

GW - 32

REPORTS

YEAR(S):

2003 GW REPORT

GIANT

REFINING COMPANY

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GALLUP
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August 30, 2004

SEP 07 2004

**Oil Conservation Division
Environmental Bureau**Mr. Roger Anderson
Environmental Bureau Chief
New Mexico Oil Conservation Division
1220 South Street Francis Drive
Santa Fe, NM 87505

Re: 2003 OCD Annual Reports

Attached please find the 2003 Annual Groundwater Report for the Giant Ciniza Refinery, as required by Discharge Permit GW-032, permit condition 16.A. Included with this report are the formal report items required by permit condition 21. This report also addresses the following permit conditions:

- Condition 8.b. The API separator closure plan.
- Condition 17.b. Northeast OCD Land Treatment Area (Old Railroad Rack Lagoon Temporary Landfarm analytic results.
- Condition 18. Railroad rack lagoon closure plan.
- Condition 19.D. Temporary storage pond closure plan.
- Condition 20.3. Pilot Travel Center sampling and metering station.

The followings wells were sampled in 2003:

- MW 1,2,4,5
- OW 11,12,13,14,29,30

Summaries of the analytical can be found in 16.A.ii. and copies of the lab analysis for these wells can be found in 21.B. Monitor wells 1,2,4, & 5 were non detect for all parameters analyzed for except for barium. Minute amounts were found in the range of .083 to .15 ppm which is below groundwater standards. OW wells 11,12,13,14,29 & 30 were analyzed for BTEX and MTBE. All parameters were non detect except for 2.7 ppb for MTBE at OW30 and the following were detected in OW14:

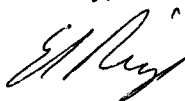
- benzene- 190 ppb
- toluene- 2 ppb
- ethylbenzene- 2.3 ppb
- xylene- 2.5 ppb
- MTBE- 46 ppb

Surface water sampling was conducted at the aeration lagoon inlet (AL1-IN), evaporation pond 1 inlet (EPI-IN) and the outlet from evaporation pond 2 (EP2-OUT). Summaries of the analytical can be found in 16.A.ii. BTEX and MTBE were detected in AL1-IN. EPI-IN and EP2-OUT were all non detect for BTEX and MTBE except for the following:

- EP1-IN xylene- 13 ppb
 MTBE- 17 ppb
- EP2-OUT toluene- 1.2 ppb
 xylene- 1 ppb

If you have any questions regarding this report please contact me at (505) 722-0217.

Sincerely,



Ed Riege
Environmental Superintendent

C: Matt Davis w/o report
Denny Foust, OCD, Aztec Office w/report

GIANT CINIZA REFINERY
-2003 OCD ANNUAL REPORTS
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Permit Condition 8.b.

A closure plan for OCD approval shall be filed by September 1, 2004 for the old API separator.

Giant proposes the following for OCDs approval;

Once the new API separator starts up the following items will take place:

- The old API separator will be taken out of service and the bottom sludge will be removed via vacuum trucks. The sludge will be recycled as a feedstock to a petroleum coker at the Norco Refinery in Louisiana.
- The walls and floors of the separator will be steam cleaned.
- The walls and floors of the separator will be sand blasted. The spent sand will be analyzed and disposed of properly.
- The unit will be inspected and repaired.
- The visible contaminated soil surrounding the separator will be removed and stockpiled onto plastic.
- The stockpiled soil will be tested and properly disposed of or reused according to analysis results.
- The excavation will then be filled with clean soil and compacted.
- The separator will then be used for non-contact storm water.

Permit Condition 16. A. Annual Groundwater Report

- i. A description of the monitoring and remediation activities, which occurred during the year including conclusions and recommendations.

Summaries of the analytical can be found in 16.A.ii. and copies of the lab analysis for these wells can be found in 21.B.

Summary of wells:

Monitor wells 1,2,4, & 5 were non detect for all parameters analyzed for except for barium. Minute amounts were found in the range of .083 to .15 ppm, which is below groundwater standards. OW wells 11,12,13,14,29 & 30 were analyzed for BTEX and MTBE. All parameters were non detect except for 2.7 ppb for MTBE at OW30 and the following were detected in OW14:

- Benzene- 190 ppb
- Toluene- 2 ppb
- Ethylbenzene- 2.3 ppb
- Xylene- 2.5 ppb
- MTBE- 46 ppb

Conclusion & recommendation: OW14 continues to show low levels of contamination. OW14 is located north and down gradient of the tank farm and is drilled to the top of the Chinle shale formation. The recommendation is to continue to sample OCD 12,13,14, 29 and 30 on an annual basis for BTEX/MTBE as indicated in the groundwater discharge permit renewal.

Summary of surface water sampling:

Surface water sampling was conducted at the aeration lagoon inlet (AL1-IN), evaporation pond 1 inlet (EPI-IN) and the outlet from evaporation pond 2 (EP2-OUT). Summaries of the analytical can be found in 16.A.ii. BTEX and MTBE were detected in AL1-IN. EPI-IN and EP2-OUT were all non detect for BTEX and MTBE except for the following:

- EP1-IN xylene- 13 ppb
 MTBE- 17 ppb
- EP2-OUT toluene- 1.2 ppb
 Xylene- 1 ppb

Conclusion & recommendation: Proceed with the startup of the new API separator along with the addition of a third benzene stripper. This should help to reduce the contaminants leaving the API oil water separator. The recommendation is to follow the surface water-monitoring requirement as indicated in the groundwater discharge renewal. On an annual basis, a grab sample of the inlet water to Pond #2 shall be collected and analyzed for BOD, COD, TDS, BTEX, MTBE, and total RCRA metals. On an annual basis, a grab sample of evaporation pond water shall be collected and analyzed for general chemistry parameters. This sampling will be conducted in the fourth quarter of this year.

Fall 2003		BTEX		MTBE		
mg/l	Date	OW	OW	OW	OW	OW
	Sampled	12	13	14	29	30
Benzene	Fall 03	ND	ND	190	ND	ND
Toluene	Fall 03	ND	ND	2	ND	ND
EthyBen	Fall 03	ND	ND	2.3	ND	ND
Xylene	Fall 03	ND	ND	2.5	ND	ND
MTBE	Fall 03	ND	ND	46	ND	2.7

Fall 2002		BTEX		MTBE		
mg/L	Date	OW	OW	OW	OW	OW
	Sampled	12	13	14	29	30
Benzene	Fall 02	ND	ND	40	ND	ND
Toluene	Fall 02	ND	ND	ND	ND	ND
EthylBen	Fall 02	ND	ND	ND	ND	ND
Xylene	Fall 02	ND	ND	ND	ND	ND
MTBE	Fall 02	ND	ND	14	1.6	3.1

OW-12 Giant Refining - Ciniza

Report table name: VOC's Diss.Metals Gen. Chem.
 Most recent data period: Fall 01 Fall 01 Fall 01
 Update macro last run: 4/26/2000 10:15 AM

DATA INPUT AREA

VOC's (8260) Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Benzene	µg/L	5	ND
Toluene	µg/L	5	ND
Ethylbenzene	µg/L	5	ND
Xylenes (total)	µg/L	5	ND

Diss. Metals Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Calcium	mg/L	---	2.5
Magnesium	mg/L	---	0.2
Potassium	mg/L	---	<0.2
Sodium	mg/L	---	247

Gen. Chem./Inorganic Input		Reporting	Fall 01
Parameters	Units	Limit	Result
Alkalinity, Bicarbonate as CaCO ₃ @ pH 4.5	mg/L	5	286
Alkalinity, Carbonate as CaCO ₃ @ pH 8.3	mg/L	5	69
Chloride	mg/L	3	33
pH	s.u.	---	9.0
Sulfate	mg/L	5	166
Spec. Conduct. @ 25° C	µmhos/cm	1	1120
Total Dissolved Solids	mg/L	10	720

OW-13 Giant Refining - Ciniza

Report table name: VOC's Diss.Metals Gen. Chem.
 Most recent data period: Fall 01 Fall 01 Fall 01
 Update macro last run: 4/26/2000 10:15 AM

DATA INPUT AREA

VOC's (8260) Input

Parameter	Units	Reporting Limit	Fall 01 Result
Benzene	µg/L	5	ND
Toluene	µg/L	5	ND
Ethylbenzene	µg/L	5	ND
Xylenes (total)	µg/L	5	ND

Diss. Metals Input

Parameter	Units	Reporting Limit	Fall 01 Result
Calcium	mg/L	---	8.5
Magnesium	mg/L	---	1.3
Potassium	mg/L	---	1.2
Sodium	mg/L	---	292

Gen. Chem./Inorganic Input

Parameters	Units	Reporting Limit	Fall 01 Result
Alkalinity, Bicarbonate as CaCO ₃ @ pH 4.5	mg/L	5	567
Alkalinity, Carbonate as CaCO ₃ @ pH 8.3	mg/L	5	9
Chloride	mg/L	3	29
pH	s.u.	---	7.9
Sulfate	mg/L	5	100
Spec. Conduct. @ 25°	µmhos/cm	1	1280
Total Dissolved Solids	mg/L	10	790

OW-14Giant Refining - Ciniza

Report table name: VOC's Diss.Metals Gen. Chem.
Most recent data period: Fall 01 Fall 01 Fall 01
Update macro last run: 4/26/2000 10:15 AM

DATA INPUT AREA

VOC's (8260) Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Benzene	µg/L	5	64
Toluene	µg/L	5	ND
Ethylbenzene	µg/L	5	ND
Xylenes (total)	µg/L	5	ND

Diss. Metals Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Calcium	mg/L	---	62.9
Magnesium	mg/L	---	18.8
Potassium	mg/L	---	<0.2
Sodium	mg/L	---	421

Gen. Chem./Inorganic Input		Reporting	Fall 01
Parameters	Units	Limit	Result
Alkalinity, Bicarbonate as CaCO ₃ @ pH 4.5	mg/L	5	742
Alkalinity, Carbonate as CaCO ₃ @ pH 8.3	mg/L	5	<1
Chloride	mg/L	3	400
pH	s.u.	---	7.3
Sulfate	mg/L	5	67
Spec. Conduct. @ 25° C	µmhos/cm	1	2440
Total Dissolved Solids	mg/L	10	1380

OW-29 Giant Refining - Ciniza

Report table name: VOC's Diss.Metals Gen. Chem.
 Most recent data period: Fall 01 Fall 01 Fall 01
 Update macro last run: 4/26/2000 10:15 AM

DATA INPUT AREA

VOC's (8260) Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Benzene	µg/L	5	ND
Toluene	µg/L	5	ND
Ethylbenzene	µg/L	5	ND
Xylenes (total)	µg/L	5	ND

Diss. Metals Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Calcium	mg/L	---	47.1
Magnesium	mg/L	---	10.9
Potassium	mg/L	---	0.5
Sodium	mg/L	---	337

Gen. Chem./Inorganic Input		Reporting	Fall 01
Parameters	Units	Limit	Result
Alkalinity, Bicarbonate as CaCO ₃ @ pH 4.5	mg/L	5	694
Alkalinity, Carbonate as CaCO ₃ @ pH 8.3	mg/L	5	<1
Chloride	mg/L	3	124
pH	s.u.	---	7.5
Sulfate	mg/L	5	133
Spec. Conduct. @ 25° C	µmhos/cm	1	1800
Total Dissolved Solids	mg/L	10	1040

OW-30 Giant Refining - Ciniza

Report table name: VOC's Diss.Metals Gen. Chem.
 Most recent data period: Fall 01 Fall 01 Fall 01
 Update macro last run: 4/26/2000 10:15 AM

DATA INPUT AREA

VOC's (8260) Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Benzene	µg/L	5	ND
Toluene	µg/L	5	ND
Ethylbenzene	µg/L	5	ND
Xylenes (total)	µg/L	5	ND

Diss. Metals Input		Reporting	Fall 01
Parameter	Units	Limit	Result
Calcium	mg/L	---	59.0
Magnesium	mg/L	---	13.7
Potassium	mg/L	---	0.2
Sodium	mg/L	---	349

Gen. Chem./Inorganic Input		Reporting	Fall 01
Parameters	Units	Limit	Result
Alkalinity, Bicarbonate as CaCO ₃ @ pH 4.5	mg/L	5	717
Alkalinity, Carbonate as CaCO ₃ @ pH 8.3	mg/L	5	<1
Chloride	mg/L	3	175
pH	s.u.	---	7.40
Sulfate	mg/L	5	81
Spec. Conduct. @ 25° C	µmhos/cm	1	1870
Total Dissolved Solids	mg/L	10	1060

TABULATED ANALYTICAL RESULTS

MW-1 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 03 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		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		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		µg/L	20
4-Methyl-2-pentanone (MIBK)	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		µg/L	10
Bromoform	ND	ND	ND	ND	ND		µg/L	5
Bromomethane	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		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		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		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		µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Chromium	<0.01	<0.01	ND	ND	<0.01	ND	mg/L	0.01
Lead	<0.005	<0.005	ND	ND	<0.005	ND	mg/L	0.005
Mercury	<0.001	<0.001	ND	ND	<0.001	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-1 Giant Refining - Ciniza

Dissolved Metals

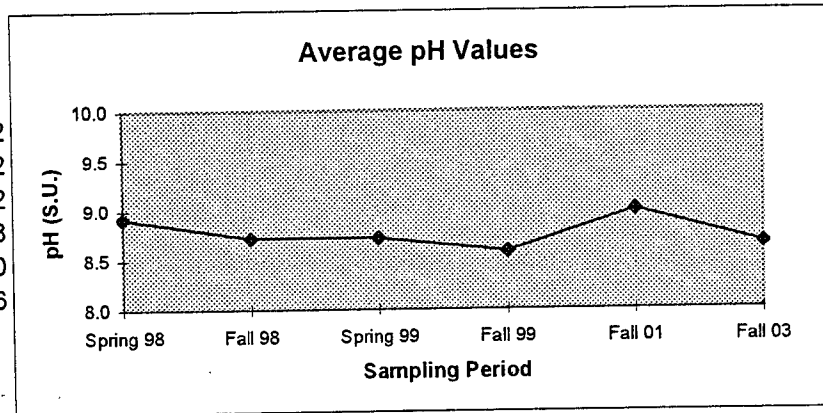
Parameter	Spring 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Arsenic	ND	<0.005	ND	mg/L	0.10
Barium	0.0093	<0.01	0.15	mg/L	1.00
Cadmium	ND	<0.001	ND	mg/L	0.01
Calcium	1.7	1.5		mg/L	---
Magnesium	0.2	0.2		mg/L	---
Manganese	ND	<0.01		mg/L	---
Potassium	0.83	0.6		mg/L	---
Selenium	ND	0.013	ND	mg/L	0.01
Silver	ND	<0.01	ND	mg/L	0.05
Sodium	360	267		mg/L	---

General Chemistry / Other

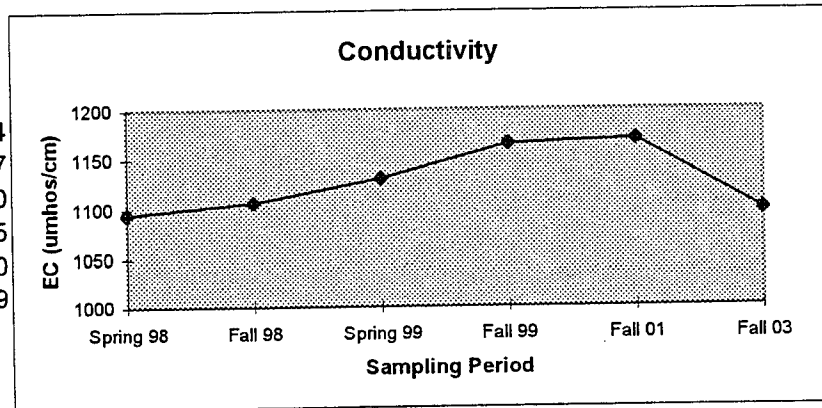
Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01	Fall 03 Results	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	318		300		415		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	21		40		<1		mg/L	5
Chloride	49		10		57		mg/L	3
pH (1st reading)	8.86	8.74	8.74	8.50	9.00	8.64	s.u.	---
pH (2nd reading)	8.94	8.73	8.71	8.56	9.00	8.65	s.u.	---
pH (3rd reading)	8.94	8.71	8.69	8.62	9.00	8.67	s.u.	---
pH (4th reading)	8.92	8.69	8.73	8.65	9.00	8.67	s.u.	---
pH Average	8.92	8.72	8.72	8.58	9.00	8.66	s.u.	---
Phenols	0.005		ND		0.03		mg/L	0.05
Sulfate	177		130		148		mg/L	5
Spec. Conduct. @ 25° C	1092	1110	1139	1170	1170	1096	µmhos/cm	1
Spec. Conduct. @ 25° C	1098	1106	1129	1160	1170	1098	µmhos/cm	1
Spec. Conduct. @ 25° C	1090	1104	1127	1166	1170	1102	µmhos/cm	1
Spec. Conduct. @ 25° C	1097	1106	1126	1164	1170	1098	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1094	1107	1130	1165	1170	1099	µmhos/cm	1
Total Organic Carbon	1	ND	ND	ND	ND		mg/L	1
Total Organic Carbon		ND	ND	ND	ND		mg/L	1
Total Organic Carbon		ND	ND	ND	ND		mg/L	1
Total Organic Carbon				ND	ND		mg/L	1
Total Org. Halides as Cl	<30	ND	ND	30	ND		ug/L	30
Total Org. Halides as Cl		ND	10		ND		ug/L	30
Total Org. Halides as Cl			ND		ND		ug/L	30
Total Org. Halides as Cl			10		ND		ug/L	30
Total Dissolved Solids	664		670		720		mg/L	10
Water Elevation	6872.56	6872.87	6872.87	6873.07	6872.62	6871.52	ft	---

MW-1 Giant Refining - Ciniza

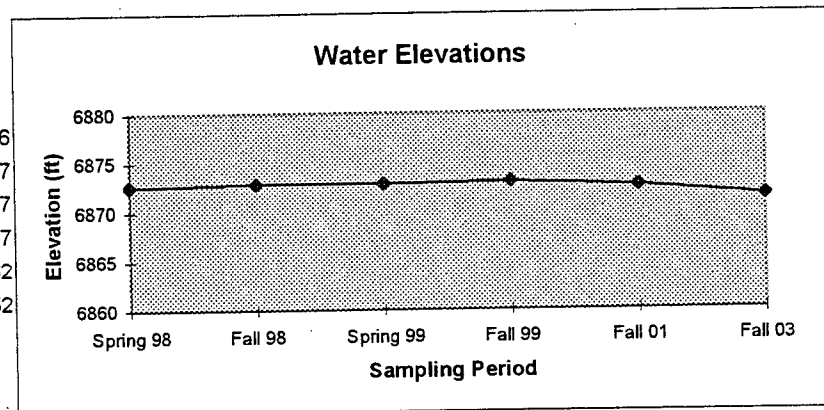
Spring 98	8.92
Fall 98	8.72
Spring 99	8.72
Fall 99	8.58
Fall 01	9.00
Fall 03	8.66



Spring 98	1094
Fall 98	1107
Spring 99	1130
Fall 99	1165
Fall 01	1170
Fall 03	1099



Spring 98	6872.56
Fall 98	6872.87
Spring 99	6872.87
Fall 99	6873.07
Fall 01	6872.62
Fall 03	6871.52



TABULATED ANALYTICAL RESULTS

MW-2 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 03 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		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		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		µg/L	20
4-Methyl-2-pentanone (MIBK)	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		µg/L	10
Bromoform	ND	ND	ND	ND	ND		µg/L	5
Bromomethane	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		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		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		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		µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND		µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND		µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Chromium	<0.01	<0.01	ND	ND	<0.01	ND	mg/L	0.01
Lead	<0.005	<0.005	ND	ND	<0.005	ND	mg/L	0.005
Mercury	<0.001	<0.001	ND	ND	<0.001	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-2 Giant Refining - Ciniza

Dissolved Metals

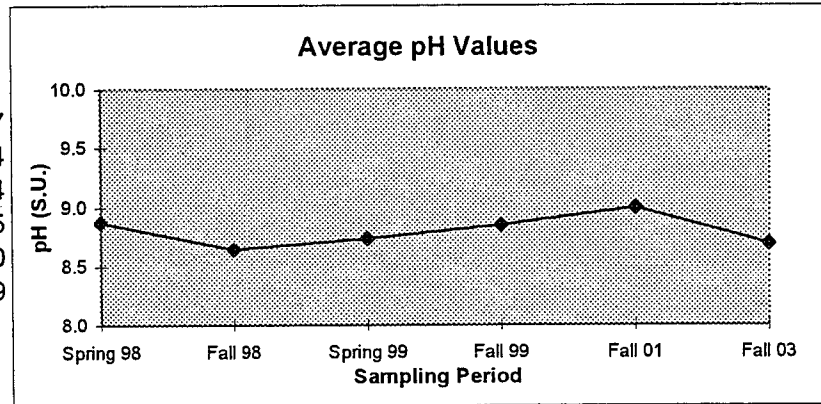
Parameter	Spring 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Arsenic	ND	<0.005	ND	mg/L	0.10
Barium	0.018	0.02	0.083	mg/L	1.00
Cadmium	ND	<0.001	ND	mg/L	0.01
Calcium	1.7	1.5		mg/L	---
Magnesium	0.2	<0.2		mg/L	---
Manganese	ND	0.02		mg/L	---
Potassium	0.9	0.6		mg/L	---
Selenium	ND	<0.005	ND	mg/L	0.01
Silver	ND	<0.01	ND	mg/L	0.05
Sodium	360	276		mg/L	---

General Chemistry / Other

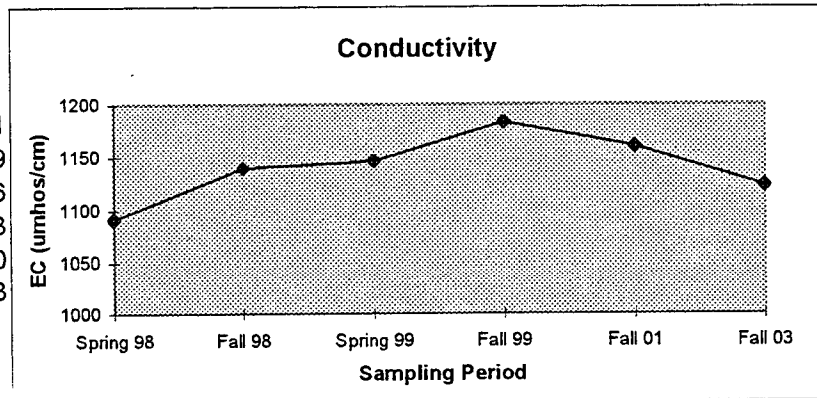
Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	309		310		364		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	22		40		29		mg/L	5
Chloride	56		42		61		mg/L	3
pH (1st reading)	8.86	8.67	8.72	8.85	9.00	8.70	s.u.	---
pH (2nd reading)	8.89	8.68	8.76	8.80	9.00	8.68	s.u.	---
pH (3rd reading)	8.85	8.65	8.72	8.87	9.00	8.69	s.u.	---
pH (4th reading)	8.89	8.57	8.74	8.87	9.00	8.69	s.u.	---
pH Average	8.87	8.64	8.74	8.85	9.00	8.69	s.u.	---
Phenols	0.015		ND		0.02		mg/L	0.05
Sulfate	186		160		149		mg/L	5
Spec. Conduct. @ 25° C	1090	1154	1163	1190	1160	1119	µmhos/cm	1
Spec. Conduct. @ 25° C	1090	1133	1142	1185	1160	1117	µmhos/cm	1
Spec. Conduct. @ 25° C	1094	1137	1141	1180	1160	1126	µmhos/cm	1
Spec. Conduct. @ 25° C	1091	1133	1138	1176	1160	1129	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1091	1139	1146	1183	1160	1123	µmhos/cm	1
Total Organic Carbon	2.31	ND	ND	ND	ND		mg/L	1
Total Organic Carbon		ND	ND	ND	ND		mg/L	1
Total Organic Carbon			ND	ND	ND		mg/L	1
Total Organic Carbon				ND	ND		mg/L	1
Total Org. Halides as Cl	10	10	10	11	ND		ug/L	30
Total Org. Halides as Cl		10	10		ND		ug/L	30
Total Org. Halides as Cl			ND		ND		ug/L	30
Total Org. Halides as Cl			10		ND		ug/L	30
Total Dissolved Solids	673		660		704		mg/L	10
Water Elevation	6870.80	6872.94	6869.64	6872.99	6868.82	6871.34	ft	---

MW-2 Giant Refining - Ciniza

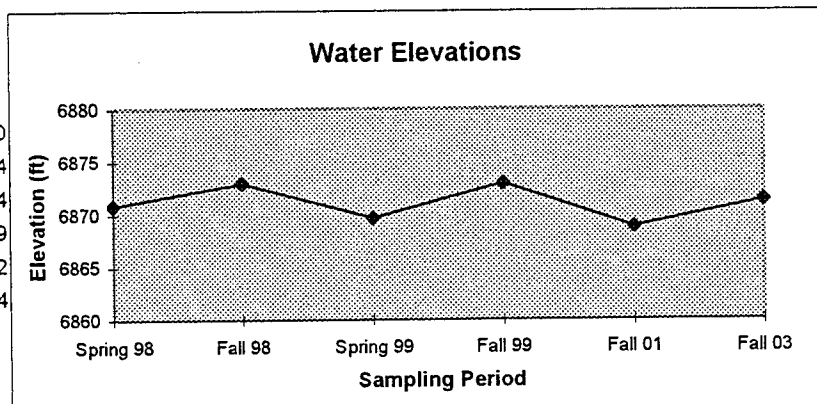
Spring 98	8.87
Fall 98	8.64
Spring 99	8.74
Fall 99	8.85
Fall 01	9.00
Fall 03	8.69



Spring 98	1091
Fall 98	1139
Spring 99	1146
Fall 99	1183
Fall 01	1160
Fall 03	1123



Spring 98	6870.80
Fall 98	6872.94
Spring 99	6869.64
Fall 99	6872.99
Fall 01	6868.82
Fall 03	6871.34



TABULATED ANALYTICAL RESULTS

MW-4 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 03 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		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		µg/L	5
2-Butanone (MEK)	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		µg/L	20
4-Methyl-2-pentanone (MIBK)	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		µg/L	10
Bromoform	ND	ND	ND	ND	ND		µg/L	5
Bromomethane	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		µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	ND	ND	ND	ND	ND	ND	µg/L	5
Chloroethane	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		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		µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND		µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND		µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Fall 01 Results	Fall 03 Result	Units	Reporting Limit
Chromium	<0.01	<0.01	ND	ND	<0.01	ND	mg/L	0.01
Lead	<0.005	<0.005	ND	ND	<0.005	ND	mg/L	0.005
Mercury	<0.001	<0.001	ND	ND	<0.001	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-4 Giant Refining - Ciniza

Dissolved Metals

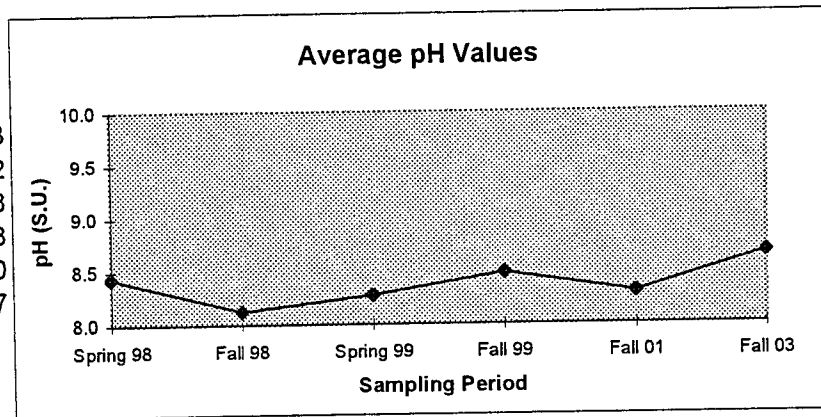
Parameter	Spring 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Arsenic	ND	<0.005	ND	mg/L	0.10
Barium	0.018	0.02	0.097	mg/L	1.00
Cadmium	ND	<0.001	ND	mg/L	0.01
Calcium	1.9	1.6		mg/L	---
Magnesium	0.2	0.2		mg/L	---
Manganese	ND	0.01		mg/L	---
Potassium	1	0.8		mg/L	---
Selenium	ND	<0.005	ND	mg/L	0.01
Silver	ND	<0.01	ND	mg/L	0.05
Sodium	390	279		mg/L	---

General Chemistry / Other

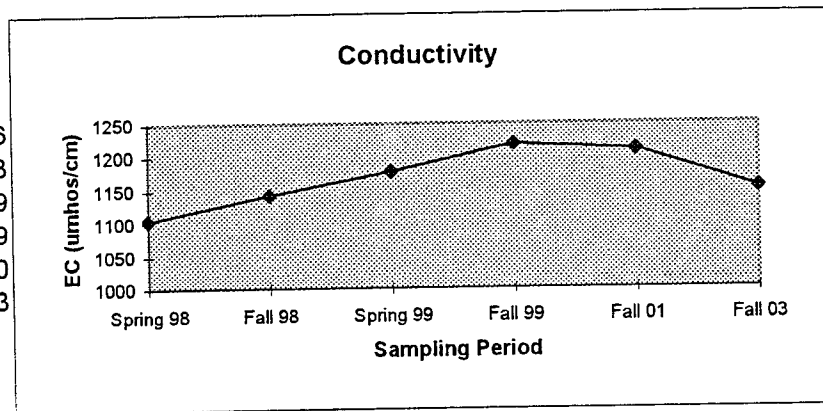
Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Results	Fall 03 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	433		360		571		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	16		80		<1		mg/L	5
Chloride	18		9		17		mg/L	3
pH (1st reading)	8.41	8.08	8.30	8.48	8.30	8.66	s.u.	---
pH (2nd reading)	8.45	8.14	8.27	8.48	8.30	8.67	s.u.	---
pH (3rd reading)	8.43	8.12	8.26	8.48	8.30	8.67	s.u.	---
pH (4th reading)	8.44	8.14	8.27	8.48	8.30	8.68	s.u.	---
pH Average	8.43	8.12	8.28	8.48	8.30	8.67	s.u.	---
Phenols	0.014		ND		<0.01		mg/L	0.05
Sulfate	169		170		147		mg/L	5
Spec. Conduct. @ 25° C	1080	1124	1172	1235	1210	1152	µmhos/cm	1
Spec. Conduct. @ 25° C	1115	1149	1182	1211	1210	1152	µmhos/cm	1
Spec. Conduct. @ 25° C	1100	1151	1180	1217	1210	1157	µmhos/cm	1
Spec. Conduct. @ 25° C	1127	1149	1180	1212	1210	1151	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1106	1143	1179	1219	1210	1153	µmhos/cm	1
Total Organic Carbon	2.95	ND	ND	ND	ND		mg/L	1
Total Organic Carbon		ND	1	ND	ND		mg/L	1
Total Organic Carbon			ND	ND	ND		mg/L	1
Total Organic Carbon				ND	ND		mg/L	1
Total Org. Halides as Cl	ND	ND	ND	ND	ND		ug/L	30
Total Org. Halides as Cl		ND	ND	47	ND		ug/L	30
Total Org. Halides as Cl			ND	31	ND		ug/L	30
Total Org. Halides as Cl			ND		ND		ug/L	30
Total Dissolved Solids	700		740		730		mg/L	10
Water Elevation	6875.88	6876.14	6876.14	6876.24	6875.99	6874.74	ft	---

MW-4 Giant Refining - Ciniza

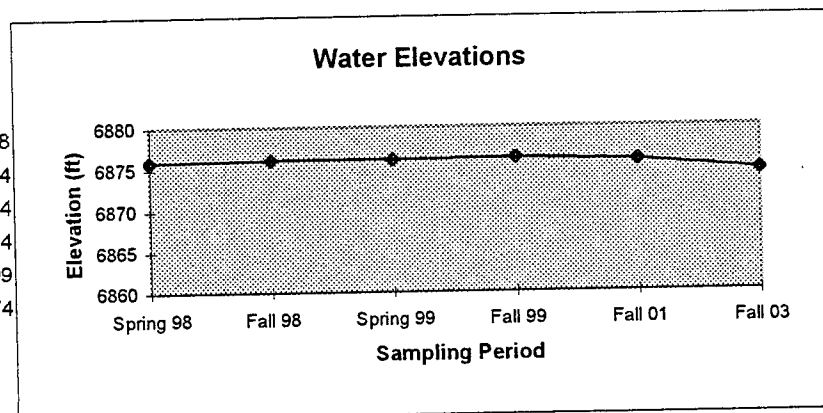
Spring 98 8.43
Fall 98 8.12
Spring 99 8.28
Fall 99 8.48
Fall 01 8.30
Fall 03 8.67



Spring 98 1106
Fall 98 1143
Spring 99 1179
Fall 99 1219
Fall 01 1210
Fall 03 1153



Spring 98 6875.88
Fall 98 6876.14
Spring 99 6876.14
Fall 99 6876.24
Fall 01 6875.99
Fall 03 6874.74



TABULATED ANALYTICAL RESULTS

MW-5 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 03 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		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		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		µg/L	20
4-Methyl-2-pentanone (MIBK)	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		µg/L	10
Bromoform	ND	ND	ND	ND	ND		µg/L	5
Bromomethane	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		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		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		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		µg/L	5
Vinyl acetate	ND	ND	ND	ND	ND		µg/L	20
Vinyl chloride (chloroethene)	ND	ND	ND	ND	ND		µg/L	10
Xylenes (total)	ND	ND	ND	ND	ND	ND	µg/L	5

Total Metals

Parameter	Spring 96 Result	Spring 97 Result	Spring 98 Result	Spring 99 Result	Fall 01	Fall 03 Result	Units	Reporting Limit
Chromium	<0.01	<.01	ND	ND	<0.01	ND	mg/L	0.01
Lead	<0.005	<.005	ND	ND	<0.005	ND	mg/L	0.005
Mercury	<0.001	<.001	ND	ND	<0.001	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

MW-5 Giant Refining - Ciniza

Dissolved Metals

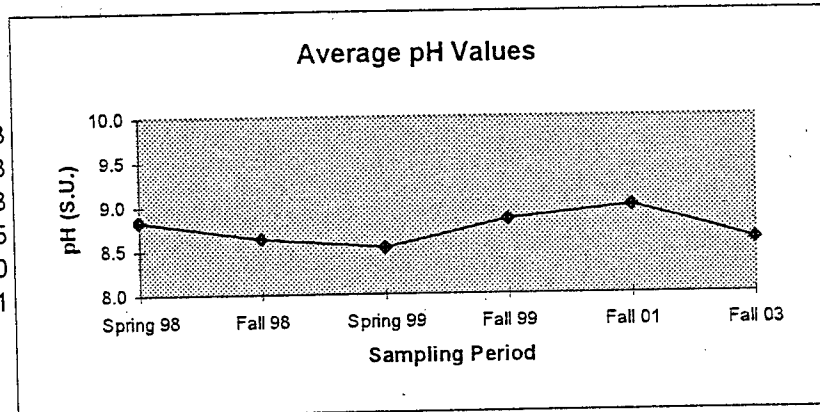
Parameter	Spring 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Arsenic	ND	<0.005	ND	mg/L	0.10
Barium	0.016	0.02	0.084	mg/L	1.00
Cadmium	ND	<0.001	ND	mg/L	0.01
Calcium	1.6	1.4		mg/L	---
Magnesium	0.2	<0.2		mg/L	---
Manganese	ND	0.08		mg/L	---
Potassium	0.89	0.8		mg/L	---
Selenium	ND	<0.005	ND	mg/L	0.01
Silver	ND	<0.01	ND	mg/L	0.05
Sodium	360	273		mg/L	---

General Chemistry / Other

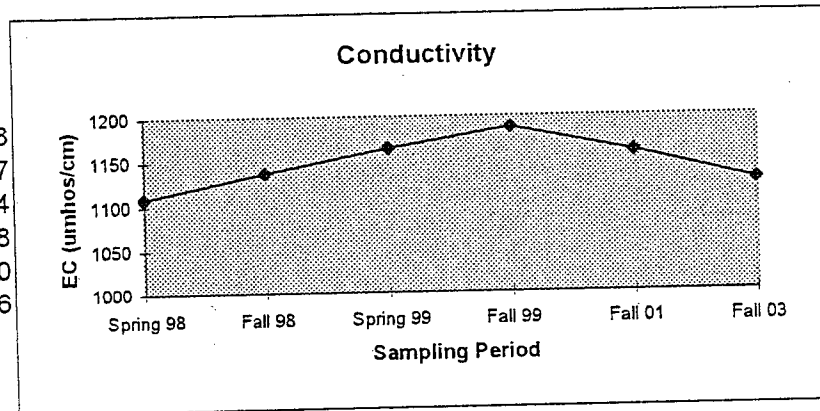
Parameter	Spring 98 Result	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 03 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5	299		300		383		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3	21		30		22		mg/L	5
Chloride	61		66		65		mg/L	3
pH (1st reading)	8.81	8.60	8.48	8.80	9.00	8.62	s.u.	---
pH (2nd reading)	8.85	8.65	8.54	8.85	9.00	8.63	s.u.	---
pH (3rd reading)	8.82	8.64	8.53	8.86	9.00	8.59	s.u.	---
pH (4th reading)	8.85	8.64	8.56	8.87	9.00	8.60	s.u.	---
pH Average	8.83	8.63	8.53	8.85	9.00	8.61	s.u.	---
Phenols	0.013		ND		0.04		mg/L	0.05
Sulfate	189		130		154		mg/L	5
Spec. Conduct. @ 25° C	1120	1140	1157	1190	1160	1124	µmhos/cm	1
Spec. Conduct. @ 25° C	1114	1136	1176	1188	1160	1126	µmhos/cm	1
Spec. Conduct. @ 25° C	1100	1134	1162	1182	1160	1127	µmhos/cm	1
Spec. Conduct. @ 25° C	1099	1139	1162	1191	1160	1127	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	1108.25	1137.25	1164.25	1187.75	1160	1126	µmhos/cm	1
Total Organic Carbon	2	2	ND	ND	ND		mg/L	1
Total Organic Carbon		2	ND	ND	ND		mg/L	1
Total Organic Carbon			ND	ND	ND		mg/L	1
Total Organic Carbon				ND	ND		mg/L	1
Total Org. Halides as Cl	ND	10	ND	17	ND		ug/L	30
Total Org. Halides as Cl		10	ND	23	ND		ug/L	30
Total Org. Halides as Cl			ND	38	ND		ug/L	30
Total Org. Halides as Cl			ND		ND		ug/L	30
Total Dissolved Solids	682		690		660		mg/L	10
Water Elevation	6871.16	6873.22	6870.82	6871.42	6872.97	6868.18	ft	---

MW-5 Giant Refining - Ciniza

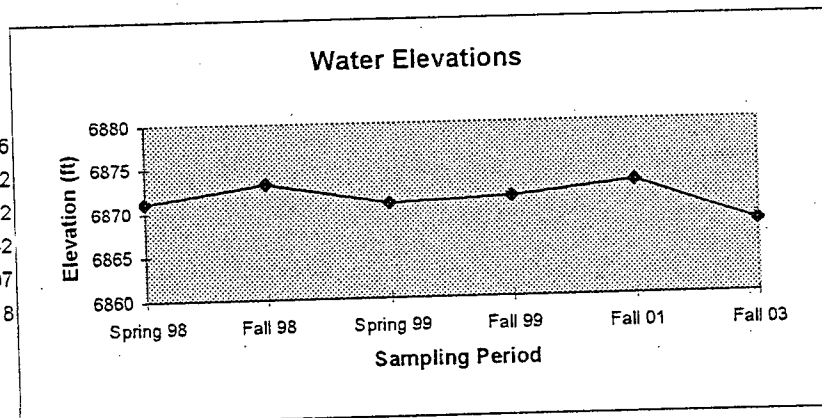
Spring 98	8.83
Fall 98	8.63
Spring 99	8.53
Fall 99	8.85
Fall 01	9.00
Fall 03	8.61



Spring 98	1108
Fall 98	1137
Spring 99	1164
Fall 99	1188
Fall 01	1160
Fall 03	1126



Spring 98	6871.16
Fall 98	6873.22
Spring 99	6870.82
Fall 99	6871.42
Fall 01	6872.97
Fall 03	6868.18



TABULATED ANALYTICAL RESULTS

OW-11 Giant Refining - Ciniza

Volatile Organics (8260)

Parameter	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 02 Result	Fall 03 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		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	µg/L	20
2-Chloroethyl vinyl ether	ND	ND	ND	ND			µg/L	10
2-Hexanone (MBK)	ND	ND	ND	ND		ND	µg/L	20
4-Methyl-2-pentanone (MIBK)	ND	ND	ND	ND		ND	µg/L	20
Acetone	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	µg/L	5
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Chlorodibromomethane	ND	ND	ND	ND			µg/L	5
Chloroethane	ND	ND	ND	ND	ND	ND	µg/L	10
Chloroform	ND	ND	ND	ND	ND	ND	µg/L	5
Chloromethane	ND	ND	ND	ND	ND	ND	µg/L	10
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Ethylbenzene	ND	ND	ND	ND	ND	ND	µg/L	5
Methylene chloride	ND	ND	ND	ND	ND	ND	µg/L	5
Stryene	ND	ND	ND	ND	ND	ND	µg/L	5
Tetrachloroethene (PCE)	ND	ND	ND	ND	ND	ND	µg/L	5
Toluene	ND	ND	ND	ND	ND	ND	µg/L	5
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	µg/L	5
Trichloroethene	ND	ND	ND	ND		ND	µg/L	5
Vinyl acetate	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	Spring 98 Result	Spring 99 Result	Fall 01 Result	Fall 02 Result	Fall 03 Result	Units	Reporting Limit
Chromium	<.01	ND	ND	<0.01	ND	ND	mg/L	0.01
Lead	<.005	ND	ND	<0.005	ND	ND	mg/L	0.005
Mercury	<.001	ND	ND	<0.001	ND	ND	mg/L	0.002

TABULATED ANALYTICAL RESULTS

OW-11 Giant Refining - Ciniza

Dissolved Metals

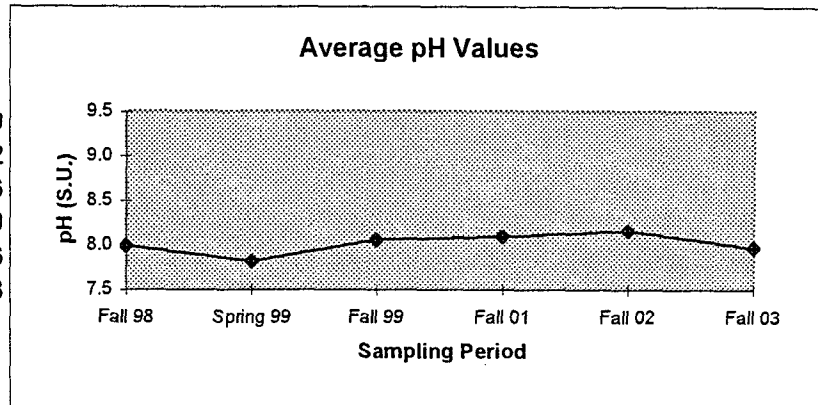
Parameter	Fall 01 Result	Fall 02 Result	Fall 03 Result	Units	Reporting Limit
Arsenic	0.016	ND	ND	mg/L	0.10
Barium	0.01	0.0099	0.009	mg/L	1.00
Cadmium	<0.001	ND	ND	mg/L	0.01
Calcium	10.1	12.0	12.0	mg/L	---
Magnesium	1.1	1.4	1.3	mg/L	---
Manganese	0.01	0.013		mg/L	---
Potassium	1.7	1.8	1.9	mg/L	---
Selenium	0.007	ND	0.02	mg/L	0.01
Silver	<0.01	ND	ND	mg/L	0.05
Sodium	596	630	690	mg/L	---

