

Bratcher, Mike, EMNRD

From: Bob Allen <ballen@sesi-nm.com>
Sent: Monday, August 27, 2012 3:49 PM
To: Bratcher, Mike, EMNRD
Cc: Green, Bill
Subject: FW: RE Nav Apache Release
Attachments: Nav-Apache HOL-11-017 Delineation report wkpln 8 20 12.pdf; Appendix A Analytical Results H200457.pdf; Appendix A Analyticals Results H200335.pdf

Categories: Red Category

Mike:

I attached the delineation report/workplan for the Navajo Apache release. We are anxious to start this project, please forward your approval/stipulations.

Thank you,

Bob Allen CSP, CHMM
Cell # 575.390.7063
Office # 575.397.0510
Fax # 575.393.4388

Isaiah 40:31

They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary; and they shall walk, and not faint.

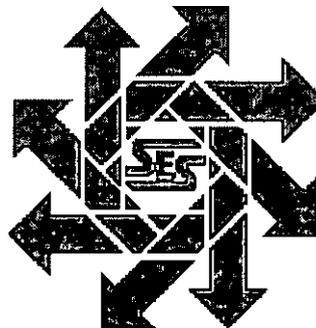
From: Susana Rodriguez [mailto:office2@sesi-nm.com]
Sent: Monday, August 27, 2012 3:34 PM
To: Bob Allen
Subject: RE Nav Apache Release

RECEIVED
AUG 27 2012
NMOCD ARTESIA

Holly Energy Partners Navaho Apache DAD Lateral Delineation Report/Workplan

**Section 30, T17S, R29E
Eddy County, New Mexico**

August 20, 2012



Prepared for:

**Holly Energy Partners
P.O. Box 1260
Artesia, New Mexico 88211**

By:

**Safety & Environmental Solutions, Inc.
703 East Clinton
Hobbs, New Mexico 88240
(575) 397-0510**

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I. Company Contacts

Representative	Company	Telephone	E-mail
Bill Green	Holly Energy Partners	575-748-8968	bill.green@hollyenergy.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged by Holly Energy Partners (HEP) to perform site assessment of a release area at the Navaho Apache DAD Lateral located in Section 30 of Township 17 South, Range 29 East, Eddy County, New Mexico.

According to the C-141 on October 22, 2011, the cause of the release was due to internal corrosion on a 3" steel pipe tie-in from Concho Resources Navaho Federal #8. The leak is located below ground at the tie-in of the Apache DAD lateral. Clean-up crews were dispatched and free product was removed. Approximately 100 barrels of crude oil was released with an unknown amount recovered.

New Mexico Oil Conservation Division (NMOCD) representative Mr. Randy Dade was contacted by HEP on that same day.

III. Surface and Ground Water

There is no surface water within a mile of the release site.

The nearest groundwater of record is approximately 2.8 miles northwest of the site. The United States Geological Survey (USGS) record is in Section 22 Range 28 East and Township 17 South. The reported depth was 79 feet below ground surface (BGS) in February 1999.

Records from the New Mexico Office of the State Engineer indicate a groundwater point of diversion (POD) for the Bogle Farm (POD Number RA08234) in Section 32 to the southeast, but this record is incomplete, with no indication of depth to water, date of installation, or detailed location.

IV. Characterization

The target cleanup levels are determined using the *Guidelines for Remediation of Leaks, Spills and Releases* published by the NMOCD (August 13, 1993). Based on the ranking criteria presented below, the applicable Recommended Remediation Action Levels (RRAL) are 10 parts per million (ppm) Benzene, 50 ppm combined benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 ppm Total Petroleum Hydrocarbons (TPH).

Depth to Ground Water:			
(Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	20 points	
	50 feet to 99 feet	10 points	X
	>100 feet	0 points	
Wellhead Protection Area:			
(Less than 200 feet from a private domestic water source; or less than 1000 feet from all other water sources)	Yes	20 points	
	No	0 points	X
Distance to Surface Water:			
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	20 points	
	200 feet to 1000 feet	10 points	
	>1000 feet	0 points	X
RANKING SCORE (TOTAL POINTS)			10

V. Work Performed

On February 8, 2012, SESI installed test trenches to determine vertical extent of contamination. Samples were retrieved and transported under chain of custody to Cardinal Laboratories in Hobbs, New Mexico to be analyzed for Chlorides (EPA Method 300.0), TPH (EPA Method 418.1), and BTEX (EPA Method 8021B). The results of the analysis are as follows:

Sample ID	TPH 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)
Analysis Date:	2/22/12	2/22/12	2/22/12	2/22/12	2/22/12
TT-1, 11' BGS	6,790	8.24	101	82.4	132
TT-2, 10' BGS	5,180	<1.00	19.9	23.7	41.7
TT-3, 07' BGS	340	<0.050	<0.050	<0.050	<0.150
TT-4, 05' BGS	113	<0.050	<0.050	<0.050	<0.150

The first attempt at the delineation of this site only achieved the vertical extent in Test Trenches 3 & 4 at a depth less than 5' BGS. Test Trenches 1 & 2 still exceeded RRAL standards at approximately 11-12' BGS.

On February 20, 2012, SESI was onsite with Atkins Drilling to install two boreholes utilizing an auger rig with split spoon sampling. Samples were retrieved at 10 ft. intervals. Field tests were run on the samples to determine the depth where the value was below 1,000 ppm TPH. Samples were transported under chain of custody to Cardinal Laboratories. The results of the analysis are as follows:

Sample ID	TPH 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl Benzene (mg/kg)	Total Xylenes (mg/kg)
Analysis Date:	2/22/12	2/22/12	2/22/12	2/22/12	2/22/12
BH-1, 19' to 21' BGS	118	<0.050	<0.050	<0.050	<0.150
BH-1, 29' to 31' BGS	<100	<0.050	<0.050	<0.050	<0.150
BH-2, 19' to 21' BGS	106	<0.050	<0.050	<0.050	<0.150
BH-2, 25' BGS	166	<0.050	<0.050	<0.050	<0.150

VI. Action Plan

Vertical delineation was achieved between the 12' and 19' BGS in both BH # 1 and BH # 2, and less than 7' BGS in TT- 3 and TT- 4.

This release may be divided into three (3) areas. The area nearest to the release site on the west end, which ran along the salt water disposal line owned by Concho, is where the crude oil penetrated to a depth of approximately 19' BGS. The middle part of the spill is adjacent the lease road. The third area is on the east end, where the spill left the road and followed a runoff path.

COG Right-of-Way remediation

Holly Energy Partners proposes that the contaminated soil be excavated to the 1,000 ppm guideline target concentration and transported to an NMOCD approved facility for disposal. Confirmation samples will be retrieved from the sides and bottom of the excavation. Upon completion, the area will be backfilled with clean fill soils and contoured to grade.

Area 2 and 3: Vertical extent of contamination of less than 7' BGS.

