

GW - 32

REPORTS

YEAR(S):

1999 GW DATA

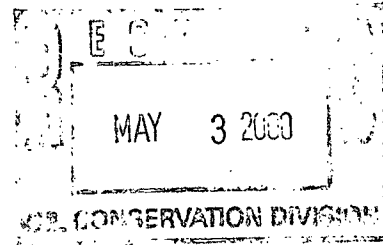


Route 3, Box 7
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87301

505-722-3833
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April 26, 2000

Mr. James Bearzi, Bureau Chief
NMED, Hazardous and Radioactive Materials Bureau
2044 Galisteo
Santa Fe, New Mexico 87505



**RE: 1999 Annual Groundwater Report
RCRA Part B Permit NMD 000333211-2**

Dear Mr. Bearzi:

Pursuant to the requirements of the above captioned permit, the Annual Groundwater Report for groundwater sampling performed in 1999 is enclosed. No unusual results were observed as a result of the 1999 sampling events.

If you require additional information or have any questions regarding this report, please contact me at (505) 722-0227.

Sincerely,

Dorinda Mancini
Environmental Manager, Ciniza Refinery

cc: Dave Pavlich, Environmental Supt., Refining Operations, Giant Industries, Inc.
Matthew R. Davis, General Manager, Giant Refining Company
Sarah Allen, Corporate Counsel, Giant Industries, Inc.

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-1
WELL LOCATION (LONGITUDE)	108° 25' 36"
WELL LOCATION (LATITUDE)	35° 29' 08"
NEW MEXICO STATE PLANE	(X) 320,903.76 (Y) 1,636,112.13
AQUIFER NAME	Sonsela
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	10/14/81
DRILLING METHOD	Cable
INNER CASING DIAMETER	5.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6745.80
ELEV. BOTTOM OF WELL CASING	6745.80
ELEV. BOTTOM OF SCREENED INT.	6750.80
ELEVATION OF SCREENED INTERVAL	6760.80
SURVEYED ELEVATION OF CASING TOP	6878.52

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-2
WELL LOCATION (LONGITUDE)	108° 26' 00"
WELL LOCATION (LATITUDE)	35° 29' 43"
NEW MEXICO STATE PLANE	(X) 321,035.23 (Y) 1,636,184.06
AQUIFER NAME	Sonsela
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	10/15/81
DRILLING METHOD	Cable
INNER CASING DIAMETER	5.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6741.90
ELEV. BOTTOM OF WELL CASING	6741.90
ELEV. BOTTOM OF SCREENED INT.	6747.90
ELEVATION OF SCREENED INTERVAL	6847.90
SURVEYED ELEVATION OF CASING TOP	6880.84

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-4
WELL LOCATION (LONGITUDE)	108° 26' 54"
WELL LOCATION (LATITUDE)	35° 29' 30"
NEW MEXICO STATE PLANE	(X) 321,602.07 (Y) 1,635,066.25
AQUIFER NAME	Sonsela
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	10/16/81
DRILLING METHOD	Cable
INNER CASING DIAMETER	5.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6761.60
ELEV. BOTTOM OF WELL CASING	6761.60
ELEV. BOTTOM OF SCREENED INT.	6761.60
ELEVATION OF SCREENED INTERVAL	6781.60
SURVEYED ELEVATION OF CASING TOP	6882.54

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-5
WELL LOCATION (LONGITUDE)	108° 25' 57"
WELL LOCATION (LATITUDE)	35° 29' 43"
NEW MEXICO STATE PLANE	(X) 321,233.03 (Y) 1,636,212.58
AQUIFER NAME	Sonsela
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	7/21/86
DRILLING METHOD	HLWAG & AIRRT
INNER CASING DIAMETER	5.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6746.80
ELEV. BOTTOM OF WELL CASING	6753.30
ELEV. BOTTOM OF SCREENED INT.	6758.30
ELEVATION OF SCREENED INTERVAL	6768.80
SURVEYED ELEVATION OF CASING TOP	6883.32

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	OW-11
WELL LOCATION (LONGITUDE)	108° 25' 36"
WELL LOCATION (LATITUDE)	35° 29' 08"
NEW MEXICO STATE PLANE	(X) 323,167.68 (Y) 1,632,185.21
AQUIFER NAME	Sonsela?
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	12/30/80
DRILLING METHOD	Cable
INNER CASING DIAMETER	4.0"
BOREHOLE DIAMETER	8.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6773.00
ELEV. BOTTOM OF WELL CASING	6773.00
ELEV. BOTTOM OF SCREENED INT.	6858.00
ELEVATION OF SCREENED INTERVAL	6880.00
SURVEYED ELEVATION OF CASING TOP	6923.89

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-3
WELL LOCATION (LONGITUDE)	108° 25' 56"
WELL LOCATION (LATITUDE)	35° 29' 40"
NEW MEXICO STATE PLANE	(X) 321,397.90 (Y) 1,635,648.75
AQUIFER NAME	Unnamed *
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	10/1/85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6836.15
ELEV. BOTTOM OF WELL CASING	6838.65
ELEV. BOTTOM OF SCREENED INT.	6841.65
ELEVATION OF SCREENED INTERVAL	6861.65
SURVEYED ELEVATION OF CASING TOP	6884.56

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-4
WELL LOCATION (LONGITUDE)	108° 26' 01"
WELL LOCATION (LATITUDE)	35° 29' 44"
NEW MEXICO STATE PLANE	(X) 321,397.90 (Y) 1,635,948.75
AQUIFER NAME	Unnamed *
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	9/25/85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6806.74
ELEV. BOTTOM OF WELL CASING	6807.84
ELEV. BOTTOM OF SCREENED INT.	6810.84
ELEVATION OF SCREENED INTERVAL	6830.84
SURVEYED ELEVATION OF CASING TOP	6880.08

MONITORING WELL IDENTIFICATION REPORT

Giant Refining Company - Ciniza Refinery

FACILITY NAME	Giant Refining Co. - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-5
WELL LOCATION (LONGITUDE)	108° 26' 03"
WELL LOCATION (LATITUDE)	35° 29' 41"
NEW MEXICO STATE PLANE	(X) 320,778.61 (Y) 1,636,054.28
AQUIFER NAME	Unnamed *
AQUIFER CONFINED xx	UNCONFINED
WELL INSTALLATION DATE	9/25/85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV. BOTTOM OF BOREHOLE	6800.68
ELEV. BOTTOM OF WELL CASING	6801.78
ELEV. BOTTOM OF SCREENED INT.	6804.78
ELEVATION OF SCREENED INTERVAL	6824.78
SURVEYED ELEVATION OF CASING TOP	6878.02

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	$(\text{Value} - X_m)^2$
1	8.74	0.0005
2	8.71	0.0001
3	8.69	0.0008
4	8.73	0.0002

$$\text{Mean } X_m = (\text{Sum of Sample Values}) / 4 = 8.72$$

$$\text{Variance } S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0005$$

$$t_m (\text{pH}) = 5.841$$

$$W_m = S_m^2 / n_m = 0.0001$$

$$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 2.13$$

$$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.98 \quad |t^*| < t_c : \text{Statistically significant change not likely.}$$

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	$(\text{Value} - X_m)^2$
1	1139	76.5625
2	1129	1.5625
3	1127	10.5625
4	1126	18.0625

$$\text{Mean } X_m = (\text{Sum of Sample Values}) / 4 = 1130$$

$$\text{Variance } S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 35.5833$$

$$t_m (\text{Specific Conduct.}) = 4.541$$

$$W_m = S_m^2 / n_m = 8.8958$$

$$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 14.49$$

$$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.77 \quad t^* > t_c : \text{Statistically significant change possible.}$$

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.
Groundwater Report - Spring 99.xls MW-1

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	$(\text{Value} - X_m)^2$
	1	8.50	0.0068
	2	8.56	0.0005
	3	8.62	0.0014
	4	8.65	0.0046

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 8.58$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0044$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0011$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 0.71$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.25$ $|t^*| < t_c$: 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	$(\text{Value} - X_m)^2$
	1	1170	25.0000
	2	1160	25.0000
	3	1166	1.0000
	4	1164	1.0000

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 1165$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 17.3333$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 4.3333$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 18.35$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.69$ $t^* > t_c$: Statistically significant change possible.

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	$(\text{Value} - X_m)^2$
	1	8.72	0.0002
	2	8.76	0.0006
	3	8.72	0.0002
	4	8.74	0.0000

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 8.74$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0004$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0001$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 2.31$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.98$ $|t^*| < t_c$: 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	$(\text{Value} - X_m)^2$
	1	1163	289.0000
	2	1142	16.0000
	3	1141	25.0000
	4	1138	64.0000

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 1146$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 131.3333$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 32.8333$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 14.45$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.11$ $t^* > t_c$: Statistically significant change possible.

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	$(\text{Value} - X_m)^2$
	1	8.85	0.0000
	2	8.80	0.0023
	3	8.87	0.0005
	4	8.87	0.0005

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 8.85$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0011$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0003$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 3.44$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.03$ $|t^*| > t_c$: 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	$(\text{Value} - X_m)^2$
	1	1190	52.5625
	2	1185	5.0625
	3	1180	7.5625
	4	1176	45.5625

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 1183$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 36.9167$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 9.2292$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 19.66$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.78$ $t^* > t_c$: Statistically significant change possible.

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	$(\text{Value} - X_m)^2$
1	8.30	0.0006
2	8.27	0.0000
3	8.26	0.0002
4	8.27	0.0000

$$\text{Mean } X_m = (\text{Sum of Sample Values}) / 4 = 8.28$$

$$\text{Variance } S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0003$$

$$t_m (\text{pH}) = 5.841$$

$$W_m = S_m^2 / n_m = 0.0001$$

$$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = -2.42$$

$$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.97 \quad |t^*| < t_c : \text{Statistically significant change not likely.}$$

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	$(\text{Value} - X_m)^2$
1	1172	42.2500
2	1182	12.2500
3	1180	2.2500
4	1180	2.2500

$$\text{Mean } X_m = (\text{Sum of Sample Values}) / 4 = 1179$$

$$\text{Variance } S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 19.6667$$

$$t_m (\text{Specific Conduct.}) = 4.541$$

$$W_m = S_m^2 / n_m = 4.9167$$

$$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 19.66$$

$$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.70 \quad t^* > t_c : \text{Statistically significant change possible.}$$

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.
Groundwater Report - Spring 99.xls MW-4

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	$(\text{Value} - X_m)^2$
	1	8.48	0.0000
	2	8.48	0.0000
	3	8.48	0.0000
	4	8.48	0.0000

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 8.48$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0000$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0000$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = -0.31$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.95$ $|t^*| < t_c$: 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	$(\text{Value} - X_m)^2$
	1	1235	264.0625
	2	1211	60.0625
	3	1217	3.0625
	4	1212	45.5625

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 1219$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 124.2500$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 31.0625$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 21.08$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.09$ $t^* > t_c$: Statistically significant change possible.

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	$(\text{Value} - X_m)^2$
	1	8.48	0.0023
	2	8.54	0.0002
	3	8.53	0.0000
	4	8.56	0.0011

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 8.53$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0012$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0003$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 0.18$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.03$ $|t^*| < t_c$: 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	$(\text{Value} - X_m)^2$
	1	1157	52.5625
	2	1176	138.0625
	3	1162	5.0625
	4	1162	5.0625

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 1164$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 66.9167$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 16.7292$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 17.21$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.90$ $t^* > t_c$: Statistically significant change possible.

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	$(\text{Value} - X_m)^2$
	1	8.80	0.0020
	2	8.85	0.0000
	3	8.86	0.0002
	4	8.87	0.0006

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 8.85$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0010$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0002$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 3.42$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.02$ $|t^*| > t_c$: 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	$(\text{Value} - X_m)^2$
	1	1190	5.0625
	2	1188	0.0625
	3	1182	33.0625
	4	1191	10.5625

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 1188$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 16.2500$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 4.0625$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 20.69$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.68$ $t^* > t_c$: Statistically significant change possible.

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

OW-11 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	$(\text{Value} - X_m)^2$
	1	7.80	0.0005
	2	7.80	0.0005
	3	7.84	0.0003
	4	7.85	0.0008

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 7.82$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0007$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0002$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = -7.04$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.00$ $|t^*| > t_c$: 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	$(\text{Value} - X_m)^2$
	1	2640	6.2500
	2	2670	756.2500
	3	2620	506.2500
	4	2640	6.2500

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 2643$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 425.0000$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 106.2500$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 117.51$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 3.64$ $t^* > t_c$: Statistically significant change possible.

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

OW-11 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	$(\text{Value} - X_m)^2$
	1	8.09	0.0009
	2	8.05	0.0001
	3	8.05	0.0001
	4	8.05	0.0001

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 8.06$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 0.0004$

$t_m (\text{pH}) = 5.841$

$W_m = S_m^2 / n_m = 0.0001$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = -4.62$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.98$ $|t^*| > t_c$: 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	$(\text{Value} - X_m)^2$
	1	2760	100.0000
	2	2750	0.0000
	3	2750	0.0000
	4	2740	100.0000

Mean $X_m = (\text{Sum of Sample Values}) / 4 = 2750$ Variance $S_m^2 = [\text{Sum of } (\text{Value} - X_m)^2] / 3 = 66.6667$

$t_m (\text{Specific Conduct.}) = 4.541$

$W_m = S_m^2 / n_m = 16.6667$

$t^* = (X_m - X_b) / (W_m + W_b)^{1/2} = 168.69$

$t_c = [(W_b \times t_b) + (W_m \times t_m)] / (W_b + W_m) = 2.90$ $t^* > t_c$: Statistically significant change possible.

Tolerance Interval

SMW-3 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	7.23	7.77	0.23	7.31 - 8.23	(Does exceed tolerance limit.)
Spring 99 sampling period	7.27	8.00	0.24	7.51 - 8.49	(Does exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	2928	3158	318	2522 - 3794	(Does not exceed tolerance limit.)
Spring 99 sampling period	2963	3150	314	2522 - 3778	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	0.010	0.051	0.144	0.000 - 0.340	(Does not exceed tolerance limit.)
Spring 99 sampling period	0.005	0.049	0.142	0.000 - 0.333	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	0.003	0.022	0.075	0.000 - 0.172	(Does not exceed tolerance limit.)
Spring 99 sampling period	0.003	0.021	0.073	0.000 - 0.168	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean $\pm$ 2 Standard Deviations)

Tolerance Interval

SMW-3 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	7.27	7.75	0.24	7.26 - 8.24	(Does not exceed tolerance limit.)
Fall 99 sampling period	7.15	8.00	0.27	7.47 - 8.53	(Does exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	2963	3150	314	2522 - 3778	(Does not exceed tolerance limit.)
Fall 99 sampling period	3018	3146	309	2528 - 3763	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	0.005	0.049	0.142	0.000 - 0.333	(Does not exceed tolerance limit.)
Fall 99 sampling period	0.008	0.048	0.139	0.000 - 0.326	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	0.003	0.021	0.073	0.000 - 0.168	(Does not exceed tolerance limit.)
Fall 99 sampling period	0.003	0.021	0.072	0.000 - 0.165	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean $\pm$ 2 Standard Deviations)

Tolerance Interval

SMW-4 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	7.91	8.33	0.20	7.92 - 8.74	(Does exceed tolerance limit.)
Spring 99 sampling period	8.41	8.33	0.20	7.93 - 8.73	(Does not exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	1213	1292	164	964 - 1620	(Does not exceed tolerance limit.)
Spring 99 sampling period	1278	1291	161	969 - 1614	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 98 sampling period	0.005	0.010	0.013	0.000 - 0.037	(Does not exceed tolerance limit.)
Fall 98 sampling period	0.005	0.010	0.013	0.000 - 0.036	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 98 sampling period	0.003	0.007	0.020	0.000 - 0.047	(Does not exceed tolerance limit.)
Fall 98 sampling period	0.003	0.007	0.020	0.000 - 0.046	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean $\pm$ 2 Standard Deviations)

Tolerance Interval

SMW-4 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	8.41	8.33	0.20	7.93 - 8.73	(Does not exceed tolerance limit.)
Fall 99 sampling period	8.25	8.33	0.20	7.93 - 8.73	(Does not exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	1278	1291	161	969 - 1614	(Does not exceed tolerance limit.)
Fall 99 sampling period	1279	1291	158	974 - 1608	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	0.005	0.010	0.013	0.000 - 0.036	(Does not exceed tolerance limit.)
Fall 99 sampling period	0.005	0.010	0.013	0.000 - 0.035	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	0.003	0.007	0.020	0.000 - 0.046	(Does not exceed tolerance limit.)
Fall 99 sampling period	0.003	0.007	0.019	0.000 - 0.045	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean $\pm$ 2 Standard Deviations)

Tolerance Interval

SMW-5 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	8.10	8.54	0.27	8.00 - 9.08	(Does not exceed tolerance limit.)
Spring 99 sampling period	8.53	8.54	0.27	8.01 - 9.08	(Does not exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	1136	1141	69	1003 - 1279	(Does not exceed tolerance limit.)
Spring 99 sampling period	1211	1143	69	1005 - 1281	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	0.015	0.021	0.029	0.000 - 0.080	(Does not exceed tolerance limit.)
Spring 99 sampling period	0.005	0.021	0.029	0.000 - 0.079	(Does not exceed tolerance limit.)

Lead

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Fall 98 sampling period	0.003	0.012	0.045	0.000 - 0.102	(Does not exceed tolerance limit.)
Spring 99 sampling period	0.003	0.012	0.044	0.000 - 0.100	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean $\pm$ 2 Standard Deviations)

Tolerance Interval

SMW-5 Giant Refining - Ciniza

pH

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	8.53	8.54	0.27	8.01 - 9.08	(Does not exceed tolerance limit.)
Fall 99 sampling period	8.51	8.54	0.26	8.02 - 9.07	(Does not exceed tolerance limit.)

Specific Conductivity

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	1211	1143	69	1005 - 1281	(Does not exceed tolerance limit.)
Fall 99 sampling period	1210	1145	69	1008 - 1283	(Does not exceed tolerance limit.)

Chromium

	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	0.005	0.021	0.029	0.000 - 0.079	(Does not exceed tolerance limit.)
Fall 99 sampling period	0.110	0.024	0.033	0.000 - 0.089	(Does exceed tolerance limit.)

Lead

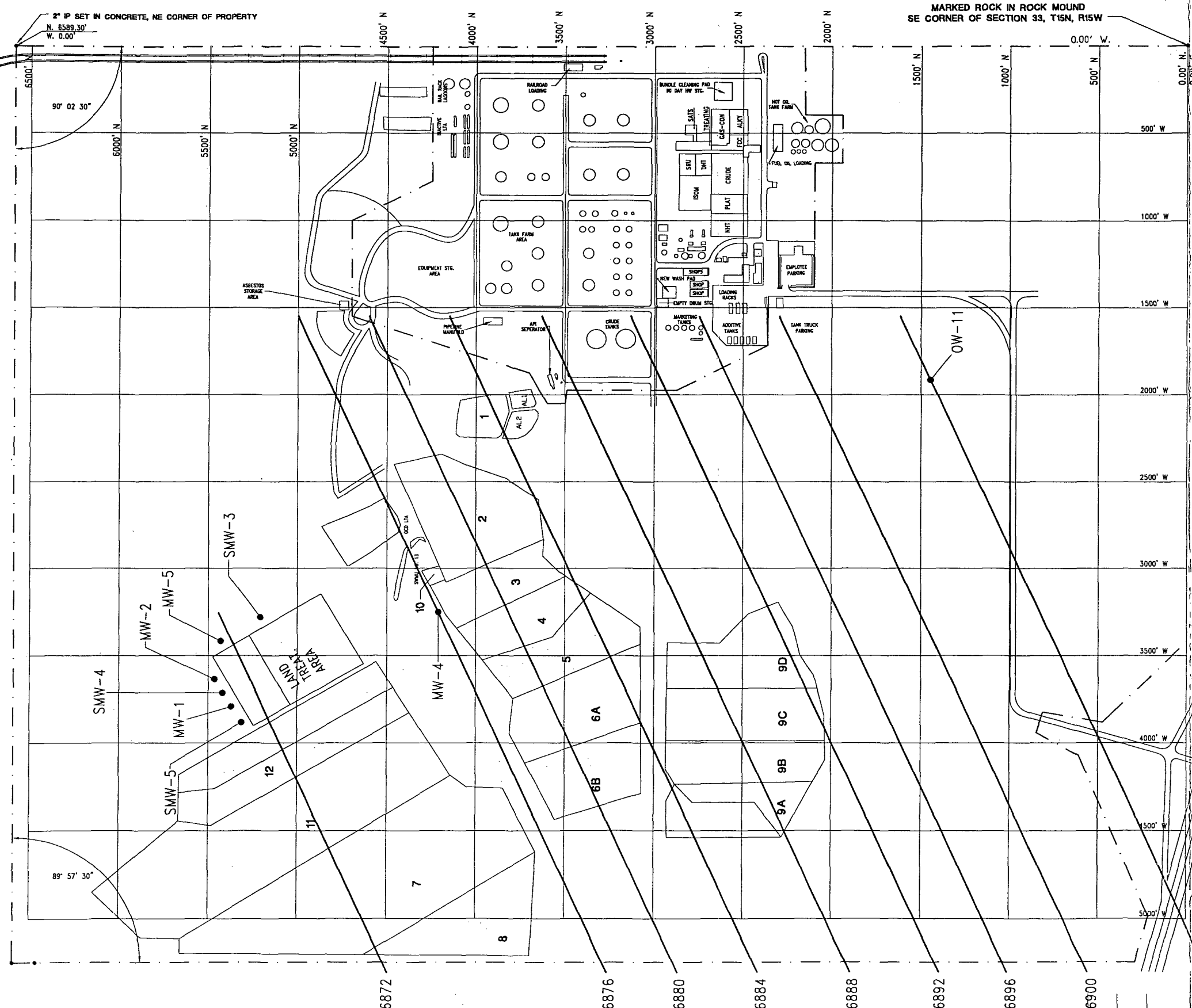
	Current Value	Historic Mean	Historic Standard Deviation	Tolerance Interval	
Spring 99 sampling period	0.003	0.012	0.044	0.000 - 0.100	(Does not exceed tolerance limit.)
Fall 99 sampling period	0.003	0.011	0.044	0.000 - 0.099	(Does not exceed tolerance limit.)

Tolerance Interval = (Mean $\pm$ 2 Standard Deviations)

GROUNDWATER ELEVATION MEASUREMENTS

Giant Refining Company - Ciniza

<u>Well No.</u>	<u>Date</u>	<u>Casing Elevation</u>	<u>Depth to Water</u>	<u>Groundwater Elevation</u>
MW-1	Spring 99	6878.52	5.65	6872.87
	Fall 99		5.45	6873.07
MW-2	Spring 99	6880.84	11.2	6869.64
	Fall 99		7.85	6872.99
MW-4	Spring 99	6882.54	6.4	6876.14
	Fall 99		6.3	6876.24
MW-5	Spring 99	6883.32	12.5	6870.82
	Fall 99		11.9	6871.42
OW-11	Spring 99	6923.89	19.4	6904.49
	Fall 99		19.65	6904.24
SMW-3	Spring 99	6884.56	30.5	6854.06
	Fall 99		30.1	6854.46
SMW-4	Spring 99	6880.08	30.1	6849.98
	Fall 99		30	6850.08
SMW-5	Spring 99	6878.02	30	6848.02
	Fall 99		30.5	6847.52



1999 GROUNDWATER ELEVATION CONTOUR MAP	
MW-1	6873.07
MW-2	6872.99
MW-4	6876.24
MW-5	6871.42
OW-11	6904.24

CINIZA REFINERY		GALLUP NEW MEXICO	
		REFINING CO.	
		A DIVISION OF GIANT INDUSTRIES	
MASTER PLOT PLAN GROUNDWATER ELEVATION CONTOUR MAP			
SCALE	N.T.S.	APRV'D.	
DATE	03-22-99	APRV'D.	
DRN.	SLM		
CHK'D.	LDVG. NOKW. ELEV. CTR. MAP		REV. 0

MARK	DATE	DESCRIPTION	BY	APRV'D.	REV.

GROUNDWATER VELOCITY

Sonsela Aquifer

The groundwater velocity in the Sonsela Aquifer under the Land Treatment Unit (LTU) at Giant's Ciniza Refinery can be estimated using the formula $V = (K \times I) \div n$, where

V = groundwater velocity in ft/day

K = horizontal hydraulic conductivity = 0.35 ft/day under the LTU

I = potentiometric gradient in the vicinity of the LTU = 0.0039

n = soil porosity = 10%

Note: "I" was calculated by using the average groundwater elevation differential between wells MW-2 and MW-4 for the reporting year and dividing that differential by the distance between the two wells (1,252').

$$V = (K \times I) \div n = .014 \text{ ft/day} = 4.95 \text{ ft/yr}$$

GROUNDWATER VELOCITY

Sonsela Aquifer

The groundwater velocity in the Sonsela Aquifer under the Land Treatment Unit (LTU) at Giant's Ciniza Refinery can be estimated using the formula $V = (K \times I) \div n$, where

V = groundwater velocity in ft/day

K = horizontal hydraulic conductivity = 0.35 ft/day under the LTU

I = potentiometric gradient in the vicinity of the LTU = 0.0039

n = soil porosity = 10%

Note: "I" was calculated by using the average groundwater elevation differential between wells MW-2 and MW-4 for the reporting year and dividing that differential by the distance between the two wells (1,252').

$$V = (K \times I) \div n = .014 \text{ ft/day} = 4.95 \text{ ft/yr}$$

TABULATED ANALYTICAL RESULTS

MW-1 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Chromium	0.021	ND	<0.01	<0.01	ND	ND	mg/L	0.01
Lead	<0.005	<0.005	<0.005	<0.005	ND	ND	mg/L	0.005
Mercury			<0.001	<0.001	ND	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-1 Giant Refining - Ciniza

Dissolved Metals

Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Arsenic	<0.005	ND	ND	mg/L	0.10
Barium	<0.01	ND	0.0093	mg/L	1.00
Cadmium	<0.001	ND	ND	mg/L	0.01
Calcium	1.7	ND	1.7	mg/L	---
Magnesium	<0.2	ND	0.2	mg/L	---
Manganese	<0.005	ND	ND	mg/L	---
Potassium	0.5	ND	0.83	mg/L	---
Selenium	<0.005	ND	ND	mg/L	0.01
Silver	<0.01	ND	ND	mg/L	0.05
Sodium	259	79.2	360	mg/L	---

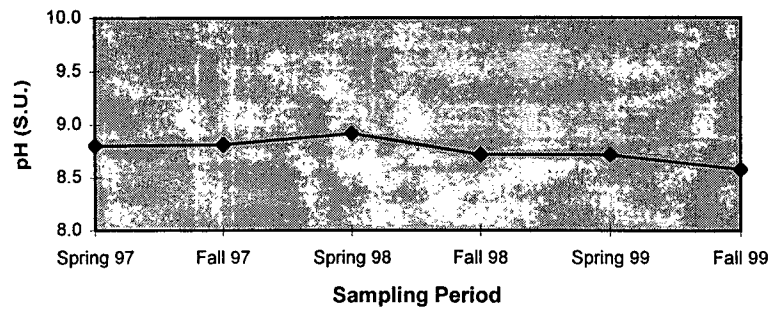
General Chemistry / Other

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	339		318		300		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	62		21		40		mg/L	5
Chloride	50		49		10		mg/L	3
pH (1st reading)	8.80	8.70	8.86	8.74	8.74	8.50	s.u.	---
pH (2nd reading)	8.80	8.83	8.94	8.73	8.71	8.56	s.u.	---
pH (3rd reading)	8.80	8.85	8.94	8.71	8.69	8.62	s.u.	---
pH (4th reading)	8.80	8.87	8.92	8.69	8.73	8.65	s.u.	---
pH Average	8.80	8.81	8.92	8.72	8.72	8.58	s.u.	---
Phenols	ND		0.005		ND		mg/L	0.05
Sulfate	170		177		130		mg/L	5
Spec. Conduct. @ 25° C	1140	1111	1092	1110	1139	1170	µmhos/cm	1
Spec. Conduct. @ 25° C	1140	1112	1098	1106	1129	1160	µmhos/cm	1
Spec. Conduct. @ 25° C	1140	1107	1090	1104	1127	1166	µmhos/cm	1
Spec. Conduct. @ 25° C	1140	1106	1097	1106	1126	1164	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1140	1109	1094	1107	1130	1165	µmhos/cm	1
Total Organic Carbon	<1.0	1	1	ND	ND	ND	mg/L	1
Total Organic Carbon	<1.0	1		ND	ND	ND	mg/L	1
Total Organic Carbon	<1.0	1		ND	ND	ND	mg/L	1
Total Organic Carbon	<1.0	1				ND	mg/L	1
Total Org. Halides as Cl	<30	10	<30	ND	ND	30	ug/L	30
Total Org. Halides as Cl		10		ND	10		ug/L	30
Total Org. Halides as Cl		10			ND		ug/L	30
Total Org. Halides as Cl					10		ug/L	30
Total Dissolved Solids	704		664		670		mg/L	10
Water Elevation	6872.50	6871.60	6872.56	6872.87	6872.87	6873.07	ft	---

MW-1 Giant Refining - Ciniza

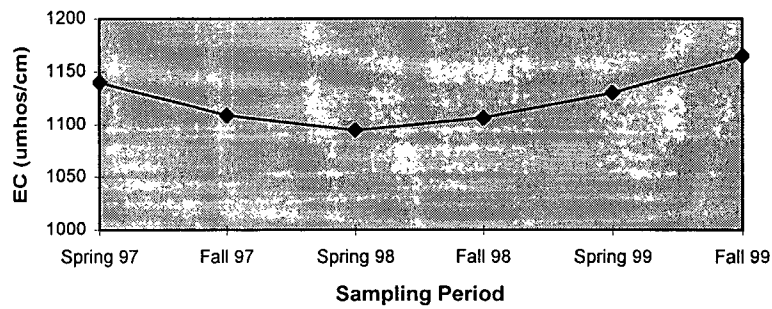
Spring 97	8.80
Fall 97	8.81
Spring 98	8.92
Fall 98	8.72
Spring 99	8.72
Fall 99	8.58

