

GRCC 06

**GIANT**

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

August 29, 2006

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



RE: Work Plan for Investigation of Overflow Ditch and Fan-Out Area of Rail Road Rack Lagoon, SWMU #8

Dear Ms. Monzeglio:

Attached is the Work Plan for the investigation of the Overflow Ditch and Fan-Out Area that were associated with the former railroad rack lagoon. Giant is submitting this Plan to NMED as you requested in the Notice of Deficiency Response to Remedy Completion Report for SWMU #8, Rail Road Rack Lagoon, Giant Refining Company, Ciniza Refinery, EPA ID # NMD000333211, HWB-GRCC-06-001.

The Plan was prepared by our consultant Trihydro Corporation. Once we obtain approval from NMED to proceed with the investigation, Trihydro will be conducting the investigation work and preparation of a follow-up report.

If you have any questions, please contact me at (505) 722-0227.

Best Regards,

A handwritten signature in black ink that reads 'Jim Lieb'.

Jim Lieb  
Environmental Engineer  
Giant Industries, Inc.  
Ciniza Refinery



August 28, 2006

Mr. Jim Lieb  
Environmental Engineer  
Giant Refining – Ciniza Refinery  
I-40 Exit 39  
Gallup, NM 87347

RE: Soil Sampling Work Plan for the Overflow Ditch and Fan-Out Area, Giant Refining – Ciniza Refinery

Dear Mr. Lieb:

This Soil Sampling Work Plan (Plan) has been prepared in response to a letter the Ciniza Refinery received from New Mexico Environment Department (NMED) dated June 29, 2006, regarding soil sampling for the Fan-Out Area and Overflow Ditch. In this correspondence, comment #26, requested information regarding the presence or absence of residual contamination at the overflow ditch and fan-out area locations. Additionally, the correspondence requested a Work Plan that describes the methods for obtaining the requested information. Details in this Plan are provided to address the requirements of comment #26 and include:

- A site map identifying the approximate dimensions and locations of the overflow ditch and fan-out area and proposed sampling locations
- A description of proposed methods and procedures for sample collection, including how the investigative derived waste will be handled
- A description of sampling equipment decontamination procedures
- A description of Quality Assurance/Quality Control (QA/QC) procedures
- A description of analyses that will be performed by the laboratory
- A description of health and safety procedures

### **Preparation**

Field equipment will be collected, prepared, and inspected prior to sampling to ensure that it is in proper working order. This will include calibration of a photoionization detector (PID) using a 100 ppm isobutylene standard. A sample calibration form is provided as Figure 1.



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### **Sampling Area Map**

Figure 2 identifies the overflow ditch and fan-out area with approximate dimensions, scale, north arrow and boundaries. This figure also shows the overflow ditch and fan-out area in relation to the Railroad Rack Lagoon and the proposed soil sample locations.

### **Sampling Methods and Procedures**

Soil samples will be collected from 10 locations within the overflow ditch and fan-out areas. The sample locations are identified on Figure 2 as B-1 through B-10. Soil samples will be collected from depths of 2 and 5 feet below ground surface (ft bgs) at each sample location. Figure 2 will be updated to identify the final sample locations in the final report, due to field adjustment of proposed soil sample locations.

The 2 foot and 5 foot sample will be collected using the hand auger technique. Procedures and equipment associated with the soil sampling techniques are described in the following subsections. In all cases however, field screening will be conducted using a PID provided by Ciniza. Field screening will involve placement of a representative soil sample into a clean sealable plastic bag for sufficient time for the sample to reach standard temperature (approximately 70 degrees F). Once the sample has reached the required temperature, the PID probe shall be inserted into the bag and the reading taken. Samples should be screened at as close to the same temperature as possible to obtain consistent results.

#### **Hand Auger Sample Method**

Soil samples will be collected from designated locations and depths using a decontaminated 3.25 inch hand auger with 2 inch split stainless steel core sampler. The hand auger will be manually driven 2 ft bgs. The sample will then be extracted from the sampler using a shovel or trowel as needed and transferred into the appropriate sample container.