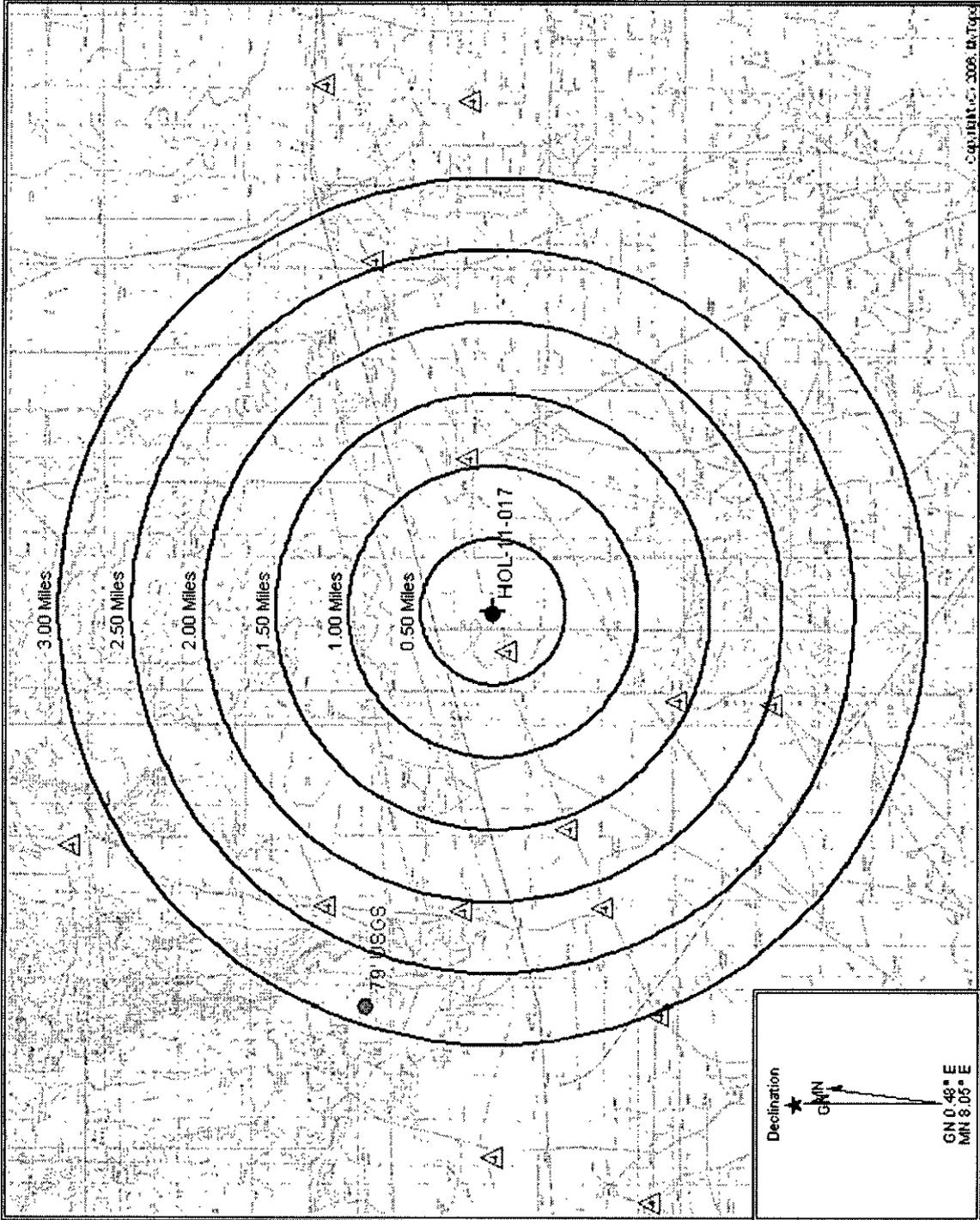
Holly Energy Partners proposes to back-drag the surface of the lease road to improve the appearance of the road, treating the impacted soils with microbes to hasten residual hydrocarbon degradation.

The third area will undergo bioremediation using a bio-surfactant applied to tilled soil. The soil will be field tested for TPH on a monthly basis to monitor the progress of the bioremediation. After completion of the bioremediation process, when the TPH concentration in the soil is less than 1,000 ppm, the soil will be contoured back to original grade. Laboratory confirmation samples will be collected for completion verification. The time required for the bioremediation is estimated to be about 60 days.

VII. Figures & Appendices

- Figure 1 – Vicinity Map
- Figure 2 – Site Plan
- Figure 3- Logs of Boring
- Appendix A – Analytical Results
- Appendix B – Site Photographs
- Appendix C – C-141

