GRCC99

GIANT INDUSTRIES, INC.

Route 3, Box 7
Gallup, New Mexico
87301

March 29, 1999

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

Dear Mr. Anderson:

SUBJECT: OCD ANNUAL REPORT

Pursuant to the water discharge permit, GW-32, Giant Refining Company - Ciniza (Giant) submits the 1998 Annual OCD Report.

The data presented in the enclosed report is arranged in the following order:

I. Aeration Lagoon 2 Effluent and API Effluent Analytical Data.
II. OCD LTA Soil Analytical Data
III. Tabulated Analytical Data - OW-1, 2, and 3
IV. Original Analytical Data - OW-1, 2, and 3

In order to help identify the sample points, please note that "AL1" signifies a sample taken from the Inlet to the Aeration Lagoon 1, which is the API effluent from the API. The abbreviation "EP1" signifies a sample taken from the Inlet to Evaporation Pond 1, which is the effluent from Aeration Lagoon 2.

If you have any comments or require additional information, please do not hesitate to contact me at (505) 722-0258.

Sincerely,

Stephen C. Morris, Environmental Specialist
Giant Refining Company

cc: Matthew R. Davis, General Manager
David Pavlich, Environmental Superintendent
Sarah Allen, Corporate Counsel
Dorinda Mancini, Environmental Manager
Denny Foust, OCD, Aztec Office

sm/c:/word/ocdannual98

1998 OCD Annual Report

American Environmental Network, Inc.

CLIENT	: GIANT REFINING COMPANY	DATE RECEIVED	: 01/14/98
PROJECT #	: (NONE)		
PROJECT NAME	: OCD WASTEWATER	REPORT DATE	: 01/28/98

AEN ID: 801331

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	801331-01	EP1-11398	AQUEOUS	01/13/98
02	801331-02	AL1-11398	AQUEOUS	01/13/98

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	2

AEN 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.

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"Method Report Summary"

Accession Number: 801284
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 801331
Project Name: GIANT REFINERY
Project Location: CINIZA
Test: Group of Single Wetchem

Client Sample Id:	Parameter:	Unit:	Result:
801331-01	BIOCHEMICAL OXYGEN DEMAND (405.1)	MG/L	110
	CHEMICAL OXYGEN DEMAND (410.4)	MG/L	800
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	6400
	TOTAL SUSPENDED SOLIDS (160.2)	MG/L	100
801331-02	BIOCHEMICAL OXYGEN DEMAND (405.1)	MG/L	160
	CHEMICAL OXYGEN DEMAND (410.4)	MG/L	900
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	6500
	TOTAL SUSPENDED SOLIDS (160.2)	MG/L	170

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"Method Report Summary"

Accession Number: 801284
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 801331
Project Name: GIANT REFINERY
Project Location: CINIZA
Test: TOTAL ORGANIC CARBON

Client Sample Id:	Parameter:	Unit:	Result:
801331-01	TOTAL ORGANIC CARBON	MG/L	82
801331-02	TOTAL ORGANIC CARBON	MG/L	100

American Environmental Network, Inc.

CLIENT	: GIANT REFINING COMPANY	AEN I.D.	: 806365
PROJECT #	: (none)	DATE RECEIVED	: 6/19/98
PROJECT NAME	: OCD LTA	REPORT DATE	: 6/26/98

AEN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	OCD-137-61898	NON-AQ	6/18/98
02	OCD-93-61898	NON-AQ	6/18/98
03	OCD-39-61898	NON-AQ	6/18/98
04	OCD-15-61898	NON-AQ	6/18/98

American Environmental Network, Inc.

GAS CHROMOTOGRAPHY RESULTS

TEST : EPA 8015 MODIFIED (DIRECT INJECT)
CLIENT : GIANT REFINING COMPANY AEN I.D.: 806365
PROJECT # : (none)
PROJECT NAME : OCD LTA

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	OCD-15-61898	NON-AQ	6/18/98	6/23/98	6/23/98	10

PARAMETER	DET. LIMIT	UNITS	04
FUEL HYDROCARBONS, C6-C10	10	MG/KG	< 100
FUEL HYDROCARBONS, C10-C22	5.0	**MG/KG**	**1300**
FUEL HYDROCARBONS, C22-C36	5.0	**MG/KG**	**1900**
CALCULATED SUM:			**3200**
SURROGATE:			
O-TERPHENYL (%)			134
SURROGATE LIMITS	(66 - 151)		

CHEMIST NOTES:
N/A

ASSAIGAI
ANALYTICAL
LABORATORIES, INC.
7300 Jefferson, NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259
3332 Wedgewood, E-5 • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

* explanation of codes	
B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

GIANT REFINERY
attn: LYNN SHELTON
ROUTE 3 BOX 7
GALLUP, NM 87301

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: GIANT REFINERY
Project: 9807078 OCD-LTU-7898

