

## Jim Hollon Consulting

14034 W. Co. Rd. 123, Odessa, Texas 79765  
(432)631-5768 Fax (432)563-1166  
Jim@JHCon.net

March 3, 2008

Merit Energy Company  
13727 Noel Rd. Ste 500  
Dallas, Texas 75240  
Attn: Mr. Justin Findley

Phone: (972) 628-1493  
Fax: (972) 628-1793

Re: Work Plan for Site Remediation  
Turner B #127 flow line  
Section 20, T17S, R31E  
Eddy County, New Mexico

Dear Mr. Findley:

This work plan includes the project information summary, field activities and investigation summary, proposed remediation activities and scope of services.

### **A. PROJECT INFORMATION SUMMARY**

This site is located in Eddy County, New Mexico approximately five miles east of Loco Hills and approximately one quarter mile north of Highway 82 (Figure 1). The surrounding area is native rangeland in a sand-hill region. The site is on property overseen by the Bureau of Land Management (BLM).

The release occurred from the flow line of Merit Energy Company's (Merit) Turner B #127 well. The release was discovered on January 29, 2008, and estimated to consist of approximately 200 barrels of produced fluids. The fluids ran through the low areas between the sand hills, creating narrow flow paths and areas of pooling. The release affected an area approximately 5 yards wide and 200 yards long, with an estimated 1,000 square yards of surface area. Upon discovery, vacuum trucks were utilized to recover the free liquids, totaling approximately 120 barrels.

### **B. FIELD ACTIVITIES AND INVESTIGATION SUMMARY**

A site visit was performed by Jim Hollon to evaluate the remediation of the site on January 30, 2008. The determination was made to begin excavating the saturated soils prior to collection of delineation samples. A backhoe was utilized to excavate the saturated soils, totaling 210 cubic yards. A composite soil sample was collected from the stockpile and analyzed for total

chlorides prior to delivery to an NMOCD approved disposal facility. A limited site investigation was performed to delineate the extent of soil impact on February 19, 2008. The New Mexico Oil Conservation Division (NMOCD) "Guidelines for Remediation of Leaks, Spills and Releases" dated August 13, 1993 was used as a guide during the site investigation.

No surface water bodies or water wells were identified within 1,000 feet of the project site. The New Mexico Office of the State Engineer web site was utilized to determine that the ground water depth is greater than 250 feet below ground surface (bgs) where it exists, for the surrounding area.

A backhoe was utilized to collect soil samples which were analyzed to evaluate the extent of hydrocarbon and chloride impact in the soil. The delineation consisted of five sample points, labeled SP-1 through SP-5, with samples collected at various depths from each point. A site map is included as Figure 1. The chloride concentrations ranged from <5.28 mg/kg (below detection limits) to 10,400 mg/kg. The total petroleum hydrocarbons (TPH) ranged from <15.8 mg/kg (below detection limits) to 21,610 mg/kg. The bottom sample from each sample point had TPH concentrations below 5,000 mg/kg. A chart of the sample points and depths with the corresponding laboratory analysis is included as Table 1.

Three of the sample points were excavated to approximately 14 feet below ground surface (BGS), the maximum depth the backhoe could dig. A clay bed was encountered at approximately 12-14 feet bgs in the excavations, typical of the B horizon, which is the zone in the subsoil that entraps clay precipitating through the upper zones. The B horizon generally restricts the vertical migration of water. Soil salts, carbonates, and reprecipitated silicates often concentrate and sometimes become cemented in the B and C horizons, further decreasing porosity (API Publication, Remediation of Salt Affected Soils at Oil and Gas Production Facilities, 1997). The highest chloride concentration was found in this clay layer, which was in SP-1, the sample point closest to the origin of the release.

### C. PROPOSED REMEDIATION ACTIVITIES

The NMOCD uses ranking criteria for determining the remediation action levels on "Unsaturated Contaminated Soils, IV.A.2.a." Based on these ranking criteria, the remediation action level at this site is as follows:

Depth to Ground Water	>100'bgs	Ranking Score = 0
(As defined as vertical distance from lowermost contaminants to seasonal high water level)		
Wellhead Protection Area	>1000' to water source	
	>200' to domestic well	Ranking Score = 0
Distance to Surface Water	>1000 horizontal feet	Ranking Score = 0

**Total Ranking Score = 0**

Based on the total ranking criteria of 0, the remediation levels are as follows:

Benzene = 10 ppm  
BTEX = 50 ppm  
TPH = 5,000 ppm  
Chlorides = Site specific

Based on the site's remediation level, the delineation results and the soil conditions encountered during the sampling activities, it is believed that the chloride remaining in the soils does not pose any threat to groundwater, if any groundwater exists under the site. To address the soils affected by hydrocarbons, the soils with TPH levels above 5,000 mg/kg will be excavated. The area of excavation is anticipated to be approximately 15 feet wide by 600 feet long with an anticipated average depth ranging from 14 feet bgs at SP-1 to one foot bgs at SP-5, which should yield no more than 1,000 cubic yards of soil. The affected soils will be stockpiled on site and sampled to determine if additional remediation will be required, such as microbial treatments and aeration. Confirmation samples will be collected from the excavated areas, and when the excavated soils meet the NMOCD remediation levels, they will be used as backfill. Ambient soil in the vicinity of the site will be utilized for additional backfill, if necessary. Restoration of the project site will match, as near as possible, to the natural grade of the surrounding area.

