....	<10.	ug/L	10.
Aldrin .....	<10.	ug/L	10.
Heptachlor epoxide .....	<10.	ug/L	10.
Dieldrin .....	<10.	ug/L	10.
Endrin .....	<10.	ug/L	10.
Endrin Aldehyde .....	<10.	ug/L	10.
Endrin Ketone .....	<10.	ug/L	10.
4,4'-DDD .....	<10.	ug/L	10.
4,4'-DDE .....	<10.	ug/L	10.
4,4'-DDT .....	<10.	ug/L	10.
Endosulfan I .....	<10.	ug/L	10.
Endosulfan II .....	<20.	ug/L	20.
Endosulfan sulfate .....	<20.	ug/L	20.
Methoxychlor .....	<25.	ug/L	25.
Toxaphene .....	<100.	ug/L	100.
PCB 1016 .....	<100.	ug/L	100.
PCB 1221 .....	<100.	ug/L	100.
PCB 1232 .....	<100.	ug/L	100.
PCB 1242 .....	<100.	ug/L	100.
PCB 1248 .....	<100.	ug/L	100.
PCB 1254 .....	<100.	ug/L	100.
PCB 1260 .....	<100.	ug/L	100.



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SAMPLE NO. : 9304837  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 1 OF 1

CLIENT SAMPLE ID : POND 8-4  
SAMPLE TYPE .....: WATER  
SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Cation/Anion Balance

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Calcium .....	740.	mg/L	0.05	03-04-93
Total Magnesium .....	500.	mg/L	0.10	03-04-93
Total Potassium .....	290.	mg/L	1.0	03-05-93
Total Sodium .....	10000.	mg/L	0.05	03-04-93
Total Silicon .....	18.	mg/L	0.10	03-03-93
Chloride .....	26000.	mg/L	1.0	03-03-93
Sulfate .....	3600.	mg/L	5.0	03-03-93
Nitrate Nitrogen .....	<10.	mg/L	10.	03-03-93
Carbonate .....	<2.0	mg/L	2.0	03-02-93
Bicarbonate .....	87.	mg/L	2.0	03-02-93
Hydroxide .....	<2.0	mg/L	2.0	03-02-93
Alkalinity, Total .....	87.	mg/L	2.0	03-02-93
Hardness .....	3900.	mg/L	0.53	03-04-93
Total Iron .....	1.0	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Aluminum .....	2.5	mg/L	0.05	03-03-93
Total Manganese .....	4.5	mg/L	0.05	03-03-93

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*M. Gresham*  
Managing Director



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AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	2.5	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.13	mg/L	0.05	03-03-93
Total Barium .....	0.11	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	740.	mg/L	0.05	03-04-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	1.0	mg/L	0.05	03-03-93
Total Lead .....	<0.05	mg/L	0.05	03-03-93
Total Magnesium .....	500.	mg/L	0.10	03-04-93
Total Manganese .....	4.5	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	290.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	10000.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	20.	mg/L	1.0	03-05-93



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AUTHORIZED BY : L. SHELTON  
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SAMPLE DATE ...: 02-25-93  
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Inorganic Chemistry - Total Metals

**D A T A T A B L E**

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Aluminum .....	2.5	mg/L	0.05	03-03-93
Total Antimony .....	<0.05	mg/L	0.05	03-03-93
Total Arsenic .....	0.13	mg/L	0.05	03-03-93
Total Barium .....	0.11	mg/L	0.05	03-03-93
Total Beryllium .....	<0.05	mg/L	0.05	03-03-93
Total Cadmium .....	<0.05	mg/L	0.05	03-03-93
Total Calcium .....	740.	mg/L	0.05	03-04-93
Total Chromium .....	<0.05	mg/L	0.05	03-03-93
Total Copper .....	<0.05	mg/L	0.05	03-03-93
Total Iron .....	1.0	mg/L	0.05	03-03-93
Total Lead .....	<0.05	mg/L	0.05	03-03-93
Total Magnesium .....	500.	mg/L	0.10	03-04-93
Total Manganese .....	4.5	mg/L	0.05	03-03-93
Total Mercury .....	<0.001	mg/L	0.001	03-04-93
Total Nickel .....	<0.05	mg/L	0.05	03-03-93
Total Potassium .....	290.	mg/L	1.0	03-05-93
Total Selenium .....	<0.05	mg/L	0.05	03-03-93
Total Sodium .....	10000.	mg/L	0.01	03-04-93
Total Tin .....	<0.05	mg/L	0.05	03-03-93
Total Vanadium .....	<0.05	mg/L	0.05	03-03-93
Total Zinc .....	<0.05	mg/L	0.05	03-03-93
Total Platinum .....	20.	mg/L	1.0	03-05-93



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SAMPLE SOURCE ...: POND #8  
ANALYST .....: L. ANTONY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-02-93

Method 8020 - Aromatic Volatiles

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Chlorobenzene .....	<1.0	ug/L	1.0
1,2-Dichlorobenzene .....	<1.0	ug/L	1.0
1,3-Dichlorobenzene .....	<1.0	ug/L	1.0
1,4-Dichlorobenzene .....	<1.0	ug/L	1.0
Ethylbenzene .....	<1.0	ug/L	1.0
Toluene .....	<1.0	ug/L	1.0
Total Xylenes .....	<0.3	ug/L	0.3
Benzene .....	<1.0	ug/L	1.0

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*M. Gindl*  
Managing Director





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PAGE : 1 OF 3

CLIENT SAMPLE ID : POND 8-4  
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SAMPLED BY .....: L. SHELTON  
SUBMITTED BY .....: L. SHELTON  
SAMPLE SOURCE ....: POND #8  
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON  
CLIENT P.O. : --  
SAMPLE DATE ...: 02-25-93  
SUBMITTAL DATE : 03-01-93  
EXTRACTION DATE: 03-02-93  
ANALYSIS DATE ..: 03-03-93

Semi-Volatiles by Gas Chromatography/ Mass Spectrometry

D A T A T A B L E			
Parameter	Result	Unit	Detection Limit
Phenol .....	<10.	ug/L	10.
Bis(2-chloroethyl)ether .....	<10.	ug/L	10.
2-Chlorophenol .....	<10.	ug/L	10.
1,3-Dichlorobenzene .....	<10.	ug/L	10.
1,4-Dichlorobenzene .....	<10.	ug/L	10.
1,2-Dichlorobenzene .....	<10.	ug/L	10.
2-Methylphenol .....	<10.	ug/L	10.
Bis(2-chloroisopropyl)ether .....	<10.	ug/L	10.
4-Methylphenol .....	<10.	ug/L	10.
N,N-Nitroso-di-n-Propylamine .....	<20.	ug/L	20.
Hexachloroethane .....	<10.	ug/L	10.
Nitrobenzene .....	<10.	ug/L	10.
Isophorone .....	<10.	ug/L	10.
2-Nitrophenol .....	<10.	ug/L	10.
2,4-Dimethylphenol .....	<10.	ug/L	10.
Bis(2-chloroethoxy)methane .....	<10.	ug/L	10.
2,4-Dichlorophenol .....	<10.	ug/L	10.
1,2,4-Trichlorobenzene .....	<10.	ug/L	10.
Napthalene .....	<10.	ug/L	10.
4-Chloroaniline .....	<20.	ug/L	20.
Hexachlorobutadiene .....	<10.	ug/L	10.
4-Chloro-3-methylphenol .....	<20.	ug/L	20.
2-Methylnapthalene .....	<10.	ug/L	10.
Hexachlorocyclopentadiene .....	<10.	ug/L	10.
2,4,6-Trichlorophenol .....	<10.	ug/L	10.
2,4,5-Trichlorophenol .....	<10.	ug/L	10.
2-Chloronapthalene .....	<10.	ug/L	10.
2-Nitroaniline .....	<50.	ug/L	50.
Dimethyl Phthalate .....	<10.	ug/L	10.
Acenaphthylene .....	<10.	ug/L	10.

(1) Copy to Client

*M. Gough*  
Managing Director



**Westtech  
Laboratories  
Inc.**

The Quality People  
Since 1955

37 East Broadway Road  
Phoenix, Arizona 85040  
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY  
ATTN: LYNN SHELTON  
ROUTE 3, BOX 7  
GALLUP, NM 87301

SAMPLE NO. : 9304837  
INVOICE NO.: 22130670  
REPORT DATE: 03-08-93  
REVIEWED BY: *AGN*  
PAGE : 2 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
3-Nitroaniline .....	<50.	ug/L	50.
Acenaphthene .....	<10.	ug/L	10.
2,4-Dinitrophenol .....	<50.	ug/L	50.
4-Nitrophenol .....	<50.	ug/L	50.
Dibenzofuran .....	<10.	ug/L	10.
2,4-Dinitrotoluene .....	<10.	ug/L	10.
2,6-Dinitrotoluene .....	<10.	ug/L	10.
Diethyl Phthalate .....	<10.	ug/L	10.
4-Chlorophenyl phenyl ether .....	<10.	ug/L	10.
Fluorene .....	<10.	ug/L	10.
4-Nitroaniline .....	<20.	ug/L	20.
2-Methyl-4,6-dinitrophenol .....	<30.	ug/L	30.
N-Nitrosodiphenylamine .....	<20.	ug/L	20.
4-Bromophenyl phenyl ether .....	<10.	ug/L	10.
Hexachlorobenzene .....	<10.	ug/L	10.
Pentachlorophenol .....	<50.	ug/L	50.
3-Methylphenol .....	<10.	ug/L	10.
2,6-Dichlorophenol .....	<10.	ug/L	10.
N,N-Nitrosodi-n-Butylamine .....	<20.	ug/L	20.
N,N-Nitrosodiethylamine .....	<20.	ug/L	20.
Phenanthrene .....	<10.	ug/L	10.
Anthracene .....	<10.	ug/L	10.
Di-n-Butyl Phthalate .....	<10.	ug/L	10.
Fluoranthene .....	<10.	ug/L	10.
Pyrene .....	<10.	ug/L	10.
Butyl Benzyl Phthalate .....	<10.	ug/L	10.
3,3'-Dichlorobenzidine .....	<20.	ug/L	20.
Benzo(a)anthracene .....	<10.	ug/L	10.
Bis(2-ethylhexyl) Phthalate .....	<10.	ug/L	10.
Chrysene .....	<10.	ug/L	10.
Di-n-Octyl Phthalate .....	<10.	ug/L	10.
Benzo(b)fluoranthene .....	<10.	ug/L	10.
Benzo(k)fluoranthene .....	<10.	ug/L	10.
Benzo(a)pyrene .....	<10.	ug/L	10.
Indeno(1,2,3-cd)pyrene .....	<10.	ug/L	10.
Dibenzo(a,h)anthracene .....	<10.	ug/L	10.
Benzo(ghi)perylene .....	<10.	ug/L	10.
alpha-BHC .....	<10.	ug/L	10.



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REVIEWED BY: *AGN*  
PAGE : 3 OF 3

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
beta-BHC .....	<10.	ug/L	10.
gamma-BHC .....	<10.	ug/L	10.
delta-BHC .....	<10.	ug/L	10.
Heptachlor .....	<10.	ug/L	10.
Chlordanes (alpha and gamma) .....	<10.	ug/L	10.
Aldrin .....	<10.	ug/L	10.
Heptachlor epoxide .....	<10.	ug/L	10.
Dieldrin .....	<10.	ug/L	10.
Endrin .....	<10.	ug/L	10.
Endrin Aldehyde .....	<10.	ug/L	10.
Endrin Ketone .....	<10.	ug/L	10.
4,4'-DDD .....	<10.	ug/L	10.
4,4'-DDE .....	<10.	ug/L	10.
4,4'-DDT .....	<10.	ug/L	10.
Endosulfan I .....	<10.	ug/L	10.
Endosulfan II .....	<20.	ug/L	20.
Endosulfan sulfate .....	<20.	ug/L	20.
Methoxychlor .....	<25.	ug/L	25.
Toxaphene .....	<100.	ug/L	100.
PCB 1016 .....	<100.	ug/L	100.
PCB 1221 .....	<100.	ug/L	100.
PCB 1232 .....	<100.	ug/L	100.
PCB 1242 .....	<100.	ug/L	100.
PCB 1248 .....	<100.	ug/L	100.
PCB 1254 .....	<100.	ug/L	100.
PCB 1260 .....	<100.	ug/L	100.