Average pH Values



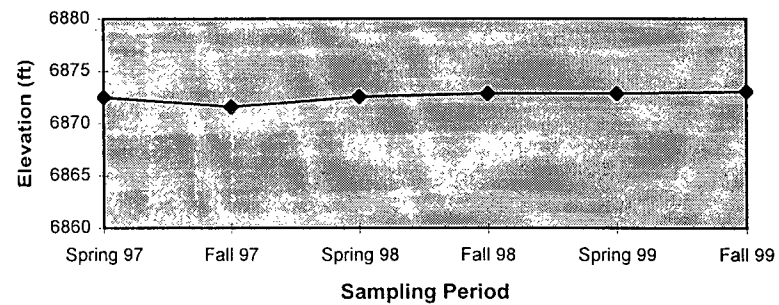
Spring 97	1140
Fall 97	1109
Spring 98	1094
Fall 98	1107
Spring 99	1130
Fall 99	1165

Conductivity



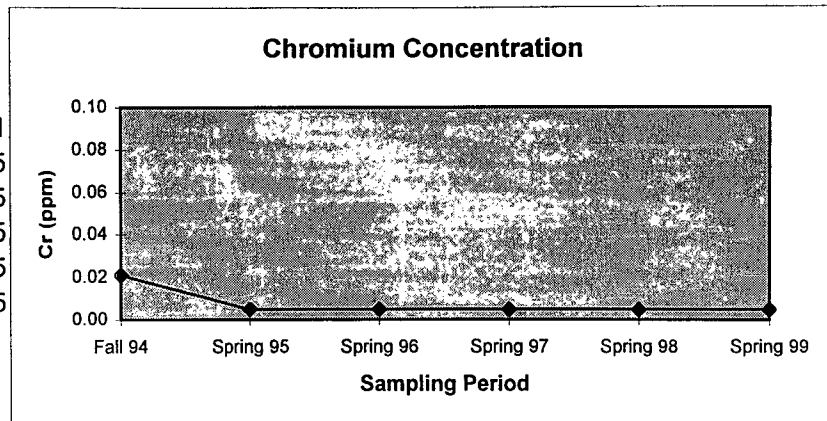
Spring 97	6872.50
Fall 97	6871.60
Spring 98	6872.56
Fall 98	6872.87
Spring 99	6872.87
Fall 99	6873.07

Water Elevations

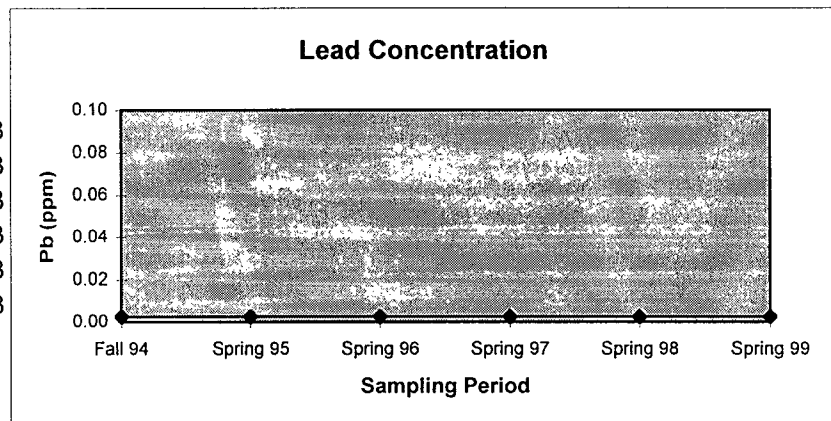


MW-1 Giant Refining - Ciniza

Fall 94	0.021
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005
Spring 98	0.005
Spring 99	0.005



Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003
Spring 98	0.003
Spring 99	0.003



TABULATED ANALYTICAL RESULTS

MW-2 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Chromium	ND	ND	<0.01	<0.01	ND	ND	mg/L	0.01
Lead	ND	ND	<0.005	<0.005	ND	ND	mg/L	0.005
Mercury		ND	<0.001	<0.001	ND	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-2 Giant Refining - Ciniza

Dissolved Metals

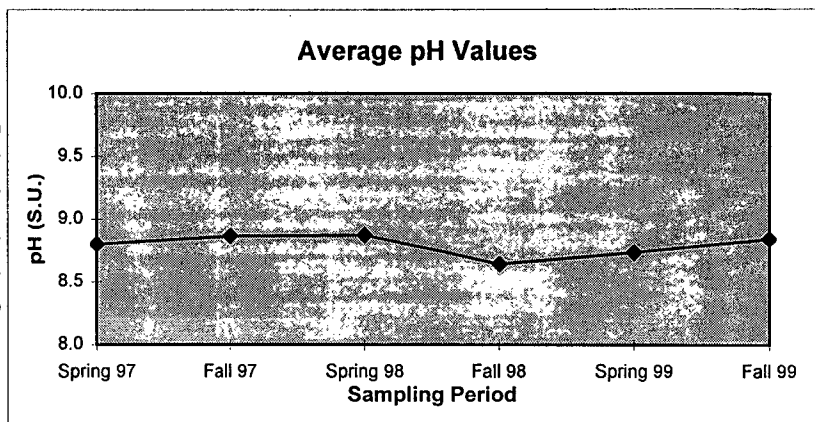
Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Arsenic	<0.005	ND	ND	mg/L	0.10
Barium	0.01	ND	0.018	mg/L	1.00
Cadmium	<0.001	ND	ND	mg/L	0.01
Calcium	1.6	ND	1.7	mg/L	---
Magnesium	<0.2	ND	0.2	mg/L	---
Manganese	<0.005	ND	ND	mg/L	---
Potassium	0.5	ND	0.9	mg/L	---
Selenium	<0.005	ND	ND	mg/L	0.01
Silver	<0.01	ND	ND	mg/L	0.05
Sodium	252	159	360	mg/L	---

General Chemistry / Other

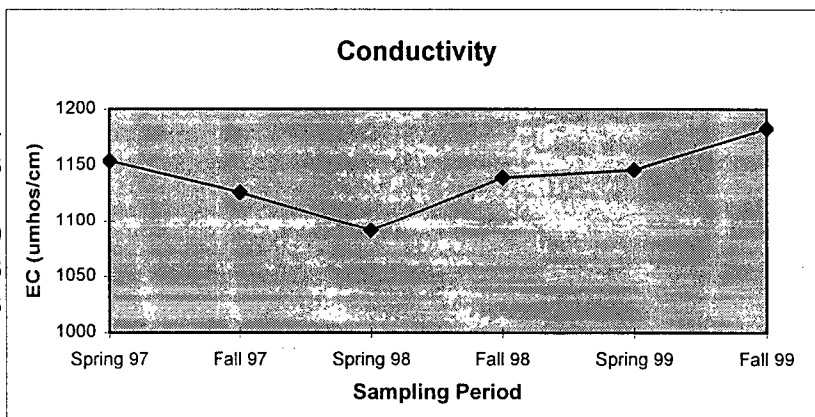
Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	356		309		310		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	21		22		40		mg/L	5
Chloride	57		56		42		mg/L	3
pH (1st reading)	8.80	8.87	8.86	8.67	8.72	8.85	s.u.	---
pH (2nd reading)	8.80	8.92	8.89	8.68	8.76	8.80	s.u.	---
pH (3rd reading)	8.80	8.86	8.85	8.65	8.72	8.87	s.u.	---
pH (4th reading)	8.80	8.81	8.89	8.57	8.74	8.87	s.u.	---
pH Average	8.80	8.87	8.87	8.64	8.74	8.85	s.u.	---
Phenols	ND		0.015		ND		mg/L	0.05
Sulfate	178		186		160		mg/L	5
Spec. Conduct. @ 25° C	1154	1110	1090	1154	1163	1190	µmhos/cm	1
Spec. Conduct. @ 25° C	1154	1127	1090	1133	1142	1185	µmhos/cm	1
Spec. Conduct. @ 25° C	1154	1132	1094	1137	1141	1180	µmhos/cm	1
Spec. Conduct. @ 25° C	1154	1135	1091	1133	1138	1176	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1154	1126	1091	1139	1146	1183	µmhos/cm	1
Total Organic Carbon	<1.0	2	2.31	ND	ND	ND	mg/L	1
Total Organic Carbon	<1.0	2		ND	ND	ND	mg/L	1
Total Organic Carbon	<1.0	2			ND	ND	mg/L	1
Total Organic Carbon	<1.0	2				ND	mg/L	1
Total Org. Halides as Cl	<30	10	10	10	10	11	ug/L	30
Total Org. Halides as Cl		10		10	10		ug/L	30
Total Org. Halides as Cl		10			ND		ug/L	30
Total Org. Halides as Cl					10		ug/L	30
Total Dissolved Solids	718		673		660		mg/L	10
Water Elevation	6871.30	6871.51	6870.80	6872.94	6869.64	6872.99	ft	---

MW-2 Giant Refining - Ciniza

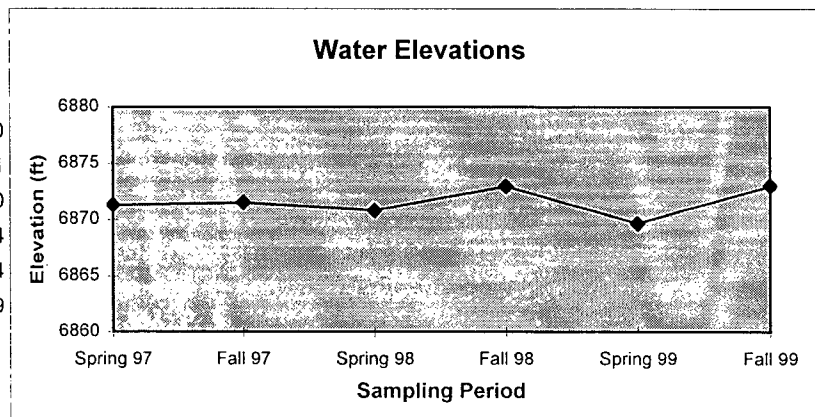
Spring 97	8.80
Fall 97	8.87
Spring 98	8.87
Fall 98	8.64
Spring 99	8.74
Fall 99	8.85



Spring 97	1154
Fall 97	1126
Spring 98	1091
Fall 98	1139
Spring 99	1146
Fall 99	1183

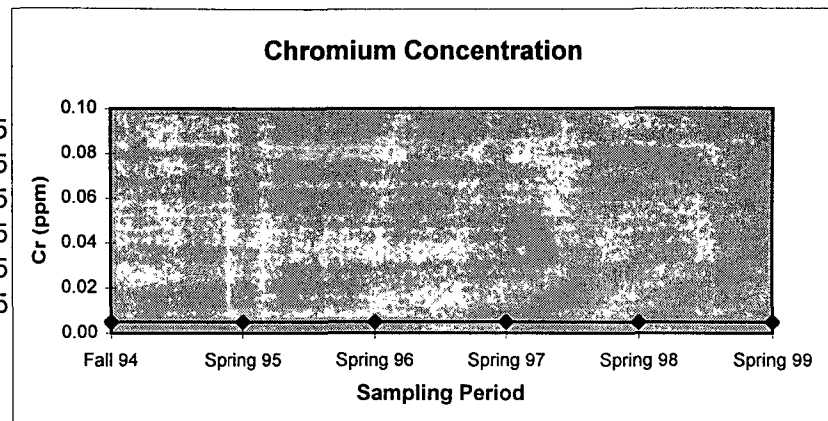


Spring 97	6871.30
Fall 97	6871.51
Spring 98	6870.80
Fall 98	6872.94
Spring 99	6869.64
Fall 99	6872.99

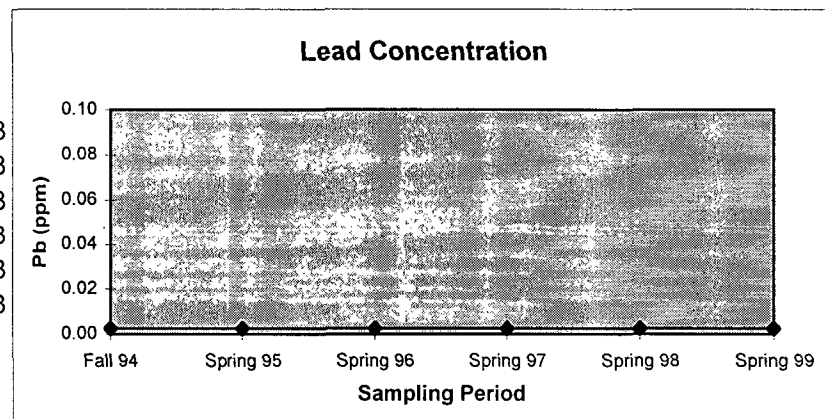


MW-2 Giant Refining - Ciniza

Fall 94	0.005
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005
Spring 98	0.005
Spring 99	0.005



Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003
Spring 98	0.003
Spring 99	0.003



TABULATED ANALYTICAL RESULTS

MW-4 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Chromium	0.013	ND	<0.01	<0.01	ND	ND	mg/L	0.01
Lead	ND	ND	<0.005	<0.005	ND	ND	mg/L	0.005
Mercury			<0.001	<0.001	ND	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-4 Giant Refining - Ciniza

Dissolved Metals

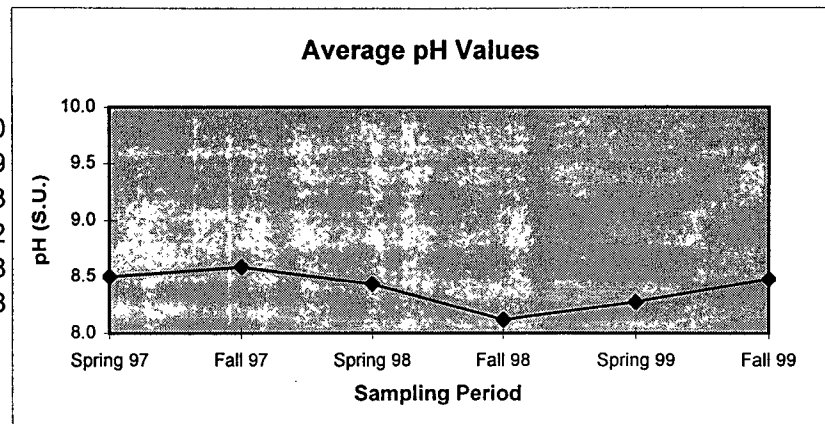
Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Arsenic	<0.005	ND	ND	mg/L	0.10
Barium	0.02	ND	0.018	mg/L	1.00
Cadmium	<0.001	ND	ND	mg/L	0.01
Calcium	1.7	ND	1.9	mg/L	---
Magnesium	<0.2	ND	0.2	mg/L	---
Manganese	<.005	ND	ND	mg/L	---
Potassium	0.53	ND	1	mg/L	---
Selenium	<0.005	ND	ND	mg/L	0.01
Silver	<0.01	ND	ND	mg/L	0.05
Sodium	276	146	390	mg/L	---

General Chemistry / Other

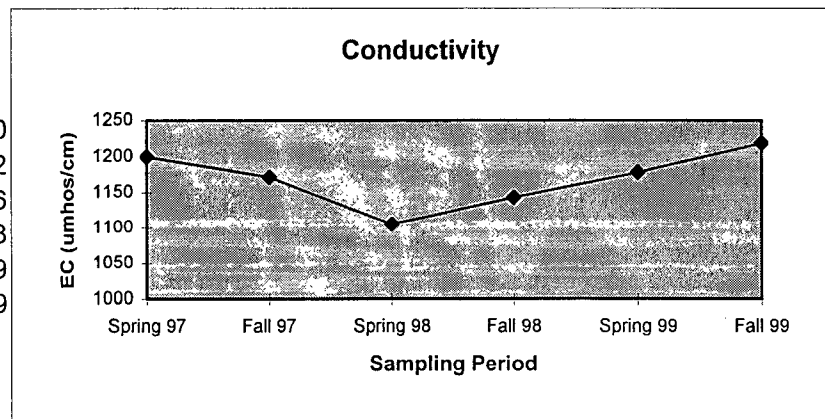
Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	505		433		360		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	14		16		80		mg/L	5
Chloride	18		18		9		mg/L	3
pH (1st reading)	8.50	8.70	8.41	8.08	8.30	8.48	s.u.	---
pH (2nd reading)	8.50	8.57	8.45	8.14	8.27	8.48	s.u.	---
pH (3rd reading)	8.50	8.54	8.43	8.12	8.26	8.48	s.u.	---
pH (4th reading)	8.50	8.53	8.44	8.14	8.27	8.48	s.u.	---
pH Average	8.50	8.59	8.43	8.12	8.28	8.48	s.u.	---
Phenols	ND		0.014		ND		mg/L	0.05
Sulfate	161		169		170		mg/L	5
Spec. Conduct. @ 25° C	1200	1171	1080	1124	1172	1235	µmhos/cm	1
Spec. Conduct. @ 25° C	1200	1172	1115	1149	1182	1211	µmhos/cm	1
Spec. Conduct. @ 25° C	1200	1174	1100	1151	1180	1217	µmhos/cm	1
Spec. Conduct. @ 25° C	1200	1172	1127	1149	1180	1212	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1200	1172	1106	1143	1179	1219	µmhos/cm	1
Total Organic Carbon	1	1	2.95	ND	ND	ND	mg/L	1
Total Organic Carbon	1.1	1		ND	1	ND	mg/L	1
Total Organic Carbon	1	1			ND	ND	mg/L	1
Total Organic Carbon	1	1				ND	mg/L	1
Total Org. Halides as Cl	ND	ND	ND	ND	ND	ND	ug/L	30
Total Org. Halides as Cl				ND	ND	47	ug/L	30
Total Org. Halides as Cl					ND	31	ug/L	30
Total Org. Halides as Cl					ND		ug/L	30
Total Dissolved Solids	758		700		740		mg/L	10
Water Elevation	6876.00	6874.79	6875.88	6876.14	6876.14	6876.24	ft	---

MW-4 Giant Refining - Ciniza

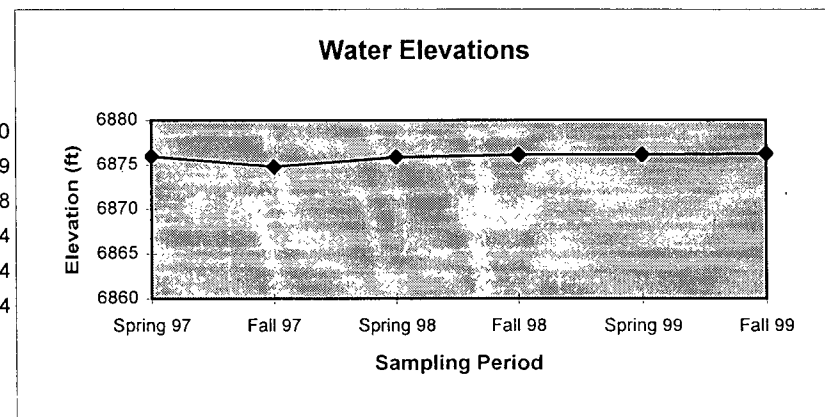
Spring 97	8.50
Fall 97	8.59
Spring 98	8.43
Fall 98	8.12
Spring 99	8.28
Fall 99	8.48



Spring 97	1200
Fall 97	1172
Spring 98	1106
Fall 98	1143
Spring 99	1179
Fall 99	1219

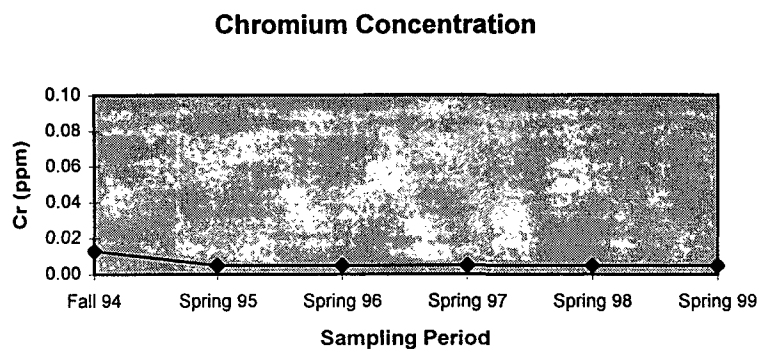


Spring 97	6876.00
Fall 97	6874.79
Spring 98	6875.88
Fall 98	6876.14
Spring 99	6876.14
Fall 99	6876.24

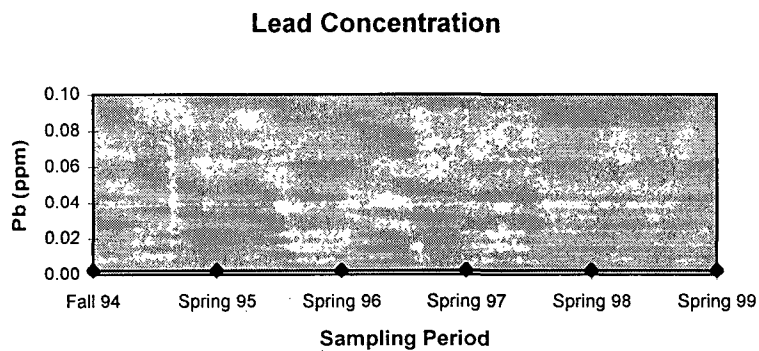


MW-4 Giant Refining - Ciniza

Fall 94	0.013
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005
Spring 98	0.005
Spring 99	0.005



Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003
Spring 98	0.003
Spring 99	0.003



TABULATED ANALYTICAL RESULTS

MW-5 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Chromium	ND	ND	<0.01	<.01	ND	ND	mg/L	0.01
Lead	ND	ND	<0.005	<.005	ND	ND	mg/L	0.005
Mercury		ND	<0.001	<.001	ND	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-5 Giant Refining - Ciniza

Dissolved Metals

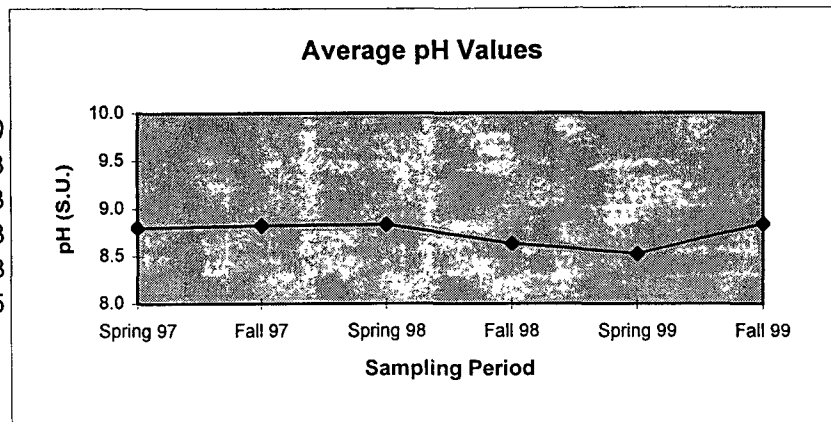
Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Arsenic	<.005	ND	ND	mg/L	0.10
Barium	0.01	ND	0.016	mg/L	1.00
Cadmium	<0.001	ND	ND	mg/L	0.01
Calcium	1.5	ND	1.6	mg/L	---
Magnesium	<0.2	ND	0.2	mg/L	---
Manganese	<.005	ND	ND	mg/L	---
Potassium	0.54	ND	0.89	mg/L	---
Selenium	<.005	ND	ND	mg/L	0.01
Silver	<.01	ND	ND	mg/L	0.05
Sodium	260	149	360	mg/L	---

General Chemistry / Other

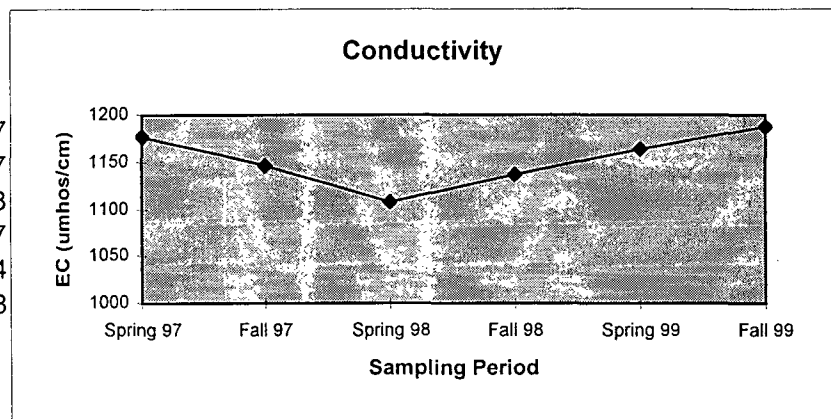
Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	349		299		300		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	14		21		30		mg/L	5
Chloride	62		61		66		mg/L	3
pH (1st reading)	8.80	8.89	8.81	8.60	8.48	8.80	s.u.	---
pH (2nd reading)	8.80	8.81	8.85	8.65	8.54	8.85	s.u.	---
pH (3rd reading)	8.80	8.80	8.82	8.64	8.53	8.86	s.u.	---
pH (4th reading)	8.80	8.80	8.85	8.64	8.56	8.87	s.u.	---
pH Average	8.80	8.83	8.83	8.63	8.53	8.85	s.u.	---
Phenols	ND		0.013		ND		mg/L	0.05
Sulfate	181		189		130		mg/L	5
Spec. Conduct. @ 25° C	1177	1145	1120	1140	1157	1190	µmhos/cm	1
Spec. Conduct. @ 25° C	1177	1148	1114	1136	1176	1188	µmhos/cm	1
Spec. Conduct. @ 25° C	1177	1147	1100	1134	1162	1182	µmhos/cm	1
Spec. Conduct. @ 25° C	1177	1148	1099	1139	1162	1191	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1177	1147	1108.25	1137.25	1164.25	1187.75	µmhos/cm	1
Total Organic Carbon	<1.0	2	2	2	ND	ND	mg/L	1
Total Organic Carbon	<1.0	2		2	ND	ND	mg/L	1
Total Organic Carbon	<1.0	2			ND	ND	mg/L	1
Total Organic Carbon	<1.0	2				ND	mg/L	1
Total Org. Halides as Cl	<30	10	ND	10	ND	17	ug/L	30
Total Org. Halides as Cl		10		10	ND	23	ug/L	30
Total Org. Halides as Cl		10			ND	38	ug/L	30
Total Org. Halides as Cl					ND		ug/L	30
Total Dissolved Solids	730		682		690		mg/L	10
Water Elevation	6871.10	6871.99	6871.16	6873.22	6870.82	6871.42	ft	---

MW-5 Giant Refining - Ciniza

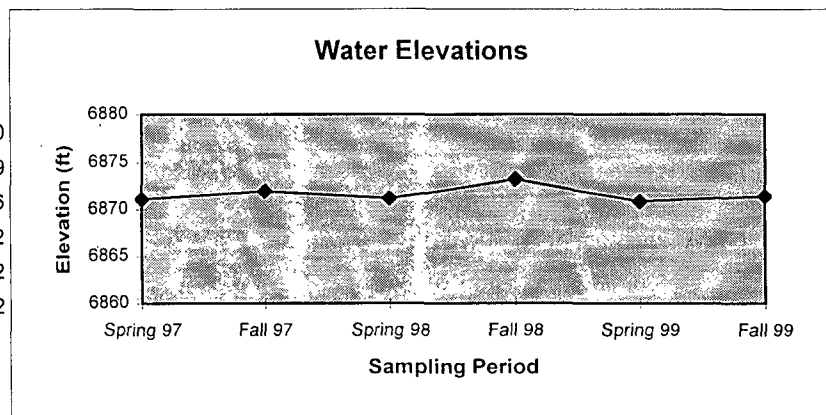
Spring 97	8.80
Fall 97	8.83
Spring 98	8.83
Fall 98	8.63
Spring 99	8.53
Fall 99	8.85



Spring 97	1177
Fall 97	1147
Spring 98	1108
Fall 98	1137
Spring 99	1164
Fall 99	1188

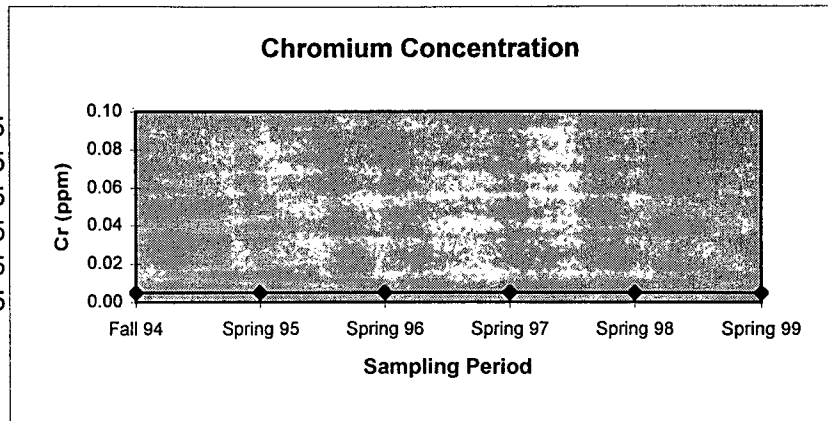


Spring 97	6871.10
Fall 97	6871.99
Spring 98	6871.16
Fall 98	6873.22
Spring 99	6870.82
Fall 99	6871.42