Figure 1
Vicinity Map

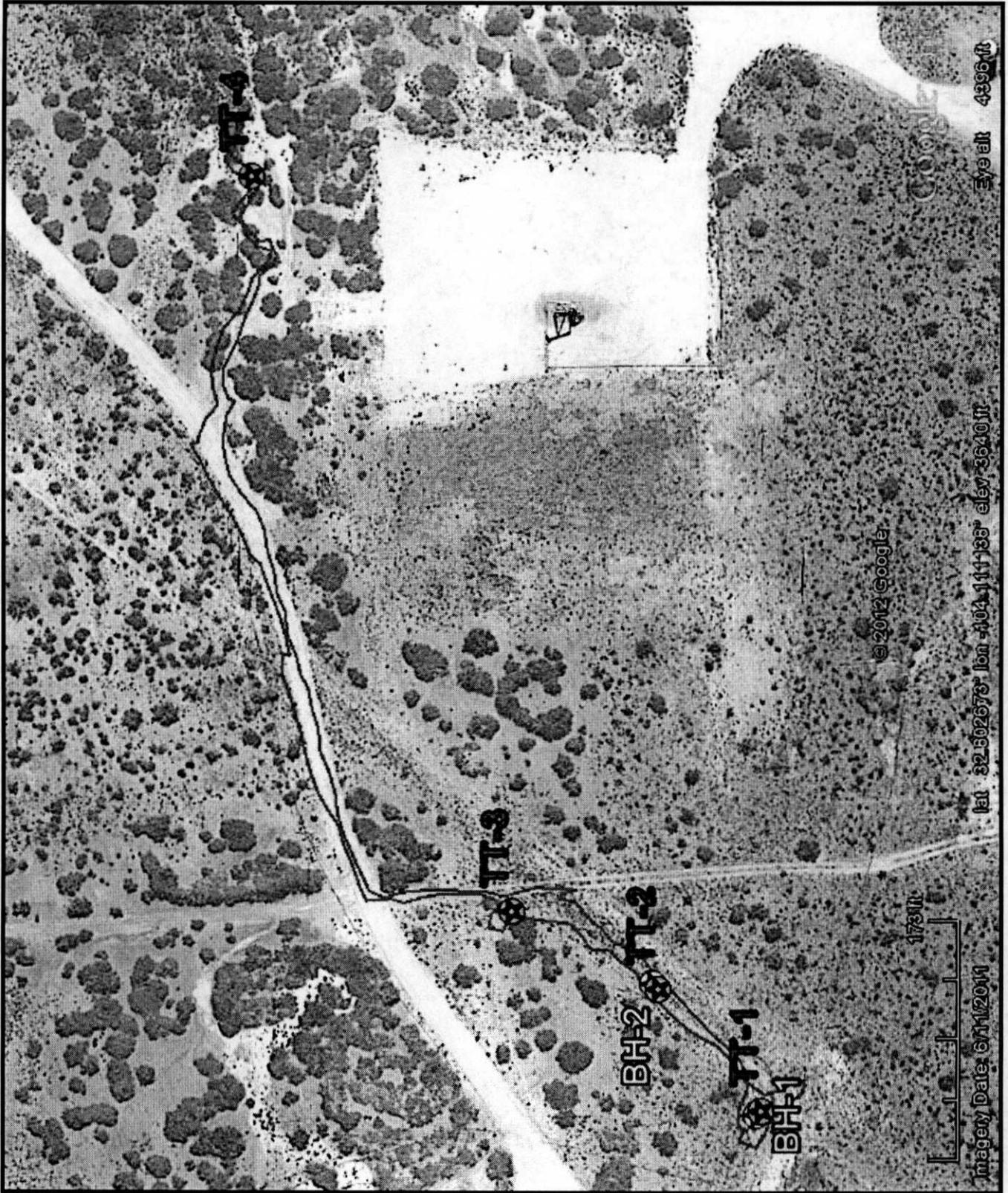


Copyright © 2008, by Topo

Map Center: 032.8027887° N 104.1119236° W
 Map Type: Topographic

Map Name: RED LAKE SE,
 Scale: 1 inch = 5,750 ft.

