GW - 32

GENERAL CORRESPONDENCE

YEAR(S):

2/07 → 8/06

2007 FEB 16 AM 9 22

2007 FEB 16 AM 9 22

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

February 14, 2007

Carl Chavez, Environmental Engineer
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505

RE: Railroad Rack Lagoon Fan-out and Overflow Ditch Investigation Report

Dear Carl and Hope:

Enclosed is a copy of the report on the investigation that Trihydro Corporation conducted at the Fan-out and Ditch areas that were associated with the former Railroad Rack Lagoon at the Giant Refining - Ciniza Refinery. NMED had requested the investigation be conducted in the comments letter NMED sent to Giant regarding the Remedy Completion Report for the Railroad Rack Lagoon.

If you have any questions and comments, please contact me at jlieb@giant.com or (505) 722-0227.

Sincerely,

Jim Lieb, Environmental Engineer
Giant Refining, Ciniza Refinery
Gallup, NM

cc: Ed Rios
Ed Riege
Steve Morris

Chavez, Carl J, EMNRD

From: Steve Morris [smorris@giant.com]

Sent: Wednesday, February 21, 2007 10:22 AM

To: Monzeglio, Hope, NMENV; Chavez, Carl J, EMNRD; Ed Riege; Jim Lieb; Cheryl Johnson

Subject: Sample Analysis 1Qtr 2007

Hope and Carl,
Here is the quarterly sample analysis for the first quarter of 2007.
We did see an elevated benzene level in the NAPIS Effluent. sample.
Ciniza's technical services manager tells us the Sour Water Stripper is expected to be in service in a couple of weeks. This will significantly reduce the load on the existing benzene strippers.
Additionally, the third benzene stripper is in place and it should be operational the first of April.
Between the Sour Water Stripper and the third benzene stripper, most of the benzene will be removed from refinery wastewater before it reaches the existing benzene strippers.
If you have any questions or concerns regarding this, please give me a call at: 505-722-0258.
Thanks, Steve Morris

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, February 14, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: NMED Quarterly Water 1st Qtr 2007

Order No.: 0701363

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 1/31/2007 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

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory, Inc. Date: *14-Feb-07*

CLIENT:	Giant Refining Co
Project:	NMED Quarterly Water 1st Qtr 2007
Lab Order:	0701363

CASE NARRATIVE

Sample AL-2 to EP-1 notes:

The GRO/DRO results are reporting using only the water fraction of the sample. A small amount of product was on the top of the water (this was not analyzed).

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	AL-2 to EP-1
Lab Order:	0701363	**Collection Date:**	1/30/2007 10:00:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	280	10		mg/L	1	2/7/2007 11:13:38 PM
Motor Oil Range Organics (MRO)	ND	50		mg/L	1	2/7/2007 11:13:38 PM
Surr: DNOP	124	58-140		%REC	1	2/7/2007 11:13:38 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **LMM**
Gasoline Range Organics (GRO)	3.2	2.5		mg/L	50	2/2/2007 3:23:37 PM
Surr: BFB	106	79.2-121		%REC	50	2/2/2007 3:23:37 PM
EPA METHOD 7470: MERCURY						Analyst: **MAP**
Mercury	0.00087	0.00020		mg/L	1	2/7/2007
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **IC**
Arsenic	ND	0.050		mg/L	1	2/5/2007 10:36:14 AM
Barium	0.22	0.050		mg/L	1	2/5/2007 10:36:14 AM
Cadmium	ND	0.0050		mg/L	1	2/5/2007 10:36:14 AM
Chromium	ND	0.015		mg/L	1	2/5/2007 10:36:14 AM
Lead	0.021	0.012		mg/L	1	2/5/2007 10:36:14 AM
Selenium	ND	0.12		mg/L	1	2/5/2007 10:36:14 AM
Silver	ND	0.012		mg/L	1	2/5/2007 2:34:43 PM
EPA METHOD 8260B: VOLATILES						Analyst: **NSB**
Benzene	ND	50		µg/L	50	2/2/2007
Toluene	ND	50		µg/L	50	2/2/2007
Ethylbenzene	ND	50		µg/L	50	2/2/2007
Methyl tert-butyl ether (MTBE)	ND	75		µg/L	50	2/2/2007
1,2,4-Trimethylbenzene	420	50		µg/L	50	2/2/2007
1,3,5-Trimethylbenzene	110	50		µg/L	50	2/2/2007
1,2-Dichloroethane (EDC)	ND	50		µg/L	50	2/2/2007
1,2-Dibromoethane (EDB)	ND	50		µg/L	50	2/2/2007
Naphthalene	830	100		µg/L	50	2/2/2007
1-Methylnaphthalene	1100	200		µg/L	50	2/2/2007
2-Methylnaphthalene	1800	200		µg/L	50	2/2/2007
Acetone	ND	500		µg/L	50	2/2/2007
Bromobenzene	ND	50		µg/L	50	2/2/2007
Bromochloromethane	ND	50		µg/L	50	2/2/2007
Bromodichloromethane	ND	50		µg/L	50	2/2/2007
Bromoform	ND	50		µg/L	50	2/2/2007
Bromomethane	ND	100		µg/L	50	2/2/2007
2-Butanone	ND	500		µg/L	50	2/2/2007
Carbon disulfide	ND	500		µg/L	50	2/2/2007

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	AL-2 to EP-1
Lab Order:	0701363	**Collection Date:**	1/30/2007 10:00:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: NSB
Carbon Tetrachloride	ND	100		µg/L	50	2/2/2007
Chlorobenzene	ND	50		µg/L	50	2/2/2007
Chloroethane	ND	100		µg/L	50	2/2/2007
Chloroform	ND	50		µg/L	50	2/2/2007
Chloromethane	ND	50		µg/L	50	2/2/2007
2-Chlorotoluene	ND	50		µg/L	50	2/2/2007
4-Chlorotoluene	ND	50		µg/L	50	2/2/2007
cis-1,2-DCE	ND	50		µg/L	50	2/2/2007
cis-1,3-Dichloropropene	ND	50		µg/L	50	2/2/2007
1,2-Dibromo-3-chloropropane	ND	100		µg/L	50	2/2/2007
Dibromochloromethane	ND	50		µg/L	50	2/2/2007
Dibromomethane	ND	100		µg/L	50	2/2/2007
1,2-Dichlorobenzene	ND	50		µg/L	50	2/2/2007
1,3-Dichlorobenzene	ND	50		µg/L	50	2/2/2007
1,4-Dichlorobenzene	ND	50		µg/L	50	2/2/2007
Dichlorodifluoromethane	ND	50		µg/L	50	2/2/2007
1,1-Dichloroethane	ND	100		µg/L	50	2/2/2007
1,1-Dichloroethene	ND	50		µg/L	50	2/2/2007
1,2-Dichloropropane	ND	50		µg/L	50	2/2/2007
1,3-Dichloropropane	ND	50		µg/L	50	2/2/2007
2,2-Dichloropropane	ND	100		µg/L	50	2/2/2007
1,1-Dichloropropene	ND	50		µg/L	50	2/2/2007
Hexachlorobutadiene	ND	100		µg/L	50	2/2/2007
2-Hexanone	ND	500		µg/L	50	2/2/2007
Isopropylbenzene	ND	50		µg/L	50	2/2/2007
4-Isopropyltoluene	63	50		µg/L	50	2/2/2007
4-Methyl-2-pentanone	ND	500		µg/L	50	2/2/2007
Methylene Chloride	ND	150		µg/L	50	2/2/2007
n-Butylbenzene	ND	50		µg/L	50	2/2/2007
n-Propylbenzene	ND	50		µg/L	50	2/2/2007
sec-Butylbenzene	ND	100		µg/L	50	2/2/2007
Styrene	ND	75		µg/L	50	2/2/2007
tert-Butylbenzene	ND	50		µg/L	50	2/2/2007
1,1,1,2-Tetrachloroethane	ND	50		µg/L	50	2/2/2007
1,1,2,2-Tetrachloroethane	ND	50		µg/L	50	2/2/2007
Tetrachloroethene (PCE)	ND	50		µg/L	50	2/2/2007
trans-1,2-DCE	ND	50		µg/L	50	2/2/2007
trans-1,3-Dichloropropene	ND	50		µg/L	50	2/2/2007
1,2,3-Trichlorobenzene	ND	50		µg/L	50	2/2/2007
1,2,4-Trichlorobenzene	ND	50		µg/L	50	2/2/2007
1,1,1-Trichloroethane	ND	50		µg/L	50	2/2/2007

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	AL-2 to EP-1
Lab Order:	0701363	**Collection Date:**	1/30/2007 10:00:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: NSB
1,1,2-Trichloroethane	ND	50		µg/L	50	2/2/2007
Trichloroethene (TCE)	ND	50		µg/L	50	2/2/2007
Trichlorofluoromethane	ND	50		µg/L	50	2/2/2007
1,2,3-Trichloropropane	ND	100		µg/L	50	2/2/2007
Vinyl chloride	ND	50		µg/L	50	2/2/2007
Xylenes, Total	ND	150		µg/L	50	2/2/2007
Surr: 1,2-Dichloroethane-d4	105	76.6-113		%REC	50	2/2/2007
Surr: 4-Bromofluorobenzene	104	77-117		%REC	50	2/2/2007
Surr: Dibromofluoromethane	113	72.3-121		%REC	50	2/2/2007
Surr: Toluene-d8	100	73-113		%REC	50	2/2/2007

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Pilot T. C. Eff.
Lab Order:	0701363	**Collection Date:**	1/30/2007 10:30:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	22	3.0		mg/L	1	2/8/2007 12:21:17 AM
Motor Oil Range Organics (MRO)	17	15		mg/L	1	2/8/2007 12:21:17 AM
Surr: DNOP	113	58-140		%REC	1	2/8/2007 12:21:17 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: LMM
Gasoline Range Organics (GRO)	0.31	0.050		mg/L	1	2/2/2007 1:18:04 PM
Surr: BFB	124	79.2-121	S	%REC	1	2/2/2007 1:18:04 PM
EPA METHOD 7470: MERCURY						Analyst: MAP
Mercury	ND	0.00020		mg/L	1	2/7/2007
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: IC
Arsenic	ND	0.050		mg/L	1	2/5/2007 10:39:11 AM
Barium	ND	0.050		mg/L	1	2/5/2007 10:39:11 AM
Cadmium	ND	0.0050		mg/L	1	2/5/2007 10:39:11 AM
Chromium	ND	0.015		mg/L	1	2/5/2007 10:39:11 AM
Lead	ND	0.012		mg/L	1	2/5/2007 10:39:11 AM
Selenium	ND	0.12		mg/L	1	2/5/2007 10:39:11 AM
Silver	ND	0.012		mg/L	1	2/5/2007 2:37:03 PM
EPA METHOD 8260B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	2/2/2007
Toluene	3.8	1.0		µg/L	1	2/2/2007
Ethylbenzene	ND	1.0		µg/L	1	2/2/2007
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	2/2/2007
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/2/2007
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/2/2007
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	2/2/2007
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	2/2/2007
Naphthalene	ND	2.0		µg/L	1	2/2/2007
1-Methylnaphthalene	ND	4.0		µg/L	1	2/2/2007
2-Methylnaphthalene	ND	4.0		µg/L	1	2/2/2007
Acetone	180	100		µg/L	10	2/2/2007
Bromobenzene	ND	1.0		µg/L	1	2/2/2007
Bromochloromethane	ND	1.0		µg/L	1	2/2/2007
Bromodichloromethane	ND	1.0		µg/L	1	2/2/2007
Bromoform	ND	1.0		µg/L	1	2/2/2007
Bromomethane	ND	2.0		µg/L	1	2/2/2007
2-Butanone	ND	10		µg/L	1	2/2/2007
Carbon disulfide	ND	10		µg/L	1	2/2/2007

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Pilot T. C. Eff.
Lab Order:	0701363	**Collection Date:**	1/30/2007 10:30:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: NSB
Carbon Tetrachloride	ND	2.0		µg/L	1	2/2/2007
Chlorobenzene	ND	1.0		µg/L	1	2/2/2007
Chloroethane	ND	2.0		µg/L	1	2/2/2007
Chloroform	17	1.0		µg/L	1	2/2/2007
Chloromethane	ND	1.0		µg/L	1	2/2/2007
2-Chlorotoluene	ND	1.0		µg/L	1	2/2/2007
4-Chlorotoluene	ND	1.0		µg/L	1	2/2/2007
cis-1,2-DCE	ND	1.0		µg/L	1	2/2/2007
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	2/2/2007
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	2/2/2007
Dibromochloromethane	ND	1.0		µg/L	1	2/2/2007
Dibromomethane	ND	2.0		µg/L	1	2/2/2007
1,2-Dichlorobenzene	ND	1.0		µg/L	1	2/2/2007
1,3-Dichlorobenzene	ND	1.0		µg/L	1	2/2/2007
1,4-Dichlorobenzene	3.5	1.0		µg/L	1	2/2/2007
Dichlorodifluoromethane	ND	1.0		µg/L	1	2/2/2007
1,1-Dichloroethane	ND	2.0		µg/L	1	2/2/2007
1,1-Dichloroethene	ND	1.0		µg/L	1	2/2/2007
1,2-Dichloropropane	ND	1.0		µg/L	1	2/2/2007
1,3-Dichloropropane	ND	1.0		µg/L	1	2/2/2007
2,2-Dichloropropane	ND	2.0		µg/L	1	2/2/2007
1,1-Dichloropropene	ND	1.0		µg/L	1	2/2/2007
Hexachlorobutadiene	ND	2.0		µg/L	1	2/2/2007
2-Hexanone	ND	10		µg/L	1	2/2/2007
Isopropylbenzene	ND	1.0		µg/L	1	2/2/2007
4-Isopropyltoluene	1.6	1.0		µg/L	1	2/2/2007
4-Methyl-2-pentanone	ND	10		µg/L	1	2/2/2007
Methylene Chloride	ND	3.0		µg/L	1	2/2/2007
n-Butylbenzene	ND	1.0		µg/L	1	2/2/2007
n-Propylbenzene	ND	1.0		µg/L	1	2/2/2007
sec-Butylbenzene	ND	2.0		µg/L	1	2/2/2007
Styrene	ND	1.5		µg/L	1	2/2/2007
tert-Butylbenzene	ND	1.0		µg/L	1	2/2/2007
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	2/2/2007
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	2/2/2007
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	2/2/2007
trans-1,2-DCE	ND	1.0		µg/L	1	2/2/2007
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	2/2/2007
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	2/2/2007
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	2/2/2007
1,1,1-Trichloroethane	ND	1.0		µg/L	1	2/2/2007

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Pilot T. C. Eff.
Lab Order:	0701363	**Collection Date:**	1/30/2007 10:30:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **NSB**
1,1,2-Trichloroethane	ND	1.0		µg/L	1	2/2/2007
Trichloroethene (TCE)	ND	1.0		µg/L	1	2/2/2007
Trichlorofluoromethane	ND	1.0		µg/L	1	2/2/2007
1,2,3-Trichloropropane	ND	2.0		µg/L	1	2/2/2007
Vinyl chloride	ND	1.0		µg/L	1	2/2/2007
Xylenes, Total	ND	3.0		µg/L	1	2/2/2007
Surr: 1,2-Dichloroethane-d4	110	76.6-113		%REC	1	2/2/2007
Surr: 4-Bromofluorobenzene	103	77-117		%REC	1	2/2/2007
Surr: Dibromofluoromethane	115	72.3-121		%REC	1	2/2/2007
Surr: Toluene-d8	99.5	73-113		%REC	1	2/2/2007

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NAPIS Eff.
Lab Order:	0701363	**Collection Date:**	1/30/2007 11:00:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	260	3.0		mg/L	1	2/8/2007 12:55:07 AM
Motor Oil Range Organics (MRO)	ND	15		mg/L	1	2/8/2007 12:55:07 AM
Surr: DNOP	119	58-140		%REC	1	2/8/2007 12:55:07 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: LMM
Gasoline Range Organics (GRO)	14	2.5		mg/L	50	2/2/2007 2:20:45 PM
Surr: BFB	104	79.2-121		%REC	50	2/2/2007 2:20:45 PM
EPA METHOD 8260B: VOLATILES						Analyst: NSB
Benzene	1800	50		µg/L	50	2/2/2007
Toluene	1900	50		µg/L	50	2/2/2007
Ethylbenzene	170	50		µg/L	50	2/2/2007
Methyl tert-butyl ether (MTBE)	ND	75		µg/L	50	2/2/2007
1,2,4-Trimethylbenzene	300	50		µg/L	50	2/2/2007
1,3,5-Trimethylbenzene	90	50		µg/L	50	2/2/2007
1,2-Dichloroethane (EDC)	ND	50		µg/L	50	2/2/2007
1,2-Dibromoethane (EDB)	ND	50		µg/L	50	2/2/2007
Naphthalene	550	100		µg/L	50	2/2/2007
1-Methylnaphthalene	1800	200		µg/L	50	2/2/2007
2-Methylnaphthalene	3000	200		µg/L	50	2/2/2007
Acetone	ND	500		µg/L	50	2/2/2007
Bromobenzene	ND	50		µg/L	50	2/2/2007
Bromochloromethane	ND	50		µg/L	50	2/2/2007
Bromodichloromethane	ND	50		µg/L	50	2/2/2007
Bromoform	ND	50		µg/L	50	2/2/2007
Bromomethane	ND	100		µg/L	50	2/2/2007
2-Butanone	ND	500		µg/L	50	2/2/2007
Carbon disulfide	ND	500		µg/L	50	2/2/2007
Carbon Tetrachloride	ND	100		µg/L	50	2/2/2007
Chlorobenzene	ND	50		µg/L	50	2/2/2007
Chloroethane	ND	100		µg/L	50	2/2/2007
Chloroform	ND	50		µg/L	50	2/2/2007
Chloromethane	ND	50		µg/L	50	2/2/2007
2-Chlorotoluene	ND	50		µg/L	50	2/2/2007
4-Chlorotoluene	ND	50		µg/L	50	2/2/2007
cis-1,2-DCE	ND	50		µg/L	50	2/2/2007
cis-1,3-Dichloropropene	ND	50		µg/L	50	2/2/2007
1,2-Dibromo-3-chloropropane	ND	100		µg/L	50	2/2/2007
Dibromochloromethane	ND	50		µg/L	50	2/2/2007
Dibromomethane	ND	100		µg/L	50	2/2/2007
1,2-Dichlorobenzene	ND	50		µg/L	50	2/2/2007

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Feb-07*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NAPIS Eff.
Lab Order:	0701363	**Collection Date:**	1/30/2007 11:00:00 AM
Project:	NMED Quarterly Water 1st Qtr 2007	**Date Received:**	1/31/2007
Lab ID:	0701363-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: NSB
1,3-Dichlorobenzene	ND	50		µg/L	50	2/2/2007
1,4-Dichlorobenzene	ND	50		µg/L	50	2/2/2007
Dichlorodifluoromethane	ND	50		µg/L	50	2/2/2007
1,1-Dichloroethane	ND	100		µg/L	50	2/2/2007
1,1-Dichloroethene	ND	50		µg/L	50	2/2/2007
1,2-Dichloropropane	ND	50		µg/L	50	2/2/2007
1,3-Dichloropropane	ND	50		µg/L	50	2/2/2007
2,2-Dichloropropane	ND	100		µg/L	50	2/2/2007
1,1-Dichloropropene	ND	50		µg/L	50	2/2/2007
Hexachlorobutadiene	ND	100		µg/L	50	2/2/2007
2-Hexanone	ND	500		µg/L	50	2/2/2007
Isopropylbenzene	ND	50		µg/L	50	2/2/2007
4-Isopropyltoluene	ND	50		µg/L	50	2/2/2007
4-Methyl-2-pentanone	ND	500		µg/L	50	2/2/2007
Methylene Chloride	ND	150		µg/L	50	2/2/2007
n-Butylbenzene	ND	50		µg/L	50	2/2/2007
n-Propylbenzene	ND	50		µg/L	50	2/2/2007
sec-Butylbenzene	ND	100		µg/L	50	2/2/2007
Styrene	ND	75		µg/L	50	2/2/2007
tert-Butylbenzene	ND	50		µg/L	50	2/2/2007
1,1,1,2-Tetrachloroethane	ND	50		µg/L	50	2/2/2007
1,1,2,2-Tetrachloroethane	ND	50		µg/L	50	2/2/2007
Tetrachloroethene (PCE)	ND	50		µg/L	50	2/2/2007
trans-1,2-DCE	ND	50		µg/L	50	2/2/2007
trans-1,3-Dichloropropene	ND	50		µg/L	50	2/2/2007
1,2,3-Trichlorobenzene	ND	50		µg/L	50	2/2/2007
1,2,4-Trichlorobenzene	ND	50		µg/L	50	2/2/2007
1,1,1-Trichloroethane	ND	50		µg/L	50	2/2/2007
1,1,2-Trichloroethane	ND	50		µg/L	50	2/2/2007
Trichloroethene (TCE)	ND	50		µg/L	50	2/2/2007
Trichlorofluoromethane	ND	50		µg/L	50	2/2/2007
1,2,3-Trichloropropane	ND	100		µg/L	50	2/2/2007
Vinyl chloride	ND	50		µg/L	50	2/2/2007
Xylenes, Total	1000	150		µg/L	50	2/2/2007
Surr: 1,2-Dichloroethane-d4	110	76.6-113		%REC	50	2/2/2007
Surr: 4-Bromofluorobenzene	107	77-117		%REC	50	2/2/2007
Surr: Dibromofluoromethane	119	72.3-121		%REC	50	2/2/2007
Surr: Toluene-d8	99.4	73-113		%REC	50	2/2/2007

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: NMED Quarterly Water 1st Qtr 2007

Work Order: 0701363

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: MB-12228		*MBLK*			Batch ID: **12228**		Analysis Date:		2/7/2007 8:57:50 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-12228		*LCS*			Batch ID: **12228**		Analysis Date:		2/7/2007 9:31:52 PM
Diesel Range Organics (DRO)	5.664	mg/L	1.0	113	74	157			
Sample ID: LCSD-12228		*LCSD*			Batch ID: **12228**		Analysis Date:		2/7/2007 10:05:58 PM
Diesel Range Organics (DRO)	5.677	mg/L	1.0	114	74	157	0.236	23	
Method: SW8015									
Sample ID: 5ML RB		*MBLK*			Batch ID: **R22332**		Analysis Date:		1/31/2007 10:01:04 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 5ML RB		*MBLK*			Batch ID: **R22359**		Analysis Date:		2/2/2007 9:44:47 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 2.5UG GRO LCS		*LCS*			Batch ID: **R22332**		Analysis Date:		1/31/2007 12:01:36 PM
Gasoline Range Organics (GRO)	0.5354	mg/L	0.050	102	80	115			
Sample ID: 2.5UG GRO LCS		*LCS*			Batch ID: **R22359**		Analysis Date:		2/2/2007 11:45:14 AM
Gasoline Range Organics (GRO)	0.4912	mg/L	0.050	93.4	80	115			

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: NMED Quarterly Water 1st Qtr 2007 **Work Order:** 0701363

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: 5ml reagent blank		*MBLK*			Batch ID: **R22349**		Analysis Date:		2/1/2007
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.5						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromochloromethane	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	2.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	2.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	2.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	2.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	2.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: NMED Quarterly Water 1st Qtr 2007 **Work Order:** 0701363

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: 5ml reagent blank		*MBLK*			Batch ID:	R22349	Analysis Date:		2/1/2007
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	2.0						
Styrene	ND	µg/L	1.5						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	1.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: b1		*MBLK*			Batch ID:	R22363	Analysis Date:		2/2/2007
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.5						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromochloromethane	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	2.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	2.0						
Chlorobenzene	ND	µg/L	1.0						

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: NMED Quarterly Water 1st Qtr 2007 **Work Order:** 0701363

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: b1		*MBLK*				Batch ID: **R22363**	Analysis Date:		2/2/2007
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	2.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	2.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	2.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	2.0						
Styrene	ND	µg/L	1.5						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	1.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: NMED Quarterly Water 1st Qtr 2007 **Work Order:** 0701363

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: b1		*MBLK*			Batch ID:	**R22363**	Analysis Date:		2/2/2007
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 100ng lcs		*LCS*			Batch ID:	**R22349**	Analysis Date:		2/1/2007
Benzene	20.29	µg/L	1.0	101	75.6	111			
Toluene	18.33	µg/L	1.0	91.6	69.6	113			
Chlorobenzene	18.43	µg/L	1.0	92.1	79.7	112			
1,1-Dichloroethene	22.00	µg/L	1.0	110	72.5	121			
Trichloroethene (TCE)	21.26	µg/L	1.0	106	63.7	123			
Sample ID: 100ng lcs		*LCS*			Batch ID:	**R22363**	Analysis Date:		2/2/2007
Benzene	21.20	µg/L	1.0	106	75.6	111			
Toluene	20.29	µg/L	1.0	101	69.6	113			
Chlorobenzene	20.89	µg/L	1.0	104	79.7	112			
1,1-Dichloroethene	21.69	µg/L	1.0	108	72.5	121			
Trichloroethene (TCE)	22.36	µg/L	1.0	112	63.7	123			
Method: SW7470									
Sample ID: MB-12270		*MBLK*			Batch ID:	**12270**	Analysis Date:		2/7/2007
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-12270		*LCS*			Batch ID:	**12270**	Analysis Date:		2/7/2007
Mercury	0.005019	mg/L	0.00020	100	80	120			
Method: SW6010A									
Sample ID: MB-12247		*MBLK*			Batch ID:	**12247**	Analysis Date:		2/5/2007 9:02:01 AM
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Sample ID: LCS-12247		*LCS*			Batch ID:	**12247**	Analysis Date:		2/5/2007 9:05:06 AM
Arsenic	0.4868	mg/L	0.020	97.4	80	120			
Barium	0.4813	mg/L	0.020	96.3	80	120			
Cadmium	0.4705	mg/L	0.0020	94.1	80	120			
Chromium	0.5264	mg/L	0.0060	105	80	120			
Lead	0.4709	mg/L	0.0050	94.2	80	120			
Selenium	0.4286	mg/L	0.050	85.7	80	120			

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN | Date and Time Received: 1/31/2007

Work Order Number 0701363 | Received by AT

Checklist completed by _____ 1/31/07
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 ☐	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 - Preservation labels on bottle and cap match?		Yes ☑	No ☐	N/A ☐			
Water - pH acceptable upon receipt?		Yes ☑	No ☐	N/A ☐			
Container/Temp Blank temperature?		6°	*4° C ± 2 Acceptable* If given sufficient time to cool.				

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

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

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: NMED Quarterly Water 1ST Q+R. 2007
Project #:
Project Manager: Steve Morris
Sampler: Steve Morris
Sample Temperature: 6

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals Total	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles or Headspace (Y or N)
1-30-07	1000	H_2O	AL-Zt-EP-1				0701363 -1			X					X			X		
"	1030	"	Pilot T.C. Eff.				-2			X					X			X		
"	1100	"	NAPIS Eff.				-3			X								X		

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
1-31-07	0901	Steve Morris	1/31/07 0901
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

MCKINLEY COUNTY FIRE/EMERGENCY MANAGEMENT
P.O.BOX 5210
GALLUP, NM
PHONE 505-863-3839
FAX 505-863-1439

FACSIMILE TRANSMITTAL SHEET

TO: Glenn VanGeerten	FROM: Mark A. Diaz and Mike Pemberton
COMPANY: EMNRD	DATE: 02-15-07
FAX NUMBER: (505) 476-3462	TOTAL NO. OF PAGES INCLUDING COVER: 9
PHONE NUMBER:	SENDER'S NUMBER: 505-863-3839
RE: Giant Refinery	YOUR REFERENCE NUMBER:

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT **X PLEASE REPLY** ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Misc. Reports

NFIRS - 1 Basic

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
31019	NM	12/27/2006		0383606	0

B Location

Address Type	Number/Milepost	Prefix	Street or Highway	Street Type	Suffix
1 - Street addres			#92 Giant Crossing		

Apt./Suite/Room	City	State	Zip Code
	Jamestown	NM	87323

Census Tract

Cross street or directions, as applicable

C Incident Type

240 - Explosion (no fire

Incident Type

D Aid Given or Received

Their FDID	Their State	Their Incident Number

N - None

Type Aid Given or Received

E1 Dates & Times (Midnight is 0000)

	Month	Day	Year	Hour	Min	Seconds
Alarm	12/27/2006			00:30		
Arrival	12/27/2006			00:45		
Controlled	12/27/2006			01:11		
Last Unit Cleared	12/27/2006			01:22		

E2 Shifts & Alarms (Local Option)

Shift or platoon	Alarms	District

E3 Special Studies (Local Option)

Special Study ID#	Special Study Value

F Actions Taken

92 - Standby

Actions Taken

G1 Resources

[X] Check this box and skip this section if an Apparatus or Personnel form is used.

	Apparatus	Personnel
Suppression	2	3
EMS	0	0
Other	0	0

[N] Check box if resource counts include aid received resources.

G2 Estimated Dollar Losses & Values

LOSSES: Required for all fires if known. Optional for non fires.

Property	$
Contents	$

PRE-INCIDENT VALUE: Optional

Property	$
Contents	$

H1 Casualties

	Deaths	Injuries
Fire Service	0	0
Civilian	0	0

H2 Detector

H3 Hazardous Materials Release

I Mixed Use Property

J Property Use: 700 - Manufacturing, processing

K1 Person/Entity Involved

Mr., Ms., Mrs.	First Name	MI	Last Name	Suffix

Number	Prefix	Street or Highway	Street Type	Suffix
		#92 Giant Crossing		

Post Office Box	Apt./Suite/Room	City
		Jamestown

State	Zip Code	Business name (if applicable)	Area Code	Phone Number
NM	87323	Giant/Pilot Refinery	7226655	

K2 Owner

Mr., Ms., Mrs.	First Name	MI	Last Name	Suffix

Number	Prefix	Street or Highway	Street Type	Suffix
		#92 Giant Crossing		

Post Office Box	Apt./Suite/Room	City
		Jamestown

State	Zip Code	Business name (if applicable)	Area Code	Phone Number
NM	87323	Giant/Pilot Refinery	7226655	

A

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure
31019	NM	12/27/2006		0383606	0

NFIRS Remarks

Remarks

Metro contacted Gallup Fire Station One via land line and advised of reported explosions and fire at the Giant Refinery near the Pilot Travel Center on US Interstate 40. Metro also stated that several attempts to obtain further information at the scene via landline failed due to un-cooperating Refinery staff who stated that they could handle their own incidents and promptly hung up (the landline). Surrounding Volunteer Fire Departments that had been toned out to the incident requested additional units and manpower be supplied by Gallup Fire for assistance. B1, and Eng 3 where dispatched to the scene where they were placed into the Staging Area by a County Volunteer Fire Department Staging Officer near the security station to await activation along with several other units from the county. No Refinery representatives were present at the staging area with all communications routed through McKinley County Metropolitan Dispatch. All on scene units were promptly canceled without activation into the hot zone.

M Authorization

	Signature	Position or rank	Assignment	Month Day Year
J. Pablo (Officer in charge ID)	J Pablo	SC	One	12/27/2006
N. Lujan (Member making report ID)	N Lujan	SLt	Two	12/27/2006

FDID	State	Incident Date (MM DD YYYY)	Station	Incident Number	Exposure	NFIRS - 8 Apparatus or Resources
31019	NM	12/27/2006		0383606	0	

B Apparatus or Resource (Use codes listed below)	Dates and Times (Month Day Year Hour/Min)	Sent [X]	Number of People	Use (Check ONE box for each apparatus to indicate its main use at the incident.)	Actions Taken
1 ID Eng3 / Type 11	Dispatch / Arrival / Clear	X	2	1 - Suppress	
2 ID B1 / Type 16	Dispatch / Arrival / Clear	X	1	1 - Suppress	
3 ID / Type	Dispatch / Arrival / Clear				
4 ID / Type	Dispatch / Arrival / Clear				
5 ID / Type	Dispatch / Arrival / Clear				
6 ID / Type	Dispatch / Arrival / Clear				
7 ID / Type	Dispatch / Arrival / Clear				
8 ID / Type	Dispatch / Arrival / Clear				
9 ID / Type	Dispatch / Arrival / Clear				
10 ID / Type	Dispatch / Arrival / Clear				
11 ID / Type	Dispatch / Arrival / Clear				
12 ID / Type	Dispatch / Arrival / Clear				
13 ID / Type	Dispatch / Arrival / Clear				

METRO DISP / GALLUP PD /MCSO AEGIS PUBLIC SAFETY SYSTEM PAGE 1
DATE 02/13/2007 INCIDENT REPORT PL1190
TIME 16:58:21 MD_ORPHEY

INCIDENT #: 2006-00015167 ORI #: MCSO INCIDENT TYPE: SF P STRCT FIRE

LOCATION . . : 1 GIANT CROSSING VENUE: Jamestown
COMMON NAME . : PILOT TRVL CTR SHOP
PHONE NUMBER : 505-863-7482
NATURE OF CALL: FIRE AT THE REFINERY

	DATE:	TIME:	
CALL . . . . :	12/27/2006	0:01:23	Wednesday
DISPATCH . . :	12/27/2006	0:01:41	
ARRIVE 1 . . :	12/27/2006	0:12:22	
CLEAR . . . . :	12/27/2006	2:42:16	

AREA . : NE SECTION : 6600 BEAT: MCSO EAST
QUADRANT: D11 DISTRICT: GEMS GRID:

UNIT 1 #: 20 ID # 1: KENDALL,JOHN,, ID # 2:
UNIT 2 #: 18 ID # 3: HENIO,ELREANO,, ID # 4:

RECEIVED ORI/ID : MCMDA ANTONIO,JACKIE,,
DISPATCH ORI/ID : MCMDA ANTONIO,JACKIE,,
DISPATCH SHIFT : NS
SOURCE . . . . : Telephone REPORT REQUIRED: YES MUTUAL AID:
DISPOSITION . . : PRIORITY . . . : 1 CLEARED BY: MD_SIFUENT

ORIGINAL INFORMATION:
LOCATION : 1 GIANT CROSSING VENUE: Jamestown
INCD TYPE: SF P STRCT FIRE PRIORITY: 1

RADIO LOG:

UNIT:	TYPE:	STATUS:	DISPATCH:	ARRIVE:	CLEAR:	ID # 1:
20	SGT	Dispatch	0:01:41			KENDALL,JOHN,,
18	DPTY	Dispatch	0:12:04			HENIO,ELREANO,,
20	SGT	Arrive		0:12:22		KENDALL,JOHN,,
SPO	NMSP	Dispatch	0:12:35			
18	DPTY	Arrive		0:25:57		HENIO,ELREANO,,
SPO	NMSP	Arrive		0:32:12		
SPO	NMSP	Secd Loc		0:49:53		
	SEC. LOC.: GIANT					
18	DPTY	Secd Loc		0:49:53		HENIO,ELREANO,,
	SEC. LOC.: GIANT					
20	SGT	Secd Loc		0:49:53		KENDALL,JOHN,,
	SEC. LOC.: GIANT					
SPO	NMSP	Secd Loc		0:50:02		
	SEC. LOC.: GIANT REF					
18	DPTY	Secd Loc		0:50:02		HENIO,ELREANO,,
	SEC. LOC.: GIANT REF					
20	SGT	Secd Loc		0:50:02		KENDALL,JOHN,,
	SEC. LOC.: GIANT REF					
SPO	NMSP	Clear Unit			0:57:33	
18	DPTY	Check-In		1:08:17		HENIO,ELREANO,,
	SEC. LOC.: GIANT REF					
20	SGT	Check-In		1:08:17		KENDALL,JOHN,,
	SEC. LOC.: GIANT REF					

18	DPTY	Clear Unit		1:51:18	HENIO,ELREANO,,
20	SGT	Secd Loc	1:51:25		KENDALL,JOHN,,
SEC. LOC.: FMO					
20	SGT	Clear Unit		2:42:16	KENDALL,JOHN,,

DOCUMENTS:
Dispatch Narrative
Information on the units assigned to the call follows.
Unit#: 20 Radio#: 020 Ofcr 1: 1801 Ofcr 2: 1801
DSP: 12/27/06 00:01 ARV: 12/27/06 00:12 CLR: 12/27/06 02:42
Unit#: 18 Radio#: 018 Ofcr 1: 1313 Ofcr 2: 1313
DSP: 12/27/06 00:12 ARV: 12/27/06 00:25 CLR: 12/27/06 01:51
Unit#: SPO Radio#: 000 Ofcr 1: Ofcr 2:
DSP: 12/27/06 00:12 ARV: 12/27/06 00:32 CLR: 12/27/06 00:57

JA//ADV SO20	0:02:26
20//I WAS JUST OUT THERE BE BACK ENRT 89 CK	0:02:36
JA//RECD ANOTHER CALL FROM PASSING TRUCK DRIVER	0:02:46
JA//CALLING GIANT REFINERY	0:03:49
JA//SPOKE TO UNK MALE	0:04:25
JA//MALE REFUSED TO GIVE NAME ADV WE HAVE IT UNDER CONTROL	0:05:35
JA//WOULD NOT ADV IF THERE WAS A FIRE OR NOT	0:05:44
JA//MALE HUNG UP ON ME....	0:06:06
JA//ADV SO20	0:06:12
JA>>20 WILL BE PAGING OUT FIRE	0:06:46
MS..PAGED D11	0:06:59
20//AFFIRM GO AHEAD AND ALSO LET GALLUP FIRE KNOW	0:07:04
D11..ACK WILL RESPOND	0:07:06
IN CASE ITS A HAZMAT CALL	0:07:10
BG...REC'D ANOTHER CALL AND A MALE STATED THAT HE SEES	0:07:53
FLAMES COMING FROM A TOWER	0:08:00
20..HAS D11 BEEN ENRT	0:08:47
MS.1098 MED* WILL BE ON 1023 FOR NOW	0:08:51
RG..ADV THEY ACK	0:08:51
20..THEREIS A FIRE IN REFINERY	0:08:58
20..GOING PRETTY GOOD TOO	0:09:02
20..WANT TO COORDINATE W/D11 IF THEY WANT TO HAVE	0:09:16
20..RDS CLOSED	0:09:27
20..WILL BE ON GIBSON FIRE	0:09:35
MS..ADV D11 CONF ON SF AT REFINERY	0:10:18
328..NEED FURTHER ASSISTANCE???	0:10:20
RG..UNK AT THIS TIME STILL GETTING FURTHER INFO	0:10:36
328..AND 366 WILL BE ENRT TO ASSIST	0:10:46
20..SEMI TK LOT HERE I WILL BE SET UP	0:11:17
JA//98 W GFD PABLO ADV OK NO REPONSE WILL BE ON STAND BY	0:11:27
RG..ADV SO20 OF UPDATE	0:12:50
JA//NMSP VALERIE ADV ONE UNIT ENRT FOR TRAFFIC	0:12:52
20..A STORY IN A HALF HIGH	0:13:16
D11,,WE ARE ENRT UKN IF THEY ARE GOING TO LET US IN AT GATE	0:13:47
20..IF SO U LET ME KNOW	0:13:59
MS..ADV GF IS ON 1023 AT THIS TIME	0:14:21
20..GO AROUND ON MY LEFT	0:14:34
D11..WERE ALL ROLLING 1097 ALL UNITS	0:17:12
1101//I WILL BE IC AND BE HELD AT GATE AND NO RPT AT THIS	0:17:43
TIME AND WIL LET YOU KNOJW AS SOON AS WE KNOW UPDATES	0:18:00
D11..THERE ADV IT IS COMING OFF THE FLAIR	0:20:16

METRO DISP / GALLUP PD /MCSO AEGIS PUBLIC SAFETY SYSTEM PAGE 3
DATE 02/13/2007 INCIDENT REPORT PL1190
TIME 16:58:21 MD_ORPHEY

JA//98 NOTIFYING AOM ORPHEY REQ THAT WE ALSO NOTIFY	0:21:30
MARK DIAZ	0:21:33
JA//98 NOTIFYING MARK DIAZ	0:23:44
20..CARRY MY PORTABLE CHANNEL	0:24:24
20..SPO..ARE HERE	0:24:38
20..APPARENTLY THEY ARENT LETTING FIRE CREWS IN	0:24:49
20..THEY WANTED ME TO SEE IF CAN GET THEM TO LET	0:24:59
ENTER	0:25:01
JA//MARK DIAZ WILL BE MONITORING GIBSON FIRE	0:25:03
18..ON SCENE W/20	0:26:09
1101//PAGE OUT D18 D13 D1 KEEP GFD ON STAND BY FOR US	0:27:26
1101,,FIXING TO MOVE UNITS AND PAGE	0:27:31
JA//98 PAGED D1	0:28:41
D11..GET GF ROLLUING	0:29:33
MJS..PAGED D18,D13	0:29:40
D13,,ACK	0:29:45
RG..CLLN GFD/PABLO	0:29:52
JA//2ND PAGE FOR D1	0:30:35
GF..ASC TANKER/ENGINE 49??	0:31:10
RG..ADV MANPOWER/ENGINE ASSISTANCE	0:31:20
D13,,WE DID NOT RECIEVE PAGE RE PAGE	0:31:21
D13,,DOES D11 NEED TANLER OR ENGINE	0:31:45
1101..ADV MAN POWER AND ENGINED	0:31:58
GF..SENDING ST3...AND WILL SOMEONE GOING	0:32:02
JA//CALLING 101 VIA PS HE WILL CK W HIS VOLUNTEERS	0:32:03
AND CALL US BACK	0:32:06
MS..ADV D13 D13 ,, 104	0:32:10
E13,,08 ENRT PILOT	0:38:26
E3..ENRT	0:38:39
T1//10-8 ENRT REFINERY	0:39:37
B1..ENRT	0:42:12
P13..ENRT	0:42:22
E3//BE SWITCHING OVER TO GIBSON FIRE	0:42:34
NATURE OF CALL ***FIRE AT THE REFINERY***	0:43:25
??//WILL BE IN COMMAND 1101 CONDUCTING COMM	0:49:54
BG...NODEE LUJAN IS ON THE WAY IN THE BRUSH TK FROM GFD	0:50:44
JA//MARK DIAZ VIA PS FRANK DALLER AT REFINERY	0:50:53
E3..KNOW WHERE STAGING IS GOING TO BE	0:51:01
RG..ADV BY THE GUARD SHACK	0:51:22
E3..ASC IF FIRE UNDERCONTROL OR ANY INJURIES	0:51:33
REQ SAFETY OFCR FRANK DALLER CONTACT METRO	0:51:47
RG..UNK ON INJURIES...NOT LETTING US KNOW ABOUT	0:51:50
ANYTHING	0:52:02
AND GIVE UPDATE OR GET W SP OR SO OFCR	0:52:03
RG..ADV HAVING SEVERAL DISTS RESPNDING	0:52:17
E3>>COMM APPROX 2 MILES OUT WHERES STAGING SET UP?	0:52:27
COMM//RIGHT IN FRONT OF REFINERY	0:52:33
RR1//10-8	0:55:14
D13..97	0:56:48
20..SP IS GONNA 98 8	0:57:07
T1..1097	0:57:09
20..NOT GONNA BE A HAZMAT	0:57:11
20..WE'RE STILL STANDING BY	0:57:23
20..NOT LETTING TANKERS COME IN	0:57:28
JA>>IC COMMAND PLEASE CALL METRO ASAP	0:57:42

E3//10-97	0:58:00
E3..97	0:58:03
T13//10-97 1022'D BY E13	1:01:40
R1.1022ED ENRT BK TO ST	1:02:47
E13//WEVE BEEN 1022'D BY COMM ENRT BACK TO STATION	1:04:24
E3..CLEARED ENRT BK ST	1:04:48
MS..CP ADV HE IS STILL AWAKE	1:05:16
THOREAU E1//BEEN RELEASED BY 1101 INC COMM ENRT THOREAU	1:05:50
JA//SO20 VIA PS NOT ABLE TO GIVE ANY FURTHER UPDATE	1:11:19
INFO IS AT THE ENTRANCE GATE TRAFFIC CONTROL	1:11:38
R1//108 1	1:12:33
E3..BK ON GF	1:14:17
B1//ALSO BK ONFG	1:14:44
JA//MARK DIAZ VIA PS	1:20:10
JA//HE GOT CALL FROM 101 ANDRES	1:20:50
JA//FIRE IS CONTAINED AND UNITS BEING RELEASED	1:21:03
D11 1101..FIRE IS OUT AND BNE RELEASING WHISPERING CEDERS	1:22:24
D11..AND ON INFO FOR MARK PERSDONAL IS BEING RELEASED AND	1:22:45
THERE IS NO OTHER INFORMATION	1:22:54
B1//BIQ	1:23:01
E3..BIQ	1:23:05
D11,,AND AS FAR AS OUT TANKERS IT IS GOING TO BE UP TO THEM	1:23:47
IF THEY LET US IN	1:23:52
20..18 HAS BEEN RELEASED BY 1101	1:24:02
20..104 WE WILL BE DONE TO THEN	1:24:05
20..BE LEAVING HERE SHORTLY	1:24:11
1101..1101 IC AND BE ARE OFF THE PROP UNTILL THEY COOL IT	1:24:43
AND EVERYONE IS 104 AND ACCOUNTED FOR	1:24:53
T13..BIQ	1:25:20
EE1..BIQ	1:25:46
20..18 ARE 1098 8	1:28:52
20..I'M NOT GONNA WRITE A RPT ON THIS	1:28:59
20..NOTHING TO RPT ON	1:29:13
20..98 W/MARK DIAZ	1:29:23
20..HIM AND PRETTY MUCH EVERYONE ELSE	1:29:31
20..KNOWS WHAT IS GOING ON	1:29:35
T11 T11 E11 1098 108 RELEAVES ALL PERSON AENRT BK TO ST	1:38:31
E13,,BIQ	1:39:04
D11//ALL UNITS BIQ GOOD NIGHT THANK YOU	1:46:45
20..BE OUT AT THE FMO FOR A MIN	1:51:14
20 108	2:42:15

NAMES:
Caller : KIEN,CHRIS,,

P. 01

TRANSACTION REPORT

FEB-15-2007 THU 09:09 AM

FOR:

RECEIVE

DATE	START	SENDER	RX TIME	PAGES	TYPE	NOTE	M#	DP
FEB-15	09:06 AM	1 505 863 1439	2′46″	8	RECEIVE	OK		

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, February 12, 2007 7:54 AM
To: 'Jim Lieb'
Cc: Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Ed Riege; Ed Rios; Steve Morris; Loren Pritzel; Carl Shook; Powell, Brandon, EMNRD
Subject: RE: Giant - Ciniza Refinery NAPIS Leakage Correction Plan

Jim, et al.:

Good morning. For some reason, the left hand margin of your text in your e-mail message below was truncated on my computer. Based on what the agencies (NMED-HWB & NMEMNRD-OCD) were able to read, and in response to your message below regarding the above subject, our comments are as follows:

1) Giant must install the monitoring wells regardless if Giant were to install a steel based secondary liner with secondary leak detection in the NAPI. The monitoring well installation work plan is still due to NMED and OCD on 2/28/07 as stated in your 12/29/06 proposal.

2) Giant states "At present we are anticipating equipping the existing sludge pit of the API with a small notch to catch any accumulated liquid in conjunction with a stand pipe that will be monitored." Giant must clarify this statement. What is the sludge pit of the API, is this the sump? Where will the notch be installed and what is its purpose? Describe the purpose of the stand pipe and describe its function in the sludge pit.

3) The description provided in number 4 is interpreted that Giant will be repairing one bay at at time and utilizing the other bay to handle the refinery's process waste water. If this interpretation is incorrect, Giant must clarify the process for handling refinery process water. Giant also states they will sample for TPH and benzene, this must include BTEX and MTBE.

Please contact me if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Monday, February 05, 2007 8:48 AM
To: Chavez, Carl J, EMNRD
Cc: Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV; Ed Riege; Ed Rios; Steve Morris; Loren Pritzel; Carl Shook
Subject: RE: Giant - Ciniza Refinery NAPIS Leakage Correction Plan

you for your recent email with conditional approval of the Ciniza Refinery of Giant Refining's New API Separator
) Leakage Correction Plan (plan).

nt is committed to implementing the plan at the earliest possible moment. Giant Corporation has approved the funding stainless steel insert system ($750,000) as offered by Siemens Water Technology Group (Siemens). The schedule we d to OCD and NMED in the plan was based primarily on a proposed schedule that was provided with Siemen's ury proposal. We have discussed the schedule with Siemens in regards to whether their proposed schedule can be ated. Their schedule is based on design timeframe, materials procurement, transportation, and on-site fabrication. s has provided Giant with a revised schedule with a shorter timeframe. Due to the complexity of the project nized fabrication/ construction of a complicated liner), the earliest that Siemens can guarantee completion is October Siemen's schedule is included as an attachment to this email. I submitted a purchase requisition on January 30, 2007 chase of the Siemens liner insert system.

our email you state that "if Giant chooses to install a protective coating to repair the cracks with a sealant that handles haw conditions and repair of the secondary containment system (SCS), then Giant must install two monitoring wells." tion as an alternative to coating, is insertion of a secondary stainless steel liner inside the NAPIS in addition to the

' insert liner. The secondary SS steel liner would likely offer the best protection against leakage in comparison to the ɔtions including coating the inside of the bays. The secondary steel liner would be a significantly higher cost option for ɔ implement (additional to the $750,000 primary insert liner) than the protective coating option. If Giant were to install ɔased secondary liner with secondary leak detection in the NAPIS would OCD and NMED be willing to forego tion of the two monitoring wells?

nentioned in item 2, the liner inserts system will be fabricated inside the NAPIS using high temperature thermal ɜ. We will provide details on leak detection at a later date. At present we are anticipating equipping the existing sludge ıe API with a small notch to catch any accumulated liquid in conjunction with a stand pipe that would be monitored. :mens scope of services includes a check out of the final equipment assembly for integrity. Siemens will use a vacuum t on the welded seams which is an acceptable test in accordance with API 650 equivalent to the mechanical integrity under positive pressure as you requested.

:ifications for selection of the NAPIS were based on expected maximum flow rate anticipated during operation of the Refinery. Maximum flow rate is less than 150 gpm. The design capacity of each bay is 150 gpm. Each bay ıally has the capacity to handle the refinery's process waste water. Cinza will make sure that the NAPIS is in good ıg condition prior to beginning the repair work. Ciniza will also ensure that the benzene strippers and all 5 aerators are ıg properly during the repairs. Giant will test water samples for TPH including benzene twice weekly at the effluent e second aeration lagoon during the repairs.

'ill keep OCD and NMED posted as to the progression of the SS insert liner system. Please let us know soon if the ıry steel liner would be acceptable as an alternative to placement of monitoring wells. If you have any questions, please me at jlieb@giant.com or (505) 722-0227.

ly,

b

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, January 18, 2007 3:45 PM
To: Jim Lieb; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Loren Pritzel; Carl Shook; Steve Morris; Price, Wayne, EMNRD; Powell, Brandon, EMNRD
Subject: RE: Giant - Ciniza Refinery NAPIS Leakage Correction Plan

Jim, et al.:

Thanks for providing the above plan. The OCD and NMED (agencies) have completed our review of Giant Refining, "Ciniza Refinery NAPIS Leakage Correction Plan" (plan) for resolving the leakage from the new API Separator and secondary containment system (SCS). The agencies approve the plan with the following conditions:

1) There is concern about the drawn out work schedule to complete the repair work (January to November 2007) on the leaky New API Separator (NAPIS). Seems like this should be tightened up to half the time for everything associated with the NAPIS to be completed. We have been dealing with this problem, since September 8, 2005, when the government agencies first became aware of the problem. However, the presented schedule has unknowns as Giant may be dealing with different contractors and the agencies do not know what time lines Giant was given by the contractors? The agencies believe that the repair work on the leaky NAPIS can be completed over a shorter time period than that proposed and that Giant's target date for completion can and should be closer to July 31, 2007.

2) Giant must demonstrate that there is no downward migration of contamination to groundwater from beneath the NAPIS. If Giant chooses to install a protective coating to repair the cracks with a sealant that handles freeze-thaw conditions in the NAPIS and repair of the secondary containment system (SCS), then Giant must install two monitoring wells.

One monitoring well (MW) should be located next to the NAPIS suspected leak and the second MW should be installed down gradient of the NAPIS. Assuming that subsurface conditions are similar to the conditions at the aeration lagoons, the screened interval in the monitoring well to be located near the leaky NAPIS and adjacent to the SCS. The MW must be installed below the bottom depth of the SCS, but

above any water bearing zone such as the sand layer observed beneath the west side of the aeration lagoons. It may be necessary to install the monitoring well at an angle or drill an angled boring for the collection of soil samples and to determine if ground water is present during drilling. If an angled boring is not drilled, soil samples must be collected during the installation of the MW.

The purpose of the boring/MW installation is to help determine the competency of the SCS; whether there has been a release from the NAPIS to soil and groundwater, and whether groundwater is present that intersects the secondary containment system of the leaky NAPIS. Comparison of general chemistry and organic sampling data of ground water in the monitor wells to analytical data from the NAPIS process water should help determine whether ground water is present in the vicinity of the NAPIS or whether fluid in the SCS is attributable to direct leakage from the NAPIS and determine if a leak is artificially creating a localized water table condition around the leaky NAPIS.

Giant must submit a work plan for the installation of the MWs/borings. The work plan must identify the locations of boring and monitoring wells, the depth of the monitoring wells, the depth at which soil and any ground water samples will be collected, including a proposed monitoring well construction diagram, and sampling methods and procedures. This work plan must be submitted to the agencies by February 28, 2007 to assess contaminant hydrogeology near the NAPIS.

3) How will the 304 SS well liners be sealed? The agencies prefer thermal seal techniques/methods to ensure maximum integrity of liner seams, etc. It appears Giant will use a vacuum box for leak detection afterward to ensure seal integrity. This may present problems in application at certain angles or corners of the bays; however, the agencies also require a Mechanical Integrity Test (MIT) under positive pressure to ensure zero leakage after the leaky NAPIS repair work is completed to demonstrate and document the success of the repair work. Also, it is not clear how the leak detection device(s) is going to be installed. Giant needs to provide the agencies with more details as to where the leak detection device(s) will be installed, what the components and design of the detection system are, etc.

4) Giant needs to address the effluent in the NAPIS and demonstrate how Giant is going to monitor and ensure breakthrough of listed waste does not occur at the ponds during the repair procedure that is expected to take approximately 2 weeks. During the repairs, will Giant utilize one-bay at-a-time while the other bay is still functional? Giant must provide this information to the agencies.

Please contact the agencies if you have questions. I will be back in the office on Tuesday, January 23, 2007. Hope will be away next week, but David Cobrain may be available to assist us next week if necessary. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Friday, December 29, 2006 3:28 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Loren Pritzel; Carl Shook; Steve Morris; Price, Wayne, EMNRD
Subject: Giant - Ciniza Refinery NAPIS Leakage Correction Plan
Importance: High

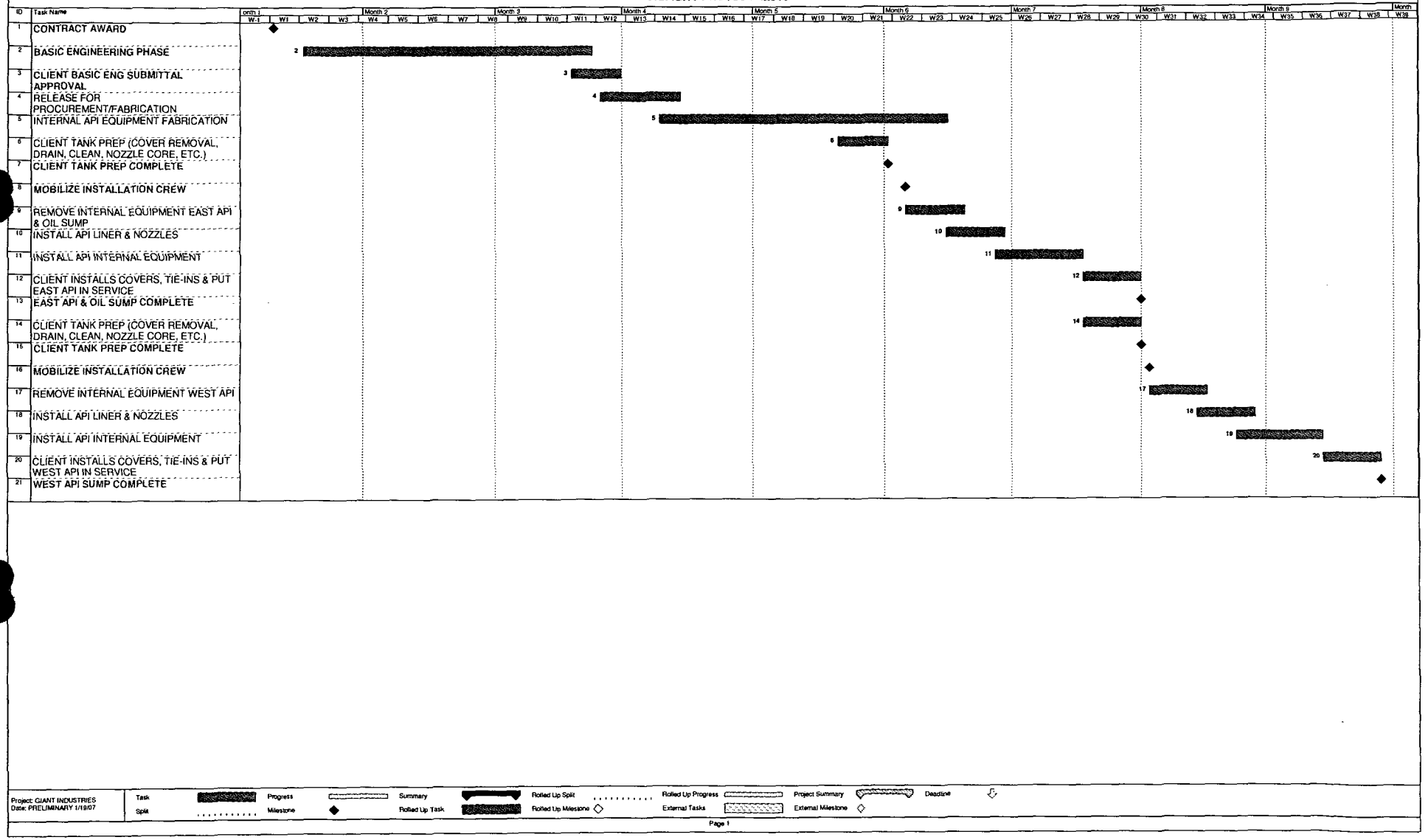
Carl, Hope_

Attached is Giant Refining – Ciniza Refinery's plan for resolving the leakage from the new API Separator. Included is a schedule and some information from Siemens Water Technologies on our proposed plan.

I have paper copies in the mail to you both.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

GIANT INDUSTRIES
API UPGRADE
GALLUP, NM
SIEMENS PROJECT 42395



Chavez, Carl J, EMNRD

From: Monzeglio, Hope, NMENV
Sent: Monday, February 05, 2007 11:22 AM
To: Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Price, Wayne, EMNRD
Subject: Ciniza NAPI leak

Carl

I have reviewed Jim's email dated 2/5/07 pertaining to the new API separator (NAPIS) Leakage Correction Plan. Below are NMED's comments. Let me know if you have any questions. My comments correspond with Giant's numbered comments. Please include these comments in your response with OCD's comments as the lead on this. If OCD does not have any comments, let me know and I will send these off.

2) Giant must install the monitoring wells regardless if Giant were to install a steel based secondary liner with secondary leak detection in the NAPI. The monitoring well installation work plan is still due to NMED and OCD on 2/28/07 as stated in your 12/29/06 proposal.

3) Giant states "At present we are anticipating equipping the existing sludge pit of the API with a small notch to catch any accumulated liquid in conjunction with a stand pipe that will be monitored." Giant must clarify this statement. What is the sludge pit of the API, is this the sump? Where will the notch be installed and what is its purpose? Describe the purpose of the stand pipe and describe its function in the sludge pit.

4) The description provided in number 4 is interpreted that Giant will be repairing one bay at at time and utilizing the other bay to handle the refinery's process waste water. If this interpretation is incorrect, Giant must clarify the process for handling refinery process water. Giant also states they will sample for TPH and benzene, this must include BTEX and MTBE.

I will be in the office today and tomorrow if you have questions. I will be gone from 2/7/07 through 2/13/07.

Thanks
Hope

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 476-6045
Main No.: (505-476-6000
Fax: (505)-476-6030
hope.monzeglio@state.nm.us

Websites:
New Mexico Environment Department
Hazardous Waste Bureau

Please note the new phone numbers

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 18, 2007 3:45 PM
To: 'Jim Lieb'; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Loren Pritzel; Carl Shook; Steve Morris; Price, Wayne, EMNRD; Powell, Brandon, EMNRD
Subject: RE: Giant - Ciniza Refinery NAPIS Leakage Correction Plan

Jim, et al.:

Thanks for providing the above plan. The OCD and NMED (agencies) have completed our review of Giant Refining, "Ciniza Refinery NAPIS Leakage Correction Plan" (plan) for resolving the leakage from the new API Separator and secondary containment system (SCS). The agencies approve the plan with the following conditions:

1) There is concern about the drawn out work schedule to complete the repair work (January to November 2007) on the leaky New API Separator (NAPIS). Seems like this should be tightened up to half the time for everything associated with the NAPIS to be completed. We have been dealing with this problem, since September 8, 2005, when the government agencies first became aware of the problem. However, the presented schedule has unknowns as Giant may be dealing with different contractors and the agencies do not know what time lines Giant was given by the contractors? The agencies believe that the repair work on the leaky NAPIS can be completed over a shorter time period than that proposed and that Giant's target date for completion can and should be closer to July 31, 2007.

2) Giant must demonstrate that there is no downward migration of contamination to groundwater from beneath the NAPIS. If Giant chooses to install a protective coating to repair the cracks with a sealant that handles freeze-thaw conditions in the NAPIS and repair of the secondary containment system (SCS), then Giant must install two monitoring wells.

One monitoring well (MW) should be located next to the NAPIS suspected leak and the second MW should be installed down gradient of the NAPIS. Assuming that subsurface conditions are similar to the conditions at the aeration lagoons, the screened interval in the monitoring well to be located near the leaky NAPIS and adjacent to the SCS. The MW must be installed below the bottom depth of the SCS, but above any water bearing zone such as the sand layer observed beneath the west side of the aeration lagoons. It may be necessary to install the monitoring well at an angle or drill an angled boring for the collection of soil samples and to determine if ground water is present during drilling. If an angled boring is not drilled, soil samples must be collected during the installation of the MW.

The purpose of the boring/MW installation is to help determine the competency of the SCS; whether there has been a release from the NAPIS to soil and groundwater, and whether groundwater is present that intersects the secondary containment system of the leaky NAPIS. Comparison of general chemistry and organic sampling data of ground water in the monitor wells to analytical data from the NAPIS process water should help determine whether ground water is present in the vicinity of the NAPIS or whether fluid in the SCS is attributable to direct leakage from the NAPIS and determine if a leak is artificially creating a localized water table condition around the leaky NAPIS.

Giant must submit a work plan for the installation of the MWs/borings. The work plan must identify the locations of boring and monitoring wells, the depth of the monitoring wells, the depth at which soil and any ground water samples will be collected, including a proposed monitoring well construction diagram, and sampling methods and procedures. This work plan must be submitted to the agencies by February 28, 2007 to assess contaminant hydrogeology near the NAPIS.

3) How will the 304 SS well liners be sealed? The agencies prefer thermal seal techniques/methods to ensure maximum integrity of liner seams, etc. It appears Giant will use a vacuum box for leak detection afterward to ensure seal integrity. This may present problems in application at certain angles or corners of the bays; however, the agencies also require a Mechanical Integrity Test (MIT) under positive pressure to ensure zero leakage after the leaky NAPIS repair work is completed to demonstrate and document the success of the repair work. Also, it is not clear how the leak detection device(s) is going to be installed. Giant needs to provide the agencies with more details as to where the leak detection device(s) will be installed, what the components and design of the detection system are, etc.

4) Giant needs to address the effluent in the NAPIS and demonstrate how Giant is going to monitor and ensure breakthrough of listed waste does not occur at the ponds during the repair procedure that is expected to take approximately 2 weeks. During the repairs, will Giant utilize one-bay at-a-time while the other bay is still functional? Giant must provide this information to the agencies.

Please contact the agencies if you have questions. I will be back in the office on Tuesday, January 23, 2007. Hope will be away next week, but David Cobrain may be available to assist us next week if necessary. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Friday, December 29, 2006 3:28 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Loren Pritzel; Carl Shook; Steve Morris; Price, Wayne, EMNRD
Subject: Giant - Ciniza Refinery NAPIS Leakage Correction Plan
Importance: High

Carl, Hope_

Attached is Giant Refining – Ciniza Refinery's plan for resolving the leakage from the new API Separator. Included is a schedule and some information from Siemens Water Technologies on our proposed plan.

I have paper copies in the mail to you both.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Chavez, Carl J, EMNRD

From: Steve Morris [smorris@giant.com]
Sent: Monday, January 08, 2007 2:29 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Subject: Ponds and Lagoons Pictures

Carl and Hope,
I took samples of ponds one and two to Hall lab last Thursday, and here are some pictures of the lagoons and ponds one and two.
Both of these ponds along with the downstream ponds have been frozen over for quite some time now.
We did get some melting today though.
Thanks,
Steve Morris

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

2007 JAN 5 PM 1 01

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Giant Refining – Ciniza Refinery	Contact Jim Lieb
Address I-40, Exit 39, Jamestown NM 87347	Telephone No. 505-722-0227
Facility Name Ciniza Refinery	Facility Type Oil Refinery

Surface Owner Giant Industries, Inc.	Mineral Owner Giant Industries, Inc.	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23 & 33	15N	15W					McKinley

Latitude 35°29'22" **Longitude** 108°25'24"

NATURE OF RELEASE

Type of Release smoke from fire, fire fighting water and some diesel	Volume of Release 200 gallons diesel (estimated) to sewers	Volume Recovered 199 gallons - diesel was recovered in new API
Source of Release DH2 heater in the ULSD Hydrotreating Unit	Date and Hour of Occurrence 12/27/06 12:00 am	Date and Hour of Discovery 12/27/06 12:00 am
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* not applicable

Describe Cause of Problem and Remedial Action Taken.*
Failure of a tube in the DH2 heater in the ULSD Hydrotreating Unit. Liquid was confined to the cement pad in unit. Liquid drained to sewers and diesel was recovered in the new API.