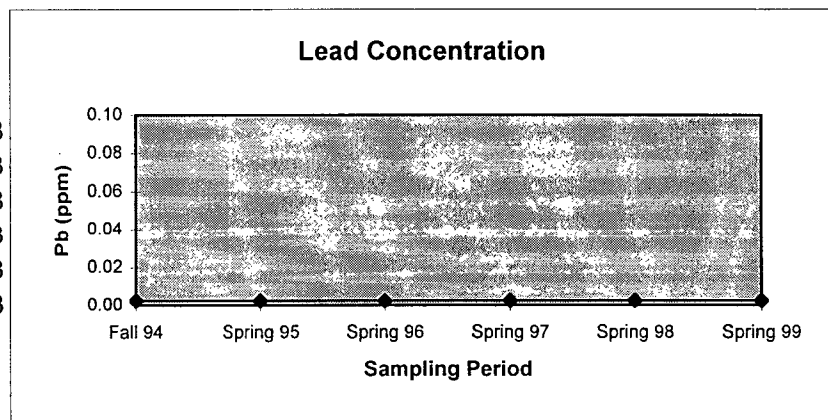


MW-5 Giant Refining - Ciniza

Fall 94	0.005
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005
Spring 98	0.005
Spring 99	0.005



Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003
Spring 98	0.003
Spring 99	0.003



TABULATED ANALYTICAL RESULTS

OW-11 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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 94 Result	Spring 95 Result	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Chromium	ND	ND	<0.01	<.01	ND	ND	mg/L	0.01
Lead	ND	ND	<0.005	<.005	ND	ND	mg/L	0.005
Mercury		ND	<0.001	<.001	ND	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

OW-11 Giant Refining - Ciniza

Dissolved Metals

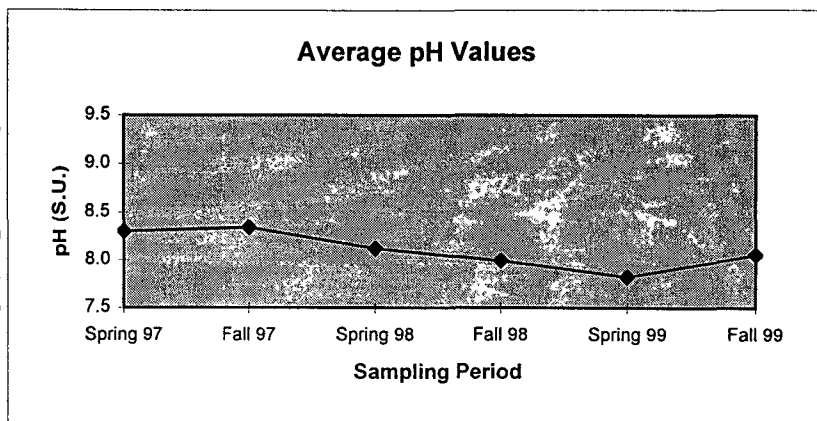
Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Arsenic	<0.005	ND	ND	mg/L	0.10
Barium	0.01	ND	0.014	mg/L	1.00
Cadmium	<.001	ND	ND	mg/L	0.01
Calcium	11.2	9.1	11.0	mg/L	---
Magnesium	1.2	ND	1.3	mg/L	---
Manganese	0.01	0.018	0.014	mg/L	---
Potassium	2.1	ND	3.1	mg/L	---
Selenium	<.005	0.0084	ND	mg/L	0.01
Silver	<.01	ND	ND	mg/L	0.05
Sodium	618	194	790	mg/L	---

General Chemistry / Other

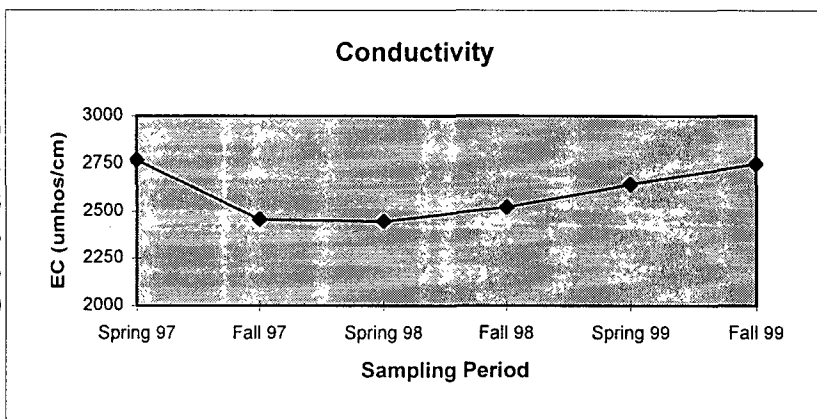
Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	334		282		300		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	ND		5		5		mg/L	5
Chloride	88		85		72		mg/L	3
pH (1st reading)	8.30	8.38	8.15	8.03	7.80	8.09	s.u.	---
pH (2nd reading)	8.30	8.27	8.12	7.99	7.80	8.05	s.u.	---
pH (3rd reading)	8.30	8.36	8.11	7.95	7.84	8.05	s.u.	---
pH (4th reading)	8.30	8.36	8.10	8.00	7.85	8.05	s.u.	---
pH Average	8.30	8.34	8.12	7.99	7.82	8.06	s.u.	---
Phenols	ND		0.006		ND		mg/L	0.05
Sulfate	1029		1040		1000		mg/L	5
Spec. Conduct. @ 25° C	2770	2440	2450	2550	2640	2760	µmhos/cm	1
Spec. Conduct. @ 25° C	2770	2480	2440	2530	2670	2750	µmhos/cm	1
Spec. Conduct. @ 25° C	2770	2460	2450	2510	2620	2750	µmhos/cm	1
Spec. Conduct. @ 25° C	2770	2450	2450	2500	2640	2740	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	2770	2457.5	2447.5	2522.5	2642.5	2750	µmhos/cm	1
Total Organic Carbon	1.8	2	3	2	2	1.4	mg/L	1
Total Organic Carbon	1.8	2		2	2	1.3	mg/L	1
Total Organic Carbon	1.8	2			2	1.3	mg/L	1
Total Organic Carbon	1.8					1.7	mg/L	1
Total Org. Halides as Cl	<30	17	ND	20	ND	13	ug/L	30
Total Org. Halides as Cl	<30	14		10	ND		ug/L	30
Total Org. Halides as Cl	<30	14			ND		ug/L	30
Total Org. Halides as Cl					ND		ug/L	30
Total Dissolved Solids	1874		1850		1800		mg/L	10
Water Elevation	6903.90	6903.85	6903.64	6904.59	6904.49	6904.24	ft	---

OW-11 Giant Refining - Ciniza

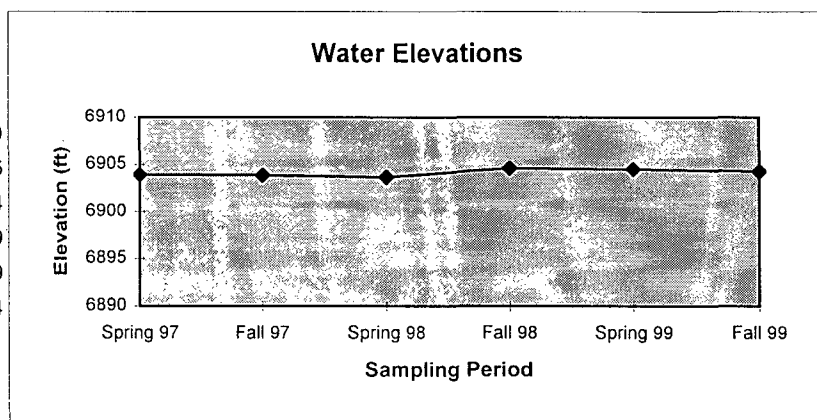
Spring 97	8.30
Fall 97	8.34
Spring 98	8.12
Fall 98	7.99
Spring 99	7.82
Fall 99	8.06



Spring 97	2770
Fall 97	2458
Spring 98	2448
Fall 98	2523
Spring 99	2643
Fall 99	2750

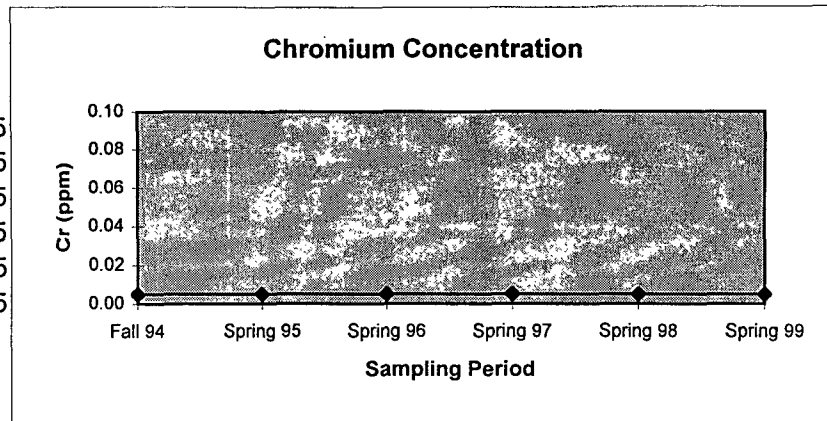


Spring 97	6903.90
Fall 97	6903.85
Spring 98	6903.64
Fall 98	6904.59
Spring 99	6904.49
Fall 99	6904.24

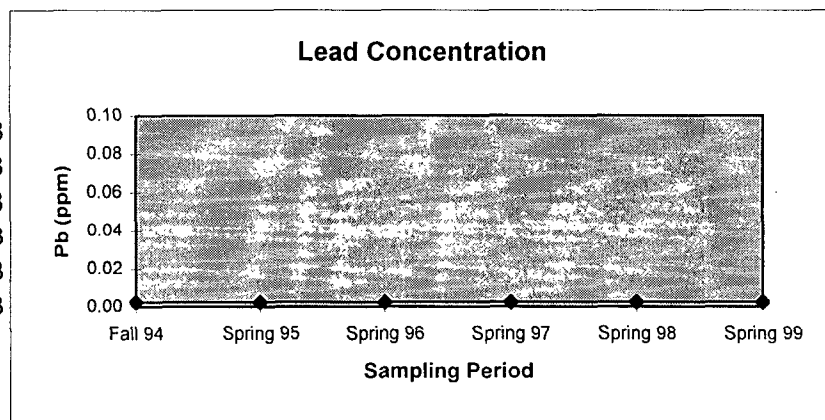


OW-11 Giant Refining - Ciniza

Fall 94	0.005
Spring 95	0.005
Spring 96	0.005
Spring 97	0.005
Spring 98	0.005
Spring 99	0.005



Fall 94	0.003
Spring 95	0.003
Spring 96	0.003
Spring 97	0.003
Spring 98	0.003
Spring 99	0.003



TABULATED ANALYTICAL RESULTS

SMW-3 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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	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	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Chromium	<.01	ND	ND	0.01	ND	0.008	mg/L	0.01
Lead	<.005	ND	ND	ND	ND	ND	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

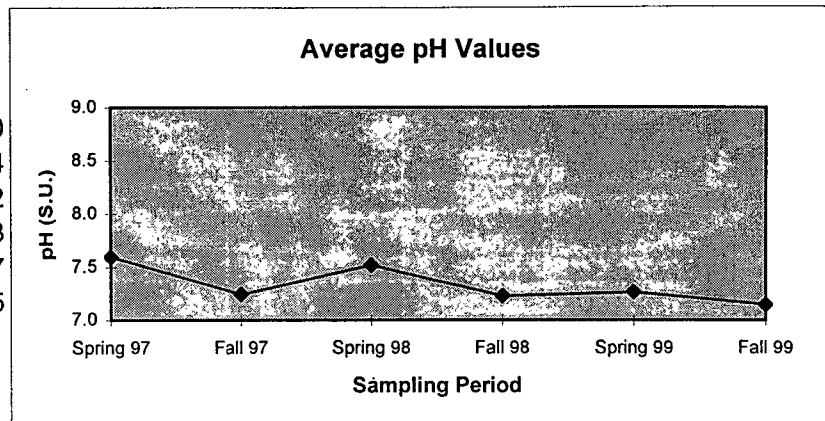
Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Calcium	43.4	42.8	46.0	mg/L	---
Magnesium	13.1	12.5	14.0	mg/L	---
Potassium	<.2	ND	0.78	mg/L	---
Sodium	660	219	830	mg/L	---

General Chemistry / Other

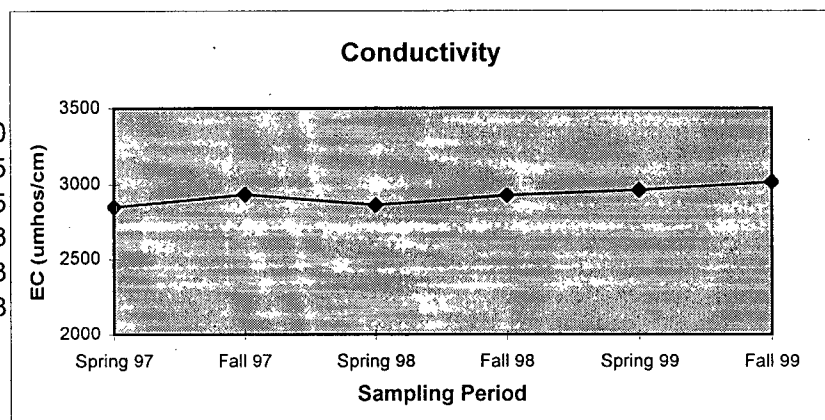
Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	766		622		640		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	ND		3		ND		mg/L	5
Chloride	87		99		72		mg/L	3
pH (1st reading)	7.60	7.25	7.51	7.28	7.26	7.14	s.u.	---
pH (2nd reading)	7.60	7.25	7.52	7.21	7.28	7.15	s.u.	---
pH (3rd reading)	7.60	7.24	7.56	7.21	7.30	7.15	s.u.	---
pH (4th reading)	7.60	7.23	7.50	7.22	7.22	7.16	s.u.	---
pH Average	7.60	7.24	7.52	7.23	7.27	7.15	s.u.	---
Sulfate	835		820		660		mg/L	5
Spec. Conduct. @ 25° C	2850	2920	2840	2940	2970	2970	µmhos/cm	1
Spec. Conduct. @ 25° C	2850	2940	2870	2930	2950	3030	µmhos/cm	1
Spec. Conduct. @ 25° C	2850	2940	2880	2920	2970	3040	µmhos/cm	1
Spec. Conduct. @ 25° C	2850	2940	2870	2920	2960	3030	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	2850	2935	2865	2928	2963	3018	µmhos/cm	1
Total Organic Carbon	3.7	9	5.6	3	4	3	mg/L	1
Total Organic Carbon	3.7	9		3	3	2.6	mg/L	1
Total Organic Carbon	3.7	8			4	2.4	mg/L	1
Total Organic Carbon						2.4	mg/L	1
Total Org. Halides as Cl	50	25	34	50	50	23	ug/L	30
Total Org. Halides as Cl		28		40	40	33	ug/L	30
Total Org. Halides as Cl		27			50	83	ug/L	30
Total Org. Halides as Cl					50		ug/L	30
Total Dissolved Solids	2020		1930		1900		mg/L	10
Water Elevation	6853.10	6852.23	6852.48	6853.96	6854.06	6854.46	ft	---

SMW-3 Giant Refining - Ciniza

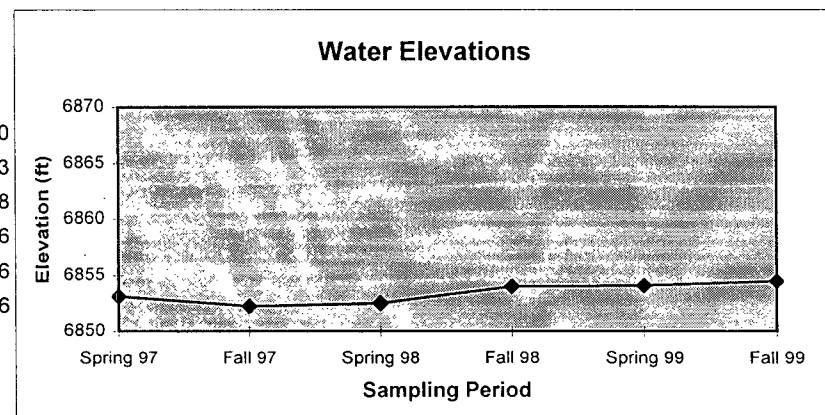
Spring 97	7.60
Fall 97	7.24
Spring 98	7.52
Fall 98	7.23
Spring 99	7.27
Fall 99	7.15



Spring 97	2850
Fall 97	2935
Spring 98	2865
Fall 98	2928
Spring 99	2963
Fall 99	3018

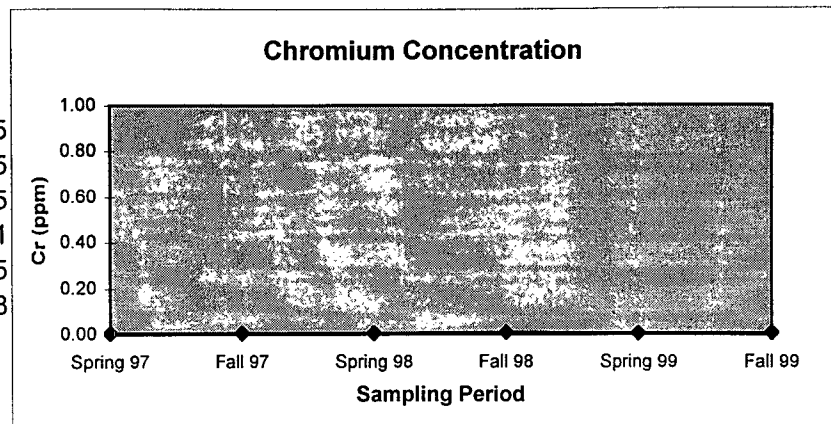


Spring 97	6853.10
Fall 97	6852.23
Spring 98	6852.48
Fall 98	6853.96
Spring 99	6854.06
Fall 99	6854.46

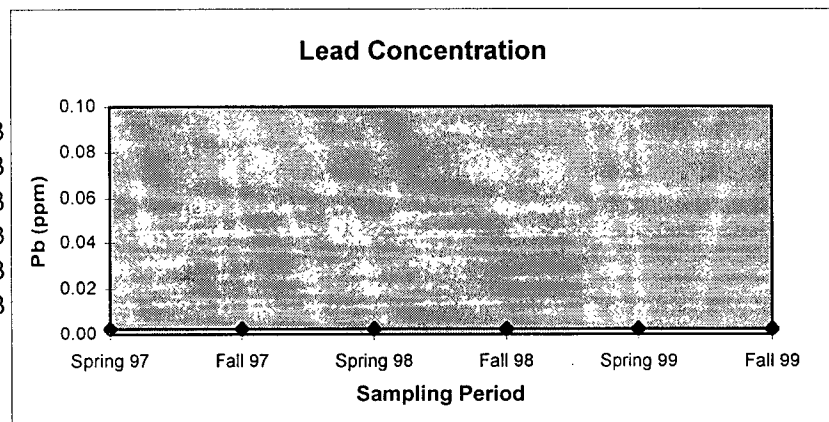


SMW-3 Giant Refining - Ciniza

Spring 97	0.005
Fall 97	0.005
Spring 98	0.005
Fall 98	0.01
Spring 99	0.005
Fall 99	0.008



Spring 97	0.003
Fall 97	0.003
Spring 98	0.003
Fall 98	0.003
Spring 99	0.003
Fall 99	0.003



TABULATED ANALYTICAL RESULTS

SMW-4 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Chromium	<.01	ND	ND	ND	ND	ND	mg/L	0.01
Lead	<.005	ND	ND	ND	ND	ND	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

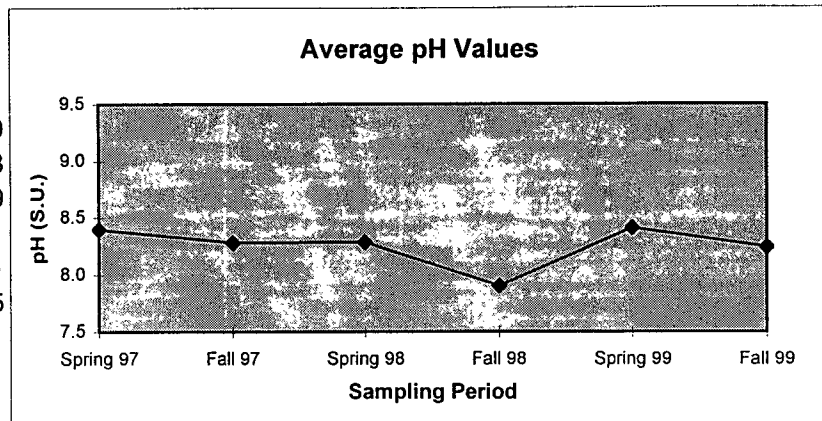
Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Calcium	3.4	ND	3.4	mg/L	---
Magnesium	0.6	ND	0.7	mg/L	---
Potassium	0.24	ND	0.75	mg/L	---
Sodium	291	158	390	mg/L	---

General Chemistry / Other

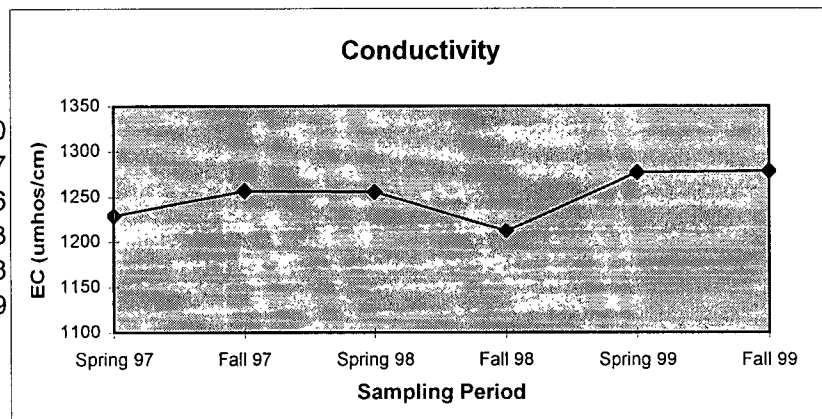
Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	432		402		380		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	15		12		50		mg/L	5
Chloride	55		56		57		mg/L	3
pH (1st reading)	8.40	8.28	8.27	7.85	8.40	8.25	s.u.	---
pH (2nd reading)	8.40	8.19	8.30	7.90	8.42	8.24	s.u.	---
pH (3rd reading)	8.40	8.12	8.30	7.93	8.40	8.25	s.u.	---
pH (4th reading)	8.40	8.03	8.28	7.94	8.43	8.25	s.u.	---
pH Average	8.40	8.28	8.29	7.91	8.41	8.25	s.u.	---
Sulfate	175		191		140		mg/L	5
Spec. Conduct. @ 25° C	1230	1225	1245	1198	1280	1282	µmhos/cm	1
Spec. Conduct. @ 25° C	1230	1260	1254	1215	1266	1283	µmhos/cm	1
Spec. Conduct. @ 25° C	1230	1233	1260	1218	1284	1277	µmhos/cm	1
Spec. Conduct. @ 25° C	1230	1311	1265	1220	1280	1274	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1230	1257.25	1256	1212.75	1277.5	1279	µmhos/cm	1
Total Organic Carbon	1.2	11	2.08	ND	1	1.3	mg/L	1
Total Organic Carbon	1.2	10		ND	1	1.1	mg/L	1
Total Organic Carbon	1.2	10			1	<1.0	mg/L	1
Total Organic Carbon	1.2					1.4	mg/L	1
Total Org. Halides as Cl	<30	ND	10	20	ND	44	ug/L	30
Total Org. Halides as Cl	<30	ND		20	ND	50	ug/L	30
Total Org. Halides as Cl	<30	ND			ND	9	ug/L	30
Total Org. Halides as Cl							ug/L	30
Total Dissolved Solids	784		777		780		mg/L	10
Water Elevation	6847.60	6848.42	6849.08	6850.18	6849.98	6850.08	ft	---

SMW-4 Giant Refining - Ciniza

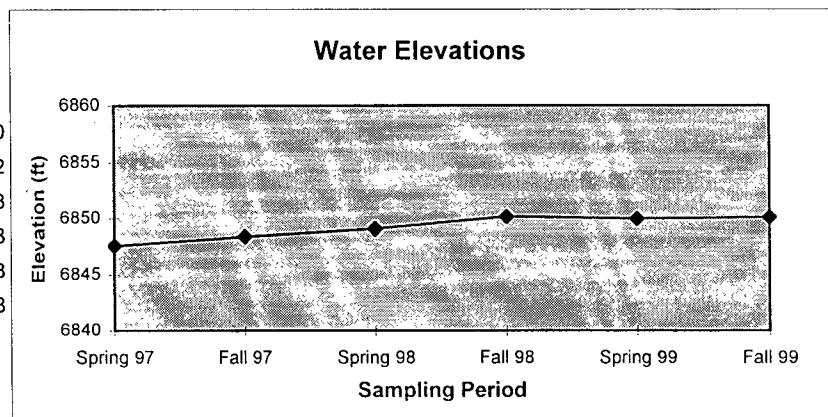
Spring 97	8.40
Fall 97	8.28
Spring 98	8.29
Fall 98	7.91
Spring 99	8.41
Fall 99	8.25



Spring 97	1230
Fall 97	1257
Spring 98	1256
Fall 98	1213
Spring 99	1278
Fall 99	1279

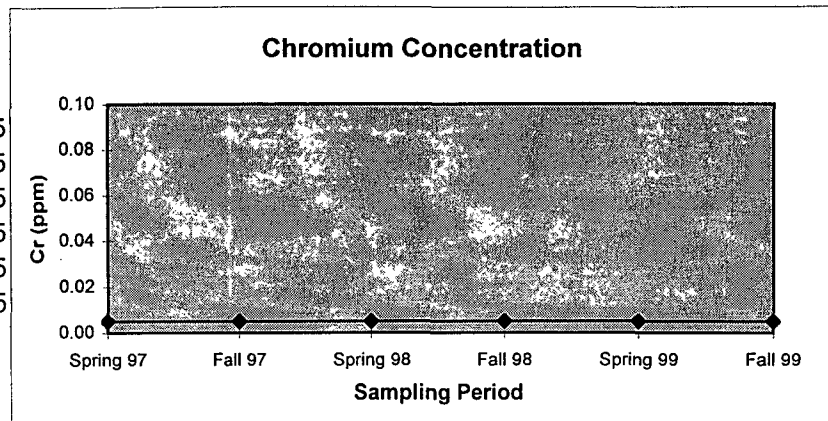


Spring 97	6847.60
Fall 97	6848.42
Spring 98	6849.08
Fall 98	6850.18
Spring 99	6849.98
Fall 99	6850.08

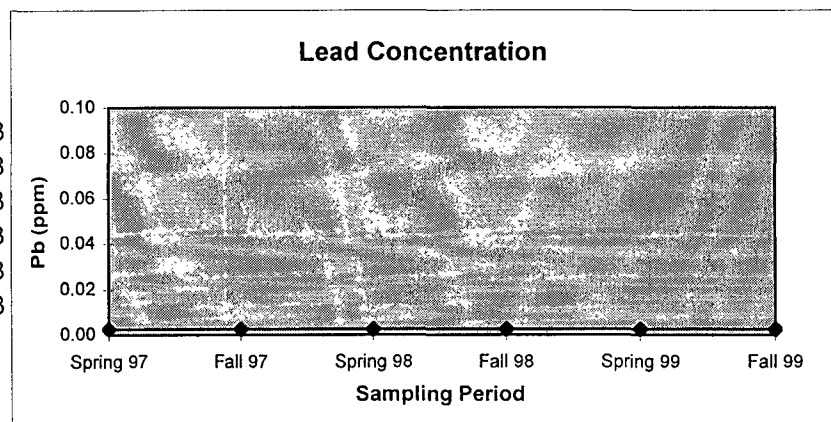


SMW-4 Giant Refining - Ciniza

Spring 97	0.005
Fall 97	0.005
Spring 98	0.005
Fall 98	0.005
Spring 99	0.005
Fall 99	0.005



Spring 97	0.003
Fall 97	0.003
Spring 98	0.003
Fall 98	0.003
Spring 99	0.003
Fall 99	0.003



TABULATED ANALYTICAL RESULTS

SMW-5 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 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-Dichloroethane	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	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	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Chromium	<.01	ND	0.013	0.015	ND	0.11	mg/L	0.01
Lead	<.005	ND	ND	ND	ND	ND	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

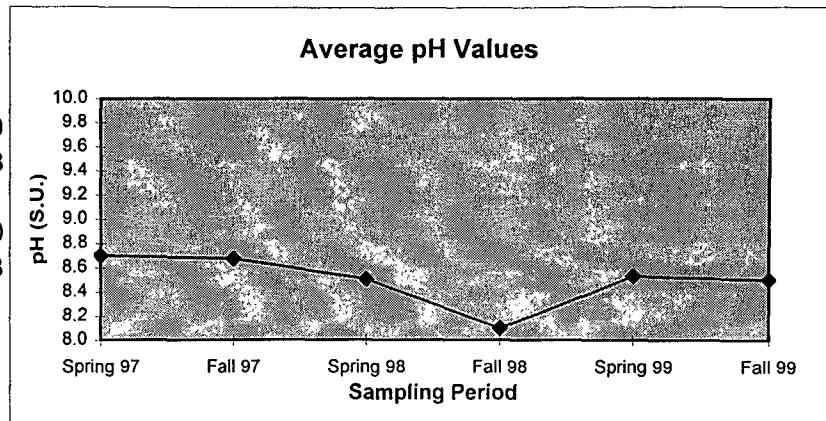
Parameter	Spring 97 Result	Spring 98 Result	Spring 99 Result	Units	Reporting Limit
Calcium	2.2	ND	2.1	mg/L	---
Magnesium	0.2	ND	0.3	mg/L	---
Potassium	0.27	ND	0.73	mg/L	---
Sodium	2.73	149	350	mg/L	---