William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Client Sample ID: *OCD-NORTH-7898* | Sample Matrix: *SOIL* | Sample Collected: *07/08/98 13:00:00*

Fraction	QC Group	CAS #		Result	Units	Dilution Factor	Detection Limit	*	Sequence	Run Date
		Test: SW846 8015A								
9807078-01A	X98351		Diesel Range Organics	1700	mg / Kg	5	25		XG.1998.614-14	07/17/98

Client Sample ID: *OCD-SOUTH-7898* | Sample Matrix: *SOIL* | Sample Collected: *07/08/98 13:05:00*

Fraction	QC Group	CAS #		Result	Units	Dilution Factor	Detection Limit	*	Sequence	Run Date
		Test: SW846 8015A								
9807078-02A	X98351		Diesel Range Organics	3000	mg / Kg	10	25		XG.1998.614-15	07/17/98

**** Sample specific analytical Detection Limit is determined by multiplying the sample Dilution Factor by the listed method Detection Limit. ****

ACCREDITED

REPRODUCTION OF THIS REPORT IN LESS THAN FULL REQUIRES THE WRITTEN CONSENT OF AAL.
THIS REPORT MAY NOT BE USED IN ANY MANNER BY THE CLIENT OR ANY OTHER THIRD PARTY TO CLAIM
PRODUCT ENDORSEMENT BY THE NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM.

TABULATED ANALYTICAL RESULTS

OW-1 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 94 Repeat	Spring 94 Repeat	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Dissolved Metals

Parameter	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Calcium	2.6	2.0	ND	mg/L	---
Magnesium	0.2	0.3	ND	mg/L	---
Potassium	0.8	1.3	ND	mg/L	---
Sodium	299	311	174	mg/L	---

General Chemistry / Other

Parameter	Spring 93 Result	Spring 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as CaCO3 @ pH 4.5	387	388	410	467	401	392	mg/L	5
Alkalinity, Carbonate as CaCO3 @ pH 8.3	22	37	19	14	42	16	mg/L	5
Chloride	41	55	46	49	48	48	mg/L	3
pH	8.70	8.82	8.70	8.60	8.70	8.48	s.u.	---
Sulfate	210	210	10	216	221	229	mg/L	5
Spec. Conduct. @ 25° C	1260	1270	1300	1380	1310	1274	µmhos/cm	1
Total Dissolved Solids	870	840	830	832	842	795	mg/L	10

TABULATED ANALYTICAL RESULTS

OW-2 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 94 Repeat	Spring 94 Repeat	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98	Units	Reporting Limit
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Xylenes (total)	2.2	ND	ND	ND	ND	ND	µg/L	5

Dissolved Metals

Parameter	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Calcium	9.0	9.3	9.7	mg/L	---
Magnesium	3.2	3.2	ND	mg/L	---
Potassium	0.39	0.3	ND	mg/L	---
Sodium	320	322	170	mg/L	---

General Chemistry / Other

Parameter	Spring 93 Result	Spring 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as CaCO3 @ pH 4.5	662	668	660	810	785	662	mg/L	5
Alkalinity, Carbonate as CaCO3 @ pH 8.3	ND	ND	5	0	0	4	mg/L	5
Chloride	42	46	41	42	39	42	mg/L	3
pH	8.10	8.04	7.90	7.90	7.70	7.52	s.u.	---
Sulfate	19	20	19	12.3	16	27.2	mg/L	5
Spec. Conduct. @ 25° C	1220	1260	1300	1340	1287	1254	µmhos/cm	1
Total Dissolved Solids	1100	890	840	840	852	793	mg/L	10

TABULATED ANALYTICAL RESULTS

OW-3 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 93 Result	Spring 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Dissolved Metals

Parameter	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Calcium	9.4	9.2	10.0	mg/L	---
Magnesium	3.0	3.0	ND	mg/L	---
Potassium	0.78	0.3	ND	mg/L	---
Sodium	317	303	166	mg/L	---

General Chemistry / Other

Parameter	Spring 93 Result	Spring 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as CaCO3 @ pH 4.5	660	662	670	811	781	645	mg/L	5
Alkalinity, Carbonate as CaCO3 @ pH 8.3	ND	ND	6	0	0	4	mg/L	5
Chloride	41	42	39	42	37	41	mg/L	3
pH	8.20	7.88	8.00	8.00	7.70	7.48	s.u.	---
Sulfate	16	18	29	26.3	24	24.8	mg/L	5
Spec. Conduct. @ 25° C	1260	1240	1300	1340	1280	1278	µmhos/cm	1
Total Dissolved Solids	840	800	980	798	834	799	mg/L	10

American Environmental Network, Inc.

AEN I.D. 805357

June 12, 1998

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name ANNUAL GW SAMPLING
Project Number (none)

Attention: STEVE MORRIS

On 5/15/98 American Environmental Network (NM), Inc. (ADHS License No. AZ0015), received a request to analyze aqueous samples. The samples 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.

