GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505.
722.3833

February 10, 1998

FEB 1998

Mr. Benito J. Garcia
Bureau Chief
Hazardous and Radioactive Materials Bureau
2044 Galisteo
P. O. Box 26110
Santa Fe, New Mexico 87502

RE: Semi-Annual (Spring, 1997) Groundwater Report
RCRA Part B Permit NMD 000333211-2

Dear Mr. Garcia:

Pursuant to the requirements of the above captioned permit, the Semi-Annual Groundwater Report for sampling required in Spring, 1997 is enclosed. No unusual results were observed as a result of this sampling event.

I spoke with Steve Pullen of your agency several days ago regarding the lateness of this report. Normally, this report is sent by the Fall of the year in which the sampling was done. Ciniza sampled the required wells in April, 1997. Intermountain Laboratories, Inc. of Farmington, NM was unable to perform all the analyses with the appropriate level of quality control. After several months of persistent inquiries by Giant, lab management and instrumentation/technician problems were finally communicated to Giant by IML. Giant subsequently re-sampled as necessary and sent these samples to AEN Labs of Albuquerque, NM. In addition, the data base used by Ciniza to track the groundwater results over time was corrupted when a new administrative assistant attempted to enter the Spring data. This data base had to be reconstructed by hand before the enclosed report could be generated.

Giant apologizes for the delay and does not anticipate these problems in the future. If you require additional information or have any questions regarding this report, please contact me at (505) 722-0227.

Sincerely,

Dorinda Mancini

Dorinda Mancini
Environmental Manager, Ciniza Refinery

cc: Dave Pavlich, HSE Manager, Ciniza Refinery
Kathleen O'Leary, Corporate Counsel, Giant Industries, Inc.

1997 SPRING SAMPLING GROUND WATER REPORT

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Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

MW-1 Giant Refining - Ciniza
(Down Gradient Well)

Parameter: pH

Background Indicator Values: $X_b = 8.51$ $S_b^2 = 0.015$
$W_b = 0.00937$ $t_b = 2.947$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	8.80	0.0000
2	8.80	0.0000
3	8.80	0.0000
4	8.80	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 8.80

Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (pH) = 5.841

$W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 3.00$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.95$

$|t^*| > tc$: Statistically significant change possible.

Parameter: Specific Conductivity

Background Indicator Values: $X_b = 984$ $S_b^2 = 1487$
$W_b = 92.9375$ $t_b = 2.602$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	1140	0.0000
2	1140	0.0000
3	1140	0.0000
4	1140	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 1140

Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (Specific Conduct.) = 4.541

$W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 16.18$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.60$

$t^* > tc$: Statistically significant change possible.

Note: W_b, W_m = Special Weighting Factors; t_b, t_m = Standard T-Table Levels of Significance; t^* = the t-statistic; and t_c = the comparison t-statistic.
This statistical treatment is set forth in 40 CFR Part 264, Appendix IV: *Cochran's Approximation To The Behrens-Fisher Students' T-Test*.

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

MW-2 Giant Refining - Ciniza
(Down Gradient Well)

Parameter: pH

Background Indicator Values: $X_b = 8.51$ $S_b^2 = 0.015$
$W_b = 0.00937$ $t_b = 2.947$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	8.80	0.0000
2	8.80	0.0000
3	8.80	0.0000
4	8.80	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 8.80 Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (pH) = 5.841 $W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 3.00$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.95$ $|t^*| > tc$: Statistically significant change possible.

Parameter: Specific Conductivity

Background Indicator Values: $X_b = 984$ $S_b^2 = 1487$
$W_b = 92.9375$ $t_b = 2.602$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	1154	0.0000
2	1154	0.0000
3	1154	0.0000
4	1154	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 1154 Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (Specific Conduct.) = 4.541 $W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 17.63$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.60$ $t^* > tc$: Statistically significant change possible.

Note: W_b, W_m = Special Weighting Factors; t_b, t_m = Standard T-Table Levels of Significance; t^* = the t-statistic; and t_c = the comparison t-statistic.
This statistical treatment is set forth in 40 CFR Part 264, Appendix IV: *Cochran's Approximation To The Behrens-Fisher Students' T-Test*.

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

MW-4 Giant Refining - Ciniza
(Down Gradient Well)

Parameter: pH

Background Indicator Values: $X_b = 8.51$ $S_b^2 = 0.015$
$W_b = 0.00937$ $t_b = 2.947$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	8.50	0.0000
2	8.50	0.0000
3	8.50	0.0000
4	8.50	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 8.50

Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (pH) = 5.841

$W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = -0.10$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.95$

$|t^*| < tc$: Statistically significant change not likely.

Parameter: Specific Conductivity

Background Indicator Values: $X_b = 984$ $S_b^2 = 1487$
$W_b = 92.9375$ $t_b = 2.602$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	1200	0.0000
2	1200	0.0000
3	1200	0.0000
4	1200	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 1200

Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (Specific Conduct.) = 4.541

$W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 22.41$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.60$

$t^* > tc$: Statistically significant change possible.

Note: W_b, W_m = Special Weighting Factors; t_b, t_m = Standard T-Table Levels of Significance; t^* = the t-statistic; and t_c = the comparison t-statistic.
This statistical treatment is set forth in 40 CFR Part 264, Appendix IV: *Cochran's Approximation To The Behrens-Fisher Students' T-Test*.

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

MW-5 Giant Refining - Ciniza
(Down Gradient Well)

Parameter: pH

Background Indicator Values: $X_b = 8.51$ $S_b^2 = 0.015$
$W_b = 0.00937$ $t_b = 2.947$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	8.80	0.0000
2	8.80	0.0000
3	8.80	0.0000
4	8.80	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 8.80

Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (pH) = 5.841

$W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 3.00$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.95$

$|t^*| > tc$: Statistically significant change possible.

Parameter: Specific Conductivity

Background Indicator Values: $X_b = 984$ $S_b^2 = 1487$
$W_b = 92.9375$ $t_b = 2.602$

Current well sample values:

Sample	Value	$(Value-X_m)^2$
1	1177	0.0000
2	1177	0.0000
3	1177	0.0000
4	1177	0.0000

Mean X_m = (Sum of Sample Values) / 4 = 1177

Variance S_m^2 = [Sum of $(Value-X_m)^2$] / 3 = 0.0000

t_m (Specific Conduct.) = 4.541

$W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 20.02$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.60$

$t^* > tc$: Statistically significant change possible.

Note: W_b, W_m = Special Weighting Factors; t_b, t_m = Standard T-Table Levels of Significance; t^* = the t-statistic; and t_c = the comparison t-statistic.
This statistical treatment is set forth in 40 CFR Part 264, Appendix IV: *Cochran's Approximation To The Behrens-Fisher Students' T-Test*.

Tolerance Interval

SMW-3 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	7.72	7.84	0.16	7.52 - 8.15	(Does not exceed tolerance limit.)
Spring 97 sampling period	7.60	8.00	0.16	7.68 - 8.32	(Does exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	2868	3208	323	2561 - 3855	(Does not exceed tolerance limit.)
Spring 97 sampling period	2850	3192	325	2542 - 3841	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	0.005	0.060	0.157	0.000 - 0.375	(Does not exceed tolerance limit.)
Spring 97 sampling period	0.005	0.058	0.154	0.000 - 0.365	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	0.003	0.026	0.082	0.000 - 0.190	(Does not exceed tolerance limit.)
Spring 97 sampling period	0.003	0.025	0.080	0.000 - 0.185	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean ± 2 Standard Deviations)

Tolerance Interval

SMW-4 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	8.62	8.35	0.20	7.95 - 8.75	(Does not exceed tolerance limit.)
Spring 97 sampling period	8.40	8.35	0.20	7.95 - 8.74	(Does not exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	1263	1300	175	950 - 1651	(Does not exceed tolerance limit.)
Spring 97 sampling period	1230	1298	172	953 - 1642	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	0.005	0.011	0.014	0.000 - 0.039	(Does not exceed tolerance limit.)
Spring 97 sampling period	0.005	0.011	0.014	0.000 - 0.038	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	0.003	0.008	0.021	0.000 - 0.051	(Does not exceed tolerance limit.)
Spring 97 sampling period	0.003	0.008	0.021	0.000 - 0.050	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean ± 2 Standard Deviations)

Tolerance Interval

SMW-5 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	8.64	8.55	0.28	8.00 - 9.10	(Does not exceed tolerance limit.)
Spring 97 sampling period	8.70	8.55	0.27	8.01 - 9.10	(Does not exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	1283	1140	74	992 - 1288	(Does not exceed tolerance limit.)
Spring 97 sampling period	1157	1141	73	996 - 1286	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	0.005	0.023	0.031	0.000 - 0.085	(Does not exceed tolerance limit.)
Spring 97 sampling period	0.005	0.022	0.031	0.000 - 0.084	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 96 sampling period	0.003	0.014	0.048	0.000 - 0.110	(Does not exceed tolerance limit.)
Spring 97 sampling period	0.003	0.013	0.047	0.000 - 0.108	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean ± 2 Standard Deviations)

TABULATED ANALYTICAL RESULTS

MW-1 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	---	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	ND	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	ND	ND	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	ND	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 93 Result	Spring 94 Result	Fall 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	ND	ND	0.021	ND	<0.01	<0.01	mg/L	0.01
Lead	0.036	ND	<0.005	<0.005	<0.005	<0.005	mg/L	0.005
Mercury	ND	ND			<0.001	<0.001	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-1 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Arsenic	ND	<0.005	<0.005	mg/L	0.10
Barium	0.01	<0.01	<0.01	mg/L	1.00
Cadmium	ND	<0.001	<0.001	mg/L	0.01
Calcium	1.8	1.0	1.7	mg/L	---
Magnesium	0.2	0.1	<0.2	mg/L	---
Manganese	ND	<0.02	<0.005	mg/L	---
Potassium	ND	0.39	0.5	mg/L	---
Selenium	ND	0.005	<0.005	mg/L	0.01
Silver	ND	0.01	<0.01	mg/L	0.05
Sodium	242	264	259	mg/L	---

General Chemistry / Other

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		310		373		339	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		23		22		62	mg/L	5
Chloride		47		55		50	mg/L	3
pH (1st reading)	8.97	8.90	8.91	9.52	8.90	8.80	s.u.	---
pH (2nd reading)	9.00		8.88	9.33	8.90	8.80	s.u.	---
pH (3rd reading)	9.03		8.88	9.23	8.90	8.80	s.u.	---
pH (4th reading)	9.05		8.90	9.26	8.90	8.80	s.u.	---
pH Average	9.01	8.90	8.90	9.34	8.90	8.80	s.u.	---
Phenols		ND		ND		ND	mg/L	0.05
Sulfate		150		175		170	mg/L	5
Spec. Conduct. @ 25° C	1090	1100	1110	1099	1144	1140	µmhos/cm	1
Spec. Conduct. @ 25° C	1080		1130	1094	1146	1140	µmhos/cm	1
Spec. Conduct. @ 25° C	1080		1120	1095	1145	1140	µmhos/cm	1
Spec. Conduct. @ 25° C	1100		1120	1091	1143	1140	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1088	1100	1120	1095	1145	1140	µmhos/cm	1
Total Organic Carbon	1	36	1	<1.0	0.8	<1.0	mg/L	1
Total Organic Carbon	1	36	1	<1.0		<1.0	mg/L	1
Total Organic Carbon						<1.0	mg/L	1
Total Organic Carbon						<1.0	mg/L	1
Total Org. Halides as Cl	ND	30	69	ND	<30	<30	mg/L	30
Total Org. Halides as Cl	ND	30		ND			mg/L	30
Total Org. Halides as Cl				ND			mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids				702		704	mg/L	10
Water Elevation	6873.30	6873.30	6872.40	6872.50	6872.20	6872.50	ft	---

TABULATED ANALYTICAL RESULTS

MW-2 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	---	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	ND	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	ND	ND	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	7	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 93 Result	Spring 94 Result	Fall 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	ND	0.011	ND	ND	<0.01	<0.01	mg/L	0.01
Lead	<0.005	ND	ND	ND	<0.005	<0.005	mg/L	0.005
Mercury		ND		ND	<0.001	<0.001	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-2 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Arsenic	ND	<0.005	<0.005	mg/L	0.10
Barium	0.02	<0.01	0.01	mg/L	1.00
Cadmium	ND	<0.001	<0.001	mg/L	0.01
Calcium	1.4	1.0	1.6	mg/L	---
Magnesium	0.1	0.1	<0.2	mg/L	---
Manganese	ND	<0.02	<0.005	mg/L	---
Potassium	ND	0.39	0.5	mg/L	---
Selenium	ND	0.005	<0.005	mg/L	0.01
Silver	ND	0.01	<0.01	mg/L	0.05
Sodium	246	264	252	mg/L	---