General Chemistry / Other

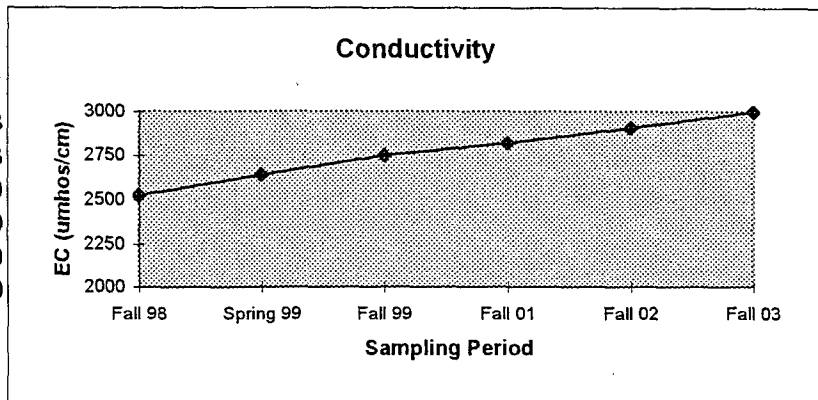
Parameter	Fall 98 Result	Spring 99 Result	Fall 99 Result	Fall 01 Result	Fall 02 Result	Fall 03 Result	Units	Reporting Limit
Alkalinity, Bicarbonate as HCO ₃ @ pH 4.5		300		387	270		mg/L	5
Alkalinity, Carbonate as HCO ₃ @ pH 8.3		5		<1	ND		mg/L	5
Chloride		72		100	74	88	mg/L	3
pH (1st reading)	8.03	7.80	8.09	8.10		7.80	s.u.	---
pH (2nd reading)	7.99	7.80	8.05	8.10		8.00	s.u.	---
pH (3rd reading)	7.95	7.84	8.05	8.10		8.10	s.u.	---
pH (4th reading)	8.00	7.85	8.05	8.10		8.00	s.u.	---
pH Average	7.99	7.82	8.06	8.10	8.16	7.98	s.u.	---
Phenols		ND		0.11	ND	ND	mg/L	0.05
Sulfate		1000		858	1000	1000	mg/L	5
Spec. Conduct. @ 25° C	2550	2640	2760	2820		3060	µmhos/cm	1
Spec. Conduct. @ 25° C	2530	2670	2750	2820		3070	µmhos/cm	1
Spec. Conduct. @ 25° C	2510	2620	2750	2820		3060	µmhos/cm	1
Spec. Conduct. @ 25° C	2500	2640	2740	2820		3100	µmhos/cm	1
Avg. Sp. Conduct. @ 25° C	2522.5	2642.5	2750	2820	2910	3000	µmhos/cm	1
Total Organic Carbon	2	2	1.4	ND		3058	mg/L	1
Total Organic Carbon	2	2	1.3	ND			mg/L	1
Total Organic Carbon		2	1.3	ND			mg/L	1
Total Organic Carbon			1.7	ND	2.4		mg/L	1
Total Org. Halides as Cl	20	ND	13	ND			ug/L	30
Total Org. Halides as Cl	10	ND		ND			ug/L	30
Total Org. Halides as Cl		ND		ND			ug/L	30
Total Org. Halides as Cl		ND		ND			ug/L	30
Total Dissolved Solids		1800		1880	1900	1800	mg/L	10
Water Elevation	6904.59	6904.49	6904.24	6902.89	6904.24	6902.79	ft	---

OW-11 Giant Refining - Ciniza

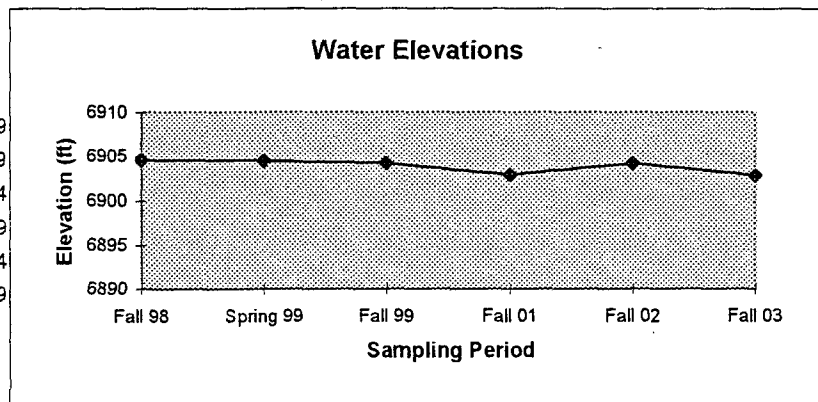
Fall 98	7.99
Spring 99	7.82
Fall 99	8.06
Fall 01	8.10
Fall 02	8.16
Fall 03	7.98



Fall 98	2523
Spring 99	2643
Fall 99	2750
Fall 01	2820
Fall 02	2910
Fall 03	3000

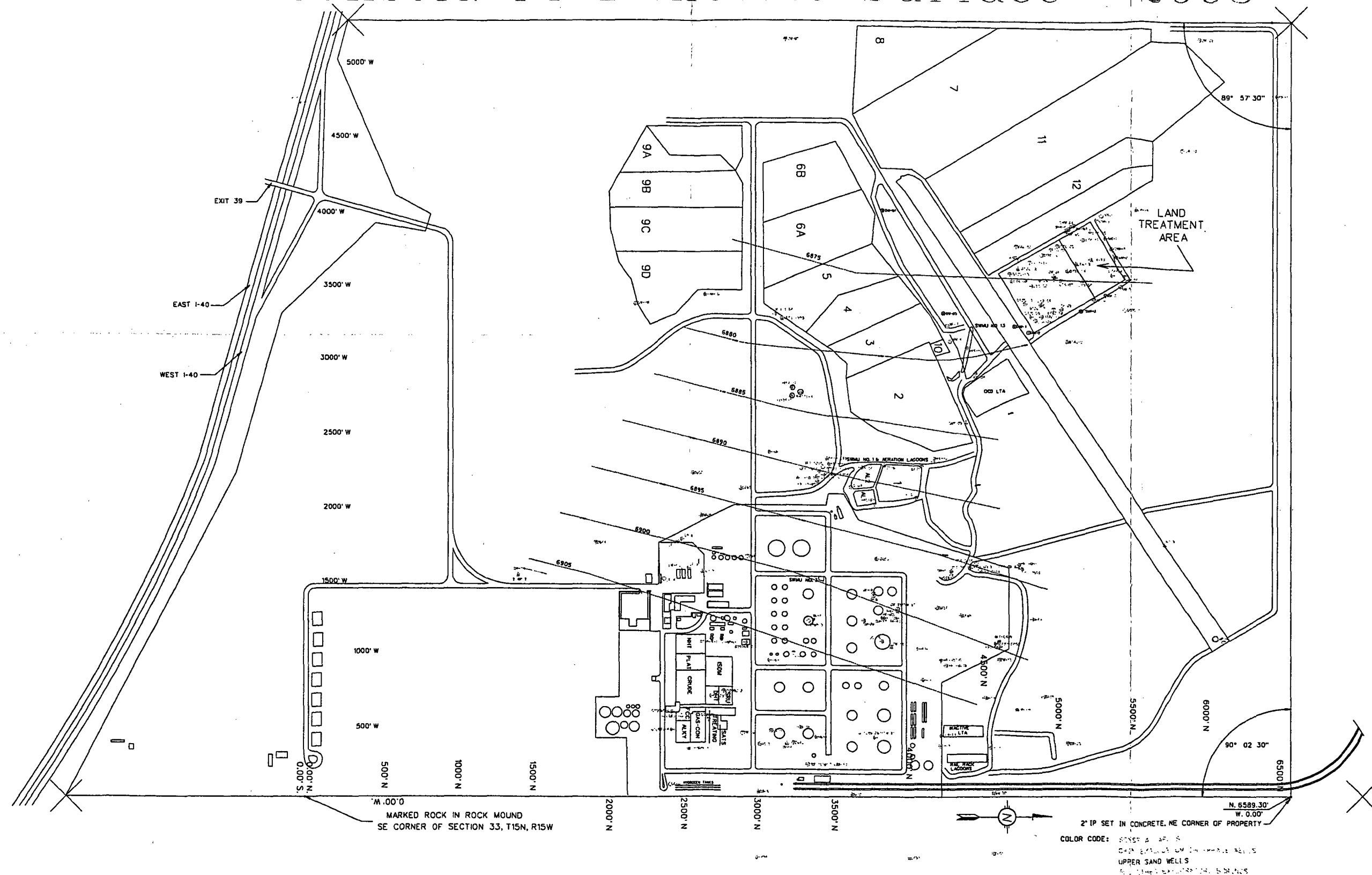


Fall 98	6904.59
Spring 99	6904.49
Fall 99	6904.24
Fall 01	6902.89
Fall 02	6904.24
Fall 03	6902.79



Giant Refining Company - Ciniza Refinery

Sonsela Piezometric Surface - 2003



Permit Condition 16. Annual Report

A.v. Annual Product Thickness Map

No well product thickness measurements were taken in 2003. Only volume was measured.

16.A. Annual Groundwater Report

- vi. The volume of the product recovered in the recovery wells during each quarter and the total recovered to date.

Product Recovered (bailed)

<u>Quarter</u>	<u>Well #</u>	<u>Volume Recovered (gallons)</u>
1	RW - 1	12
1	RW - 5	.85
1	RW - 6	2.39
2	RW - 1	5.3

Total Recovered to Date Through 2003

<u>Well #</u>	<u>Volume Recovered (gallons)</u>
RW - 1	60.07
RW - 5	17.2
RW - 6	31.03

Permit Condition 17. Refinery Land Farms

- B. Northern OCD Land Treatment Area (Old Railroad Rack Lagoon Temporary Land Farm.

No sampling was conducted in 2003. Prior years and 2004 analytical results can be found in attachment 1.

Permit Condition 18. Railroad Rack Lagoon

A closure plan shall be submitted for OCD approval by September 1, 2004.

Giant believes this condition has been met. The plan was included in the May 24, 2004 letter to Wayne Price followed by notice of approval from Hope Monzeglio on June 2, 2004. Copies of both email and letters follow this page. A copy of the analysis may be found in attachment 1. Giant plans to complete this closure within the next three months.

Ed Riege

From: Dorinda Mancini
Sent: Wednesday, May 19, 2004 2:14 PM
To: 'wprice@state.nm.us'; 'david_cobrain@nmenv.state.nm.us'; 'dfoust@state.nm.us'
Cc: Ed Riege; Steve Morris
Subject: Landfarm Analyses 1998 - 2004.xls

Importance: High



Sample Grids for
Landfarms.xls...



Landfarm Analyses
1998 - 2004...

Wayne, Denny, and Dave - I will follow these spreadsheets up with a letter outlining our request for use of these soils within a few days.

Thank you for your assistance. Please let me know if you have any questions or concerns.

Dorinda Mancini
Environmental Manager
Ciniza Refinery, GRC



May 24, 2004

Wayne Price
Environmental Bureau
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Dave Cobrain
Hazardous Waste Bureau
NMED
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, NM 87505

RE: SWMU 8 – Railroad Rack Lagoon - Permit No. NMD 000333211-1
Use of Remediated Soil from the Northeast OCD Landfarm – GW-032

Dear Wayne and Dave:

Ciniza Refinery requests permission to use the soil, currently on the Northeast OCD Landfarm, to construct a 2-foot berm around this landfarm. Any remaining soil will be placed back into the Lagoon after we have established that all waste sludge has been removed and the lagoon is clean. The TPH has dropped from a range of 25,000 to 40,000 ppm to ~2000 PPM. There is no gasoline range TPH. Please see attached spreadsheet and analytical results.

Samples will be taken of the bottom of the lagoon, and clean closure standards will be met by comparing the bottom soil of the lagoon to soil from the Below Treatment Zone (BTZ) of the nearby NE OCD Landfarm. Once these standards are met, any remediated soil remaining after construction of the berm will be placed back in the lagoon.

The remaining RRR Lagoon sludge will be removed and spread on the NE OCD Landfarm. We expect that all the remaining sludge in the lagoon can be landfarmed with one application. The attached spreadsheet and analytical results contain information about the contaminant levels of the sludge.

Your timely response is appreciated, since this work must be done at the same time as the dike work between ponds 5 & 6. We will be using the same contractor and equipment for both projects. Please contact me at 505.722.0227 if you have questions or concerns. Again, thank you for your assistance with this request.

Sincerely

Dorinda Mancini
Environmental Manager, Ciniza Refinery

Enc.

cc: Denny Foust, Aztec Office
Ed Riege, Environmental Superintendent, Giant Refining Co.

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

ROUTE 3
BOX 7
GALLUP
NEW MEXIC
87301



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us



RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 2, 2004

Ms. Dorinda Mancini
Environmental Manager
Giant Refining Company
Route 3 Box 7
Gallup, NM 87301

Mr. Ed Riege
Environmental Superintendent
Giant Refining Company
Route 3 Box 7
Gallup, NM 87301

RE: NOTICE OF APPROVAL
TREATED SOIL REUSE
GIANT REFINING COMPANY, CINIZA REFINERY
EPA ID # NMD000333211
HWB-GRCC-01-002

Dear Ms. Mancini and Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed your email dated May 19, 2004 Landfarm Analyses 1998-2004.xls GW-032 and May 24, 2004 letter regarding the analyses of treated soils and use of remediated soils from the OCD Northeast Landfarm to construct berms at the evaporation ponds (Solid Waste Management Unit [SWMU] # 2).

Soils containing diesel- and oil-range hydrocarbons at concentrations less than 2000 mg/kg may be used as dike material between ponds 5 & 6 and as backfill at SWMU 8 (Railroad Rack Lagoon). Please be aware that NMED requires the collection and analysis of discrete soil confirmation samples from the limits of the Railroad Rack Lagoon remedial excavation to demonstrate that all soils containing contaminants of concern at concentrations greater than industrial cleanup levels as listed the New Mexico Soil Screening Levels (Technical Background Document for Development of Soil Screening Levels, Revision 2.0, February 2004) have been removed.

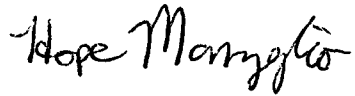
Ms. Mancini and Mr. Riege

June 2, 2004

Page 2 of 2

Please call this office at 505-428-2545 if you have questions regarding this letter.

Sincerely,

A handwritten signature in cursive script that reads "Hope Monzeglio".

Hope Monzeglio

Project Leader

Permits Management Program

HM

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
J. Harris, EPA Region VI
W. Price, NMOCD
B. Olson, NMOCD

file: Reading and GRCC

Permit Condition 19. Evaporation Ponds

- B. All wastewater from the refinery or other sources entering the ponds shall be metered and records maintained and reported in an annual report to be submitted on the 1st day of September each year.

See the attached 2003 wastewater summary.

2003 WASTE WATER SUMMARY

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
12/30/03	38	2	7.16	34	4.5	94.2	0
12/29/03	38	2	7.16	34	4.5	94.2	0
12/17/03	36	1	1.27	32	4.5	94.2	0
12/16/03	36	1	1.27	32	4.5	94.2	0
12/15/03	36	2	7.16	34	4.5	94.2	0.02
12/11/03	34	1	1.27	32	4.5	94.2	0
12/10/03	34	2	7.16	32	4.5	94.2	0.05
12/8/03	36	2	7.16	34	4.5	94.2	0
12/4/03	38	0	0	34	4.5	94.2	0
12/3/03	38	2	7.16	34	4.5	94.2	0
12/2/03	38	1	1.27	36	4.5	94.2	0.1
11/20/03	40	1	1.27	36	4.5	94.2	0
11/19/03	40	2	7.16	36	4.5	94.2	0
11/18/03	40	0	0	36	4.5	94.2	0
11/17/03	42	1	1.27	38	4.5	94.2	0
11/13/03	44	2	7.16	40	4.5	94.2	0
11/12/03	44	2	7.16	40	4.5	94.2	0
11/11/03	42	1	1.27	38	4.5	94.2	0
11/6/03	40	1	1.27	36	4.5	94.2	0
11/5/03	40	1	1.27	36	4.5	94.2	0
11/4/03	40	0	0	36	4.5	94.2	0
11/3/03	42	2	7.16	38	4.5	94.2	0.1
10/30/03	40	2	7.16	36	4.5	94.2	0
10/29/03	40	1	1.27	36	4.5	94.2	0
10/28/03	40	1	1.27	36	4.5	94.2	0
10/27/03	40	2	7.16	36	4.5	94.2	0
10/23/03	44	0	0	40	4.5	94.2	0
10/22/03	44	1	1.27	40	4.5	94.2	0
10/21/03	44	2	7.16	40	4.5	94.2	0
10/20/03	44	1	1.27	40	4.5	94.2	0
10/16/03	42	1	1.27	40	4.5	94.2	0
10/15/03	42	2	7.16	40	4.5	94.2	0
10/14/03	42	2	7.16	40	4.5	94.2	0
10/13/03	44	1	1.27	40	5	123	0
10/8/03	44	2	7.16	42	4.5	94.2	0.4
10/7/03	46	0	0	42	4.5	94.2	0
10/6/03	46	1	1.27	42	4.5	94.2	0.5
10/2/03	48	1	1.27	44	4.5	94.2	0
10/1/03	48	2	7.16	44	4.5	94.2	0
9/30/03	48	1	1.27	44	4.5	94.2	0
9/29/03	48	0	0	44	4.5	94.2	0
9/25/03	48	1	1.27	44	4.5	94.2	0
9/24/03	46	2	7.16	44	4.5	94.2	0
9/23/03	46	2	7.16	44	4.5	94.2	0

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
9/22/03	46	1	1.27	44	4.5	94.2	0
9/17/03	48	0	0	44	4.5	94.2	0
9/16/03	48	1	1.27	44	4.5	94.2	0
9/15/03	48	2	7.16	46	4.5	94.2	0
9/11/03	50	2	7.16	46	5	123	0.2
9/10/03	50	1	1.27	46	5	123	0.3
9/9/03	50	2	7.16	46	5	123	0.3
9/8/03	52	1	1.27	48	5	123	0.1
9/4/03	56	1	1.27	50	4.5	94.2	0
9/3/03	56	1	1.27	50	4.5	94.2	0
9/2/03	54	0	0	50	5	123	0
8/28/03	54	1	1.27	50	7	284	0.7
8/27/03	54	2	7.16	50	4.5	94.2	0
8/25/03	54	1	1.27	50	5	123	0
8/21/03	54	2	7.16	50	5	123	0
8/20/03	54	1	1.27	50	5	123	0.1
8/19/03	56	1	1.27	54	5	123	0
8/18/03	56	2	7.16	54	5.5	156	1.5
8/14/03	54	0	0	54	5	123	0.2
8/13/03	54	1	1.27	54	5	123	0
8/12/03	58	2	7.16	56	5	123	0.2
8/11/03	58	0	0	56	5	123	0
8/8/03	56	1	1.27	54	5	123	0.2
8/7/03	58	0	0	56	4.5	94.2	0.1
8/6/03	58	0	0	56	4.5	94.2	0
8/5/03	60	1	1.27	58	4.5	94.2	0.2
7/31/03	62	2	7.16	58	4.5	94.2	0
7/30/03	60	2	7.16	58	4.5	94.2	0
7/29/03	60	1	1.27	58	5	123	0.1
7/28/03	60	2	7.16	58	5	123	0.5
7/24/03	62	0	0	58	4.5	94.2	0
7/23/03	62	1	1.27	60	4.5	94.2	0
7/22/03	62	2	7.16	60	4.5	94.2	0
7/21/03	62	2	7.16	60	4.5	94.2	0
7/16/03	60	1	1.27	58	4.5	94.2	0
7/15/03	64	0	0	60	4.5	94.2	0
7/14/03	64	2	7.16	60	5	123	0
7/9/03	62	2	7.16	58	4.5	94.2	0
7/8/03	60	1	1.27	58	4.5	94.2	0
7/7/03	62	1	1.27	58	4.5	94.2	0
7/6/03	62	2	7.16	58	4.5	94.2	0
7/2/03	60	0	0	56	4.5	94.2	0
7/1/03	60	2	7.16	56	4.5	94.2	0
6/30/03	58	1	1.27	56	5	123	0
6/26/03	62	0	0	58	4.5	94.2	0
6/25/03	60	1	1.27	58	5	123	0

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
6/24/03	60	1	1.27	58	4.5	94.2	0
6/23/03	60	2	7.16	58	5	123	0
6/20/03	58	1	1.27	54	6	193	0.2
6/19/03	58	0	0	56	6	193	1.1
6/17/03	62	2	7.16	60	5	123	0
6/12/03	62	1	1.27	60	5	123	0
6/11/03	60	2	7.16	58	5	123	0
6/10/03	62	3	19.7	58	5	123	0
6/9/03	62	1	1.27	58	5	123	0
6/6/03	60	2	7.16	56	5	123	0
6/5/03	60	2	7.16	56	5	123	0
6/4/03	60	2	7.16	56	5	123	0
6/3/03	60	0	0	58	5	123	0
6/2/03	62	2	7.16	60	5	123	0
5/29/03	62	3	19.7	60	5	123	0
5/28/03	62	1	1.27	60	5	123	0
5/27/03	62	2	7.16	60	5	123	0
5/22/03	54	0	0	50	6	193	0
5/20/03	52	2	7.16	50	6	193	0
5/19/03	52	2	7.16	48	6	193	0
5/8/03	50	2	7.19	44	5.5	156	0
5/7/03	50	0	0	44	5.5	156	0
5/6/03	50	2	7.16	44	5.5	156	0
5/5/03	50	2	7.16	44	5.5	156	0.01
4/30/03	50	1	1.27	48	5.5	156	0
4/29/03	54	0	0	52	5.5	156	0
4/28/03	54	2	7.16	52	5.5	156	0
4/23/03	44	1	1.27	40	5.5	156	0
4/22/03	50	2	7.16	46	5.5	156	0
4/21/03	50	2	7.16	46	5.5"	156	0
4/16/03	50	2	7.16	46	5.5	156	0
4/15/03	50	1	1.27	46	5.5	156	0
4/11/03	48	0	0	42	5.5	156	0
4/10/03	48	2	7.16	42	5.5	156	0
4/9/03	48	1	1.27	42	5.5	156	0
4/8/03	46	2	7.16	40	5.5	156	0
4/7/03	46	2	7.16	40	5	123	0
4/3/03	44	2	7.16	40	6	193	0
4/2/03	46	1	1.27	40	6	193	0
4/1/03	50	3	19.7	46	6	193	0
3/31/03	48	2	7.16	46	6	193	0
3/27/03	48	2	7.16	46	6	193	0
3/26/03	50	1	1.27	46	6	193	0
3/25/03	50	2	7.16	46	6	193	0
3/24/03	52	2	7.16	46	6.5	236	0.1
3/19/03	40	1	1.27	36	6	193	0

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
3/17/03	44	2	7.16	40	6	193	0.1
3/13/03	50	3	19.7	46	6	193	0
3/12/03	50	2	7.16	46	6	193	0
3/11/03	50	2	7.16	44	6	193	0
3/10/03	50	1	1.27	44	6.5	236	0
3/6/03	34	3	19.7	30	6	193	0
3/5/03	40	2	7.16	36	6	193	0
3/4/03	38	1	1.27	34	6	193	0
3/3/03	36	2	7.16	32	6	193	0.02
2/27/03	40	2	7.16	36	6	193	0.02
2/26/03	40	4	40.5	36	6	193	0
2/24/03	40	2	7.16	36	6	193	ND
2/20/03	36	2	7.16	34	6	193	0
2/19/03	36	1	1.27	32	6	193	0.2
2/18/03	36	2	7.16	32	6	193	0.5
2/13/03	38	2	7.16	32	6	193	0
2/12/03	36	3	19.7	30	6	193	0
2/11/03	34	1	1.27	30	6	193	0
2/10/03	30	2	7.16	26	6	193	0
2/3/03	38	1	1.27	36	6	193	0
1/30/03	40	2	7.16	36	6	193	0
1/29/03	38	1	1.27	36	6	193	0
1/27/03	40	2	7.16	36	6	193	0
1/23/03	44	2	7.16	40	6	193	0
1/22/03	42	0	0	40	6	193	0
1/20/03	44	2	7.16	40	6	193	0
1/16/03	38	2	7.16	36	6	193	0
1/15/03	38	2	7.16	36	6	193	0
1/14/03	40	3	19.7	36	6	193	0
1/13/03	40	2	7.16	36	6	193	0
1/9/03	42	3	19.7	38	6	193	0
1/7/03	38	2	7.16	36	6	193	0
1/6/03	40	1	1.27	38	6	193	0
	AVG	AVG	AVG	AVG	AVG	AVG	TOTAL
	48.67456	1.44	4.96	45.18	5.35	135.49	8.12

2003 Total flow to ponds:

135.49 gpm x 60 min/hr x 8760 hr/yr = 71,213,544 gal/yr.

Permit Condition 19. Evaporation Ponds

- D. Temporary storage ponds, which were previously approved, shall be identified and Giant shall submit a closure plan for OCD approval by September 1, 2004.

Giant believes this condition has been met. The plan was included in the May 24, 2004 letter to Wayne Price. Notice of approval was received from Hope Monzeglio on June 2, 2004 to use the soils as dike material between ponds 5 and 6. This work was then completed by Fuhs Trucking in June, 2004. Copies of letters are attached including the invoices from Fuhs Trucking.

GIANT

REFINING COMPANY

May 24, 2004

Wayne Price
Environmental Bureau
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Use of Remediated Soil from the Central OCD Landfarm – GW-032

Dear Wayne:

Ciniza Refinery requests permission to use the soil currently on the Central OCD Landfarm to cover the area on the northwest corner of the site, where the temporary evaporation ponds were located, after removal of the surface soil from that area.

The surface soil from the temporary pond area has been impacted with salts by its use for holding wastewater. The salt-impacted surface soil will be removed and used as dike material to repair the dike between ponds 5 & 6.

This landfarm has been tilled and fertilized, without addition of new amounts of contaminated soil, since 1999. The TPH has dropped from ~5000 ppm to between 1200 and 1800 ppm. Please see attached spreadsheet and analytical results. There is no gasoline range TPH. This soil has shown the ability to grow native vegetation and has a significant amount of seeds, which will be beneficial in stabilizing and controlling erosion in the northwest area.

Your timely response is appreciated, since the dike work is critical, and needs to be started as soon as possible. Please contact me at 505.722.0227 if you have questions or concerns. Again, thank you for your assistance with this request.

Sincerely



Dorinda Mancini
Environmental Manager, Ciniza Refinery

Enc.

cc: Denny Foust, Aztec Office
Dave Cobrain, NMED
Ed Riege, Environmental Superintendent, Giant Refining Co.

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

ROUTE 3
BOX 7
GALLUP
NEW MEXICO
87301



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us



RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 2, 2004

Ms. Dorinda Mancini
Environmental Manager
Giant Refining Company
Route 3 Box 7
Gallup, NM 87301

Mr. Ed Riege
Environmental Superintendent
Giant Refining Company
Route 3 Box 7
Gallup, NM 87301

RE: NOTICE OF APPROVAL
TREATED SOIL REUSE
GIANT REFINING COMPANY, CINIZA REFINERY
EPA ID # NMD000333211
HWB-GRCC-01-002

Dear Ms. Mancini and Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed your email dated May 19, 2004 Landfarm Analyses 1998-2004.xls GW-032 and May 24, 2004 letter regarding the analyses of treated soils and use of remediated soils from the OCD Northeast Landfarm to construct berms at the evaporation ponds (Solid Waste Management Unit [SWMU] # 2).

Soils containing diesel- and oil-range hydrocarbons at concentrations less than 2000 mg/kg may be used as dike material between ponds 5 & 6 and as backfill at SWMU 8 (Railroad Rack Lagoon). Please be aware that NMED requires the collection and analysis of discrete soil confirmation samples from the limits of the Railroad Rack Lagoon remedial excavation to demonstrate that all soils containing contaminants of concern at concentrations greater than industrial cleanup levels as listed the New Mexico Soil Screening Levels (Technical Background Document for Development of Soil Screening Levels, Revision 2.0, February 2004) have been removed.

Ms. Mancini and Mr. Riege
June 2, 2004
Page 2 of 2

Please call this office at 505-428-2545 if you have questions regarding this letter.

Sincerely,



Hope Monzeglio
Project Leader
Permits Management Program

HM

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
J. Harris, EPA Region VI
W. Price, NMOCD
B. Olson, NMOCD

file: Reading and GRCC

FUHS TRUCKING CO., INC.

PO Box 630
2210 Lance Street
GALLUP, NM 87305-0613

Invoice

Customer No.: 018

Invoice No.: 90

Bill To: **Giant Industries**
Route 3 - Box 7
Gallup, NM 87301

Ship To: **Project # 3**
Dorinda Mancini

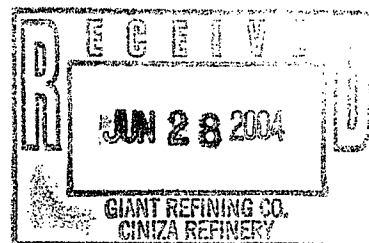
Date		Ship Via		F.O.B.		Terms		
06/24/04						1.5% NET 30		
Purchase Order Number			Order Date		Sales Person		Our Order Number	
			06/24/04					
Quantity			Item Number	Description	Unit Price	Amount		
Required	Shipped	B.O.						
1	1			Mobilize & de-mobilize	2100.00	2100.00		
12000	12000			Stockpile	0.80	9600.00		
8400	8400			Load, haul & place on berm	4.85	40740.00		
25	25			Berm & place concrete as rip-rap	55.00	1375.00		

Invoice subtotal 53815.00
Sales tax @ 6.438% 3464.61

Invoice total 57279.61

We appreciate your business!

RFE 9400.65
2084060.5302.05
ok to pay
Dorinda Mancini
6/28/04
g/rip



Thank You

Permit Condition 20. Wastewater from Pilot Travel Center and Truck Stop Facility

3. Giant shall design, implement and maintain a sampling and metering station on the incoming line.

Giant submitted the attached emails dated July 27 and August 5 13 to Wayne Price requesting to use a pipe outlet box containing a triangular notch weir. Also included is a Caneron Hydraulic Data page used to convert inches of flow to gallons per minute. Giant proposes to use this weir for their 3rd quarter 2004 sampling and metering

Ed Riege

From: Steve Morris
Sent: Tuesday, August 24, 2004 1:21 PM
To: Ed Riege
Subject: FW: Travel Center Water Flow

-----Original Message-----

From: Price, Wayne [mailto:WPrice@state.nm.us]
Sent: Tuesday, August 24, 2004 11:19 AM
To: 'Steve Morris'
Subject: RE: Travel Center Water Flow

If you measure daily including weekends then we will approve.

-----Original Message-----

From: Steve Morris [mailto:smorris@giant.com]
Sent: Tuesday, August 24, 2004 9:45 AM
To: 'Price, Wayne'
Subject: RE: Travel Center Water Flow

Wayne,

We've been recording the inches of flow daily on weekdays. That is one of the items on the daily checklist for the evaporation ponds. The guy who has been doing that checklist works day shift on weekdays. That's the only reason for that schedule. We could make arrangements for tank farm folks to get measurements on weekends if need be.
Thanks, Steve

-----Original Message-----

From: Price, Wayne [mailto:WPrice@state.nm.us]
Sent: Friday, August 13, 2004 2:45 PM
To: 'Steve Morris'
Subject: RE: Travel Center Water Flow

How often will this reading be taken?

-----Original Message-----

From: Steve Morris [mailto:smorris@giant.com]
Sent: Friday, August 13, 2004 10:26 AM
To: 'wprice@state.nm.us'
Cc: Ed Riege
Subject: Travel Center Water Flow

Mr. Wayne Price,

This is in regard to our request to use the pipe outlet box for flow measurement and sample point for the wastewater we receive from Pilot's Travel Center.

I'm including pictures of the measuring notch and a scan from the Cameron Hydraulic Data book

we use to convert inches of flow to gallons per minute.

If you have any questions please give me a call at 505-722-0258.

Thanks, Steve Morris

August 13, 2004 1025 hours

<<Water Flow Chart.jpg>> <<Travel Center Notch 004.jpg>> <<Travel Center

Ed Riege

From: Steve Morris
Sent: Friday, August 13, 2004 10:26 AM
To: 'wprice@state.nm.us'
Cc: Ed Riege
Subject: Travel Center Water Flow

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Thanks, Steve Morris

August 13, 2004 1025 hours



Water Flow
Chart.jpg



Travel Center
Notch 004.jpg



Travel Center
Notch 005.jpg



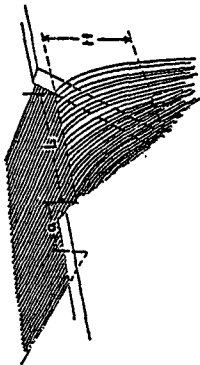
Travel Center
Notch 006.jpg



Travel Center
Notch 007.jpg

CAMERON HYDRAULIC DATA

Discharge from Triangular Notch Weirs with End Contractions



Head (H) in Inches	Flow in Gallons Per Min.		Head (H) in Inches	Flow in Gallons Per Min.		Head (H) in Inches	Flow in Gallons Per Min.	
	90° Notch	60° Notch		90° Notch	60° Notch		90° Notch	60° Notch
1	2.19	1.27	6 3/4	260	160	15	1912	1104
1 1/4	3.83	2.21	7	284	164	15 1/2	2073	1197
1 1/2	5.05	2.91	7 1/4	310	179	16	2246	1277
1 3/4	6.05	3.49	7 1/2	338	196	16 1/2	2426	1401
2	8.89	5.13	7 3/4	367	212	17	2614	1509
2 1/4	12.4	7.16	8	397	229	17 1/2	2810	1623
2 1/2	16.7	9.62	8 1/4	429	248	18	3016	1741
2 3/4	21.7	12.5	8 1/2	462	267	18 1/2	3229	1864
3	27.5	15.9	8 3/4	498	287	19	3452	1993
3 1/4	34.2	19.7	8 1/2	533	308	19 1/2	3684	2127
3 1/2	41.8	24.1	9	571	330	20	3924	2266
3 3/4	50.3	29.0	9 1/4	610	352	20 1/2	4174	2410
3 1/2	59.7	34.5	9 1/2	651	376	21	4433	2560
4	70.2	40.5	9 3/4	694	401	21 1/2	4702	2715
4 1/4	81.7	47.2	10	739	427	22	4980	2875
4 1/2	94.2	54.4	10 1/4	784	452	22 1/2	5268	3041
4 3/4	108	62.3	11	830	478	23	5565	3213
5	123	70.8	11 1/4	878	503	23 1/2	5873	3391
5 1/4	139	80.0	11 1/2	924	528	24	6190	3574
5 1/2	156	89.9	12 1/4	971	553	24 1/2	6518	3763
5 3/4	174	100	13	1019	578	25	6855	3958
6	193	112	13 1/4	1069	603			
6 1/4	214	124	14	1119	628			
6 1/2	236	136	14 1/2	1169	653			

Based on formula:
 $Q = C(H)^{3/2}$ (1) $(H)^{3/2} \sqrt{2gH}$
 in which Q = flow of water in cu. ft. per sec.
 L = width of notch in ft. at H distance above apex.
 H = head of water above apex of notch in ft.
 C = constant varying with conditions, .57 being used for this table.
 a = should be not less than $\frac{1}{2}L$.
 For 90° notch the formula becomes
 $Q = 2.481H^{3/2}$
 For 60° notch the formula becomes
 $Q = 1.4076 H^{3/2}$

WATER DATA

ECONOMICAL PIPE SIZES

ECONOMICAL PIPE SIZES FOR PRESSURE MAINS

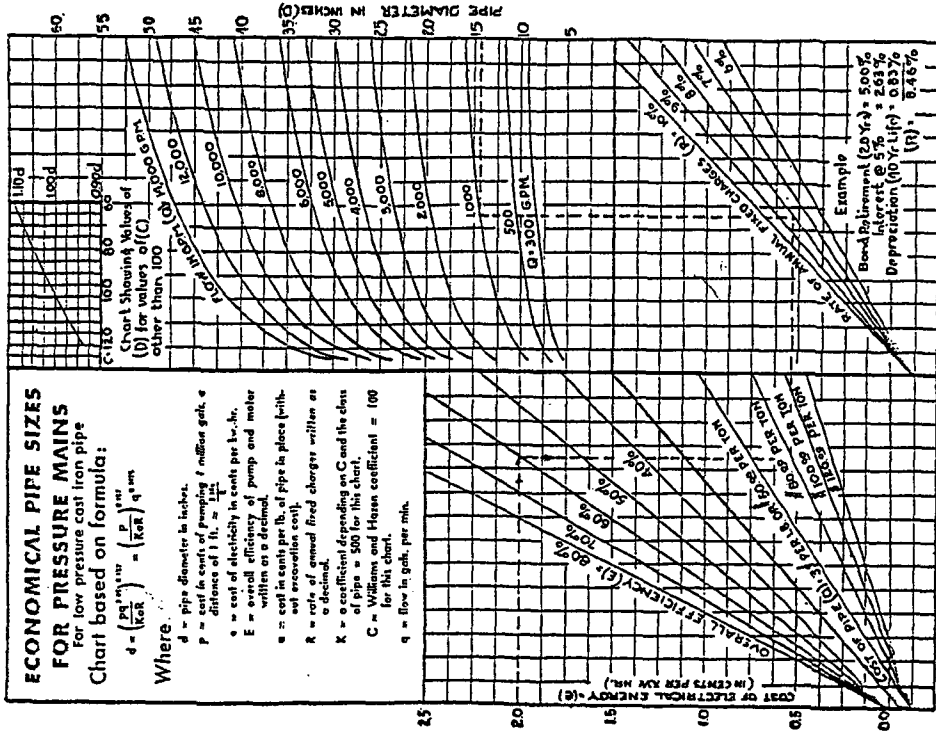
For low pressure cast iron pipe

Chart based on formula:

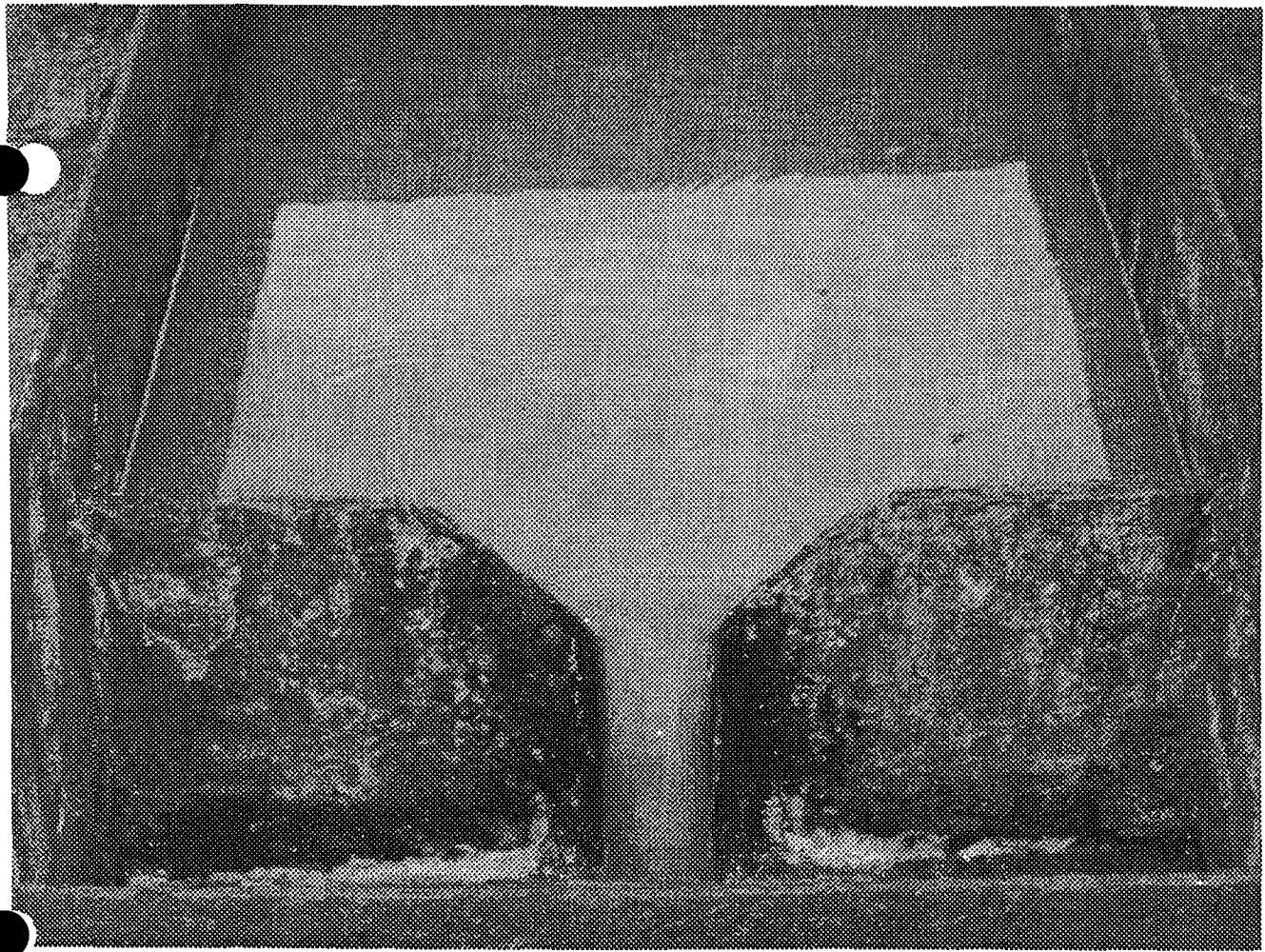
$$d = \left(\frac{P \cdot L}{K \cdot E} \right)^{1/3} \cdot \left(\frac{P}{K \cdot E} \right)^{1/3}$$

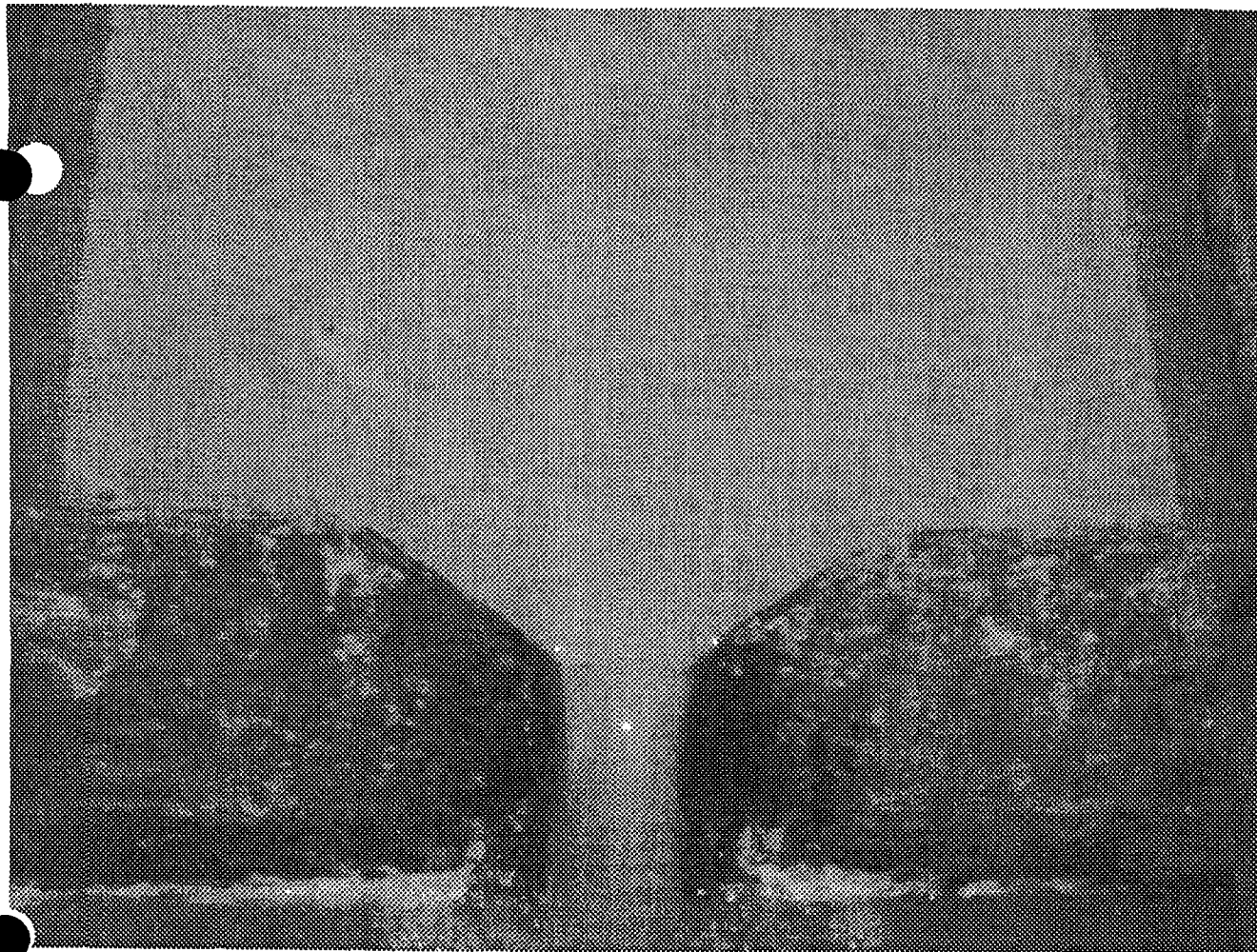
Where

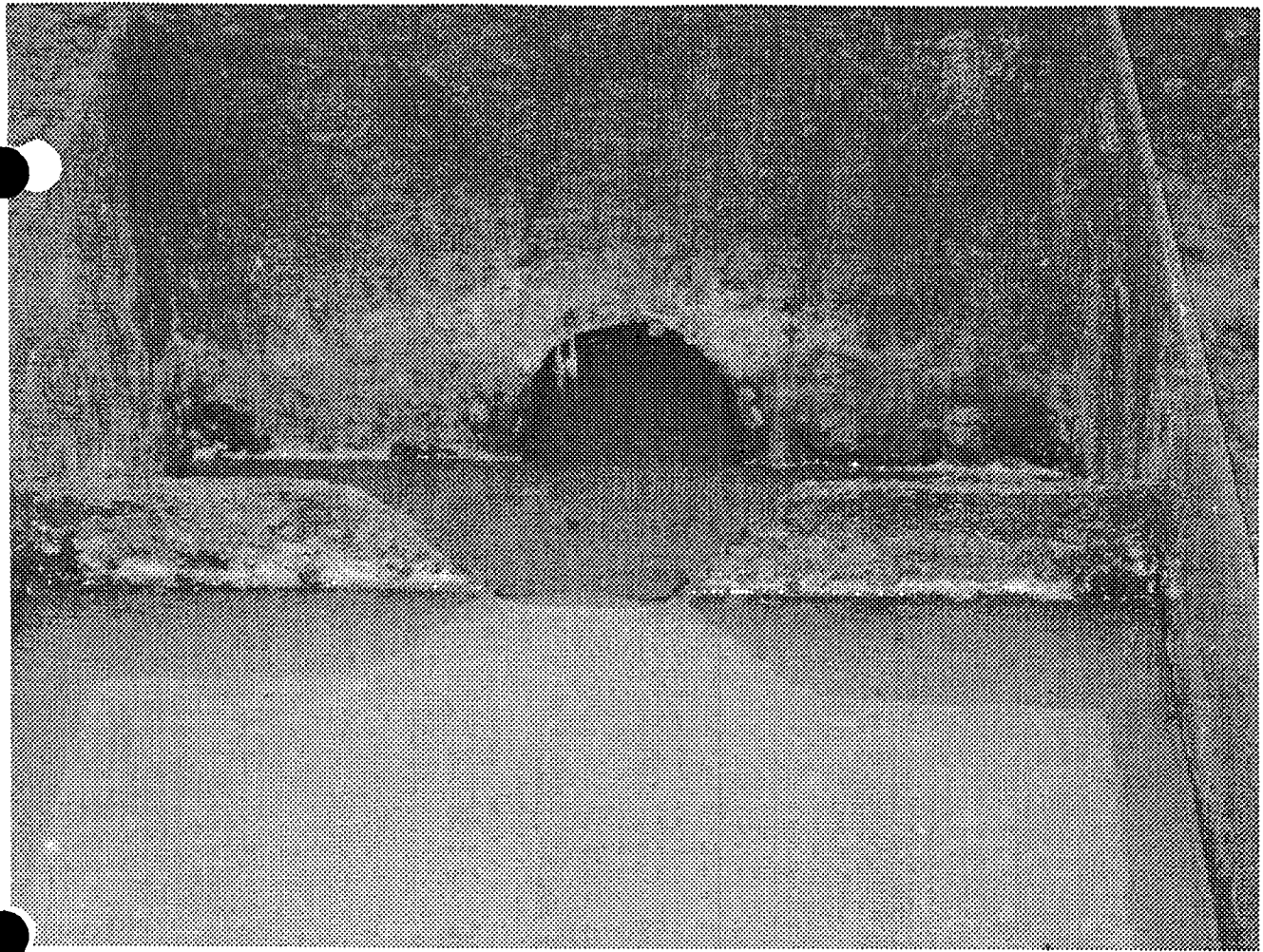
- d = pipe diameter in inches.
- P = cost in cents of pumping 1 million gals. a distance of 1 ft. = $\frac{1}{1000}$
- L = length of pipe in ft.
- E = cost of electricity in cents per kw.-hr.
- K = overall efficiency of pump and motor written on a decimal.
- a = cost in cents per lb. of pipe in place (including excavation cost).
- R = rate of annual fixed charges written on a decimal.
- K = a coefficient depending on C and the class of pipe = 500 for this chart.
- C = Williams and Hazen coefficient = 100 for this chart.
- q = flow in gals. per min.