This report is being reissued in part to correct the client ID. This report was originally dated 6/10/98. We apologize for any inconvenience this may have caused.

EPA method 150.1 and 8260 were performed by American Environmental Network (NM) Inc., Albuquerque, NM.

All other parameters were performed by American Environmental Network (CT) Inc., Monroe, CT.

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

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt

Enclosure

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

AMERICAN ENVIRONMENTAL NETWORK
Albuquerque, New Mexico

Interlab Chain of Custody

DATE: 5/15 PAGE: 1 OF 1

NETWORK PROJECT MANAGER: KIMBERLY D. McNEILL

COMPANY: AMERICAN ENVIRONMENTAL NETWORK
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

7098-1103A

CLIENT PROJECT MANAGER: Kim McNeill

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals - TAL	Metals - PP List	Metals - RCRA	RCRA Metals by TCLP (1311)	* Ca, Mg, K, Na	TOX	TOC	Gen Chemistry	Oil and Grease	BOD	COD	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	8240 (TCLP 1311) ZHE	8270 (TCLP 1311)	TO-14	Gross Alpha/Beta	NUMBER OF CONTAINERS
805357-01	5/13/98	1030	AQ	01					X																
-02		1130	AQ	02					X																
-03		1345	AQ	03					X																

Passed Rad Screen
[signature] 5/16/98 5°C

PROJECT INFORMATION	
PROJECT NUMBER:	805357
PROJECT NAME:	Giant Refining Co.
QC LEVEL:	STD IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	

DUE DATE: 5/29-6/5 * = Dissolved Metals
RUSH SURCHARGE:
CLIENT DISCOUNT:
SPECIAL CERTIFICATION REQUIRED: ☐ YES ☐ NO

SAMPLES SENT TO:	
CONNECTICUT	X
ILLINOIS	
MASSACHUSETTS	
PENSACOLA	
PORTLAND	
PHOENIX	
N.CAROLINA	

Passed Rad Screen

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: [signature] Time: 1700	Signature: Time:
Printed Name: John Caldwell Date: 5/15/98	Printed Name: Date:
Albuquerque	Company:
RECEIVED BY: (LAB) 1.	RECEIVED BY: ~~(LAB)~~ 2.
Signature: PSeq Time: 10:00	Signature: Time:
Printed Name: P. SEQUIN Date: 5/16/98	Printed Name: Date:
Company: AENV CT	Company:

American Environmental Network (NM), Inc.

CHAIN OF CUSTODY

DATE: 5-14-98 PAGE: 1 OF 1

[redacted]

PROJECT MANAGER:

COMPANY: Giant Refining Company
ADDRESS: Route 3, Box 7
Gallup NM 87301
PHONE: 505-722-3833
FAX: 505-722-0210

BILL TO: Giant Refining Co./Ciniza
COMPANY: Same
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline)	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	SEE ATTACHED LIST	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310)	General Chemistry:			Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	
OW-1-51398	5/13/98	1930	H_2O											X																	
OW-2-51398	"	1130	"											X																	
OW-3-51398	"	1345	"											X																	

PROJECT INFORMATION

PROJ. NO.: Annual
PROJ. NAME: groundwater
P.O. NO.: sampling
SHIPPED VIA: event 1998

[redacted]

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☐

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

Passed Rad Screen

RELINQUISHED BY:

Signature: [signature] Time: 0830
Printed Name: Steve Morris Date: 5/14/98
Company: Giant

RECEIVED BY:

Signature: [signature] Time:
Printed Name: P. Sequin Date: 5/14/98
Company: AENet

RELINQUISHED BY:

Signature: Time:
Printed Name: Date:
Company:

[redacted]

PLEASE FILL THIS FORM IN COMPLETELY.

American Environmental Network (NM), Inc.

CHAIN OF CUSTODY

DATE: 5-14-98 PAGE: 1 OF 1

AEN(NM) Accession #: [illegible]

SHADED AREAS FOR LAB USE ONLY

PROJECT MANAGER:

COMPANY: Giant Refining Company
ADDRESS: Route 3, Box 7
Gallup, NM 87301
PHONE: 505-722-3833
FAX: 505-722-0210
BILL TO: Giant Refining Co./Ciniza
COMPANY: Same
ADDRESS:

ANALYSIS REQUESTED

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline)	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	SEE ATTACHED LIST	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310)	General Chemistry:	pH		Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS
GW-1-51398	5/13/98	1930	H_2O	[illegible]											X		X								X							
GW-2-51398	"	1130	"	[illegible]											X		X								X							
GW-3-51398	"	1345	"	[illegible]											X		X								X							

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION	PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS
PROJ. NO.: Annual	(RUSH) [ ] 24hr [ ] 48hr [ ] 72hr [ ] 1 WEEK (NORMAL) [ ]
PROJ. NAME: groundwater	CERTIFICATION REQUIRED: [ ] NM [ ] SDWA [ ] OTHER
P.O. NO.: sampling	METHANOL PRESERVATION [ ]
SHIPPED VIA: event 1998	COMMENTS: FIXED FEE [ ]