General Chemistry / Other

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		320		365		356	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		ND		19		21	mg/L	5
Chloride		58		63		57	mg/L	3
pH (1st reading)	9.06	9.00	9.01	9.40	8.90	8.80	s.u.	---
pH (2nd reading)	9.07		9.04	9.32	8.90	8.80	s.u.	---
pH (3rd reading)	9.06		9.03	9.29	8.90	8.80	s.u.	---
pH (4th reading)	9.08		9.05	9.25	8.90	8.80	s.u.	---
pH Average	9.07	9.00	9.03	9.32	8.90	8.80	s.u.	---
Phenols		ND		ND		ND	mg/L	0.05
Sulfate		170		175		178	mg/L	5
Spec. Conduct. @ 25° C	1130	1100	1080	1110	1163	1154	µmhos/cm	1
Spec. Conduct. @ 25° C	1100		1100	1092	1160	1154	µmhos/cm	1
Spec. Conduct. @ 25° C	1110		1100	1102	1162	1154	µmhos/cm	1
Spec. Conduct. @ 25° C	1110		1100	1094	1163	1154	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1113	1100	1095	1100	1162	1154	µmhos/cm	1
Total Organic Carbon	ND	ND	1.3	<1.0	0.8	<1.0	mg/L	1
Total Organic Carbon	ND	ND				<1.0	mg/L	1
Total Organic Carbon						<1.0	mg/L	1
Total Organic Carbon						<1.0	mg/L	1
Total Org. Halides as Cl	ND	40	<30	ND	44	<30	mg/L	30
Total Org. Halides as Cl	ND	20		ND			mg/L	30
Total Org. Halides as Cl				ND			mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids				676		718	mg/L	10
Water Elevation	6870.01	6873.13	6872.34	6867.54	6870.80	6871.30	ft	---

TABULATED ANALYTICAL RESULTS

MW-4 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	---	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	ND	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	ND	ND	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	ND	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 93 Result	Spring 94 Result	Fall 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	ND	ND	0.013	ND	<0.01	<0.01	mg/L	0.01
Lead	ND	ND	ND	ND	<0.005	<0.005	mg/L	0.005
Mercury		ND			<0.001	<0.001	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-4 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Arsenic	ND	<0.005	<0.005	mg/L	0.10
Barium	0.01	<0.01	0.02	mg/L	1.00
Cadmium	ND	<0.001	<0.001	mg/L	0.01
Calcium	1.8	1.0	1.7	mg/L	---
Magnesium	0.2	0.1	<0.2	mg/L	---
Manganese	ND	<0.02	<.005	mg/L	---
Potassium	ND	0.39	0.53	mg/L	---
Selenium	ND	0.005	<0.005	mg/L	0.01
Silver	ND	0.01	<0.01	mg/L	0.05
Sodium	242	264	276	mg/L	---

General Chemistry / Other

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		440		528		505	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		21		8		14	mg/L	5
Chloride		18		21		18	mg/L	3
pH (1st reading)	8.77	8.70	9.02	9.12	8.52	8.50	s.u.	---
pH (2nd reading)	8.77		9.01	8.99	8.56	8.50	s.u.	---
pH (3rd reading)	8.78		9.02	8.94	8.57	8.50	s.u.	---
pH (4th reading)	8.77		9.00	8.91	8.92	8.50	s.u.	---
pH Average	8.77	8.70	9.01	8.99	8.64	8.50	s.u.	---
Phenols		ND		ND		ND	mg/L	0.05
Sulfate		180		160		161	mg/L	5
Spec. Conduct. @ 25° C	1140	1200	1100	1144	1180	1200	µmhos/cm	1
Spec. Conduct. @ 25° C	1150		1110	1125	1210	1200	µmhos/cm	1
Spec. Conduct. @ 25° C	1150		1100	1129	1220	1200	µmhos/cm	1
Spec. Conduct. @ 25° C	1160		1190	1135	1220	1200	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1150	1200	1100	1133	1208	1200	µmhos/cm	1
Total Organic Carbon	ND	ND	1.8	1.1	1	1	mg/L	1
Total Organic Carbon	ND	ND				1.1	mg/L	1
Total Organic Carbon						1	mg/L	1
Total Organic Carbon						1	mg/L	1
Total Org. Halides as Cl	ND	<30	<30	ND	<30	ND	mg/L	30
Total Org. Halides as Cl	ND	<30		ND			mg/L	30
Total Org. Halides as Cl				ND			mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids				741		758	mg/L	10
Water Elevation	6876.10	6872.70	6875.90	6876.00	6875.50	6876.00	ft	---

TABULATED ANALYTICAL RESULTS

MW-5 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	---	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	14	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	ND	ND	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	5	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 93 Result	Spring 94 Result	Fall 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	ND	ND	ND	ND	<0.01	<.01	mg/L	0.01
Lead	<0.005	ND	ND	ND	<0.005	<.005	mg/L	0.005
Mercury		ND		ND	<0.001	<.001	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-5 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Arsenic	ND	<0.005	<.005	mg/L	0.10
Barium	0.02	0.02	0.01	mg/L	1.00
Cadmium	ND	<0.002	<0.001	mg/L	0.01
Calcium	1.5	1.6	1.5	mg/L	---
Magnesium	0.1	0.2	<0.2	mg/L	---
Manganese	ND	<0.02	<.005	mg/L	---
Potassium	ND	0.78	0.54	mg/L	---
Selenium	ND	<0.005	<.005	mg/L	0.01
Silver	ND	<0.01	<.01	mg/L	0.05
Sodium	246	275	260	mg/L	---

General Chemistry / Other

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		330		339		349	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		ND		26		14	mg/L	5
Chloride		63		66		62	mg/L	3
pH (1st reading)	9.09	9.00	9.01	9.65	9.06	8.80	s.u.	---
pH (2nd reading)	9.09		9.03	9.42	8.96	8.80	s.u.	---
pH (3rd reading)	9.09		9.06	9.32	8.94	8.80	s.u.	---
pH (4th reading)	9.11		9.06	9.28	8.92	8.80	s.u.	---
pH Average	9.10	9.00	9.04	9.42	8.97	8.80	s.u.	---
Phenols	ND	ND		ND		ND	mg/L	0.05
Sulfate		190		175		181	mg/L	5
Spec. Conduct. @ 25° C	1120	1100	1120	1111	1135	1177	µmhos/cm	1
Spec. Conduct. @ 25° C	1130		1100	1110	1143	1177	µmhos/cm	1
Spec. Conduct. @ 25° C	1130		1110	1118	1137	1177	µmhos/cm	1
Spec. Conduct. @ 25° C	1120		1120	1118	1142	1177	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1125	1100	1113	1114	1139	1177	µmhos/cm	1
Total Organic Carbon	ND	ND	1.7	<1.0	0.8	<1.0	mg/L	1
Total Organic Carbon	ND	ND				<1.0	mg/L	1
Total Organic Carbon						<1.0	mg/L	1
Total Organic Carbon						<1.0	mg/L	1
Total Org. Halides as Cl	ND	<30	<30	ND	<30	<30	mg/L	30
Total Org. Halides as Cl	ND	<30		ND			mg/L	30
Total Org. Halides as Cl				ND			mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids				714		730	mg/L	10
Water Elevation	6869.40	6877.30	6874.00	6870.80	6871.50	6871.10	ft	---

TABULATED ANALYTICAL RESULTS

OW-11 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	---	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	13	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	ND	ND	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	5	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 93 Result	Spring 94 Result	Fall 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	ND	ND	ND	ND	<0.01	<.01	mg/L	0.01
Lead	ND	ND	ND	ND	<0.005	<.005	mg/L	0.005
Mercury		ND		ND	<0.001	<.001	mg/L	0.002

TABULATED ANALYTICAL RESULTS

OW-11 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Arsenic	ND	<0.005	<0.005	mg/L	0.10
Barium	0.01	0.01	0.01	mg/L	1.00
Cadmium	ND	<0.002	<.001	mg/L	0.01
Calcium	7.6	9.4	11.2	mg/L	---
Magnesium	0.8	1.1	1.2	mg/L	---
Manganese	ND	<0.02	0.01	mg/L	---
Potassium	ND	1.56	2.1	mg/L	---
Selenium	ND	<0.005	<.005	mg/L	0.01
Silver	ND	<0.01	<.01	mg/L	0.05
Sodium	480	575	618	mg/L	---

General Chemistry / Other

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		330		420		334	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		10		2		ND	mg/L	5
Chloride		100		108		88	mg/L	3
pH (1st reading)	8.34	8.50	8.39	8.30	8.40	8.30	s.u.	---
pH (2nd reading)	8.34		8.31		8.30	8.30	s.u.	---
pH (3rd reading)	8.35		8.31		8.40	8.30	s.u.	---
pH (4th reading)	8.35		8.30		8.40	8.30	s.u.	---
pH Average	8.35	8.50	8.33	8.30	8.40	8.30	s.u.	---
Phenols		ND		ND		ND	mg/L	0.05
Sulfate		680		708		1029	mg/L	5
Spec. Conduct. @ 25° C	2120	2500	2340	2510	2730	2770	µmhos/cm	1
Spec. Conduct. @ 25° C	2180		2360		2730	2770	µmhos/cm	1
Spec. Conduct. @ 25° C	2190		2380		2700	2770	µmhos/cm	1
Spec. Conduct. @ 25° C	2190		2340		2720	2770	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	2170	2500	2355	2510	2720	2770	µmhos/cm	1
Total Organic Carbon	2	1	1.9	2.8	2.1	1.8	mg/L	1
Total Organic Carbon	2	1				1.8	mg/L	1
Total Organic Carbon						1.8	mg/L	1
Total Organic Carbon						1.8	mg/L	1
Total Org. Halides as Cl	ND	30	<30	ND	<30	<30	mg/L	30
Total Org. Halides as Cl	ND	60		ND		<30	mg/L	30
Total Org. Halides as Cl				ND		<30	mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids		1600		1630		1874	mg/L	10
Water Elevation	6890.80	6905.50	6904.10	6893.30	6893.60	6903.90	ft	---

TABULATED ANALYTICAL RESULTS

SMW-3 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ND	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	ND	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	---	ND	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	ND	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	6.0	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	0.718	0.01	0.08	<0.01	<0.01	<.01	mg/L	0.01
Lead	0.043	ND	ND	<0.005	<.05 *	<.005	mg/L	0.005

* Lab used incorrect detection limit of 0.05 instead of 0.005

TABULATED ANALYTICAL RESULTS

SMW-3 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Calcium	37.7	47.0	43.4	mg/L	---
Magnesium	12.1	14.0	13.1	mg/L	---
Potassium	ND	0.78	<.2	mg/L	---
Sodium	564	669	660	mg/L	---

General Chemistry / Other

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		590		786		766	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		3		ND		ND	mg/L	5
Chloride		69		91		87	mg/L	3
pH (1st reading)	7.63	7.80	7.77	8.00	7.95	7.60	s.u.	---
pH (2nd reading)	7.68		7.74	7.87	7.72	7.60	s.u.	---
pH (3rd reading)	7.70		7.73	7.80	7.63	7.60	s.u.	---
pH (4th reading)	7.79		7.74	7.77	7.59	7.60	s.u.	---
pH Average	7.70	7.80	7.75	7.86	7.72	7.60	s.u.	---
Sulfate		680		844		835	mg/L	5
Spec. Conduct. @ 25° C	3360	2700	2890	2830	2870	2850	µmhos/cm	1
Spec. Conduct. @ 25° C	3340		2880	2830	2880	2850	µmhos/cm	1
Spec. Conduct. @ 25° C	3500		2900	2870	2870	2850	µmhos/cm	1
Spec. Conduct. @ 25° C	3520		2890	3090	2850	2850	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	3430	2700	2890	2905	2868	2850	µmhos/cm	1
Total Organic Carbon	5	5	14.9	3.2	3.1	3.7	mg/L	1
Total Organic Carbon	5	5				3.7	mg/L	1
Total Organic Carbon						3.7	mg/L	1
Total Organic Carbon							mg/L	1
Total Org. Halides as Cl	<30	80	60	ND	<30	50	mg/L	30
Total Org. Halides as Cl	20	70		ND			mg/L	30
Total Org. Halides as Cl				ND			mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids		1900		2040		2020	mg/L	10
Water Elevation	6852.76	6853.16	6853.00	6854.56	6853.00	6853.10	ft	---

TABULATED ANALYTICAL RESULTS

SMW-4 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	---	ND	ND	ND	ND	---	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	54	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	---	ND	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	3	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	0.03	ND	0.01	<0.01	<.01	<.01	mg/L	0.01
Lead	ND	ND	ND	<0.005	<.05 *	<.005	mg/L	0.005