**Figure 2
Site Plan**



TT-4

TT-3

BH-2

TT-2

TT-1

BH-1

173m

Imagery Date: 6/11/2011

lat: 32.502673, lon: -104.114133, elev: 3640 ft

Eye alt: 4396 ft

© 2012 Google

Google

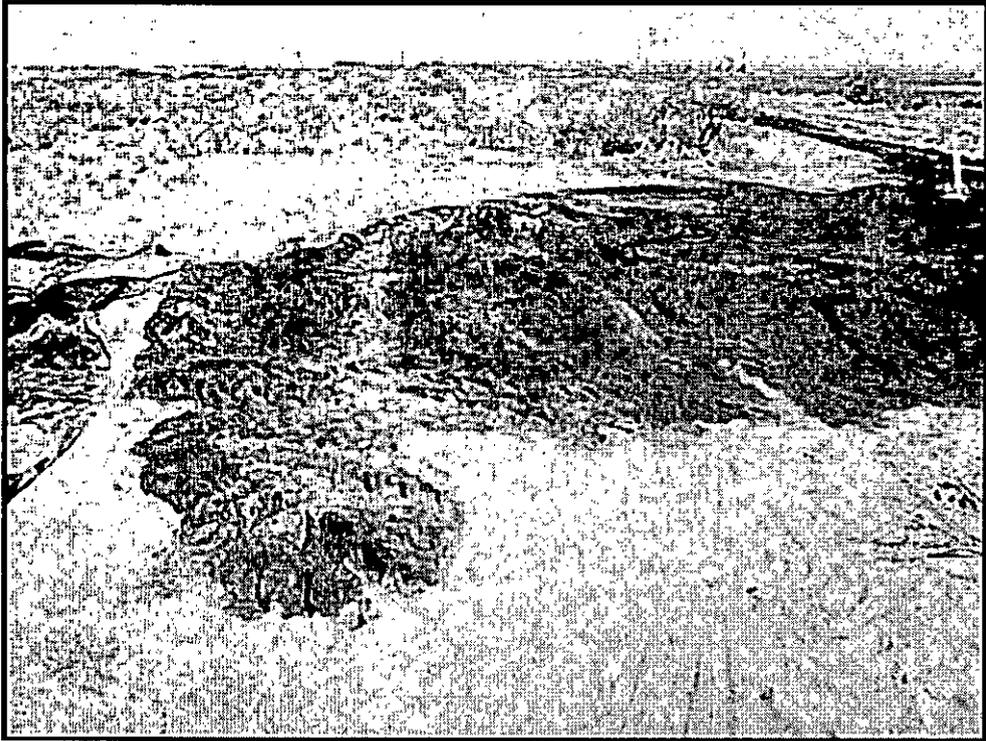
Figure 3
Logs of Boring

Appendix A

Analytical Results

Appendix B

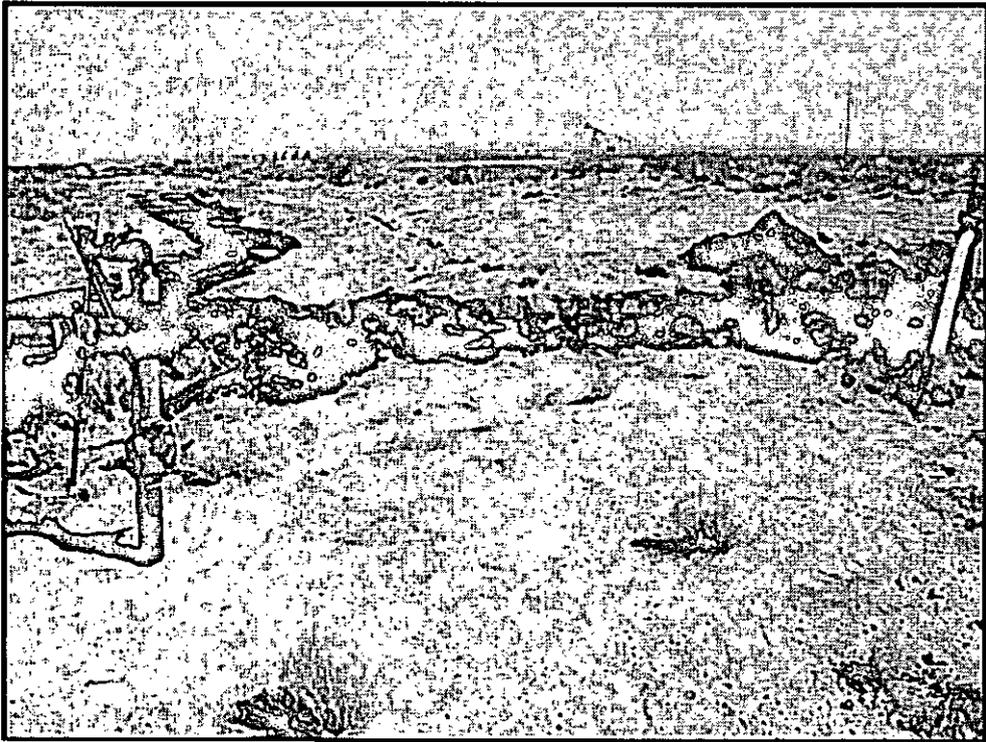
Site Photographs



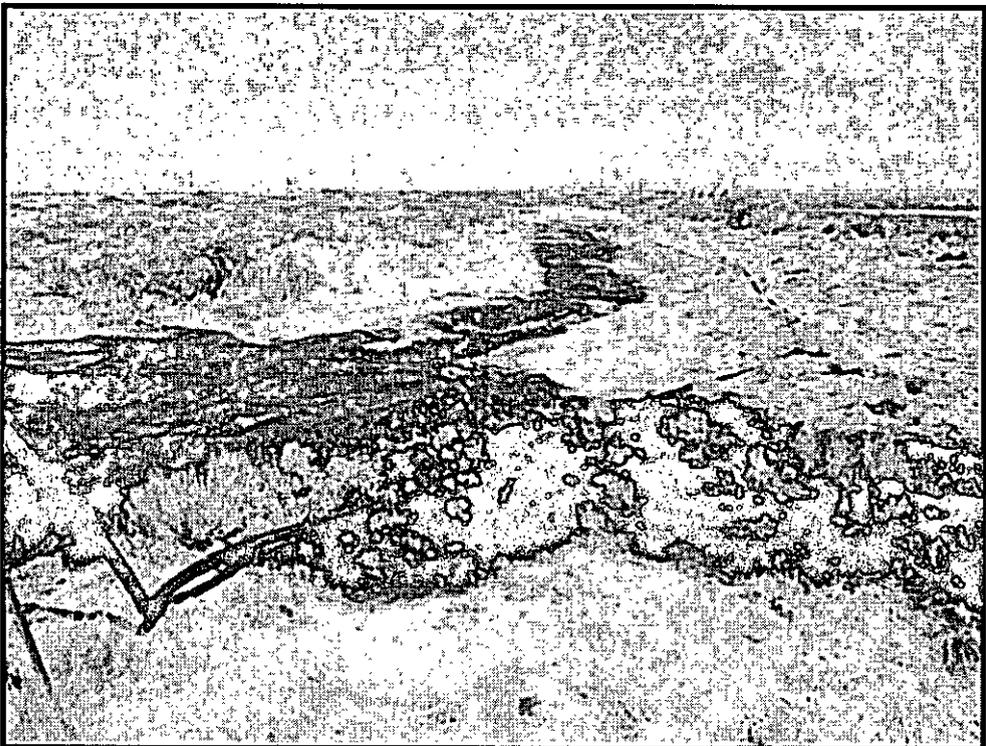
Leak site looking east