SAMPLE RECEIPT

TOTAL # OF CONTAINERS	[illegible]
HEAD SPACE ABSENT	[illegible]
PROPER PRESERVATION	[illegible]
CHAIN OF CUSTODY	[illegible]
PROPER CONDITION	[illegible]

RELINQUISHED BY: 1	RELINQUISHED BY: 2
Signature: [illegible] Time: 0830	Signature: Time:
Printed Name: Steve Morris Date: 5/14/98	Printed Name: Date:
Company: Giant	Company:
RECEIVED BY: 1	RECEIVED BY: (LAB) 2
Signature: Time:	[illegible]
Printed Name: Date:	[illegible]
Company:	[illegible]

American Environmental Network, Inc.

CLIENT	: GIANT REFINING COMPANY	AEN I.D.	: 805357
PROJECT #	: (none)	DATE RECEIVED	: 5/15/98
PROJECT NAME	: ANNUAL GW SAMPLING	REPORT DATE	: 6/10/98

June 12, 1998

ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	OW-1-51398	AQUEOUS	5/13/98
02	OW-2-51398	AQUEOUS	5/13/98
03	OW-3-51398	AQUEOUS	5/13/98

ANALYTICAL PARAMETERS

WELL	pH	Cond	TOC*	TOX*	TDS	ALKAL BICARB	ALKAL CARB	CHLORIDE	SULFATE	PHENOL	VOL-ORG 8260	BTEX 8260	TOTAL METALS Cr	Pb	Hg	DISSOLVED METALS Aa	Ba	Cd	Ca	Mg	Mn	K	Se	Ag	Na
MW-1	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
MW-2	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
MW-4	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
MW-5	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
OW-11	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
SMW-3	X	X	X	X	X	X	X	X	X		X		X	X					X	X		X			X
SMW-4	X	X	X	X	X	X	X	X	X		X		X	X					X	X		X			X
SMW-5	X	X	X	X	X	X	X	X	X		X		X	X					X	X		X			X
SMW-6	X	X	X	X	X	X	X	X	X		X		X	X					X	X		X			X
OW-1	X	X			X	X	X	X	X			X							X	X		X			X
OW-2	X	X			X	X	X	X	X			X							X	X		X			X
OW-3	X	X			X	X	X	X	X			X							X	X		X			X
OW-12												X													
OW-29												X													
OW-30												X													

* TOC - 2 replicates & original

* TOX - 3 replicates & original

American Environmental Network, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT REFINING COMPANY	AEN I.D.	: 805357
PROJECT #	: (none)	DATE RECEIVED	: 5/15/98
PROJECT NAME	: ANNUAL GW SAMPLING		

SAMPLE 'D. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE ANALYZED
)1	OW-1-51398	AQUEOUS	5/13/98	5/29/98
02	OW-2-51398	AQUEOUS	5/13/98	5/29/98
03	OW-3-51398	AQUEOUS	5/13/98	5/29/98

PARAMETER	UNITS	01	02	03
PH (150.1)	UNITS	8.82	7.95	7.95

CHEMIST NOTES:
N/A

1

WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

805357-01 OW-1-51398

ab Name: IEA Contract: _____

ab Code: IEA Case No.: 1103A SAS No. : _____ SDG No.: A1103

atrix: (soil/water) WATER Lab Sample ID: 1103001

Solids: _____ Date Received: 05/16/98

Concentration Units (mg/L or mg/kg dry weight) : mg/L

Analyte	Concentration	C	Q	M
ALKALIN	408.			
CHLORIDE	48.2			
CONDUCT	1340.			
SULFATE	229.			
TDS	795.			

omments:

FORM I - WC

SAMPLE NO.

WET CHEM ANALYSIS DATA SHEET

805357-02 OW-2-51398

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 1103A SAS No. : SDG No.: A1103

Matrix: (soil/water) WATER Lab Sample ID: 1103002

% Solids: Date Received: 05/16/98

Concentration Units (mg/L or mg/kg dry weight) : mg/L

Analyte	Concentration	C	Q	M
ALKALIN	667.			
CHLORIDE	42.2			
CONDUCT	1340.			
SULFATE	27.2			
TDS	793.			

Comments:

FORM I - WC

WET CHEM ANALYSIS DATA SHEET

SAMPLE NO.

805357-03 OW-3-51398

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 1103A SAS No. : _____ SDG No.: A1103

Matrix: (soil/water) WATER Lab Sample ID: 1103003

% Solids: _____ Date Received: 05/16/98

Concentration Units (mg/L or mg/kg dry weight) : mg/L

Analyte	Concentration	C	Q	M
ALKALIN	650.			
CHLORIDE	41.4			
CONDUCT	1320.			
SULFATE	24.8			
TDS	799.			

