



GRCC 2002

April 25, 2002

Mr. Roger Anderson  
Environmental Bureau Chief  
New Mexico Oil Conservation Division  
1220 So. St. Francis Drive  
Santa Fe, New Mexico 87505

**RE: 2001 Comprehensive Groundwater Sampling Report  
Submitted as Partial Requirement for Renewal of Discharge Plan/GW-32 Permit**

Dear Mr. Anderson:

As part of Ciniza Refinery's (Giant Refining Co.) renewal of its Groundwater Discharge Plan (GW-32) application, sixteen (16) groundwater wells located on the refinery property were sampled and analyzed in the Spring of 2001.

The parameters (compounds analyzed for) were discussed with Wayne Price via phone and email prior to sampling. The final list is given in Attachment A to this letter and includes general chemistry, total metals, radiochemistry, volatiles and semi-volatiles, PCB's, DRO and ORO petroleum hydrocarbons. All parameters listed in 20.6.2.3103 "Standards for Ground Water of 10,000 mg/l TDS or less" were tested for.

The following wells were sampled:

- MW 1, 2, 4, 5
- SMW 4
- OW 1, 2, 3, 7, 10, 11, 12, 13, 14, 29, 30

The following wells were not sampled:

- OW 9
- OW 24

Both of these wells have casings that are compromised (cracked, open to surface contamination). Giant recommends closing these and several other wells. Our rationale for well closures and addition of new monitoring wells will be provided in the Discharge Plan Application.

PHONE  
505-722-3833  
FAX  
505-722-0210

ROUTE 3  
BOX 7  
GALLUP  
NEW MEXICO  
87301

If you have questions regarding this report, please do not hesitate to call me at 505-722-0227.  
Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dorinda Mancini".

Dorinda Mancini  
Environmental Manager, Ciniza Refinery

cc: Denny Foust, NMOCD – Farmington (w/binder)  
Dave Cobrain, NMED, HMB (w/binder)  
Steve Morris, Environmental Coordinator (w/o binder)  
Dave Pavlich, Environmental Superintendent (w/o binder)

The only well that showed evidence of contamination was OW 14. OW 14 is located north and down gradient of the Tank Farm and is drilled to the top of the Chinle shale formation. It is not drilled into the Sonsella Aquifer. All Sonsella wells are "clean". The following contaminants were detected in OW 14:

- 1,3,5 Trimethylbenzene – 9.5 ppb (ug/l)
- Benzene – 64 ppb (ug/l)
- MTBE – 8 ppb (ug/l)

The following historical data is provided for Well OW 14:

Date	Units	<i>Benzene</i>	<i>Toluene</i>	<i>Ethylbenzene</i>	<i>Xylene</i>	<i>MTBE</i>
5/2/91	ug/l	<5	<5	<5	<5	No analysis
2/6/96	ug/l	25	<0.5	2.8	1.7	<2.5
2/14/96	ug/l	34.2	ND	28.6	ND	No analysis
4/9/01	ug/l	64	ND	ND	ND	8

Date	Units	<i>Phenanthrene</i>	<i>1,3,5 Trimethylbenzene</i>	<i>1,2 Dichloroethane</i>	<i>1,2 Dichloropropane</i>
5/2/91	ug/l	No analysis	No analysis	<5	No analysis
2/6/96	ug/l	0.1	No analysis	3.4	0.2
2/14/96	ug/l	No analysis	No analysis	No analysis	No analysis
4/9/01	ug/l	<0.6	9.5	ND	ND

Contamination of OW 14 and plans for monitoring it and the surrounding area will be addressed in the GW Discharge Plan/Permit Renewal that is currently being developed.

Attachment B is a statement from Intermountain Lab regarding several issues that are analytical or laboratory related:

- The difference between Total Phenolics (by Method 420.1) and Phenol (by Method 8270)
- Laboratory contamination of Method blanks (MB01-100, MB01-094) and sample OW 11 in Method 8270 by bis(2-Ethylhexyl) phthalate
- Poor recoveries of surrogates in the acid extractable portion of Method 8270

Attachment C and D are Ciniza site maps:

- Attach. C - Site map showing evaporation ponds, RCRA Land Treatment Unit (LTU) and groundwater wells; Sonsella wells are identified with the color red, Chinle/Alluvium Interface wells are in green, and upper sand wells are in black.
- Attach. D – Site map showing evaporation ponds, groundwater wells (color coded), RCRA LTU, and Solid Waste Management Units (SWMUs)

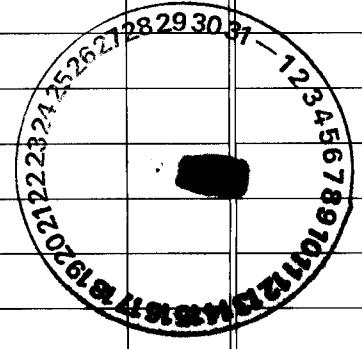
**Giant Refining Company  
Ciniza Refinery**

