

GREC 91



Route 3, Box 7  
Gallup, New Mexico  
87301

May 17, 1991

505  
722-3833

Steve Alexander  
NMED - Hazardous Waste Section  
Harold Runnels Building  
1190 St. Francis Drive  
Santa Fe, New Mexico 87502

RE: March 1991 Sampling Data

Dear Mr. Alexander:

Enclosed is the original analytical data for the March sampling event. It includes all of the data for MW-1, MW-2, MW-4, MW-5, OW-11, SMW-1, SMW-2, SMW-3, SMW-4, SMW-5 and SMW-6.

Also enclosed is a vertical and horizontal well survey for the wells at the Ciniza Refinery. This survey was conducted by a licensed surveyor using the New Mexico Coordinate System.

This packet also includes the water elevations of both the Sonsela and Ciniza sand aquifers underlying the refinery.

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

Sincerely,

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

Claud Rosendale  
Environmental Manager  
Ciniza Refinery

enclosures

8-5-91\*\*

TABLE I  
ELEVATION

WELL	CASING DIAMETER	T.O.C.*	B.O.C.*	CAPACITY PER FOOT
MW-1	5	6878.52	6746.5	1.02
MW-2	5	6880.84	6740.6	1.02
MW-4	5	6882.54	6760.4	1.02
MW-5	4	6883.32	6750.3	0.74
SMW-1	2	6883.29	6834.20	0.163
SMW-2	2	6884.44	6827.10	0.163
SMW-3	2	6884.56	6838.70	0.163
SMW-4	2	6880.08	6807.80	0.163
SMW-5	2	6878.02	6801.80	0.163
SMW-6	2	6880.71	6807.60	0.163
OW-1	4	6868.00	6773.96	0.74
OW-2	4	6871.00	6810.00	0.74
OW-3	4	6876.00	6809.30	0.74
OW-11	4	6923.89	6857.27	0.74
OW-24	4	6880.00	6815.00	0.74

\* T.O.C.-Top of Casing  
B.O.C.-Bottom of Casing

\*\* Update of 1989 Sample and Analysis Plan.

8/05/91

WATER ELEVATIONS

DATE MEASURED	WELL #				
	MW1	MW2	MW3	MW4	MW5
6/89	6873.00	6873.11	---	6876.04	6873.50
9/89	6870.23	6873.75	---	6876.39	6872.93
3/90	6871.44	6872.52	---	6875.86	6872.96
10/90	6871.97	6871.09	---	6875.52	6870.39
1/91	6873.28	6872.65	---	6876.74	6873.49
3/91	6873.45	6873.31	---	6876.51	6873.72

8/05/91

WATER ELEVATIONS

DATE MEASURED	WELL #					
	SMW1	SMW2	SMW3	SMW4	SMW5	SMW6
6/89	6859.83	6853.79	6851.41	6849.33	6847.15	6849.56
7/89	6859.66	6854.25	6850.90	6845.25	6846.71	6849.75
9/89	6859.66	6853.62	6851.25	6848.25	6846.08	6849.32
3/90	6860.37	6854.27	6852.06	6848.10	6847.15	6848.77
9/90	6859.70	6853.55	6851.08	6848.30	6845.64	6848.80
3/91	6860.51	6854.26	6852.45	6849.71	6847.40	6850.11

GIANT REFINING CO.  
CINIZA

COMPARISON OF SURVEY ELEVATIONS OF MW AND SMW WELLS  
JULY 31, 1991

WELL NAME	1989 ELEVATION (FEET)	1989 ELEVATION (CORRECTED)*	1991 ELEVATION (FEET)	DIFFERENCE (FEET)
MW-1	6878.15	6878.52	6878.52	0.00
MW-2	6880.21	6880.58	6880.84	0.26
MW-4	6882.20	6882.57	6882.54	-0.03
MW-5	6882.93	6883.30	6883.32	0.02
SMW-1	6882.89	6883.26	6883.29	0.03
SMW-2	6884.11	6884.48	6884.44	-0.04
SMW-3	6884.22	6884.59	6884.56	-0.03
SMW-4	6879.73	6880.10	6880.08	-0.02
SMW-5	6876.66	6878.03 (1)	6878.02	-0.01
SMW-6	6880.36	6880.73	6880.71	-0.02

\* Letter from Sterling & Mataya of May 13, 1991, Note 4, explains the discrepancies between 1989 and 1991 figures.