General Chemistry / Other

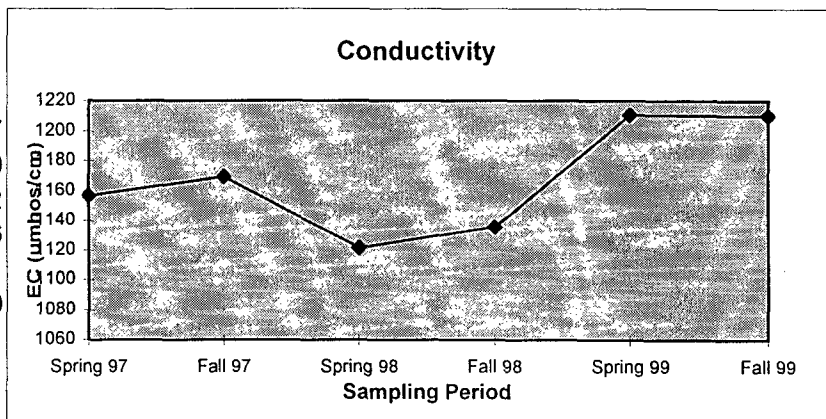
Parameter	Spring 97 Result	Fall 97 Result	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	366		352		340		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	ND		15		30		mg/L	5
Chloride	56		58		56		mg/L	3
pH (1st reading)	8.70	8.68	8.55	8.12	8.53	8.50	s.u.	---
pH (2nd reading)	8.70	8.65	8.47	8.09	8.54	8.52	s.u.	---
pH (3rd reading)	8.70	8.72	8.53	8.09	8.55	8.50	s.u.	---
pH (4th reading)	8.70	8.65	8.48	8.10	8.50	8.50	s.u.	---
pH Average	8.70	8.68	8.51	8.10	8.53	8.51	s.u.	---
Sulfate	162		170		150		mg/L	5
Spec. Conduct. @ 25° C	1157	1163	1120	1129	1212	1200	µmhos/cm	1
Spec. Conduct. @ 25° C	1157	1180	1122	1134	1208	1215	µmhos/cm	1
Spec. Conduct. @ 25° C	1157	1172	1121	1136	1211	1214	µmhos/cm	1
Spec. Conduct. @ 25° C	1157	1163	1123	1144	1212	1212	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1157	1170	1122	1136	1211	1210	µmhos/cm	1
Total Organic Carbon	<1	ND	1	ND	1	<1.0	mg/L	1
Total Organic Carbon	<1	2		ND	1	<1.0	mg/L	1
Total Organic Carbon	<1	2			1	<1.0	mg/L	1
Total Organic Carbon	<1					<1.0	mg/L	1
Total Org. Halides as Cl	<30	ND	10	10	50	16	ug/L	30
Total Org. Halides as Cl	<30	ND		10	40	16	ug/L	30
Total Org. Halides as Cl	<30	ND			30	8	ug/L	30
Total Org. Halides as Cl					30		ug/L	30
Total Dissolved Solids	730		705		740		mg/L	10
Water Elevation	6847.70	6846.52	6847.10	6847.92	6848.02	6847.52	ft	---

SMW-5 Giant Refining - Ciniza

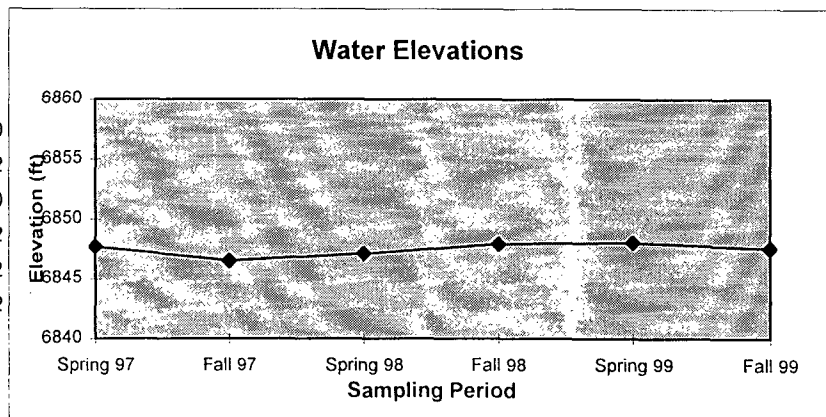
Spring 97	8.70
Fall 97	8.68
Spring 98	8.51
Fall 98	8.10
Spring 99	8.53
Fall 99	8.51



Spring 97	1157
Fall 97	1170
Spring 98	1122
Fall 98	1136
Spring 99	1211
Fall 99	1210

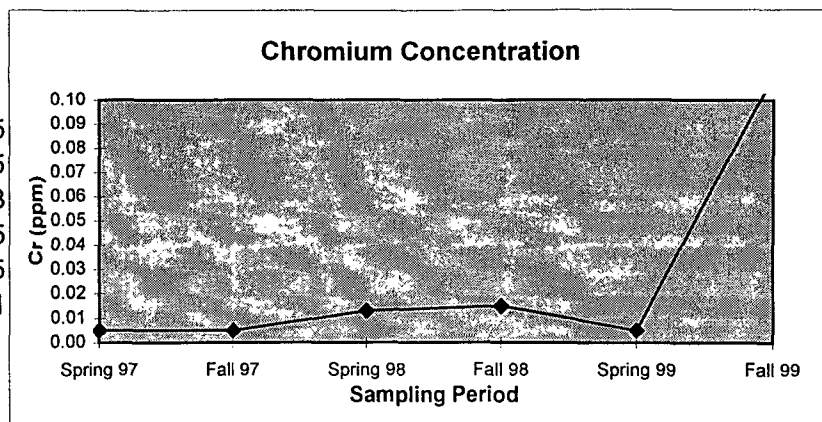


Spring 97	6847.70
Fall 97	6846.52
Spring 98	6847.10
Fall 98	6847.92
Spring 99	6848.02
Fall 99	6847.52

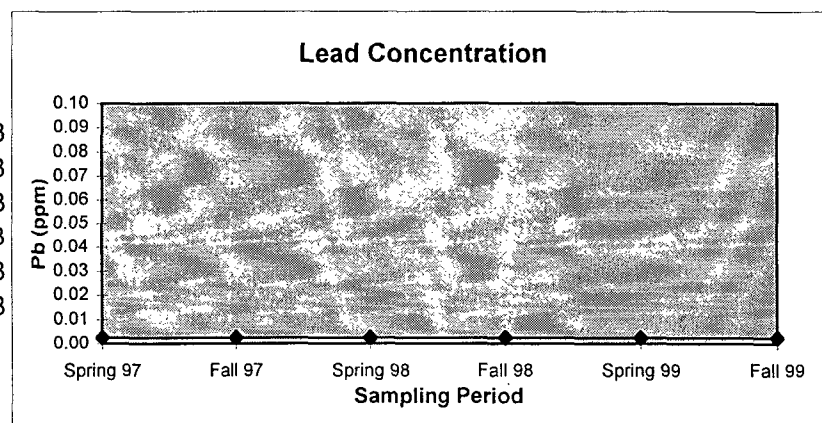


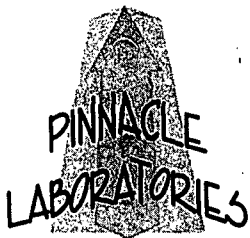
SMW-5 Giant Refining - Ciniza

Spring 97	0.005
Fall 97	0.005
Spring 98	0.013
Fall 98	0.015
Spring 99	0.005
Fall 99	0.11



Spring 97	0.003
Fall 97	0.003
Spring 98	0.003
Fall 98	0.003
Spring 99	0.003
Fall 99	0.003





2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 903055
March 31, 1999

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name ANNUAL GROUNDWATER
Project Number (none)

Attention: STEVE MORRIS

On 3/17/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA methods 150.1 and 8260 were performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

Phenols, TOC and TOX were performed by Severn Trent (FL) Inc., Pensacola, FL.

All other parameters were performed by ESL (OR) Inc., Portland, OR.

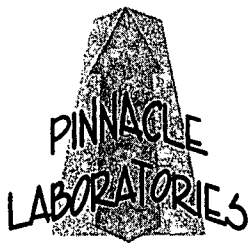
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

MR: mt

Enclosure

H. Mitchell Rubenstein, Ph. D.
General Manager

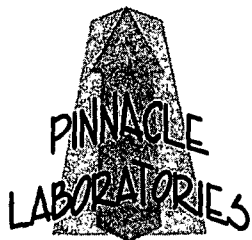


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Fax (505) 344-4413

CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : ANNUAL GROUNDWATER

PINNACLE ID : 903055
DATE RECEIVED : 3/17/99
REPORT DATE : 3/31/99

PIN	ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
	1	MW-1-31599	AQUEOUS	3/15/99
	2	MW-2-31599	AQUEOUS	3/15/99
	03	MW-5-31599	AQUEOUS	3/15/99
	4	MW-4-31599	AQUEOUS	3/15/99
	5	OW-11-31599	AQUEOUS	3/15/99



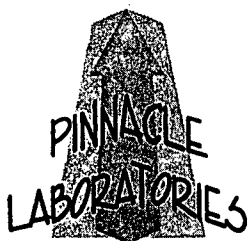
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Fax (505) 344-4413

GENERAL CHEMISTRY RESULTS

CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903055
PROJECT # : (none) DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE		DATE		DATE		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED		
01	MW-1-31599	AQUEOUS	3/15/99	3/17/99		
02	MW-2-31599	AQUEOUS	3/15/99	3/17/99		
03	MW-5-31599	AQUEOUS	3/15/99	3/17/99		
PARAMETER			UNITS	MW-1-31599	MW-2-31599	MW-5-31599
PH (150.1)			UNITS	8.97	8.94	9.01
PH (150.1)			UNITS	9.03	9.07	9.07
PH (150.1)			UNITS	9.06	9.09	9.10
PH (150.1)			UNITS	9.07	9.08	9.10

CHEMIST NOTES:
N/A



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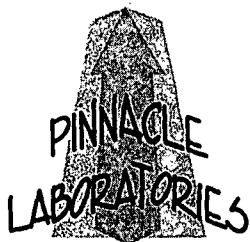
GENERAL CHEMISTRY RESULTS

CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903055
PROJECT # : (none) DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE ANALYZED
04	MW-4-31599	AQUEOUS	3/15/99	3/17/99
05	OW-11-31599	AQUEOUS	3/15/99	3/17/99

PARAMETER	UNITS	MW-4-31599	OW-11-31599
PH (150.1)	UNITS	8.74	8.32
PH (150.1)	UNITS	8.79	8.33
PH (150.1)	UNITS	8.80	8.37
PH (150.1)	UNITS	8.81	8.39

CHEMIST NOTES:
N/A



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GENERAL CHEMISTRY - QUALITY CONTROL

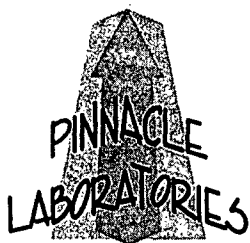
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903055
PROJECT # : (none) SAMPLE MATRIX : AQUEOUS
PROJECT NAME : ANNUAL GROUNDWATER

PARAMETER	UNITS	PINNACLE I.D.	SAMPLE RESULT	DUP. RESULT	% RPD
PH	UNITS	903055-05	8.32	8.33	0

CHEMIST NOTES:
N/A

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

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



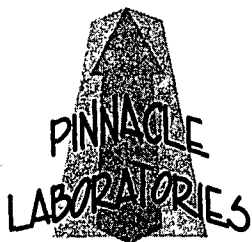
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-01	MW-1-31599	AQUEOUS	3/15/99	N/A	03/17/99	1
PARAMETER	DET. LIMIT	UNITS				

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



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GC/MS RESULTS

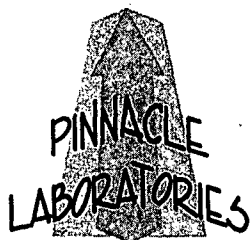
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-01	MW-1-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	107 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	98 (86 - 115)



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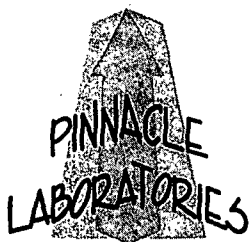
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-02	MW-2-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

PARAMETER	DET. LIMIT	UNITS
-----------	------------	-------

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



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-02	MW-2-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	104 (80 - 120)
Toluene-d8	94 (88 - 110)
Bromofluorobenzene	90 (86 - 115)



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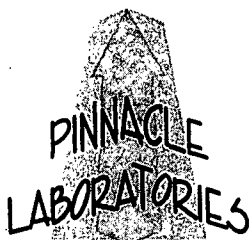
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-04	MW-4-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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



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GC/MS RESULTS

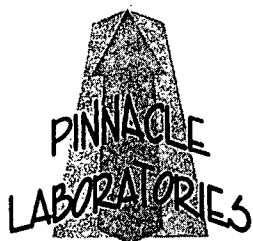
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CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-04	MW-4-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	104 (80 - 120)
Toluene-d8	99 (88 - 110)
Bromofluorobenzene	96 (86 - 115)



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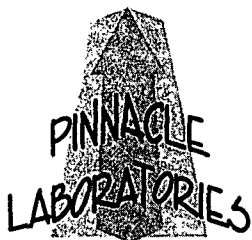
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-03	MW-5-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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



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GC/MS RESULTS

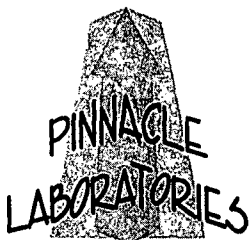
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CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-03	MW-5-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	100 (80 - 120)
Toluene-d8	99 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



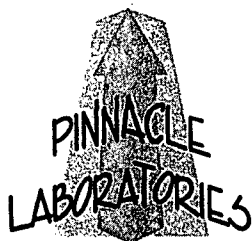
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-05	OW-11-31599	AQUEOUS	3/15/99	N/A	03/17/99	1
PARAMETER	DET. LIMIT	UNITS				

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



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GC/MS RESULTS

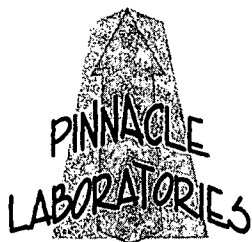
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CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-05	OW-11-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	107 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	99 (86 - 115)



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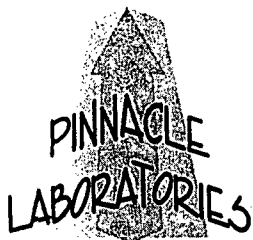
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA
PROJECT # : NONE
PROJECT NAME : ANNUAL GROUNDWATER

PINNACLE I.D. : 903055

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	031799	AQUEOUS	N/A	03/17/99	1
PARAMETER	DET. LIMIT	UNITS			

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



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

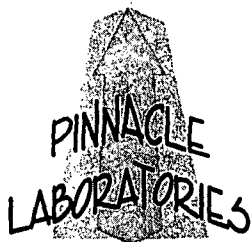
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	031799	AQUEOUS	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	111 (80 - 120)
Toluene-d8	103 (88 - 110)
Bromofluorobenzene	98 (86 - 115)



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
SPIKED SAMPLE : 903053-03
CLIENT : GIANT REFINING COMPANY-CINIZA
PROJECT # : NONE
PROJECT NAME : ANNUAL GROUNDWATER

PINNACLE I.D. : 903053
DATE ANALYZED : 3/17/99
UNITS : ug/L (PPB)

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	54.1	53.6	108	107	1	14	61-145
BENZENE	<1.0	50.0	54.2	55.4	108	111	2	11	76-127
TRICHLOROETHENE	<1.0	50.0	51.1	52.6	102	105	3	14	71-120
TOLUENE	<1.0	50.0	51.8	52.0	104	104	0	13	76-125
CHLOROBENZENE	<1.0	50.0	51.9	50.8	104	102	2	13	75-130



Severn Trent Laboratories
11 East Olive Road
Pensacola FL 32514

Tel: (850) 474-1001
Fax: (850) 478-2671

SIGNATURE PAGE

Reviewed by:



STL Project Manager

Client: PINNACLE LABORATORIES
ALBUQUERQUE, NEW MEXICO

Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Number: 903055
Project Location: N/S
Accession Number: 903377

Project Manager: K. MCNEILL
Sampled By: N/S

Other Laboratory Locations:

- 149 Ringeway Road, North Billerica MA 01862
- 16203 Park Row, Suite 110, Houston TX 77084
- 200 Monroe Turnpike, Monroe CT 06468
- 55 South Park Drive, Colchester VT 05446

- 315 Fullerton Avenue, Newburgh NY 12550
- Westfield Executive Park, 53 Southampton Road, Westfield MA 01085
- 628 Route 10, Whippany NY 07981
- 77 New Durham Road, Edison NJ 08817

a part of



SEVERN TRENT LABORATORIES, INC. – PENSACOLA, FLORIDA
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. 81142 (Drinking Water), Laboratory ID No. E81010 (Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. 98-25 (Drinking Water)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&OccH (No Laboratory ID No. assigned by state) (Drinking Water by Reciprocity with Florida)

New Hampshire DES, Laboratory ID No. 250598-A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waste)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment, Health, & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Hazardous Waste and Wastewater by Reciprocity with California)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Tennessee Division of Underground Storage Tanks Approved Laboratory

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 9133

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: Group of Single Wetchem

Accession:	903377
Client:	PINNACLE LABORATORIES
Project Number:	903055
Project Name:	GRC/ANNUAL GROUNDWATER SAMPLES
Project Location:	N/S
Department:	WET CHEM

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: Group of Single Wetchem
QcLevel: I

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 903055-01A	MW-1-31599		Lab ID: 001		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-02A	MW-2-31599		Lab ID: 005		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-03A	MW-5-31599		Lab ID: 009		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-04A	MW-4-31599		Lab ID: 013		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-05A	OW-11-31599		Lab ID: 017		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					

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Date 26-Mar-99

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: Group of Single Wetchem

Client ID:	Lab Matrix: ID:	Date/Time Sampled:	Date Received:
903055-01A	001 WATER	15-MAR-99 0920	18-MAR-99
903055-02A	005 WATER	15-MAR-99 1120	18-MAR-99
903055-03A	009 WATER	15-MAR-99 1315	18-MAR-99
903055-04A	013 WATER	15-MAR-99 1410	18-MAR-99
903055-05A	017 WATER	15-MAR-99 1515	18-MAR-99

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: TOTAL ORGANIC CARBON

Accession:	903377
Client:	PINNACLE LABORATORIES
Project Number:	903055
Project Name:	GRC/ANNUAL GROUNDWATER SAMPLES
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

[0] Page 1
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	001	Sample Date/Time:	15-MAR-99 0920
Client Sample Id:	903055-01A MW-I-31599	Received Date:	18-MAR-99

Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 2
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	002	Sample Date/Time:	15-MAR-99 0920
Client Sample Id:	903055-01B MW-1-31599	Received Date:	18-MAR-99
Batch:	TOW018	Extraction Date:	N/A
Blank:	B	Analysis Date:	24-MAR-99
Dry Weight %:	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 3
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	003	Sample Date/Time:	15-MAR-99 0920
Client Sample Id:	903055-01C MW-1-31599	Received Date:	18-MAR-99
Batch:	TOW018	Extraction Date:	N/A
Blank:	B	Analysis Date:	24-MAR-99
	Dry Weight %:		N/A

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

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Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	005	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02A MW-2-31599	Received Date:	18-MAR-99

Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 5
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	006	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02B MW-2-31599	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND		1
ANALYST	INITIALS	HC		

Comments:

[0] Page 6
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	007	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02C MW-2-31599	Received Date:	18-MAR-99
Batch:	TOW018	Extraction Date:	N/A
Blank:	B	Analysis Date:	24-MAR-99
Dry Weight %:	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

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Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	013	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04A MW-4-31599	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 11
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	014	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04B MW-4-31599	Received Date:	18-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	HC		

Comments:

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Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	015	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04C MW-4-31599	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 7
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	009	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03A MW-5-31599	Received Date:	18-MAR-99
Batch:	TOW018	Extraction Date:	N/A
Blank:	B	Analysis Date:	24-MAR-99
Dry Weight %:	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 8
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	010	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03B MW-5-31599	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 9
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	011	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03C MW-5-31599	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND		1
ANALYST	INITIALS	HC		

Comments:

[0] Page 13
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	017	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05A OW-11-31599	Received Date:	18-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	2	1	
ANALYST	INITIALS	HC		

Comments:

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Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	018	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05B OW-11-31599	Received Date:	18-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	2	1	
ANALYST	INITIALS	HC		

Comments: .

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Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	019	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05C OW-11-31599	Received Date:	18-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	2	1	
ANALYST	INITIALS	HC		

Comments:

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Date 25-Mar-99

"Method Report Summary"

Accession Number: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON

Client Sample Id:	Parameter:	Unit:	Result:
903055-04B	TOTAL ORGANIC CARBON	MG/L	1
903055-05A	TOTAL ORGANIC CARBON	MG/L	2
903055-05B	TOTAL ORGANIC CARBON	MG/L	2
903055-05C	TOTAL ORGANIC CARBON	MG/L	2

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: TOTAL ORGANIC HALIDES IN WATER

Accession:	903377
Client:	PINNACLE LABORATORIES
Project Number:	903055
Project Name:	GRC/ANNUAL GROUNDWATER SAMPLES
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 0920
Client Sample Id:	903055-01A MW-1-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 0920
Client Sample Id:	903055-01B MW-1-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 0920
Client Sample Id:	903055-01C MW-1-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 0920
Client Sample Id:	903055-01D MW-1-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	23-MAR-99
	N/A		

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 1120
Client Sample Id:	903055-02A MW-2-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 1120
Client Sample Id:	903055-02B MW-2-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: . 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	007	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02C MW-2-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	008	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02D MW-2-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	009	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03A MW-5-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	010	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03B MW-5-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	011	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03C MW-5-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	012	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03D MW-5-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	013	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04A MW-4-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	014	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04B MW-4-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	015	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04C MW-4-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	016	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04D MW-4-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	017	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05A OW-11-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments: .

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	018	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05B OW-11-31599	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	019	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05C OW-11-31599	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id: 020
Client Sample Id: 903055-05D OW-11-31599
Sample Date/Time: 15-MAR-99 1515
Received Date: 18-MAR-99

Batch: TXW009
Blank: B Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 24-MAR-99

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

Comments:

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Date 24-Mar-99

"Method Report Summary"

Accession Number: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER

Client Sample Id:	Parameter:	Unit:	Result:
903055-01B	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-01D	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-02A	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-02B	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-02D	TOTAL ORGANIC HALIDES	MG/L	0.01

Data Qualifiers for Final Report

STL-Pensacola Inorganic/Organic and AFCEE Projects (under QAPP)

J4	(For positive results)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
J5	(TICs)	The reported value is quantitated as a TIC; therefore, it is estimated
J6	(For positive results)	LCS or Surrogate %R is $>$ upper control limit (UCL) or $<$ lower control limit (LCL)
J7	(For positive results)	The reported value is $>$ the laboratory MDL and $<$ lowest calibration standards; therefore, the quantitation is an estimation.
J (AFCEE description)		The analyte was positively identified, the quantitation is an estimation
R1	(For nondetects)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
R2		Improper preservation, no preservative present in sample upon receipt
R3		Improper preservation, incorrect preservative present in sample upon receipt
R4		Holding time exceeded
R5		Collection requirements not met, improper container used for sample
R6		LCS or surrogate %R is $<$ LCL and analyte is not detected or surrogate %R is $<$ 10% for detects/nondetects
R7		Internal standard area outside -50% to +100% of initial calibration midpoint standard.
R8		Second source calibration verification exceeds acceptance criteria.
R9		Improper preservation, sample not filtered in the field.
R (AFCEE description)		The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
F		$<$ laboratory or AFCEE RL and $>$ laboratory MDL
F (AFCEE description)		The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL
U2		$<$ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (AFCEE description)		The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL
B (AFCEE description)		The analyte was found in the associated blank, as well as in the sample
@		Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)
+		Elevated reporting limit due to dilution into calibration range
*		Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
#		Elevated reporting limit due to insufficient sample size
D		Diluted out
M		A matrix effect was present (sample was analyzed twice to confirm or chromatogram had interfering peaks)
S		Incorrect sample amount was submitted to the laboratory for analysis

ND = Not Detected at or above the STL-Pensacola reporting limit (RL)

N/S = Not Submitted

N/A = Not Applicable

IDL = Laboratory Instrument Detection Limit

MDL = Laboratory Method Detection Limit

RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative)

Florida Projects Inorganic/Organic

Y1	Improper preservation, no preservative present in sample upon receipt
Y2	Improper preservation, incorrect preservative present in sample upon receipt
Y3	Improper preservation, sample temperature exceeded EPA temperature limits of $2-6^{\circ}\text{C}$ upon receipt
Y (FL description)	The analysis was from an unpreserved or improperly preserved sample. Data may not be accurate
Q	Sample held beyond the accepted holding time
I	The reported value is $<$ Laboratory RL and $>$ laboratory MDL
U1	The reported value is $\leq$ Laboratory MDL (value for sample result is reported as the MDL)
U (FL description)	Indicates the compound was analyzed for but not detected
T	The reported value is $<$ Laboratory MDL (value shall not be used for statistical analysis)
V	The analyte was detected in both the sample and the associated method blank
J1	Surrogate recovery limits have been exceeded
J2	The sample matrix interfered with the ability to make any accurate determinations
J3	The reported value failed to meet the established quality control criteria for either precision or accuracy
J (FL description)	Estimated value; not accurate

CR Projects Inorganic/Organic

A1 Acceptable

R6

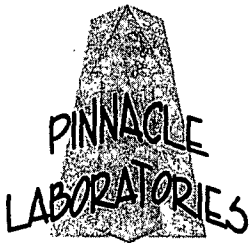
Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit

CLP and CLP-like Projects: Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers



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Phone (505) 344-3777
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Pinnacle Lab ID number 903065
April 05, 1999

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Number ANNUAL GROUNDWATER SAMPLES
Project Name SPRING 1999

Attention: STEVE MORRIS

On 3/19/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze *aqueous* samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA methodS 150.1 and 8260 were performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

TOC and TOX parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

All other parameters were performed by ESL (OR) Inc., Portland, OR.