Describe Area Affected and Cleanup Action Taken.*
The ULSD Hydrotreating unit. The area was cleaned up.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: J. Lieb	OIL CONSERVATION DIVISION	
Printed Name: Jim Lieb	Approved by District Supervisor:	
Title: Environmental Engineer	Approval Date:	Expiration Date:
E-mail Address: jlieb@giant.com	Conditions of Approval:	Attached ☐
Date: December 29, 2006 Phone: 505-722-0227		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
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1220 South St. Francis Dr.
Santa Fe, NM 87505

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Revised October 10, 2003

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Release Notification and Corrective Action

OPERATOR

X Initial Report ☐ Final Report

Name of Company Giant Refining Company - Ciniza	Contact Stephen C. Morris
Address Route 3 Box 7 Gallup, NM 87301	Telephone No. 505-722-3833
Facility Name Giant Refining Company - Ciniza Refinery	Facility Type Oil Refinery

Surface Owner Giant Industries Inc.	Mineral Owner Giant Industries Inc.	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23 & 33	15N	15W					McKinley

Latitude 35° 29' 30" Longitude 108° 24' 40"

NATURE OF RELEASE

Type of Release Crude Oil Spill	Volume of Release 250 gallons	Volume Recovered 220 gallons
Source of Release Crude tank # 102	Date and Hour of Occurrence 12-31-06 0030 hrs.	Date and Hour of Discovery 12-31-06 0030 hrs.
Was Immediate Notice Given? X Yes ☐ No ☐ Not Required	If YES, To Whom? Carl Chavez at OCD by phone.	
By Whom? Stephen C. Morris	Date and Hour 01-02-07 0930 hrs.	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
The process sewer drain line from the water draw on tank # 102 plugged causing the drain box to overflow onto the ground.

Describe Area Affected and Cleanup Action Taken.*
The driver for the vacuum truck was called out (Sunday morning) to vacuum all liquid possible. Giant maintenance then cleaned up most of the oily soil on the ground from the spill. Cleanup continues today Tuesday 01-02-2006, and should be completed today. Samples will be gathered from the oily soil cleanup and confirmation samples from excavation in area.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Stephen C. Morris	Approved by District Supervisor:	
Title: Environmental Engineer	Approval Date:	Expiration Date:
E-mail Address: smorris@giant.com	Conditions of Approval:	Attached ☐
Date: 01-02-2006 Phone: 505 722 0258		

*** Attach Additional Sheets If Necessary**

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 476-6000
Fax (505) 476-6030
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

CINDY PADILLA
DEPUTY SECRETARY

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

January 4, 2006

Jim Lieb
Giant Refining Company
Route 3, Box 7
Gallup, New Mexico 87301

SUBJECT: APPROVAL OF EXTENSION REQUEST FOR THE OIL CONSERVATION DIVISION 2005 ANNUAL GROUNDWATER REPORT GIANT REFINING COMPANY, CINIZA REFINERY EPA ID # NMD000333211; HWB-GRCC-06-003

Dear Mr. Lieb:

The New Mexico Environment Department (NMED) is in receipt of Giant Refining Company's (Permittee) e-mail titled *Revision to Annual GW-Report-Giant Ciniza* dated January 3, 2007, which requests an extension to the original due date of January 15, 2007. NMED hereby approves the extension for the submittal of the revised Oil Conservation Division 2005 Annual Groundwater Report due to NMED on or before February 19, 2006.

Please contact Hope Monzeglio of my staff at 505-476-6045 if you have questions regarding this letter.

Sincerely,

John E. Kieling
Program Manager
Permits Management Program
Hazardous Waste Bureau

cc: H. Monzeglio, NMED HWB
W. Price, OCD-Santa Fe office
E. Reige, GRCC
File: Reading and GRCC 2007
HWB-GRCC 06-003

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 04, 2007 9:50 AM
To: Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: RE: Revision to Annual GW Report - Giant Ciniza

Hope:

Yes, the OCD is ok with this. Thanks.

From: Monzeglio, Hope, NMENV
Sent: Thursday, January 04, 2007 9:37 AM
To: Price, Wayne, EMNRD; Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: FW: Revision to Annual GW Report - Giant Ciniza

Wayne and Carl

Referencing the email below. NMED gave Giant an Notice of Deficiency to the OCD 2005 Annual Groundwater Report in a letter dated October 31, 2006 which you were cc on. Giant is requesting an extension that we are going to grant. I just want to make sure OCD is ok with this. If you could let me know as soon as possible as I would like to get this letter out today or tomorrow.

Thanks

Hope

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Wednesday, January 03, 2007 4:20 PM
To: Monzeglio, Hope, NMENV
Subject: Revision to Annual GW Report - Giant Ciniza

Hope:

Giant is requesting a 4 week extension on the submittal date for the revised GW Report that is currently due to NMED on January 15, 2007. Reason for the extension request are the number of items that need to be addressed in the revised report and the rather heavy load that Ciniza environmental staff are working on at this time.

Best Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Chavez, Carl J, EMNRD

From: Steve Morris [smorris@giant.com]
Sent: Tuesday, January 02, 2007 11:14 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Riege; Jim Lieb; Cheryl Johnson; Ed Rios
Subject: C-141 Tank 102 spill 12-31-06

Jan. 2nd, 2007
1115 hrs.

To All,
Attached is the C-141 for a spill that occurred shortly after midnight Sunday morning Dec. 31st, 2006.
Cleanup continues at this time and is expected to be complete today or tomorrow.
I will get confirmation samples as well as pictures of the excavation when ready to take samples.
I will also take samples of the excavated soils after cleanup for waste determination.
If you have any questions, please give me a call at 505-722-0258.
Thanks,
Steve Morris

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR X Initial Report ☐ Final Report

Name of Company Giant Refining Company - Ciniza	Contact Stephen C. Morris
Address Route 3 Box 7 Gallup, NM 87301	Telephone No. 505-722-3833
Facility Name Giant Refining Company - Ciniza Refinery	Facility Type Oil Refinery

Surface Owner Giant Industries Inc.	Mineral Owner Giant Industries Inc.	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23 & 33	15N	15W					McKinley

Latitude 35° 29' 30" Longitude 108° 24' 40"

NATURE OF RELEASE

Type of Release Crude Oil Spill	Volume of Release 250 gallons	Volume Recovered 220 gallons
Source of Release Crude tank # 102	Date and Hour of Occurrence 12-31-06 0030 hrs.	Date and Hour of Discovery 12-31-06 0030 hrs.
Was Immediate Notice Given? X Yes ☐ No ☐ Not Required	If YES, To Whom? Carl Chavez at OCD by phone.	
By Whom? Stephen C. Morris	Date and Hour 01-02-07 0930 hrs.	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
The process sewer drain line from the water draw on tank # 102 plugged causing the drain box to overflow onto the ground.

Describe Area Affected and Cleanup Action Taken.*
The driver for the vacuum truck was called out (Sunday morning) to vacuum all liquid possible. Giant maintenance then cleaned up most of the oily soil on the ground from the spill. Cleanup continues today Tuesday 01-02-2006, and should be completed today. Samples will be gathered from the oily soil cleanup and confirmation samples from excavation in area.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Stephen C. Morris	Approved by District Supervisor:	
Title: Environmental Engineer	Approval Date:	Expiration Date:
E-mail Address: smorris@giant.com	Conditions of Approval:	Attached ☐
Date: 01-02-2006 Phone: 505 722 0258		

*** Attach Additional Sheets If Necessary**

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, January 02, 2007 10:16 AM
To: Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; VonGonten, Glenn, EMNRD
Subject: RE: diesel hydrotreating unit fire

Hope:

Yes, that is the plan (~$2,000) for this lack of notification (am completing a draft NOV today). Giant will be sampling EPs 1 and 2 with sample delivery to the lab this Thursday according to Steve Morris this morning at 9:00 a.m. Based on the analytical data results, there may be violations to both RCRA and the OCD DP Permit. According to Glenn Von Gonten, he believes there is already a RCRA violation for not notifying the NMED in the event of a fire. So the fine may go upward.

In addition, I just received another release notice for a 250 gallon crude tank #102 release that occurred this past Sunday (12/31/06) at about 12:30 a.m. that was not reported until this morning about 9:15 a.m. Since the ground was frozen at the time of the release, they have excavated and recovered most of the spill and will be wrapping up cleanup today with photos, soil sampling, etc., to confirm cleanup. Stay tuned.....

From: Monzeglio, Hope, NMENV
Sent: Tuesday, January 02, 2007 9:27 AM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: diesel hydrotreating unit fire

Wayne and Carl

Will OCD be fining Giant for not reporting the fire within 24 hours?

Thanks

Hope

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 428-2545
Fax: (505)-428-2567
hope.monzeglio@state.nm.us

The Hazardous Waste Bureau is switching to a new phone system on or about December 7, 2006. The new contact numbers for me will be:

Phone: (505) 476-6045

Main HWB Phone: (505) 476-6000

Fax: (505) 476-6030

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, January 10, 2007 9:28 AM
To: Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: RE: Ciniza new API leak

Hope:

Good morning. It appears that Giant is in the midst of being purchased by Western Refining, I believe. The OCD has reviewed Giant's "Plan for Correction of Leakage from the New API Separator at the Giant Refining Company's Ciniza Refinery."

The OCD's comments are:

1) There is concern about the drawn out work schedule to complete the repair work (January to November 2007. Seems like this should be tightened up to half the time.

2) The proposal for MW locations and monitoring objectives by 2/28/07 to assess contaminant hydrogeology near the NAPIS can be handled by NMED. From my perspective, some sampling at the water table and monitoring to determine if an aquifer actually exists in the vicinity of the NAPIS is important in understanding the hydrogeology of the site. Monitoring may result in a corrective action of any perched or water table aquifer?

3) How will the 304 SS well liners be sealed? We should make sure that the seal technique is a thermal seal process to ensure maximum integrity of liner seams, seam orientation, etc. It appears they will use a vacuum box for leak detection afterward to ensure seal integrity. Perhaps they should include an MIT of the OAPIS to ensure zero leakage after the repair to demonstrate success?

4) Will Giant re-route all effluent to its OAPIS while the NAPIS is down? If so, can OAPIS effluent be routed to the benzene strippers? The repair procedure is expected tl take 10 days at 10 hours per day per 5-day work weeks or about 2 weeks. Seems like Giant has the OCD's approval to proceed at this point with the above considerations and unless the NMED has any other issues to convey. Based on the above, does NMED have more issues? Give me a call. Thanks.

From: Monzeglio, Hope, NMENV
Sent: Wednesday, January 10, 2007 8:54 AM
To: Price, Wayne, EMNRD; Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Frischkorn, Cheryl, NMENV
Subject: Ciniza new API leak

Wayne and Carl

Let me know a few dates when you would be available to discuss Ciniza's new API proposal for fixing the leak.

Thanks

Hope

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 428-2545

Fax: (505)-428-2567
hope.monzeglio@state.nm.us

The Hazardous Waste Bureau is switching to a new phone system on or about December 7, 2006. The new contact numbers for me will be:

Phone: (505) 476-6045

Main HWB Phone: (505) 476-6000

Fax: (505) 476-6030

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Friday, December 29, 2006 3:28 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Loren Pritzel; Carl Shook; Steve Morris; Price, Wayne, EMNRD
Subject: Giant - Ciniza Refinery NAPIS Leakage Correction Plan
Importance: High

Carl, Hope_

Attached is Giant Refining – Ciniza Refinery's plan for resolving the leakage from the new API Separator. Included is a schedule and some information from Siemens Water Technologies on our proposed plan.

I have paper copies in the mail to you both.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

December 29, 2006

Carl Chavez, Environmental Engineer
Oil Conservation Division
1220 S. Saint Francis Street
Santa Fe, NM 87505

Hope Monzeglio
Environmental Engineer
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe, NM 87505

RE: Plan for Correction of Leakage from the New API Separator at the Giant Refining Company's Ciniza Refinery

Dear Carl and Hope:

In your email of November 16, 2006 you requested that Giant Refining - Ciniza Refinery (Giant) provide a plan for fixing leakage in the new API separator (NAPIS). Giant has evaluated alternatives for correcting the leakage and has determined that the following plan provides the most reliable and cost-effective solution for resolution of the leakage.

At least one other refinery has had similar problems with a leaking API separator (APIS). A Gulf-Coast refinery in Louisiana is located in an area with a high water table that promoted cracking in the concrete bays of their APIS. The coastal refinery successfully installed stainless steel liner inserts in their APIS. The liner inserts serve as the primary containment. They also repaired the cracks in the concrete bays and coated the entire inside with a non-permeable coating. Repaired as such, the concrete bays serve as the secondary containment. The insert liners were installed in 1999. The refinery has not experienced any leakage from their APIS since the insert liner system was installed. The insert liners were

fabricated and installed by Siemens Water Technologies Corporation, a division of the Siemens Corporation which owns US Filter, the manufacturer of Giant's NAPIS and the Gulf Coast refinery's APIS.

In conjunction with the insert liner system, Giant will seal the cracks in the concrete bays. Giant will also coat the inside of the bays with an impermeable flexible coating system suitable for bridging cracks. When repaired, the concrete bays will effectively serve as the secondary containment. Giant will select a coating that is designed for coating concrete in concrete tanks exposed to oily water solutions.

Because the insert liner system in the other refinery's APIS has proven to be successful without any leakage, Giant is confident such a liner system will be successful in the NAPIS. However for additional security, a leak detection system can be installed. We will include the interstitial leak detection system. In this way, we can be sure there will be no leakage from the liners.

We have contacted Siemens Water Technology Corporation for purposes of budgetary information for design fabrication and installation of stainless steel insert liner system in Giant's NAPIS. We have included some information on the insert liner system with this plan.

We also include a schedule for installation of the liner system.

Giant is working with Dr. William Kingsley of Precision Engineering to determine the appropriate locations for the two monitoring wells near the new API. Giant will forward the proposed monitoring well locations to OCD and NMED when they have been determined. Giant anticipates this can be accomplished by February 28, 2007.

Giant Refining - Ciniza Refinery is committed to implementing a permanent solution to the leakage and continuing a mutually agreeable working relationship with the OCD and NMED in this and other environmental matters.

If you have any questions regarding the plan presented in this letter, please feel free to contact me at (505) 722-0227 or at jlieb@giant.com.

Sincerely,

Jim Lieb
Environmental Engineer

\Attachments: Liner info
Schedule

\Cc: Ed Rios
Stan Fisher
Carl Shook
Ed Riege
Loren Pritzel
Don Riley
Jim Hallock
Steve Morris
Tom Urbas
Bill Chojnacky

Schedule

New API Separator Repair Project

Giant Refining- Ciniza Refinery

All dates are 2007

Submit RFE for SS Liner System and concrete bay repair:	January 10
Anticipated date of RFE approval by corporate:	January 25
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Site Mobilization (by SWT and concrete coating contractor):	August 30
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SIEMENS

SIEMENS WATER TECHNOLOGIES

WATER AND WASTEWATER

TREATMENT EQUIPMENT

BUDGET PROPOSAL 42400

TO DESIGN AND FURNISH

WASTEWATER TREATMENT EQUIPMENT

FOR

GIANT INDUSTRIES INC.
CINZA REFINERY
JAMESTOWN, NM

DECEMBER 21, 2006

SIEMENS

Siemens Water Technologies Corp.
1901 South Prairie Ave.
Waukesha, WI USA 53189

PROJECT SUMMARY

Background

The existing API Separator has been operational for approximately two years. The installation incorporates four shaft chain & scraper collectors, oil roll skimmers, skimming pipes and FRP vapor covers. All existing equipment was supplied by Siemens Water Technologies Corp. (formerly USFilter/Envirex Products).

Work Scope

Siemens proposes to supply & install the tank liner and refurbished equipment in two existing API tanks and one existing recovered oil sump as follows:

Responsibility Matrix

Siemens:

Design - Prepare & submit general arrangement drawings for the installation of the tank liner and modifications to the existing equipment.

Submit WPS & PQR for approval.

Submit Safety Plan for approval.

Submit project schedule for approval.

Supply - Tank liner material and new equipment items.

Install - Mobilize construction forces.
Provide equipment removal as necessary for liner installation.
Verify field measurements (to determine critical interfaces for tank liner)
Install liner & mechanisms including all labor, supervision, equipment and consumables to complete the work.
Mechanical test (Dry Run) of the installed equipment.

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Waukesha, WI USA 53189

Giant Industries :

Shut Down & Start Up of API Separtors for each phase of construction.
Confirm structural integrity of existing concrete tanks.
Remove existing vapor cover and isolate venting system from operating unit.
Drain, clean & gas free tanks prior to hot work.
Disconnect & reconnect pipe & wire before & after modifications.
Dismantle, clean & dispose of existing equipment & material designated by Siemens .
Install vapor covers.

SIEMENS

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SCOPE OF WORK

PROVIDED BY SIEMENS WATER TECHNOLOGIES

The following services and materials are included in Siemens Water Technologies Scope of Work.

Engineering & Services:

1. General arrangement and installation drawings for API Separator Tank and Oil Recovery Sump.
2. Installation of components and material supplied.
3. Checkout of installed package equipment.
4. Startup services and operator training.

Wastewater Treatment Unit Packages:

The following equipment items are included in quoted package.

API Separator Upgrade

1. Tank Liner (SS)
2. Liner Bearing, Track & Shaft Reinforcement Pads
3. Liner Structural Reinforcement — SS
4. Collector Track Support Brackets
5. Floor Wear Strips
6. Replacement Parts for Existing API Collector & Skimmers
7. Vapor Cover Gasketing Material
8) Leak detection system ?

SIEMENS

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INSTALLATION SERVICES

Installation Scope of Supply:

1. Remove existing equipment in areas where liner is to be provided.
2. Remove existing equipment anchor bolts below surface of concrete wall and seal holes with epoxy concrete. (Non permeable coating)
3. Prepare existing concrete walls to be lined by removing unnecessary protrusions and cleaning.
4. Modify existing tank pipe penetrations.
5. Install shell, bottom, retention baffle and effluent weir wall liner (304ss) with corner angles (304ss). Liner will be installed in the API separator tank, sludge hopper, effluent chamber and oil recovery sump.
6. Install pipe wall sleeves (304ss) and closure plates (304ss) in existing concrete.
7. Install bearing plates (304ss) and shell stiffeners (304ss).
8. Install collector track angle supports (304ss).
9. Vacuum box test liner seams.
10. Install two (2) four shaft collector mechanism in API tank.
11. Install two (2) rotary drum oil skimmer in API tank.
12. Install two (2) pipe skimmer in API tank.
13. Dry run test installed collector mechanism and oil roll skimmer.

SIEMENS

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Installation Notes:

1. All tanks will be drained and cleaned by the Buyer to allow installation work to commence immediately after crew mobilization. Buyer will be responsible for existing vapor cover removal/installation and disposal of all hazardous materials.

2. Two mobilizations to jobsite are included.

3. Temporary contractor office is not included.

4. Clear and accessible jobsite is required with level road up to the tank foundations and adequate lay-down area immediately adjacent to the tank foundations for storage of materials and equipment.

5. Area around API erection site will be drained and include sufficient to support light to medium equipment prior to installation crew mobilization. Area around erection site is to include rough gravel surface as a minimum.

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7. Electrical power for small tools (120V, 1PH, 100 amp; 460V, 3PH, 200 amp) and plant water is to be provided by Buyer within 50 feet of the jobsite.

8. Facility access for emergency medical assistance in the event of jobsite injury will be provided by Buyer.

9. The installation work is to be performed by highly skilled labor qualified for the specific tasks outlined. Non-Union labor is provided. The proposed installation pricing is based on the assumption that there will be no interference from any other contractors, unions or other entities on site while performing the installation work.

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11. We have estimated based on the use of half-face organic respirators for PPE if required. Monitoring of the area is included where the work will be performed to insure a safe atmosphere based on the respiratory protection used and for the work being performed.

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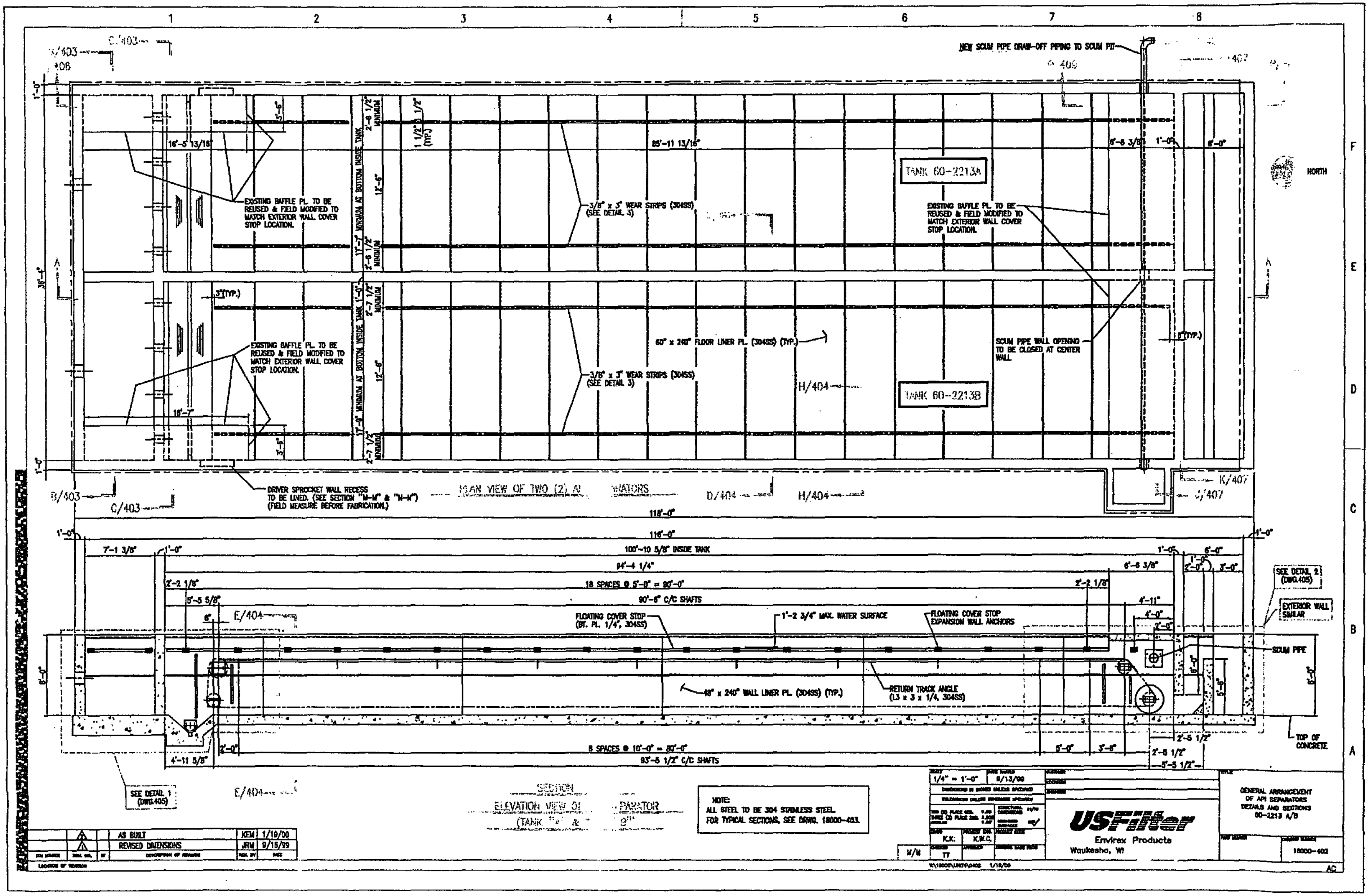
12. No delays are anticipated in obtaining work permits (hot work, etc.) from the site.

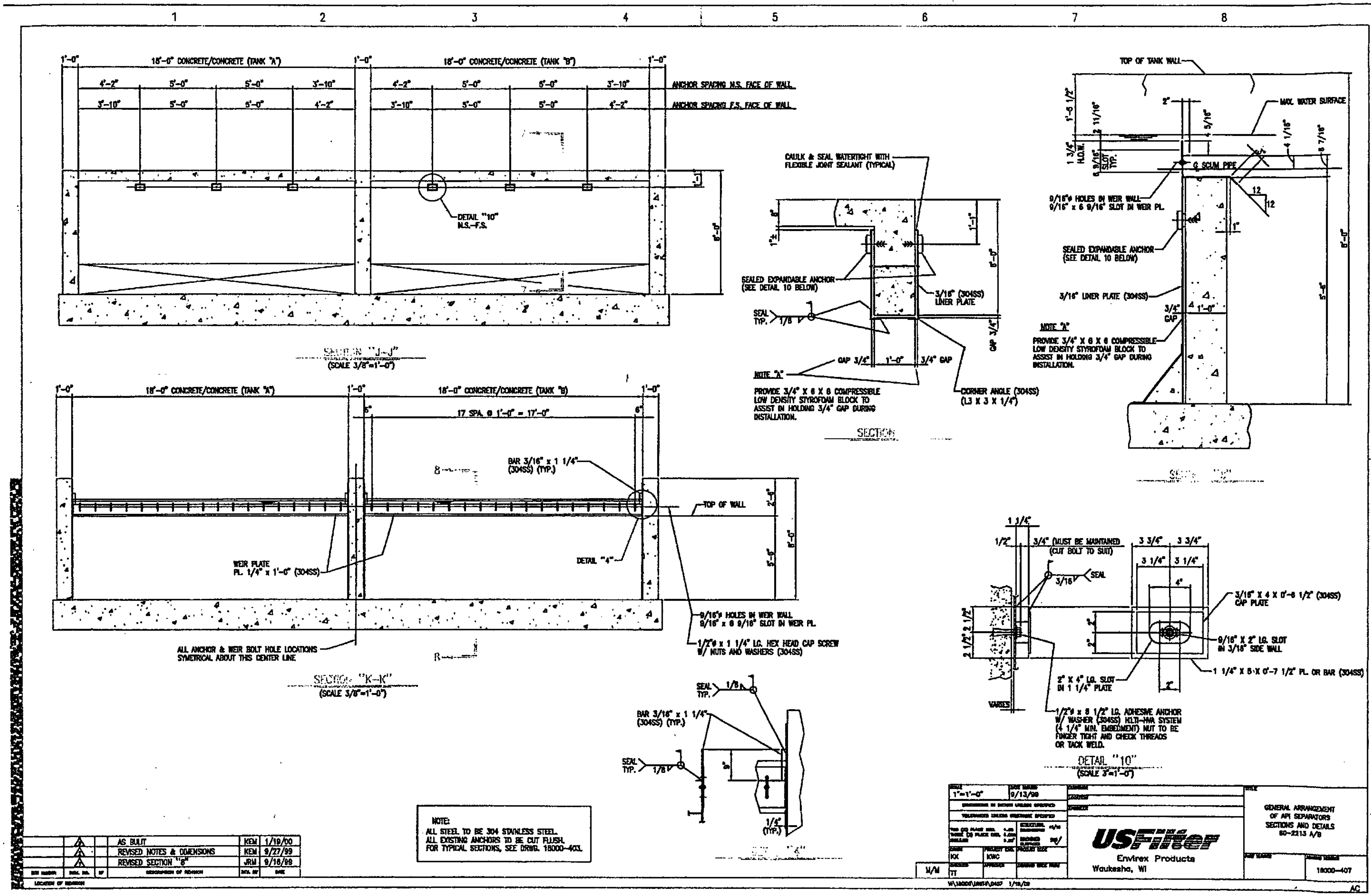
13. Work in the tanks includes confined space entry protocol and full time dedicated hole watch & fire watch personnel – separate positions - not combined.

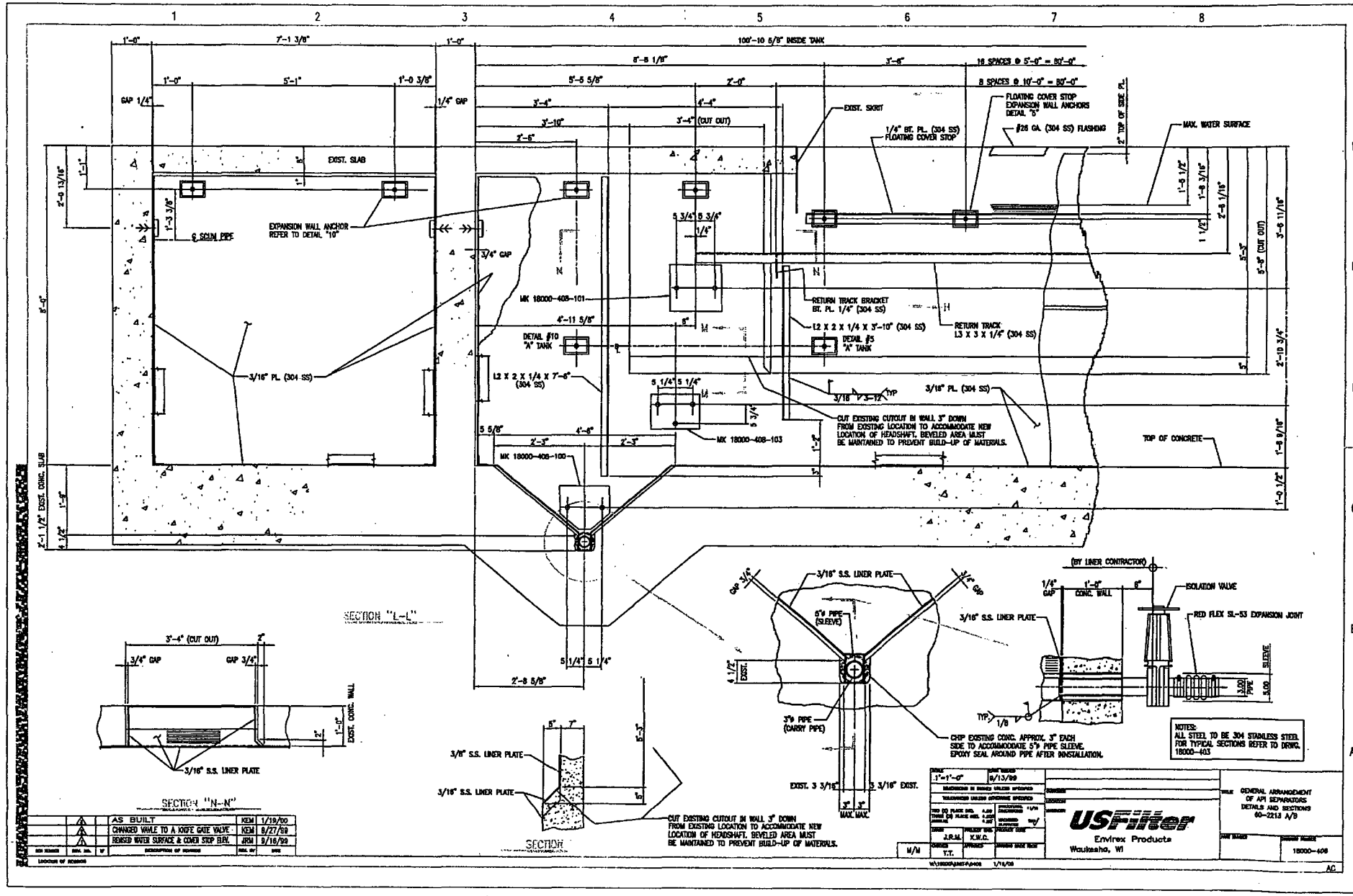
Diagrams of API Separator are of the Gulf Coast refinery application

Some materials of contruction may be different for Giant's application

Sizes are different


PLAN VIEW OF TWO (2) A[illegible] [illegible]ATORS
TANK 60-2213A
TANK 60-2213B
NEW SCUM PIPE DRAW-OFF PIPING TO SCUM PIT
EXISTING BAFFLE PL. TO BE REUSED & FIELD MODIFIED TO MATCH EXTERIOR WALL COVER STOP LOCATION.
3/8" x 3" WEAR STRIPS (304SS) (SEE DETAIL 3)
60" x 240" FLOOR LINER PL. (304SS) (TYP.)
SCUM PIPE WALL OPENING TO BE CLOSED AT CENTER WALL
DRIVER SPROCKET WALL RECESS TO BE LINED. (SEE SECTION "M-M" & "N-N") (FIELD MEASURE BEFORE FABRICATION.)
17'-7" MINIMUM AT BOTTOM INSIDE TANK
17'-9" MINIMUM AT BOTTOM INSIDE TANK
NORTH
118'-0"
116'-0"
100'-10 5/8" INSIDE TANK
94'-4 1/4"
18 SPACES @ 5'-0" = 90'-0"
90'-8" C/C SHAFTS
8 SPACES @ 10'-0" = 80'-0"
93'-5 1/2" C/C SHAFTS
FLOATING COVER STOP (BT. PL. 1/4", 304SS)
1'-2 3/4" MAX. WATER SURFACE
FLOATING COVER STOP EXPANSION WALL ANCHORS
48" x 240" WALL LINER PL. (304SS) (TYP.)
RETURN TRACK ANGLE (L3 x 3 x 1/4, 304SS)
SCUM PIPE
SEE DETAIL 1 (DWG.405)
SEE DETAIL 2 (DWG.405)
EXTERIOR WALL SIMILAR
TOP OF CONCRETE
SECTION
ELEVATION VIEW OF [illegible] PARATOR (TANK [illegible] & [illegible])
NOTE:
ALL STEEL TO BE 304 STAINLESS STEEL.
FOR TYPICAL SECTIONS, SEE DRWG. 18000-403.
AS BUILT KEM 1/19/00
REVISED DIMENSIONS JRM 9/15/99
1/4" = 1'-0"
9/13/99
K.K.
K.W.C.
USFilter
Envirex Products
Waukesha, WI
GENERAL ARRANGEMENT OF API SEPARATORS DETAILS AND SECTIONS 60-2213 A/B
18000-402
AC


SECTION "J-J"
(SCALE 3/8"=1'-0")
18'-0" CONCRETE/CONCRETE (TANK "A")
18'-0" CONCRETE/CONCRETE (TANK "B")
ANCHOR SPACING N.S. FACE OF WALL
ANCHOR SPACING F.S. FACE OF WALL
DETAIL "10" N.S.-F.S.
SECTION "K-K"
(SCALE 3/8"=1'-0")
17 SPA. @ 1'-0" = 17'-0"
BAR 3/16" x 1 1/4" (304SS) (TYP.)
TOP OF WALL
WEIR PLATE PL. 1/4" x 1'-0" (304SS)
DETAIL "4"
9/16"ø HOLES IN WEIR WALL 9/16" x 6 9/16" SLOT IN WEIR PL.
1/2"ø x 1 1/4" LG. HEX HEAD CAP SCREW W/ NUTS AND WASHERS (304SS)
ALL ANCHOR & WEIR BOLT HOLE LOCATIONS SYMETRICAL ABOUT THIS CENTER LINE
CAULK & SEAL WATERTIGHT WITH FLEXIBLE JOINT SEALANT (TYPICAL)
SEALED EXPANDABLE ANCHOR (SEE DETAIL 10 BELOW)
3/16" (304SS) LINER PLATE
CORNER ANGLE (304SS) (L3 X 3 X 1/4")
NOTE "A"
PROVIDE 3/4" X 6 X 6 COMPRESSIBLE LOW DENSITY STYROFOAM BLOCK TO ASSIST IN HOLDING 3/4" GAP DURING INSTALLATION.
SECTION
TOP OF TANK WALL
MAX. WATER SURFACE
℄ SCUM PIPE
H.O.W.
SLOT TYP.
3/16" LINER PLATE (304SS)
DETAIL "10"
(SCALE 3"=1'-0")
3/4" (MUST BE MAINTAINED (CUT BOLT TO SUIT)
3/16" X 4 X 0'-6 1/2" (304SS) CAP PLATE
9/16" X 2" LG. SLOT IN 3/16" SIDE WALL
1 1/4" X 6 X 0'-7 1/2" PL. OR BAR (304SS)
2" X 4" LG. SLOT IN 1 1/4" PLATE
1/2"ø x 8 1/2" LG. ADHESIVE ANCHOR W/ WASHER (304SS) HILTI-HVA SYSTEM (4 1/4" MIN. EMBEDMENT) NUT TO BE FINGER TIGHT AND CHECK THREADS OR TACK WELD.
VARIES
NOTE:
ALL STEEL TO BE 304 STAINLESS STEEL.
ALL EXISTING ANCHORS TO BE CUT FLUSH.
FOR TYPICAL SECTIONS, SEE DRWG. 18000-403.
AS BUILT KEM 1/19/00
REVISED NOTES & DIMENSIONS KEM 9/27/99
REVISED SECTION "8" JRM 9/16/99
1"=1'-0" 9/13/99
USFilter
Envirex Products
Waukesha, WI
GENERAL ARRANGEMENT OF API SEPARATORS SECTIONS AND DETAILS 80-2213 A/B
18000-407


1'-0"
7'-1 3/8"
1'-0"
100'-10 5/8" INSIDE TANK
8'-8 1/8"
3'-6"
16 SPACES @ 5'-0" = 80'-0"
8 SPACES @ 10'-0" = 80'-0"
5'-5 5/8"
2'-0"
3'-4"
4'-4"
3'-10"
3'-4" (CUT OUT)
2'-6"
GAP 1/4"
1/4" GAP
5'-1"
1'-0 3/8"
EXIST. SLAB
EXIST. SKIRT
FLOATING COVER STOP
EXPANSION WALL ANCHORS
DETAIL "5"
1/4" BT. PL. (304 SS)
FLOATING COVER STOP
#26 GA. (304 SS) FLASHING
2" TOP OF SIDE PL.
MAX. WATER SURFACE
EXPANSION WALL ANCHOR
REFER TO DETAIL "10"
6" SCUM PIPE
3/4" GAP
MK 18000-408-101
RETURN TRACK BRACKET
BT. PL. 1/4" (304 SS)
L2 X 2 X 1/4 X 3'-10" (304 SS)
RETURN TRACK
L3 X 3 X 1/4" (304 SS)
DETAIL #10
"A" TANK
DETAIL #5
"A" TANK
4'-11 5/8"
L2 X 2 X 1/4 X 7'-6"
(304 SS)
3/16" PL. (304 SS)
3/16 3-12 TYP
3/16" PL. (304 SS)
CUT EXISTING CUTOUT IN WALL 3" DOWN
FROM EXISTING LOCATION TO ACCOMMODATE NEW
LOCATION OF HEADSHAFT. BEVELED AREA MUST
BE MAINTAINED TO PREVENT BUILD-UP OF MATERIALS.
TOP OF CONCRETE
MK 18000-408-103
MK 18000-408-100
2'-3"
2'-3"
4'-6"
2'-8 5/8"
EXIST. CONC. SLAB
SECTION "L-L"
3'-4" (CUT OUT)
3/4" GAP
GAP 3/4"
EXIST. CONC. WALL
3/16" S.S. LINER PLATE
SECTION "N-N"
3/16" S.S. LINER PLATE
3/16" S.S. LINER PLATE
SECTION
CUT EXISTING CUTOUT IN WALL 3" DOWN
FROM EXISTING LOCATION TO ACCOMMODATE NEW
LOCATION OF HEADSHAFT. BEVELED AREA MUST
BE MAINTAINED TO PREVENT BUILD-UP OF MATERIALS.
3/16" S.S. LINER PLATE
5'9 PIPE
(SLEEVE)
3'9 PIPE
(CARRY PIPE)
EXIST. 3 3/16"
3 3/16" EXIST.
MAX. MAX.
CHIP EXISTING CONC. APPROX. 3" EACH
SIDE TO ACCOMMODATE 5'9 PIPE SLEEVE.
EPOXY SEAL AROUND PIPE AFTER INSTALLATION.
(BY LINER CONTRACTOR)
1/8" GAP
1'-0" CONC. WALL
6"
ISOLATION VALVE
3/16" S.S. LINER PLATE
RED FLEX SL-53 EXPANSION JOINT
SLEEVE
3.00 PIPE
5.00
TYP. 1/8
NOTES:
ALL STEEL TO BE 304 STAINLESS STEEL
FOR TYPICAL SECTIONS REFER TO DRWG.
18000-403
AS BUILT KEM 1/19/00
CHANGED VALVE TO A KNIFE GATE VALVE KEM 8/27/99
REVISED WATER SURFACE & COVER STOP ELEV. JRM 8/16/99
DESCRIPTION OF REVISIONS
SCALE .1"=1'-0"
DATE ISSUED 8/13/99
DRAWN J.R.M.
CHECKED T.T.
PROJECT ENG. K.W.C.
PROJECT CODE
USFilter
Envirex Products
Waukesha, WI
GENERAL ARRANGEMENT
OF API SEPARATORS
DETAILS AND SECTIONS
60-2213 A/9
DRAWING NUMBER
18000-408
M/M
W:\18000\UNIT-A\408 1/19/00
AC

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

December 29, 2006

Carl Chavez, Environmental Engineer
Oil Conservation Division
1220 S. Saint Francis Street
Santa Fe, NM 87505

Hope Monzeglio
Environmental Engineer
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe, NM 87505

RE: Plan for Correction of Leakage from the New API Separator at the Giant Refining Company's Ciniza Refinery

Dear Carl and Hope:

In your email of November 16, 2006 you requested that Giant Refining - Ciniza Refinery (Giant) provide a plan for fixing leakage in the new API separator (NAPIS). Giant has evaluated alternatives for correcting the leakage and has determined that the following plan provides the most reliable and cost-effective solution for resolution of the leakage.

At least one other refinery has had similar problems with a leaking API separator (APIS). A Gulf-Coast refinery in Louisiana is located in an area with a high water table that promoted cracking in the concrete bays of their APIS. The coastal refinery successfully installed stainless steel liner inserts in their APIS. The liner inserts serve as the primary containment. They also repaired the cracks in the concrete bays and coated the entire inside with a non-permeable coating. Repaired as such, the concrete bays serve as the secondary containment. The insert liners were installed in 1999. The refinery has not experienced any leakage from their APIS since the insert liner system was installed. The insert liners were

fabricated and installed by Siemens Water Technologies Corporation, a division of the Siemens Corporation which owns US Filter, the manufacturer of Giant's NAPIS and the Gulf Coast refinery's APIS.

In conjunction with the insert liner system, Giant will seal the cracks in the concrete bays. Giant will also coat the inside of the bays with an impermeable flexible coating system suitable for bridging cracks. When repaired, the concrete bays will effectively serve as the secondary containment. Giant will select a coating that is designed for coating concrete in concrete tanks exposed to oily water solutions.

Because the insert liner system in the other refinery's APIS has proven to be successful without any leakage, Giant is confident such a liner system will be successful in the NAPIS. However for additional security, a leak detection system can be installed. We will include the interstitial leak detection system. In this way, we can be sure there will be no leakage from the liners.

We have contacted Siemens Water Technology Corporation for purposes of budgetary information for design fabrication and installation of stainless steel insert liner system in Giant's NAPIS. We have included some information on the insert liner system with this plan.

We also include a schedule for installation of the liner system.

Giant is working with Dr. William Kingsley of Precision Engineering to determine the appropriate locations for the two monitoring wells near the new API. Giant will forward the proposed monitoring well locations to OCD and NMED when they have been determined. Giant anticipates this can be accomplished by February 28, 2007.

Giant Refining - Ciniza Refinery is committed to implementing a permanent solution to the leakage and continuing a mutually agreeable working relationship with the OCD and NMED in this and other environmental matters.

If you have any questions regarding the plan presented in this letter, please feel free to contact me at (505) 722-0227 or at jlieb@giant.com.

Sincerely,

Jim Lieb
Environmental Engineer

\Attachments: Liner info
Schedule

\Cc: Ed Rios
Stan Fisher
Carl Shook
Ed Riege
Loren Pritzel
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Schedule

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SIEMENS

SIEMENS WATER TECHNOLOGIES

WATER AND WASTEWATER

TREATMENT EQUIPMENT

BUDGET PROPOSAL 42400

TO DESIGN AND FURNISH

WASTEWATER TREATMENT EQUIPMENT

FOR

GIANT INDUSTRIES INC.
CINZA REFINERY
JAMESTOWN, NM

DECEMBER 21, 2006

SIEMENS

Siemens Water Technologies Corp.
1901 South Prairie Ave.
Waukesha, WI USA 53189

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Waukesha, WI USA 53189

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SIEMENS

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PROVIDED BY SIEMENS WATER TECHNOLOGIES

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SIEMENS

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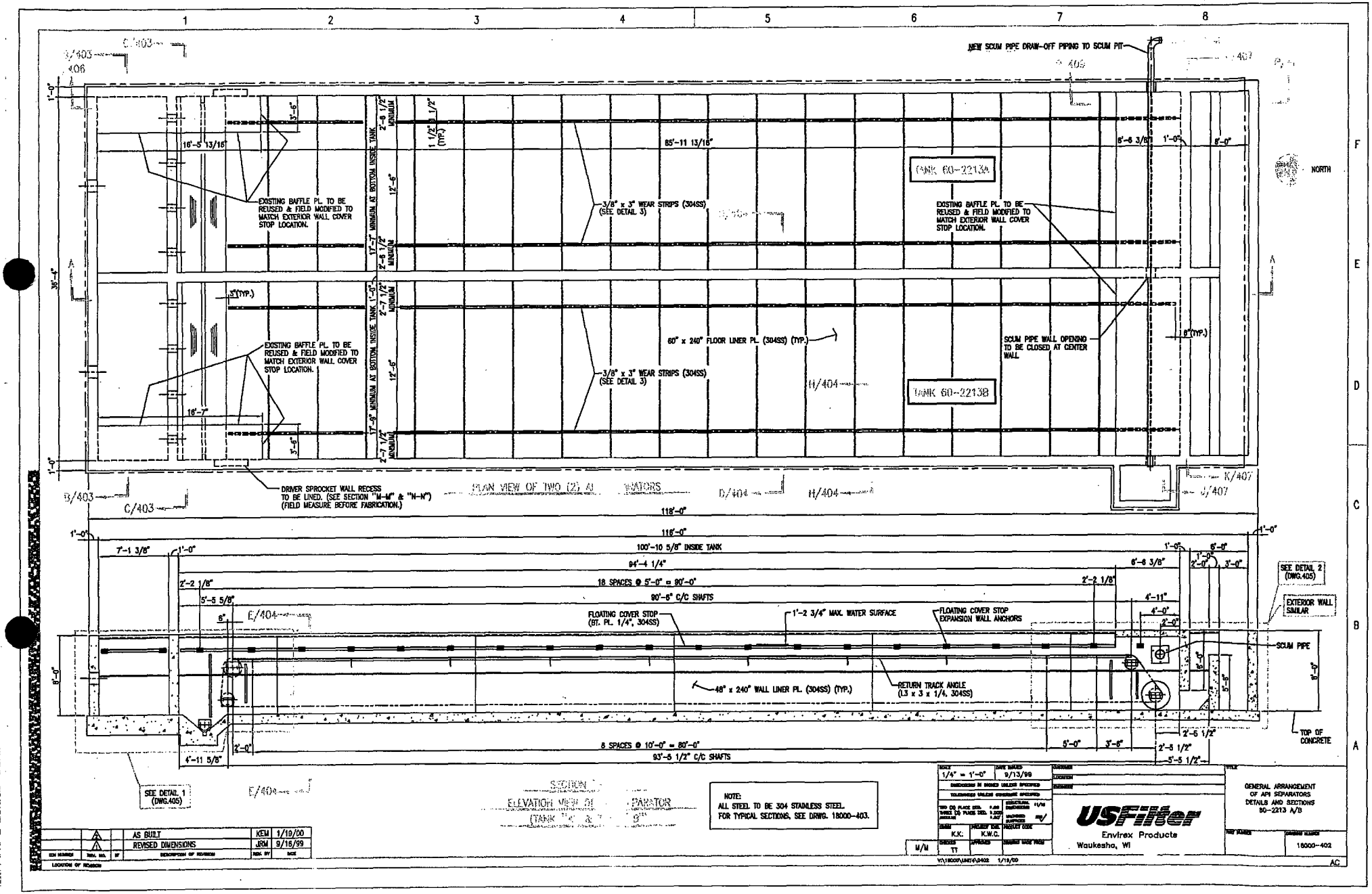
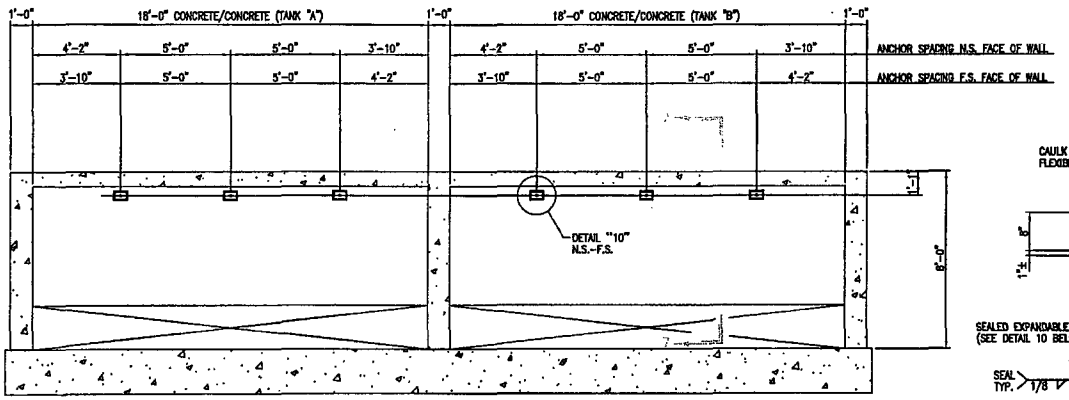
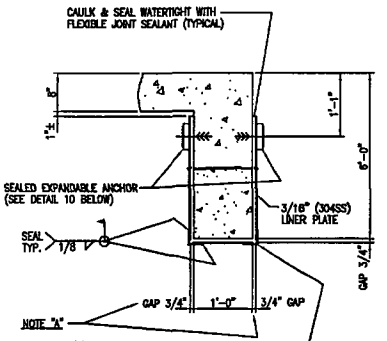
Some materials of contruction may be different for Giant's application

Sizes are different

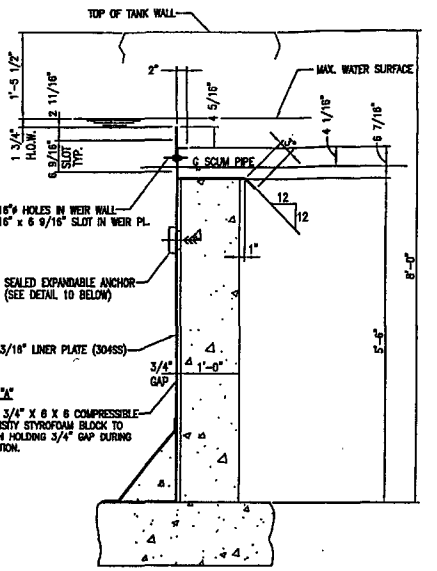

NEW SCUM PIPE DRAIN-OFF PIPING TO SCUM PIT
EXISTING BAFFLE PL. TO BE REUSED & FIELD MODIFIED TO MATCH EXTERIOR WALL COVER STOP LOCATION.
3/8" x 3" WEAR STRIPS (304SS) (SEE DETAIL 3)
TANK 60-2213A
TANK 60-2213B
60" x 240" FLOOR LINER PL. (304SS) (TYP.)
SCUM PIPE WALL OPENING TO BE CLOSED AT CENTER WALL
DRIVER SPROCKET WALL RECESS TO BE LINED. (SEE SECTION "M-M" & "N-N") (FIELD MEASURE BEFORE FABRICATION.)
PLAN VIEW OF TWO (2) AERATORS
NORTH
118'-0"
100'-10 5/8" INSIDE TANK
94'-4 1/4"
18 SPACES @ 5'-0" = 90'-0"
90'-6" C/C SHAFTS
FLOATING COVER STOP (BT. PL. 1/4", 304SS)
1'-2 3/4" MAX. WATER SURFACE
FLOATING COVER STOP EXPANSION WALL ANCHORS
48" x 240" WALL LINER PL. (304SS) (TYP.)
RETURN TRACK ANGLE (L3 x 3 x 1/4, 304SS)
8 SPACES @ 10'-0" = 80'-0"
93'-6 1/2" C/C SHAFTS
SCUM PIPE
TOP OF CONCRETE
EXTERIOR WALL SIMILAR
SEE DETAIL 2 (DWG.405)
SEE DETAIL 1 (DWG.405)
SECTION ELEVATION VIEW OF TANK "A" & "B" AERATOR
NOTE: ALL STEEL TO BE 304 STAINLESS STEEL. FOR TYPICAL SECTIONS, SEE DRWG. 18000-403.
AS BUILT KEM 1/19/00
REVISED DIMENSIONS JRM 9/16/99
USFilter
Envirex Products
Waukesha, WI
GENERAL ARRANGEMENT OF API SEPARATORS DETAILS AND SECTIONS 60-2213 A/B
18000-402

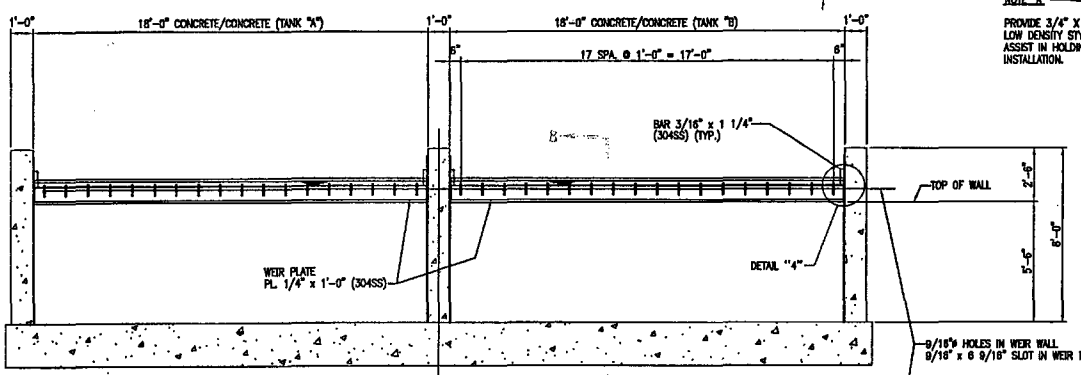


SECTION "J-J"
(SCALE 3/8"=1'-0")

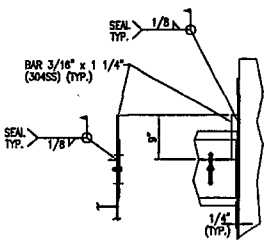


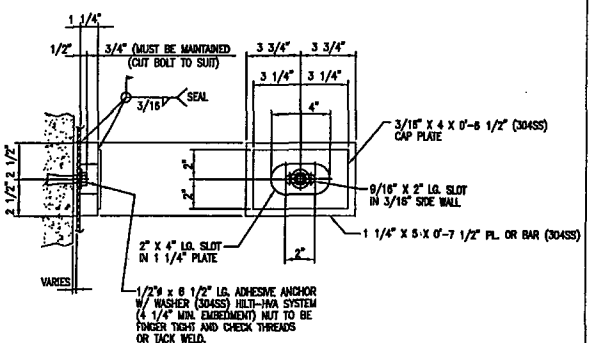
SECTION





SECTION "K-K"
(SCALE 3/8"=1'-0")





DETAIL "10"
(SCALE 3"=1'-0")

NOTE:
ALL STEEL TO BE 304 STAINLESS STEEL.
ALL EXISTING ANCHORS TO BE CUT FLUSH.
FOR TYPICAL SECTIONS, SEE DRWG. 18000-403.

	3	AS BUILT	KEM	1/19/00
	2	REVISED NOTES & DIMENSIONS	KEM	9/27/99
	1	REVISED SECTION "B"	JRM	9/16/99
ECN NUMBER	MOD. NO.	BY	DESCRIPTION OF REVISION	APP. BY	DATE

LOCATION OF REVISION

SCALE	1"=1'-0"	DATE ISSUED	9/13/99
DRAWN	KK	PROJECT ENG.	KWC
CHECKED	TT	APPROVED	
M/M			

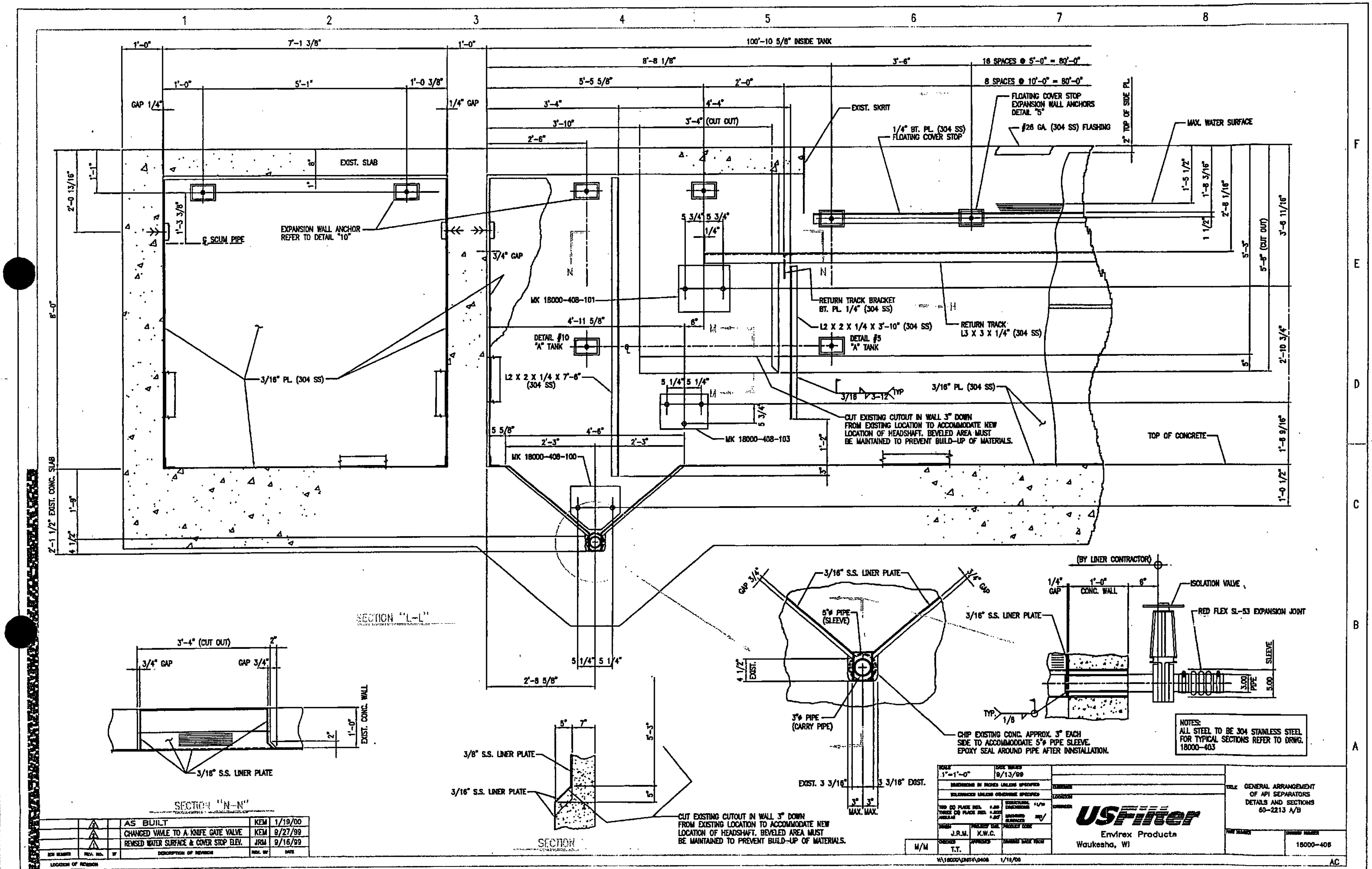
USFilter
Envirex Products
Waukesha, WI

GENERAL ARRANGEMENT
OF API SEPARATORS
SECTIONS AND DETAILS
60-2213 A/B

PART NUMBER
DRAWING NUMBER
18000-407

W:\18000\18414\D407 1/19/00

AC


100'-10 5/8" INSIDE TANK
16 SPACES @ 5'-0" = 80'-0"
8 SPACES @ 10'-0" = 80'-0"
FLOATING COVER STOP EXPANSION WALL ANCHORS DETAIL "5"
#26 GA. (304 SS) FLASHING
2" TOP OF SIDE PL.
MAX. WATER SURFACE
EXIST. SKRIT
1/4" BT. PL. (304 SS) FLOATING COVER STOP
EXIST. SLAB
GAP 1/4"
1/4" GAP
3/4" GAP
℄ SCUM PIPE
EXPANSION WALL ANCHOR REFER TO DETAIL "10"
MK 18000-408-101
DETAIL #10 "A" TANK
3/16" PL. (304 SS)
L2 X 2 X 1/4 X 7'-6" (304 SS)
RETURN TRACK BRACKET BT. PL. 1/4" (304 SS)
L2 X 2 X 1/4 X 3'-10" (304 SS)
DETAIL #5 "A" TANK
RETURN TRACK L3 X 3 X 1/4" (304 SS)
CUT EXISTING CUTOUT IN WALL 3" DOWN FROM EXISTING LOCATION TO ACCOMMODATE NEW LOCATION OF HEADSHAFT. BEVELED AREA MUST BE MAINTAINED TO PREVENT BUILD-UP OF MATERIALS.
MK 18000-408-103
MK 18000-408-100
TOP OF CONCRETE
2'-1 1/2" EXIST. CONC. SLAB
SECTION "L-L"
3/16" S.S. LINER PLATE
5"φ PIPE (SLEEVE)
3"φ PIPE (CARRY PIPE)
GAP 3/4"
EXIST. 3 3/16"
3 3/16" EXIST.
MAX. MAX.
CHIP EXISTING CONC. APPROX. 3" EACH SIDE TO ACCOMMODATE 5"φ PIPE SLEEVE. EPOXY SEAL AROUND PIPE AFTER INSTALLATION.
(BY LINER CONTRACTOR)
1'-0" CONC. WALL
ISOLATION VALVE
RED FLEX SL-53 EXPANSION JOINT
3.00 PIPE
5.00 SLEEVE
3'-4" (CUT OUT)
EXIST. CONC. WALL
3/16" S.S. LINER PLATE
SECTION "N-N"
3/8" S.S. LINER PLATE
SECTION
NOTES:
ALL STEEL TO BE 304 STAINLESS STEEL
FOR TYPICAL SECTIONS REFER TO DRWG. 18000-403
AS BUILT KEM 1/19/00
CHANGED VAVLE TO A KNIFE GATE VALVE KEM 9/27/99
REVISED WATER SURFACE & COVER STOP ELEV. JRM 9/16/99
SCALE 1"=1'-0"
DATE ISSUED 9/13/99
DRAWN J.R.M.
APPROVED K.W.C.
CHECKED T.T.
M/M
USFilter
Envirex Products
Waukesha, WI
TITLE GENERAL ARRANGEMENT OF API SEPARATORS DETAILS AND SECTIONS 60-2213 A/B
18000-408
AC

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Friday, December 22, 2006 1:28 PM
To: Chavez, Carl J, EMNRD
Cc: Monzeglio, Hope, NMENV; Ed Riege; Steve Morris
Subject: Flumes Installation Update - Giant Ciniza Refinery

Carl:
The concrete flume box has been installed between lagoon 2 and evaporation pond 1. We are now refilling lagoon 2. All 3 aerators in lagoon 1 were in operation during the work and continue to operate. The work was delayed a couple days due to the heavy snowfall we received earlier this week.

We may need to conduct a partial draw down of the second lagoon for a brief time (anticipated less than 1 day) to install the modified flume between AL2 and EP1. When we installed the flumes initially in the boxes, we experienced some water overflow over the flumes so the flumes will need some modification to prevent this from re-occuring. We anticipate installing the modified flumes soon after the new year begins. I will keep you posted.

We have received the flowmeters for the flumes and expect these will be installed in January.

Merry X-mas and Happy New Years!!
Jim Lieb

Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, December 21, 2006 2:36 PM
To: 'Jim Lieb'
Subject: RE: Discharge Permit Reapplication for Giant

Jim:

Giant is in violation of its DP renewal permit expiration date. After conferring with my Supervisor, Mr. Wayne Price, Giant needs to submit everything by February 1, 2007.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, December 21, 2006 1:50 PM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; David Kirby
Subject: RE: Discharge Permit Reapplication for Giant
Importance: High

Carl;

Would it be acceptable to OCD if the Ciniza Refinery submits the completed DP Application certification form and the $100 check by December 31, 2006 and commits to submit the required attachments (Parts 4 through 13 listed on the DP Application) by March 1 of 2007? This would give us time to ensure we have prepared a complete and thorough application complying with OCD's requested information requirement within a reasonable time frame.

Regards,

Jim Lieb
Giant Ciniza Refinery

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, December 21, 2006 1:18 PM
To: Jim Lieb
Cc: Ed Riege; Randy Schmaltz; David Kirby
Subject: RE: Discharge Permit Reapplication for Giant

Jim:

I believe I see the source of the confusion with actual expiration dates on DPs. The original discharge plan expiration date sets the 5 year incremental date for renewals. Sometimes the expiration date is exceeded; however, when the permit is completed it will specify an expiration date 5 years from the original discharge date and not the date that the discharge plan is finally approved on. Consequently, the original date, i.e., August 31, 1991; 1996; 2001; and 2006. When a renewal for Giant Ciniza occurs, the expiration date will be August 31, 2011.