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(602) 437-1080 • fax 437-8706

QUALITY CONTROL REPORT

QC IDENTIFIER .....: 110-030393-1  
REFERENCE NOTEBOOK :  
REFERENCE PAGE .....:

INSTRUMENT : Hewlett Packard GC/MS w/ Dir.Inject  
ANALYZED BY : I. HRABOVSKY  
ANALYZED ON : 03-03-93

TEST DESCRIPTION ...: Semi-Volatiles by GC-MS/Base, Neutrals, Acids & Pests.  
TEST METHOD .....: EPA 625/8270

SAMPLES IN THIS RUN: 9303711 9304404 9304691 9304834 9304835 9304836 9304837

CALIBRATION CHECK -

PARAMETER	UNIT	TRUE VALUE	FOUND VALUE	%RECOVERY
INITIAL:				
2,4,6-Trichlorophenol	ug/L	100.	108.	108.0
2,4-Dichlorophenol	ug/L	100.	107.	107.0
2-Nitrophenol	ug/L	100.	110.	110.0
4-Nitrophenol	ug/L	100.	107.	107.0
1,4-Dichlorobenzene	ug/L	100.	110.	110.0
Acenaphthene	ug/L	100.	120.	120.0
Benzo(a)pyrene	ug/L	100.	97.	97.0
Di-n-octyl phthalate	ug/L	100.	90.	90.0
Fluoranthene	ug/L	100.	105.	105.0
Hexachlorobutadiene	ug/L	100.	91.	91.0
Hexachlorocyclopentadiene	ug/L	100.	108.	108.0
N-Nitrosodiphenylamine	ug/L	100.	100.	100.0
N-Nitroso-di-n-propylamine	ug/L	100.	105.	105.0

CONTINUING:

2,4,6-Trichlorophenol	ug/L	100.	104.	104.0
2,4-Dichlorophenol	ug/L	100.	87.	87.0
2-Nitrophenol	ug/L	100.	93.	93.0
Phenol	ug/L	100.	106.	106.0
1,4-Dichlorobenzene	ug/L	100.	96.	96.0
Acenaphthene	ug/L	100.	118.	118.0
Benzo(a)pyrene	ug/L	100.	100.	100.0
Di-n-octyl phthalate	ug/L	100.	91.	91.0
Fluoranthene	ug/L	100.	104.	104.0
Hexachlorobutadiene	ug/L	100.	88.	88.0
Hexachlorocyclopentadiene	ug/L	100.	76.	76.0
N-Nitrosodiphenylamine	ug/L	100.	92.	92.0
N-Nitroso-di-n-propylamine	ug/L	100.	116.	116.0

FINAL:

2,4-Dichlorophenol	ug/L	100.	115.	115.0
2-Nitrophenol	ug/L	100.	125.	125.0
4-Chloro-3-methylphenol	ug/L	100.	83.	83.0
4-Nitrophenol	ug/L	100.	111.	111.0

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ANALYZED ON : 03-03-93

## CALIBRATION CHECK -

PARAMETER	UNIT	TRUE VALUE	FOUND VALUE	%RECOVERY
FINAL:				
Acenaphthene	ug/L	100.	102.	102.0
Benzo(a)pyrene	ug/L	100.	98.	98.0
Di-n-octyl phthalate	ug/L	100.	104.	104.0
Fluoranthene	ug/L	100.	107.	107.0
Hexachlorobutadiene	ug/L	100.	101.	101.0
Hexachlorocyclopentadiene	ug/L	100.	89.	89.0
N-Nitrosodiphenylamine	ug/L	100.	88.	88.0
N-Nitroso-di-n-propylamine	ug/L	100.	91.	91.0
2,4-Dichlorophenol	ug/L	100.	101.	101.0
1,4-Dichlorobenzene	ug/L	100.	95.	95.0

## REPLICATES -

SAMPLE NUMBER	PARAMETER	UNIT	RESULT	REPLICATE	RPD%
9304691	beta-BHC	ug/L	<10.	<10.	NC
9304691	2,4,5-Trichlorophenol	ug/L	<10.	<10.	NC
9304691	2,4,6-Trichlorophenol	ug/L	<10.	<10.	NC
9304691	2,4-Dichlorophenol	ug/L	<10.	<10.	NC
9304691	2,4-Dimethylphenol	ug/L	<10.	<10.	NC
9304691	2,4-Dinitrophenol	ug/L	<50.	<50.	NC
9304691	2,6-Dichlorophenol	ug/L	<10.	<10.	NC
9304691	2-Chlorophenol	ug/L	<10.	<10.	NC
9304691	2-Methylphenol	ug/L	<10.	<10.	NC
9304691	2-Nitrophenol	ug/L	<10.	<10.	NC
9304691	3-Methylphenol	ug/L	<10.	<10.	NC
9304691	4-Chloro-3-methylphenol	ug/L	<10.	<10.	NC
9304691	4-Methylphenol	ug/L	<10.	<10.	NC
9304691	4-Nitrophenol	ug/L	<10.	<10.	NC
9304691	Pentachlorophenol	ug/L	<10.	<10.	NC
9304691	Phenol	ug/L	<10.	<10.	NC
9304691	Dimethyl phthalate	ug/L	<10.	<10.	NC
9304691	Diethyl phthalate	ug/L	<10.	<10.	NC
9304691	Di-n-butyl phthalate	ug/L	<10.	<10.	NC
9304691	Butyl benzyl phthalate	ug/L	<10.	<10.	NC
9304691	Bis(2-ethylhexyl) phthalate	ug/L	<10.	<10.	NC

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 ANALYZED BY : I. HRABOVSKY  
 ANALYZED ON : 03-03-93

## REPLICATES -

SAMPLE NUMBER	PARAMETER	UNIT	RESULT	REPLICATE	RPD%
9304691	Di-n-octyl phthalate	ug/L	<10.	<10.	NC
9304691	Acenaphthene	ug/L	<10.	<10.	NC
9304691	Acenaphthylene	ug/L	<10.	<10.	NC
9304691	Anthracene	ug/L	<10.	<10.	NC
9304691	Benzo(a)anthracene	ug/L	<10.	<10.	NC
9304691	Benzo(a)pyrene	ug/L	<10.	<10.	NC
9304691	Benzo(b)fluoranthene	ug/L	<10.	<10.	NC
9304691	Benzo(ghi)perylene	ug/L	<10.	<10.	NC
9304691	Benzo(k)fluoranthene	ug/L	<10.	<10.	NC
9304691	Chrysene	ug/L	<10.	<10.	NC
9304691	Dibenzo(a,h)anthracene	ug/L	<10.	<10.	NC
9304691	Fluoranthene	ug/L	<10.	<10.	NC
9304691	Fluorene	ug/L	<10.	<10.	NC
9304691	Indenol(1,2,3-cd)pyrene	ug/L	<10.	<10.	NC
9304691	Napthalene	ug/L	<10.	<10.	NC
9304691	Phenanthrene	ug/L	<10.	<10.	NC
9304691	Pyrene	ug/L	<10.	<10.	NC
9304691	Bis(2-chloroethyl)ether	ug/L	<10.	<10.	NC
9304691	Bis(2-chloroethoxy)methane	ug/L	<10.	<10.	NC
9304691	Bis(2-chloroisopropyl)ether	ug/L	<10.	<10.	NC
9304691	4-Bromophenyl phenyl ether	ug/L	<10.	<10.	NC
9304691	4-Chlorophenyl phenyl ether	ug/L	<10.	<10.	NC
9304691	2-Chloronaphthalene	ug/L	<10.	<10.	NC
9304691	Hexachlorobenzene	ug/L	<10.	<10.	NC
9304691	Hexachlorobutadiene	ug/L	<10.	<10.	NC
9304691	Hexachlorocyclopentadiene	ug/L	<10.	<10.	NC
9304691	Hexachloroethane	ug/L	<10.	<10.	NC
9304691	1,2,4-Trichlorobenzene	ug/L	<10.	<10.	NC
9304691	1,2-Dichlorobenzene	ug/L	<10.	<10.	NC
9304691	1,3-Dichlorobenzene	ug/L	<10.	<10.	NC
9304691	1,4-Dichlorobenzene	ug/L	<10.	<10.	NC
9304691	2-Methyl-4,6-dinitrophenol	ug/L	<30.	<30.	NC
9304691	N-Nitrosodibutylamine	ug/L	<20.	<20.	NC
9304691	N-Nitrosodiphenylamine	ug/L	<20.	<20.	NC
9304691	N-Nitroso-di-n-propylamine	ug/L	<20.	<20.	NC
9304691	4,4'-DDD	ug/L	<10.	<10.	NC
9304691	4,4'-DDE	ug/L	<10.	<10.	NC
9304691	4,4'-DDT	ug/L	<10.	<10.	NC
9304691	Aldrin	ug/L	<10.	<10.	NC
9304691	alpha-BHC	ug/L	<10.	<10.	NC
9304691	Chlordane	ug/L	<30.	<30.	NC

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ANALYZED ON : 03-03-93

## REPLICATES -

<u>SAMPLE NUMBER</u>	<u>PARAMETER</u>	<u>UNIT</u>	<u>RESULT</u>	<u>REPLICATE</u>	<u>RPD%</u>
9304691	delta-BHC	ug/L	<10.	<10.	NC
9304691	Dieldrin	ug/L	<10.	<10.	NC
9304691	Endosulfan I	ug/L	<10.	<10.	NC
9304691	Endosulfan II	ug/L	<10.	<10.	NC
9304691	Endosulfan sulfate	ug/L	<10.	<10.	NC
9304691	Endrin	ug/L	<10.	<10.	NC
9304691	Endrin aldehyde	ug/L	<20.	<20.	NC
9304691	Heptachlor	ug/L	<10.	<10.	NC
9304691	Heptachlor Epoxide	ug/L	<10.	<10.	NC
9304691	Lindane	ug/L	<10.	<10.	NC
9304691	Methoxychlor	ug/L	<20.	<20.	NC
9304691	PCB 1016	ug/L	<20.	<20.	NC
9304691	PCB 1221	ug/L	<50.	<50.	NC
9304691	PCB 1232	ug/L	<20.	<20.	NC
9304691	PCB 1242	ug/L	<20.	<20.	NC
9304691	PCB 1248	ug/L	<20.	<20.	NC
9304691	PCB 1254	ug/L	<20.	<20.	NC
9304691	PCB 1260	ug/L	<20.	<20.	NC
9304691	Toxaphene	ug/L	<50.	<50.	NC
9304691	2,4-Dinitrotoluene	ug/L	<10.	<10.	NC
9304691	Isophorone	ug/L	<10.	<10.	NC
9304691	Nitrobenzene	ug/L	<10.	<10.	NC
9304691	2,6-Dinitrotoluene	ug/L	<10.	<10.	NC
9304691	2,3,7,8 TCDD(Screen)	ug/L	<100.	<100.	NC
9304691	1,2-Diphenyl Hydrazine	ug/L	<20.	<20.	NC
9304691	Benzidine	ug/L	<20.	<20.	NC
9304691	N-Nitroso Dimethyl Amine	ug/L	<20.	<20.	NC
9304691	Bis-(Chloro Methyl) Ether	ug/L	<10.	<10.	NC
9304691	3,3'-Dichlorobenzidine	ug/L	<20.	<20.	NC
9304691	Biphenyl	ug/L	<10.	<10.	NC
9304691	Diphenyloxide	ug/L	<20.	<20.	NC
9304691	Monomethylnaphthalene	ug/L	<30.	<30.	NC

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ANALYZED BY : I. HRABOVSKY  
ANALYZED ON : 03-03-93