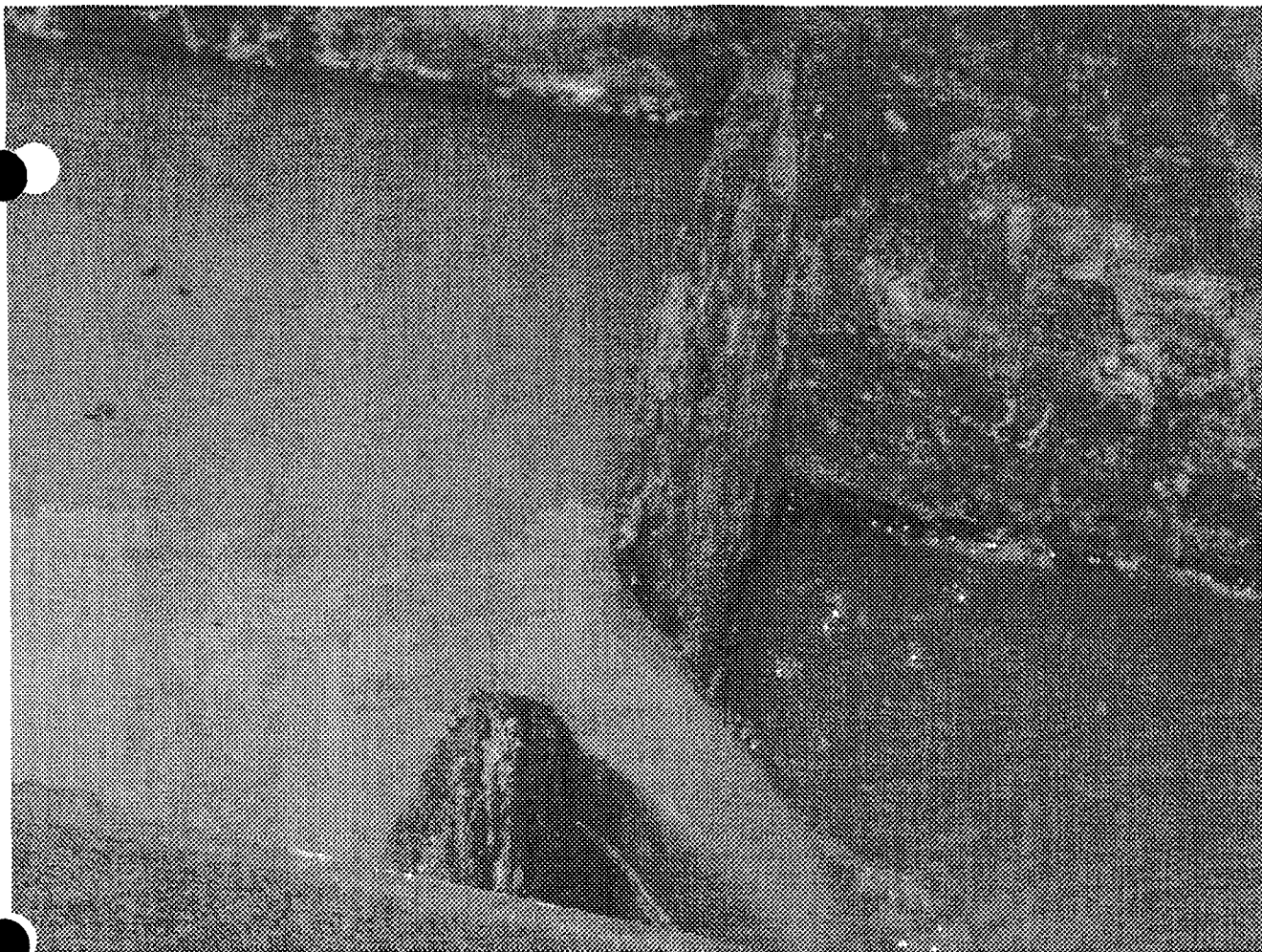


Courtesy of George B. Gargelone, Consulting Engineer Cleveland. Compiled by R. G. Hornberger, W. L. Leach and J. W. Avery









Ed Riege

From: Ed Riege
Sent: Tuesday, July 27, 2004 4:21 PM
To: 'Price, Wayne'
Cc: Steve Morris
Subject: RE: New Monitor points (New Wells) and one located Near API separator and ponds

Wayne,
Dorinda resigned last Friday, so I will be your new contact. Kingsley was planning on coming back this week to finish concrete work around the new wells and purge them, and then we would sample them next week. This may be put off a week due to the rain we have had, but I will keep you posted as to the sampling date. MW 1c, 2a,b,c & 3b,c contain water and we will try to sample them after purging. The pond 1 monitor point will also be sampled at this time. Attached is the chain of custody for the upcoming well sampling. Do we have to analyze the pond 1 monitor point for all of these parameters or would BTEX be enough?

On a different item, new permit condition 20.3., requires design and implementation of a sampling and metering station on the incoming Pilot line. Ciniza currently has in place a triangular notch weir near the Pilot line outlet into the pond. Measurements are taken daily at this point. Could we utilize this weir as our sampling and metering station? Also it requires TCLP on the quarterly sample. My understanding is that TCLP is mainly for solids since it is a leaching procedure. We can test for the RCRA constituents but I'm not sure about the TCLP part.

Thanks, Ed

-----Original Message-----

From: Price, Wayne [mailto:WPrice@state.nm.us]
Sent: Tuesday, July 27, 2004 3:12 PM
To: Dorinda Manncina (E-mail); Ed Riege (E-mail)
Cc: hope Monzeglio (E-mail)
Subject: New Monitor points (New Wells) and one located Near API separator and ponds

Dear Dorinda, Please make sure this monitoring point is included in your sampling program. Section 9.0 of the discharge plan calls for this well to be checked for fluids quarterly. Your annual report shall reflect your findings. Please notify OCD within 48 hours of discovery of fluids. The new wells near the evaporation ponds shall also be included in the annual report. Please let me know which of those wells have fluids in them.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

Confidentiality Notice: This e-mail, including all attachments is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited unless specifically provided under the New Mexico Inspection of Public Records Act. If you are not the intended recipient, please contact the sender and destroy all copies of this message. --

Permit Condition 21. Annual Report

A. Summary Of All Major Refinery Activities Or Events

April- the annual cleaning of the API separator occurred.

The proposal for the refinery boundary wells installation was sent to OCD and NMED for their approval. A copy is attached.

A progress report on the Discharge Plan renewal was sent to OCD. A copy is attached.

May- The annual HAZWOPER training was received by environmental and emergency response personnel.

June- The sale of the travel center to Pilot Travel Centers LLC was completed on June 24.

July- On July 6, a railcar derailment at the refinery, caused a transfer pipeline release of 140 pounds of crude oil containing propane, butane, isopentane, and pentane. The release was contained in the loading dock area and cleanup and repair was completed.

July- On July 23, a meeting was held at the Ciniza Refinery that included representatives of the refinery, OCD and NMED. A detailed discussion of the groundwater monitoring and consensus agreement was reached in regard to proposed modification of existing plan.

November- Installation began on the refinery boundary wells by Precision Engineering.

The refinery adopted a Pollution Prevention Policy on November 23.

December- The annual SPCC self-audit inspection was completed.

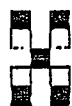
The annual Storm water Pollution Prevention Plan self audit inspection was performed.

Construction began on the new oil water separator.

Permit Condition 21. Annual Report

B. Results of all sampling and monitoring events.

OW – 12, 13, 29, & 30
BTEX & MTBE



Hall Environmental Analysis Laboratory

COVER LETTER

October 28, 2003

Dorinda Mancini
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0227
FAX (505) 722-0210

RE: Annual Ground Water Samples 2003

Order No.: 0310180

Dear Dorinda Mancini:

Hall Environmental Analysis Laboratory received 4 samples on 10/24/2003 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: 28-Oct-03

CLIENT: Giant Refining Co
Project: Annual Ground Water Samples 2003

Lab Order: 0310180

Lab ID: 0310180-01
Client Sample ID: OW-12-102203

Collection Date: 10/22/2003 11:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/24/2003 4:33:23 PM
Benzene	ND	0.50		µg/L	1	10/24/2003 4:33:23 PM
Toluene	ND	0.50		µg/L	1	10/24/2003 4:33:23 PM
Ethylbenzene	ND	0.50		µg/L	1	10/24/2003 4:33:23 PM
Xylenes, Total	ND	0.50		µg/L	1	10/24/2003 4:33:23 PM
Surr: 4-Bromofluorobenzene	102	74-118		%REC	1	10/24/2003 4:33:23 PM

Lab ID: 0310180-02
Client Sample ID: OW-13-102203

Collection Date: 10/22/2003 1:00:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/24/2003 5:04:18 PM
Benzene	ND	0.50		µg/L	1	10/24/2003 5:04:18 PM
Toluene	ND	0.50		µg/L	1	10/24/2003 5:04:18 PM
Ethylbenzene	ND	0.50		µg/L	1	10/24/2003 5:04:18 PM
Xylenes, Total	ND	0.50		µg/L	1	10/24/2003 5:04:18 PM
Surr: 4-Bromofluorobenzene	99.0	74-118		%REC	1	10/24/2003 5:04:18 PM

Lab ID: 0310180-03
Client Sample ID: OW-29-102303

Collection Date: 10/23/2003 9:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/24/2003 5:35:18 PM
Benzene	ND	0.50		µg/L	1	10/24/2003 5:35:18 PM
Toluene	ND	0.50		µg/L	1	10/24/2003 5:35:18 PM
Ethylbenzene	ND	0.50		µg/L	1	10/24/2003 5:35:18 PM
Xylenes, Total	ND	0.50		µg/L	1	10/24/2003 5:35:18 PM
Surr: 4-Bromofluorobenzene	100	74-118		%REC	1	10/24/2003 5:35:18 PM

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

Hall Environmental Analysis Laboratory

Date: 28-Oct-03

CLIENT: Giant Refining Co
Project: Annual Ground Water Samples 2003

Lab Order: 0310180

Lab ID: 0310180-04
Client Sample ID: OW-30-102303

Collection Date: 10/23/2003 10:45:00 AM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	2.7	2.5		µg/L	1	10/24/2003 6:06:04 PM
Benzene	ND	0.50		µg/L	1	10/24/2003 6:06:04 PM
Toluene	ND	0.50		µg/L	1	10/24/2003 6:06:04 PM
Ethylbenzene	ND	0.50		µg/L	1	10/24/2003 6:06:04 PM
Xylenes, Total	ND	0.50		µg/L	1	10/24/2003 6:06:04 PM
Surr: 4-Bromofluorobenzene	99.8	74-118		%REC	1	10/24/2003 6:06:04 PM

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

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

Accreditation Applied:

NELAC ☐ **USACE** ☐

Project Name: Annual Ground water sample 2003

Project #:

Project Manager;

Drinda Mancini

Sampler: *Chloe Smith*

Sample Temperature:

Phone #: 505 722 3833

Fax #: 505 722 0210

Date _____

Time

Matrix

Sample I.D. No.

Number/Volume

Preservative

--	--

--	--

HEAT No.

HEAL No. 0310180

10/22/03

10/22/03

9/23/03

$$\frac{2}{23}h^3$$

20

2

22

00W-12-1012203

OW-13-102203

OW-29-102303

044-39-107303

Date: _____

សេចក្តី:

Relinquished By: (Signature)

[illegible]

Date: _____

Ans:

Relinquished By: (Signature)

Remarks:

1030

ANALYSIS REQUEST

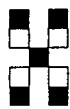
BTX + MTBE + TMB's (8021)	BTX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1)	ED8 (Method 504.1)	EDC (Method 8021)	8310 (PMA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / PCB's (8082)	8250 (VOA)	8270 (Semi-VOA)	8021 BTX+MTBE
---------------------------	----------------------------------	-----------------------------------	--------------------	--------------------	-------------------	-------------------	---------------	-------------------------	--	--------------------------------	------------	-----------------	---------------

Remarks:

**AL – 1 IN Inlet to Aeration Lagoon 1, which
is effluent from the API**

**EP – 1 IN Inlet to evaporation pond 1, which
is effluent from aeration lagoon 2**

EP – 2 OUT Outlet from evaporation pond 2



Hall Environmental Analysis Laboratory

COVER LETTER

July 28, 2003

Dorinda Mancini
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0227
FAX (505) 722-0210

RE: OCD GW 32 Summer 03

Order No.: 0307074

Dear Dorinda Mancini:

Hall Environmental Analysis Laboratory received 4 samples on 7/10/2003 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,


Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-01

Client Sample ID: AL1-IN
Collection Date: 7/10/2003 9:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	950	100		µg/L	100	7/15/2003
Toluene	2400	100		µg/L	100	7/15/2003
Ethylbenzene	210	10		µg/L	10	7/14/2003
Methyl tert-butyl ether (MTBE)	1800	100		µg/L	100	7/15/2003
1,2,4-Trimethylbenzene	330	10		µg/L	10	7/14/2003
1,3,5-Trimethylbenzene	97	10		µg/L	10	7/14/2003
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	7/14/2003
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	7/14/2003
Naphthalene	350	20		µg/L	10	7/14/2003
1-Methylnaphthalene	220	40		µg/L	10	7/14/2003
2-Methylnaphthalene	300	40		µg/L	10	7/14/2003
Acetone	16000	1000		µg/L	100	7/15/2003
Bromobenzene	ND	10		µg/L	10	7/14/2003
Bromochloromethane	ND	10		µg/L	10	7/14/2003
Bromodichloromethane	ND	10		µg/L	10	7/14/2003
Bromoform	ND	10		µg/L	10	7/14/2003
Bromomethane	ND	20		µg/L	10	7/14/2003
2-Butanone	2000	1000		µg/L	100	7/15/2003
Carbon disulfide	ND	100		µg/L	10	7/14/2003
Carbon Tetrachloride	ND	10		µg/L	10	7/14/2003
Chlorobenzene	ND	10		µg/L	10	7/14/2003
Chloroethane	ND	20		µg/L	10	7/14/2003
Chloroform	ND	10		µg/L	10	7/14/2003
Chloromethane	ND	10		µg/L	10	7/14/2003
2-Chlorotoluene	ND	10		µg/L	10	7/14/2003
4-Chlorotoluene	ND	10		µg/L	10	7/14/2003
cis-1,2-DCE	ND	10		µg/L	10	7/14/2003
cis-1,3-Dichloropropene	ND	10		µg/L	10	7/14/2003
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	7/14/2003
Dibromochloromethane	ND	10		µg/L	10	7/14/2003
Dibromomethane	ND	20		µg/L	10	7/14/2003
1,2-Dichlorobenzene	ND	10		µg/L	10	7/14/2003
1,3-Dichlorobenzene	ND	10		µg/L	10	7/14/2003
1,4-Dichlorobenzene	ND	10		µg/L	10	7/14/2003
Dichlorodifluoromethane	ND	10		µg/L	10	7/14/2003
1,1-Dichloroethane	ND	10		µg/L	10	7/14/2003
1,1-Dichloroethene	ND	10		µg/L	10	7/14/2003
1,2-Dichloropropane	ND	10		µg/L	10	7/14/2003
1,3-Dichloropropane	ND	10		µg/L	10	7/14/2003
2,2-Dichloropropane	ND	10		µg/L	10	7/14/2003
1,1-Dichloropropene	ND	10		µg/L	10	7/14/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-01

Client Sample ID: AL1-IN
Collection Date: 7/10/2003 9:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	10		µg/L	10	7/14/2003
2-Hexanone	ND	100		µg/L	10	7/14/2003
Isopropylbenzene	26	10		µg/L	10	7/14/2003
4-Isopropyltoluene	17	10		µg/L	10	7/14/2003
4-Methyl-2-pentanone	ND	100		µg/L	10	7/14/2003
Methylene Chloride	ND	30		µg/L	10	7/14/2003
n-Butylbenzene	46	10		µg/L	10	7/14/2003
n-Propylbenzene	47	10		µg/L	10	7/14/2003
sec-Butylbenzene	18	10		µg/L	10	7/14/2003
Styrene	ND	10		µg/L	10	7/14/2003
tert-Butylbenzene	ND	10		µg/L	10	7/14/2003
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	7/14/2003
1,1,2,2-Tetrachloroethane	ND	10		µg/L	10	7/14/2003
Tetrachloroethene (PCE)	ND	10		µg/L	10	7/14/2003
trans-1,2-DCE	ND	10		µg/L	10	7/14/2003
trans-1,3-Dichloropropene	ND	10		µg/L	10	7/14/2003
1,2,3-Trichlorobenzene	ND	10		µg/L	10	7/14/2003
1,2,4-Trichlorobenzene	ND	10		µg/L	10	7/14/2003
1,1,1-Trichloroethane	ND	10		µg/L	10	7/14/2003
1,1,2-Trichloroethane	ND	10		µg/L	10	7/14/2003
Trichloroethene (TCE)	ND	10		µg/L	10	7/14/2003
Trichlorofluoromethane	ND	10		µg/L	10	7/14/2003
1,2,3-Trichloropropane	ND	20		µg/L	10	7/14/2003
Vinyl chloride	ND	20		µg/L	10	7/14/2003
Xylenes, Total	1400	10		µg/L	10	7/14/2003
Surr: 1,2-Dichloroethane-d4	90.3	70.6-124		%REC	10	7/14/2003
Surr: 4-Bromofluorobenzene	101	76.2-122		%REC	10	7/14/2003
Surr: Dibromofluoromethane	86.4	67.2-131		%REC	10	7/14/2003
Surr: Toluene-d8	105	82.1-123		%REC	10	7/14/2003

EPA METHOD 8270D: SEMIVOLATILES

Analyst: CS

Acenaphthene	ND	100		µg/L	1	7/25/2003
Acenaphthylene	ND	100		µg/L	1	7/25/2003
Aniline	ND	100		µg/L	1	7/25/2003
Anthracene	ND	100		µg/L	1	7/25/2003
Azobenzene	ND	100		µg/L	1	7/25/2003
Benz(a)anthracene	ND	100		µg/L	1	7/25/2003
Benzidine	ND	200		µg/L	1	7/25/2003
Benzo(a)pyrene	ND	100		µg/L	1	7/25/2003
Benzo(b)fluoranthene	ND	100		µg/L	1	7/25/2003
Benzo(g,h,i)perylene	ND	100		µg/L	1	7/25/2003
Benzo(k)fluoranthene	ND	100		µg/L	1	7/25/2003
Benzoic acid	ND	500		µg/L	1	7/25/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co

Client Sample ID: AL1-IN

Lab Order: 0307074

Collection Date: 7/10/2003 9:15:00 AM

Project: OCD GW 32 Summer 03

Lab ID: 0307074-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzyl alcohol	ND	200		µg/L	1	7/25/2003
Bis(2-chloroethoxy)methane	ND	100		µg/L	1	7/25/2003
Bis(2-chloroethyl)ether	ND	100		µg/L	1	7/25/2003
Bis(2-chloroisopropyl)ether	ND	100		µg/L	1	7/25/2003
Bis(2-ethylhexyl)phthalate	ND	100		µg/L	1	7/25/2003
4-Bromophenyl phenyl ether	ND	100		µg/L	1	7/25/2003
Butyl benzyl phthalate	ND	100		µg/L	1	7/25/2003
Carbazole	ND	100		µg/L	1	7/25/2003
4-Chloro-3-methylphenol	ND	200		µg/L	1	7/25/2003
4-Chloroaniline	ND	200		µg/L	1	7/25/2003
2-Chloronaphthalene	ND	100		µg/L	1	7/25/2003
2-Chlorophenol	ND	100		µg/L	1	7/25/2003
4-Chlorophenyl phenyl ether	ND	100		µg/L	1	7/25/2003
Chrysene	ND	100		µg/L	1	7/25/2003
Di-n-butyl phthalate	ND	100		µg/L	1	7/25/2003
Di-n-octyl phthalate	ND	100		µg/L	1	7/25/2003
Dibenz(a,h)anthracene	ND	100		µg/L	1	7/25/2003
Dibenzofuran	ND	100		µg/L	1	7/25/2003
1,2-Dichlorobenzene	ND	100		µg/L	1	7/25/2003
1,3-Dichlorobenzene	ND	100		µg/L	1	7/25/2003
1,4-Dichlorobenzene	ND	100		µg/L	1	7/25/2003
3,3'-Dichlorobenzidine	ND	100		µg/L	1	7/25/2003
Diethyl phthalate	ND	100		µg/L	1	7/25/2003
Dimethyl phthalate	ND	100		µg/L	1	7/25/2003
2,4-Dichlorophenol	ND	100		µg/L	1	7/25/2003
2,4-Dimethylphenol	ND	100		µg/L	1	7/25/2003
4,6-Dinitro-2-methylphenol	ND	500		µg/L	1	7/25/2003
2,4-Dinitrophenol	ND	500		µg/L	1	7/25/2003
2,4-Dinitrotoluene	ND	100		µg/L	1	7/25/2003
2,6-Dinitrotoluene	ND	100		µg/L	1	7/25/2003
Fluoranthene	ND	100		µg/L	1	7/25/2003
Fluorene	170	100		µg/L	1	7/25/2003
Hexachlorobenzene	ND	100		µg/L	1	7/25/2003
Hexachlorobutadiene	ND	100		µg/L	1	7/25/2003
Hexachlorocyclopentadiene	ND	100		µg/L	1	7/25/2003
Hexachloroethane	ND	100		µg/L	1	7/25/2003
Indeno(1,2,3-cd)pyrene	ND	100		µg/L	1	7/25/2003
Isophorone	ND	100		µg/L	1	7/25/2003
2-Methylnaphthalene	ND	100		µg/L	1	7/25/2003
2-Methylphenol	ND	100		µg/L	1	7/25/2003
4-Methylphenol	ND	100		µg/L	1	7/25/2003
N-Nitrosodi-n-propylamine	ND	100		µg/L	1	7/25/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-01

Client Sample ID: AL1-IN
Collection Date: 7/10/2003 9:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
N-Nitrosodiphenylamine	ND	100		µg/L	1	7/25/2003
Naphthalene	ND	100		µg/L	1	7/25/2003
2-Nitroaniline	ND	500		µg/L	1	7/25/2003
3-Nitroaniline	ND	500		µg/L	1	7/25/2003
4-Nitroaniline	ND	200		µg/L	1	7/25/2003
Nitrobenzene	ND	100		µg/L	1	7/25/2003
2-Nitrophenol	ND	100		µg/L	1	7/25/2003
4-Nitrophenol	ND	500		µg/L	1	7/25/2003
Pentachlorophenol	ND	500		µg/L	1	7/25/2003
Phenanthrene	420	100		µg/L	1	7/25/2003
Phenol	ND	100		µg/L	1	7/25/2003
Pyrene	ND	100		µg/L	1	7/25/2003
Pyridine	ND	100		µg/L	1	7/25/2003
1,2,4-Trichlorobenzene	ND	100		µg/L	1	7/25/2003
2,4,5-Trichlorophenol	ND	100		µg/L	1	7/25/2003
2,4,6-Trichlorophenol	ND	100		µg/L	1	7/25/2003
Surr: 2,4,6-Tribromophenol	85.4	16.6-115		%REC	1	7/25/2003
Surr: 2-Fluorobiphenyl	69.5	37-95.7		%REC	1	7/25/2003
Surr: 2-Fluorophenol	53.2	9.54-89.8		%REC	1	7/25/2003
Surr: 4-Terphenyl-d14	62.5	47.9-115		%REC	1	7/25/2003
Surr: Nitrobenzene-d5	67.2	38-106		%REC	1	7/25/2003
Surr: Phenol-d6	41.2	10.7-63.4		%REC	1	7/25/2003

EPA METHOD 8310: PAHS

Analyst: GT

Naphthalene	ND	100		µg/L	20	7/18/2003 1:08:30 PM
1-Methylnaphthalene	680	100		µg/L	20	7/18/2003 1:08:30 PM
2-Methylnaphthalene	140	100		µg/L	20	7/18/2003 1:08:30 PM
Acenaphthylene	ND	100		µg/L	20	7/18/2003 1:08:30 PM
Acenaphthene	ND	100		µg/L	20	7/18/2003 1:08:30 PM
Fluorene	170	32		µg/L	20	7/18/2003 1:08:30 PM
Phenanthrene	520	120		µg/L	100	7/22/2003 4:38:08 PM
Anthracene	ND	24		µg/L	20	7/18/2003 1:08:30 PM
Fluoranthene	ND	12		µg/L	20	7/18/2003 1:08:30 PM
Pyrene	91	12		µg/L	20	7/18/2003 1:08:30 PM
Benz(a)anthracene	ND	0.80		µg/L	20	7/18/2003 1:08:30 PM
Chrysene	33	8.0		µg/L	20	7/18/2003 1:08:30 PM
Benzo(b)fluoranthene	ND	2.0		µg/L	20	7/18/2003 1:08:30 PM
Benzo(k)fluoranthene	1.2	0.80		µg/L	20	7/18/2003 1:08:30 PM
Benzo(a)pyrene	3.2	0.80		µg/L	20	7/18/2003 1:08:30 PM
Dibenz(a,h)anthracene	ND	1.6		µg/L	20	7/18/2003 1:08:30 PM
Benzo(g,h,i)perylene	6.8	1.2		µg/L	20	7/18/2003 1:08:30 PM
Indeno(1,2,3-cd)pyrene	ND	3.2		µg/L	20	7/18/2003 1:08:30 PM
Surr: Benzo(e)pyrene	151	54-102	S	%REC	20	7/18/2003 1:08:30 PM

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-01

Client Sample ID: AL1-IN
Collection Date: 7/10/2003 9:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	0.0031	0.00020		mg/L	1	7/25/2003
EPA METHOD 6010C: TOTAL METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	7/23/2003 8:20:25 AM
Barium	0.33	0.0020		mg/L	1	7/22/2003 3:50:38 PM
Cadmium	ND	0.0020		mg/L	1	7/22/2003 3:50:38 PM
Chromium	0.015	0.0060		mg/L	1	7/22/2003 3:50:38 PM
Lead	0.0070	0.0050		mg/L	1	7/22/2003 3:50:38 PM
Selenium	0.028	0.020		mg/L	1	7/22/2003 3:50:38 PM
Silver	ND	0.0050		mg/L	1	7/23/2003 9:08:07 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	2900	1.0		mg/L	1	7/16/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-02

Client Sample ID: EP1-IN
Collection Date: 7/10/2003 10:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	ND	10		µg/L	10	7/15/2003
Toluene	ND	10		µg/L	10	7/15/2003
Ethylbenzene	ND	10		µg/L	10	7/15/2003
Methyl tert-butyl ether (MTBE)	.17	10		µg/L	10	7/15/2003
1,2,4-Trimethylbenzene	22	10		µg/L	10	7/15/2003
1,3,5-Trimethylbenzene	ND	10		µg/L	10	7/15/2003
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	7/15/2003
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	7/15/2003
Naphthalene	ND	20		µg/L	10	7/15/2003
1-Methylnaphthalene	310	40		µg/L	10	7/15/2003
2-Methylnaphthalene	190	40		µg/L	10	7/15/2003
Acetone	4900	1000		µg/L	100	7/15/2003
Bromobenzene	ND	10		µg/L	10	7/15/2003
Bromochloromethane	ND	10		µg/L	10	7/15/2003
Bromodichloromethane	ND	10		µg/L	10	7/15/2003
Bromoform	ND	10		µg/L	10	7/15/2003
Bromomethane	ND	20		µg/L	10	7/15/2003
2-Butanone	370	100		µg/L	10	7/15/2003
Carbon disulfide	ND	100		µg/L	10	7/15/2003
Carbon Tetrachloride	ND	10		µg/L	10	7/15/2003
Chlorobenzene	ND	10		µg/L	10	7/15/2003
Chloroethane	ND	20		µg/L	10	7/15/2003
Chloroform	ND	10		µg/L	10	7/15/2003
Chloromethane	ND	10		µg/L	10	7/15/2003
2-Chlorotoluene	ND	10		µg/L	10	7/15/2003
4-Chlorotoluene	ND	10		µg/L	10	7/15/2003
cis-1,2-DCE	ND	10		µg/L	10	7/15/2003
cis-1,3-Dichloropropene	ND	10		µg/L	10	7/15/2003
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	7/15/2003
Dibromochloromethane	ND	10		µg/L	10	7/15/2003
Dibromomethane	ND	20		µg/L	10	7/15/2003
1,2-Dichlorobenzene	ND	10		µg/L	10	7/15/2003
1,3-Dichlorobenzene	ND	10		µg/L	10	7/15/2003
1,4-Dichlorobenzene	ND	10		µg/L	10	7/15/2003
Dichlorodifluoromethane	ND	10		µg/L	10	7/15/2003
1,1-Dichloroethane	ND	10		µg/L	10	7/15/2003
1,1-Dichloroethene	ND	10		µg/L	10	7/15/2003
1,2-Dichloropropane	ND	10		µg/L	10	7/15/2003
1,3-Dichloropropane	ND	10		µg/L	10	7/15/2003
2,2-Dichloropropane	ND	10		µg/L	10	7/15/2003
1,1-Dichloropropene	ND	10		µg/L	10	7/15/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co

Client Sample ID: EP1-IN

Lab Order: 0307074

Collection Date: 7/10/2003 10:00:00 AM

Project: OCD GW 32 Summer 03

Lab ID: 0307074-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	10		µg/L	10	7/15/2003
2-Hexanone	ND	100		µg/L	10	7/15/2003
Isopropylbenzene	ND	10		µg/L	10	7/15/2003
4-Isopropyltoluene	ND	10		µg/L	10	7/15/2003
4-Methyl-2-pentanone	ND	100		µg/L	10	7/15/2003
Methylene Chloride	ND	30		µg/L	10	7/15/2003
n-Butylbenzene	ND	10		µg/L	10	7/15/2003
n-Propylbenzene	ND	10		µg/L	10	7/15/2003
sec-Butylbenzene	ND	10		µg/L	10	7/15/2003
Styrene	ND	10		µg/L	10	7/15/2003
tert-Butylbenzene	ND	10		µg/L	10	7/15/2003
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	7/15/2003
1,1,2,2-Tetrachloroethane	ND	10		µg/L	10	7/15/2003
Tetrachloroethene (PCE)	ND	10		µg/L	10	7/15/2003
trans-1,2-DCE	ND	10		µg/L	10	7/15/2003
trans-1,3-Dichloropropene	ND	10		µg/L	10	7/15/2003
1,2,3-Trichlorobenzene	ND	10		µg/L	10	7/15/2003
1,2,4-Trichlorobenzene	ND	10		µg/L	10	7/15/2003
1,1,1-Trichloroethane	ND	10		µg/L	10	7/15/2003
1,1,2-Trichloroethane	ND	10		µg/L	10	7/15/2003
Trichloroethene (TCE)	ND	10		µg/L	10	7/15/2003
Trichlorofluoromethane	ND	10		µg/L	10	7/15/2003
1,2,3-Trichloropropane	ND	20		µg/L	10	7/15/2003
Vinyl chloride	ND	20		µg/L	10	7/15/2003
Xylenes, Total	13	10		µg/L	10	7/15/2003
Surr: 1,2-Dichloroethane-d4	97.0	70.6-124		%REC	10	7/15/2003
Surr: 4-Bromofluorobenzene	120	76.2-122		%REC	100	7/15/2003
Surr: Dibromofluoromethane	91.0	67.2-131		%REC	10	7/15/2003
Surr: Toluene-d8	97.5	82.1-123		%REC	10	7/15/2003

EPA METHOD 8270D: SEMIVOLATILES

Analyst: CS

Acenaphthene	ND	2000		µg/L	10	7/25/2003
Acenaphthylene	ND	2000		µg/L	10	7/25/2003
Aniline	ND	2000		µg/L	10	7/25/2003
Anthracene	ND	2000		µg/L	10	7/25/2003
Azobenzene	ND	2000		µg/L	10	7/25/2003
Benz(a)anthracene	ND	2000		µg/L	10	7/25/2003
Benzidine	ND	4000		µg/L	10	7/25/2003
Benzo(a)pyrene	ND	2000		µg/L	10	7/25/2003
Benzo(b)fluoranthene	ND	2000		µg/L	10	7/25/2003
Benzo(g,h,i)perylene	ND	2000		µg/L	10	7/25/2003
Benzo(k)fluoranthene	ND	2000		µg/L	10	7/25/2003
Benzoic acid	ND	10000		µg/L	10	7/25/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-02

Client Sample ID: EP1-IN
Collection Date: 7/10/2003 10:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzyl alcohol	ND	4000		µg/L	10	7/25/2003
Bis(2-chloroethoxy)methane	ND	2000		µg/L	10	7/25/2003
Bis(2-chloroethyl)ether	ND	2000		µg/L	10	7/25/2003
Bis(2-chloroisopropyl)ether	ND	2000		µg/L	10	7/25/2003
Bis(2-ethylhexyl)phthalate	ND	2000		µg/L	10	7/25/2003
4-Bromophenyl phenyl ether	ND	2000		µg/L	10	7/25/2003
Butyl benzyl phthalate	ND	2000		µg/L	10	7/25/2003
Carbazole	ND	2000		µg/L	10	7/25/2003
4-Chloro-3-methylphenol	ND	4000		µg/L	10	7/25/2003
4-Chloroaniline	ND	4000		µg/L	10	7/25/2003
2-Chloronaphthalene	ND	2000		µg/L	10	7/25/2003
2-Chlorophenol	ND	2000		µg/L	10	7/25/2003
4-Chlorophenyl phenyl ether	ND	2000		µg/L	10	7/25/2003
Chrysene	ND	2000		µg/L	10	7/25/2003
Di-n-butyl phthalate	ND	2000		µg/L	10	7/25/2003
Di-n-octyl phthalate	ND	2000		µg/L	10	7/25/2003
Dibenz(a,h)anthracene	ND	2000		µg/L	10	7/25/2003
Dibenzofuran	ND	2000		µg/L	10	7/25/2003
1,2-Dichlorobenzene	ND	2000		µg/L	10	7/25/2003
1,3-Dichlorobenzene	ND	2000		µg/L	10	7/25/2003
1,4-Dichlorobenzene	ND	2000		µg/L	10	7/25/2003
3,3'-Dichlorobenzidine	ND	2000		µg/L	10	7/25/2003
Diethyl phthalate	ND	2000		µg/L	10	7/25/2003
Dimethyl phthalate	ND	2000		µg/L	10	7/25/2003
2,4-Dichlorophenol	ND	2000		µg/L	10	7/25/2003
2,4-Dimethylphenol	ND	2000		µg/L	10	7/25/2003
4,6-Dinitro-2-methylphenol	ND	10000		µg/L	10	7/25/2003
2,4-Dinitrophenol	ND	10000		µg/L	10	7/25/2003
2,4-Dinitrotoluene	ND	2000		µg/L	10	7/25/2003
2,6-Dinitrotoluene	ND	2000		µg/L	10	7/25/2003
Fluoranthene	ND	2000		µg/L	10	7/25/2003
Fluorene	ND	2000		µg/L	10	7/25/2003
Hexachlorobenzene	ND	2000		µg/L	10	7/25/2003
Hexachlorobutadiene	ND	2000		µg/L	10	7/25/2003
Hexachlorocyclopentadiene	ND	2000		µg/L	10	7/25/2003
Hexachloroethane	ND	2000		µg/L	10	7/25/2003
Indeno(1,2,3-cd)pyrene	ND	2000		µg/L	10	7/25/2003
Isophorone	ND	2000		µg/L	10	7/25/2003
2-Methylnaphthalene	17000	2000		µg/L	10	7/25/2003
2-Methylphenol	ND	2000		µg/L	10	7/25/2003
4-Methylphenol	3500	2000		µg/L	10	7/25/2003
N-Nitrosodi-n-propylamine	ND	2000		µg/L	10	7/25/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-02

Client Sample ID: EP1-IN
Collection Date: 7/10/2003 10:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
N-Nitrosodiphenylamine	ND	2000		µg/L	10	7/25/2003
Naphthalene	5300	2000		µg/L	10	7/25/2003
2-Nitroaniline	ND	10000		µg/L	10	7/25/2003
3-Nitroaniline	ND	10000		µg/L	10	7/25/2003
4-Nitroaniline	ND	4000		µg/L	10	7/25/2003
Nitrobenzene	ND	2000		µg/L	10	7/25/2003
2-Nitrophenol	ND	2000		µg/L	10	7/25/2003
4-Nitrophenol	ND	10000		µg/L	10	7/25/2003
Pentachlorophenol	ND	10000		µg/L	10	7/25/2003
Phenanthrene	2500	2000		µg/L	10	7/25/2003
Phenol	7300	2000		µg/L	10	7/25/2003
Pyrene	ND	2000		µg/L	10	7/25/2003
Pyridine	ND	2000		µg/L	10	7/25/2003
1,2,4-Trichlorobenzene	ND	2000		µg/L	10	7/25/2003
2,4,5-Trichlorophenol	ND	2000		µg/L	10	7/25/2003
2,4,6-Trichlorophenol	ND	2000		µg/L	10	7/25/2003
Surr: 2,4,6-Tribromophenol	17.9	16.6-115		%REC	10	7/25/2003
Surr: 2-Fluorobiphenyl	76.0	37-95.7		%REC	10	7/25/2003
Surr: 2-Fluorophenol	3.30	9.54-89.8	S	%REC	10	7/25/2003
Surr: 4-Terphenyl-d14	58.6	47.9-115		%REC	10	7/25/2003
Surr: Nitrobenzene-d5	85.6	38-106		%REC	10	7/25/2003
Surr: Phenol-d6	24.5	10.7-63.4		%REC	10	7/25/2003

EPA METHOD 8310: PAHS

Analyst: GT

Naphthalene	6500	1300		µg/L	20	7/22/2003 6:14:06 PM
1-Methylnaphthalene	13000	1300		µg/L	20	7/22/2003 6:14:06 PM
2-Methylnaphthalene	19000	1300		µg/L	20	7/22/2003 6:14:06 PM
Acenaphthylene	ND	1300		µg/L	20	7/22/2003 6:14:06 PM
Acenaphthene	ND	1300		µg/L	20	7/22/2003 6:14:06 PM
Fluorene	1200	400		µg/L	20	7/22/2003 6:14:06 PM
Phenanthrene	3800	300		µg/L	20	7/22/2003 6:14:06 PM
Anthracene	ND	300		µg/L	20	7/22/2003 6:14:06 PM
Fluoranthene	ND	150		µg/L	20	7/22/2003 6:14:06 PM
Pyrene	ND	150		µg/L	20	7/22/2003 6:14:06 PM
Benz(a)anthracene	ND	10		µg/L	20	7/22/2003 6:14:06 PM
Chrysene	110	100		µg/L	20	7/22/2003 6:14:06 PM
Benzo(b)fluoranthene	ND	25		µg/L	20	7/22/2003 6:14:06 PM
Benzo(k)fluoranthene	ND	10		µg/L	20	7/22/2003 6:14:06 PM
Benzo(a)pyrene	ND	10		µg/L	20	7/22/2003 6:14:06 PM
Dibenz(a,h)anthracene	ND	20		µg/L	20	7/22/2003 6:14:06 PM
Benzo(g,h,i)perylene	30	15		µg/L	20	7/22/2003 6:14:06 PM
Indeno(1,2,3-cd)pyrene	ND	40		µg/L	20	7/22/2003 6:14:06 PM
Surr: Benzo(e)pyrene	120	54-102	S	%REC	20	7/22/2003 6:14:06 PM

