

1R - 371

REPORTS

DATE:

2001

CHEVRON USA

REMEDIATION WORK PLAN AND CLOSURE REPORT

FOR THE
PRODUCTION FLUID RELEASE
ASSOCIATED WITH THE

HUGH #12 FLOW LINE

New Mexico Oil Conservation Division Case #

NE¼ SECTION 14, T22S, R37E
~4 miles southeast of Eunice
Lea County, New Mexico
Latitude 32°23'37.5"N Longitude 103° 07'43.5"W

JUNE 2001

Prepared by

Environmental Plus, Inc.
1324 North Main Street
P.O. Box 1558
Eunice, New Mexico 88231
Tele 505•394•3481 FAX 505•394•2601

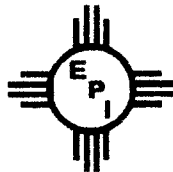


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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

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 CHEVRON USA	Contact NATHAN MOUSER
Address P.O. Box 1949, Eunice, NM	Telephone No. (505) 394-1247
Facility Name HUGH WELL No. 12	Facility Type PRODUCTION FLOWLINE

Surface Owner TOM & WINNIE KEENAN	Mineral Owner ELA GANN	Lease No.
---	----------------------------------	-----------

LOCATION OF RELEASE

Unit Letter H	Section 14	Township 22S	Range 37E	Feet from the 2310	North/South Line North	Feet from the 330	East/West Line East	County LEA
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NATURE OF RELEASE

Type of Release OIL & WATER	Volume of Release 20 (10Bbl & 10Bbl)	Volume Recovered 5
Source of Release PARTED FLOWLINE	Date and Hour of Occurrence 05/19/01, 9:00 am	Date and Hour of Discovery 05/19/01, 12:00 pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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.*

Broken Threads on 4" flowline at hammer union; Well Shut In, 5/21/01 Worn threads cut to good pipe, rethreaded & installed new nipple & union

Describe Area Affected and Cleanup Action Taken.*

Sandy Pasture; Vacuum Truck Dispatched to area, approximately 3 Bbls BSEW recovered & 2 Bbls oil; Soils Pushed Up; Area will be remediated to OGD levels

Describe General Conditions Prevailing (Temperature, Precipitation, etc.)*

Hot & Dry

Disposed of 942 yd³ of soil in The Rhino Env. Land Farm.

Attached report Documents Remediation
OIL CONSERVATION DIVISION

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:

Brenda K. Parker

Printed Name:

Brenda K. Parker

Title:

FIELD SPECIALIST

Date:

05-29-01

Phone:

390-7166

Approved by

District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary

GENERAL EVENT INFO.	Date of Spill: 05-19-01		Time (HH:MM) : 0900 (24 Hrs.)	
	Location: Desc. (i.e. HSA Well #544 - Oil &/or Water Spill)			
	Supervisor: Hugh Well No. 12 - Oil & Water Spill			
Spill Levels: (Select One) <input type="checkbox"/> <L1> Level 1 <input type="checkbox"/> <L2> Level 2 <input checked="" type="checkbox"/> <L3> Level 3 Agency Notified? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N (<L1> = Oil < 1 bbl, Water < 100 bbls <L2> = Oil 1 bbl to < 10 bbl, Water 100 to 500 bbls <L3> Everything else)				
Location: Lat Long		Unique Code: (Lease and/or Facility Unique Code) UCU 523000 UCU 521800 (OA's have print out of Unique Codes by Facility)		
Equip. Process Unit	(Select One) <input checked="" type="checkbox"/> <FF> Field Flowline <input type="checkbox"/> <AG> Above Ground Tank <input type="checkbox"/> <FS> Flare Stack <input type="checkbox"/> <IN> Injection Unit <input type="checkbox"/> <PE> Pumping Equipment <input type="checkbox"/> <HT> Heater Treater <input type="checkbox"/> <WC> Well Casing <input type="checkbox"/> <WH> Well Head <input type="checkbox"/> <AS> API Separator			
Equip. Component	(Select One) <input type="checkbox"/> <GU> Gauge <input type="checkbox"/> <PO> Plug <input type="checkbox"/> <PU> Pump <input type="checkbox"/> <F> Fitting <input type="checkbox"/> <WS> Welded Seam <input type="checkbox"/> <SB> Stuffing Box <input type="checkbox"/> <CA> Clamp <input type="checkbox"/> <PK> Packing <input type="checkbox"/> <GA> Gasket <input type="checkbox"/> <VL> Valve <input type="checkbox"/> <PD> Pipe Body < <input type="checkbox"/> <F> Fittings <input checked="" type="checkbox"/> <PC> Pipe Conn. <input type="checkbox"/> <FL> Flange <input type="checkbox"/> <CP> Coupling <input type="checkbox"/> <CR> Collar <input type="checkbox"/> <IL> Injection Line <input type="checkbox"/> <OT> Other (Specific) <input type="checkbox"/> <NI> Nipple <input type="checkbox"/> <NZ> Nozzle			
Cause	(Select Items that apply) <input checked="" type="checkbox"/> <CI> Internal Corr. <input type="checkbox"/> <DE> Design <input type="checkbox"/> <PR> Procedural <input type="checkbox"/> <WE> Weather <input type="checkbox"/> <CX> External Corr. <input type="checkbox"/> <HU> Human Error <input type="checkbox"/> <TP> Third Party <input type="checkbox"/> <ME> Mechanical <input type="checkbox"/> <VA> Intentional Act/Vandalism Describe Event:			
Witness Info.	Name:		Company:	
	Name:		Company:	
Recovery Method	Select One) <input type="checkbox"/> Berm Material <input type="checkbox"/> <F> Fuel <input type="checkbox"/> <R> Remediate <input type="checkbox"/> <D> Disposal <input type="checkbox"/> <P> Product Recovery <input type="checkbox"/> <RM> Road Mix <input type="checkbox"/> <E> Excavate <input checked="" type="checkbox"/> <V> Vacuum Truck			
Corrective Recom.	Well Shut In 5/19/01 until 05/21/01; 5/21/01: Worn threads			
Action	cut to good pipe, re-threaded and install new nipple & union			
	Date/Time, Start		Date/Time, End	
Prev. Meas.				
Curr. Status				

Specific Chemicals (Please specify Measurement Units) <div style="text-align: center; font-size: small;"> Barrels, <G> Gallons, <X> MSCF, <T> Tons, <L> Pounds </div> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 20%;">Quantity Spilled</th> <th style="width: 20%;">Quantity Recovered</th> <th style="width: 30%;">Quantity Lost</th> </tr> </thead> <tbody> <tr> <td>Crude Oil <PP></td> <td style="text-align: center;">10</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td>Produced Water <PW></td> <td style="text-align: center;">10</td> <td style="text-align: center;">3</td> <td style="text-align: center;">7</td> </tr> <tr> <td>Produced Gas <PG></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Spill Measurements</td> <td style="text-align: center;">Length 30'</td> <td style="text-align: center;">Width 50'</td> <td style="text-align: center;">Depth 18"</td> </tr> </tbody> </table>				Quantity Spilled	Quantity Recovered	Quantity Lost	Crude Oil <PP>	10	2	8	Produced Water <PW>	10	3	7	Produced Gas <PG>				Spill Measurements	Length 30'	Width 50'	Depth 18"	Reportability (Select One) Serious Event? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Offsite? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Cercla Reportable? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Impacted Area (Select One) <input type="checkbox"/> Rural (Fee Land) <input type="checkbox"/> Private Land (inc. lse.) <input type="checkbox"/> Urban <input type="checkbox"/> State Land <input type="checkbox"/> Federal Land		Receiving Medium (Select One) <input checked="" type="checkbox"/> Permeable Surface <input type="checkbox"/> Impermeable Surface <input type="checkbox"/> Air <input type="checkbox"/> Surface Waters <input type="checkbox"/> Not Applicable Containment (Select One) <input checked="" type="checkbox"/> Un-Contained <input type="checkbox"/> Contained						
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Produced Water <PW>	10	3	7																												
Produced Gas <PG>																															
Spill Measurements	Length 30'	Width 50'	Depth 18"																												
Cost: Est. Damages \$ Lost Value \$ <u>240.00</u> Clean-Up \$																															
General Comments:																															
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="4" style="width: 10%; vertical-align: top;"> Agency Info. (If Y marked above) </td> <td colspan="2" style="padding: 5px;"> (Select Code(s) that apply) Reason Notified: <input type="checkbox"/> <GW> Good Will <input checked="" type="checkbox"/> <RE> Required </td> <td colspan="2" style="padding: 5px;"> (Select Code(s) that apply) Regulatory Category: <input type="checkbox"/> <RG> Regulated Substances <input type="checkbox"/> <PS> Public Safety </td> <td colspan="2" style="padding: 5px;"> (Select Code(s) that apply) Agencies Notified: <input type="checkbox"/> <TXRC> TX Railroad Commission <input type="checkbox"/> <TNRC> TX Natural Resource Conservation Comm. </td> </tr> <tr> <td style="width: 20%;">Agency (Code)</td> <td style="width: 20%;">Agency Contact</td> <td style="width: 20%;">Caller</td> <td style="width: 20%;">Date</td> <td colspan="2" style="width: 20%;">RRC Job No</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td colspan="2"> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td colspan="2"> </td> </tr> </table>							Agency Info. (If Y marked above)	(Select Code(s) that apply) Reason Notified: <input type="checkbox"/> <GW> Good Will <input checked="" type="checkbox"/> <RE> Required		(Select Code(s) that apply) Regulatory Category: <input type="checkbox"/> <RG> Regulated Substances <input type="checkbox"/> <PS> Public Safety		(Select Code(s) that apply) Agencies Notified: <input type="checkbox"/> <TXRC> TX Railroad Commission <input type="checkbox"/> <TNRC> TX Natural Resource Conservation Comm.		Agency (Code)	Agency Contact	Caller	Date	RRC Job No													
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	Last Name	First Name	MI																												
Approved by:				Date:																											
	Last Name	First Name	MI																												