The sample container will be filled completely to minimize headspace (by tamping during filling), and immediately sealed. Sample containers will be immediately labeled, recorded in the field log book or soil sampling field log forms and stored on blue ice (or equivalent) for transport to the laboratory. No preservatives will be added to the soil sample containers.

#### **Test Pit Sample Method**

Test pits will be used to access the soil sample at the depth of 5 ft bgs. The use of test pits will provide an economic and effective alternative to the use of test borings. Test pits also provide the opportunity for direct examination of subsurface materials to be sampled. Once a test pit location has been selected and access controls and health and safety precautions have been implemented, the test pit will be excavated to



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4 feet and the hand auger sample method will be used to sample through the remaining 1 foot of soil to the 5 foot level. This will minimize contamination and disturbance of soil at the 5 foot level.

A backhoe, provided by Giant, will be used for the test pit excavation. As excavation of a test pit proceeds, all test pit pertinent information will be recorded (see Field Documentation and Logging section below). Upon completion of test pit, logging, and sampling the equipment operator will be instructed to back fill the test pit with the excavated material. Backfilled test pits will be returned to original grade.

#### **Field Documentation and Logging**

Field observations are critical to the verification and interpretation of the laboratory data. Field observations made during soil sampling will be recorded in the field log book and figures 3a and 3b. The following information will be recorded, in indelible ink, where appropriate for each sample:

- Date and name of observer
- Names and affiliations of sampling team members
- Names and affiliations of others present at the sampling sites
- Weather conditions
- Sampling location and time of sampling
- Dimensions and orientation of the finished test pit
- Orientation of sampling location
- Health and safety measures implemented
- Sampling site condition upon arrival (concrete cover, standing water, erosion, etc.)
- Soil characteristics and texture
- Soil observations, including discoloration, hydrocarbon sheens, moisture content, etc,
- Deviations from or clarifications of sampling procedures
- Miscellaneous conditions which the sampling team finds noteworthy
- Sampler and model number, sampler calibration, photographs, and other QA/QC data as applicable
- Type of debris or waste



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- Color of waste, soil and stained soil
- Relative viscosity of waste
- Depth below ground surface at which waste, debris, or stained soil is observed
- Whether groundwater was observed and the depth below ground surface to groundwater
- Odor qualities (sweet, sulfurous, strong, etc.) will also be recorded if casually noticed; however, field personnel will be cautioned against unnecessary exposure to volatile constituents. PID measurements are intended to measure volatile organic chemicals that might also be detected as odor.

### **Photographs**

Photographs will be used to substantiate and augment the field notes. Photographs will be used following the investigation to document the color of sample media, coarse material at the location, soil staining, stressed vegetation, or other information that led to the collection of samples, and other defining features at each location. A color photograph will be taken of each test pit excavation showing the depth and soil character if feasible given natural lighting and angle of view limitations. Each photograph will be numbered and recorded in the field logbook (Figure 4).

Following field activities, a separate photographic log will be created for possible use in the remedy evaluation report. The photographic log will contain the following information:

- Date
- Time
- Photographer
- Field sample identification number
- Direction of the photographic view
- Sequential number of the photograph.

### **Investigative Derived Waste**

The test pits will be back-filled with excavated soil. Excavated soil will be stockpiled on plastic sheeting prior to backfilling excavation; therefore, no soil wastes are expected to be generated. Other wastes associated with sampling may include personal protective equipment (PPE), rinse water from decontamination, and disposable sampling instruments. Generated wastes will be managed according to appropriate regulations by the Ciniza Refinery.



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### **Equipment Decontamination Procedures**

Sampling equipment will be decontaminated prior to sampling in the field and after sampling at each location. Sampling equipment will be disassembled into component parts prior to decontamination. Sampling devices will be decontaminated using warm non-phosphate detergent solution (e.g., Alconox) and then rinsing with well water. Sampling devices will be dried before use by air drying or with clean paper towels. Decontaminated sampling devices and containers will be stored in contaminant-free locations or containers until use.