## METHOD BLANKS -

PARAMETER	UNIT	RESULT
Chrysene	ug/L	<10.
Dibenzo-[a,h]-Anthracene	ug/L	<10.
Fluoranthene	ug/L	<10.
Fluorene	ug/L	<10.
Indeno-[1,2,3-cd]-Pyrene	ug/L	<10.
Napthalene	ug/L	<10.
Phenanthrene	ug/L	<10.
Pyrene	ug/L	<10.
Bis(2-Chloroethyl) Ether	ug/L	<10.
Bis(2-Chloroethoxy) Methane	ug/L	<10.
Bis(2-Chloroisopropyl) Ether	ug/L	<10.
4-Bromophenyl Phenyl Ether	ug/L	<10.
4-Chlorophenyl Phenyl Ether	ug/L	<10.
2-Chloronaphthalene	ug/L	<10.
Hexachlorobenzene	ug/L	<10.
Hexachlorobutadiene	ug/L	<10.
Hexachlorocyclopentadiene	ug/L	<10.
Hexachloroethane	ug/L	<10.
1,2,4-Trichlorobenzene	ug/L	<10.
1,2-Dichlorobenzene	ug/L	<10.
1,3-Dichlorobenzene	ug/L	<10.
1,4-Dichlorobenzene	ug/L	<10.
3,3'-Dichlorobenzidine	ug/L	<20.
1,2-Diphenyl Hydrazine	ug/L	<20.
Benzidine	ug/L	<20.
Bis-(Chloromethyl) Ether	ug/L	<10.
Diphenyloxide	ug/L	<20.
Biphenyl	ug/L	<10.
Monomethylnaphthalenes (Total)	ug/L	<30.
Phenol	ug/L	<10.
Bis(2-chloroethyl)ether	ug/L	<10.
2-Chlorophenol	ug/L	<10.
1,3-Dichlorobenzene	ug/L	<10.
1,4-Dichlorobenzene	ug/L	<10.
1,2-Dichlorobenzene	ug/L	<10.
2-Methylphenol	ug/L	<10.
Bis(2-chloroisopropyl)ether	ug/L	<10.
4-Methylphenol	ug/L	<10.
N,N-Nitroso-di-n-Propylamine	ug/L	<20.
Hexachloroethane	ug/L	<10.
Nitrobenzene	ug/L	<10.
Isophorone	ug/L	<10.



QUALITY CONTROL REPORT

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ANALYZED BY : I. HRABOVSKY  
ANALYZED ON : 03-03-93

METHOD BLANKS -

PARAMETER	UNIT	RESULT
2-Nitrophenol	ug/L	<10.
2,4-Dimethylphenol	ug/L	<10.
Bis(2-chloroethoxy)methane	ug/L	<10.
2,4-Dichlorophenol	ug/L	<10.
1,2,4-Trichlorobenzene	ug/L	<10.
Napthalene	ug/L	<10.
4-Chloroaniline	ug/L	<20.
Hexachlorobutadiene	ug/L	<10.
4-Chloro-3-methylphenol	ug/L	<20.
2-Methylnaphthalene	ug/L	<10.
Hexachlorocyclopentadiene	ug/L	<10.
2,4,6-Trichlorophenol	ug/L	<10.
2,4,5-Trichlorophenol	ug/L	<10.
2-Chloronaphthalene	ug/L	<10.
2-Nitroaniline	ug/L	<50.
Dimethyl Phthalate	ug/L	<10.
Acenaphthylene	ug/L	<10.
3-Nitroaniline	ug/L	<50.
Acenaphthene	ug/L	<10.
2,4-Dinitrophenol	ug/L	<50.
4-Nitrophenol	ug/L	<50.
Dibenzofuran	ug/L	<10.
2,4-Dinitrotoluene	ug/L	<10.
2,6-Dinitrotoluene	ug/L	<10.
Diethyl Phthalate	ug/L	<10.
4-Chlorophenyl phenyl ether	ug/L	<10.
Fluorene	ug/L	<10.
4-Nitroaniline	ug/L	<20.
2-Methyl-4,6-dinitrophenol	ug/L	<30.
N-Nitrosodiphenylamine	ug/L	<20.
4-Bromophenyl phenyl ether	ug/L	<10.
Hexachlorobenzene	ug/L	<10.
Pentachlorophenol	ug/L	<50.
3-Methylphenol	ug/L	<10.
2,6-Dichlorophenol	ug/L	<10.

QUALITY CONTROL REPORT

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ANALYZED BY : I. HRABOVSKY  
ANALYZED ON : 03-03-93

NOTE -

- 1) NC: Not Calculable because result is < 5 times the MDL
- 2) NP: Not Practical because sample result is 4 times or more greater than spike added.
- 3) Percent Recovery is:

$$\frac{\text{Sample+Spike Result} - \text{Sample Result}}{\text{Spike Amount}} \times 100$$

- 4) Relative Percent Difference (RPD) is:

$$\frac{\text{Sample Result} - \text{Replicate Result}}{(\text{Sample Result} + \text{Replicate Result})/2} \times 100$$

WESTECH  
LABORATORIES  
INC.  
QUALITY ASSURANCE OFFICER  
*Dave Nichols*  
DATE: *3/11/93*

QUALITY CONTROL REPORT

QC IDENTIFIER .....: 110-030393-1  
REFERENCE NOTEBOOK :  
REFERENCE PAGE .....:

INSTRUMENT : Hewlett Packard GC/MS w/ Dir.Inject  
ANALYZED BY : I. HRABOVSKY  
ANALYZED ON : 03-03-93

SPIKES -

SAMPLE NUMBER	PARAMETER	UNIT	SAMPLE RESULT	SPIKE AMOUNT	SAMPLE+SPIKE RESULT	%RECOVERY
9304691	2-Chlorophenol	ug/L	<10.	200.	170.	85.0
9304691	4-Chloro-3-methylphenol	ug/L	<10.	200.	130.	65.0
9304691	Acenaphthene	ug/L	<10.	100.	86.	86.0
9304691	Pyrene	ug/L	<10.	100.	71.	71.0
9304691	1,2,4-Trichlorobenzene	ug/L	<10.	100.	50.	50.0
9304691	1,4-Dichlorobenzene	ug/L	<10.	100.	60.	60.0
9304691	N-Nitroso-di-n-propylamine	ug/L	<20.	100.	86.	86.0
9304691	2,4-Dinitrotoluene	ug/L	<10.	100.	82.	82.0

METHOD BLANKS -

PARAMETER	UNIT	RESULT
N,N-Nitrosodi-n-Butylamine	ug/L	<20.
N,N-Nitrosodimethylamine	ug/L	<20.
N,N-Nitrosodiphenylamine	ug/L	<20.
N,N-Nitroso-di-n-Propylamine	ug/L	<20.
2,4-Dinitrotoluene	ug/L	<10.
Isophorone	ug/L	<10.
Nitrobenzene	ug/L	<10.
2,6-Dinitrotoluene	ug/L	<10.
beta-BHC	ug/L	<10.
4,4'-DDD	ug/L	<10.
4,4'-DDE	ug/L	<10.
4,4'-DDT	ug/L	<10.
Aldrin	ug/L	<10.
alpha-BHC	ug/L	<10.
Chlordane (alpha+gamma)	ug/L	<30.
delta-BHC	ug/L	<10.
Dieldrin	ug/L	<10.
Endosulfan I	ug/L	<10.
Endosulfan II	ug/L	<10.
Endosulfan sulfate	ug/L	<10.
Endrin	ug/L	<10.
Endrin Aldehyde	ug/L	<20.
Heptachlor	ug/L	<10.

# QUALITY CONTROL REPORT

QC IDENTIFIER .....: 110-030393-1  
REFERENCE NOTEBOOK :  
REFERENCE PAGE .....:

INSTRUMENT : Hewlett Packard GC/MS w/ Dir.Inject  
ANALYZED BY : I. HRABOVSKY  
ANALYZED ON : 03-03-93

## METHOD BLANKS -

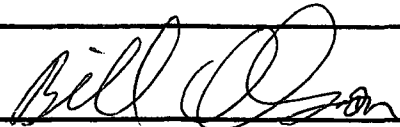
PARAMETER	UNIT	RESULT
Heptachlor Epoxide	ug/L	<10.
Lindane (gamma-BHC)	ug/L	<10.
Methoxychlor	ug/L	<20.
PCB 1016	ug/L	<20.
PCB 1221	ug/L	<50.
PCB 1232	ug/L	<20.
PCB 1242	ug/L	<20.
PCB 1248	ug/L	<20.
PCB 1254	ug/L	<20.
PCB 1260	ug/L	<20.
Toxaphene	ug/L	<50.
2,3,7,8-TCDD (Screen)	ug/L	<100.
2-Methyl-4,6-Dinitrophenol	ug/L	<30.
2,4,5-Trichlorophenol	ug/L	<10.
2,4,6-Trichlorophenol	ug/L	<10.
2,4-Dichlorophenol	ug/L	<10.
2,4-Dimethylphenol	ug/L	<10.
2,4-Dinitrophenol	ug/L	<50.
2,6-Dichlorophenol	ug/L	<10.
2-Chlorophenol	ug/L	<10.
2-Methylphenol	ug/L	<10.
2-Nitrophenol	ug/L	<10.
3-Methylphenol	ug/L	<10.
4-Chloro-3-Methylphenol	ug/L	<10.
4-Methylphenol	ug/L	<10.
4-Nitrophenol	ug/L	<10.
Pentachlorophenol	ug/L	<10.
Phenol	ug/L	<10.
Dimethyl Phthalate	ug/L	<10.
Diethyl Phthalate	ug/L	<10.
Di-n-Butyl Phthalate	ug/L	<10.
Butyl Benzyl Phthalate	ug/L	<10.
Bis(2-Ethylhexyl) Phthalate	ug/L	14.
Di-n-Octyl Phthalate	ug/L	<10.
Acenaphthene	ug/L	<10.
Acenaphthylene	ug/L	<10.
Anthracene	ug/L	<10.
Benzo-[a]-Anthracene	ug/L	<10.
Benzo-[a]-Pyrene	ug/L	<10.
Benzo-[b]-Fluoranthene	ug/L	<10.
Benzo-[g,h,i]-Perylene	ug/L	<10.
Benzo-[k]-Fluoranthene	ug/L	<10.



State of New Mexico  
**ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT**  
Santa Fe, New Mexico 87505

STATE OF  
NEW MEXICO  
OIL  
CONSERVATION  
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Personal	Time 1455	Date 2-22-93
<u>Originating Party</u> Zeke Sherman - Giant Ciniza 722-3833		<u>Other Parties</u> Bill Olson and Roger Anderson (Environmental Bureau)
<u>Subject</u> 1-203 Spill Notification from ponds.		
<u>Discussion</u> Learned of incident approximately 2-3 hours ago. Believed happened on Saturday during high winds. There was breach in dike star pond 7 & 8, then dike in SW corner of pond 8 breached from extra water. Breach is approximately 20 feet long 6-8" deep. Water is flowing offsite into runoff ditch adjacent to pond. Runoff ditch flows into Puerco. Estimate 750,000 gallons lost. Breach is ongoing. Can't get to break because of muds. Have backhoe stuck.		
<u>Conclusions or Agreements</u> Told him to get conductivity of outflow from pond and background quality of Puerco to determine immediate actions. Also told him to take 8010/8020, cation/anions, ICAP metals at outflow, and cations/anions ICAP metal, upstream and downstream of inflow to Puerco. He will call back as soon as he gets conductivity at pond and river (approximately 1 hour.		
<u>Distribution</u> W. J. LeMay F. Chavez Giant Ciniza File	Signed 	

OIL CONSERVATION DIVISION  
RECEIVED

**GIANT**  
REFINING CO.

August 26, 1991 '91 AUG 24 AM 8 59

Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

David Boyer  
Bureau Chief  
New Mexico Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87504

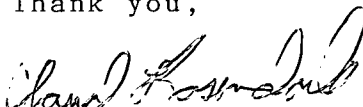
RE: Spill Report

Dear Mr. Boyer:

The attached report is for the spill that occurred at Giant's Ciniza Refinery on August 21, 1991. The initial report was telephoned to Bill Olson of your staff, Ernie Bush of the Aztec office and to Steve Machovina of the National Response Center. John Myers, who is running cattle on the land, was also notified. Remediation associated with the spill was completed by August 23, 1991.

If you have any questions, contact my office at (505) 722-0217.