Comments:

FORM I - WC

Alkalinity
Bicarbonate/Carbonate

	Total Alkalinity ppm	Bicarb. ppm	Carbonate ppm
OW-1-51398	408	392.07	15.72
OW-2-51398	667	662.56	4.41
OW-3-51398	650	645.77	4.20

Aqueou:

TABLE AS-1.0
7098-1103A
AEN-NEW MEXICO
MISCELLANEOUS ATOMIC SPECTROSCOPY

All values are ug/L.

Client Sample I.D.	OW-1-51398 805357-01	OW-2-51398 805357-02	OW-3-51398 805357-03	
Lab Sample I.D.	981103A-01	981103A-02	981103A-03	
Calcium	5000U	9770	10100	
Magnesium	5000U	5000U	5000U	
Potassium	5000U	5000U	5000U	
Sodium	174000	170000	166000	

See Appendix for qualifier definitions

American Environmental Network, Inc.

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260		
CLIENT	: GIANT REFINING COMPANY	AEN I.D. :	805357
PROJECT #	: (none)	DATE RECEIVED :	5/15/98
PROJECT NAME	: ANNUAL GROUNDWATER SAMPLING EVENT		

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
805357-01	OW-1-51398	AQUEOUS	5/13/98	N/A	05/19/98	1

PARAMETER	DET. LIMIT		UNITS
Dichlorodifluoromethane	1.0	< 1.0	ug/L
Chloromethane	1.0	< 1.0	ug/L
Vinyl Chloride	1.0	< 1.0	ug/L
Bromomethane	1.0	< 1.0	ug/L
Chloroethane	1.0	< 1.0	ug/L
Trichlorofluoromethane	1.0	< 1.0	ug/L
Acetone	10	< 10	ug/L
Acrolein	5.0	< 5.0	ug/L
1,1-Dichloroethene	1.0	< 1.0	ug/L
Iodomethane	1.0	< 1.0	ug/L
Methylene Chloride	1.0	< 1.0	ug/L
Acrylonitrile	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene	1.0	< 1.0	ug/L
Methyl-t-butyl Ether	1.0	< 1.0	ug/L
1,1,2,1,2,2-Trichlorotrifluoroethane	1.0	< 1.0	ug/L
1,1-Dichloroethane	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene	1.0	< 1.0	ug/L
2-Butanone	10	< 10	ug/L
Carbon Disulfide	1.0	< 1.0	ug/L
Bromochloromethane	1.0	< 1.0	ug/L
Chloroform	1.0	< 1.0	ug/L
2,2-Dichloropropane	1.0	< 1.0	ug/L
1,2-Dichloroethane	1.0	< 1.0	ug/L
Vinyl Acetate	1.0	< 1.0	ug/L
1,1,1-Trichloroethane	1.0	< 1.0	ug/L
1,1-Dichloropropene	1.0	< 1.0	ug/L
Carbon Tetrachloride	1.0	< 1.0	ug/L
Benzene	1.0	< 1.0	ug/L
1,2-Dichloropropane	1.0	< 1.0	ug/L
Trichloroethene	1.0	< 1.0	ug/L
Bromodichloromethane	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether	10	< 10	ug/L
cis-1,3-Dichloropropene	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene	1.0	< 1.0	ug/L
1,1,2-Trichloroethane	1.0	< 1.0	ug/L
1,3-Dichloropropane	1.0	< 1.0	ug/L
Dibromomethane	1.0	< 1.0	ug/L
Toluene	1.0	< 1.0	ug/L
1,2-Dibromoethane	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone	10	< 10	ug/L
2-Hexanone	10	< 10	ug/L
Dibromochloromethane	1.0	< 1.0	ug/L
Tetrachloroethene	1.0	< 1.0	ug/L
Chlorobenzene	1.0	< 1.0	ug/L
Ethylbenzene	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane	1.0	< 1.0	ug/L

American Environmental Network, Inc.

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260		
CLIENT	: GIANT REFINING COMPANY	AEN I.D. :	805357
PROJECT #	: (none)	DATE RECEIVED :	5/15/98
PROJECT NAME	: ANNUAL GROUNDWATER SAMPLING EVENT		

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
805357-01	OW-1-51398	AQUEOUS	5/13/98	N/A	05/19/98	1