(1) Letter from Sterling & Mataya of March 1, 1990, first paragraph, notes the discrepancy of one (1) foot in elevation due to mathematical error.

3/23/91

WATER ELEVATIONS

*Area Sand*

DATE MEASURED	WELL #					
	BMW1	BMW2	BMW3	BMW4	BMW5	BMW6
1/87	6857.70	6851.62	6849.46	6847.16	6846.01	6847.64
1/88	6856.74	6851.58	6848.92	6847.00	6845.12	6847.05
1/89	---	---	6848.77	6846.70	6844.93	6847.11
1/89	6857.83	6851.03	6848.99	6845.87	6844.91	6846.98
3/89	6857.89	6851.10	6849.10	6846.99	6844.80	6847.2
7/89	6857.07	6851.51	6848.54	6842.87	6844.39	6847.44
9/89	6857.68	6850.88	6848.29	6846.62	6843.76	6847.01
3/90	6857.78	6851.53	6849.70	6845.72	6844.83	6846.46
3/90	6857.11	6850.81	6848.72	6845.92	6843.32	6846.49
3/91	6857.92	6851.52	6850.09	6847.33	6845.08	6847.8

3/28/91

## WATER ELEVATIONS

*Sonsela*

DATE MEASURED	WELL #				
	MW1	MW2	MW3	MW4	MW5
1Q/82	6868.90	6869.20	6850.70	6873.00	---
2Q/82	6869.50	6871.20	6853.80	6872.40	---
3Q/82	6870.30	6870.00	6855.00	6873.30	---
4Q/82	6870.10	6871.00	6854.60	6872.70	---
7/83	6869.20	6869.60	6853.80	6872.80	---
1/84	6870.90	6870.30	6855.30	6871.40	---
2/84	6870.90	6870.60	6855.30	6871.40	---
3/84	6870.90	6870.50	6855.10	6873.60	---
4/84	6871.60	6870.40	6856.30	6873.80	---
11/84	6870.20	6868.80	6852.10	6872.30	---
12/84	6870.60	6868.80	6862.90	6873.60	---
1/85	6869.90	6869.70	6809.50	6873.30	---
10/85	6870.70	6869.70	6849.60	6873.70	---
2/86	6870.90	6869.70	6843.90	6873.80	---
5/86	6871.50	6870.40	6856.50	6874.30	---
10/86	6871.10	6870.50	6856.80	6873.80	6870.70
1/87	---	---	---	---	6871.50
5/87	6871.80	6871.10	6856.70	6873.60	6871.30
6/87	6871.80	6871.10	6856.70	6876.20	6871.30
10/87	6871.20	6871.20	---	6876.20	6871.00
11/87	6871.20	6871.20	---	6874.00	---
8/88	6871.10	6871.20	---	6874.00	6871.24
1/89	6871.10	6870.80	---	6873.40	---
1/89	6870.78	6870.97	---	6873.60	6871.30
6/89	6870.70	6870.60	---	6873.30	6871.00
9/89	6867.31	6871.21	---	6873.64	6870.41
3/90	6869.12	6869.98	---	6873.12	6870.44
10/90	6869.65	6868.55	---	6872.78	6867.87
1/91	6870.96	6870.11	---	6874.00	6870.91
3/91	6871.13	6870.77	---	6873.77	6871.20

# Sterling & Mataya

D.E. Sterling, P.E. & L.S.  
W.P. Mataya, L.S.

