

May 12, 2008

Hope Monzeglio  
New Mexico Environment Dept.  
Hazardous Waste Bureau  
2905 Rodeo Park  
Drive East, BLDG 1  
Santa Fe, NM 87505-6303

Dear Ms. Monzeglio:

It is a pleasure to submit our excavation and remediation plan for the Fan-out Area SWMU at the Gallup Refinery of Western Refining Southwest Inc.

As you will notice from the attached report and figure, we have carried out a series of sampling events to determine the area and depth of soils to be excavated, and have used extremely conservative estimation procedures in this determination.

For example, in areas in which the sampled materials had no detectable levels of contaminants at 3 feet, we plan to excavate to depths of 5 feet. Similarly in the few areas at which there is contamination at greater depths, we plan to excavate to far greater depths than at which we found no detectable levels of contaminants. Similarly, you will notice that at point L1 we found no detectable levels of contamination; yet, on a conservative basis, we plan to excavate an areal extent far more extensive than the clean point L1 would indicate.

You will notice that at point A we collected samples from a depth of 9 feet and did find some contamination. We were unable to sample at a greater depth than 9 feet at point A as this area had been previously excavated and our sampling drill rig could not locate itself directly on top of point A. At point B, a foot away, we found no detectable levels of contamination at depths much less than 13 feet. At these locations, marked in pink in our figure, we plan to excavate to depths of 13 feet which is far greater than the depths at which any detectable levels of contaminants were found.

We look forward to your review and comments of our excavation plan, and to the expeditious conclusion of our planned remedial actions.

Please do not hesitate to contact me if I can offer any further clarifications at 505-722-0227.

Sincerely,

Gaurav Ragen  
Environmental Engineer 

Cc Carl Chavez



May 2, 2008

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

RE: Railroad Rack Lagoon Fan-out Area Excavation Work Plan

Dear Mr. Reige:

Western Refining and Trihydro have been working together to delineate soil contamination in the Railroad Rack Overflow Ditch and Fan-out Area (Fan-out Area) at the Gallup Refinery (Gallup). The New Mexico Environmental Department (NMED) has requested an Excavation Plan (Plan). This Plan has been prepared to assist in the excavation and disposal of soil in the Fan-out Area that exceed diesel range organics (DRO) concentrations of 890 mg/kg. NMED and Gallup agreed that the Industrial Direct Exposure level for #3 and # 6 Fuel Oil of 890 mg/kg would be used as the DRO clean-up standard (verbal agreement with Hope Monzeglio, Dave Cobrain, and Jim Lieb).

### **COMPLETED FIELD WORK**

Trihydro was contracted to collect samples to determine the presence or absence of residual contamination at the Overflow Ditch and Fan-out Area locations. The initial field work for this project was conducted in October 2006 and a report was submitted to Gallup and NMED, titled *Railroad Rack Lagoon Overflow Ditch and Fan-out Area, SWMU #8 Subsurface Investigation* dated February 8, 2007. The results of this investigation prompted NMED to request that Gallup excavate soil contaminated DRO in the vicinity of the two test pit locations, "B-8" and "B-9". Trihydro was onsite and completed the initial sampling and excavation of soil from these test pits during the week of May 21, 2007.

The soil sample concentrations from "B-9" were below the DRO clean-up standard (890 mg/kg). However, the soil sample results from the southeast corner of test pit "B-8" was reported at concentrations higher than the clean-up standard for DRO. Gallup then requested that Trihydro collect additional samples from the contaminated area around "B-8" and delineate the impacted soil that would need to be excavated to meet the objectives of the project. The additional samples were collected during the week of August 20, 2007. One of the objectives of the August sampling event was to minimize the amount of soil that would potentially need to be excavated. It was anticipated that the August 2007 soil sample results would be below the DRO clean up standard approved by NMED. However, the August data collection showed several samples results above the DRO clean up standard.



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Therefore, after conversations with Gallup personnel, it was decided to delineate the contamination by using a larger step-out distance to meet project objectives. Field work utilizing this method commenced on December 17, 2007. The soil samples collected during this event effectively delineated the horizontal and vertical extent of DRO contamination associated with "B-8". The December 17 field event and results are described below.