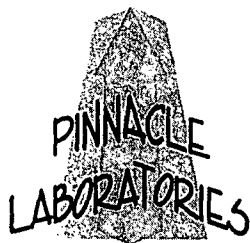
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt

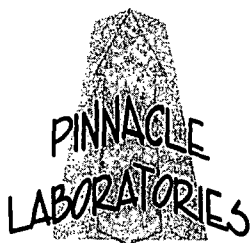
Enclosure



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Fax (505) 344-4413

CLIENT	: GIANT REFINING COMPANY	PINNACLE ID	: 903065
PROJECT #	: ANNUAL GROUNDWATER SAMPLES	DATE RECEIVED	: 3/19/99
PROJECT NAME	: SPRING 1999	REPORT DATE	: 4/5/99

PIN	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
ID. #			
02	OW-2-31699	AQUEOUS	3/16/99
03	OW-3-31699	AQUEOUS	3/16/99
	OW-1-31699	AQUEOUS	3/16/99
	SMW-3-31799	AQUEOUS	3/17/99
	SMW-4-31799	AQUEOUS	3/17/99
06	SMW-5-31799	AQUEOUS	3/17/99



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GENERAL CHEMISTRY RESULTS

CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE			DATE	DATE		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED		
01	OW-2-31699	AQUEOUS	3/16/99	3/22/99		
02	OW-3-31699	AQUEOUS	3/16/99	3/22/99		
03	OW-1-31699	AQUEOUS	3/16/99	3/22/99		
PARAMETER			UNITS	OW-2-31699	OW-3-31699	OW-1-31699
PH (150.1)			UNITS	8.26	8.44	8.88
PH (150.1)			UNITS	8.29	8.44	8.90
PH (150.1)			UNITS	8.33	8.41	8.90
PH (150.1)			UNITS	8.35	8.44	8.89

CHEMIST NOTES:
N/A



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GENERAL CHEMISTRY RESULTS

CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE		DATE		DATE	
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED	
04	SMW-3-31799	AQUEOUS	3/17/99	3/22/99	
05	SMW-4-31799	AQUEOUS	3/17/99	3/22/99	
06	SMW-5-31799	AQUEOUS	3/17/99	3/22/99	
PARAMETER			UNITS	SMW-3-31799	SMW-4-31799
PH (150.1)			UNITS	8.21	8.84
PH (150.1)			UNITS	8.25	8.83
PH (150.1)			UNITS	8.26	8.83
PH (150.1)			UNITS	8.29	8.83

CHEMIST NOTES:
N/A

GENERAL CHEMISTRY - QUALITY CONTROL

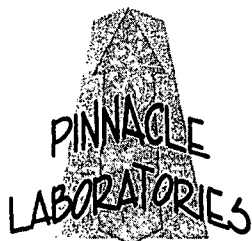
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903065
 PROJECT # : ANNUAL GROUNDWATER SAMPLES SAMPLE MATRIX : AQUEOUS
 PROJECT NAME : SPRING 1999

PARAMETER	UNITS	PINNACLE I.D.	SAMPLE RESULT	DUP. RESULT	% RPD
PH	UNITS	903065-06	8.95	8.97	0

CHEMIST NOTES:
 N/A

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

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



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA PINNACLE I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-03	OW-1-31699	AQUEOUS	3/16/99	N/A	03/22/99	1

PARAMETER	DET. LIMIT	UNITS
Benzene	1.0	< 1.0 ug/L
Toluene	1.0	< 1.0 ug/L
Ethylbenzene	1.0	< 1.0 ug/L
m&p Xylenes	1.0	< 1.0 ug/L
o-Xylene	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	108 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



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GC/MS RESULTS

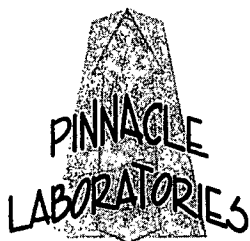
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA PINNACLE I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-01	OW-2-31699	AQUEOUS	3/16/99	N/A	03/22/99	1

PARAMETER	DET. LIMIT	UNITS
Benzene	1.0	< 1.0 ug/L
Toluene	1.0	< 1.0 ug/L
Ethylbenzene	1.0	< 1.0 ug/L
m&p Xylenes	1.0	< 1.0 ug/L
o-Xylene	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	95 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	94 (86 - 115)



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA PINNACLE I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-02	OW-3-31699	AQUEOUS	3/16/99	N/A	03/22/99	1

PARAMETER	DET. LIMIT	UNITS
Benzene	1.0	< 1.0 ug/L
Toluene	1.0	< 1.0 ug/L
Ethylbenzene	1.0	< 1.0 ug/L
m&p Xylenes	1.0	< 1.0 ug/L
o-Xylene	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	100 (80 - 120)
Toluene-d8	96 (88 - 110)
Bromofluorobenzene	94 (86 - 115)



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA
PROJECT # : ANNUAL GROUNDWATER SAMPLES
PROJECT NAME : SPRING 1999

PINNACLE I.D. : 903065
DATE RECEIVED : 3/19/99

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-04	SMW-3-31799	AQUEOUS	3/17/99	N/A	03/22/99	1
PARAMETER	DET. LIMIT	UNITS				

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



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GC/MS RESULTS

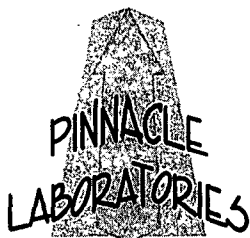
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA PINNACLE I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-04	SMW-3-31799	AQUEOUS	3/17/99	N/A	03/22/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	101 (80 - 120)
Toluene-d8	95 (88 - 110)
Bromofluorobenzene	92 (86 - 115)



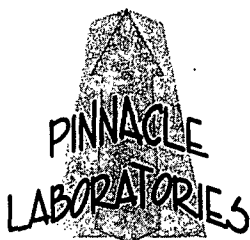
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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA Pinnacle I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-05	SMW-4-31799	AQUEOUS	3/17/99	N/A	03/22/99	1
PARAMETER	DET. LIMIT	UNITS				

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



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA
PROJECT # : ANNUAL GROUNDWATER SAMPLES
PROJECT NAME : SPRING 1999

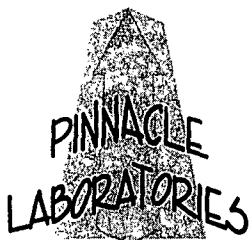
PINNACLE I.D. : 903065
DATE RECEIVED : 3/19/99

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-05	SMW-4-31799	AQUEOUS	3/17/99	N/A	03/22/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	105 (80 - 120)
Toluene-d8	96 (88 - 110)
Bromofluorobenzene	92 (86 - 115)



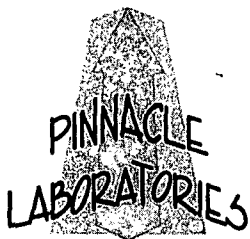
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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA PINNACLE I.D. : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-06	SMW-5-31799	AQUEOUS	3/17/99	N/A	03/22/99	1
PARAMETER	DET. LIMIT		UNITS			

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



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA
PROJECT # : ANNUAL GROUNDWATER SAMPLES
PROJECT NAME : SPRING 1999

PINNACLE I.D. : 903065
DATE RECEIVED : 3/19/99

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903065-06	SMW-5-31799	AQUEOUS	3/17/99	N/A	03/22/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	106 (80 - 120)
Toluene-d8	97 (88 - 110)
Bromofluorobenzene	93 (86 - 115)



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA
PROJECT # : ANNUAL GROUNDWATER SAMPLES
PROJECT NAME : SPRING 1999

PINNACLE I.D. : 903065

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	032299	AQUEOUS	N/A	03/22/99	1

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



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING CO./CINIZA
PROJECT # : ANNUAL GROUNDWATER SAMPLES
PROJECT NAME : SPRING 1999

PINNACLE I.D. : 903065

SAMPLE			DATE	DATE	DIL.
ID #	BATCH	MATRIX	EXTRACTED	ANALYZED	FACTOR
REAGENT BLANK	032299	AQUEOUS	N/A	03/22/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	100 (80 - 120)
Toluene-d8	101 (88 - 110)
Bromofluorobenzene	101 (86 - 115)



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MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
SPIKED SAMPLE : 903059-01
CLIENT : GIANT REFINING CO./CINIZA
PROJECT # : ANNUAL GROUNDWATER SAMPLES
PROJECT NAME : SPRING 1999

PINNACLE I.D. : 903065
DATE ANALYZED : 3/22/99
UNITS : ug/L (PPB)

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	53.6	52.9	107	106	1	14	61-145
BENZENE	<1.0	50.0	55.5	56.2	111	112	1	11	76-127
TRICHLOROETHENE	<1.0	50.0	51.8	53.6	104	107	3	14	71-120
TOLUENE	<1.0	50.0	52.6	54.9	105	110	4	13	76-125
CHLOROBENZENE	<1.0	50.0	55.9	58.9	112	118	5	13	75-130

Environmental Services Laboratory, Inc.

17400 SW Upper Boones Ferry Road • Suite 270 • Portland, OR 97224 • (503) 670-8520

April 01, 1999

Kim McNeill
Pinnacle Laboratories
2709-D Pan American Fwy NE
Albuquerque, NM 87107

TEL: 505-344-3777
FAX (505) 344-4413

RE: 903065/GRC/Annual Groundwater Samples

Order No.: 9903099

Dear Kim McNeill,

Environmental Services Laboratory received 6 samples on 3/23/99 for the analyses presented in the following report.

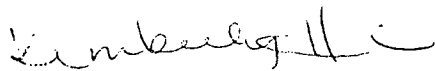
The Samples were analyzed for the following tests:

- Alkalinity (Alkalinity)
- CHLORIDE (Chloride)
- CONDUCTANCE (E120.1)
- ICP Metals (ICPMET)
- Sulfate (Sulfate)
- TOTAL DISSOLVED SOLIDS (E160.1)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval from the Laboratory.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Kimberly Hill
Project Manager


Technical Review

ANALYTICAL SERVICES FOR THE ENVIRONMENT

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-03
 Lab Order: 9903099 Tag Number:
 Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/16/99
 Lab ID: 9903099-03A OW-1-31699 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ALKALINITY		ALKALINITY				Analyst: sld
Alkalinity, Bicarbonate (As CaCO ₃)	430	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Carbonate (As CaCO ₃)	30	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Total (As CaCO ₃)	460	5		mg/L CaCO ₃	1	3/25/99
CHLORIDE		CHLORIDE				Analyst: sld
Chloride	47	2		mg/L	4	3/31/99
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400	1		µmhos/cm	1	3/23/99
SULFATE		SULFATE				Analyst: sld
Sulfate	200	62		mg/L	12.5	3/26/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: sld
Total Dissolved Solids (Residue, Filterable)	810	10		mg/L	1	3/23/99
ICP METALS		ICPMET				Analyst: jph
Calcium, Diss	2.2	0.05		mg/L	1	3/24/99
Magnesium, Diss	0.24	0.05		mg/L	1	3/24/99
Potassium, Diss	1.1	0.2		mg/L	1	3/24/99
Sodium, Diss	420	20		mg/L	1	3/24/99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-03
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/16/99
Lab ID: 9903099-03B OW-1-31699 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1500		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-03
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/16/99
Lab ID: 9903099-03C OW-1-31699 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-03
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/16/99
Lab ID: 9903099-03D OW-1-31699 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 903065-01

Lab Order: 9903099

Tag Number:

Project: 903065/GRC/Annual Groundwater Samples Spr

Collection Date: 3/16/99

Lab ID: 9903099-01A OW-2-31699

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ALKALINITY		ALKALINITY				Analyst: sld
Alkalinity, Bicarbonate (As CaCO ₃)	720	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Total (As CaCO ₃)	720	5		mg/L CaCO ₃	1	3/25/99
CHLORIDE		CHLORIDE				Analyst: sld
Chloride	29	2		mg/L	4	3/31/99
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400	1		µmhos/cm	1	3/23/99
SULFATE		SULFATE				Analyst: sld
Sulfate	10	5		mg/L	1	3/26/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: sld
Total Dissolved Solids (Residue, Filterable)	850	10		mg/L	1	3/23/99
ICP METALS		ICPMET				Analyst: jph
Calcium, Diss	9	0.05		mg/L	1	3/24/99
Magnesium, Diss	3.2	0.05		mg/L	1	3/24/99
Potassium, Diss	0.59	0.2		mg/L	1	3/24/99
Sodium, Diss	440	20		mg/L	1	3/24/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-01
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/16/99
Lab ID: 9903099-01B OW-2-31699 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 903065-01

Lab Order: 9903099

Tag Number:

Project: 903065/GRC/Annual Groundwater Samples Spr

Collection Date: 3/16/99

Lab ID: 9903099-01C OW-2-31699

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 903065-01

Lab Order: 9903099

Tag Number:

Project: 903065/GRC/Annual Groundwater Samples Spr

Collection Date: 3/16/99

Lab ID: 9903099-01D OW-2-31699

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

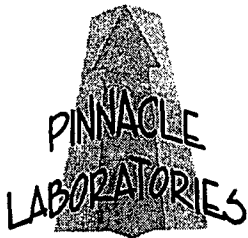
B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range



2709-D Pan American Freeway NE
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Pinnacle Lab ID number 903065
April 28, 1999

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Number ANNUAL GROUNDWATER SAMPLES
Project Name SPRING 1999

Attention: STEVE MORRIS

On 3/19/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

This report is being reissued in part to correct a typographical error. We apologize for any inconvenience this may have caused. This report was originally dated 4/5/98.

EPA methodS 150.1 and 8260 were performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

TOC and TOX parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

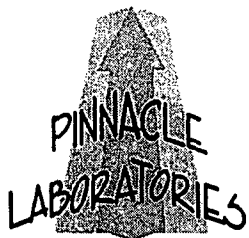
All other parameters were performed by ESL (OR) Inc., Portland, OR.

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

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : GIANT REFINING COMPANY PINNACLE ID : 903065
PROJECT # : ANNUAL GROUNDWATER SAMPLES DATE RECEIVED : 3/19/99
PROJECT NAME : SPRING 1999 REPORT DATE : 4/5/99

PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	OW-2-31699	AQUEOUS	3/16/99
02	OW-3-31699	AQUEOUS	3/16/99
03	OW-1-31699	AQUEOUS	3/16/99
04	SMW-3-31799	AQUEOUS	3/17/99
05	SMW-4-31799	AQUEOUS	3/17/99
06	SMW-5-31799	AQUEOUS	3/17/99

Environmental Services Laboratory

Date: 09-Apr-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 903065-02

Lab Order: 9903099

Tag Number:

Project: 903065/GRC/Annual Groundwater Samples Spr

Collection Date: 3/16/99

Lab ID: 9903099-02A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ALKALINITY		EPA 310.0				Analyst: sld
Alkalinity, Bicarbonate (As CaCO ₃)	720	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Total (As CaCO ₃)	720	5		mg/L CaCO ₃	1	3/25/99
CHLORIDE		EPA 325.3				Analyst: sld
Chloride	33	2		mg/L	4	3/31/99
CONDUCTANCE		EPA 120.1				Analyst: sld
Specific Conductance	1400	1		µmhos/cm	1	3/23/99
SULFATE		EPA 375.4				Analyst: sld
Sulfate	43	12		mg/L	2.5	3/26/99
TOTAL DISSOLVED SOLIDS		EPA 160.1				Analyst: sld
Total Dissolved Solids (Residue, Filterable)	1100	10		mg/L	1	4/9/99
ICP METALS		SW 6010 / EPA 200.				Analyst: jph
Calcium, Diss	10	0.05		mg/L	1	3/24/99
Magnesium, Diss	3.3	0.05		mg/L	1	3/24/99
Potassium, Diss	0.75	0.2		mg/L	1	3/24/99
Sodium, Diss	440	20		mg/L	1	3/24/99

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-02
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/16/99
Lab ID: 9903099-02B OW-3-31699 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 903065-02

Lab Order: 9903099

Tag Number:

Project: 903065/GRC/Annual Groundwater Samples Spr

Collection Date: 3/16/99

Lab ID: 9903099-02C OW-3-31699

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-02
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/16/99
Lab ID: 9903099-02D OW-3-31699 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT:	Pinnacle Laboratories	Client Sample ID:	903065-04
Lab Order:	9903099	Tag Number:	
Project:	903065/GRC/Annual Groundwater Samples Spr	Collection Date:	3/17/99
Lab ID:	9903099-04A SMW-3-31799	Matrix:	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ALKALINITY		ALKALINITY		Analyst: sld		
Alkalinity, Bicarbonate (As CaCO ₃)	640	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	3/25/99
Alkalinity, Total (As CaCO ₃)	640	5		mg/L CaCO ₃	1	3/25/99
CHLORIDE		CHLORIDE		Analyst: sld		
Chloride	72	5		mg/L	10	3/31/99
CONDUCTANCE		E120.1		Analyst: sld		
Specific Conductance	3100	1		µmhos/cm	1	3/23/99
SULFATE		SULFATE		Analyst: sld		
Sulfate	660	120		mg/L	25	3/26/99
TOTAL DISSOLVED SOLIDS		E160.1		Analyst: sld		
Total Dissolved Solids (Residue, Filterable)	1900	10		mg/L	1	3/23/99
ICP METALS		ICPMET		Analyst: jph		
Calcium, Diss	46	0.05		mg/L	1	3/24/99
Chromium	ND	0.005		mg/L	1	3/24/99
Lead	ND	0.005		mg/L	1	3/24/99
Magnesium, Diss	14	0.05		mg/L	1	3/24/99
Potassium, Diss	0.78	0.2		mg/L	1	3/24/99
Sodium, Diss	830	20		mg/L	1	3/24/99

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-04
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/17/99
Lab ID: 9903099-04B SMW-3-31799 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	3100		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT:	Pinnacle Laboratories	Client Sample ID:	903065-04
Lab Order:	9903099	Tag Number:	
Project:	903065/GRC/Annual Groundwater Samples Spr	Collection Date:	3/17/99
Lab ID:	9903099-04C SMW-3-31799	Matrix:	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	3100		1	µmhos/cm	1	3/23/99

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 903065-04

Lab Order: 9903099

Tag Number:

Project: 903065/GRC/Annual Groundwater Samples Spr

Collection Date: 3/17/99

Lab ID: 9903099-04D SMW-3-31799

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	3100		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT:	Pinnacle Laboratories	Client Sample ID:	903065-05
Lab Order:	9903099	Tag Number:	
Project:	903065/GRC/Annual Groundwater Samples Spr	Collection Date:	3/17/99
Lab ID:	9903099-05A SMW-4-31799	Matrix:	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ALKALINITY		ALKALINITY				Analyst: sld
Alkalinity, Bicarbonate (As CaCO3)	380	5		mg/L CaCO3	1	3/25/99
Alkalinity, Carbonate (As CaCO3)	50	5		mg/L CaCO3	1	3/25/99
Alkalinity, Total (As CaCO3)	430	5		mg/L CaCO3	1	3/25/99
CHLORIDE		CHLORIDE				Analyst: sld
Chloride	57	2		mg/L	4	3/31/99
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400	1		µmhos/cm	1	3/23/99
SULFATE		SULFATE				Analyst: sld
Sulfate	140	62		mg/L	12.5	3/26/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: sld
Total Dissolved Solids (Residue, Filterable)	780	10		mg/L	1	3/23/99
ICP METALS		ICPMET				Analyst: jph
Calcium, Diss	3.4	0.05		mg/L	1	3/24/99
Chromium	ND	0.005		mg/L	1	3/24/99
Lead	ND	0.005		mg/L	1	3/24/99
Magnesium, Diss	0.72	0.05		mg/L	1	3/24/99
Potassium, Diss	0.75	0.2		mg/L	1	3/24/99
Sodium, Diss	390	20		mg/L	1	3/24/99

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-05
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/17/99
Lab ID: 9903099-05B SMW-4-31799 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-05
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/17/99
Lab ID: 9903099-05C SMW-4-31799 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1300		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-05
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/17/99
Lab ID: 9903099-05D SMW-4-31799 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1400	1		µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT:	Pinnacle Laboratories	Client Sample ID:	903065-06
Lab Order:	9903099	Tag Number:	
Project:	903065/GRC/Annual Groundwater Samples Spr	Collection Date:	3/17/99
Lab ID:	9903099-06A SMW-5-31799	Matrix:	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ALKALINITY						Analyst: sld
Alkalinity, Bicarbonate (As CaCO3)	340	5		mg/L CaCO3	1	3/25/99
Alkalinity, Carbonate (As CaCO3)	30	5		mg/L CaCO3	1	3/25/99
Alkalinity, Total (As CaCO3)	370	5		mg/L CaCO3	1	3/25/99
CHLORIDE						Analyst: sld
Chloride	56	2		mg/L	4	3/31/99
CONDUCTANCE						Analyst: sld
Specific Conductance	1100	1		µmhos/cm	1	3/23/99
SULFATE						Analyst: sld
Sulfate	150	62		mg/L	12.5	3/26/99
TOTAL DISSOLVED SOLIDS						Analyst: sld
Total Dissolved Solids (Residue, Filterable)	740	10		mg/L	1	3/23/99
ICP METALS						Analyst: jph
Calcium, Diss	2.1	0.05		mg/L	1	3/24/99
Chromium	ND	0.005		mg/L	1	3/24/99
Lead	ND	0.005		mg/L	1	3/24/99
Magnesium, Diss	0.3	0.05		mg/L	1	3/24/99
Potassium, Diss	0.73	0.2		mg/L	1	3/24/99
Sodium, Diss	350	20		mg/L	1	3/24/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 01-Apr-99

CLIENT: Pinnacle Laboratories Client Sample ID: 903065-06
Lab Order: 9903099 Tag Number:
Project: 903065/GRC/Annual Groundwater Samples Spr Collection Date: 3/17/99
Lab ID: 9903099-06D SMW-5-31799 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
CONDUCTANCE		E120.1				Analyst: sld
Specific Conductance	1200		1	µmhos/cm	1	3/23/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Pinnacle Laboratories, Inc.

Interlab Chain of Custody

Date: 3/17 Page: 1 of 1

Network Project Manager: Kimberly D. McNeill

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

*Dissolved metals
need to be filtered*

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Total Cr, Pb, Hg	Diss. As, Ba, Cd, Cu, Mg, Mn, K, Ag, Na, Se	Conductivity (Need 4 results per sample)	Gen Chemistry: TDS, Cl, SO4	Alkalinity + Bicarb. Carb.	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
903055-01	3/15	0920	AQ	01				X	X	X	X	X	X														
-02		1120		02				X	X	X	X	X	X														
-03		1315		03				X	X	X	X	X	X														
-04		1410		04				X	X	X	X	X	X														
-05		1515		05				X	X	X	X	X	X														

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	903055	Total Number of Containers		PENSACOLA - STL-FL		Signature:		Signature:	
PROJ. NAME:	GRC	Chain of Custody Seals		PORTLAND - ESL-OR	X	Printed Name:	Shanice Dune 1700	Printed Name:	
QC LEVEL:	STD. IV	Received Intact?		STL - CT		Date:	3/17/99	Date:	
QC REQUIRED:	MS MSD BLANK	Received Good Cond/Cold		STL - NEW JERSEY		Company:	Pinnacle Laboratories, Inc.	Company:	
TAT:	STANDARD RUSH!!	LAB NUMBER:	9903029	N CREEK		RECEIVED BY:	1	RECEIVED BY:	2
DUE DATE:	3/31	COMMENTS:	Conductivity 24 Results per sample.	BARRINGER		Signature:		Signature:	
RUSH SURCHARGE:	—			SEQUOIA		Time:		Time:	
CLIENT DISCOUNT:	—					Printed Name:		Printed Name:	
SPECIAL CERTIFICATION						Date:		Date:	
REQUIREMENTS						Company:		Company:	

Page: 1 of 1

ANALYSIS REQUEST

Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
903065-01	3/16	1015	AQ	
-02	↓	1100	↑	
-03	↓	1500	↑	
-04	3/17	0845	↑	
-05	↓	1040	↑	
-06	↓	(30)	↓	

Metals (8) RCRA	X X X X X X X
RCRA TCLP METALS	
Metals-13 PP List	
Metals-TAC Total Cr, Pb	X X X X X X X
Diss. Cu, Mg, K, Na	X X X X X X X
TOX	
TOC	
Gen Chemistry Conductivity TDS	X X X X X X X
Alkalinity+Bicarb / Carb, Cl, SO ₄	X X X X X X X
Oil and Grease	
Volatile Organics GC/MS (8260)	
BOD	
COD	
PESTICIDES/PCB (608/8080)	
8270 BY GC/MS	
PNA (8310)	
8240 (TCLP 1311) ZHE	
Herbicides (815/8150)	
Base/Neutral Acid Compounds GC/MS (625/8270)	
URANIUM	
RADIUM 226+228	
Gross Alpha/Beta	
TO-14	
NUMBER OF CONTAINERS	

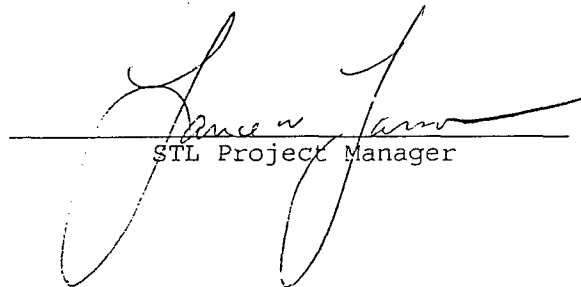


Severn Trent Laboratories
11 East Olive Road
Pensacola FL 32514

SIGNATURE PAGE

Tel: (850) 474-1001
Fax: (850) 478-2671

Reviewed by:


STL Project Manager

Client: PINNACLE LABORATORIES
ALBUQUERQUE, NEW MEXICO

Project Name: GRC
Project Number: 903065
Project Location: N/S
Accession Number: 903467

Project Manager: KIM MCNEILL
Sampled By: N/S

Other Laboratory Locations:

- 149 Rangway Road, North Billerica MA 01862
- 16203 Park Row, Suite 110, Houston TX 77084
- 200 Monroe Turnpike, Monroe CT 06468
- 55 South Park Drive, Colchester VT 05446
- 315 Fullerton Avenue, Newburgh NY 12550
- Westfield Executive Park, 53 Southampton Road, Westfield MA 01085
- 628 Route 10, Whippany NY 07981
- 77 New Durham Road, Edison NJ 08817

a part of



SEVERN TRENT LABORATORIES, INC. – PENSACOLA, FLORIDA
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. 81142 (Drinking Water), Laboratory ID No. E81010 (Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. 98-25 (Drinking Water)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&OccH (No Laboratory ID No. assigned by state) (Drinking Water by Reciprocity with Florida)

New Hampshire DES, Laboratory ID No. 250598-A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waste)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment, Health, & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Hazardous Waste and Wastewater by Reciprocity with California)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Tennessee Division of Underground Storage Tanks Approved Laboratory

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 9133

ANNUAL GROUNDWATER SAMPLING EVENT

ANALYTICAL PARAMETERS

WELL	pH	Cond	TOC*	TOX*	TDS	ALKAL. BICARB	ALKAL. CARB	CHLORIDE	SULFATE	PHENOL	VOL-ORG 8260	BTX 8260	TOTAL METALS			DISSOLVED METALS									
													Cr	Pb	Hg	Aa	Ba	Cd	Ca	Mg	Mn	K	Sc	Ag	Na
MW-1	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
MW-2	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
MW-4	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
MW-5	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
OW-11	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
04 SMW-3	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
05 SMW-4	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
06 SMW-5	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
SMW-6	X	X	X	X	X	X		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
03 OW-1	X	X			X	X		X	X			X													
01 OW-2	X	X			X	X		X	X			X													
02 OW-3	X	X			X	X		X	X			X													

* TOC - 2 replicates & original

* TOX - 3 replicates & original

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: TOTAL ORGANIC CARBON

Accession:	903467
Client:	PINNACLE LABORATORIES
Project Number:	903065
Project Name:	GRC
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	001	Sample Date/Time:	16-MAR-99 1015
Client Sample Id:	903065	Received Date:	23-MAR-99
	SMW-3-31799		
Batch:	TOW019	Extraction Date:	N/A
Blank:	A	Analysis Date:	25-MAR-99
	Dry Weight %:		N/A

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	4	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 2
Date 29-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	002	Sample Date/Time:	16-MAR-99 1015
Client Sample Id:	903065- SMW-3-31799	Received Date:	23-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	3	1	
ANALYST	INITIALS	BT		

Comments:

[0] Page 3
Date 29-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	003		Sample Date/Time:	16-MAR-99 1015
Client Sample Id:	903065	SMW-3-31799	Received Date:	23-MAR-99
Batch: TOW019			Extraction Date:	N/A
Blank: A	Dry Weight %:	N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	4	1	
ANALYST	INITIALS	BT		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	005	Sample Date/Time:	16-MAR-99 1100
Client Sample Id:	903065	Received Date:	23-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	25-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	BT		

Comments:

[0] Page 5
Date 29-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id: 006 Sample Date/Time: 16-MAR-99 1100
Client Sample Id: 903065 SMW-4-31799 Received Date: 23-MAR-99

Batch: TOW019 Extraction Date: N/A
Blank: A Dry Weight %: N/A Analysis Date: 25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	BT		

Comments:

[0] Page 6
Date 29-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	007		Sample Date/Time:	16-MAR-99 1100
Client Sample Id:	903065	SMW-4-31799	Received Date:	23-MAR-99
Batch:	TOW019		Extraction Date:	N/A
Blank:	A	Dry Weight %:	Analysis Date:	25-MAR-99
		N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	BT		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	009	Sample Date/Time:	16-MAR-99 1500
Client Sample Id:	903065	Received Date:	23-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	25-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	BT		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	010		Sample Date/Time:	16-MAR-99 1500
Client Sample Id:	903065	SMW-5-31799	Received Date:	23-MAR-99
Batch: TOW019			Extraction Date:	N/A
Blank: A	Dry Weight %:	N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	BT		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	011	Sample Date/Time:	16-MAR-99 1500
Client Sample Id:	903065 SMW-5-31799	Received Date:	23-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	BT		

Comments:

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: TOTAL ORGANIC HALIDES IN WATER

Accession:	903467
Client:	PINNACLE LABORATORIES
Project Number:	903065
Project Name:	GRC
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

[0] Page 1
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	16-MAR-99 1015
Client Sample Id:	903065	Received Date:	23-MAR-99
Batch: TXW010		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

[0] Page 2
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	16-MAR-99 1015
Client Sample Id:	903065 SMW-3-31799	Received Date:	23-MAR-99
Batch: TXW010		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES	MG/L	0.04	0.01	
ANALYST	INITIALS	LBL		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	16-MAR-99 1015
Client Sample Id:	903065 . SMW-3-31799	Received Date:	23-MAR-99
Batch:	TXW010	Extraction Date:	N/A
Blank:	A	Analysis Date:	24-MAR-99
Dry Weight %:	N/A		

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	16-MAR-99 1015
Client Sample Id:	903065	Received Date:	23-MAR-99

Batch: TXW010		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

[0] Page 5
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	16-MAR-99 1100
Client Sample Id:	903065	SMW-4-31799	Received Date:	23-MAR-99
Batch: TXW010			Extraction Date:	N/A
Blank: A	Dry Weight %:	N/A	Analysis Date:	24-MAR-99

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

Comments:

{0} Page 6
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	16-MAR-99 1100
Client Sample Id:	903065	Received Date:	23-MAR-99
Batch: TXW010		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	007	Sample Date/Time:	16-MAR-99 1100
Client Sample Id:	903065	Received Date:	23-MAR-99
Batch: TXW010		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	008	Sample Date/Time:	16-MAR-99 1100
Client Sample Id:	903065 SMW-4-31799	Received Date:	23-MAR-99
Batch: TXW010		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	25-MAR-99

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

Comments:

[0] Page 9
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	009	Sample Date/Time:	16-MAR-99 1500
Client Sample Id:	903065	Received Date:	23-MAR-99
	SMW-5-31799		
Batch: TXW010		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	25-MAR-99
	N/A		

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	010		Sample Date/Time:	16-MAR-99 1500
Client Sample Id:	903065	SMW-5-31799	Received Date:	23-MAR-99
Batch: TXW010			Extraction Date:	N/A
Blank: B	Dry Weight %:	N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES	MG/L	0.04	0.01	
ANALYST	INITIALS	LBL		

Comments:

[0] Page 11
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	011	Sample Date/Time:	16-MAR-99 1500
Client Sample Id:	903065	Received Date:	23-MAR-99
Batch: TXW010		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	25-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES	MG/L	0.03	0.01	
ANALYST	INITIALS	LBL		

Comments:

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Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903467
Client: PINNACLE LABORATORIES
Project Number: 903065
Project Name: GRC
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	012	Sample Date/Time:	16-MAR-99 1500
Client Sample Id:	903065	Received Date:	23-MAR-99
	SMW-5-31799		
Batch: TXW010		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	25-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC HALIDES	MG/L	0.03	0.01	
ANALYST	INITIALS	LBL		

Comments:

Data Qualifiers for Final Report

STL-Pensacola Inorganic/Organic and AFCEE Projects (under QAPP)

J4	(For positive results)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
J5	(TICs)	The reported value is quantitated as a TIC; therefore, it is estimated
J6	(For positive results)	LCS or Surrogate %R is > upper control limit (UCL) or < lower control limit (LCL)
J7	(For positive results)	The reported value is > the laboratory MDL and < lowest calibration standards; therefore, the quantitation is an estimation.
J (AFCEE description)	The analyte was positively identified, the quantitation is an estimation	
R1	(For nondetects)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
R2	Improper preservation, no preservative present in sample upon receipt	
R3	Improper preservation, incorrect preservative present in sample upon receipt	
R4	Holding time exceeded	
R5	Collection requirements not met, improper container used for sample	
R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects	
R7	Internal standard area outside -50% to +100% of initial calibration midpoint standard.	
R8	Second source calibration verification exceeds acceptance criteria.	
R9	Improper preservation, sample not filtered in the field.	
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria	
F	< laboratory or AFCEE RL and > laboratory MDL	
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL	
U2	< Laboratory MDL (value for result will be the MDL, never below the MDL)	
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL	
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample	
@	Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)	
+	Elevated reporting limit due to dilution into calibration range	
*	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)	
#	Elevated reporting limit due to insufficient sample size	
D	Diluted out	
M	A matrix effect was present (sample was analyzed twice to confirm or chromatogram had interfering peaks)	
S	Incorrect sample amount was submitted to the laboratory for analysis	
T	Second-column confirmation exceeded the SW-846 criteria of 40% RPD for this compound.	