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-02

Client Sample ID: EP1-IN
Collection Date: 7/10/2003 10:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 7470: MERCURY						
Mercury	0.0032	0.00020		mg/L	1	Analyst: MAP 7/25/2003
EPA METHOD 6010C: TOTAL METALS						
Arsenic	ND	0.020		mg/L	1	Analyst: NMO 7/23/2003 8:22:01 AM
Barium	0.62	0.0020		mg/L	1	7/22/2003 3:54:13 PM
Cadmium	ND	0.0020		mg/L	1	7/22/2003 3:54:13 PM
Chromium	0.020	0.0060		mg/L	1	7/22/2003 3:54:13 PM
Lead	0.0088	0.0050		mg/L	1	7/22/2003 3:54:13 PM
Selenium	0.020	0.020		mg/L	1	7/22/2003 3:54:13 PM
Silver	ND	0.0050		mg/L	1	7/23/2003 9:09:11 AM
EPA METHOD 160.1: TDS						
Total Dissolved Solids	2100	1.0		mg/L	1	Analyst: MAP 7/16/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-03

Client Sample ID: EP2-OUT
Collection Date: 7/10/2003 10:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	ND	1.0		µg/L	1	7/15/2003
Toluene	1.2	1.0		µg/L	1	7/15/2003
Ethylbenzene	ND	1.0		µg/L	1	7/15/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/15/2003
1,2,4-Trimethylbenzene	1.1	1.0		µg/L	1	7/15/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/15/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/15/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/15/2003
Naphthalene	2.9	2.0		µg/L	1	7/15/2003
1-Methylnaphthalene	8.4	4.0		µg/L	1	7/15/2003
2-Methylnaphthalene	9.5	4.0		µg/L	1	7/15/2003
Acetone	240	100		µg/L	10	7/14/2003
Bromobenzene	ND	1.0		µg/L	1	7/15/2003
Bromochloromethane	ND	1.0		µg/L	1	7/15/2003
Bromodichloromethane	ND	1.0		µg/L	1	7/15/2003
Bromoform	ND	1.0		µg/L	1	7/15/2003
Bromomethane	ND	2.0		µg/L	1	7/15/2003
2-Butanone	ND	10		µg/L	1	7/15/2003
Carbon disulfide	ND	10		µg/L	1	7/15/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	7/15/2003
Chlorobenzene	ND	1.0		µg/L	1	7/15/2003
Chloroethane	ND	2.0		µg/L	1	7/15/2003
Chloroform	ND	1.0		µg/L	1	7/15/2003
Chloromethane	ND	1.0		µg/L	1	7/15/2003
2-Chlorotoluene	ND	1.0		µg/L	1	7/15/2003
4-Chlorotoluene	ND	1.0		µg/L	1	7/15/2003
cis-1,2-DCE	ND	1.0		µg/L	1	7/15/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/15/2003
Dibromochloromethane	ND	1.0		µg/L	1	7/15/2003
Dibromomethane	ND	2.0		µg/L	1	7/15/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/15/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/15/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	7/15/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	7/15/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	7/15/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	7/15/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	7/15/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-03

Client Sample ID: EP2-OUT
Collection Date: 7/10/2003 10:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	1.0		µg/L	1	7/15/2003
2-Hexanone	ND	10		µg/L	1	7/15/2003
Isopropylbenzene	ND	1.0		µg/L	1	7/15/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	7/15/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	7/15/2003
Methylene Chloride	ND	3.0		µg/L	1	7/15/2003
n-Butylbenzene	ND	1.0		µg/L	1	7/15/2003
n-Propylbenzene	ND	1.0		µg/L	1	7/15/2003
sec-Butylbenzene	ND	1.0		µg/L	1	7/15/2003
Styrene	ND	1.0		µg/L	1	7/15/2003
tert-Butylbenzene	ND	1.0		µg/L	1	7/15/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	7/15/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/15/2003
trans-1,2-DCE	ND	1.0		µg/L	1	7/15/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/15/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/15/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/15/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/15/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/15/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	7/15/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/15/2003
Vinyl chloride	ND	2.0		µg/L	1	7/15/2003
Xylenes, Total	1.0	1.0		µg/L	1	7/15/2003
Surr: 1,2-Dichloroethane-d4	89.4	70.6-124		%REC	1	7/15/2003
Surr: 4-Bromofluorobenzene	102	76.2-122		%REC	1	7/15/2003
Surr: Dibromofluoromethane	83.5	67.2-131		%REC	1	7/15/2003
Surr: Toluene-d8	110	82.1-123		%REC	1	7/15/2003

EPA METHOD 8270D: SEMIVOLATILES

Analyst: CS

Acenaphthene	ND	100		µg/L	1	7/25/2003
Acenaphthylene	ND	100		µg/L	1	7/25/2003
Aniline	ND	100		µg/L	1	7/25/2003
Anthracene	ND	100		µg/L	1	7/25/2003
Azobenzene	ND	100		µg/L	1	7/25/2003
Benz(a)anthracene	ND	100		µg/L	1	7/25/2003
Benzidine	ND	200		µg/L	1	7/25/2003
Benzo(a)pyrene	ND	100		µg/L	1	7/25/2003
Benzo(b)fluoranthene	ND	100		µg/L	1	7/25/2003
Benzo(g,h,i)perylene	ND	100		µg/L	1	7/25/2003
Benzo(k)fluoranthene	ND	100		µg/L	1	7/25/2003
Benzoic acid	ND	500		µg/L	1	7/25/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-03

Client Sample ID: EP2-OUT
Collection Date: 7/10/2003 10:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzyl alcohol	ND	200		µg/L	1	7/25/2003
Bis(2-chloroethoxy)methane	ND	100		µg/L	1	7/25/2003
Bis(2-chloroethyl)ether	ND	100		µg/L	1	7/25/2003
Bis(2-chloroisopropyl)ether	ND	100		µg/L	1	7/25/2003
Bis(2-ethylhexyl)phthalate	ND	100		µg/L	1	7/25/2003
4-Bromophenyl phenyl ether	ND	100		µg/L	1	7/25/2003
Butyl benzyl phthalate	ND	100		µg/L	1	7/25/2003
Carbazole	ND	100		µg/L	1	7/25/2003
4-Chloro-3-methylphenol	ND	200		µg/L	1	7/25/2003
4-Chloroaniline	ND	200		µg/L	1	7/25/2003
2-Chloronaphthalene	ND	100		µg/L	1	7/25/2003
2-Chlorophenol	ND	100		µg/L	1	7/25/2003
4-Chlorophenyl phenyl ether	ND	100		µg/L	1	7/25/2003
Chrysene	ND	100		µg/L	1	7/25/2003
Di-n-butyl phthalate	ND	100		µg/L	1	7/25/2003
Di-n-octyl phthalate	ND	100		µg/L	1	7/25/2003
Dibenz(a,h)anthracene	ND	100		µg/L	1	7/25/2003
Dibenzofuran	ND	100		µg/L	1	7/25/2003
1,2-Dichlorobenzene	ND	100		µg/L	1	7/25/2003
1,3-Dichlorobenzene	ND	100		µg/L	1	7/25/2003
1,4-Dichlorobenzene	ND	100		µg/L	1	7/25/2003
3,3'-Dichlorobenzidine	ND	100		µg/L	1	7/25/2003
Diethyl phthalate	ND	100		µg/L	1	7/25/2003
Dimethyl phthalate	ND	100		µg/L	1	7/25/2003
2,4-Dichlorophenol	ND	100		µg/L	1	7/25/2003
2,4-Dimethylphenol	ND	100		µg/L	1	7/25/2003
4,6-Dinitro-2-methylphenol	ND	500		µg/L	1	7/25/2003
2,4-Dinitrophenol	ND	500		µg/L	1	7/25/2003
2,4-Dinitrotoluene	ND	100		µg/L	1	7/25/2003
2,6-Dinitrotoluene	ND	100		µg/L	1	7/25/2003
Fluoranthene	ND	100		µg/L	1	7/25/2003
Fluorene	ND	100		µg/L	1	7/25/2003
Hexachlorobenzene	ND	100		µg/L	1	7/25/2003
Hexachlorobutadiene	ND	100		µg/L	1	7/25/2003
Hexachlorocyclopentadiene	ND	100		µg/L	1	7/25/2003
Hexachloroethane	ND	100		µg/L	1	7/25/2003
Indeno(1,2,3-cd)pyrene	ND	100		µg/L	1	7/25/2003
Isophorone	ND	100		µg/L	1	7/25/2003
2-Methylnaphthalene	ND	100		µg/L	1	7/25/2003
2-Methylphenol	ND	100		µg/L	1	7/25/2003
4-Methylphenol	ND	100		µg/L	1	7/25/2003
N-Nitrosodi-n-propylamine	ND	100		µg/L	1	7/25/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-03

Client Sample ID: EP2-OUT
Collection Date: 7/10/2003 10:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
N-Nitrosodiphenylamine	ND	100		µg/L	1	7/25/2003
Naphthalene	ND	100		µg/L	1	7/25/2003
2-Nitroaniline	ND	500		µg/L	1	7/25/2003
3-Nitroaniline	ND	500		µg/L	1	7/25/2003
4-Nitroaniline	ND	200		µg/L	1	7/25/2003
Nitrobenzene	ND	100		µg/L	1	7/25/2003
2-Nitrophenol	ND	100		µg/L	1	7/25/2003
4-Nitrophenol	ND	500		µg/L	1	7/25/2003
Pentachlorophenol	ND	500		µg/L	1	7/25/2003
Phenanthrene	ND	100		µg/L	1	7/25/2003
Phenol	ND	100		µg/L	1	7/25/2003
Pyrene	ND	100		µg/L	1	7/25/2003
Pyridine	ND	100		µg/L	1	7/25/2003
1,2,4-Trichlorobenzene	ND	100		µg/L	1	7/25/2003
2,4,5-Trichlorophenol	ND	100		µg/L	1	7/25/2003
2,4,6-Trichlorophenol	ND	100		µg/L	1	7/25/2003
Surr: 2,4,6-Tribromophenol	24.5	16.6-115		%REC	1	7/25/2003
Surr: 2-Fluorobiphenyl	62.7	37-95.7		%REC	1	7/25/2003
Surr: 2-Fluorophenol	32.0	9.54-89.8		%REC	1	7/25/2003
Surr: 4-Terphenyl-d14	66.0	47.9-115		%REC	1	7/25/2003
Surr: Nitrobenzene-d5	74.3	38-106		%REC	1	7/25/2003
Surr: Phenol-d6	40.4	10.7-63.4		%REC	1	7/25/2003

EPA METHOD 8310: PAHS

Analyst: GT

Naphthalene	ND	25		µg/L	5	7/24/2003 1:08:14 PM
1-Methylnaphthalene	ND	25		µg/L	5	7/24/2003 1:08:14 PM
2-Methylnaphthalene	ND	25		µg/L	5	7/24/2003 1:08:14 PM
Acenaphthylene	ND	25		µg/L	5	7/24/2003 1:08:14 PM
Acenaphthene	ND	25		µg/L	5	7/24/2003 1:08:14 PM
Fluorene	ND	8.0		µg/L	5	7/24/2003 1:08:14 PM
Phenanthrene	15	6.0		µg/L	5	7/24/2003 1:08:14 PM
Anthracene	ND	6.0		µg/L	5	7/24/2003 1:08:14 PM
Fluoranthene	ND	3.0		µg/L	5	7/24/2003 1:08:14 PM
Pyrene	ND	3.0		µg/L	5	7/24/2003 1:08:14 PM
Benz(a)anthracene	ND	0.20		µg/L	5	7/24/2003 1:08:14 PM
Chrysene	ND	2.0		µg/L	5	7/24/2003 1:08:14 PM
Benzo(b)fluoranthene	ND	0.50		µg/L	5	7/24/2003 1:08:14 PM
Benzo(k)fluoranthene	ND	0.20		µg/L	5	7/24/2003 1:08:14 PM
Benzo(a)pyrene	ND	0.20		µg/L	5	7/24/2003 1:08:14 PM
Dibenz(a,h)anthracene	ND	0.40		µg/L	5	7/24/2003 1:08:14 PM
Benzo(g,h,i)perylene	0.30	0.30		µg/L	5	7/24/2003 1:08:14 PM
Indeno(1,2,3-cd)pyrene	ND	0.80		µg/L	5	7/24/2003 1:08:14 PM
Surr: Benzo(e)pyrene	72.0	54-102		%REC	5	7/24/2003 1:08:14 PM

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-03

Client Sample ID: EP2-OUT
Collection Date: 7/10/2003 10:45:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 7470: MERCURY						
Mercury	ND	0.00020		mg/L	1	Analyst: MAP 7/25/2003
EPA METHOD 6010C: TOTAL METALS						
Arsenic	ND	0.020		mg/L	1	Analyst: NMO 7/23/2003 8:23:36 AM
Barium	0.11	0.0020		mg/L	1	7/22/2003 3:58:15 PM
Cadmium	ND	0.0020		mg/L	1	7/22/2003 3:58:15 PM
Chromium	ND	0.0060		mg/L	1	7/22/2003 3:58:15 PM
Lead	ND	0.0050		mg/L	1	7/22/2003 3:58:15 PM
Selenium	ND	0.020		mg/L	1	7/22/2003 3:58:15 PM
Silver	ND	0.0050		mg/L	1	7/23/2003 9:10:17 AM
EPA METHOD 160.1: TDS						
Total Dissolved Solids	13000	1.0		mg/L	1	Analyst: MAP 7/16/2003

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-04

Client Sample ID: Trip Blank
Collection Date:

Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: BDH
Benzene	ND	1.0		µg/L	1	7/14/2003
Toluene	ND	1.0		µg/L	1	7/14/2003
Ethylbenzene	ND	1.0		µg/L	1	7/14/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/14/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/14/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/14/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/14/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/14/2003
Naphthalene	ND	2.0		µg/L	1	7/14/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	7/14/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	7/14/2003
Acetone	ND	10		µg/L	1	7/14/2003
Bromobenzene	ND	1.0		µg/L	1	7/14/2003
Bromochloromethane	ND	1.0		µg/L	1	7/14/2003
Bromodichloromethane	ND	1.0		µg/L	1	7/14/2003
Bromoform	ND	1.0		µg/L	1	7/14/2003
Bromomethane	ND	2.0		µg/L	1	7/14/2003
2-Butanone	ND	10		µg/L	1	7/14/2003
Carbon disulfide	ND	10		µg/L	1	7/14/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	7/14/2003
Chlorobenzene	ND	1.0		µg/L	1	7/14/2003
Chloroethane	ND	2.0		µg/L	1	7/14/2003
Chloroform	ND	1.0		µg/L	1	7/14/2003
Chloromethane	ND	1.0		µg/L	1	7/14/2003
2-Chlorotoluene	ND	1.0		µg/L	1	7/14/2003
4-Chlorotoluene	ND	1.0		µg/L	1	7/14/2003
cis-1,2-DCE	ND	1.0		µg/L	1	7/14/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/14/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/14/2003
Dibromochloromethane	ND	1.0		µg/L	1	7/14/2003
Dibromomethane	ND	2.0		µg/L	1	7/14/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/14/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/14/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/14/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/14/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	7/14/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	7/14/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	7/14/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	7/14/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	7/14/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	7/14/2003

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

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

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

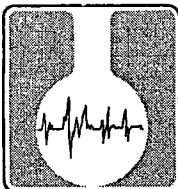
CLIENT: Giant Refining Co
Lab Order: 0307074
Project: OCD GW 32 Summer 03
Lab ID: 0307074-04

Client Sample ID: Trip Blank**Collection Date:****Matrix:** TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	1.0		µg/L	1	7/14/2003
2-Hexanone	ND	10		µg/L	1	7/14/2003
Isopropylbenzene	ND	1.0		µg/L	1	7/14/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	7/14/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	7/14/2003
Methylene Chloride	ND	3.0		µg/L	1	7/14/2003
n-Butylbenzene	ND	1.0		µg/L	1	7/14/2003
n-Propylbenzene	ND	1.0		µg/L	1	7/14/2003
sec-Butylbenzene	ND	1.0		µg/L	1	7/14/2003
Styrene	ND	1.0		µg/L	1	7/14/2003
tert-Butylbenzene	ND	1.0		µg/L	1	7/14/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/14/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	7/14/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/14/2003
trans-1,2-DCE	ND	1.0		µg/L	1	7/14/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/14/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/14/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/14/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/14/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/14/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/14/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	7/14/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/14/2003
Vinyl chloride	ND	2.0		µg/L	1	7/14/2003
Xylenes, Total	ND	1.0		µg/L	1	7/14/2003
Surr: 1,2-Dichloroethane-d4	96.9	70.6-124		%REC	1	7/14/2003
Surr: 4-Bromofluorobenzene	99.4	76.2-122		%REC	1	7/14/2003
Surr: Dibromofluoromethane	90.7	67.2-131		%REC	1	7/14/2003
Surr: Toluene-d8	102	82.1-123		%REC	1	7/14/2003

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



ASSAIGAI ANALYTICAL LABORATORIES, INC.

4301 Masthead NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

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127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

HALL ENVIRONMENTAL
attn: SCOTT HALLENBECK
4901 HAWKINS NE, SUITE D
ALBUQUERQUE NM 87109-4372

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

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: HALL ENVIRONMENTAL

Project: OCD GW-32 SUMMER 03

Order: 0307228 HAL03

Receipt: 07-10-03

Scott Hallenbeck
William F. Hallenbeck: President of Assaigai Analytical Laboratories, Inc.

Sample: AL1-IN

Collected: 07-10-03 9:15:00 By:

Matrix: AQUEOUS

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0307228-01A			EPA 405.1 Biochemical Oxygen Demand					By: DAH		
BOD03146	WC.2003.1800.10		Biochemical Oxygen Demand	> 1254	mg/L	1	2		07-11-03	07-16-03
0307228-01B			EPA 410.1 Chemical Oxygen Demand					By: NJL		
COD0311	WC.2003.1827.4		Chemical Oxygen Demand	3210	mg / L	10	10		07-14-03	07-14-03

Sample: EP1-in

Collected: 07-10-03 10:00:00 By:

Matrix: AQUEOUS

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0307228-02A			EPA 405.1 Biochemical Oxygen Demand					By: DAH		
BOD03146	WC.2003.1800.9		Biochemical Oxygen Demand	> 398	mg/L	1	2		07-11-03	07-16-03
0307228-02B			EPA 410.1 Chemical Oxygen Demand					By: NJL		
COD0311	WC.2003.1827.5		Chemical Oxygen Demand	2220	mg / L	10	10		07-14-03	07-14-03

Sample: EP2-out

Collected: 07-10-03 10:45:00 By:

Matrix: AQUEOUS

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0307228-03A			EPA 405.1 Biochemical Oxygen Demand					By: DAH		
BOD03146	WC.2003.1800.11		Biochemical Oxygen Demand	50.3	mg/L	1	2		07-11-03	07-16-03



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SQL-Covered Reports 1010205881585X

Report Date 7/21/2003 5:04:26 PM



Assaigai Analytical Laboratories, Inc.

Certificate of AnalysisClient: **HALL ENVIRONMENTAL**Project: **OCD GW-32 SUMMER 03**Order: **0307228 HAL03**Receipt: **07-10-03**Sample: **EP2-out**Collected: **07-10-03 10:45:00** By:Matrix: **AQUEOUS**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0307228-03B			EPA 410.1 Chemical Oxygen Demand					By: NJL		
COD0311	WC.2003.1827.3		Chemical Oxygen Demand	1110	mg / L	1	10		07-14-03	07-14-03

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or footnotes will appear below.



LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: OCD GW-32 Summer 03

Lab Order: C03070455
Report Date: 07/16/03

Lab ID: C03070455-001

Collection Date: 07/10/03 09:15

Client Sample ID: AL1-In (0307074-01E)

Date Received: 07/11/03

Matrix: AQUEOUS

MCL/

Analyses	Result	Units	Qual	RL	QCL	Method	Analysis Date / By
----------	--------	-------	------	----	-----	--------	--------------------

NON-METALS

Organic Carbon, Total (TOC)	59.6	mg/L		0.50		A5310 C	07/14/03 16:13 / j
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Lab ID: C03070455-002

Collection Date: 07/10/03 10:00

Client Sample ID: EP1-In (0307074-02E)

Date Received: 07/11/03

Matrix: AQUEOUS

MCL/

Analyses	Result	Units	Qual	RL	QCL	Method	Analysis Date / By
----------	--------	-------	------	----	-----	--------	--------------------

NON-METALS

Organic Carbon, Total (TOC)	162	mg/L	D	0.68		A5310 C	07/14/03 16:25 / j
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Lab ID: C03070455-003

Collection Date: 07/10/03 10:45

Client Sample ID: EP2-Out (0307074-03E)

Date Received: 07/11/03

Matrix: AQUEOUS

MCL/

Analyses	Result	Units	Qual	RL	QCL	Method	Analysis Date / By
----------	--------	-------	------	----	-----	--------	--------------------

NON-METALS

Organic Carbon, Total (TOC)	7.92	mg/L		0.50		A5310 C	07/14/03 16:38 / j
-----------------------------	------	------	--	------	--	---------	--------------------

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

TRACKING NO. PAGE NO.

070455R0001



QA/QC Summary Report

Client: Hall Environmental
Project: OCD GW-32 Summer 03

Report Date: 07/16/03
Work Order: C03070455

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A5310 C								Batch: TOC-071403P	
Sample ID: MBLK	Method Blank								07/14/03 14:02
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: MBLK	Method Blank								07/14/03 14:23
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: C03070495-001AMS	Matrix Spike								07/14/03 18:03
Organic Carbon, Total (TOC)	6.36	mg/L	0.500	97.9	85	115			
Sample ID: C03070495-001AMSD	Matrix Spike Duplicate								07/14/03 18:14
Organic Carbon, Total (TOC)	6.59	mg/L	0.500	103	85	115	3.7	10	
Sample ID: LCS-C194-82-11	Laboratory Control Spike								07/14/03 18:26
Organic Carbon, Total (TOC)	9.98	mg/L	0.500	99.8	90	110			
Sample ID: MBLK	Method Blank								07/14/03 18:38
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: MBLK	Method Blank								07/14/03 18:43
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: MBLK	Method Blank								07/14/03 19:28
Organic Carbon, Total (TOC)	ND	mg/L	0.500						
Sample ID: MBLK	Method Blank								07/14/03 19:32
Organic Carbon, Total (TOC)	ND	mg/L	0.500						

Qualifiers: ND - Not Detected at the Reporting Limit
R - RPD outside of recommended recovery limits

S - Spike Recovery outside of recommended recovery limits

TRACKING NO. PAGE NO.
070455R0002

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co
Work Order: 0307074
Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Method Blank

Sample ID	MB-3932	Batch ID: 3932	Test Code: SW8270B	Units: µg/L	Analysis Date 7/24/2003	Prep Date 7/15/2003					
Client ID:			Run ID: ELMO_030724A		SeqNo: 202884						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Aniline	ND	10									
Anthracene	ND	10									
Azobenzene	ND	10									
Benz(a)anthracene	ND	10									
Benzidine	ND	20									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	ND	50									
Benzyl alcohol	ND	20									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									
4-Bromophenyl phenyl ether	ND	10									
Butyl benzyl phthalate	ND	10									
Carbazole	ND	10									
4-Chloro-3-methylphenol	ND	20									
4-Chloroaniline	ND	20									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
4-Chlorophenyl phenyl ether	ND	10									
Chrysene	ND	10									
Di-n-butyl phthalate	2.9	10									J

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

J

Di-n-octyl phthalate	7.82	10
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	10
Diethyl phthalate	ND	10
Dimethyl phthalate	ND	10
2,4-Dichlorophenol	ND	10
2,4-Dimethylphenol	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
N-Nitrosodi-n-propylamine	ND	10
N-Nitrosodiphenylamine	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	20
Nitrobenzene	ND	10

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

Compound	ND	10	50	100	200	65.0	16.6	115	0
2-Nitrophenol	ND	10							
4-Nitrophenol	ND	50							
Pentachlorophenol	ND	50							
Phenanthrene	ND	10							
Phenol	ND	10							
Pyrene	ND	10							
Pyridine	ND	10							
1,2,4-Trichlorobenzene	ND	10							
2,4,5-Trichlorophenol	ND	10							
2,4,6-Trichlorophenol	ND	10							
Surr: 2,4,6-Tribromophenol	130.1	0		200		65.0	16.6	115	0
Surr: 2-Fluorobiphenyl	60.94	0		100		60.9	37	95.7	0
Surr: 2-Fluorophenol	121.6	0		200		60.8	9.54	89.8	0
Surr: 4-Terphenyl-d14	72.74	0		100		72.7	70	130	0
Surr: Nitrobenzene-d5	68.62	0		100		68.6	38	106	0
Surr: Phenol-d6	92.04	0		200		46.0	10.7	63.4	0

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	
			3

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0307074
 Project: OCD GW 32 Summer 03

Sample ID MB-3916 Batch ID: 3916 Test Code: SW8310 Units: µg/L Analysis Date 7/18/2003 5:08:41 AM Prep Date 7/11/2003
 Client ID: Run ID: HUGO_030718A SeqNo: 201352

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	2.5									
1-Methylnaphthalene	ND	2.5									
2-Methylnaphthalene	ND	2.5									
Acenaphthylene	ND	2.5									
Acenaphthene	ND	2.5									
Fluorene	ND	0.80									
Phenanthrene	ND	0.60									
Anthracene	ND	0.60									
Fluoranthene	ND	0.30									
Pyrene	ND	0.30									
Benz(a)anthracene	ND	0.020									
Chrysene	ND	0.20									
Benzo(b)fluoranthene	ND	0.050									
Benzo(k)fluoranthene	ND	0.020									
Benzo(a)pyrene	ND	0.020									
Dibenz(a,h)anthracene	ND	0.040									
Benzo(g,h,i)perylene	ND	0.030									
Indeno(1,2,3-cd)pyrene	ND	0.080									
Surr: Benzo(e)pyrene	14.73	0									
		20		0	73.7	54	102	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits 4

CLIENT: Giant Refining Co
Work Order: 0307074
Project: OCD GW 32 Summer 03

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-3916	Batch ID:	3916	Test Code:	SW8310	Units:	µg/L	Analysis Date	7/18/2003 5:08:41 AM	Prep Date	7/11/2003
Client ID:		Run ID:	HUGO_030718A	SeqNo:	201366						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	10									
1-Methylnaphthalene	ND	10									
2-Methylnaphthalene	ND	10									
Benzo(a)pyrene	ND	0.10									
Surr: Benzo(e)pyrene	14.73	0	20	0	73.7	54	102	0			

Sample ID	MB-3995	Batch ID:	3995	Test Code:	SW7470	Units:	mg/L	Analysis Date	7/25/2003	Prep Date	7/24/2003
Client ID:		Run ID:	MI-LA254_030725A	SeqNo:	203180						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID	MB-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/22/2003 3:04:06 PM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030722D	SeqNo:	202239						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	0.0020									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Lead	ND	0.0050									
Selenium	ND	0.020									

Sample ID	MB-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 8:08:25 AM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723A	SeqNo:	202259						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020	0	0	0	0	0	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Method Blank

Sample ID	MB-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 8:51:01 AM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723B	SeqNo:	202298						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Silver		0.0039	0.0050	0	0	0	0	0	0	0	J

Sample ID	MB-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 9:55:03 AM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723C	SeqNo:	202352						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Barium		ND		0.0020							
Chromium		ND		0.0060							

Sample ID	MB-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 1:12:37 PM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723E	SeqNo:	202478						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Cadmium		ND	0.0020	0	0	0	0	0	0	0	
Lead		ND	0.0050	0	0	0	0	0	0	0	

Sample ID	MB-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/25/2003 12:43:57 PM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030725A	SeqNo:	202994						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Lead		ND		0.0050							

Sample ID	MB-3924	Batch ID:	3924	Test Code:	E160.1	Units:	mg/L	Analysis Date	7/16/2003	Prep Date	7/14/2003
Client ID:		Run ID:	WC_030716B	SeqNo:	200826						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Total Dissolved Solids		ND		1.0							

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
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Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Method Blank

Sample ID	BLK	Batch ID: R8867	Test Code: SW8260B	Units: µg/L	Analysis Date 7/14/2003	Prep Date						
Client ID:			Run ID: THOR_030714A		SeqNo: 200159							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		ND	1.0									
Toluene		ND	1.0									
Ethylbenzene		ND	1.0									
Methyl tert-butyl ether (MTBE)		ND	1.0									
1,2,4-Trimethylbenzene		ND	1.0									
1,3,5-Trimethylbenzene		ND	1.0									
1,2-Dichloroethane (EDC)		ND	1.0									
1,2-Dibromoethane (EDB)		ND	1.0									
Naphthalene		ND	2.0									
1-Methylnaphthalene		ND	4.0									
2-Methylnaphthalene		ND	4.0									
Acetone		ND	10									
Bromobenzene		ND	1.0									
Bromochloromethane		ND	1.0									
Bromodichloromethane		ND	1.0									
Bromoform		ND	1.0									
Bromomethane		ND	2.0									
2-Butanone		ND	10									
Carbon disulfide		ND	10									
Carbon Tetrachloride		ND	1.0									
Chlorobenzene		ND	1.0									
Chloroethane		ND	2.0									
Chloroform		ND	1.0									
Chloromethane		ND	1.0									
2-Chlorotoluene		ND	1.0									
4-Chlorotoluene		ND	1.0									
cis-1,2-DCE		ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

cis-1,3-Dichloropropene	ND	1.0
1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb-b	Batch ID: R8875	Test Code: SW8260B	Units: µg/L	Analysis Date	7/15/2003	Prep Date				
Client ID:			Run ID: THOR_030714B		SeqNo: 200442						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0307074
Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Method Blank

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	0.468	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	0.52	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits

Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

[illegible]**Qualifiers:**

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Sample Duplicate

Sample ID	0307074-01C	Batch ID: 3995	Test Code: SW7470	Units: mg/L	Analysis Date	7/25/2003	Prep Date	7/24/2003				
Client ID:	AL1-IN		Run ID:	MI-LA254_030725A	SeqNo:	203184						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00291	0.00020	0	0	0	0	0	0.003135	7.44	20	

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 28-Jul-03

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	100NG LCS	Batch ID: R8867	Test Code: SW8260B	Units: µg/L	Analysis Date 7/14/2003	Prep Date					
Client ID:			Run ID: THOR_030714A		SeqNo: 200160						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20	1.0	20	0	100	71.2	122	0			
Toluene	20.79	1.0	20	0	104	87.7	122	0			
Chlorobenzene	22.65	1.0	20	0	113	85.6	136	0			
1,1-Dichloroethene	19.01	1.0	20	0	95.1	70.7	117	0			
Trichloroethene (TCE)	19.37	1.0	20	0	96.9	76.9	130	0			

Sample ID	Ics	Batch ID: R8867	Test Code: SW8260B	Units: µg/L	Analysis Date 7/15/2003	Prep Date					
Client ID:		Run ID: THOR_030714A			SeqNo: 200161						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.85	1.0	20	0	99.3	71.2	122	0			
Toluene	21.42	1.0	20	0	107	87.7	122	0			
Chlorobenzene	22.13	1.0	20	0	111	85.6	136	0			
1,1-Dichloroethene	17.9	1.0	20	0	89.5	70.7	117	0			
Trichloroethene (TCE)	17.52	1.0	20	0	87.6	76.9	130	0			

Sample ID	Icsd	Batch ID: R8867	Test Code: SW8260B	Units: µg/L	Analysis Date 7/15/2003	Prep Date					
Client ID:		Run ID: THOR_030714A			SeqNo: 200162						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.14	1.0	20	0	95.7	78.7	122	20	4.44	11	
Toluene	20.94	1.0	20	0	105	76	128	20.79	0.729	12.2	
Chlorobenzene	21.88	1.0	20	0	109	85.6	136	22.65	3.45	12	
1,1-Dichloroethene	17.95	1.0	20	0	89.8	70.7	117	19.01	5.75	19.3	
Trichloroethene (TCE)	18.43	1.0	20	0	92.2	76.9	130	19.37	4.97	15.5	

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

I

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	100ng Ics-b	Batch ID: R8875	Test Code: SW8260B	Units: µg/L	Analysis Date	7/15/2003	Prep Date				
Client ID:			Run ID: THOR_030714B		SeqNo: 200443						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.14	1.0	20	0	90.7	71.2	122	0			
Toluene	20.24	1.0	20	0	101	87.7	122	0			
Chlorobenzene	21.41	1.0	20	0	107	85.6	136	0			
1,1-Dichloroethene	16.61	1.0	20	0	83.0	70.7	117	0			
Trichloroethene (TCE)	17.34	1.0	20	0	86.7	76.9	130	0			

Sample ID	100ng Ics	Batch ID: R8876	Test Code: SW8260B	Units: µg/L	Analysis Date	7/15/2003	Prep Date				
Client ID:			Run ID: NEPTUNE_030715A		SeqNo:	200470					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.45	1.0	20	0	92.3	71.2	122	0			
Toluene	20.2	1.0	20	0	101	87.7	122	0			
Chlorobenzene	25.01	1.0	20	0	125	85.6	136	0			
1,1-Dichloroethene	18.59	1.0	20	0	92.9	70.7	117	0			
Trichloroethene (TCE)	18.93	1.0	20	0	94.7	76.9	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

Sample ID	LCS-3932	Batch ID	3932	Test Code	SW8270B	Units	µg/L	Analysis Date	7/24/2003	Prep Date	7/15/2003
Client ID:		Run ID:	ELMO_030724A	SeqNo:	202886						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	67.34	10	100	0	67.3	43.1	89.9	0			
4-Chloro-3-methylphenol	138.7	20	200	0	69.3	44.1	93.2	0			
2-Chlorophenol	136.3	10	200	0	68.2	20.7	98	0			
1,4-Dichlorobenzene	52.82	10	100	0	52.8	24.1	90.7	0			
2,4-Dinitrotoluene	66.54	10	100	0	66.5	43.2	101	0			
N-Nitrosodi-n-propylamine	71.5	10	100	0	71.5	44.6	99.9	0			
4-Nitrophenol	85.52	50	200	0	42.8	11.8	60.1	0			
Pentachlorophenol	115.6	50	200	0	57.8	8.65	105	0			
Phenol	91.32	10	200	0	45.7	21.1	55.3	0			
Pyrene	77.32	10	100	0	77.3	35.7	111	0			
1,2,4-Trichlorobenzene	50.94	10	100	0	50.9	30.2	89.6	0			

Sample ID	LCSD-3932	Batch ID	3932	Test Code	SW8270B	Units	µg/L	Analysis Date	7/24/2003	Prep Date	7/15/2003
Client ID:		Run ID:	ELMO_030724A	SeqNo:	202888						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	62.7	10	100	0	62.7	43.1	89.9	67.34	7.14	30.5	
4-Chloro-3-methylphenol	128.4	20	200	0	64.2	44.1	93.2	138.7	7.68	28.6	
2-Chlorophenol	121.9	10	200	0	61.0	20.7	98	136.3	11.2	107	
1,4-Dichlorobenzene	47.48	10	100	0	47.5	24.1	90.7	52.82	10.6	62.1	
2,4-Dinitrotoluene	65.66	10	100	0	65.7	43.2	101	66.54	1.33	14.7	
N-Nitrosodi-n-propylamine	65.78	10	100	0	65.8	44.6	99.9	71.5	8.33	30.3	
4-Nitrophenol	76.12	50	200	0	38.1	11.8	60.1	85.52	11.6	36.3	
Pentachlorophenol	122	50	200	0	61.0	8.65	105	115.6	5.35	49	
Phenol	71.14	10	200	0	35.6	21.1	55.3	91.32	24.8	52.4	
Pyrene	78.46	10	100	0	78.5	35.7	111	77.32	1.46	16.3	
1,2,4-Trichlorobenzene	46.1	10	100	0	46.1	30.2	89.6	50.94	9.98	36.4	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS-3916 Batch ID: 3916 Test Code: SW8310 Units: µg/L Analysis Date 7/18/2003 5:56:38 AM Prep Date 7/11/2003

Client ID:

Run ID: HUGO_030718A

SeqNo: 201354

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	16.42	2.5	40	0	41.1	31.4	66.7	0			
1-Methylnaphthalene	15.82	2.5	40.1	0	39.5	27.8	71.3	0			
2-Methylnaphthalene	15.1	2.5	40	0	37.8	24.9	72.4	0			
Acenaphthylene	15.22	2.5	40.1	0	37.9	25.8	71.6	0			
Acenaphthene	15.94	2.5	40	0	39.9	29.6	78.4	0			
Fluorene	1.75	0.80	4.01	0	43.6	36.9	78.1	0			
Phenanthrene	0.97	0.60	2.01	0	48.3	42.3	87.7	0			
Anthracene	1.04	0.60	2.01	0	51.7	46.1	88.9	0			
Fluoranthene	2.41	0.30	4.01	0	60.1	51.2	98.4	0			
Pyrene	2.53	0.30	4.01	0	63.1	56	99.4	0			
Benz(a)anthracene	0.29	0.020	0.401	0	72.3	64.3	104	0			
Chrysene	1.41	0.20	2.01	0	70.1	65.2	99.2	0			
Benzo(b)fluoranthene	0.39	0.050	0.501	0	77.8	71.3	106	0			
Benzo(k)fluoranthene	0.19	0.020	0.25	0	76.0	73.5	105	0			
Benzo(a)pyrene	0.19	0.020	0.251	0	75.7	69.1	111	0			
Dibenz(a,h)anthracene	0.4	0.040	0.501	0	79.8	74.7	110	0			
Benzo(g,h,i)perylene	0.41	0.030	0.5	0	82.0	73.3	114	0			
Indeno(1,2,3-cd)pyrene	0.81	0.080	1.002	0	80.8	79.3	104	0			

Sample ID LCS-3916 Batch ID: 3916 Test Code: SW8310 Units: µg/L Analysis Date 7/18/2003 5:56:38 AM Prep Date 7/11/2003

Client ID:

Run ID: HUGO_030718A

SeqNo: 201367

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	16.42	10	40	0	41.1	31.4	66.7	0			
1-Methylnaphthalene	15.82	10	40.1	0	39.5	27.8	71.3	0			
2-Methylnaphthalene	15.1	10	40	0	37.8	24.9	72.4	0			
Benzo(a)pyrene	0.19	0.10	0.251	0	75.7	69.1	111	0			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0307074
Project: OCD GW 32 Summer 03

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID	LCS-3995	Batch ID:	3995	Test Code:	SW7470	Units:	mg/L	Analysis Date	7/25/2003	Prep Date	7/24/2003
Client ID:				Run ID:	MI-LA254_030725A			SeqNo:	203181		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00486	0.0020	0.005	0	97.2	75.2	134	0			

Sample ID	LCSD-3995	Batch ID:	3995	Test Code:	SW7470	Units:	mg/L	Analysis Date	7/25/2003	Prep Date	7/24/2003
Client ID:				Run ID:	MI-LA254_030725A			SeqNo:	203182		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004875	0.0020	0.005	0	97.5	75.2	134	0.00486	0.308	0	

Sample ID	LCS-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/22/2003 3:07:54 PM	Prep Date	7/17/2003
Client ID:				Run ID:	ICP_030722D			SeqNo:	202240		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	0.4845	0.0020	0.5	0	96.9	80	120	0			
Cadmium	0.4579	0.0020	0.5	0	91.6	80	120	0			
Chromium	0.493	0.0060	0.5	0	98.6	80	120	0			
Lead	0.4884	0.0050	0.5	0	97.7	80	120	0			
Selenium	0.481	0.020	0.5	0	96.2	80	120	0			

Sample ID	LCS-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 8:09:33 AM	Prep Date	7/17/2003
Client ID:				Run ID:	ICP_030723A			SeqNo:	202260		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4349	0.020	0.5	0	87.0	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307074

Project: OCD GW 32 Summer 03

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 8:56:26 AM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723B					SeqNo:	202301		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Silver		0.5299		0.0050	0.5	0.0039	105	80	120	0	

Sample ID	LCS-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 10:00:03 AM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723C					SeqNo:	202353		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		0.5036		0.0060	0.5	0	101	80	120	0	

Sample ID	LCS-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 12:02:04 PM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723D					SeqNo:	202372		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		ND		0.020	0.5	0	0	80	120	0	0 0 S
Barium		ND		0.0020	0.5	0	0	80	120	0	0 0 S
Cadmium		ND		0.0020	10	0	0	80	120	0	0 0 S
Chromium		ND		0.0060	0.5	0	0	80	120	0	0 0 S
Lead		ND		0.0050	10	0	0	80	120	0	0 0 S
Selenium		ND		0.020	10	0	0	80	120	0	0 0 S
Silver		ND		0.0050	0.5	0	0	80	120	0	0 0 S

Sample ID	LCS-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/23/2003 1:14:14 PM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030723E					SeqNo:	202479		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cadmium		0.4644		0.0020	0.5	0	92.9	80	120	0	
Lead		0.4828		0.0050	0.5	0	96.6	80	120	0	

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0307074
Project: OCD GW 32 Summer 03

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	LCS-3955	Batch ID:	3955	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/25/2003 12:45:42 PM	Prep Date	7/17/2003
Client ID:		Run ID:	ICP_030725A					SeqNo:	202995		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Lead		0.4686		0.0050	0.5	0	93.7	80	120	0	

Sample ID	LCS-3924	Batch ID:	3924	Test Code:	E160.1	Units:	mg/L	Analysis Date	7/16/2003	Prep Date	7/14/2003
Client ID:		Run ID:	WC_030716B					SeqNo:	200827		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids		1002		1.0	1000	0	100	80	120	0	

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	7

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **GIANTREFIN**

Date and Time Receive

7/10/03

Work Order Number **0307074**

Received by **AMF**

Checklist completed by

Signature

Date

Matrix:

Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☒	No ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
Container/Temp Blank temperature?	5°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining
Company - Civiza
Address: Route 3 Box 7
Fallsburg, NM 87301

Phone #: 505 722 3833
Fax #: 505 722 0210

Date	Time	Matrix	Sample I.D. No.
11/9/03	0915	H ₂ O	AL1-IN
"	1000	"	EP1-IN
"	1045	"	EP2-OUT
			Tri. Blank

Accreditation Applied: ☐ NELAC ☐ USACE ☐

Other: _____
Project Name: OC D GW-32
Summer 2003, (special)
Project #: _____
Project Manager: Dorinda Mancini
Sampler: Steve Morris
Sample Temperature: 40C

Project Manager: Dorinda Massini

Sampler: *Steve Morris*
Sample Temperature: *40C*

Number/Volume	Preservative			HEAL No.
	H ₂ Cl ₂	HNO ₃		
				0307074-1
				-2
				-3
				-4

Date: 7/10/03	Time: 4:30	Relinquished By: (Signature) <i>[Signature]</i>	Remarks: <i>[Signature]</i>	7/10/03 1430
Date: 7/10/03	Time: 4:30	Relinquished By: (Signature) <i>[Signature]</i>	Remarks: <i>[Signature]</i>	7/10/03 1430

ANALYSIS REQUEST

[illegible]

Remarks:

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Accreditation Applied:

NELAC  **USACE** 

Other:

Project Name: 25D GW-32

Summer 2003

Project #:

Project Manager: *Dorinda Mancini*

Sampler: the White

Sample Temperature: 70°C

Preservative

$$\text{HCl}_2 \quad \text{HNO}_3$$

Number/Volume

HEAL No.