Thank you,

  
Claud Rosendale  
Environmental Manager  
Ciniza Refinery

cc w/enclosure: Ernie Bush  
NMOCD - Aztec Office

Kim Bullerdick  
Corporate Counsel  
Giant Industries Arizona, Inc.

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR Giant Refining Company					ADDRESS Route 3 Box 7 Gallup, NM 87301		
REPORT OF	FIRE	BREAK	SPILL <input checked="" type="checkbox"/>	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY <input checked="" type="checkbox"/>	OTHER*
NAME OF FACILITY Ciniza Refinery							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 33	TWP. 15N	RGE. 15W
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK					17 miles east of Gallup, New Mexico		
DATE AND HOUR OF OCCURENCE August 20, 1991 at 2230 hrs.				DATE AND HOUR OF DISCOVERY August 21, 1991 at 0300 hrs.			
WAS IMMEDIATE NOTICE GIVEN?	YES <input checked="" type="checkbox"/>	NO	NOT RE-QUIRED	IF YES, Bill Olson & Ernie Bush at NMOCD TO WHOM Steve Machovina at NRC			
BY WHOM	Claud Rosendale			DATE AND HOUR August 21, 1991 1342 hrs.			
TYPE OF FLUID LOST	Diesel Fuel			QUANTITY OF LOSS	170 80 8W	VOLUME RE-COVERED	105 30 3W
DID ANY FLUIDS REACH A WATERCOURSE?	YES <input checked="" type="checkbox"/>	NO	QUANTITY 25 bbl.				
IF YES, DESCRIBE FULLY** Diesel flowed down a dry arroyo for about 500 meters. The arroyo is from six inches to two feet deep and from one foot to four feet wide. The diesel that was not recovered, soaked into the soil and was excavated.							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** The incident was caused by operator error in opening a tank fill vavle and forgetting it. We are investigating the possibility of an automatic fill system.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** See attached drawing for area affected. A dike was formed to prevent additional spreading pending the clean-up. A vacuum truck was used throughout the ditch to recover all pools of liquid. This liquid was dumped through (see attached)							
DESCRIPTION OF AREA	FARMING	GRAZING <input checked="" type="checkbox"/>	URBAN	OTHER* Refinery			
SURFACE CONDITIONS	SANDY	SANDY LOAM <input checked="" type="checkbox"/>	CLAY	ROCKY	WET	DRY <input checked="" type="checkbox"/>	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							
Precipitation; few scattered clouds; 48°F night; 87°F day							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED <i>Claud C. Rosendale</i>				TITLE Environmental Manager DATE August 23, 1991			

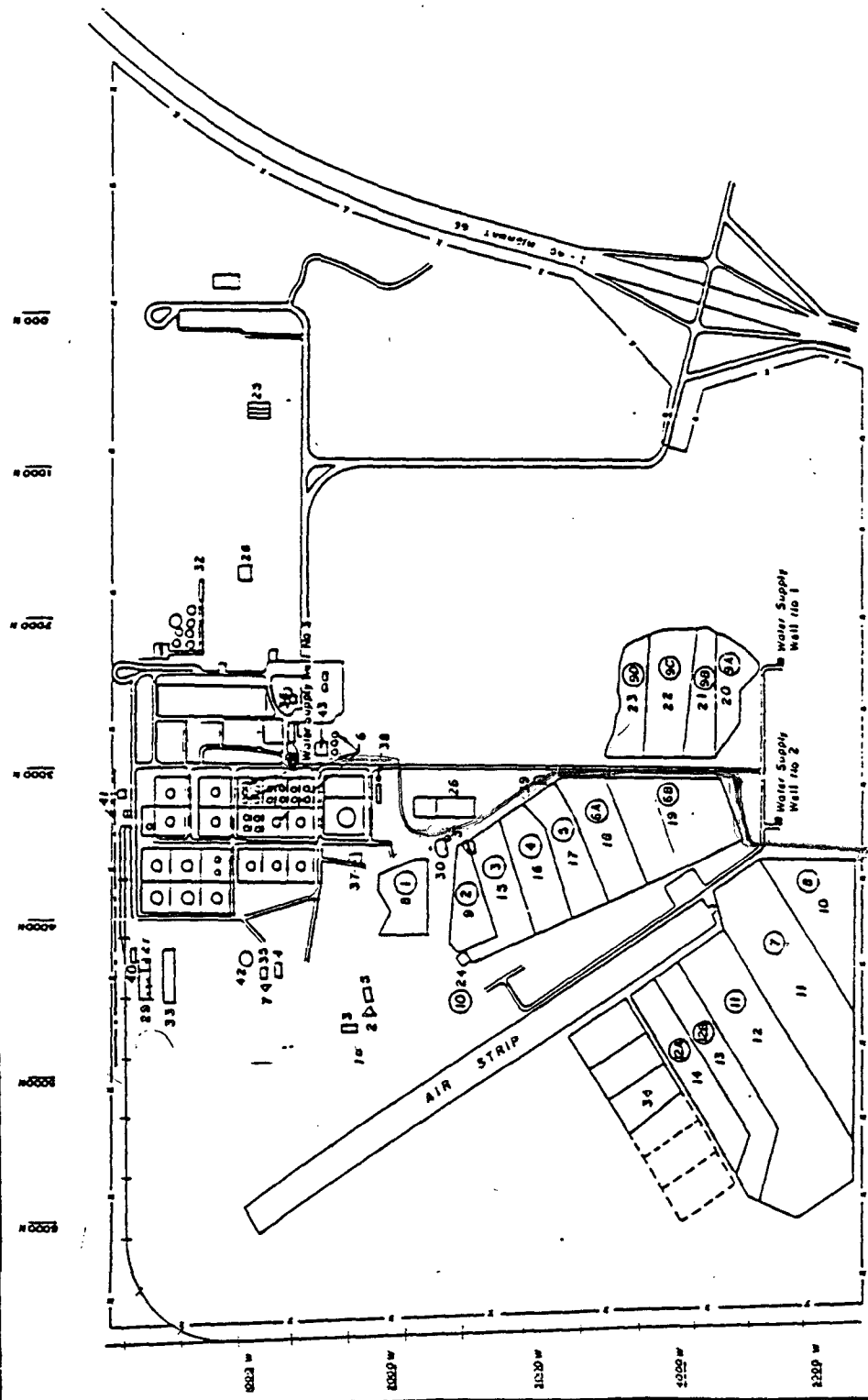
\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

the API separator system. A front end loader and backhoes were used to excavate all soil with diesel contamination from all of the ditch except the first 700 meters where it exits the marketing tank area. All of the soil removed (355 cubic yards) was hauled to the land treatment area by a dump truck. The soil was stockpiled and will be landfarmed pending receipt of the TCLP analytical.

The first 700 meters of the ditch is more rugged terrain preventing the soil removal. A small dike and collection sump was constructed at the lower end of this area. The ditch was flooded with water (30,000 gallons) to float all diesel to the lower end where a vacuum truck was used to collect the liquid. This liquid was also dumped through the API separator.





**LEGEND**

- ① - ⑫ Evaporation Ponds as identified in Giant Refinery Documents.

- 1. Landfill
- 2. Landfill
- 3. Landfill
- 4. Landfill
- 5. Landfill
- 6. Tank Farm
- 7. Tank Farm
- 8. Evaporation Pond
- 9. Evaporation Pond
- 10. Evaporation Pond
- 11. Evaporation Pond
- 12. Evaporation Pond
- 13. Evaporation Pond
- 14. Evaporation Pond

- 33. Inactive Lead Treatment
- 34. Active Lead Treatment
- 35. Inactive Container Storage
- 36. Active Container Storage
- 37. API Separator
- 38. Neutralization Tank
- 39. Secondary Oil Skimmer
- 40. Unburied Storage Tanks
- 41. Drainage From Process Area
- 42. Fire Training Area
- 43. Empty Container Storage

Applied Earth Sciences		GIANT REFINERY	SITE MAP	FIGURE 1
FILE NO. 5202	DATE: 5/15/89	Gallup, New Mexico		