Decontamination of heavy equipment (e.g. backhoe) will not be necessary because this equipment will not contact the material to be sampled.

To ensure proper equipment decontamination, one equipment blank will be collected from the hand auger sampler per day of sampling. Equipment blanks will be collected in appropriate containers.

### **Quality Control/Quality Assurance Procedures**

The following QAQC procedures will be followed:

- Data listed in the Field Documentation and Logging section will be documented on field data sheets. The field data sheets that will be used are included as Figures 3a and 3b.
- One blind duplicate will be collected per 20 samples collected.
- Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples will be collected and labeled as MS/MSD samples.
- One equipment blank will be collected each day of sampling.
- Chain-of Custody (COC) will be completed and will accompany the samples to the laboratory.
- The shipping container will be sealed with a custody seal to ensure that the samples have not been disturbed during transportation to the laboratory.

### **Sample Analyses**

Soil samples will be collected in three 4-ounce jars using the sampling techniques described above and submitted for analysis to Hall Environmental located in Albuquerque, New Mexico. The only preservation requirement for soil samples for the above analyses is to cool the samples to 4 degrees Celsius or less.



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Laboratory sampling analyses will include diesel range organics (DRO) by EPA method 8015, semi-volatile organic compounds (if the DRO exceeds 500 mg/kg) by EPA method 8270, volatile organic compounds (VOCs) by EPA method 8260, RCRA metals by EPA method 200.7 or 6010C, and cyanide by EPA method 335.2.

### Health and Safety Procedures

Prior to any work being performed at the overflow ditch and fan-out area, the Ciniza Refinery safe work procedure titled "Safe Work Procedure # 404: Excavations" will be followed. This safe work procedure includes an excavation permit that will be approved and signed by the maintenance manager, maintenance supervisor, lab/operations shift supervisor, and safety representative. The permit is required to be renewed daily. The personnel listed above must re-sign the permit in order for it to be renewed.

Proper access controls and health and safety precautions will be implemented prior to sampling. Protective measures will be employed for limiting access to the sampling sites during sampling, particularly where the use of excavations and/or heavy equipment is required.

Trihydro is ready to implement this work plan at a mutually convenient date upon approval by the NMED. If you have any questions, please feel free to contact us at (307) 745-7474.