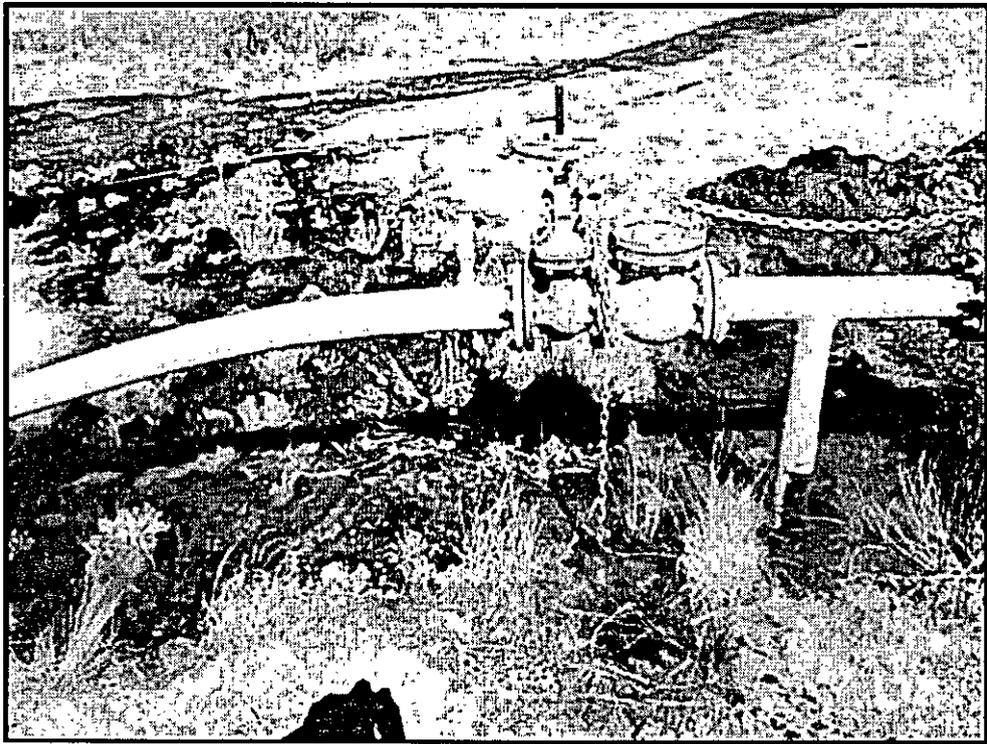
Pooling area at west end of leak



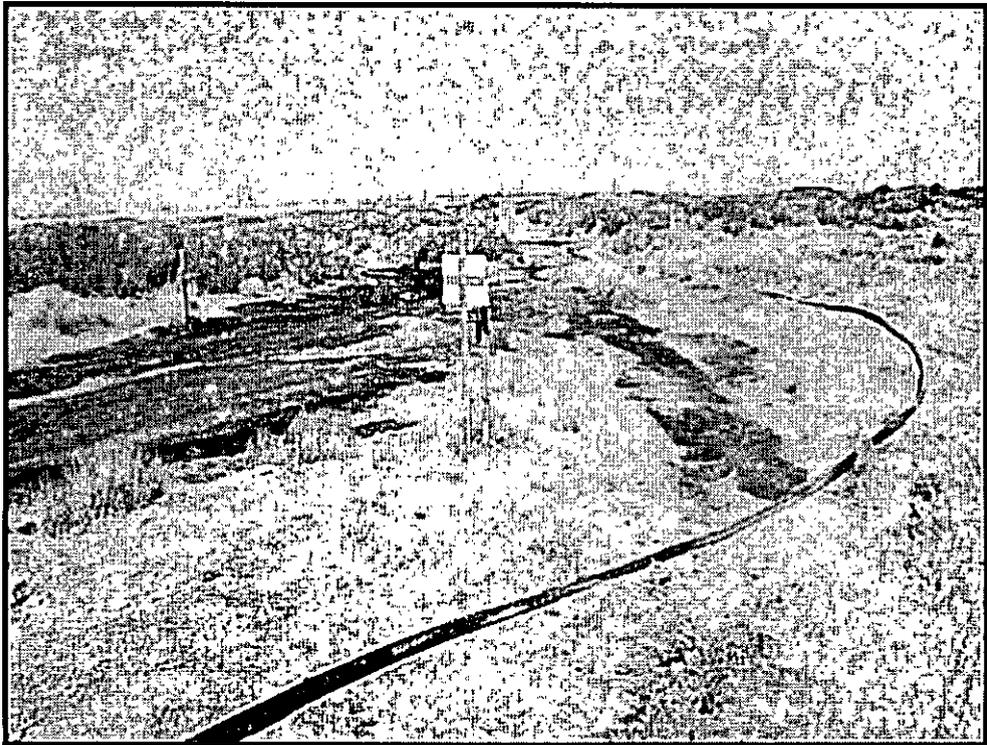
West end of leak source



West pooling area and right of way run



Leak source area



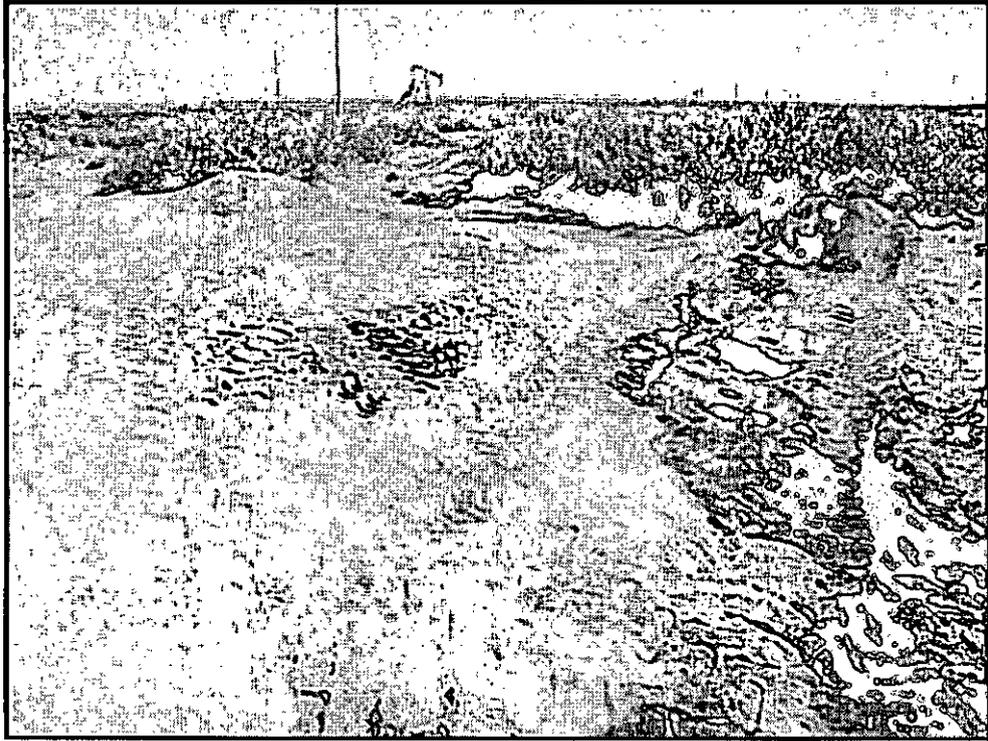
West end of leak



Run area before lease road



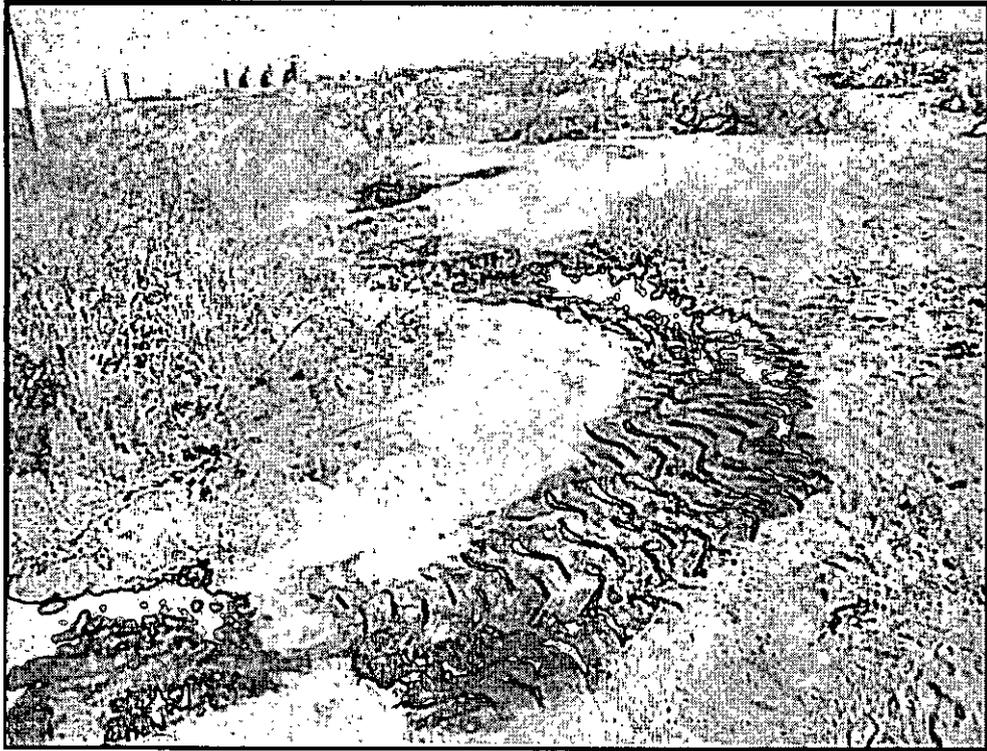
Run area on lease road



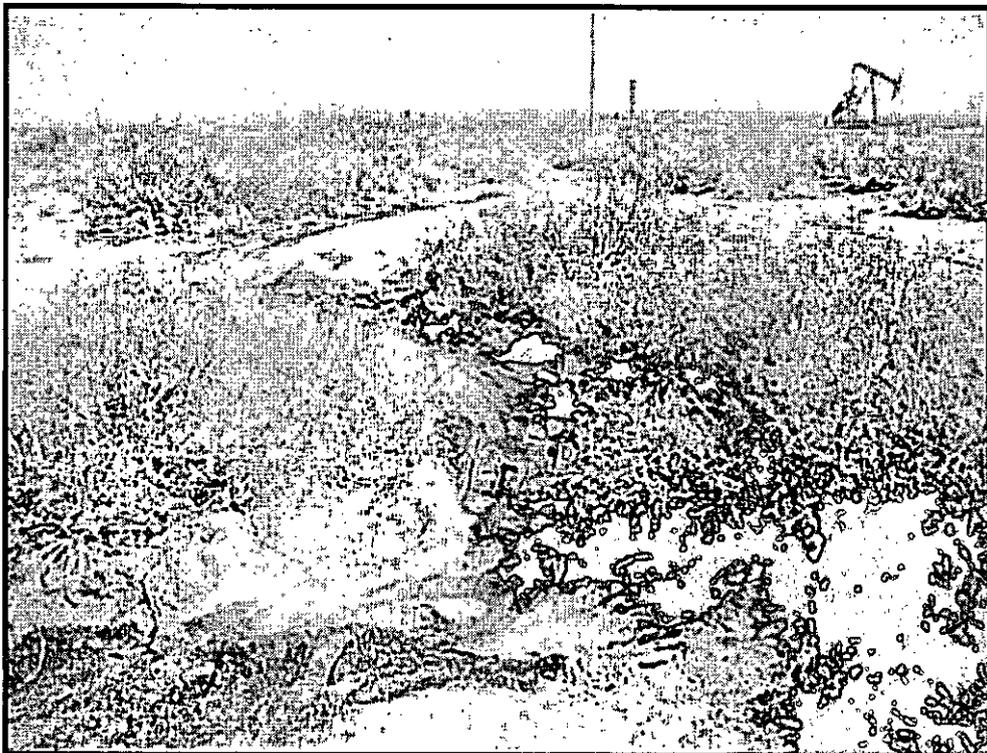
Run area leaving lease road on east end of leak