'91 SEP 3 AM 9 49

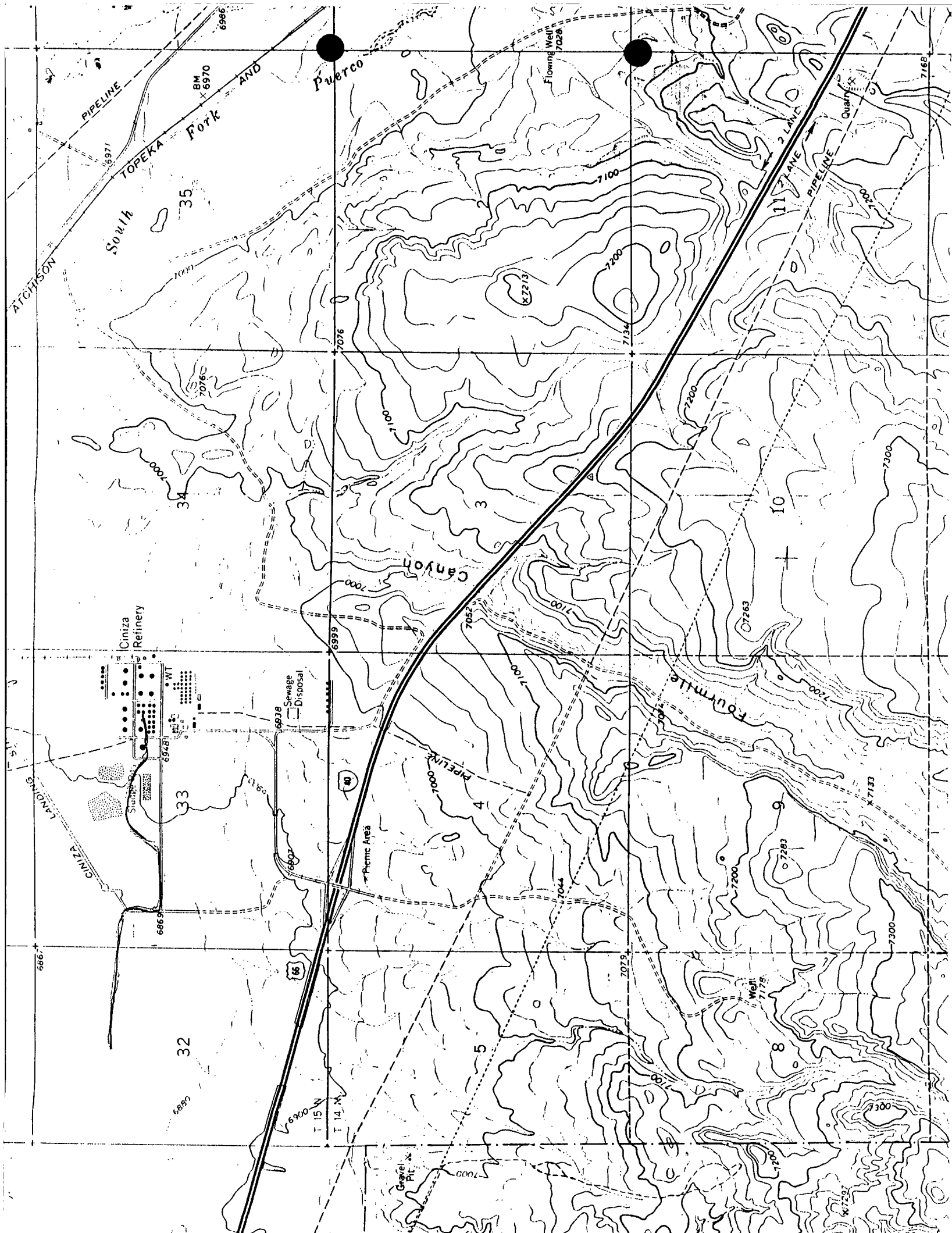
AUGUST 23, 1991

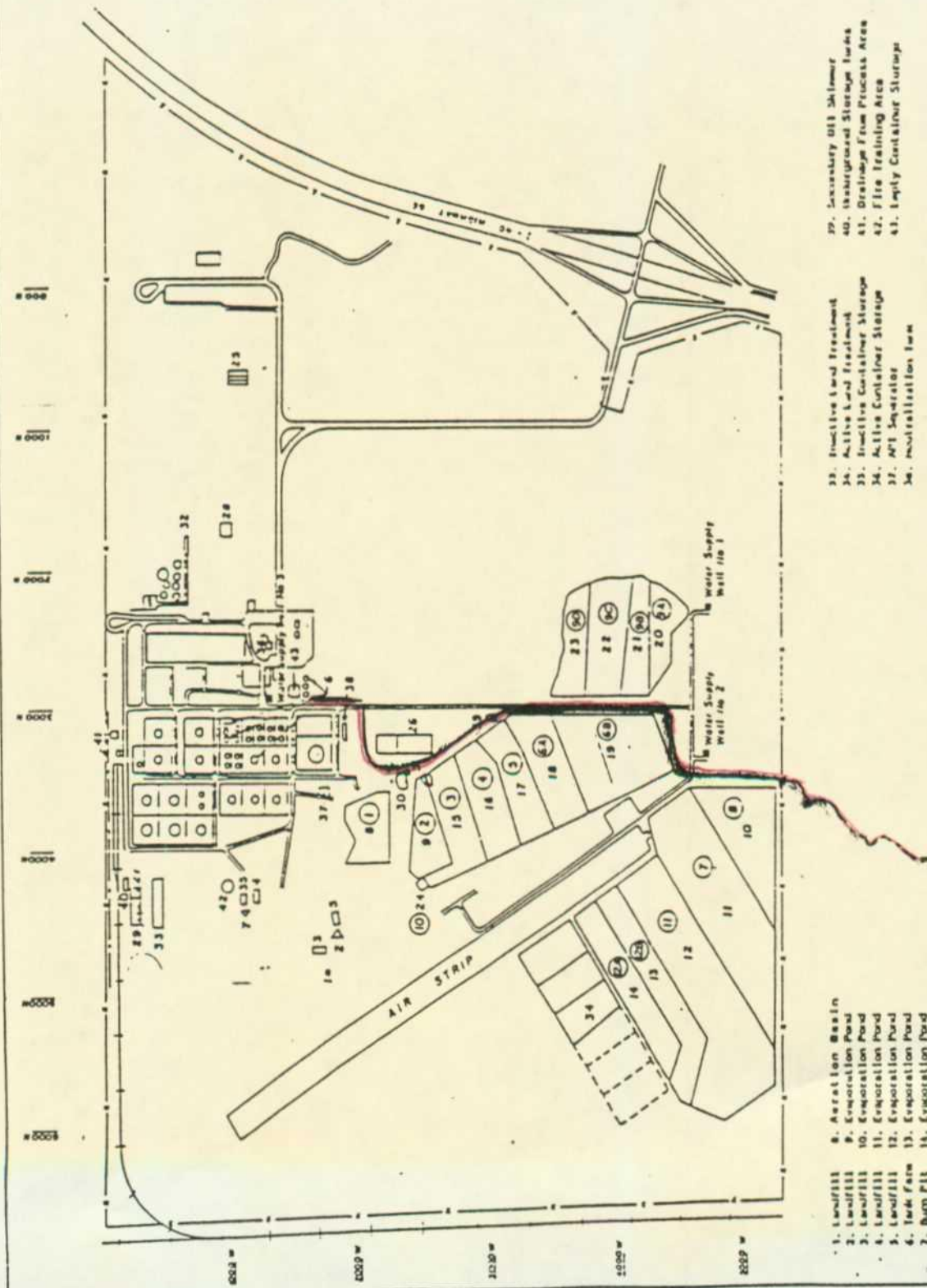
RE: Ciniza Refinery Product Spill on August 20-21, 1991.

A day tank holding diesel fuel for an emergency generator overflowed due to a neglected manual valve, the spill was discovered at 3:00 AM. No follow up after valve shut-off until the day shift at 8:00 AM. Three quarter inch inflow line saturated soil with diesel around the tank (see photo) and flowed into a drainage trench (see photo) then through drain pipe approximately 100 yards to a drainage ditch; then down a drainage ditch 7/8ths of a mile or better to the property line, thence 3/8ths of a mile onto state land leased by Jon Myers (32-15N-15W). The Ciniza Refinery occupies all section 33-15N-15W (see attachments). Ciniza has three water supply wells into the aquifer at approximately 800 feet for their use and the truck stop. The nearest additional water well is at the state rest area 3/4 quarters mile S-Sw in D-4-14N-15W. Current operation is flushing the drainage ditch channel with water, sucking up flushed material with vacuum truck and running fluid through an API separator. Contaminated dirt will be land farmed on the refinery grounds. The spill reached 1 1/4 miles from the source. The valve was open 10:30 PM-3:00 AM. Flow was 30.5 gallons per minute totaling 196 barrels maximum. Sales tank showed 170 barrels loss for the 20th and 21st. Recovered 105 barrels of product not inventorying any material run through separator.

Denny G. Foust

cc: Operator File  
Dave Boyer  
Frank Chavez  
DGF File





**LEGEND**  
 (1)-(12) Evaporation Ponds as identified in Giant Refinery Documents.

0 500 1000  
 Scale in Feet

39. Secondary Oil Shipment  
 40. Underground Storage Tanks  
 41. Drainage From Process Area  
 42. Fire Training Area  
 43. Empty Container Storage

33. Inactive Land Treatment  
 34. Active Land Treatment  
 35. Inactive Container Storage  
 36. Active Container Storage  
 37. API Separator  
 38. Neutralization Tank

1. Sewerage  
 2. Sewerage  
 3. Sewerage  
 4. Sewerage  
 5. Sewerage  
 6. Sewerage  
 7. Sewerage  
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 37. Sewerage  
 38. Sewerage  
 39. Sewerage  
 40. Sewerage  
 41. Sewerage  
 42. Sewerage  
 43. Sewerage

Applied Earth Sciences		GIANT REFINERY		SITE MAP	
FILE NO.	5202	DATE	APR 27, 1957	FIGURE	1
		Gallup, New Mexico			

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time

1400

Date

8/21/91

Originating Party

Bill Olson, OCD - Santa Fe

Other Parties

Glen Searns - ED Surface Water

Subject

Giant Ciniza Spill

Discussion

Informed him of 8/21/91 spill report by Claude Rosendale

Conclusions or Agreements

I will send him copy of spill report when comes in  
and call him to discuss

Distribution

Giant Ciniza File

Signed

Bill Olson

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time

1343

Date

8/21/91

Originating Party

Other Parties

Claude Rosendale - Giant Refining Co.

Bill Olson - OCD Santa Fe

Subject

Spill at Giant Cinniz Refinery

Discussion

Early this morning they discovered spill of diesel from valve left open <sup>(overnight)</sup> fill a day tank. Day tank had overflowed into plant ditch then into arroyo and travelled around ponds and ~~ponds~~ approx. 600 yds out refinery property by southwest corner of North lagoons.

They have diked arroyo and are skimming product located in small pools. They will dig up contaminated soil and landfarm ~~it~~.

Conclusions or Agreements

I told him to call Aztec office to notify and file spill report listing volumes of product lost, recover, soil remediation, etc. Also told him to notify National Response Center. I will call Ed Surfaa White to notify.

Distribution

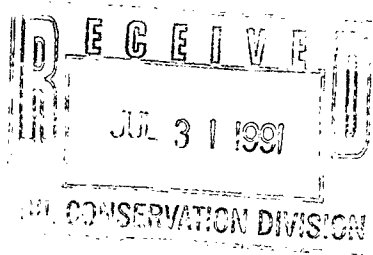
Giant Cinniz File

Signed

Will Olson



July 29, 1991



Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

Roger Anderson  
New Mexico Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87504


RE: Notification of Leak

Dear Mr. Anderson:

Attached is a copy of the spill report for the incident that was reported to Bill Olson, of your office, on July 24, 1991.

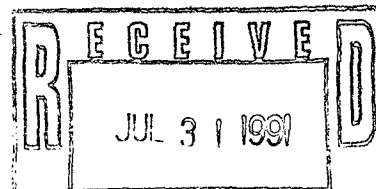
If you have any questions, contact Lynn Shelton at (505) 722-0227 or myself at (505) 722-0217.

Thank you,

  
Claud Rosendale  
Environmental Manager  
Ciniza Refinery

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501



NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND OIL CLOSURES

NAME OF OPERATOR					ADDRESS				
Giant Refining Company					Route 3 Box 7 Gallup, NM 87301				
REPORT OF	FIRE	BREAK	SPILL	LEAK	BLOWOUT	OTHER*			
				X					
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY	OTHER*		
						X			
NAME OF FACILITY									
Ciniza Refinery									
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)						SEC.	TWP.	RGE.	COUNTY
						33	15N	15W	McKinley
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK									
17 miles east of Gallup, New Mexico									
DATE AND HOUR OF OCCURENCE					DATE AND HOUR OF DISCOVERY				
7-24-91 4:24 a.m.					7-24-91 4:30 a.m.				
WAS IMMEDIATE NOTICE GIVEN?		YES	NO	NOT RE-QUIRED	IF YES, TO WHOM				
		X			Bill Olson Ruth at District Office				
BY WHOM					DATE AND HOUR				
Tyson Lynn Shelton					7-24-91 8:25 a.m. 7-24-91 8:34 a.m.				
TYPE OF FLUID LOST					QUANTITY		VOLUME RE-		
JP-4 / 84 Octane Gasoline					39 80		35 80		
					OF LOSS 84- 245 80		COVERED 240 80		
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO	QUANTITY					
			X						
IF YES, DESCRIBE FULLY**									
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** Modification to existing transfer lines was completed on 7-23-91. Product transfer was attempted at 4:24 a.m.. Two bleeders were open, two or three flanges were not tightened and a steam-out blind was left in. When discovered, product feed was shut in, stopping the leak.									
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** The product was confined to the east-west pipe rack and drainage ditch. The overflow pipe in the ditch was plugged by refinery personnel which confined the product just west of tank 101. Water was sprayed over the leak area and floated most of the product into the sewer system for recovery. Soil in the drainage ditch was tilled.									
DESCRIPTION OF AREA		FARMING	GRAZING	URBAN	OTHER*				
					X Refinery				
SURFACE CONDITIONS		SANDY	SANDY LOAM	CLAY	ROCKY	WET	DRY	SNOW	
				X			X		
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**									
60°F, no precipitation, east wind at 5-10 mph, partly cloudy.									
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF									
SIGNED <i>Claudio C. Rosendahl</i>					TITLE Environmental Manager DATE July 29, 1991				

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY



MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Personal	Time 0930	Date 7/24/91
---	-----------	--------------

Originating Party

Other Parties

Lynn Shelton - Grant Ciniza

Bill Olson - OCD Santa Fe

Subject

Report A Spill at Grant Ciniza Refinery

Discussion

Cost 245 bbls - 84 octane gasoline  
39 bbls - JP-4

Spilled in pipework. Cause - valves left open after cleaning  
Fluids flowed into sewer system to API separator  
Recovered 240 bbls - 84 octane gasoline } estimated  
39 bbls - JP-4

Will vacuum up remaining fluids and remediate soils in place by  
discing - grading

Conclusions or Agreements

He will send report to OCD Santa Fe and Astea

Distribution

Grant Ciniza file

Signed

Bill Olson

MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Personal	Time	Date 11/23/90
<u>Originating Party</u> Giant Ciniza Pipeline		<u>Other Parties</u> Bill Olson - OCD Santa Fe
<u>Subject</u> Pipeline spill		
<u>Discussion</u> Pipeline leaked approx. 75-100 bbls down right of way Oil is being skimmed. Want to burn contaminated soil  I requested filing a report on incident within 7 days and notification of Axtex office. He has already contacted Ernie Bush Told him EID has authority for burns		
<u>Conclusions or Agreements</u> He will call Dave Tompkins to request burn He will file report with Axtex office		
<u>Distribution</u>	Signed Bill Olson	

OIL CONSERVATION DIVISION  
RECEIVED

'90 OCT 29 AM 10 00



Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

October 25, 1990

Mr. David Boyer  
Director  
New Mexico Oil Conservation Division  
P. O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87504

RE: NOTIFICATION OF API OVERFLOW  
GIANT REFINING CO.  
RT. 3, BOX 7  
GALLUP, NEW MEXICO 87301

Dear Mr. Boyer:

The attached notification outlines the details associated with the API Separator overflow at the above location. The "immediate notification" was transmitted to your office on October 22, 1990.

