

Attachments can contain viruses that may harm your computer. Attachments may not display correctly.

Monzeglio, Hope, NMENV

From: James Romero [jromero@giant.com] **Sent:** Wed 8/31/2005 3:12 PM
To: Monzeglio, Hope, NMENV; Ed Riege; James Romero
Cc: Price, Wayne, EMNRD; Foust, Denny, EMNRD; Cobrain, Dave, NMENV; Steve Morris
Subject: RE: Firewater storage
Attachments: firewaterproposal.doc(712KB) Picture 010.jpg(1MB) Picture 011.jpg(859KB) Picture 012.jpg(1MB) Picture 023.jpg(878KB)

Hope, I really appreciate all your questions and interest in our project. It really helps me to see our project from all aspects.

This morning I mailed a letter with attachments to everyone requesting permission to use the pond to store firewater. Ideally after reading that letter your questions will be addressed. However, below are some quick answers to your questions. Also, I've attached the letter to this email

- 1) RO stands for Reverse Osmosis, it is not the same as boiler feed water. The well water used comes from the main potable water well
- 2) Lab results for the RO water are attached to the letter and included RCRA Metals, 8260B, and general chemistry
 The RO water will not be pumped and/or stored from pond 2, it will go directly into the proposed firewater pond from the boiler house. Currently, the RO water does go into Evap 2, however, its infrastructure is completely separate from the inlet from evap 1.
- 3) To my knowledge the sewage effluent has not been tested. The pond receives very little effluent, the vast majority of our raw sewage goes into our sewage lagoons located east from the refinery. Numerous visual inspections of the area did not indicate any standing water in the pond, moist soil is present with hydrophytic vegetation.
- 4) As stated above, the RO water currently goes from the boiler house into pond 2 via pipe. If our request is approved, the pipe will be removed and a new pipe will travel from the boiler house to the new firewater pond. This proposal is not only beneficial to the refinery from a safety standpoint, but it eliminates the potential of sucking contaminants from Pond 2, if an emergency were to arise today. The proposed basin will hold approximately 3, 200,000 gallons of water for firefighting. If the basin becomes full an overflow into pond 2 can be created.
- 5) The dimensions are approximately 20'bottomX10'topX10"high The soil composition is the same as our other ponds (Clay) which is several feet thick and permeability (as demonstrated from our other ponds) is zero. Evaporation rates have not been formally completed, however, based on experience with our other ponds we do not feel it will be a huge factor
- 6) See letter
- 7) Map attached to letter

Call me after you've had a chance to review everything, if there is anything I can answer or get for you please let me know.

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

From: Monzeglio, Hope, NMENV [mailto:hope.monzeglio@state.nm.us]
Sent: Wednesday, August 31, 2005 12:04 PM
To: eriege@giant.com; jromero@giant.com
Cc: Price, Wayne, EMNRD; Foust, Denny, EMNRD; Cobrain, Dave, NMENV
Subject: Firewater storage

James

To recap our conversation today 8/30/05 pertaining to fire water storage. Below is the information I have gathered from our conversations and email.

From our understanding, Giant is going to use "RO" water, which was explained to be well water, used to create steam for turbines. This water will be placed in the proposed firewater storage area identified on the map provided in the 8/29/05 email Subject: RE: "1,152,000 gal Release notification form." The proposed firewater storage area is a basin created in the 50's and a section of the basin currently stores sewer effluent. The "RO" water and sewer effluent water will be separated by a berm. Finally, the "RO" water will be transported from the well, stored in Evaporation Pond 2 (EP 2), and then transferred to the

GIANT

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

August 31, 2005

Wayne Price, Senior Environmental Engr.
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505

Denny Foust, Environmental Geologist
Oil Conservation Division
1000 Rio Bravo Rd
Aztec, NM 887410

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

RE: Request to utilize existing pond for firewater storage

Dear Wayne, Denny and Hope:

Giant Ciniza Safety Department has been investigating options to improve and increase the amount of water available in case of an emergency at the refinery. This project would not only be beneficial to the safety of our employees and the facility, but would double (1500/3000gpm) the amount of water available.