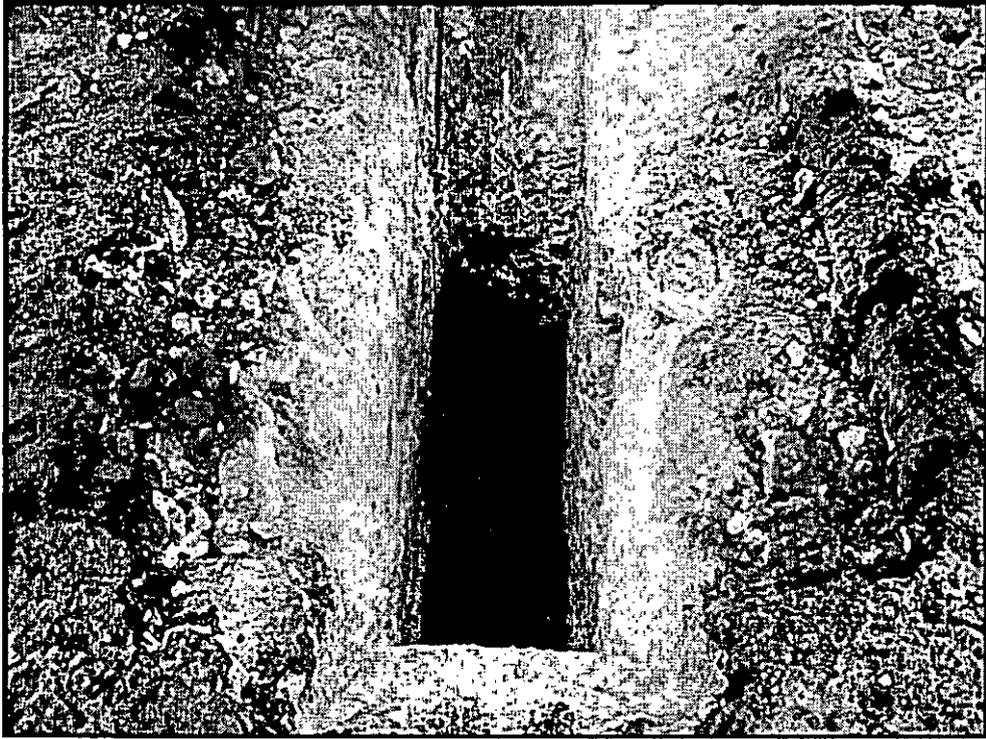
Run area east end of leak



Run area east end of leak



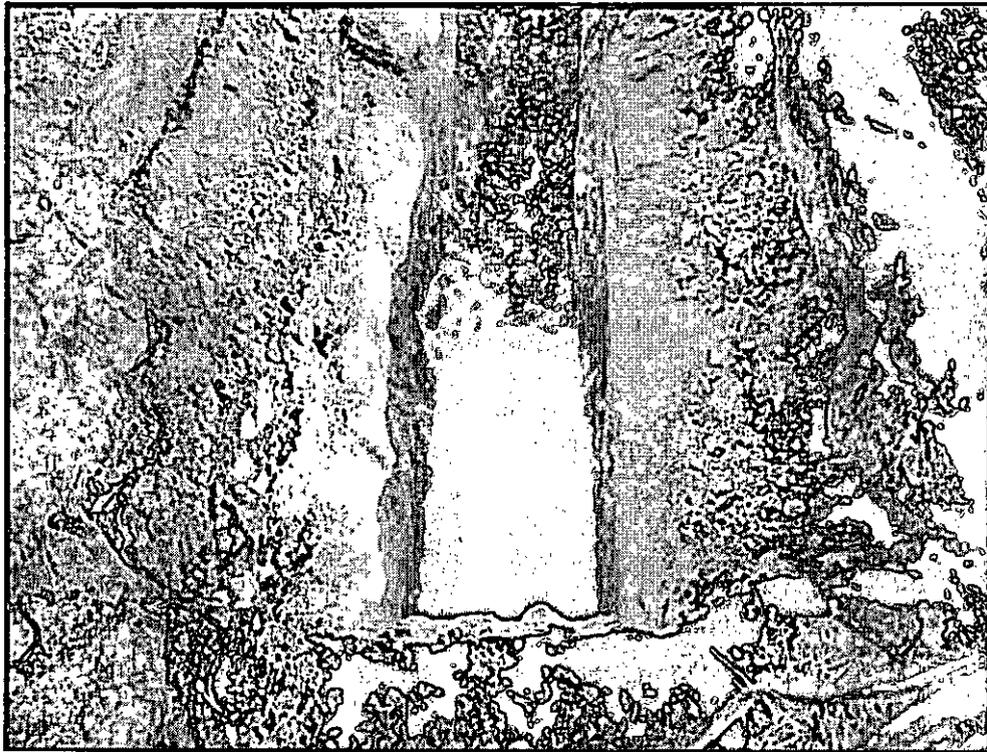
Run area east end of leak



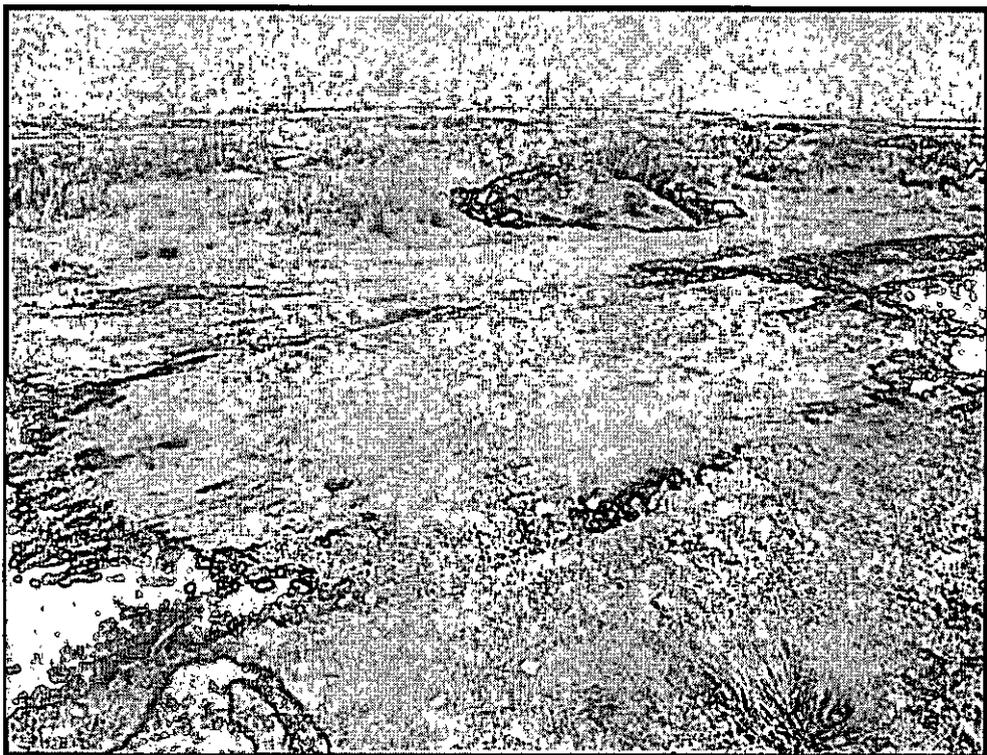
Test trench-1 facing south



Test trench-1 facing south (backfilled)



Test trench-2 facing west



Test trench-2 facing west (backfilled)