* Lab used incorrect detection limit of 0.05 instead of 0.005

TABULATED ANALYTICAL RESULTS

SMW-4 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Calcium	3.3	3.0	3.4	mg/L	---
Magnesium	0.7	1.0	0.6	mg/L	---
Potassium	ND	0.78	0.24	mg/L	---
Sodium	266	292	291	mg/L	---

General Chemistry / Other

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		380		461		432	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		11		12		15	mg/L	5
Chloride		53		61		55	mg/L	3
pH (1st reading)	8.53	8.50	8.47	8.88	8.75	8.40	s.u.	---
pH (2nd reading)	8.48		8.40	8.69	8.63	8.40	s.u.	---
pH (3rd reading)	8.51		8.35	8.55	8.58	8.40	s.u.	---
pH (4th reading)	8.48		8.34	8.95	8.53	8.40	s.u.	---
pH Average	8.50	8.50	8.39	8.77	8.62	8.40	s.u.	---
Sulfate		220		170		175	mg/L	5
Spec. Conduct. @ 25° C	1270	1300	1280	1255	1280	1230	µmhos/cm	1
Spec. Conduct. @ 25° C	1280		1280	1278	1280	1230	µmhos/cm	1
Spec. Conduct. @ 25° C	1250		1280	1273	1250	1230	µmhos/cm	1
Spec. Conduct. @ 25° C	1230		1280	1273	1240	1230	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1257.5	1300	1280	1269.75	1262.5	1230	µmhos/cm	1
Total Organic Carbon	ND	ND	1	1	0.9	1.2	mg/L	1
Total Organic Carbon	ND	ND				1.2	mg/L	1
Total Organic Carbon						1.2	mg/L	1
Total Organic Carbon						1.2	mg/L	1
Total Org. Halides as Cl	ND	30	110	ND	<30	<30	mg/L	30
Total Org. Halides as Cl	ND	<30		ND		<30	mg/L	30
Total Org. Halides as Cl				ND		<30	mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids		790		740		784	mg/L	10
Water Elevation	6849.88	6849.30	6848.52	6849.98	6850.00	6847.60	ft	---

TABULATED ANALYTICAL RESULTS

SMW-5 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
1,1,1-Trichloroethane (TCA)	ND	ND	ND	ND	ND	ND	µg/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
1,1-Dichoroethane	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethane (EDC)	ND	ND	ND	ND	ND	ND	µg/L	5
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ND	µg/L	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ND	µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND	ND	ND	µg/L	20
Acetone	ND	ND	ND	ND	ND	ND	µg/L	20
Benzene	ND	ND	ND	ND	ND	ND	µg/L	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
Bromoform	ND	ND	ND	ND	ND	ND	µg/L	5
Bromomethane	ND	ND	ND	ND	ND	ND	µg/L	10
Carbon disulfide	ND	ND	ND	ND	ND	ND	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	---	---	ND	ND	ND	---	µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	ND	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND	ND	ND	µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND	---	µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND	ND	µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Chromium	0.076	0.01	0.02	<0.01	<.01	<.01	mg/L	0.01
Lead	0.008	ND	ND	<0.005	<.05 *	<.005	mg/L	0.005

* Lab used incorrect detection limit of 0.05 instead of 0.005

TABULATED ANALYTICAL RESULTS

SMW-5 Giant Refining - Ciniza

Dissolved Metals

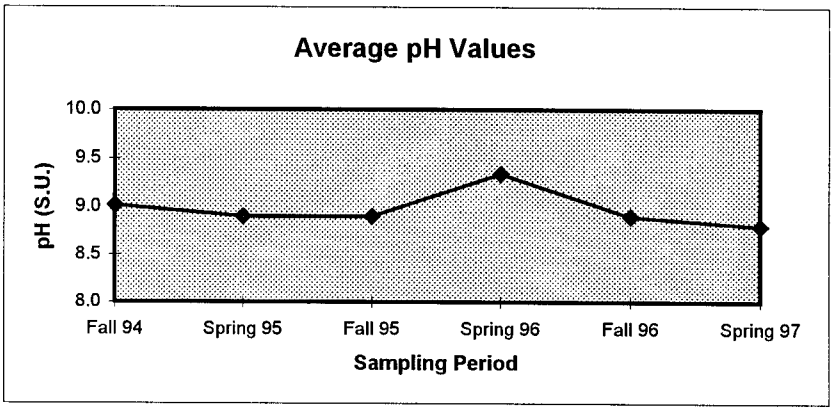
Parameter	Spring 95 Result	Spring 96 Result	Spring 97 Result	Units	Reporting Limit
Calcium	1.6	2.2	2.2	mg/L	---
Magnesium	0.7	1.8	0.2	mg/L	---
Potassium	ND	1.96	0.27	mg/L	---
Sodium	267	176	2.73	mg/L	---

General Chemistry / Other

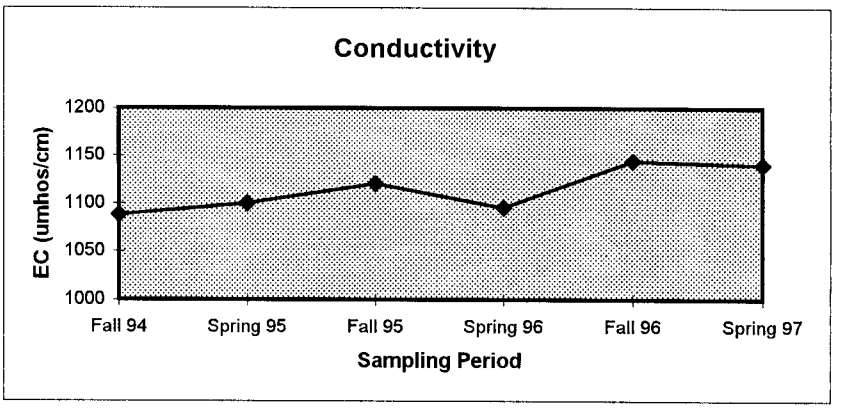
Parameter	Fall 94 Result	Spring 95 Result	Fall 95 Result	Spring 96 Result	Fall 96 Result	Spring 97 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO3 @ pH 4.5		350		427		366	mg/L	5
Alkalinity, Carbonate as HCO3 @ pH 8.3		21		10		ND	mg/L	5
Chloride		54		67		56	mg/L	3
pH (1st reading)	8.58	8.80	8.69	8.60	8.60	8.70	s.u.	---
pH (2nd reading)	8.60		8.69	9.01	8.70	8.70	s.u.	---
pH (3rd reading)	8.60		8.69	8.90	8.64	8.70	s.u.	---
pH (4th reading)	8.64		8.70	8.89	8.60	8.70	s.u.	---
pH Average	8.61	8.80	8.69	8.85	8.64	8.70	s.u.	---
Sulfate		180		160		162	mg/L	5
Spec. Conduct. @ 25° C	1120	1100	1170	1126	1280	1157	µmhos/cm	1
Spec. Conduct. @ 25° C	1130		1160	1123	1290	1157	µmhos/cm	1
Spec. Conduct. @ 25° C	1120		1170	1146	1280	1157	µmhos/cm	1
Spec. Conduct. @ 25° C	1150		1170	1126	1280	1157	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1130	1100	1168	1130	1283	1157	µmhos/cm	1
Total Organic Carbon	8	ND	12	1	1.2	<1	mg/L	1
Total Organic Carbon	8	ND				<1	mg/L	1
Total Organic Carbon						<1	mg/L	1
Total Organic Carbon						<1	mg/L	1
Total Org. Halides as Cl	ND	<30	<30	ND	<30	<30	mg/L	30
Total Org. Halides as Cl	ND	30		ND		<30	mg/L	30
Total Org. Halides as Cl				ND		<30	mg/L	30
Total Org. Halides as Cl							mg/L	30
Total Dissolved Solids		790		704		730	mg/L	10
Water Elevation	6848.02	6848.38	6847.47	6847.82	6847.00	6847.70	ft	---

MW-1 Giant Refining - Ciniza

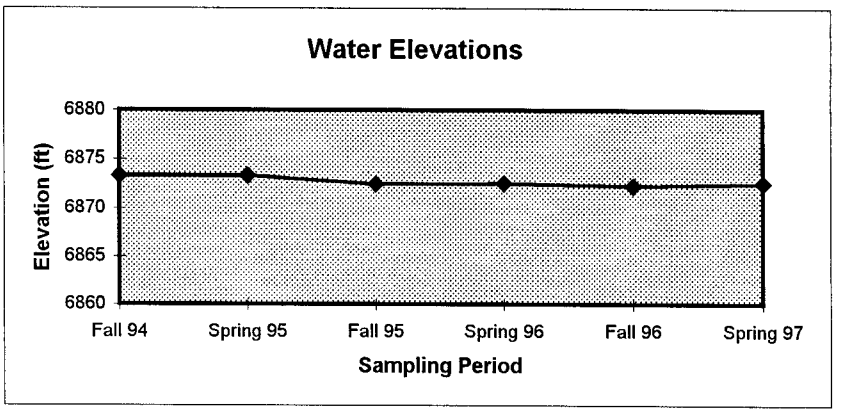
Fall 94	9.01
Spring 95	8.90
Fall 95	8.90
Spring 96	9.34
Fall 96	8.90
Spring 97	8.80



Fall 94	1088
Spring 95	1100
Fall 95	1120
Spring 96	1095
Fall 96	1145
Spring 97	1140

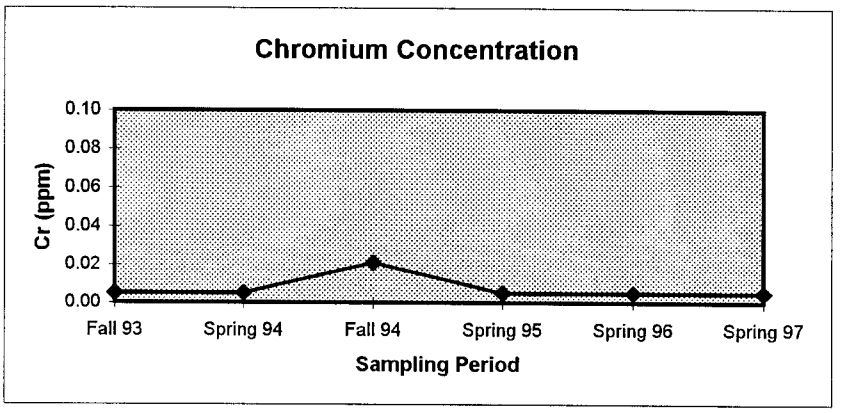


Fall 94	6873.30
Spring 95	6873.30
Fall 95	6872.40
Spring 96	6872.50
Fall 96	6872.20
Spring 97	6872.50

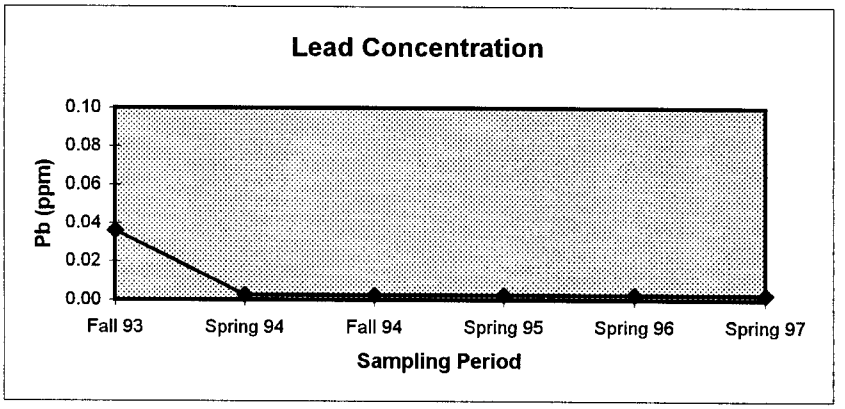


MW-1 Giant Refining - Ciniza

Fall 93	0.005
Spring 94	0.005
Fall 94	0.021
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005

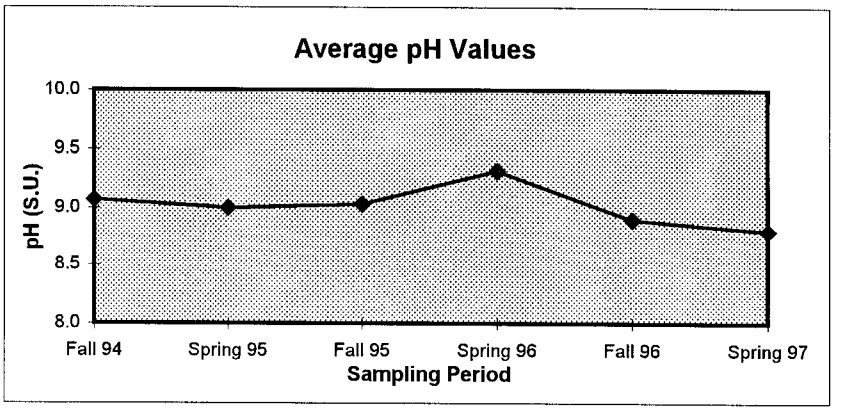


Fall 93	0.036
Spring 94	0.003
Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003