## **DECEMBER 207 FIELD EVENT**

### **Horizontal Delineation**

Soil samples were collected extending outward in a radial pattern at 20, 40 and 60 feet away from existing boreholes K, G, I and M at depths of 3, 8, and 13 feet below ground surface (ft-bgs). As shown on Figure 1, boreholes K, G, I, and M were the outermost DRO contaminated soil sample locations based on the August event. The proposed step-out distances of 20, 40, and 60 feet are designated as 1, 2, and 3, respectively on Figure 1. The 20 foot step-out locations are designated as M-1, I-1, G-1, and K-1. Boreholes M-1, I-1, G-1, and K-1 were installed on December 17, 2007 using a CME 75 drill rig. A 6 ¼ inch hollow stem auger was advanced to 1 foot above the discrete sampling depth. A split-spoon sampling device was then advanced from 1 foot above to 1 foot below the discrete sampling depth. Samples were taken directly from the split spoon sampling device at depths of 3, 8, and 13 ft-bgs. Samples were submitted to the Laboratory for 24-hour analysis on the same day. No visual contamination or odor was noted at any of these boreholes during sampling. Borehole logs were recorded for each location and a photograph was taken of each split spoon. Field documentation will be provided as needed as part of Trihydro's Railroad Rack Lagoon Fan-out Area Final Report upon completion of the excavation of DRO contaminated soils.

On December 18<sup>th</sup>, while waiting for laboratory results of the December 17<sup>th</sup> sampling, boreholes K-2, K-3, G-2, G-3, I-2, and M-2 were installed and sampled in the same manner described above. The remaining proposed boreholes, M-3 and I-3, were installed on December 19, 2007. These locations were sampled in the event the 20-foot step-out interval samples (M-1, I-1, G-1, and K-1) were not below the clean-up standard.

### **Vertical Delineation**

Existing borehole B (B8-NEW-SE-S1) was drilled to a depth of 23 ft-bgs to vertically delineate the extent of DRO contamination. This borehole was selected for vertical delineation because the previous sampling event showed that this borehole had a DRO exceedance of 2,600 mg/kg at 7 ft-bgs. Samples were collected on December 17 at 8, 13, 18, and 23 ft-bgs using the same methods described above. These samples were submitted to the Laboratory for 24 hour DRO analysis on the same day that they were collected.



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## **Results**

Samples were submitted to Hall Environmental in Albuquerque, NM for analysis. The laboratory analyzed the samples using USEPA Method 8015B. The results for samples collected from new boreholes M-1, I-1, G-1, and K-1 at depths of 3, 8, and 13 ft-bgs and existing borehole B (B8-NEW-SE-S1) at 8, 13, 18, and 23 ft-bgs were non-detect for DRO. Trihydro believes that this new data effectively delineates both the horizontal and vertical extent of DRO contamination associated with test pit B-8. These results are illustrated on Figure 1. Laboratory reports will be provided as part of the final report after the completion of the excavation. Because samples from the above locations met the project objectives, samples from boreholes, M-3 and I-3 were not analyzed.

## **EXCAVATION PLANS**

Trihydro proposes to excavate soil horizontally and vertically to the extents that have been determined to be above clean-up standards based on laboratory analysis. These extents of soil impacts are illustrated on Figure 1. The DRO contaminated zone has been divided into three areas that will be excavated to different depths to remove DRO contaminated soil. The green area on Figure 1 will be excavated to a depth of 3 ft-bgs. The blue and pink areas will be excavated to 5 and 13 ft-bgs, respectively. Based on calculations generated from the areas shown on Figure 1, the total volume of soil that requires excavation is approximated to be 145 cubic yards. The anticipated final volume of soils requiring excavation would be approximately 240 cubic yards due to a 1.5 expansion factor and a 10 percent contingency.

## **PROCEDURES**

### **Staking the Boundaries:**

The areas that will require excavation were staked by Trihydro personnel on April 11, 2008. A photograph illustrating the staked locations is presented as Figure 2. Sampling locations from previous events had been staked and labeled at the time of sample collection and these stakes currently remain in the ground as illustrated on Figure 2. These locations were used as reference points when the excavation boundary stakes were installed on April 11. The boundaries of the area to be excavated to 3 ft-bgs illustrated in green on Figure 1 have been marked with green ribbon (Figure 2). The boundaries of the areas to be excavated to 5 and 13 ft-bgs (blue and pink areas on Figure 1, respectively) have been marked with orange and pink ribbon, respectively (Figure 2). These boundaries will be estimated in the field during the excavation and documented in the final report.