Engineers - Surveyors  
Gallup, New Mexico 87301  
(505) 863-5440

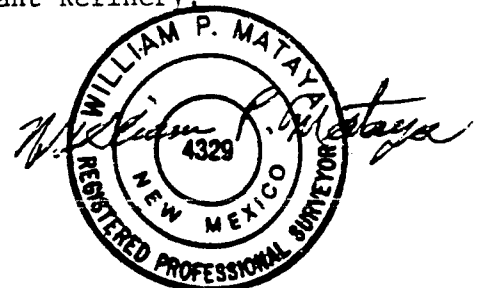
601 W. Aztec  
P.O. Box 876

May 13, 1991

Well No.	Elevation Top Inside Pipe at V Notch	New Mexico State Plane Coordinates (west zone)		Point No. S & M Map (9-29-89)
		X	Y	
SMW-6	6880.71	320,839.52	1,635,867.66	532
SMW-5	6878.02	320,778.61	1,636,054.28	530
MW-1	6878.52	320,903.76	1,636,112.13	529
SMW-4	6880.08	320,974.85	1,636,153.54	528
MW-2	6880.84	321,035.35	1,636,184.06	527
MW-5	6883.32	321,233.03	1,636,212.58	526
SMW-3	6884.56	321,397.90	1,635,948.75	524
SMW-2	6884.44	321,542.80	1,635,592.65	523
SMW-1	6883.29	321,501.32	1,635,501.43	522
MW-4	6882.54	321,602.07	1,635,066.25	539
OW-11	6923.89	323,167.68	1,632,185.21	645

## Notes:

1. Geological Survey Monument ET 6 GT 1962 was the basis for this survey. The combined factor equals 0.99960744.
2. NGS Bench Mark Z 426 - 1983 having a normal ortho. Height of 2100.35015 meters (elev. 6890.91 feet) was used for this survey.
3. A Bench Mark was established for this project at SMW-3, Top of concrete pad at the south edge of the well casing. The elevation being 6882.64 feet.
4. Subtracting 0.37 feet from the elevations shown for this project should equal the elevations in this area shown on our 1989 map which was based on datum furnished by Giant Refinery.



3/28/91

## WATER ELEVATIONS

DATE MEASURED	WELL #				
	MW1	MW2	MW3	MW4	MW5
1Q/82	6868.90	6869.20	6850.70	6873.00	---
2Q/82	6869.50	6871.20	6853.80	6872.40	---
3Q/82	6870.30	6870.00	6855.00	6873.30	---
4Q/82	6870.10	6871.00	6854.60	6872.70	---
7/83	6869.20	6869.60	6853.80	6872.80	---
1/84	6870.90	6870.30	6855.30	6871.40	---
2/84	6870.90	6870.60	6855.30	6871.40	---
3/84	6870.90	6870.50	6855.10	6873.60	---
4/84	6871.60	6870.40	6856.30	6873.80	---
11/84	6870.20	6868.80	6852.10	6872.30	---
12/84	6870.60	6868.80	6862.90	6873.60	---
1/85	6869.90	6869.70	6809.50	6873.30	---
10/85	6870.70	6869.70	6849.60	6873.70	---
2/86	6870.90	6869.70	6843.90	6873.80	---
5/86	6871.50	6870.40	6856.50	6874.30	---
10/86	6871.10	6870.50	6856.80	6873.80	6870.70
1/87	---	---	---	---	6871.50
5/87	6871.80	6871.10	6856.70	6873.60	6871.30
6/87	6871.80	6871.10	6856.70	6876.20	6871.30
10/87	6871.20	6871.20	---	6876.20	6871.00
11/87	6871.20	6871.20	---	6874.00	---
8/88	6871.10	6871.20	---	6874.00	6871.24
1/89	6871.10	6870.80	---	6873.40	---
1/89	6870.78	6870.97	---	6873.60	6871.30
6/89	6870.70	6870.60	---	6873.30	6871.00
9/89	6867.31	6871.21	---	6873.64	6870.41
3/90	6869.12	6869.98	---	6873.12	6870.44
10/90	6869.65	6868.55	---	6872.78	6867.87
1/91	6870.96	6870.11	---	6874.00	6870.91
3/91	6871.13	6870.77	---	6873.77	6871.20



3/28/91

WATER ELEVATIONS

DATE MEASURED	WELL #					
	SMW1	SMW2	SMW3	SMW4	SMW5	SMW6
6/87	6857.70	6851.62	6849.46	6847.36	6846.01	6847.64
4/88	6856.74	6851.58	6848.83	6847.60	6845.12	6847.05
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1/89	6857.33	6851.03	6848.99	6845.87	6844.91	6846.98
6/89	6857.20	6851.10	6849.10	6846.90	6844.80	6847.3
7/89	6857.07	6851.51	6848.54	6842.87	6844.39	6847.44
9/89	6857.08	6850.88	6848.89	6846.62	6843.76	6847.01
3/90	6857.78	6851.53	6849.70	6845.72	6844.83	6846.46
9/90	6857.11	6850.81	6848.72	6845.92	6843.32	6846.49
3/91	6857.92	6851.52	6850.09	6847.33	6845.08	6847.8