Sincerely,  
Trihydro Corporation

Calvin Niss  
Vice President

For Regina Allen  
Project Manager

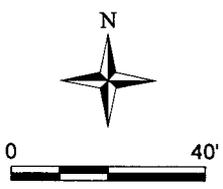
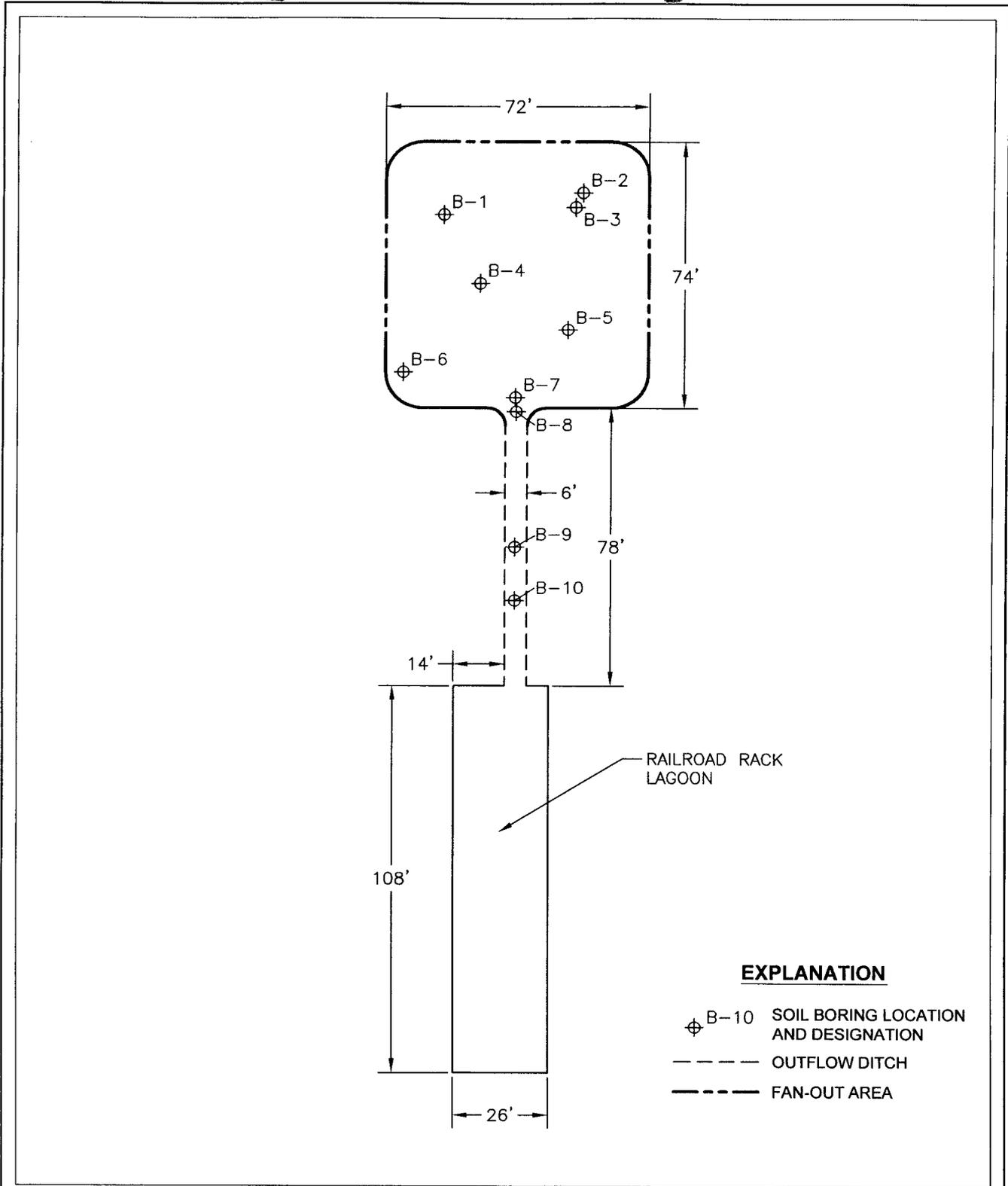
cc: Ed Riege, Giant Refining

072-006-001

Attachment

**FIGURES**





  
**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
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**FIGURE 3b. SOIL / WASTE SAMPLE LOG**  
**Ciniza Refinery, Gallup New Mexico**

Sample Identification: \_\_\_\_\_ Logged by: \_\_\_\_\_  
 Sample Location: \_\_\_\_\_ Project/Job#: \_\_\_\_\_  
 Date: \_\_\_\_\_ Samplers: \_\_\_\_\_  
 Time: \_\_\_\_\_ Associated Test Pit: \_\_\_\_\_  
 Weather: \_\_\_\_\_ If Duplicate List Original Source: \_\_\_\_\_  
 Site Description: \_\_\_\_\_  
 Photographs: \_\_\_\_\_ Coordinates(x,y,z): \_\_\_\_\_

**Composite Sample Description**

Sampling Method:      Direct Push      Scoop      Auger  
 Other (Describe): \_\_\_\_\_  
 Sample Type:    Soil / Waste  
 USCS Group:     \_\_\_\_\_  
 Color:           \_\_\_\_\_  
 Texture:         \_\_\_\_\_  
 Moisture Content:     Dry / Moist / Wet  
 Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): \_\_\_\_\_  
 \_\_\_\_\_  
 Grain Size and Shape: \_\_\_\_\_  
 Analysis Required:    \_\_\_\_\_  
 Number of Sample Bottles: \_\_\_\_\_  
 Notes:             \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Discreet Soil Interval Description**

Graphic Log

0'          6'          12'	<u>Depth (in / ft)</u>	<u>PID/FID Reading (ppm)</u>	<u>Description</u>