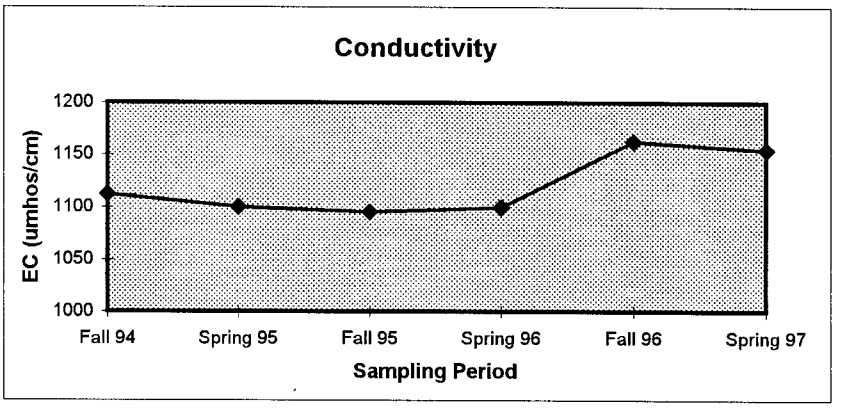


MW-2 Giant Refining - Ciniza

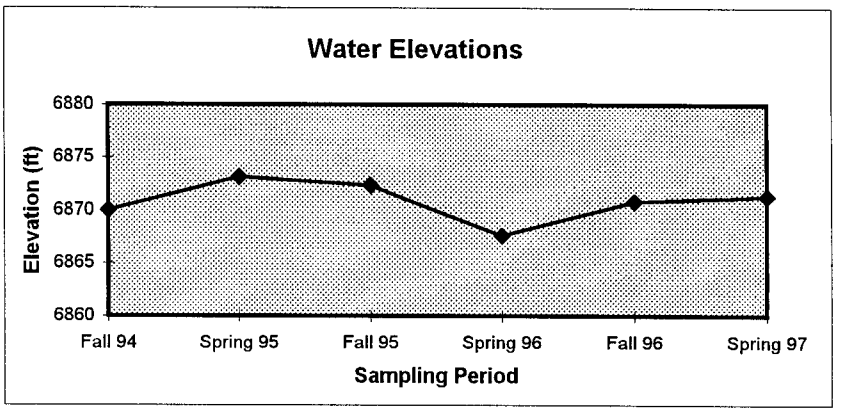
Fall 94	9.07
Spring 95	9.00
Fall 95	9.03
Spring 96	9.32
Fall 96	8.90
Spring 97	8.80



Fall 94	1113
Spring 95	1100
Fall 95	1095
Spring 96	1100
Fall 96	1162
Spring 97	1154

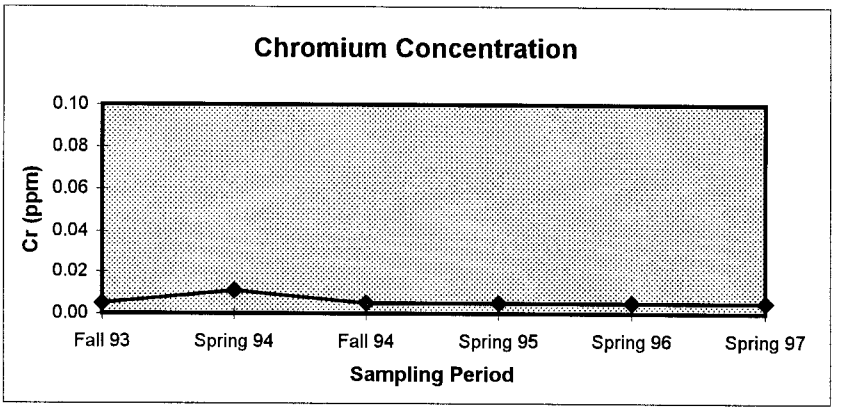


Fall 94	6870.01
Spring 95	6873.13
Fall 95	6872.34
Spring 96	6867.54
Fall 96	6870.80
Spring 97	6871.30

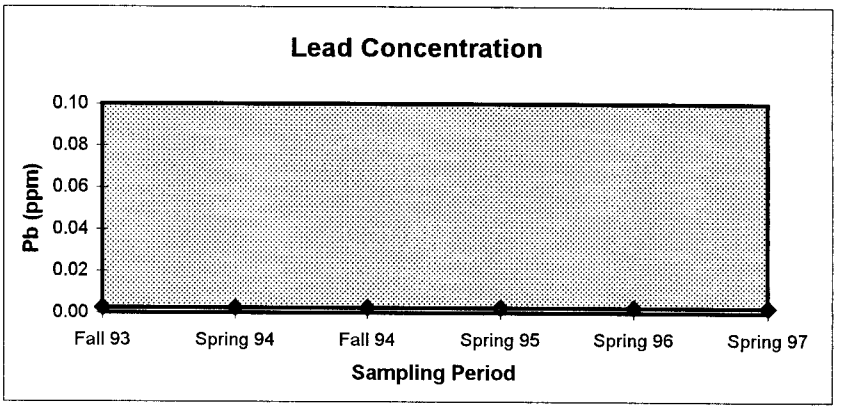


MW-2 Giant Refining - Ciniza

Fall 93	0.005
Spring 94	0.011
Fall 94	0.005
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005

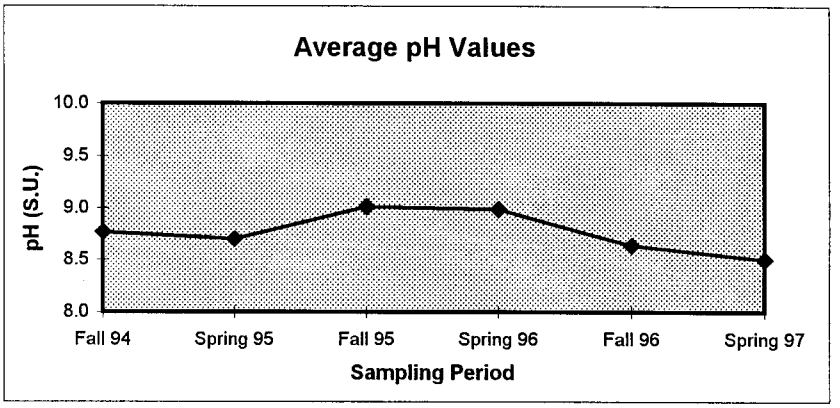


Fall 93	0.003
Spring 94	0.003
Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003

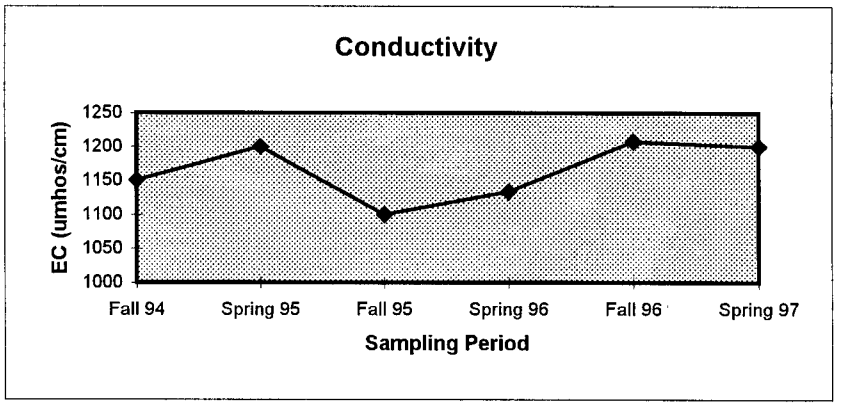


MW-4 Giant Refining - Ciniza

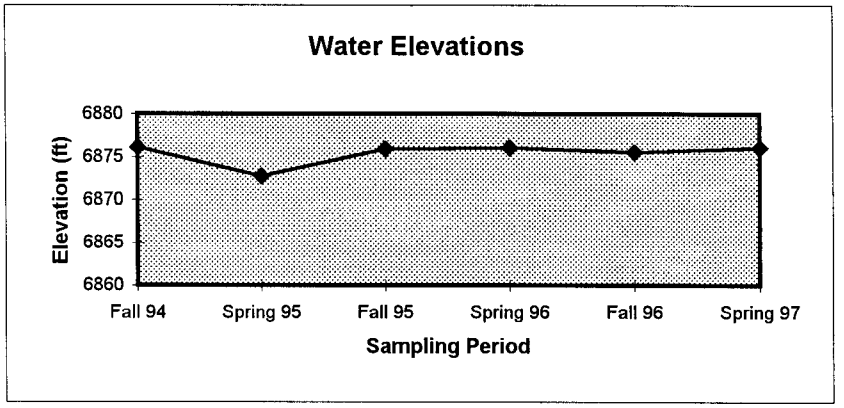
Fall 94	8.77
Spring 95	8.70
Fall 95	9.01
Spring 96	8.99
Fall 96	8.64
Spring 97	8.50



Fall 94	1150
Spring 95	1200
Fall 95	1100
Spring 96	1133
Fall 96	1208
Spring 97	1200

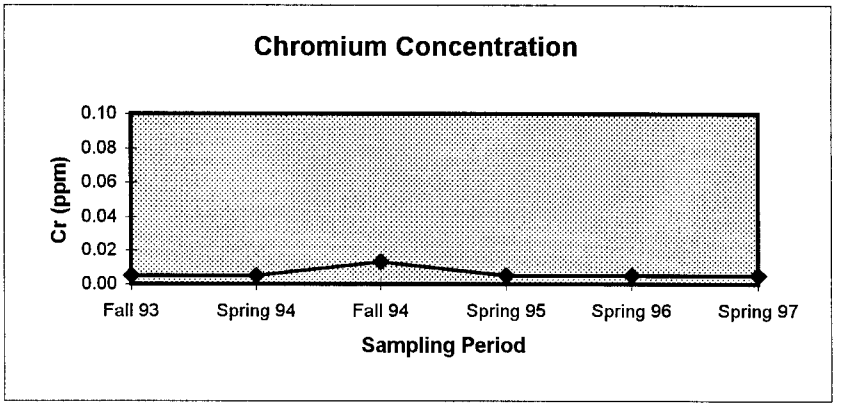


Fall 94	6876.10
Spring 95	6872.70
Fall 95	6875.90
Spring 96	6876.00
Fall 96	6875.50
Spring 97	6876.00

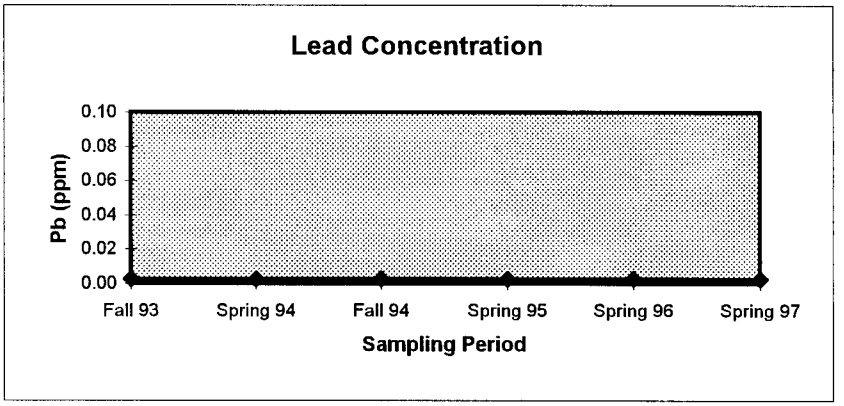


MW-4 Giant Refining - Ciniza

Fall 93	0.005
Spring 94	0.005
Fall 94	0.013
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005

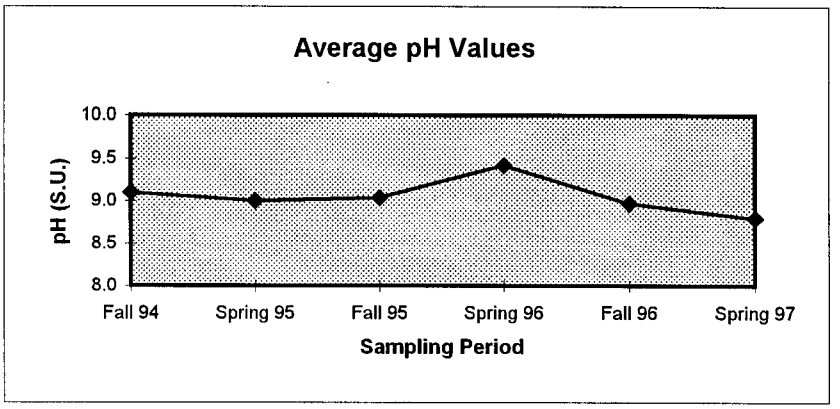


Fall 93	0.003
Spring 94	0.003
Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003