03,7074-1

-2

13

Remarks:

2/10/03

Remarks:

marks: 

Remarks:

Time: _____
Relinquished By: (Signature) _____

Date: 7/10/03

Time: _____ Relinquished By: (Signature) _____

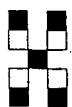
Date: _____

ANALYSIS REQUEST

[illegible]

Remarks:

OW – 11 &14



**Hall Environmental
Analysis Laboratory**

COVER LETTER

November 19, 2003

Dorinda Mancini
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0227
FAX (505) 722-0210

RE: Annual Ground Water Samples 2003

Order No.: 0311049

Dear Dorinda Mancini:

Hall Environmental Analysis Laboratory received 3 samples on 11/7/2003 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co
Lab Order: 0311049
Project: Annual Ground Water Samples 2003
Lab ID: 0311049-01

Client Sample ID: OW-11-11603
Collection Date: 11/6/2003 9:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: BDH
Fluoride	2.3	0.10		mg/L	1	11/7/2003 6:01:39 PM
Chloride	88	10		mg/L	100	11/10/2003 2:11:10 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	11/7/2003 6:01:39 PM
Bromide	ND	0.10		mg/L	1	11/7/2003 6:01:39 PM
Nitrogen, Nitrate (As N)	0.65	0.10		mg/L	1	11/7/2003 6:01:39 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	11/7/2003 6:01:39 PM
Sulfate	1000	50		mg/L	100	11/10/2003 2:11:10 PM
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	ND	1.0		µg/L	1	11/7/2003
Toluene	ND	1.0		µg/L	1	11/7/2003
Ethylbenzene	ND	1.0		µg/L	1	11/7/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/7/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/7/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/7/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/7/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/7/2003
Naphthalene	ND	2.0		µg/L	1	11/7/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	11/7/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	11/7/2003
Acetone	ND	10		µg/L	1	11/7/2003
Bromobenzene	ND	1.0		µg/L	1	11/7/2003
Bromochloromethane	ND	1.0		µg/L	1	11/7/2003
Bromodichloromethane	ND	1.0		µg/L	1	11/7/2003
Bromoform	ND	1.0		µg/L	1	11/7/2003
Bromomethane	ND	2.0		µg/L	1	11/7/2003
2-Butanone	ND	10		µg/L	1	11/7/2003
Carbon disulfide	ND	10		µg/L	1	11/7/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	11/7/2003
Chlorobenzene	ND	1.0		µg/L	1	11/7/2003
Chloroethane	ND	2.0		µg/L	1	11/7/2003
Chloroform	ND	1.0		µg/L	1	11/7/2003
Chloromethane	ND	1.0		µg/L	1	11/7/2003
2-Chlorotoluene	ND	1.0		µg/L	1	11/7/2003
4-Chlorotoluene	ND	1.0		µg/L	1	11/7/2003
cis-1,2-DCE	ND	1.0		µg/L	1	11/7/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/7/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/7/2003
Dibromochloromethane	ND	1.0		µg/L	1	11/7/2003
Dibromomethane	ND	2.0		µg/L	1	11/7/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/7/2003

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co
Lab Order: 0311049
Project: Annual Ground Water Samples 2003
Lab ID: 0311049-01

Client Sample ID: OW-11-11603
Collection Date: 11/6/2003 9:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/7/2003
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/7/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/7/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	11/7/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	11/7/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	11/7/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	11/7/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	11/7/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	11/7/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	11/7/2003
2-Hexanone	ND	10		µg/L	1	11/7/2003
Isopropylbenzene	ND	1.0		µg/L	1	11/7/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	11/7/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	11/7/2003
Methylene Chloride	ND	3.0		µg/L	1	11/7/2003
n-Butylbenzene	ND	1.0		µg/L	1	11/7/2003
n-Propylbenzene	ND	1.0		µg/L	1	11/7/2003
sec-Butylbenzene	ND	1.0		µg/L	1	11/7/2003
Styrene	ND	1.0		µg/L	1	11/7/2003
tert-Butylbenzene	ND	1.0		µg/L	1	11/7/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/7/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	11/7/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/7/2003
trans-1,2-DCE	ND	1.0		µg/L	1	11/7/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/7/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/7/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/7/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/7/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/7/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/7/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	11/7/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/7/2003
Vinyl chloride	ND	2.0		µg/L	1	11/7/2003
Xylenes, Total	ND	1.0		µg/L	1	11/7/2003
Surr: 1,2-Dichloroethane-d4	99.1	70.6-124		%REC	1	11/7/2003
Surr: 4-Bromofluorobenzene	94.5	76.2-122		%REC	1	11/7/2003
Surr: Dibromofluoromethane	99.2	67.2-131		%REC	1	11/7/2003
Surr: Toluene-d8	105	82.1-123		%REC	1	11/7/2003

EPA METHOD 8270D: SEMIVOLATILES

Analyst: CS

Acenaphthene	ND	10	µg/L	1	11/14/2003
Acenaphthylene	ND	10	µg/L	1	11/14/2003
Aniline	ND	10	µg/L	1	11/14/2003

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co**Client Sample ID:** OW-11-11603**Lab Order:** 0311049**Collection Date:** 11/6/2003 9:30:00 AM**Project:** Annual Ground Water Samples 2003**Lab ID:** 0311049-01**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Anthracene	ND	10		µg/L	1	11/14/2003
Azobenzene	ND	10		µg/L	1	11/14/2003
Benz(a)anthracene	ND	10		µg/L	1	11/14/2003
Benzidine	ND	20		µg/L	1	11/14/2003
Benzo(a)pyrene	ND	10		µg/L	1	11/14/2003
Benzo(b)fluoranthene	ND	10		µg/L	1	11/14/2003
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/14/2003
Benzo(k)fluoranthene	ND	10		µg/L	1	11/14/2003
Benzoic acid	ND	50		µg/L	1	11/14/2003
Benzyl alcohol	ND	20		µg/L	1	11/14/2003
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/14/2003
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/14/2003
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/14/2003
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	11/14/2003
4-Bromophenyl phenyl ether	ND	10		µg/L	1	11/14/2003
Butyl benzyl phthalate	ND	10		µg/L	1	11/14/2003
Carbazole	ND	10		µg/L	1	11/14/2003
4-Chloro-3-methylphenol	ND	20		µg/L	1	11/14/2003
4-Chloroaniline	ND	20		µg/L	1	11/14/2003
2-Chloronaphthalene	ND	10		µg/L	1	11/14/2003
2-Chlorophenol	ND	10		µg/L	1	11/14/2003
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	11/14/2003
Chrysene	ND	10		µg/L	1	11/14/2003
Di-n-butyl phthalate	ND	10		µg/L	1	11/14/2003
Di-n-octyl phthalate	ND	10		µg/L	1	11/14/2003
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/14/2003
Dibenzofuran	ND	10		µg/L	1	11/14/2003
1,2-Dichlorobenzene	ND	10		µg/L	1	11/14/2003
1,3-Dichlorobenzene	ND	10		µg/L	1	11/14/2003
1,4-Dichlorobenzene	ND	10		µg/L	1	11/14/2003
3,3'-Dichlorobenzidine	ND	10		µg/L	1	11/14/2003
Diethyl phthalate	ND	10		µg/L	1	11/14/2003
Dimethyl phthalate	ND	10		µg/L	1	11/14/2003
2,4-Dichlorophenol	ND	10		µg/L	1	11/14/2003
2,4-Dimethylphenol	ND	10		µg/L	1	11/14/2003
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	11/14/2003
2,4-Dinitrophenol	ND	50		µg/L	1	11/14/2003
2,4-Dinitrotoluene	ND	10		µg/L	1	11/14/2003
2,6-Dinitrotoluene	ND	10		µg/L	1	11/14/2003
Fluoranthene	ND	10		µg/L	1	11/14/2003
Fluorene	ND	10		µg/L	1	11/14/2003
Hexachlorobenzene	ND	10		µg/L	1	11/14/2003

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co

Client Sample ID: OW-11-11603

Lab Order: 0311049

Collection Date: 11/6/2003 9:30:00 AM

Project: Annual Ground Water Samples 2003

Lab ID: 0311049-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	10		µg/L	1	11/14/2003
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/14/2003
Hexachloroethane	ND	10		µg/L	1	11/14/2003
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/14/2003
Isophorone	ND	10		µg/L	1	11/14/2003
2-Methylnaphthalene	ND	10		µg/L	1	11/14/2003
2-Methylphenol	ND	10		µg/L	1	11/14/2003
3+4-Methylphenol	ND	10		µg/L	1	11/14/2003
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/14/2003
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/14/2003
Naphthalene	ND	10		µg/L	1	11/14/2003
2-Nitroaniline	ND	50		µg/L	1	11/14/2003
3-Nitroaniline	ND	50		µg/L	1	11/14/2003
4-Nitroaniline	ND	20		µg/L	1	11/14/2003
Nitrobenzene	ND	10		µg/L	1	11/14/2003
2-Nitrophenol	ND	10		µg/L	1	11/14/2003
4-Nitrophenol	ND	50		µg/L	1	11/14/2003
Pentachlorophenol	ND	50		µg/L	1	11/14/2003
Phenanthrene	ND	10		µg/L	1	11/14/2003
Phenol	ND	10		µg/L	1	11/14/2003
Pyrene	ND	10		µg/L	1	11/14/2003
Pyridine	ND	10		µg/L	1	11/14/2003
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/14/2003
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/14/2003
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/14/2003
Surr: 2,4,6-Tribromophenol	58.7	16.6-115		%REC	1	11/14/2003
Surr: 2-Fluorobiphenyl	67.2	37-95.7		%REC	1	11/14/2003
Surr: 2-Fluorophenol	49.2	9.54-89.8		%REC	1	11/14/2003
Surr: 4-Terphenyl-d14	77.8	47.9-115		%REC	1	11/14/2003
Surr: Nitrobenzene-d5	65.7	38-106		%REC	1	11/14/2003
Surr: Phenol-d6	36.3	10.7-63.4		%REC	1	11/14/2003
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: MAP
Specific Conductance	3000	0.010		µmhos/cm	1	11/12/2003
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	11/11/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Calcium	12	1.0		mg/L	1	11/10/2003 9:40:01 AM
Magnesium	1.3	1.0		mg/L	1	11/10/2003 9:40:01 AM
Potassium	1.9	1.0		mg/L	1	11/10/2003 9:40:01 AM
Sodium	690	10		mg/L	10	11/10/2003 9:43:16 AM

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co

Client Sample ID: OW-11-11603

Lab Order: 0311049

Collection Date: 11/6/2003 9:30:00 AM

Project: Annual Ground Water Samples 2003

Lab ID: 0311049-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	11/12/2003 8:35:29 AM
Barium	0.0090	0.0020		mg/L	1	11/12/2003 8:35:29 AM
Cadmium	ND	0.0020		mg/L	1	11/12/2003 8:35:29 AM
Chromium	ND	0.0060		mg/L	1	11/12/2003 8:35:29 AM
Lead	ND	0.0050		mg/L	1	11/12/2003 8:35:29 AM
Selenium	0.020	0.020		mg/L	1	11/12/2003 8:35:29 AM
Silver	ND	0.0050		mg/L	1	11/12/2003 8:35:29 AM
EPA METHOD 150.1: PH						Analyst: MAP
pH	8.45	0.010		pH units	1	11/12/2003
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1800	1.0		mg/L	1	11/13/2003

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co

Client Sample ID: OW-14-11603

Lab Order: 0311049

Collection Date: 11/6/2003 11:00:00 AM

Project: Annual Ground Water Samples 2003

Lab ID: 0311049-02

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	46	2.5		µg/L	1	11/10/2003 8:41:19 PM
Benzene	190	5.0		µg/L	10	11/11/2003 10:32:59 AM
Toluene	2.0	0.50		µg/L	1	11/10/2003 8:41:19 PM
Ethylbenzene	2.3	0.50		µg/L	1	11/10/2003 8:41:19 PM
Xylenes, Total	2.5	0.50		µg/L	1	11/10/2003 8:41:19 PM
Surr: 4-Bromofluorobenzene	107	74-118		%REC	1	11/10/2003 8:41:19 PM

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co
Lab Order: 0311049
Project: Annual Ground Water Samples 2003
Lab ID: 0311049-03

Client Sample ID: Trip Blank
Collection Date:
Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	11/10/2003 9:11:52 PM
Benzene	ND	0.50		µg/L	1	11/10/2003 9:11:52 PM
Toluene	ND	0.50		µg/L	1	11/10/2003 9:11:52 PM
Ethylbenzene	ND	0.50		µg/L	1	11/10/2003 9:11:52 PM
Xylenes, Total	ND	0.50		µg/L	1	11/10/2003 9:11:52 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	1	11/10/2003 9:11:52 PM
EPA METHOD 8260B: VOLATILES						Analyst: JDC
Benzene	ND	1.0		µg/L	1	11/7/2003
Toluene	ND	1.0		µg/L	1	11/7/2003
Ethylbenzene	ND	1.0		µg/L	1	11/7/2003
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/7/2003
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/7/2003
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/7/2003
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/7/2003
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/7/2003
Naphthalene	ND	2.0		µg/L	1	11/7/2003
1-Methylnaphthalene	ND	4.0		µg/L	1	11/7/2003
2-Methylnaphthalene	ND	4.0		µg/L	1	11/7/2003
Acetone	ND	10		µg/L	1	11/7/2003
Bromobenzene	ND	1.0		µg/L	1	11/7/2003
Bromochloromethane	ND	1.0		µg/L	1	11/7/2003
Bromodichloromethane	ND	1.0		µg/L	1	11/7/2003
Bromoform	ND	1.0		µg/L	1	11/7/2003
Bromomethane	ND	2.0		µg/L	1	11/7/2003
2-Butanone	ND	10		µg/L	1	11/7/2003
Carbon disulfide	ND	10		µg/L	1	11/7/2003
Carbon Tetrachloride	ND	1.0		µg/L	1	11/7/2003
Chlorobenzene	ND	1.0		µg/L	1	11/7/2003
Chloroethane	ND	2.0		µg/L	1	11/7/2003
Chloroform	ND	1.0		µg/L	1	11/7/2003
Chloromethane	ND	1.0		µg/L	1	11/7/2003
2-Chlorotoluene	ND	1.0		µg/L	1	11/7/2003
4-Chlorotoluene	ND	1.0		µg/L	1	11/7/2003
cis-1,2-DCE	ND	1.0		µg/L	1	11/7/2003
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/7/2003
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/7/2003
Dibromochloromethane	ND	1.0		µg/L	1	11/7/2003
Dibromomethane	ND	2.0		µg/L	1	11/7/2003
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/7/2003
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/7/2003

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co
Lab Order: 0311049
Project: Annual Ground Water Samples 2003
Lab ID: 0311049-03

Client Sample ID: Trip Blank
Collection Date:
Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/7/2003
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/7/2003
1,1-Dichloroethane	ND	1.0		µg/L	1	11/7/2003
1,1-Dichloroethene	ND	1.0		µg/L	1	11/7/2003
1,2-Dichloropropane	ND	1.0		µg/L	1	11/7/2003
1,3-Dichloropropane	ND	1.0		µg/L	1	11/7/2003
2,2-Dichloropropane	ND	1.0		µg/L	1	11/7/2003
1,1-Dichloropropene	ND	1.0		µg/L	1	11/7/2003
Hexachlorobutadiene	ND	1.0		µg/L	1	11/7/2003
2-Hexanone	ND	10		µg/L	1	11/7/2003
Isopropylbenzene	ND	1.0		µg/L	1	11/7/2003
4-Isopropyltoluene	ND	1.0		µg/L	1	11/7/2003
4-Methyl-2-pentanone	ND	10		µg/L	1	11/7/2003
Methylene Chloride	ND	3.0		µg/L	1	11/7/2003
n-Butylbenzene	ND	1.0		µg/L	1	11/7/2003
n-Propylbenzene	ND	1.0		µg/L	1	11/7/2003
sec-Butylbenzene	ND	1.0		µg/L	1	11/7/2003
Styrene	ND	1.0		µg/L	1	11/7/2003
tert-Butylbenzene	ND	1.0		µg/L	1	11/7/2003
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/7/2003
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	11/7/2003
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/7/2003
trans-1,2-DCE	ND	1.0		µg/L	1	11/7/2003
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/7/2003
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/7/2003
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/7/2003
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/7/2003
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/7/2003
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/7/2003
Trichlorofluoromethane	ND	1.0		µg/L	1	11/7/2003
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/7/2003
Vinyl chloride	ND	2.0		µg/L	1	11/7/2003
Xylenes, Total	ND	1.0		µg/L	1	11/7/2003
Surr: 1,2-Dichloroethane-d4	99.1	70.6-124		%REC	1	11/7/2003
Surr: 4-Bromofluorobenzene	97.8	76.2-122		%REC	1	11/7/2003
Surr: Dibromofluoromethane	99.1	67.2-131		%REC	1	11/7/2003
Surr: Toluene-d8	105	82.1-123		%REC	1	11/7/2003

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

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co
 Work Order: 0311049
 Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Method Blank

Sample ID	MB 110703	Batch ID: R10046	Test Code: E300	Units: mg/L	Analysis Date	11/7/2003 11:53:13 AM	Prep Date				
Client ID:			Run ID: LC_031107A		SeqNo:	225325					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Sample ID	mb 1107	Batch ID: R10046	Test Code: E300	Units: mg/L	Analysis Date	11/7/2003 6:51:54 PM	Prep Date				
Client ID:			Run ID:	LC_031107A	SeqNo:	225347					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0311049
Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Method Blank

Sample ID	MB 111003	Batch ID: R10067	Test Code: E300	Units: mg/L	Analysis Date	11/10/2003 10:20:34 A	Prep Date				
Client ID:			Run ID: LC_031110A		SeqNo:	225682					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND										
Chloride	ND										
Nitrogen, Nitrite (As N)	ND										
Bromide	ND										
Nitrogen, Nitrate (As N)	ND										
Phosphorus, Orthophosphate (As P)	ND										
Sulfate	ND										

Sample ID	mb 111003-b	Batch ID: R10067	Test Code: E300	Units: mg/L	Analysis Date	11/10/2003 9:43:19 PM	Prep Date				
Client ID:			Run ID: LC_031110A		SeqNo: 225721						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									
Chloride	ND	0.10									
Nitrogen, Nitrite (As N)	ND	0.10									
Bromide	ND	0.10									
Nitrogen, Nitrate (As N)	ND	0.10									
Phosphorus, Orthophosphate (As P)	ND	0.50									
Sulfate	ND	0.50									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0311049
Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT
 Method Blank

Sample ID	Reagent Blank 5m	Batch ID: R10064	Test Code: SW8021	Units: µg/L	Analysis Date	11/10/2003 7:24:02 AM	Prep Date				
Client ID:			Run ID: PIDFID_031110A		SeqNo: 225647						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	21.25	0	20	0	106	74	118	0			

Sample ID	Reagent Blank 5m	Batch ID: R10071	Test Code: SW8021	Units: µg/L	Analysis Date	11/11/2003 8:55:30 AM	Prep Date				
Client ID:			Run ID: PIDFID_031111A		SeqNo: 225840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	20.52	0	20	0	103	74	118	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

Sample ID mb-4645 Batch ID: 4645 Test Code: SW8270A Units: µg/L Analysis Date 11/14/2003 Prep Date 11/12/2003

Client ID: Run ID: ELMO_031114A SeqNo: 226987

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Aniline	ND	10									
Anthracene	ND	10									
Azobenzene	ND	10									
Benz(a)anthracene	ND	10									
Benzidine	ND	20									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	ND	50									
Benzyl alcohol	ND	20									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									
4-Bromophenyl phenyl ether	ND	10									
Butyl benzyl phthalate	ND	10									
Carbazole	ND	10									
4-Chloro-3-methylphenol	ND	20									
4-Chloroaniline	ND	20									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
4-Chlorophenyl phenyl ether	ND	10									
Chrysene	ND	10									
Di-n-butyl phthalate	ND	10									
Di-n-octyl phthalate	ND	10									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0311049
 Project: Annual Ground Water Samples 2003

Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	10
Diethyl phthalate	ND	10
Dimethyl phthalate	ND	10
2,4-Dichlorophenol	ND	10
2,4-Dimethylphenol	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
2-Methylphenol	ND	10
3+4-Methylphenol	ND	10
N-Nitrosodi-n-propylamine	ND	10
N-Nitrosodiphenylamine	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	20
Nitrobenzene	ND	10
2-Nitrophenol	ND	10

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0311049
Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT
 Method Blank

Sample ID MB-4626	Batch ID: 4626	Test Code: SW6010A	Units: mg/L	Analysis Date 11/12/2003 8:18:56 AM	Prep Date 11/10/2003						
Client ID:	Run ID: ICP_031112B			SeqNo: 226192							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.020									
Barium	ND	0.020									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Lead	ND	0.0050									
Selenium	ND	0.020									
Silver	ND	0.0050									

Sample ID MB-4646	Batch ID: 4646	Test Code: E160.1	Units: mg/L	Analysis Date 11/13/2003	Prep Date 11/12/2003						
Client ID:	Run ID: WC_031113A			SeqNo: 226496							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co
Work Order: 0311049
Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT
Method Blank

Sample ID	5ml rb	Batch ID: R10051	Test Code: SW8260B	Units: µg/L	Analysis Date	11/7/2003	Prep Date				
Client ID:		Run ID:	NEPTUNE_031107A		SeqNo:	225393					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
dis-1,2-DCE	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0311049
 Project: Annual Ground Water Samples 2003

cis-1,3-Dichloropropene	ND	1.0
1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Method Blank

Method Blank

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

	ND	1.0					
1,1,2-Trichloroethane	ND	1.0					
Trichloroethene (TCE)	ND	1.0					
Trichlorofluoromethane	ND	1.0					
1,2,3-Trichloropropane	ND	2.0					
Vinyl chloride	ND	2.0					
Xylenes, Total	ND	1.0					
Surr: 1,2-Dichloroethane-d4	10.1	0	10	0	101	68.4	127
Surr: 4-Bromofluorobenzene	9.776	0	10	0	97.8	70.4	126
Surr: Dibromofluoromethane	10.11	0	10	0	101	70.2	126
Surr: Toluene-d8	10.64	0	10	0	106	73.5	129

Qualifiers:
 ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co
 Work Order: 0311049
 Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Sample Duplicate

Sample ID	0311049-01B	Batch ID: 4646	Test Code: E160.1	Units: mg/L	Analysis Date	11/13/2003	Prep Date	11/12/2003				
Client ID:	OW-11-11603		Run ID:	WC_031113A	SeqNo:	226499						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		1884	1.0	0	0	0	0	0	1846	2.04	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 19-Nov-03

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0311049-01B	Batch ID: 4646	Test Code: E160.1	Units: mg/L	Analysis Date	11/13/2003	Prep Date	11/12/2003				
Client ID:	OW-11-11603		Run ID: WC_031113A		SeqNo:	226500						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		2837	1.0	1000	1846	99.1	80	120	0			

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 20-Nov-03

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS 110703	Batch ID: R10046	Test Code: E300	Units: mg/L	Analysis Date	11/7/2003 12:09:57 PM	Prep Date				
Client ID:			Run ID: LC_031107A		SeqNo: 225326						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5358	0.10	0.5	0	107	90	110	0			
Chloride	5.27	0.10	5	0	105	90	110	0			
Nitrogen, Nitrite (As N)	0.9571	0.10	1	0	95.7	90	110	0			
Bromide	2.546	0.10	2.5	0	102	90	110	0			
Nitrogen, Nitrate (As N)	2.515	0.10	2.5	0	101	90	110	0			
Phosphorus, Orthophosphate (As P)	5.149	0.50	5	0	103	90	110	0			
Sulfate	9.725	0.50	10	0	97.2	90	110	0			

Sample ID	Ics 1107	Batch ID: R10046	Test Code: E300	Units: mg/L	Analysis Date	11/7/2003 7:08:38 PM	Prep Date				
Client ID:		Run ID: LC_031107A			SeqNo: 225348						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5418	0.10	0.5	0	108	90	110	0			
Chloride	5.073	0.10	5	0	101	90	110	0			
Nitrogen, Nitrite (As N)	0.9032	0.10	1	0	90.3	90	110	0			
Bromide	2.396	0.10	2.5	0	95.8	90	110	0			
Nitrogen, Nitrate (As N)	2.441	0.10	2.5	0	97.7	90	110	0			
Phosphorus, Orthophosphate (As P)	5.069	0.50	5	0	101	90	110	0			
Sulfate	9.648	0.50	10	0	96.5	90	110	0			

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS 111003	Batch ID: R10067	Test Code: E300	Units: mg/L	Analysis Date	11/10/2003 10:37:18 A	Prep Date				
Client ID:		Run ID: LC_031110A			SeqNo: 225683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5265	0.10	0.5	0	105	90	110	0			
Chloride	5.228	0.10	5	0	105	90	110	0			
Nitrogen, Nitrite (As N)	1.008	0.10	1	0	101	90	110	0			
Bromide	2.628	0.10	2.5	0	105	90	110	0			
Nitrogen, Nitrate (As N)	2.532	0.10	2.5	0	101	90	110	0			
Phosphorus, Orthophosphate (As P)	4.952	0.50	5	0	99.0	90	110	0			
Sulfate	9.737	0.50	10	0	97.4	90	110	0			

Sample ID	Ics 111003-b	Batch ID: R10067	Test Code: E300	Units: mg/L		Analysis Date 11/10/2003 10:00:03 P		Prep Date			
Client ID:			Run ID: LC_031110A			SeqNo: 225722					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5492	0.10	0.5	0	110	90	110	0			
Chloride	5.211	0.10	5	0	104	90	110	0			
Nitrogen, Nitrite (As N)	0.9495	0.10	1	0	95.0	90	110	0			
Bromide	2.33	0.10	2.5	0	93.2	90	110	0			
Nitrogen, Nitrate (As N)	2.451	0.10	2.5	0	98.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.854	0.50	5	0	97.1	90	110	0			
Sulfate	9.596	0.50	10	0	96.0	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	BTEX Std 100ng	Batch ID: R10064	Test Code: SW8021	Units: µg/L	Analysis Date	11/10/2003 8:25:25 AM	Prep Date				
Client ID:		Run ID: PIDFID_031110A			SeqNo: 225677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	40.69	2.5	40	0	102	54.9	142	0			
Benzene	20.94	0.50	20	0	105	81.3	121	0			
Toluene	20.55	0.50	20	0	103	84.9	118	0			
Ethylbenzene	20.17	0.50	20	0	101	53.8	149	0			
Xylenes, Total	59.35	0.50	60	0	98.9	83.1	122	0			

Sample ID	BTEX Std 100ng	Batch ID: R10064	Test Code: SW8021	Units: µg/L	Analysis Date	11/10/2003 2:02:59 PM	Prep Date				
Client ID:		Run ID: PIDFID_031110A			SeqNo: 225735						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	39.9	2.5	40	0	99.8	54.9	142	40.69	1.94	28	
Benzene	20	0.50	20	0	100	81.3	121	20.94	4.56	27	
Toluene	20	0.50	20	0	100	84.9	118	20.55	2.69	19	
Ethylbenzene	20	0.50	20	0	100	53.8	149	20.17	0.836	10	
Xylenes, Total	60.01	0.50	60	0	100	83.1	122	59.35	1.09	13	

Sample ID	BTEX Std 87.5ng	Batch ID: R10071	Test Code: SW8021	Units: µg/L	Analysis Date	11/11/2003 9:56:59 AM	Prep Date				
Client ID:		Run ID: PIDFID_031111A			SeqNo: 225842						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	35.97	2.5	35	0	103	54.9	142	0			
Benzene	17.61	0.50	17.5	0	101	81.3	121	0			
Toluene	17.79	0.50	17.5	0	102	84.9	118	0			
Ethylbenzene	17.64	0.50	17.5	0	101	53.8	149	0			
Xylenes, Total	52.39	0.50	52.5	0	99.8	83.1	122	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0311049
Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID	100ng Ics	Batch ID: R10051	Test Code: SW8260B	Units: µg/L	Analysis Date	11/7/2003	Prep Date				
Client ID:		Run ID:	NEPTUNE_031107A		SeqNo:	225394					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.86	1.0	20	0	104	71.2	122	0			
Toluene	19.84	1.0	20	0	99.2	87.7	122	0			
Chlorobenzene	19.17	1.0	20	0	95.8	85.6	136	0			
1,1-Dichloroethene	20.76	1.0	20	0	104	70.7	117	0			
Trichloroethene (TCE)	21.5	1.0	20	0	108	76.9	130	0			

Sample ID	Ics-4645	Batch ID: 4645	Test Code: SW8270A	Units: µg/L	Analysis Date 11/14/2003	Prep Date 11/12/2003					
Client ID:			Run ID: ELMO_031114A		SeqNo: 226988						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	62.17	10	100	0	62.2	43.1	89.9	0			
4-Chloro-3-methylphenol	139.5	20	200	0	69.8	44.1	93.2	0			
2-Chlorophenol	136.9	10	200	0	68.5	20.7	98	0			
1,4-Dichlorobenzene	56.35	10	100	0	56.4	24.1	90.7	0			
2,4-Dinitrotoluene	72.5	10	100	0	72.5	43.2	101	0			
N-Nitrosodi-n-propylamine	63.65	10	100	0	63.6	44.6	99.9	0			
4-Nitrophenol	75.44	50	200	0	37.7	11	57.5	0			
Pentachlorophenol	143.5	50	200	0	71.7	8.65	105	0			
Phenol	73.65	10	200	0	36.8	21.1	55.3	0			
Pyrene	77.63	10	100	0	77.6	35.7	111	0			
1,2,4-Trichlorobenzene	56.94	10	100	0	56.9	30.2	89.6	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID	Icscd-4645	Batch ID: 4645	Test Code: SW8270A	Units: µg/L	Analysis Date 11/14/2003		Prep Date 11/12/2003				
Client ID:			Run ID: ELMO_031114A		SeqNo: 226989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	54.69	10	100	0	54.7	43.1	89.9	62.17	12.8	30.5	
4-Chloro-3-methylphenol	128.2	20	200	0	64.1	44.1	93.2	139.5	8.44	28.6	
2-Chlorophenol	131.2	10	200	0	65.6	20.7	98	136.9	4.28	107	
1,4-Dichlorobenzene	53.18	10	100	0	53.2	24.1	90.7	56.35	5.78	62.1	
2,4-Dinitrotoluene	63.18	10	100	0	63.2	43.2	101	72.5	13.7	14.7	
N-Nitrosodi-n-propylamine	59.44	10	100	0	59.4	44.6	99.9	63.65	6.83	30.3	
4-Nitrophenol	66.85	50	200	0	33.4	11	57.5	75.44	12.1	36.3	
Pentachlorophenol	134.3	50	200	0	67.2	8.65	105	143.5	6.59	49	
Phenol	70.23	10	200	0	35.1	21.1	55.3	73.65	4.76	52.4	
Pyrene	72.62	10	100	0	72.6	35.7	111	77.63	6.67	16.3	
1,2,4-Trichlorobenzene	54.68	10	100	0	54.7	30.2	89.6	56.94	4.05	36.4	

Sample ID	LCS-4633	Batch ID: 4633	Test Code: SW7470	Units: mg/L	Analysis Date	11/11/2003	Prep Date	11/11/2003			
Client ID:			Run ID: MI-LA254_031111A		SeqNo:	225862					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005028	0.00020	0.005	0	101	75.2	134	0			

Sample ID	LCSD-4633	Batch ID: 4633	Test Code: SW7470	Units: mg/L	Analysis Date	11/11/2003	Prep Date	11/11/2003			
Client ID:			Run ID: MI-LA254_031111A		SeqNo:	225863					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004717	0.00020	0.005	0	94.3	75.2	134	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
5

CLIENT: Giant Refining Co

Work Order: 0311049

Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS Batch ID: R10055 Test Code: SW6010A Units: mg/L Analysis Date 11/10/2003 8:27:48 AM Prep Date
Client ID: Run ID: ICP_031110A SeqNo: 225512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	46.9	1.0	50.5	0.2105	92.5	80	120	0			
Magnesium	45.87	1.0	50.5	0.1625	90.5	80	120	0			
Potassium	49.22	1.0	55	0.2536	89.0	80	120	0			
Sodium	45.32	1.0	50.5	0.2026	89.3	80	120	0			

Sample ID LCSD Batch ID: R10055 Test Code: SW6010A Units: mg/L Analysis Date 11/10/2003 8:30:26 AM Prep Date
Client ID: Run ID: ICP_031110A SeqNo: 225513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	52.32	1.0	50.5	0.2105	103	80	120	46.9	10.9	20	
Magnesium	51.4	1.0	50.5	0.1625	101	80	120	45.87	11.4	20	
Potassium	53.72	1.0	55	0.2536	97.2	80	120	49.22	8.74	20	
Sodium	50.2	1.0	50.5	0.2026	99.0	80	120	45.32	10.2	20	

Sample ID LCS-4626 Batch ID: 4626 Test Code: SW6010A Units: mg/L Analysis Date 11/12/2003 8:22:41 AM Prep Date 11/10/2003
Client ID: Run ID: ICP_031112B SeqNo: 226193

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5079	0.020	0.5	0	102	80	120	0			
Barium	0.4936	0.020	0.5	0	98.7	80	120	0			
Cadmium	0.49	0.0020	0.5	0	98.0	80	120	0			
Chromium	0.5067	0.0060	0.5	0	101	80	120	0			
Lead	0.4789	0.0050	0.5	0	95.8	80	120	0			
Selenium	0.5365	0.020	0.5	0	107	80	120	0			
Silver	0.4799	0.0050	0.5	0	96.0	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0311049
Project: Annual Ground Water Samples 2003

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	LCSD-4626	Batch ID:	4626	Test Code:	SW6010A	Units:	mg/L	Analysis Date	11/12/2003 8:26:34 AM	Prep Date	11/10/2003
Client ID:		Run ID:	ICP_031112B	SeqNo:	226194						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4917	0.020	0.5	0	98.3	80	120	0.5079	3.24	20	
Barium	0.4727	0.020	0.5	0	94.5	80	120	0.4936	4.32	20	
Cadmium	0.4694	0.0020	0.5	0	93.9	80	120	0.49	4.28	20	
Chromium	0.4855	0.0060	0.5	0	97.1	80	120	0.5067	4.28	20	
Lead	0.4682	0.0050	0.5	0	93.6	80	120	0.4789	2.26	20	
Selenium	0.5292	0.020	0.5	0	106	80	120	0.5365	1.36	20	
Silver	0.4575	0.0050	0.5	0	91.5	80	120	0.4799	4.78	20	

Sample ID	LCS-4646	Batch ID:	4646	Test Code:	E160.1	Units:	mg/L	Analysis Date	11/13/2003	Prep Date	11/12/2003
Client ID:		Run ID:	WC_031113A	SeqNo:	226497						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	997	1.0	1000	0	99.7	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

Work Order Number 0311049

Received by AMF

Checklist completed by

Bonzales
Signature

11/7/03
Date

Matrix

Carrier name Client drop-off

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☐

Not Shipped ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

3°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Project #:

Project Manager:

Dorinda Mancini

Sampler:

Sample Temperature: -70°

Number/Volume

HEAL No.

Preservative

HCl_2	HNO_3
----------------	----------------

Number/Volume

11/6/03	0930	H ₂ O	OW-11-11603
---------	------	------------------	-------------

"	1100	H-20	OW-14-11603
---	------	------	-------------

Trip Blank

Date:	11/7/03	Time:	0930
Date:		Time:	

Relinquished By: (Signature) 

Relinquished By: (Signature) 

Remarks:	Remarks:
----------	----------

11/7/03

Remarks:	Remarks:
----------	----------

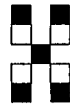
Remarks: 600
of 11/7

ANALYSIS REQUEST

[illegible]

Remarks: General Chem! Cations, Anions, pH, etc, TDS, PCA-8

MW – 1, 2, 5, & 4



Hall Environmental Analysis Laboratory

COVER LETTER

August 11, 2003

Dorinda Mancini
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0227
FAX (505) 722-0210

RE: RCRA Wells Summer 2003 GW

Order No.: 0307126

Dear Dorinda Mancini:

Hall Environmental Analysis Laboratory received 5 samples on 7/17/2003 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,



Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-01

Client Sample ID: MW-1-71503
Collection Date: 7/15/2003 10:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	0.50		mg/L	1	7/21/2003 8:03:07 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/21/2003 8:03:07 PM
Surr: DNOP	139	58-140		%REC	1	7/21/2003 8:03:07 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/18/2003 11:59:15 AM
Surr: BFB	94.1	74.5-115		%REC	1	7/18/2003 11:59:15 AM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	8/1/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/6/2003 1:45:06 PM
Barium	0.15	0.0020		mg/L	1	8/6/2003 1:45:06 PM
Beryllium	ND	0.0030		mg/L	1	8/6/2003 1:45:06 PM
Cadmium	ND	0.0020		mg/L	1	8/6/2003 1:45:06 PM
Chromium	ND	0.0060		mg/L	1	8/6/2003 1:45:06 PM
Cobalt	ND	0.0060		mg/L	1	8/6/2003 1:45:06 PM
Lead	ND	0.0050		mg/L	1	8/6/2003 1:45:06 PM
Nickel	ND	0.010		mg/L	1	8/6/2003 1:45:06 PM
Selenium	ND	0.020		mg/L	1	8/7/2003 8:05:55 AM
Silver	ND	0.0050		mg/L	1	8/7/2003 8:36:26 AM
Vanadium	ND	0.050		mg/L	1	8/6/2003 1:45:06 PM
Zinc	ND	0.0050		mg/L	1	8/6/2003 1:45:06 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	7/31/2003 10:40:45 AM
Barium	ND	0.020		mg/L	1	7/31/2003 10:40:45 AM
Beryllium	ND	0.0030		mg/L	1	7/31/2003 10:40:45 AM
Cadmium	ND	0.0020		mg/L	1	7/31/2003 10:40:45 AM
Chromium	ND	0.0060		mg/L	1	7/31/2003 10:40:45 AM
Cobalt	ND	0.0060		mg/L	1	7/31/2003 10:40:45 AM
Lead	ND	0.0050		mg/L	1	7/31/2003 10:40:45 AM
Nickel	ND	0.010		mg/L	1	7/31/2003 10:40:45 AM
Selenium	ND	0.020		mg/L	1	8/1/2003 8:18:53 AM
Silver	ND	0.0050		mg/L	1	7/31/2003 2:41:48 PM
Vanadium	ND	0.050		mg/L	1	8/1/2003 9:28:57 AM
Zinc	ND	0.010		mg/L	1	7/31/2003 10:40:45 AM
SEMIVOLATILES BY 8270 - SKINNER						Analyst: CS
Acenaphthene	ND	10		µg/L	1	8/6/2003
Anthracene	ND	10		µg/L	1	8/6/2003
Benz(a)anthracene	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co

Client Sample ID: MW-1-71503

Lab Order: 0307126

Collection Date: 7/15/2003 10:00:00 AM

Project: RCRA Wells Summer 2003 GW

Lab ID: 0307126-01

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	10		µg/L	1	8/6/2003
Benzo(b)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(j)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(k)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzyl alcohol	ND	20		µg/L	1	8/6/2003
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/6/2003
Butyl benzyl phthalate	ND	10		µg/L	1	8/6/2003
2-Chlorophenol	ND	10		µg/L	1	8/6/2003
Chrysene	ND	10		µg/L	1	8/6/2003
Di-n-butyl phthalate	ND	10		µg/L	1	8/6/2003
Di-n-octyl-phthalate	ND	10		µg/L	1	8/6/2003
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/6/2003
Dibenz(a,j)acridine	ND	10		µg/L	1	8/6/2003
1,2-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,3-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,4-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
Diethyl phthalate	ND	10		µg/L	1	8/6/2003
Dimethyl phthalate	ND	10		µg/L	1	8/6/2003
7,12-Dimethylbenz(a)anthracene	ND	10		µg/L	1	8/6/2003
2,4-Dimethylphenol	ND	10		µg/L	1	8/6/2003
2,4-Dinitrophenol	ND	50		µg/L	1	8/6/2003
2,4-Dinitrotoluene	ND	10		µg/L	1	8/6/2003
Fluoranthene	ND	10		µg/L	1	8/6/2003
Fluorene	ND	10		µg/L	1	8/6/2003
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/6/2003
6-Methylchrysene	ND	10		µg/L	1	8/6/2003
2-Methylnaphthalene	ND	10		µg/L	1	8/6/2003
1-methylnaphthalene	ND	10		µg/L	1	8/6/2003
2-Methylphenol	ND	10		µg/L	1	8/6/2003
3-Methylphenol	ND	50		µg/L	1	8/6/2003
4-Methylphenol	ND	10		µg/L	1	8/6/2003
Naphthalene	ND	10		µg/L	1	8/6/2003
Nitrobenzene	ND	10		µg/L	1	8/6/2003
4-Nitrophenol	ND	50		µg/L	1	8/6/2003
Phenanthrene	ND	10		µg/L	1	8/6/2003
Phenol	ND	10		µg/L	1	8/6/2003
Pyrene	ND	10		µg/L	1	8/6/2003
Pyridine	ND	20		µg/L	1	8/6/2003
Quinoline	ND	50		µg/L	1	8/6/2003
Thiophenol	ND	50		µg/L	1	8/6/2003
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/6/2003
Total cresol	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-01

Client Sample ID: MW-1-71503
Collection Date: 7/15/2003 10:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	67.9	16.6-115		%REC	1	8/6/2003
Surr: 2-Fluorobiphenyl	64.8	37-95.7		%REC	1	8/6/2003
Surr: 2-Fluorophenol	55.8	9.54-89.8		%REC	1	8/6/2003
Surr: 4-Terphenyl-d14	84.9	70-130		%REC	1	8/6/2003
Surr: Nitrobenzene-d5	71.4	38-106		%REC	1	8/6/2003
Surr: Phenol-d6	38.5	10.7-63.4		%REC	1	8/6/2003

VOLATILES BY 8260B - SKINNER

Analyst: BDH

Acetone	ND	10		µg/L	1	7/18/2003
Benzene	ND	0.50		µg/L	1	7/18/2003
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	1	7/18/2003
2-Butanone	ND	10		µg/L	1	7/18/2003
Carbon disulfide	ND	10		µg/L	1	7/18/2003
Chlorobenzene	ND	0.50		µg/L	1	7/18/2003
Chloroform	ND	0.50		µg/L	1	7/18/2003
Chloromethane	ND	1.0		µg/L	1	7/18/2003
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	7/18/2003
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethane	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethene	ND	0.50		µg/L	1	7/18/2003
1,4-Dioxane	ND	50		µg/L	1	7/18/2003
Ethylbenzene	ND	0.50		µg/L	1	7/18/2003
Methylene Chloride	ND	3.0		µg/L	1	7/18/2003
Styrene	ND	0.50		µg/L	1	7/18/2003
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	7/18/2003
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	7/18/2003
Toluene	ND	0.50		µg/L	1	7/18/2003
trans-1,2-DCE	ND	0.50		µg/L	1	7/18/2003
1,1,1-Trichloroethane	ND	0.50		µg/L	1	7/18/2003
Trichloroethene (TCE)	ND	0.50		µg/L	1	7/18/2003
Xylenes, Total	ND	0.50		µg/L	1	7/18/2003
Surr: 1,2-Dichloroethane-d4	101	74.6-123		%REC	1	7/18/2003
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	7/18/2003
Surr: Dibromofluoromethane	96.8	78.6-115		%REC	1	7/18/2003
Surr: Toluene-d8	106	84.2-115		%REC	1	7/18/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-02