Consequently, Giant needs to submit its application renewal with $100 filing fee so we may generate an updated Discharge Plan Permit. Both Giant and the OCD will need to follow the WQCC Public Notice requirements, once the OCD has determined that the renewal application is administratively complete (see attached WQCC regulations for Public Notice). There is a 60 day public notice period for the OCD and Giant to allow 30 days for public comments. If the submittal is not administratively complete, we allow 30 days extra in order to receive the required info. to make the submittal administratively complete.

Please contact me if you have questions. Let me know the date that you will submit Giant's renewal application with $100 filing fee. Once the DP permit is completed, the OCD will mail if back to you for signature and submittal of the $8,400 (refineries) permit fee to the Water Quality Management Fund. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, December 21, 2006 7:29 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Randy Schmaltz; David Kirby
Subject: RE: Discharge Permit Reapplication for Giant

Carl:

I scanned the first two pages of the approval letter for the Ciniza Refinery permit. The expiration date is a bit confusing because the third from the last paragraph states that "Pursuant to Section 3109.H.4., this approval is good for a period of 5 years. This approval will expire August 31, 2006."

Please advise.

Jim Lieb
Giant - Ciniza Refinery

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, December 20, 2006 1:18 PM
To: Jim Lieb
Subject: RE: Discharge Permit Reapplication for Giant

Jim:

According to our database system, it is the Giant Bloomfield Refinery where the Discharge Plan Permit is or has expired. Take a look at the expiration data. Let me know if this info. is incorrect or it is supposed to be the Ciniza Refinery. I'm at home sick today, but should be in my office tomorrow. Thank you. Seasons Greetings! :)

Carl:

Is this notice intended for the Ciniza Refinery although it was addressed to Randy Schmaltz at our Bloomfield Refinery?

Regards,
Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, December 15, 2006 4:40 PM
To: Klein, Elisabeth A; Randy Schmaltz; ed.sloman@igeenergy.com; Moore, Darrell; Aparicio, Linda K.; david.bays@williams.com
Cc: Price, Wayne, EMNRD
Subject: Expired Discharge Plan Permits

Ladies and Gentlemen:

The Oil Conservation Division's (OCD) records indicate that your discharge plan has expired (see attached "Expired-No Expire Permits 12-15-06" file). New Mexico Water Quality Control Commission regulations (WQCC) Section 3106.F (20.6.2.3106.F NMAC) specifies that if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the

approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved. You may be operating without a permit. Please submit a permit renewal application with a filing fee (20.6.2.3114 NMAC) of $100.00 by December 31, 2006. Please make all checks payable to the **Water Quality Management Fund** and addressed to the OCD Santa Fe Office. There is also a discharge plan permit fee, based on the type of facility, which OCD will assess after processing your application. An application form and guidance document is attached in order to assist in expediting this process.

In accordance with the public notice requirements (Subsection A of 20.6.2.3108 NMAC) of the newly revised (July 2006) WQCC regulations, "...to be deemed administratively complete, an application shall provide all of the information required by Paragraphs (1) through (5) of Subsection F of 20.6.2.3108 NMAC and shall indicate, for department approval, the proposed locations and newspaper for providing notice required by Paragraphs (1) through (4) of Subsection B or Paragraph (2) of Subsection C of 20.6.2.3108 NMAC." You are required to provide the information specified above in your permit renewal application submittal. Attached are a flow chart and the regulatory language pertaining to the new WQCC public notice requirements for your convenience. After the application is deemed administratively complete, the revised public notice requirements of 20.6.2.3108 NMAC must be satisfactory demonstrated to OCD. OCD will provide public notice pursuant to the revised WQCC notice requirements of 20.6.2.3108 NMAC to determine if there is any public interest.

Please find attached other relevant files for your consideration and use. If your discharge plan filing fee has been submitted, please inform me that it has been sent. You may contact me by phone at 505-476-3491 or email carlj.chavez@state.nm.us if you have any questions regarding this matter. Thanks in advance for your cooperation.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

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Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 13, 2006 11:31 AM
To: 'Jim Lieb'
Cc: Ed Riege; Ed Rios; Monzeglio, Hope, NMENV; Steve Morris; Price, Wayne, EMNRD; Powell, Brandon, EMNRD
Subject: RE: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Jim:

If Giant chooses to install a whole new API separator system, they will need to investigate the extent of any releases. If Giant chooses to repair the new API separator, they will likely need to install monitoring well(s). Let me know if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Friday, December 08, 2006 11:11 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Ed Rios; Monzeglio, Hope, NMENV; Steve Morris
Subject: RE: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Carl:

Just to be clear on this issue, is OCD requiring Giant to install monitoring wells irregardless of how we propose to rectify the leakage at the NAPIS, or, are the wells only required if we repair both the walls and the SCS?

Jim Lieb
Giant

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, November 16, 2006 2:08 PM
To: Ed Riege; Ed Rios; Jim Lieb; Steve Morris
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Mr. Ed Riege:

The NMED- Hazardous Waste Bureau (HWB) and NMEMNRD- Environmental Bureau (EB) (agencies) met on November 2, 2006 to discuss the status of Giant's leaky New API Separator (NAPIS) with secondary containment system (SCS) leakage problems. The agencies reviewed past meeting notes with Giant and drawings of the NAPIS (API Chopper Pump Piping Plan and Elevations) provided by Giant at the request of the agencies.

You may recall that during the agencies facility inspection on September 8, 2005, the agencies became aware of cracks and oil leakage around the NAPIS cement vault. Since then, Giant attempted to repair the cracks with mortar; however, oil leakage has persisted to this day. In addition, Giant after learning more about the NAPIS, through weekly monitoring of head within the SCS surrounding the NAPIS, has suspected that ground water is infiltrating and in direct connection with the SCS. Since ground water has consistently been absent beneath the pond areas at the facility, the agencies are not convinced that the increasing fluid levels recorded by Giant in the SCS are attributable to ground water, since leakage from the NAPIS cement vaults or bays could be fully or partially contributing to the fluid levels within the SCS. It appears that Giant would prefer to continue monitoring head levels in the SCS indefinitely, and when head reaches 7 ft, evacuate fluid back down to 1 ft to resolve the suspected leaky liner problem. Although Giant has taken responsible actions/approaches to resolving the NAPIS problems, it does not fix the problems; consequently, the agencies cannot accept or approve Giant's approach to resolving the NAPIS problems.

According to Giant's October 27, 2006 letter (letter) "Ciniza Plans for Storm Water Retention Tanks and NAPIS," Giant indicates that the maximum capacity of the NAPIS (2 bays at 150 gpm each) is 300 gpm. The NAPIS is currently discharging between about 90 to 120 gpm through one bay with plans to increase the volume of crude oil for refining into the refinery with associated

process water in addition to storm water drainage currently routed to the OAPIS into the NAPIS. Storm water drains near process drains in the refinery process area may also be routed to the NAPIS. Old API Separator (OAPIS) storm water will be routed to two tanks for eventual metering back to the NAPIS for treatment. When emergency shut-down of the NAPIS is required, the process water would also be routed to the new tanks temporarily. In the letter, Giant will provide the agencies with a copy of Vector Arizona's engineering design report supporting the above in late 2006 or early 2007. The report will demonstrate that the NAPIS and tanks will be capable of handling the increased treatment load to the NAPIS at the refinery. In consideration of the historical problems that Giant has been experiencing with the NAPIS, and in follow-up to the agencies from the September 8, 2005 inspection, and in consideration of Giant's October 27, 2006 letter, the agencies require the following:

1) A plan to fix the NAPIS vault leakage and secondary liner repair is required by January 1, 2007. The agencies would prefer that Giant consider the cost of installing a new APIS of appropriate capacity for future operations that corrects the discharge of oil that is currently occurring at the NAPIS. However, if Giant wishes to install a protective coating to repair the cracks with a sealant that handles freeze-thaw conditions to see if the problem can be fixed, the agencies may be amenable to the proposal. However, the repair(s) of the NAPIS and SCS may ultimately be much more expensive than installing a brand new API Separator.

2) Giant must demonstrate that there is no downward migration of contamination to groundwater from beneath the New API Separator (NAPIS). If Giant chooses to install a protective coating to repair the cracks with a sealant that handles freeze-thaw conditions in the NAPIS and repair of the SCS, then Giant must install two monitoring wells. One monitoring well should be located next to the NAPIS suspected leak and the second monitoring well should be installed down gradient of the NAPIS. Assuming that subsurface conditions are similar to the conditions at the aeration lagoons, the screened interval in the monitoring well to be located near the NAPIS leak in the SCS must be installed below the SCS, but above any water bearing zone such as the sand layer observed beneath the west side of the aeration lagoons. It may be necessary to install the monitoring well at an angle or drill an angled boring for the collection of soil samples and determine if groundwater is present during drilling. If an angled boring is not drilled, soil samples must be collected during the installation of the monitoring well. The purpose of the boring/monitoring well installation is to help determine the competency of the SCS, whether there has been a release from the NAPIS to soil and groundwater and if groundwater is present that intersects the secondary containment system for the NAPIS. General chemistry and organic sampling of ground water in the monitor wells in comparison to NAPIS process water should help determine whether ground water is indeed present in the vicinity of the NAPIS or whether fluid in the SCS is attributable to direct leakage from the NAPIS.

Giant must submit a work plan for the installation of the monitoring wells/boring. The work plan must identify the locations of boring and monitoring wells, the depth of the monitoring wells, the depth at which soil and any ground water samples will be collected, including a proposed monitoring well construction diagram, and sampling methods and procedures.

The agencies request that you consider the problems at the NAPIS in Giant's future plans mentioned in Giant's October 27, 2006 letter. Please contact the agencies to arrange a telephone conference call if you have questions or need further clarification of the above. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 13, 2006 10:51 AM
To: Monzeglio, Hope, NMENV
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Hope:

Ok. Thanks for the communication.

From: Monzeglio, Hope, NMENV
Sent: Wednesday, December 13, 2006 10:46 AM
To: Chavez, Carl J, EMNRD
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Carl

If Giant chooses to install a whole new API separator system, they will need to investigate the extent of any releases. If Giant chooses to repair the new API separator, they will likely need to install monitoring well(s). Let us know if you have any other questions.

Thanks

Hope

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 13, 2006 10:00 AM
To: Monzeglio, Hope, NMENV
Subject: FW: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Hope:

Please find below some discussion of the MWs at the NAPIS. For the sake of further communication on this matter, it would seem that the agencies, regardless of contamination, would want to know if there is a ground water table present in the vicinity of the NAPIS and is not artificial recharge from it. Wayne thinks that MWs would only be required if they have contamination, which is the most likely scenario based on the leakage observed there.

Consequently, I ask NMED based on your response and the OCD's communications below, if it is sure that the no MWs scenario is feasible? In other words, I think we want MWs regardless of all scenarios in order to understand the perceived hydrogeology in the vicinity of the NAPIS right? Let me know if your previous position in regard to the MWs has changed based on this communiqué. Thanks.

From: Price, Wayne, EMNRD
Sent: Wednesday, December 13, 2006 9:32 AM
To: Chavez, Carl J, EMNRD
Subject: RE: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

If they have contamination they need to address it.

From: Chavez, Carl J, EMNRD

Sent: Tuesday, December 12, 2006 1:56 PM
To: Price, Wayne, EMNRD
Subject: FW: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Wayne:

Just wanted to communicate with you based on Hope's response to MWs near the NAPIS. Seems like there would be a dis-incentive to replace the NAPIS with a whole new API system if cleanup is outright required. Cleanup may be required for the repair of the leaky NAPIS. Seems like the mere mention of "cleanup" will send Giant down the repair pathway. It would seem to me repair or a whole new APIS requires the installation of MWs to determine the nature of the suspected ground water vs. leakage from the NAPIS.

Do you agree that MWs are required under repair and/or complete replacement to determine the nature of ground water suspected of infiltrating the NAPIS secondary containment system and even if a whole new APIS is installed to determine if there is a ground water table there? Thanks.

From: Monzeglio, Hope, NMENV
Sent: Monday, December 11, 2006 8:55 AM
To: Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV; Price, Wayne, EMNRD
Subject: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Carl

In response to your email pertaining to the new API separator; if Giant is going to fix the new API separator and rectify the leakage, yes monitoring wells are required. If Giant chooses to install a whole new API system, then cleanup would be required and depending on cleanup, monitoring wells may or may not be required. Let me know if you have questions and if OCD agrees. From the hazardous waste aspect, the new API separator is a solid waste management unit (SWMU).

Hope

Our phone numbers have changed, see below.

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 428-2545
Fax: (505)-428-2567
hope.monzeglio@state.nm.us

The Hazardous Waste Bureau is switching to a new phone system on or about December 7, 2006. The new contact numbers for me will be:

Phone: (505) 476-6045

Main HWB Phone: (505) 476-6000

Fax: (505) 476-6030

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, December 12, 2006 10:27 AM
To: 'Jim Lieb'
Cc: Monzeglio, Hope, NMENV; Ed Riege; Steve Morris; Price, Wayne, EMNRD
Subject: RE: Installation of flumes

Jim:

It appears that treatment will be sufficient during the installation period. Let us immediately know if the treatment sytem is compromised in any way during the installation process. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Tuesday, December 12, 2006 9:57 AM
To: Chavez, Carl J, EMNRD
Cc: Monzeglio, Hope, NMENV; Ed Riege; Steve Morris
Subject: RE: Installation of flumes
Importance: High

Carl:

The installation of the concrete box and flume will occur over the next several days. The construction work involved is rather substantial, hence the installation is anticipated to carry through to Wednesday (December 20) of next week. So, diversion of the second aeration lagoon is anticipated also to last through next Wednesday. We began diversion this morning at approximately 8 am.

Complete treatment of Giant's effluent is occurring because all three aerators in the first aeration lagoon are continuously operating during the flume installation and diversion. Earlier this year we performed calculations (that we provided to OCD and NMED), which showed that operation of the three aerators in the first aeration lagoon provides the necessary treatment to meet the USEPA's F037 and F038 treatment criteria.

We will contact you and NMED as soon as the installation is completed and diversion has ended.

If you have any questions, please contact me at (505) 722-0227 or email reply to jlieb@giant.com

Jim Lieb
Environmental Engineer

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, December 12, 2006 8:59 AM
To: Jim Lieb
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV
Subject: RE: Installation of flumes

Jim:

Thanks for the notification and we are concerned about about how long AL1 was diverted to EP1. Let us know the date and time that this occurred and the amount of time that was taken for the procedure. I presume that everything is back to normal now? Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Monday, December 11, 2006 8:13 AM
To: Chavez, Carl J, EMNRD

Cc: Ed Riege; Steve Morris; Monzeglio, Ho[redacted], NMENV
Subject: Installation of flumes

Carl: We will be installing the flume between aeration lagoon 2 and evaporation pond 1 this week. In order to do this we must temporarily divert water from aeration lagoon 1 directly to evaporation pond 1. In a previous email you had requested that we notify you when we do this.

As of this week we will have installed the flumes at the other locations also. We must also install all of the flow meters and the associated hardware.

Jim Lieb

Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, December 07, 2006 1:15 PM
To: 'Jim Lieb'
Cc: Ed Riege; Monzeglio, Hope, NMENV
Subject: RE: Giant-Ciniza One Time Discharge Plan (GW-032) Waste Disposal Approval at OCD Permitted Landfill

Jim:

Hi. The C-138 is to be submitted to the OCD (me) from the receiving OCD Waste Facility. Please request the testing criteria from the receiving OCD Facility to ensure that your information is complete for the C-138 submittal.

Please note upon preliminary review of Giant's analytical data, we notice that black solids and soil samples 10-12 were not analyzed for TPH, TCLP and Hazardous Characteristics.

Please contact me if you questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Tuesday, December 05, 2006 4:51 PM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Monzeglio, Hope, NMENV
Subject: RE: Giant-Ciniza One Time Discharge Plan (GW-032) Waste Disposal Approval at OCD Permitted Landfill
Importance: High

Carl:

Is the OCD C-138 to be filled out by the waste facility management? There is a signature block near the bottom of the form for the waste facility management authorized agent to sign.

I have attached the NMED's contained in determination and all the analytical we had run on several samples of the waste.

Jim Lieb

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Tuesday, December 05, 2006 11:26 AM
To: Ed Riege; Jim Lieb
Cc: Jones, Brad A., EMNRD; Price, Wayne, EMNRD; Hansen, Edward J., EMNRD; Cobrain, Dave, NMENV
Subject: Giant-Ciniza One Time Discharge Plan (GW-032) Waste Disposal Approval at OCD Permitted Landfill

Ed and Jim:

As requested, please find attached a listing of OCD Commercial Facilities that can accept oilfield exempt and non-exempt non-hazardous wastes in New Mexico. The Gandy-Marley Landfill is the closest facility to the Ciniza Refinery.

For clarification of our telephone conversation this morning, in order for the OCD to issue a one-time approval under Discharge Plan Permit (GW-032) for disposal of 300 yards of oilfield exempt/non-exempt non-hazardous waste, and in consideration that Giant is now requesting disposal at a permitted OCD Landfill Facility and not a solid waste facility as per OCD Rule 712, the OCD requires the following:

1) Copy of the NMED-HWB "Contained in Determination" for 300 yards of waste.
2) OCD C-138 completed form (http://www.emnrd.state.nm.us/ocd/documents/c138.pdf) w/ TCLP Analytical Data Results from Waste (note: waste must be oilfield non-hazardous). If waste is hazardous, OCD permitted facilities cannot accept hazardous waste.

You may send the above information to my [redacted] number below or via e-mail. Once the OC[redacted] has reviewed the above requested information, the OCD may approve a one-time disposal of your waste at an OCD permitted landfarm/landfill. If we cannot approve it because it is hazardous, then Giant will need to consider out-of-state hazardous landfill, etc. options. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Tuesday, December 05, 2006 4:51 PM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Monzeglio, Hope, NMENV
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Importance: High

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Oil Conservation Division, Environmental Bureau
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Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised June 10, 2003

Submit Original
Plus 1 Copy
to Appropriate
District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt: ☐ Non-Exempt: ☐ ☐Verbal Approval Received: Yes ☐ No ☐	4. Generator
	5. Originating Site
2. Management Facility Destination	6. Transporter
3. Address of Facility Operator	8. State
7. Location of Material (Street Address or ULSTR)	

9. Circle One:

A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator; one certificate per job.

B. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved

All transporters must certify the wastes delivered are only those consigned for transport.

BRIEF DESCRIPTION OF MATERIAL:

Estimated Volume _____cy Known Volume (to be entered by the operator at the end of the haul) _____cy

SIGNATURE _____ TITLE: _____ DATE: _____
Waste Management Facility Authorized Agent

TYPE OR PRINT NAME: _____ TELEPHONE NO. _____

E-MAIL ADDRESS _____

(This space for State Use)

APPROVED BY: _____ TITLE: _____ DATE: _____

APPROVED BY: _____ TITLE: _____ DATE: _____

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

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 29, 2006

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

SUBJECT: "CONTAINED-IN" DETERMINATION APPROVAL REGARDING CONTAMINATED SOIL REMOVED FROM THE AERATION LAGOONS AND EVAPORATON PONDS AUGUST 2005 API SEPARATOR RELEASE GIANT REFINING COMPANY, CINIZA REFINERY EPA ID NO. NMD000333211 HWB-GRCC-MISC

Dear Mr. Riege:

The New Mexico Environment Department (NMED) is in receipt of Giant Refining Company, Ciniza Refinery's (the Permittee) letter titled *Request For Waste Determination At The Giant Ciniza Refinery* dated June 15, 2006. This letter requests a "contained-in" determination for petroleum contaminated soil excavated from the banks of Aeration Lagoons (AL) No. 1 and No. 2 and Evaporation Ponds (EP) No. 1 and No. 2. The soil was contaminated, in part, by API separator releases that occurred on August 3 and 15, 2005. Oily wastewater containing benzene (D018) and F037/F038-listed waste was released from the API separator, entered the ALs and EPs and was eventually deposited on the banks of the ponds. Six composite and six discrete soil samples were obtained from excavated soils removed from the banks of the ALs and EPs. The discrete samples were analyzed in a laboratory for volatile organic compounds (VOCs). The composite samples were analyzed in a laboratory for semi-volatile organic compounds (SVOCs),

toxicity characteristic leaching procedure (TCLP) metals, reactivity, ignitability, corrosivity, diesel range organics (DRO) and gasoline range organics (GRO).

NMED has determined that the Permittee is not required to manage the soils excavated from around the banks of the ALs and EPs as hazardous waste. This determination is based on analytical data indicating concentrations of all detected constituents were below the residential NM SSLs and EPA Region 6 Residential standards. As part of this approval, the Permittee must dispose of the soil in an appropriate landfill or on-site in a designated Oil Conservation Division (OCD) landfarm, if approved by OCD. If the excavated soil is not disposed of in the OCD landfarm, the Permittee must obtain approval for final disposal from both NMED and OCD.

If you have questions regarding this approval please contact Hope Monzeglio of my staff at 505-428-2545.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:hm

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
W. Price, NMEMNRD OCD
S. Morris, GRCC
J. Lieb, GRCC

File: Reading GRCC 2006

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, May 15, 2006

Ed Riege
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Stockpile Banks from Lagoons & Ponds

Order No.: 0605060

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 12 sample(s) on 5/5/2006 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

AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co
Project:	Stockpile Banks from Lagoons & Ponds
Lab Order:	0605060

CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

Reporting limits for many of the 8260 and 8270 samples are elevated due to the high amounts of diesel and motor oil range organic compounds in the samples.

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

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 29, 2006

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

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James P. Bearzi
Chief
Hazardous Waste Bureau

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cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
W. Price, NMEMNRD OCD
S. Morris, GRCC
J. Lieb, GRCC

File: Reading GRCC 2006

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

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

Client: Giant Refining Co. Ciniza
Address: Route 3 Box 7 Gallup NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: STOCKPILE BANKS FROM LAGOONS + PONDS
Project #: 111605
Project Manager: ED RIEGE
Sampler: JOHNNY SANCHEZ
Sample Temperature: 15

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals TCLP	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	REACTIVITY	IGNITABILITY	CORROSIVITY (RIC)	Air Bubbles or Headspace (Y or N)
5-3-06	0930	SOIL	N.W. Comp	2				0605160-1			X					X				X	X	X	X	
	0935		N.E.					-2			X					X				X	X	X	X	
	0940		MID. W.					-3			X					X				X	X	X	X	
	0945		MID. E.					-4			X					X				X	X	X	X	
	0950		S.W.					-5			X					X				X	X	X	X	
	0955	↓	S.E.	↓				-6			X					X				X	X	X	X	
	10:00	BLACK SOLIDS	#1 MORE CONTAM.	1				-7											X					
	10:05		#2 MORE CONTAM					-8											X					
	10:10	↓	#3 MORE CONTAM.					-9											X					
	10:15	SOIL	#4 LESS CONTAM.					-10											X					
	10:20		#5 LESS CONTAM					-11											X					
↓	10:25	↓	#6 LESS CONTAM.	↓				-12											X					

Date: 5-4-06 Time: 0810 Relinquished By: (Signature) [signature]
Received By: (Signature) [signature] 5/5/06 1005

Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks: RUSH!

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN | Date and Time Received: 5/5/2006

Work Order Number 0605060 | Received by AT

Checklist completed by _____ 5/5/06
Signature | Date

Matrix | Carrier name UPS

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? **15°** *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									Batch ID: 10361
Sample ID: mb-10361		*MBLK*							Analysis Date: 5/10/2006
Xylenes, Total	ND	mg/Kg	0.050						
Sample ID: lcs-10361		*LCS*							Analysis Date: 5/9/2006
Benzene	0.8252	mg/Kg	0.050	82.5	80.8	132			
Toluene	0.9339	mg/Kg	0.050	93.4	72.1	126			
Chlorobenzene	1.078	mg/Kg	0.050	108	75.4	140			
1,1-Dichloroethene	0.9166	mg/Kg	0.050	91.7	59	147			
Trichloroethene (TCE)	0.7785	mg/Kg	0.050	77.8	77.2	123			
Sample ID: 0605060-12a ms		*MS*							Analysis Date: 5/9/2006
Benzene	0.8676	mg/Kg	0.050	86.8	80.8	132			
Toluene	0.9851	mg/Kg	0.050	98.5	72.1	126			
Chlorobenzene	1.092	mg/Kg	0.050	109	75.4	140			
1,1-Dichloroethene	1.066	mg/Kg	0.050	107	59	147			
Trichloroethene (TCE)	0.8804	mg/Kg	0.050	88.0	77.2	123			
Sample ID: 0605060-12a msd		*MSD*							Analysis Date: 5/9/2006
Benzene	0.7971	mg/Kg	0.050	79.7	80.8	132	8.47	20	S
Toluene	0.8644	mg/Kg	0.050	86.4	72.1	126	13.1	20	
Chlorobenzene	1.061	mg/Kg	0.050	106	75.4	140	2.92	20	
1,1-Dichloroethene	0.9447	mg/Kg	0.050	94.5	59	147	12.0	20	
Trichloroethene (TCE)	0.7631	mg/Kg	0.050	76.3	77.2	123	14.3	20	S

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									**Batch ID:** 10361
Sample ID: mb-10361		*MBLK*							**Analysis Date:** 5/10/2006
Chloroethane	ND	mg/Kg	0.10						
Chloroform	ND	mg/Kg	0.050						
Chloromethane	ND	mg/Kg	0.050						
2-Chlorotoluene	ND	mg/Kg	0.050						
4-Chlorotoluene	ND	mg/Kg	0.050						
cis-1,2-DCE	ND	mg/Kg	0.050						
cis-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2-Dibromo-3-chloropropane	ND	mg/Kg	0.10						
Dibromochloromethane	ND	mg/Kg	0.050						
Dibromomethane	ND	mg/Kg	0.10						
1,2-Dichlorobenzene	ND	mg/Kg	0.050						
1,3-Dichlorobenzene	ND	mg/Kg	0.050						
1,4-Dichlorobenzene	ND	mg/Kg	0.050						
Dichlorodifluoromethane	ND	mg/Kg	0.050						
1,1-Dichloroethane	ND	mg/Kg	0.10						
1,1-Dichloroethene	ND	mg/Kg	0.050						
1,2-Dichloropropane	ND	mg/Kg	0.050						
1,3-Dichloropropane	ND	mg/Kg	0.050						
2,2-Dichloropropane	ND	mg/Kg	0.10						
1,1-Dichloropropene	ND	mg/Kg	0.050						
Hexachlorobutadiene	ND	mg/Kg	0.10						
2-Hexanone	ND	mg/Kg	0.50						
Isopropylbenzene	ND	mg/Kg	0.050						
4-Isopropyltoluene	ND	mg/Kg	0.050						
4-Methyl-2-pentanone	ND	mg/Kg	0.50						
Methylene chloride	ND	mg/Kg	0.15						
n-Butylbenzene	ND	mg/Kg	0.050						
n-Propylbenzene	ND	mg/Kg	0.050						
sec-Butylbenzene	ND	mg/Kg	0.050						
Styrene	ND	mg/Kg	0.050						
tert-Butylbenzene	ND	mg/Kg	0.050						
1,1,1,2-Tetrachloroethane	ND	mg/Kg	0.050						
1,1,2,2-Tetrachloroethane	ND	mg/Kg	0.050						
Tetrachloroethene (PCE)	ND	mg/Kg	0.050						
trans-1,2-DCE	ND	mg/Kg	0.050						
trans-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2,3-Trichlorobenzene	ND	mg/Kg	0.10						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.050						
1,1,1-Trichloroethane	ND	mg/Kg	0.050						
1,1,2-Trichloroethane	ND	mg/Kg	0.050						
Trichloroethene (TCE)	ND	mg/Kg	0.050						
Trichlorofluoromethane	ND	mg/Kg	0.050						
1,2,3-Trichloropropane	ND	mg/Kg	0.10						
Vinyl chloride	ND	mg/Kg	0.050						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									Batch ID: 10361
Sample ID: mb-10361		*MBLK*							Analysis Date: 5/9/2006
4-Isopropyltoluene	ND	mg/Kg	0.050						
4-Methyl-2-pentanone	ND	mg/Kg	0.50						
Methylene chloride	ND	mg/Kg	0.15						
n-Butylbenzene	ND	mg/Kg	0.050						
n-Propylbenzene	ND	mg/Kg	0.050						
sec-Butylbenzene	ND	mg/Kg	0.050						
Styrene	ND	mg/Kg	0.050						
tert-Butylbenzene	ND	mg/Kg	0.050						
1,1,1,2-Tetrachloroethane	ND	mg/Kg	0.050						
1,1,2,2-Tetrachloroethane	ND	mg/Kg	0.050						
Tetrachloroethene (PCE)	ND	mg/Kg	0.050						
trans-1,2-DCE	ND	mg/Kg	0.050						
trans-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2,3-Trichlorobenzene	ND	mg/Kg	0.10						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.050						
1,1,1-Trichloroethane	ND	mg/Kg	0.050						
1,1,2-Trichloroethane	ND	mg/Kg	0.050						
Trichloroethene (TCE)	ND	mg/Kg	0.050						
Trichlorofluoromethane	ND	mg/Kg	0.050						
1,2,3-Trichloropropane	ND	mg/Kg	0.10						
Vinyl chloride	ND	mg/Kg	0.050						
Xylenes, Total	ND	mg/Kg	0.050						
Sample ID: mb-10361		*MBLK*							Analysis Date: 5/10/2006
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.050						
1,2,4-Trimethylbenzene	ND	mg/Kg	0.050						
1,3,5-Trimethylbenzene	ND	mg/Kg	0.050						
1,2-Dichloroethane (EDC)	ND	mg/Kg	0.050						
1,2-Dibromoethane (EDB)	ND	mg/Kg	0.050						
Naphthalene	ND	mg/Kg	0.10						
1-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
Acetone	ND	mg/Kg	0.75						
Bromobenzene	ND	mg/Kg	0.050						
Bromochloromethane	ND	mg/Kg	0.050						
Bromodichloromethane	ND	mg/Kg	0.050						
Bromoform	ND	mg/Kg	0.050						
Bromomethane	ND	mg/Kg	0.10						
2-Butanone	ND	mg/Kg	0.50						
Carbon disulfide	ND	mg/Kg	0.50						
Carbon tetrachloride	ND	mg/Kg	0.10						
Chlorobenzene	ND	mg/Kg	0.050						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B								**Batch ID:**	10361
Sample ID: mb-10361		*MBLK*						**Analysis Date:**	5/9/2006
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.050						
1,2,4-Trimethylbenzene	ND	mg/Kg	0.050						
1,3,5-Trimethylbenzene	ND	mg/Kg	0.050						
1,2-Dichloroethane (EDC)	ND	mg/Kg	0.050						
1,2-Dibromoethane (EDB)	ND	mg/Kg	0.050						
Naphthalene	ND	mg/Kg	0.10						
1-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
Acetone	ND	mg/Kg	0.75						
Bromobenzene	ND	mg/Kg	0.050						
Bromochloromethane	ND	mg/Kg	0.050						
Bromodichloromethane	ND	mg/Kg	0.050						
Bromoform	ND	mg/Kg	0.050						
Bromomethane	ND	mg/Kg	0.10						
2-Butanone	ND	mg/Kg	0.50						
Carbon disulfide	ND	mg/Kg	0.50						
Carbon tetrachloride	ND	mg/Kg	0.10						
Chlorobenzene	ND	mg/Kg	0.050						
Chloroethane	ND	mg/Kg	0.10						
Chloroform	ND	mg/Kg	0.050						
Chloromethane	ND	mg/Kg	0.050						
2-Chlorotoluene	ND	mg/Kg	0.050						
4-Chlorotoluene	ND	mg/Kg	0.050						
cis-1,2-DCE	ND	mg/Kg	0.050						
cis-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2-Dibromo-3-chloropropane	ND	mg/Kg	0.10						
Dibromochloromethane	ND	mg/Kg	0.050						
Dibromomethane	ND	mg/Kg	0.10						
1,2-Dichlorobenzene	ND	mg/Kg	0.050						
1,3-Dichlorobenzene	ND	mg/Kg	0.050						
1,4-Dichlorobenzene	ND	mg/Kg	0.050						
Dichlorodifluoromethane	ND	mg/Kg	0.050						
1,1-Dichloroethane	ND	mg/Kg	0.10						
1,1-Dichloroethene	ND	mg/Kg	0.050						
1,2-Dichloropropane	ND	mg/Kg	0.050						
1,3-Dichloropropane	ND	mg/Kg	0.050						
2,2-Dichloropropane	ND	mg/Kg	0.10						
1,1-Dichloropropene	ND	mg/Kg	0.050						
Hexachlorobutadiene	ND	mg/Kg	0.10						
2-Hexanone	ND	mg/Kg	0.50						
Isopropylbenzene	ND	mg/Kg	0.050						

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW1311/6010									**Batch ID: 10391**
Sample ID: MB-10391		*MBLK*							**Analysis Date: 5/12/2006**
Arsenic	ND	mg/L	5.0						
Barium	ND	mg/L	100						
Cadmium	ND	mg/L	1.0						
Chromium	ND	mg/L	5.0						
Lead	ND	mg/L	5.0						
Selenium	ND	mg/L	1.0						
Silver	ND	mg/L	5.0						
Sample ID: LCS-10391		*LCS*							**Analysis Date: 5/12/2006**
Arsenic	0.5714	mg/L	0.20	114	80	120			
Barium	0.4692	mg/L	0.20	93.8	80	120			
Cadmium	0.5199	mg/L	0.20	104	80	120			
Chromium	0.4823	mg/L	0.20	96.5	80	120			
Lead	0.4641	mg/L	0.20	92.8	80	120			
Selenium	0.5610	mg/L	0.20	112	80	120			
Silver	0.5307	mg/L	0.20	106	80	120			
Sample ID: 0605060-05AMS		*MS*							**Analysis Date: 5/12/2006**
Arsenic	0.6494	mg/L	0.20	120	75	125			
Barium	0.8321	mg/L	0.20	97.6	75	125			
Cadmium	0.5350	mg/L	0.20	107	75	125			
Chromium	0.4697	mg/L	0.20	93.9	75	125			
Lead	0.4574	mg/L	0.20	90.9	75	125			
Selenium	0.5508	mg/L	0.20	110	75	125			
Silver	0.5574	mg/L	0.20	111	75	125			
Sample ID: 0605060-05AMSD		*MSD*							**Analysis Date: 5/12/2006**
Arsenic	0.6296	mg/L	0.20	116	75	125	3.10	20	
Barium	0.8358	mg/L	0.20	98.4	75	125	0.444	20	
Cadmium	0.5327	mg/L	0.20	107	75	125	0.421	20	
Chromium	0.5057	mg/L	0.20	101	75	125	7.39	20	
Lead	0.4547	mg/L	0.20	90.4	75	125	0.596	20	
Selenium	0.5251	mg/L	0.20	105	75	125	4.78	20	
Silver	0.5582	mg/L	0.20	112	75	125	0.138	20	

Qualifiers:

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- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									Batch ID: 10367
Sample ID: LCSD-10367		*LCSD*							Analysis Date: 5/10/2006
4-Nitrophenol	2.254	mg/Kg	0.20	67.7	13.1	150	0.862	25	
Pentachlorophenol	2.344	mg/Kg	0.50	70.4	20.1	139	4.05	25	
Phenol	1.721	mg/Kg	0.20	51.7	17.3	141	16.8	25	
Pyrene	1.193	mg/Kg	0.20	71.4	29	131	2.54	25	
1,2,4-Trichlorobenzene	0.8497	mg/Kg	0.20	50.9	17.9	126	14.4	25	
Method: SW7470									Batch ID: 10399
Sample ID: MB-10399		*MBLK*							Analysis Date: 5/11/2006
Mercury	ND	mg/L	0.020						
Sample ID: LCS-10399		*LCS*							Analysis Date: 5/11/2006
Mercury	0.004860	mg/L	0.0020	97.2	80	120			
Sample ID: 0605060-02AMS		*MS*							Analysis Date: 5/11/2006
Mercury	0.004785	mg/L	0.0020	95.7	75	125			
Sample ID: 0605060-02AMSD		*MSD*							Analysis Date: 5/11/2006
Mercury	0.004530	mg/L	0.0020	90.6	75	125	5.48	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									Batch ID: 10367
Sample ID: MB-10367		*MBLK*							Analysis Date: 5/10/2006
Hexachlorobutadiene	ND	mg/Kg	0.20						
Hexachlorocyclopentadiene	ND	mg/Kg	0.25						
Hexachloroethane	ND	mg/Kg	0.50						
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.20						
Isophorone	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylphenol	ND	mg/Kg	0.20						
3+4-Methylphenol	ND	mg/Kg	0.20						
N-Nitrosodi-n-propylamine	ND	mg/Kg	0.20						
N-Nitrosodiphenylamine	ND	mg/Kg	0.20						
Naphthalene	ND	mg/Kg	0.20						
2-Nitroaniline	ND	mg/Kg	0.50						
3-Nitroaniline	ND	mg/Kg	0.50						
4-Nitroaniline	ND	mg/Kg	0.25						
Nitrobenzene	ND	mg/Kg	0.20						
2-Nitrophenol	ND	mg/Kg	0.20						
4-Nitrophenol	ND	mg/Kg	0.20						
Pentachlorophenol	ND	mg/Kg	0.50						
Phenanthrene	ND	mg/Kg	0.20						
Phenol	ND	mg/Kg	0.20						
Pyrene	ND	mg/Kg	0.20						
Pyridine	ND	mg/Kg	0.50						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.20						
2,4,5-Trichlorophenol	ND	mg/Kg	0.20						
2,4,6-Trichlorophenol	ND	mg/Kg	0.20						
Sample ID: LCS-10367		*LCS*							Analysis Date: 5/10/2006
Acenaphthene	1.223	mg/Kg	0.20	73.3	24	125			
4-Chloro-3-methylphenol	2.391	mg/Kg	0.20	71.8	14.6	154			
2-Chlorophenol	2.073	mg/Kg	0.20	62.3	13.3	149			
1,4-Dichlorobenzene	0.8983	mg/Kg	0.20	53.8	23.6	118			
2,4-Dinitrotoluene	1.072	mg/Kg	0.20	64.2	28	136			
N-Nitrosodi-n-propylamine	1.098	mg/Kg	0.20	65.8	28	114			
4-Nitrophenol	2.234	mg/Kg	0.20	67.1	13.1	150			
Pentachlorophenol	2.441	mg/Kg	0.50	73.3	20.1	139			
Phenol	2.037	mg/Kg	0.20	61.2	17.3	141			
Pyrene	1.224	mg/Kg	0.20	73.3	29	131			
1,2,4-Trichlorobenzene	0.9813	mg/Kg	0.20	58.8	17.9	126			
Sample ID: LCSD-10367		*LCSD*							Analysis Date: 5/10/2006
Acenaphthene	1.200	mg/Kg	0.20	71.9	24	125	1.93	25	
4-Chloro-3-methylphenol	2.163	mg/Kg	0.20	65.0	14.6	154	9.98	25	
2-Chlorophenol	1.725	mg/Kg	0.20	51.8	13.3	149	18.3	25	
1,4-Dichlorobenzene	0.7727	mg/Kg	0.20	46.3	23.6	118	15.0	25	
2,4-Dinitrotoluene	1.086	mg/Kg	0.20	65.0	28	136	1.30	25	
N-Nitrosodi-n-propylamine	0.9733	mg/Kg	0.20	58.3	28	114	12.1	25	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: MB-10367		*MBLK*							
Acenaphthene	ND	mg/Kg	0.20						
Acenaphthylene	ND	mg/Kg	0.20						
Aniline	ND	mg/Kg	0.20						
Anthracene	ND	mg/Kg	0.20						
Azobenzene	ND	mg/Kg	0.20						
Benz(a)anthracene	ND	mg/Kg	0.25						
Benzo(a)pyrene	ND	mg/Kg	0.20						
Benzo(b)fluoranthene	ND	mg/Kg	0.20						
Benzo(g,h,i)perylene	ND	mg/Kg	0.30						
Benzo(k)fluoranthene	ND	mg/Kg	0.50						
Benzoic acid	ND	mg/Kg	0.50						
Benzyl alcohol	ND	mg/Kg	1.0						
Bis(2-chloroethoxy)methane	ND	mg/Kg	0.50						
Bis(2-chloroethyl)ether	ND	mg/Kg	0.25						
Bis(2-chloroisopropyl)ether	ND	mg/Kg	0.50						
Bis(2-ethylhexyl)phthalate	0.2097	mg/Kg	0.20						
4-Bromophenyl phenyl ether	ND	mg/Kg	0.25						
Butyl benzyl phthalate	ND	mg/Kg	0.20						
Carbazole	ND	mg/Kg	0.20						
4-Chloro-3-methylphenol	ND	mg/Kg	0.20						
4-Chloroaniline	ND	mg/Kg	0.20						
2-Chloronaphthalene	ND	mg/Kg	0.20						
2-Chlorophenol	ND	mg/Kg	0.20						
4-Chlorophenyl phenyl ether	ND	mg/Kg	0.20						
Chrysene	ND	mg/Kg	0.20						
Di-n-butyl phthalate	ND	mg/Kg	0.50						
Di-n-octyl phthalate	ND	mg/Kg	0.50						
Dibenz(a,h)anthracene	ND	mg/Kg	0.25						
Dibenzofuran	ND	mg/Kg	0.50						
1,2-Dichlorobenzene	ND	mg/Kg	0.20						
1,3-Dichlorobenzene	ND	mg/Kg	0.20						
1,4-Dichlorobenzene	ND	mg/Kg	0.20						
3,3'-Dichlorobenzidine	ND	mg/Kg	0.20						
Diethyl phthalate	ND	mg/Kg	0.20						
Dimethyl phthalate	ND	mg/Kg	0.20						
2,4-Dichlorophenol	ND	mg/Kg	0.20						
2,4-Dimethylphenol	ND	mg/Kg	0.20						
4,6-Dinitro-2-methylphenol	ND	mg/Kg	0.50						
2,4-Dinitrophenol	ND	mg/Kg	0.50						
2,4-Dinitrotoluene	ND	mg/Kg	0.20						
2,6-Dinitrotoluene	ND	mg/Kg	0.20						
Fluoranthene	ND	mg/Kg	0.20						
Fluorene	ND	mg/Kg	0.20						
Hexachlorobenzene	ND	mg/Kg	0.20						

Batch ID: 10367
Analysis Date: 5/10/2006

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Stockpile Banks from Lagoons & Ponds **Work Order:** 0605060

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									Batch ID: 10369
Sample ID: MB-10369		*MBLK*							Analysis Date: 5/10/2006
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-10369		*LCS*							Analysis Date: 5/10/2006
Diesel Range Organics (DRO)	43.73	mg/Kg	10	87.5	64.6	116			
Sample ID: LCSD-10369		*LCSD*							Analysis Date: 5/10/2006
Diesel Range Organics (DRO)	45.86	mg/Kg	10	91.7	64.6	116	4.76	17.4	
Method: SW8015									Batch ID: 10361
Sample ID: MB-10361		*MBLK*							Analysis Date: 5/8/2006
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0						
Sample ID: LCS-10361		*LCS*							Analysis Date: 5/8/2006
Gasoline Range Organics (GRO)	20.20	mg/Kg	5.0	80.8	77	115			
Sample ID: LCSD-10361		*LCSD*							Analysis Date: 5/8/2006
Gasoline Range Organics (GRO)	22.00	mg/Kg	5.0	88.0	77	115	8.53	11.6	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

QA/QC Summary Report

Client: Hall Environmental
Project: 0605060

Report Date: 05/12/06
Work Order: C06050423

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW1010								Batch: 060511A-FLSHPNT-S	
Sample ID: C06050423-001ADUP	Sample Duplicate				Run: PM_FLASHPOINT_060511A			05/11/06 10:00	
Flash Point (Ignitability)	> 140	°F	60				0.0	5	
Sample ID: MBLK1_060511A	Method Blank				Run: PM_FLASHPOINT_060511A			05/11/06 16:58	
Flash Point (Ignitability)	ND	°F	60						
Sample ID: LCS1_060511A	Laboratory Control Sample				Run: PM_FLASHPOINT_060511A			05/11/06 07:54	
Flash Point (Ignitability)	82.0	°F	60	100	96	104			
Method: SW846 Ch 7								Batch: 10942	
Sample ID: MB-10942-S	Method Blank				Run: TITRATION_060510A			05/10/06 14:17	
Sulfide, Reactive	ND	mg/kg	1						
Sample ID: C06050423-006B	Sample Duplicate				Run: TITRATION_060510A			05/10/06 14:39	
Sulfide, Reactive	12.0	mg/kg	20				0.0	20	
Method: SW846 Ch 7								Batch: B_21065	
Sample ID: MB-21065	Method Blank				Run: SUB-B75568			05/11/06 14:27	
Cyanide, Reactive	ND	mg/kg	0.05						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: 0605060
Lab ID: C06050423-006
Client Sample ID: SE Comp

Report Date: 05/12/06
Collection Date: 05/03/06 09:55
Date Received: 05/09/06
Matrix: Soil

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Corrosivity - pH	7.33	s.u.		0.01		SW9045C	05/11/06 14:23 / ph
Flash Point (Ignitability)	>140	°F		60	140	SW1010	05/11/06 16:49 / bah
REACTIVITY							
Sulfide, Reactive	ND	mg/kg		20.0	500	SW846 Ch 7	05/10/06 14:34 / jl
Cyanide, Reactive	ND	mg/kg		1.0	250	SW846 Ch 7	05/11/06 14:23 / ell-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: 0605060
Lab ID: C06050423-005
Client Sample ID: SW Comp

Report Date: 05/12/06
Collection Date: 05/03/06 09:50
Date Received: 05/09/06
Matrix: Soil

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Corrosivity - pH	7.41	s.u.		0.01		SW9045C	05/11/06 14:23 / ph
Flash Point (Ignitability)	>140	°F		60	140	SW1010	05/11/06 15:45 / bah
REACTIVITY							
Sulfide, Reactive	ND	mg/kg		20.0	500	SW846 Ch 7	05/10/06 14:31 / jl
Cyanide, Reactive	ND	mg/kg		1.0	250	SW846 Ch 7	05/11/06 14:21 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: 0605060
Lab ID: C06050423-004
Client Sample ID: MID E Comp

Report Date: 05/12/06
Collection Date: 05/03/06 09:45
Date Received: 05/09/06
Matrix: Soil

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Corrosivity - pH	7.21	s.u.		0.01		SW9045C	05/11/06 14:23 / ph
Flash Point (Ignitability)	>140	°F		60	140	SW1010	05/11/06 14:44 / bah
REACTIVITY							
Sulfide, Reactive	ND	mg/kg		20.0	500	SW846 Ch 7	05/10/06 14:28 / jl
Cyanide, Reactive	ND	mg/kg		1.0	250	SW846 Ch 7	05/11/06 14:20 / efi-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: 0605060
Lab ID: C06050423-003
Client Sample ID: MID W Comp

Report Date: 05/12/06
Collection Date: 05/03/06 09:40
Date Received: 05/09/06
Matrix: Soil

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Corrosivity - pH	7.17	s.u.		0.01		SW9045C	05/11/06 14:23 / ph
Flash Point (Ignitability)	>140	°F		60	140	SW1010	05/11/06 13:10 / bah
REACTIVITY							
Sulfide, Reactive	ND	mg/kg		20.0	500	SW846 Ch 7	05/10/06 14:26 / jl
Cyanide, Reactive	ND	mg/kg		1.0	250	SW846 Ch 7	05/11/06 14:18 / ali-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: 0605060
Lab ID: C06050423-002
Client Sample ID: NE Comp

Report Date: 05/12/06
Collection Date: 05/03/06 09:35
Date Received: 05/09/06
Matrix: Soil

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Corrosivity - pH	7.53	s.u.		0.01		SW9045C	05/11/06 14:23 / ph
Flash Point (Ignitability)	>140	°F		60	140	SW1010	05/11/06 11:00 / bah
REACTIVITY							
Sulfide, Reactive	ND	mg/kg		20.0	500	SW846 Ch 7	05/10/06 14:23 / jl
Cyanide, Reactive	ND	mg/kg		1.0	250	SW846 Ch 7	05/11/06 14:16 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: 0605060
Lab ID: C06050423-001
Client Sample ID: MW Comp

Report Date: 05/12/06
Collection Date: 05/03/06 09:30
Date Received: 05/09/06
Matrix: Soil

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
Corrosivity - pH	7.46	s.u.		0.01		SW9045C	05/11/06 14:23 / ph
Flash Point (Ignitability)	>140	°F		60	140	SW1010	05/11/06 08:53 / bah
REACTIVITY							
Sulfide, Reactive	ND	mg/kg		20.0	500	SW846 Ch 7	05/10/06 14:21 / jl
Cyanide, Reactive	ND	mg/kg		1.0	250	SW846 Ch 7	05/11/06 14:14 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#6 Less Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:25:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-12	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
1,1-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	5/10/2006
2-Hexanone	ND	0.50		mg/Kg	1	5/10/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	5/10/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	5/10/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	5/10/2006
Methylene chloride	ND	0.15		mg/Kg	1	5/10/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	5/10/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
Styrene	ND	0.050		mg/Kg	1	5/10/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	5/10/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	5/10/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	5/10/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	5/10/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	5/10/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	5/10/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	5/10/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	5/10/2006
Trichlorofluoromethane	ND	0.050		mg/Kg	1	5/10/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	5/10/2006
Vinyl chloride	ND	0.050		mg/Kg	1	5/10/2006
Xylenes, Total	ND	0.050		mg/Kg	1	5/10/2006
Surr: 1,2-Dichloroethane-d4	128	74.2-135		%REC	1	5/10/2006
Surr: 4-Bromofluorobenzene	93.6	75.2-127		%REC	1	5/10/2006
Surr: Dibromofluoromethane	112	76.9-138		%REC	1	5/10/2006
Surr: Toluene-d8	99.6	74-119		%REC	1	5/10/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#6 Less Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:25:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-12	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	0.050		mg/Kg	1	5/10/2006
Toluene	ND	0.050		mg/Kg	1	5/10/2006
Ethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	5/10/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	5/10/2006
Naphthalene	ND	0.10		mg/Kg	1	5/10/2006
1-Methylnaphthalene	0.56	0.20		mg/Kg	1	5/10/2006
2-Methylnaphthalene	0.43	0.20		mg/Kg	1	5/10/2006
Acetone	ND	0.75		mg/Kg	1	5/10/2006
Bromobenzene	ND	0.050		mg/Kg	1	5/10/2006
Bromochloromethane	ND	0.050		mg/Kg	1	5/10/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	5/10/2006
Bromoform	ND	0.050		mg/Kg	1	5/10/2006
Bromomethane	ND	0.10		mg/Kg	1	5/10/2006
2-Butanone	ND	0.50		mg/Kg	1	5/10/2006
Carbon disulfide	ND	0.50		mg/Kg	1	5/10/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	5/10/2006
Chlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
Chloroethane	ND	0.10		mg/Kg	1	5/10/2006
Chloroform	ND	0.050		mg/Kg	1	5/10/2006
Chloromethane	ND	0.050		mg/Kg	1	5/10/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	5/10/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	5/10/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	5/10/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	5/10/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	5/10/2006
Dibromomethane	ND	0.10		mg/Kg	1	5/10/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	5/10/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	5/10/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	5/10/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	5/10/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#5 Less Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:20:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
1,1-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	5/10/2006
2-Hexanone	ND	0.50		mg/Kg	1	5/10/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	5/10/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	5/10/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	5/10/2006
Methylene chloride	ND	0.15		mg/Kg	1	5/10/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	5/10/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
Styrene	ND	0.050		mg/Kg	1	5/10/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	5/10/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	5/10/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	5/10/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	5/10/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	5/10/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	5/10/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	5/10/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	5/10/2006
Trichlorofluoromethane	ND	0.050		mg/Kg	1	5/10/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	5/10/2006
Vinyl chloride	ND	0.050		mg/Kg	1	5/10/2006
Xylenes, Total	ND	0.050		mg/Kg	1	5/10/2006
Surr: 1,2-Dichloroethane-d4	132	74.2-135		%REC	1	5/10/2006
Surr: 4-Bromofluorobenzene	103	75.2-127		%REC	1	5/10/2006
Surr: Dibromofluoromethane	118	76.9-138		%REC	1	5/10/2006
Surr: Toluene-d8	101	74-119		%REC	1	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#5 Less Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:20:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	0.050		mg/Kg	1	5/10/2006
Toluene	ND	0.050		mg/Kg	1	5/10/2006
Ethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	5/10/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	5/10/2006
Naphthalene	ND	0.10		mg/Kg	1	5/10/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	5/10/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	5/10/2006
Acetone	ND	0.75		mg/Kg	1	5/10/2006
Bromobenzene	ND	0.050		mg/Kg	1	5/10/2006
Bromochloromethane	ND	0.050		mg/Kg	1	5/10/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	5/10/2006
Bromoform	ND	0.050		mg/Kg	1	5/10/2006
Bromomethane	ND	0.10		mg/Kg	1	5/10/2006
2-Butanone	ND	0.50		mg/Kg	1	5/10/2006
Carbon disulfide	ND	0.50		mg/Kg	1	5/10/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	5/10/2006
Chlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
Chloroethane	ND	0.10		mg/Kg	1	5/10/2006
Chloroform	ND	0.050		mg/Kg	1	5/10/2006
Chloromethane	ND	0.050		mg/Kg	1	5/10/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	5/10/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	5/10/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	5/10/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	5/10/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	5/10/2006
Dibromomethane	ND	0.10		mg/Kg	1	5/10/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	5/10/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	5/10/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	5/10/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	5/10/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#4 Less Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:15:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-10	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
1,1-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	5/10/2006
2-Hexanone	ND	0.50		mg/Kg	1	5/10/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	5/10/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	5/10/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	5/10/2006
Methylene chloride	ND	0.15		mg/Kg	1	5/10/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	5/10/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
Styrene	ND	0.050		mg/Kg	1	5/10/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	5/10/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	5/10/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	5/10/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	5/10/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	5/10/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	5/10/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	5/10/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	5/10/2006
Trichlorofluoromethane	ND	0.050		mg/Kg	1	5/10/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	5/10/2006
Vinyl chloride	ND	0.050		mg/Kg	1	5/10/2006
Xylenes, Total	ND	0.050		mg/Kg	1	5/10/2006
Surr: 1,2-Dichloroethane-d4	116	74.2-135		%REC	1	5/10/2006
Surr: 4-Bromofluorobenzene	93.4	75.2-127		%REC	1	5/10/2006
Surr: Dibromofluoromethane	105	76.9-138		%REC	1	5/10/2006
Surr: Toluene-d8	96.9	74-119		%REC	1	5/10/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#4 Less Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:15:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-10	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	0.050		mg/Kg	1	5/10/2006
Toluene	ND	0.050		mg/Kg	1	5/10/2006
Ethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	5/10/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	5/10/2006
Naphthalene	ND	0.10		mg/Kg	1	5/10/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	5/10/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	5/10/2006
Acetone	ND	0.75		mg/Kg	1	5/10/2006
Bromobenzene	ND	0.050		mg/Kg	1	5/10/2006
Bromochloromethane	ND	0.050		mg/Kg	1	5/10/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	5/10/2006
Bromoform	ND	0.050		mg/Kg	1	5/10/2006
Bromomethane	ND	0.10		mg/Kg	1	5/10/2006
2-Butanone	ND	0.50		mg/Kg	1	5/10/2006
Carbon disulfide	ND	0.50		mg/Kg	1	5/10/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	5/10/2006
Chlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
Chloroethane	ND	0.10		mg/Kg	1	5/10/2006
Chloroform	ND	0.050		mg/Kg	1	5/10/2006
Chloromethane	ND	0.050		mg/Kg	1	5/10/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	5/10/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	5/10/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	5/10/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	5/10/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	5/10/2006
Dibromomethane	ND	0.10		mg/Kg	1	5/10/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	5/10/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	5/10/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	5/10/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	5/10/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	5/10/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	5/10/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	5/10/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#3 More Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:10:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-09	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
1,1-Dichloropropene	ND	1.0		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	2.0		mg/Kg	20	5/10/2006
2-Hexanone	ND	10		mg/Kg	20	5/10/2006
Isopropylbenzene	ND	1.0		mg/Kg	20	5/10/2006
4-Isopropyltoluene	ND	1.0		mg/Kg	20	5/10/2006
4-Methyl-2-pentanone	ND	10		mg/Kg	20	5/10/2006
Methylene chloride	ND	3.0		mg/Kg	20	5/10/2006
n-Butylbenzene	1.3	1.0		mg/Kg	20	5/10/2006
n-Propylbenzene	ND	1.0		mg/Kg	20	5/10/2006
sec-Butylbenzene	ND	1.0		mg/Kg	20	5/10/2006
Styrene	ND	1.0		mg/Kg	20	5/10/2006
tert-Butylbenzene	ND	1.0		mg/Kg	20	5/10/2006
1,1,1,2-Tetrachloroethane	ND	1.0		mg/Kg	20	5/10/2006
1,1,2,2-Tetrachloroethane	ND	1.0		mg/Kg	20	5/10/2006
Tetrachloroethene (PCE)	ND	1.0		mg/Kg	20	5/10/2006
trans-1,2-DCE	ND	1.0		mg/Kg	20	5/10/2006
trans-1,3-Dichloropropene	ND	1.0		mg/Kg	20	5/10/2006
1,2,3-Trichlorobenzene	ND	2.0		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
1,1,1-Trichloroethane	ND	1.0		mg/Kg	20	5/10/2006
1,1,2-Trichloroethane	ND	1.0		mg/Kg	20	5/10/2006
Trichloroethene (TCE)	ND	1.0		mg/Kg	20	5/10/2006
Trichlorofluoromethane	ND	1.0		mg/Kg	20	5/10/2006
1,2,3-Trichloropropane	ND	2.0		mg/Kg	20	5/10/2006
Vinyl chloride	ND	1.0		mg/Kg	20	5/10/2006
Xylenes, Total	ND	1.0		mg/Kg	20	5/10/2006
Surr: 1,2-Dichloroethane-d4	117	74.2-135		%REC	20	5/10/2006
Surr: 4-Bromofluorobenzene	105	75.2-127		%REC	20	5/10/2006
Surr: Dibromofluoromethane	111	76.9-138		%REC	20	5/10/2006
Surr: Toluene-d8	102	74-119		%REC	20	5/10/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#3 More Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:10:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-09	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: **KTM**
Benzene	ND	1.0		mg/Kg	20	5/10/2006
Toluene	ND	1.0		mg/Kg	20	5/10/2006
Ethylbenzene	ND	1.0		mg/Kg	20	5/10/2006
Methyl tert-butyl ether (MTBE)	ND	1.0		mg/Kg	20	5/10/2006
1,2,4-Trimethylbenzene	ND	1.0		mg/Kg	20	5/10/2006
1,3,5-Trimethylbenzene	1.2	1.0		mg/Kg	20	5/10/2006
1,2-Dichloroethane (EDC)	ND	1.0		mg/Kg	20	5/10/2006
1,2-Dibromoethane (EDB)	ND	1.0		mg/Kg	20	5/10/2006
Naphthalene	2.2	2.0		mg/Kg	20	5/10/2006
1-Methylnaphthalene	12	4.0		mg/Kg	20	5/10/2006
2-Methylnaphthalene	11	4.0		mg/Kg	20	5/10/2006
Acetone	ND	15		mg/Kg	20	5/10/2006
Bromobenzene	ND	1.0		mg/Kg	20	5/10/2006
Bromochloromethane	ND	1.0		mg/Kg	20	5/10/2006
Bromodichloromethane	ND	1.0		mg/Kg	20	5/10/2006
Bromoform	ND	1.0		mg/Kg	20	5/10/2006
Bromomethane	ND	2.0		mg/Kg	20	5/10/2006
2-Butanone	ND	10		mg/Kg	20	5/10/2006
Carbon disulfide	ND	10		mg/Kg	20	5/10/2006
Carbon tetrachloride	ND	2.0		mg/Kg	20	5/10/2006
Chlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
Chloroethane	ND	2.0		mg/Kg	20	5/10/2006
Chloroform	ND	1.0		mg/Kg	20	5/10/2006
Chloromethane	ND	1.0		mg/Kg	20	5/10/2006
2-Chlorotoluene	ND	1.0		mg/Kg	20	5/10/2006
4-Chlorotoluene	ND	1.0		mg/Kg	20	5/10/2006
cis-1,2-DCE	ND	1.0		mg/Kg	20	5/10/2006
cis-1,3-Dichloropropene	ND	1.0		mg/Kg	20	5/10/2006
1,2-Dibromo-3-chloropropane	ND	2.0		mg/Kg	20	5/10/2006
Dibromochloromethane	ND	1.0		mg/Kg	20	5/10/2006
Dibromomethane	ND	2.0		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
Dichlorodifluoromethane	ND	1.0		mg/Kg	20	5/10/2006
1,1-Dichloroethane	ND	2.0		mg/Kg	20	5/10/2006
1,1-Dichloroethene	ND	1.0		mg/Kg	20	5/10/2006
1,2-Dichloropropane	ND	1.0		mg/Kg	20	5/10/2006
1,3-Dichloropropane	ND	1.0		mg/Kg	20	5/10/2006
2,2-Dichloropropane	ND	2.0		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#2 More Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:05:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
1,1-Dichloropropene	ND	5.0		mg/Kg	100	5/9/2006
Hexachlorobutadiene	ND	10		mg/Kg	100	5/9/2006
2-Hexanone	ND	50		mg/Kg	100	5/9/2006
Isopropylbenzene	ND	5.0		mg/Kg	100	5/9/2006
4-Isopropyltoluene	ND	5.0		mg/Kg	100	5/9/2006
4-Methyl-2-pentanone	ND	50		mg/Kg	100	5/9/2006
Methylene chloride	ND	15		mg/Kg	100	5/9/2006
n-Butylbenzene	ND	5.0		mg/Kg	100	5/9/2006
n-Propylbenzene	ND	5.0		mg/Kg	100	5/9/2006
sec-Butylbenzene	ND	5.0		mg/Kg	100	5/9/2006
Styrene	ND	5.0		mg/Kg	100	5/9/2006
tert-Butylbenzene	ND	5.0		mg/Kg	100	5/9/2006
1,1,1,2-Tetrachloroethane	ND	5.0		mg/Kg	100	5/9/2006
1,1,2,2-Tetrachloroethane	ND	5.0		mg/Kg	100	5/9/2006
Tetrachloroethene (PCE)	ND	5.0		mg/Kg	100	5/9/2006
trans-1,2-DCE	ND	5.0		mg/Kg	100	5/9/2006
trans-1,3-Dichloropropene	ND	5.0		mg/Kg	100	5/9/2006
1,2,3-Trichlorobenzene	ND	10		mg/Kg	100	5/9/2006
1,2,4-Trichlorobenzene	ND	5.0		mg/Kg	100	5/9/2006
1,1,1-Trichloroethane	ND	5.0		mg/Kg	100	5/9/2006
1,1,2-Trichloroethane	ND	5.0		mg/Kg	100	5/9/2006
Trichloroethene (TCE)	ND	5.0		mg/Kg	100	5/9/2006
Trichlorofluoromethane	ND	5.0		mg/Kg	100	5/9/2006
1,2,3-Trichloropropane	ND	10		mg/Kg	100	5/9/2006
Vinyl chloride	ND	5.0		mg/Kg	100	5/9/2006
Xylenes, Total	ND	5.0		mg/Kg	100	5/9/2006
Surr: 1,2-Dichloroethane-d4	136	74.2-135	S	%REC	100	5/9/2006
Surr: 4-Bromofluorobenzene	96.4	75.2-127		%REC	100	5/9/2006
Surr: Dibromofluoromethane	116	76.9-138		%REC	100	5/9/2006
Surr: Toluene-d8	102	74-119		%REC	100	5/9/2006