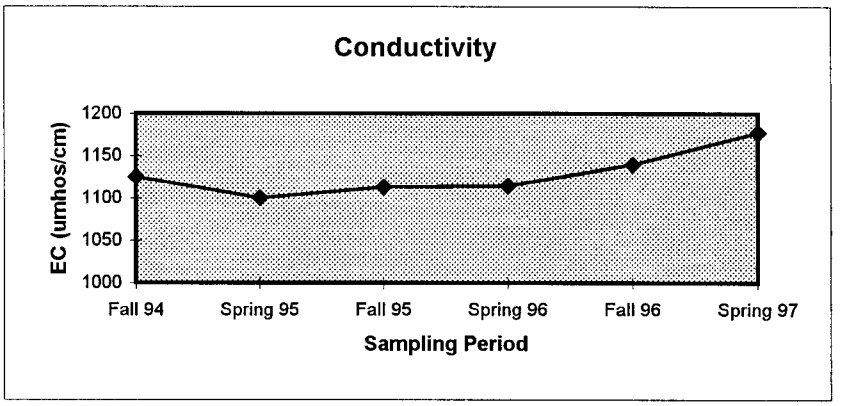


MW-5 Giant Refining - Ciniza

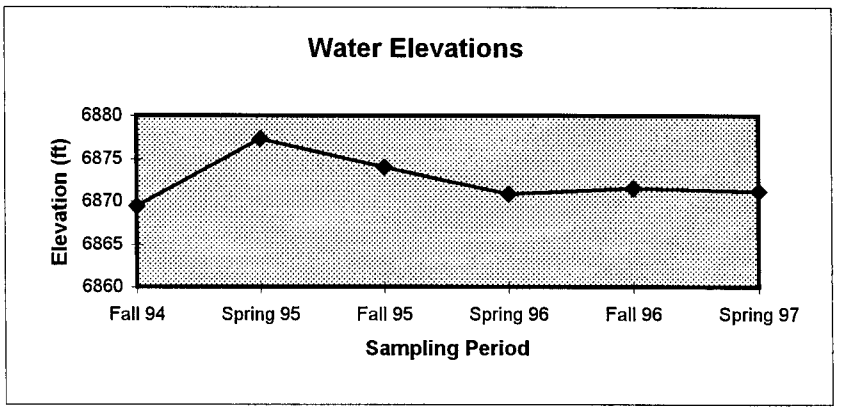
Fall 94	9.10
Spring 95	9.00
Fall 95	9.04
Spring 96	9.42
Fall 96	8.97
Spring 97	8.80



Fall 94	1125
Spring 95	1100
Fall 95	1113
Spring 96	1114
Fall 96	1139
Spring 97	1177

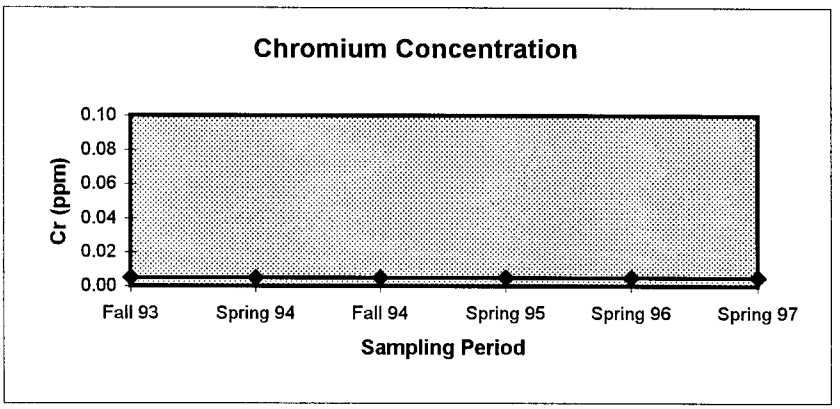


Fall 94	6869.40
Spring 95	6877.30
Fall 95	6874.00
Spring 96	6870.80
Fall 96	6871.50
Spring 97	6871.10

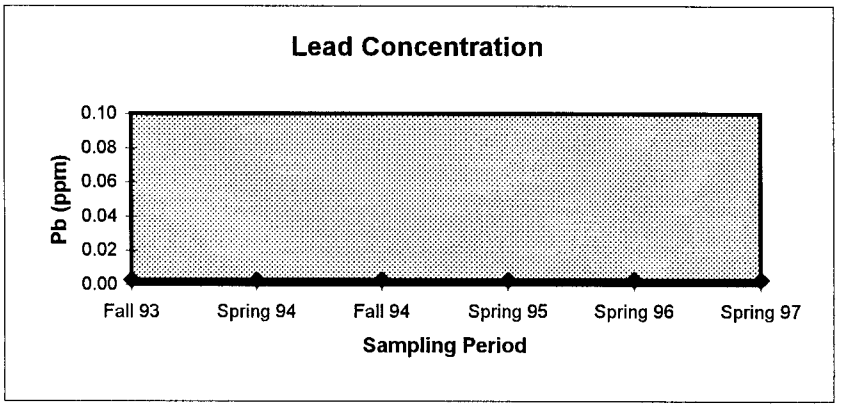


MW-5 Giant Refining - Ciniza

Fall 93	0.005
Spring 94	0.005
Fall 94	0.005
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005

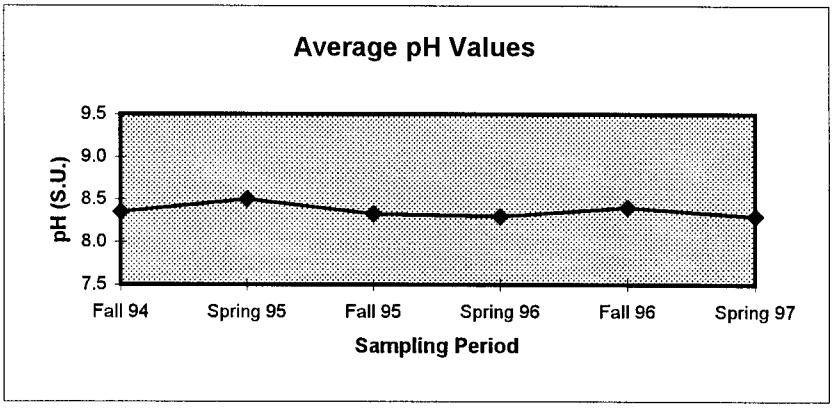


Fall 93	0.003
Spring 94	0.003
Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003

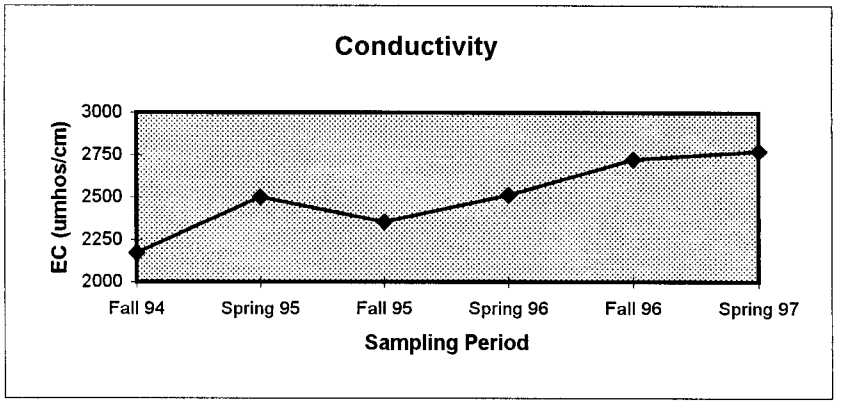


OW-11 Giant Refining - Ciniza

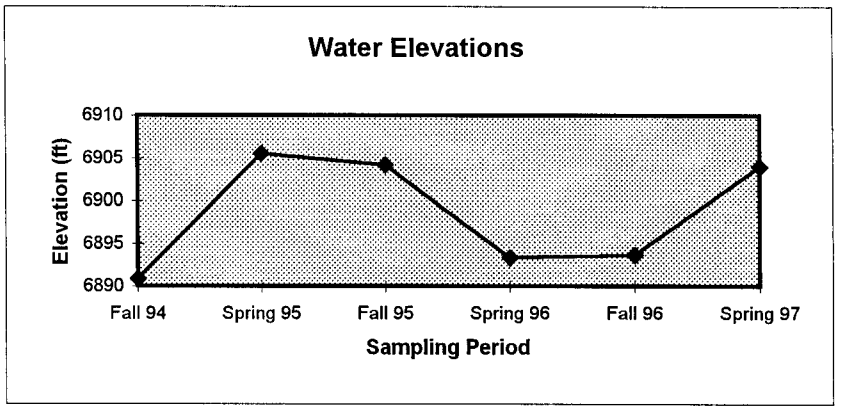
Fall 94	8.35
Spring 95	8.50
Fall 95	8.33
Spring 96	8.30
Fall 96	8.40
Spring 97	8.30



Fall 94	2170
Spring 95	2500
Fall 95	2355
Spring 96	2510
Fall 96	2720
Spring 97	2770

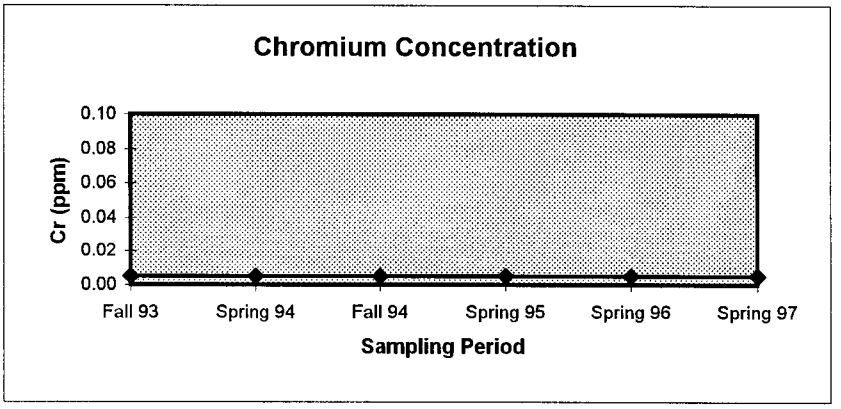


Fall 94	6890.80
Spring 95	6905.50
Fall 95	6904.10
Spring 96	6893.30
Fall 96	6893.60
Spring 97	6903.90

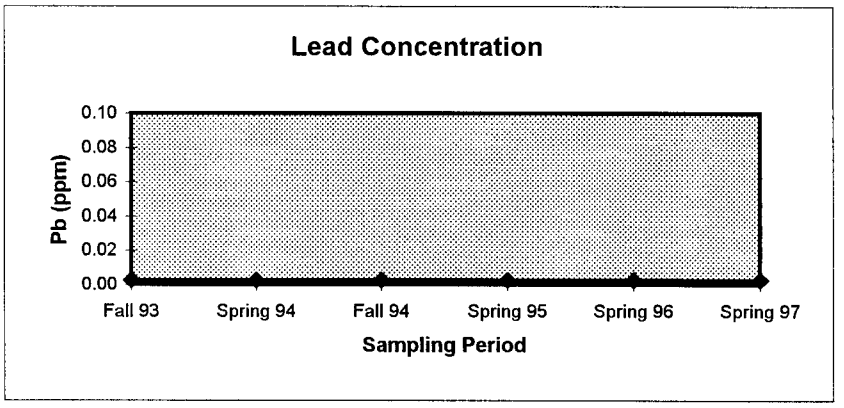


OW-11 Giant Refining - Ciniza

Fall 93	0.005
Spring 94	0.005
Fall 94	0.005
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005



Fall 93	0.003
Spring 94	0.003
Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003



Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	MW-1-41597	Date Reported:	08/18/97
Project ID:	Ciniza	Date Sampled:	04/15/97
Lab ID:	B971913	Date Received:	04/17/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	MW-1-41597	Date Reported:	08/18/97
Project ID:	Ciniza	Date Sampled:	04/15/97
Lab ID:	B971913	Date Received:	04/17/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	**QC Limits**
1,2-Dichloroethane-d4	98	80 - 120
Bromofluorobenzene	98	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E.D.