Currently, firewater is delivered via suction line from pond #2 @ 1500gpm to the refinery. Problems with the current system have made it obsolete and unreliable. Problems include but are not limited to: (1) service life of the suction pipe has been reached and reliability is severely questionable; (2) water quantity has diminished substantially due to settling in pond 2; and (3) water quality (heavy salts) have made the water undesirable for use.

Alternatives considered included, (1) no action; (2) replace suction line in pond 2; (3) construct a new pond; and (4) utilizing exiting effluent pond. Taking no action was not considered practicable because of safety concerns and it would not increase or improve the amount of water available. Alternative 2 would involve a considerable amount of labor and would cause significant disruption to pond 2 from dredging operations. Dredging may require draining which would make the fire pumps unavailable during an emergency. Moreover, the question of dredge spoil disposal would be an issue with this alternative. Alternative 3 would involve locating an acceptable location, construction, labor costs and increased regulatory oversight would make it uneconomic to pursue.

The preferred option would use an existing pond thereby minimizing impacts to the environment from construction and logistically is more favorable, and more cost

effective. This alternative would easily connect to our current fire fighting loop system increasing our available firewater by 84,000 barrels; doubling our fire fighting capabilities from 1500gpm to 3000gpm.

Water Supply

As discussed previously, firewater is currently taken from pond 2 via suction line. Water in pond 2 derives from effluent from evaporation pond #1 and RO (Reverse Osmosis) reject water from the boiler house. Both sources have separate infrastructure and outlets into pond 2.

The RO reject water derives from clean water, which is pumped to the boiler house from onsite wells. There it is purified using RO then turned into steam which is used to run turbines and other facility operations. Grab samples of the RO water were taken on 8/9/05 and analyzed. Test results (see attached) showed non-detect for all contaminants.

Existing effluent pond

The existing pond (see attached pics) was constructed sometime in the 1950's to hold sewage effluent. However, very little sewage effluent reaches the pond. A vast majority of the refineries sewage effluent goes into sewage lagoons located east of the refinery. However, the pond still receives small amounts of sewage from the refinery.

The pond itself consists of two cells, one cell is currently being used for sewage effluent and is 1/3 the size of the second cell. The Second Cell is larger and to the best of our knowledge has never been used for sewage effluent or other uses. The cells are separated by an earthen berm measuring 15-18' at its base. This earthen berm will be re-built and strengthened prior to any use of the pond.

Thank you for taking the time to review our request. If there is any additional information you need or if you have any questions please do not hesitate to call me at (505) 722-0227.

Sincerely,

James Romero
Environmental Engineer
Ciniza Refinery

Encl: lab results, refinery map, and pics



Proposed firewater pond

→
Sewage
Lagoon





B-3

Proposed Firewater
Pond

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COVER LETTER

August 24, 2005

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: RO Reject & Softener Water

Order No.: 0508111

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 1 sample on 8/10/2005 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager



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

Hall Environmental Analysis Laboratory

Date: 24-Aug-05

CLIENT: Giant Refining Co
 Lab Order: 0508111
 Project: RO Reject & Softener Water
 Lab ID: 0508111-01