ND = Not Detected at or above the STL-Pensacola reporting limit (RL)

N/S = Not Submitted

N/A = Not Applicable

IDL = Laboratory Instrument Detection Limit

MDL = Laboratory Method Detection Limit

RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative)

Florida Projects Inorganic/Organic

Refer to back side of this page

ICR Projects Inorganic/Organic

A1 Acceptable

R6

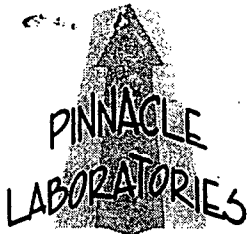
Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit

CLP and CLP-like Projects: Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 003022
March 24, 2000

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
Project Number (none)

Attention: STEVE MORRIS

On 03/07/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8260 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

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

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

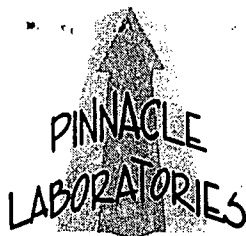
Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : GIANT REFINING COMPANY PINNACLE ID : 003022
PROJECT # : (none) DATE RECEIVED : 03/07/00
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FAL REPORT DATE : 03/24/00

PIN	ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
	01	MW-1-3300	AQUEOUS	03/03/00
	02	MW-2-3300	AQUEOUS	03/03/00
	03	MW-5-3300	AQUEOUS	03/03/00
	04	MW-4-3300	AQUEOUS	03/03/00
	05	SMW-3-3300	AQUEOUS	03/03/00
	06	SMW-4-3300	AQUEOUS	03/03/00
	07	SMW-5-3300	AQUEOUS	03/03/00
	08	OW-11 3300	AQUEOUS	03/03/00
	09	TRIP BLANK	AQUEOUS	10/08/99



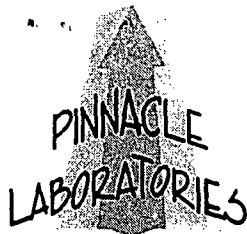
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-01	MW - 1 - 3300	AQUEOUS	10/08/99	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



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Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-01	MW - 1 - 3300	AQUEOUS	10/08/99	N/A	03/08/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromo-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	95 (80 - 120)
Toluene-d8	96 (88 - 110)
Bromofluorobenzene	99 (86 - 115)



LOG NO: C0-03279
Received: 09 MAR 00
Reported: 22 MAR 00

Ms. Kim McNeill
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Albuquerque, NM 87107

Project: 003022, GRC-SEMIANNUAL GW SAMPLES FALL 1999

Sampled By: Client

Code: 075400322

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES					DATE/ TIME SAMPLED
03279-1	003022-01 MW-1-3300					03-03-00/08:10
03279-2	003022-02 MW-2-3300					03-03-00/09:00
03279-3	003022-03 MW-5-3300					03-03-00/09:45
03279-4	003022-04 MW-4-3300					03-03-00/11:15
03279-5	003022-08 OW-11-3300					03-03-00/13:00
PARAMETER	03279-1	03279-2	03279-3	03279-4	03279-5	
Total Organic Carbon (TOC) (9060)						
Total Organic Carbon -	<1.0	<1.0	<1.0	<1.0	1.4	
Replicate 1, mg/l						
Total Organic Carbon -	<1.0	<1.0	<1.0	<1.0	1.3	
Replicate 2, mg/l						
Total Organic Carbon -	<1.0	<1.0	<1.0	<1.0	1.3	
Replicate 3, mg/l						
Total Organic Carbon -	<1.0	<1.0	<1.0	<1.0	1.7	
Replicate 4, mg/l						
Analyst	BT	BT	BT	BT	BT	
Prep Date	03.15.00	03.15.00	03.15.00	03.15.00	03.15.00	
Analysis Date	03.15.00	03.15.00	03.15.00	03.15.00	03.15.00	
Batch ID	TOW019	TOW019	TOW019	TOW019	TOW019	
Prep Method	9060	9060	9060	9060	9060	
Dilution Factor	1	1	1	1	1	



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LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED		
03279-6	003022-05 SMW-3-3300	03-03-00/13:45		
03279-7	003022-06 SMW-4-3300	03-03-00/14:15		
03279-8	003022-07 SMW-5-3300	03-03-00/14:45		
PARAMETER		03279-6	03279-7	03279-8
Total Organic Carbon (TOC) (9060)				
Total Organic Carbon - Replicate 1, mg/l		3.0	1.3	<1.0
Total Organic Carbon - Replicate 2, mg/l		2.6	1.1	<1.0
Total Organic Carbon - Replicate 3, mg/l		2.4	<1.0	<1.0
Total Organic Carbon - Replicate 4, mg/l		2.4	1.4	<1.0
Analyst		BT	BT	BT
Prep Date		03.15.00	03.15.00	03.15.00
Analysis Date		03.15.00	03.15.00	03.15.00
Batch ID		TOW019	TOW019	TOW019
Prep Method		9060	9060	9060
Dilution Factor		1	1	1
Chromium (200.7), mg/l				
		0.008	<0.005	0.11
Analyst		GSP	GSP	GSP
Prep Date		03.15.00	03.15.00	03.15.00
Analysis Date		03.16.00	03.16.00	03.16.00
Batch ID		PW080	PW080	PW080
Dilution Factor		1	1	1
Lead (200.7), mg/l				
		<0.005	<0.005	<0.005
Analyst		GSP	GSP	GSP
Prep Date		03.15.00	03.15.00	03.15.00
Analysis Date		03.16.00	03.16.00	03.16.00
Batch ID		PW080	PW080	PW080
Dilution Factor		1	1	1



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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES					DATE/ TIME SAMPLED
03279-9	003022-01-A MW-1-3300					03-03-00/08:10
03279-10	003022-01-B MW-1-3300					03-03-00/08:10
03279-11	003022-01-C MW-1-3300					03-03-00/08:10
03279-12	003022-02-A MW-2-3300					03-03-00/09:00
03279-13	003022-02-B MW-2-3300					03-03-00/09:00
PARAMETER	03279-9	03279-10	03279-11	03279-12	03279-13	
Total Organic Halogens (9020), mg/l	130	220	250	260	260	
Analyst	MG	MG	MG	MG	MG	
Prep Date	03.14.00	03.14.00	03.14.00	03.16.00	03.16.00	
Analysis Date	03.16.00	03.16.00	03.16.00	03.16.00	03.16.00	
Batch ID	TXW048	TXW048	TXW048	TXW048	TXW048	
Prep Method	9020	9020	9020	9020	9020	
Dilution Factor	1	1	1	1	1	

Reported



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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
03279-14	003022-02-C MW-2-3300	03-03-00/09:00			
03279-15	003022-03-A MW-5-3300	03-03-00/09:45			
03279-16	003022-03-B MW-5-3300	03-03-00/09:45			
03279-17	003022-03-C MW-5-3300	03-03-00/09:45			
03279-18	003022-04-A MW-4-3300	03-03-00/11:15			
PARAMETER	03279-14	03279-15	03279-16	03279-17	03279-18
Total Organic Halogens (9020), mg/l/	59	17	23	38	<1.0
Analyst	MG	MG	MG	MG	MG
Prep Date	03.16.00	03.16.00	03.16.00	03.16.00	03.16.00
Analysis Date	03.16.00	03.16.00	03.16.00	03.16.00	03.16.00
Batch ID	TXW048	TXW048	TXW048	TXW048	TXW048
Prep Method	9020	9020	9020	9020	9020
Dilution Factor	1	1	1	1	1



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LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES					DATE/ TIME SAMPLED
03279-19	003022-04-B	MW-4-3300				03-03-00/11:15
03279-20	003022-04-C	MW-4-3300				03-03-00/11:15
03279-21	003022-05-A	SMW-3-3300				03-03-00/13:45
03279-22	003022-05-B	SMW-3-3300				03-03-00/13:45
03279-23	003022-05-C	SMW-3-3300				03-03-00/13:45
PARAMETER	03279-19	03279-20	03279-21	03279-22	03279-23	
Total Organic Halogens (9020), mg/l	47	31	23	33	83	
Analyst	MG	MG	MG	MG	MG	
Prep Date	03.16.00	03.16.00	03.16.00	03.16.00	03.16.00	
Analysis Date	03.16.00	03.16.00	03.16.00	03.16.00	03.16.00	
Batch ID	TXW048	TXW048	TXW048	TXW048	TXW048	
Prep Method	9020	9020	9020	9020	9020	
Dilution Factor	1	1	1	1	1	



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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED				
03279-24	003022-06-A SMW-4-3300	03-03-00/14:15				
03279-25	003022-06-B SMW-4-3300	03-03-00/14:15				
03279-26	003022-06-C SMW-4-3300	03-03-00/14:15				
03279-27	003022-07-A SMW-5-3300	03-03-00/14:45				
03279-28	003022-07-B SMW-5-3300	03-03-00/14:45				
PARAMETER	03279-24	03279-25	03279-26	03279-27	03279-28	
Total Organic Halogens (9020), mg/l	44	50	8.5	16	16	
Analyst	MG	MG	MG	MG	MG	
Prep Date	03.17.00	03.17.00	03.17.00	03.17.00	03.17.00	
Analysis Date	03.17.00	03.17.00	03.17.00	03.17.00	03.17.00	
Batch ID	TXW048	TXW048	TXW048	TXW048	TXW048	
Prep Method	9020	9020	9020	9020	9020	
Dilution Factor	1	1	1	1	1	



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REPORT OF RESULTS

DATE/
TIME SAMPLED

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
03279-29	003022-07-C SMW-5-3300	03-03-00/14:45
03279-30	003022-08-A OW-11-3300	03-03-00/13:00
03279-31	003022-08-B OW-11-3300	03-03-00/13:00
03279-32	003022-08-C OW-11-3300	03-03-00/13:00

PARAMETER	03279-29	03279-30	03279-31	03279-32
Total Organic Halogens (9020), mg/l	8.3	250	260	18
Analyst	MG	MG	MG	MG
Prep Date	03.17.00	03.17.00	03.17.00	03.17.00
Analysis Date	03.17.00	03.17.00	03.17.00	03.17.00
Batch ID	TXW048	TXW048	TXW048	TXW048
Prep Method	9020	9020	9020	9020
Dilution Factor	1	1	1	1



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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
03279-33	Method Blank			
03279-34	Lab Control Standard % Recovery			
03279-35	Matrix Spike % Recovery			
03279-36	Matrix Spike Duplicate % Recovery			
PARAMETER	03279-33	03279-34	03279-35	03279-36
Total Organic Carbon (TOC) (9060)				
Total Organic Carbon, mg/l	<1.0	106 %	104 %	109 %
Analyst	BT	BT	BT	BT
Prep Date	03.15.00	03.15.00	03.15.00	03.15.00
Analysis Date	03.15.00	03.15.00	03.15.00	03.15.00
Batch ID	TOW019	TOW019	TOW019	TOW019
Prep Method	9060	9060	9060	9060
Dilution Factor	1	1	1	1
Chromium (200.7), mg/l	<0.005	102 %	102 %	104 %
Analyst	GSP	GSP	GSP	GSP
Prep Date	03.15.00	03.15.00	03.15.00	03.15.00
Analysis Date	03.16.00	03.16.00	03.16.00	03.16.00
Batch ID	PW080	PW080	PW080	PW080
Dilution Factor	1	1	1	1
Lead (200.7), mg/l	<0.005	100 %	101 %	102 %
Analyst	GSP	GSP	GSP	GSP
Prep Date	03.15.00	03.15.00	03.15.00	03.15.00
Analysis Date	03.16.00	03.16.00	03.16.00	03.16.00
Batch ID	PW080	PW080	PW080	PW080
Dilution Factor	1	1	1	1



LOG NO: C0-03279
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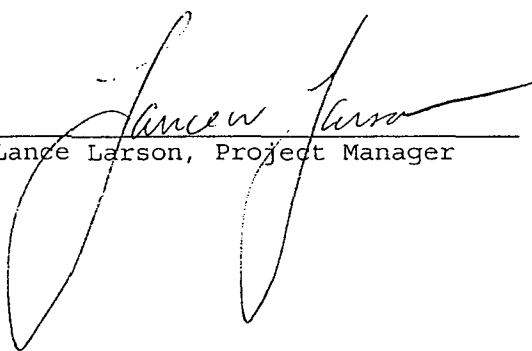
Ms. Kim McNeill
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Albuquerque, NM 87107

Project: 003022, GRC-SEMIANNUAL GW SAMPLES FALL 1999
Sampled By: Client
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REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
03279-33	Method Blank			
03279-34	Lab Control Standard % Recovery			
03279-35	Matrix Spike % Recovery			
03279-36	Matrix Spike Duplicate % Recovery			
PARAMETER	03279-33	03279-34	03279-35	03279-36
Total Organic Halogens (9020), mg/l	<1.0	90 %	151 % J6	146 % J6
Analyst	MG	MG	MG	MG
Prep Date	03.16.00	03.16.00	03.16.00	03.16.00
Analysis Date	03.16.00	03.16.00	03.16.00	03.16.00
Batch ID	TXW048	TXW048	TXW048	TXW048
Prep Method	9020	9020	9020	9020
Dilution Factor	1	1	1	1


Lance Larson, Project Manager

Final Page Of Report

Data Qualifiers for Final Report

STL-Pensacola Inorganic/Organic

J4	(For positive results)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
J6	(For positive results)	LCS or Surrogate %R is > upper control limit (UCL) or < lower control limit (LCL)
J7		The reported value is > the laboratory MDL and < lowest calibration standard; therefore, the quantitation is an estimation (this qualifier should only be used when the STL-PN RL is below the lowest calibration standard in the initial calibration).
J (description)		The analyte was positively identified, the quantitation is estimation
R1	(For nondetects)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$); non-reportable for NDPES compliance monitoring
R2		Improper preservation, no preservative present or insufficient amounts of preservative in sample upon receipt, non-reportable for NDPES compliance monitoring
R3		Improper preservation, incorrect preservative present in sample upon receipt, non-reportable for NPDES compliance
R4		Holding time exceeded, non-reportable for NDPES compliance monitoring.
R5		Collection requirements not met, improper container used for sample
R6		LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects
R7		Internal standard area outside -50% to +100% of initial calibration midpoint standard.
R8		Initial calibration or any calibration verification exceeds acceptance criteria.
R10		Headspace > 1/4" in diameter in volatile vials, non-reportable for NPDES compliance monitoring
R (description)		The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
F		The reported value is < STL-Pensacola RL and > the STL-Pensacola MDL; therefore, the quantitation is estimation (assume the STL-PN RL is at or above lowest calibration standard in the initial calibration curve).
F (description)		The analyte was positively identified but the associated numerical value is below the STL-Pensacola RL
U2		The reported value is $\leq$ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (description)		The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL
B3		The analyte was found in the associated blank as well as in the associated sample(s) (qualifier is applied to the sample, not to the blank).
B1		The analyte was detected in the associated method blank (sample itself is flagged even though sample is ND).
B2		The analyte was detected in the sample(s) and in the associated method blank analyzed on the day samples were extruded; however, this analyte was not detected in the blank analyzed with the samples.
+		Elevated reporting limit due to dilution into calibration range
#		Elevated reporting limit due to insufficient sample size
M		A matrix effect was present (sample, MS or MSD was analyzed twice to confirm surrogate/spike failure, sample and/or MS/MSD chromatogram(s) had interfering peaks, or sample result was > 4 X spike added)
NoMS		Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)
C		MS/MSD not performed on this order # (this client's sample was not the sample that was spiked)
N/C+		Not Calculable
N/C*		Not Calculable; Sample spiked is > 4X spike concentration (may also use this flag in place of negative numbers)
D		Diluted out
S		Incorrect sample amount was submitted to the laboratory for analysis
T		Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC		The compound is not within the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
E		Compound concentration exceeds the upper calibration range of the instrument.
FracB		Sample results were corrected due to contaminants in Fractionation Blank (a certification statement is required to be submitted with the final report for MA EPH and NC-Modified MA EPH)
Normally used for Inorganics Only		
R9		Improper preservation, sample not filtered in the field, non-reportable for NDPES compliance monitoring
* (Metals & Wet Chem)		Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
N/C		Sample and duplicate results are at or below the STL Reporting Limit; therefore, the RPD is "Not Calculable" and no control limits apply.
W		Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.
G		Sample and/or duplicate result is at or below 5 X (times) the STL Reporting Limit and the absolute difference between the sample and duplicate result is at or below the STL reporting limit; therefore, the results are "in control".
Q		The analytical (post digestion) spike is reported due to the percent recovery being outside limits on the matrix (pre-digestion) spike.
H		Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control"
NH		Sample and/or duplicate result is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit; therefore, the results are "out of control". Sample is nonhomogeneous.
A		Sample and duplicate results are "out of control". The sample is nonhomogeneous.
J8		Matrix spike and post spike recoveries are outside control limits. See out of Control Events/Corrective Action Form.
Z		The sample result for the spike is below the STL Reporting Limit. It is reported for accurate QC calculations.
S1		The Method of Standard Additions (MSA) has been performed on this sample.
P		Analytical (post-digestion) spike
I		Duplicate Injection

SEVERN TRENT LABORATORIES, INC. - PENSACOLA, FLORIDA
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. 81142 (Drinking Water), Laboratory ID No. E81010 (Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. 98-25 (Drinking Water)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&OcCH, Laboratory ID No. 9912 (Drinking Water by Reciprocity with Florida)

New Hampshire DES ELAP, Laboratory ID No. 250599A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waste)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Hazardous Waste and Wastewater by Reciprocity with Florida)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Tennessee Division of Underground Storage Tanks Approved Laboratory

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 100704

Network Project Manager: Kimberly D. McNeill

Pinnacle Laboratories, Inc.

2709-D Pan American Freeway, NE

Albuquerque, New Mexico 87107

(505) 344-3777 Fax (505) 344-4413

TOC needs to be done in 4 replicates.

TOX needs to be done in 3 replicates.

Submitting Date: 3-17-00

(003 279

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL	Total Cr, Pb	TOX (3 replicates)	TOC (4 replicates)	Gen Chemistry	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8080)	8270 BY GC/MS	PNA (8310)	8240 (TCLP 1311) ZHE	Herbicides (615/8150)	Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
003022-01	3/3	0810	AD							X	X																
-02		0900								X	X																
-03		0945								X	X																
-04		1115								X	X																
-05		1345								X	X																
-06		1415								X	X																
-07		1445								X	X																
-08		1300								X	X																

PROJECT INFORMATION

SAMPLE RECEIPT

SAMPLES SENT TO:

RELINQUISHED BY:

1. RELINQUISHED BY:

2

PROJECT #: 003022

Total Number of Containers

PENSACOLA - STL-FL

Signature: [Signature] Time: 1700

Signature: [Signature] Time: [Time]

PROJ. NAME: GRC

Chain of Custody Seals

PORTLAND - STL-OR

Signature: [Signature] Time: 1700

Signature: [Signature] Time: [Time]

QC LEVEL: STD IV

Received Inactive?

STL - CT

Signature: [Signature] Time: 3/7/00

Signature: [Signature] Time: [Time]

QC REQUIRED: MS MSD BLANK

Received Good Cond/Cold

STL - NEW JERSEY

Signature: [Signature] Time: 3/7/00

Signature: [Signature] Time: [Time]

TAT: STANDARD RUSHII

LAB NUMBER:

N. CREEK

Signature: [Signature] Time: 3/7/00

Signature: [Signature] Time: [Time]

DUE DATE: 3/7

LAB NUMBER:

BARRINGER

Signature: [Signature] Time: 1025

Signature: [Signature] Time: [Time]

RUSH SURCHARGE: -

LAB NUMBER:

SEQUOIA

Signature: [Signature] Time: 1025

Signature: [Signature] Time: [Time]

CLIENT DISCOUNT: -

LAB NUMBER:

SEQUOIA

Signature: [Signature] Time: 1025

Signature: [Signature] Time: [Time]

SPECIAL CERTIFICATION

LAB NUMBER:

SEQUOIA

Signature: [Signature] Time: 1025

Signature: [Signature] Time: [Time]

REQUIRED: YES (NO)

LAB NUMBER:

SEQUOIA

Signature: [Signature] Time: 1025

Signature: [Signature] Time: [Time]

REQUIRED: YES (NO)

LAB NUMBER:

SEQUOIA

Signature: [Signature] Time: 1025

Signature: [Signature] Time: [Time]

REQUIRED: YES (NO)

LAB NUMBER:

SEQUOIA

Signature: [Signature] Time: 1025

Signature: [Signature] Time: [Time]

Severn-Trent Laboratories of Florida

PROJECT SAMPLE INSPECTION FORM

Lab Accession #: C003279

Date Received: 08-mar-00

- | | |
|---|--|
| <p>1. Was there a Chain of Custody? <u>Yes</u> No⁺</p> <p>2. Was Chain of Custody properly filled out and relinquished? <u>Yes</u> No⁺</p> <p>3. Were samples received cold? <u>Yes</u> No⁺ N/A
(Criteria: 2° - 6°C: STL-SOP 1055)</p> <p>4. Were all samples properly labeled and identified? <u>Yes</u> No⁺</p> <p>5. Did samples require splitting? <u>Yes</u>⁺ No
Req By: PM Client Other⁺</p> <p>6. Were samples received in proper containers for analysis requested? <u>Yes</u> No⁺</p> <p>7. Were all sample containers received intact? <u>Yes</u> No⁺</p> | <p>8. Were samples checked for preservative? <u>Yes</u> No⁺ N/A
(Check pH of all H₂O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)⁺</p> <p>9. Is there sufficient volume for analysis requested? <u>Yes</u> No⁺ N/A (Can)</p> <p>10. Were samples received within Holding Time? <u>Yes</u> No⁺
(REFER TO STL-SOP 1040)</p> <p>11. Is Headspace visible > 1/4" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section. <u>Yes</u>⁺ No N/A</p> <p>12. If sent, were matrix spike bottles returned? <u>Yes</u> No⁺ N/A</p> <p>13. Was Project Manager notified of problems? (initials: <u> </u>) <u>Yes</u> No⁺ N/A</p> |
|---|--|

Airbill Number(s): 12878 16801 4395 2147

Shipped By: UPS

Cooler Number(s): Client

Shipping Charges: N/A

Cooler Weight(s): 36

Cooler Temp(s) (°C): 30
CCK10

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

TOC QUAD WAS REQUESTED ON THE 200th COC, HOWEVER ONLY 3 bottles per sample was submitted. Pk 3/9/00

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: LBrown Date: 3-800 Logged By: PKC Date: 3/9/00

Note all Out-of-Control and/or questionable events on Comment Section of this form.

Note who requested the splitting of samples on the Comment Section of this form.

All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).

According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION				PRIORITY AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT NO.	PROJECT NAME	PROJECT DATE	PROJECT TIME	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☐	Signature	Time	Signature	Time
1999	Sampled	3/3/00	8:10	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	9:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	9:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	11:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	1:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	2:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	2:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	13:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	13:50	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	14:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	14:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	14:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	14:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	15:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	15:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	15:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	15:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	16:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	16:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	16:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	16:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	17:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	17:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	17:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	17:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	18:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	18:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	18:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	18:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	19:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	19:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	19:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	19:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	20:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	20:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	20:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	20:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	21:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	21:15	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	21:30	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	21:45	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	22:00	☐	☐	Steve Morris	0930	Steve Morris	0930
1999	Sampled	3/3/00	22:15	☐	☐	Steve Morris	0930	Steve Morris	0930

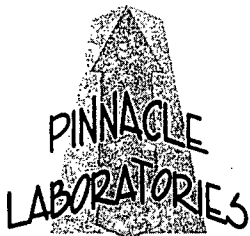
SEMI-ANNUAL GROUNDWATER SAMPLING EVENT

PARAMETERS

WELL			TOC *	TOX**	CHROME	LEAD	VOL ORG 8260	
MW-1			X	X			X	
MW-2			X	X			X	
MW-4			X	X			X	
MW-5			X	X			X	
OW-11			X	X			X	
SMW-3			X	X	X	X	X	
SMW-4			X	X	X	X	X	
SMW-5			X	X	X	X	X	
OW-12								X

* = Four replicates

** = Three replicates



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 903055
March 31, 1999

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name ANNUAL GROUNDWATER
Project Number (none)

Attention: STEVE MORRIS

On 3/17/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA methods 150.1 and 8260 were performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

Phenols, TOC and TOX were performed by Severn Trent (FL) Inc., Pensacola, FL.

All other parameters were performed by ESL (OR) Inc., Portland, OR.