Client Sample ID: MW-2-71503
Collection Date: 7/15/2003 10:40:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	0.50		mg/L	1	7/21/2003 8:33:56 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/21/2003 8:33:56 PM
Surr: DNOP	122	58-140		%REC	1	7/21/2003 8:33:56 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/18/2003 12:29:52 PM
Surr: BFB	97.4	74.5-115		%REC	1	7/18/2003 12:29:52 PM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	8/1/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/6/2003 2:18:08 PM
Barium	0.083	0.0020		mg/L	1	8/6/2003 2:18:08 PM
Beryllium	ND	0.0030		mg/L	1	8/6/2003 2:18:08 PM
Cadmium	ND	0.0020		mg/L	1	8/6/2003 2:18:08 PM
Chromium	ND	0.0060		mg/L	1	8/6/2003 2:18:08 PM
Cobalt	ND	0.0060		mg/L	1	8/6/2003 2:18:08 PM
Lead	ND	0.0050		mg/L	1	8/6/2003 2:18:08 PM
Nickel	ND	0.010		mg/L	1	8/6/2003 2:18:08 PM
Selenium	ND	0.020		mg/L	1	8/7/2003 8:08:50 AM
Silver	ND	0.0050		mg/L	1	8/7/2003 8:44:36 AM
Vanadium	ND	0.050		mg/L	1	8/6/2003 2:18:08 PM
Zinc	ND	0.0050		mg/L	1	8/6/2003 2:18:08 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	7/31/2003 10:58:22 AM
Barium	0.020	0.020		mg/L	1	7/31/2003 10:58:22 AM
Beryllium	ND	0.0030		mg/L	1	7/31/2003 10:58:22 AM
Cadmium	ND	0.0020		mg/L	1	7/31/2003 10:58:22 AM
Chromium	ND	0.0060		mg/L	1	7/31/2003 10:58:22 AM
Cobalt	ND	0.0060		mg/L	1	7/31/2003 10:58:22 AM
Lead	ND	0.0050		mg/L	1	7/31/2003 10:58:22 AM
Nickel	ND	0.010		mg/L	1	7/31/2003 12:22:37 PM
Selenium	ND	0.020		mg/L	1	8/1/2003 8:24:08 AM
Silver	ND	0.0050		mg/L	1	7/31/2003 2:43:17 PM
Vanadium	ND	0.050		mg/L	1	8/1/2003 9:30:38 AM
Zinc	ND	0.010		mg/L	1	7/31/2003 12:22:37 PM
SEMIVOLATILES BY 8270 - SKINNER						Analyst: CS
Acenaphthene	ND	10		µg/L	1	8/6/2003
Anthracene	ND	10		µg/L	1	8/6/2003
Benz(a)anthracene	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-02

Client Sample ID: MW-2-71503
Collection Date: 7/15/2003 10:40:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	10		µg/L	1	8/6/2003
Benzo(b)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(j)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(k)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzyl alcohol	ND	20		µg/L	1	8/6/2003
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/6/2003
Butyl benzyl phthalate	ND	10		µg/L	1	8/6/2003
2-Chlorophenol	ND	10		µg/L	1	8/6/2003
Chrysene	ND	10		µg/L	1	8/6/2003
Di-n-butyl phthalate	ND	10		µg/L	1	8/6/2003
Di-n-octyl-phthalate	ND	10		µg/L	1	8/6/2003
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/6/2003
Dibenz(a,j)acridine	ND	10		µg/L	1	8/6/2003
1,2-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,3-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,4-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
Diethyl phthalate	ND	10		µg/L	1	8/6/2003
Dimethyl phthalate	ND	10		µg/L	1	8/6/2003
7,12-Dimethylbenz(a)anthracene	ND	10		µg/L	1	8/6/2003
2,4-Dimethylphenol	ND	10		µg/L	1	8/6/2003
2,4-Dinitrophenol	ND	50		µg/L	1	8/6/2003
2,4-Dinitrotoluene	ND	10		µg/L	1	8/6/2003
Fluoranthene	ND	10		µg/L	1	8/6/2003
Fluorene	ND	10		µg/L	1	8/6/2003
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/6/2003
6-Methylchrysene	ND	10		µg/L	1	8/6/2003
2-Methylnaphthalene	ND	10		µg/L	1	8/6/2003
1-methylnaphthalene	ND	10		µg/L	1	8/6/2003
2-Methylphenol	ND	10		µg/L	1	8/6/2003
3-Methylphenol	ND	50		µg/L	1	8/6/2003
4-Methylphenol	ND	10		µg/L	1	8/6/2003
Naphthalene	ND	10		µg/L	1	8/6/2003
Nitrobenzene	ND	10		µg/L	1	8/6/2003
4-Nitrophenol	ND	50		µg/L	1	8/6/2003
Phenanthrene	ND	10		µg/L	1	8/6/2003
Phenol	ND	10		µg/L	1	8/6/2003
Pyrene	ND	10		µg/L	1	8/6/2003
Pyridine	ND	20		µg/L	1	8/6/2003
Quinoline	ND	50		µg/L	1	8/6/2003
Thiophenol	ND	50		µg/L	1	8/6/2003
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/6/2003
Total cresol	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-02

Client Sample ID: MW-2-71503
Collection Date: 7/15/2003 10:40:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	67.9	16.6-115		%REC	1	8/6/2003
Surr: 2-Fluorobiphenyl	64.8	37-95.7		%REC	1	8/6/2003
Surr: 2-Fluorophenol	55.8	9.54-89.8		%REC	1	8/6/2003
Surr: 4-Terphenyl-d14	84.9	70-130		%REC	1	8/6/2003
Surr: Nitrobenzene-d5	71.4	38-106		%REC	1	8/6/2003
Surr: Phenol-d6	38.5	10.7-63.4		%REC	1	8/6/2003

VOLATILES BY 8260B - SKINNER

Analyst: BDH

Acetone	ND	10		µg/L	1	7/18/2003
Benzene	ND	0.50		µg/L	1	7/18/2003
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	1	7/18/2003
2-Butanone	ND	10		µg/L	1	7/18/2003
Carbon disulfide	ND	10		µg/L	1	7/18/2003
Chlorobenzene	ND	0.50		µg/L	1	7/18/2003
Chloroform	ND	0.50		µg/L	1	7/18/2003
Chloromethane	ND	1.0		µg/L	1	7/18/2003
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	7/18/2003
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethane	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethene	ND	0.50		µg/L	1	7/18/2003
1,4-Dioxane	ND	50		µg/L	1	7/18/2003
Ethylbenzene	ND	0.50		µg/L	1	7/18/2003
Methylene Chloride	ND	3.0		µg/L	1	7/18/2003
Styrene	ND	0.50		µg/L	1	7/18/2003
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	7/18/2003
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	7/18/2003
Toluene	ND	0.50		µg/L	1	7/18/2003
trans-1,2-DCE	ND	0.50		µg/L	1	7/18/2003
1,1,1-Trichloroethane	ND	0.50		µg/L	1	7/18/2003
Trichloroethene (TCE)	ND	0.50		µg/L	1	7/18/2003
Xylenes, Total	ND	0.50		µg/L	1	7/18/2003
Surr: 1,2-Dichloroethane-d4	96.5	74.6-123		%REC	1	7/18/2003
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	7/18/2003
Surr: Dibromofluoromethane	93.0	78.6-115		%REC	1	7/18/2003
Surr: Toluene-d8	110	84.2-115		%REC	1	7/18/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-03

Client Sample ID: MW-5-71503
Collection Date: 7/15/2003 11:30:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	0.50		mg/L	1	7/21/2003 9:04:45 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/21/2003 9:04:45 PM
Surr: DNOP	126	58-140		%REC	1	7/21/2003 9:04:45 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/18/2003 1:00:49 PM
Surr: BFB	93.8	74.5-115		%REC	1	7/18/2003 1:00:49 PM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	8/1/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/6/2003 2:23:24 PM
Barium	0.084	0.0020		mg/L	1	8/6/2003 2:23:24 PM
Beryllium	ND	0.0030		mg/L	1	8/6/2003 2:23:24 PM
Cadmium	ND	0.0020		mg/L	1	8/6/2003 2:23:24 PM
Chromium	ND	0.0060		mg/L	1	8/6/2003 2:23:24 PM
Cobalt	ND	0.0060		mg/L	1	8/6/2003 2:23:24 PM
Lead	ND	0.0050		mg/L	1	8/6/2003 2:23:24 PM
Nickel	ND	0.010		mg/L	1	8/6/2003 2:23:24 PM
Selenium	ND	0.020		mg/L	1	8/7/2003 8:10:05 AM
Silver	ND	0.0050		mg/L	1	8/7/2003 8:46:01 AM
Vanadium	ND	0.050		mg/L	1	8/6/2003 2:23:24 PM
Zinc	ND	0.0050		mg/L	1	8/6/2003 2:23:24 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	7/31/2003 11:04:41 AM
Barium	0.021	0.020		mg/L	1	7/31/2003 11:04:41 AM
Beryllium	ND	0.0030		mg/L	1	7/31/2003 11:04:41 AM
Cadmium	ND	0.0020		mg/L	1	7/31/2003 11:04:41 AM
Chromium	ND	0.0060		mg/L	1	7/31/2003 11:04:41 AM
Cobalt	ND	0.0060		mg/L	1	7/31/2003 11:04:41 AM
Lead	ND	0.0050		mg/L	1	7/31/2003 11:04:41 AM
Nickel	ND	0.010		mg/L	1	7/31/2003 12:24:19 PM
Selenium	ND	0.020		mg/L	1	8/1/2003 8:25:56 AM
Silver	ND	0.0050		mg/L	1	7/31/2003 2:44:47 PM
Vanadium	ND	0.050		mg/L	1	8/1/2003 9:32:22 AM
Zinc	ND	0.010		mg/L	1	7/31/2003 12:24:19 PM
SEMIVOLATILES BY 8270 - SKINNER						Analyst: CS
Acenaphthene	ND	10		µg/L	1	8/6/2003
Anthracene	ND	10		µg/L	1	8/6/2003
Benz(a)anthracene	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co

Client Sample ID: MW-5-71503

Lab Order: 0307126

Collection Date: 7/15/2003 11:30:00 AM

Project: RCRA Wells Summer 2003 GW

Lab ID: 0307126-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	10		µg/L	1	8/6/2003
Benzo(b)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(j)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(k)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzyl alcohol	ND	20		µg/L	1	8/6/2003
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/6/2003
Butyl benzyl phthalate	ND	10		µg/L	1	8/6/2003
2-Chlorophenol	ND	10		µg/L	1	8/6/2003
Chrysene	ND	10		µg/L	1	8/6/2003
Di-n-butyl phthalate	ND	10		µg/L	1	8/6/2003
Di-n-octyl-phthalate	ND	10		µg/L	1	8/6/2003
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/6/2003
Dibenz(a,j)acridine	ND	10		µg/L	1	8/6/2003
1,2-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,3-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,4-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
Diethyl phthalate	ND	10		µg/L	1	8/6/2003
Dimethyl phthalate	ND	10		µg/L	1	8/6/2003
7,12-Dimethylbenz(a)anthracene	ND	10		µg/L	1	8/6/2003
2,4-Dimethylphenol	ND	10		µg/L	1	8/6/2003
2,4-Dinitrophenol	ND	50		µg/L	1	8/6/2003
2,4-Dinitrotoluene	ND	10		µg/L	1	8/6/2003
Fluoranthene	ND	10		µg/L	1	8/6/2003
Fluorene	ND	10		µg/L	1	8/6/2003
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/6/2003
6-Methylchrysene	ND	10		µg/L	1	8/6/2003
2-Methylnaphthalene	ND	10		µg/L	1	8/6/2003
1-methylnaphthalene	ND	10		µg/L	1	8/6/2003
2-Methylphenol	ND	10		µg/L	1	8/6/2003
3-Methylphenol	ND	50		µg/L	1	8/6/2003
4-Methylphenol	ND	10		µg/L	1	8/6/2003
Naphthalene	ND	10		µg/L	1	8/6/2003
Nitrobenzene	ND	10		µg/L	1	8/6/2003
4-Nitrophenol	ND	50		µg/L	1	8/6/2003
Phenanthrene	ND	10		µg/L	1	8/6/2003
Phenol	ND	10		µg/L	1	8/6/2003
Pyrene	ND	10		µg/L	1	8/6/2003
Pyridine	ND	20		µg/L	1	8/6/2003
Quinoline	ND	50		µg/L	1	8/6/2003
Thiophenol	ND	50		µg/L	1	8/6/2003
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/6/2003
Total cresol	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co

Client Sample ID: MW-5-71503

Lab Order: 0307126

Collection Date: 7/15/2003 11:30:00 AM

Project: RCRA Wells Summer 2003 GW

Lab ID: 0307126-03

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	68.4	16.6-115		%REC	1	8/6/2003
Surr: 2-Fluorobiphenyl	67.4	37-95.7		%REC	1	8/6/2003
Surr: 2-Fluorophenol	53.7	9.54-89.8		%REC	1	8/6/2003
Surr: 4-Terphenyl-d14	81.1	70-130		%REC	1	8/6/2003
Surr: Nitrobenzene-d5	70.0	38-106		%REC	1	8/6/2003
Surr: Phenol-d6	37.8	10.7-63.4		%REC	1	8/6/2003

VOLATILES BY 8260B - SKINNER

Analyst: BDH

Acetone	ND	10		µg/L	1	7/18/2003
Benzene	ND	0.50		µg/L	1	7/18/2003
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	1	7/18/2003
2-Butanone	ND	10		µg/L	1	7/18/2003
Carbon disulfide	ND	10		µg/L	1	7/18/2003
Chlorobenzene	ND	0.50		µg/L	1	7/18/2003
Chloroform	ND	0.50		µg/L	1	7/18/2003
Chloromethane	ND	1.0		µg/L	1	7/18/2003
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	7/18/2003
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethane	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethene	ND	0.50		µg/L	1	7/18/2003
1,4-Dioxane	ND	50		µg/L	1	7/18/2003
Ethylbenzene	ND	0.50		µg/L	1	7/18/2003
Methylene Chloride	ND	3.0		µg/L	1	7/18/2003
Styrene	ND	0.50		µg/L	1	7/18/2003
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	7/18/2003
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	7/18/2003
Toluene	ND	0.50		µg/L	1	7/18/2003
trans-1,2-DCE	ND	0.50		µg/L	1	7/18/2003
1,1,1-Trichloroethane	ND	0.50		µg/L	1	7/18/2003
Trichloroethene (TCE)	ND	0.50		µg/L	1	7/18/2003
Xylenes, Total	ND	0.50		µg/L	1	7/18/2003
Surr: 1,2-Dichloroethane-d4	104	74.6-123		%REC	1	7/18/2003
Surr: 4-Bromofluorobenzene	96.5	80-120		%REC	1	7/18/2003
Surr: Dibromofluoromethane	98.8	78.6-115		%REC	1	7/18/2003
Surr: Toluene-d8	111	84.2-115		%REC	1	7/18/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-04

Client Sample ID: MW-4-71603
Collection Date: 7/16/2003 8:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	0.50		mg/L	1	7/21/2003 9:35:29 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/21/2003 9:35:29 PM
Surr: DNOP	134	58-140		%REC	1	7/21/2003 9:35:29 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/18/2003 1:33:08 PM
Surr: BFB	98.4	74.5-115		%REC	1	7/18/2003 1:33:08 PM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	8/1/2003
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/6/2003 2:28:42 PM
Barium	0.097	0.0020		mg/L	1	8/6/2003 2:28:42 PM
Beryllium	ND	0.0030		mg/L	1	8/6/2003 2:28:42 PM
Cadmium	ND	0.0020		mg/L	1	8/6/2003 2:28:42 PM
Chromium	ND	0.0060		mg/L	1	8/6/2003 2:28:42 PM
Cobalt	ND	0.0060		mg/L	1	8/6/2003 2:28:42 PM
Lead	ND	0.0050		mg/L	1	8/6/2003 2:28:42 PM
Nickel	ND	0.010		mg/L	1	8/6/2003 2:28:42 PM
Selenium	ND	0.020		mg/L	1	8/7/2003 8:11:23 AM
Silver	ND	0.0050		mg/L	1	8/7/2003 8:47:13 AM
Vanadium	ND	0.050		mg/L	1	8/6/2003 2:28:42 PM
Zinc	ND	0.0050		mg/L	1	8/6/2003 2:28:42 PM
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	7/31/2003 11:10:59 AM
Barium	0.021	0.020		mg/L	1	7/31/2003 11:10:59 AM
Beryllium	ND	0.0030		mg/L	1	7/31/2003 11:10:59 AM
Cadmium	ND	0.0020		mg/L	1	7/31/2003 11:10:59 AM
Chromium	ND	0.0060		mg/L	1	7/31/2003 11:10:59 AM
Cobalt	ND	0.0060		mg/L	1	7/31/2003 11:10:59 AM
Lead	ND	0.0050		mg/L	1	7/31/2003 11:10:59 AM
Nickel	ND	0.010		mg/L	1	7/31/2003 12:26:21 PM
Selenium	ND	0.020		mg/L	1	8/1/2003 8:27:40 AM
Silver	ND	0.0050		mg/L	1	7/31/2003 2:46:15 PM
Vanadium	ND	0.050		mg/L	1	8/1/2003 9:34:01 AM
Zinc	ND	0.010		mg/L	1	7/31/2003 12:26:21 PM
SEMIVOLATILES BY 8270 - SKINNER						Analyst: CS
Acenaphthene	ND	10		µg/L	1	8/6/2003
Anthracene	ND	10		µg/L	1	8/6/2003
Benz(a)anthracene	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co

Client Sample ID: MW-4-71603

Lab Order: 0307126

Collection Date: 7/16/2003 8:00:00 AM

Project: RCRA Wells Summer 2003 GW

Lab ID: 0307126-04

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	10		µg/L	1	8/6/2003
Benzo(b)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(j)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzo(k)fluoranthene	ND	10		µg/L	1	8/6/2003
Benzyl alcohol	ND	20		µg/L	1	8/6/2003
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/6/2003
Butyl benzyl phthalate	ND	10		µg/L	1	8/6/2003
2-Chlorophenol	ND	10		µg/L	1	8/6/2003
Chrysene	ND	10		µg/L	1	8/6/2003
Di-n-butyl phthalate	ND	10		µg/L	1	8/6/2003
Di-n-octyl-phthalate	ND	10		µg/L	1	8/6/2003
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/6/2003
Dibenz(a,j)acridine	ND	10		µg/L	1	8/6/2003
1,2-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,3-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
1,4-Dichlorobenzene	ND	10		µg/L	1	8/6/2003
Diethyl phthalate	ND	10		µg/L	1	8/6/2003
Dimethyl phthalate	ND	10		µg/L	1	8/6/2003
7,12-Dimethylbenz(a)anthracene	ND	10		µg/L	1	8/6/2003
2,4-Dimethylphenol	ND	10		µg/L	1	8/6/2003
2,4-Dinitrophenol	ND	50		µg/L	1	8/6/2003
2,4-Dinitrotoluene	ND	10		µg/L	1	8/6/2003
Fluoranthene	ND	10		µg/L	1	8/6/2003
Fluorene	ND	10		µg/L	1	8/6/2003
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/6/2003
6-Methylchrysene	ND	10		µg/L	1	8/6/2003
2-Methylnaphthalene	ND	10		µg/L	1	8/6/2003
1-methylnaphthalene	ND	10		µg/L	1	8/6/2003
2-Methylphenol	ND	10		µg/L	1	8/6/2003
3-Methylphenol	ND	50		µg/L	1	8/6/2003
4-Methylphenol	ND	10		µg/L	1	8/6/2003
Naphthalene	ND	10		µg/L	1	8/6/2003
Nitrobenzene	ND	10		µg/L	1	8/6/2003
4-Nitrophenol	ND	50		µg/L	1	8/6/2003
Phenanthrene	ND	10		µg/L	1	8/6/2003
Phenol	ND	10		µg/L	1	8/6/2003
Pyrene	ND	10		µg/L	1	8/6/2003
Pyridine	ND	20		µg/L	1	8/6/2003
Quinoline	ND	50		µg/L	1	8/6/2003
Thiophenol	ND	50		µg/L	1	8/6/2003
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/6/2003
Total cresol	ND	10		µg/L	1	8/6/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-04

Client Sample ID: MW-4-71603
Collection Date: 7/16/2003 8:00:00 AM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	75.4	16.6-115		%REC	1	8/6/2003
Surr: 2-Fluorobiphenyl	71.1	37-95.7		%REC	1	8/6/2003
Surr: 2-Fluorophenol	55.7	9.54-89.8		%REC	1	8/6/2003
Surr: 4-Terphenyl-d14	86.7	70-130		%REC	1	8/6/2003
Surr: Nitrobenzene-d5	74.9	38-106		%REC	1	8/6/2003
Surr: Phenol-d6	40.8	10.7-63.4		%REC	1	8/6/2003

VOLATILES BY 8260B - SKINNER

Analyst: BDH

Acetone	ND	10		µg/L	1	7/18/2003
Benzene	ND	0.50		µg/L	1	7/18/2003
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	1	7/18/2003
2-Butanone	ND	10		µg/L	1	7/18/2003
Carbon disulfide	ND	10		µg/L	1	7/18/2003
Chlorobenzene	ND	0.50		µg/L	1	7/18/2003
Chloroform	ND	0.50		µg/L	1	7/18/2003
Chloromethane	ND	1.0		µg/L	1	7/18/2003
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	7/18/2003
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethane	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethene	ND	0.50		µg/L	1	7/18/2003
1,4-Dioxane	ND	50		µg/L	1	7/18/2003
Ethylbenzene	ND	0.50		µg/L	1	7/18/2003
Methylene Chloride	ND	3.0		µg/L	1	7/18/2003
Styrene	ND	0.50		µg/L	1	7/18/2003
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	7/18/2003
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	7/18/2003
Toluene	ND	0.50		µg/L	1	7/18/2003
trans-1,2-DCE	ND	0.50		µg/L	1	7/18/2003
1,1,1-Trichloroethane	ND	0.50		µg/L	1	7/18/2003
Trichloroethene (TCE)	ND	0.50		µg/L	1	7/18/2003
Xylenes, Total	ND	0.50		µg/L	1	7/18/2003
Surr: 1,2-Dichloroethane-d4	99.8	74.6-123		%REC	1	7/18/2003
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	7/18/2003
Surr: Dibromofluoromethane	99.6	78.6-115		%REC	1	7/18/2003
Surr: Toluene-d8	109	84.2-115		%REC	1	7/18/2003

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

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co
Lab Order: 0307126
Project: RCRA Wells Summer 2003 GW
Lab ID: 0307126-05

Client Sample ID: TRIP BLANK
Collection Date:
Matrix: TRIP BLANK

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	7/18/2003 2:04:37 PM
Surr: BFB	95.5	74.5-115		%REC	1	7/18/2003 2:04:37 PM
VOLATILES BY 8260B - SKINNER						Analyst: BDH
Acetone	ND	10		µg/L	1	7/18/2003
Benzene	ND	0.50		µg/L	1	7/18/2003
Methyl tert-butyl ether (MTBE)	ND	0.50		µg/L	1	7/18/2003
2-Butanone	ND	10		µg/L	1	7/18/2003
Carbon disulfide	ND	10		µg/L	1	7/18/2003
Chlorobenzene	ND	0.50		µg/L	1	7/18/2003
Chloroform	ND	0.50		µg/L	1	7/18/2003
Chloromethane	ND	1.0		µg/L	1	7/18/2003
1,2-Dibromoethane (EDB)	ND	0.50		µg/L	1	7/18/2003
1,2-Dichloroethane (EDC)	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethane	ND	0.50		µg/L	1	7/18/2003
1,1-Dichloroethene	ND	0.50		µg/L	1	7/18/2003
1,4-Dioxane	ND	50		µg/L	1	7/18/2003
Ethylbenzene	ND	0.50		µg/L	1	7/18/2003
Methylene Chloride	ND	3.0		µg/L	1	7/18/2003
Styrene	ND	0.50		µg/L	1	7/18/2003
1,1,2,2-Tetrachloroethane	ND	0.50		µg/L	1	7/18/2003
Tetrachloroethene (PCE)	ND	0.50		µg/L	1	7/18/2003
Toluene	ND	0.50		µg/L	1	7/18/2003
trans-1,2-DCE	ND	0.50		µg/L	1	7/18/2003
1,1,1-Trichloroethane	ND	0.50		µg/L	1	7/18/2003
Trichloroethene (TCE)	ND	0.50		µg/L	1	7/18/2003
Xylenes, Total	ND	0.50		µg/L	1	7/18/2003
Surr: 1,2-Dichloroethane-d4	103	74.6-123		%REC	1	7/18/2003
Surr: 4-Bromofluorobenzene	99.0	80-120		%REC	1	7/18/2003
Surr: Dibromofluoromethane	97.3	78.6-115		%REC	1	7/18/2003
Surr: Toluene-d8	101	84.2-115		%REC	1	7/18/2003

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



LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Summer 2003 Groundwater Samples
Lab ID: C03070719-001
Client Sample ID: MW-1-71503 (0307126-01E)

Report Date: 07/30/03
Collection Date: 07/15/03 10:00
Date Received: 07/18/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Manual Distillation	ND	mg/L		0.0050		E335.4	07/21/03 16:01 / eli-b
METALS - DISSOLVED							
Antimony	ND	mg/L		0.001		E200.8	07/24/03 05:33 / smd
METALS - TOTAL							
Antimony	ND	mg/L		0.001		E200.8	07/26/03 03:01 / smd

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

TRACKING NO. PAGE NO
070719R0001



LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Summer 2003 Groundwater Samples
Lab ID: C03070719-002
Client Sample ID: MW-2-71503 (0307126-02E)

Report Date: 07/30/03
Collection Date: 07/15/03 10:40
Date Received: 07/18/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Manual Distillation	ND	mg/L		0.0050		E335.4	07/21/03 16:12 / eli-b
METALS - DISSOLVED							
Antimony	ND	mg/L		0.001		E200.8	07/24/03 05:39 / smd
METALS - TOTAL							
Antimony	ND	mg/L		0.001		E200.8	07/26/03 03:07 / smd

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

TRACKING NO. PAGE NO.

070719R0002



LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Summer 2003 Groundwater Samples
Lab ID: C03070719-003
Client Sample ID: MW-5-71503 (0307126-03E)

Report Date: 07/30/03
Collection Date: 07/15/03 11:30
Date Received: 07/18/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Manual Distillation	ND	mg/L		0.0050		E335.4	07/21/03 16:14 / eli-b
METALS - DISSOLVED							
Antimony	ND	mg/L		0.001		E200.8	07/24/03 05:54 / smd
METALS - TOTAL							
Antimony	ND	mg/L		0.001		E200.8	07/26/03 03:12 / smd

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

TRACKING NO. PAGE NO.
070719R0003



LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Summer 2003 Groundwater Samples
Lab ID: C03070719-004
Client Sample ID: MW-4-71603 (0307126-04E)

Report Date: 07/30/03
Collection Date: 07/16/03 08:00
Date Received: 07/18/03
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Manual Distillation	ND	mg/L		0.0050		E335.4	07/21/03 16:16 / eli-b
METALS - DISSOLVED							
Antimony	ND	mg/L		0.001		E200.8	07/24/03 06:00 / smd
METALS - TOTAL							
Antimony	ND	mg/L		0.001		E200.8	07/26/03 03:28 / smd

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

TRACKING NO. PAGE NO.
070719R0004



QA/QC Summary Report

Client: Hall Environmental
Project: Summer 2003 Groundwater Samples

Report Date: 07/30/03
Work Order: C03070719

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Batch: 3864
Sample ID: C03070719-003BMS	Matrix Spike								07/26/03 03:17
Antimony	0.281	mg/L	0.00100	113	70	130			
Sample ID: C03070719-003BMSD	Matrix Spike Duplicate								07/26/03 03:23
Antimony	0.277	mg/L	0.00100	111	70	130	1.5	20	
Sample ID: C03070787-009AMS	Matrix Spike								07/26/03 04:37
Antimony	0.270	mg/L	0.00100	108	70	130			
Sample ID: C03070787-009AMSD	Matrix Spike Duplicate								07/26/03 04:42
Antimony	0.272	mg/L	0.00100	109	70	130	0.8	20	
Sample ID: MB-3864	Method Blank								07/26/03 05:19
Antimony	0.0000310	mg/L	0.00100						

Qualifiers: A - Analyte concentration greater than three times the spike amount
ND - Not Detected at the Reporting Limit

R - RPD outside of recommended recovery limits
S - Spike Recovery outside of recommended recovery limits

TRACKING NO. PAGE NO.

070719R0005



QA/QC Summary Report

Client: Hall Environmental
Project: Summer 2003 Groundwater Samples

Report Date: 07/30/03
Work Order: C03070719

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Batch: R24351
Sample ID: LRB	Method Blank								07/23/03 22:38
Antimony	ND	mg/L	0.00100						
Sample ID: C03070660-002AMS	Matrix Spike								07/24/03 00:13
Antimony	0.0542	mg/L	0.00100	108	70	130			
Sample ID: C03070660-002AMSD	Matrix Spike Duplicate								07/24/03 00:18
Antimony	0.0522	mg/L	0.00100	104	70	130			
Sample ID: C03070711-001CMS	Matrix Spike								07/24/03 01:31
Antimony	0.0521	mg/L	0.00100	104	70	130			
Sample ID: C03070711-001CMSD	Matrix Spike Duplicate								07/24/03 01:37
Antimony	0.0508	mg/L	0.00100	102	70	130			
Sample ID: C03070624-002AMS	Matrix Spike								07/24/03 02:50
Antimony	0.0532	mg/L	0.00100	106	70	130			
Sample ID: C03070624-002AMSD	Matrix Spike Duplicate								07/24/03 03:11
Antimony	0.0529	mg/L	0.00100	106	70	130	0.5	20	
Sample ID: C03070678-002BMS	Matrix Spike								07/24/03 04:25
Antimony	0.540	mg/L	0.00100	108	70	130			
Sample ID: C03070678-002BMSD	Matrix Spike Duplicate								07/24/03 04:30
Antimony	0.524	mg/L	0.00100	105	70	130	3.0	20	
Sample ID: C03070719-002CMS	Matrix Spike								07/24/03 05:44
Antimony	0.0547	mg/L	0.00100	109	70	130			
Sample ID: C03070719-002CMSD	Matrix Spike Duplicate								07/24/03 05:49
Antimony	0.0575	mg/L	0.00100	115	70	130	5.0	20	
Sample ID: C03070768-007AMS	Matrix Spike								07/24/03 07:03
Antimony	0.530	mg/L	0.00100	106	70	130			
Sample ID: C03070768-007AMSD	Matrix Spike Duplicate								07/24/03 07:24
Antimony	0.538	mg/L	0.00100	108	70	130	1.5	20	
Sample ID: C03070474-003AMS	Matrix Spike								07/24/03 08:28
Antimony	0.573	mg/L	0.00100	115	70	130			
Sample ID: C03070474-003AMSD	Matrix Spike Duplicate								07/24/03 08:33
Antimony	0.573	mg/L	0.00100	115	70	130	0	20	

Qualifiers: A - Analyte concentration greater than three times the spike amount
ND - Not Detected at the Reporting Limit

R - RPD outside of recommended recovery limits
S - Spike Recovery outside of recommended recovery limits

TRACKING NO. PAGE NO.

070719R0006



QA/QC Summary Report

Client: Hall Environmental

Project: Summer 2003 Groundwater Samples

Report Date: 07/30/03

Work Order: C03070719

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E335.4							Batch: B_A2003-07-21_4_CN_01		
Sample ID: B03071153-001AMS	Matrix Spike								07/21/03 16:03
Cyanide, Total Manual Distillation	0.104	mg/L	0.00500	104	80	120			
Sample ID: B03071153-001AMSD	Matrix Spike Duplicate								07/21/03 16:05
Cyanide, Total Manual Distillation	0.104	mg/L	0.00500	104	80	120			

Qualifiers: A - Analyte concentration greater than three times the spike amount
ND - Not Detected at the Reporting Limit

R - RPD outside of recommended recovery limits
S - Spike Recovery outside of recommended recovery limits

TRACKING NO. PAGE NO.

070719R0007

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Method Blank

Sample ID	MB-3965	Batch ID	3965	Test Code	SW8015	Units	mg/L	Analysis Date	7/21/2003 6:29:02 PM	Prep Date	7/19/2003		
Client ID:		Run ID:	FID(17A)_030721A					SeqNo:	202072				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		ND		0.50									
Motor Oil Range Organics (MRO)		ND		5.0									
Surr: DNOP		1.282		0	1	0	128	58	140	0			

Sample ID	Reagent Blank 5m	Batch ID	R8915	Test Code	SW8015	Units	mg/L	Analysis Date	7/18/2003 10:04:57 AM	Prep Date			
Client ID:		Run ID:	PIDFID_030718A					SeqNo:	201329				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		ND		0.050									
Surr: BFB		19.25		0	20	0	96.2	74.5	115	0			

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limitsS - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R8916	Test Code: SW8260B	Units: µg/L	Analysis Date	7/18/2003	Prep Date				
Client ID:		Run ID:	THOR_030718A		SeqNo:	201400					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	2.0									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0307126
 Project: RCRA Wells Summer 2003 GW

1,2-Dibromo-3-chloropropane	ND	2.0
Dibromochloromethane	ND	1.0
Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
2-Hexanone	ND	10
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 3

Method Blank

Method Blank

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

Compound	Concentration (ppm)	Retention Time (min)	Peak Area	Peak Height	Peak Width (min)	Peak Shape	Peak Type	Peak Label
Trichloroethene (TCE)	ND	1.0						
Trichlorofluoromethane	ND	1.0						
1,2,3-Trichloropropane	ND	2.0						
Vinyl chloride	ND	2.0						
Xylenes, Total	ND	1.0						
Surr: 1,2-Dichloroethane-d4	10.21	0	10	102	74.6			123
Surr: 4-Bromofluorobenzene	10.09	0	10	101	79.5			118
Surr: Dibromofluoromethane	9.922	0	10	99.2	78.6			117
Surr: Toluene-d8	11.2	0	10	112	80			119

Qualifiers:
 ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limit

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Method Blank

Sample ID	MB-3980	Batch ID: 3980	Test Code: SW8270A	Units: µg/L	Analysis Date	7/25/2003	Prep Date	7/22/2003			
Client ID:			Run ID:	ELMO_030725A	SeqNo:	202981					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Methylphenol	ND	10									
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Aniline	ND	10									
Anthracene	ND	10									
Azobenzene	ND	10									
Benz(a)anthracene	ND	10									
Benzidine	ND	20									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	ND	50									
Benzyl alcohol	ND	20									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									
4-Bromophenyl phenyl ether	ND	10									
Butyl benzyl phthalate	ND	10									
Carbazole	ND	10									
4-Chloro-3-methylphenol	ND	20									
4-Chloroaniline	ND	20									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
4-Chlorophenyl phenyl ether	ND	10									
Chrysene	ND	10									
Di-n-butyl phthalate	ND	10									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
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CLIENT: Giant Refining Co
Work Order: 0307126
Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT
 Method Blank

Di-n-octyl phthalate	ND	10
Dibenz(a,h)anthracene	ND	10
Dibenzofuran	ND	10
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	10
Diethyl phthalate	ND	10
Dimethyl phthalate	ND	10
2,4-Dichlorophenol	ND	10
2,4-Dimethylphenol	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
2-Methylphenol	ND	10
N-Nitrosodi-n-propylamine	ND	10
N-Nitrosodiphenylamine	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	20
Nitrobenzene	ND	10
2-Nitrophenol	ND	10

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 6

Method Blank

Project: RCRA Wells Summer 2003 GW

Mercury	ND	0.00020
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J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0307126
Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Method Blank

Sample ID	MB	Batch ID: R9138	Test Code: SW6010A	Units: mg/L	Analysis Date	8/6/2003 1:14:51 PM	Prep Date				
Client ID:			Run ID: ICP_030806D		SeqNo:	206147					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.006948	0.020									J
Barium	ND	0.0020									
Beryllium	ND	0.0030									
Cadmium	ND	0.0020									
Chromium	ND	0.0060									
Cobalt	ND	0.0060									
Lead	0.00138	0.0050									J
Nickel	0.0001756	0.010									J
Selenium	ND	0.020									
Vanadium	ND	0.050									
Zinc	ND	0.0050									

Sample ID	MB	Batch ID: R9143	Test Code: SW6010A	Units: mg/L	Analysis Date	8/7/2003 8:27:37 AM	Prep Date				
Client ID:			Run ID: ICP_030807B		SeqNo:	206258					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.0050									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0307126
Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Method Blank

Sample ID	MB-4018	Batch ID:	4018	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/31/2003 9:02:04 AM	Prep Date	7/29/2003	
Client ID:		Run ID:	ICP_030731B					SeqNo:	204807			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.004059	0.020									J
Barium		0.00343	0.020									J
Beryllium		ND	0.0030									
Cadmium		ND	0.0020									
Chromium		0.002918	0.0060									J
Cobalt		ND	0.0060									
Lead		0.002172	0.0050									J
Nickel		ND	0.010									
Selenium		ND	0.020									
Silver		ND	0.0050									
Vanadium		ND	0.050									
Zinc		0.009923	0.010									J

Sample ID	Batch ID	Test Code	Units	Analysis Date	Prep Date						
MB-4018	4018	SW6010A	mg/L	7/31/2003 9:02:04 AM	7/29/2003						
Client ID:		Run ID:	ICP_030731C	SeqNo:	204930						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.004059	0.020									J
Barium	0.00343	0.020									J
Beryllium	ND	0.0030									
Cadmium	ND	0.0020									
Chromium	0.002918	0.0060									J
Cobalt	ND	0.0060									
Lead	0.002172	0.0050									J
Nickel	ND	0.010									
Zinc	0.009923	0.010									J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
Work Order: 0307126
Project: RCRA Wells Summer 2003 GW

Sample ID	MB-4018	Batch ID:	4018	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/31/2003 2:10:53 PM	Prep Date	7/29/2003
Client ID:		Run ID:	ICP_030731D					SeqNo:	205043		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Silver		0.0009831		0.0050							J

Sample ID	MB-4018	Batch ID:	4018	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/1/2003 7:59:58 AM	Prep Date	7/29/2003
Client ID:		Run ID:	ICP_030801A					SeqNo:	205069		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Selenium		ND		0.020							

Sample ID	MB-4018	Batch ID:	4018	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/1/2003 9:04:13 AM	Prep Date	7/29/2003
Client ID:		Run ID:	ICP_030801B					SeqNo:	205087		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Vanadium		ND		0.050							

Sample ID	MB-4018	Batch ID:	4018	Test Code:	SW6010A	Units:	mg/L	Analysis Date	7/31/2003 3:09:48 PM	Prep Date	7/29/2003
Client ID:		Run ID:	ICP_030731A					SeqNo:	204872		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Lead		ND		0.0050							

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R8916	Test Code: SW8260B	Units: µg/L	Analysis Date	7/18/2003	Prep Date				
Client ID:		Run ID: THOR_030718A			SeqNo:	201769					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	ND	10									
Benzene	ND	0.50									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Chlorobenzene	ND	0.50									
Chloroform	ND	0.50									
Chloromethane	ND	1.0									
1,2-Dibromoethane (EDB)	ND	0.50									
1,2-Dichloroethane (EDC)	ND	0.50									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	0.50									
1,4-Dioxane	ND	50									
Ethylbenzene	ND	0.50									
Methylene Chloride	ND	3.0									
Styrene	ND	0.50									
1,1,2,2-Tetrachloroethane	ND	0.50									
Tetrachloroethene (PCE)	ND	0.50									
Toluene	ND	0.50									
trans-1,2-DCE	ND	0.50									
1,1,1-Trichloroethane	ND	0.50									
Trichloroethene (TCE)	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 1,2-Dichloroethane-d4	9.704	0	10	0	97.0	74.6	123	0			
Surr: 4-Bromofluorobenzene	9.904	0	10	0	99.0	80	120	0			
Surr: Dibromofluoromethane	9.634	0	10	0	96.3	78.6	115	0			
Surr: Toluene-d8	10.51	0	10	0	105	84.2	115	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID 0307126-01aMS		Batch ID: R8915	Test Code: SW8015		Units: mg/L	Analysis Date 7/18/2003 2:35:42 PM		Prep Date			
Client ID: MW-1-71503			Run ID: PIDFID_030718A			SeqNo: 201335					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)											
	0.4464	0.050	0.5	0	89.3	80.3	116	0			
Sample ID 0307126-01aMSD		Batch ID: R8915	Test Code: SW8015		Units: mg/L	Analysis Date 7/18/2003 3:07:00 PM		Prep Date			
Client ID: MW-1-71503			Run ID: PIDFID_030718A			SeqNo: 201336					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)											
	0.4528	0.050	0.5	0	90.6	80.3	116	0.4464	1.42	8.39	
Sample ID 0307126-01C		Batch ID: 4033	Test Code: SW7470		Units: mg/L	Analysis Date 8/1/2003		Prep Date 7/31/2003			
Client ID: MW-1-71503			Run ID: MI-LA254_030801A			SeqNo: 205217					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury											
	0.00507	0.00020	0.005	0.000045	101	75.2	134	0			
Sample ID 0307126-01C		Batch ID: 4033	Test Code: SW7470		Units: mg/L	Analysis Date 8/1/2003		Prep Date 7/31/2003			
Client ID: MW-1-71503			Run ID: MI-LA254_030801A			SeqNo: 205218					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury											
	0.00495	0.00020	0.005	0.000045	98.1	75.2	134	0.00507	2.40	0	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID	0307126-01D MS	Batch ID: R9138	Test Code: SW6010A	Units: mg/L	Analysis Date	8/6/2003 1:56:06 PM	Prep Date				
Client ID:	MW-1-71503	Run ID:	ICP_030806D		SeqNo:	206155					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.012	0.020	1	0	101	75	125	0			
Barium	1.103	0.0020	1	0.1467	95.6	75	125	0			
Beryllium	1.006	0.0030	1	0	101	75	125	0			
Cadmium	0.9752	0.0020	1	0	97.5	75	125	0			
Chromium	0.9527	0.0060	1	0.0007774	95.2	75	125	0			
Cobalt	0.9787	0.0060	1	0	97.9	75	125	0			
Lead	0.9787	0.0050	1	0.004687	97.4	78.4	112	0			
Nickel	0.9757	0.010	1	0	97.6	75	125	0			
Selenium	1.156	0.020	1	0.0275	113	75	125	0			
Vanadium	0.9982	0.050	1	0	99.8	75	125	0			
Zinc	0.9978	0.0050	1	0	99.8	75	125	0			

Sample ID	0307126-01D MS	Batch ID: R9143	Test Code: SW6010A	Units: mg/L	Analysis Date	8/7/2003 8:39:05 AM	Prep Date				
Client ID:	MW-1-71503	Run ID:	ICP_030807B		SeqNo:	206266					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.8453	0.0050	1	0	84.5	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
2

Hall Environmental Analysis Laboratory

Date: 11-Aug-03

CLIENT: Giant Refining Co

Work Order: 0307126

Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCs-3965	Batch ID: 3965	Test Code: SW8015	Units: mg/L	Analysis Date 7/21/2003 7:00:22 PM	Prep Date 7/19/2003					
Client ID:		Run ID: FID(17A)_030721A			SeqNo: 202073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.25	0.50	5	0	125	62.6	127	0			

Sample ID	LCSD-3965	Batch ID: 3965	Test Code: SW8015	Units: mg/L	Analysis Date 7/21/2003 7:31:45 PM	Prep Date 7/19/2003					
Client ID:		Run ID: FID(17A)_030721A			SeqNo: 202074						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.167	0.50	5	0	123	71	161	6.25	1.34	23	

Sample ID	100ng lcs	Batch ID: R8916	Test Code: SW8260B	Units: µg/L	Analysis Date 7/18/2003	Prep Date					
Client ID:		Run ID: THOR_030718A			SeqNo: 201401						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	19.29	1.0	20	0	96.5	71.2	122	0			
Toluene	20.3	1.0	20	0	102	87.7	122	0			
Chlorobenzene	23.69	1.0	20	0	118	85.6	136	0			
1,1-Dichloroethene	20.61	1.0	20	0	103	70.7	117	0			
Trichloroethene (TCE)	18.74	1.0	20	0	93.7	76.9	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Giant Refining Co
Work Order: 0307126
Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID	LCS-3980	Batch ID: 3980	Test Code: SW8270A	Units: µg/L	Analysis Date 7/25/2003	Prep Date 7/22/2003					
Client ID:			Run ID: ELMO_030725A		SeqNo: 203356						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	77.02	10	100	0	77.0	43.1	89.9	0			
4-Chloro-3-methylphenol	146.3	20	200	0	73.2	44.1	93.2	0			
2-Chlorophenol	127.5	10	200	0	63.8	20.7	98	0			
1,4-Dichlorobenzene	54.08	10	100	0	54.1	24.1	90.7	0			
2,4-Dinitrotoluene	81.62	10	100	0	81.6	43.2	101	0			
N-Nitrosodi-n-propylamine	75.18	10	100	0	75.2	44.6	99.9	0			
4-Nitrophenol	86.82	50	200	0	43.4	11.8	60.1	0			
Pentachlorophenol	127.8	50	200	0	63.9	8.65	105	0			
Phenol	77.32	10	200	0	38.7	21.1	55.3	0			
Pyrene	93.72	10	100	0	93.7	35.7	111	0			
1,2,4-Trichlorobenzene	54.7	10	100	0	54.7	30.2	89.6	0			