If you have any questions, contact my office at (505)722-3833.

A handwritten signature in cursive script that reads "Claud Rosendale".

Claud Rosendale  
Environmental Manager  
Ciniza Refinery

CR:cam

cc w/attachment: (OCD Notification)  
John Stokes, Giant Refining  
Carl Shook, Giant Industries Arizona, Inc.  
Kim Bullerdick, Giant Industries Arizona, Inc.

NEW MEXICO OIL CONSERVATION COMMISSION  
DIVISION  
NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR Ciniza Pipe Line					ADDRESS P.O. Box 1887 Bloomfield, NM 87413		
REPORT OF	FIRE	BREAK	SPILL	LEAK XX	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY	OTHER*
NAME OF FACILITY Lybrook-Hospah 4" Line							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 17	TWP. 18	RGE. 7
					COUNTY Sandoval		
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK				5.15 miles or 27215' North of (Hospah) or Ciniza's Hospah Station.			
DATE AND HOUR OF OCCURENCE Unknown				DATE AND HOUR OF DISCOVERY 10-23-90 at 11:45 A.M.			
WAS IMMEDIATE NOTICE GIVEN?	YES XX	NO	NOT RE-QUIRED		IF YES, TO WHOM Ernie Bush		
BY WHOM Chuck Calvery				DATE AND HOUR			
TYPE OF FLUID LOST Crude Oil				QUANTITY OF LOSS 100 barrels		VOLUME RE-COVERED 20 barrels	
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO XX	QUANTITY			
IF YES, DESCRIBE FULLY**							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**  External Corrosion							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**							
DESCRIPTION OF AREA		FARMING	GRAZING XX	URBAN	OTHER*		
SURFACE CONDITIONS		SANDY XX	SANDY LOAM	CLAY XX	ROCKY XX	WET XX	DRY SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**  Temperature 60° - Clear, sunny day.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED		TITLE General Manager			DATE 10-25-90		

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

**RECEIVED**  
OCT 25 1990  
OIL CON. DIV  
DIST. 3

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87301

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR Giant Industries Arizona Inc.					ADDRESS Rt. 3, Box 7, Gallup, NM 87301		
REPORT OF	FIRE	BREAK	SPILL <input checked="" type="checkbox"/>	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	ORLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY <input checked="" type="checkbox"/>	OTHER*
NAME OF FACILITY Ciniza Refinery							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 33	TWP. 15N	RGE. 15W
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK					17 miles east of Gallup, New Mexico		
DATE AND HOUR OF OCCURENCE October 20, 1990 12:30 am				DATE AND HOUR OF DISCOVERY October 20, 1990 12:45 am			
WAS IMMEDIATE NOTICE GIVEN?	YES <input checked="" type="checkbox"/>	NO	NOT REQUIRED	IF YES, TO WHOM Bill (OCD) Rich Mayer (EPA)			
BY WHOM Claud Rosendale				DATE AND HOUR October 22, 1990 1:30 p.m.			
TYPE OF FLUID LOST				QUANTITY 200 BBL	VOLUME RE- 175 BBL		
DID ANY FLUIDS REACH A WATERCOURSE?				YES <input checked="" type="checkbox"/>	NO	QUANTITY	
IF YES, DESCRIBE FULLY** Not Applicable							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** A heavy rain occurred increasing the flow to the API Pit. A backup pump used to handle excess flow out of the API Pit failed to start causing liquids to overflow. The pump switch has been worked on.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** Hydrocarbons were on the surface of the aeration lagoons and pond 2. The hydrocarbons were skimmed off on October 20, 1990. The associated ditch has had soil removed and stockpiled and waiting for analytical results.							
DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Refinery			
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY <input checked="" type="checkbox"/>	ROCKY	WET <input checked="" type="checkbox"/>	DRY	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)** The weather was cool and the spill occurred during 0.88" of rainfall.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							

SIGNED *Claud C Rosendale*

TITLE Environmental Manager DATE October 25, 1990

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time

1330

Date

10/22/90

Originating Party

Claudio Rosende - Giant Refining Co

Other Parties

Bill Olson - OCP

Subject

Giant Ciniza Spill

Discussion

He is reporting a spill at the refinery.

Spill volume approx. 5000-6000 gallons

Spill caused by pump failure by air stripper. APF separator  
overloaded for approx 15-30 min due to heavy rains

Spill ran down to aeration lagoon and pond 2

Dec.

Hydrocarbons are being skimmed. Soils will be addressed

Conclusions or Agreements

He will file report with OCP within 7 days

Distribution

Signed

Bill Olson



Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

ON DIVISION  
September 24, 1990  
RE:

90 SEP 27 AM 9 23

David Boyer  
Director  
New Mexico Oil Conservation Division  
P.O. Box 2088  
State Land Office Building  
Santa Fe, NM 87504

RE: Report Follow-up

Dear Mr. Boyer:

On July 2, 1990, your office was notified of a leak which was detected in the diesel transfer line from the Giant Refinery to the Travel Center. The initial report was submitted on July 9, 1990. After further investigation, a total of eight leaks were found in the line. The leaks were the result of faulty glues being used during construction. The fiberglass line has been removed and 775.27 tons of soil has been removed from the areas where the leaks occurred and was treated at the land treatment unit at the Ciniza Refinery. A steel line with cathodic protection is being installed. There will also be several inspection stations, designed for leak detection, installed at bends and low points.

If you have any questions, contact my office at (505) 722-3833.

Sincerely,

Claud Rosendale  
Environmental Manager  
Ciniza Refinery

CCR:smb

enclosures

cc: Tito Madrid - Bureau Chief - NMEID



Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

July 10, 1990

Tito Madrid  
Bureau Chief  
NMEID-UST  
Harold Runnels Building  
1190 St. Francis Drive  
Santa Fe, New Mexico 87504-0968

RE: NOTIFICATION OF HYDROCARBON LEAK  
P. O. BOX 960  
EXIT 39, I-40  
JAMESTOWN, NEW MEXICO 87347

Dear Mr. Madrid:

The attached notification form, as required by the New Mexico Oil Conservation Division, outlines the details associated with the hydrocarbon leak at the above location. The "immediate notification" was transmitted to your office via telephone conversation on the afternoon of July 2, 1990.

If you have any questions, contact my office at (505) 722-3833 extension 217.

A handwritten signature in cursive script, reading "Claud C. Rosendale".

Claud C. Rosendale  
Environmental Manager  
Ciniza Refinery

CCR:ctf

attachment



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR Giant Industries Arizona, Inc.					ADDRESS P. O. Box 960, Jamestown, NM 87347		
REPORT OF	FIRE	BREAK	SPILL	LEAK X	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE X	GASO PLNT	OIL RFY	OTHER* Line connected to UST
NAME OF FACILITY Giant Travel Center							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 33	TWP. 15 North	RGE. 15 West
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK					17 miles east of Gallup, New Mexico		
DATE AND HOUR OF OCCURENCE Before July , 1990					DATE AND HOUR OF DISCOVERY July 2, 1990 0930 hrs.		
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT RE-QUIRED		IF YES, David Boyer (OCD) TO WHOM UST Section (NMEID)		
BY WHOM Claud Rosendale					DATE AND HOUR July 2, 1990 1430 hrs.		
TYPE OF FLUID LOST Diesel					QUANTITY OF LOSS 25* 80 BW	VOLUME RE-COVERED	0 80 BW
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO X	QUANTITY Not Applicable			
IF YES, DESCRIBE FULLY**							
Not Applicable							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**							
The leak was detected during a leak detection pressure test of the underground pipes associated with the diesel storage tanks. The diesel line and tank was drained on the day the leak was detected. The line was then flushed and pressured with water to confirm the exact location of the leak. The line is being repaired.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**							
The primary area affected is the sand packing around the underground pipe with some clay contamination. The sand and clay is being removed and transported to the refinery land treatment unit. A photo-ionization detector will be used for monitoring soils removal.							
DESCRIPTION OF AREA		FARMING	GRAZING	URBAN	OTHER* Service Station		
SURFACE CONDITIONS		SANDY	SANDY LOAM	CLAY X	ROCKY	WET	DRY SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							
Partly cloudy, 70°F at detection, 2 inch rain on July 5, 1990. Rainwater in ditch transferred to refinery sewer system.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED <i>Clard C Rosendale</i>					TITLE Environmental Manager DATE July 9, 1990		

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

\* estimate barrels



Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

July 9, 1990

David Boyer  
Director  
New Mexico Oil Conservation Division  
P. O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87504

RE: NOTIFICATION OF HYDROCARBON LEAK  
P. O. BOX 960  
EXIT 39, I-40  
JAMESTOWN, NEW MEXICO 87347

Dear Sir:

The attached notification outlines the details associated with the hydrocarbon leak at the above location. The "immediate notification" was transmitted to your office via telephone conversation on the afternoon of July 2, 1990.

If you have any questions, contact my office at (505)722-3833 extension 217.

A handwritten signature in cursive script, reading "Claud C. Rosendale".

Claud C. Rosendale  
Environmental Manager  
Ciniza Refinery

CCR:ctf

cc w/enclosures: Barry Zeigler, Project Manager - Giant Industries  
Kim Bullerdick, Corporate Counsel - Giant Industries  
Jay Mills, Maintenance and Security Supervisor -  
Giant Travel Center  
Ray Horton, General Manager - Giant Travel Center

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87501

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR Giant Industries Arizona, Inc.					ADDRESS P. O. Box 960, Jamestown, NM 87347		
REPORT OF	FIRE	BREAK	SPILL	LEAK X	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE X	GASO PLNT	OIL RFY	OTHER* Line connected to UST
NAME OF FACILITY Giant Travel Center							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 33	TWP. 15 North	RGE. 15 West
					COUNTY McKinley		
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK 17 miles east of Gallup, New Mexico							
DATE AND HOUR OF OCCURENCE Before July , 1990					DATE AND HOUR OF DISCOVERY July 2, 1990 0930 hrs.		
WAS IMMEDIATE NOTICE GIVEN?	YES X	NO	NOT RE-QUIRED		IF YES, David Boyer (OCD) TO WHOM UST Section (NMEID)		
BY WHOM Claud Rosendale					DATE AND HOUR July 2, 1990 1430 hrs.		
TYPE OF FLUID LOST Diesel					QUANTITY 25* BO	VOLUME RE-	0 BO
					OF LOSS BW	COVERED	0 BW
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO X	QUANTITY Not Applicable			
IF YES, DESCRIBE FULLY**							
Not Applicable							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**							
The leak was detected during a leak detection pressure test of the underground pipes associated with the diesel storage tanks. The diesel line and tank was drained on the day the leak was detected. The line was then flushed and pressured with water to confirm the exact location of the leak. The line is being repaired.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**							
The primary area affected is the sand packing around the underground pipe with some clay contamination. The sand and clay is being removed and transported to the refinery land treatment unit. A photo-ionization detector will be used for monitoring soils removal.							
DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* Service Station			
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY X	ROCKY	WET	DRY	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)**							
Partly cloudy, 70°F at detection, 2 inch rain on July 5, 1990. Rainwater in ditch transferred to refinery sewer system.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED <i>Claud C Rosendale</i>					TITLE Environmental Manager DATE July 9, 1990		

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

\* estimate barrels

MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Personal	Time PM	Date 7/2/90
<u>Originating Party</u>		<u>Other Parties</u>
Clara Rosendale, ENV-Manager Ciniza Refinery 722-3833		Dave Boyer O&G
<u>Subject</u> Report of Leak - Giant Ciniza		

Discussion

Mr. Rosendale called to notify that they had a diesel leak in the line between the refinery and the terminal. They had not located the leak yet but found saturated soil while excavating for a new truck wash clean out pit. The line is only about 2 years old.