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#2 More Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:05:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	5.0		mg/Kg	100	5/9/2006
Toluene	ND	5.0		mg/Kg	100	5/9/2006
Ethylbenzene	ND	5.0		mg/Kg	100	5/9/2006
Methyl tert-butyl ether (MTBE)	ND	5.0		mg/Kg	100	5/9/2006
1,2,4-Trimethylbenzene	ND	5.0		mg/Kg	100	5/9/2006
1,3,5-Trimethylbenzene	ND	5.0		mg/Kg	100	5/9/2006
1,2-Dichloroethane (EDC)	ND	5.0		mg/Kg	100	5/9/2006
1,2-Dibromoethane (EDB)	ND	5.0		mg/Kg	100	5/9/2006
Naphthalene	ND	10		mg/Kg	100	5/9/2006
1-Methylnaphthalene	43	20		mg/Kg	100	5/9/2006
2-Methylnaphthalene	ND	20		mg/Kg	100	5/9/2006
Acetone	ND	75		mg/Kg	100	5/9/2006
Bromobenzene	ND	5.0		mg/Kg	100	5/9/2006
Bromochloromethane	ND	5.0		mg/Kg	100	5/9/2006
Bromodichloromethane	ND	5.0		mg/Kg	100	5/9/2006
Bromoform	ND	5.0		mg/Kg	100	5/9/2006
Bromomethane	ND	10		mg/Kg	100	5/9/2006
2-Butanone	ND	50		mg/Kg	100	5/9/2006
Carbon disulfide	ND	50		mg/Kg	100	5/9/2006
Carbon tetrachloride	ND	10		mg/Kg	100	5/9/2006
Chlorobenzene	ND	5.0		mg/Kg	100	5/9/2006
Chloroethane	ND	10		mg/Kg	100	5/9/2006
Chloroform	ND	5.0		mg/Kg	100	5/9/2006
Chloromethane	ND	5.0		mg/Kg	100	5/9/2006
2-Chlorotoluene	ND	5.0		mg/Kg	100	5/9/2006
4-Chlorotoluene	ND	5.0		mg/Kg	100	5/9/2006
cis-1,2-DCE	ND	5.0		mg/Kg	100	5/9/2006
cis-1,3-Dichloropropene	ND	5.0		mg/Kg	100	5/9/2006
1,2-Dibromo-3-chloropropane	ND	10		mg/Kg	100	5/9/2006
Dibromochloromethane	ND	5.0		mg/Kg	100	5/9/2006
Dibromomethane	ND	10		mg/Kg	100	5/9/2006
1,2-Dichlorobenzene	ND	5.0		mg/Kg	100	5/9/2006
1,3-Dichlorobenzene	ND	5.0		mg/Kg	100	5/9/2006
1,4-Dichlorobenzene	ND	5.0		mg/Kg	100	5/9/2006
Dichlorodifluoromethane	ND	5.0		mg/Kg	100	5/9/2006
1,1-Dichloroethane	ND	10		mg/Kg	100	5/9/2006
1,1-Dichloroethene	ND	5.0		mg/Kg	100	5/9/2006
1,2-Dichloropropane	ND	5.0		mg/Kg	100	5/9/2006
1,3-Dichloropropane	ND	5.0		mg/Kg	100	5/9/2006
2,2-Dichloropropane	ND	10		mg/Kg	100	5/9/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#1 More Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:00:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-07	**Matrix:**	SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
1,1-Dichloropropene	ND	1.0		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	2.0		mg/Kg	20	5/10/2006
2-Hexanone	ND	10		mg/Kg	20	5/10/2006
Isopropylbenzene	ND	1.0		mg/Kg	20	5/10/2006
4-Isopropyltoluene	ND	1.0		mg/Kg	20	5/10/2006
4-Methyl-2-pentanone	ND	10		mg/Kg	20	5/10/2006
Methylene chloride	ND	3.0		mg/Kg	20	5/10/2006
n-Butylbenzene	ND	1.0		mg/Kg	20	5/10/2006
n-Propylbenzene	ND	1.0		mg/Kg	20	5/10/2006
sec-Butylbenzene	ND	1.0		mg/Kg	20	5/10/2006
Styrene	ND	1.0		mg/Kg	20	5/10/2006
tert-Butylbenzene	ND	1.0		mg/Kg	20	5/10/2006
1,1,1,2-Tetrachloroethane	ND	1.0		mg/Kg	20	5/10/2006
1,1,2,2-Tetrachloroethane	ND	1.0		mg/Kg	20	5/10/2006
Tetrachloroethene (PCE)	ND	1.0		mg/Kg	20	5/10/2006
trans-1,2-DCE	ND	1.0		mg/Kg	20	5/10/2006
trans-1,3-Dichloropropene	ND	1.0		mg/Kg	20	5/10/2006
1,2,3-Trichlorobenzene	ND	2.0		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
1,1,1-Trichloroethane	ND	1.0		mg/Kg	20	5/10/2006
1,1,2-Trichloroethane	ND	1.0		mg/Kg	20	5/10/2006
Trichloroethene (TCE)	ND	1.0		mg/Kg	20	5/10/2006
Trichlorofluoromethane	ND	1.0		mg/Kg	20	5/10/2006
1,2,3-Trichloropropane	ND	2.0		mg/Kg	20	5/10/2006
Vinyl chloride	ND	1.0		mg/Kg	20	5/10/2006
Xylenes, Total	ND	1.0		mg/Kg	20	5/10/2006
Surr: 1,2-Dichloroethane-d4	124	74.2-135		%REC	20	5/10/2006
Surr: 4-Bromofluorobenzene	92.5	75.2-127		%REC	20	5/10/2006
Surr: Dibromofluoromethane	115	76.9-138		%REC	20	5/10/2006
Surr: Toluene-d8	95.9	74-119		%REC	20	5/10/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	#1 More Contam.
Lab Order:	0605060	**Collection Date:**	5/3/2006 10:00:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-07	**Matrix:**	SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		mg/Kg	20	5/10/2006
Toluene	ND	1.0		mg/Kg	20	5/10/2006
Ethylbenzene	ND	1.0		mg/Kg	20	5/10/2006
Methyl tert-butyl ether (MTBE)	ND	1.0		mg/Kg	20	5/10/2006
1,2,4-Trimethylbenzene	2.0	1.0		mg/Kg	20	5/10/2006
1,3,5-Trimethylbenzene	ND	1.0		mg/Kg	20	5/10/2006
1,2-Dichloroethane (EDC)	ND	1.0		mg/Kg	20	5/10/2006
1,2-Dibromoethane (EDB)	ND	1.0		mg/Kg	20	5/10/2006
Naphthalene	2.9	2.0		mg/Kg	20	5/10/2006
1-Methylnaphthalene	16	4.0		mg/Kg	20	5/10/2006
2-Methylnaphthalene	21	4.0		mg/Kg	20	5/10/2006
Acetone	ND	15		mg/Kg	20	5/10/2006
Bromobenzene	ND	1.0		mg/Kg	20	5/10/2006
Bromochloromethane	ND	1.0		mg/Kg	20	5/10/2006
Bromodichloromethane	ND	1.0		mg/Kg	20	5/10/2006
Bromoform	ND	1.0		mg/Kg	20	5/10/2006
Bromomethane	ND	2.0		mg/Kg	20	5/10/2006
2-Butanone	ND	10		mg/Kg	20	5/10/2006
Carbon disulfide	ND	10		mg/Kg	20	5/10/2006
Carbon tetrachloride	ND	2.0		mg/Kg	20	5/10/2006
Chlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
Chloroethane	ND	2.0		mg/Kg	20	5/10/2006
Chloroform	ND	1.0		mg/Kg	20	5/10/2006
Chloromethane	ND	1.0		mg/Kg	20	5/10/2006
2-Chlorotoluene	ND	1.0		mg/Kg	20	5/10/2006
4-Chlorotoluene	ND	1.0		mg/Kg	20	5/10/2006
cis-1,2-DCE	ND	1.0		mg/Kg	20	5/10/2006
cis-1,3-Dichloropropene	ND	1.0		mg/Kg	20	5/10/2006
1,2-Dibromo-3-chloropropane	ND	2.0		mg/Kg	20	5/10/2006
Dibromochloromethane	ND	1.0		mg/Kg	20	5/10/2006
Dibromomethane	ND	2.0		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	1.0		mg/Kg	20	5/10/2006
Dichlorodifluoromethane	ND	1.0		mg/Kg	20	5/10/2006
1,1-Dichloroethane	ND	2.0		mg/Kg	20	5/10/2006
1,1-Dichloroethene	ND	1.0		mg/Kg	20	5/10/2006
1,2-Dichloropropane	ND	1.0		mg/Kg	20	5/10/2006
1,3-Dichloropropane	ND	1.0		mg/Kg	20	5/10/2006
2,2-Dichloropropane	ND	2.0		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	SE Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:55:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
4-Nitroaniline	ND	50		mg/Kg	20	5/10/2006
Nitrobenzene	ND	40		mg/Kg	20	5/10/2006
2-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
4-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
Pentachlorophenol	ND	100		mg/Kg	20	5/10/2006
Phenanthrene	47	40		mg/Kg	20	5/10/2006
Phenol	ND	40		mg/Kg	20	5/10/2006
Pyrene	ND	40		mg/Kg	20	5/10/2006
Pyridine	ND	100		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	40		mg/Kg	20	5/10/2006
2,4,5-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4,6-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
Surr: 2,4,6-Tribromophenol	0	35.5-141	S	%REC	20	5/10/2006
Surr: 2-Fluorobiphenyl	95.8	30.4-128		%REC	20	5/10/2006
Surr: 2-Fluorophenol	543	28.1-129	S	%REC	20	5/10/2006
Surr: 4-Terphenyl-d14	663	34.6-151	S	%REC	20	5/10/2006
Surr: Nitrobenzene-d5	116	26.5-122		%REC	20	5/10/2006
Surr: Phenol-d5	208	37.6-118	S	%REC	20	5/10/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	SE Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:55:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Butyl benzyl phthalate	ND	40		mg/Kg	20	5/10/2006
Carbazole	ND	40		mg/Kg	20	5/10/2006
4-Chloro-3-methylphenol	ND	40		mg/Kg	20	5/10/2006
4-Chloroaniline	ND	40		mg/Kg	20	5/10/2006
2-Chloronaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Chlorophenol	ND	40		mg/Kg	20	5/10/2006
4-Chlorophenyl phenyl ether	ND	40		mg/Kg	20	5/10/2006
Chrysene	ND	40		mg/Kg	20	5/10/2006
Di-n-butyl phthalate	ND	100		mg/Kg	20	5/10/2006
Di-n-octyl phthalate	ND	100		mg/Kg	20	5/10/2006
Dibenz(a,h)anthracene	ND	50		mg/Kg	20	5/10/2006
Dibenzofuran	ND	100		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
3,3'-Dichlorobenzidine	ND	40		mg/Kg	20	5/10/2006
Diethyl phthalate	ND	40		mg/Kg	20	5/10/2006
Dimethyl phthalate	ND	40		mg/Kg	20	5/10/2006
2,4-Dichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4-Dimethylphenol	ND	40		mg/Kg	20	5/10/2006
4,6-Dinitro-2-methylphenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrophenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
2,6-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
Fluoranthene	ND	40		mg/Kg	20	5/10/2006
Fluorene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobenzene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	40		mg/Kg	20	5/10/2006
Hexachlorocyclopentadiene	ND	50		mg/Kg	20	5/10/2006
Hexachloroethane	ND	100		mg/Kg	20	5/10/2006
Indeno(1,2,3-cd)pyrene	ND	40		mg/Kg	20	5/10/2006
Isophorone	ND	40		mg/Kg	20	5/10/2006
2-Methylnaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Methylphenol	ND	40		mg/Kg	20	5/10/2006
3+4-Methylphenol	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodi-n-propylamine	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodiphenylamine	ND	40		mg/Kg	20	5/10/2006
Naphthalene	ND	40		mg/Kg	20	5/10/2006
2-Nitroaniline	ND	100		mg/Kg	20	5/10/2006
3-Nitroaniline	ND	100		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	SE Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:55:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	51000	1000		mg/Kg	100	5/10/2006 1:43:20 PM
Motor Oil Range Organics (MRO)	9800	5000		mg/Kg	100	5/10/2006 1:43:20 PM
Surr: DNOP	0	61.7-135	S	%REC	100	5/10/2006 1:43:20 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: HLM
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	5/11/2006 1:36:08 AM
Surr: BFB	98.6	81.7-127		%REC	5	5/11/2006 1:36:08 AM
MERCURY, TCLP LEACHED						Analyst: CMC
Mercury	ND	0.020		mg/L	1	5/11/2006
EPA METHOD 6010B: TCLP METALS						Analyst: NMO
Arsenic	ND	5.0		mg/L	1	5/12/2006 2:47:55 PM
Barium	ND	100		mg/L	1	5/12/2006 2:47:55 PM
Cadmium	ND	1.0		mg/L	1	5/12/2006 2:47:55 PM
Chromium	ND	5.0		mg/L	1	5/12/2006 2:47:55 PM
Lead	ND	5.0		mg/L	1	5/12/2006 2:47:55 PM
Selenium	ND	1.0		mg/L	1	5/12/2006 2:47:55 PM
Silver	ND	5.0		mg/L	1	5/12/2006 2:47:55 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Acenaphthene	ND	40		mg/Kg	20	5/10/2006
Acenaphthylene	ND	40		mg/Kg	20	5/10/2006
Aniline	ND	40		mg/Kg	20	5/10/2006
Anthracene	ND	40		mg/Kg	20	5/10/2006
Azobenzene	ND	40		mg/Kg	20	5/10/2006
Benz(a)anthracene	ND	50		mg/Kg	20	5/10/2006
Benzo(a)pyrene	ND	40		mg/Kg	20	5/10/2006
Benzo(b)fluoranthene	ND	40		mg/Kg	20	5/10/2006
Benzo(g,h,i)perylene	ND	60		mg/Kg	20	5/10/2006
Benzo(k)fluoranthene	ND	100		mg/Kg	20	5/10/2006
Benzoic acid	ND	100		mg/Kg	20	5/10/2006
Benzyl alcohol	ND	200		mg/Kg	20	5/10/2006
Bis(2-chloroethoxy)methane	ND	100		mg/Kg	20	5/10/2006
Bis(2-chloroethyl)ether	ND	50		mg/Kg	20	5/10/2006
Bis(2-chloroisopropyl)ether	ND	100		mg/Kg	20	5/10/2006
Bis(2-ethylhexyl)phthalate	ND	40		mg/Kg	20	5/10/2006
4-Bromophenyl phenyl ether	ND	50		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	SW Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:50:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
4-Nitroaniline	ND	50		mg/Kg	20	5/10/2006
Nitrobenzene	ND	40		mg/Kg	20	5/10/2006
2-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
4-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
Pentachlorophenol	ND	100		mg/Kg	20	5/10/2006
Phenanthrene	55	40		mg/Kg	20	5/10/2006
Phenol	ND	40		mg/Kg	20	5/10/2006
Pyrene	ND	40		mg/Kg	20	5/10/2006
Pyridine	ND	100		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	40		mg/Kg	20	5/10/2006
2,4,5-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4,6-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
Surr: 2,4,6-Tribromophenol	468	35.5-141	S	%REC	20	5/10/2006
Surr: 2-Fluorobiphenyl	83.8	30.4-128		%REC	20	5/10/2006
Surr: 2-Fluorophenol	539	28.1-129	S	%REC	20	5/10/2006
Surr: 4-Terphenyl-d14	679	34.6-151	S	%REC	20	5/10/2006
Surr: Nitrobenzene-d5	124	26.5-122	S	%REC	20	5/10/2006
Surr: Phenol-d5	204	37.6-118	S	%REC	20	5/10/2006

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	SW Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:50:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Butyl benzyl phthalate	ND	40		mg/Kg	20	5/10/2006
Carbazole	ND	40		mg/Kg	20	5/10/2006
4-Chloro-3-methylphenol	ND	40		mg/Kg	20	5/10/2006
4-Chloroaniline	ND	40		mg/Kg	20	5/10/2006
2-Chloronaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Chlorophenol	ND	40		mg/Kg	20	5/10/2006
4-Chlorophenyl phenyl ether	ND	40		mg/Kg	20	5/10/2006
Chrysene	ND	40		mg/Kg	20	5/10/2006
Di-n-butyl phthalate	ND	100		mg/Kg	20	5/10/2006
Di-n-octyl phthalate	ND	100		mg/Kg	20	5/10/2006
Dibenz(a,h)anthracene	ND	50		mg/Kg	20	5/10/2006
Dibenzofuran	ND	100		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
3,3'-Dichlorobenzidine	ND	40		mg/Kg	20	5/10/2006
Diethyl phthalate	ND	40		mg/Kg	20	5/10/2006
Dimethyl phthalate	ND	40		mg/Kg	20	5/10/2006
2,4-Dichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4-Dimethylphenol	ND	40		mg/Kg	20	5/10/2006
4,6-Dinitro-2-methylphenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrophenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
2,6-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
Fluoranthene	ND	40		mg/Kg	20	5/10/2006
Fluorene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobenzene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	40		mg/Kg	20	5/10/2006
Hexachlorocyclopentadiene	ND	50		mg/Kg	20	5/10/2006
Hexachloroethane	ND	100		mg/Kg	20	5/10/2006
Indeno(1,2,3-cd)pyrene	ND	40		mg/Kg	20	5/10/2006
Isophorone	ND	40		mg/Kg	20	5/10/2006
2-Methylnaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Methylphenol	ND	40		mg/Kg	20	5/10/2006
3+4-Methylphenol	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodi-n-propylamine	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodiphenylamine	ND	40		mg/Kg	20	5/10/2006
Naphthalene	ND	40		mg/Kg	20	5/10/2006
2-Nitroaniline	ND	100		mg/Kg	20	5/10/2006
3-Nitroaniline	ND	100		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	SW Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:50:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	53000	1000		mg/Kg	100	5/10/2006 1:10:37 PM
Motor Oil Range Organics (MRO)	8700	5000		mg/Kg	100	5/10/2006 1:10:37 PM
Surr: DNOP	0	61.7-135	S	%REC	100	5/10/2006 1:10:37 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **HLM**
Gasoline Range Organics (GRO)	ND	50		mg/Kg	10	5/11/2006 12:38:15 AM
Surr: BFB	105	81.7-127		%REC	10	5/11/2006 12:38:15 AM
MERCURY, TCLP LEACHED						Analyst: **CMC**
Mercury	ND	0.020		mg/L	1	5/11/2006
EPA METHOD 6010B: TCLP METALS						Analyst: **NMO**
Arsenic	ND	5.0		mg/L	1	5/12/2006 2:43:46 PM
Barium	ND	100		mg/L	1	5/12/2006 2:43:46 PM
Cadmium	ND	1.0		mg/L	1	5/12/2006 2:43:46 PM
Chromium	ND	5.0		mg/L	1	5/12/2006 2:43:46 PM
Lead	ND	5.0		mg/L	1	5/12/2006 2:43:46 PM
Selenium	ND	1.0		mg/L	1	5/12/2006 2:43:46 PM
Silver	ND	5.0		mg/L	1	5/12/2006 2:43:46 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
Acenaphthene	ND	40		mg/Kg	20	5/10/2006
Acenaphthylene	ND	40		mg/Kg	20	5/10/2006
Aniline	ND	40		mg/Kg	20	5/10/2006
Anthracene	ND	40		mg/Kg	20	5/10/2006
Azobenzene	ND	40		mg/Kg	20	5/10/2006
Benz(a)anthracene	ND	50		mg/Kg	20	5/10/2006
Benzo(a)pyrene	ND	40		mg/Kg	20	5/10/2006
Benzo(b)fluoranthene	ND	40		mg/Kg	20	5/10/2006
Benzo(g,h,i)perylene	ND	60		mg/Kg	20	5/10/2006
Benzo(k)fluoranthene	ND	100		mg/Kg	20	5/10/2006
Benzoic acid	ND	100		mg/Kg	20	5/10/2006
Benzyl alcohol	ND	200		mg/Kg	20	5/10/2006
Bis(2-chloroethoxy)methane	ND	100		mg/Kg	20	5/10/2006
Bis(2-chloroethyl)ether	ND	50		mg/Kg	20	5/10/2006
Bis(2-chloroisopropyl)ether	ND	100		mg/Kg	20	5/10/2006
Bis(2-ethylhexyl)phthalate	ND	40		mg/Kg	20	5/10/2006
4-Bromophenyl phenyl ether	ND	50		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	MID E Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:45:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
4-Nitroaniline	ND	50		mg/Kg	20	5/10/2006
Nitrobenzene	ND	40		mg/Kg	20	5/10/2006
2-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
4-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
Pentachlorophenol	ND	100		mg/Kg	20	5/10/2006
Phenanthrene	100	40		mg/Kg	20	5/10/2006
Phenol	ND	40		mg/Kg	20	5/10/2006
Pyrene	ND	40		mg/Kg	20	5/10/2006
Pyridine	ND	100		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	40		mg/Kg	20	5/10/2006
2,4,5-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4,6-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
Surr: 2,4,6-Tribromophenol	0	35.5-141	S	%REC	20	5/10/2006
Surr: 2-Fluorobiphenyl	95.8	30.4-128		%REC	20	5/10/2006
Surr: 2-Fluorophenol	545	28.1-129	S	%REC	20	5/10/2006
Surr: 4-Terphenyl-d14	671	34.6-151	S	%REC	20	5/10/2006
Surr: Nitrobenzene-d5	124	26.5-122	S	%REC	20	5/10/2006
Surr: Phenol-d5	214	37.6-118	S	%REC	20	5/10/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	MID E Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:45:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Butyl benzyl phthalate	ND	40		mg/Kg	20	5/10/2006
Carbazole	ND	40		mg/Kg	20	5/10/2006
4-Chloro-3-methylphenol	ND	40		mg/Kg	20	5/10/2006
4-Chloroaniline	ND	40		mg/Kg	20	5/10/2006
2-Chloronaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Chlorophenol	ND	40		mg/Kg	20	5/10/2006
4-Chlorophenyl phenyl ether	ND	40		mg/Kg	20	5/10/2006
Chrysene	ND	40		mg/Kg	20	5/10/2006
Di-n-butyl phthalate	ND	100		mg/Kg	20	5/10/2006
Di-n-octyl phthalate	ND	100		mg/Kg	20	5/10/2006
Dibenz(a,h)anthracene	ND	50		mg/Kg	20	5/10/2006
Dibenzofuran	ND	100		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
3,3'-Dichlorobenzidine	ND	40		mg/Kg	20	5/10/2006
Diethyl phthalate	ND	40		mg/Kg	20	5/10/2006
Dimethyl phthalate	ND	40		mg/Kg	20	5/10/2006
2,4-Dichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4-Dimethylphenol	ND	40		mg/Kg	20	5/10/2006
4,6-Dinitro-2-methylphenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrophenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
2,6-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
Fluoranthene	ND	40		mg/Kg	20	5/10/2006
Fluorene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobenzene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	40		mg/Kg	20	5/10/2006
Hexachlorocyclopentadiene	ND	50		mg/Kg	20	5/10/2006
Hexachloroethane	ND	100		mg/Kg	20	5/10/2006
Indeno(1,2,3-cd)pyrene	ND	40		mg/Kg	20	5/10/2006
Isophorone	ND	40		mg/Kg	20	5/10/2006
2-Methylnaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Methylphenol	ND	40		mg/Kg	20	5/10/2006
3+4-Methylphenol	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodi-n-propylamine	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodiphenylamine	ND	40		mg/Kg	20	5/10/2006
Naphthalene	ND	40		mg/Kg	20	5/10/2006
2-Nitroaniline	ND	100		mg/Kg	20	5/10/2006
3-Nitroaniline	ND	100		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	MID E Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:45:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	82000	1000		mg/Kg	100	5/10/2006 12:37:54 PM
Motor Oil Range Organics (MRO)	9500	5000		mg/Kg	100	5/10/2006 12:37:54 PM
Surr: DNOP	0	61.7-135	S	%REC	100	5/10/2006 12:37:54 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: HLM
Gasoline Range Organics (GRO)	ND	50		mg/Kg	10	5/10/2006 11:40:17 PM
Surr: BFB	100	81.7-127		%REC	10	5/10/2006 11:40:17 PM
MERCURY, TCLP LEACHED						Analyst: CMC
Mercury	ND	0.020		mg/L	1	5/11/2006
EPA METHOD 6010B: TCLP METALS						Analyst: NMO
Arsenic	ND	5.0		mg/L	1	5/12/2006 2:39:29 PM
Barium	ND	100		mg/L	1	5/12/2006 2:39:29 PM
Cadmium	ND	1.0		mg/L	1	5/12/2006 2:39:29 PM
Chromium	ND	5.0		mg/L	1	5/12/2006 2:39:29 PM
Lead	ND	5.0		mg/L	1	5/12/2006 2:39:29 PM
Selenium	ND	1.0		mg/L	1	5/12/2006 2:39:29 PM
Silver	ND	5.0		mg/L	1	5/12/2006 2:39:29 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Acenaphthene	ND	40		mg/Kg	20	5/10/2006
Acenaphthylene	ND	40		mg/Kg	20	5/10/2006
Aniline	ND	40		mg/Kg	20	5/10/2006
Anthracene	ND	40		mg/Kg	20	5/10/2006
Azobenzene	ND	40		mg/Kg	20	5/10/2006
Benz(a)anthracene	ND	50		mg/Kg	20	5/10/2006
Benzo(a)pyrene	ND	40		mg/Kg	20	5/10/2006
Benzo(b)fluoranthene	ND	40		mg/Kg	20	5/10/2006
Benzo(g,h,i)perylene	ND	60		mg/Kg	20	5/10/2006
Benzo(k)fluoranthene	ND	100		mg/Kg	20	5/10/2006
Benzoic acid	ND	100		mg/Kg	20	5/10/2006
Benzyl alcohol	ND	200		mg/Kg	20	5/10/2006
Bis(2-chloroethoxy)methane	ND	100		mg/Kg	20	5/10/2006
Bis(2-chloroethyl)ether	ND	50		mg/Kg	20	5/10/2006
Bis(2-chloroisopropyl)ether	ND	100		mg/Kg	20	5/10/2006
Bis(2-ethylhexyl)phthalate	ND	40		mg/Kg	20	5/10/2006
4-Bromophenyl phenyl ether	ND	50		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	MID W Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:40:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
4-Nitroaniline	ND	50		mg/Kg	20	5/10/2006
Nitrobenzene	ND	40		mg/Kg	20	5/10/2006
2-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
4-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
Pentachlorophenol	ND	100		mg/Kg	20	5/10/2006
Phenanthrene	57	40		mg/Kg	20	5/10/2006
Phenol	ND	40		mg/Kg	20	5/10/2006
Pyrene	ND	40		mg/Kg	20	5/10/2006
Pyridine	ND	100		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	40		mg/Kg	20	5/10/2006
2,4,5-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4,6-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
Surr: 2,4,6-Tribromophenol	0	35.5-141	S	%REC	20	5/10/2006
Surr: 2-Fluorobiphenyl	71.9	30.4-128		%REC	20	5/10/2006
Surr: 2-Fluorophenol	553	28.1-129	S	%REC	20	5/10/2006
Surr: 4-Terphenyl-d14	659	34.6-151	S	%REC	20	5/10/2006
Surr: Nitrobenzene-d5	128	26.5-122	S	%REC	20	5/10/2006
Surr: Phenol-d5	202	37.6-118	S	%REC	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	MID W Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:40:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Butyl benzyl phthalate	ND	40		mg/Kg	20	5/10/2006
Carbazole	ND	40		mg/Kg	20	5/10/2006
4-Chloro-3-methylphenol	ND	40		mg/Kg	20	5/10/2006
4-Chloroaniline	ND	40		mg/Kg	20	5/10/2006
2-Chloronaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Chlorophenol	ND	40		mg/Kg	20	5/10/2006
4-Chlorophenyl phenyl ether	ND	40		mg/Kg	20	5/10/2006
Chrysene	ND	40		mg/Kg	20	5/10/2006
Di-n-butyl phthalate	ND	100		mg/Kg	20	5/10/2006
Di-n-octyl phthalate	ND	100		mg/Kg	20	5/10/2006
Dibenz(a,h)anthracene	ND	50		mg/Kg	20	5/10/2006
Dibenzofuran	ND	100		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
3,3'-Dichlorobenzidine	ND	40		mg/Kg	20	5/10/2006
Diethyl phthalate	ND	40		mg/Kg	20	5/10/2006
Dimethyl phthalate	ND	40		mg/Kg	20	5/10/2006
2,4-Dichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4-Dimethylphenol	ND	40		mg/Kg	20	5/10/2006
4,6-Dinitro-2-methylphenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrophenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
2,6-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
Fluoranthene	ND	40		mg/Kg	20	5/10/2006
Fluorene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobenzene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	40		mg/Kg	20	5/10/2006
Hexachlorocyclopentadiene	ND	50		mg/Kg	20	5/10/2006
Hexachloroethane	ND	100		mg/Kg	20	5/10/2006
Indeno(1,2,3-cd)pyrene	ND	40		mg/Kg	20	5/10/2006
Isophorone	ND	40		mg/Kg	20	5/10/2006
2-Methylnaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Methylphenol	ND	40		mg/Kg	20	5/10/2006
3+4-Methylphenol	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodi-n-propylamine	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodiphenylamine	ND	40		mg/Kg	20	5/10/2006
Naphthalene	ND	40		mg/Kg	20	5/10/2006
2-Nitroaniline	ND	100		mg/Kg	20	5/10/2006
3-Nitroaniline	ND	100		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	MID W Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:40:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						**Analyst: SCC**
Diesel Range Organics (DRO)	65000	1000		mg/Kg	100	5/10/2006 12:05:06 PM
Motor Oil Range Organics (MRO)	9400	5000		mg/Kg	100	5/10/2006 12:05:06 PM
Surr: DNOP	0	61.7-135	S	%REC	100	5/10/2006 12:05:06 PM
EPA METHOD 8015B: GASOLINE RANGE						**Analyst: HLM**
Gasoline Range Organics (GRO)	ND	50		mg/Kg	10	5/8/2006 12:27:18 PM
Surr: BFB	157	81.7-127	S	%REC	10	5/8/2006 12:27:18 PM
MERCURY, TCLP LEACHED						**Analyst: CMC**
Mercury	ND	0.020		mg/L	1	5/11/2006
EPA METHOD 6010B: TCLP METALS						**Analyst: NMO**
Arsenic	ND	5.0		mg/L	1	5/12/2006 2:35:12 PM
Barium	ND	100		mg/L	1	5/12/2006 2:35:12 PM
Cadmium	ND	1.0		mg/L	1	5/12/2006 2:35:12 PM
Chromium	ND	5.0		mg/L	1	5/12/2006 2:35:12 PM
Lead	ND	5.0		mg/L	1	5/12/2006 2:35:12 PM
Selenium	ND	1.0		mg/L	1	5/12/2006 2:35:12 PM
Silver	ND	5.0		mg/L	1	5/12/2006 2:35:12 PM
EPA METHOD 8270C: SEMIVOLATILES						**Analyst: BL**
Acenaphthene	ND	40		mg/Kg	20	5/10/2006
Acenaphthylene	ND	40		mg/Kg	20	5/10/2006
Aniline	ND	40		mg/Kg	20	5/10/2006
Anthracene	ND	40		mg/Kg	20	5/10/2006
Azobenzene	ND	40		mg/Kg	20	5/10/2006
Benz(a)anthracene	ND	50		mg/Kg	20	5/10/2006
Benzo(a)pyrene	ND	40		mg/Kg	20	5/10/2006
Benzo(b)fluoranthene	ND	40		mg/Kg	20	5/10/2006
Benzo(g,h,i)perylene	ND	60		mg/Kg	20	5/10/2006
Benzo(k)fluoranthene	ND	100		mg/Kg	20	5/10/2006
Benzoic acid	ND	100		mg/Kg	20	5/10/2006
Benzyl alcohol	ND	200		mg/Kg	20	5/10/2006
Bis(2-chloroethoxy)methane	ND	100		mg/Kg	20	5/10/2006
Bis(2-chloroethyl)ether	ND	50		mg/Kg	20	5/10/2006
Bis(2-chloroisopropyl)ether	ND	100		mg/Kg	20	5/10/2006
Bis(2-ethylhexyl)phthalate	ND	40		mg/Kg	20	5/10/2006
4-Bromophenyl phenyl ether	ND	50		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NE Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:35:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
4-Nitroaniline	ND	50		mg/Kg	20	5/10/2006
Nitrobenzene	ND	40		mg/Kg	20	5/10/2006
2-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
4-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
Pentachlorophenol	ND	100		mg/Kg	20	5/10/2006
Phenanthrene	58	40		mg/Kg	20	5/10/2006
Phenol	ND	40		mg/Kg	20	5/10/2006
Pyrene	ND	40		mg/Kg	20	5/10/2006
Pyridine	ND	100		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	40		mg/Kg	20	5/10/2006
2,4,5-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4,6-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
Surr: 2,4,6-Tribromophenol	0	35.5-141	S	%REC	20	5/10/2006
Surr: 2-Fluorobiphenyl	79.8	30.4-128		%REC	20	5/10/2006
Surr: 2-Fluorophenol	535	28.1-129	S	%REC	20	5/10/2006
Surr: 4-Terphenyl-d14	679	34.6-151	S	%REC	20	5/10/2006
Surr: Nitrobenzene-d5	116	26.5-122		%REC	20	5/10/2006
Surr: Phenol-d5	210	37.6-118	S	%REC	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NE Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:35:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Butyl benzyl phthalate	ND	40		mg/Kg	20	5/10/2006
Carbazole	ND	40		mg/Kg	20	5/10/2006
4-Chloro-3-methylphenol	ND	40		mg/Kg	20	5/10/2006
4-Chloroaniline	ND	40		mg/Kg	20	5/10/2006
2-Chloronaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Chlorophenol	ND	40		mg/Kg	20	5/10/2006
4-Chlorophenyl phenyl ether	ND	40		mg/Kg	20	5/10/2006
Chrysene	ND	40		mg/Kg	20	5/10/2006
Di-n-butyl phthalate	ND	100		mg/Kg	20	5/10/2006
Di-n-octyl phthalate	ND	100		mg/Kg	20	5/10/2006
Dibenz(a,h)anthracene	ND	50		mg/Kg	20	5/10/2006
Dibenzofuran	ND	100		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
3,3'-Dichlorobenzidine	ND	40		mg/Kg	20	5/10/2006
Diethyl phthalate	ND	40		mg/Kg	20	5/10/2006
Dimethyl phthalate	ND	40		mg/Kg	20	5/10/2006
2,4-Dichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4-Dimethylphenol	ND	40		mg/Kg	20	5/10/2006
4,6-Dinitro-2-methylphenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrophenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
2,6-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
Fluoranthene	ND	40		mg/Kg	20	5/10/2006
Fluorene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobenzene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	40		mg/Kg	20	5/10/2006
Hexachlorocyclopentadiene	ND	50		mg/Kg	20	5/10/2006
Hexachloroethane	ND	100		mg/Kg	20	5/10/2006
Indeno(1,2,3-cd)pyrene	ND	40		mg/Kg	20	5/10/2006
Isophorone	ND	40		mg/Kg	20	5/10/2006
2-Methylnaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Methylphenol	ND	40		mg/Kg	20	5/10/2006
3+4-Methylphenol	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodi-n-propylamine	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodiphenylamine	ND	40		mg/Kg	20	5/10/2006
Naphthalene	ND	40		mg/Kg	20	5/10/2006
2-Nitroaniline	ND	100		mg/Kg	20	5/10/2006
3-Nitroaniline	ND	100		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NE Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:35:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	44000	1000		mg/Kg	100	5/10/2006 11:32:15 AM
Motor Oil Range Organics (MRO)	6700	5000		mg/Kg	100	5/10/2006 11:32:15 AM
Surr: DNOP	0	61.7-135	S	%REC	100	5/10/2006 11:32:15 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **HLM**
Gasoline Range Organics (GRO)	ND	50		mg/Kg	10	5/10/2006 10:42:03 PM
Surr: BFB	97.5	81.7-127		%REC	10	5/10/2006 10:42:03 PM
MERCURY, TCLP LEACHED						Analyst: **CMC**
Mercury	ND	0.020		mg/L	1	5/11/2006
EPA METHOD 6010B: TCLP METALS						Analyst: **NMO**
Arsenic	ND	5.0		mg/L	1	5/12/2006 2:31:03 PM
Barium	ND	100		mg/L	1	5/12/2006 2:31:03 PM
Cadmium	ND	1.0		mg/L	1	5/12/2006 2:31:03 PM
Chromium	ND	5.0		mg/L	1	5/12/2006 2:31:03 PM
Lead	ND	5.0		mg/L	1	5/12/2006 2:31:03 PM
Selenium	ND	1.0		mg/L	1	5/12/2006 2:31:03 PM
Silver	ND	5.0		mg/L	1	5/12/2006 2:31:03 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
Acenaphthene	ND	40		mg/Kg	20	5/10/2006
Acenaphthylene	ND	40		mg/Kg	20	5/10/2006
Aniline	ND	40		mg/Kg	20	5/10/2006
Anthracene	ND	40		mg/Kg	20	5/10/2006
Azobenzene	ND	40		mg/Kg	20	5/10/2006
Benz(a)anthracene	ND	50		mg/Kg	20	5/10/2006
Benzo(a)pyrene	ND	40		mg/Kg	20	5/10/2006
Benzo(b)fluoranthene	ND	40		mg/Kg	20	5/10/2006
Benzo(g,h,i)perylene	ND	60		mg/Kg	20	5/10/2006
Benzo(k)fluoranthene	ND	100		mg/Kg	20	5/10/2006
Benzoic acid	ND	100		mg/Kg	20	5/10/2006
Benzyl alcohol	ND	200		mg/Kg	20	5/10/2006
Bis(2-chloroethoxy)methane	ND	100		mg/Kg	20	5/10/2006
Bis(2-chloroethyl)ether	ND	50		mg/Kg	20	5/10/2006
Bis(2-chloroisopropyl)ether	ND	100		mg/Kg	20	5/10/2006
Bis(2-ethylhexyl)phthalate	ND	40		mg/Kg	20	5/10/2006
4-Bromophenyl phenyl ether	ND	50		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NW Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:30:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
4-Nitroaniline	ND	50		mg/Kg	20	5/10/2006
Nitrobenzene	ND	40		mg/Kg	20	5/10/2006
2-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
4-Nitrophenol	ND	40		mg/Kg	20	5/10/2006
Pentachlorophenol	ND	100		mg/Kg	20	5/10/2006
Phenanthrene	110	40		mg/Kg	20	5/10/2006
Phenol	ND	40		mg/Kg	20	5/10/2006
Pyrene	ND	40		mg/Kg	20	5/10/2006
Pyridine	ND	100		mg/Kg	20	5/10/2006
1,2,4-Trichlorobenzene	ND	40		mg/Kg	20	5/10/2006
2,4,5-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4,6-Trichlorophenol	ND	40		mg/Kg	20	5/10/2006
Surr: 2,4,6-Tribromophenol	0	35.5-141	S	%REC	20	5/10/2006
Surr: 2-Fluorobiphenyl	91.8	30.4-128		%REC	20	5/10/2006
Surr: 2-Fluorophenol	537	28.1-129	S	%REC	20	5/10/2006
Surr: 4-Terphenyl-d14	0	34.6-151	S	%REC	20	5/10/2006
Surr: Nitrobenzene-d5	136	26.5-122	S	%REC	20	5/10/2006
Surr: Phenol-d5	204	37.6-118	S	%REC	20	5/10/2006

Qualifiers:				
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	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NW Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:30:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Butyl benzyl phthalate	ND	40		mg/Kg	20	5/10/2006
Carbazole	ND	40		mg/Kg	20	5/10/2006
4-Chloro-3-methylphenol	ND	40		mg/Kg	20	5/10/2006
4-Chloroaniline	ND	40		mg/Kg	20	5/10/2006
2-Chloronaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Chlorophenol	ND	40		mg/Kg	20	5/10/2006
4-Chlorophenyl phenyl ether	ND	40		mg/Kg	20	5/10/2006
Chrysene	ND	40		mg/Kg	20	5/10/2006
Di-n-butyl phthalate	ND	100		mg/Kg	20	5/10/2006
Di-n-octyl phthalate	ND	100		mg/Kg	20	5/10/2006
Dibenz(a,h)anthracene	ND	50		mg/Kg	20	5/10/2006
Dibenzofuran	ND	100		mg/Kg	20	5/10/2006
1,2-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,3-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
1,4-Dichlorobenzene	ND	40		mg/Kg	20	5/10/2006
3,3'-Dichlorobenzidine	ND	40		mg/Kg	20	5/10/2006
Diethyl phthalate	ND	40		mg/Kg	20	5/10/2006
Dimethyl phthalate	ND	40		mg/Kg	20	5/10/2006
2,4-Dichlorophenol	ND	40		mg/Kg	20	5/10/2006
2,4-Dimethylphenol	ND	40		mg/Kg	20	5/10/2006
4,6-Dinitro-2-methylphenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrophenol	ND	100		mg/Kg	20	5/10/2006
2,4-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
2,6-Dinitrotoluene	ND	40		mg/Kg	20	5/10/2006
Fluoranthene	ND	40		mg/Kg	20	5/10/2006
Fluorene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobenzene	ND	40		mg/Kg	20	5/10/2006
Hexachlorobutadiene	ND	40		mg/Kg	20	5/10/2006
Hexachlorocyclopentadiene	ND	50		mg/Kg	20	5/10/2006
Hexachloroethane	ND	100		mg/Kg	20	5/10/2006
Indeno(1,2,3-cd)pyrene	ND	40		mg/Kg	20	5/10/2006
Isophorone	ND	40		mg/Kg	20	5/10/2006
2-Methylnaphthalene	ND	40		mg/Kg	20	5/10/2006
2-Methylphenol	ND	40		mg/Kg	20	5/10/2006
3+4-Methylphenol	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodi-n-propylamine	ND	40		mg/Kg	20	5/10/2006
N-Nitrosodiphenylamine	ND	40		mg/Kg	20	5/10/2006
Naphthalene	ND	40		mg/Kg	20	5/10/2006
2-Nitroaniline	ND	100		mg/Kg	20	5/10/2006
3-Nitroaniline	ND	100		mg/Kg	20	5/10/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: *15-May-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	NW Comp
Lab Order:	0605060	**Collection Date:**	5/3/2006 9:30:00 AM
Project:	Stockpile Banks from Lagoons & Ponds	**Date Received:**	5/5/2006
Lab ID:	0605060-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						**Analyst: SCC**
Diesel Range Organics (DRO)	82000	1000		mg/Kg	100	5/10/2006 10:59:28 AM
Motor Oil Range Organics (MRO)	8000	5000		mg/Kg	100	5/10/2006 10:59:28 AM
Surr: DNOP	0	61.7-135	S	%REC	100	5/10/2006 10:59:28 AM
EPA METHOD 8015B: GASOLINE RANGE						**Analyst: HLM**
Gasoline Range Organics (GRO)	ND	100		mg/Kg	20	5/8/2006 11:29:07 AM
Surr: BFB	104	81.7-127		%REC	20	5/8/2006 11:29:07 AM
MERCURY, TCLP LEACHED						**Analyst: CMC**
Mercury	ND	0.020		mg/L	1	5/11/2006
EPA METHOD 6010B: TCLP METALS						**Analyst: NMO**
Arsenic	ND	5.0		mg/L	1	5/12/2006 2:26:43 PM
Barium	ND	100		mg/L	1	5/12/2006 2:26:43 PM
Cadmium	ND	1.0		mg/L	1	5/12/2006 2:26:43 PM
Chromium	ND	5.0		mg/L	1	5/12/2006 2:26:43 PM
Lead	ND	5.0		mg/L	1	5/12/2006 2:26:43 PM
Selenium	ND	1.0		mg/L	1	5/12/2006 2:26:43 PM
Silver	ND	5.0		mg/L	1	5/12/2006 2:26:43 PM
EPA METHOD 8270C: SEMIVOLATILES						**Analyst: BL**
Acenaphthene	ND	40		mg/Kg	20	5/10/2006
Acenaphthylene	ND	40		mg/Kg	20	5/10/2006
Aniline	ND	40		mg/Kg	20	5/10/2006
Anthracene	ND	40		mg/Kg	20	5/10/2006
Azobenzene	ND	40		mg/Kg	20	5/10/2006
Benz(a)anthracene	ND	50		mg/Kg	20	5/10/2006
Benzo(a)pyrene	ND	40		mg/Kg	20	5/10/2006
Benzo(b)fluoranthene	ND	40		mg/Kg	20	5/10/2006
Benzo(g,h,i)perylene	ND	60		mg/Kg	20	5/10/2006
Benzo(k)fluoranthene	ND	100		mg/Kg	20	5/10/2006
Benzoic acid	ND	100		mg/Kg	20	5/10/2006
Benzyl alcohol	ND	200		mg/Kg	20	5/10/2006
Bis(2-chloroethoxy)methane	ND	100		mg/Kg	20	5/10/2006
Bis(2-chloroethyl)ether	ND	50		mg/Kg	20	5/10/2006
Bis(2-chloroisopropyl)ether	ND	100		mg/Kg	20	5/10/2006
Bis(2-ethylhexyl)phthalate	ND	40		mg/Kg	20	5/10/2006
4-Bromophenyl phenyl ether	ND	50		mg/Kg	20	5/10/2006

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Friday, December 29, 2006 3:49 PM
To: Chavez, Carl J, EMNRD
Cc: Monzeglio, Hope, NMENV; Ed Riege; Steve Morris; Loren Pritzel; Ed Rios
Subject: C-141 Form for 12/27/06 Fire at Giant- Ciniza Refinery
Importance: High

Carl:

The OCD's C-141 Form for the recent fire incident is attached. Once again we apologize a more faster notification was not made due to the circumstances (Holiday)
Regards,
Jim Lieb

Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Giant Refining – Ciniza Refinery	Contact Jim Lieb
Address I-40, Exit 39, Jamestown NM 87347	Telephone No. 505-722-0227
Facility Name Ciniza Refinery	Facility Type Oil Refinery

Surface Owner Giant Industries, Inc.	Mineral Owner Giant Industries, Inc.	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23 & 33	15N	15W					McKinley

Latitude 35°29'22" **Longitude** 108°25'24"

NATURE OF RELEASE

Type of Release smoke from fire, fire fighting water and some diesel	Volume of Release 200 gallons diesel (estimated) to sewers	Volume Recovered 199 gallons - diesel was recovered in new API
Source of Release DH2 heater in the ULSD Hydrotreating Unit	Date and Hour of Occurrence 12/27/06 12:00 am	Date and Hour of Discovery 12/27/06 12:00 am
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* not applicable

Describe Cause of Problem and Remedial Action Taken.*
Failure of a tube in the DH2 heater in the ULSD Hydrotreating Unit. Liquid was confined to the cement pad in unit. Liquid drained to sewers and diesel was recovered in the new API.

Describe Area Affected and Cleanup Action Taken.*
The ULSD Hydrotreating unit. The area was cleaned up.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: J. Lieb	OIL CONSERVATION DIVISION	
Printed Name: Jim Lieb	Approved by District Supervisor:	
Title: Environmental Engineer	Approval Date:	Expiration Date:
E-mail Address: jlieb@giant.com	Conditions of Approval:	Attached ☐
Date: December 29, 2006 Phone: 505-722-0227		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, December 05, 2006 11:26 AM
To: 'eriege@giant.com'; 'Jim Lieb'
Cc: Jones, Brad A., EMNRD; Price, Wayne, EMNRD; Hansen, Edward J., EMNRD; Cobrain, Dave, NMENV
Subject: Giant-Ciniza One Time Discharge Plan (GW-032) Waste Disposal Approval at OCD Permitted Landfill

Ed and Jim:

As requested, please find attached a listing of OCD Commercial Facilities that can accept oilfield exempt and non-exempt non-hazardous wastes in New Mexico. The Gandy-Marley Landfill is the closest facility to the Ciniza Refinery.

For clarification of our telephone conversation this morning, in order for the OCD to issue a one-time approval under Discharge Plan Permit (GW-032) for disposal of 300 yards of oilfield exempt/non-exempt non-hazardous waste, and in consideration that Giant is now requesting disposal at a permitted OCD Landfill Facility and not a solid waste facility as per OCD Rule 712, the OCD requires the following:

1) Copy of the NMED-HWB "Contained in Determination" for 300 yards of waste.
2) OCD C-138 completed form (http://www.emnrd.state.nm.us/ocd/documents/c138.pdf) w/ TCLP Analytical Data Results from Waste (note: waste must be oilfield non-hazardous). If waste is hazardous, OCD permitted facilities cannot accept hazardous waste.

You may send the above information to my fax number below or via e-mail. Once the OCD has reviewed the above requested information, the OCD may approve a one-time disposal of your waste at an OCD permitted landfarm/landfill. If we cannot approve it because it is hazardous, then Giant will need to consider out-of-state hazardous landfill, etc. options. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, November 29, 2006 4:02 PM
To: 'Jim Lieb'
Cc: Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Jim:

The OCD has reviewed your sodium and chloride investigation analytical data results stemming from the October 5, 2006 Alkylation Unit fire and fire water runoff that flooded over the refinery process area (RPA) containment area at the southeast region of the RPA. In addition, your proposal to spread the excavated soils onto the landfarm area is approved. Thank you for your cooperation during the investigation and your cleanup efforts.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Wednesday, November 29, 2006 1:54 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Riege; Steve Morris
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Carl:

We took samples from 4 locations surrounding the location where the elevated chloride was detected. I have attached pictures showing our sampling of the location. I have also attached the analytical from these samples. From each sample point we took two samples, one from near the surface and the second from at least 6 inches depth. Each of the samples has tested at less than 500 mg/kg chloride. We will dig out the soil within the perimeter of the sample points to the six inch depth to ensure we get all the chloride impacted soil. We estimate there will be approximately 1 to 2 cubic yards of soil excavated.

We propose to spread out the excavated soil on our land farm. We would spread it out so it will be evenly dispersed and not concentrated in any particular area.

Let us know if our proposal for disposition of the excavated soil is acceptable to OCD.

Regards,
Jim Lieb
Giant

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, November 03, 2006 4:53 PM
To: Jim Lieb; Hansen, Edward J., EMNRD
Cc: Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Jim:

The OCD has reviewed the soil samples collected in the aftermath of the Alkylation Unit fire (Oct. 5, 2006) east of the refinery process area. Unfortunately, the "Alky SE" soil sample exhibited 1,900 mg/kg chlorides, which is significantly elevated.

The OCD requires that Giant conduct an excavation of the soils in the vicinity of sample location "Alky SE" with verification of soil remediation sampling for chlorides to a concentration not to exceed 500 mg/kg. Giant shall propose an option(s) for the disposition of the chloride contaminated soils to the OCD.

Please contact me or Wayne Price in my absence if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, November 02, 2006 9:58 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Steve Morris
Subject: Lab Results on Fire Soils, Spill Training

Carl, Hope:

Attached are the lab results from the soil samples Steve took from the fire water areas at the two locations as you requested we take. Fluoride is low. pHs are in the 7 to 8 range and chloride was a bit high in one sample but this is likely due to the natural tendency of the soils here to be elevated in salts.

I took part in spill response training including boom deployment exercises earlier this week at Giant's regional office facility in Bloomfield. At least 20 Giant employees from Giants two refineries, transportation, and the pipeline divisions received the training. We conducted two boom deployment exercises on the San Juan River on Tuesday afternoon and Wednesday morning at two separate locations on the river. Monday was devoted to classroom lectures on spill response techniques. Training was provided by H2O OSRO-DOWCAR's Carl Oskins. I have included some pictures from the Tuesday afternoon boom deployment exercise.

Installation of flumes is progressing. Was delayed some due to the heavy rains we had last week.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Wednesday, November 29, 2006 1:54 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Riege; Steve Morris
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

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Let us know if our proposal for disposition of the excavated soil is acceptable to OCD.

Regards,
Jim Lieb
Giant

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, November 03, 2006 4:53 PM
To: Jim Lieb; Hansen, Edward J., EMNRD
Cc: Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Jim:

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The OCD requires that Giant conduct an excavation of the soils in the vicinity of sample location "Alky SE" with verification of soil remediation sampling for chlorides to a concentration not to exceed 500 mg/kg. Giant shall propose an option(s) for the disposition of the chloride contaminated soils to the OCD.

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To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Steve Morris
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Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, November 21, 2006

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Post Alky Fire Soil Samples Phase 2. 11-7-2

Order No.: 0611098

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 11/8/2006 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

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory, Inc.

Date: *21-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	PAF-1A
Lab Order:	0611098	**Collection Date:**	11/7/2006 10:30:00 AM
Project:	Post Alky Fire Soil Samples Phase 2. 11-7-2006	**Date Received:**	11/8/2006
Lab ID:	0611098-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Chloride	42	1.5		mg/Kg	5	11/14/2006 9:41:40 AM
EPA METHOD 6010B: SOIL METALS						Analyst: NMO
Sodium	300	25		mg/Kg	1	11/17/2006 12:21:24 PM

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *21-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	PAF-2A
Lab Order:	0611098	**Collection Date:**	11/7/2006 10:45:00 AM
Project:	Post Alky Fire Soil Samples Phase 2. 11-7-2006	**Date Received:**	11/8/2006
Lab ID:	0611098-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Chloride	75	1.5		mg/Kg	5	11/14/2006 10:16:29 AM
EPA METHOD 6010B: SOIL METALS						Analyst: NMO
Sodium	420	25		mg/Kg	1	11/17/2006 12:28:10 PM

Qualifiers:					
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *21-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	PAF-1B
Lab Order:	0611098	**Collection Date:**	11/7/2006 10:35:00 AM
Project:	Post Alky Fire Soil Samples Phase 2. 11-7-2006	**Date Received:**	11/8/2006
Lab ID:	0611098-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Chloride	31	1.5		mg/Kg	5	11/14/2006 9:59:05 AM
EPA METHOD 6010B: SOIL METALS						Analyst: NMO
Sodium	210	50		mg/Kg	2	11/17/2006 12:55:00 PM

Qualifiers:					
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *21-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	PAF-3A
Lab Order:	0611098	**Collection Date:**	11/7/2006 11:00:00 AM
Project:	Post Alky Fire Soil Samples Phase 2. 11-7-2006	**Date Received:**	11/8/2006
Lab ID:	0611098-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Chloride	35	1.5		mg/Kg	5	11/14/2006 10:51:19 AM
EPA METHOD 6010B: SOIL METALS						Analyst: NMO
Sodium	310	25		mg/Kg	1	11/17/2006 12:32:39 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *21-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	PAF-2B
Lab Order:	0611098	**Collection Date:**	11/7/2006 10:50:00 AM
Project:	Post Alky Fire Soil Samples Phase 2. 11-7-2006	**Date Received:**	11/8/2006
Lab ID:	0611098-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Chloride	40	1.5		mg/Kg	5	11/14/2006 10:33:54 AM
EPA METHOD 6010B: SOIL METALS						Analyst: NMO
Sodium	380	25		mg/Kg	1	11/17/2006 12:30:25 PM

Qualifiers:					
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *21-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	PAF-4A
Lab Order:	0611098	**Collection Date:**	11/7/2006 11:15:00 AM
Project:	Post Alky Fire Soil Samples Phase 2. 11-7-2006	**Date Received:**	11/8/2006
Lab ID:	0611098-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Chloride	260	1.5		mg/Kg	5	11/17/2006 9:41:59 PM
EPA METHOD 6010B: SOIL METALS						Analyst: NMO
Sodium	450	25		mg/Kg	1	11/17/2006 12:41:41 PM

Qualifiers:					
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Post Alky Fire Soil Samples Phase 2. 11-7-2006 **Work Order:** 0611098

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW9056A									
Sample ID: MB-11734		*MBLK*			Batch ID:	11734	Analysis Date:	11/14/2006 4:10:55 AM	
Chloride	ND	mg/Kg	0.30						
Sample ID: MB-11756		*MBLK*			Batch ID:	11756	Analysis Date:	11/15/2006 11:30:14 PM	
Chloride	ND	mg/Kg	0.30						
Sample ID: LCS-11734		*LCS*			Batch ID:	11734	Analysis Date:	11/14/2006 4:28:20 AM	
Chloride	15.05	mg/Kg	0.30	100	90	110			
Sample ID: LCS-11756		*LCS*			Batch ID:	11756	Analysis Date:	11/15/2006 11:47:39 PM	
Chloride	14.85	mg/Kg	0.30	99.0	90	110			
Method: SW6010A									
Sample ID: 0611098-08B MSD		*MSD*			Batch ID:	11749	Analysis Date:	11/17/2006 12:48:33 PM	
Sodium	2796	mg/Kg	25	94.1	75	125	6.95	30	
Sample ID: MB-11749		*MBLK*			Batch ID:	11749	Analysis Date:	11/17/2006 12:12:53 PM	
Sodium	ND	mg/Kg	25						
Sample ID: LCS-11749		*LCS*			Batch ID:	11749	Analysis Date:	11/17/2006 12:15:33 PM	
Sodium	2838	mg/Kg	25	114	80	120			
Sample ID: 0611098-08B MS		*MS*			Batch ID:	11749	Analysis Date:	11/17/2006 12:46:08 PM	
Sodium	2608	mg/Kg	25	87.1	75	125			

Qualifiers:

- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *21-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	PAF-4B
Lab Order:	0611098	**Collection Date:**	11/7/2006 11:20:00 AM
Project:	Post Alky Fire Soil Samples Phase 2. 11-7-2006	**Date Received:**	11/8/2006
Lab ID:	0611098-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Chloride	240	1.5		mg/Kg	5	11/17/2006 9:59:23 PM
EPA METHOD 6010B: SOIL METALS						Analyst: NMO
Sodium	450	25		mg/Kg	1	11/17/2006 12:43:55 PM

Qualifiers:					
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Post Alky Fire Soil samples Phase 2 - 11-7-2006
Project #:
Project Manager: Steve Morris
Sampler: Steve Morris
Sample Temperature: 4°

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

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	HEAL No. 0611098	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	Sodium	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	Chloride	8270 (Semi-VOA)	Air Bubbles or Headspace (Y or N)
11-7-06	1030	Soil	PAF-1A	2			1								X			X		
"	1035	"	PAF-1B	2			2								X			X		
"	1045	"	PAF-2A	2			3								X			X		
"	1050	"	PAF-2B	2			4								X			X		
"	1100	"	PAF-3A	2			5								X			X		
"	1105	"	PAF-3B	2			6								X			X		
"	1115	"	PAF-4A	2			7								X			X		
"	1120	"	PAF-4B	2			8								X			X		

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	Remarks:
11-8-06	1155	Steve Morris	11/8/06 1155	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN | Date and Time Received: 11/8/2006

Work Order Number 0811098 | Received by AT

Checklist completed by [signature] Signature | 11-8-06 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? 4° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

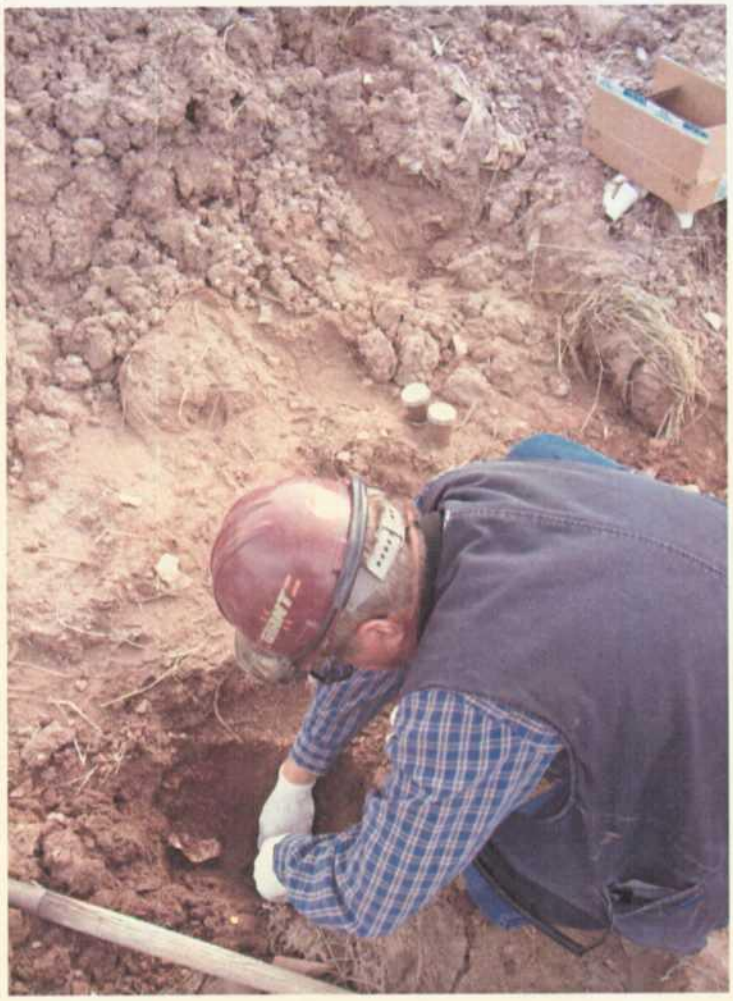
Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

Giant- Ciniza Alkylation Unit Fire 10/05/2006 Water Release
Chloride Soil Sampling 11/07/2006



Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, November 16, 2006 2:31 PM
To: 'Jim Lieb'; Steve Morris
Cc: Monzeglio, Hope, NMENV
Subject: FW: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Jim and Steve:

Let us know how and when you propose to investigate and remediate chloride contaminated soils SE of the Alkylation Unit. I would expect Giant to resolve this matter by December 4, 2006. Thank you.

From: Monzeglio, Hope, NMENV
Sent: Monday, November 06, 2006 8:59 AM
To: Chavez, Carl J, EMNRD; 'Jim Lieb'; Hansen, Edward J., EMNRD
Cc: Price, Wayne, EMNRD; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Please continue to cc NMED HWB on this issue.

Thanks
Hope

From: Chavez, Carl J, EMNRD
Sent: Friday, November 03, 2006 4:53 PM
To: Jim Lieb; Hansen, Edward J., EMNRD
Cc: Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Jim:

The OCD has reviewed the soil samples collected in the aftermath of the Alkylation Unit fire (Oct. 5, 2006) east of the refinery process area. Unfortunately, the "Alky SE" soil sample exhibited 1,900 mg/kg chlorides, which is significantly elevated.

The OCD requires that Giant conduct an excavation of the soils in the vicinity of sample location "Alky SE" with verification of soil remediation sampling for chlorides to a concentration not to exceed 500 mg/kg. Giant shall propose an option(s) for the disposition of the chloride contaminated soils to the OCD.

Please contact me or Wayne Price in my absence if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, November 02, 2006 9:58 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Steve Morris
Subject: Lab Results on Fire Soils, Spill Training

Carl, Hope:

Attached are the lab results from the soil samples Steve took from the fire water areas at the two locations as you requested we take. Fluoride is low. pHs are in the 7 to 8 range and chloride was a bit high in one sample but this is likely due to the natural tendency of the soils here to be elevated in salts.

I took part in spill response training including boom deployment exercises earlier this week at Giant's regional office facility in

Bloomfield. At least 20 Giant employees from Giants two refineries, transportation, and the pipeline divisions received the training. We conducted two boom deployment exercises on the San Juan River on Tuesday afternoon and Wednesday morning at two separate locations on the river. Monday was devoted to classroom lectures on spill response techniques. Training was provided by H2O OSRO-DOWCAR's Carl Oskins. I have included some pictures from the Tuesday afternoon boom deployment exercise.

Installation of flumes is progressing. Was delayed some due to the heavy rains we had last week.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD

Sent: Thursday, November 16, 2006 2:08 PM

To: 'eriege@giant.com'; 'erios@giant.com'; 'Jim Lieb'; Steve Morris

Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV

Subject: Giant Ciniza Refinery Leaky NAPIS Unit & Secondary Containment Problems

Mr. Ed Riege:

The NMED- Hazardous Waste Bureau (HWB) and NMEMNRD- Environmental Bureau (EB) (agencies) met on November 2, 2006 to discuss the status of Giant's leaky New API Separator (NAPIS) with secondary containment system (SCS) leakage problems. The agencies reviewed past meeting notes with Giant and drawings of the NAPIS (API Chopper Pump Piping Plan and Elevations) provided by Giant at the request of the agencies.

You may recall that during the agencies facility inspection on September 8, 2005, the agencies became aware of cracks and oil leakage around the NAPIS cement vault. Since then, Giant attempted to repair the cracks with mortar; however, oil leakage has persisted to this day. In addition, Giant after learning more about the NAPIS, through weekly monitoring of head within the SCS surrounding the NAPIS, has suspected that ground water is infiltrating and in direct connection with the SCS. Since ground water has consistently been absent beneath the pond areas at the facility, the agencies are not convinced that the increasing fluid levels recorded by Giant in the SCS are attributable to ground water, since leakage from the NAPIS cement vaults or bays could be fully or partially contributing to the fluid levels within the SCS. It appears that Giant would prefer to continue monitoring head levels in the SCS indefinitely, and when head reaches 7 ft, evacuate fluid back down to 1 ft to resolve the suspected leaky liner problem. Although Giant has taken responsible actions/approaches to resolving the NAPIS problems, it does not fix the problems; consequently, the agencies cannot accept or approve Giant's approach to resolving the NAPIS problems.

According to Giant's October 27, 2006 letter (letter) "Ciniza Plans for Storm Water Retention Tanks and NAPIS," Giant indicates that the maximum capacity of the NAPIS (2 bays at 150 gpm each) is 300 gpm. The NAPIS is currently discharging between about 90 to 120 gpm through one bay with plans to increase the volume of crude oil for refining into the refinery with associated process water in addition to storm water drainage currently routed to the OAPIS into the NAPIS. Storm water drains near process drains in the refinery process area may also be routed to the NAPIS. Old API Separator (OAPIS) storm water will be routed to two tanks for eventual metering back to the NAPIS for treatment. When emergency shut-down of the NAPIS is required, the process water would also be routed to the new tanks temporarily. In the letter, Giant will provide the agencies with a copy of Vector Arizona's engineering design report supporting the above in late 2006 or early 2007. The report will demonstrate that the NAPIS and tanks will be capable of handling the increased treatment load to the NAPIS at the refinery. In consideration of the historical problems that Giant has been experiencing with the NAPIS, and in follow-up to the agencies from the September 8, 2005 inspection, and in consideration of Giant's October 27, 2006 letter, the agencies require the following:

1) A plan to fix the NAPIS vault leakage and secondary liner repair is required by January 1, 2007. The agencies would prefer that Giant consider the cost of installing a new APIS of appropriate capacity for future operations that corrects the discharge of oil that is currently occurring at the NAPIS. However, if Giant wishes to install a protective coating to repair the cracks with a sealant that handles freeze-thaw conditions to see if the problem can be fixed, the agencies may be amenable to the proposal. However, the repair(s) of the NAPIS and SCS may ultimately be much more expensive than installing a brand new API Separator.