Sample ID	LCSD3980	Batch ID: 3980	Test Code: SW8270A	Units: µg/L	Analysis Date 7/25/2003	Prep Date 7/22/2003					
Client ID:			Run ID:	ELMO_030725A	SeqNo:	203357					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	72.22	10	100	0	72.2	43.1	89.9	0			
4-Chloro-3-methylphenol	134	20	200	0	67.0	44.1	93.2	0			
2-Chlorophenol	135.4	10	200	0	67.7	20.7	98	0			
1,4-Dichlorobenzene	61.52	10	100	0	61.5	24.1	90.7	0			
2,4-Dinitrotoluene	73.9	10	100	0	73.9	43.2	101	0			
N-Nitrosodi-n-propylamine	71.04	10	100	0	71.0	44.6	99.9	0			
4-Nitrophenol	81.88	50	200	0	40.9	11.8	60.1	0			
Pentachlorophenol	122	50	200	0	61.0	8.65	105	0			
Phenol	83.12	10	200	0	41.6	21.1	55.3	0			
Pyrene	83.66	10	100	0	83.7	35.7	111	0			
1,2,4-Trichlorobenzene	56.02	10	100	0	56.0	30.2	89.6	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0307126
Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID	LCS-4033	Batch ID:	4033	Test Code:	SW7470	Units:	mg/L	Analysis Date	8/1/2003	Prep Date	7/31/2003
Client ID:		Run ID:	MI-LA254_030801A	SeqNo:	205212						
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.00486		0.00020	0.005	0	97.2	75.2	134	0	

Sample ID	LCSD-4033	Batch ID:	4033	Test Code:	SW7470	Units:	mg/L	Analysis Date	8/1/2003	Prep Date	7/31/2003
Client ID:		Run ID:	MI-LA254_030801A	SeqNo:	205213						
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.00588		0.00020	0.005	0	118	75.2	134	0.00486	19.0 0

Sample ID	LCS	Batch ID:	R9138	Test Code:	SW6010A	Units:	mg/L	Analysis Date	8/6/2003 1:20:10 PM	Prep Date	
Client ID:		Run ID:	ICP_030806D	SeqNo:	206148						
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		1.004		0.020	1	0.006948	99.7	80	120	0	
Barium		0.9794		0.0020	1	0	97.9	80	120	0	
Beryllium		1		0.0030	1	0	100	80	120	0	
Cadmium		1.014		0.0020	1	0	101	80	120	0	
Chromium		0.9611		0.0060	1	0	96.1	80	120	0	
Cobalt		1.008		0.0060	1	0	101	80	120	0	
Lead		0.9941		0.0050	1	0.00138	99.3	80	120	0	
Nickel		1.008		0.010	1	0.0001756	101	80	120	0	
Selenium		0.9891		0.020	1	0	98.9	80	120	0	
Vanadium		1.01		0.050	1	0	101	80	120	0	
Zinc		1.019		0.0050	1	0	102	80	120	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0307126
Project: RCRA Wells Summer 2003 GW

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	LCSD	Batch ID: R9138	Test Code: SW6010A	Units: mg/L	Analysis Date 8/6/2003 1:24:42 PM	Prep Date					
Client ID:		Run ID: ICP_030806D			SeqNo: 206149						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.045	0.020	1	0.006948	104	80	120	0			
Barium	1.037	0.0020	1	0	104	80	120	0			
Beryllium	1.045	0.0030	1	0	105	80	120	0			
Cadmium	1.009	0.0020	1	0	101	80	120	0			
Chromium	1.022	0.0060	1	0	102	80	120	0			
Cobalt	1.009	0.0060	1	0	101	80	120	0			
Lead	1.006	0.0050	1	0.00138	100	80	120	0			
Nickel	1.019	0.010	1	0.0001756	102	80	120	0			
Selenium	1.011	0.020	1	0	101	80	120	0			
Vanadium	1.024	0.050	1	0	102	80	120	0			
Zinc	1.006	0.0050	1	0	101	80	120	0			

Sample ID	LCS	Batch ID: R9143	Test Code: SW6010A	Units: mg/L	Analysis Date 8/7/2003 8:32:34 AM	Prep Date					
Client ID:		Run ID: ICP_030807B			SeqNo: 206261						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.5033	0.0050	0.5	0	101	80	120	0			

Sample ID	LCSD	Batch ID: R9143	Test Code: SW6010A	Units: mg/L	Analysis Date 8/7/2003 8:33:54 AM	Prep Date					
Client ID:		Run ID: ICP_030807B			SeqNo: 206262						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	0.4942	0.0050	0.5	0	98.8	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **GIANTREFIN**

Date and Time Receive

7/17/03

Work Order Number **0307126**

Received by **AMG**

Checklist completed by

Signature

Date

Matrix:

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☒	No ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
Container/Temp Blank temperature?	6°	4° C ± 2 Acceptable	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

Client: Giant Refining
Company - Liniger
 Address: Route 3 Box 7
 Gallup NM 87301

Project Name: Summer 2003
Groundwater samples
 Project #: _____
 Project Manager: Dorinda Mancini
 Sampler: Steve Gifford
 Samples Collected: ☐ Yes ☒ No 6.0

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative	HEAL No.
7/15/03	1000	H ₂ O	MW-1-71503	10	HgCl ₂	0307126
"	1040	"	MW-2-71503	10	HCl	1
"	1130	"	MW-5-71503	10		2
7/16/03	0800	"	MW-4-71603	10		3
			TB			4
						5

Date: 7/15/03 Time: 1430
 Relinquished By: (Signature) Steve Gifford
 Date: 7/16/03 Time: 1027
 Relinquished By: (Signature) _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
 4901 Hawkins NE, Suite D
 Albuquerque, New Mexico 87109
 Tel. 505.345-3975 Fax 505.345.4107
 www.hallenvironmental.com

ANALYSIS REQUEST

BTEX + MTBE + TMBs (8021)	
BTEX + MTBE + TPH (Gasoline Only)	
TPH Method 8015B MOD (Gas/Diesel)	
TPH (Method 418.1)	
Volatiles Full List (8021)	
EDB (Method 504.1)	
EDC (Method 8021)	
8310 (PNA or PAH)	
RCRA 8 Metals	
Cations (Na, K, Ca, Mg)	
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	
8081 Pesticides / PCB's (8082)	
8260 (VOA) - see list	X
8270 (Semi-VOA)	X
Cyanide & Mercaptans	X
Phenols & Alcohols	X
Air Bubbles or Headspace (Y or N)	

Remarks: See attached sheet for
all parameters / tests
samples filtered in lab. 7/17/03

Permit Condition 21. Annual Report

- C. Summary of all wastewater disposed of, sold, or treated on-site, including a refinery wastewater balance sheet including a mass balance of the evaporation pond rates.

All of the above items are included in this section.

Giant Ciniza

2003 Summary of All Waste Water and Waste Disposed/Sold In 2003 there was no treatment onsite

Waste Water	Discharged to Ponds (gallons)	Offsite Recycled (gallons)	Offsite Disposal/ Recycled (pounds)
Total to Ponds (V notch)	71,213,544		
Sold to WW Construction		6,105,600	
Pilot Travel Center to Ponds (V notch)	2,606,976		
Boiler Feedwater Treatment	31,000,000		
Boilers	9,000,000		
Cooling Towers	13,000,000		
Crude Unit	13,000,000		
NHT	250,000		
Alkylate Unit Scrubber	91,000		
Butane Treater Column	16,900		
Straight-Run Gas Treater Columns	2,850		
Light-Cat Gas Treater Columns	2,850		
Alkylate Treater Column	2,850		
KOH Treater Columns	45,625		
Jet Fuel Treater Columns	0		
Kerosene Treater	182,500		
Sulfur Recovery Unit (SRU)	1,000,200		
Storage Tanks	784,750		

Waste	Discharged to Ponds (gallons)	Offsite Recycle/d (gallons)	Offsite Disposal/ Recycled (pounds)
FCC Catalyst			656,000
Defluorinator Unit Catalyst			98,000
Reforming Unit Catalyst			0
NHT/ DHT Catalyst			33,291
Spent Zinc Oxide Catalyst			0
Sulfur Byproduct			1,660,600
VRU Used Seal Fluid			0
Heat Exchanger Bundle Cleaning Pad Oily Sludge			0
Process Sewer System Sludge			12,013
Maintenance Shops			0
Quality Control Laboratory			0
OCD Landfarm			0
Asbestos Containing Material (ACM)			0
Lead Acid Batteries			4550
Spent Sand Blasting Media			0
API Separator Sludge			9,896/ 379,920
Paint Waste			1623

Sources and Quantities of Effluent & Waste Solids Generated at the Facility

The following processing units, systems, equipment, and categories are potential sources of wastewater effluent or waste solids generated at the refinery.

Sources of wastewater effluent include the following. Most of these discharges are collected in the refinery process sewer system and flow to the API separator. An exception is the boiler feedwater treatment system, which has a dedicated drainage line to Evaporation Pond No. 2.

Boiler Feedwater Treatment System

Raw water is treated in this equipment in order to remove impurities before being supplied as feedwater to the refinery boilers. Wastewater containing dissolved solids is routinely discharged to Evaporation Pond No. 2 via in a dedicated drainage line from the water softening units and reverse osmosis (RO) units.

This discharge typically ranges from 70,000 to 100,000 gallons per day. In 2003, approximately 31 million gallons were discharged.

Boilers

Five boilers are in service at the refinery: two cogeneration boilers, two utility boilers, and one CO boiler. Wastewater containing dissolved solids is routinely discharged to the process sewer from these boilers.

This discharge typically ranges from 20,000 to 30,000 gallons per day. In 2003, approximately 9 million gallons were discharged.

Cooling Towers

Two cooling towers are in service at the refinery. Wastewater containing dissolved solids and biocide residue is routinely discharged to the process sewer from this equipment.

This discharge typically ranges from 20,000 to 50,000 gallons per day. In 2003, approximately 13 million gallons were discharged.

Crude Unit

Two desalters at the crude distillation unit are used to remove impurities and water from crude oil. Wastewater containing dissolved solids and trace hydrocarbons are routinely discharged to the process sewer from this equipment.

This discharge typically ranges from 30,000 to 40,000 gallons per day. In 2003, approximately 13 million gallons were discharged.

Naphtha Hydrotreater Unit (NHT)

One overhead accumulator drum at this processing unit is used to remove condensed water. Wastewater containing trace hydrocarbons is routinely discharged to the process sewer from this accumulator drum.

This discharge typically ranges from 600 to 800 gallons per day. In 2003, approximately .25 million gallons were discharged.

Alkylation Unit Scrubber

A scrubber tower at the alkylation unit is used to remove impurities and entrained water from a gas stream. Wastewater containing dissolved solids and trace hydrocarbons are intermittently discharged to the process sewer from this equipment.

This discharge typically ranges from 1,500 to 2,000 gallons per week. In 2003, approximately 91,000 gallons were discharged.

Butane Treater Column

A caustic wash column at this treater unit is used to remove impurities from butane products. Occasionally, this caustic solution must be replaced and, at that time, the spent solution is discarded. Wastewater containing dissolved solids and trace hydrocarbons are intermittently discharged to the process sewer from this equipment.

This discharge typically ranges from 300 to 350 gallons per week. In 2003, approximately 16,900 gallons were discharged.

Straight-Run Gasoline Treater Columns

A caustic wash column and a water wash column at this treater unit are used to remove impurities from an intermediate gasoline feedstock. Occasionally, the caustic solution must be replaced and, at that time, the spent solution is discarded. Wastewater containing dissolved solids and trace hydrocarbons are intermittently discharged to the process sewer from the caustic wash column and routinely discharged from the water wash column.

This discharge typically ranges from 900 to 1,000 gallons per event when changing out the caustic wash solution, which occurs approximately 2 to 3 times per year. In 2003, approximately 2,850 gallons were discharged.

Light-Cat Gasoline Treater Column

A caustic wash column at this treater unit is used to remove impurities from a gasoline product. Occasionally, the caustic solution must be replaced and, at that time, the spent solution is discarded. Wastewater containing dissolved solids and trace hydrocarbons are intermittently discharged to the process sewer from this equipment.

This discharge typically ranges from 900 to 1,000 gallons per event when changing out the caustic wash solution, which occurs approximately 2 to 3 times per year. In 2003, approximately 2,850 gallons were discharged.

Alkylate Treater Column

A caustic wash column at this treater unit is used to remove impurities from an intermediate gasoline feedstock. Occasionally, the caustic solution must be replaced and, at that time, the spent solution is discarded. Wastewater containing dissolved solids and trace hydrocarbons are intermittently discharged to the process sewer from this equipment.

This discharge typically ranges from 900 to 1,000 gallons per event when changing out the caustic wash solution, which occurs approximately 2 to 3 times per year. In 2003, approximately 2,850 gallons were discharged.

KOH Treater Columns

Six scrubber towers at these treater units are used to remove impurities from propane and butane product streams. Wastewater containing dissolved solids and trace hydrocarbons are routinely discharged to the process sewer from this equipment.

This discharge typically ranges from 100 to 150 gallons per day. In 2003, approximately 45,265 gallons were discharged.

Jet Fuel Treater Columns

A scrubber column and water wash column are used to remove impurities from jet fuel product streams. Occasionally, the caustic solution must be replaced and, at that time, the spent solution is discarded. Wastewater containing dissolved solids and trace hydrocarbons are intermittently discharged to the process sewer from this equipment.

This discharge typically ranges from 5,000 to 10,000 gallons per event when changing out the caustic wash solution, which occurs approximately 1 time per year. In 2003, there was no discharge.

Diesel/Kerosene Treater Columns

Four salt wash columns are used to remove impurities and water from diesel and kerosene product streams. Wastewater containing dissolved solids and trace hydrocarbons are routinely discharged to the process sewer from this equipment.

This discharge typically is typically 400 to 600 GPD total for four columns. In 2003, approximately 182,500 gallons were discharged.

Sulfur Recovery Unit (SRU)

At the SRU, sulfur compounds are recovered from refinery feedstocks and then converted into a wet solid. Wastewater from a rinsing operation and a belt press dewatering operation is

1

routinely discharged to the process sewer. This wastewater contains dissolved solids and trace sulfur compounds.

This discharge typically ranges from 25,000 to 35,000 gallons per day. In 2003 approximately 11 million gallons were discharged

Storage Tanks

Numerous aboveground storage tanks are used within the refinery to store various products and intermediate feedstocks. Wastewater containing dissolved solids and trace hydrocarbons are occasionally drained from these tanks as bottom water or decanted water, and then discharged to the process sewer.

This discharge typically ranges from 1,800 to 2,500 gallons per day. Most of this discharge comes from the crude oil storage tanks. In 2003, approximately 784,750 gallons were discharged.

Sources of solid waste include the following. Most of these waste materials are generated intermittently and then removed, collected, containerized, and stored until shipped off-site for recycling or disposal. In 2003, 9404 pounds were shipped off for disposals.

Fluid Catalytic Cracking Unit (FCCU) Catalyst

A metallic (alumina) catalyst is used within the FCCU to convert hydrocarbon molecules. This catalyst is periodically replaced and the spent catalyst is stored in drums or supersacks until disposed at an off-site landfill. This material is a dry metallic solid and is non hazardous.

Approximately 350 to 450 tons of spent FCCU catalyst is generated each year. In 2003, approximately 328 tons were disposed of.

Defluorinator Unit Catalyst

A metallic (alumina) catalyst is used within the Defluorinator Unit to remove trace fluorine from propane and butane products. This catalyst is periodically replaced and the spent catalyst is stored in supersacks until disposed at an off-site landfill. This material is a dry metallic solid and is non hazardous.

Approximately 30 to 50 tons of spent Defluorinator catalyst is generated each year. In 2003 approximately 49 tons were disposed of.

Reforming Unit Catalyst

A metallic (platinum) catalyst is used in the reforming unit to convert hydrocarbon molecules. This catalyst is periodically replaced and the spent catalyst is recycled by an off-site metal recovery service. This material is a dry metallic solid and is shipped as a D018 hazardous waste due to the presence of trace benzene.

Approximately 10 to 15 tons of reformer catalyst is generated every one to two years. In 2003 there was no catalyst generated.

Naphtha/Diesel Hydrotreating Units (NHT/DHT) Catalyst

Metallic catalysts are used in these treating units to convert hydrocarbon molecules. These catalysts are periodically replaced and the spent catalysts are recycled by an off-site metal recovery service. This material is a dry metallic solid and is shipped as a K171 hazardous waste.

Approximately 7 tons of naphtha hydrotreater catalyst and 10 tons of diesel hydrotreater catalyst are generated each year. In 2003 33,291 pounds were disposed of.

Spent Zinc Oxide Catalyst

A metallic (zinc) catalyst is used in the isomerization unit to convert hydrocarbon molecules. This catalyst is periodically replaced and the spent catalyst is recycled by an off-site metal recovery service. This material is a dry metallic solid and is non hazardous.

Approximately 2 to 3 tons of zinc oxide catalyst is generated every two years. In 2003 there was no catalyst disposal.

Sulfur Byproduct

An elemental sulfur byproduct is routinely generated at the SRU. This solid residue is stored in supersacks until shipped off-site for disposal at a landfill.

Approximately 400 to 800 tons of sulfur byproduct is generated each year. In 2003 there were 830.3 tons disposed of.

Vapor Recovery Unit (VRU) Used Seal Fluid

An air pollution control system is used to capture vapor emissions during tank truck loading. This system uses ethylene glycol as a seal fluid in a vacuum pump. Periodically, this fluid must be replaced.

Approximately 330 gallons of used ethylene glycol is generated per change-out. Because this is a new system, the frequency of change-out is not known. NO ethylene glycol was disposed of in 2003.

Heat Exchanger Bundle Cleaning Pad Oily Sludge

Heat exchanger bundles are occasionally cleaned in order to restore heat transfer performance. This cleaning activity is conducted within a concrete enclosure that incorporates a wastewater accumulation sump. Oily sediment and sludge may accumulate in the bottom of this sump. Wastewater overflows from this sump and is discharged into the process sewer.

The heat exchanger bundle cleaning sludge is a listed hazardous waste (K051) and is collected and contained in 55 gallon drums until disposed at an off-site hazardous waste disposal facility.

The quantity of this waste typically ranges from 0 to 3 tons per year. No sludge was disposed of in 2003.

Process Sewer System Sludge

Sediment, sludge, and other debris can occasionally accumulate within the piping, junction boxes, and interceptor manholes that comprise the process sewer system. These materials are periodically removed via a vacuum truck and upon removal are classified as a hazardous waste (F037). This material remains in the vacuum truck until transported off-site for disposal.

The quantity of this waste disposed of in 2003 was 12,013 pounds.

Maintenance Shops

Most process equipment and mobile equipment is repaired and maintained at the refinery maintenance shops. Waste oils and antifreeze are collected in 55 gallon drums and recycled.

Approximately 2 drums of antifreeze and 4 drums of used motor oil are generated each year.

Quality Control Laboratory

Residual petroleum products are recycled in the refinery. Residual or expired reagents and other discarded chemicals are stored in lab packs until disposed off-site.

No disposal occurred in 2003.

OCD Landfarm

Oily non hazardous solid waste is treated at the OCD-permitted landfarm located on-site.

The quantity of oily solid waste typically ranges from zero to 10 tons per year.

No solid waste treated in 2003.

RCRA 90 Day Storage Pad

All hazardous wastes are stored at the RCRA 90 Day Storage Pad until shipped off-site for recycling, treatment, or disposal. All hazardous wastes are placed in containers and stored on this dedicated concrete pad.

Aerosol Spray Cans

Most aerosol spray cans at the refinery contain paint. All aerosol spray cans that have been used up or that have been discarded for other reasons are collected and carried to the satellite waste accumulation area. All cans are then checked for contents. Non-empty cans are punctured and drained into a dedicated 55 gallon drum.

Typically 300 to 400 aerosol spray cans are discarded each year.

Asbestos Containing Material (ACM)

Historically, asbestos containing materials have been used within the refinery for pipe and tank insulation. Occasionally, these materials must be removed and disposed as part of normal maintenance activities. All friable asbestos containing materials are abated in compliance with EPA and NMED regulations. These materials are double-bagged and stored in a segregated and secure area of the RCRA 90 Day Storage Pad.

The quantity of ACM disposed each year is highly variable, and ranges from zero to as much as 50 cubic yards.

Lead/Acid Batteries

Discarded lead acid batteries are placed in a segregated area of the RCRA 90 Day Storage Pad until shipped off-site for recycling.

The number of batteries recycled each year is highly variable and ranges from zero to as much as 50 units.

Spent Sand Blasting Media

Sand blasting is occasionally conducted at the refinery as part of normal maintenance activities. After repeated reuse, the sand grit becomes degraded and loses its abrasive action. When this occurs, the spent sand blasting media must be replaced. This material is then stored in drums or supersacks until disposed at an off-site landfill. This material is non hazardous.

The quantity of spent sand blasting media typically ranges from zero to 2 tons per year.

API Separator Sludge

Oily sediment and sludge accumulates at the bottom of the API separator. The API separator is taken out of service annually and the bottom sludge is removed via vacuum trucks. This sludge typically remains in the truck until it is shipped off-site for recycling.

API separator sludge is recycled as a feedstock to a petroleum coker at the Norco Refinery:

Motiva Enterprises, LLC – Norco Refinery
15536 River Road
Norco, LA 70079

EPA ID: LAD008186579

Paint Waste

Paint waste is generated at the aerosol spray can puncturing unit and also from left over paints and solvents from maintenance activities that can no longer be used.

The quantity for 2003 disposed off site was 1623 pounds.

Ciniza refinery

2003 Waste Water Balance/Evaporation Pond Rates

	GALLONS
Discharged to Ponds (measured at V notch)	71,213,544
Rainfall to Ponds	26,723,446
Total to Ponds	97,936,990
Pond Evaporation (150 gpm)	78,840,000
Snow Machines Evaporation (80 gpm)	14,054,400
Water Sold to WW Construction	6,105,600
Total	-1,063,010

2003 WASTE WATER SUMMARY

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
12/30/03	38	2	7.16	34	4.5	94.2	0
12/29/03	38	2	7.16	34	4.5	94.2	0
12/17/03	36	1	1.27	32	4.5	94.2	0
12/16/03	36	1	1.27	32	4.5	94.2	0
12/15/03	36	2	7.16	34	4.5	94.2	0.02
12/11/03	34	1	1.27	32	4.5	94.2	0
12/10/03	34	2	7.16	32	4.5	94.2	0.05
12/8/03	36	2	7.16	34	4.5	94.2	0
12/4/03	38	0	0	34	4.5	94.2	0
12/3/03	38	2	7.16	34	4.5	94.2	0
12/2/03	38	1	1.27	36	4.5	94.2	0.1
11/20/03	40	1	1.27	36	4.5	94.2	0
11/19/03	40	2	7.16	36	4.5	94.2	0
11/18/03	40	0	0	36	4.5	94.2	0
11/17/03	42	1	1.27	38	4.5	94.2	0
11/13/03	44	2	7.16	40	4.5	94.2	0
11/12/03	44	2	7.16	40	4.5	94.2	0
11/11/03	42	1	1.27	38	4.5	94.2	0
11/6/03	40	1	1.27	36	4.5	94.2	0
11/5/03	40	1	1.27	36	4.5	94.2	0
11/4/03	40	0	0	36	4.5	94.2	0
11/3/03	42	2	7.16	38	4.5	94.2	0.1
10/30/03	40	2	7.16	36	4.5	94.2	0
10/29/03	40	1	1.27	36	4.5	94.2	0
10/28/03	40	1	1.27	36	4.5	94.2	0
10/27/03	40	2	7.16	36	4.5	94.2	0
10/23/03	44	0	0	40	4.5	94.2	0
10/22/03	44	1	1.27	40	4.5	94.2	0
10/21/03	44	2	7.16	40	4.5	94.2	0
10/20/03	44	1	1.27	40	4.5	94.2	0
10/16/03	42	1	1.27	40	4.5	94.2	0
10/15/03	42	2	7.16	40	4.5	94.2	0
10/14/03	42	2	7.16	40	4.5	94.2	0
10/13/03	44	1	1.27	40	5	123	0
10/8/03	44	2	7.16	42	4.5	94.2	0.4
10/7/03	46	0	0	42	4.5	94.2	0
10/6/03	46	1	1.27	42	4.5	94.2	0.5
10/2/03	48	1	1.27	44	4.5	94.2	0
10/1/03	48	2	7.16	44	4.5	94.2	0
9/30/03	48	1	1.27	44	4.5	94.2	0
9/29/03	48	0	0	44	4.5	94.2	0
9/25/03	48	1	1.27	44	4.5	94.2	0
9/24/03	46	2	7.16	44	4.5	94.2	0
9/23/03	46	2	7.16	44	4.5	94.2	0

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
9/22/03	46	1	1.27	44	4.5	94.2	0
9/17/03	48	0	0	44	4.5	94.2	0
9/16/03	48	1	1.27	44	4.5	94.2	0
9/15/03	48	2	7.16	46	4.5	94.2	0
9/11/03	50	2	7.16	46	5	123	0.2
9/10/03	50	1	1.27	46	5	123	0.3
9/9/03	50	2	7.16	46	5	123	0.3
9/8/03	52	1	1.27	48	5	123	0.1
9/4/03	56	1	1.27	50	4.5	94.2	0
9/3/03	56	1	1.27	50	4.5	94.2	0
9/2/03	54	0	0	50	5	123	0
8/28/03	54	1	1.27	50	7	284	0.7
8/27/03	54	2	7.16	50	4.5	94.2	0
8/25/03	54	1	1.27	50	5	123	0
8/21/03	54	2	7.16	50	5	123	0
8/20/03	54	1	1.27	50	5	123	0.1
8/19/03	56	1	1.27	54	5	123	0
8/18/03	56	2	7.16	54	5.5	156	1.5
8/14/03	54	0	0	54	5	123	0.2
8/13/03	54	1	1.27	54	5	123	0
8/12/03	58	2	7.16	56	5	123	0.2
8/11/03	58	0	0	56	5	123	0
8/8/03	56	1	1.27	54	5	123	0.2
8/7/03	58	0	0	56	4.5	94.2	0.1
8/6/03	58	0	0	56	4.5	94.2	0
8/5/03	60	1	1.27	58	4.5	94.2	0.2
7/31/03	62	2	7.16	58	4.5	94.2	0
7/30/03	60	2	7.16	58	4.5	94.2	0
7/29/03	60	1	1.27	58	5	123	0.1
7/28/03	60	2	7.16	58	5	123	0.5
7/24/03	62	0	0	58	4.5	94.2	0
7/23/03	62	1	1.27	60	4.5	94.2	0
7/22/03	62	2	7.16	60	4.5	94.2	0
7/21/03	62	2	7.16	60	4.5	94.2	0
7/16/03	60	1	1.27	58	4.5	94.2	0
7/15/03	64	0	0	60	4.5	94.2	0
7/14/03	64	2	7.16	60	5	123	0
7/9/03	62	2	7.16	58	4.5	94.2	0
7/8/03	60	1	1.27	58	4.5	94.2	0
7/7/03	62	1	1.27	58	4.5	94.2	0
7/6/03	62	2	7.16	58	4.5	94.2	0
7/2/03	60	0	0	56	4.5	94.2	0
7/1/03	60	2	7.16	56	4.5	94.2	0
6/30/03	58	1	1.27	56	5	123	0
6/26/03	62	0	0	58	4.5	94.2	0
6/25/03	60	1	1.27	58	5	123	0

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
6/24/03	60	1	1.27	58	4.5	94.2	0
6/23/03	60	2	7.16	58	5	123	0
6/20/03	58	1	1.27	54	6	193	0.2
6/19/03	58	0	0	56	6	193	1.1
6/17/03	62	2	7.16	60	5	123	0
6/12/03	62	1	1.27	60	5	123	0
6/11/03	60	2	7.16	58	5	123	0
6/10/03	62	3	19.7	58	5	123	0
6/9/03	62	1	1.27	58	5	123	0
6/6/03	60	2	7.16	56	5	123	0
6/5/03	60	2	7.16	56	5	123	0
6/4/03	60	2	7.16	56	5	123	0
6/3/03	60	0	0	58	5	123	0
6/2/03	62	2	7.16	60	5	123	0
5/29/03	62	3	19.7	60	5	123	0
5/28/03	62	1	1.27	60	5	123	0
5/27/03	62	2	7.16	60	5	123	0
5/22/03	54	0	0	50	6	193	0
5/20/03	52	2	7.16	50	6	193	0
5/19/03	52	2	7.16	48	6	193	0
5/8/03	50	2	7.19	44	5.5	156	0
5/7/03	50	0	0	44	5.5	156	0
5/6/03	50	2	7.16	44	5.5	156	0
5/5/03	50	2	7.16	44	5.5	156	0.01
4/30/03	50	1	1.27	48	5.5	156	0
4/29/03	54	0	0	52	5.5	156	0
4/28/03	54	2	7.16	52	5.5	156	0
4/23/03	44	1	1.27	40	5.5	156	0
4/22/03	50	2	7.16	46	5.5	156	0
4/21/03	50	2	7.16	46	5.5"	156	0
4/16/03	50	2	7.16	46	5.5	156	0
4/15/03	50	1	1.27	46	5.5	156	0
4/11/03	48	0	0	42	5.5	156	0
4/10/03	48	2	7.16	42	5.5	156	0
4/9/03	48	1	1.27	42	5.5	156	0
4/8/03	46	2	7.16	40	5.5	156	0
4/7/03	46	2	7.16	40	5	123	0
4/3/03	44	2	7.16	40	6	193	0
4/2/03	46	1	1.27	40	6	193	0
4/1/03	50	3	19.7	46	6	193	0
3/31/03	48	2	7.16	46	6	193	0
3/27/03	48	2	7.16	46	6	193	0
3/26/03	50	1	1.27	46	6	193	0
3/25/03	50	2	7.16	46	6	193	0
3/24/03	52	2	7.16	46	6.5	236	0.1
3/19/03	40	1	1.27	36	6	193	0

	TRAVEL CENTER TO PONDS			TOTAL FLOW TO PONDS			RAIN GAUGE INCHES
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM	
3/17/03	44	2	7.16	40	6	193	0.1
3/13/03	50	3	19.7	46	6	193	0
3/12/03	50	2	7.16	46	6	193	0
3/11/03	50	2	7.16	44	6	193	0
3/10/03	50	1	1.27	44	6.5	236	0
3/6/03	34	3	19.7	30	6	193	0
3/5/03	40	2	7.16	36	6	193	0
3/4/03	38	1	1.27	34	6	193	0
3/3/03	36	2	7.16	32	6	193	0.02
2/27/03	40	2	7.16	36	6	193	0.02
2/26/03	40	4	40.5	36	6	193	0
2/24/03	40	2	7.16	36	6	193	ND
2/20/03	36	2	7.16	34	6	193	0
2/19/03	36	1	1.27	32	6	193	0.2
2/18/03	36	2	7.16	32	6	193	0.5
2/13/03	38	2	7.16	32	6	193	0
2/12/03	36	3	19.7	30	6	193	0
2/11/03	34	1	1.27	30	6	193	0
2/10/03	30	2	7.16	26	6	193	0
2/3/03	38	1	1.27	36	6	193	0
1/30/03	40	2	7.16	36	6	193	0
1/29/03	38	1	1.27	36	6	193	0
1/27/03	40	2	7.16	36	6	193	0
1/23/03	44	2	7.16	40	6	193	0
1/22/03	42	0	0	40	6	193	0
1/20/03	44	2	7.16	40	6	193	0
1/16/03	38	2	7.16	36	6	193	0
1/15/03	38	2	7.16	36	6	193	0
1/14/03	40	3	19.7	36	6	193	0
1/13/03	40	2	7.16	36	6	193	0
1/9/03	42	3	19.7	38	6	193	0
1/7/03	38	2	7.16	36	6	193	0
1/6/03	40	1	1.27	38	6	193	0
	AVG	AVG	AVG	AVG	AVG	AVG	TOTAL
	48.67456	1.44	4.96	45.18	5.35	135.49	8.12

2003 Total flow to ponds:

135.49 gpm x 60 min/hr x 8760 hr/yr = 71,213,544 gal/yr.

Permit Condition 21. Annual Report

- D** Summary of the sump and underground wastewater lines tested.

Copies of sewer test forms for 2003 are attached. Testing was conducted in the treater unit on April 12 at man holes Q-1, Q-2, and Q-3 and all passed. Testing was conducted in the Plat unit on January 23, at manholes P-8, P-5, P-6, and P-7. The sewer cup by P-V3 did not hold level. The sewer cup and branch line were unplugged, retested, and passed on February 6.



Ciniza Refinery Sewer Test Form

REFINING COMPANY Test Data for Main Line Upstream of Listed Manhole

Unit: _____ Plat _____
Test Fluid: Water
Test Water Column (ft.): 3 + (in manholes, 1-3 from sewer pipe inverts connecting manholes) _____
Test Duration (min.): 25
Manhole Number: P-8, P-5, P-6, & P-7
Date: 1/23/03

Were all process sewer cup branches from the above manholes filled with water to verify that branch lines held level?



No

Did all branch lines hold level?

Yes



List any branch lines and location of branch lines that did not hold level (if any):

Sewer cup by P-V3. A work order has been written to repair this item. _____

Test Witness Signature:

B. Loo

Work Order

2/3/2003

WO49101 - Repair Sewer cup at P-V3 and/or branch line.

Equipment: -	Status: APPR
Location: 13_SEWER	Report Date: 2/3/2003
Job Plan: -	Start Date:
Parts reserved in warehouse:	Finish Date:
Comments:	Parent:
	Sequence: 0.00
	Reported By: BLOOS
	Lead Craft:
	Priority: 0.00

Failure Report:

<u>JPOPERATION</u>	<u>DESCRIPTION</u>	<u>DURATION</u>

DATE: _____ START: _____ FINISH: _____
DATE: _____ START: _____ FINISH: _____
DATE: _____ START: _____ FINISH: _____
DATE: _____ START: _____ FINISH: _____ OPERATOR: _____
DATE COMPLETED: _____ COMPLETED BY: _____ SUPERVISOR: _____

Work Order	WO49101	Repair Sewer cup at P-V3 and/or branch line.																																				
Location	13_SEWER	SEWER SYSTEMS																																				
Equipment																																						
Failure Report																																						
Remark	Tested & unplugged sewer cup and branch line @ P-V3																																					
Failure Class	PIPING	PIPING																																				
Remark Date	2003-02-06-14.4																																					
Failure Report Date	2003-02-04-6.44																																					
<table border="1"><thead><tr><th>Type</th><th>Code</th><th>Description</th></tr></thead><tbody><tr><td></td><td>UNPLUG</td><td>UNPLUG PIPING</td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></tbody></table>			Type	Code	Description		UNPLUG	UNPLUG PIPING																														
Type	Code	Description																																				
	UNPLUG	UNPLUG PIPING																																				
List Failure Codes																																						

AREA LIMITS N. 26+00

EQUIPMENT LIST

VEHICLES

- P-V1 OXYGEN STRIPPER
- P-V2 UNFINING STRIPPER RECEIVER
- P-V3 PLATFORMING REACTOR #1
- P-V4 PLATFORMING REACTOR #2
- P-V5 PLATFORMING REACTOR #3
- P-V6 PLATFORMING REACTOR PRODUCTS SEPARATOR
- P-V7 STABILIZER
- P-V8 STABILIZER RECEIVER
- P-V9 CHEMICAL CONDENSATE GAUGING TANK
- P-V10 UNFINING REACTOR
- P-V11 UNFINING REACTOR PRODUCTS SEPARATOR
- P-V12 FLASH DRUM
- P-V13 UNFINING WATER INJECTION Suction Tank
- P-V14 STARTING AIR RECEIVER (IN COMPRESSOR HOUSE)
- P-V15 COMPRESSOR COOLING WATER MAKE-UP TANK
- P-V16 PLATFORMING UNIT SURGE DRUM
- Z-01-V1 FUEL GAS BALANCE SURGE
- P-V21 STEAM/WATER SEPARATOR
- P-V22 SLOW DOWN DRUM

HEATERS

- P-PH1 PLATFORMING CHARGE HEATER
- P-PH2 UNFINING HEATER

HEAT EXCHANGERS

- R-E1 UNFINING STRIPPER FEED EXCHANGER
- R-E2 UNFINING STRIPPER CONDENSER
- R-E3 PLATFORMING COLD COMBINED FEED EXCH.
- R-E4 PLATFORMING HOT COMBINED FEED EXCH.
- R-E5 PLATFORMING REACTOR PRODUCTS CONDENSER
- R-E6 PLATFORMING REACTOR PRODUCTS COOLER
- R-E7 STABILIZER FEED EXCHANGER
- R-E8 STABILIZER REBOILER
- R-E9 STABILIZER CONDENSER

COMPRESSORS

- P-CM1B RECYCLE GAS COMPRESSOR

PUMPS

- P-P2 PLATFORMING REACTOR CHARGE PUMP
- P-PH1B UNFINING STRIPPER REFLUX PUMP
- P-PH2B UNFINING STRIPPER REBOILER PUMP
- P-PH3B UNFINING STRIPPER REFLUX PUMP
- P-P4 UNFINING REACTOR CHARGE PUMP
- P-P5 UNFINING REACTOR CHARGE PUMP
- P-P6 UNFINING WATER INJECTION PUMP (NOT SHOWN)
- P-P7 STEAM/CONDENSATE P-V21 CIRC.
- P-P8

MISCELLANEOUS

- A-1 EXHAUSTER (NOT SHOWN)

REFERENCE DRAWINGS

- EP-55-101 PLOT PLAN
- EP-55-102 PUMP DETAILS
- EP-55-103 TYPICAL PIPING AT DRAIN SUMP & DRAIN SUMP
- AP-04-131 BILL OF MATERIAL

NOTES

1. FUTURE UNFINING EQUIPMENT, IF SHOWN
2. INVERT ELEVATION FOR ALL "A" DRAIN FUNNELS IN PUMP DRAIN HEADER WILL BE 253'-10"

NO.	DATE	REVISIONS	BY
1	10-1-57	REVISED DRAIN FUNNEL LOC.	
2	10-1-57	ADDED DRAIN SUMP P-2 & P-3 DRAIN	
3	10-1-57	ADDED DRAIN SUMP P-4 & P-5 DRAIN	
4	10-1-57	ADDED DRAIN SUMP P-6 & P-7 DRAIN	
5	10-1-57	ADDED DRAIN SUMP P-8 & P-9 DRAIN	
6	10-1-57	ADDED DRAIN SUMP P-10 & P-11 DRAIN	
7	10-1-57	ADDED DRAIN SUMP P-12 & P-13 DRAIN	
8	10-1-57	ADDED DRAIN SUMP P-14 & P-15 DRAIN	
9	10-1-57	ADDED DRAIN SUMP P-16 & P-17 DRAIN	
10	10-1-57	ADDED DRAIN SUMP P-18 & P-19 DRAIN	

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4800 SANTA FE AVE., LOS ANGELES, CALIF.
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UNFINING - PLATFORMING UNIT
UNDERGROUND PIPING PLAN

EL. 253'-10" NATURAL GAS PRODUCT CONDENSATE
KINGA REFINERY
NEWARK, N.J.

SCALE: 1" = 10'-0"

DATE: 10-1-57

APPROVED FOR CONSTRUCTION

DESIGNED BY: W.S. Roper

CHECKED BY: J. L. Roper

DATE: 10-1-57

PROJECT NO.: EP-55-102

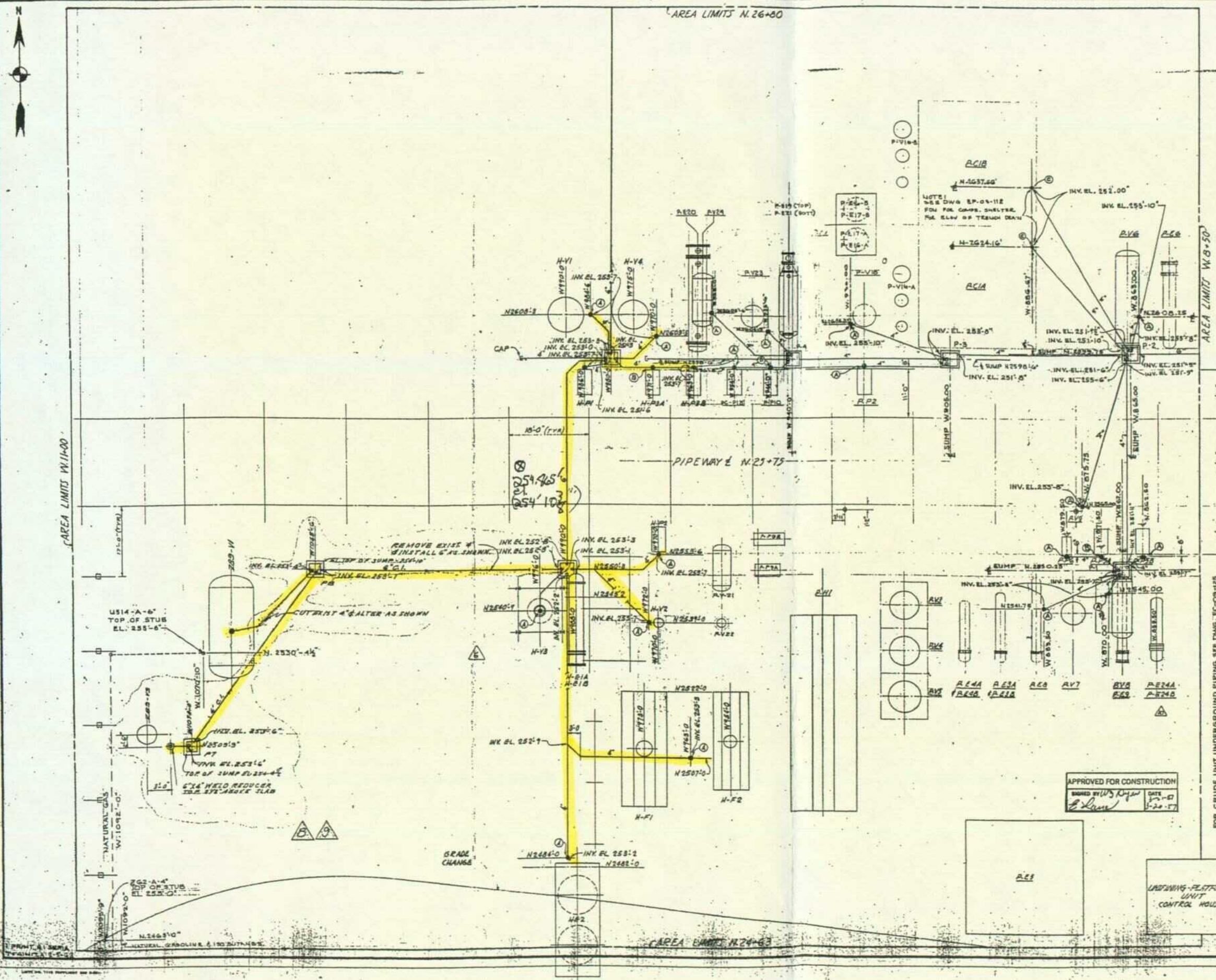
FOR CRUDE UNIT UNDERGROUND PIPING SEE DWG. EP-04-125

AREA LIMIT W. 8+50

PIPEWAY N. 23+75

AREA LIMIT N. 24+00

AREA LIMITS W. 11+00





Ciniza Refinery Sewer Test Form

REFINING COMPANY Test Data for Main Line Upstream of Listed Manhole

Unit:	Treater
Test Fluid:	Water
Test Water Column (ft.):	2.33+ _____
Test Duration (min.):	30 _____
Manhole Number:	Q-1 _____
Date:	4/2/03 _____

Test Data for Branch Lines from the Listed Manhole

Were all process sewer cup branches from the above manholes filled with water to verify that branch lines held level?