PARAMETER	DET. LIMIT		UNITS
m&p Xylenes	1.0	< 1.0	ug/L
o-Xylene	1.0	< 1.0	ug/L
Styrene	1.0	< 1.0	ug/L
Bromoform	1.0	< 1.0	ug/L
1,1,2,2-Tetrachloroethane	1.0	< 1.0	ug/L
1,2,3-Trichloropropane	1.0	< 1.0	ug/L
Isopropyl Benzene	1.0	< 1.0	ug/L
Bromobenzene	1.0	< 1.0	ug/L
trans-1,4-Dichloro-2-Butene	1.0	< 1.0	ug/L
n-Propylbenzene	1.0	< 1.0	ug/L
2-Chlorotoluene	1.0	< 1.0	ug/L
4-Chlorotoluene	1.0	< 1.0	ug/L
1,3,5-Trimethylbenzene	1.0	< 1.0	ug/L
tert-Butylbenzene	1.0	< 1.0	ug/L
1,2,4-Trimethylbenzene	1.0	< 1.0	ug/L
sec-Butylbenzene	1.0	< 1.0	ug/L
1,3-Dichlorobenzene	1.0	< 1.0	ug/L
1,4-Dichlorobenzene	1.0	< 1.0	ug/L
p-Isopropyltoluene	1.0	< 1.0	ug/L
1,2-Dichlorobenzene	1.0	< 1.0	ug/L
n-Butylbenzene	1.0	< 1.0	ug/L
1,2-Dibromomo-3-chloropropane	1.0	< 1.0	ug/L
1,2,4-Trichlorobenzene	1.0	< 1.0	ug/L
Naphthalene	1.0	< 1.0	ug/L
Hexachlorobutadiene	1.0	< 1.0	ug/L
1,2,3-Trichlorobenzene	1.0	< 1.0	ug/L

SURROGATE % RECOVERY		
1,2-Dichloroethane-d4	106	(80 - 120)
Toluene-d8	104	(88 - 110)
Bromofluorobenzene	100	(86 - 115)

American Environmental Network, Inc.

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260		
CLIENT	: GIANT REFINING COMPANY	AEN I.D. :	805357
PROJECT #	: (none)	DATE RECEIVED :	5/15/98
PROJECT NAME	: ANNUAL GROUNDWATER SAMPLING EVENT		

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
805357-02	OW-2-51398	AQUEOUS	5/13/98	N/A	05/19/98	1

PARAMETER	DET. LIMIT		UNITS
Dichlorodifluoromethane	1.0	< 1.0	ug/L
Chloromethane	1.0	< 1.0	ug/L
Vinyl Chloride	1.0	< 1.0	ug/L
Bromomethane	1.0	< 1.0	ug/L
Chloroethane	1.0	< 1.0	ug/L
Trichlorofluoromethane	1.0	< 1.0	ug/L
Acetone	10	< 10	ug/L
Acrolein	5.0	< 5.0	ug/L
1,1-Dichloroethene	1.0	< 1.0	ug/L
Iodomethane	1.0	< 1.0	ug/L
Methylene Chloride	1.0	< 1.0	ug/L
Acrylonitrile	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene	1.0	< 1.0	ug/L
Methyl-t-butyl Ether	1.0	< 1.0	ug/L
1,1,2,1,2,2-Trichlorotrifluoroethane	1.0	< 1.0	ug/L
1,1-Dichloroethane	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene	1.0	< 1.0	ug/L
2-Butanone	10	< 10	ug/L
Carbon Disulfide	1.0	< 1.0	ug/L
Bromochloromethane	1.0	< 1.0	ug/L
Chloroform	1.0	< 1.0	ug/L
2,2-Dichloropropane	1.0	< 1.0	ug/L
1,2-Dichloroethane	1.0	< 1.0	ug/L
Vinyl Acetate	1.0	< 1.0	ug/L
1,1,1-Trichloroethane	1.0	< 1.0	ug/L
1,1-Dichloropropene	1.0	< 1.0	ug/L
Carbon Tetrachloride	1.0	< 1.0	ug/L
Benzene	1.0	< 1.0	ug/L
1,2-Dichloropropane	1.0	< 1.0	ug/L
Trichloroethene	1.0	< 1.0	ug/L
Bromodichloromethane	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether	10	< 10	ug/L
cis-1,3-Dichloropropene	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene	1.0	< 1.0	ug/L
1,1,2-Trichloroethane	1.0	< 1.0	ug/L
1,3-Dichloropropane	1.0	< 1.0	ug/L
Dibromomethane	1.0	< 1.0	ug/L
Toluene	1.0	< 1.0	ug/L
1,2-Dibromoethane	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone	10	< 10	ug/L
2-Hexanone	10	< 10	ug/L
Dibromochloromethane	1.0	< 1.0	ug/L
Tetrachloroethene	1.0	< 1.0	ug/L
Chlorobenzene	1.0	< 1.0	ug/L
Ethylbenzene	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane	1.0	< 1.0	ug/L

American Environmental Network, Inc.