Reviewed E.D. for CRB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 1
Sample ID: MW-1-41597
Lab ID: 0397W00613
Matrix: Water
Condition: Cool/Intact

Date Received: 04/17/97
Date Reported: 07/07/97
Date Sampled: 04/15/97
Time Sampled: 0920

Parameter	Analytical Result	Units		Units	PQL	Method	Analysis Date	Time	Init.
GENERAL PARAMETERS									
pH	8.8	s.u.			0.1	EPA 150.1	04/22/97	1315	BJ
Electrical Conductivity	1,140	µmhos/cm			10	EPA 120.1	04/17/97	1315	BJ
Solids - Total Dissolved	704	mg/L			10	EPA 160.1	04/18/97	0850	BJ
Alkalinity as CaCO3	381	mg/L			1	EPA 310.1	04/22/97	1300	BJ
MAJOR ANIONS									
Bicarbonate (HCO3)	339	mg/L	5.56	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Carbonate (CO3)	62.0	mg/L	2.07	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Chloride	50.1	mg/L	1.41	meq/L	1	EPA 325.2	04/18/97	0826	TH
Sulfate	170	mg/L	3.54	meq/L	5	EPA 375.3	04/21/97	0750	TH
DISSOLVED METALS									
Arsenic	<0.005	mg/L			0.005	EPA 206.3	04/23/97	207	GB
Barium	<0.01	mg/L			0.01	EPA 200.7	04/18/97	1325	JW
Cadmium	<0.001	mg/L			0.001	EPA 213.2	04/23/97	1325	GB
Calcium	1.69	mg/L	0.08	meq/L	0.2	EPA 200.7	04/18/97	1325	JW
Magnesium	<0.2	mg/L	0.01	meq/L	0.2	EPA 200.7	04/18/97	1325	JW
Manganese	<0.005	mg/L			0.005	EPA 200.7	04/18/97	1325	JW
Potassium	0.48	mg/L	0.01	meq/L	0.2	EPA 200.7	04/18/97	1325	JW
Selenium	<0.005	mg/L			0.005	EPA 270.3	04/22/97	800	GB
Silver	<0.01	mg/L			0.01	EPA 200.7	04/18/97	1325	JW
Sodium	259	mg/L	11.3	meq/L	0.2	EPA 200.7	04/18/97	1325	JW
TOTAL METALS									
Chromium	<0.01	mg/L			0.01	EPA 200.7	04/26/97	943	JW
Lead	<0.005	mg/L			0.005	EPA 239.2	04/23/97	1025	GB
Mercury	<0.001	mg/L			0.001	EPA 245.2	04/22/97	900	CH

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

GENERAL PARAMETERS

Client: GIANT REFINING COMPANY
Project ID: Ciniza
Matrix: Water

Date Reported: 04/25/97
Date Received: 04/18/97

Results for: Phenols

Sample ID	Date Sampled	Lab ID	Result	PQL	Units
MW-1-41597	04/15/97	B971929	ND	0.05	mg/L
MW-2-41597	04/15/97	B971930	ND	0.05	mg/L
MW-4-41697	04/16/97	B971931	ND	0.05	mg/L
MW-5-41597	04/15/97	B971932	ND	0.05	mg/L

ND - Not Detected at Practical Quantitation Level (PQL)
NA - Not Applicable.

Reference: EPA - 600/4-79-020 Methods for Chemical Analysis of Water and Waste Water, Method 420.2 (Colorimetric, Automated 4-AAP with Distillation).

Analyst _____

Reviewed _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON

TOC

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/04/97
Sample ID:	MW-1-41597	Date Sampled:	04/15/97
Lab ID:	0397W00613	Time Sampled:	9:20
Matrix:	Water	Date Received:	04/17/97
Condition:	Cool / Intact		

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	<1.0	1.0

Concentration is the average of the replicates reported below

Replicate #1	<1.0	1.0
Replicate #2	<1.0	1.0
Replicate #3	<1.0	1.0

ND - Analyte not detected at stated detection limit.

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: _____

Reviewed by: JB _____

American Environmental Network, Inc.

CLIENT : GIANT REFINING COMPANY
PROJECT # : (NONE)
PROJECT NAME : CINIZA

DATE RECEIVED : 06/06/97
REPORT DATE : 06/19/97

AEN ID: 706324

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	706324-01	MW-1-6397	AQUEOUS	06/03/97
02	706324-02	MW-2-6397	AQUEOUS	06/03/97
03	706324-03	MW-4-6497	AQUEOUS	06/04/97
04	706324-04	MW-5-6397	AQUEOUS	06/03/97
05	706324-05	OW-11-6497	AQUEOUS	06/04/97
06	706324-06	SMW-3-6397	AQUEOUS	06/03/97

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	6

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, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	706009
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	706324
Project Name:	GIANT REFINING
Project Location:	CINIZA
Test:	TOTAL ORGANIC HALIDES IN WATER
Analysis Method:	9020/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	IIM

Lab Id:	001	Sample Date/Time:	03-JUN-97 1540
Client Sample Id:	706324-01	Received Date:	07-JUN-97
Batch: TXW028		Extraction Date:	N/A
Blank: D	Dry Weight %: N/A	Analysis Date:	12-JUN-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES*	MG/L	0.01	0.01	
ANALYST	INITIALS	KL		

Comments:

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: MW-2-41597
Project ID: Ciniza
Lab ID: B971914
Matrix: Water

Date Reported: 04/22/97
Date Sampled: 04/15/97
Date Received: 04/17/97
Date Extracted: NA
Date Analyzed: 04/21/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	MW-2-41597	Date Reported:	04/22/97
Project ID:	Ciniza	Date Sampled:	04/15/97
Lab ID:	B971914	Date Received:	04/17/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	**QC Limits**
1,2-Dichloroethane-d4	100	81 - 126
Bromofluorobenzene	99	78 - 112
Toluene-d8	103	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E.D.

Reviewed CEB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 1
Sample ID: MW-2-41597
Lab ID: 0397W00614
Matrix: Water
Condition: Cool/Intact

Date Received: 04/17/97
Date Reported: 06/04/97
Date Sampled: 04/15/97
Time Sampled: 1145

Parameter	Analytical Result	Units		Units
GENERAL PARAMETERS				
pH	8.8	s.u.		
Electrical Conductivity	1,154	µmhos/cm		
Solids - Total Dissolved	718	mg/L		
Alkalinity as CaCO3	327	mg/L		
MAJOR ANIONS				
Bicarbonate (HCO3)	356	mg/L	5.84	meq/L
Carbonate (CO3)	21.0	mg/L	0.70	meq/L
Hydroxide (OH)	<1	mg/L	<0.06	meq/L
Chloride	56.5	mg/L	1.59	meq/L
Sulfate	178	mg/L	3.71	meq/L
DISSOLVED METALS				
Arsenic	<0.005	mg/L		
Barium	0.01	mg/L		
Cadmium	<0.001	mg/L		
Calcium	1.64	mg/L	0.08	meq/L
Magnesium	<0.2	mg/L	<0.02	meq/L
Manganese	<0.005	mg/L		
Potassium	0.50	mg/L	0.01	meq/L
Selenium	<0.005	mg/L		
Silver	<0.01	mg/L		
Sodium	252	mg/L	11.0	meq/L
TOTAL METALS				
Chromium	<0.01	mg/L		
Lead	<0.005	mg/L		
Mercury	<0.001	mg/L		

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.
EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON

TOC

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/17/97
Sample ID:	MW-2-41597	Date Analyzed:	04/30/97
Lab ID:	0397W00614	Date Sampled:	04/15/97
Matrix:	Water	Time Sampled;	11:45
Condition:	Cool / Intact	Date Received:	04/17/97

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	<1.0	1.0

Concentration is the average of the replicates reported below

Replicate #1	<1.0	1.0
Replicate #2	<1.0	1.0
Replicate #3	<1.0	1.0

ND - Analyte not detected at stated detection limit.

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: SW

Reviewed by: JB

American Environmental Network, Inc.

CLIENT	: GIANT REFINING COMPANY	DATE RECEIVED	: 06/06/97
PROJECT #	: (NONE)		
PROJECT NAME	: CINIZA	REPORT DATE	: 06/19/97

AEN ID: 706324

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	706324-01	MW-1-6397	AQUEOUS	06/03/97
02	706324-02	MW-2-6397	AQUEOUS	06/03/97
03	706324-03	MW-4-6497	AQUEOUS	06/04/97
04	706324-04	MW-5-6397	AQUEOUS	06/03/97
05	706324-05	OW-11-6497	AQUEOUS	06/04/97
06	706324-06	SMW-3-6397	AQUEOUS	06/03/97

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	6

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, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	706009
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	706324
Project Name:	GIANT REFINING
Project Location:	CINIZA
Test:	TOTAL ORGANIC HALIDES IN WATER
Analysis Method:	9020/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	IIM

Lab Id:	002	Sample Date/Time:	03-JUN-97 1500
Client Sample Id:	706324-02	Received Date:	07-JUN-97
Batch: TXW028		Extraction Date:	N/A
Blank: D	Dry Weight %: N/A	Analysis Date:	12-JUN-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES*	MG/L	0.01	0.01	
ANALYST	INITIALS	KL		

Comments:

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

GENERAL PARAMETERS

Client: GIANT REFINING COMPANY
Project ID: Ciniza
Matrix: Water

Date Reported: 04/25/97
Date Received: 04/18/97

Results for: Phenols

Sample ID	Date Sampled	Lab ID	Result	PQL	Units
MW-1-41597	04/15/97	B971929	ND	0.05	mg/L
MW-2-41597	04/15/97	B971930	ND	0.05	mg/L
MW-4-41697	04/16/97	B971931	ND	0.05	mg/L
MW-5-41597	04/15/97	B971932	ND	0.05	mg/L

ND - Not Detected at Practical Quantitation Level (PQL)
NA - Not Applicable.

Reference: EPA - 600/4-79-020 Methods for Chemical Analysis of Water and Waste Water, Method 420.2 (Colorimetric, Automated 4-AAP with Distillation).

Analyst _____

Reviewed _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: MW-4-41697
Project ID: Ciniza
Lab ID: B971915
Matrix: Water

Date Reported: 04/22/97
Date Sampled: 04/16/97
Date Received: 04/17/97
Date Extracted: NA
Date Analyzed: 04/21/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**	Date Reported:	04/22/97
Sample ID:	MW-4-41697	Date Sampled:	04/16/97
Project ID:	Ciniza	Date Received:	04/17/97
Lab ID:	B971915	Date Extracted:	NA
Matrix:	Water	Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	**QC Limits**
1,2-Dichloroethane-d4	99	81 - 126
Bromofluorobenzene	91	78 - 112
Toluene-d8	101	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E.D. **Reviewed** CTB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 1
Sample ID: MW-4-41697
Lab ID: 0397W00615
Matrix: Water
Condition: Cool/Intact

Date Received: 04/17/97
Date Reported: 06/04/97
Date Sampled: 04/16/97
Time Sampled: 0745

Parameter	Analytical Result	Units		Units
GENERAL PARAMETERS				
pH	8.5	s.u.		
Electrical Conductivity	1,200	µmhos/cm		
Solids - Total Dissolved	758	mg/L		
Alkalinity as CaCO3	437	mg/L		
MAJOR ANIONS				
Bicarbonate (HCO3)	505	mg/L	8.28	meq/L
Carbonate (CO3)	14.0	mg/L	0.47	meq/L
Hydroxide (OH)	<1	mg/L	<0.06	meq/L
Chloride	17.7	mg/L	0.50	meq/L
Sulfate	161	mg/L	3.35	meq/L
DISSOLVED METALS				
Arsenic	<0.005	mg/L		
Barium	0.02	mg/L		
Cadmium	<0.001	mg/L		
Calcium	1.70	mg/L	0.08	meq/L
Magnesium	<0.2	mg/L	<0.02	meq/L
Manganese	<0.005	mg/L		
Potassium	0.53	mg/L	0.01	meq/L
Selenium	<0.005	mg/L		
Silver	<0.01	mg/L		
Sodium	276	mg/L	12.0	meq/L
TOTAL METALS				
Chromium	<0.01	mg/L		
Lead	<0.005	mg/L		
Mercury	<0.001	mg/L		

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.
EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON

TOC

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/17/97
Sample ID:	MW-4-41697	Date Analyzed:	04/30/97
Lab ID:	0397W00615	Date Sampled:	04/16/97
Matrix:	Water	Time Sampled:	7:45
Condition:	Cool / Intact	Date Received:	04/17/97

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	1.0	1.0

Concentration is the average of the replicates reported below

Replicate #1	1.1	1.0
Replicate #2	1.0	1.0
Replicate #3	1.0	1.0

ND - Analyte not detected at stated detection limit

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: _____

Reviewed by: _____

American Environmental Network, Inc.