### **Excavation**

Excavation will be performed by or under the supervision of Trihydro personnel. A clean, decontaminated backhoe will be used to complete the excavation. The staked boundaries will be excavated to the corresponding depths illustrated on Figure 1. Excavated soil will either be immediately transported to Gallup's Northeast OCD Land Farm or temporarily stock piled on plastic sheeting within a



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bermed area until it can be transported to the Land Farm. This volume will be more than adequate for the excavated soil from the Fan-out Area. Upon completion of the excavation, the area will be immediately backfilled with clean native material obtained from soil from within the Refinery boundary.

### **Reporting**

As requested in a letter from NMED dated March 14, 2007, an investigation report will be submitted to NMED within 90 days of completion of the excavation. This report will be similar in style and format to Gallup Refinery's *Railroad Rack Lagoon Overflow Ditch and Fan-out Area, SWMU #8 Subsurface Investigation* (Report) dated February 8, 2007. It will include appropriate field forms, photos, and analytical data obtained from each field event, including photos of the excavation itself, not described in the February 8, 2007 report.

### **FIELD DOCUMENTATION AND LOGGING**

Field observations are critical to the verification of appropriate excavation procedures. Field observations made during the excavation will be recorded in a field log book by Trihydro personnel. The following information will be recorded, in indelible ink, where appropriate:

- Date and name of observer.
- Names and affiliations of excavation team members.
- Names and affiliations of others present at the excavation site.
- Weather conditions.
- Health and safety measures implemented.
- Excavation site condition upon arrival.
- Deviations from or clarifications of excavation procedures.
- Miscellaneous conditions which the excavation team finds noteworthy.
- Backhoe make and model
- 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.



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## **PHOTOGRAPHS**

Photographs will be used to substantiate and augment the field notes. Photo-documentation will be utilized to show that the staked boundaries have been excavated to the appropriate depths. Each photograph will be numbered and recorded on a photograph log.

## **INVESTIGATIVE DERIVED WASTE**

Wastes associated with the excavation, other than the excavated soil itself, are expected to be minimal. Disposable personal protective equipment (PPE) and plastic sheeting used for stock piling, if used, will be managed by Gallup according to appropriate regulations.

## **EQUIPMENT DECONTAMINATION PROCEDURES**

The only piece of equipment that will come in contact with DRO contaminated soil is the backhoe that will be used for excavation. The shovel of backhoe will be cleaned and decontaminated prior to the excavation and again after the excavation is complete. The cleaning pad located at the Gallup Refinery will be utilized for decontamination.

## **HEALTH AND SAFETY PROCEDURES**

Personnel operating the backhoe will be properly trained. The Trihydro site specific Health and Training Plan will be followed. An excavation permit for the area will be obtained from Gallup by Trihydro personnel.