Client Sample ID: Res. Water
 Collection Date: 8/9/2005 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: CMC
Fluoride	1.5	0.10		mg/L	1	8/10/2005
Chloride	46	0.50		mg/L	5	8/11/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/10/2005
Nitrogen, Nitrate (As N)	0.56	0.10		mg/L	1	8/10/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/10/2005
Sulfate	2500	25		mg/L	* 50	8/11/2005
EPA METHOD 8260: VOLATILES						Analyst: HLM
Benzene	ND	1.0		µg/L	1	8/15/2005
Toluene	ND	1.0		µg/L	1	8/15/2005
Ethylbenzene	ND	1.0		µg/L	1	8/15/2005
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2005
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2005
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2005
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2005
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2005
Naphthalene	ND	2.0		µg/L	1	8/15/2005
1-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2005
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2005
Acetone	ND	10		µg/L	1	8/15/2005
Bromobenzene	ND	1.0		µg/L	1	8/15/2005
Bromochloromethane	ND	1.0		µg/L	1	8/15/2005
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2005
Bromoform	ND	1.0		µg/L	1	8/15/2005
Bromomethane	ND	2.0		µg/L	1	8/15/2005
2-Butanone	ND	10		µg/L	1	8/15/2005
Carbon disulfide	ND	10		µg/L	1	8/15/2005
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2005
Chlorobenzene	ND	1.0		µg/L	1	8/15/2005
Chloroethane	ND	2.0		µg/L	1	8/15/2005
Chloroform	ND	1.0		µg/L	1	8/15/2005
Chloromethane	ND	1.0		µg/L	1	8/15/2005
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2005
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2005
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2005
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2005
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2005
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2005
Dibromomethane	ND	2.0		µg/L	1	8/15/2005
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2005
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2005

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

Hall Environmental Analysis Laboratory

Date: 24-Aug-05

CLIENT: Giant Refining Co
 Lab Order: 0508111
 Project: RO Reject & Softener Water
 Lab ID: 0508111-01

Client Sample ID: Res. Water
 Collection Date: 8/9/2005 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2005
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2005
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2005
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2005
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2005
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2005
2,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2005
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2005
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2005
2-Hexanone	ND	10		µg/L	1	8/15/2005
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2005
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2005
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2005
Methylene Chloride	ND	3.0		µg/L	1	8/15/2005
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2005
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2005
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2005
Styrene	ND	1.0		µg/L	1	8/15/2005
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2005
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2005
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2005
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2005
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2005
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2005
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2005
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2005
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2005
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2005
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2005
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2005
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2005
Vinyl chloride	ND	1.0		µg/L	1	8/15/2005
Xylenes, Total	ND	1.0		µg/L	1	8/15/2005
Surr: 1,2-Dichloroethane-d4	98.1	87.7-108		%REC	1	8/15/2005
Surr: 4-Bromofluorobenzene	107	88.8-113		%REC	1	8/15/2005
Surr: Dibromofluoromethane	105	84.1-111		%REC	1	8/15/2005
Surr: Toluene-d8	95.4	85.9-109		%REC	1	8/15/2005

EPA 120.1: SPECIFIC CONDUCTANCE

Specific Conductance 6900 0.010 µmhos/cm 1 8/13/2005 Analyst: CMC

EPA METHOD 7470: MERCURY

Mercury ND 0.00020 mg/L 1 8/15/2005 Analyst: CMC

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

Hall Environmental Analysis Laboratory

Date: 24-Aug-05

CLIENT: Giant Refining Co
 Lab Order: 0508111
 Project: RO Reject & Softener Water
 Lab ID: 0508111-01