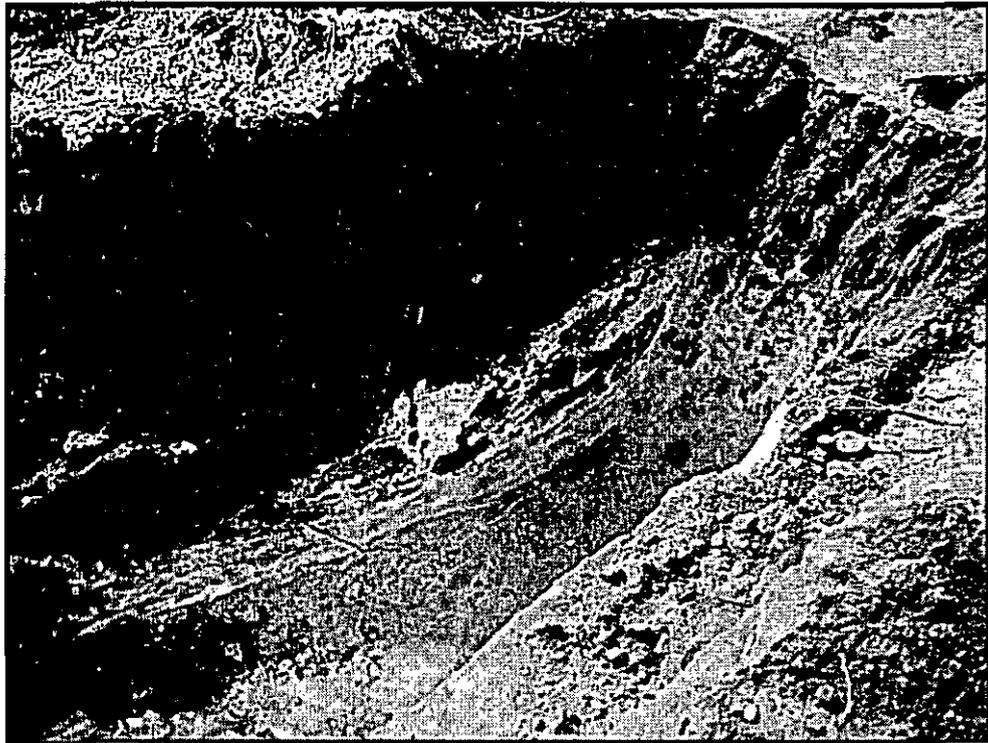
Test trench-3 facing west



Test trench-3 facing west



Test trench-3 facing west (backfilled)



Test trench-4 facing west



Test trench-4 facing west (backfilled)

Appendix C
C-141

District I
1625 N. Finch Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1090 Rio Brazos Road, Artesia, NM 87416
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 16, 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: Holly Energy Partners	Contact: Jeff Stubblefield
Address: 1602 W Main Street, Artesia, NM 88210	Telephone No.: 972-322-5782
Facility Name: Navaho Federal / Apache DAD Lateral	Facility Type: Gathering Line

Surface Owner: BLM	Mineral Owner:	Lease No.:
--------------------	----------------	------------

LOCATION OF RELEASE

Grid Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	30	T17S	29E	1650'	FSL	2308'	FEL	Eddy

Latitude N 32' 48.167

Longitude W 104' 06.730

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: ~100 bbls	Volume Recovered: bbl
Source of Release: 3" steel pipeline	Date and Hour of Occurrence: 10/22/2011 unknown	Date and Hour of Discovery: 10:10 a.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Randy Dade: 575-626-1372	
By Whom? Lori Coupland	Date and Hour: 10/22/2011 1:55 p.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.*
Possible internal or external corrosion on a 3" steel pipe tie-in from Concho Resources Navaho Federal #8. The leak is located below ground at the tie-in of the Apache DAD lateral. Clean-up crews have been dispatched and free product will be removed. Contaminated soil will also be removed and placed on plastic near the site.

Describe Area Affected and Cleanup Action Taken.*
Lease road - nearest well: Concho Resources Navaho Federal #8. Lease road has been closed on both sides of release and earthen dikes built to prevent surface migration. The free product will be recovered and the contaminated soil will be excavated and placed on plastic to allow for natural aeration. The soil will be hauled to an approved land farm once analytical tests have been completed and the levels are at acceptable levels for disposal.

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: Lori Coupland	Approval Date:	Expiration Date:
Title: Mgr - Regulatory Compliance	Conditions of Approval:	
E-mail Address: lori.coupland@hollyenergy.com	Attached <input type="checkbox"/>	
Date: 10/22/2011 Phone: 575.748.4076		

* Attach Additional Sheets If Necessary

February 24, 2012

Bob Allen
Safety & Environmental Solutions
703 East Clinton
Hobbs, NM 88240

RE: HOL-11-017

Enclosed are the results of analyses for samples received by the laboratory on 02/20/12 13:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accrred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
 703 East Clinton
 Hobbs NM, 88240
 Fax To: (575) 393-4388

Received:	02/20/2012	Sampling Date:	02/20/2012
Reported:	02/24/2012	Sampling Type:	Soil
Project Name:	HOL-11-017	Sampling Condition:	Cool & Intact
Project Number:	NAVAJO APACHE DAD LATERAL	Sample Received By:	Jodi Henson
Project Location:	LOCO HILLS, NM		

Sample ID: BH-1 19" TO 21" BGS (H200457-01)

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2012	ND	1.76	87.9	2.00	5.15		
Toluene*	<0.050	0.050	02/22/2012	ND	1.91	95.6	2.00	4.87		
Ethylbenzene*	<0.050	0.050	02/22/2012	ND	1.97	98.6	2.00	3.43		
Total Xylenes*	<0.150	0.150	02/22/2012	ND	6.17	103	6.00	3.45		

Surrogate: 4-Bromofluorobenzene (PIL) 112 % 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	118	100	02/24/2012	ND	2470	98.7	2500	0.0810		

Sample ID: BH-1 29" TO 31" BGS (H200457-02)

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2012	ND	1.76	87.9	2.00	5.15		
Toluene*	<0.050	0.050	02/22/2012	ND	1.91	95.6	2.00	4.87		
Ethylbenzene*	<0.050	0.050	02/22/2012	ND	1.97	98.6	2.00	3.43		
Total Xylenes*	<0.150	0.150	02/22/2012	ND	6.17	103	6.00	3.45		

Surrogate: 4-Bromofluorobenzene (PIL) 111 % 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	02/24/2012	ND	2470	98.7	2500	0.0810		

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
 703 East Clinton
 Hobbs NM, 88240
 Fax To: (575) 393-4388

Received:	02/20/2012	Sampling Date:	02/20/2012
Reported:	02/24/2012	Sampling Type:	Soil
Project Name:	HOL-11-017	Sampling Condition:	Cool & Intact
Project Number:	NAVAJO APACHE DAD LATERAL	Sample Received By:	Jodi Henson
Project Location:	LOCO HILLS, NM		

Sample ID: BH-2 19" TO 21" BGS (H200457-03)