Conclusions or Agreements

I told him to make a full report when the leak was exactly located and to investigate the impacts on soil, water, etc. I also told him that since the truck terminal was under our discharge plan, he needed to notify <sup>us</sup> ~~him~~ of new waste facilities.

Distribution

Giant Ciniza file

Signed

H. H. Boyer



RECEIVED  
DIVISION  
'90 APR 23 AM 9 13

Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

April 12, 1990

David Boyer  
Director  
New Mexico Oil Conservation Division  
P. O. Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87504

RE: HYDROCARBON SPILL AT CINIZA REFINERY

Dear Mr. Boyer:

The following information details the Ciniza Refinery hydrocarbon spill which was reported to your office on April 9, 1990.

1. Giant Industries Arizona, Inc.  
Ciniza Refinery  
Gallup, New Mexico
2. NMD000333211
3. April 6, 1990 at 2000 hrs.
4. No injuries were sustained.
5. Approximately twenty-five (25) barrels of platformate leaked from an above ground pipe onto the soil below the pipe rack. The spill was contained on each end by a small earth berm. All of the platformate leached into the soil and contaminated an area approximately eighteen (18) feet wide and ninety (90) feet long and varied from six (6) to thirty (30) inches deep.
6. A super vacuum truck and crew of five (5) people spent five (5) days removing approximately 97 ton (75 cubic yards) of contaminated soil. The soil was placed on the facility landfarm for treatment. The area where the contaminated soil had been excavated was then back-filled with clean soil.
7. The following costs are estimates associated with the clean up of the contaminated area.

Waste Removal:	\$10,300
Backfill:	\$ 1,500
Disposal and Treatment	\$ 3,000
Analytical:	\$ 2,000
Emergency Response and Supervision:	<u>\$ 3,500</u>

Total Cost: \$20,300

All remediation work was completed by April 12, 1990.

If you have any questions, contact me at (505) 722-3833  
ext. 217.

Sincerely,



Claud Rosendale  
Environmental Manager  
Ciniza Refinery

CR/ctf

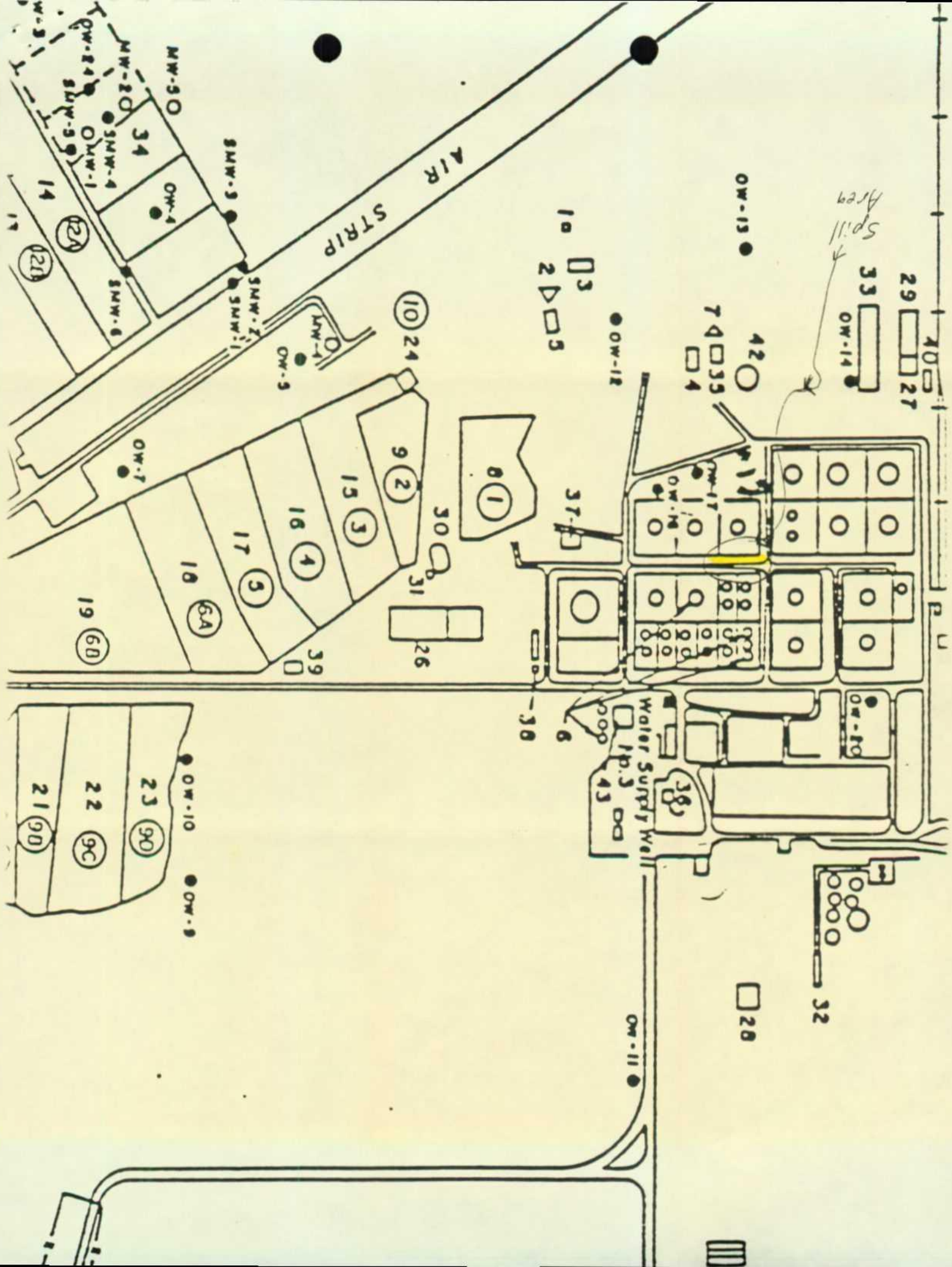
cc - with enclosures

Boyd Hamilton, Program Manager/New Mexico Environmental  
Improvement Division

John Stokes, Refinery Manager/Giant Industries

Kim Bullerdick, Corporate Counsel/Giant Industries

Carl Shook, V. P. Refinery Operations/Giant Industries



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
P. O. BOX 2088  
SANTA FE, NEW MEXICO 87301

NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

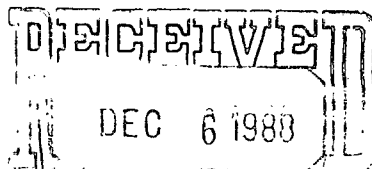
NAME OF OPERATOR GIANT REFINING COMPANY					ADDRESS ROUTE 3 BOX 7 GALLUP, NEW MEXICO 87301		
REPORT OF	FIRE	BREAK	SPILL X	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	ORLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY X	OTHER*
NAME OF FACILITY CINIZA REFINERY							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC. 33	TWP. 15N	RGE. 15W
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK					17 MILES EAST OF GALLUP, NEW MEXICO		
DATE AND HOUR OF OCCURRENCE 4/28/89 1:00 AM (0100)				DATE AND HOUR OF DISCOVERY 4/28/89 1:00 AM (0100)			
WAS IMMEDIATE NOTICE GIVEN?		YES X	NO	NOT RE-REQUIRED		IF YES, DR. ELIZABETH GORDON NMEID AND TO WHOM DAVID G. BOYER OCD	
BY WHOM SUSAN E. MYERS				DATE AND HOUR 10:00 AM 4/28/89 11:30 AM 5/1/89			
TYPE OF FLUID LOST UNLEADED GASOLINE				QUANTITY OF LOSS 10 80 BW		VOLUME RE-COVERED 10 80 BW	
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO X	QUANTITY			
IF YES, DESCRIBE FULLY**							
<b>RECEIVED</b> MAY 19 1989 OIL CONSERVATION DIV. SANTA FE							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** A HIGH LEVEL TANK SENSOR FAILED TO SOUND AND CUT OFF FUEL DELIVERY. THE SENSOR WAS REPLACED. THE NEW SENSOR WAS TESTED AND PROVEN TO BE EFFECTIVE.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** A BERMED AREA WITHIN PRODUCT TANK FARM CONTAINED THE PRODUCT. THE REFINERY VACUUM TRUCK VACUUMED UP THE LIQUID. THE OPERATOR THEN WASHED DOWN THE AREA AND VACUUMED THE EFFLUENT. ALL VACUUMED LIQUIDS WERE DEPOSITED INTO THE API SEPARATOR FOR RECOVERY.							
DESCRIPTION OF AREA	FARMING	GRAZING	URBAN	OTHER* REFINERY			
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY X	ROCKY	WET	DRY X	SNOW
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)** NO PRECIPITATION, 40°F, NO WIND, SUNNY.							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED ROBERT L. MCCLENAHAN, JR.				TITLE ENVIRONMENTAL COORD. DATE 5/5/89			

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

CC: DR. ELIZABETH GORDON, NMEID





November 30, 1988 OIL CONSERVATION DIVISION  
SANTA FE

Route 3, Box 7  
Gallup, New Mexico  
87301

505  
722-3833

David Boyer  
Environmental Bureau Chief  
NMOCD  
State Land Office Building  
Santa Fe, NM 87504

RE: Oil Spill at Giant's Ciniza Refinery

Dear Mr. Boyer:

On the morning of November 24, 1988, Tank 707, which is used to store Fluid Catalytic Cracking Unit feedstock overflowed and spilled approximately 20 BBLs of heavy oil. The spilled oil was contained within the tank dike and has a pour point of approximately 60°F.

The spill was discovered at 6:30 AM on the 24th, and was caused by a valve that did not seal. We had been transferring oil into Tank 707 from another tank by gravity flow the evening of the 23rd. When the transfer was completed, the valve between the tanks was closed, but evidently did not seal, thus causing Tank 707 to overflow slowly.

We have begun a clean-up of the oil, by either heating to allow pumping, or scooping up and holding in drums for reprocessing. The clean-up should be completed by December 1.

Let me know if you need any additional information.

Sincerely,

Robert L. McClenahan, Jr.  
Environmental Coordinator  
Giant Refining Company

RLM:ds

# MONTGOMERY & ANDREWS

OF COUNSEL  
William R. Federici

PROFESSIONAL ASSOCIATION  
ATTORNEYS AND COUNSELORS AT LAW

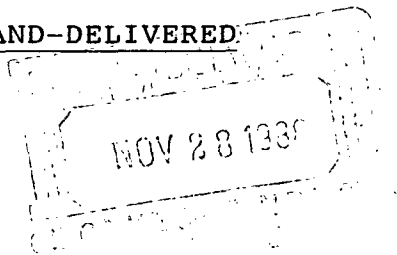
J. O. Seth (1883-1963)  
A. K. Montgomery (1903-1987)  
Frank Andrews (1914-1981)

November 23, 1988

Seth D. Montgomery  
Victor R. Ortega  
Jeffrey R. Brannen  
John B. Pound  
Gary R. Kilpatric  
Thomas W. Olson  
William C. Madison  
Walter J. Melendres  
Bruce Herr  
Robert P. Worcester  
James C. Compton  
John B. Draper  
Nancy Anderson King  
Alison K. Schuler  
Janet McL. McKay  
Jean-Nikole Wells  
Joseph E. Earnest  
Stephen S. Hamilton  
W. Perry Pearce  
Brad V. Coryell  
Michael H. Harbour  
Robert J. Mroz  
Sarah M. Singleton  
Jay R. Hone  
Charles W. N. Thompson, Jr.  
John M. Hickey  
Mack E. With  
Galen M. Buller

Katherine W. Hall  
Edmund H. Kendrick  
Helen C. Sturm  
Richard L. Puglisi  
Arturo Rodriguez  
Joan M. Waters  
James C. Murphy  
James R. Jurgens  
Ann M. Maloney  
Deborah J. Van Vleck  
Anne B. Hemenway  
Roger L. Prucino  
Deborah S. Dungan  
Helen L. Stirling  
Rosalise Olson  
William P. Slattery  
Kenneth B. Baca  
Daniel E. Gershon  
Anne B. Tallmadge  
Michael R. Roybal  
Robert A. Bassett  
Paula G. Maynes  
Neils L. Thompson  
Susan Andrews  
Joseph E. Whitley  
David L. Skinner  
Elizabeth A. Glenn

HAND-DELIVERED



SANTA FE OFFICE  
325 Paseo de Peralta  
Post Office Box 2307  
Santa Fe, New Mexico 87504-2307

Telephone (505) 982-3873  
Telecopy (505) 982-4289

ALBUQUERQUE OFFICE  
Suite 500  
7 Broadway Place  
707 Broadway, N.E.  
Post Office Box 26927  
Albuquerque, New Mexico 87125-6927

Telephone (505) 242-9677

LOS ALAMOS OFFICE  
Suite 120  
901 18th Street  
Los Alamos, New Mexico 87544

Telephone (505) 662-0005

REPLY TO SANTA FE OFFICE

Mr. Reid Allan  
Underground Storage Tank Program  
Environmental Improvement Division  
1190 St. Francis Drive  
Santa Fe, New Mexico 87503

Re: Notice of Suspected Release From an Underground Storage  
Tank System at the Giant Travel Center

Dear Mr. Allan:

I am writing to confirm the verbal notification that I gave Barbara Valencia of your office on November 16, 1988 and to you on November 17, 1988 concerning a suspected release of lubricating oil from an underground storage tank system at the Giant Travel Center near Gallup. By copy of this letter to Stuart P. Castle, Chief, Ground Water Bureau, I am also confirming the verbal notification I gave Ernest Rebuck of that office on November 16, 1988 concerning the suspected release. By copy of this letter, I am also notifying David Boyer, Chief, Environmental Bureau, Oil Conservation Division ("OCD") concerning the suspected release, because I understand that the Giant Travel Center is subject to discharge plan GW-32 approved by the OCD.