#### **D. SCOPE OF SERVICES**

The scope of services will consist of the following:

- Provide a work plan to the NMOCD and Merit detailing the preliminary site investigation and summary of remediation recommendations;
- Provide project oversight and management of excavation/remediation activities, sampling and regulatory permitting and documentation; and
- Prepare a final report detailing documentation of field activities, a site plan showing pertinent site features, analytical laboratory results and presentation of findings showing adherence to NMOCD cleanup standards for closure of the site.

At this time, it is anticipated that a USEPA Level D work uniform consisting of hard hats, safety glasses, protective gloves, and steel-toed boots will be required by all personnel in the work area. It may become necessary to upgrade this level of protection if an increased risk for personal exposure to petroleum or chemical constituents is encountered during excavation / remediation activities.

### Preparation of Final Report

Upon completion of site activities and receipt of the laboratory analytical results, a final report will be prepared that will include the following:

- Documentation of field activities;
- Site plan showing pertinent site features;
- Analytical laboratory results;
- Presentation of findings and conclusions.

Preparations have been made to commence work immediately, pending approval by Mr. Justin Findley and the NMOCD. It is anticipated that the field activities will be completed in 1 to 2 weeks. The standard analytical turnaround time is 5 to 7 working days (expedited turnaround is available at an additional charge). Preliminary verbal results may be available within 24 hours of receipt of laboratory analytical reports. The final written report will be available two weeks following receipt of final laboratory analytical reporting. This written report will reflect final results, findings and recommendations, and, as such, will take precedence over any verbal reports that may have provided. All field services will be performed under modified Level D safety personal protective equipment. The analysis, comments and recommendations presented in the written report will be based on the information collected as discussed in this work plan.

Services will be performed in a manner consistent with generally accepted practices of the professional undertaken in similar studies in the same geographic area during the same period. There are no warranties, expressed or implied, regarding the services, findings, conclusions or recommendations. Please note that JHC cannot warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These services will be performed in accordance with the scope of work agreed with you, the client, as set forth in this work plan.

Findings, conclusions and recommendations resulting from these services will be based upon information derived from on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable or not present during these services, and JHC cannot represent that the site contains no hazardous substances, toxic substances, petroleum products, or other latent conditions beyond those identified during this scope of work. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings and recommendations are based solely upon data obtained at the time and within the scope of these services.

**Merit Energy Company  
Turner B #127 flow line  
March 3, 2008**

**Jim Hollon Consulting**

If you should have any questions or comments regarding this work plan, please contact the undersigned.