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2012	ND	1.76	87.9	2.00	5.15		
Toluene*	<0.050	0.050	02/22/2012	ND	1.91	95.6	2.00	4.87		
Ethylbenzene*	<0.050	0.050	02/22/2012	ND	1.97	98.6	2.00	3.43		
Total Xylenes*	<0.150	0.150	02/22/2012	ND	6.17	103	6.00	3.45		

Surrogate: 4-Bromofluorobenzene (PIL) 111 % 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	106	100	02/24/2012	ND	2470	98.7	2500	0.0810		

Sample ID: BH-2 25" BGS (H200457-04)

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2012	ND	1.76	87.9	2.00	5.15		
Toluene*	<0.050	0.050	02/22/2012	ND	1.91	95.6	2.00	4.87		
Ethylbenzene*	<0.050	0.050	02/22/2012	ND	1.97	98.6	2.00	3.43		
Total Xylenes*	<0.150	0.150	02/22/2012	ND	6.17	103	6.00	3.45		

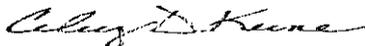
Surrogate: 4-Bromofluorobenzene (PIL) 111 % 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	166	100	02/24/2012	ND	2470	98.7	2500	0.0810		

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

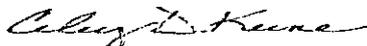
Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES
 101 East Marland, Hobbs, NM 88240
 (505) 393-2326 Fax (505) 393-2476

Page _____ of _____

Company Name: Safety & Environmental Solutions, Inc.		BILL TO		ANALYSIS REQUEST											
Project Manager: Bob Allen		P.O. #:													
Address: 703 East Clinton		Company: Same													
City: Hobbs State: NM Zip: 88240		Altir:													
Phone #: 575-397-0510 Fax #: 575-393-4388		Address:													
Project #: HOL-11-017 Project Owner: Itel 114		City:													
Project Name: MUNDO APARTE DAD WATERAL		State:													
Project Location: Case Hill N.M.		Phone #:													
Sampler Name: Seth J...		Fax #:													
PER LAB USE ONLY		PRESERV:													
		MATRIX													
		SAMPLING													
		DATE													
		TIME													
		OTHER:													
		ICE/COOL													
		ACID/BASE													
		OTHER:													
		SLUDGE													
		OIL													
		SOIL													
		WASTEWATER													
		GROUNDWATER													
		# CONTAINERS													
		GRAB OR (COMP)													
Lab I.D. H200457		Sample I.D.													
1 BH-1 19' to 24' BGS		DATE													
2 BH-1 29' to 31' BGS		TIME													
3 BH-2 19' to 21' BGS		OTHER:													
4 BH-2 25' BGS		ICE/COOL													
		ACID/BASE													
		OTHER:													
		SLUDGE													
		OIL													
		SOIL													
		WASTEWATER													
		GROUNDWATER													
		# CONTAINERS													
		GRAB OR (COMP)													

PLEASE NOTE: Utility and Designers' Consultant's liability and Alerts will be waived for use of their mixing vehicles based in contract or test. Small fee waived by the client for the analysis. All along including those for equipment and any other costs whatsoever shall be itemized and included in the invoice. 30 days after completion of the analysis service. In no event shall Cardinal be liable for incident or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates, or contractors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Sampler Relinquished:	Date: 02/20/12	Received By: <i>Wade Newton</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Audit Phone #: _____
Relinquished By: <i>Seth J...</i>	Time: 1300	Received By:	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Audit Fax #: _____
	Date:		REMARKS:	
	Time:			
Delivered By: (Circle One)	Temp. 42C	Sample Condition	CHECKED BY: (Initials) <i>WJ</i>	
Sampler - UPS - Bus - Other:		Cool Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

#26

February 16, 2012

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: HOL-11-017

Enclosed are the results of analyses for samples received by the laboratory on 02/09/12 14:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
 703 East Clinton
 Hobbs NM, 88240
 Fax To: (575) 393-4388

Received:	02/09/2012	Sampling Date:	02/08/2012
Reported:	02/16/2012	Sampling Type:	Soil
Project Name:	HOL-11-017	Sampling Condition:	Cool & Intact
Project Number:	NAVAJO APACHE DAD LATERAL	Sample Received By:	Jodi Henson
Project Location:	LOCO HILLS, NM		

Sample ID: TT - 4 5' BGS (H200335-01)

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/16/2012	ND	1.93	96.5	2.00	16.0		
Toluene*	<0.050	0.050	02/16/2012	ND	2.09	105	2.00	15.8		
Ethylbenzene*	<0.050	0.050	02/16/2012	ND	2.15	107	2.00	15.0		
Total Xylenes*	<0.150	0.150	02/16/2012	ND	6.65	111	6.00	15.5		

Surrogate: 4-Bromofluorobenzene (PIL) 110% 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	113	100	02/10/2012	ND	2570	103	2500	2.28		

Sample ID: TT - 3 7' BGS (H200335-02)

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/16/2012	ND	1.93	96.5	2.00	16.0		
Toluene*	<0.050	0.050	02/16/2012	ND	2.09	105	2.00	15.8		
Ethylbenzene*	<0.050	0.050	02/16/2012	ND	2.15	107	2.00	15.0		
Total Xylenes*	<0.150	0.150	02/16/2012	ND	6.65	111	6.00	15.5		

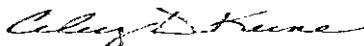
Surrogate: 4-Bromofluorobenzene (PIL) 108% 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	340	100	02/10/2012	ND	2570	103	2500	2.28		

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
 703 East Clinton
 Hobbs NM, 88240
 Fax To: (575) 393-4388

Received:	02/09/2012	Sampling Date:	02/09/2012
Reported:	02/16/2012	Sampling Type:	Soil
Project Name:	HOL-11-017	Sampling Condition:	Cool & Intact
Project Number:	NAVAJO APACHE DAD LATERAL	Sample Received By:	Jodi Henson
Project Location:	LOCO HILLS, NM		

Sample ID: TT - 2 10' BGS (H200335-03)

BTEX 8021B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<1.00	1.00	02/16/2012	ND	1.93	96.5	2.00	16.0		
Toluene*	19.9	1.00	02/16/2012	ND	2.09	105	2.00	15.8		
Ethylbenzene*	23.7	1.00	02/16/2012	ND	2.15	107	2.00	15.0		
Total Xylenes*	41.7	3.00	02/16/2012	ND	6.65	111	6.00	15.5		

Surrogate: 4-Bromofluorobenzene (PIL) 124% 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	5180	100	02/10/2012	ND	2570	103	2500	2.28		

Sample ID: TT - 1 11' BGS (H200335-04)

BTEX 8021B		mg/kg		Analyzed By: AP							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Benzene*	8.24	1.00	02/16/2012	ND	1.93	96.5	2.00	16.0			
Toluene*	101	1.00	02/16/2012	ND	2.09	105	2.00	15.8			
Ethylbenzene*	82.4	1.00	02/16/2012	ND	2.15	107	2.00	15.0			
Total Xylenes*	132	3.00	02/16/2012	ND	6.65	111	6.00	15.5			

Surrogate: 4-Bromofluorobenzene (PIL) 141% 64.4-134

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	6790	100	02/10/2012	ND	2570	103	2500	2.28		

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

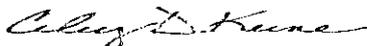
Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