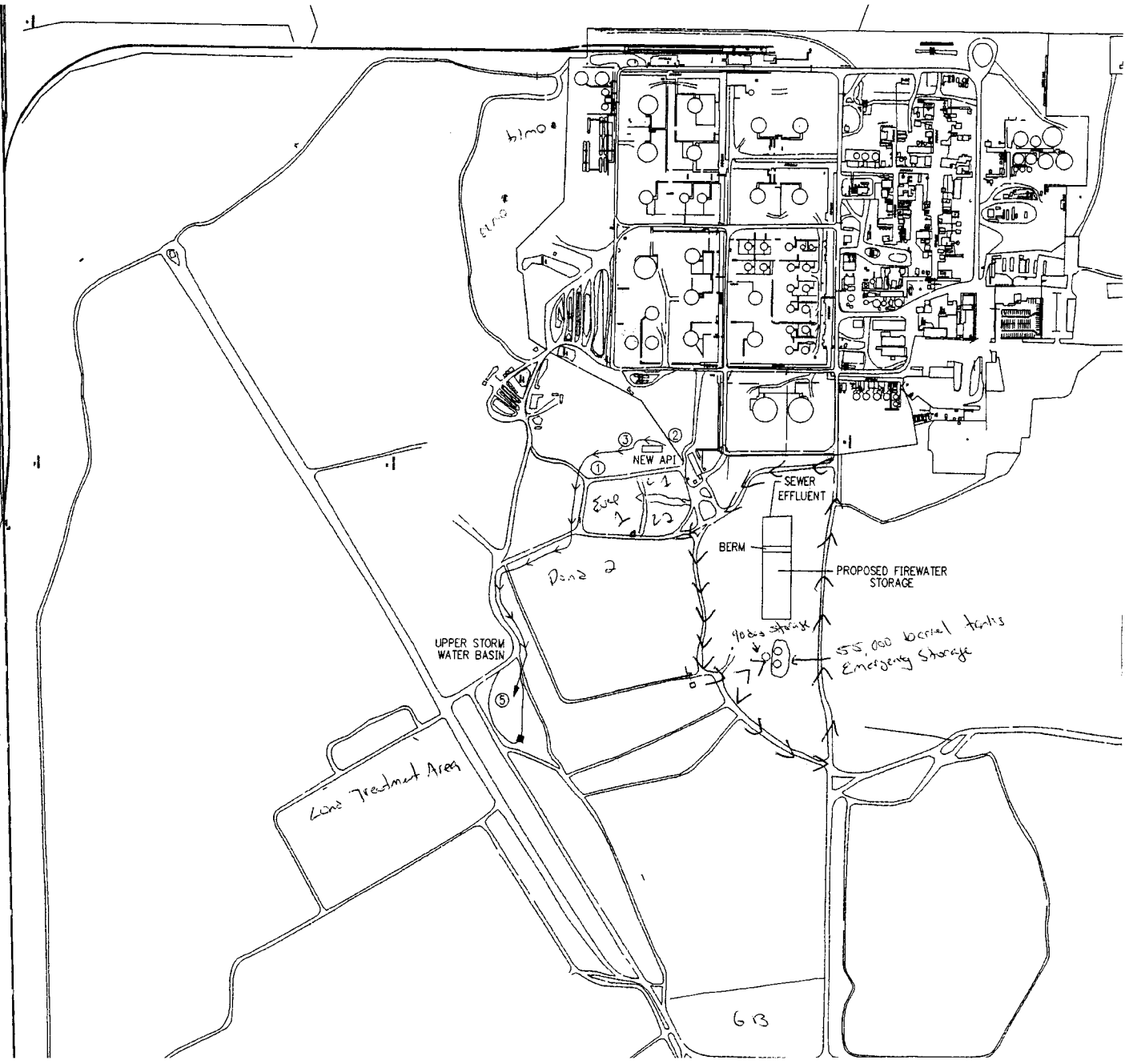
Client Sample ID: Res. Water
 Collection Date: 8/9/2005 8:00:00 AM
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/16/2005 9:31:46 AM
Barium	ND	0.020		mg/L	1	8/15/2005 1:17:58 PM
Cadmium	ND	0.0020		mg/L	1	8/15/2005 1:17:58 PM
Calcium	2.1	1.0		mg/L	1	8/15/2005 1:17:58 PM
Chromium	ND	0.0060		mg/L	1	8/15/2005 1:17:58 PM
Lead	ND	0.0050		mg/L	1	8/15/2005 1:17:58 PM
Magnesium	ND	1.0		mg/L	1	8/15/2005 1:17:58 PM
Potassium	6.5	1.0		mg/L	1	8/15/2005 1:17:58 PM
Selenium	ND	0.050		mg/L	1	8/16/2005 9:31:46 AM
Silver	ND	0.0050		mg/L	1	8/15/2005 1:17:58 PM
Sodium	1600	20		mg/L	20	8/15/2005 3:53:14 PM
EPA METHOD 150.1: PH						Analyst: DK
pH	8.12	0.010		pH units	1	8/17/2005

Qualifiers: ND - Not Detected at the Reporting Limit
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 * - Value exceeds Maximum Contaminant Level
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range

←← Spill Flow

Truck Route



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Precision Engineering, Inc.