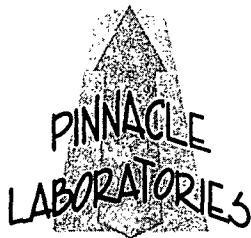
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : ANNUAL GROUNDWATER

PINNACLE ID : 903055
DATE RECEIVED : 3/17/99
REPORT DATE : 3/31/99

PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
1	MW-1-31599	AQUEOUS	3/15/99
02	MW-2-31599	AQUEOUS	3/15/99
03	MW-5-31599	AQUEOUS	3/15/99
4	MW-4-31599	AQUEOUS	3/15/99
5	OW-11-31599	AQUEOUS	3/15/99



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Albuquerque, New Mexico 87107
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GENERAL CHEMISTRY RESULTS

CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903055
PROJECT # : (none) DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE		DATE		DATE		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED		
01	MW-1-31599	AQUEOUS	3/15/99	3/17/99		
02	MW-2-31599	AQUEOUS	3/15/99	3/17/99		
03	MW-5-31599	AQUEOUS	3/15/99	3/17/99		
PARAMETER			UNITS	MW-1-31599	MW-2-31599	MW-5-31599
PH (150.1)			UNITS	8.97	8.94	9.01
PH (150.1)			UNITS	9.03	9.07	9.07
PH (150.1)			UNITS	9.06	9.09	9.10
PH (150.1)			UNITS	9.07	9.08	9.10

CHEMIST NOTES:
N/A



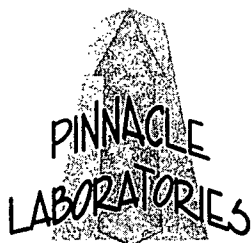
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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GENERAL CHEMISTRY RESULTS

CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903055
PROJECT # : (none) DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE		DATE		DATE
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED
04	MW-4-31599	AQUEOUS	3/15/99	3/17/99
05	OW-11-31599	AQUEOUS	3/15/99	3/17/99
PARAMETER		UNITS	MW-4-31599	OW-11-31599
PH (150.1)		UNITS	8.74	8.32
PH (150.1)		UNITS	8.79	8.33
PH (150.1)		UNITS	8.80	8.37
PH (150.1)		UNITS	8.81	8.39

CHEMIST NOTES:
N/A



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GENERAL CHEMISTRY - QUALITY CONTROL

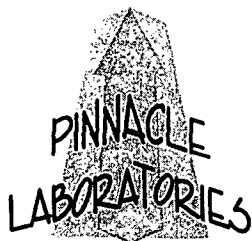
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 903055
PROJECT # : (none) SAMPLE MATRIX : AQUEOUS
PROJECT NAME : ANNUAL GROUNDWATER

PARAMETER	UNITS	PINNACLE I.D.	SAMPLE RESULT	DUP. RESULT	% RPD
PH	UNITS	903055-05	8.32	8.33	0

CHEMIST NOTES:
N/A

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

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



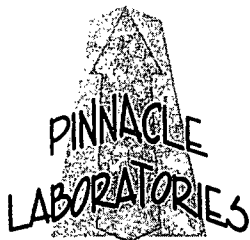
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-01	MW-1-31599	AQUEOUS	3/15/99	N/A	03/17/99	1
PARAMETER	DET. LIMIT	UNITS				

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



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GC/MS RESULTS

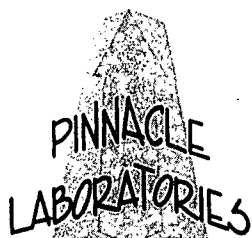
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-01	MW-1-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	107 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	98 (86 - 115)



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GC/MS RESULTS

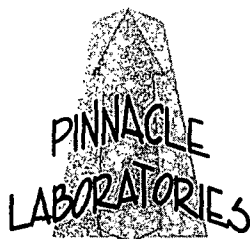
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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903055-02	MW-2-31599	AQUEOUS	3/15/99	N/A	03/17/99	1
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PARAMETER	DET. LIMIT	UNITS
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Dichlorodifluoromethane	1.0	< 1.0 ug/L
Chloromethane	1.0	< 1.0 ug/L
Vinyl Chloride	1.0	< 1.0 ug/L
Bromomethane	1.0	< 1.0 ug/L
Chloroethane	1.0	< 1.0 ug/L
Trichlorofluoromethane	1.0	< 1.0 ug/L
Acetone	10	< 10 ug/L
Acrolein	5.0	< 5.0 ug/L
1,1-Dichloroethene	1.0	< 1.0 ug/L
Iodomethane	1.0	< 1.0 ug/L
Methylene Chloride	1.0	< 1.0 ug/L
Acrylonitrile	5.0	< 5.0 ug/L
cis-1,2-Dichloroethene	1.0	< 1.0 ug/L
Methyl-t-butyl Ether	1.0	< 1.0 ug/L
1,1,2,1,2,2-Trichlorotrifluoroethane	1.0	< 1.0 ug/L
1,1-Dichloroethane	1.0	< 1.0 ug/L
trans-1,2-Dichloroethene	1.0	< 1.0 ug/L
2-Butanone	10	< 10 ug/L
Carbon Disulfide	1.0	< 1.0 ug/L
Bromochloromethane	1.0	< 1.0 ug/L
Chloroform	1.0	< 1.0 ug/L
2,2-Dichloropropane	1.0	< 1.0 ug/L
1,2-Dichloroethane	1.0	< 1.0 ug/L
Vinyl Acetate	1.0	< 1.0 ug/L
1,1,1-Trichloroethane	1.0	< 1.0 ug/L
1,1-Dichloropropene	1.0	< 1.0 ug/L
Carbon Tetrachloride	1.0	< 1.0 ug/L
Benzene	1.0	< 1.0 ug/L
1,2-Dichloropropane	1.0	< 1.0 ug/L
Trichloroethene	1.0	< 1.0 ug/L
Bromodichloromethane	1.0	< 1.0 ug/L
2-Chloroethyl Vinyl Ether	10	< 10 ug/L
cis-1,3-Dichloropropene	1.0	< 1.0 ug/L
trans-1,3-Dichloropropene	1.0	< 1.0 ug/L
1,1,2-Trichloroethane	1.0	< 1.0 ug/L
1,3-Dichloropropane	1.0	< 1.0 ug/L
Dibromomethane	1.0	< 1.0 ug/L
Toluene	1.0	< 1.0 ug/L
1,2-Dibromoethane	1.0	< 1.0 ug/L
4-Methyl-2-Pentanone	10	< 10 ug/L
2-Hexanone	10	< 10 ug/L
Dibromochloromethane	1.0	< 1.0 ug/L
Tetrachloroethene	1.0	< 1.0 ug/L
Chlorobenzene	1.0	< 1.0 ug/L
Ethylbenzene	1.0	< 1.0 ug/L



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GC/MS RESULTS

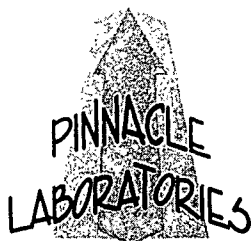
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-02	MW-2-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	104 (80 - 120)
Toluene-d8	94 (88 - 110)
Bromofluorobenzene	90 (86 - 115)



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-04	MW-4-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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



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GC/MS RESULTS

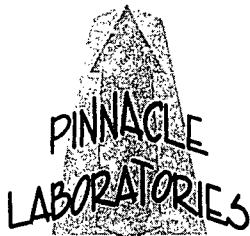
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CLIENT : GIANT REFINING COMPANY-CINIZA Pinnacle I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-04	MW-4-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	104 (80 - 120)
Toluene-d8	99 (88 - 110)
Bromofluorobenzene	96 (86 - 115)



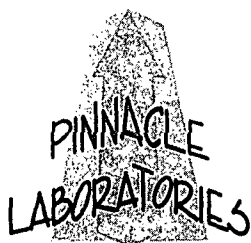
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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-03	MW-5-31599	AQUEOUS	3/15/99	N/A	03/17/99	1
PARAMETER	DET. LIMIT	UNITS				

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



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GC/MS RESULTS

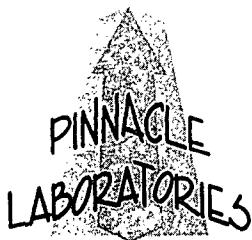
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CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-03	MW-5-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	100 (80 - 120)
Toluene-d8	99 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



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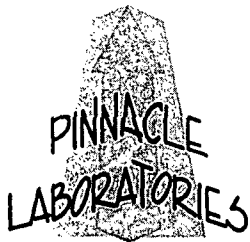
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-05	OW-11-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

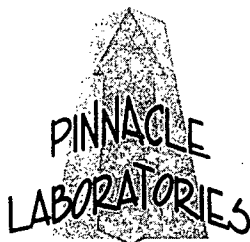
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE DATE RECEIVED : 3/17/99
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
903055-05	OW-11-31599	AQUEOUS	3/15/99	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	107 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	99 (86 - 115)



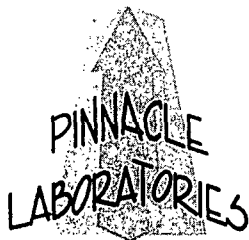
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	031799	AQUEOUS	N/A	03/17/99	1

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



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY-CINIZA PINNACLE I.D. : 903055
PROJECT # : NONE
PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	031799	AQUEOUS	N/A	03/17/99	1

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

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	111 (80 - 120)
Toluene-d8	103 (88 - 110)
Bromofluorobenzene	98 (86 - 115)



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260	PINNACLE I.D.	: 903053
SPIKED SAMPLE	: 903053-03	DATE ANALYZED	: 3/17/99
CLIENT	: GIANT REFINING COMPANY-CINIZA	UNITS	: ug/L (PPB)
PROJECT #	: NONE		
PROJECT NAME	: ANNUAL GROUNDWATER		

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	54.1	53.6	108	107	1	14	61-145
BENZENE	<1.0	50.0	54.2	55.4	108	111	2	11	76-127
TRICHLOROETHENE	<1.0	50.0	51.1	52.6	102	105	3	14	71-120
TOLUENE	<1.0	50.0	51.8	52.0	104	104	0	13	76-125
CHLOROBENZENE	<1.0	50.0	51.9	50.8	104	102	2	13	75-130

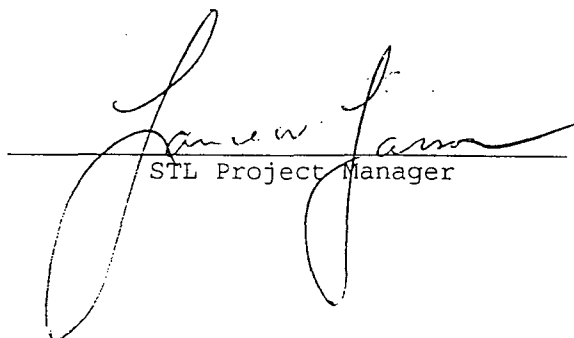


Severn Trent Laboratories
11 East Olive Road
Pensacola FL 32514

SIGNATURE PAGE

Tel: (850) 474-1001
Fax: (850) 478-2671

Reviewed by:


STL Project Manager

Client: PINNACLE LABORATORIES
ALBUQUERQUE, NEW MEXICO

Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Number: 903055
Project Location: N/S
Accession Number: 903377

Project Manager: K. MCNEILL
Sampled By: N/S

Other Laboratory Locations:

- 149 Rangeway Road, North Bafford MA 01862
- 16203 Park Row, Suite 110, Houston TX 77084
- 200 Monroe Turnpike, Monroe CT 06468
- 55 South Park Drive, Colchester VT 05445
- 315 Fulton Avenue, Newburgh NY 12550
- Westfield Executive Park, 53 Southampton Road, Westfield MA 01085
- 628 Route 10, Whippany NY 07981
- 77 New Durham Road, Edison NJ 08817

a part of



SEVERN TRENT LABORATORIES, INC. – PENSACOLA, FLORIDA
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)

State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)

State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)

Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)

Florida DOH Laboratory ID No. 81142 (Drinking Water), Laboratory ID No. E81010 (Hazardous Waste and Wastewater)

Florida, Radioactive Materials License No. G0733-1

Foreign Soil Permit, Permit No. S-37599

Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)

Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)

State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. 98-25 (Drinking Water)

State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)

Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)

State of Michigan, Bureau of E&OccH (No Laboratory ID No. assigned by state) (Drinking Water by Reciprocity with Florida)

New Hampshire DES, Laboratory ID No. 250598-A (Wastewater)

State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waste)

New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)

North Carolina Department of Environment, Health, & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)

North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Hazardous Waste and Wastewater by Reciprocity with California)

State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)

Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)

Tennessee Division of Underground Storage Tanks Approved Laboratory

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)

State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)

West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)

American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 9133

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: Group of Single Wetchem

Accession:	903377
Client:	PINNACLE LABORATORIES
Project Number:	903055
Project Name:	GRC/ANNUAL GROUNDWATER SAMPLES
Project Location:	N/S
Department:	WET CHEM

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: Group of Single Wetchem
QcLevel: I

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 903055-01A			Lab ID: 001		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-02A			Lab ID: 005		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-03A			Lab ID: 009		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-04A			Lab ID: 013		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					
Client ID: 903055-05A			Lab ID: 017		
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW011	
Comments:					

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: Group of Single Wetchem

Client ID:	Lab Matrix: ID:	Date/Time Sampled:	Date Received:
903055-01A	001 WATER	15-MAR-99 0920	18-MAR-99
903055-02A	005 WATER	15-MAR-99 1120	18-MAR-99
903055-03A	009 WATER	15-MAR-99 1315	18-MAR-99
903055-04A	013 WATER	15-MAR-99 1410	18-MAR-99
903055-05A	017 WATER	15-MAR-99 1515	18-MAR-99

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: TOTAL ORGANIC CARBON

Accession:	903377
Client:	PINNACLE LABORATORIES
Project Number:	903055
Project Name:	GRC/ANNUAL GROUNDWATER SAMPLES
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id: 001
Client Sample Id: 903055-01A

Sample Date/Time: 15-MAR-99 0920
Received Date: 18-MAR-99

Batch: TOW018

Blank: B

Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 2
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id: 002 Sample Date/Time: 15-MAR-99 0920
Client Sample Id: 903055-01B Received Date: 18-MAR-99

Batch: TOW018 Extraction Date: N/A
Blank: B Dry Weight %: N/A Analysis Date: 24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 3
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	003	Sample Date/Time:	15-MAR-99 0920
Client Sample Id:	903055-01C	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 4
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	005	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02A	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 5
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	006	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02B	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	007	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02C	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	013	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04A	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	014	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04B	Received Date:	18-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	1	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	015	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04C	Received Date:	18-MAR-99

Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	009	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03A	Received Date:	18-MAR-99

Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

[0] Page 8
Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	010	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03B	Received Date:	18-MAR-99

Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	011	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03C	Received Date:	18-MAR-99
Batch: TOW018		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	ND	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id: 017
Client Sample Id: 903055-05A

Sample Date/Time: 15-MAR-99 1515
Received Date: 18-MAR-99

Batch: TOW019
Blank: A

Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	2	1	
ANALYST	INITIALS	HC		

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	018	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05B	Received Date:	18-MAR-99
Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	25-MAR-99

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	2	1	
ANALYST	INITIALS	HC		

Comments: .

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Date 25-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON
Analysis Method: 415.1/EPA-600/4-79-020, March 1983.
Extraction Method: N/A
Matrix: WATER
QC Level: I

Lab Id:	019	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05C	Received Date:	18-MAR-99

Batch: TOW019		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	25-MAR-99
	N/A		

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TOTAL ORGANIC CARBON	MG/L	2	1	
ANALYST	INITIALS	HC		

Comments:

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Date 25-Mar-99

"Method Report Summary"

Accession Number: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC CARBON

Client Sample Id:	Parameter:	Unit:	Result:
903055-04B	TOTAL ORGANIC CARBON	MG/L	1
903055-05A	TOTAL ORGANIC CARBON	MG/L	2
903055-05B	TOTAL ORGANIC CARBON	MG/L	2
903055-05C	TOTAL ORGANIC CARBON	MG/L	2

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: TOTAL ORGANIC HALIDES IN WATER

Accession:	903377
Client:	PINNACLE LABORATORIES
Project Number:	903055
Project Name:	GRC/ANNUAL GROUNDWATER SAMPLES
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id: 001
Client Sample Id: 903055-01A
Sample Date/Time: 15-MAR-99 0920
Received Date: 18-MAR-99

Batch: TXW009
Blank: A
Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 23-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 0920
Client Sample Id:	903055-01B	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id: 003
Client Sample Id: 903055-01C
Sample Date/Time: 15-MAR-99 0920
Received Date: 18-MAR-99

Batch: TXW009
Blank: A
Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 23-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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: 15-MAR-99 0920
Client Sample Id: 903055-01D Received Date: 18-MAR-99

Batch: TXW009 Extraction Date: N/A
Blank: A Dry Weight %: N/A Analysis Date: 23-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 1120
Client Sample Id:	903055-02A	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %:	Analysis Date:	23-MAR-99
	N/A		

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/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:	15-MAR-99 1120
Client Sample Id:	903055-02B	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	007	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02C	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	008	Sample Date/Time:	15-MAR-99 1120
Client Sample Id:	903055-02D	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	23-MAR-99

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id: 009
Client Sample Id: 903055-03A
Sample Date/Time: 15-MAR-99 1315
Received Date: 18-MAR-99

Batch: TXW009
Blank: B
Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	010	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03B	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	011	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03C	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	012	Sample Date/Time:	15-MAR-99 1315
Client Sample Id:	903055-03D	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	013	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04A	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	014	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04B	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %: N/A	Analysis Date:	24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	014	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04B	Received Date:	18-MAR-99
Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	015	Sample Date/Time:	15-MAR-99 1410
Client Sample Id:	903055-04C	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id: 016 Sample Date/Time: 15-MAR-99 1410
Client Sample Id: 903055-04D Received Date: 18-MAR-99

Batch: TXW009 Extraction Date: N/A
Blank: B Dry Weight %: N/A Analysis Date: 24-MAR-99

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

Comments:

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Date 24-Mar-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	017	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05A	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments: .

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	018	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05B	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id:	019	Sample Date/Time:	15-MAR-99 1515
Client Sample Id:	903055-05C	Received Date:	18-MAR-99

Batch: TXW009		Extraction Date:	N/A
Blank: B	Dry Weight %:	Analysis Date:	24-MAR-99
	N/A		

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

Comments:

"FINAL REPORT FORMAT - SINGLE"

Accession: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER
Analysis Method: 9020B/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: N/A
Matrix: WATER
QC Level: IIM

Lab Id: 020
Client Sample Id: 903055-05D

Sample Date/Time: 15-MAR-99 1515
Received Date: 18-MAR-99

Batch: TXW009
Blank: B

Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 24-MAR-99

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

Comments:

"Method Report Summary"

Accession Number: 903377
Client: PINNACLE LABORATORIES
Project Number: 903055
Project Name: GRC/ANNUAL GROUNDWATER SAMPLES
Project Location: N/S
Test: TOTAL ORGANIC HALIDES IN WATER

Client Sample Id:	Parameter:	Unit:	Result:
903055-01B	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-01D	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-02A	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-02B	TOTAL ORGANIC HALIDES	MG/L	0.01
903055-02D	TOTAL ORGANIC HALIDES	MG/L	0.01

Data Qualifiers for Final Report

STL-Pensacola Inorganic/Organic and AFCEE Projects (under QAPP)

J4	(For positive results)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
J5	(TICs)	The reported value is quantitated as a TIC; therefore, it is estimated
J6	(For positive results)	LCS or Surrogate %R is $>$ upper control limit (UCL) or $<$ lower control limit (LCL)
J7	(For positive results)	The reported value is $>$ the laboratory MDL and $<$ lowest calibration standards; therefore, the quantitation is an estimation.
J (AFCEE description)	The analyte was positively identified, the quantitation is an estimation	
R1	(For nondetects)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
R2		Improper preservation, no preservative present in sample upon receipt
R3		Improper preservation, incorrect preservative present in sample upon receipt
R4		Holding time exceeded
R5		Collection requirements not met, improper container used for sample
R6		LCS or surrogate %R is $<$ LCL and analyte is not detected or surrogate %R is $<$ 10% for detects/nondetects
R7		Internal standard area outside -50% to +100% of initial calibration midpoint standard.
R8		Second source calibration verification exceeds acceptance criteria.
R9		Improper preservation, sample not filtered in the field.
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria	
F		$<$ laboratory or AFCEE RL and $>$ laboratory MDL
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL	
U2		$<$ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL	
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample	
@		Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)
+		Elevated reporting limit due to dilution into calibration range
-		Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
#		Elevated reporting limit due to insufficient sample size
D		Diluted out
M		A matrix effect was present (sample was analyzed twice to confirm or chromatogram had interfering peaks)
S		Incorrect sample amount was submitted to the laboratory for analysis

ND = Not Detected at or above the STL-Pensacola reporting limit (RL)

N/S = Not Submitted

N/A = Not Applicable

IDL = Laboratory Instrument Detection Limit

MDL = Laboratory Method Detection Limit

RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative)

Florida Projects Inorganic/Organic

Y1	Improper preservation, no preservative present in sample upon receipt
Y2	Improper preservation, incorrect preservative present in sample upon receipt
Y3	Improper preservation, sample temperature exceeded EPA temperature limits of $2-6^{\circ}\text{C}$ upon receipt
Y (FL description)	The analysis was from an unpreserved or improperly preserved sample. Data may not be accurate
Q	Sample held beyond the accepted holding time
I	The reported value is $<$ Laboratory RL and $>$ laboratory MDL
U1	The reported value is $\leq$ Laboratory MDL (value for sample result is reported as the MDL)
U (FL description)	Indicates the compound was analyzed for but not detected
T	The reported value is $<$ Laboratory MDL (value shall not be used for statistical analysis)
V	The analyte was detected in both the sample and the associated method blank
J1	Surrogate recovery limits have been exceeded
J2	The sample matrix interfered with the ability to make any accurate determinations
J3	The reported value failed to meet the established quality control criteria for either precision or accuracy
J (FL description)	Estimated value; not accurate

ICR Projects Inorganic/Organic

A1 Acceptable

R6

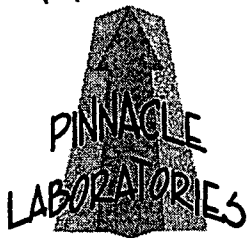
Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit

CLP and CLP-like Projects: Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 003095
April 03, 2000

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name GROUNDWATER FALL EVENT 1999 VERIFY
Project Number (none)

Attention: STEVE MORRIS

On 03/30/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

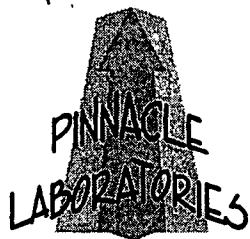
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: GIANT REFINING COMPANY	PINNACLE ID	: 003095
PROJECT #	: (none)	DATE RECEIVED	: 03/30/00
PROJECT NAME	: GROUNDWATER FALL EVENT 1999 VERIFY	REPORT DATE	: 04/03/00
IN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
1	MW-2-32900	AQUEOUS	03/29/00



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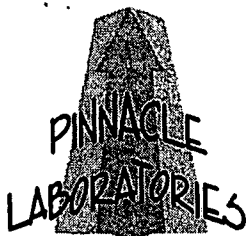
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : GROUNDWATER FALL EVENT 1999 VERIFY

PINNACLE I.D. : 003095
DATE RECEIVED : 03/30/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003095-01	MW - 2 - 32900	AQUEOUS	03/29/00	N/A	03/30/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : GROUNDWATER FALL EVENT 1999 VERIFY

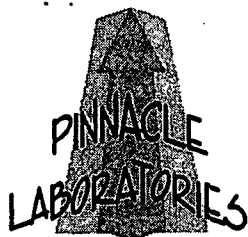
PINNACLE I.D. : 003095
DATE RECEIVED : 03/30/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003095-01	MW - 2 - 32900	AQUEOUS	03/29/00	N/A	03/30/00	1

PARAMETER (CAS#)	DET. LIMIT		UNITS
Bromoform (75-25-2)	1.0	< 1.0	ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0	ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0	ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0	ug/L
Bromobenzene (108-86-1)	1.0	< 1.0	ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0	ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0	ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0	ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0	ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0	ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0	ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0	ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0	ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0	ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0	ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0	ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0	ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0	ug/L
1,2-Dibromomono-3-chloropropane (96-12-8)	1.0	< 1.0	ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0	ug/L
Naphthalene (91-20-3)	1.0	< 1.0	ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0	ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0	ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	100 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



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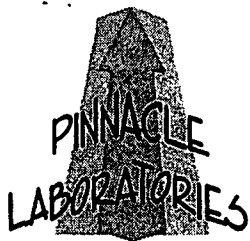
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 003095
PROJECT # : (none)
PROJECT NAME : GROUNDWATER FALL EVENT 1999 VERIFY

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	033000	AQUEOUS	N/A	03/30/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
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Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : GROUNDWATER FALL EVENT 1999 VERIFY

PINNACLE I.D. : 003095

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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REAGENT BLANK	033000	AQUEOUS	N/A	03/30/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
m&p Xylenes (108-38-3, 106-42-3)	1.0 < 1.0	ug/L
o-Xylene (95-47-6)	1.0 < 1.0	ug/L
Styrene (100-42-5)	1.0 < 1.0	ug/L
Bromoform (75-25-2)	1.0 < 1.0	ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0 < 1.0	ug/L
1,2,3-Trichloropropane (96-18-4)	1.0 < 1.0	ug/L
Isopropyl Benzene (98-82-8)	1.0 < 1.0	ug/L
Bromobenzene (108-86-1)	1.0 < 1.0	ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0 < 1.0	ug/L
n-Propylbenzene (103-65-1)	1.0 < 1.0	ug/L
2-Chlorotoluene (95-49-8)	1.0 < 1.0	ug/L
4-Chlorotoluene (106-43-4)	1.0 < 1.0	ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0 < 1.0	ug/L
tert-Butylbenzene (98-06-6)	1.0 < 1.0	ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0 < 1.0	ug/L
sec-Butylbenzene (135-98-9)	1.0 < 1.0	ug/L
1,3-Dichlorobenzene (541-73-1)	1.0 < 1.0	ug/L
1,4-Dichlorobenzene (106-46-7)	1.0 < 1.0	ug/L
p-Isopropyltoluene (99-87-6)	1.0 < 1.0	ug/L
1,2-Dichlorobenzene (95-50-1)	1.0 < 1.0	ug/L
n-Butylbenzene (104-51-8)	1.0 < 1.0	ug/L
1,2-Dibromo-3-chloropropane (96-12-8)	1.0 < 1.0	ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0 < 1.0	ug/L
Naphthalene (91-20-3)	1.0 < 1.0	ug/L
Hexachlorobutadiene (87-68-3)	1.0 < 1.0	ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0 < 1.0	ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	103 (80 - 120)
Toluene-d8	100 (88 - 110)
Bromofluorobenzene	98 (86 - 115)



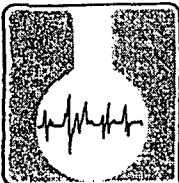
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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
SPIKED SAMPLE : 003095-01
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : GROUNDWATER FALL EVENT 1999 VERIF

PINNACLE I.D. : 003095
DATE ANALYZED : 03/30/00
UNITS : ug/L (PPB)

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	52.8	50.8	106	102	4	14	61-145
BENZENE	<1.0	50.0	54.4	52.9	109	106	3	11	76-127
TRICHLOROETHENE	<1.0	50.0	54.3	53.2	109	106	2	14	71-120
TOLUENE	<1.0	50.0	54.7	53.9	109	108	1	13	76-125
CHLOROBENZENE	<1.0	50.0	51.6	50.4	103	101	2	13	75-130



ASSAIGAI ANALYTICAL LABORATORIES, INC.

7300 Jefferson, NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood Dr., Suite N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820

127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

GIANT REFINERY
attn: DORINDA MANCINI
ROUTE 3 BOX 7
GALLUP, NM 87301

Explanation of codes

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

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: GIANT REFINERY
Project: 0004163 TOX RESAMPLE 1999

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

Client Sample ID: **MW1-041300** Sample Matrix: **H2O** Sample Collected: **04/13/00 10:00:00**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0004163-01A		EPA 9020A							
MT.2000.987	MT.2000.987-1		Total Organic Halides, TOX	30	ug/L	1	5	S	04/19/00

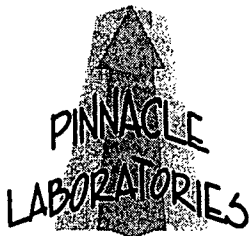
Client Sample ID: **MW2-041300** Sample Matrix: **H2O** Sample Collected: **04/13/00 10:20:00**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0004163-02A		EPA 9020A							
MT.2000.987	MT.2000.987-2		Total Organic Halides, TOX	11	ug/L	1	5	S	04/19/00

Client Sample ID: **OW11-041300** Sample Matrix: **H2O** Sample Collected: **04/13/00 10:50:00**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Run Date
0004163-03A		EPA 9020A							
MT.2000.987	MT.2000.987-3		Total Organic Halides, TOX	13	ug/L	1	5	S	04/19/00





2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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Pinnacle Lab ID number 003022
March 28, 2000

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
Project Number (none)

Attention: STEVE MORRIS

On 03/07/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

This report is being reissued in part to correct an incorrect sample date. We apologize for any inconvenience this may have caused. This report was originally dated 3/24/00.

EPA method 8260 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

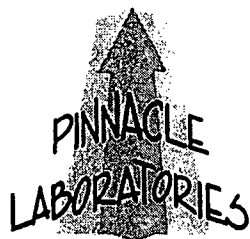
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

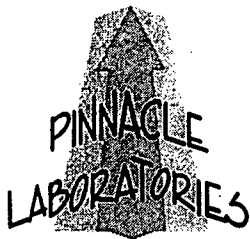
Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : GIANT REFINING COMPANY PINNACLE ID : 003022
PROJECT # : (none) DATE RECEIVED : 03/07/00
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FAL REPORT DATE : 03/24/00

PIN	ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
	1	MW-1-3300	AQUEOUS	03/03/00
	2	MW-2-3300	AQUEOUS	03/03/00
	03	MW-5-3300	AQUEOUS	03/03/00
	4	MW-4-3300	AQUEOUS	03/03/00
	5	SMW-3-3300	AQUEOUS	03/03/00
	06	SMW-4-3300	AQUEOUS	03/03/00
	07	SMW-5-3300	AQUEOUS	03/03/00
	8	OW-11 3300	AQUEOUS	03/03/00
	09	TRIP BLANK	AQUEOUS	10/08/99



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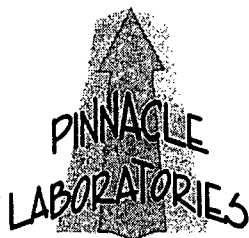
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-01	MW - 1 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
Dichlorodifluoromethane (75-71-8)	1.0	< 1.0 ug/L
Chloromethane (74-87-9)	1.0	< 1.0 ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0 ug/L
Bromomethane (74-83-9)	1.0	< 1.0 ug/L
Chloroethane (75-00-3)	1.0	< 1.0 ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0 ug/L
Acetone (67-64-1)	10	< 10 ug/L
Acrolein (107-02-8)	5.0	< 5.0 ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0 ug/L
Iodomethane (74-88-4)	1.0	< 1.0 ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0 ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0 ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0 ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0 ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0 ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0 ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0 ug/L
2-Butanone (78-93-3)	10	< 10 ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0 ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0 ug/L
Chloroform (67-66-3)	1.0	< 1.0 ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0 ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0 ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0 ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0 ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0 ug/L
Benzene (71-43-2)	1.0	< 1.0 ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0 ug/L
Trichloroethene (79-01-6)	1.0	< 1.0 ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0 ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10 ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0 ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0 ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0 ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0 ug/L
Dibromomethane (74-95-3)	1.0	< 1.0 ug/L
Toluene (108-88-3)	1.0	< 1.0 ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0 ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10 ug/L
2-Hexanone (591-78-6)	10	< 10 ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0 ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0 ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0 ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0 ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0 ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0 ug/L
o-Xylene (95-47-6)	1.0	< 1.0 ug/L
Styrene (100-42-5)	1.0	< 1.0 ug/L



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

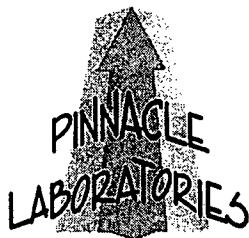
SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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003022-01	MW - 1 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomono-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	95 (80 - 120)
Toluene-d8	96 (88 - 110)
Bromofluorobenzene	99 (86 - 115)



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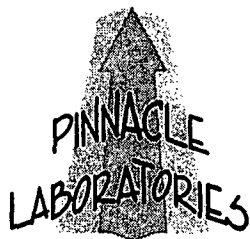
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-02	MW - 2 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.1	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



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GC/MS RESULTS

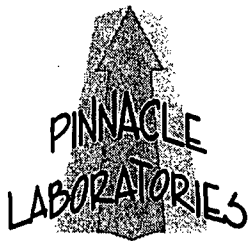
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-02	MW - 2 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	95 (80 - 120)
Toluene-d8	97 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



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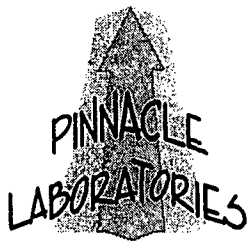
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-03	MW - 5 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



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GC/MS RESULTS

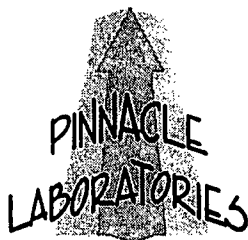
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-03	MW - 5 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	96 (80 - 120)
Toluene-d8	97 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



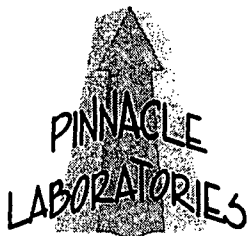
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-04	MW - 4 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



2709-D Pan American Freeway NE
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

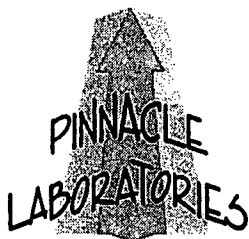
SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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003022-04	MW - 4 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomono-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	97 (80 - 120)
Toluene-d8	97 (88 - 110)
Bromofluorobenzene	99 (86 - 115)