Revised 1/3/01

EXECUTIVE SUMMARY

May 19, 2001, a production fluid leak consisting of crude oil, natural gas, and formation water occurred between the Chevron Hugh #12 pumping well and the tank battery and was apparently due to internal corrosion. Chevron contracted Environmental Plus, Inc. (EPI) of Eunice, New Mexico to delineate the vertical and horizontal extents of Total Petroleum Hydrocarbon EPA method 8015M (TPH) and BTEX, i.e., Benzene, Toluene, Ethyl Benzene, and Xylene, and soil Chloride to New Mexico Oil Conservation Division (NMOCD) remedial goals. Chevron chose to remove soil above the NMOCD remedial goals and replace with clean soil. Acceptable levels of TPH and BTEX were encountered at the 15'bgs interval and resulted in the excavation and disposal of 942 yd³ of soil at NMOCD approved and permitted Rhino Environmental Facility south of Hobbs, New Mexico. A similar volume of clean soil was purchased from the landowner and used as backfill.

1 HUGH #12 FLOW LINE REMEDIATION WORK PLAN

This plan will restore the impacted surface area to an acceptable agricultural state and remove or isolate soil contaminated above New Mexico Oil Conservation Division (NMOCD) guidelines by historical oil and gas production and handling activities. The Constituents of Concern (CoCs) will be Total Petroleum Hydrocarbon using EPA method 8015M (TPH), Benzene, BTEX, i.e., the sum of Benzene, Toluene, Ethyl Benzene, and m, p, & o Xylene, and soil Chloride. This Site Specific Remediation Work Plan will provide quality analytical information and document remediation activities necessary to receive a "no further action" declaration from the NMOCD.

1.1 Remediation Strategy and Objective

The site will be delineated concurrent with excavation with soil disposal as the remediation strategy. The objectives of the plan will be to;

- Document final achievement of acceptable environmental thresholds established by the NMOCD and
- Restore the impacted surface area to an acceptable agricultural state.

1.2 Site Description

The site is located in open sandy range land and is traversed north to south with three main line crude oil pipelines owned by E.O.T.T. Energy Pipeline. A site map is included as Attachment I.

1.2.1 Historical Use

This land surface is owned by Sims/Kennann and used for livestock grazing, caliche sales, and oil and gas production facilities access.

1.2.2 Legal Description

The site is located approximately 4 miles southeast of Eunice, Lea County, New Mexico. The legal description is NE¼ S14 T22S R37E, Latitude 32°23'37.5"North and Longitude 103° 07'43.5"West.

1.2.3 Photographic documentation

Photographs of the site are included as Attachment II.

1.2.4 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Quercus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses and weeds.