2) Giant must demonstrate that there is no downward migration of contamination to groundwater from beneath the New API Separator (NAPIS). If Giant chooses to install a protective coating to repair the cracks with a sealant that handles freeze-thaw conditions in the NAPIS and repair of the SCS, then Giant must install two monitoring wells. One monitoring well should be located next to the NAPIS suspected leak and the second monitoring well should be installed down gradient of the NAPIS. Assuming that subsurface conditions are similar to the conditions at the aeration lagoons, the screened interval in the monitoring well to be located near the NAPIS leak in the SCS must be installed below the SCS, but above any water bearing zone such as the sand layer observed beneath the west side of the aeration lagoons. It may be necessary to install the monitoring well at an angle or drill an angled boring for the collection of soil samples and determine if groundwater is present during drilling. If an angled boring is not drilled, soil samples must be collected during the installation of the monitoring well. The purpose of the boring/monitoring well installation is to help determine the competency of the SCS, whether there has been a release from the NAPIS to soil and groundwater and if groundwater is present that intersects the secondary containment system for the NAPIS. General chemistry and organic sampling of ground water in the monitor wells in comparison to NAPIS process water should help determine whether ground water is indeed present in the vicinity of the NAPIS or whether fluid in the SCS is attributable to direct leakage from the NAPIS.

Giant must submit a work plan for the installation of the monitoring wells/boring. The work plan must identify the locations of boring and monitoring wells, the depth of the monitoring wells, the depth at which soil and any ground water samples will be collected, including a proposed monitoring well construction diagram, and sampling methods and procedures.

The agencies request that you consider the problems at the NAPIS in Giant's future plans mentioned in Giant's October 27, 2006 letter. Please contact the agencies to arrange a telephone conference call if you have questions or need further clarification of the above. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

GIANT
REFINING COMPANY

John W. Kieling
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Bldg 1
Santa Fe, NM 87505

Certified Mail: 7004 2510 0005 1641 4903

November 10, 2006

Re: Approval with Modifications
Interim Measures Implementation Report
North Boundary Barrier and Collection System
Giant Refining Company, Bloomfield Refinery
EPA ID #NMD089416416 HWB-GRCB-05-004

Dear Mr. Kieling,

Giant Refining Company Bloomfield (GRCB) received the October 12, 2006 letter from the New Mexico Environmental Department (NMED) requesting additional information regarding the Interim Measures Implementation Report North Boundary Barrier and Collection System Giant Refining Company, Bloomfield Refinery. The following correspondence will address NMED's requests.

Comment #1 requests an explanation for the discrepancy in the sampling dates. The reported June 2005 date is a typographical error. Baseline sampling in fact occurred in May 2005.

Comment #3 requests information regarding the location and subsequent management of a segregated soil stockpile. The stockpile was placed on a plastic liner within a bermed area located on the east end of the refinery's Tank Farm. As stated in the Interim Measures Report, one composite sample was taken and analytical results indicated (Table 1) detected concentrations below the NMED SSLs for industrial exposure. The segregated soil was then transported to the former storm water retention basins.

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

If you need additional information, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz
Environmental Manager – Giant Refining – Bloomfield

Cc: Wayne Price – NMOCD-Santa Fe
Brandon Powell – NMOCD-Aztec
Hope Monzeglio – NMED-Santa Fe
David Cobrain – NMED-Santa Fe
Bob Wilkinson – EPA Region 6

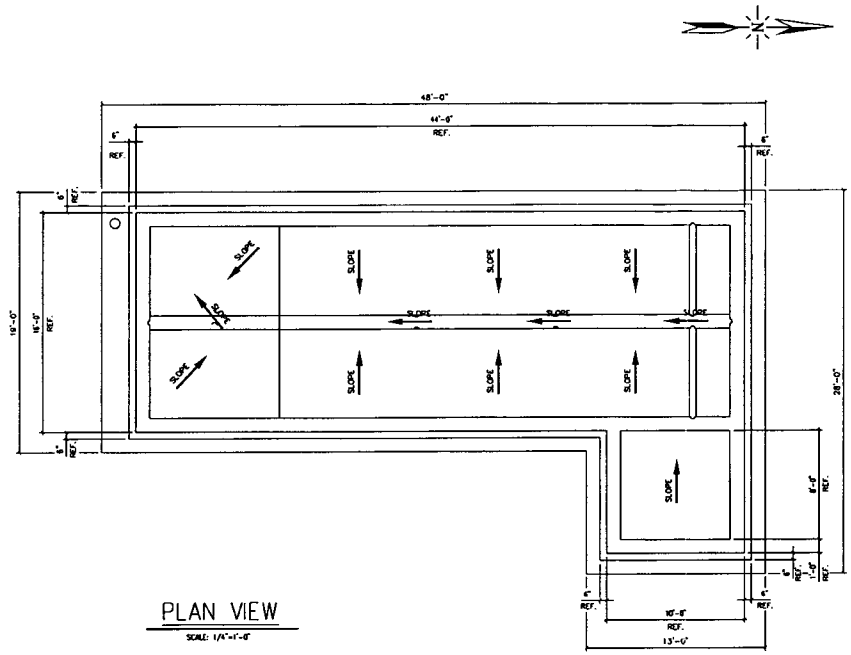
Chavez, Carl J, EMNRD

From: Monzeglio, Hope, NMENV
Sent: Monday, November 06, 2006 2:13 PM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: FW: API Diagram

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Monday, November 06, 2006 2:09 PM
To: Monzeglio, Hope, NMENV
Cc: Ed Riege
Subject: API Diagram

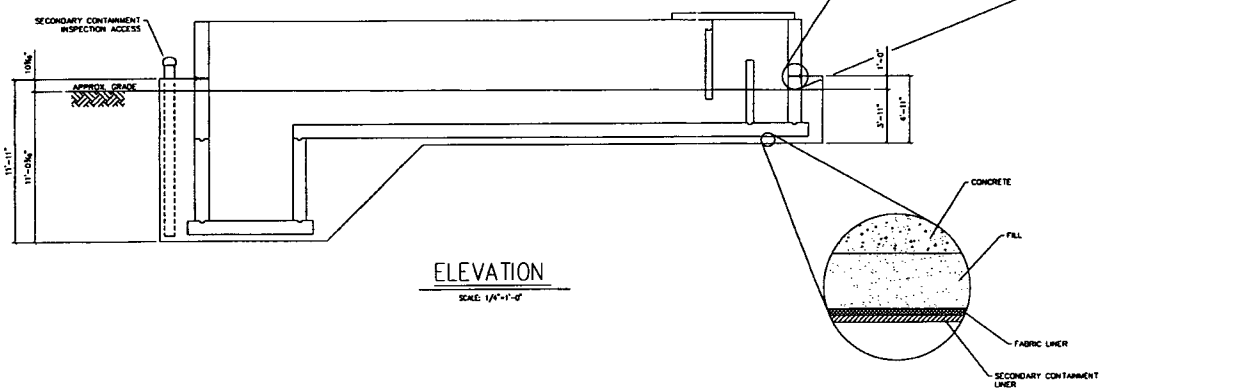
Hope
I searched my API file and found this diagram that shows the liner placement underneath the New API.

Jim
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com



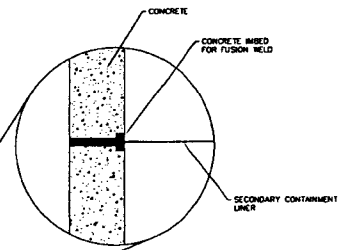
PLAN VIEW

SCALE: 1/4"=1'-0"



ELEVATION

SCALE: 1/4"=1'-0"



MARK	DATE	DESCRIPTION	BY	APRVD
0		ISSUED FOR CONSTRUCTION	kbs	

CINIZA REFINERY — GIANT — GALLUP NEW MEXICO

GIANT REFINING, CO.
A DIVISION OF GIANT INDUSTRIES

SECONDARY CONTAINMENT API SEPARATOR BASINS

SCALE:	1/4" = 1'-0"	APRVD.	
DATE:	11/15/03	APRV. DATE:	
DRN.:	kbs		REV.
CHK'D:	DWG NUM.	284-03-117A	0

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, November 03, 2006 4:53 PM
To: 'Jim Lieb'; Hansen, Edward J., EMNRD
Cc: Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Giant Ciniza Lab Soil Data Results on Fire Soils East of Refinery Process Area

Jim:

The OCD has reviewed the soil samples collected in the aftermath of the Alkylation Unit fire (Oct. 5, 2006) east of the refinery process area. Unfortunately, the "Alky SE" soil sample exhibited 1,900 mg/kg chlorides, which is significantly elevated.

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Please contact me or Wayne Price in my absence if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, November 02, 2006 9:58 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Steve Morris
Subject: Lab Results on Fire Soils, Spill Training

Carl, Hope:

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Installation of flumes is progressing. Was delayed some due to the heavy rains we had last week.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

November 3, 2006

Carl Chavez,
Oil Conservation Division
Environmental Bureau
1220 S. Saint Francis
Santa Fe, NM 87505

Brandon Powell
Oil Conservation Division
1000 Rio Bravo Rd
Aztec, NM 87410

Hope Monzeglio
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505

2006 NOV 7 AM 9 32

RE: Cross Reference Chart, Figures, FRP Booklet

Dear all:

I have prepared a cross reference chart as was requested by NMED for the revised Remedy Completion Report for the SWMU No. 8 (Railroad Rack Lagoon). This chart will assist you in referencing changes in the revised report which was significantly revised to more accurately reflect the work that was performed at the RR Rack lagoon cleanup.

In going through the revised report I noticed that the revised report is missing Figures 1 and 2. Hence I have included these figures with this chart.

We have recently prepared a facility response plan (FRP) for our facility. DOWCAR provided us with a small emergency reference booklet (Emergency Response Action Plan) for use in conjunction with the FRP. I have provided a copy of the booklet also.

If you have any questions regarding this letter, please contact me at jlieb@giant.com or (505) 722-0227.

Sincerely,
Giant Refining Company - Ciniza

Jim Lieb
Environmental Engineer

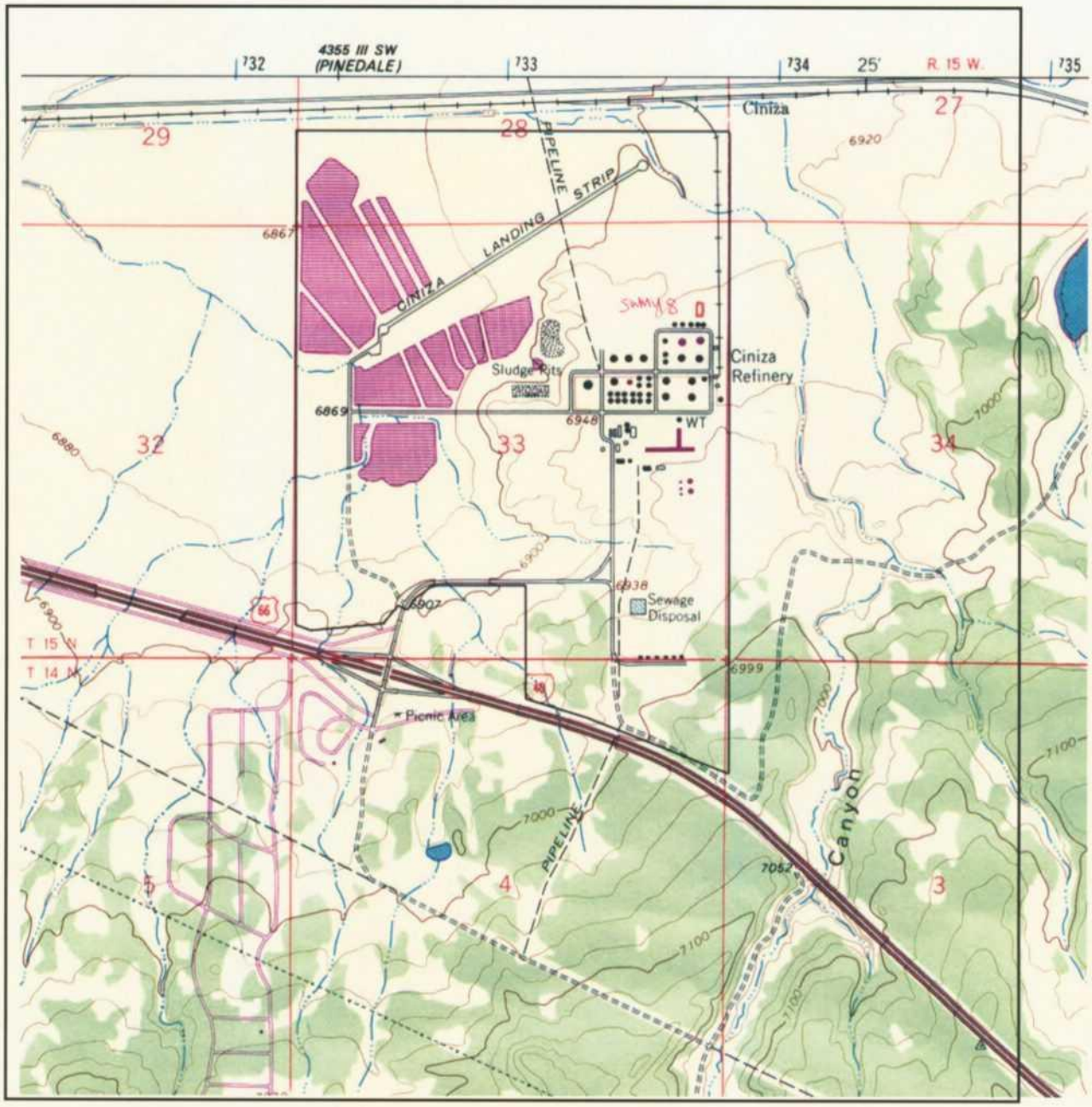
Cc: Ed Rios
Ed Riege
Steve Morris

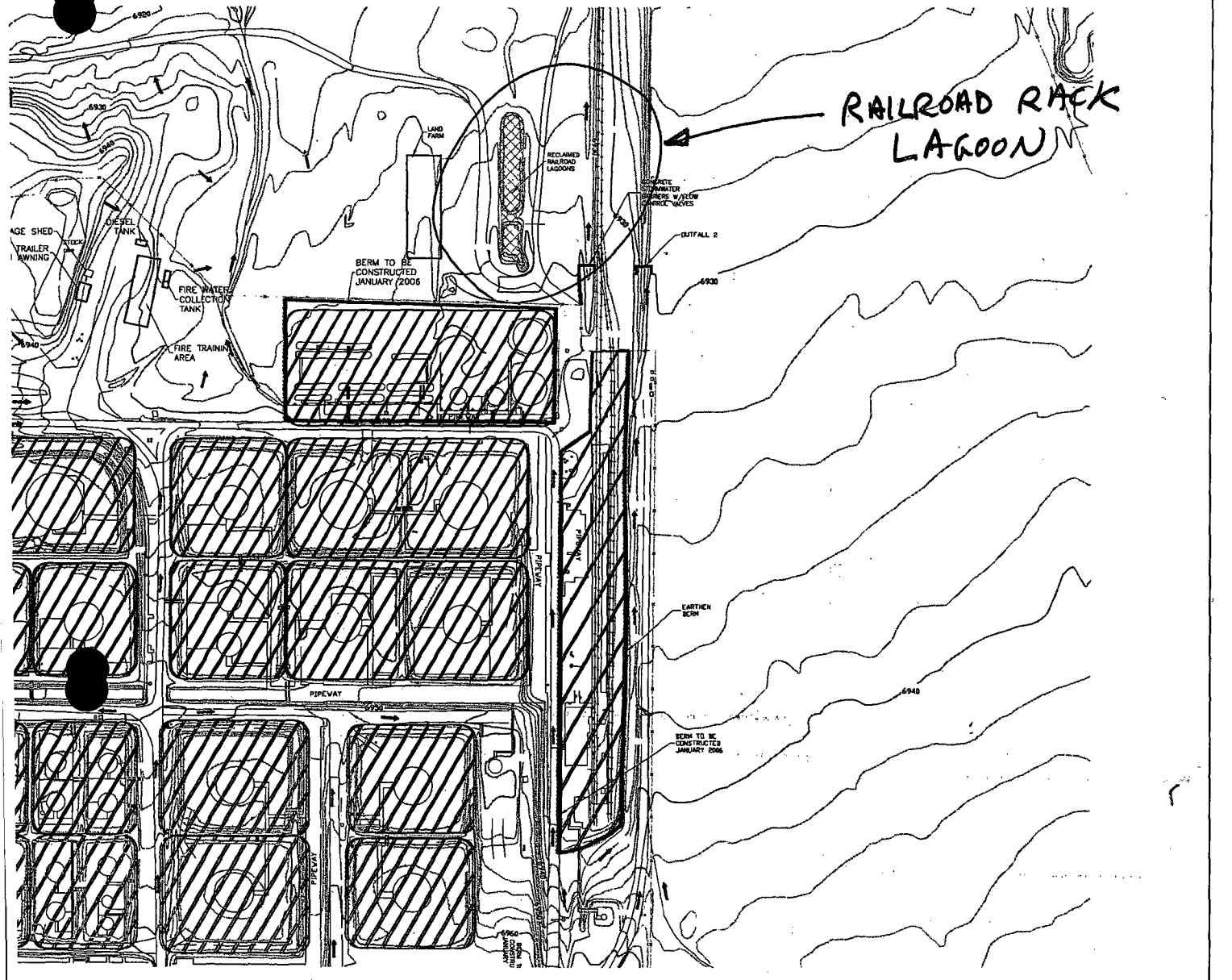
Cross Reference Chart
Revised Remedy Completion Report for Railroad Rack Lagoon
(SWMU No. 8), Giant Refining Company, Ciniza Refinery, HWB-GRCC-06-001
EPA ID#: NMD000333211

NMED Comment Number	Revised Report Revision Location
1	Tables 1 through 14 in Section 4 - Investigation Results (Summary Tables) Figures 1 through 14 following Section 8 Appendices 1 through 7
2	Section 6 - Sampling Methods
3	Tables 1 through 14 in Section 4 - Investigation Results (Summary Tables)
4	Tables 1 through 14 in Section 4 - Investigation Results (Summary Tables)
5	Page 6 Paragraph 2
6	Page 6 Paragraph 2
7	Page 6 Paragraph 2
8	Page 11 Paragraph 3
9	Page 10 Section 2.2.1 and Appendix 1
10	Page 6 Paragraph 2 and Section 2.2.1 was rewritten to clarify, in particular the last paragraph.
11	Report was revised to clarify excavation events and sampling events. Tables 1 through 14 in Section 4 - Investigation Results (Summary Tables) References to Table 6 on Page 14 (Paragraph 3) and to Table 9 on Page 15 (Paragraph 3) clarify the sampling events. Confirmation sampling covered in Section 2.3.3, Page 14 (Paragraph 3), and Section 2.3.5 Page 15 (Paragraph 3).
12	SVOCs are presented in Tables 11 through 14.
13	Section 2.2, Page 10 (first paragraph) and Section 2.3, Page 12 (second paragraph).
14	Photos in Appendix 8 now include captions.
15	Figure 4 was deleted.
16	SVOCs were not analyzed for in the 2004 samples.
17	The Appendix 1 cover sheet was revised to include the December 13 samples.
18	Figure 6 was cleaned up to clarify meaning and is now Figure 5 in the revised report. Figures 8 and 9 show where sampling on 8/19/05 and 8/22/05 occurred.
19	Appendix 8 Figures are now in color with captions and with better resolution.
20	Figure 7 was deleted. New Figure 7 shows sample locations more clearly.
21	New Figure 10 and 11 show locations were the 10 samples were taken.
22	The title to Table 8 was corrected to accurately reflect description in the text.
23	The redundant pages were deleted from the revised report.
24	Figures 10 and 11 have been improved to better show sample locations.
25	Figures 6 and 9 have been improved to better explain the pertaining excavation.
26	The 2006 investigation of the fan out and ditch will be provided in a separate report.

Figure 1: Location Map

Locality Map
USGS Topographical Map - Ciniza Quadrangle (Revised 1980)





		Scale: 1"=200'	Issued for:	Issued by:	Title:	
		Designed by: LAL/JM		VECTOR ARIZONA	STORMWATER CONTROLS GRASSY AREA/OUTFALL 2 RAILYARD/FIRE TRAINING AREA CINIZA REFINERY	1 REVISION
		Drawn by: LAL	GIANT REFINING COMPANY			
		Checked by:				
		Approved by:				
	1/9/05				Project: SWPPP	Project no.: DRAWING

FIGURE 2

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, November 02, 2006 1:57 PM
To: 'Jim Lieb'; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD; Cobrain, Dave, NMENV
Cc: Ed Rios; Ed Riege; Steve Morris
Subject: RE: Lab Results on Fire Soils, Spill Training

FYI to file for consideration at annual GW.

Jim:

Glad to see Giant is actively training to protect the San Juan River. Keep up the good work. :)

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, November 02, 2006 9:58 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Rios; Ed Riege; Steve Morris
Subject: Lab Results on Fire Soils, Spill Training

Carl, Hope:

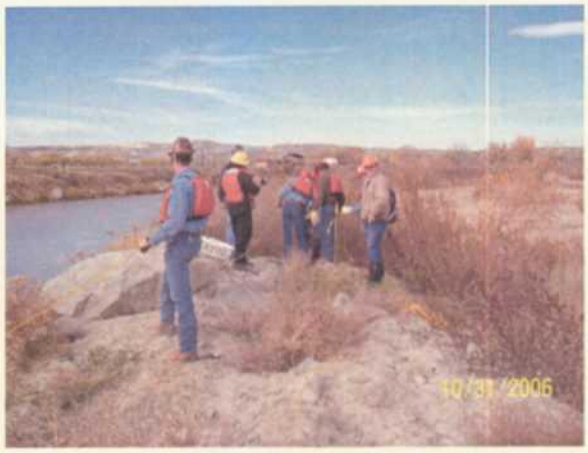
Attached are the lab results from the soil samples Steve took from the fire water areas at the two locations as you requested we take. Fluoride is low. pHs are in the 7 to 8 range and chloride was a bit high in one sample but this is likely due to the natural tendency of the soils here to be elevated in salts.

I took part in spill response training including boom deployment exercises earlier this week at Giant's regional office facility in Bloomfield. At least 20 Giant employees from Giants two refineries, transportation, and the pipeline divisions received the training. We conducted two boom deployment exercises on the San Juan River on Tuesday afternoon and Wednesday morning at two separate locations on the river. Monday was devoted to classroom lectures on spill response techniques. Training was provided by H2O OSRO-DOWCAR's Carl Oskins. I have included some pictures from the Tuesday afternoon boom deployment exercise.

Installation of flumes is progressing. Was delayed some due to the heavy rains we had last week.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Ciniza- Bloomfield
River Spill Response Training
(October 30- November 1, 2006)



Chavez, Carl J, EMNRD

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Sent: Thursday, November 02, 2006 9:58 AM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
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Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, October 27, 2006

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Post Alky Fire Soil Samples 10-25-06

Order No.: 0610285

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 10/25/2006 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

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Oct-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Alky SE
Lab Order:	0610285	**Collection Date:**	10/25/2006 12:35:00 PM
Project:	Post Alky Fire Soil Samples 10-25-06	**Date Received:**	10/25/2006
Lab ID:	0610285-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: **TES**
Fluoride	33	1.5		mg/Kg	5	10/26/2006 12:55:35 PM
Chloride	1900	6.0		mg/Kg	20	10/26/2006 2:22:36 PM
EPA METHOD 150.1: PH						Analyst: **CMC**
pH	7.64	0.010		pH Units	1	10/26/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Oct-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Alky NE
Lab Order:	0610285	**Collection Date:**	10/25/2006 12:50:00 PM
Project:	Post Alky Fire Soil Samples 10-25-06	**Date Received:**	10/25/2006
Lab ID:	0610285-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: TES
Fluoride	86	3.0		mg/Kg	10	10/27/2006 12:08:20 PM
Chloride	350	1.5		mg/Kg	5	10/26/2006 1:12:59 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.53	0.010		pH Units	1	10/26/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Post Alky Fire Soil Samples 10-25-06 **Work Order:** 0610285

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW9056A									
Sample ID: MB-11576		*MBLK*			Batch ID:	11576	Analysis Date:	10/27/2006 9:49:05 AM	
Fluoride	ND	mg/Kg	0.30						
Chloride	ND	mg/Kg	0.30						
Sample ID: LCS-11576		*LCS*			Batch ID:	11576	Analysis Date:	10/26/2006 11:57:08 PM	
Fluoride	1.506	mg/Kg	0.30	100	90	110			
Chloride	14.94	mg/Kg	0.30	99.6	90	110			
Method: SW9045B									
Sample ID: 0610285-01ADUP		*DUP*			Batch ID:	R21176	Analysis Date:	10/26/2006	
pH	7.600	pH Units	0.010						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	3 / 4recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN | Date and Time Received: 10/25/2006

Work Order Number 0610285 | Received by AT

Checklist completed by [signature] Signature | 10-25-06 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? 5° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted | Date contacted: | Person contacted

Contacted by: | Regarding

Comments:

Corrective Action

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

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

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Post Alby Fire Soil Sample 10-25-2006
Project #:
Project Manager: Steve Morris
Sampler: Steve Morris
Sample Temperature: 5°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
10/25/06	1235	Soil	Alby SE					0610285 1
"	1259	"	Alby NE					2

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	pH				Air Bubbles or Headspace (Y or N)
								X				X				
								X				X				

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
10/25/06	1600	Steve Morris	10/25/06 1600
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks: RUSH

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

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 31, 2006

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

RE: NOTICE OF DEFICIENCY
OIL CONSERVATION DIVISION (OCD) 2005 ANNUAL GROUNDWATER REPORT (AND OCD ADDENDUM)
GIANT REFINING COMPANY, CINIZA REFINERY; HWB-GRCC-06-003
EPA ID # NMD000333211

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has completed its review of the *Oil Conservation Division 2005 Annual Groundwater Report (and OCD Addendum)* (Report), dated August 31, 2006, submitted on behalf of Giant Refining Company, Ciniza Refinery (the Permittee). NMED hereby issues this Notice of Deficiency (NOD). The Permittee must make the following revisions before NMED will approve the Report.

Comments 1-19 Apply to Binder 1: Annual Groundwater Report

Comment 1
The Permittee states in the Executive Summary of the Report that elevated levels of fluoride, total dissolved solids (TDS), and chlorides are likely due to naturally occurring conditions in some wells.

To assert that fluoride, TDS, and chloride concentrations are naturally occurring, the Permittee must demonstrate that anion concentrations detected at the facility are present at background

concentrations. To date, NMED has not approved background concentrations of naturally-occurring constituents in groundwater at the facility because a background study has not been performed. Background concentrations for inorganic constituents in groundwater must be determined from upgradient wells representative of natural conditions that are unaffected by releases from the facility. The Permittee must use NMED's guidance document *Determination of Background*, provided below to determine background values at the facility.

DETERMINATION OF BACKGROUND

The Permittee shall determine an appropriate background data set for inorganic constituents at the Facility. The Permittee shall determine whether one or more background data sets are appropriate based on variations in soil type and geology at the site. Background concentrations for groundwater shall be collected from upgradient wells. The background data sets shall be representative of natural conditions unaffected by site activities and shall be statistically defensible. Sufficient number of background samples shall be collected for use in the risk assessment, including conducting site attribution analyses and comparison of data sets.

The Respondents shall provide summary statistics for background metals concentrations in each medium of concern and include the following information:

1. Number of detects,
2. Total number of samples,
3. Frequency of detection,
4. Minimum detected concentration,
5. Maximum detected concentration,
6. Minimum sample quantitation limit (SQL),
7. Maximum SQL,
8. Arithmetic mean,
9. Median,
10. Standard deviation, and
11. Coefficient of variation.

The Permittee shall determine the 95% upper tolerance limit (UTL) for each metal using statistical methods that are distribution based.

Comparing Site Data to Background

The 95% UTL for each metal shall be used as the background reference value for use in screening assessments and determining whether metals are present in soil, groundwater, surface water, or sediment due to Facility activities. The site maximum detected concentration shall be compared to the 95% UTL for each metal. If the site maximum detected concentration is greater than the background reference value, then additional site attribution analyses shall be conducted.

Site attribution analyses shall be conducted in accordance with current EPA or Department-accepted guidance. The site attribution analyses shall consists of a statistical comparison of the background data set to the site data set, using distribution based tests such as the Wilcoxon Rank Sum Test.

If the results of the site attribution analyses indicate that the metal is present at the site above naturally occurring levels, then the Permittee shall include metal as a site contaminant.

Comment 2

In Section 2 (Scope of Activities) of the Report, the Permittee discusses sampling of the boundary wells (BW) and identifies the BW's not sampled because they were dry. Boundary Well BW-3-A was not included in the Section 2 (Scope of Activities) or in Section 4 (Groundwater Monitoring Results) of the Report, but was addressed in Section 6 (Summary of Groundwater Testing) as being dry and not sampled. No change is required in the revised report; however, in future reports the Permittee should identify all dry wells in the same section of the Report.

Comment 3

Section 2 (Scope of Activities) appears to be missing text between pages three and four. The last sentence of page three states "Samples were taken in November 2004 and indicated that further" and page four begins with "by both parties".

The Permittee must provide the apparent missing information between page three and four in the revised report.

Comment 4

The table and subsequent text presented in Section 2 (Scope of Activities) is incomplete. This table originates from the OCD Discharge Plan Renewal Application (OCD DPRA). The OCD DPRA was revised in 2005 with the letter regarding "Response Letter, HWB-04-001" from the

Permittee to NMED dated September 26, 2005. The table in the Report does not address the requirement for sampling of wastewater discharged from the Pilot Travel Center and Truck Stop Facility that "grab samples shall be collected quarterly from the sampling and metering station (triangular notch weir) on the Pilot incoming line. The samples will be analyzed for hazardous characteristics [toxicity characteristic leaching procedure] (TCLP) by [Environmental Protection Agency] EPA Method 1311 and [biological oxygen demand] B.O.D." However, a Table containing BOD data is provided in the Report.

The Permittee must revise the Table in Section 2.0 to contain the most current information. The Permittee must refer to Comment 3 of the letter from NMED to the Permittee, dated February 21, 2006 entitled "Response to Approval with Modification to the 2003 OCD Annual Report GW-23 Response letter" and Comment 4 of the March 13, 2006 letter from NMED to the Permittee titled "Approval with Modifications 2004 Annual Groundwater Report." These changes must be made in the revised report.

Comment 5

The Permittee states in Section 2.0 (Scope of Activities) of the Report "[a]ll facility monitoring wells and recovery wells were gauged in February, June, September, and December 2005."

The Report does not appear to provide all the well measurements for the months listed above except for June 2005, which is provided in the Well Data Summary Table found in Section 7 (List of Tables). The annual groundwater monitoring event was conducted in September and October 2005 and the associated water level data was not provided in the Well Data Summary Table. The Permittee must provide all water level measurements for all monitoring and recovery wells for the months of February, June, September, and December 2005 in table format. The Permittee also must provide a Well Data Summary Table containing the data collected during annual groundwater monitoring event (September/October).

Comment 6

Field sample collection and handling procedures were included in Section 2 (Scope of Activities) under Field Data Collection and in Appendix B (Ciniza Field Sampling Collection and Handling Procedures) of the Report.

If the Permittee chooses to include this information in two areas of the Report, both sections must be complete and contain the same information. The field sample collection and handling information in Section 2 was overly brief, and pertinent information was not included in Appendix B. The Permittee must combine these sections into one section or revise both sections to be more comprehensive and complete.

Comment 7
The Permittee states in Section 2 (Scope of Activities) (Field Data Collection) of the Report "All water/product levels were measured to an accuracy of nearest inch using an electrical conductance based meter."

The depth to product (DTP) and depth to water (DTW) measurements must be determined to the nearest 0.01 of a foot. The Permittee must also provide the conversion factors used to determine the purge volumes removed from each well. The Permittee may choose to include this information in Appendix B. The Permittee must make the appropriate changes in the revised report.

Comment 8
The table found in Section 2 (Scope of Activities) of the Report includes the groundwater monitoring requirements, and indicates Pond 1 inlet (EP-1-IN) will be sampled semi-annually and analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), semi-volatile organics compounds (SVOCs), and Resource Conservation and Recovery Act (RCRA) metals.

The laboratory results for the semi-annual sampling events for EP-1-IN were not provided in Section 5.0, nor were they presented in the tables containing the monitoring results. The Permittee must provide the analytical results in the revised report or provide an explanation as to why the location EP-1-IN was not sampled.

Comment 9
The Table (Volatiles 8021B) located in Section 4 (Groundwater Monitoring Results) of the Report has an asterisk notation that states "Unless otherwise specified." The Permittee must provide an explanation of what "unless otherwise specified" means (e.g., the GWM 1 column for benzene on September 27, 2005 is notated as 0.081*). This must be clarified in the revised report.

Comment 10
The tables found in Section 4 (Groundwater Monitoring Results) of the Report do not provide groundwater monitoring data for SVOCs. If SVOCs were not detected, this must be stated (this was not addressed in Section 6 [Summary of Groundwater Testing] either). The tables containing data collected from monitoring well MW-1 do not include all the analytical results (e.g., general chemistry, DRO, and GRO results are not included).

The table titled *Volatiles 8021B* that lists data for observation wells OW-29 and OW-30, reports a detection of methyl tertiary-butyl ether (MTBE) at 0.0025 mg/L during the December 8, 2004 groundwater monitoring event. This is a typographical error and should be notated as <0.0025 mg/L, indicating that the laboratory did not detect the compound.

The Permittee must make the above changes to the revised report.

Comment 11

Section 6 (Summary of Groundwater Testing) of the Report lists all the wells sampled and identifies concentrations detected both above and below the Water Quality Control Commission (WQCC) standards and EPA's Maximum Contaminant Levels (MCL). In the summary for OW-14, the Permittee did not mention benzene was detected at 0.017 mg/L, which is above both the WQCC standard and the MCL for benzene. This must be included in the revised report.

Comment 12

The Permittee states in Section 6 (Summary of Groundwater Testing) that a sample from Pond #2 was supposed to have been collected in 2005 but was not due to an oversight.

It is not clear which sampling requirement the Permittee is referencing to. The Permittee states in the monitoring schedule found in Section 2 (Scope of Activities) "[o]n an annual basis, a grab sample of the inlet water to Pond #2 shall be collected and analyzed for BOD, COD, TDS, BTEX, and MTBE". Another requirement reads "[o]n an annual basis, a grab sample of evaporation pond water shall be collected and analyzed for general chemistry parameters. The evaporation pond selected for sampling shall be the pond, considered by refinery personnel, to most likely contain the highest salinity or TDS. In addition, the selected pond shall be alternated from year-to-year in order to provide a broader indication of analysis."

The Permittee must clarify which requirement Section 6 is referring to for Pond #2 in the revised report.

Comment 13

Section 7 (List of Tables) contains a table entitled *RW-1 Hydrocarbon Recovery 2/22 to 12/29 2005*. The table contains three columns entitled "Depth to Product (feet)", "Depth to Water (Feet)" and "Product Level Thickness (feet)." The values presented in these columns are listed in both feet and inches and appear to be rounded numbers. Groundwater elevation and flow directions cannot be determined accurately from estimated measurements.

The Permittee must provide a description of the methods and instrument(s) used to collect depth to water and depth to product measurements which allows measurements in feet and inches (e.g. RW-1 measured a product level at 31 feet, 11 inches). All future measurements must be measured to an accuracy of 0.01 foot. NMED recommends using a water/product interface probe. (See comment 7 of the March 13, 2006 letter from NMED to the Permittee titled "Approval with Modifications 2004 Annual Groundwater Report").

Comment 14
The *Well Data Summary* Table found in Section 7 (List of Tables) of the Report must be revised to define "na" in the footnotes of the table. The Permittee must also provide a page containing the calculations used to determine the corrected groundwater elevations. This information must be provided in the revised report.

Comment 15
In Section 8 (Figures) of the Report, Figure 4 (Alluvium/Chinle Group Interface Water Piezometeric Surface) and Figure 5 (Separate Phase Hydrocarbon Thickness) are dated June 2005, which indicates that the data depicted on the map was collected in June 2005. The data generated on these maps should be data collected during the annual groundwater monitoring event (October/September). The Permittee must explain why Figures 4 and 5 were generated with June 2005 data. The Permittee must provide maps that present the data from the September/October annual groundwater monitoring event in the revised report.

Comment 16
Appendix B (Ciniza Field Sampling Collection and Handling Procedures) of the Report must be revised to include the information listed below.

a. Identify the names of the instruments utilized during the groundwater sampling events to measure water and product levels and water quality parameters (e.g., Geotech Interface Meter).

b. Describe calibration procedures for the instruments used to measure water quality parameters.

c. Identify the type of filter used to filter dissolved metals in the field (e.g. 5-micron filter).

d. Describe how the water samples were collected. Appendix B only explains how water was purged from the well and does not describe how samples were collected. (e.g., disposable bailers, dedicated bailers, or pumps).

e. Decontamination procedures were briefly described for the "well depth instrument" in which the probe was washed with distilled water. NMED recommends washing the probe of the "well depth instrument" with a non-phosphate soap, a tap water rinse followed by a distilled water rinse. This will help prevent cross contamination between wells.

Comment 17
The Report references the remediation of Railroad Rack Lagoon (RR Lagoon). The Permittee must remove all references to the RR Lagoon as the remediation of this area is separate from groundwater monitoring activities at the site.

Comment 18
The Executive Summary and Section 1 (Introduction) of the Report reference HWB-GRCC-04-001 as a permit number. The correct permit number is EPA ID # NMD000333211.

Comments 19 and 20 Apply to Binder 2: OCD Addendum to Annual Groundwater Report

Comment 19
Binder 2, Section 3a (Summary of all Major Refinery Activities or Events). In the future, this Section must provide a year next to the months. No revision is required in the revised report.

Comment 20
In future reports, if the Permittee is going to provide all the laboratory analytical results for all activities that occurred at the facility during the year as provided in Section 3b (Results of all Sampling and Monitoring Events) of Binder 2, the Permittee must insert some type of section break between the different groups of laboratory analysis (e.g., colored paper or letter ring book indexes to distinguish between the different sampling events such as the groundwater sampling events, RR Lagoon sampling, aeration lagoon and evaporation pond sampling). No revision is required in the revised report.

The Permittee must address all comments contained in this NOD and submit a revised Binder 1: Annual Groundwater Report. The revised report must include a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. All requirements must be incorporated in future groundwater monitoring reports. The revised report must be submitted to NMED no later than January 15, 2006.

If you have questions regarding this Notice of Deficiency please contact Hope Monzeglio of my staff at 505-428-2545.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:hm

cc: J. Kieling, NMED HWB
D. Cobrain NMED HWB
H. Monzeglio NMED HWB
W. Price, OCD
S. Morris, GRCC
J. Lieb, GRCC
L. King, EPA Region 6 (6PD-N)
file: Reading File and GRCC 2006 File
HWB-GRCC-06-003

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 31, 2006 1:02 PM
To: Powell, Richard, NMENV
Cc: 'Jim Lieb'; Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV
Subject: FW: Some Giant- Ciniza Refinery follow-up items from OCD's October 11, 2006 site inspection

Richard:

FYI, per Mr. Jim Lieb of the Giant-Ciniza Refinery:

"[We were wondering if it might not be a good idea to schedule a visit by Mr. Powell after the new MSGP (MSGP-2006) is released by U.S. EPA so his inspection could not only address any lingering concerns you may still have, but could also provide some compliance assistance for us in reviewing our efforts to implement new requirements of the MSGP-2006? We understand that this release of the final MSGP-2006 is anticipated to occur sometime later this year. We just had an inspection less than a year ago on compliance with the MSGP-2000; and we anticipate the release of the new MSGP-2006 will probably require a reevaluation of the SWPPP and perhaps some changes. Thus, it makes the most sense from our perspective, and probably even from the regulatory agency's perspective to wait until Ciniza has had a chance to do the anticipated reevaluation and any required changes so in the visit by Mr. Powell he will be able to look at both issues and help assure our correct implementation of the MSGP-2006 requirements. Mr. Powell could visit our facility then and this would save him the inconvenience from having to make a return visit fairly soon thereafter.]"

Perhaps you could mark your calendar for a stormwater inspection after the release of the new MSGP-2006. There have been surface drainage changes made at the facility, i.e., decommissioning of outfall #2 area, new berms, etc. There appears to be a fundamental difference of opinion on what is considered a stormwater area; i.e., the release of fire water diluted with hydrofluoric acid from the Alkylation Unit over the curb in the process area and into an OCD perceived stormwater drainage area adjacent to and east of the refinery process area. According to Mr. Lieb, "as a result of the dikes and berms, cross migration of contamination from the process areas into stormwater drainage areas of the refinery is virtually eliminated."

Please contact me if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Saturday, October 28, 2006 10:29 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Rios; Ed Riege; Steve Morris; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Some follow-up items from OCD's October 11, 2006 site inspection

Dear Carl:

Good morning. We appreciate the comments you provided Wednesday. Steve Morris has taken the samples you requested and has already delivered them to Hall Environmental Analytical Laboratory in Albuquerque. We should have results back by early next week. Because of the large amount of water used to suppress the fire in combination with the relatively low amount of HF released, we anticipate the samples will show nothing of material concern.

I am preparing an outline letter regarding our plans for the two large storage tanks for storm water management and as emergency backup storage in the event a malfunction ever should occur in the new API separator (NAPIS). I provide NAPIS design rate and typical flows in the letter for your and NMED's reference during your meeting on November 2. I anticipate providing the letter by email to you and NMED on Friday afternoon with a hard copy to follow in the mail.

Release of water to areas outside of the alkylation unit's dike/curb during the fire was due an extraordinary event and is not normal by any means. Ciniza placed the berms near the unit to hold runoff to prevent any possible commingling of waste water with storm water. The amount of HF released was so diluted by all the water such if any is in the soil behind the berm is likely much less than the NMED's SSLs for fluoride and chloride. Water samples were tested right

after the fire and showed neutral pH. The soil samples very likely will confirm our position in this regard.

As a result of the construction of the dikes and berms, cross migration of contamination from the process areas into storm water drainage areas of the refinery is virtually eliminated. If we did experience a spill event into the berms, holding contaminants within the confinement of the berms enables Giant to timely clean up the spill behind the berm thereby preventing the surface migration beyond the berm as well as the prevention of any significant potential to migrate to ground water. We placed the berms and shored up existing dikes and constructed new dikes in the process area as a result of recommendations made by Mr. Powell during his last visit here in November 2005. Mr. Powell recommended these dikes and berms as improvements to existing storm water controls. These berms are shown in the updated SWPPP that Vector-Arizona provided Giant in January 2006 and we then sent to NMED and OCD.

While not to minimize concerns we may have regarding commingling, discharges of waste water from fire fighting activities to storm water are specifically allowed by the MSGP-2000 (1.2.2.2.1 Discharges from fire fighting activities) that Giant is operating under. The MSGP requires that a facility list the "discharges from fire fighting activities" in the SWPPP (4.4.2 Allowable Non-Storm Water Discharges). Our SWPPP does specifically list water from fire fighting as being one of the allowable discharges pursuant to the MSGP-2000. I have scanned the applicable portions from the MSGP-2000 and our SWPPP for your review.

We were wondering if it might not be a good idea to schedule a visit by Mr. Powell after the new MSGP (MSGP-2006) is released by U.S. EPA so his inspection could not only address any lingering concerns you may still have, but could also provide some compliance assistance for us in reviewing our efforts to implement new requirements of the MSGP-2006? We understand that this release of the final MSGP-2006 is anticipated to occur sometime later this year. We just had an inspection less than a year ago on compliance with the MSGP-2000; and we anticipate the release of the new MSGP-2006 will probably require a reevaluation of the SWPPP and perhaps some changes. Thus, it makes the most sense from our perspective, and probably even from the regulatory agency's perspective to wait until Ciniza has had a chance to do the anticipated reevaluation and any required changes so in the visit by Mr. Powell he will be able to look at both issues and help assure our correct implementation of the MSGP-2006 requirements. Mr. Powell could visit our facility then and this would save him the inconvenience from having to make a return visit fairly soon thereafter.

I will be at our Bloomfield Refinery Monday thru Wednesday taking in part in spill response training so I probably won't be able to respond immediately to any follow-up questions you may have.

If you have any questions please contact me at jlieb@giant.com or at (505) 722-0227.

Jim Lieb

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, October 25, 2006 10:45 AM
To: Jim Lieb
Cc: Ed Rios; Ed Riege; Steve Morris; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Some follow-up items from OCD's October 11, 2006 site inspection

Jim:

Good morning. Regarding the first 2 paragraphs in your note below, the OCD considers the curb around the process area to be within the containment area around the process area; however, the overflow over the curb that migrated immediately east and then north past the culvert and toward the final berm area you mentioned at the NE region of the process area, this is where precipitation runoff flows during rain events outside of the process area.

For example, any release outside of the curb in the process area flows in a stormwater drainage area(s). One example of environmental problems that we could encounter if Giant considered the drainage area east of the curb to be inclusive of the process area is: after multiple spill events, the accumulation of contaminants may result in a point source(s) that could impact

groundwater below the area. Giant could simply place berms down slope of its refinery process areas and enlarge it maps of the process and other areas. The realization is that during precipitation events, natural runoff will flow in these areas and make there way to pool, pond and accumulate behind berms on dirt and potentially cause ground water contamination beneath the facility.

I think that we should schedule Richard Powell of the NMED to conduct another stormwater evaluation due to recent changes in Giants stormwater areas to see if he concurs with Giant; however, I specifically remember Richard carefully assessing the process area to ensure no cross-migration into stormwater areas occur at the site. I believe Giant shored up a concrete curb (~6-8 inches) around the process area and its drains to address Richard's concern there. The problem occurs when overflows occur outside of the curb (during the fire event) and ends up in drainage or stormwater areas.

Let me know if you would prefer not to sample as requested. I can come out and grab some samples and also split samples with Giant on phenol samples at the treatment system. In addition, Richard Powell may be able to revisit the facility and check the changes to your stormwater drainage areas in the vicinity and north of the RR Lagoon Rack area.

I agree with Hope's request from your meeting, but I need to know more about NAPI Unit and how it will factor into your new tanks proposal. Regarding the NAPI Unit and its capacity, what is the NAPI Unit's maximum design capacity and is Giant confident of achieving this capacity in the future? According to Hope's e-mail of Giant's March 24, 2006 letter, the daily operational flow at the time of Giant's measurement was about 93 gpm.

Please contact me if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Wednesday, October 25, 2006 7:26 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Rios; Ed Riege; Steve Morris; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Some follow-up items from OCD's October 11, 2006 site inspection

Carl:

Thank you for the follow-up and update. In consideration of the concerns you provided in your email Giant – Ciniza offers the following responses.

We believe that it is highly unlikely that a storm event in the area you mention where the fire fighting water was contained in a drainage area behind the berm could initiate an overflow that would escape this process area and thus there should never be a discharge to waters of the state. This process area is surrounded by a curb and there are berms that were located in strategic areas that serve as emergency flow blocks to prevent process area spills and storm water in this area from progressing any distance from the process area. During storm events, the curb and berms hold storm water inside this process area where the water flows into the storm sewer system. We believe the existing system will contain the equivalent to, or exceeding, a 100 year flood storm event.

During the fighting of the fire, deluge sprays were used by Giant to suppress the fire. The amount of water used was on the order of 5,000 gallons per minute administered through a number of fire water monitors surrounding the alkylation unit. Some overspray from the deluge of fire water resulted in water outside the curbing. We showed you the berm that stopped the runoff of fire fighting water from the alkylation unit fire. The berm held the overspray water as the berm was designed to do. The water from the fire was not and will not be discharged.

Yesterday morning, Steve Morris and I discussed over the telephone with Hope Monzeglio our plans in brief for the two tanks. She requested that I prepare a short letter outlining our plans for the two large tanks for use as accumulation of storm water, and as emergency process waste water storage in event of a malfunction at the new API separator. This letter will also include our plans for the NAPIS including repairing any leaks and ability to handle future flows. I anticipate providing the letter to OCD and NMED before your meeting on November 2. Vector-Arizona is currently working on an engineering design plan for the storm water/emergency tank system. We will provide the design plan to you upon completion.

Giant – Ciniza will notify you at least a day in advance of when we get to the point that we install the flume at the *AL2 to EP1* location.

If you have any questions, please contact me at (505) 7220227 or jlieb@giant.com

Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, October 20, 2006 5:09 PM
To: Jim Lieb; Steve Morris
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: Some follow-up items from OCD's October 11, 2006 site inspection

Jim and Steve:

I am writing to follow-up with you on some issues from the OCD's October 11, 2006, fire inspection. The inspection was precipitated by an alkylation unit fire on October 5, 2006, and resulted in a comprehensive refinery inspection with discussion of past inspection items. The refinery inspection also facilitated the introduction of two new OCD Inspectors, Mr. Leonard Lowe and Mr. Ed Hansen. This e-mail serves to follow-up on some items from our meeting and to update you on what will be forthcoming.

I am in the process of completing a OCD fire investigation document pertaining to the Alkylation Unit fire. It will contain observations, recommendations and some requirements (i.e.; sampling for chlorides, fluorides and pH at a couple of locations) based on our inspection. It is interesting to note that some stormwater drainage changes have been made by Giant, since our inspection of September 8, 2005, i.e.; Giant appears to have decommissioned outfall #2 replacing it with a series of drainage blocks in the vicinity of the railroad lagoon area, which Giant indicated it had submitted a stormwater drainage map to the EPA in its most recent Stormwater Pollution Prevention Plan (SWPPP) and had yet to be contacted by the EPA. The OCD is concerned about natural natural rainfall events and the potential for overflow at the process area. Is this likely and especially if Giant combines stormwater with its process water drains. For example, the overflow from the refinery process area (cement curbing) during the fire ran over into a stormwater drainage area that is contained by a berm. Any contamination in the stormwater area could present a point source of contamination.

Secondly, there were some follow-up items to previous refinery inspections that were discussed. I am working on more comprehensive write-up of our inspection. The OCD and NMED will be discussing the NAPI Unit on Thursday, November 2, 2006 around 11:30 a.m. and may contact you if we have questions. I think we need to know the maximum flow capacity of the NAPI system. It seems like Giant is moving forward with tank placement, etc., in lieu of the previously proposed fire water pond in advance of engineering plans, submittals, etc. The issues associated with the NAPI Unit may affect Giant's plans.

Regarding the proposal to bypass AL2 during the installation of a flow meter device, flow from AL1 to EP1 may be approvable if the 3 aerators are fully functional in AL1, and you can provide us with a reasonable time-frame (ex., 1/2 day); and provided there are no other plant treatment system upsets or issues that have yet to be discussed.

Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

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Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

October 27, 2006

Carl Chavez,
Oil Conservation Division
Environmental Bureau
1220 S. Saint Francis
Santa Fe, NM 87505

Brandon Powell
Oil Conservation Division
1000 Rio Bravo Rd
Aztec, NM 87410

Hope Monzeglio
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505

2006 OCT 31 AM 11 57

RE: Outline of Giant - Ciniza Refinery Plans for Storm Water Retention Tanks and NAPIS

Dear all:

In this letter Giant - Ciniza outlines its plans for handling storm water from the process area using the two existing large storage tanks. We have mentioned in brief discussions previously over the telephone with OCD and NMED, this method for handling storm water rather than routing to the existing pond that Giant was considering earlier for conversion to storm water retention pond and use as emergency water supply in event of a refinery fire. Giant thinks the tanks would be better than the pond because the two tanks would be more amenable for usage as a temporary storage system in event of a malfunction of the new API separator (NAPIS). Wayne Price, in a previous meeting this last March, had asked us for ideas on how to handle process water in the event of a NAPIS malfunction. The two tanks are NSPS Subpart Kb compliant with floating roofs. Each tank has 5,000 barrels capacity (210,000 gallons) for a total combined capacity of 10,000 barrels or 420,000 gallons. I include a diagram showing the location of the tanks.

Piping would be installed between the two tanks and the influent pipe to the NAPIS that would enable Giant to route untreated process waste water to the tanks in the event of a malfunction of the NAPIS. A shut-off valve would be installed at the influent pipe to the NAPIS. If a malfunction occurred, the valve could be closed and the untreated process waste water would shunt through the proposed piping to the tanks. Once the API was repaired, the accumulated untreated process waste water in the tanks would be pumped at a controlled rate to the NAPIS for treatment.

Piping would be installed to connect the tanks to the existing storm sewer line that presently inputs to the Old API Separator (OAPIS). The tanks are positioned at a low spot compared to the storm sewer line so that flow to the tanks may be by gravity flow. Vector Arizona will determine during the engineering phase whether supplemental pumping may be required to fully utilize the capacity of the tanks. The tanks will be piped such that accumulated storm water in the tanks can be pumped to the NAPIS for treatment. The water would be pumped at a rate to accommodate the design flow rate of the NAPIS. The NAPIS consists of two separate sections or bays. The NAPIS design rate is 150 gallons per minute per bay or a total of 300 gpm total. Typically, only one bay is used because Giant's flow to the NAPIS is typically only in the 90 gpm to 120 gpm range. 120 gpm is the maximum expected *process waste water* flow rate to the NAPIS experienced by the refinery.

The Giant - Ciniza refinery has been operating at less than its full crude oil processing capacity for a long period. A new pipeline will soon bring in west Texas crude. The new crude input will enable the Ciniza refinery to operate at full capacity. The NAPIS was selected and designed to accommodate process waste water flows at the full crude processing rate so there is not expected to be any increase in waste water flows due to the full crude processing that the NAPIS would not be capable of handling. In fact, waste water flows are expected to drop because the new SWAATS unit will recycle water that was previously discharged as waste water.

Because the process water flow to the NAPIS is considerably less than the design capacity, and because waste water flows are not expected to increase as a result of new crude processing, the NAPIS has sufficient capacity to handle storm water flows. The pump rate of storm water to the NAPIS from the two large tanks will be determined based on the results of Vector Arizona's engineering design. The pump rate of storm water to the NAPIS will be selected to remain within the design treatment capacity of the NAPIS with sufficient safety margin to ensure overfill does not occur.

I am in contact with supplier of protective coatings that will be used to repair the cracks in the NAPIS. We will work with supplier to ensure a tough flexible sealant capable of handling the freeze/thaw cycles is used for the repairs. We are also examining appropriate coatings that would be suitable for coating the entire inside of the NAPIS to provide essentially an inner liner.

Giant will provide the NMED and OCD with a copy of Vector Arizona's engineering design report when it is completed. This is anticipated in late 2006 or early 2007

timeframe. If you have any questions regarding this letter, please contact me at jlieb@giant.com or (505) 722-0227.

Sincerely,
Giant Refining Company - Ciniza

Jim Lieb
Environmental Engineer

Cc: Ed Rios
Ed Riege
Steve Morris

List of Solid Waste Management Units

SWMU #1 - Aeration Basin
SWMU #2 - Evaporation Ponds
SWMU #3 - Heat Exchanger Bundle Cleaning Pad
SWMU #4 - Old Burn Pit
SWMU #5 - Land Fill Area
SWMU #6 - Tank Farm
SWMU #7 - Fire Training Area
SWMU #8 - Railroad Rack Lagoon
SWMU #9 - Inactive Land Farm
SWMU #10 - Sludge Pits
SWMU #11 - Secondary Oil Skimmer
SWMU #12 - Contact Waste Water Collection System
SWMU #13 - Drainage Ditch

Monitoring Wells

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

Plugged / To Be Plugged Wells

OW - 2	OW - 25
OW - 3	OW - 26
OW - 7	SMW - 1
OW - 9	SMW - 3
OW - 16	SMW - 5
OW - 17	
OW - 20	
OW - 24	

EXIT 39

EAST I-40

WEST I-40

TWO LARGE EXISTING TANKS

MAPS

CINIZA REFINERY

MARKED ROCK IN ROCK MOUND
SE CORNER OF SECTION 33, T15N, R15W

2" IP SET IN CONCRETE, NE CORNER OF PROPERTY
N. 6589.30', W 0'

Plant Site Drawing

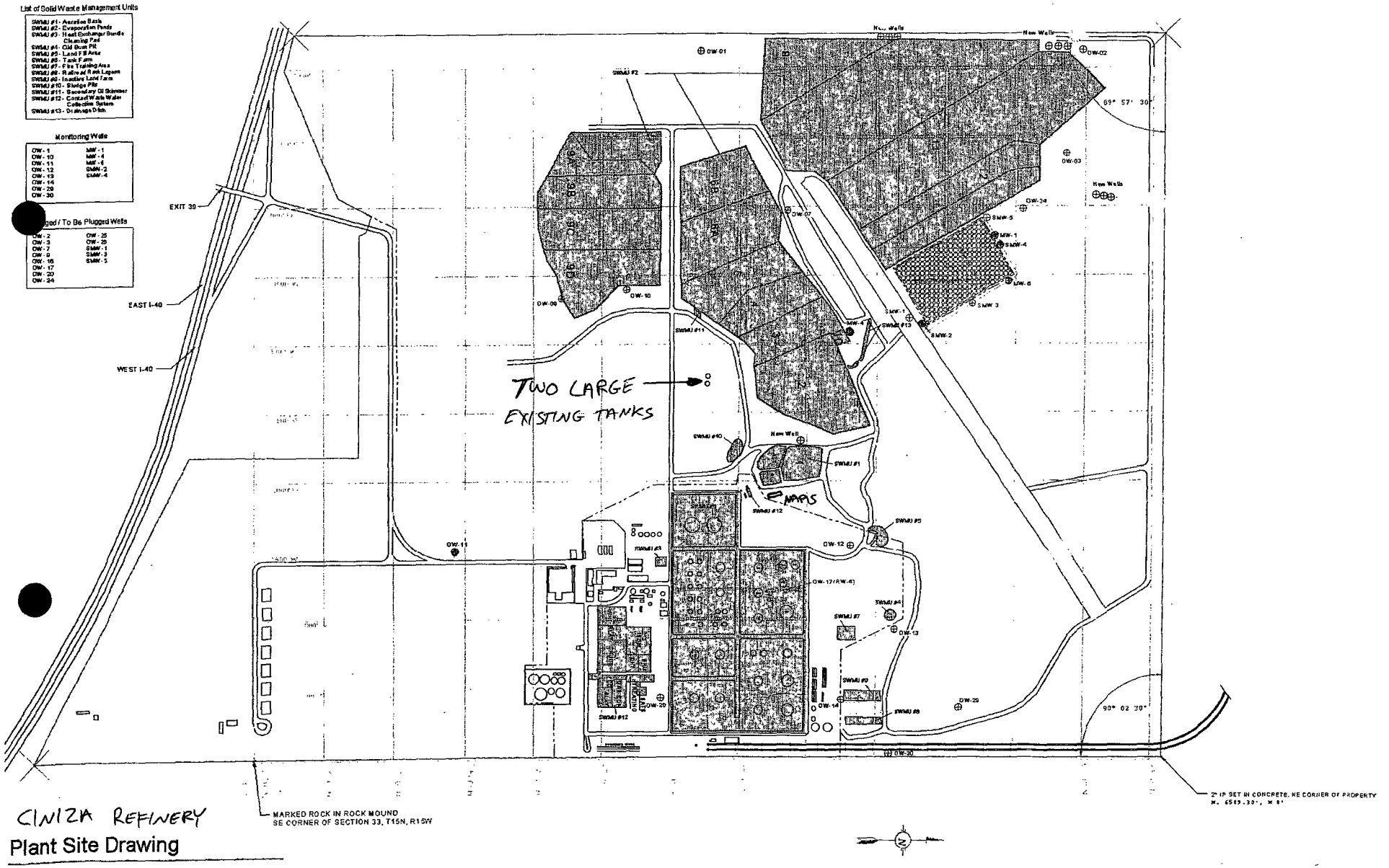
Scale 1" : 300'

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Saturday, October 28, 2006 11:40 AM
To: Monzeglio, Hope, NMENV; Chavez, Carl J, EMNRD; Powell, Brandon, EMNRD
Cc: Ed Rios; Ed Riege; Steve Morris
Subject: Tanks Storm Water Management Plan at Ciniza

Dear all—
Attached is the brief outline of our plans for the two large tanks for use as storm water management system here at Ciniza Refinery. I am having a hard copy mailed Monday to you.

I will be at Bloomfield Refinery Monday thru Wednesday for spill response training and won't be immediately available for questions.
Sincerely,
Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com



CINIZA REFINERY

Plant Site Drawing

Scale 1" : 900'

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

October 27, 2006

Carl Chavez,
Oil Conservation Division
Environmental Bureau
1220 S. Saint Francis
Santa Fe, NM 87505

Brandon Powell
Oil Conservation Division
1000 Rio Bravo Rd
Aztec, NM 87410

Hope Monzeglio
New Mexico Environment Department
Hazardous Waste Bureau
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Santa Fe NM 87505

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Sincerely,
Giant Refining Company - Ciniza

Jim Lieb
Environmental Engineer

Cc: Ed Rios
Ed Riege
Steve Morris

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, October 25, 2006 10:45 AM
To: 'Jim Lieb'
Cc: Ed Rios; Ed Riege; Steve Morris; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Some follow-up items from OCD's October 11, 2006 site inspection

Jim:

Good morning. Regarding the first 2 paragraphs in your note below, the OCD considers the curb around the process area to be within the containment area around the process area; however, the overflow over the curb that migrated immediately east and then north past the culvert and toward the final berm area you mentioned at the NE region of the process area, this is where precipitation runoff flows during rain events outside of the process area.

For example, any release outside of the curb in the process area flows in a stormwater drainage area(s). One example of environmental problems that we could encounter if Giant considered the drainage area east of the curb to be inclusive of the process area is: after multiple spill events, the accumulation of contaminants may result in a point source(s) that could impact groundwater below the area. Giant could simply place berms down slope of its refinery process areas and enlarge it maps of the process and other areas. The realization is that during precipitation events, natural runoff will flow in these areas and make there way to pool, pond and accumulate behind berms on dirt and potentially cause ground water contamination beneath the facility.

I think that we should schedule Richard Powell of the NMED to conduct another stormwater evaluation due to recent changes in Giants stormwater areas to see if he concurs with Giant; however, I specifically remember Richard carefully assessing the process area to ensure no cross-migration into stormwater areas occur at the site. I believe Giant shored up a concrete curb (~6-8 inches) around the process area and its drains to address Richard's concern there. The problem occurs when overflows occur outside of the curb (during the fire event) and ends up in drainage or stormwater areas.

Let me know if you would prefer not to sample as requested. I can come out and grab some samples and also split samples with Giant on phenol samples at the treatment system. In addition, Richard Powell may be able to revisit the facility and check the changes to your stormwater drainage areas in the vicinity and north of the RR Lagoon Rack area.

I agree with Hope's request from your meeting, but I need to know more about NAPI Unit and how it will factor into your new tanks proposal. Regarding the NAPI Unit and its capacity, what is the NAPI Unit's maximum design capacity and is Giant confident of achieving this capacity in the future? According to Hope's e-mail of Giant's March 24, 2006 letter, the daily operational flow at the time of Giant's measurement was about 93 gpm.

Please contact me if you have questions. Thank you.

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Wednesday, October 25, 2006 7:26 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Rios; Ed Riege; Steve Morris; Price, Wayne, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: RE: Some follow-up items from OCD's October 11, 2006 site inspection

Carl:

Thank you for the follow-up and update. In consideration of the concerns you provided in your email Giant – Ciniza offers the following responses.

We believe that it is highly unlikely that a storm event in the area you mention where the fire fighting water was contained in a drainage area behind the berm could initiate an overflow that would escape this process area and thus there should never be a discharge to waters of the state. This process area is surrounded by a curb and there are berms that were located in strategic areas that serve as emergency flow blocks to prevent process area spills and storm water in this area from progressing any distance from the process area. During storm events, the curb and berms hold storm water inside this process area where the water flows into the storm sewer system. We believe the existing system will contain the equivalent to, or exceeding, a 100 year flood storm

event.

During the fighting of the fire, deluge sprays were used by Giant to suppress the fire. The amount of water used was on the order of 5,000 gallons per minute administered through a number of fire water monitors surrounding the alkylation unit. Some overspray from the deluge of fire water resulted in water outside the curbing. We showed you the berm that stopped the runoff of fire fighting water from the alkylation unit fire. The berm held the overspray water as the berm was designed to do. The water from the fire was not and will not be discharged.

Yesterday morning, Steve Morris and I discussed over the telephone with Hope Monzeglio our plans in brief for the two tanks. She requested that I prepare a short letter outlining our plans for the two large tanks for use as accumulation of storm water, and as emergency process waste water storage in event of a malfunction at the new API separator. This letter will also include our plans for the NAPIS including repairing any leaks and ability to handle future flows. I anticipate providing the letter to OCD and NMED before your meeting on November 2. Vector-Arizona is currently working on an engineering design plan for the storm water/emergency tank system. We will provide the design plan to you upon completion.

Giant – Ciniza will notify you at least a day in advance of when we get to the point that we install the flume at the *AL2 to EP1* location.

If you have any questions, please contact me at (505) 7220227 or jlieb@giant.com

Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, October 20, 2006 5:09 PM
To: Jim Lieb; Steve Morris
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: Some follow-up items from OCD's October 11, 2006 site inspection

Jim and Steve:

I am writing to follow-up with you on some issues from the OCD's October 11, 2006, fire inspection. The inspection was precipitated by an alkylation unit fire on October 5, 2006, and resulted in a comprehensive refinery inspection with discussion of past inspection items. The refinery inspection also facilitated the introduction of two new OCD Inspectors, Mr. Leonard Lowe and Mr. Ed Hansen. This e-mail serves to follow-up on some items from our meeting and to update you on what will be forthcoming.

I am in the process of completing a OCD fire investigation document pertaining to the Alkylation Unit fire. It will contain observations, recommendations and some requirements (i.e.; sampling for chlorides, fluorides and pH at a couple of locations) based on our inspection. It is interesting to note that some stormwater drainage changes have been made by Giant, since our inspection of September 8, 2005, i.e.; Giant appears to have decommissioned outfall #2 replacing it with a series of drainage blocks in the vicinity of the railroad lagoon area, which Giant indicated it had submitted a stormwater drainage map to the EPA in its most recent Stormwater Pollution Prevention Plan (SWPPP) and had yet to be contacted by the EPA. The OCD is concerned about natural natural rainfall events and the potential for overflow at the process area. Is this likely and especially if Giant combines stormwater with its process water drains. For example, the overflow from the refinery process area (cement curbing) during the fire ran over into a stormwater drainage area that is contained by a berm. Any contamination in the stormwater area could present a point source of contamination.