**Comprehensive  
Groundwater Sampling  
Report**

**2001**

**Prepared for  
OCD Discharge Permit  
GW-32 Renewal**

		DATE SHIPPED	SHIPPER'S NO. <b>005898</b>				
SHIPPED VIA <i>WRS Ground</i>		CARRIER					
CONSIGNEE TO (Mail or street address for notification only) <i>Dave Cokrain NM ED - HWB 2905 Rodeo Park Dr. East Bldg 1 Santa Fe, NM 87505</i>		<small>the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns. If this document evidences a delivery by shipper's truck or into consignee's truck, it is not a bill of lading but consignee's receipt for the delivery.</small>		<small>Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.</small>			
RETURN AUTHORIZATION BY		GIANT PURCHASE ORDER NO.					
ROUTE CODE	CAR / TRUCK NO.	SEAL NO.	CUSTOMER ORDER NO.				
		<input type="checkbox"/> MATERIAL TRANSFER					
PACKAGES		DESCRIPTION OF MATERIALS, SPECIAL MARKS AND EXCEPTIONS D.O.T. HAZARDOUS MATERIALS, IF ANY, MUST BE LISTED FIRST	WEIGHT * Subject to correction	CLASS OR RATE	TOTAL VALUE OF ITEMS	NEW	USED
NO.	KIND						
<i>2</i>	<i>Books</i>	<i>Binders Labeled: Comprehensive GW Sampling Report 2001</i>					
		<i>Questions? call: Dorinda Mancini 505-722-0227</i>					
◀ TOTAL NO. OF PACKAGES		TOTAL WEIGHT ▶					
COLLECT ON DELIVERY \$	REMIT TO	REASON FOR SHIPMENT <i>Delivery to HUB</i>			C.O.D. CHARGE TO BE PAID BY SHIPPER <input type="checkbox"/> CONSIGNEE <input type="checkbox"/>		
SETTLEMENT BASIS <input type="checkbox"/> CREDIT MEMO <input type="checkbox"/> CASH SALE <input type="checkbox"/> MEMO		SHIPMENT AUTHORIZATION BY <i>D Mancini</i>					
ISSUE BILLING NO.		DEBIT			CREDIT		
MAIL FREIGHT BILL IN DUPLICATE WITH NO. 3 COPY OF BILL OF LADING TO							
FOR HELP IN EMERGENCIES SUCH AS SPILL, LEAK, FIRE OR EXPOSURE-- CALL TOLL FREE - DAY OR NIGHT ▶ <b>800-424-9300</b>				SHIPMENTS VIA MOTOR CARRIER ▶		D.O.T. HAZARDOUS MATERIALS PLACARDS FURNISHED BY <input type="checkbox"/> SHIPPER <input type="checkbox"/> CARRIER	
<p>• If shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"</p> <p>1. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding 50¢ per pound where the rate is dependent on value.</p> <p>2. Description and gross weight thereof as shown herein are correct, per Agreement filed with Weighing and Inspection Bureau, if applicable.</p> <p>3. This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.</p> <p><b>GIANT REFINING COMPANY, Shipper</b></p> <p>PER _____</p>							
MATERIAL RECEIVED		DATE RECEIVED		Carrier certifies that the container supplied by Carrier for this shipment is a proper container for transportation of the Products as above described.			
				CARRIER			
				PER _____ AGENT			



GIANT/CINIZA - WELL SAMPLE PARAMETERS

3/27/01

Parameters	Preservative	# of cont.
Full 8260 + MTBE	Hcl	2
Full 8270	None	2
TOC (4 replicates)	H2SO4	8
TOX (4 replicates)	H2SO4	1
CN	NaOH/Zn Acetate	1
(Unfiltered) Metals (Per WQCC)	HNO3	1
PCB	None	1
Phenols	H2SO4	2
Ra 226/228	None	1
8015 (DRO)	HCl	2
NO3/NO2	H2SO4	1
PAH (8310)	None	1
pH, cond. (4 replicates each)	None *	1
Cat/Anion parameters	None *	
TDS/TSS	None *	
Alkalinity	None *	
Chloride	None *	
Fluoride	None *	
Sulfate	None *	
Phosphorous as P	None *	
Bromide	None *	
Calcium	None *	
Potassium	None *	
Magnesium	None *	

\* = All from unpreserved bottles  
 note: all sample water is nonchlorinated

**Inter-Mountain Laboratories, Inc.**

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2506 West Main Street  
Farmington, NM 87401

**Total Phenolics by Method 420.1**

A colorimetric method that determines phenol, ortho and meta – substituted phenols, and under proper conditions, para substituted phenols in which the substitution is a carboxyl, halogen, or sulfonic acid group. This method does not differentiate between phenol compounds.

Most interferences are eliminated by acidification and distillation, however, other organic compounds present may interfere.

**Phenols by 8270**

A gas chromatography method that separates all compounds based on elution order (boiling point and chemical reactivity) and identifies them based on time and mass spectral patterns. This method is specific to each phenolic compound. Because identification is by mass spectra, there are few interferences. Typically interferences in this method are caused by the reactivity of phenolic compounds to glassware causing low recoveries in the extraction process.

**Method 8270**

Contamination of method blanks by bis(2-ethylhexyl)phthalate. This compound is a common laboratory contaminant found in rubber stoppers and other rubber and plastic compounds.

**Low Recoveries for Acid Extractables (Method 8270)**

Typically interferences in this method are caused by the reactivity of phenolic (acid) compounds to glassware causing low recoveries in the extraction process. Surrogate compounds are added to each sample, blank, and quality control sample to monitor the extraction process. A low surrogate recovery in the blank but not the sample may indicate a potential problem with the particular flask used to extract the blank. Because the sample surrogate recoveries were acceptable the sample data is acceptable.



William Lipps  
Laboratory Director - Inter-Mountain Labs