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

Sincerely,  
Trihydro Corporation

Eric Worden  
Client Manager

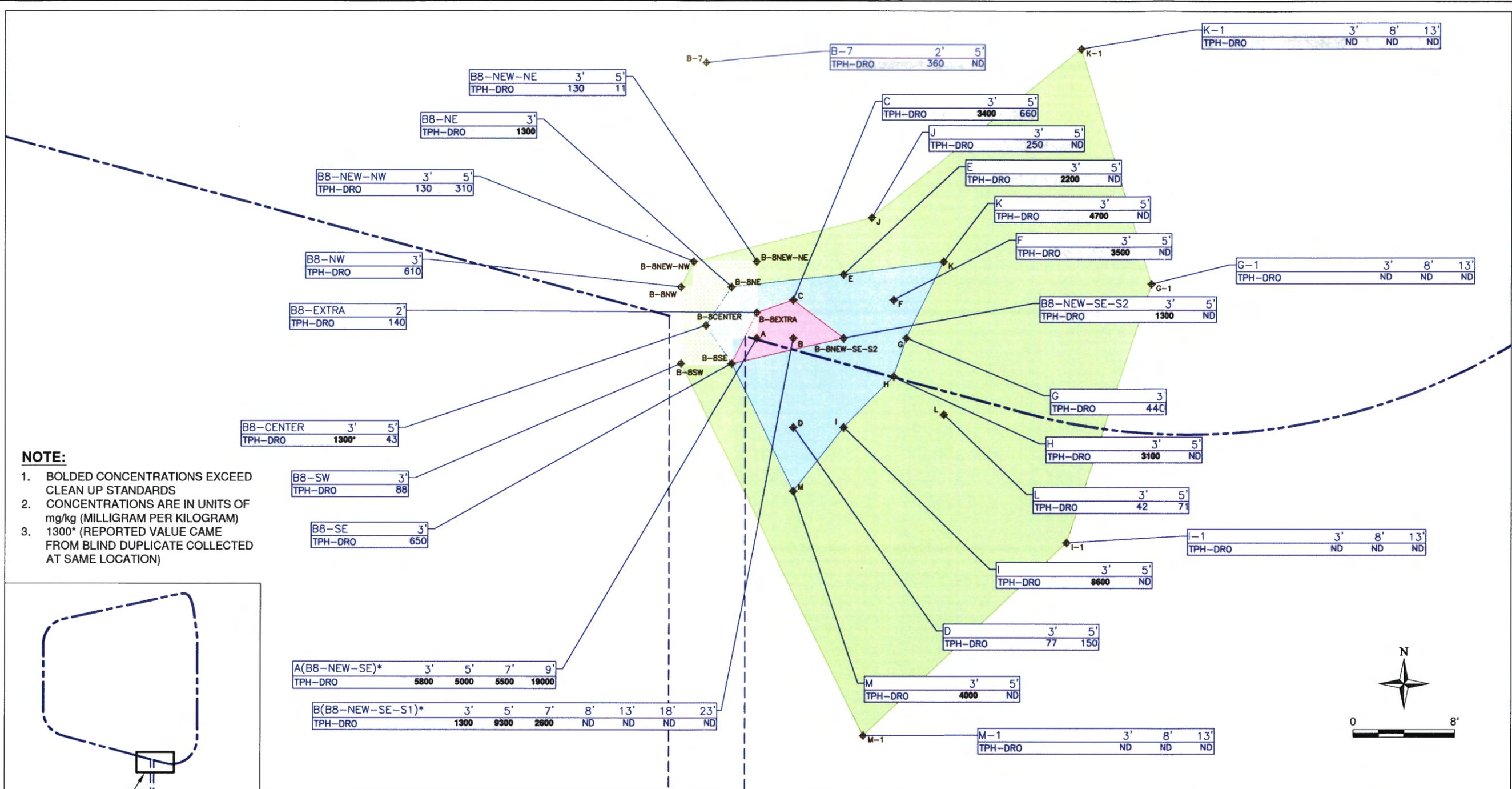
Regina Allen  
Project Manager

072-013-001

cc: Jim Lieb, Giant Refining

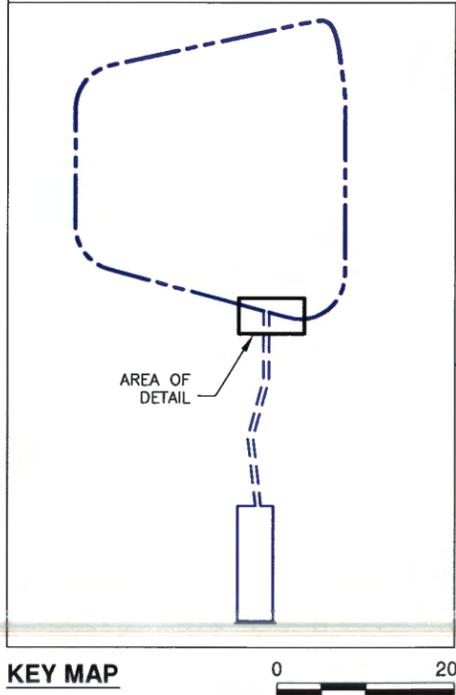
Attachment

**FIGURES**



**NOTE:**

1. BOLD CONCENTRATIONS EXCEED CLEAN UP STANDARDS
2. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
3. 1300\* (REPORTED VALUE CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION)



**EXPLANATION**

	OUTFLOW DITCH		SOIL SAMPLE LOCATION AND DESIGNATION
	FAN-OUT AREA	ND	NON DETECT
	RAILROAD RACK LAGOON	*	A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT) B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
	PREVIOUSLY EXCAVATED AREA		
	EXCAVATE TO 3 FEET		
	EXCAVATE TO 5 FEET		
	EXCAVATE TO 13 FEET		

**CONSTITUENT TABLE EXPLANATION**

WELL DESIGNATION	M-1	3' 8' 13'	SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS	TPH-DRO	ND ND ND	CONCENTRATION SHOWN HERE IN MAXIMUM VALUE

**Trihydro**  
CORPORATION  
1252 Commerce Drive  
Laramie, Wyoming 82070  
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**FIGURE 1**

**RAILROAD RACK LAGOON  
OVERFLOW DITCH AND FAN-OUT AREA  
SOIL SAMPLE LOCATIONS AND RESULTS**

**WESTERN REFINING, LLC  
GALLUP REFINERY  
GALLUP, NEW MEXICO**