Secondly, there were some follow-up items to previous refinery inspections that were discussed. I am working on more

comprehensive write-up of our inspection. The OCD and NMED will be discussing the NAPI Unit on Thursday, November 2, 2006 around 11:30 a.m. and may contact you if we have questions. I think we need to know the maximum flow capacity of the NAPI system. It seems like Giant is moving forward with tank placement, etc., in lieu of the previously proposed fire water pond in advance of engineering plans, submittals, etc. The issues associated with the NAPI Unit may affect Giant's plans.

Regarding the proposal to bypass AL2 during the installation of a flow meter device, flow from AL1 to EP1 may be approvable if the 3 aerators are fully functional in AL1, and you can provide us with a reasonable time-frame (ex., 1/2 day); and provided there are no other plant treatment system upsets or issues that have yet to be discussed.

Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 24, 2006 4:05 PM
To: 'Jim Lieb'; Steve Morris
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV
Subject: Alkylation Unit Fire 10/5/06 Sampling

Jim and Steve:

From my e-mail last Friday (October 19, 2006), based on the overflow of fire water at the Alkylation Unit (AU) and SE of the process area into the stormwater area, the OCD requires a couple of soil samples for chloride, fluoride and pH to support Giant's C-141 report stating that the overflow of hydrofluoric acid catalyst from the AU with fire water was diluted and neutral. The samples should be collected before the end of the week.

The location of one of the soil samples should be collected in the stormwater area where overflow from the SE region of the process area and Alkylation Unit moved northward (sample at the elbow or 90 degree turn). Another sample should be collected at the final pond drainage or accumulation area within the berm at the NE region of the process area. Another optional sample may be collected from the culvert near the mid-point of stormwater drainage.

Let me know when the samples are delivered to the lab. Please contact me if you have questions. Thank you.

GRCC06

GIANT

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

March 24, 2006

Ms. Hope Monzeglio
Project Leader
Permits Management Program
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, New Mexico 87505

SUBJECT: INFORMATION REQUEST FOR AERATION LAGOON AND API SEPARATOR FLOW RATE AND CAPACITY
GIANT REFINING COMPANY, CINIZA REFINERY
HWB-GRCC-MISC

Dear Ms. Monzeglio:

In response to your letter on the same subject, Giant Industries, Inc. – Ciniza Refinery hereby provides the capacity and flow rate data that you requested. The information is provided below:

a. The average flow rate of effluent discharged by the new API separator on a daily, weekly and monthly basis:

The most recent measurements show the total flow of effluent from Pond 2 at the permanent V-notch weir at 123 gpm. On the same day, Giant also measured the flow from the boiler plant where it enters the Pond 2 at the temporary V-notch weir at 22 gpm. Subtracting the boiler plant flow from the overall flow provides the flow from the aeration lagoons to Pond 1 = 123 gpm – 22 gpm = 101 gpm.

Subtracting the Pilot Station sanitary flow (8 gpm) from the flow from the aeration lagoons to Pond 1 then provides the flow of effluent from the new API separator = 101 gpm – 8 gpm = 93 gpm.

Daily flow = 93 gpm x 60 min/hr x 24 hr/day = 133,920 gpd
Weekly flow = 133,920 gpd x 7 days/week = 937,440 gpw
Monthly flow = 937,440 gpw x 4 weeks/month = 3.75 Mgm

b. The maximum capacity (volume) of each of the aeration lagoons 1 and 2:

Depth measurements of the lagoons were recently taken. Based on the recent measurements, the capacity of the ponds are:

Aeration lagoon 1 = 0.36 acre x 43,560 sq ft/acre x ¾ x 4.5 ft x 7.48 gal/cu ft = 395,900 gallons (approx)
Aeration lagoon 2 = 0.56 acre x 43,560 sq ft/acre x ¾ x 4.5 ft x 7.48 gal/cu ft = 615,800 gallons (approx)

c. The average daily flow (volume) currently passing through the aeration lagoons to evaporation pond 1:

The gpm value for the aeration lagoon flow rate was calculated in the determination of the flow rate in a. = 101 gpm

Daily flow = 101 gpm x 60 min/hr x 24 hr/day = 145,440 gpd

d. The maximum flow rate that the aeration lagoons can effectively treat:

Based on aerator size and hp rating, the maximum treatment capacity of both lagoons combined is 1,500 pounds per day of BOD. Based on an average BOD influent of 700 mg/l this correlates to:

1500 lbs/day x 2.2 kg/lb x 10^6 mg/kg x 1 l/700 mg x 1 gal/3.785 l = 1.24 MGD

e. The maximum capacity (volume of waste water that the New API separator can treat:

The new API separator was designed to treat 300 gpm of waste water total. It consists of two bays each of which can treat a maximum of 150 gpm for a total of 300 gpm.

f. The average volume of waste water that is treated by the new API separator on a daily, weekly and monthly basis:

The average amount of slop oil generated on a daily basis is approximately 5,500 gpd. This is the daily average amount sent to the NAPIS. The total amount of waste water on a daily basis also includes the waste water component. The waste water component was determined in a. at 133,920 gpd. Therefore, the total volume treated by the NAPIS is the sum of the two waste streams = 5,500 gpd + 133,920 gpd = 139,420 gpd.

Daily flow = 139,420 gpd
Weekly flow = 139,420 gpd x 7 days/week = 937,440 gpw
Monthly flow = 937,440 gpw x 4 weeks/yr = 3.75 Mgm

If you have any questions regarding the information provided in this letter, please contact me at (505) 722-0227.

Sincerely,

Jim Lieb
Environmental Engineer
Giant Industries, Inc. – Ciniza Refinery

Cc: Ed Riege
Steve Morris
Ed Rios

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, October 20, 2006 5:09 PM
To: 'Jim Lieb'; Steve Morris
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Subject: Some follow-up items from OCD's October 11, 2006 site inspection

Jim and Steve:

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Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

INTRODUCTION
In the past, converting a hydrofluoric acid (HF) alkylation unit to use sulfuric acid (H_2SO_4) catalyst meant reusing only the distillation section of the existing unit. The majority of the new equipment was designed to be installed in a grassroots fashion. This method could require a long unit downtime, significant plot space, and, in most cases, was prohibitively expensive.

STRATCO's ALKYSAFE® conversion/expansion process (U.S. Patent 5,284,990) reuses both the reaction and distillation sections of the existing HF alkylation unit. This simplifies and significantly lowers the cost and downtime of the conversion. In addition, this process is cost competitive with the mitigation systems currently being installed on HF alkylation units.

STRATCO has determined that both Phillips and UOP designed HF alkylation units can be converted and expanded into H_2SO_4 alkylation units with minimum capital expense. Although the converted units will not employ STRATCO Contactor reactors, the alkylate octane will be higher than that of the original HF units in many cases. The alkylate product rate can usually be substantially increased since the H_2SO_4 process optimally operates at a lower external isobutane to olefin (I/O) ratio than the HF process. Therefore, the same fractionation equipment will typically support increased alkylate production.

The cost of the expansion is estimated to be comparable to the average cost of installing effective HF aerosol mitigation and isolation equipment. Much of the reaction zone equipment may be modified and reused. The fractionators typically require no major modifications. The only new major equipment required are a closed-loop refrigeration system, a treating section for the reactor effluent, acid blowdown and storage facilities. Some existing equipment may be reused in the acid blowdown section of the unit.

Several refiners have expressed interest in this process because of the safety and expansion benefits.

BACKGROUND
Many refiners have increasing needs for additional alkylation capacity to meet reformulated gasoline regulations, lower gasoline vapor pressure requirements, and/or increased gasoline demand.

However, the owners and operators of HF alkylation units in most parts of the world are faced with public concern and regulatory attention regarding the safety of their units. The problem, of course, is that the catalyst forms a hazardous aerosol when released as a superheated liquid. This dense aerosol cloud has the potential to persist at toxic concentrations for long distances downwind of a release.

While the industry's record has been good, this potential has led environmental activist groups and various regulatory bodies to attack the use of HF in refining and chemical plants. For these reasons it is often very difficult to obtain permits to expand an existing HF unit or build a new alkylation unit. This trend is clearly seen by the fact that an overwhelming majority of the alkylation units constructed worldwide during the 1990s use H_2SO_4 catalyst.

OPTIONS FOR HF ALKYLATION UNITS
What options do refiners have in responding to regulatory pressure intended to assure the safety of their HF alkylation units? Fundamentally, there are three approaches that may be taken: mitigation, HF modifiers, or conversion to another catalyst such as sulfuric acid. We will explore each of these options in more detail.

Mitigation
Currently mitigation of the downwind impact of an HF release is the option most frequently employed. Mitigation systems usually include detection, isolation, water spray, and remote deinventory facilities. The first goal of these systems is to detect an incipient acid release. Once a leak is detected, the goal becomes to reliably isolate the major inventories of acid from the release; remove the acid from the leaking portion of the unit to a safe storage location; and finally, erect a wall of water between the leak and the community to absorb a substantial amount of the acid cloud on site.

Based on responses at Oil and Gas Journal's seminar on alkylation in Houston (October 31 -

November 1, 1994), the typical cost of adding mitigation facilities to an existing HF alkylation unit is between $20 and $30 million (U.S.). One Los Angeles refiner reportedly spent $50 million (U.S.) on their mitigation system.

To be effective, mitigation facilities must be fast acting. The water curtain and water cannons must be in operation within seconds after the onset of the release. Isolation and HF deinventory operations must take place within minutes. All of these facilities must be tested at some regular frequency to insure they are operable.

Deinventory systems usually involve large vessels with large acid movement devices. Plant isolation systems may require from 10 to 80 remote-operated, fireproofed, testable valves and may also require additional pressure relief valves in HF service.

The reliability of mitigation systems is unknown at this time. Also, this large capital expenditure provides no process benefit to the alkylation unit (i.e., no increase in capacity or product quality).

HF Modifiers

Modification of the physical properties of the HF catalyst is a second avenue the refiner may explore. Much research is focused on the development of HF modifiers (chemical additives) that reduce the volatility and aerosol formation properties of HF. Recent tests of two of these additives have indicated substantial reductions in HF aerosol and vapor cloud formation. Figures quoted are in the range of 63-80% reduction of airborne HF due to the additive.

Additives to modify the properties of HF are still in the developmental stage. Their effectiveness in reducing HF aerosol formation is commercially unproven at present. The capital and operating cost of a commercial installation is not known, but could be significant.

The developers of the HF modifiers foresee using the additive in conjunction with an effective mitigation system. When coupled with a water application system designed for a 40/1 water/HF ratio, reduction in the quantity of airborne HF would be in the range of 95-97% compared to an unmitigated release from an alkylation unit without additive. This combination may be required to meet the ultimate rules set by the regulators.

Conversion

The third option is to convert the alkylation unit to use a catalyst that has no aerosol forming tendencies. Sulfuric acid is the most likely catalyst to replace HF because it is commercially proven and does not form an aerosol.

Other potential catalysts such as "solid catalysts" (SbF_5, BF_3, $AlCl_3$, $Zr(SO_4)_2$, or Trifluoromethane Sulfonic Acid on solid carriers) are not being considered in this paper since they have not proven to be economically or commercially viable to date.

HF properties are much different from the properties of sulfuric acid catalyst, and therefore, the optimum reaction conditions are different. The major process differences in a sulfuric acid alkylation unit are lower reaction temperatures and pressures, higher mixing energies, and effluent treatment of the reactor effluent prior to fractionation. One of the major benefits of the conversion is a lower optimum isobutane to olefin (I/O) ratio in the H_2SO_4 process. Less fractionation capacity is required meaning that the feed and product rates can typically be increased without sacrificing alkylate quality.

STRATCO presented a paper at the 1988 NPRA Annual Meeting entitled, "Conversion from HF to H_2SO_4 Alkylation: Incentives, Benefits, and Capital Considerations" (AM-88-67). The conversion method discussed in that paper requires replacement of most of the equipment in the unit except for the distillation towers. This includes replacement of the HF reaction zone with STRATCO Contactor reactors and an effluent refrigeration system.

This previous form of conversion has octane, acid consumption, and capacity advantages over the one discussed in this paper. However, the downside of the previous form of conversion is that replacing the reaction zone and installing the more complicated refrigeration configuration is typically more capital intensive and requires more plot space and a longer downtime.

THE STRATCO ALKYSAFE PROCESS

The ALKYSAFE process reuses both the reaction and distillation sections. It may also be possible to construct much of the acid blowdown section from existing equipment. The majority of the new equipment (packaged refrigeration unit, effluent treating system, acid blowdown and tankage sections) can be constructed in advance of the conversion.

With planning, the remaining modifications and tie-ins can be completed within a four-week FCC turnaround. The short downtime and low capital equipment requirements make this process cost-competitive with the mitigation systems currently being installed on HF alkylation units.

The process flow of the converted unit will somewhat resemble the time tank units built between 1938 and 1958. This proven technology has been modernized to incorporate STRATCO's alkylation knowledge gained over the past 55 years. The converted reaction zone will consist of acid settlers with external emulsion pumps and reaction chillers. As compared to modern STRATCO effluent refrigerated alkylation units with state-of-the-art Contactors reactors, the octanes may be up to one octane number lower and the acid consumption will be approximately 10% higher. However, in many cases, the converted unit's alkylate octanes will be higher than the original HF unit especially if the feeds contain a high concentration of MTBE raffinate or amylenes since they are more suitable for H_2SO_4 alkylation.

The following is a description of the process differences and the resulting modifications which must be made in order to convert an HF unit to an H_2SO_4 alkylation unit via the ALKYSAFE process. Although there are nomenclature and process differences between the two HF licensors, this discussion generically describes the equipment modifications to apply to both Phillips and UOP HF units.

Reaction Zone

The sulfuric acid alkylation reaction is optimized by emulsifying the H_2SO_4 and hydrocarbon reaction mixture to maximize the surface area of the isobutane within the continuous acid phase. This reduces the side reactions and increases the desired alkylation reaction. Only a small amount of mixing is required in the reaction zone of an HF unit because isobutane is much more soluble in HF than in H_2SO_4. Therefore, the conversion requires equipment to provide sufficient emulsification in the reaction zone.

Emulsion pumps and static mixers are added between the acid settlers and the reaction coolers. This provides the necessary pressure drop and turbulence to emulsify the H_2SO_4 and hydrocarbon mixture. The hydrocarbon feeds are injected into the suction of the emulsion pumps rather than directly into the reaction chillers as with the original HF unit. The emulsion will flow from the pumps through the reaction chillers and then to the acid settler. Additional surface area may be required in the reaction chiller section depending on the desired design alkylate rate. The trays and other internals of the acid settlers are removed or modified to minimize turbulence. Since the H_2SO_4 and hydrocarbon are highly emulsified, the hydrocarbon takes much longer to separate from the H_2SO_4 than from the HF.

Depending on the residence time in the system, additional settling volume may be needed to provide adequate hold-up time to facilitate separation of the hydrocarbon and spent acid. However, some carryover of acid in the hydrocarbon effluent is not a problem since it will be recovered in the downstream acid wash.

Most types of monel material in potential contact with H_2SO_4 (>50 wt%) should be replaced with carbon steel or Alloy 20. Valves in frequent contact with H_2SO_4 should be constructed with Alloy 20 trim.

Refrigeration Section

Both the HF and the H_2SO_4 alkylation reactions release significant (but similar) amounts of heat. The HF reaction occurs at approximately 100°F (38°C) and uses cooling water to remove the heat of reaction. The H_2SO_4 reaction is optimized at 45°-50°F (7°-10°C) which requires a refrigeration section to remove the heat of reaction. Therefore, the water-cooled reaction coolers are to be replaced or modified to refrigerated reaction chillers.

A closed-loop, packaged propane (or Freon substitute) refrigeration section is added to the unit.

Since the heat loads are similar, the net cooling tower load for the plant remains about the same after conversion.

In order to minimize cooling requirements, the entire reaction zone is insulated with cold insulation. Also, feed/effluent exchangers are added to the unit to further conserve refrigeration energy. If the reaction zone feeds are not dry (see effluent treating section), precooling the feed has the added benefit of dropping out free water which can be removed in a coalescer to reduce acid dilution (consumption).

Figures 1 and 2 show the reaction zone modifications required in both a Phillips and a UOP HF unit:

Figure 1: Phillips Reaction Zone Modifications

New Modify Retire
Acid Settler o
Reaction Chillers o or o
HF Acid Storage (After Settler) o
HF Acid Recontactor o or o
Emulsion Pumps o
Feed/Effluent Exchangers o
STRATCO Acid Analyzer o

Figure 2: UOP Reaction Zone Modifications

New Modify
Acid Settler o
Reaction Chillers o or o
After Settler o or o
Emulsion Pumps o
Feed/Effluent Exchangers o
STRATCO Acid Analyzer o

Reactor Effluent Treating
The effluent from the H_2SO_4 alkylation reaction contains small quantities of organic sulfates (esters) which, if not removed, can contribute to fouling and corrosion in the fractionation section. A treating system is therefore added to remove these components from the reactor effluent.

This can either be STRATCO's standard fresh acid wash (with electrostatic precipitator) followed by a hot alkaline water wash or an alternate fresh acid wash (with EP) followed by a bauxite treater. Retired vessels in the existing unit may be modified for use in the effluent treating system.

The bauxite treater option has the added benefit of keeping the recycle isobutane dry. If the feed dryers that already exist in the HF unit are reused in combination with bauxite treating, almost no water will enter the reaction zone. This will lower acid consumption, increase the alkylate octane and minimize corrosion rates in the unit.

Figure 3 shows STRATCO's standard fresh acid wash / hot alkaline water wash system:

Figure 3: STRATCO's Standard Fresh Acid / Alkaline Water Wash

Fractionation
The fractionation systems in the various HF unit designs vary significantly from one unit to another -- even from the same licensor. However, each design has the common purpose of separating propane, recycle isobutane, normal butane, and alkylate from the reactor effluent stream (and possibly a low-purity makeup isobutane feed). The fractionators will have the same function after the conversion but will have more capacity (for a given olefin feed rate) for the following reasons:

The HF-catalyzed reaction generates propane via a hydrogen-transfer side reaction:

$C_3{=} + iC_4 \rightarrow C_3 + iC_4{=}$

This reaction is much less significant in H_2SO_4-catalyzed reactions and therefore the amount of propane produced in the converted unit is negligible. Also, the effluent from the HF reaction zone contains free HF that behaves like ethane in the fractionation section. In order to condense the HF, the depropanizer section operates at a much higher pressure than what would be required if no HF were present.

Therefore, besides decreasing the propane make, converting the unit also unloads the depropanizer section by lowering the operating pressure and temperatures to a more optimum level (that is, differences in relative volatilities between propane and isobutane will increase). This reduces the reflux rate and the reboiler temperature and duty requirements for a given feed basis.

Since the isobutane recycle requirements are less with H_2SO_4 than with the HF-catalyzed reactions, the deisobutanizer (or isostripper) recycle isobutane flowrate can typically be reduced for a given feed basis. This provides tower capacity for increased alkylate throughput or for improved alkylate octane.

The debutanizer section of the HF unit is typically reboiled with a fired heater to reach a temperature level that thermally decomposes the organic fluorides in the alkylate. Since no fluorides will be present in the converted unit, a steam reboiler can be used in place of the fired heater. Safety, economics, and stack emission issues will determine whether or not the fired heater should be replaced.

Acid Blowdown / Tankage
A blowdown drum is added in order to decant and/or vaporize any remaining hydrocarbon from the spent acid before flowing to tankage. This drum is also used during shutdown to deinventory the acid from the unit. The existing acid relief neutralizer will stay in service, but plugging with fluoride salts will be eliminated. If the alkaline water wash system is incorporated, a water degassing drum and a water neutralizatiion basin are required for treatment of spent alkaline water before being discharged to the refinery wastewater treatment facility (existing equipment may be repiped and used for this purpose.

New fresh and spent acid tanks are required for the modified unit. The tanks are designed to store acid for 7-10 days of operation. A loading/unloading facility is also needed for moving the acid into trucks or rail cars for transport to and from the regeneration plant. If on-site acid regeneration is desired, modular plants are available at a modest cost and the loading/unloading facility is not needed.

Retired Equipment
The HF unit's facilities for acid regeneration, KOH regeneration, disposal of acid soluble oils (ASO), disposal of calcium fluoride, sodium fluoride and spent caustic are eliminated. And since the products from H_2SO_4 alkylation units require no further treatment, the product treaters are no longer necessary.

CONCLUSIONS
A refiner currently has three options to reduce the safety risk of his HF alkylation unit: mitigation, HF modifiers, or conversion to sulfuric acid catalyst. Of these three options, only conversion is absolutely certain to eliminate the risk of releasing an HF aerosol cloud.

A refiner can convert an HF unit to one that uses H_2SO_4 for approximately the same cost as an effective mitigation system. The refiner will also typically gain additional capacity and higher octane with the conversion.

For these reasons, the ALKYSAFE low cost conversion/expansion process should be considered by all refiners who have plans to increase the capacity or upgrade the safety facilities of their HF alkylation unit.

For additional information on this technology, please see the Contact Us section or call 913-338-2559.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, October 20, 2006 9:28 AM
To: Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: RE: Meeting

If we have time, we may want to discuss the Giant-Ciniza Refinery NAPI Unit built over shallow ground water, leakage, repair, secondary containment issues with consideration of recommending a new API unit with higher treatment capacity to handle all process water at the facility. This is an inspection follow-up issue that needs to be addressed based on recent tank placements near fire water pond area and verbal suggestions by Giant that they want to pursue their tank option rather than the fire-water pond proposal to handle OAPI water. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

From: Monzeglio, Hope, NMENV
Sent: Thursday, October 19, 2006 4:02 PM
To: Chavez, Carl J, EMNRD; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: RE: Meeting

Thanks, see you then.

Hope

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 19, 2006 3:45 PM
To: Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: RE: Meeting

Hope:

Wayne, Cheryl O'Connor (Attorney) and I will arrive at HWB on Thursday at around 10 a.m. on Nov. 2, 2006 for the meeting. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

From: Monzeglio, Hope, NMENV
Sent: Thursday, October 19, 2006 8:34 AM
To: Price, Wayne, EMNRD; Chavez, Carl J, EMNRD
Cc: Cobrain, Dave, NMENV
Subject: Meeting

Wayne and Carl

Dave and I would like to set up a meeting with both of you to discuss OCD's compliance Order and NMED's Order pertaining to Giant Bloomfield to discuss areas that overlap. We are available Wed. November 1, 2006 in the afternoon and any time on Thursday November 2 and Friday November 3. I will reserve a conference room upon confirming the meeting date.

Thanks

Hope

Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505
Phone: (505) 428-2545
Fax: (505)-428-2567
hope.monzeglio@state.nm.us

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Monday, October 16, 2006 4:15 PM
To: Monzeglio, Hope, NMENV
Cc: Chavez, Carl J, EMNRD; Ed Riege; Steve Morris
Subject: Dye Trace Report Follow-up

Hope: Attached is Trihydro's report containing their responses to the NMED comment letter regarding the dye trace report that Giant – Ciniza submitted to NMED in June 2006. We are mailing a hard copy of the report to you whih you should receive shortly.

If you have any questions, please contact me at (505) 722-0227 or at jlieb@giant.com

Sincerely,

Jim Lieb

Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Trihydro
CORPORATION

October 13, 2006

Ms. Hope Monzeglio
Environmental Specialist
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe, NM 87505

RE: Responses to NMED comments of the Ciniza Refinery Dye Tracer Study

Dear Ms. Monzeglio:

Giant Refining, Ciniza Refinery (Refinery) submitted a report entitled "Dye Tracer Study 2006" (Report) to the New Mexico Environmental Department (NMED) in late June 2006. This report detailed a study, conducted in April 2006, that utilized dye to determine if a cross-connect existed between the process and storm sewer systems at the Ciniza Refinery. The NMED commented on the Report in a letter to Mr. Ed Riege dated August 14, 2006. The correspondence included eight comments regarding the methods and procedures used in the Dye Tracer Study. The purpose of this letter is to respond to the comments in the NMED correspondence.

NMED Comment "A."

The dye study was conducted during a facility turnaround, which introduces a variety of different variables (e.g., low wastewater discharge conditions) that can yield different results than if the dye study was conducted when the facility was operating at full capacity with all processing units operating and water constantly flowing through the sewer systems.

Response to NMED comment "A."

Trihydro understood that the Refinery would be undergoing turnaround and that some units may not have had adequate flow through the process sewer system. Inadequate process sewer flow, for a dye tracer study, can be the result of a turnaround or normal refining operations. Therefore, water hoses were utilized to provide more than sufficient flow to carry dye through those sections of sewer where flow was not adequate. Water hoses were also used to create sufficient flow in the storm sewer because dry weather conditions during the course of the study prevented storm flow through the storm sewer system.

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NMED Comment "B."

The Permittee observed "green oil" during the dye tracer study (the dye did not fluoresce when visually examined under ultraviolet light (UV) light) in the stormwater sewer system, which was thought to be slurry from the [Fluid Catalytic Cracking Unit] FCCU. The Permittee states in the conclusions section of the Report that "it was determined that green-colored antifreeze/coolant or gas oil was sometimes present in the storm sewer system." The final source of the "green colored oil" was never identified or further discussed in the report. The presence of the "green oil" signifies some type of cross-connect, leak or spill into the stormwater sewer system or it would not be present.

Response to NMED comment "B."

Trihydro partially concurs with NMED regarding the presence of "green oil" in that it signifies a leak or spill entering the storm sewer drains. It is not possible at the time of the study to determine the source of the above-ground leak or spill that occurred during the dye tracer study. However, Giant strongly suspects a storm sewer drain in the FCCU unit was the point of entry for the leaked liquid because it is located near a filter pot that filters the green slurry oil. The leak or spill was most likely temporary because the green substance was not observed in all samples collected during the study. Giant has since sealed off the storm sewer drain in the FCCU area where the green slurry oil likely leaked during the dye tracer study.

During a subsequent visit to the Ciniza Refinery, green colored oil was observed in the Fluid Catalytic Cracking Unit (FCCU). The FCCU was undergoing a turnaround during this visit and thus bundle exchangers were being cleaned and pumps were being drained. Figure 6 is a photo, taken during a site visit in September 2006 that shows green oil residue on an FCCU pump process drain. Green oil was also observed at the bundle cleaning pad. Bundle exchangers were being cleaned using high pressured fire water. Thus, the green color was only due to the green oil. Operations personnel were interviewed and the green oil was confirmed to be slurry oil.

Additionally, as described in section 3.8 of the Report, test samples were created. Several test samples were used to determine how a sample would fluoresce with different dye dilutions. When the "green oil" samples were compared to the different dye dilution test samples, the color of the "green oil" did not match the color of any of the test samples. The "green oil" samples were compared to the test samples with and without the aid of UV light. Further the "green oil" did not fluoresce and thus could not have been introduced into the storm sewer as part of the dye tracer study. The presence of the green oil is irrelevant to the dye tracer study because it could have entered the system from surface drains.

NMED Comment "C."

The Permittee states in Section 3.3 that red dye was used to determine if any cross-connects existed in the Alkylation unit. Since no red dye was detected visually, it was believed no cross-connects existed. During this test "green oil" was observed visually in the lines, which did not fluoresce under UV light. However, the Permittee never determined the source of this "green oil" either. Until the source of the "green oil" is verified, it would appear some type of cross-connects or leaks exists within the Alkylation unit or elsewhere.

Response to NMED comment "C."

Trihydro partially concurs with NMED regarding the presence of "green oil" in the storm sewer system near the Alkylation unit. Trihydro believes the green oil signifies a leak or spill entering the storm sewer drains. For reasons explained in the report and this response in this letter, Trihydro believes that cross connections are not an issue. It is not possible at this time to determine the source of the above-ground leak or spill that occurred during the dye tracer study. However, Giant strongly suspects a storm sewer drain in the FCCU unit was the point of entry for the leaked liquid because it is located near a filter pot that filters the green slurry oil. The leak or spill was most likely temporary because the green substance was not observed in all the samples collected during the study. Giant has since sealed off the suspected storm sewer drain in the nearby FCCU unit that was the likely source of the leaked green slurry oil.

For further explanation please see Response to NMED comment "D."

NMED Comment "D."

Inspections and reporting of the cross connection between the stormwater sewer system and the process sewer system were inconsistent. The New API Separator (NAPIS) was not sampled each time a unit was checked to ensure the dye had reached the process sewer effluent (if it was checked at each unit, this was not always stated in the Report). The Permittee does not mention, in Section 3.3 (Alkylation Unit), the collection of samples from NAPIS; however, the Permittee does mention, in Section 3.4 (Treating Unit), the collection of samples from the NAPIS to verify that dye had reached the process sewer effluent.

Response to NMED Comment "D."

The NAPIS was not sampled as each unit's sewer systems were checked for cross-connects. However, the NAPIS was sampled during the initial and second dye test of the entire sewer system (sections 3.1 and 3.2). The NAPIS was also sampled when testing the units farthest downstream (or just upstream of the NAPIS) for cross-connects. Therefore the NAPIS was sampled when testing the Isomerization (Isom), Naphtha Hydrotreating Unit (NHT), and Treating units. Once these sewer systems sections were conclusively cleared for the possibility of cross-connects, it was considered unnecessary to sample that far downstream (the NAPIS) when testing the remaining units. The downstream section of the sewer

system was considered free of cross-connects because they are simple straight-runs that are separated by considerable distance with no cross connect. This was verified further by a Giant employee familiar with the storm sewer installation and present while the downstream portion was installed. Therefore, for other units, it was only necessary to ensure the dye had left the process unit. After it was determined the dye was leaving the process unit, the storm sewer was observed for the presence of dye.

The sampling activities were detailed in Appendix A of the Report. Appendix A from the Report is summarized in Table 1 attached to this letter for clarification of sample locations and times. Table 1 lists the locations where dye was introduced into the system, time the dye was introduced into the system, location of storm sewer observation, time of storm sewer observations, results of observations, time of samples collected, and results of sample analysis with UV light.

NMED comment "E."

The amount of time spent to observe the dye flowing through the system is unclear. Only the time the dye entered the system was recorded. The Permittee does not describe how specific time lengths were selected to check for the appearance of the dye in the stormwater sewer system at specific locations. For example, stormwater sewer MH17 was observed for approximately 30 minutes after dye was introduced into the Gas Concentration Unit and since dye did not appear, it was assumed there was no cross-connect. The Permittee does not assert the possibility that dye could have reached the storm sewer or leaked elsewhere or that the dye may not have reached the stormwater sewer system after 30 minutes due to an unforeseen obstacle and therefore was never observed.

Response to NMED comment "E."

The sampling activities were detailed in Appendix A of the Report. Appendix A from the Report is summarized in Table 1 attached to this letter for clarification of the time spent observing for the presence of dye in the process and storm sewer systems. Table 1 lists the locations where dye was introduced into the system, time the dye was introduced into the system, location of storm sewer observation, time of storm sewer observations, results of observations, time of samples collected, and results of sample analysis with UV light.

The time lengths selected to check for the appearance of dye was determined by the flow through each sewer and the proximity of the dye introduction location to the downstream storm and process sewer test locations (e.g. NAPIS and MH17). For example, it would take less time for dye introduced into the Treating Unit to reach the NAPIS and MH17 in comparison to the time for dye introduced into the Alkylation Unit to reach the NAPIS and MH17 (see Figures 1 through 5).

Additionally, if adequate flow did not exist in a sewer (process or storm), water hoses were used to create enough flow to carry dye through the sewer. Flow was verified by observation at the downstream

manhole and before collecting samples for analysis by UV light. To conclusively determine whether a cross connection existed, the storm sewer locations were observed until the dye would have reached the location, based on flow rates, if there was a cross-connect. Trihydro is confident obstacles did not exist because measures were taken to ensure there was sufficient flow through the systems (with water hoses) to carry the dye all the way through the sewer.

NMED comment "F."

NMED understands approximately 25,000 gallons per week of back-flush water (non-contact cooling water and heat exchanger) flows are entering into the OAPIS. However, this does not appear to be the total flow that was entering into the OAPIS during the dry period. The Permittee must explain how the non-contact cooling water and heat exchanger back-flush flows and process water will be distinguished from one another and identify the sources of other continuous flows observed in the OAPIS in the past year.

Response to NMED comment "F."

Heat exchanger back-flush water is a type of non-contact cooling water. Other types of non-contact cooling water would include rain and steam condensate. Unfortunately, it is not possible to distinguish the types of non-contact cooling water from one another. The sources of non-contact cooling water that entered the system during the dry period have been identified as back-flush water and steam condensate. The steam condensate locations were identified in the Report in Table 2.

Other sources of liquid (other than non-contact cooling water) entering the storm sewer system during the dry period was most likely due to inadvertent flows due to maintenance procedures that were followed incorrectly. These have been addressed and Ciniza is currently working to correct maintenance issues.

NMED comment "G."

It is unclear from the Figures provided in the Report where the process sewer system is in relation to the stormwater/non-process wastewater sewer system. An overlay map showing the two sewer systems would be beneficial. (e.g. it is not clear where MH17 in Figure 2 would appear in Figure 1).

Response to NMED comment "G."

Please see Figure 1 attached to this letter. Figure 1 shows the process sewer drain locations and the stormwater sewer drain locations on a Master Plot Plan of the Ciniza Refinery. The process sewer is designated by magenta lines and the storm sewer is designated by black lines.

NMED comment "H."

The Permittee must complete the last sentence found on page four of the cover letter titled "Sewer Training Outline." The sentence that ends with "and that."

Response to NMED comment "H."
Ciniza Refinery personnel have corrected the Sewer Training Outline and include it as an attachment with this letter.

Summary

Trihydro was fully aware of the operating condition of the Refinery at the time of the dye tracer test. Substantial effort was expended to counter these conditions and produce reliable test results. The final result of the dye tracer study is that sub-surface sewer cross-connections do not exist.

Currently, there are several storm sewer drain locations at the Refinery where it is possible for dry weather wastewater to drain into the storm sewer system. The Refinery is currently evaluating alternative methods of managing storm water and process waste water including an option to collect storm water in two large existing tanks that were installed for intended use as oil-water separators. However, the new API separator (NAPIS) was installed as the ultimate oil-water separation system and the two large tanks are currently unused. Accumulated stormwater would then be metered from the tanks into the NAPIS and benzene strippers for treatment prior to discharge into the Refinery's lagoons. The tanks would be piped such that process water could be diverted to them temporarily in the event of a malfunction at the NAPIS. Once the NAPIS is repaired the process water would then be routed back to the NAPIS.

If you have any further questions or comments please do not hesitate to contact either Mr. Jim Lieb or Mr. Ed Riege at 505-722-3833.

Sincerely,
Trihydro Corporation

For: Calvin Niss
Vice President

Regina Allen
Project Manager

072-003-001

cc: Ed Riege - Giant
Jim Lieb - Giant
Steve Morris - Giant
Carl Chavez – New Mexico Oil Conservation Division

Sewer Training Outline

The following items will be discussed during the Storm Sewer Training sessions:

- Review physical layouts of the storm sewer and process sewer systems most importantly highlighting the locations of storm sewer drains on the storm sewer diagrams. All storm sewer drains are painted green so as not to be confused with the process sewer drains.
- Review Section 5, Storm Sewer Drain Location Conclusions of the Trihydro report. Emphasize that the storm sewers are strictly for storm water and nothing else. Storm sewers that showed oil staining during the study particularly must be addressed in such a manner that oils will not enter the storm sewer system.
- Review the Recommendation Sections 6.1 and 6.2 in the Trihydro report. Proper draining procedures include, but are not limited to, routing of process water or other liquids through a hose or other suitable conduit to a process sewer drain thereby preventing liquids from flowing to a storm sewer drain. Proper draining procedures also include the routing of process water to a process sewer drain at a rate such that the process sewer drain does not become overwhelmed, resulting in a spill that may flow to a storm sewer drain. Proper draining procedures should be followed when draining all types of equipment
- Review Action plan letter with employees. Emphasize that employees need to regularly inspect process sewer drains for drain plugging. If process or storm water sewer drain plugging is observed, the plugging location must be immediately reported to the shift supervisor who will write a Level 5 work order to correct the plugging.
- Emphasize the importance of not allowing any piping to ever be routed to a storm drain and vigilance toward protection of the storm drains from entry of oil and other contaminants. Emphasize the importance of regulatory compliance.

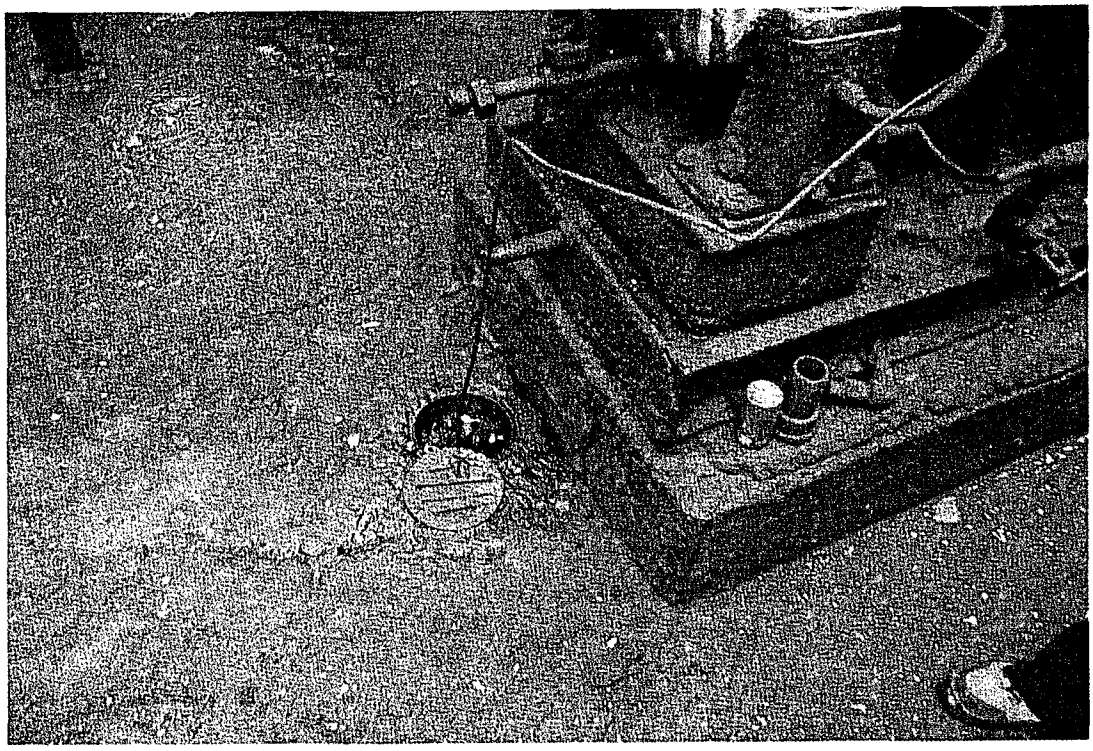


Figure 6: Green oil residue on an FCCU process drain. Picture taken September 22, 2006.

Table 1: Dye Trace Study Timeline of Activities
Ciniza Refinery, Giant Refining, Gallup, New Mexico

Unit	Time	Dye Introduction Location / Sample Activity	Dye Amount	Dye Color	Sample Observation Unaided by UV Light	Sample Observation Aided with UV Light	Flow
April 18, 2006: Initial Dye Trace Study of Entire Sewer System							
Dye Introduction Locations							
FCCU	1343	Sewer hub near F-P4 sewer bell (LCO Pump)	2 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box F1
Alkylation	1355	Sewer hub near AE44	3 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box A1
NHT	1355	Sewer hub near H-V3 Reactor	2 ounces	Green	N/A	N/A	Adequate flow from process drains to ensure dye disbursement throughout the process sewer system
Gas Con	1400	Sewer bell near G-P6 pump base	2 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box G1
Treaters	1410	Sewer bell just east of PSV-26	2 ounces	Green	N/A	N/A	Adequate flow from process drains to ensure dye disbursement throughout the process sewer system
Observations							
Junction Box C10	1440	Junction box observed beginning at 1440	N/A	Green	Dye was not observed	Dye was detected	Adequate flow from process drains to ensure dye disbursement throughout the process sewer system
MH17	1540	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
NAPIS effluent	1555	NAPIS effluent was sampled	N/A	Green	Dye was not detected	Dye was detected	Adequate flow from process drains to ensure dye disbursement throughout the process sewer system
OAPIS	1600	OAPIS was sampled	N/A	N/A	Unconfirmed due to interference	Unconfirmed due to interference	Adequate flow from unidentified sources
NAPIS influent	1620	NAPIS influent was sampled	N/A	N/A	Unconfirmed due to interference	Unconfirmed due to interference	Adequate flow from process drains to ensure dye disbursement throughout the process sewer system
April 19, 2006: Second Dye Trace Study of Entire Sewer System							
Observations							
MH17	0830	MH17 was sampled prior to introducing dye	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
Dye Introduction Locations							
Alkylation	0932	Sewer hub near AE44	8 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box A1
FCCU	0933	Sewer hub near F-P4 sewer bell (LCO Pump)	8 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box F1
Gas Con	0938	Sewer bell off of the G-P6 pump base	8 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box G1
NHT	0944	Junction box near Reactor H-V3	8 ounces	Green	N/A	N/A	Adequate flow was already present in box assuring dye disbursement throughout the process sewer system
Platformer	0947	Sewer hub near P5A Stabilizer Reflux Pump	8 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box P4
Isom	0958	Sewer near profac bottoms (IV11)	8 ounces	Green	N/A	N/A	1-2 minutes with water hose to ensure dye reached Isom manhole
Treaters	1000	Sewer bell just east of PSV-26	6 ounces	Green	N/A	N/A	Adequate flow from process drains ensuring dye reached junction box Q1
Observations							
Junction box C2	1045	Junction box C2 was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
MH17	1110	MH17 was sampled	N/A	N/A	Sample appeared orange	Light green hue	Adequate flow from unidentified sources
Aeration ponds	1100	Aeration ponds were sampled	N/A	N/A	Dye was detected	Dye was detected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
OAPIS effluent	1125	OAPIS effluent was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
OAPIS effluent	1435	OAPIS effluent was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
OAPIS effluent	1442	OAPIS effluent was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
April 20, 2006: Alky and Treating Units							
Dye Introduction Locations							
Alkylation	0826	A-V24 sewer drain hub	8 ounces	Red	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box A1
Alkylation	0827	Sewer hub near AE44	8 ounces	Red	N/A	N/A	1-2 minutes with water hose to ensure dye reached junction box A1
Observations							
MH17	0845	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
MH17	0900	MH17 was sampled	N/A	N/A	Dye was not detected	Light green hue but no red dye	Adequate flow from unidentified sources
MH17	1015	MH17 was sampled	N/A	N/A	Red hue was detected	Red hue did not fluoresce	Adequate flow from unidentified sources
Aeration Pond #1	1032	Aeration Pond #1 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
OAPIS	1040	OAPIS was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
NAPIS influent	1047	NAPIS influent was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
MH17	1300	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
Dye Introduction Locations							
Treating	1442	Drain near PSV-26	16 ounces	Orange	N/A	N/A	Adequate flow from SR Water Wash ensuring disbursement throughout the process sewer system

Table 1: Dye Trace Study Timeline of Activities
Ciniza Refinery, Giant Refining, Gallup, New Mexico

Unit	Time	Dye Introduction Location / Sample Activity	Dye Amount	Dye Color	Sample Observation Unaided by UV Light	Sample Observation Aided with UV Light	Flow
Observations							
MH17	1454	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
NAPIS influent	1500	NAPIS influent was sampled	N/A	N/A	Dye was not detected	Orange fluoresced under UV light	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
Dye Introduction Locations							
Treating	1525	Additional dye added to drain near PSV-26	48 ounces	Orange	N/A	N/A	Continuous flow from SR Water Wash ensuring disbursement throughout the process sewer system
Observations							
NAPIS influent	1548	NAPIS influent was sampled	N/A	N/A	Dye was not detected	Orange dye fluoresced	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
NAPIS influent	1555	NAPIS influent was sampled	N/A	N/A	Dye was not detected	Orange dye fluoresced	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
MH17	1550	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
MH17	1606	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
MH17	1612	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
April 21, 2006: Isom/NHT and FCC Units							
Dye Introduction Locations							
Isom	0757	Drain hub near Prefac Ovrhd Accum. (IV6)	32 ounces	Red	N/A	N/A	Intermittent flow with water hose to ensure dye reached Isom manhole
Observations							
NAPIS influent	NR	NAPIS influent was observed	N/A	N/A	Dye was not observed	Sample was not collected	It was determined flow was not adequate to move dye through the process sewer system
MH17	NR	MH17 was observed	N/A	N/A	Dye was not observed	Sample was not collected	It was determined flow was not adequate to move dye through the process sewer system
Isom manhole	0950	Isom manhole sampled	N/A	N/A	Dye was detected	Green dye fluoresced brightly	It was determined that the residual green dye was from the NHT and Isom units
Dye Introduction Locations							
Isom	1205	Drain hub near Prefac Ovrhd Accum. (IV6)	32 ounces	Red	N/A	N/A	Adequate flow from water hose to ensure dye reached the Isom manhole
Observations							
Isom manhole	1220	Isom manhole was observed	N/A	N/A	Green dye was observed	Sample was not collected	Green dye was observed flowing from Isom and NHT units
Isom manhole	1255	Isom manhole was observed	N/A	N/A	Red dye was observed	Sample was not collected	Red dye was observed to be flowing from the Isom unit.
NAPIS influent	1315	NAPIS influent was sampled	N/A	N/A	Dye was not observed	Green dye fluoresced brightly	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
MH17	1315	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
Dye Introduction Locations							
FCC	1538	Drain hub near F-P4 LCO Pump	16 ounces	Red	N/A	N/A	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
Observations							
Junction box F1	NR	Junction box was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
Junction box F2	NR	Junction box was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
Junction box F3	NR	Junction box was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
Junction box C10	1627	Junction box C10 was sampled	N/A	N/A	Dye was detected	Red dye fluoresced brightly	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
MH17	1700	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
April 24, 2006: Alky Unit							
Dye Introduction Locations							
Alkylation	0843	Sewer hub near AE44	32 ounces	Green	N/A	N/A	Adequate flow from water hose to ensure dye reached junction box A1
Observations							
MH17	0945	MH17 was sampled	N/A	N/A	Dye was not detected	Light green hue	Adequate flow from unidentified sources
Junction box CBZ-25	1100	Junction box was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
Junction box CBZ-21	1100	Junction box was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout the process sewer system
MH17	1057	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
MH17	1150	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources

Table 1: Dye Trace Study Timeline of Activities
Ciniza Refinery, Giant Refining, Gallup, New Mexico

Unit	Time	Dye Introduction Location / Sample Activity	Dye Amount	Dye Color	Sample Observation Unaided by UV Light	Sample Observation Aided with UV Light	Flow
April 25, 2006: Alky and Gas Con Unit							
Dye Introduction Locations							
Alkylation	0811	Sewer hub near AE44	8 ounces	Green	N/A	N/A	Adequate flow from water hose to ensure dye reached junction box A1
Observations							
MH4	0843	MH4 was observed	N/A	N/A	Dye was not observed	Sample was not collected	Insufficient amount of water for sample
Junction box CBZ-25	0913	Junction box CBZ-25 was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout process sewer system
MH13	0917	MH13 was sampled	N/A	N/A	Dye was not detected	Light green hue	Note: no flow was observed in MH13
MH4	NR	MH4 was observed	N/A	N/A	Dye was not observed	Sample was not collected	Adequate flow from water hose to ensure flow through storm sewer system
MH13	NR	MH13 was observed	N/A	N/A	Dye was not observed	Sample was not collected	Adequate flow from water hose to ensure flow through storm sewer system
Dye Introduction Locations							
Gas Con	1438	Drain hub near G-P6	16 ounces	Red	N/A	N/A	Adequate flow from water hose to ensure dye disbursement throughout the process sewer system
Observations							
Junction box G4	1504	Junction box G4 was sampled	N/A	N/A	Dye was detected	Red dye fluoresced brightly	Adequate flow from process drains ensuring dye disbursement throughout process sewer system
MH17	1505	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
MH17	1535	MH17 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from unidentified sources
April 26, 2006: Crude Unit							
Dye Introduction Locations							
Crude	1140	Process sewer pump drain hub for CP41B	16 ounces	Green	N/A	N/A	Adequate flow from water hose to ensure dye disbursement throughout the process sewer system
Observations							
Junction box C2	1145	Junction box was C2 observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout process sewer system
Junction box C3	1146	Junction box C3 was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout process sewer system
Junction box C10	1200	Junction box C10 was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout process sewer system
MH6	1231	MH6 was sampled	N/A	N/A	Dye was not detected	Light green hue	Adequate flow from water hose to ensure dye disbursement throughout the process sewer system
MH6	1412	MH6 was sampled	N/A	N/A	Dye was not detected	Unconfirmed	Adequate flow from water hose to ensure dye disbursement throughout the process sewer system
Dye Introduction Locations							
Crude	1532	Process sewer pump drain hub for CP41B	32 ounces	Red	N/A	N/A	Adequate flow from water hose to ensure dye disbursement throughout the process sewer system
Observations							
Junction box C2	1532	Junction box C2 was observed	N/A	N/A	Dye was observed	Sample was not collected	Adequate flow from process drains ensuring dye disbursement throughout process sewer system
MH6	1608	MH6 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from water hose to ensure flow through storm sewer system
MH6	1611	MH6 was sampled	N/A	N/A	Dye was not detected	Light green hue	Adequate flow from water hose to ensure flow through storm sewer system
MH6	1650	MH6 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from water hose to ensure flow through storm sewer system
April 27, 2006: Alky and Platformer Units							
Dye Introduction Locations							
Alkylation	0858	Sewer hub near AE44	48 ounces	Red	N/A	N/A	15 minutes of flow from water hose to ensure dye reached junction box A1
Observations							
MH13	0934	MH13 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from water hose to ensure flow through storm sewer system
MH4	0953	MH4 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from water hose to ensure flow through storm sewer system
MH13	1057	MH13 was observed	N/A	N/A	Dye was not detected	Sample was not collected	Adequate flow from water hose to ensure flow through storm sewer system
MH4`	1102	MH4 was observed	N/A	N/A	Dye was not detected	Sample was not collected	Adequate flow from water hose to ensure flow through storm sewer system
Dye Introduction Locations							
Platformer	1452	Drain hub P-P2B near Reactor Charge Pump	32 ounces	Red	N/A	N/A	Adequate flow from water hose to ensure dye disbursement throughout the process sewer system
Observations							
MH6	1521	MH6 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from water hose to ensure flow through storm sewer system
MH6	1523	MH6 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from water hose to ensure flow through storm sewer system
MH6	1538	MH6 was sampled	N/A	N/A	Dye was not detected	Dye was not detected	Adequate flow from water hose to ensure flow through storm sewer system

Notes

Table 1: Dye Trace Study Timeline of Activities
Ciniza Refinery, Giant Refining, Gallup, New Mexico

Unit	Time	Dye Introduction Location / Sample Activity	Dye Amount	Dye Color	Sample Observation Unaided by UV Light	Sample Observation Aided with UV Light	Flow

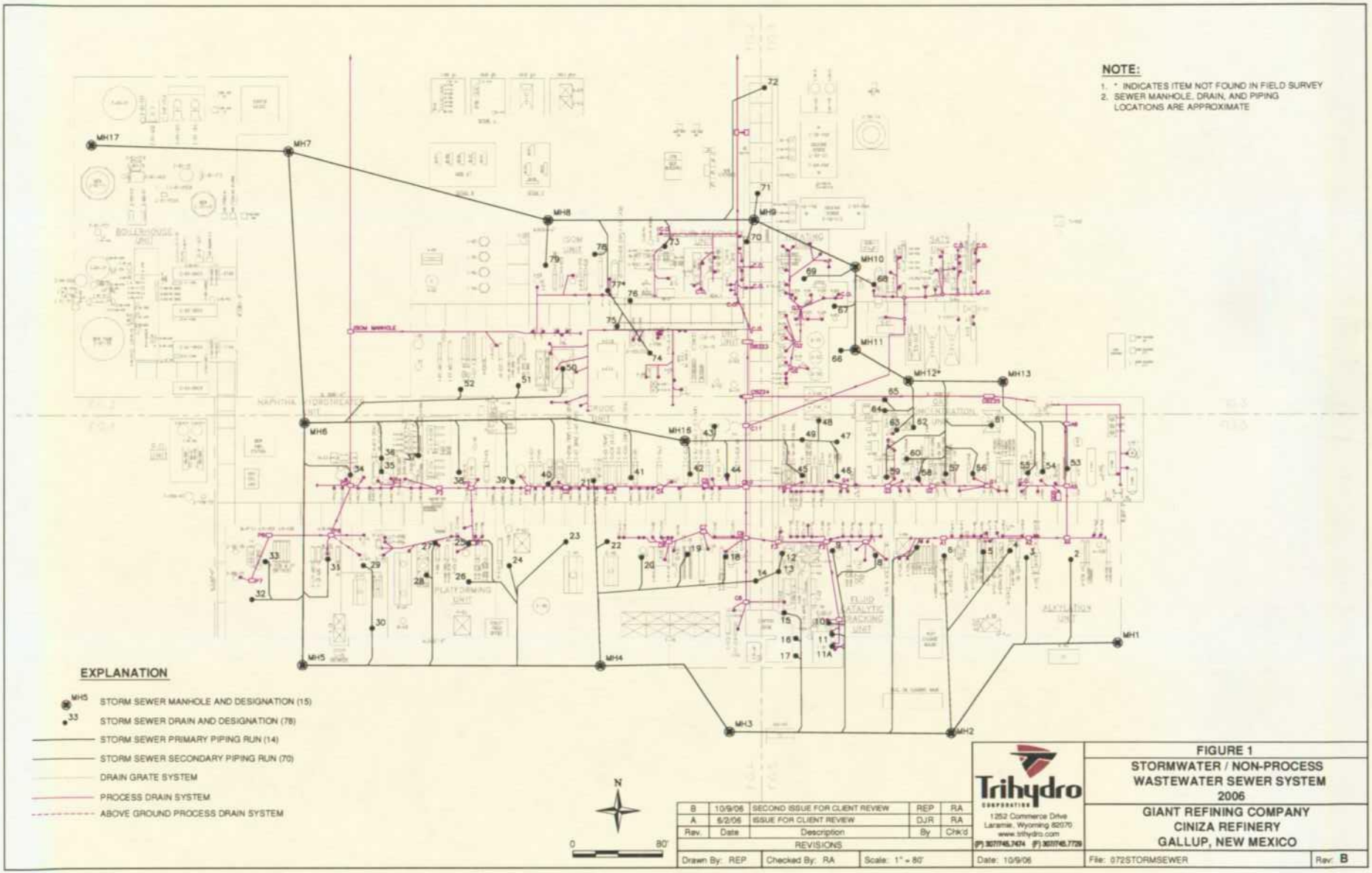
NR denotes Not Recorded

AT 100% CONCENTRATION OF OIL

Soil Sample Volume (yd^3)	Porosity at 30% Oil Vol. (yd^3)	Sand Vol. (yd^3)	Oil Dnsty lb/yd^3	Oil Mass (lbs)	Sand Dnsty lb/yd^3	Sand Mass (lbs)	Total Weight Total Vol. (lbs)	Oil Vol. (gal)	Oil Barrels
1	0.3	0.7	1211.8441	363.55323	4000	2800	3163.55323	60.592205	1.442672
10	3	7		3635.5323		28000	31635.5323	605.92205	14.42672
20	6	14		7271.0646		56000	63271.0646	1211.8441	28.85343
30	9	21		10906.5969		84000	94906.5969	1817.76615	43.28015
40	12	28		14542.1292		112000	126542.1292	2423.6882	57.70686
50	15	35		18177.6615		140000	158177.6615	3029.61025	72.13358
60	18	42		21813.1938		168000	189813.1938	3635.5323	86.56029
70	21	49		25448.7261		196000	221448.7261	4241.45435	100.987
80	24	56		29084.2584		224000	253084.2584	4847.3764	115.4137
90	27	63		32719.7907		252000	284719.7907	5453.29845	129.8404
100	30	70		36355.323		280000	316355.323	6059.2205	144.2672

AT 50% CONCENTRATION OF OIL

Soil Sample Volume (yd^3)	Porosity at 30% Oil Vol. (yd^3)	Sand Vol. (yd^3)	Oil Dnsty lb/yd^3	Oil Mass (lbs)	Sand Dnsty lb/yd^3	Sand Mass (lbs)	Total Weight Total Vol. (lbs)	Oil Vol. (gal)	Oil Barrels
1	0.3	0.7	1211.8441	181.776615	4000	2800	2981.776615	30.2961025	0.721336
10	3	7		1817.76615		28000	29817.76615	302.961025	7.213358
20	6	14		3635.5323		56000	59635.5323	605.92205	14.42672
30	9	21		5453.29845		84000	89453.29845	908.883075	21.64007
40	12	28		7271.0646		112000	119271.0646	1211.8441	28.85343
50	15	35		9088.83075		140000	149088.8308	1514.805125	36.06679
60	18	42		10906.5969		168000	178906.5969	1817.76615	43.28015
70	21	49		12724.3631		196000	208724.3631	2120.727175	50.4935
80	24	56		14542.1292		224000	238542.1292	2423.6882	57.70686
90	27	63		16359.8954		252000	268359.8954	2726.649225	64.92022
100	30	70		18177.6615		280000	298177.6615	3029.61025	72.13358



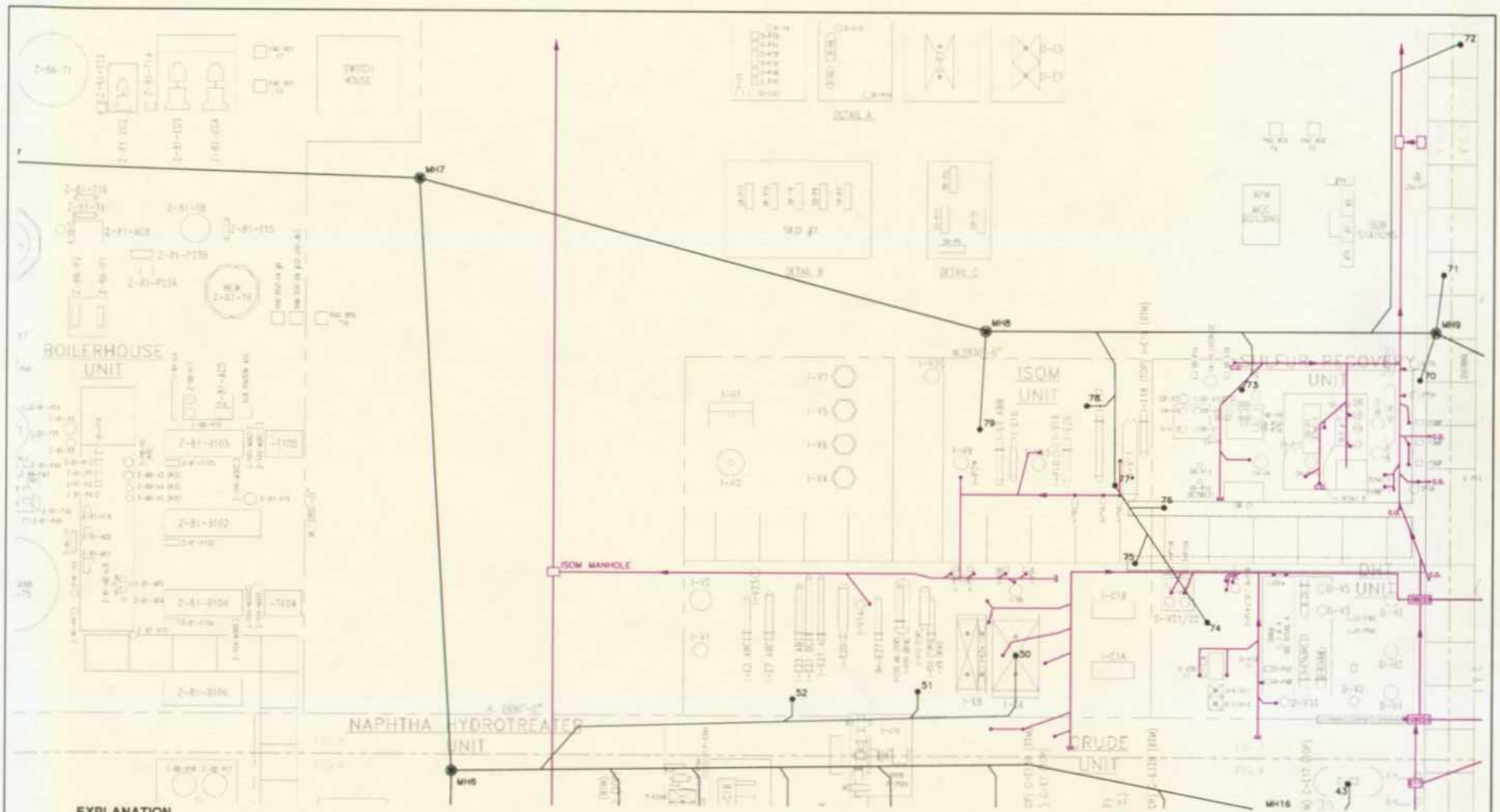
Rev.	Date	Description	By	Chk'd
B	10/9/06	SECOND ISSUE FOR CLIENT REVIEW	REP	RA
A	6/2/06	ISSUE FOR CLIENT REVIEW	DJR	RA

REVISIONS

Drawn By: REP | Checked By: RA | Scale: 1" = 80' | Date: 10/9/06 | File: 072STORMSEWER | Rev: B

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 3077745.7474 (F) 3077745.7729

FIGURE 1
STORMWATER / NON-PROCESS WASTEWATER SEWER SYSTEM 2006
GIANT REFINING COMPANY CINIZA REFINERY GALLUP, NEW MEXICO



EXPLANATION

- MH7 — STORM SEWER MANHOLE AND DESIGNATION (15)
- 52 — STORM SEWER DRAIN AND DESIGNATION (78)
- STORM SEWER PRIMARY PIPING RUN (14)
- STORM SEWER SECONDARY PIPING RUN (70)
- DRAIN GRATE SYSTEM
- PROCESS DRAIN SYSTEM

N

0 40'

NOTE:

1. * INDICATES ITEM NOT FOUND IN FIELD SURVEY
2. SEWER MANHOLE, DRAIN, AND PIPING LOCATIONS ARE APPROXIMATE

Rev.	Date	Description	By	Chk'd
B	10/9/06	SECOND ISSUE FOR CLIENT REVIEW	REP	RA

REVISIONS

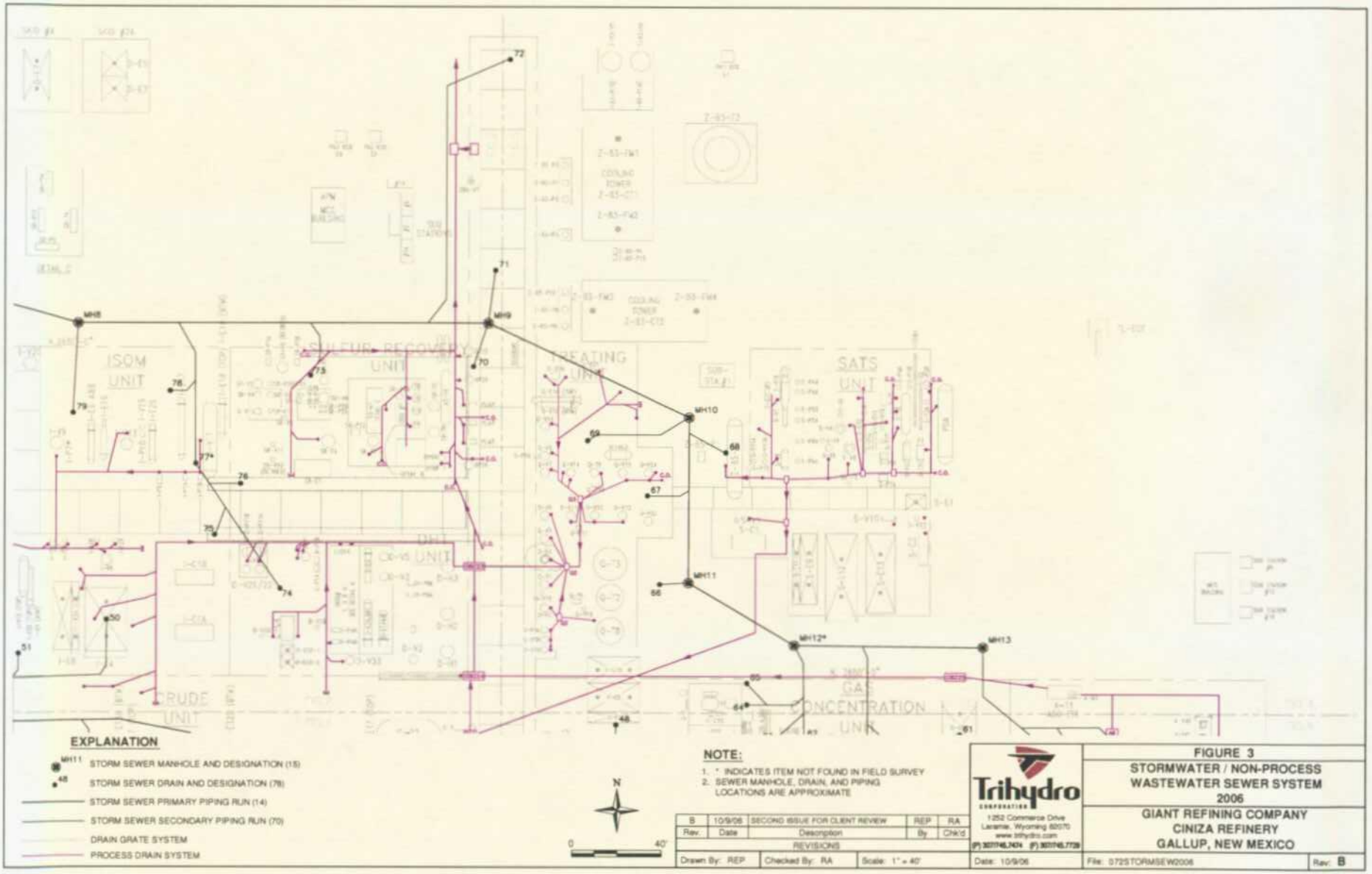
Drawn By: REP | Checked By: RA | Scale: 1" = 40'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745-7474 (F) 307/745-7729