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260		
CLIENT	: GIANT REFINING COMPANY	AEN I.D. :	805357
PROJECT #	: (none)	DATE RECEIVED :	5/15/98
PROJECT NAME	: ANNUAL GROUNDWATER SAMPLING EVENT		

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
805357-02	OW-2-51398	AQUEOUS	5/13/98	N/A	05/19/98	1

PARAMETER	DET. LIMIT		UNITS
m&p Xylenes	1.0	< 1.0	ug/L
o-Xylene	1.0	< 1.0	ug/L
Styrene	1.0	< 1.0	ug/L
Bromoform	1.0	< 1.0	ug/L
1,1,2,2-Tetrachloroethane	1.0	< 1.0	ug/L
1,2,3-Trichloropropane	1.0	< 1.0	ug/L
Isopropyl Benzene	1.0	< 1.0	ug/L
Bromobenzene	1.0	< 1.0	ug/L
trans-1,4-Dichloro-2-Butene	1.0	< 1.0	ug/L
n-Propylbenzene	1.0	< 1.0	ug/L
2-Chlorotoluene	1.0	< 1.0	ug/L
4-Chlorotoluene	1.0	< 1.0	ug/L
1,3,5-Trimethylbenzene	1.0	< 1.0	ug/L
tert-Butylbenzene	1.0	< 1.0	ug/L
1,2,4-Trimethylbenzene	1.0	< 1.0	ug/L
sec-Butylbenzene	1.0	< 1.0	ug/L
1,3-Dichlorobenzene	1.0	< 1.0	ug/L
1,4-Dichlorobenzene	1.0	< 1.0	ug/L
p-Isopropyltoluene	1.0	< 1.0	ug/L
1,2-Dichlorobenzene	1.0	< 1.0	ug/L
n-Butylbenzene	1.0	< 1.0	ug/L
1,2-Dibromomo-3-chloropropane	1.0	< 1.0	ug/L
1,2,4-Trichlorobenzene	1.0	< 1.0	ug/L
Naphthalene	1.0	< 1.0	ug/L
Hexachlorobutadiene	1.0	< 1.0	ug/L
1,2,3-Trichlorobenzene	1.0	< 1.0	ug/L

SURROGATE % RECOVERY	
1,2-Dichloroethane-d4	102 (80 - 120)
Toluene-d8	102 (88 - 110)
Bromofluorobenzene	95 (86 - 115)

American Environmental Network, Inc.

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260		
CLIENT	: GIANT REFINING COMPANY	AEN I.D. :	805357
PROJECT #	: (none)	DATE RECEIVED :	5/15/98
PROJECT NAME	: ANNUAL GROUNDWATER SAMPLING EVENT		

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
805357-02	OW-2-51398	AQUEOUS	5/13/98	N/A	05/19/98	1

PARAMETER	DET. LIMIT		UNITS
m&p Xylenes	1.0	< 1.0	ug/L
o-Xylene	1.0	< 1.0	ug/L
Styrene	1.0	< 1.0	ug/L
Bromoform	1.0	< 1.0	ug/L
1,1,2,2-Tetrachloroethane	1.0	< 1.0	ug/L
1,2,3-Trichloropropane	1.0	< 1.0	ug/L
Isopropyl Benzene	1.0	< 1.0	ug/L
Bromobenzene	1.0	< 1.0	ug/L
trans-1,4-Dichloro-2-Butene	1.0	< 1.0	ug/L
n-Propylbenzene	1.0	< 1.0	ug/L
2-Chlorotoluene	1.0	< 1.0	ug/L
4-Chlorotoluene	1.0	< 1.0	ug/L
1,3,5-Trimethylbenzene	1.0	< 1.0	ug/L
tert-Butylbenzene	1.0	< 1.0	ug/L
1,2,4-Trimethylbenzene	1.0	< 1.0	ug/L
sec-Butylbenzene	1.0	< 1.0	ug/L
1,3-Dichlorobenzene	1.0	< 1.0	ug/L
1,4-Dichlorobenzene	1.0	< 1.0	ug/L
p-Isopropyltoluene	1.0	< 1.0	ug/L
1,2-Dichlorobenzene	1.0	< 1.0	ug/L
n-Butylbenzene	1.0	< 1.0	ug/L
1,2-Dibromomo-3-chloropropane	1.0	< 1.0	ug/L
1,2,4-Trichlorobenzene	1.0	< 1.0	ug/L
Naphthalene	1.0	< 1.0	ug/L
Hexachlorobutadiene	1.0	< 1.0	ug/L
1,2,3-Trichlorobenzene	1.0	< 1.0	ug/L

SURROGATE % RECOVERY	
1,2-Dichloroethane-d4	102
	(80 - 120)
Toluene-d8	102
	(88 - 110)
Bromofluorobenzene	95
	(86 - 115)

American Environmental Network, Inc.