Sincerely,

Jim Hollon  
JH Consulting

Table 1

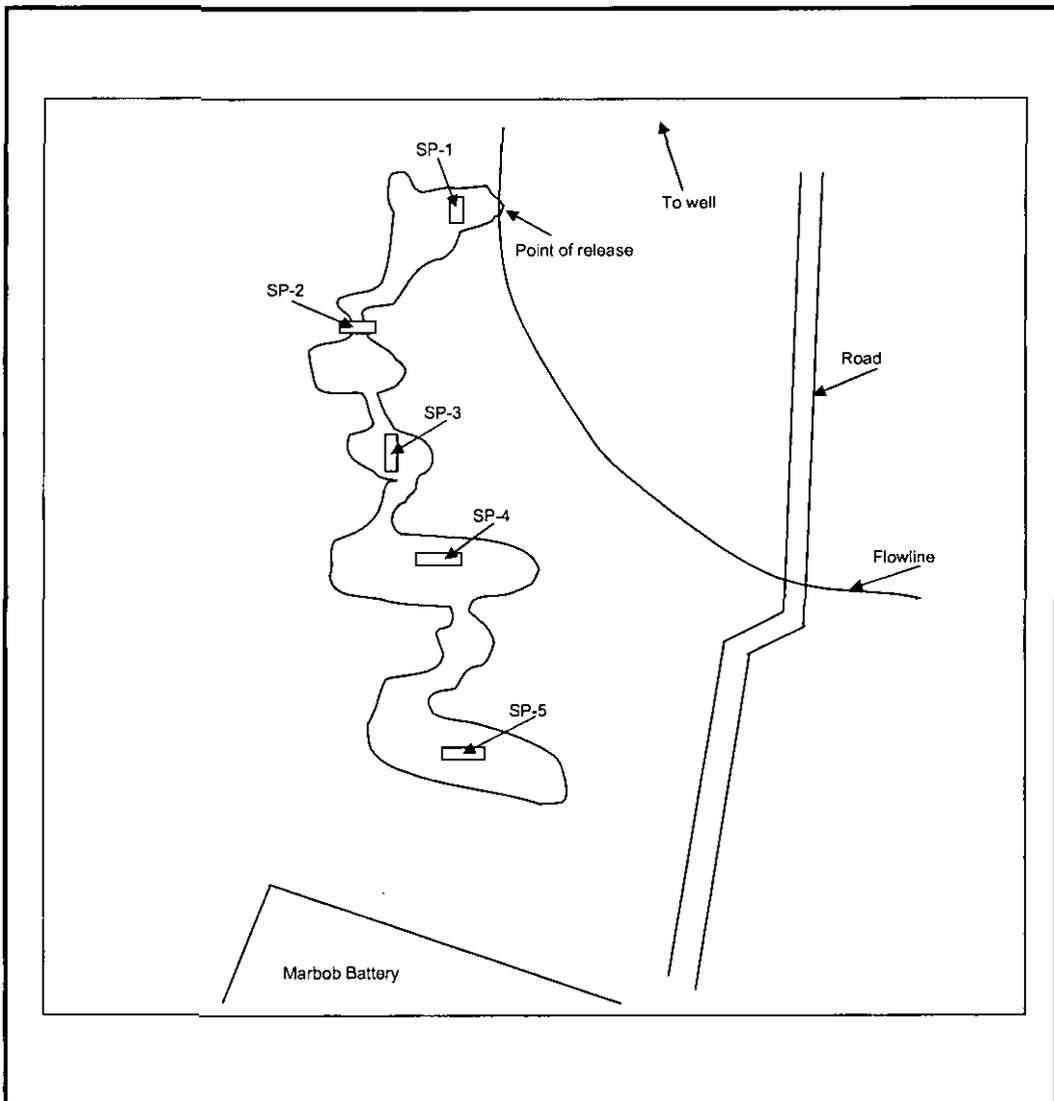
CONCENTRATIONS OF CHEMICALS OF CONCERN IN SOIL

Merit Energy  
 Turner B # 127  
 Loco Hills, Eddy County, New Mexico

All concentrations are in mg/kg

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH	EPA 325.3	EPA Method 8015M			
			TOTAL CHLORIDE	TPH C <sub>6</sub> -C <sub>12</sub>	TPH C <sub>12</sub> -C <sub>28</sub>	TPH C <sub>12</sub> -C <sub>35</sub>	TPH C <sub>6</sub> -C <sub>35</sub>
2/19/2008	SP-1	7'	5,030	5,010	14,800	1,800	21,610
		14'	10,400	999	3,490	463	4,952
	SP-2	9'	231	<17.6	124	91.6	215.6
	SP-3	5'	5,260	2,910	12,300	1,970	17,180
		14'	4,000	<16.1	95.4	52.2	147.6
	SP-4	8'	3,800	<16.2	<16.2	<16.2	ND
		14'	4,920	<17.4	95.6	20.8	116.4
	SP-5	3'	7.47	<15.6	18.2	<15.6	18.2
		8'	<5.28	<15.8	<15.8	<15.8	ND

CONCENTRATIONS IN BOLD ARE ABOVE REGULATORY GUIDELINES



	<b>Merit Energy Company</b>	<b>Figure 3 Site Map</b>
Not to Scale	Turner B #127	Prepared By: Jim Hollon Consulting
↑ N	5 miles west of Loco Hills Eddy County, New Mexico	

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: Merit Energy Company	Contact: Jackey Williams
Address: P.O. Box 69, Loco Hills N.M., 88255	Telephone No.: 575-677-2327
Facility Name: Turner B #127	Facility Type: Flow line

Surface Owner: BLM	Mineral Owner: BLM	Lease No.: LC-029395-B
--------------------	--------------------	------------------------

**LOCATION OF RELEASE**

Unit Letter O	Section 17	Township 17S	Range 31E	Feet from the 990	North/South Line South	Feet from the 2550	East/West Line East	County Eddy
------------------	---------------	-----------------	--------------	----------------------	---------------------------	-----------------------	------------------------	----------------

Latitude 32.823388 Longitude 103.895308

**NATURE OF RELEASE**

Type of Release: Produced fluids	Volume of Release: ~200 bbls	Volume Recovered: ~120
Source of Release: Flow line from the Turner B 127	Date and Hour of Occurrence: unknown	Date and Hour of Discovery: 1/29/08 4:30
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Jim Amos (BLM) & Mike Bratcher (OCD)	
By Whom? Jim Hollon	Date and Hour: 1/30/07 11:45	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Rupture in flow line. Bad section of line was cut out and replaced. The line has also been treated to remove the scale build up inside.

Describe Area Affected and Cleanup Action Taken.\*

The fluids ran from the leak in the flow line through depressions in the sand-hills to a flat area north of Marbob's tank battery. Vacuum trucks were summoned to recover the free liquids, totaling approximately 120 bbls. The grossly affected soils are being scraped up and hauled to a nearby OCD approved land farm. One calls are being made before additional excavation / delineation can be performed.

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.

**OIL CONSERVATION DIVISION**

Signature:	Approved by District Supervisor:	
Printed Name: Jackey Williams	Approval Date:	Expiration Date:
Title: Area Foreman	Conditions of Approval:	
E-mail Address:	Attached <input type="checkbox"/>	
Date: 1-30-08	Phone: 575-677-2327	

\* Attach Additional Sheets If Necessary