☒ Yes

No

Did all branch lines hold level?

☒ Yes

No

List any branch lines and location of branch lines that did not hold level (if any).

N.A. _____

Test Witness Signature:

B. Loos

PHONE

505-722-3833

FAX

505-722-0210

ROUTE 3

BOX 7

GALLUP

NEW MEXIC

87301



Ciniza Refinery Sewer Test Form

REFINING COMPANY

Test Data for Main Line Upstream of Listed Manhole

Unit:	Treater
Test Fluid:	Water
Test Water Column (ft.):	1-4
Test Duration (min.):	30
Manhole Number:	Q-2
Date:	4/2/03

Test Data for Branch Lines from the Listed Manhole

Were all process sewer cup branches from the above manholes filled with water to verify that branch lines held level?

☒ Yes

No

Did all branch lines hold level?

☒ Yes

No

List any branch lines and location of branch lines that did not hold level (if any).

N.A.

Test Witness Signature:

Philbert B

PHONE

505-722-3833

FAX

505-722-0210

ROUTE 3

BOX 7

GALLUP

NEW MEXIC

87301



Ciniza Refinery Sewer Test Form

REFINING COMPANY Test Data for Main Line Upstream of Listed Manhole

Unit:	Treater
Test Fluid:	Water
Test Water Column (ft.):	2.5+
Test Duration (min.):	30
Manhole Number:	Q-3
Date:	4/3/03

Test Data for Branch Lines from the Listed Manhole

Were all process sewer cup branches from the above manholes filled with water to verify that branch lines held level?

☒ Yes

No

Did all branch lines hold level?

☒ Yes

No

List any branch lines and location of branch lines that did not hold level (if any).

N.A.

Test Witness Signature:

Phil But

PHONE

505-722-3833

FAX

505-722-0210

ROUTE 3

BOX 7

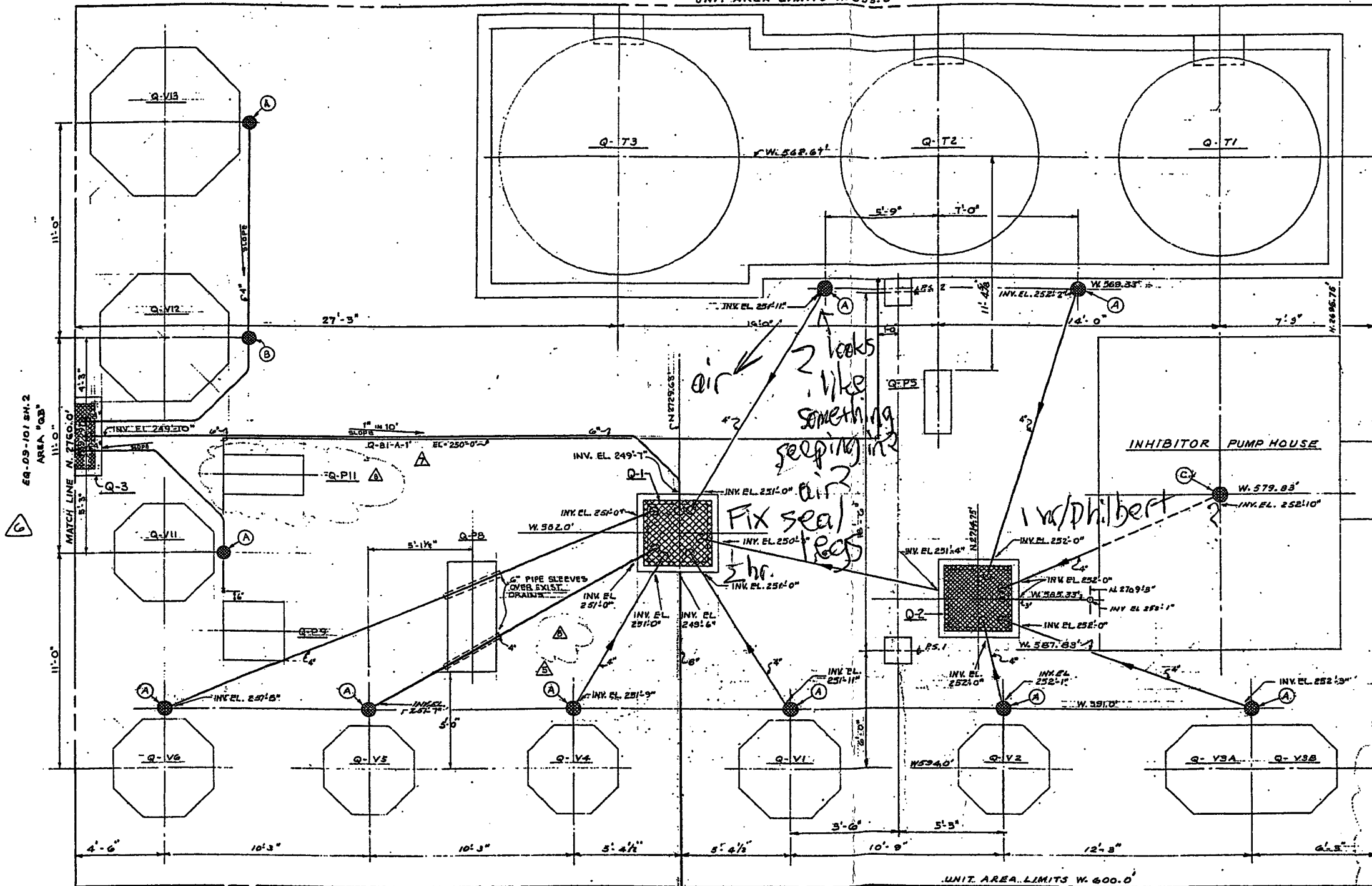
GALLUP

NEW MEXIC

87301



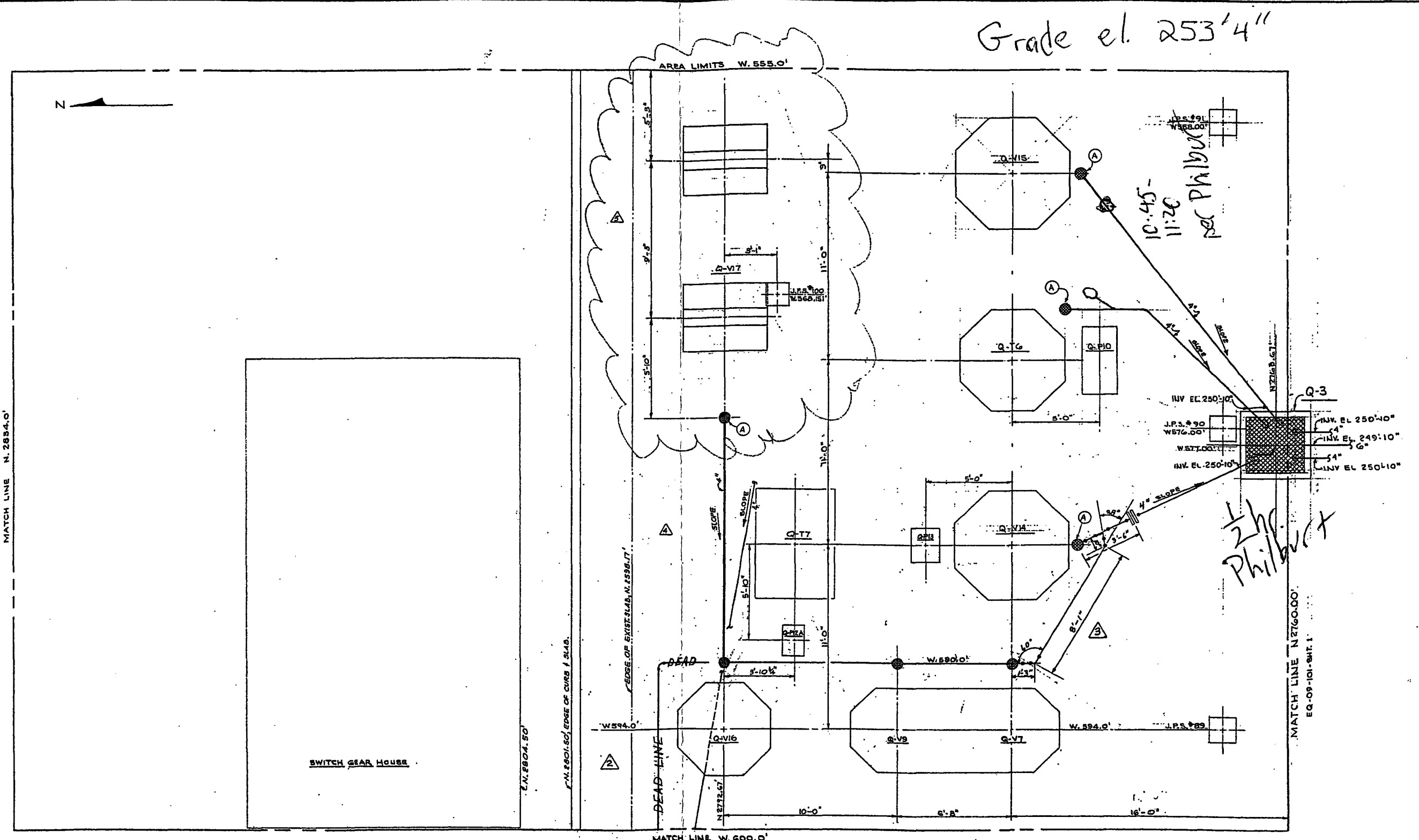
UNIT AREA LIMITS W. 555.0'



- GENERAL NOTES**
- 1. BASE LINE EL. 0.0' IS EQUIVALENT TO DATUM EL. 288.00'
 - 2. USE BW OR LW PIPE PER CLASS "Z" OF SWECO SPECS. 509-102

- REFERENCE DRAWINGS**
- EQ-09-102 PIPING PLAN BELOW EL. 11.0'
 - EQ-03-101 FOUNDATION LOCATION PLAN
 - EZ-35-101 PLOT PLAN
 - EZ-09-114 PIPING-FIRE PROTECTION AREA
 - KO-09-111 UNDERGROUND PIPING
 - EZ-03-106 BILL OF MATERIAL LIST (UNDERGROUND PIPING)
 - AZ-09-105 SUMP STRUCTURAL DETAILS
 - AZ-09-105 TYPICAL PIPING AT DRAIN SUMPS & FUNNELS

5. P.C. 11/15 DELETED Q-P11 AND Q-70 TO Q-77 W.D. 211	
7. E.P.S. 4-7-41 ADDED Q-B1-A-1 (NO. 68441 & 68440)	
10. DLS 4-1-49 ADDED Q-RT, Q-19, Q-V11, Q-V12, Q-V13 (NO. 68564 & 68565)	
15. L.J.T. 11-10-41 RELOCATED Q-P11 (NO. 67543 & 67544)	
1. P.C. 5-2-71 ADDED DRAIN FOR SUMP Q-70	
3. L.P.E. 4-3-71 NORTH COORDINATION SUMP Q-70 CHARTS 1127121 & 1127122	
2. S.M. 2-10-51 CHANGED FOR CONSTRUCTION Q-70 SUMP 1127121	
1. L.P.E. 11-10-41 REVISION FOR COMMENTS ISSUED FOR APPROVAL	
0. L.P.E. 11-10-41 ISSUED FOR APPROVAL S.M. EL. HIL	
REVISIONS	
THIS PRINT IS THE PROPERTY OF SOUTHWESTERN ENGINEERING COMPANY 4800 SANTA FE AVE., LOS ANGELES, CALIF. AND IS LOANED TO YOU OR BORROWED, IT IS BEING ON EXPOSED QUESTION THAT IT IS NOT TO BE USED DIRECTLY OR INDIRECTLY IN ANY MANNER, TO THE DETERIMENT OF THE COMPANY	
TREATING UNIT	
PLAN	
UNDERGROUND PIPING	
AREA "QA"	
EL PASO NATURAL GAS PRODUCTS CO. CINIZA REFINERY CALLUPO, NEW MEXICO	
APPROVED FOR CONSTRUCTION SIGNED BY <i>[Signature]</i> DATE 5/18/57 C. L. L. / P.M.	
SCALE 3/8" = 1'-0" DATE 5-18-57 DRAWN BY PATRICK H. JENSEN CHECKED BY V.E.L.S. 11-21-56 APPROVED BY J.E. 11-21-56 JOB NO. 11-21-56 SHEET NO. 11-21-56 EQ-09-101 SH. 1	



NOTICE:
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PRINT RECORD				REFERENCE DRAWINGS				REVISIONS				ENG. RECORD			
NO.	DATE	TO	NO.	DATE	TO	NO.	DATE	BY	DESCRIPTION	DATE	BY	DATE	BY	DATE	BY
1	4-1-68	AS	1	4-1-68	AS	1	4-1-68	AS	ADDED Q-VI5, Q-VI6, Q-VI7, Q-VI8, Q-VI9, Q-VI10, Q-VI11, Q-VI12, Q-VI13, Q-VI14, Q-VI15, Q-VI16, Q-VI17, Q-VI18, Q-VI19, Q-VI20	4-1-68	AS	4-1-68	AS	4-1-68	AS
2	2-19-70	DEFS	2	2-19-70	DEFS	2	2-19-70	DEFS	ADDED Q-VI16 (W.D. 6540 164)	2-19-70	DEFS	2-19-70	DEFS	2-19-70	DEFS
3	1-24-77	AS	3	1-24-77	AS	3	1-24-77	AS	ADDED LINE FROM Q-VI17 TO Q-VI18	1-24-77	AS	1-24-77	AS	1-24-77	AS
4	12-3-81	AS	4	12-3-81	AS	4	12-3-81	AS	ADDED Q-VI18, Q-VI19, Q-VI20, Q-VI21, Q-VI22, Q-VI23, Q-VI24, Q-VI25, Q-VI26, Q-VI27, Q-VI28, Q-VI29, Q-VI30, Q-VI31, Q-VI32, Q-VI33, Q-VI34, Q-VI35, Q-VI36, Q-VI37, Q-VI38, Q-VI39, Q-VI40, Q-VI41, Q-VI42, Q-VI43, Q-VI44, Q-VI45, Q-VI46, Q-VI47, Q-VI48, Q-VI49, Q-VI50, Q-VI51, Q-VI52, Q-VI53, Q-VI54, Q-VI55, Q-VI56, Q-VI57, Q-VI58, Q-VI59, Q-VI60, Q-VI61, Q-VI62, Q-VI63, Q-VI64, Q-VI65, Q-VI66, Q-VI67, Q-VI68, Q-VI69, Q-VI70, Q-VI71, Q-VI72, Q-VI73, Q-VI74, Q-VI75, Q-VI76, Q-VI77, Q-VI78, Q-VI79, Q-VI80, Q-VI81, Q-VI82, Q-VI83, Q-VI84, Q-VI85, Q-VI86, Q-VI87, Q-VI88, Q-VI89, Q-VI90, Q-VI91, Q-VI92, Q-VI93, Q-VI94, Q-VI95, Q-VI96, Q-VI97, Q-VI98, Q-VI99, Q-VI100	12-3-81	AS	12-3-81	AS	12-3-81	AS
5	5-8-82	AS	5	5-8-82	AS	5	5-8-82	AS	RELOCATED Q-VI17 & FUNNEL TO "SLT" AS BUILT	5-8-82	AS	5-8-82	AS	5-8-82	AS

EL PASO NATURAL GAS PRODUCTS COMPANY
CINIZA REFINERY EL PASO, TEXAS GALLUP, N.M.
TREATING UNIT PLAN
UNDERGROUND PIPING
AREA "QB"
DWG NO EQ-09-101-2 (5)

Permit Condition 21. Annual Report

E. Summary of all leaks, spills and releases and corrective actions taken.

5/15/03 – A 20-gallon spill of HiTEC 3023 occurred. 3023 is a mixture of gasoline detergents, MMT and solvent and no component exceeded its RQ. The MMT will decompose rapidly in the presence of sunlight. The solvent is an aromatic refinery cut. The detergent is a mixture of polymers and solvents containing only carbon, hydrogen, oxygen and nitrogen. The Ciniza HAZMAT team immediately cleaned up the spilled material.

7/6/03 – The BNSF railroad was in the process of switching cars at the Ciniza refinery railroad-loading terminal when a rail car was pushed past the stops and was partially derailed. The rail car came into contact with piping and several lines and support structures were damaged. A six-inch line containing crude oil ruptured which resulted in a spill of 140 pounds of crude oil containing propane, butane, isopentane and pentane. Immediately following the spill, Tank Farm and Operations employees began identifying damaged piping and isolating it by closing valves. AFFF foam was applied to the spill. The contaminated soil was sampled and cleaned up by Ciniza employees. Disposal of the soil was handled by BNSF.

12/22/03 – A small leak was found on the drain valve of tank 903 and the fluid was being collected in the concrete containment. The leak was repaired and the containment was cleaned up.

12/24/03 – The Sats inlet S-C1 and outlet SC-2 compressors shoed signs of leakage in concrete containments and stained soil outside containment. The leaks were repaired and the stained soil was cleaned up.

Permit Condition 21. Annual Report

F. Summary of discovery of new groundwater contamination.

There were no new discoveries in 2003.

Permit Condition 21. Annual Report

6. Summary and copies of all EPA/NMED RCRA activity.

The following items are attached:

- 2003 Hazardous Waste Biennial Report
- 2003 Land Treatment Unit Inspection Summary
- 2003 Annual Hazardous Waste Fees



February 19, 2004

Ms. Linda Montoya
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park drive East, Building 1
Santa Fe, New Mexico 87502

**RE: 2003 Hazardous Waste Biennial Report
Giant Refining Co. - Ciniza Refinery
EPA ID No. NMD 0000333211**

Dear Ms. Montoya:

Enclosed please find the 2003 Hazardous Waste Report for Giant's Ciniza Refinery. We are sending a hard copy of the report in addition to the diskette and the signed SI form.

Please feel free to contact me at (505) 722-0227 if you have any comments or questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dorinda Mancini", is written over a horizontal line.

Dorinda Mancini
Environmental Manager, Ciniza Refinery

cc: w/o attachments
Matthew R. Davis, General Manager
Ed Riege, Environmental Superintendent
David Kirby, Esq., Giant Industries Arizona, Inc.

M:\2003 HW Biennial Report

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

ROUTE 3
BOX 7
GALLUP
NEW MEXICO
87301

MAIL THE COMPLETED FORM TO: The Appropriate EPA Regional or State Office	United States Environmental Protection Agency RCRA SUBTITLE C SITE IDENTIFICATION FORM		
1. Reason for Submittal and Status of Information Supplied (see instructions on pages 10 and 11) CHECK CORRECT BOX(ES)	A. Reason for Submittal: ☐ To provide initial notification (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities). ☒ To provide subsequent notification (to update site identification information). ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application. ☐ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment # _____). ☒ As a component of the Hazardous Waste Report.		
2. Site EPA ID Number (see instructions on page 11)	EPA ID Number: NMD000333211		
3. Site Name (see instructions on page 11)	Legal Name: GIANT REFINING CO. - CINIZA REFINERY		
4. Site Location Information (see instructions on page 11)	Street Address: INTERSTATE 40, EXIT 39 - 17 MILES EAST OF GALLUP, NM		
	City, Town, or Village: JAMESTOWN	State: NM	
	County Name: MCKINLEY	Zip Code: 87347- -	
5. Site Land Type (see instructions on page 11)	Site Land Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other		
6. North American Industry Classification System (NAICS) Code(s) for the Site (see instructions on page 11)	A. 324110		B.
	C.		D.
7. Site Mailing Address (see instructions on page 12)	Street or P.O. Box: ROUTE 3, BOX 7		
	City, Town, or Village: GALLUP		State: NM
	Country:	Zip Code: 87301- -	
8. Site Contact Person (see instructions on page 12)	First Name: DORINDA	MI:	Last Name: MANCINI
	Phone Number: (505) 722-3833 Extension: 3227		Email: DMANCINI@GIANT.COM
9. Legal Owner and Operator of the Site (see instructions on pages 12 and 13)	A. Name of Site's Operator: GIANT REFINING CO.		Date Became Operator (mm/dd/yyyy): 01/01/1982
	Operator Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other		
	B. Name of Site's Legal Owner: GIANT INDUSTRIES ARIZONA, INC.		Date Became Owner (mm/dd/yyyy): 01/01/1982
	Owner Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other		
	Street or P.O. Box: ROUTE 3, BOX 7		
	City, Town, or Village: GALLUP		
	State: NM	Zip Code: 87301- -	Country:

EPA ID No. NMD000333211

10. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. See instructions on pages 13, 14, 15, and 16)**A. Hazardous Waste Activities****1. Generator of Hazardous Waste**

(choose only one of the following three categories)

- ☒ a. LQG: Greater than 1,000 kg/mo (2,200 lbs.) of non-acute hazardous waste; or
- ☐ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs.) of non-acute hazardous waste; or
- ☐ c. CESQG: Less than 100 kg/mo of non-acute hazardous waste

In addition, indicate other generator activities
(check all that apply)

- ☐ d. United States Importer of Hazardous Waste
- ☐ e. Mixed Waste (hazardous and radioactive) Generator

For Items 2 through 6, check all that apply:

- ☐ 2. Transporter of Hazardous Waste
- ☐ 3. Treater, Storer, or Disposer of Hazardous Waste (at your site) Note: A hazardous waste permit is required for this activity
- ☐ 4. Recycler of Hazardous Waste (at your site) Note: A hazardous waste permit may be required for this activity.
- 5. Exempt Boiler and/or Industrial Furnace**
- ☐ a. Small Quantity On-site Burner Exemption
- ☐ b. Smelting, Melting, Refining Furnace Exemption
- ☐ 6. Underground Injection Control

B. Universal Waste Activities

- 1. Large Quantity Handler of Universal Waste (accumulate 5,000 KG or more)**
[refer to your State regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site.
(check all boxes that apply)

	<u>Generated</u>	<u>Accumulated</u>
a. Batteries	☐	☐
b. Pesticides	☐	☐
c. Thermostats	☐	☐
d. Lamps	☐	☐
e. Other _____	☐	☐
f. Other _____	☐	☐
g. Other _____	☐	☐

2. Destination Facility for Universal Waste ☐ N

Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

- 1. Used Oil Transporter - Indicate Type(s) of Activity(ies)**
- ☐ a. Transporter
- ☐ b. Transfer Facility
- 2. Used Oil Processor and/or Re-refiner - Indicate Type(s) of Activity(ies)**
- ☐ a. Processor
- ☐ b. Re-refiner
- ☐ 3. Off-Specification Used Oil Burner
- 4. Used Oil Fuel Marketer - Indicate Type(s) of Activity(ies)**
- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

11. Description of Hazardous Wastes (see instructions on page 16)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

D018	K171	F037	D002	D001	F003	K051

Please list the waste codes of the State-regulated hazardous wastes

12. Comments (see instructions on page 17)

DMANCINI@GIANT.COM

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. **(see instructions on page 17)**

Signature of owner, operator, or an authorized representative	Name and Official Title (type or print)	D. Date Signed (mm-dd-yyyy)
	MATTHEW R DAVIS	02/18/2004
	GENERAL MANAGER	

SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID NO: NMD000333211

**FORM
GM**

U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

**WASTE GENERATION
AND MANAGEMENT**

Sec. 1	A. Waste Description SPENT HYDRO-TREATING CATALYST		
B. EPA Hazardous Waste Code K171		C. State Hazardous Waste Code	
D. Source Code G08 Management Method code for Source code G25	E. Form Code W319	F. Quantity Generated in 2003 33,291.00	G. UOM 1 Density 0.00 spec.gra

Sec. 2	Was any of this waste managed on-site? NO		
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site #	B. EPA ID No. of facility to which waste was shipped	C. Off-site Management Method code shipped to	D. Total quantity shipped in 2003
1	NMD002208627	H141	1,086.00
2	TXD074195678	H129	32,205.00

Comments	2. METALS RECOVERY
.NULL.	

SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID NO: NMD000333211

FORM
GM

U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

WASTE GENERATION
AND MANAGEMENT

Sec. 1	A. Waste Description SLUDGE/SOLIDS REMOVED FROM PROCESS SEWERS AND SUMPS			
B. EPA Hazardous Waste Code F037		C. State Hazardous Waste Code		
D. Source Code G13 Management Method code for Source code G25	E. Form Code W603	F. Quantity Generated in 2003 12,013.00	G. UOM 1 Density 0.00 spec.gra	

Sec. 2	Was any of this waste managed on-site? NO		
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site # 1	B. EPA ID No. of facility to which waste was shipped NMD002208627	C. Off-site Management Method code shipped to H141	D. Total quantity shipped in 2003 12,013.00

Comments NULL.			
-----------------------	--	--	--

SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID NO: NMD000333211

FORM
GM

U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

WASTE GENERATION
AND MANAGEMENT

Sec. 1	A. Waste Description ACIDIC RESIDUE FROM PROCESS EQUIPMENT CLEANING AND SLUDGE REMOVAL		
B. EPA Hazardous Waste Code D002		C. State Hazardous Waste Code	
D. Source Code G13 Management Method code for Source code G25	E. Form Code W103	F. Quantity Generated in 2003 137.00	G. UOM 1 Density 0.00 lb./gal.

Sec. 2	Was any of this waste managed on-site? NO		
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site # 1	B. EPA ID No. of facility to which waste was shipped NMD002208627	C. Off-site Management Method code shipped to H141	D. Total quantity shipped in 2003 137.00

Comments

.NULL.

SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID NO: NMD000333211

**FORM
GM**

U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

**WASTE GENERATION
AND MANAGEMENT**

Sec. 1	A. Waste Description CAUSTIC RESIDUE FROM EQUIPMENT CLEANING AND SLUDGE REMOVAL			
B. EPA Hazardous Waste Code D002		C. State Hazardous Waste Code		
D. Source Code G13 Management Method code for Source code G25	E. Form Code W110	F. Quantity Generated in 2003 201.00	G. UOM 1 Density 0.00 lb./gal.	

Sec. 2	Was any of this waste managed on-site? NO			
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2		
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site # 1	B. EPA ID No. of facility to which waste was shipped NMD002208627	C. Off-site Management Method code shipped to H141	D. Total quantity shipped in 2003 201.00

Comments NULL.			
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SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID NO: NMD000333211

**FORM
GM**

U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

**WASTE GENERATION
AND MANAGEMENT**

Sec. 1	A. Waste Description RESIDUE FROM API CLEANOUT		
B. EPA Hazardous Waste Code K051		C. State Hazardous Waste Code	
D. Source Code G13 Management Method code for Source code G25	E. Form Code W603	F. Quantity Generated in 2003 9,896.00	G. UOM 1 Density 0.00 lb./gal.

Sec. 2	Was any of this waste managed on-site? NO		
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site # 1	B. EPA ID No. of facility to which waste was shipped NMD002208627	C. Off-site Management Method code shipped to H141	D. Total quantity shipped in 2003 9,896.00

Comments NULL.			
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U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID.NO: NMD000333211

FORM
GMWASTE GENERATION
AND MANAGEMENT

Sec. 1	A. Waste Description SLUDGE/LIQUIDS FROM TANK 570 CLEANOUT		
B. EPA Hazardous Waste Code D001 D018		C. State Hazardous Waste Code	
D. Source Code G14 Management Method code for Source code G25	E. Form Code W603	F. Quantity Generated in 2003 9,404.00	G. UOM 1 Density 0.00 lb./gal.

Sec. 2	Was any of this waste managed on-site? NO		
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site # 1	B. EPA ID No. of facility to which waste was shipped NMD002208627	C. Off-site Management Method code shipped to H141	D. Total quantity shipped in 2003 9,404.00

Comments

.NULL.

SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID NO: NMD000333211



U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

FORM
GM

WASTE GENERATION
AND MANAGEMENT

Sec. 1	A. Waste Description SPENT ACTIVATED CARBON FROM ASO PIT VENT USED FOR ODOR CONTROL		
B. EPA Hazardous Waste Code D001		C. State Hazardous Waste Code	
D. Source Code G19 Management Method code for Source code G25	E. Form Code W409	F. Quantity Generated in 2003 393.00	G. UOM 1. Density 0.00 lb./gal.

Sec. 2	Was any of this waste managed on-site? No		
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site # 1	B. EPA ID No. of facility to which waste was shipped NMD002208627	C. Off-site Management Method code shipped to H141	D. Total quantity shipped in 2003 393.00

Comments NULL.			
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SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
INTERSTATE 40, EXIT 39 - 17 MILES EAST
JAMESTOWN, NM 87347

EPA ID NO: NMD000333211

**FORM
GM**

U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

**WASTE GENERATION
AND MANAGEMENT**

Sec. 1	A. Waste Description WASTE PAINT RELATED MATERIAL		
B. EPA Hazardous Waste Code D001 F003		C. State Hazardous Waste Code	
D. Source Code G06 Management Method code for Source code G25	E. Form Code W209	F. Quantity Generated in 2003 1,623.00	G. UOM 1 Density 0.00 lb./gal.

Sec. 2	Was any of this waste managed on-site? No		
ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type	Quantity treated, disposed, or recycled on-site in 2003	On-site process system type	Quantity treated, disposed, or recycled on-site in 2003

Sec. 3	A. Was any of this waste shipped off site in 2003 for treatment, disposal, or recycling? Yes		
Site # 1	B. EPA ID No. of facility to which waste was shipped NMD002208627	C. Off-site Management Method code shipped to H141	D. Total quantity shipped in 2003 1,623.00

Comments NULL.			
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U.S. ENVIRONMENTAL
PROTECTION AGENCY
2003 Hazardous Waste Report

SITE NAME

GIANT REFINING CO. - CINIZA REFINERY
40, EXIT 39 - 17 MILES EAST OF GALLUP, NM
JAMESTOWN NM 87347

EPA ID NO: NMD000333211

FORM
OI

OFF-SITE
IDENTIFICATION

A. EPA ID No. of off-site installation or transporter NMD002208627	B. Name of off-site installation or transporter RINCHEM COMPANY, INC
C. Handler Type N Generator Y Transporter N TSDR	D. Address of off-site installation Street City State Zip -

A. EPA ID No. of off-site installation or transporter OKD981588791	B. Name of off-site installation or transporter TRIAD TRANSPORT
C. Handler Type N Generator Y Transporter N TSDR	D. Address of off-site installation Street City State Zip -

A. EPA ID No. of off-site installation or transporter NMD002208627	B. Name of off-site installation or transporter RINCHEM COMPANY, INC
C. Handler Type N Generator N Transporter Y TSDR	D. Address of off-site installation Street 6133 EDITH BLVD. NE City ALBUQUERQUE State NM Zip 87107-

A. EPA ID No. of off-site installation or transporter TXD074195678	B. Name of off-site installation or transporter GULF CHEMICAL AND METALLURGICAL CORP
C. Handler Type N Generator N Transporter Y TSDR	D. Address of off-site installation Street 302 MIDWAY City FREEPORT State TX Zip 77542-

2003 Land Treatment Unit Inspection

Date of Inspection	Inspector's Name	Findings
1/2/2003	Richard Luna	OK
1/9/2003	Richard Luna	OK
1/16/2003	Richard Luna	OK
1/23/2003	Richard Luna	OK
1/30/2003	Richard Luna	OK
2/6/2003	Richard Luna	OK
2/13/2003	Richard Luna	OK
2/20/2003	Richard Luna	OK
2/27/2003	Richard Luna	OK
3/6/2003	Richard Luna	OK
3/13/2003	Richard Luna	OK
3/20/2003	Richard Luna	OK
3/27/2003	Richard Luna	OK
4/3/2003	Richard Luna	OK
4/10/2003	Richard Luna	OK
4/17/2003	Richard Luna	OK
4/24/2003	Steve Morris	OK
5/1/2003	Steve Morris	OK
5/8/2003	Steve Morris	OK
5/15/2003	Steve Morris	OK
5/22/2003	Steve Morris	OK
5/29/2003	Steve Morris	OK
6/5/2003	Steve Morris	OK
6/13/2003	Richard Luna	OK
6/20/2003	Richard Luna	OK
6/27/2003	Richard Luna	OK
7/3/2003	Richard Luna	OK
7/10/2003	Richard Luna	OK
7/17/2003	Richard Luna	OK
7/24/2003	Kurt Kirlin	OK
7/31/2003	Kurt Kirlin	OK
8/7/2003	Kurt Kirlin	OK
8/14/2003	Kurt Kirlin	OK
8/21/2003	Kurt Kirlin	OK
8/28/2003	Kurt Kirlin	OK
9/4/2003	Kurt Kirlin	OK
9/11/2003	Kurt Kirlin	OK
9/18/2003	Kurt Kirlin	OK

2003 Land Treatment Unit Inspection

9/25/2003	Kurt Kirlin	OK
10/2/2003	Kurt Kirlin	OK
10/9/2003	Kurt Kirlin	OK
10/16/2003	Kurt Kirlin	OK
10/23/2003	Kurt Kirlin	OK
10/30/2003	Kurt Kirlin	OK
11/6/2003	Kurt Kirlin	OK
11/13/2003	Kurt Kirlin	OK
11/20/2003	Kurt Kirlin	OK
11/26/2003	Kurt Kirlin	OK
12/4/2003	Kurt Kirlin	OK
12/11/2003	Kurt Kirlin	OK
12/18/2003	Kurt Kirlin	OK
12/24/2003	Kurt Kirlin	OK
12/31/2003	Kurt Kirlin	OK

State of New Mexico Environment Department
Hazardous Waste Bureau
Annual Hazardous Waste Fees



Report #: NMD982283541-0242-CY2003

Facility:
GIANT-REFINING-CO--CINIZA
~~RT-3-BOX-7~~ I-40 Exit 39
JAMESTOWN, NM 87347

Please provide current Owner information below.
Owner Name: Giant Industries Arizona, Inc.
Address: 23722 N Scottsdale Rd.
Scottsdale, AZ 85255

This is our annual notice for hazardous generation and business fees applicable to all facilities classified as Small Quantity Generators (SQG), Large Quantity Generator (LQG), Treatment, Storage, or Disposal (TSD) including Closure and Post-Closure Care. The fee regulations are promulgated pursuant to the provisions of New Mexico Hazardous Waste Act, Chapter 74, Article 4, NMSA (as amended). **Fees are due AUGUST 1 of EACH YEAR for waste generated the previous calendar year.**

If you have any questions or concerns please contact Linda Montoya at (505) 428-2503.

Calendar Year	2003	
Total amount generated	446,878	lbs/tons (circle one)
How many lbs/tons were recycled?	423,152	lbs/tons (circle one)
Amount generated from spill cleanup	0	lbs/tons (circle one)

FEE SUMMARY: (from Annual Hazardous Waste Fee Report)

Generation Fee Amount	\$ 238.00
Business Fee Amount	\$ 2500.00
Late Fee Amount	\$ 0
CAP Fee Paid	\$ 0
TOTAL AMOUNT DUE	\$ 2738.00

Special Instructions:

- Please include your report # on your remittance check.
- Complete and return this report with your Annual Hazardous Waste Fee.
- Make Checks Payable to: NMED/HWB
- Mail Checks to:

New Mexico Environment Dept/HWB
Attn: Linda Montoya
2905 Rodeo Park Drive East
Santa Fe, NM 87505



NEW MEXICO ENVIRONMENT DEPARTMENT HAZARDOUS WASTE BUREAU

ANNUAL HAZARDOUS WASTE FEE REPORT

Note: Complete and return this report with your invoice and payment

SECTION I: FACILITY INFORMATION AND IDENTIFICATION

Facility Name: Giant Refining Company, Ciniza

EPA Identification Number: NMD000333211 Phone: 505-722-3833

Facility Address: Giant Refining Co. - Ciniza Refinery

Interstate 40, Exit 39

Jamestown, NM 87347

Mailing Address: Giant Refining Company - Ciniza Refinery

Rt 3 Box 7

Gallup, NM 87301

Facility Contact: Dorinda Mancini

Title: Environmental Manager

Reporting Date: 7/8/04

The New Mexico Hazardous Waste Generation Fee is comprised of two parts: a Business Fee and a Generation Fee. The Business Fee is determined by your generator status and the Generation Fee is determined by the amount of non-recycled hazardous waste, which is generated by the facility. It is important to note that your generator status is determined by adding the recycled and non-recycled hazardous waste generated by your facility each month.

Detailed regulations covering the annual hazardous waste fees are defined at 20.4.3 NMAC.

SECTION IV: BUSINESS FEES

Based on the generator status determined from Section III, check the appropriate category for this facility and pay the appropriate Business Fee.

Conditional Exempt Small Quantity Generator	_____	no fees due
Small Quantity Generator	_____	\$ 200.00
Large Quantity Generator	_____	<u>\$2,500.00</u>

SECTION V: ANNUAL GENERATION FEES

1. **Conditionally Exempt Small Quantity Generators** do not owe any annual generator fees.
2. **Small Quantity Generators** shall pay the following fees based on the average monthly amount of non-recycled hazardous waste generated.

Annual total non-recycled hazardous waste from Section II divided by twelve equals monthly average

_____ lb / 12 = _____ pounds per month

1 - 500 pounds/month	_____	\$ 35.00
501 - 1,000 pounds/month	_____	\$ 100.00
1,001 - 2,205 pounds/month	_____	\$ 250.00

If < 2,206 pounds/month, enter appropriate fee: \$ _____

3. **Large Quantity Generators** at a site shall pay the following fees for non-recycled hazardous waste generated for the reporting year, if both hazardous waste and hazardous wastewater were generated at the site, the generator must determine the amounts for each to calculate the fee. Use the following fee schedules for these calculations.

- a. \$ 0.01 per pound of non-recycled hazardous waste generated at the site.

23,766 pounds for the reporting year X \$ 0.01 = \$ 237.66

and

- b. \$ 0.01 per ton of wastewater designated a hazardous waste solely because it exhibits a hazardous characteristic.

0 tons for reporting year X \$ 0.01 = \$ 0

Total LQG annual fee (a + b) = \$ 238

SECTION VIII: TOTAL FEES DUE

Total Fees (Business Fees, Generation Fees)

Owed for Current Calendar Year

\$2738.00

Total Past Due Fees Owed (if applicable)

0

TOTAL FEES

\$2738.00

SECTION IX: CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents. I hereby certify that either based on my personal knowledge or my inquiry of those individuals immediately responsible for obtaining the information, the submitted information is true, accurate and complete. I hereby acknowledge that any person who knowingly omits information from or makes any false statement or representation in a fee report may be subject to criminal penalties under the Act.

Matthew R. Davis

Name (printed or typed)

General Manager

Title

Signature

Date

7/8/04

This report must be completed and returned to the address listed below. Make your cashiers check or money order for the full amount due payable to the NMED Hazardous Waste Fund and mail it to:

NMED - Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505

CINIZA REFINERY
GIANT REFINING COMPANY
 Discharge Plan GW-032

Table 1
OCD Central Landfarm
 (mg/Kg)

Date	Sample ID	TPH	Gasoline	Diesel	Oil	benzene	e-benzene	o-xylene	m/p xylene	toluene
6/18/1998	OCD - 15	3200	<100	1300	1900					
6/18/1998	OCD - 39	4700	<100	1500	3200					
6/18/1998	OCD - 93	4700	<100	1900	2800					
6/18/1998	OCD - 137	4700	<100	1800	2900					
7/8/1998	OCD-North			1700						
7/8/1998	OCD-South			3000						
11/1/1999	OCD-North	1520	<10	560	960					
11/1/1999	OCD-South	1070	<10	320	750					
8/2/2000	OCD-East	2090	<50	690	1400					
8/2/2000	OCD-West	1910	<50	610	1300					
1/4/2001	OCD LF		<10	920		<0.005	<0.005	<0.005	<0.01	<0.005
12/19/2002	OCD - 59			720	600					
12/19/2002	OCD - 63			880	680					
12/19/2002	OCD - 112			1200	980					
5/14/2004	Central - North		<5	610	570					
5/14/2004	Central - South		<5	850	990					

Table 2
OCD Central Landfarm
(mg/Kg) Total & TCLP Metals

Date	Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
1/4/2001	OCD LF Soil Total	<3	303	0.5	23.8	32.3	1.66	<2.5	<1
1/30/2001	OCD - North Total TCLP	12 <0.1	396 0.7	0.8 <0.01	19 <0.02	30 <0.1	3.02 <0.01	<4 <0.1	<2 <0.05
1/30/2001	OCD - South Total TCLP	10 <0.1	254 0.7	<0.5 <0.01	17 <0.02	27 <0.1	0.3 <0.01	<4 <0.1	<2 <0.05

Table 3
NE OCD Landfarm - Below the Treatment Zone
(mg/Kg)

Date	Sample ID	TPH	Gasoline	Diesel	Oil	Volatiles (8260B)	Semi-vols (8270B)
12/7/2000	BTZ-RRR-Lag Assaigai Lab		<0.25	<25	<100	ND	ND
12/7/2000	BTZ-RRR-Lag IML		<5	<30	ND	ND	ND

Table 4
NE OCD Landfarm - Below the Treatment Zone
(mg/Kg)
Total Metals

Date	Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
12/7/2000	BTZ-RRR-Lag Assaigai Lab	<3	333	0.24	9.8	9.8	0.1	<2.5	<0.5
12/7/2000	BTZ-RRR-Lag IML	0.6	326	<0.5	10	11	<0.06	<0.5	<2

Table 5
NE OCD Landfarm - Below the Treatment Zone
(mg/Kg)

Date	Sample ID	pH	Calcium	Magnesium	Potassium	Silicon	Sodium
12/7/2000	BTZ-RRR-Lag Assaigai Lab	7	19200	5160	1399	888	995

Table 6
NE OCD Landfarm - Remediated Soil
(mg/Kg)

Date	Sample ID	TPH	Gasoline	Diesel	Oil	Volatiles (8260B)	BNA
4/17/2001	Temp LTA TCLP					ND	ND
8/28/2001	Temp LTU - No.	205					
8/28/2001	Temp LTU - So.	100					
12/19/2002	RRR - 36			5600	1100		
12/19/2002	RRR - 76			3500	820		
12/19/2002	RRR - 125			2700	700		
5/13/2004	NE - North		<5	1400	910		
	NE - South		ND	1000	800		

Table 7
Railroad Rack Lagoon Sludge
(mg/Kg) **Total & TCLP Metals**

Date	Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
12/7/2000	RRR Lagoon Sl. Assaigai-Total	<3	560	0.41	42.4	77.8	1.18	<2.5	<0.5
12/7/2000	RRR Lagoon IML-Total	0.6	300	0.5	10	10	0.21	<0.5	<1
4/17/2001	RRR Lag Summit-TCLP	<0.01	<1.0	<0.005	<0.05	<0.1	<0.002	<0.02	<0.01

Table 8
Railroad Rack Lagoon Sludge
(mg/Kg)

Date	Sample ID	TPH	Gasoline	Diesel	Oil	benzene	e-benzene	o-xylene	m/p xylene	toluene
12/7/2000	RRR Lagoon Sl. Assaigai		760	17000	7400	0.6	3.1	5.5	15	3.1
12/7/2000	RRR Lagoon IML			13,500	27000	<0.5	1	2.2	5.4	1.6

Table 9
Railroad Rack Lagoon Sludge
(mg/Kg) TCLP Volatiles & Semi-Volatiles

Date	Sample ID	Vols	BNA
4/17/2001	RRR Lagoon Summit	ND	ND

Ciniza Refinery
Giant Refining Company
Discharge Plan GW-032

NE OCD Landfarm Sample Grid
Length 20 Ft. by Width 7.5 Ft..

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150

Ciniza Refinery
Giant Refining Company
Discharge Plan GW-032

CENTRAL OCD Landfarm Sample Grid
Length 22 Ft. by Width 20 Ft.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150