I understand from my conversations with you and Mr. Rebuck that, because of the involvement of the Underground Storage Tank Program, it will not be necessary to report to the Ground Water Bureau further. However, because I assume that you would like to

Mr. Reid Allan  
November 23, 1988  
Page 2

receive the same information called for by Section 1-203 of the Water Quality Control Commission regulations, a description of the suspected release is presented below addressing the topics set forth in that section:

- a. Operator and Person in Charge of Facility
  - 1) Operator -- JEA, Inc., Post Office Box 9156, Phoenix, Arizona 85068 (602) 274-3584
  - 2) Person in Charge of Underground Storage Tanks -- Barry Ziegler at same address as the operator.
- b. Facility -- Giant Travel Center, on Interstate 40 approximately 17 miles east of Gallup.
- c. Date, Time, Location and Duration of Suspected Release -- On November 16, 1988, a pressure test of the underground pipe between the 6,000 gallon underground lubricating oil tank and the indoor truck service area revealed a leak in the pipe. The suspected release probably occurred within a few days prior to or on November 16, 1988. The pipe is between 1.5 and 2 feet below the surface of the pavement.
- d. Source and Cause of Suspected Release -- The source of the suspected release is the underground lubricating oil tank line. The cause is not certain, but is believed to be a crack in the underground pipe between the tank and the indoor truck service area. The crack probably is not very large, because the pipe holds some pressure briefly. The oil tank has been pressure tested and is not leaking.
- e. Description of Suspected Release -- 15W40 weight Shell lubricant (engine oil).
- f. Estimated Volume of Suspected Release -- approximately 3,000 gallons.
- g. Mitigation -- Because the underground pipe runs uphill from the underground tank, there is no opportunity for any further release. Soil corings taken both inside the truck service area and outside the building within a few feet of the foundation have revealed no contamination.

Mr. Reid Allan  
November 23, 1988  
Page 3

It is believed that any release has been contained within the pit excavated for installation of the lubricating oil tank. The soil into which the pit was excavated is Chinle formation clay, with no evidence of sand lenses. The pit was filled with gravel after the tank was installed.

The current plan is to break up the concrete over the pipe and to excavate to the pipe to locate the crack. Then soil corings will be taken to confirm that no oil has seeped into the ground below the gravel fill, and well points will be installed to remove any released oil.

I trust the foregoing adequately describes the suspected release and follow-up action taken. Please do not hesitate to contact me should you have any further questions.

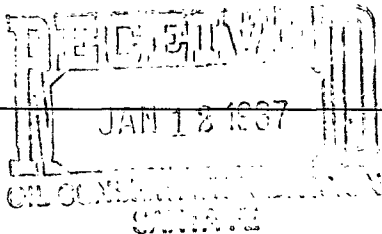
Sincerely,



Edmund H. Kendrick

EHK/cp:220  
File #8361-88-02

cc: David G. Boyer (Hand Delivery) ✓  
Stuart P. Castle (Hand Delivery)



ROUTE 3, BOX 7 • GALLUP, NEW MEXICO 87301  
(505) 722-3833 • TWX 910-981-0504

January 9, 1987

Mr. Charles Roybal  
Acting Director  
NMOCD  
P.O. Box 2088  
Santa Fe, NM 87501

RE: Sewer Leak at Giant's Ciniza Refinery

Dear Mr. Roybal:

This letter is to inform your office of a leak that occurred at our Ciniza Refinery. On January 6, a truck containing old Diesel was being unloaded to our slop oil tank. Due to a malfunctioning pump on the truck, it was decided to drain the Diesel to our API sewer system and recover the Diesel at the API separator. After the truck was emptied, a leak in the sewer line was discovered. This resulting in approximately 1000 gallons of Diesel leaking to an onsite drainage ditch. The Diesel was contained with earthen dikes and did not leave the fenced area of the refinery. The pooled Diesel was recovered using an air pump and a vacuum truck. We estimate that approximately 400 gallons was recovered.

Rodger Anderson of your staff has been notified by phone. If you have any questions regarding this matter, please give me a call.

Sincerely,

Bob McClenahan, Jr.  
Environmental Coordinator  
Giant Refining Company

RLM:ds

cc: Carl Shook  
Carlos Guerra  
Rodger Anderson, OCD



Giant Lybrook Spill  
Clean up

Aug 7, 1986





Giant Flybrook Spill  
Aug 7, 86



Giant Lybrook Spell

Aug 7, 1986

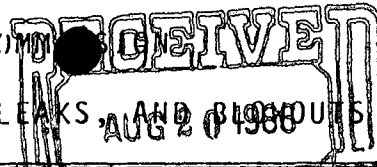


Giant Lybrook Spill

Aug 7, 86



Giant Lybrook Spiel  
Aug 7, 86

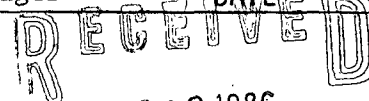


## NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR				ADDRESS			
Ciniza Pipe Line Inc.				P.O. Box 1887 OIL CONSERVATION DIVISION SANTA FE			
REPORT OF	FIRE	BREAK X	SPILL	LEAK	BLOWOUT	OTHER*	
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTTY	PIPE LINE X	GASO PLNT	OIL RFY	OTHER*
NAME OF FACILITY							
Lybrook - Hospah 4½" Crude Oil Pipeline							
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION)					SEC.	TWP.	RGE.
NE¼ SE¼					23	23N	7W
COUNTY							
Sandoval							
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK							
1.5 miles south of Lybrook Station							
DATE AND HOUR OF OCCURENCE				DATE AND HOUR OF DISCOVERY			
8-01-86 Early morning hours				8-01-85 8:30 a.m.			
WAS IMMEDIATE NOTICE GIVEN?		YES X	NO	NOT RE-QUIRED		IF YES, TO WHOM	
						Charles Gholson - OCC	
BY WHOM				DATE AND HOUR			
Robert Ramero with BCO, Inc.				8-01-86 Approximately 8:30 a.m.			
TYPE OF FLUID LOST				QUANTITY OF LOSS		VOLUME RE-COVERED	
Crude Oil				124 bbls.		194 bbls.	
DID ANY FLUIDS REACH A WATERCOURSE?		YES X	NO	QUANTITY			
				132 bbls.			
IF YES, DESCRIBE FULLY**							
Stock pond approximately 495 yards long and 33 yards wide. Pond is contained and supplied by run off.							
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN**							
4" line was ruptured by a road grader. Oil sprayed an area of 300' X 200', and ran approximately ½ mile to the pond. The stations were stopped, a dike was built, and a hole was dug to prevent any more oil from going to the pond.							
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN**							
Some pinetrees, sagebrush, road. Replaced 12' of pipe. Sprayed trees and brush with water, skimmed oil off pond and used straw along the banks to absorb the oil residue.							
DESCRIPTION OF AREA		FARMING	GRAZING	URBAN	OTHER*		
					Sagebrush		
SURFACE CONDITIONS		SANDY X	SANDY LOAM	CLAY X	ROCKY	WET	SNOW
						DRY	
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)*							
Clear - 90°							
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF							
SIGNED Robert Uillo				TITLE General Manager		DATE 8-12-86	

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY

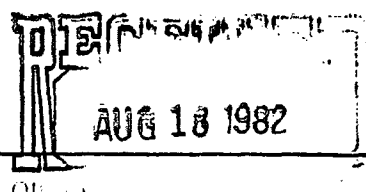


AUG 12 1986

OIL CON. DIV.  
DIST. 3



## NOTIFICATION OF FIRE, BREAKS, SPILLS, LEAKS, AND BLOWOUTS

NAME OF OPERATOR <i>Giant Refining Co. Inc.</i>					ADDRESS <i>RT 3 Box 7 Gallup N.M.</i>			
REPORT OF	FIRE	BREAK	SPILL <input checked="" type="checkbox"/>	LEAK	BLOWOUT	OTHER*		
TYPE OF FACILITY	DRLG WELL	PROD WELL	TANK BTY	PIPE LINE	GASO PLNT	OIL RFY	OTHER* <i>TANK TRANSPORT</i>	
NAME OF FACILITY <i>N/A</i>								
LOCATION OF FACILITY (QUARTER/QUARTER SECTION OR FOOTAGE DESCRIPTION) <i>N/A</i>					SEC.	TWP.	RGE.	COUNTY <i>SAN JUAN</i>
DISTANCE AND DIRECTION FROM NEAREST TOWN OR PROMINENT LANDMARK <i>Huerfano NM</i>								
DATE AND HOUR OF OCCURENCE <i>8-9-82 1030 AM</i>				DATE AND HOUR OF DISCOVERY <i>Same</i>				
WAS IMMEDIATE NOTICE GIVEN?		YES <input checked="" type="checkbox"/>	NO	NOT REQUIRED	IF YES, TO WHOM <i>NOT KNOWN TO ME</i>			
BY WHOM <i>Joe Stevens</i>				DATE AND HOUR <i>8-9-82 3 PM</i>				
TYPE OF FLUID LOST <i>CRUDE</i>				QUANTITY OF LOSS <i>20 BBL's</i>		VOLUME RECOVERED <i>None</i>		
DID ANY FLUIDS REACH A WATERCOURSE?		YES	NO <input checked="" type="checkbox"/>	QUANTITY				
IF YES, DESCRIBE FULLY**								
 AUG 18 1982								
DESCRIBE CAUSE OF PROBLEM AND REMEDIAL ACTION TAKEN** <i>Vehicle Accident. transport was overturned.</i>								
DESCRIBE AREA AFFECTED AND CLEANUP ACTION TAKEN** <i>SHOULDER OF HWY WAS AFFECTED. WE REMOVED CONTAMINATED SOIL AND REPLACED IT WITH CLEAN SOIL.</i>								
DESCRIPTION OF AREA	FARMING		GRAZING		URBAN <input checked="" type="checkbox"/>		OTHER*	
SURFACE CONDITIONS	SANDY	SANDY LOAM	CLAY <input checked="" type="checkbox"/>	ROCKY	WET	DRY	SNOW	
DESCRIBE GENERAL CONDITIONS PREVAILING (TEMPERATURE, PRECIPITATION, ETC.)** <i>WEATHER WAS CLEAR, <del>NO</del> NO PRECIPITATION. temp. ABOUT 85°F.</i>								
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF								
SIGNED <i>Mike Ramirez</i>				TITLE <i>Sgt. Supervisor</i>		DATE <i>8-11-82</i>		

\*SPECIFY

\*\*ATTACH ADDITIONAL SHEETS IF NECESSARY