Mammals present, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, and the Mule Deer. Reptiles, Amphibians, and Birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species has not been conducted.

1.2.5 Environmental Media Characterization

Chemical parameters of the soil were characterized consistent with the New Mexico Oil Conservation Division (NMOCD) guidelines published in the following documents;

- Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- Unlined Surface Impoundment Closure Guidelines (February 1993)

Acceptable "Site Specific" thresholds for contaminants of concern, i.e., Chloride, TPH and BTEX, were determined based on the following;

- Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.
- Wellhead Protection Area, i.e., distance from fresh water supply wells.
- Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.

1.2.5.1 Ground Water Level

According to the Office of the New Mexico State Engineer ground water level database, there are three water wells with known levels in section 14 of T22S R37E, i.e., 60.76, 68, 54.06 feet below ground surface (bgs). This averages to 60.94'bgs or 61'bgs. On going environmental surveillance by another company at a site ~.2 mile north records the ground water level at 60'bgs.

1.2.5.2 Depth to Ground Water Calculation

Depth to ground water, i.e., "the vertical distance from the lowermost contaminants to the seasonal high water elevation of the ground water." For the hydrocarbon source term, i.e., TPH, Benzene, and BTEX, this was determined to be 45'bgs.

1.2.5.3 Ground Water Gradient

According to the USGS (Nicholson & Clbesch), the gradient is to the southeast.

1.2.5.4 Wellhead Protection Area

There are no domestic use wells located within a 1000' radius of the site.

1.2.5.5 Distance to Nearest Surface Water Body

There are no naturally occurring surface water bodies located within a 1 mile radius of the site.

1.2.5.6 Soil Assessment

For field delineation purposes only, the VOC headspace threshold of 200 ppm was used to determine when samples should be ascensioned to the laboratory for analysis. A 5-point composite sample was collected from the excavation side walls and bottom.

1.2.5.7 Ground Water Assessment

The ground water level is conservatively estimated to occur at ~60 feet bgs. The soil assessment did not indicate that the ground water had been impacted by the hydrocarbon source term.

1.2.6 NMOCD Site Ranking and Remedial Goals

The Site information and Metrics form in Attachment IV summarizes the information about the site, shows a site ranking of >19 and sets the following remedial goals for the CoCs.

Benzene ¹	10 ppm
BTEX ¹	50 ppm
TPH	100 ppm

1.3 Data Quality

All laboratory analytical results were within the data quality objectives listed below.

- Laboratory data must have > 85% recovery for TPH and BTEX and >75% recovery for general chemistry parameters.
- Laboratory data must have <15% Relative Percent Difference
- Field headspace analyses must be supported with instrument calibration data and calibration gas certification.

Duplicates or blanks were not submitted to the laboratory.

1.4 Project Safety

Hazards that will be encountered at this site include the following;

- Moving equipment
- Buried pipelines
- Highway ingress/egress
- Excavation
- Potential Hydrogen Sulfide Gas

Employees and subcontractors will be required to confirm current training in these hazards. Standard personal protective equipment will include;

- Personal H₂S Monitor
- Hard-hat
- Safety Glasses
- Excavation Safety
- Steel Toed Boots/Shoes

1.5 Process/Procedure

The following sequence was used to guide project implementation.

1. Site visit: Photograph and map
2. Issue "One Call" and notifying utilities
3. Complete the "Chevron Digging Permit" and signature approval process
4. Locate, hand spot, and mark buried lines or other structures
5. Overhead powerlines are not present and will not be a hazard.
6. Lockout/Tagout: Pipeline companies notified of activity but LO/TO unnecessary
7. Procedure: Equipment required will be: Backhoe, Excavator, Dump Trucks
 - Daily Tail gate safety meetings and PPE check
 - Excavation Safety Checklist Form
 - Excavate visibly contaminated soil and stockpile
 - Haul stockpiled soil to NMOCD approved facility
 - Conduct field VOC headspace analyses on selected samples
 - Collect Composite Sample of the selected areas for laboratory analysis
 - Review data and determine "Depth to Ground Water"
 - Backfill excavations with volume consistent with disposal volume
 - Photograph
 - Develop and issue site specific report
 - Reseed surface

2 WORK PLAN IMPLEMENTATION AND CLOSURE

The process of excavating and disposing of contaminated soil and field surveying began on June 7, 2001 with the disposal and backfilling phase completed on June 20, 2001.