CLIENT	: GIANT REFINING COMPANY	DATE RECEIVED	: 06/06/97
PROJECT #	: (NONE)		
PROJECT NAME	: CINIZA	REPORT DATE	: 06/19/97

AEN ID: 706324

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	706324-01	MW-1-6397	AQUEOUS	06/03/97
02	706324-02	MW-2-6397	AQUEOUS	06/03/97
03	706324-03	MW-4-6497	AQUEOUS	06/04/97
04	706324-04	MW-5-6397	AQUEOUS	06/03/97
05	706324-05	OW-11-6497	AQUEOUS	06/04/97
06	706324-06	SMW-3-6397	AQUEOUS	06/03/97

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	6

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, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	706009
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	706324
Project Name:	GIANT REFINING
Project Location:	CINIZA
Test:	TOTAL ORGANIC HALIDES IN WATER
Analysis Method:	9020/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	IIM

Lab Id:	003	Sample Date/Time:	04-JUN-97 0525
Client Sample Id:	706324-03	Received Date:	07-JUN-97
Batch: TXW029		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	12-JUN-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES	MG/L	ND	0.01	
ANALYST	INITIALS	KL		

Comments:

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

GENERAL PARAMETERS

Client: GIANT REFINING COMPANY
Project ID: Ciniza
Matrix: Water

Date Reported: 04/25/97
Date Received: 04/18/97

Results for: Phenols

Sample ID	Date Sampled	Lab ID	Result	PQL	Units
MW-1-41597	04/15/97	B971929	ND	0.05	mg/L
MW-2-41597	04/15/97	B971930	ND	0.05	mg/L
MW-4-41697	04/16/97	B971931	ND	0.05	mg/L
MW-5-41597	04/15/97	B971932	ND	0.05	mg/L

ND - Not Detected at Practical Quantitation Level (PQL)
NA - Not Applicable.

Reference: EPA - 600/4-79-020 Methods for Chemical Analysis of Water and Waste Water, Method 420.2 (Colorimetric, Automated 4-AAP with Distillation).

Analyst _____

Reviewed _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: MW-5-41597
Project ID: Ciniza
Lab ID: B971916
Matrix: Water

Date Reported: 04/22/97
Date Sampled: 04/15/97
Date Received: 04/17/97
Date Extracted: NA
Date Analyzed: 04/21/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	MW-5-41597	Date Reported:	04/22/97
Project ID:	Ciniza	Date Sampled:	04/15/97
Lab ID:	B971916	Date Received:	04/17/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	**QC Limits**
1,2-Dichloroethane-d4	99	81 - 126
Bromofluorobenzene	93	78 - 112
Toluene-d8	96	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E. D.

Reviewed CEB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 1
Sample ID: MW-5-41597
Lab ID: 0397W00616
Matrix: Water
Condition: Cool/Intact

Date Received: 04/17/97
Date Reported: 06/04/97
Date Sampled: 04/15/97
Time Sampled: 1530

Parameter	Analytical Result	Units		Units
GENERAL PARAMETERS				
pH	8.8	s.u.		
Electrical Conductivity	1,177	µmhos/cm		
Solids - Total Dissolved	730	mg/L		
Alkalinity as CaCO3	309	mg/L		
MAJOR ANIONS				
Bicarbonate (HCO3)	349	mg/L	5.72	meq/L
Carbonate (CO3)	14.0	mg/L	0.47	meq/L
Hydroxide (OH)	<1	mg/L	<0.06	meq/L
Chloride	62.0	mg/L	1.75	meq/L
Sulfate	181	mg/L	3.77	meq/L
DISSOLVED METALS				
Arsenic	<0.005	mg/L		
Barium	0.01	mg/L		
Cadmium	<0.001	mg/L		
Calcium	1.49	mg/L	0.07	meq/L
Magnesium	<0.2	mg/L	<0.02	meq/L
Manganese	<0.005	mg/L		
Potassium	0.54	mg/L	0.01	meq/L
Selenium	<0.005	mg/L		
Silver	<0.01	mg/L		
Sodium	260	mg/L	11.3	meq/L
TOTAL METALS				
Chromium	<0.01	mg/L		
Lead	<0.005	mg/L		
Mercury	<0.001	mg/L		

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.
EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON

TOC

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/17/97
Sample ID:	MW-5-41597	Date Analyzed:	04/30/97
Lab ID:	0397W00616	Date Sampled:	04/15/97
Matrix:	Water	Time Sampled:	3:30
Condition:	Cool / Intact	Date Received:	04/17/97

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	<1.0	1.0

Concentration is the average of the replicates reported below

Replicate #1	<1.0	1.0
Replicate #2	<1.0	1.0
Replicate #3	<1.0	1.0

ND - Analyte not detected at stated detection limit.

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: _____

Reviewed by: _____

American Environmental Network, Inc.

CLIENT : GIANT REFINING COMPANY DATE RECEIVED : 06/06/97
PROJECT # : (NONE)
PROJECT NAME : CINIZA REPORT DATE : 06/19/97

AEN ID: 706324

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	706324-01	MW-1-6397	AQUEOUS	06/03/97
02	706324-02	MW-2-6397	AQUEOUS	06/03/97
03	706324-03	MW-4-6497	AQUEOUS	06/04/97
04	706324-04	MW-5-6397	AQUEOUS	06/03/97
05	706324-05	OW-11-6497	AQUEOUS	06/04/97
06	706324-06	SMW-3-6397	AQUEOUS	06/03/97

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	6

AEN STANDARD DISPOSAL PRACTICE

'he 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, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	706009
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	706324
Project Name:	GIANT REFINING
Project Location:	CINIZA
Test:	TOTAL ORGANIC HALIDES IN WATER
Analysis Method:	9020/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	IIM

Lab Id:	004		Sample Date/Time:	03-JUN-97 1130
Client Sample Id:	706324-04		Received Date:	07-JUN-97
Batch: TXW029			Extraction Date:	N/A
Blank: A	Dry Weight %:	N/A	Analysis Date:	12-JUN-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES	MG/L	0.01	0.01	
ANALYST	INITIALS	KL		

Comments:

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

GENERAL PARAMETERS

Client: GIANT REFINING COMPANY
Project ID: Ciniza
Matrix: Water

Date Reported: 04/25/97
Date Received: 04/18/97

Results for: Phenols

Sample ID	Date Sampled	Lab ID	Result	PQL	Units
MW-1-41597	04/15/97	B971929	ND	0.05	mg/L
MW-2-41597	04/15/97	B971930	ND	0.05	mg/L
MW-4-41697	04/16/97	B971931	ND	0.05	mg/L
MW-5-41597	04/15/97	B971932	ND	0.05	mg/L

ND - Not Detected at Practical Quantitation Level (PQL)
NA - Not Applicable.

Reference: EPA - 600/4-79-020 Methods for Chemical Analysis of Water and Waste Water, Method 420.2 (Colorimetric, Automated 4-AAP with Distillation).

Analyst _____

Reviewed _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: OW-11-41797
Project ID: Ciniza
Lab ID: B971944
Matrix: Water

Date Reported: 04/22/97
Date Sampled: 04/17/97
Date Received: 04/19/97
Date Extracted: NA
Date Analyzed: 04/22/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	OW-11-41797	Date Reported:	04/22/97
Project ID:	Ciniza	Date Sampled:	04/17/97
Lab ID:	B971944	Date Received:	04/19/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	04/22/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	**QC Limits**
1,2-Dichloroethane-d4	94	81 - 126
Bromofluorobenzene	95	78 - 112
Toluene-d8	101	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E.D.

Reviewed CB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 1
Sample ID: OW-11-41797
Lab ID: 0397W00653
Matrix: Water
Condition: Cool/Intact

Date Received: 04/19/97
Date Reported: 07/07/97
Date Sampled: 04/17/97
Time Sampled: 0745

Parameter	Analytical Result	Units		Units	PQL	Method	Analysis Date	Time	Init.
GENERAL PARAMETERS									
pH	8.3	s.u.			0.1	EPA 150.1	04/21/97	1655	BJ
Electrical Conductivity	2,770	µmhos/cm			10	EPA 120.1	04/21/97	1655	BJ
Solids - Total Dissolved	1,874	mg/L			10	EPA 160.1	04/22/97	0615	TH
Alkalinity as CaCO3	274	mg/L			1	EPA 310.1	04/24/97	092	BJ
MAJOR ANIONS									
Bicarbonate (HCO3)	334	mg/L	5.48	meq/L	1	EPA 310.1	04/24/97	092	BJ
Carbonate (CO3)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/24/97	092	BJ
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/24/97	092	BJ
Chloride	88.4	mg/L	2.49	meq/L	1	EPA 325.2	04/24/97	1046	TH
Sulfate	1,029	mg/L	21.42	meq/L	5	EPA 375.3	04/22/97	1202	TH
DISSOLVED METALS									
Arsenic	<0.005	mg/L			0.005	EPA 200.7	04/23/97	0803	JW
Barium	0.01	mg/L			0.01	EPA 200.7	04/26/97	0803	JW
Cadmium	<0.001	mg/L			0.001	EPA 200.7	04/21/97	0803	JW
Calcium	11.2	mg/L	0.56	meq/L	0.2	EPA 200.7	04/22/97	0803	JW
Magnesium	1.18	mg/L	0.10	meq/L	0.2	EPA 200.7	04/22/97	0753	JW
Manganese	0.01	mg/L			0.005	EPA 200.7	04/26/97	0909	JW
Potassium	2.08	mg/L	0.05	meq/L	0.2	EPA 200.7	04/22/97	0753	JW
Selenium	<0.005	mg/L			0.005	EPA 200.7	04/22/97	0753	JW
Silver	<0.01	mg/L			0.01	EPA 200.7	04/26/97	0909	JW
Sodium	618	mg/L	26.9	meq/L	0.2	EPA 200.7	04/22/97	0753	JW
TOTAL METALS									
Chromium	<0.01	mg/L			0.01	EPA 200.7	04/22/97	0753	JW
Lead	<0.005	mg/L			0.005	EPA 239.2	04/24/97	0803	JW
Mercury	<0.001	mg/L			0.001	EPA 245.2	04/22/97	0753	JW

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC HALIDES
TOX

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/18/97
Sample ID:	OW-11-41797	Date Sampled:	04/17/97
Lab ID:	0397W00653	Date Received:	04/19/97
Matrix:	Water	Date Analyzed:	05/05/97
Condition:	Cool / Intact	Time Sampled:	7:45

Parameter	Concentration ug/L	Detection Limit ug/L
Total Organic Halides	<30	30

Concentration is the average of the replicates reported below

Replicate #1	<30	30
Replicate #2	<30	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX). Test Methods for Evaluating Waste and Solid Waste, SW-846 USEPA, 3rd edition, Final Update II, September, 1994.

Comments:

Reported by: _____

Reviewed by: _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON
TOC

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/18/97
Sample ID;	OW-11-41797	Date Sampled:	04/17/97
Lab ID:	0397W00653	Date Received:	04/19/97
Matrix:	Water	Date Analyzed:	04/30/97
Condition:	Cool / Intact	Time Sampled:	7:45

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	1.8	1.0

Concentration is the average of the replicates reported below

Replicate #1	1.8	1.0
Replicate #2	1.8	1.0
Replicate #3	1.8	1.0

ND - Analyte not detected at stated detection limit.

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd Edition, Final Update II, September, 1994.

Comments:

Reported by:_____

Reviewed by: JB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

GENERAL PARAMETERS

Client: GIANT REFINING COMPANY
Project ID: Ciniza
Matrix: Water

Date Reported: 04/25/97
Date Received: 04/19/97

Results for: Phenols

Sample ID	Date Sampled	Lab ID	Result	PQL	Units
OW-11-41797	04/17/97	B971944	ND	0.05	mg/L
OW-29-41897	04/17/97	B971945	ND	0.05	mg/L

ND - Not Detected at Practical Quantitation Level (PQL)
NA - Not Applicable.

Reference: EPA - 600/4-79-020 Methods for Chemical Analysis of Water and Waste Water, Method 420.2 (Colorimetric, Automated 4-AAP with Distillation).

Analyst _____

Reviewed E.D.

American Environmental Network, Inc.