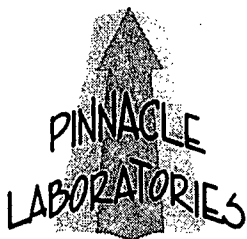
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 003022
PROJECT # : (none) DATE RECEIVED : 03/07/00
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-05	SMW - 3 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

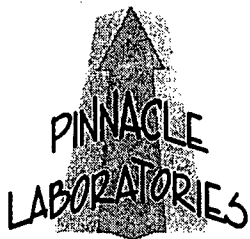
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-05	SMW - 3 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	102 (80 - 120)
Toluene-d8	101 (88 - 110)
Bromofluorobenzene	101 (86 - 115)



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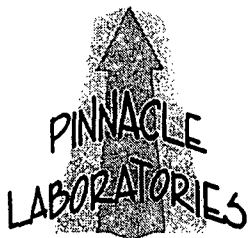
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-06	SMW - 4 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

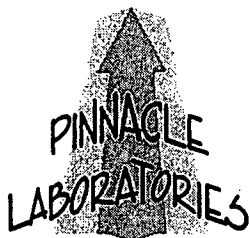
SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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003022-06	SMW - 4 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	99 (80 - 120)
Toluene-d8	95 (88 - 110)
Bromofluorobenzene	96 (86 - 115)



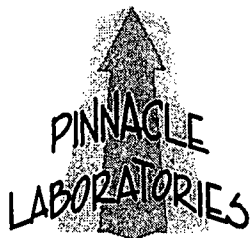
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-07	SMW - 5 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



2709-D Pan American Freeway NE
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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003022-07	SMW - 5 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
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PARAMETER (CAS#)	DET. LIMIT		UNITS
Bromoform (75-25-2)	1.0	< 1.0	ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0	ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0	ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0	ug/L
Bromobenzene (108-86-1)	1.0	< 1.0	ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0	ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0	ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0	ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0	ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0	ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0	ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0	ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0	ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0	ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0	ug/L
p-isopropyltoluene (99-87-6)	1.0	< 1.0	ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0	ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0	ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0	ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0	ug/L
Naphthalene (91-20-3)	1.0	< 1.0	ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0	ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0	ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	99 (80 - 120)
Toluene-d8	96 (88 - 110)
Bromofluorobenzene	100 (86 - 115)



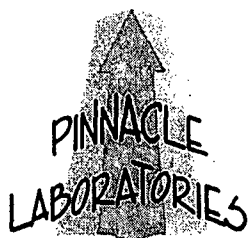
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-08	OW - 11 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



2709-D Pan American Freeway NE
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Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999
PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

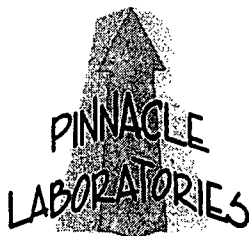
SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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003022-08	OW - 11 - 3300	AQUEOUS	03/03/00	N/A	03/08/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromo-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	97 (80 - 120)
Toluene-d8	95 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



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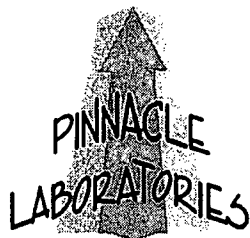
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

PINNACLE I.D. : 003022
DATE RECEIVED : 03/07/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003022-09	Trip Blank	AQUEOUS	10/08/99	N/A	03/08/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 003022
PROJECT # : (none) DATE RECEIVED : 03/07/00
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

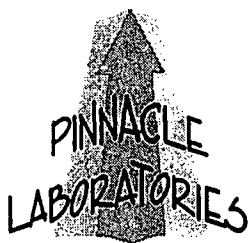
SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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003022-09	Trip Blank	AQUEOUS	10/08/99	N/A	03/08/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomono-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	100 (80 - 120)
Toluene-d8	96 (86 - 110)
Bromofluorobenzene	97 (86 - 115)



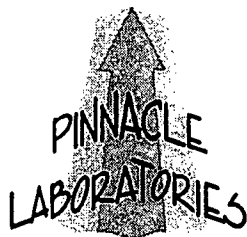
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 003022
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	030800	AQUEOUS	N/A	03/08/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
Dichlorodifluoromethane (75-71-8)	1.0 < 1.0	ug/L
Chloromethane (74-87-9)	1.0 < 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0 < 1.0	ug/L
Bromomethane (74-83-9)	1.0 < 1.0	ug/L
Chloroethane (75-00-3)	1.0 < 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0 < 1.0	ug/L
Acetone (67-64-1)	10 < 10	ug/L
Acrolein (107-02-8)	5.0 < 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0 < 1.0	ug/L
Iodomethane (74-88-4)	1.0 < 1.0	ug/L
Methylene Chloride (75-09-2)	1.0 < 1.0	ug/L
Acrylonitrile (107-13-1)	5.0 < 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0 < 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0 < 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0 < 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0 < 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0 < 1.0	ug/L
2-Butanone (78-93-3)	10 < 10	ug/L
Carbon Disulfide (75-15-0)	1.0 < 1.0	ug/L
Bromochloromethane (74-97-5)	1.0 < 1.0	ug/L
Chloroform (67-66-3)	1.0 < 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0 < 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0 < 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0 < 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0 < 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0 < 1.0	ug/L
Benzene (71-43-2)	1.0 < 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0 < 1.0	ug/L
Trichloroethene (79-01-6)	1.0 < 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0 < 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10 < 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0 < 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0 < 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0 < 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0 < 1.0	ug/L
Dibromomethane (74-95-3)	1.0 < 1.0	ug/L
Toluene (108-88-3)	1.0 < 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0 < 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10 < 10	ug/L
2-Hexanone (591-78-6)	10 < 10	ug/L
Dibromochloromethane (124-48-1)	1.0 < 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0 < 1.0	ug/L
Chlorobenzene (108-90-7)	1.0 < 1.0	ug/L
Ethylbenzene (100-41-4)	1.0 < 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0 < 1.0	ug/L



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GC/MS RESULTS

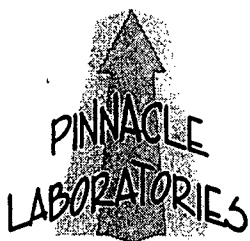
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY PINNACLE I.D. : 003022
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES FALL 1999

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	030800	AQUEOUS	N/A	03/08/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
m&p Xylenes (108-38-3, 106-42-3)	1.0 < 1.0	ug/L
o-Xylene (95-47-6)	1.0 < 1.0	ug/L
Styrene (100-42-5)	1.0 < 1.0	ug/L
Bromoform (75-25-2)	1.0 < 1.0	ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0 < 1.0	ug/L
1,2,3-Trichloropropane (96-18-4)	1.0 < 1.0	ug/L
Isopropyl Benzene (98-82-8)	1.0 < 1.0	ug/L
Bromobenzene (108-86-1)	1.0 < 1.0	ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0 < 1.0	ug/L
n-Propylbenzene (103-65-1)	1.0 < 1.0	ug/L
2-Chlorotoluene (95-49-8)	1.0 < 1.0	ug/L
4-Chlorotoluene (106-43-4)	1.0 < 1.0	ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0 < 1.0	ug/L
tert-Butylbenzene (98-06-6)	1.0 < 1.0	ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0 < 1.0	ug/L
sec-Butylbenzene (135-98-9)	1.0 < 1.0	ug/L
1,3-Dichlorobenzene (541-73-1)	1.0 < 1.0	ug/L
1,4-Dichlorobenzene (106-46-7)	1.0 < 1.0	ug/L
p-Isopropyltoluene (99-87-6)	1.0 < 1.0	ug/L
1,2-Dichlorobenzene (95-50-1)	1.0 < 1.0	ug/L
n-Butylbenzene (104-51-8)	1.0 < 1.0	ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0 < 1.0	ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0 < 1.0	ug/L
Naphthalene (91-20-3)	1.0 < 1.0	ug/L
Hexachlorobutadiene (87-68-3)	1.0 < 1.0	ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0 < 1.0	ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	99 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	102 (86 - 115)



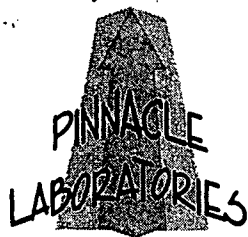
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
SPIKED SAMPLE : 003017-08
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : SEMI ANNUAL GROUNDWATER SAMPLES

PINNACLE I.D. : 003022
DATE ANALYZED : 03/08/00
UNITS : ug/L (PPB)

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	64.1	65.5	128	131	2	14	61-145
BENZENE	<1.0	50.0	62.3	61.6	125	123	1	11	76-127
TRICHLOROETHENE	<1.0	50.0	55.3	55.4	111	111	0	14	71-120
TOLUENE	<1.0	50.0	53.8	53.7	108	107	0	13	76-125
CHLOROBENZENE	<1.0	50.0	49.3	48.4	99	97	2	13	75-130



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Albuquerque, New Mexico 87107
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Pinnacle Lab ID number 003096
April 03, 2000

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name (none)
Project Number (none)

Attention: STEVE MORRIS

On 03/30/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

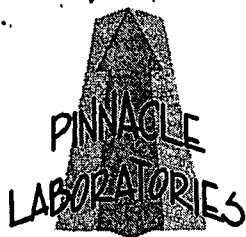
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE ID : 003096
DATE RECEIVED : 03/30/00
REPORT DATE : 04/03/00

WIN	ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
	1	MW-2-32900-RE	AQUEOUS	03/29/00



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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

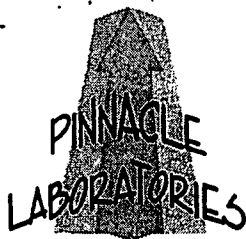
PINNACLE I.D. : 003096

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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REAGENT BLANK	033000	AQUEOUS	N/A	03/30/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
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Dichlorodifluoromethane (75-71-8)	1.0	< 1.0 ug/L
Chloromethane (74-87-9)	1.0	< 1.0 ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0 ug/L
Bromomethane (74-83-9)	1.0	< 1.0 ug/L
Chloroethane (75-00-3)	1.0	< 1.0 ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0 ug/L
Acetone (67-64-1)	10	< 10 ug/L
Acrolein (107-02-8)	5.0	< 5.0 ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0 ug/L
Iodomethane (74-88-4)	1.0	< 1.0 ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0 ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0 ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0 ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0 ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0 ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0 ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0 ug/L
2-Butanone (78-93-3)	10	< 10 ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0 ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0 ug/L
Chloroform (67-66-3)	1.0	< 1.0 ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0 ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0 ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0 ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0 ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0 ug/L
Benzene (71-43-2)	1.0	< 1.0 ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0 ug/L
Trichloroethene (79-01-6)	1.0	< 1.0 ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0 ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10 ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0 ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0 ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0 ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0 ug/L
Dibromomethane (74-95-3)	1.0	< 1.0 ug/L
Toluene (108-88-3)	1.0	< 1.0 ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0 ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10 ug/L
2-Hexanone (591-78-6)	10	< 10 ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0 ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0 ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0 ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0 ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0 ug/L



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE I.D. : 003096
DATE RECEIVED : 03/30/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003096-01	MW - 2 - 32900 - RE	AQUEOUS	03/29/00	N/A	03/30/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomono-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	94 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE I.D. : 003096
DATE RECEIVED : 03/30/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003096-01	MW - 2 - 32900 - RE	AQUEOUS	03/29/00	N/A	03/30/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS				

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



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Albuquerque, New Mexico 87107
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

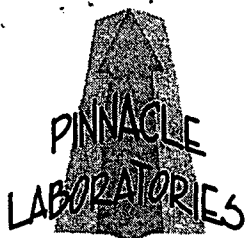
PINNACLE I.D. : 003096

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	033000	AQUEOUS	N/A	03/30/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
m&p Xylenes (108-38-3, 106-42-3)	1.0 < 1.0	ug/L
o-Xylene (95-47-6)	1.0 < 1.0	ug/L
Styrene (100-42-5)	1.0 < 1.0	ug/L
Bromoform (75-25-2)	1.0 < 1.0	ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0 < 1.0	ug/L
1,2,3-Trichloropropane (96-18-4)	1.0 < 1.0	ug/L
Isopropyl Benzene (98-82-8)	1.0 < 1.0	ug/L
Bromobenzene (108-86-1)	1.0 < 1.0	ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0 < 1.0	ug/L
n-Propylbenzene (103-65-1)	1.0 < 1.0	ug/L
2-Chlorotoluene (95-49-8)	1.0 < 1.0	ug/L
4-Chlorotoluene (106-43-4)	1.0 < 1.0	ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0 < 1.0	ug/L
tert-Butylbenzene (98-06-6)	1.0 < 1.0	ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0 < 1.0	ug/L
sec-Butylbenzene (135-98-9)	1.0 < 1.0	ug/L
1,3-Dichlorobenzene (541-73-1)	1.0 < 1.0	ug/L
1,4-Dichlorobenzene (106-46-7)	1.0 < 1.0	ug/L
p-Isopropyltoluene (99-87-6)	1.0 < 1.0	ug/L
1,2-Dichlorobenzene (95-50-1)	1.0 < 1.0	ug/L
n-Butylbenzene (104-51-8)	1.0 < 1.0	ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0 < 1.0	ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0 < 1.0	ug/L
Naphthalene (91-20-3)	1.0 < 1.0	ug/L
Hexachlorobutadiene (87-68-3)	1.0 < 1.0	ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0 < 1.0	ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	103 (80 - 120)
Toluene-d8	100 (88 - 110)
Bromofluorobenzene	98 (86 - 115)



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MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST	: VOLATILE ORGANICS EPA METHOD 8260	PINNACLE I.D.	: 003096
SPIKED SAMPLE	: 003095-01	DATE ANALYZED	: 03/30/00
CLIENT	: GIANT REFINING COMPANY	UNITS	: ug/L (PPB)
PROJECT #	: (none)		
PROJECT NAME	: (none)		

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	52.8	50.8	106	102	4	14	61-145
BENZENE	<1.0	50.0	54.4	52.9	109	106	3	11	76-127
TRICHLOROETHENE	<1.0	50.0	54.3	53.2	109	106	2	14	71-120
TOLUENE	<1.0	50.0	54.7	53.9	109	108	1	13	76-125
CHLOROBENZENE	<1.0	50.0	51.6	50.4	103	101	2	13	75-130

fall 1999

TABLE 1

8-5-91**

ELEVATION

WELL	CASING DIAMETER	T.O.C.*	B.O.C. *	CAPACITY PER FOOT	TOTAL DEPTH
X MW-1 6873.07	5	6878.52-5.45	6746.5	1.02	132.02
X MW-2 6872.99	5	6880.84-7.85	6740.6	1.02	140.24
X MW-4 6876.24	5	6882.54-6.3	6760.4	1.02	122.14
X MW-5 6871.42	4	6883.32-11.9	6750.3	0.74	133.02
SMW-1	2	6883.29	6834.20	0.163	
SMW-2	2	6884.44	6827.10	0.163	
X SMW-3 6854.46	2	6884.56-30.1	6838.70	0.163	45.86
X SMW-4 6850.08	2	6880.08-30	6807.80	0.163	72.22
X SMW-5 6847.52	2	6878.02-30.5	6801.80	0.163	76.22
SMW-6	2	6880.71	6807.60	0.163	73.11
OW-1	4	6868.00	6773.96	0.74	94.04
OW-2	4	6871.00	6810.00	0.74	61.0
OW-3	4	6876.00	6809.30	0.74	66.73
X OW-11 6904.24	4	6923.89-19.65	6857.27	0.74	66.62
OW-24	4	6880.00	6815.00	0.74	65.0

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

** Update of 1989 Sample and Analysis Plan.

$$\text{ToC (minus)} \\ (mw-1) 6878.52 - 5.45 = 6873.07$$

5.45 from sampling Log!

~~106-7 mat. 3 mu - 4 mid. 8 snk~~ 3 catw-d 3 at 5
+ Fall g

SAMPLE DAY	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00
SAMPLE TIME	9:14 AM	9:06	11:15	9:45	1:15	2:15	2:45
OVA READING							
LIQUID DEPTH	5:45	7:85	6:3	11:9	30.1	30.1	30.1
1) TEMP. F	55	55	56	55	55	56	56
pH	8.50	8.85	8.18	8.8	7.14	8.35	8.50
SP. COND.	1170	1190	1235	1190	2770	1282	1200
2) TEMP. F	55	55	56	55	55	55	56
pH	8.56	8.80	8.18	8.95	7.15	8.34	8.52
SP. COND.	1160	1185	1211	1188	3030	1293	1215
3) TEMP. F	55	55	56	55	55	55	56
pH	8.62	9.37	8.18	8.96	7.15	8.25	8.50
SP. COND.	1166	1180	1217	1180	3040	1297	1214
4) TEMP. F	55	55	56	55	55	55	56
pH	8.65	8.87	8.18	8.97	7.16	8.25	8.50
SP. COND.	1164	1176	1212	1171	3030	1271	1212

EJ/Data/Word/Forms/WPSL

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1:10, 2m

2:20 p.m.

11-11

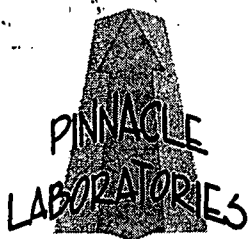
SAMPLE DAY	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00
SAMPLE TIME	9:00 AM	9:00	11:15	9:45	1:15	2:15	2:15	3:00
OVA READING								
LIQUID DEPTH								
1) TEMP. F	5.45	7.85	6.3	11.9	30.1	20	30.1	19.65
pH	5.5	5.5	5.6	5.5	5.5	5.5	5.6	5.6
SP. COND.	8.50	8.85	8.18	8.8	7.14	8.05	8.50	8.07
2) TEMP. F	11.70	11.90	12.35	11.70	29.10	12.82	12.08	12.08
pH	5.5	5.5	5.6	5.5	5.5	5.5	5.6	5.6
SP. COND.	8.56	8.20	8.18	8.55	7.15	8.01	8.02	8.05
3) TEMP. F	11.60	11.85	12.11	11.88	30.80	12.82	12.15	12.15
pH	5.5	5.5	5.6	5.5	5.5	5.5	5.6	5.6
SP. COND.	8.62	8.77	8.18	8.26	7.15	8.05	8.50	8.05
4) TEMP. F	11.66	11.80	12.17	11.80	30.10	12.77	12.14	12.14
pH	5.5	5.5	5.6	5.5	5.5	5.5	5.6	5.6
SP. COND.	8.65	8.87	8.18	8.27	7.16	8.05	8.50	8.05
SP. COND.	11.64	11.76	12.12	11.91	30.30	12.11	12.12	12.12

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2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 003096
April 03, 2000

GIANT REFINING COMPANY
ROUTE 3 BOX 7
GALLUP, NM 87301

Project Name (none)
Project Number (none)

Attention: STEVE MORRIS

On 03/30/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE
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CLIENT	: GIANT REFINING COMPANY	PINNACLE ID	: 003096
PROJECT #	: (none)	DATE RECEIVED	: 03/30/00
PROJECT NAME	: (none)	REPORT DATE	: 04/03/00
IN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
1	MW-2-32900-RE	AQUEOUS	03/29/00



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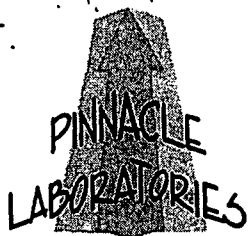
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE I.D. : 003096

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	033000	AQUEOUS	N/A	03/30/00	1
PARAMETER (CAS#)	DET. LIMIT	UNITS			

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE I.D. : 003096
DATE RECEIVED : 03/30/00

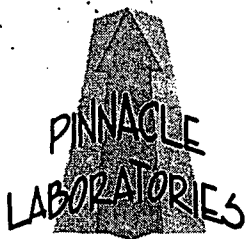
SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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003096-01	MW - 2 - 32900 - RE	AQUEOUS	03/29/00	N/A	03/30/00	1
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PARAMETER (CAS#)	DET. LIMIT	UNITS
Bromoform (75-25-2)	1.0	< 1.0 ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0 ug/L
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0 ug/L
Isopropyl Benzene (98-82-8)	1.0	< 1.0 ug/L
Bromobenzene (108-86-1)	1.0	< 1.0 ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0 ug/L
n-Propylbenzene (103-65-1)	1.0	< 1.0 ug/L
2-Chlorotoluene (95-49-8)	1.0	< 1.0 ug/L
4-Chlorotoluene (106-43-4)	1.0	< 1.0 ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0 ug/L
tert-Butylbenzene (98-06-6)	1.0	< 1.0 ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0 ug/L
sec-Butylbenzene (135-98-9)	1.0	< 1.0 ug/L
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0 ug/L
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0 ug/L
p-Isopropyltoluene (99-87-6)	1.0	< 1.0 ug/L
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0 ug/L
n-Butylbenzene (104-51-8)	1.0	< 1.0 ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0 ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0 ug/L
Naphthalene (91-20-3)	1.0	< 1.0 ug/L
Hexachlorobutadiene (87-68-3)	1.0	< 1.0 ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0 ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	94 (80 - 120)
Toluene-d8	98 (88 - 110)
Bromofluorobenzene	97 (86 - 115)



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE I.D. : 003096
DATE RECEIVED : 03/30/00

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
003096-01	MW - 2 - 32900 - RE	AQUEOUS	03/29/00	N/A	03/30/00	1
PARAMETER (CAS#)	DET. LIMIT		UNITS			

Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	1.0	< 1.0	ug/L
Chloroethane (75-00-3)	1.0	< 1.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	1.0	< 1.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
1,1,2-Trichlorotrifluoroethane (76-13-1)	1.0	< 1.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L
o-Xylene (95-47-6)	1.0	< 1.0	ug/L
Styrene (100-42-5)	1.0	< 1.0	ug/L



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

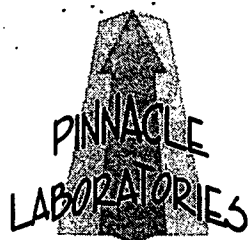
PINNACLE I.D. : 003096

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	033000	AQUEOUS	N/A	03/30/00	1

PARAMETER (CAS#)	DET. LIMIT	UNITS
m&p Xylenes (108-38-3, 106-42-3)	1.0 < 1.0	ug/L
o-Xylene (95-47-6)	1.0 < 1.0	ug/L
Styrene (100-42-5)	1.0 < 1.0	ug/L
Bromoform (75-25-2)	1.0 < 1.0	ug/L
1,1,2,2-Tetrachloroethane (79-34-5)	1.0 < 1.0	ug/L
1,2,3-Trichloropropane (96-18-4)	1.0 < 1.0	ug/L
Isopropyl Benzene (98-82-8)	1.0 < 1.0	ug/L
Bromobenzene (108-86-1)	1.0 < 1.0	ug/L
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0 < 1.0	ug/L
n-Propylbenzene (103-65-1)	1.0 < 1.0	ug/L
2-Chlorotoluene (95-49-8)	1.0 < 1.0	ug/L
4-Chlorotoluene (106-43-4)	1.0 < 1.0	ug/L
1,3,5-Trimethylbenzene (108-67-8)	1.0 < 1.0	ug/L
tert-Butylbenzene (98-06-6)	1.0 < 1.0	ug/L
1,2,4-Trimethylbenzene (95-63-6)	1.0 < 1.0	ug/L
sec-Butylbenzene (135-98-9)	1.0 < 1.0	ug/L
1,3-Dichlorobenzene (541-73-1)	1.0 < 1.0	ug/L
1,4-Dichlorobenzene (106-46-7)	1.0 < 1.0	ug/L
p-Isopropyltoluene (99-87-6)	1.0 < 1.0	ug/L
1,2-Dichlorobenzene (95-50-1)	1.0 < 1.0	ug/L
n-Butylbenzene (104-51-8)	1.0 < 1.0	ug/L
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0 < 1.0	ug/L
1,2,4-Trichlorobenzene (120-82-1)	1.0 < 1.0	ug/L
Naphthalene (91-20-3)	1.0 < 1.0	ug/L
Hexachlorobutadiene (87-68-3)	1.0 < 1.0	ug/L
1,2,3-Trichlorobenzene (87-61-6)	1.0 < 1.0	ug/L

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	103 (80 - 120)
Toluene-d8	100 (88 - 110)
Bromofluorobenzene	98 (86 - 115)



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MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
SPIKED SAMPLE : 003095-01
CLIENT : GIANT REFINING COMPANY
PROJECT # : (none)
PROJECT NAME : (none)

PINNACLE I.D. : 003096
DATE ANALYZED : 03/30/00
UNITS : ug/L (PPB)

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	52.8	50.8	106	102	4	14	61-145
BENZENE	<1.0	50.0	54.4	52.9	109	106	3	11	76-127
TRICHLOROETHENE	<1.0	50.0	54.3	53.2	109	106	2	14	71-120
TOLUENE	<1.0	50.0	54.7	53.9	109	108	1	13	76-125
CHLOROBENZENE	<1.0	50.0	51.6	50.4	103	101	2	13	75-130



CHAIN OF CUSTODY

DATE: 5-26-70 PAGE: 1 OF 1

PLI Accession #

003096

PROJECT MANAGER:										ANALYSIS REQUEST									
COMPANY: <u>Grant Refining Company</u> ADDRESS: <u>Box 7</u> <u>Gallop, NM 87301</u> PHONE: <u>505 722 3833</u> FAX: <u>505 722 0210</u> BILL TO: <u>Same</u> COMPANY: ADDRESS:																			
SAMPLE ID: <u>MLL-2-52900-RE</u> DATE: <u>3/29/00</u> TIME: <u>0915</u> MATRIX: <u>H₂O</u> LAB ID: <u>01</u>																			
										Petroleum Hydrocarbons (418.1) TRPH									
										(MOD.8015) Diesel/Direct Inject									
										(M8015) Gas/Purge & Trap									
										8021 (BTEX)/8015 (Gasoline) MTBE									
										8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE									
										8021 (TCL)									
										8021 (EDX)									
										8021 (HALO)									
										8021 (CUST)									
										504.1 EDB ☐ / DBCP ☐									
										X <u>P260</u>									
										8260 (TCL) Volatile Organics									
										8260 (Full) Volatile Organics									
										8260 (CUST) Volatile Organics									
										8260 (Landfill) Volatile Organics									
										Pesticides /PCB (608/8081/8082)									
										Herbicides (615/8151)									
										Base/Neutral/Acid Compounds GC/MS (625/8270)									
										Polynuclear Aromatics (610/8310/8270-SIMS)									
										General Chemistry:									
										Priority Pollutant Metals (13)									
										Target Analyte List Metals (23)									
										RCRA Metals (8)									
										RCRA Metals by TCLP (Method 1311)									
										Metals:									
										NUMBER OF CONTAINERS									

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREA ARE FOR LAB USE ONLY.

11/10/2022 PL Inc., Bionolla
Laboratories, Inc. • 3700 D Pan American
Freeway, Ste. A, Albuquerque, New Mexico 87107 • (505) 244-3377 • Fax: (505) 244-4443 • E-mail: PL_LAB@MOL.DNET.AT
DISTRIBUTION: While: • PL County - Original

fall 1999

TABLE 1

8-5-91**

ELEVATION

WELL	CASING DIAMETER	T.O.C.*	B.O.C.*	CAPACITY PER FOOT	TOTAL DEPTH
X MW-1 6873.07	5	6878.52-5.45	6746.5	1.02	132.02
X MW-2 6872.99	5	6880.84-7.85	6740.6	1.02	140.24
X MW-4 6876.24	5	6882.54-6.3	6760.4	1.02	122.14
X MW-5 6871.42	4	6883.32-11.9	6750.3	0.74	133.02
SMW-1	2	6883.29	6834.20	0.163	
SMW-2	2	6884.44	6827.10	0.163	
X SMW-3 6854.46	2	6884.56-30.1	6838.70	0.163	45.86
X SMW-4 6850.08	2	6880.08-30	6807.80	0.163	72.22
X SMW-5 6847.52	2	6878.02-30.5	6801.80	0.163	76.22
SMW-6	2	6880.71	6807.60	0.163	73.11
OW-1	4	6868.00	6773.96	0.74	94.04
OW-2	4	6871.00	6810.00	0.74	61.0
OW-3	4	6876.00	6809.30	0.74	66.73
X OW-11 6904.24	4	6923.89-19.65	6857.27	0.74	66.62
OW-24	4	6880.00	6815.00	0.74	65.0

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

** Update of 1989 Sample and Analysis Plan.

$$\text{ToC} - \text{Dtw} =$$

$$(MW-1) 6878.52 - 5.45 = 6873.07$$

5.45 from Sampling Log!

~~n₀~~ - 7 m.u. - 3 n.u. - 4 m.u. - 5 n.p. - 3 n.p. - 4 S.n.p. - 5

SAMPLE DAY	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00	3/3/00
SAMPLE TIME	9:10 AM	9:00	11:15	9:45	1:15	2:15	3:15
OVA READING							
LQUID DEPTH	5'48"	7.85	6.3	11.9	34.1	30	30.1
1) TEMP. F	55	55	66	55	55	55	56
pH	8.40	8.85	8.48	8.8	7.14	8.35	8.50
SP. COND.	1170	1190	1235	1190	2770	1284	1200
2) TEMP. F	55	55	56	55	55	55	56
pH	8.56	8.80	8.48	8.95	7.15	8.41	8.52
SP. COND.	1160	1185	1211	1188	3030	1302	1215
3) TEMP. F	55	55	56	55	55	55	56
pH	8.62	9.47	8.48	8.96	7.15	8.35	8.50
SP. COND.	1166	1150	1217	1183	3040	1277	1214
4) TEMP. F	55	55	56	55	55	55	56
pH	8.65	8.87	8.48	8.97	7.16	8.35	8.50
SP. COND.	1164	1176	1212	1171	3030	1271	1212

EJ/Data/Word/Forms/WPSL

0950 111
Ca
5
2
Tu

1.10.2m
Cc
51
1
16

2:20 p.m.