**P.O. Box 422
Las Cruces, NM 88004
505-523-7674**

ERCC

Proposed Fire Water
Storage

**Rigid Wall Hydraulic Conductivity
Falling Head**

**ATTN: James Romero
Giant Refining Company
Route 3, Box 7
Gallup, NM 87301**

Project: Ciniza Fire Water Lagoon File No.: 05-100
Soil Type: Silty Clay Date: October 13, 2005 Lab No.: 47872
Sampled From: Boring 05-100-1(2.5'-3.0') Performed By: GG

TEST SPECIMEN CONDITIONS AT BEGINING OF TEST:

Wet Unit Weight: 120.8 pcf % Moisture: 10.8
Dry Unit Weight: 109.0 pcf % Compaction: n/a
% Compaction Requested: n/a

PROCTOR INFORMATION:

Maximum Dry Density: n/a pcf
Optimum Moisture Content: n/a %

Coefficient of Permeability, k_{20} : 1.1×10^{-7} cm/sec. avg

Remarks: Avg of three: 1.1×10^{-7} , 1.1×10^{-7} , 1.1×10^{-7}

C:\bill\Projects\2005\05100cinizafirewtr\Permeability.xls]Report
Reviewed By: _____ Reviewed By: _____

Certified By: 

Sheet: 1 OF 5

Bore Point: SW Corner of Proposed
Fire Water Lagoon
Water Elevation: -98.2@TD,-27@1 hr
Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Glant-Ciniza

Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
47872	0.0-5.0				<u>Clay</u> , Very Silty, Sandy, Very Fine, Dark Red, Wet, Firm				
				<u>2.5</u>	[2.5-3.0 hydraulic conductivity sample]				
	5.0-10.0			<u>5.0</u>	<u>Same As Above</u> , Wet, Soft				
				<u>7.5</u>					
	10.0-15.0			<u>10.0</u>	<u>Same As Above</u>				
	15.0-16.0			<u>15.0</u>	<u>Same As Above</u>				
	16.0-17.5				<u>Sand</u> , Very Fine, Very Clayey, Very Silty, Weak Water Bearing, Moderately Dense, Dark Red/Brown				
	17.5-21.5			<u>20.0</u>	<u>Clay</u> , Dark Red, Wet, Soft				
SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER						LOGGED BY: WHK			

Sheet: 3 OF 5
 Bore Point: SW Corner of Proposed
 Fire Water Lagoon
 Water Elevation:
 Boring No.: 05-100-1

Precision Engineering, Inc.
 P.O. Box 422
 Las Cruces, NM 88004
 505-523-7674

File #: 05-100
 Site: Giant-Ciniza
 Elevation: EXISTING
 Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	45.0-50.0			<u>45.0</u>	<u>Mudstone/Siltstone</u> , Bright Red/Brown, Dry Very Dense				
	50.0-55.0			<u>50.0</u>	<u>Same As Above</u>				
	55.0-60.0			<u>55.0</u>	<u>Same As Above</u>				
	60.0-65.0			<u>60.0</u>	<u>Same As Above</u>				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER

LOGGED BY: WHK

Bore Point: SW Corner of Proposed
Fire Water Lagoon
Water Elevation:
Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Giant-Ciniza
Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
				90.0	Upper Sonsela Member Continued (dry)				
				95.0					
	97.7-98.2				Mudstone , Hard, Dry, Green/Grey-White				
	98.2-101.6			100.0	Sandstone , Fine to Medium, Quartz Grains, Water Bearing, Hard, (Sonsela Member, Petrified Forest Formation, Chinle Group)				
	101.6			105.0	TD Boring continuously sampled using 5' split barreled intrusion sampler. Boring closed using 10' of 3/8" TR-30 Pel Plug capped with 50' of 8% bentonite cement slurry and backfilled to the ground surface with cuttings.				
SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER						LOGGED BY: WHK			