CLIENT	: GIANT REFINING COMPANY	DATE RECEIVED	: 06/06/97
PROJECT #	: (NONE)		
PROJECT NAME	: CINIZA	REPORT DATE	: 06/19/97

AEN ID: 706324

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	706324-01	MW-1-6397	AQUEOUS	06/03/97
02	706324-02	MW-2-6397	AQUEOUS	06/03/97
03	706324-03	MW-4-6497	AQUEOUS	06/04/97
04	706324-04	MW-5-6397	AQUEOUS	06/03/97
05	706324-05	OW-11-6497	AQUEOUS	06/04/97
06	706324-06	SMW-3-6397	AQUEOUS	06/03/97

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	6

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, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	706009
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	706324
Project Name:	GIANT REFINING
Project Location:	CINIZA
Test:	TOTAL ORGANIC HALIDES IN WATER
Analysis Method:	9020/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	IIM

Lab Id:	005	Sample Date/Time:	04-JUN-97 0745
Client Sample Id:	706324-05	Received Date:	07-JUN-97
Batch: TXW029		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	12-JUN-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES	MG/L	0.01	0.01	
ANALYST	INITIALS	KL		

Comments:

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: SMW-3-41497
Project ID: Ciniza
Lab ID: B971910
Matrix: Water

Date Reported: 04/22/97
Date Sampled: 04/14/97
Date Received: 04/17/97
Date Extracted: NA
Date Analyzed: 04/21/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	SMW-3-41497	Date Reported:	04/22/97
Project ID:	Ciniza	Date Sampled:	04/14/97
Lab ID:	B971910	Date Received:	04/17/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	97	81 - 126
Bromofluorobenzene	93	78 - 112
Toluene-d8	98	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E.D. **Reviewed** CEB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 2
Sample ID: SMW-3-41497
Lab ID: 0397W00610
Matrix: Water
Condition: Cool/Intact

Date Received: 04/17/97
Date Reported: 06/17/97
Date Sampled: 04/14/97
Time Sampled: 1525

Parameter	Analytical Result	Units		Units	PQL	Method	Analysis Date	Time	Init.
GENERAL PARAMETERS									
pH	7.6	s.u.			0.1	EPA 150.1	04/22/97		BJ
Electrical Conductivity	2,850	µmhos/cm			10	EPA 120.1	04/17/97	1315	BJ
Total Organic Carbon (TOC)	0.0				N/A	N/A			
Solids - Total Dissolved	2,020	mg/L			10	EPA 160.1	04/18/97	0850	BJ
Alkalinity as CaCO3	628	mg/L			1	EPA 310.1	04/22/97	1300	BJ
MAJOR ANIONS									
Bicarbonate (HCO3)	766	mg/L	12.56	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Carbonate (CO3)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Chloride	86.5	mg/L	2.44	meq/L	1	EPA 325.2	04/18/97	0826	TH
Sulfate	835	mg/L	17.39	meq/L	5	EPA 375.3	04/21/97	0750	TH
DISSOLVED METALS									
Calcium	43.40	mg/L	2.17	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Magnesium	13.10	mg/L	1.08	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Potassium	<0.2	mg/L	<0.01	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Sodium	660	mg/L	28.7	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
TOTAL METALS									
Chromium	<0.01	mg/L			0.01	EPA 200.7	04/26/97	0753	JW
Lead	<0.005	mg/L			0.005	EPA 239.2	04/23/97	1025	GB

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes". United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON
TOC

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/17/97
Sample ID:	SMW-3-41497	Date Analyzed:	04/30/97
Lab ID:	0397W00610	Date Sampled:	04/14/97
Matrix:	Water	Time Sampled:	3:25
Condition:	Cool / Intact	Date Received:	04/17/97

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	3.7	1.0

Concentration is the average of the replicates reported below

Replicate #1	3.7	1.0
Replicate #2	3.7	1.0
Replicate #3	3.7	1.0

ND - Analyte not detected at stated detection limit.

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: _____

Reviewed by: _____

American Environmental Network, Inc.

CLIENT : GIANT REFINING COMPANY DATE RECEIVED : 06/06/97
PROJECT # : (NONE)
PROJECT NAME : CINIZA REPORT DATE : 06/19/97

AEN ID: 706324

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	706324-01	MW-1-6397	AQUEOUS	06/03/97
02	706324-02	MW-2-6397	AQUEOUS	06/03/97
03	706324-03	MW-4-6497	AQUEOUS	06/04/97
04	706324-04	MW-5-6397	AQUEOUS	06/03/97
05	706324-05	OW-11-6497	AQUEOUS	06/04/97
06	706324-06	SMW-3-6397	AQUEOUS	06/03/97

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	6

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, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	706009
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	706324
Project Name:	GIANT REFINING
Project Location:	CINIZA
Test:	TOTAL ORGANIC HALIDES IN WATER
Analysis Method:	9020/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	IIM

Lab Id:	006	Sample Date/Time:	03-JUN-97 1145
Client Sample Id:	706324-06	Received Date:	07-JUN-97
Batch: TXW029		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	13-JUN-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES*	MG/L	0.05	0.01	
ANALYST	INITIALS	KL		

Comments:

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: SMW-4-41497
Project ID: Ciniza
Lab ID: B971911
Matrix: Water

Date Reported: 04/22/97
Date Sampled: 04/14/97
Date Received: 04/17/97
Date Extracted: NA
Date Analyzed: 04/21/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	SMW-4-41497	Date Reported:	04/22/97
Project ID:	Ciniza	Date Sampled:	04/14/97
Lab ID:	B971911	Date Received:	04/17/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	93	81 - 126
Bromofluorobenzene	96	78 - 112
Toluene-d8	100	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E.D. **Reviewed** CEB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 2
Sample ID: SMW-4-41497
Lab ID: 0397W00611
Matrix: Water
Condition: Cool/Intact

Date Received: 04/17/97
Date Reported: 06/17/97
Date Sampled: 04/14/97
Time Sampled: 1345

Parameter	Analytical Result	Units		Units	PQL	Method	Analysis Date	Time	Init.
GENERAL PARAMETERS									
pH	8.4	s.u.			0.1	EPA 150.1	04/22/97		BJ
Electrical Conductivity	1,230	µmhos/cm			10	EPA 120.1	04/17/97	1315	BJ
Total Organic Carbon (TOC)	0.0				N/A	N/A			
Solids - Total Dissolved	784	mg/L			10	EPA 160.1	04/18/97	0850	BJ
Alkalinity as CaCO3	379	mg/L			1	EPA 310.1	04/22/97	1300	BJ
MAJOR ANIONS									
Bicarbonate (HCO3)	432	mg/L	7.08	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Carbonate (CO3)	15.0	mg/L	0.50	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Chloride	55.4	mg/L	1.56	meq/L	1	EPA 325.2	04/18/97	0826	TH
Sulfate	175	mg/L	3.65	meq/L	5	EPA 375.3	04/21/97	0750	TH
DISSOLVED METALS									
Calcium	3.40	mg/L	0.17	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Magnesium	0.64	mg/L	0.05	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Potassium	0.24	mg/L	0.01	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Sodium	291	mg/L	12.7	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
TOTAL METALS									
Chromium	<0.01	mg/L			0.01	EPA 200.7	04/26/97	0753	JW
Lead	<0.005	mg/L			0.005	EPA 239.2	04/23/97	1025	GB

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020. Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON

TOC

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/17/97
Sample ID:	SMW-4-41497	Date Analyzed:	04/30/97
Lab ID:	0397W00611	Date Sampled:	04/14/97
Matrix:	Water	Time Sampled:	1:45
Condition:	Cool / Intact	Date Received:	04/17/97

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	1.2	1.0

Concentration is the average of the replicates reported below

Replicate #1	1.2	1.0
Replicate #2	1.2	1.0
Replicate #3	1.2	1.0

ND - Analyte not detected at stated detection limit.

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd edition, final update II, Sept., 1994.

Comments:

Reported by: _____

Reviewed by: _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC HALIDES

TOX

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/04/97
Sample ID:	SMW-4-41497	Date Sampled:	04/14/97
Lab ID:	0397W00611	Time Sampled:	1:45
Matrix:	Water	Date Received:	04/17/97
Condition:	Cool / Intact		

Parameter	Concentration ug/L	Detection Limit ug/L
Total Organic Halides	<30	30
Concentration is the average of the replicates reported below		
Replicate #1	<30	30
Replicate #2	<30	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX). Test Methods for Evaluating Waste and Solid Wastes, SW-846 USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: _____

Reviewed by: _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client: **GIANT REFINING COMPANY**
Sample ID: SMW-5-41497
Project ID: Ciniza
Lab ID: B971912
Matrix: Water

Date Reported: 04/22/97
Date Sampled: 04/14/97
Date Received: 04/17/97
Date Extracted: NA
Date Analyzed: 04/21/97

Parameter	Result	PQL	Units
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	5.0	ug/L
Carbon Disulfide	ND	5.0	ug/L
Carbon Tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
m,p-Xylene	ND	5.0	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
Tetrachloroethene (PCE)	ND	5.0	ug/L
Toluene	ND	5.0	ug/L

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8240
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY	Date Reported:	04/22/97
Sample ID:	SMW-5-41497	Date Sampled:	04/14/97
Project ID:	Ciniza	Date Received:	04/17/97
Lab ID:	B971912	Date Extracted:	NA
Matrix:	Water	Date Analyzed:	04/21/97

Parameter	Result	PQL	Units
Continued			
trans-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Trichloroethene (TCE)	ND	5.0	ug/L
Vinyl Chloride	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	96	81 - 126
Bromofluorobenzene	98	78 - 112
Toluene-d8	100	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260A Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, Final Update II, United States Environmental Protection Agency, September 1994.

Analyst E.D.

Reviewed CCB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: Giant Refining Co.
Project: Annual GW Set 2
Sample ID: SMW-5-41497
Lab ID: 0397W00612
Matrix: Water
Condition: Cool/Intact

Date Received: 04/17/97
Date Reported: 06/17/97
Date Sampled: 04/14/97
Time Sampled: 1310

Parameter	Analytical Result	Units		Units	PQL	Method	Analysis Date	Time	Init.
GENERAL PARAMETERS									
pH	8.7	s.u.			0.1	EPA 150.1	04/22/97		BJ
Electrical Conductivity	1,157	µmhos/cm			10	EPA 120.1	04/17/97	1315	BJ
Total Organic Carbon (TOC)	0.0				N/A	N/A			
Solids - Total Dissolved	730	mg/L			10	EPA 160.1	04/18/97	0850	BJ
Alkalinity as CaCO3	300	mg/L			1	EPA 310.1	04/22/97	1300	BJ
MAJOR ANIONS									
Bicarbonate (HCO3)	366	mg/L	6.00	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Carbonate (CO3)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	04/22/97	1300	BJ
Chloride	55.8	mg/L	1.57	meq/L	1	EPA 325.2	04/18/97	0826	TH
Sulfate	162	mg/L	3.37	meq/L	5	EPA 375.3	04/21/97	0750	TH
DISSOLVED METALS									
Calcium	2.17	mg/L	0.11	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Magnesium	0.24	mg/L	0.02	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Potassium	0.27	mg/L	0.01	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
Sodium	273	mg/L	11.9	meq/L	0.2	EPA 200.7	04/17/97	1202	JW
TOTAL METALS									
Chromium	<0.01	mg/L			0.01	EPA 200.7	04/26/97	0753	JW
Lead	<0.005	mg/L			0.005	EPA 239.2	04/23/97	1025	GB

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes", United States Environmental Protection Agency, EPA 600/4-79-020, Revised March, 1983.

Reviewed By: GB

Gloria Bartlett, Asst. Lab Manager

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC HALIDES
TOX

Client:	**Giant Refining Co.**		
Project:	Annual GW Set 1	Date Reported:	06/04/97
Sample ID:	SMW-5-41497	Date Sampled:	04/14/97
Lab ID:	0397W00612	Time Sampled:	1:10
Matrix:	Water	Date Received:	04/17/97
Condition:	Cool / Intact		

Parameter	Concentration ug/L	Detection Limit ug/L
Total Organic Halides	<30	30
Concentration is the average of the replicates reported below		
Replicate #1	<30	30
Replicate #2	<30	30

ND - Analyte not detected at stated detection limit.

Reference: Method 9020B: TOTAL ORGANIC HALIDES (TOX). Test Methods for Evaluating Waste and Solid Wastes, SW-846 USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: SW

Reviewed by: OB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL ORGANIC CARBON

TOC

Client:	**Giant Refining Co.**		
Project:	Annual SW Set 1	Date Reported:	06/17/97
Sample ID:	SMW-5-41497	Date Analyzed:	4/30/97
Lab ID:	0397W00612	Date Sampled:	04/14/97
Matrix:	Water	Time Sampled:	1:10
Condition:	Cool / Intact	Date Received:	04/17/97

Parameter	Concentration mg/L	Detection Limit mg/L
Total Organic Carbon	<1.0	1.0

Concentration is the average of the replicates reported below

Replicate #1	<1.0	1.0
Replicate #2	<1.0	1.0
Replicate #3	<1.0	1.0

ND - Analyte not detected at stated detection limit.

Reference: Method 415.1: TOTAL ORGANIC CARBON (TOC). Test Methods for Evaluating Solid Waste, SW-846, USEPA, 3rd Edition, Final Update II, Sept., 1994.

Comments:

Reported by: _____

Reviewed by: _____