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260		
CLIENT	: GIANT REFINING COMPANY	AEN I.D. :	805357
PROJECT #	: (none)	DATE RECEIVED :	5/15/98
PROJECT NAME	: ANNUAL GROUNDWATER SAMPLING EVENT		

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
805357-03	OW-3-51398	AQUEOUS	5/13/98	N/A	05/19/98	1

PARAMETER	DET. LIMIT		UNITS
Dichlorodifluoromethane	1.0	< 1.0	ug/L
Chloromethane	1.0	< 1.0	ug/L
Vinyl Chloride	1.0	< 1.0	ug/L
Bromomethane	1.0	< 1.0	ug/L
Chloroethane	1.0	< 1.0	ug/L
Trichlorofluoromethane	1.0	< 1.0	ug/L
Acetone	10	< 10	ug/L
Acrolein	5.0	< 5.0	ug/L
1,1-Dichloroethene	1.0	< 1.0	ug/L
Iodomethane	1.0	< 1.0	ug/L
Methylene Chloride	1.0	< 1.0	ug/L
Acrylonitrile	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene	1.0	< 1.0	ug/L
Methyl-t-butyl Ether	1.0	< 1.0	ug/L
1,1,2,1,2,2-Trichlorotrifluoroethane	1.0	< 1.0	ug/L
1,1-Dichloroethane	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene	1.0	< 1.0	ug/L
2-Butanone	10	< 10	ug/L
Carbon Disulfide	1.0	< 1.0	ug/L
Bromochloromethane	1.0	< 1.0	ug/L
Chloroform	1.0	< 1.0	ug/L
2,2-Dichloropropane	1.0	< 1.0	ug/L
1,2-Dichloroethane	1.0	< 1.0	ug/L
Vinyl Acetate	1.0	< 1.0	ug/L
1,1,1-Trichloroethane	1.0	< 1.0	ug/L
1,1-Dichloropropene	1.0	< 1.0	ug/L
Carbon Tetrachloride	1.0	< 1.0	ug/L
Benzene	1.0	< 1.0	ug/L
1,2-Dichloropropane	1.0	< 1.0	ug/L
Trichloroethene	1.0	< 1.0	ug/L
Bromodichloromethane	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether	10	< 10	ug/L
cis-1,3-Dichloropropene	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene	1.0	< 1.0	ug/L
1,1,2-Trichloroethane	1.0	< 1.0	ug/L
1,3-Dichloropropane	1.0	< 1.0	ug/L
Dibromomethane	1.0	< 1.0	ug/L
Toluene	1.0	< 1.0	ug/L
1,2-Dibromoethane	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone	10	< 10	ug/L
2-Hexanone	10	< 10	ug/L
Dibromochloromethane	1.0	< 1.0	ug/L
Tetrachloroethene	1.0	< 1.0	ug/L
Chlorobenzene	1.0	< 1.0	ug/L
Ethylbenzene	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane	1.0	< 1.0	ug/L

American Environmental Network, Inc.

GC/MS RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260		
CLIENT	: GIANT REFINING COMPANY	AEN I.D. :	805357
PROJECT #	: (none)	DATE RECEIVED :	5/15/98
PROJECT NAME	: ANNUAL GROUNDWATER SAMPLING EVENT		

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
805357-03	OW-3-51398	AQUEOUS	5/13/98	N/A	05/19/98	1

PARAMETER	DET. LIMIT		UNITS
m&p Xylenes	1.0	< 1.0	ug/L
o-Xylene	1.0	< 1.0	ug/L
Styrene	1.0	< 1.0	ug/L
Bromoform	1.0	< 1.0	ug/L
1,1,2,2-Tetrachloroethane	1.0	< 1.0	ug/L
1,2,3-Trichloropropane	1.0	< 1.0	ug/L
Isopropyl Benzene	1.0	< 1.0	ug/L
Bromobenzene	1.0	< 1.0	ug/L
trans-1,4-Dichloro-2-Butene	1.0	< 1.0	ug/L
n-Propylbenzene	1.0	< 1.0	ug/L
2-Chlorotoluene	1.0	< 1.0	ug/L
4-Chlorotoluene	1.0	< 1.0	ug/L
1,3,5-Trimethylbenzene	1.0	< 1.0	ug/L
tert-Butylbenzene	1.0	< 1.0	ug/L
1,2,4-Trimethylbenzene	1.0	< 1.0	ug/L
sec-Butylbenzene	1.0	< 1.0	ug/L
1,3-Dichlorobenzene	1.0	< 1.0	ug/L
1,4-Dichlorobenzene	1.0	< 1.0	ug/L
p-Isopropyltoluene	1.0	< 1.0	ug/L
1,2-Dichlorobenzene	1.0	< 1.0	ug/L
n-Butylbenzene	1.0	< 1.0	ug/L
1,2-Dibromomo-3-chloropropane	1.0	< 1.0	ug/L
1,2,4-Trichlorobenzene	1.0	< 1.0	ug/L
Naphthalene	1.0	< 1.0	ug/L
Hexachlorobutadiene	1.0	< 1.0	ug/L
1,2,3-Trichlorobenzene	1.0	< 1.0	ug/L

SURROGATE % RECOVERY	
1,2-Dichloroethane-d4	110
	(80 - 120)
Toluene-d8	106
	(88 - 110)
Bromofluorobenzene	101
	(86 - 115)