Date: 10/9/06

FIGURE 2
STORMWATER / NON-PROCESS WASTEWATER SEWER SYSTEM 2006
GIANT REFINING COMPANY
CINIZA REFINERY
GALLUP, NEW MEXICO

File: 072STORMSEW2006 | Rev: B



NOTE:

1. * INDICATES ITEM NOT FOUND IN FIELD SURVEY
2. SEWER MANHOLE, DRAIN, AND PIPING LOCATIONS ARE APPROXIMATE

Rev.	Date	Description	By	Chk'd
B	10/9/06	SECOND ISSUE FOR CLIENT REVIEW	REP	RA

REVISIONS

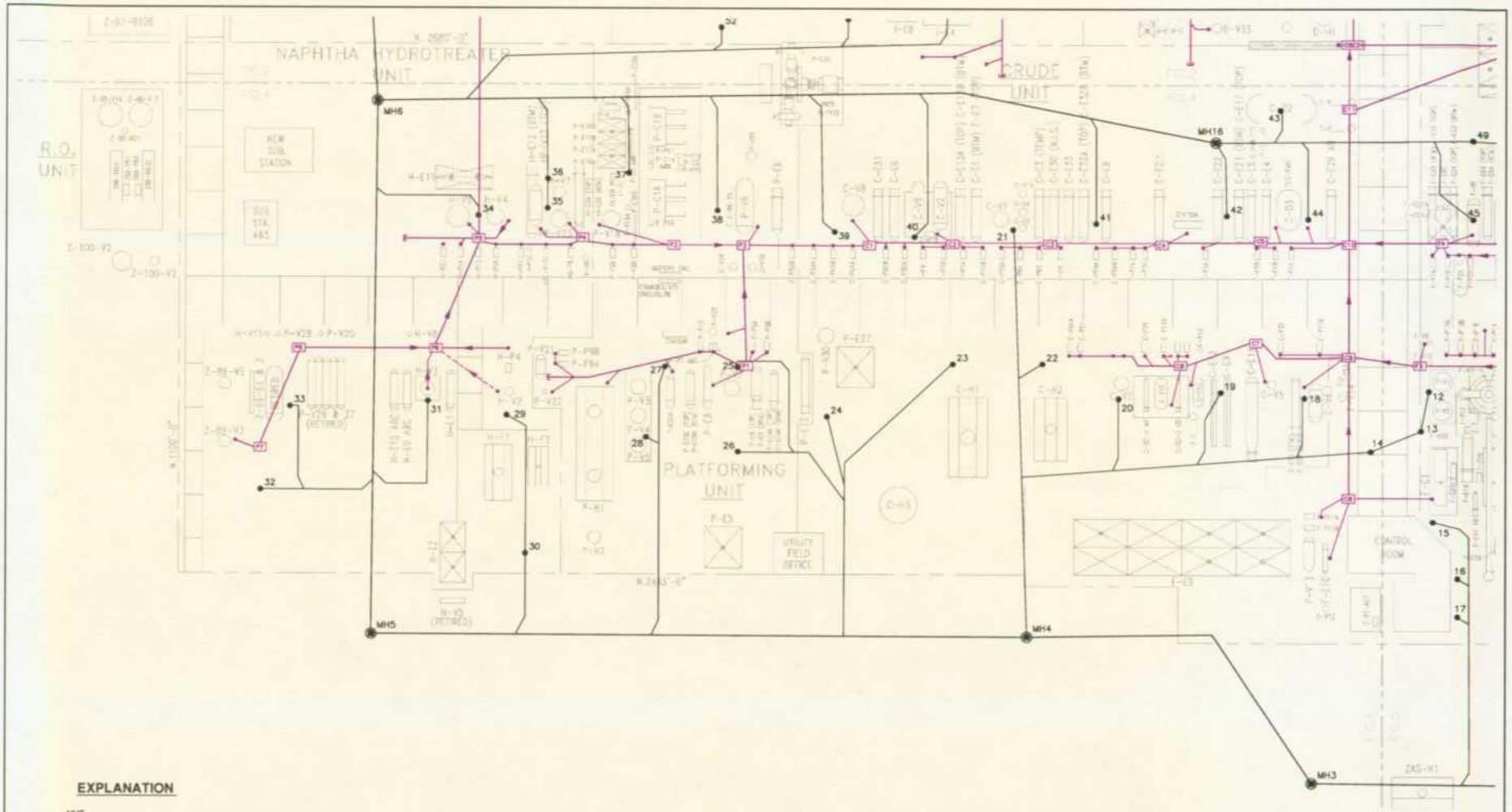
Drawn By: REP | Checked By: RA | Scale: 1" = 40'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307.745.7474 (F) 307.745.7729

Date: 10/9/06

FIGURE 3
STORMWATER / NON-PROCESS WASTEWATER SEWER SYSTEM 2006
GIANT REFINING COMPANY
CINIZA REFINERY
GALLUP, NEW MEXICO

File: 072STORMSEW2006 | Rev: B



EXPLANATION

- MH5 — STORM SEWER MANHOLE AND DESIGNATION (15)
- 33 — STORM SEWER DRAIN AND DESIGNATION (78)
- STORM SEWER PRIMARY PIPING RUN (14)
- STORM SEWER SECONDARY PIPING RUN (70)
- DRAIN GRATE SYSTEM
- PROCESS DRAIN SYSTEM
- ABOVE GROUND PROCESS DRAIN SYSTEM

N

0 40'

NOTE:

1. * INDICATES ITEM NOT FOUND IN FIELD SURVEY
2. SEWER MANHOLE, DRAIN, AND PIPING LOCATIONS ARE APPROXIMATE

Rev.	Date	Description	By	Chk'd
B	10/9/06	SECOND ISSUE FOR CLIENT REVIEW	REP	RA

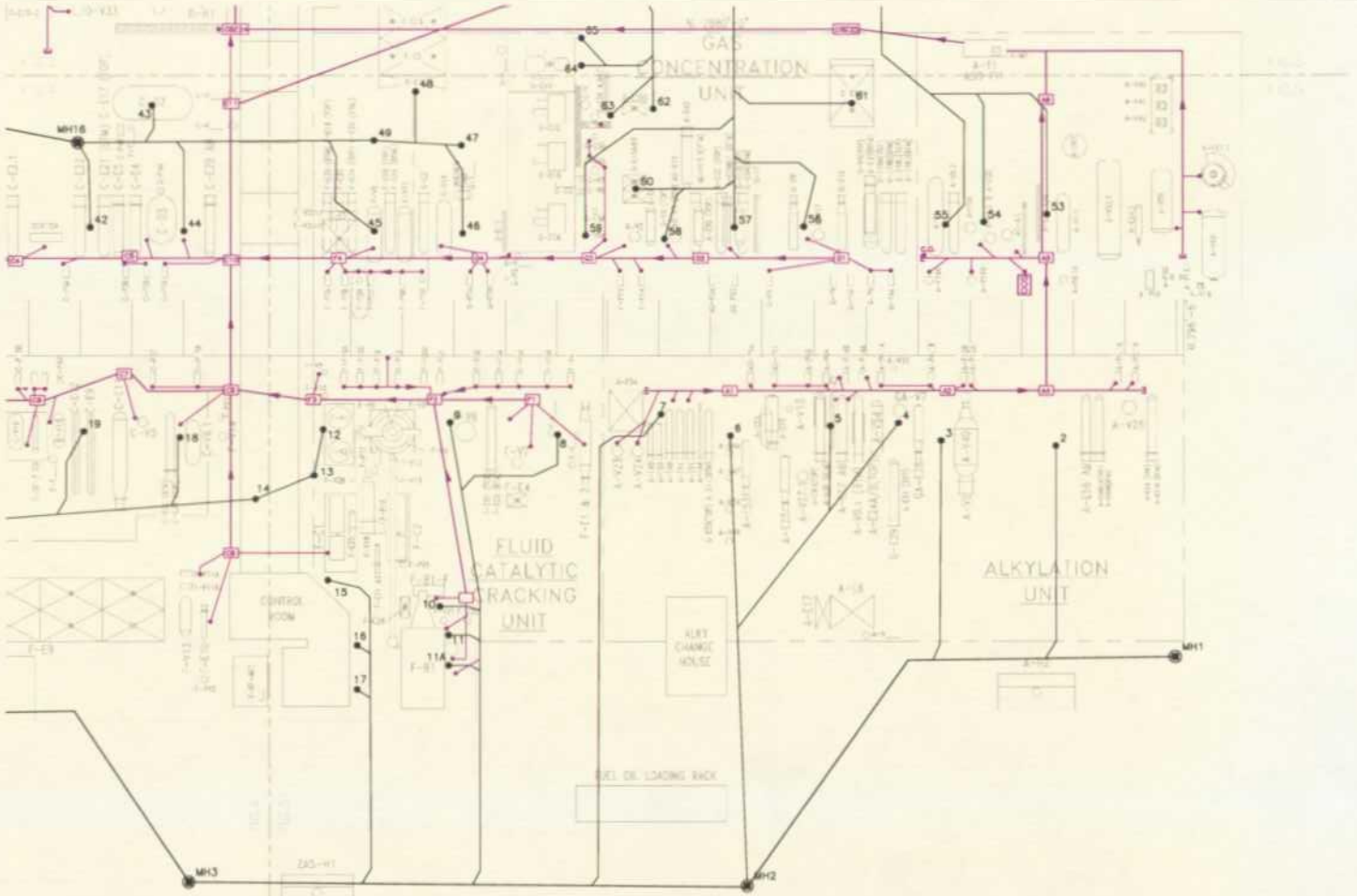
REVISIONS

Drawn By: REP | Checked By: RA | Scale: 1" = 40' | Date: 10/9/06

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 3077745.7474 (F) 3077745.7729

FIGURE 4
STORMWATER / NON-PROCESS WASTEWATER SEWER SYSTEM 2006
GIANT REFINING COMPANY CINIZA REFINERY GALLUP, NEW MEXICO

File: 072STORMSEW2006 | Rev: B



EXPLANATION

- MH3 — STORM SEWER MANHOLE AND DESIGNATION (15)
- 17 — STORM SEWER DRAIN AND DESIGNATION (78)
- STORM SEWER PRIMARY PIPING RUN (14)
- STORM SEWER SECONDARY PIPING RUN (70)
- DRAIN GRATE SYSTEM
- PROCESS DRAIN SYSTEM

N

0 40'

NOTE:

1. * INDICATES ITEM NOT FOUND IN FIELD SURVEY
2. SEWER MANHOLE, DRAIN, AND PIPING LOCATIONS ARE APPROXIMATE

Rev.	Date	Description	By	Chk'd
B	10/9/06	SECOND ISSUE FOR CLIENT REVIEW	REP	RA

REVISIONS

Drawn By: REP | Checked By: RA | Scale: 1" = 40'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 3077745.7474 (F) 3077745.7729

Date: 10/9/06

FIGURE 5

STORMWATER / NON-PROCESS WASTEWATER SEWER SYSTEM 2006

GIANT REFINING COMPANY
CINIZA REFINERY
GALLUP, NEW MEXICO

File: 072STORMSEW2006 | Rev: B

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Wednesday, October 11, 2006 10:14 AM
To: Monzeglio, Hope, NMENV
Cc: Chavez, Carl J, EMNRD
Subject: Revised RR Rack Lagoon Remedy Completion Report was put in the overnight

Hope,
The Revised RR Rack Lagoon Remedy Completion Report was put in the overnight to you yesterday so you should receive it this morning. Let me know if you do not receive it today. I also mailed a copy to Carl.

Regards,
Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

10/11/06
Fire Inspect. -
Alkylation Unit

NEW OIL WATER SEPARATOR
SECONDARY CONTAINMENT INSPECTIONS

START DEPTH TO BOTTOM OF SECONDARY CONTAINMENT EQUALS 13.25 FEET

DATE	WATER LAYER THICKNESS (FEET)	COMMENTS	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	MTBE (ug/L)	XYLENES, TOTAL (ug/L)
10/1/2004	*	* See attached inspection report dated 10/14/05					
10/14/2004	0.17						
11/18/2004	1.15						
12/16/2004	1.75						
1/21/2005	3.25						
2/15/2005	3.35	SAMPLED	1.1	0.9	0.62		5.7
3/17/2005	3.53						
4/11/2005	3.65						
5/3/2005	3.95						
6/10/2005	3.90						
7/6/2005	3.85						
8/3/2005	3.83						
9/15/2005	6.80	SAMPLED	150	130	ND	1000	58
9/29/2005	6.80						
10/3/2005	4.50	Today maintenance vacuumed out some water from here, Kerry said about 5 barrels.					
10/4/2005	5.50						
10/5/2005	0.15	This was just vacuumed out now. Water taken out about 10 barrels.					
10/12/2005	0.10	Continuous pumping of below grade tank.					
10/18/2005		Air driven pump removing all water but one inch on the bottom while repairs are being made to separator.					
10/26/2005		Air driven pump removing all water but one inch on the bottom while repairs are being made to separator.					
DEPTH TO BOTTOM OF SECONDARY CONTAINMENT EQUALS 13.1 FEET							
11/2/2005	1.00						
11/9/2005	1.00						
11/15/2005	1.20						
11/21/2005	1.40						
11/23/2005	1.55	After measuring, all water was pumped out.					
11/25/2005	0.22						
11/28/2005	0.35						
12/7/2005	0.65						
12/14/2005	0.80						
12/19/2005	1.20						
12/28/2005	1.80						
END 2005 START 2006 DEPTH TO BOTTOM OF SECONDARY CONTAINMENT EQUALS 13.1 FEET							
1/4/2006	1.95						
1/10/2006	2.15						
1/18/2006	2.25						
1/24/2006	2.35						
1/30/2006	2.55						
2/6/2006	2.80						
2/16/2006	3.10						
2/22/2006	3.20						
3/1/2006	3.30						
3/6/2006	3.35						
3/16/2006	3.55						
3/20/2006	3.67						
3/29/2006	3.80						
4/3/2006	3.85						
4/10/2006	3.95						
4/17/2006	4.05						

DATE	WATER LAYER THICKNESS (FEET)	COMMENTS	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	MTBE (ug/L)	XYLENES, TOTAL (ug/L)	ARSENIC mg/l	BARIUM mg/l	CHROMIUM mg/l	LEAD mg/l	SELENIUM mg/l	SILVER mg/l	MERCURY mg/L	DIESEL RANGE OGANICS (DRO) mg/l	MOTOR OIL RANGE ORGANICS (MRO) mg/l	GASOLINE RANGE ORGANICS (GRO) mg/l
4/19/2006		SAMPLED	7.3	ND	ND		ND	0.031	0.025	ND	ND	ND	ND	ND	6.2	ND	ND
4/25/2006	4.10																
5/2/2006	4.20																
5/10/2006	4.35	Pumped out aproximately 65 gallons total.															
5/10/2006	0.13	New measurement, water layer thickness.															
5/17/2006	0.85																
5/24/2006	1.00																
5/30/2006	1.08																
6/5/2006	1.13																
6/12/2006	1.20																
6/19/2006	1.33																
6/26/2006	1.39																
7/3/2006	1.42																
7/10/2006	1.53																
7/18/2006	1.62																
7/24/2006	1.75																
8/2/2006	1.75																
8/8/2006	1.87																
8/16/2006	2.15																
8/22/2006	2.52																
8/29/2006	3.16																
9/6/2006	3.10																
9/11/2006	3.20																
9/18/2006	3.25																
9/25/2006	3.27																
10/2/2006	3.30																
10/10	3.66																

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

October 10, 2006

Ms. Hope Monzeglio
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, BLDG 1
Santa Fe, New Mexico 87505

Mr. Carl Chavez
Environmental Bureau
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Ms. Monzeglio and Mr. Chavez:

Giant Refining, Inc Ciniza Refinery (Giant) has completed the revised Remedy Completion Report for the Railroad Rack Lagoon. Giant has revised the report to include the comments provided to Giant by the Hazardous Waste Bureau.

If you have any questions, please contact me at (505) 722-0227 or by email at jlieb@giant.com.

Sincerely,
Giant Refining, Inc.

Jim Lieb
Environmental Engineer

Cc: Ed Riege
Ed Rios
Steve Morris

VECTOR
ARIZONA

September 27, 2006

Mr. Jim Leib
Giant Industries, Inc. – Ciniza Refinery
I-40, Exit 39
Gallup, New Mexico 87301

RE: Storm Drain System Extension

Dear Jim,

The following letter proposal has been prepared by Vector Arizona (Vector) to define a scope of work and present a cost estimate to complete the development of a detailed piping design for an extension of the current storm drain system at the Giant Industries, Inc. – Ciniza Refinery (Ciniza). This letter has been prepared at the request of Ciniza.

Ciniza has been actively searching for economic alternatives for managing stormwater that falls within their process area. This piping plan would take the stormwater from the process area and store it in two tanks currently on the Ciniza property. A pipeline would also be constructed from the two tanks to the API separator. This pipeline will allow treatment of any contaminated stormwater. It would also allow Ciniza to move process water from the API unit in the event of equipment malfunction.

Scope of Work

For this project, Vector will complete three tasks. The first task is an initial site visit. During this site visit, Vector will coordinate with a surveyor to complete the additional surveying that will be required for the detailed drawings.

The second task is the pipeline design. This will include all appurtenant structures and the layout of the pipeline.

The third task includes the preparation of construction plans and specifications.

Schedule

Vector estimates that it will take approximately 6 weeks to complete the work. Assuming a purchase order is received by October 15, 2006, the work could be completed by December 15, 2006.

Cost Estimate

The cost to complete the design is $38,601. This estimate includes a 10% contingency. A project budget showing the hourly rates, estimated man-hours, and anticipated expenses for each task is attached to this letter proposal.

Deliverables

Vector plans to provide Ciniza with the following documents:

1. A brief design report outlining the methods used to determine pipe sizes and locations;
2. A set of detailed construction drawings to aid Ciniza's contractor during installation of the pipeline; and
3. Construction specifications to ensure all components are installed and/or constructed properly.

Exclusions

The cost estimate provided by Vector does not include the cost for surveying. This quote also does not include the cost for any construction monitoring services. If these services are required, Vector can provide them at an estimated cost of $3,800 per week, excluding any testing costs.

Staffing

The proposed key staff members for the project are:

David Krizek, P. E., Senior Civil Engineer

Mr. Krizek will serve as the Senior Civil Engineer. He will be responsible for reviewing all project activities and will also direct the internal activities of the Vector technical team members.

Mr. Krizek has over 15 years experience with various mine site closure, process improvement, and environmental compliance projects. His responsibilities have included: development and management of projects related to remedial cleanup actions; geotechnical and environmental investigations; facility process improvement/optimization; managing engineering design and construction activities for mine facility and environmental compliance; technical review and management reporting; selecting and managing contractors; directing internal support departments; project planning; financial analysis; budgeting and expense tracking; scheduling; overseeing equipment and material selection and procurement; analyzing underground openings and pit slopes using numerical modeling techniques such as limit equilibrium, finite difference, and boundary element methods; and surface and underground mine design studies.

Matt Bachman, P.E., Project Engineer

Matt's experience is rooted in hydrology, hydraulics, water quality, and water resources design and construction projects. He has expertise in hydrologic and hydraulic modeling using computer programs UDSWM, CUHP, Pond Pack, HEC-1, HEC-HMS, and HEC-RAS. Matt also has extensive experience in rainfall and flow frequency analyses, water balance models, pollutant mass balance models, pressure pipe flow systems, pump design, tailings consolidation models, and two dimensional finite element seepage models. His design and construction experience includes work on flood control reservoirs, tailings impoundments, dam spillways, fish-passage spillways, diversion channels, pumped decant pipelines, geomembrane liner design, open channel bank stabilizations, multi-use trails, and stormwater management structures. Matt is extremely proficient with the civil drafting/design software AutoCad Land Development Desktop. He has widespread experience in preparation of construction plans and specifications, cost estimating, preparation of bid documents, construction surveying and staking, soil compaction testing, and construction management.

Mike Thornbrue, Staff Engineer

Mr. Thornbrue is a graduate of the Colorado School of Mines and has a Bachelor of Science degree in Mechanical Engineering. Mike's experience as resident engineer and a CQA monitor has included providing comprehensive services for construction of various landfills, heap leach pads, evaporation ponds, and other projects in the Western United States. Mike has also conducted field and laboratory testing and observations of soils, concrete, asphalt, masonry, and reinforcing steel.

Lori Ann Laster, Staff Hydrologist

Ms. Laster started her career as a consultant working the construction field. She has provided both field inspection and laboratory testing for commercial, industrial, and residential projects. She also has experience with hydrologic and open channel hydraulic modeling (HEC-1, HEC-2, HEC-HMS, and HEC-RAS), flood control and diversion design, and FEMA floodplain amendments and revisions.

Vector appreciates the opportunity to present this proposal. Please feel free to contact us if you have any questions. We look forward to working with you on this project.

Sincerely,

Vector Arizona

David Krizek, P.E.
Principal

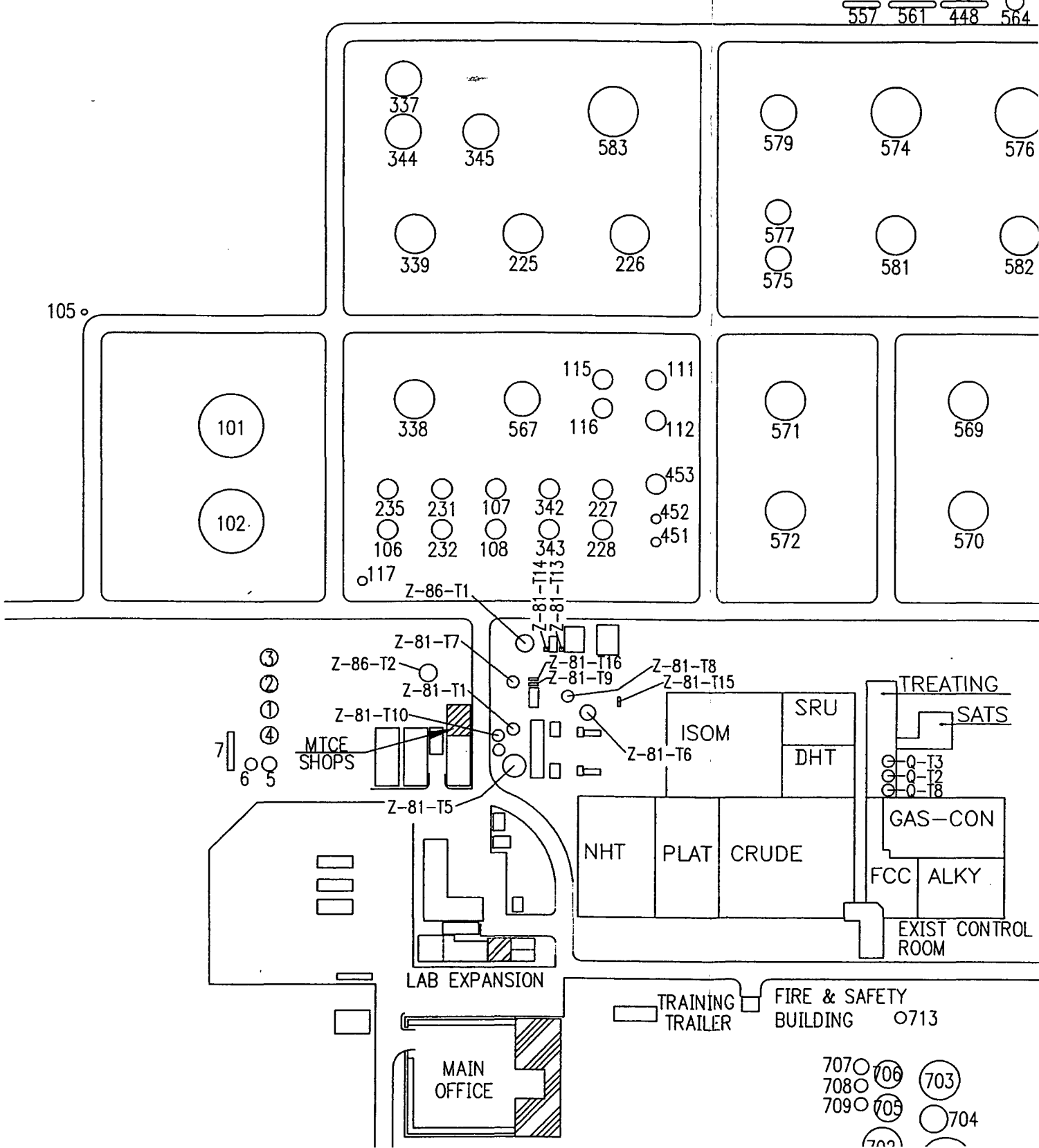
Doc. No. 104/06-VA-06-P033

Project Budget - Giant Ciniza Storm Drain Extension

Task	Tasks	Total Hours	David Krizek, PE		Matt Bachman, Project Engineer		Mike Thornbrue, Staff Engineer		Lori Laster, Staff Hydrologist		Drafter		Admin		Subtotal Labor Cost	Other		Total Cost
			hrs	Cost/h $125	hrs	Cost/h $95	hrs	Cost/h $75	hrs	Cost/h $70	hrs	Cost/h $75	hrs	Cost/h $55		5% C&C	Expenses	
	TASKS																	
1	**Initial Site Visit**	**32**	**-**	**$0**	**-**	**$0**	**16**	**$1,200**	**16**	**$1,120**	**-**	**$0**	**-**	**$0**	**$2,320**	**$116**	**$1,397**	**$3,833**
2	**Design**	**182**	**2**	**$250**	**5**	**$475**	**40**	**$3,000**	**120**	**$8,400**	**20**	**$1,500**	**-**	**$0**	**$13,625**	**$681**	**$0**	**$14,306**
	Engineering Analysis	182	2	$250	5	$475	40	$3,000	120	$8,400	20	$1,500	-	$0				
3	**Construction Specifications**	**204**	**6**	**$750**	**6**	**$570**	**14**	**$1,050**	**24**	**$1,680**	**120**	**$9,000**	**40**	**$2,200**	**$15,250**	**$763**	**$300**	**$16,313**
	Work Scope	26	2	$250	2	$190	2	$150	2	$140	-	$0	20	$1,100				
	Specifications	52	2	$250	2	$190	10	$750	20	$1,400	-	$0	20	$1,100				
	Engineering Drawings	126	2	$250	2	$190	2	$150	2	$140	120	$9,000	-	$0				
4	**Project Management**	**6**	**4**	**$500**	**-**	**$0**	**-**	**$0**	**-**	**$0**	**-**	**$0**	**2**	**$110**	**$610**	**$31**	**$0**	**$641**
	Subtotal	**804**	12	$1,500	11	$1,045	70	$5,250	160	$11,200	140	$10,500	42	$2,310	$31,805	$1,590	$1,697	$35,092
	Contingency 10%																	$3,509
	Total																	$38,601

Field Expenses-Initial Site Visit

Item	Rate	Unit	Quantity	Cost
Plane Ticket	$300	each	2	$600
Lodging	$80	day	4	$320
Per Diem	$25	day	4	$100
Car Rental	$100	day	2	$200
Gas	$50	tank	1	$50
				$1,270
			10% markup on expenses	***$127***
			TOTAL	***$1,397***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Z-86-T1
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Z-81-T1
Z-81-T10
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SHOPS
ISOM
SRU
DHT
TREATING
SATS
Q-T3
Q-T2
Q-T8
GAS—CON
NHT
PLAT
CRUDE
FCC
ALKY
EXIST CONTROL
ROOM
LAB EXPANSION
TRAINING
TRAILER
FIRE & SAFETY
BUILDING
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OFFICE
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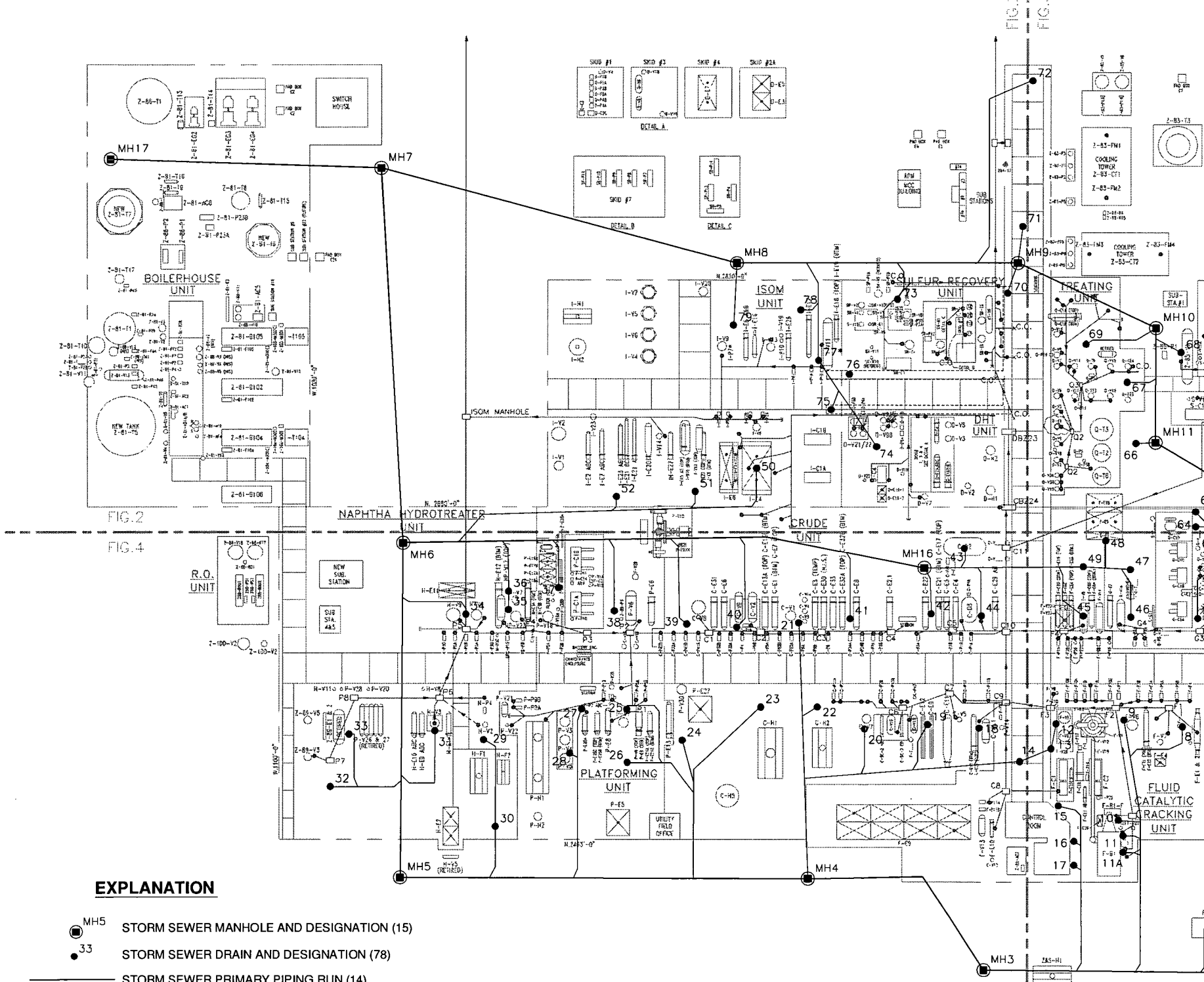


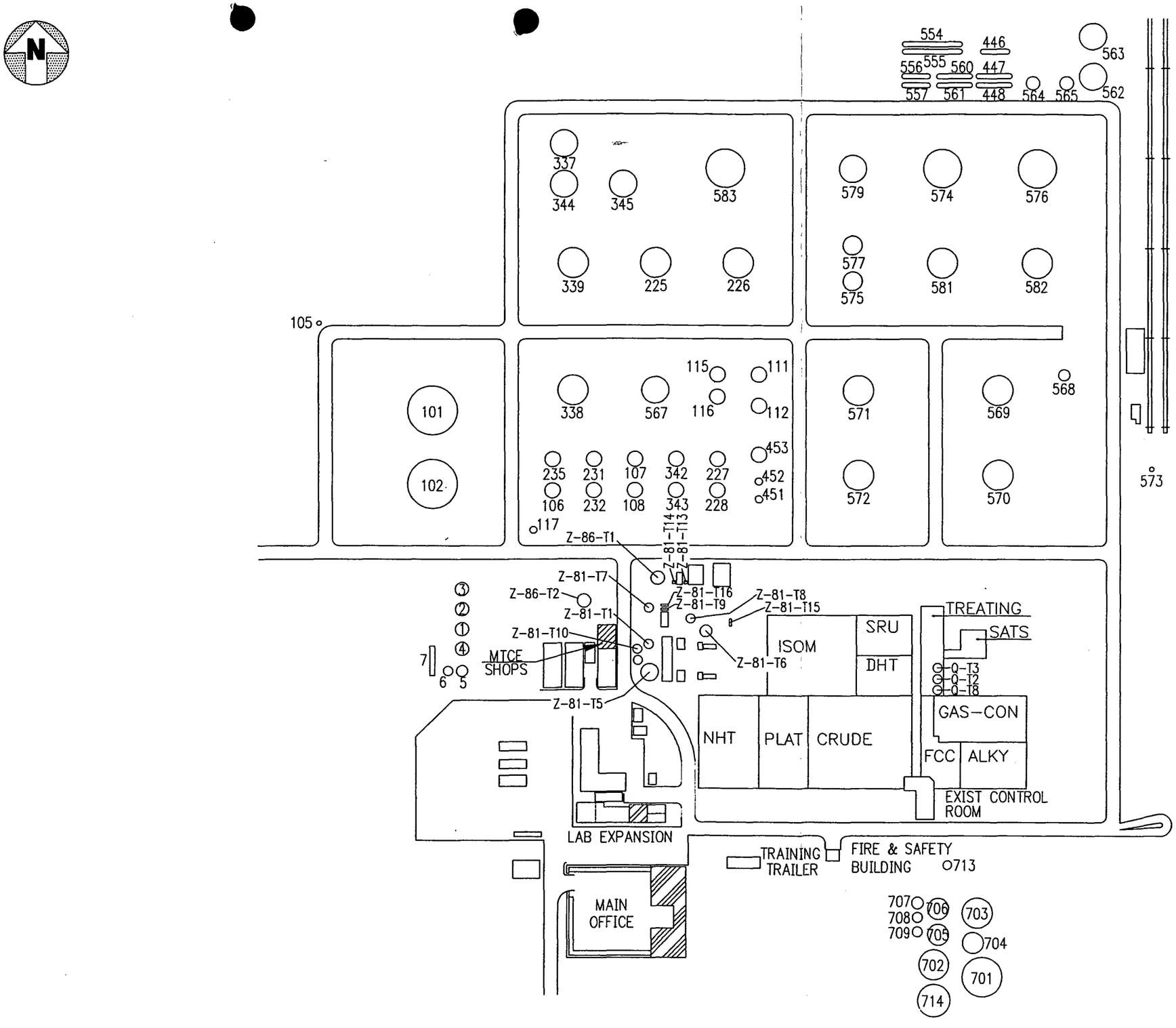
EXPLANATION

- MH5 — STORM SEWER MANHOLE AND DESIGNATION (15)
- 33 — STORM SEWER DRAIN AND DESIGNATION (78)
- STORM SEWER PRIMARY PIPING RUN (14)
- STORM SEWER SECONDARY PIPING RUN (70)
- DRAIN GRATE SYSTEM
- PROCESS DRAIN SYSTEM
- ABOVE GROUND PROCESS DRAIN SYSTEM

N

B	10/9/06	SECOND ISSUE FOR CLIENT REVIEW

Provide to
Carl Chavez



CONTRACTOR:

CINIZA REFINERY

GIANT REFINING CO. A DIVISION OF GIANT INDUSTRIES

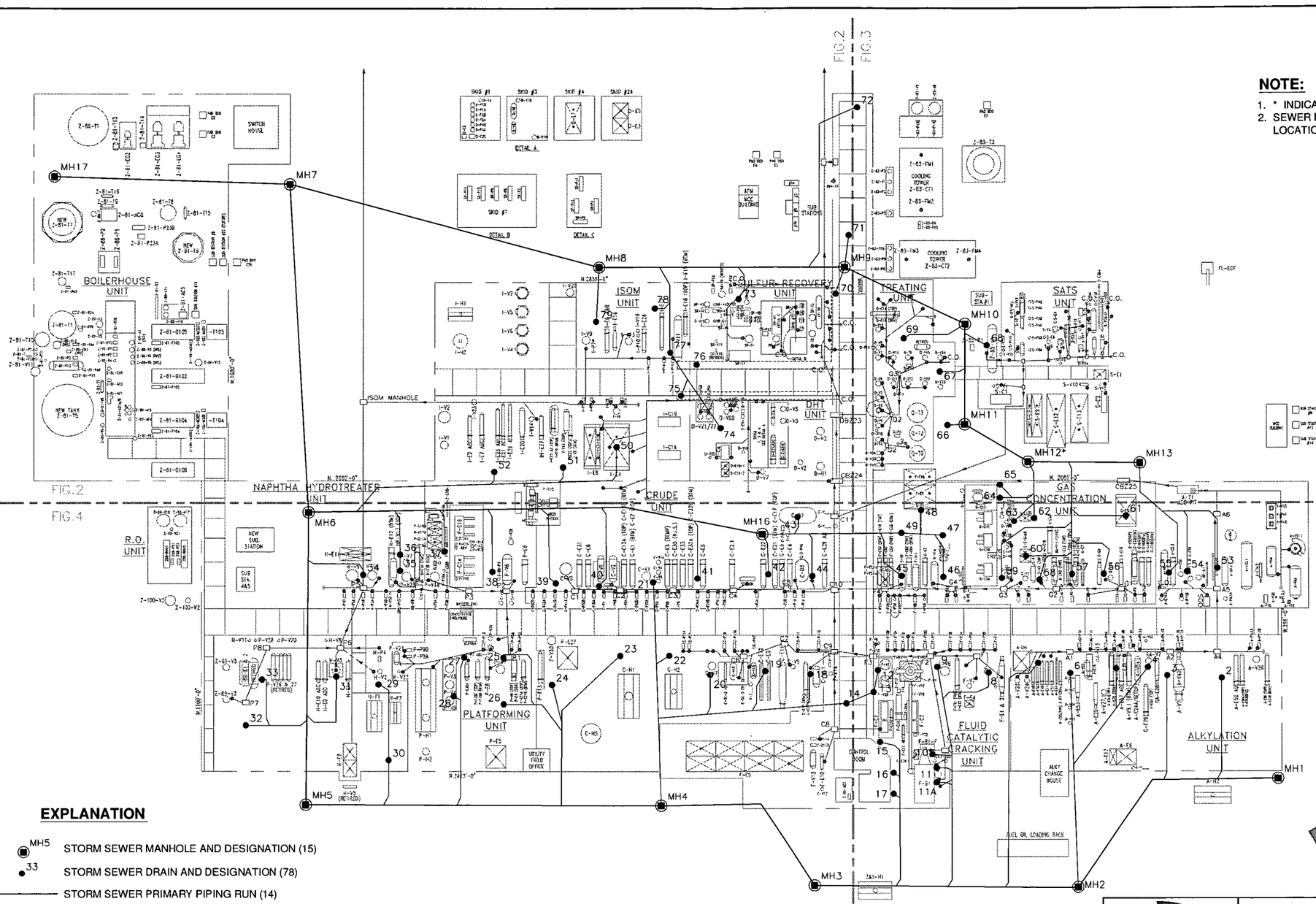
GALLUP NEW MEXICO

GIANT REFINERY TANK FARM PLAN

DRN. BY: CLM	DATE: 10DEC02	RFE/RFC No: –
CHK'D. BY: –	DATE: –	SCALE: NTS
APP'D. BY: –	DATE:	CAD REF: C:/BULLWINKLE
WELD SPEC: –	PAINT: –	
DRAWING NO. Z-01-100		REV 0

NOTE:

1. * INDICATES ITEM NOT FOUND IN FIELD SURVEY
2. SEWER MANHOLE, DRAIN, AND PIPING LOCATIONS ARE APPROXIMATE



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- STORM SEWER SECONDARY PIPING RUN (70)
- DRAIN GRATE SYSTEM
- PROCESS DRAIN SYSTEM
- ABOVE GROUND PROCESS DRAIN SYSTEM

N

0 80'

DRAFT

Rev.	Date	Description	By	Chk'd
B	10/9/06	SECOND ISSUE FOR CLIENT REVIEW	REP	RA
A	6/2/06	ISSUE FOR CLIENT REVIEW	DJR	RA
		REVISIONS		

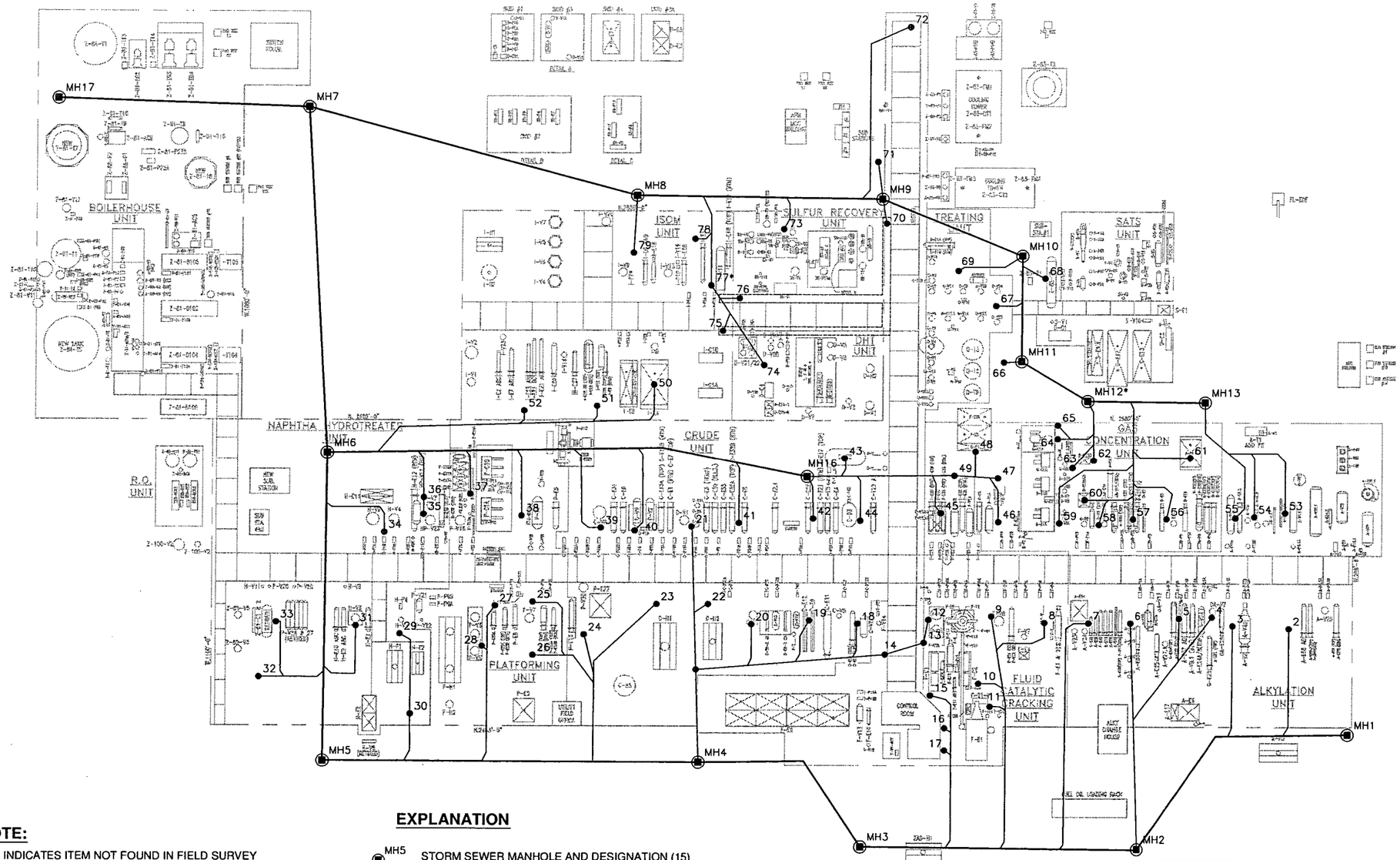
Drawn By: REP | Checked By: RA | Scale: 1" = 80'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

Date: 10/9/06 | File: 072STORMSEWER | Rev: B

FIGURE 1
STORMWATER / NON-PROCESS WASTEWATER SEWER SYSTEM 2006
GIANT REFINING COMPANY CINIZA REFINERY GALLUP, NEW MEXICO

Provide to
Carl Chavez



NOTE:

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2. SEWER MANHOLE, DRAIN, AND PIPING LOCATIONS ARE APPROXIMATE

EXPLANATION

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- 33 — STORM SEWER DRAIN AND DESIGNATION (78)
- STORM SEWER PRIMARY PIPING RUN (14)
- STORM SEWER SECONDARY PIPING RUN (70)
- DRAIN GRATE SYSTEM

N

0 80'

Rev.	Date	Description	By	Chk'd
A	6/2/06	ISSUE FOR CLIENT REVIEW	DJR	RA
REVISIONS				

Drawn By: DJR | Checked By: RA | Scale: 1" = 80' | Date: 6/16/06

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 2

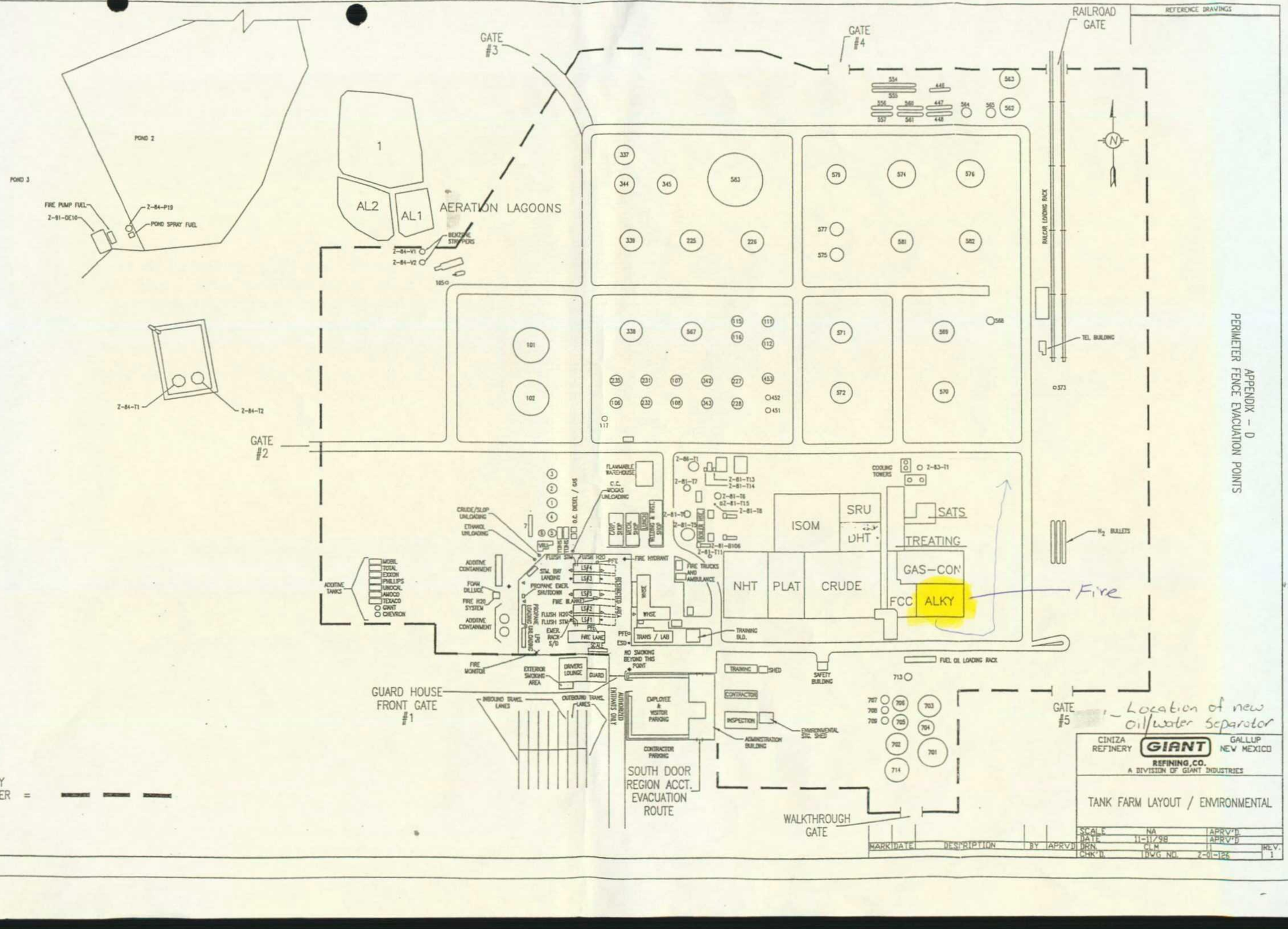
STORMWATER / NON-PROCESS WASTEWATER SEWER SYSTEM 2006

GIANT REFINING COMPANY, CINIZA REFINERY, GALLUP, NEW MEXICO

File: 072STORMSEWER | Rev: A

APPENDIX - D
PERIMETER FENCE EVACUATION POINTS

REFERENCE DRAWINGS



LEGEND

REFINERY PERIMETER FENCE = - - - - -

CINIZA REFINERY — GIANT REFINING,CO. A DIVISION OF GIANT INDUSTRIES — GALLUP NEW MEXICO

TANK FARM LAYOUT / ENVIRONMENTAL

MARK	DATE	DESCRIPTION	BY	APRV'D

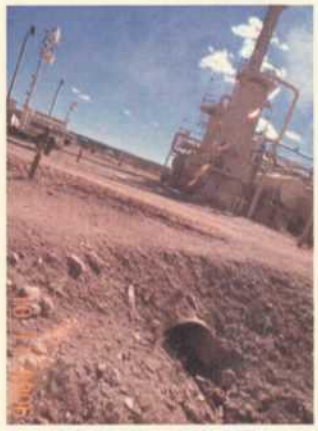
SCALE	NA	APRV'D	
DATE	11-17-98	APRV'D	
DRN	RLH		REV.
CHK'D		DWG NO.	Z-01-126	1

Giant Ciniza Refinery
Fire Inspection Follow-up of 10/05/06 Alkyl Unit Fire
October 10, 2006

Truck load-out release area spill area scheduled to be cleaned next week

Looking northward at storm water ditch area where firewater and diluted HF acid flowed to berm area at NE region of process area.


Looking S. from NE corner of process area where firewater and diluted HF acid flowed northward to pond in berm area at NE region of process area.


Looking south back toward SE area of process unit where overflow drained through storm water culvert to pond in berm area at NE region of process area.

Looking northward from SE corner of process area in direction where firewater and diluted HF acid flowed north toward culvert and eventually to pond in berm area at NE region of process area.

Giant Ciniza Refinery
Fire Inspection Follow-up of 10/05/06 Alkyl Unit Fire
October 10, 2006

Looking northward at NE corner of process area where fire water and diluted HF acid eventually ponded within berm.

Looking northward toward NE region of process area where ponding within berm eventually occurred

Metal debris, i.e., piping, temporarily stored for recycling E of process area

Two 5000 bbl. tanks W of API treatment area down near ponds that are planned to be used to store water for eventual treatment

and in lieu of a previous fire water pond proposal

Outfall area #1 at west side of refinery

Giant Ciniza Refinery
Fire Inspection Follow-up of 10/05/06 Alkyl Unit Fire
October 10, 2006

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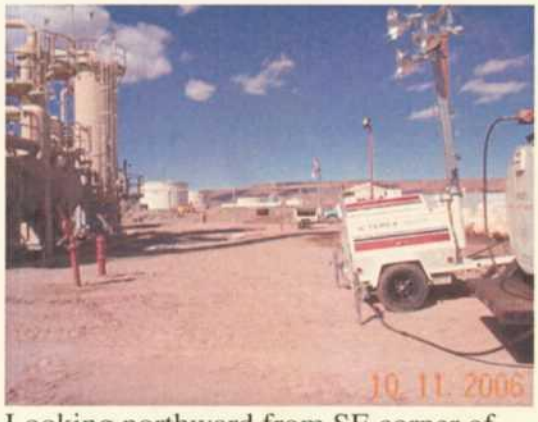

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Giant Ciniza Refinery
Fire Inspection Follow-up of 10/05/06 Alkyl Unit Fire
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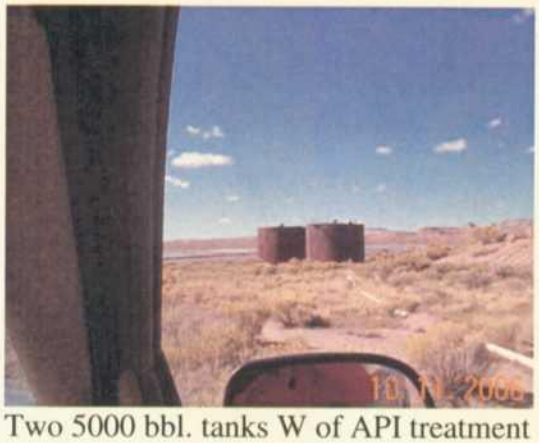

Two 5000 bbl. tanks W of API treatment area down near ponds that are planned to be used to store water for eventual treatment and in lieu of a previous fire water pond proposal

Outfall area #1 at west side of refinery

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Giant Refining – Ciniza Refinery	Contact Jim Lieb
Address I-40, Exit 39, Jamestown NM 87347	Telephone No. 505-722-0227
Facility Name Ciniza Refinery	Facility Type Oil Refinery

Surface Owner Giant Industries, Inc.	Mineral Owner Giant Industries, Inc.	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23 & 33	15N	15W					McKinley

Latitude 35°29'22" **Longitude** 108°25'24"

NATURE OF RELEASE

Type of Release Iso Butane gas and Hydrofluoric Acid (HF)	Volume of Release 7.8 lbs HF to air. 34.3 lbs HF to sewer (estimated)	Volume Recovered not applicable
Source of Release Alkylation Unit	Date and Hour of Occurrence 10/05/06 1850 hours	Date and Hour of Discovery 10/5/06 1850 hours
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD- Wayne Price NMED – Air Quality Bureau	
By Whom? Ed Riege, within 24 hours of fire	Date and Hour 10/06/06 at hours	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* not applicable

Describe Cause of Problem and Remedial Action Taken.*
Failure of a depropanizer charge pump seal resulted in a fire in the Alkylation unit.

Describe Area Affected and Cleanup Action Taken.*
The Alkylation unit. No cleanup was necessary because of the large amount of water used to suppress the fire. Based on the estimated amount of HF solubilized in the water (34.3 lbs) and the amount of water used to suppress the fire (5,000 gals/min for 140 minutes), the estimated concentration of HF in water to the sewer system was only 5 ppm. Samples of the water were checked for pH at approximately neutral pH.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Jim Lieb	OIL CONSERVATION DIVISION	
Printed Name: Jim Lieb	Approved by District Supervisor:	
Title: Environmental Engineer	Approval Date:	Expiration Date:
E-mail Address: jlieb@giant.com	Conditions of Approval:	Attached ☐
Date: October 11, 2006 Phone: 505-722-0227		

* Attach Additional Sheets If Necessary

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 10, 2006 4:57 PM
To: 'Jim Lieb'; Monzeglio, Hope, NMENV
Cc: Ed Riege; Ed Rios; Steve Morris
Subject: RE: Weekly Update

Jim:

Interesting phenol results and I'm glad the units are ug/L units. Based on your 4 factors (9/15/06 e-mail) that could explain the phenol results below, I have some comments for you to consider. The factors you mentioned were:

1) Sampling snapshot scenario: perhaps Giant can explain exactly how a sample is collected from the influent of AL1 and effluent of AL2? I can see how a sampler could sample a certain part of a vast water stream with variable results as opposed to sampling directly from the end of pipe. Is it probably based on the sampling protocol that variability is a given the way you are sampling?

2) Degradation of organics in process water into phenol type compounds: I would consider this less likely, since phenols are known to degrade aerobically and would be less likely to be present at higher concentration at the effluent end.

3) Entrained phenol in the lagoon mud entering water: perhaps a soil sample could be collected to examine the lagoon mud at AL2 to see if this may support this theory?

4) Sampler inadvertently mixed up samples: don't think this occurred do you?

Date	AL-1 (ug/L)	AL-2 (ug/L)	%Diff	COD (mg/L)	BOD (mg/L)
08/17/06	9.4	110	1070	976	525
09/07/06	21	140	567	791	241

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Friday, September 29, 2006 1:01 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Riege; Ed Rios; Steve Morris
Subject: Weekly Update

Carl, Hope:

Work is progressing on the flowmeters project. My RFE was approved by management and I cut purchase orders today. The contractor can begin excavations and concrete work for the concrete flume boxes early next week.

One problem I found out today when I placed an order is that the flumes are special order and may take 4-6 weeks delivery because each flume needs to be built. I assumed they had these in stock as they seem to be available in standardized sizes and my

consultants did not warn me. I may be able to get some more readily from another source.

We got back test results on Phenol for September sample. Once again the effluent concentration is greater than the influent. I attached the results to this email. BOD and COD results are included in the report also.

I contacted Mark Bundren at NM Fish and Game. He said he will check with other NMF&G staff for ideas. He seemed initially favorable about the sonic bird repeller.

One concern we have and that may have not been considered previously is that the boiler plant water is relied upon by our birds for clean drinking water. This water flows into Evaporation Pond #2 as we showed you during your last visit. It is crystal clear. If we preclude the birds from this water supply they will suffer which none of us want to happen. The boiler plant water is the only reliable source of clean water they have around here. We will show this to Mark Bundren when he comes to see our ponds.

Potable Well #1 closure work is set for Tuesday next week with Rogers Company. I notified the District 1 Supervisor, Jes Ward about the date.

Trihydro was here last week for a QQQ review of our facility. They will prepare a process sewer map for overlay on the existing storm sewer map we provided in the dye trace report. They will provide a report on the QQQ review which we will provide you when finished. We anticipate providing responses to your questions on the Dye Trace Report by October 16th as agreed.

Any questions, please call or email.
Regards,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

Chavez, Carl J, EMNRD

From: Price, Wayne, EMNRD
Sent: Friday, October 06, 2006 4:04 PM
To: Ed Riege
Cc: Perrin, Charlie, EMNRD; Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Subject: RE: Ciniza Alky Fire

Ed, all fires are considered major releases pursuant to our Rule 116. Please submit a C-141 within 15 days.

From: Ed Riege [mailto:eriege@giant.com]
Sent: Friday, October 06, 2006 3:43 PM
To: Price, Wayne, EMNRD
Subject: Ciniza Alky Fire

Hi Wayne,
A fire started in the Alky unit last night 10/5/06 at approximately 1850 hr. The fire was contained in the pump area of the Alky unit. The cause of the fire is being investigated and there were no injuries or releases of hydrocarbon other than the LPG burned in the fire. It does not appear a release report will be needed. All firewater entered the sewer system or was contained within the process area concrete containment or the secondary containment berms surrounding the process unit. There was no offsite release of firewater.

Ed

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Friday, September 29, 2006 1:01 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Riege; Ed Rios; Steve Morris
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Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, September 22, 2006

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Pond 2 Inlet Aeration Lagoon Phenolics

Order No.: 0609070

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 9/7/2006 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

AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory, Inc.

Date: *22-Sep-06*

CLIENT:	Giant Refining Co	**Lab Order:**	0609070
Project:	Pond 2 Inlet Aeration Lagoon Phenolics		

Lab ID:	0609070-02	**Collection Date:**	9/7/2006 11:15:00 AM
Client Sample ID:	AL-1 Inlet	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 420.3: TOTAL PHENOLICS						Analyst: JAT
Phenolics, Total Recoverable	21	3.0		µg/L	1	9/13/2006

Lab ID:	0609070-03	**Collection Date:**	9/7/2006 11:30:00 AM
Client Sample ID:	AL-2 Outlet	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 420.3: TOTAL PHENOLICS						Analyst: JAT
Phenolics, Total Recoverable	140	15		µg/L	5	9/13/2006

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

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

HALL ENVIRONMENTAL
attn: ANDY FREEMAN
4901 HAWKINS NE, SUITE D
ALBUQUERQUE NM 87109-4372

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **HALL ENVIRONMENTAL**
Project: **0609070**
Order: **0609178** **HAL03** Receipt: **09-08-06**

William P. Blava: President of Assaigai Analytical Laboratories, Inc.

Sample: ***0609070-01B POND 2 INLET*** Collected: *09-07-06 11:00:00* By:
Matrix: ***AQUEOUS***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0609178-0001A		EPA 405.1 Biochemical Oxygen Demand						By: MEV		
BOD06109	WC.2006.2297.13	10-26-4	Biochemical Oxygen Demand	241	mg/L	1	2		09-08-06	09-13-06

Sample: ***0609070-01A POND 2 INLET*** Collected: *09-07-06 11:00:00* By:
Matrix: ***AQUEOUS***

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0609178-0002A		EPA 410.1 Chemical Oxygen Demand						By: MEV		
WC06.2313	WC.2006.2313.10	C-004	Chemical Oxygen Demand	791	mg/L	1	10		09-20-06	09-20-06

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 foonotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN | Date and Time Received: 9/7/2006

Work Order Number 0609070 | Received by GLS

Checklist completed by [signature] Signature 9-7-06 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? 7° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Pond 2 Inlet and Aeration Lagoon Phenolics
~~Project #~~: 9-7-2006
Project Manager: Steve Morris
Sampler: Steve Morris
Sample Temperature: 7°C

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
9/7/06	1100	H_2O	Pond 2 Inlet	2				1
"	1115	"	AL-1 Inlet	1				2
"	1130	"	AL-2 Outlet	1				3

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
9/7/06	1623	Steve Morris	D Schlappe 9-7-06 1623
Date:	Time:	Relinquished By: (Signature)	Received 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 + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	BOD	COD	420.3 Phenolics		Air Bubbles or Headspace (Y or N)
												X	X			
														X		
														X		

Remarks: RUSH
email to jlieb@giant.com
+ Steve Morris

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, September 20, 2006 1:36 PM
To: 'Jim Lieb'
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV; 'Steve Morris'; Ed Rios; 'eriege@giant.com'; 'rschmaltz@giant.com'; Rector, Joshua M, DGF
Subject: RE: Ciniza Refinery Water Flow Meter Final Engineering Design

Jim:

Good afternoon. I spoke to Mr. Rector on September 11, 2006, and he said that he had spoken to you about the proposed sonic foul deterrent device you had proposed to the Oil Conservation Division stemming from the OCD's netting requirement. Mr. Rector provided a local NM Game & Fish contact in the Gallup area and his name is Mr. Mark Bundren at (505) 476-7777. Mr. Bundren may be able to offer some tips or advice for deterring foul from landing in ponds at the refinery. He also mentioned that the Federal US Fish & Wildlife Service may have some tips or advice on deterring foul.

The OCD is amenable to any Giant proposal to deter foul from landing in its refinery ponds, especially ponds located closest to the treatment system, but if the installed system does not work, Giant will need to report it to the OCD. This will provide the demonstration needed for the OCD to conclude whether the system is working. In addition, the OCD advises Giant to report any occurrences where foul land in ponds or refinery facilities and expire to the Federal US Fish and Wildlife Service after becoming aware of the situation in order for a proper investigation to be conducted. Giant should also consider contacting the US Fish & Wildlife Service to learn about any penalties that could be imposed if foul expire from contact with hazardous chemicals.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, August 31, 2006 1:44 PM
To: Chavez, Carl J, EMNRD
Cc: Monzeglio, Hope, NMENV; Powell, Brandon, EMNRD; Cote Edward L.; Ed Riege; Steve Morris
Subject: RE: Ciniza Refinery Water Flow Meter Final Engineering Design

Carl:

Ciniza's responses to your comments:

1) The pipe from aeration lagoon #1 to evaporation pond #1 is an emergency overflow only and not a "bypass".
As OCD suggested, we had a skimmer device built and installed on that overflow in lagoon #1.
There are two transfer pipes that carry water from lagoon #1 to lagoon #2.
The second pipe was installed about ten years ago to help insure there would be no overflow across the berm separation from lagoon #1 to evaporation pond #1.

2) Ciniza agrees to change FM-4 location to "Boiler Plant to EP2"

3) Ciniza is working with our engineering consultant HRC to ensure the flume and meters are sized adequately to handle

maximum anticipated flows.

Ciniza Refinery appreciates your comments and assistance with suggestions for improvements with the BOD/Phenol study including the flow meters installation.
For your information, I will be out of the office all next week.

By the way, I re-contacted Josh Rector at the NM Game & Fish Department regarding the sonic bird repeller device for our evaporation ponds but he has not replied yet.

Sincerely,

Jim Lieb

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, August 31, 2006 9:33 AM
To: Jim Lieb; Ed Riege
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Subject: Ciniza Refinery Water Flow Meter Final Engineering Design

Jim:

The OCD has completed its preliminary review of the water flow meter design. The supporting information provided was very helpful. OCD comments are provided below:

1) From past meetings and discussions with Giant, the OCD learned that aeration lagoon 1 (AL1) will flow directly into evaporation pond 1 (EP1) effectively bypassing aeration lagoon 2. Shouldn't the bypass from AL1 to EP1 be removed as this will change the results of the treatment system study? If Giant would like to keep the bypass, then another flow meter may be needed to monitor the flow rate between AL1 and EP1.

2) In the flow meter schedule table of Figure 4 of 5, Designation FM-4 Location should be changed to "Boiler Plant to EP2."

3) Be sure that the appropriate size flume is installed where the flow rate requires it and in consideration of maximum flow rate conditions for maximum production capacity at the plant. For example, extra large 60 degree V at appropriate locations should continue to be useful even at maximum flow rate conditions.

Please respond to the above comments and any comments that the NMED may have regarding the flow meters. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

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

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

September 19, 2006

Ed Riege
Giant Refining Company,
Route 3, Box 7
Gallup, New Mexico 87301

RE: APPROVAL WITH MODIFICATIONS WORK PLAN FOR INVESTIGATION OF THE OVERFLOW DITCH AND FAN-OUT AREA OF RAILROAD RACK LAGOON, SWMU #8
GIANT REFINING COMPANY, CINIZA REFINERY
EPA ID #: NMD000333211, HWB-GRCC-06-001

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed Giant Refining Company, Ciniza Refinery's (Permittee) *Work Plan for Investigation of Overflow Ditch and Fan-Out Area of Rail Road Rack Lagoon, SWMU #8* (Work Plan), dated August 29, 2006. NMED hereby approves the Work Plan with the following modifications. The Permittee must implement the modifications to the Work Plan described below and document them in the investigation report.

Comment 1
If the Permittee detects evidence of contamination during the investigation, the Permittee must contact NMED within one business day to determine the need for further action.

Comment 2
The Permittee must move the locations of soil boring B-3 and B-9 to the locations identified in Attachment 1 of this letter. To provide for more evenly distributed locations, sample point B-9 must be moved further north toward B-8 and sample point B-3 must be moved southwest, between B-4 and B-7.

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

The Permittee must submit the results of this investigation in an investigation report to NMED within 180 days after receipt of this letter. If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 428-2545.

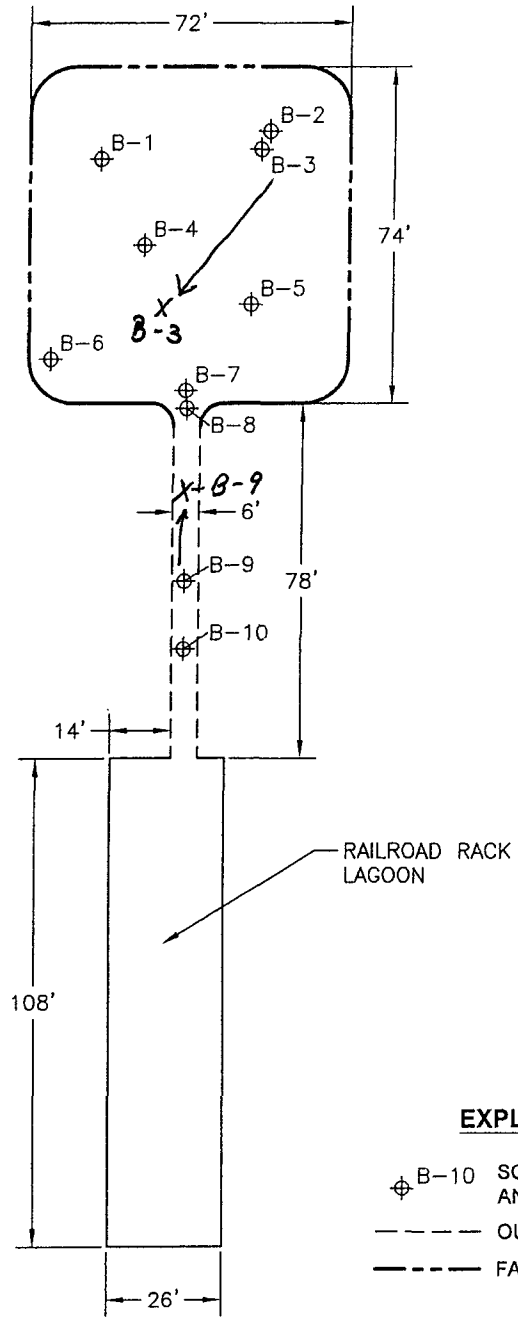
Sincerely,

John E. Kieling
Program Manager
Permits Management Program
Hazardous Waste Bureau

HM

cc: D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
C. Frischkorn, NMED HWB
W. Price, OCD
J. Lieb, GRCC
S. Morris, GRCC
R. Allen, Trihydro Corporation
File: GRCC 2006 and Reading
HWB-GRCC-06-001

Attachment 1



N

0 40'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 2

RAILROAD RACK LAGOON
OVERFLOW DITCH AND FAN-OUT AREA

GIANT REFINING COMPANY
CINIZA REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: RA	Scale: 1" = 40'	Date: 8/7/06	File: 072RROVERFLOW_200608

Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Friday, September 15, 2006 3:54 PM
To: Chavez, Carl J, EMNRD; Monzeglio, Hope, NMENV
Cc: Ed Riege; Ed Rios; Steve Morris
Subject: Update for week of 9-11-06

Carl and Hope:

1) As required by OCD and NMED, we sampled the aeration lagoons in August for phenol. I have attached the results. For some reason phenol was detected at a higher concentration leaving than was detected entering the aeration lagoons. I asked our waste water consultants about this and they said it could be due to one or a combination of factors:

1) Sampling snapshot that just happened to show higher phenol leaving while at the same time water with lower phenol concentration was entering
2) Degradation of organics in process water into phenol type compounds
3) Entrained phenol in the lagoon mud entering water
4) Sampler inadvertently mixed up the samples

All 5 of our aerators were operating during the sampling and nothing out of the ordinary was occurring with the system. We will sample the aeration lagoons for phenol this month and await the results to see if a similar pattern results.

2) Trihydro will be on site Monday to kick off a QQQ audit to identify applicable requirements that would pertain for storm sewer conversions to process sewers. We will identify the storm sewers that we will plan to convert to process sewers. Trihydro will also perform work to prepare a process/storm sewer comparison schematic as NMED and OCD have requested in comments to Giant. We expect to submit the comparison schematic with our other responses to NMED's and OCD's comments that are due to NMED and OCD on or before October 16, 2006.

3) We are continuing flow meter project and expect to issue purchase orders soon for the meters and for contractor to begin installation.

4) We will soon be closing potable well #1. We recently obtained approval from the New Mexico Engineer's Office to perform the well closing.

If vou have any questions concerning any of these points, please contact me at (505) 722-0227.

Sincerely,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, August 25, 2006

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Pond 2 Inlet & Aeration Lagoon Phenolics

Order No.: 0608225

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 8/18/2006 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

AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	AL-1 Inlet
Lab Order:	0608225	**Collection Date:**	8/17/2006 1:00:00 PM
Project:	Pond 2 Inlet & Aeration Lagoon Phenolics	**Date Received:**	8/18/2006
Lab ID:	0608225-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 420.3: TOTAL PHENOLICS						Analyst: SCC
Phenolics, Total Recoverable	9.4	3.0		µg/L	1	8/25/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	AL-2 Outlet
Lab Order:	0608225	**Collection Date:**	8/17/2006 1:15:00 PM
Project:	Pond 2 Inlet & Aeration Lagoon Phenolics	**Date Received:**	8/18/2006
Lab ID:	0608225-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 420.3: TOTAL PHENOLICS						Analyst: SCC
Phenolics, Total Recoverable	110	15		µg/L	5	8/25/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

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

HALL ENVIRONMENTAL
attn: ANDY FREEMAN
4901 HAWKINS NE, SUITE D
ALBUQUERQUE NM 87109-4372

STANDARD

Assalgal Analytical Laboratories, Inc.

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: HALL ENVIRONMENTAL
Project: 0608225
Order: 0608543 HAL03 Receipt: 08-18-06

William P. Blava: President of Assalgal Analytical Laboratories, Inc.

Sample: *0608225-01A POND INLET 2* Collected: *08-17-06 13:30:00* By:
Matrix: *AQUEOUS*

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0608543-0001A		EPA 410.1 Chemical Oxygen Demand						By: NJL		
WCOD06053	WC.2006.2080.12	C-004	Chemical Oxygen Demand	976	mg/L	1	10		08-24-06	08-24-06

Sample: *0608225-01B POND INLET 2* Collected: *08-17-06 13:30:00* By:
Matrix: *AQUEOUS*

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0608543-0002A		EPA 405.1 Biochemical Oxygen Demand						By: NJL		
BOD06101	WC.2006.2077.5	10-26-4	Biochemical Oxygen Demand	525	mg/L	1	2		08-18-06	08-23-06

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.

Analytical results are not corrected for method blank or field blank contamination.

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Pond 2 Inlet & Aeration Lagoon Phenolics

Work Order: 0608225

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: E420.1									
Sample ID: MB-11109		*MBLK*			Batch ID:	11118	Analysis Date:		8/25/2006
Phenolics, Total Recoverable	ND	µg/L	3.0						
Sample ID: LCS-11109		*LCS*			Batch ID:	11118	Analysis Date:		8/25/2006
Phenolics, Total Recoverable	18.80	µg/L	3.0	94.0	51.7	133			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN | Date and Time Received: 8/18/2006

Work Order Number 0608225 | Received by AT

Checklist completed by _____ 8/18/06
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 ☐	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 _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

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

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Pond 2 Inlet and Aeration Lagoon Phenolics
~~Project #:~~ 8-17-2006
Project Manager: Steve Morris
Sampler: Steve Morris
Sample Temperature: 3°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	HEAL No.
8/17/06	1330	H_2O	Pond 2 Inlet	2			606225-1
"	1300	"	AL-1 Inlet	1			-2
"	1315	"	AL-2 Outlet	1			-3

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	BOD	COD	420.3 Phenolics		Air Bubbles or Headspace (Y or N)
												X	X			
														X		
														X		

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
8/18/06	0950		
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
			8/18/06 0952

Remarks: RUSH

Chavez, Carl J, EMNRD

To: Jim Lieb; Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Monzeglio, Hope, NMENV

Cc: Rector, Joshua M, DGF

Subject: RE: Ciniza Refinery Netting Requirements for Evaporation Ponds

Jim:

Good afternoon. I spoke to Mr. Rector today and he said that he has spoken to you about the proposed sonic foul deterent device you had proposed to the Oil Conservation Division stemming from the OCD's recent netting requirement. The bottom line is that the sonic device over time (~2 weeks) would not be effective at keeping birds out of the evaporation ponds, since birds adapt to repetitive audible signals over time and become immune to the audible noises.

The most effective way to prevent birds from entering the evaporation ponds is netting; however, Mr. Rector acknowledges that placing netting over such large ponds (~1/4 acre) is not feasible. Mr. Rector recommends that you contact Mr. Mark Bundren of the NM Dept. of Game & Fish in the Gallup area at (505) 476-7777 to arrange for a meeting at the refinery to discuss procedures and methods to deter birds. However, the conclusion may be very similar to Mr. Rector's.

Since netting the ponds does not appear to be feasible, the Ciniza Refinery must report any occurrences where birds land in ponds and expire to the Federal US Fish and Wildlife Service after becoming aware of the situation in order for a proper investigation to be conducted. Giant should also consider contacting the US Fish & Wildlife Service to see what solutions it may have to offer. Giant could be subject to a federal fine(s) if it is determined that foul expire from chemical exposure to refinery facilities, i.e.; ponds, tanks, etc.

Please contact Mr. Rector at (505) 476-8047 or me if you have questions. Thank you..

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 31, 2006 2:02 PM
To: Jones, William V., EMNRD
Cc: 'Jim Lieb'
Subject: FW: Ciniza Refinery Water Flow Meter Final Engineering Design

Willie:

Re:

"By the way, I re-contacted Josh Rector at the NM Game & Fish Department regarding the sonic bird repeller device for our evaporation ponds but he has not replied yet.

Sincerely,

Jim Lieb"

Could you please contact Josh Rector and request that he respond to Giant Ciniza's audible bird device question or direct us to the right person. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
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E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, August 31, 2006 1:44 PM
To: Chavez, Carl J, EMNRD
Cc: Monzeglio, Hope, NMENV; Powell, Brandon, EMNRD; Cote Edward L.; Ed Riege; Steve Morris
Subject: RE: Ciniza Refinery Water Flow Meter Final Engineering Design

Carl:

Ciniza's responses to your comments:

1) The pipe from aeration lagoon #1 to evaporation pond #1 is an emergency overflow only and not a "bypass".
As OCD suggested, we had a skimmer device built and installed on that overflow in lagoon #1.
There are two transfer pipes that carry water from lagoon #1 to lagoon #2.
The second pipe was installed about ten years ago to help insure there would be no overflow across the berm separation from lagoon #1 to evaporation pond #1.

2) Ciniza agrees to change FM-4 location to "Boiler Plant to EP2"

3) Ciniza is working with our engineering consultant HRC to ensure the flume and meters are sized adequately to handle maximum anticipated flows.

Ciniza Refinery appreciates your comments and assistance with suggestions for improvements with the BOD/Phenol study including the flow meters installation.
For your information, I will be out of the office all next week.

By the way, I re-contacted Josh Rector at the NM Game & Fish Department regarding the sonic bird repeller device for our evaporation ponds but he has not replied yet.

Sincerely,

Jim Lieb

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Thursday, August 31, 2006 9:33 AM
To: Jim Lieb; Ed Riege
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Subject: Ciniza Refinery Water Flow Meter Final Engineering Design

Jim:

The OCD has completed its preliminary review of the water flow meter design. The supporting information provided was very helpful. OCD comments are provided below:

1) From past meetings and discussions with Giant, the OCD learned that aeration lagoon 1 (AL1) will flow directly into

evaporation pond 1 (EP1) effectively bypassing aeration lagoon 2. Shouldn't the bypass from AL1 to EP1 be removed as this will change the results of the treatment system study? If Giant would like to keep the bypass, then another flow meter may be needed to monitor the flow rate between AL1 and EP1.

2) In the flow meter schedule table of Figure 4 of 5, Designation FM-4 Location should be changed to "Boiler Plant to EP2."

3) Be sure that the appropriate size flume is installed where the flow rate requires it and in consideration of maximum flow rate conditions for maximum production capacity at the plant. For example, extra large 60 degree V at appropriate locations should continue to be useful even at maximum flow rate conditions.

Please respond to the above comments and any comments that the NMED may have regarding the flow meters. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
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1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
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Chavez, Carl J, EMNRD

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Sent: Thursday, August 31, 2006 1:44 PM
To: Chavez, Carl J, EMNRD
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To: Jim Lieb; Ed Riege
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Subject: Ciniza Refinery Water Flow Meter Final Engineering Design

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(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 31, 2006 11:28 AM
To: 'Jim Lieb'; Ed Riege
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Subject: Ciniza Refinery Dye Trace Study 2006 (June 19, 2006)

Jim & Ed:

The OCD has completed its review of the above study and in consideration of the NMED's August 14, 2006 letter about the study. The NMED raised an interesting concern about the flow rate, duration or ability of the dye tracer relative to the flow rate to show up within the scope of the test, and especially at locations where there was discoloration present, but interpreted by Giant as negative indication of breakthrough. Since the OCD had approved the study during the turn-around, since it seemed to be an opportune time to conduct study, the OCD is wondering whether Giant's consultant should have compensated by increasing the flow rate to ensure the adequate time for the tracer to show up. Consequently, Section 4 "Dye Trace Study Conclusions" statement that "No cross-connects were detected, using dye, between the process sewer and storm sewer system at the refinery is in question. Is there a way to resolve this issue, i.e., retesting the locations in question under normal operating flow rate conditions?

Giant had plans to decommission the OAPIS and route OAPIS effluent to a fire water evaporation pond, but due to contact water in the OAPIS, there was verbal discussion with Giant that it may utilize 2 large size tanks to store and treat the water instead. Giant has estimated the average effluent (effluent contains refinery contact water) flow rate into the OAPIS to be about 9.2 gpm (Hubbell, Roth & Clark, INC. Figure 4 of 5 Water Flow Meter Final Engineering Design- 8/24/06 correspondence). There has been verbal mention of Giant utilizing 2 5000 bbl tanks to store and treat OAPIS effluent, but this has not been proposed to date. The OCD requests a time-table for actions to bring the OAPIS effluent situation into compliance?

In consideration of the time-table and steps to bring Giant's treatment system into compliance, the OCD proposes the following:

1) Either defend the low flow rate and coloration interpretation or propose to retest the tracer at locations where the tracer observations were questionable using appropriate flow rates and tracers that will be expected to be detected within appropriate time-frame.

2) It appears that all drains within process areas should be routed to contact area processing units for treatment. Installing a lip around adjacent stormwater drains does eliminate cross-contamination in and of itself. This will also prevent the needless plugging (i.e., #8, 12, 33, 46, 47, 64 & 77,of existing sewer drains that will help facilitate drainage and control stormwater.

3) The unplugging of storm drains, i.e.; #5, 11, 31, 38, 39 & 73, is encouraged by the OCD; however, in concurrence with Item 2 above.

4) During the study, stormwater line #77 and MH-12 could not be found. There is concern about potentially damaged lines, and that these drainage features are an integral part of the stormwater system. They need to be found and flow through these lines need to be tested to ensure their integrity or breach, and reconstruct them if necessary to provide for proper drainage and treatment.

5) A comparison schematic to scale of the process water vs. non-process water drains would help Giant with the above items. It was difficult for the OCD to compare storm and process drains based on submitted diagrams.

Thanks to Giant for coordinating and conducting the study to attempt to locate cross-connects and contamination that is going to the OAPIS. We look forward to resolving areas where tracer discoloration was evident. Perhaps there is a solution to this and we can arrange for a telephone conference call. Perhaps Trihydro Corporation's engineer can be included. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
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Fax: (505) 476-3462

8/31/2006

E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 31, 2006 11:28 AM
To: 'Jim Lieb'; Ed Riege
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Subject: Ciniza Refinery Dye Trace Study 2006 (June 19, 2006)

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8/31/2006

E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

August 31, 2006

Carl Chavez, Environmental Engr.
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505

Brandon Powell
Oil Conservation Division
1000 Rio Bravo Rd
Aztec, NM 87410

Hope Monzeglio
Environmental Engineer
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, BLDG 1
Santa Fe NM 87505

RE: 2005 Annual Groundwater Report (and OCD Addendum), Discharge Permit GW-032

Dear Carl, Hope, and Brandon:

Giant Refining is pleased to submit the 2005 Annual Groundwater Report for our Ciniza Refinery. This report is being submitted to comply with Discharge Permit-032 annual groundwater reporting requirements.

Due to the large number of environmental sampling data laboratory reports from 2005, we have split the report into two binders; the first being the groundwater report proper, and the second, an OCD Addendum containing OCD requested information.

If you have any questions please contact me at (505) 722-0227 or Ed Riege at (505) 722-0217.

Sincerely,

Jim Lieb, Environmental Engineer
Giant Refining, Ciniza Refinery
Gallup, NM

cc: Ed Rios w/o report
Ed Riege w/o report

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, August 31, 2006 10:33 AM
To: 'Jim Lieb'; Ed Riege
Cc: Price, Wayne, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Subject: Ciniza Refinery Water Flow Meter Final Engineering Design

Jim:

The OCD has completed its preliminary review of the water flow meter design. The supporting information provided was very helpful. OCD comments are provided below:

1) From past meetings and discussions with Giant, the OCD learned that aeration lagoon 1 (AL1) will flow directly into evaporation pond 1 (EP1) effectively bypassing aeration lagoon 2. Shouldn't the bypass from AL1 to EP1 be removed as this will change the results of the treatment system study? If Giant would like to keep the bypass, then another flow meter may be needed to monitor the flow rate between AL1 and EP1.

2) In the flow meter schedule table of Figure 4 of 5, Designation FM-4 Location should be changed to "Boiler Plant to EP2."

3) Be sure that the appropriate size flume is installed where the flow rate requires it and in consideration of maximum flow rate conditions for maximum production capacity at the plant. For example, extra large 60 degree V at appropriate locations should continue to be useful even at maximum flow rate conditions.

Please respond to the above comments and any comments that the NMED may have regarding the flow meters. Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
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(Pollution Prevention Guidance is under "Publications")

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, June 15, 2006 9:55 AM
To: 'Jim Lieb'
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV; Ed Rios; Price, Wayne, EMNRD
Subject: RE: Ciniza Refinery Flow Meter Locations

Jim:

Good morning. Wayne and I discussed your msg. We are examining the Palmer-Bowlus type flumes with totalizers. Is there any specific model or type that you are proposing to use (see http://tracomfrp.com/palmer_bowlus.htm)? Please provide a link to info. on the specific type for our review.

Regarding the flow meter locations, the OCD requires monitoring between EP1 and EP2 and between AL2 and EP1. This will help us to determine infiltration loss, evaporation loss rates, and to better understand the overall treatment system capacity.

The OCD considers the flow from the OAPI drainage system to be an important flow monitoring point regardless of where the effluent is routed. While the flow rate of the pump is important to monitor to determine if it can keep up with drainage from the OAPI, the flow into the OAPI drainage system coming from an unidentified source(s) is also important to know. The OCD had anticipated that the continuous flow of contaminated water into the OAPI drainage network would be fixed. In consideration of the fire water evaporation pond (note: we have not received the design), Giant had proposed decommissioning the OAPI and routing water from the OAPI drainage network into the fire water pond. In consideration of this, the assumption by OCD was that the water would not be contaminated water and would be suitable for use as an emergency fire water source. Giant had verbally mentioned to me on May 9, 2006 that the dye test did not identify any leakage into the OAPI drainage network from the suspected process area. However, the OAPI continues to receive water coming from an unidentified source. Consequently, the OCD feels that there is a need to quantify the actual flow rate of water into the OAPI drainage network. We will need to meet or hold a conference call with Giant to further discuss the feasibility of the fire water pond as proposed on March 28, 2006, after reviewing the results of the dye test and NAPI issues discussed on March 28, 2006.

After receiving a couple of drawings of the NAPI, we are wondering whether the drawings reflect the more recent construction activities, i.e.; installation and/or repair of the secondary containment system, as built specifications, etc? Please clarify that the drawing represent the current construction of the NAPI or send current as-built drawings (to scale) for our review.

Thank you.

Carl J. Chavez, CHMM
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Website: http://www.emnrd.state.nm.us/ocd/
(Pollution Prevention Guidance is under "Publications")

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Thursday, June 15, 2006 8:50 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV; Ed Rios
Subject: RE: Ciniza Refinery Flow Meter Locations
Importance: High

Carl:

We will install the integrated flow meters [redacted]CD and HWB require at the locations, lik[redacted]ing Palmer-Bowlus type flumes with totalizers. Yesterday, Hope emailed reply to us that monitoring flow at location EP1 to EP2 in lieu of AL2 to EP1 was acceptable to the HWB. Would the alternate monitoring location also be acceptable to the OCD?

I'm not sure how you came to the conclusion that the flow rate to the NAPIS from the OAPIS is 0.5 gpm. I recall mentioning the 0.5 gpm rate as a "guesstimate" of the dry weather flow rate to the OAPIS. The Sandpiper pump that we are using to pump from the OAPIS to the NAPIS is capable of greater flow when it is running pumping down the level in the OAPIS. At this time we do not know what the actual flow rate is when the pump is running. To get an actual estimate of the flow, Steve Morris is going to run the discharge into a 55 gallon drum using a stopwatch feature on his watch. The NAPIS is capable of handling, and has been handling satisfactorily, the Sandpiper pumped flow from the OAPIS.

We will be forwarding the Trihydro sewer dye trace report including Giant's corrective action plan to OCD and HWB prior to June 26.

Regards,

Jim Lieb
Giant - Ciniza

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, June 14, 2006 2:53 PM
To: Jim Lieb
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV
Subject: RE: Ciniza Refinery Flow Meter Locations

Jim:

The OCD and HWB require integrated flow meters (flow meter with totalizer (cumulative volumes) with visual determination of flow rate upon inspection).

According to our March 28, 2006 meeting at the Ciniza Refinery, the OCD had asked the question about the maximum flow rate for the discharge from the OAPI to be routed to the NAPI. Giant informed us that the max. flow rate would need to be less than or equal to about 0.5 gpm for OAPI effluent to be routed to the NAPI. Exceedences of 0.5 gpm would result in effluent from the OAPI continuing to be routed or overflow (?) into AL1. The OCD and HWB approved this on an interim basis until Giant could assess and fix the leakage problems in the drainage system of the OAPI. Currently the OCD and HWB are awaiting the results of the dye test and Giant's officials determination of the nature of leakage into the OAPI drainage system and repairs needed to fix the problem.

The OCD and HWB have received the design of the NAPI as requested on March 28, 2006 to determine possible action(s) at the NAPI.

I hope this helps. Please contact me if you have questions. Thanks.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
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(Pollution Prevention Guidance is under "Publications")

From: Jim Lieb [mailto:jlieb@giant.com]
Sent: Wednesday, June 14, 2006 1:19 PM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Steve Morris; Monzeglio, Hope, NMENV
Subject: RE: Ciniza Refinery Flow Meter Locations

Importance: High

Carl:

There is no direct flow from the OAPIS to the AL1. Flow from the OAPIS goes directly to the NAPIS.

We would like to propose use of V-Notch meters as flow meters. We already have experience with V-Notches flow meters and they would be relatively inexpensive and quick to install in time for the study which will begin soon. We would make them permanent by setting them in concrete frames.

It will be very difficult to install a meter between AL2 and EP1. However, the flow between EP1 and EP2 is essentially the same as flow from AL2 to EP1 and could easily be installed.

Let me know.

Thank you,

Jim

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, June 14, 2006 10:30 AM
To: Jim Lieb
Cc: Price, Wayne, EMNRD
Subject: FW: Ciniza Refinery Flow Meter Locations

Jim:

I forgot to include item 6 below in my previous e-mail. Please include item 6 below in the flow meter monitoring location list.

1) PSE (pilot station effluent) to AL1 (aeration lagoon #1);
2) NAPIS (new API separator)- Benzene Stripper to AL1 (flow rate from benzene stripper to AL1);
3) OAPIS (old API separator) to AL1;
4) Boiler water to EP2 (evaporation pond #2); and
5) Flow between EP1 to EP2.
6) AL2 to EP1

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
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(Pollution Prevention Guidance is under "Publications")

From: Chavez, Carl J, EMNRD
Sent: Wednesday, June 14, 2006 9:20 AM
To: 'Jim Lieb'
Cc: Price, Wayne, EMNRD; Foust, Denny, EMNRD; Powell, Brandon, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV
Subject: Ciniza Refinery Flow Meter Locations

Jim:

Good morning. From our March 28, 2006 [redacted]ing, you may recall we discussed the lo[redacted]ns for flow meter monitoring at Ciniza. The OCD and HWB require flow meters at the following locations:

1) PSE (pilot station effluent) to AL1 (aeration lagoon #1);
2) NAPIS (new API separator)- Benzene Stripper to AL1 (flow rate from benzene stripper to AL1);
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4) Boiler water to EP2 (evaporation pond #2); and
5) Flow between EP1 to EP2.

Please contact me if you have questions. Thank you.

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Chavez, Carl J, EMNRD

From: Jim Lieb [jlieb@giant.com]
Sent: Thursday, August 24, 2006 2:32 PM
To: Monzeglio, Hope, NMENV; Chavez, Carl J, EMNRD
Cc: Ed Riege; Cote Edward L.; Steve Morris
Subject: Water Flow Meter Final Engineering Design

Carl, Hope:

Attached is the engineering design provided by our waste water consultant Hubel, Roth and Clark, Inc. for the flow metering system Giant is planning to install in the aeration lagoons area and for the boiler plant water.

We are planning to use Hach Company flow meters in the lagoons area for this study. Hach is a recognized manufacturer of high quality flow meters for waste water and storm water monitoring applications. We are planning to use the Hach Sigma Model 910 Area Velocity type meter for the Storm water flow into the Old API Separator. Four (4) Hach Sigma Model 950 AV Bubbler flow meters with one each for the Pilot Station effluent, Benzene Stripper effluent, AL2 to EVP1, and EVP1 to EVP2 locations. Hach literature on these meters is provided in the binder I mailed to you. Totalizers will be included. See the attached HRC Figures 2 and 4 for descriptions of the locations.

We will use a magnetic type meter for the boiler plant water. The boiler plant meter will be installed at the boiler plant.

The area velocity and bubbler type flow meters accuracies are on par with the ultrasonic type flow meter if not better. The ultrasonic type meter is subject to ice condensation fouling in winter and so is not a good fit for our application.

The area velocity and the bubbler type flow meters will be installed in trapezoidal type flumes (made by Tracom). This type of flume is described in the Tracom literature at the end of the binder I mailed to you. The trapezoidal flume is more accurate than the Palmer-Bowlus type flume at lower flows and is less prone to fouling and clogging. The trapezoidal flumes are commonly used in storm water monitoring applications so they are ideal for our use. The trapezoidal flumes that will be placed in permanent concrete vaults for security and ensuring that the flumes will be absolutely level. Steel grate will be placed over each flume to keep out debris and allow for access to the flumes and meters. Figure 3 shows the construction details of the flumes.

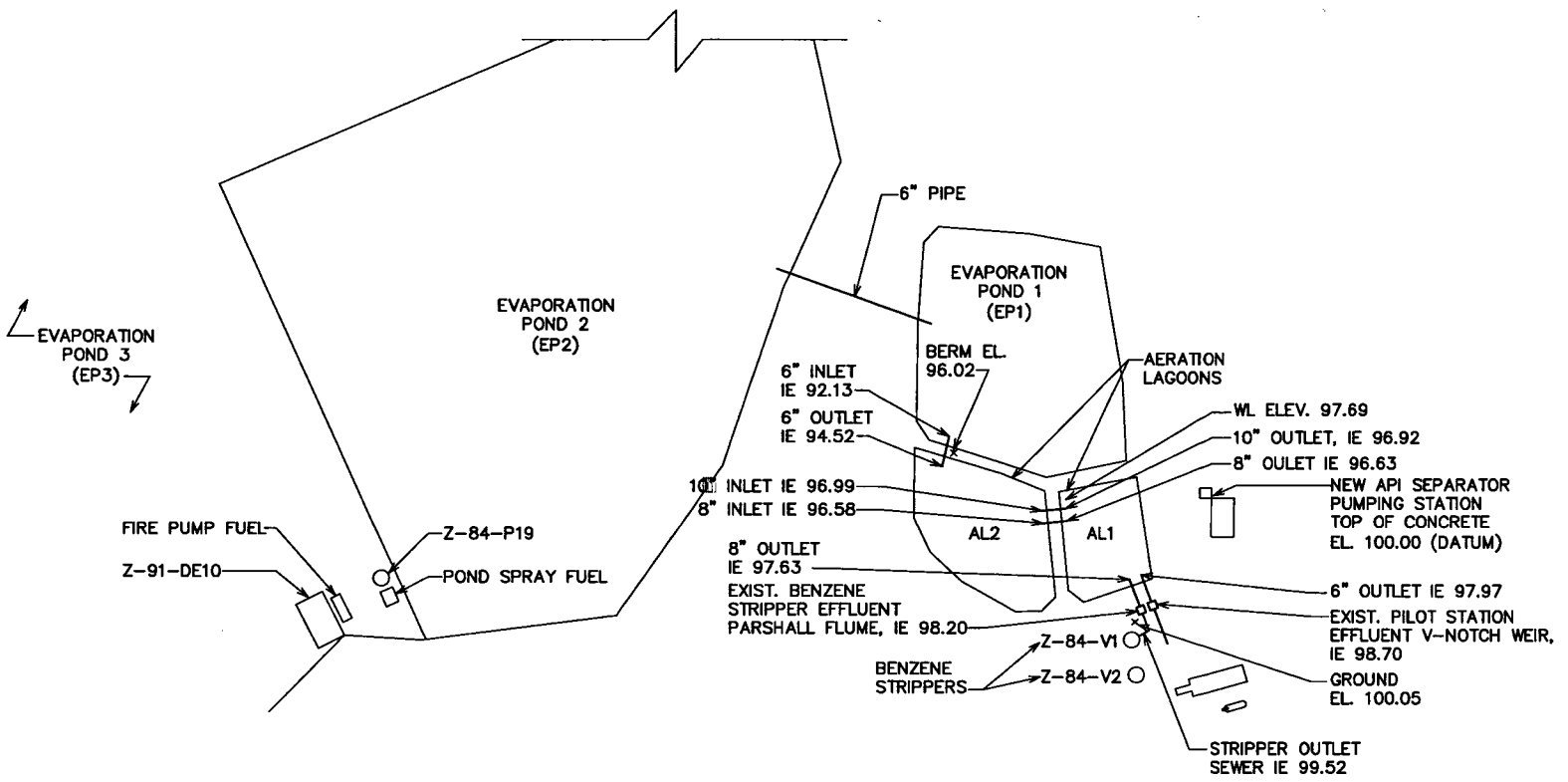
The magnetic flow meter will be placed into the discharge pipe from the boiler plant at a location near the boiler plant as the piping is readily accessible at this location. We will likely be using a Multi-Mag Magmeter made by Marsh McBirney rather than the Yamatake unit. Our vendor (Water Technology Group, Inc. of Mesa, Arizona) has recommended this unit rather than the Yamatake unit. I have included the manufacturer's literature on this model. The Multi-Mag meter is less prone to inaccuracies from turbulence than other mag meters.

If you have any questions, please email or contact me at (505) 722-0227. I will be out tomorrow but back in the office on Monday.

Sincerely,

Jim Lieb
Environmental Engineer
Giant Industries, Inc.
Ciniza Refinery
I-40, Exit 39
Jamestown, NM 87347
(505) 722-0227
fax (505) 722-0210
jlieb@giant.com

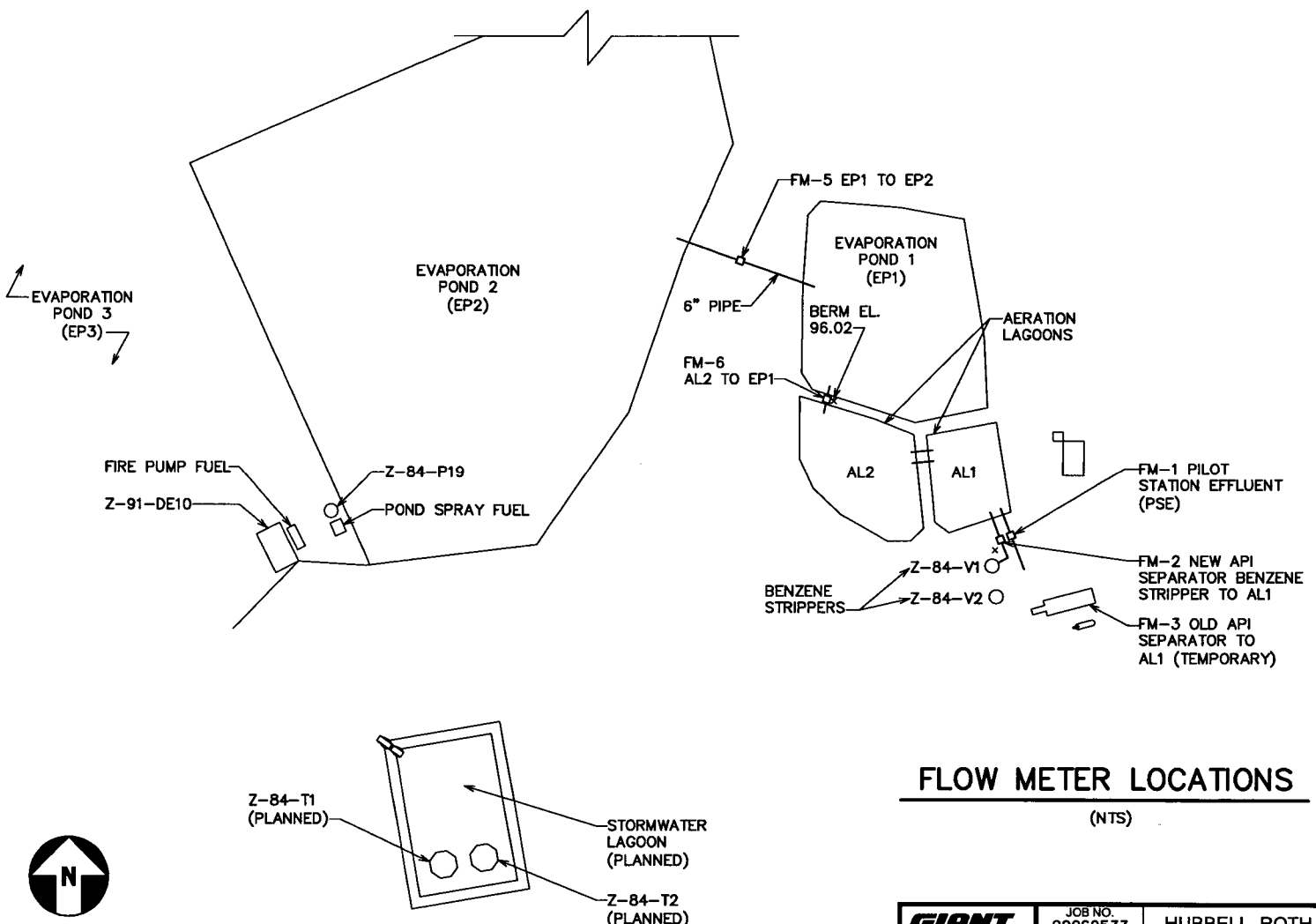
8/25/2006



EXISTING CONDITIONS

(NTS)

GIANT Giant Refining Company Route 3, Box 7 Gallup, NM 87301	JOB NO. 20060533 DATE AUG. 17, 06	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 555 HULET DRIVE P.O. BOX 824 BLOOMFIELD HILLS, MICH. 48303-0824	SHEET NO. FIG. 1 OF 5

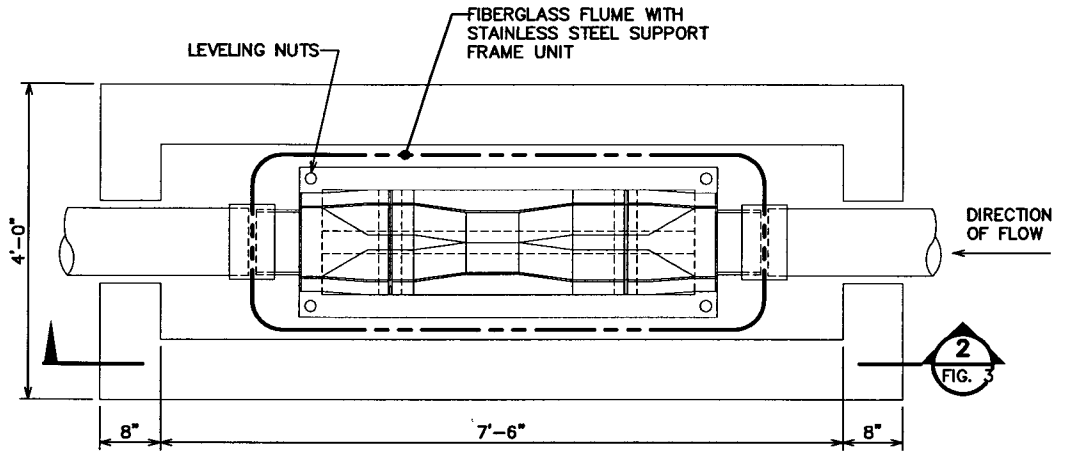


FLOW METER LOCATIONS

(NTS)

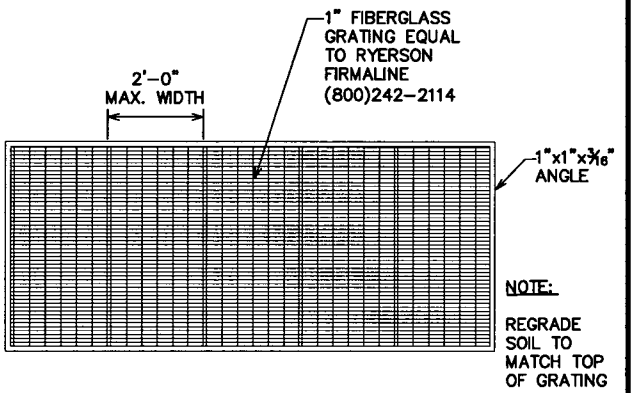
FM-4 BOILER PLANT WATER TO EP2 (LOCATED AT WATER TREATMENT BUILDING)

GIANT Giant Refining Company Route 3, Box 7 Gallup, NM 87301	JOB NO. 20060533 DATE AUG. 17, 06	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 555 HULET DRIVE P.O. BOX 824 BLOOMFIELD HILLS, MICH. 48303-0824	SHEET NO. FIG. 2 OF 5



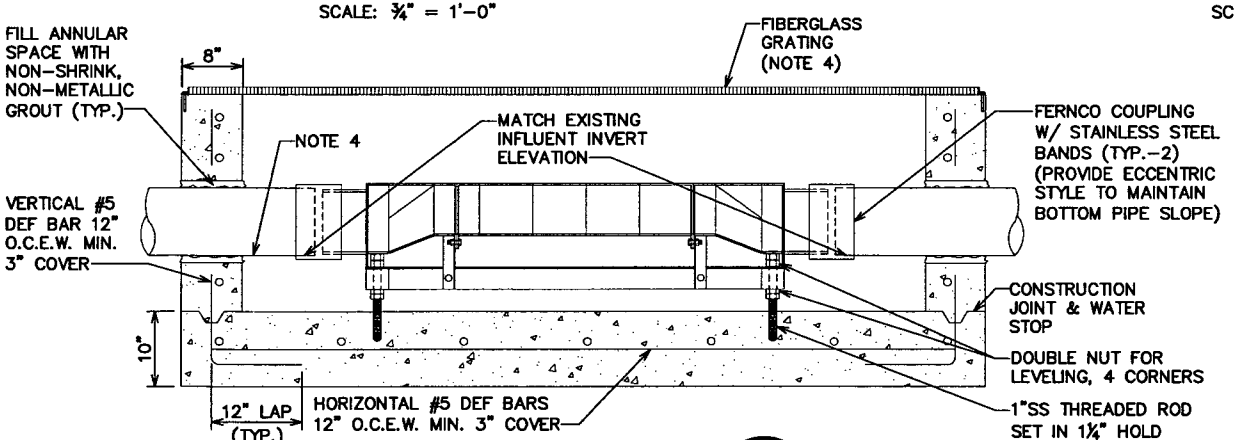
PLAN WITH GRATING REMOVED

SCALE: ¾" = 1'-0"



PLAN WITH GRATING IN-PLACE

SCALE: ½" = 1'-0"



SECTION

SCALE: ¾" = 1'-0"

2
FIG. 3

NOTES:

1. ALL 304 STAINLESS STEEL FASTENERS.
2. DOUBLE NUT AND LEVEL FLUME IN ALL DIRECTIONS.
3. CONCRETE FOR STRUCTURE SHALL BE 3500 PSI @ 28 DAYS.
4. SEE PLAN SHEET FOR GRADE AND PIPE INVERT IN THE AREA WHERE STRUCTURE IS TO BE PLACED.

FIBERGLASS FLUME INSTALLATION

GIANT Giant Refining Company Route 3, Box 7 Gallup, NM 87301	JOB NO. 20060533 DATE AUG. 17, 06	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 555 HULET DRIVE P.O. BOX 824 BLOOMFIELD HILLS, MICH. 48303-0824	SHEET NO. FIG. 3 OF 5

FLOW METER SCHEDULE

DESIGNATION	LOCATION	ESTIMATED AVERAGE FLOW (GPM)	WATER QUALITY	FLOW METER TYPE	SIZE FLUME	INVERT ELEVATION (FEET)	PREVAILING GRADE ELEVATION (FEET)	COMMENTS
FM-1	PILOT STATION EFFLUENT TO BENZENE STRIPPER	8	DIRTY	TRAPEZOIDAL FLUME/BUBBLER	8 INCH			PROVIDE NEW 8 INCH DISCHARGE PIPE
FM-2	NEW API SEPARATOR/BENZENE	93	CLEAN	TRAPEZOIDAL FLUME/BUBBLER	8 INCH			PROVIDE NEW 8 INCH DISCHARGE PIPE
FM-3	OLD API SEPARATOR/BENZENE	9.2	DIRTY	AREA VELOCITY	24 INCH PIPE	–	–	TEMPORARY INSTALLATION – METER WILL BE MOVED TO PROPOSED STORMWATER
FM-4	BOILER PLANT TO EVAPORATION POND NO. 1	22	CLEAN	MAGNETIC	–	–	–	4 INCH METER INSTALLED ON VERTICAL RISER PIPE
FM-5	EVAPORATION POND NO. 1 TO EVAPORATION POND NO. 2	101	DIRTY	TRAPEZOIDAL FLUME/BUBBLER	8 INCH			PROVIDE NEW 8 INCH INLET PIPING AND OUTLET PIPING
FM-6	AERATION LAGOON NO. 2 TO EVAPORATION POND NO. 1	101	DIRTY	TRAPEZOIDAL FLUME/BUBBLER	8 INCH			PROVIDE NEW 8 INCH INLET PIPING AND OUTLET PIPING

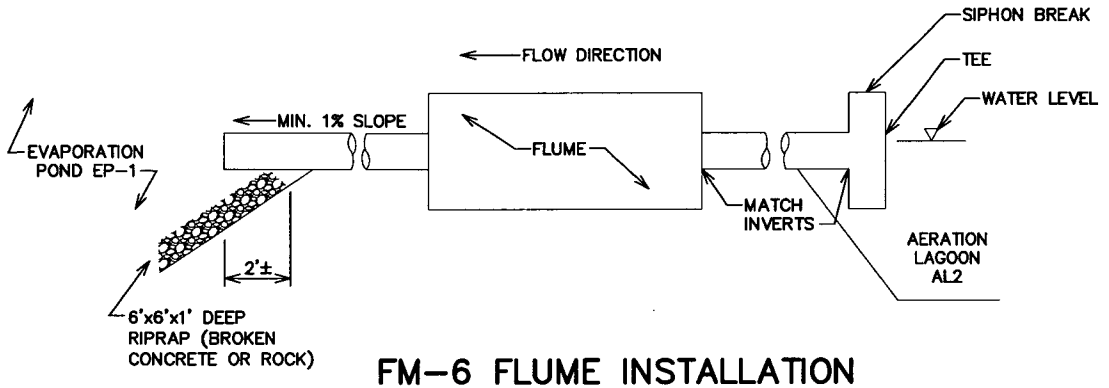
NOTE:

PROVIDE DUCTILE IRON OR SCHEDULE 40 CARBON STEEL PIPING, EXCEPT PM-5 WHICH MAY BE PVC PIPING.

EQUIPMENT SPECIFICATIONS

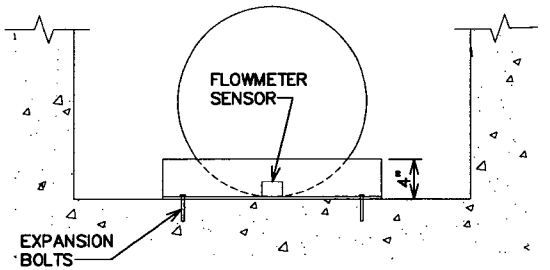
EQUIPMENT	SUPPLIER CONTACT	SPECIFICATIONS	OWNER INPUT
TRAPEZOIDAL FLUME	TRACOM, INC. (877) 435-8637	FIBERGLASS FLUME INSERT, 60 DEGREE, LARGE V WITH INLET AND OUTLET ADAPTERS, 8" PIPE STUBS. FLUME PROVIDED WITH STAINLESS STEEL FRAME FOR LEVELING AS SHOWN ON THE DWGS.	
MAGNETIC FLOWMETER	YAMATAKE (888) 262-4639	MTG18W MagneW TWO-WIRE PLUS, WITH POLISHED PFA LINING. REMOTE READOUT WITH TOTALIZER. FOUR (4) INCH FLANGED UNIT SUITABLE FOR FLOWRATES BETWEEN 10 AND 400 GPM. BAKED EPOXY COATINGS FOR CORROSIVE ATMOSPHERES. FM CLASS 1, DIVISION 1 HAZARDOUS AREA CERTIFICATION. STAINLESS STEEL ELECTRODE AND GROUNDING RING.	OWNER TO SELECT COMMUNICATION OUTPUT, WIRING CONNECTION, CONVERTER MOUNTING, AND CABLE LENGTH. NOTE ALTERNATE MAGNETIC FLOWMETER QUOTED BY WATER TECHNOLOGY GROUP AS MANUFACTURED BY MULTIMAG.
AREA – VELOCITY METER	HACH-SIGMA – CONTACT BROOKS NEWBRY W/ WATER TECHNOLOGY GROUP (480) 415-5296	MODEL 910 AREA VELOCITY FLOWMETER WITH NON-OIL FILLED SUBMERGED SENSOR. WITH MOUNTING RING FOR 24 INCH DIAMETER PIPE AND MOUNTING CLIP.	SELECT LENGTH OF CABLE FROM SENSOR TO FLOWMETER. NOTE THAT UNIT IS BATTERY POWERED.
BUBBLER FLOWMETER PACKAGE	HACH-SIGMA – CONTACT BROOKS NEWBRY W/ WATER TECHNOLOGY GROUP (480) 415-5296	PART NUMBER 3428 950 AV FLOWMETER, 888007 BUBBLER DEPTH PROBE, 3232 CABLE TO CONNECT FLOWMETER TO PERSONAL COMPUTER.	SPECIFY LENGTH OF BUBBLER TUBING.

GIANT Giant Refining Company Route 3, Box 7 Gallup, NM 87301	JOB NO. 20060533 DATE AUG. 17, 06	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 555 HULET DRIVE P.O. BOX 824 BLOOMFIELD HILLS, MICH. 48303-0824	SHEET NO. FIG. 4 OF 5

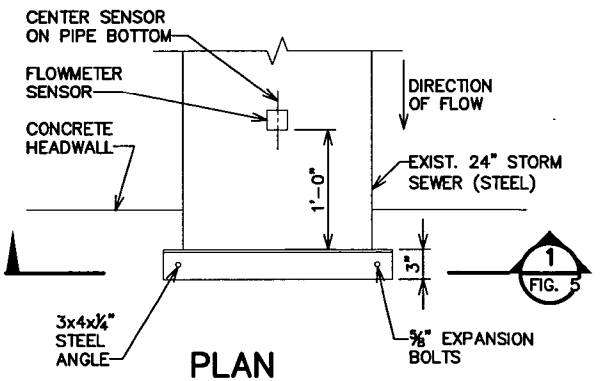


FM-6 FLUME INSTALLATION

NOT TO SCALE



SECTION 1 / FIG. 5



PLAN

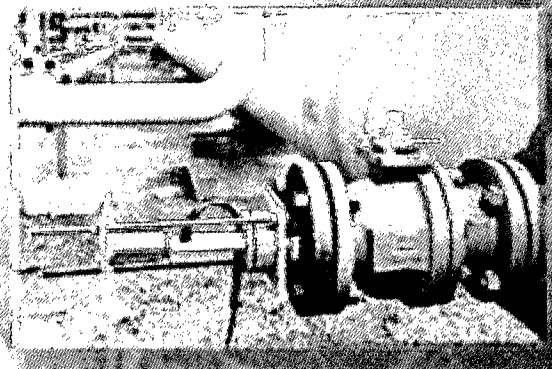
OLD API SEPARATOR
FLOW METER (FM-3) INSTALLATION

SCALE: ¾" = 1'-0"

GIANT Giant Refining Company Route 3, Box 7 Gallup, NM 87301	JOB NO. 20060533 DATE AUG. 17, 06	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 555 HULET DRIVE P.O. BOX 824 BLOOMFIELD HILLS, MICH. 48303-0824	SHEET NO. FIG. 5 OF 5

Multi-Mag™ Magmeter

Revolutionary Technology Utilizes Multiple Measuring Points for Unsurpassed Accuracy



MARSH McBIRNEY

A Higher Level of Flow Technology

www.mccrometer.com

"A 40 year old Venturi meter at a major station cracked. We first replaced it with a single point insertion magmeter. Accuracy over a range of flows from 4-40 MGD was required. We found the accuracy of the single point insertion meter would degrade when different combinations of pumps were used. To solve this problem we installed a Multi-Mag over four years ago. Multi-Mag has given us the accuracy and extra confidence we need in our pump station flows."

Bob Merrill
Division Foreman
United Water - NJ

- *Potable Water*
- *Cooling Water*
- *Raw Water*
- *Filter Balancing*
- *Backwash Monitoring*
- *Water Containing Sand/Grit*
- *Chilled Water*
- *Well Field Monitoring*

Multi-Mag™ Magmeter

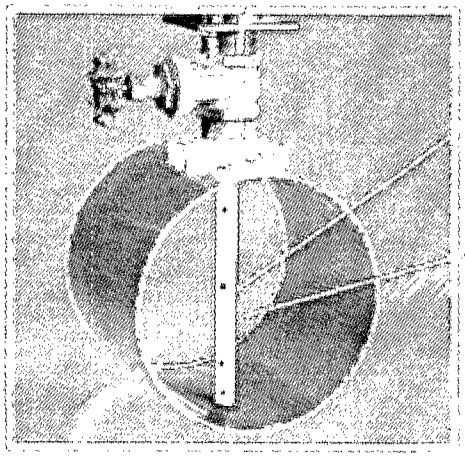
With thousands of installations worldwide, our customers have consistently demonstrated their trust in Multi-Mag's accuracy, outstanding operating performance, ease of installation and significant cost savings.

Multiple Electrodes Constantly Profile the Flow to Optimize Accuracy

An array of electromagnetic sensors are strategically located on the insertable probe that spans the entire pipe diameter. This insertable probe detects and compensates for shifting profiles unlike spool-piece meters and flowmeters that provide only a single point flow measurement. Typically, accuracy is better than the ±1% specification.

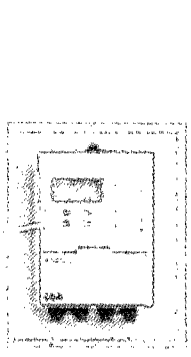
The streamlined sensor shape minimizes flow disturbances, thus providing minimal pressure drop, unlike vortex meters, turbine meters, and orifice plates. Multi-Mag requires significantly less energy to operate than most flowmeters, including pitot tubes.

Costs for most flowmeters, including spool-piece magmeters increase substantially as pipe size increases. Not so with Multi-Mag.



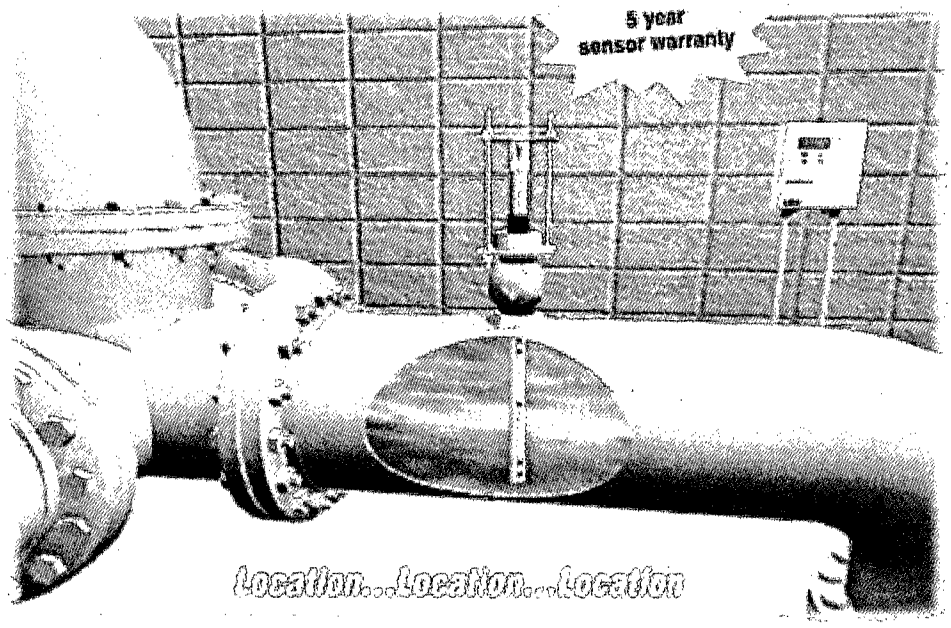
A single patented probe with multiple sensors constantly measures shifting flow profiles unlike single point flowmeters.

5 Year Sensor Warranty



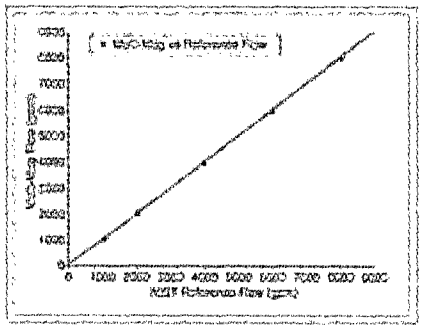
Compact state-of-the-art transmitter(s) available with menu-driven software for easy set-up.

Streamlined sensor shape does not disrupt water flow and has negligible pressure loss resulting in lower energy costs.

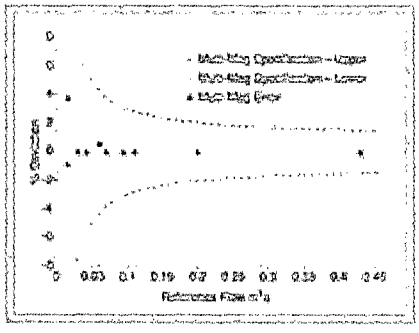


Our Insertable Magmeter Accurately Measures Flow Where Others Can't...Close to Bends and Elbows

1% Accuracy Verified Worldwide by Independent Flow Laboratory Test Results

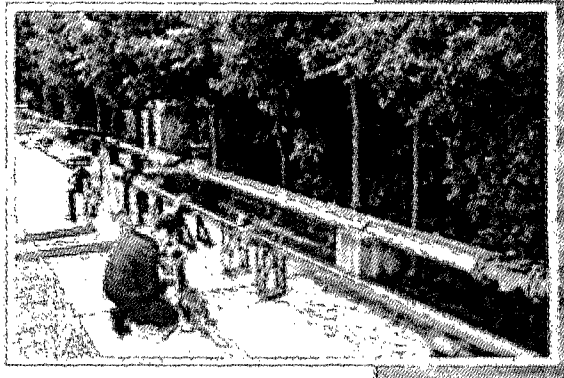


In February 1996, the National Institute of Standards and Technology (NIST) collected performance data on a Multi-Mag in a 9.95-inch pipe. The Multi-Mag was subjected to velocities in excess of 30 ft/s and exceeded its design goals for accuracy. ±0.3% of reading was achieved over the entire flow range.



In April 1995, tests were conducted on a 400 mm pipe by the Water Research Institute of Bratislava, Slovakia. A typical flow accuracy of ±0.2% of reading/±5 mm/s was attained by the Multi-Mag.

The Water Research Center (WRc) located in England conducted Multi-Mag testing for several large water companies. The results of this evaluation solidly confirm that Multi-Mag is capable of accurately measuring flow close to bends and elbows.



"The Authority had a need to monitor the flow characteristics at an existing water booster station and then transmit the information to our filtration plant. A previous insertion meter did not provide accurate information even though it was installed at a recommended location. The Multi-Mag's adaptability to a unique piping arrangement enabled the Authority to install an accurate meter within the station at a quarter of the cost."

Bob Softcheck
General Manager
North Fayette County Municipal Authority, Dunbar, PA

Benefits

- Installs Close to Bends/Elbows
- Electromagnetic Technology
- 5 Year Sensor Warranty
- No Ports to Clog
- For pipe sizes 4" and up
- High Temperature Sensors
- Low and/or High Flow Rates
- Quick Installation
- No System Shutdown
- Streamlined Sensor Shape
- Creates Negligible Pressure Loss
- Never Requires Calibration

Specifications — Multi-Mag™ Model 285

Measurement
Volumetric flow in filled flow conduits 4" (101.6 mm) to 120" (3 m) utilizing insertable electromagnetic averaging sensor. Flow indication in English Std. or Metric units. Contact factory for larger pipe sizes.

Flow Measurement
Method: Electromagnetic
Zero Stability: ±0.03 ft/s (+.009 m/s)
Linearity: 0.3% of range
Repeatability: 0.20% of range
Accuracy: ±1% of reading from 0 to +20 ft/s + zero stability
Has reverse flow indication.
Range: Nominal pipe size availability
Sensor Size-Velocity Range for Pipe Sizes

2" Sensor Velocity Range	Pipe Sizes (4" to 60")
0 to 40 ft/s	10" & under
0 to 35 ft/s	12" & under
0 to 30 ft/s	16" & under
0 to 25 ft/s	20" & under
0 to 20 ft/s	24" & under
0 to 15 ft/s	36" & under
0 to 10 ft/s	42" & under
0 to 7.5 ft/s	60" & under
3" Sensor Velocity Range	**Pipe Sizes (42" to 120")**
0 to 15 ft/s	60" & under
0 to 10 ft/s	100" & under
0 to 7.5 ft/s	120" & under

(Contact factory for information on models with bi-directional flow capability or velocities in excess of above specifications.)

Materials
Sensor: Fiberglass
Cable: Polyurethane outer jacket
Insertion Hardware: 316 Stainless Steel exposed to flow.
Compression Seal: Silicone Rubber
Sensor Electrodes: Carbon
Number of electrode pairs is dependent upon sensor length.

Transmitter Enclosure:
NEMA 4X/IP65. Separate termination and electronics compartments. Glass filled polypropylene with clear polycarbonate window.

Transmitter-Dimensions
8.4"H x 6.4"W x 2.8"D
(214mm x 163 mm x 70 mm)

Transmitter-Weight
3.2 lbs. (1.5kg)

Potable Water Applications
Suitable for use in contact with potable water. Water Byelaws Scheme (WBS) Approved Product. Meets BS6920 - Cert. #9706516 - 2" Sensor
3" Sensor manufactured with materials certified to NSF 61.

Configuration and Set-Up
Programming can be easily done on site using the keypad. Two levels of user defined password protection are provided.

Outputs
Analog: Galvanically isolated and fully programmable for zero and full scale. Output capability <16V. (800 ohm, 4-20mA) Secondary range enabled by external input or programmed alarm condition as a percent of full scale.
Pulse/Frequency: One flow proportional or frequency output (transistor type) for flow rate or for external totalizer. Capable of sinking <250 mA @ <35V.

Dual Alarms
(2 separate outputs): Isolated protected transistor switch capable of sinking <230mA @ <35V. Note: Not isolated from frequency output. Fully programmable for high/low flow rates, % of range, empty-pipe, fault conditions, forward/reverse, polarity (normally open/close), analog over-range, pulse over-range, pulse cutoff, etc.

Environmental
Minimum Conductivity: 5 umho/cm (5 uS/cm)
Pressure/Temperature Limits:
Sensor: Flow Temperature Range
Standard: 32° to 110°F (0° to 44°C) @ 250 psi
Optional: 32° to 140°F (0° to 60°C) @ 250 psi
Sensor may be submersed.
Electronics: Temperature limits
Operating: -14° to 140°F (-25° to 60°C)
Storage: 5° to 167°F (-15°C to +75°C)

Electrical Connections
0.5 inch NPT with gasket seal

Keypad and Display
Can be used to access and change all set-up parameters using four membrane keys and 3-line display.
3-Line, 16 character, backlit LCD display with large 1/2" numerals for flow rate and two lines for engineering units, totalizers, alarm status, velocity and percent of range.

Isolation
Galvanic separation to 50VDC between analog, pulse/alarm, and earth/ground.

Electrical Safety
Meets ANSI/ISA-S82.10-1988 and S82.03-1988

Power Supply
Universal switch mode.
AC: 85 to 265V 45 to 400 Hz at 20VA max. or DC: 11 to 40V at 20VA max. AC or DC must be specified at time of ordering.

Vibration Specification
Meets BS2011: Part 2.1Fc: 1983

Internal Totalizer
9-digit totalizer. Can be programmed to reset via external input or the keypad. Reset from keypad can be password protected.

Test Mode and Output Circuit Loop Verification
After transmitter has been programmed, operation of the test mode will drive all outputs to a programmed value which provides a total system test.

Ordering Information
Multi-Mag flowmeter includes modified NEMA 4X/IP65 (separate termination and electronics compartment) glass filled polypropylene electronics enclosure with polycarbonate window, electromagnetic velocity sensor with 20' cable, 4-membrane keys for configuring the transmitter, 3-line LCD backlit display with one line of five ½" numerals for flow rate indication and 2 lines containing 16 characters for viewing engineering units, velocity, totalizer, alarm status and flow rate expressed as a percent of full scale, one flow proportional or frequency output (transistor type) for flow rate or for external totalizer, a 4-20 mA output for flow and one instruction manual.

Options include high temperature sensor, extended sensor cable, (Maximum length 1000' (304m)), pole mounting kit, insertion tool, sun shield, and additional instruction manuals.

Contact factory for Sensor Mounting Hardware Ordering Information

Note: Periodic cleaning may be required depending on the concentration of substances such as manganese or iron. The sensor is relatively easy to remove and clean. Multi-Mag™ may not be suitable where stringy material such as grasses or sea weed, rags, bio-film or leaves are likely to collect on the sensor.

MARSH McBIRNEY
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3255 W. Stetson Ave. • Hemet, CA 92545 USA
Tel: (951) 652-6811 • Toll Free: (800) 220-2279 • Fax: (951) 652-3078
www.mccrometer.com

FMRC

Made in U.S.A. under one or more of the following patent numbers: [illegible]

P/N 103004501 2.5M 5/04