2.1 Excavation and Composite Sampling

The E.O.T.T. pipelines traversing the site were in use during the project. The excavation span required that a pedestal of soil be left in place as a pipeline support while the north and south portions of the contamination was removed. The column was removed and disposed of only after the remedial goals had been achieved and the north and south sections had backfilled and capable of supporting the pipe. On June 6th and again on June 11th, composite samples of the sidewalls and bottom were collected and ascensioned to Cardinal Laboratories in Hobbs, New Mexico for analysis.

2.2 Discussion of Data

The June 11th results indicated achievement of the NMOCD remedial goals. The original laboratory analytical reports and data summary are included as Attachment III. Data Charts are provided below.

2.2.1 Bottom Composite Sample

TPH is 32.5 mg/Kg and is < the NMOCD 100 mg/Kg remedial goal. Benzene is not detectable and BTEX shows only a nominal detection for Toluene, both well below the respective remedial goals of 10 and 50 mg/Kg. The soil chloride concentration at this interval is 295 mg/Kg.

2.2.2 North Side Wall Composite Sample

TPH is <10 mg/Kg and is < the NMOCD 100 mg/Kg remedial goal. Benzene is not detectable and BTEX shows only a nominal detection for Toluene, both well below the respective remedial goals of 10 and 50 mg/Kg. The soil chloride at this location is 124 mg/Kg.

2.2.3 South Side Wall Composite Sample

TPH is <10 mg/Kg and is < the NMOCD 100 mg/Kg remedial goal. Benzene is not detectable and BTEX shows only a nominal detection for Toluene, both well below the respective remedial goals of 10 and 50 mg/Kg. The soil chloride at this location is 62 mg/Kg.

2.2.4 East Side Wall Composite Sample

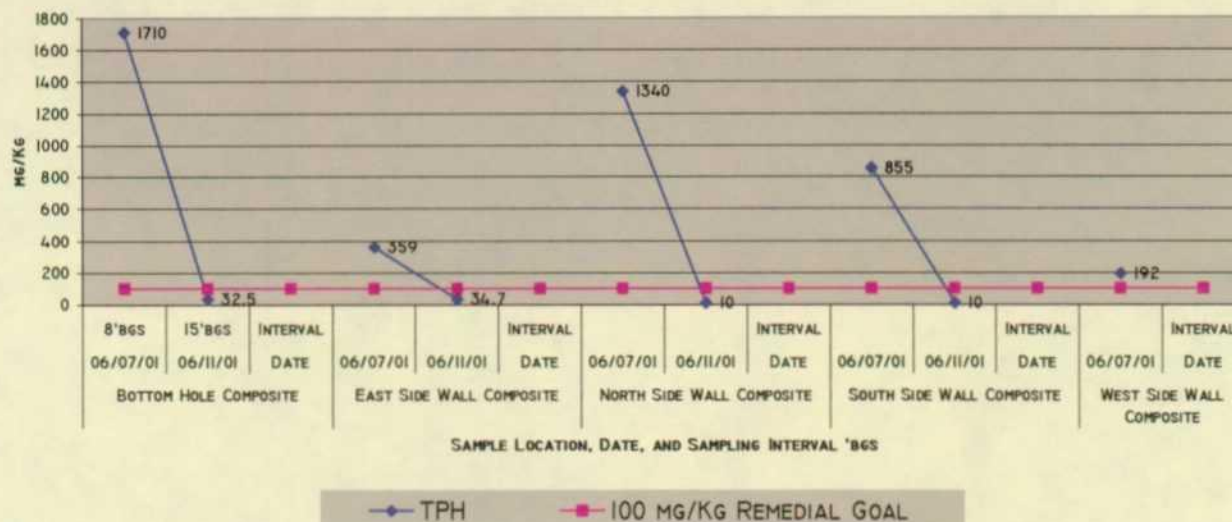
TPH is 34.7 mg/Kg and is < the NMOCD 100 mg/Kg remedial goal. Benzene is not detectable and BTEX shows only a nominal detection for Toluene, both well below the respective remedial goals of 10 and 50 mg/Kg. The soil chloride at this location is 746 mg/Kg.

2.2.5 West Side Wall Composite Sample

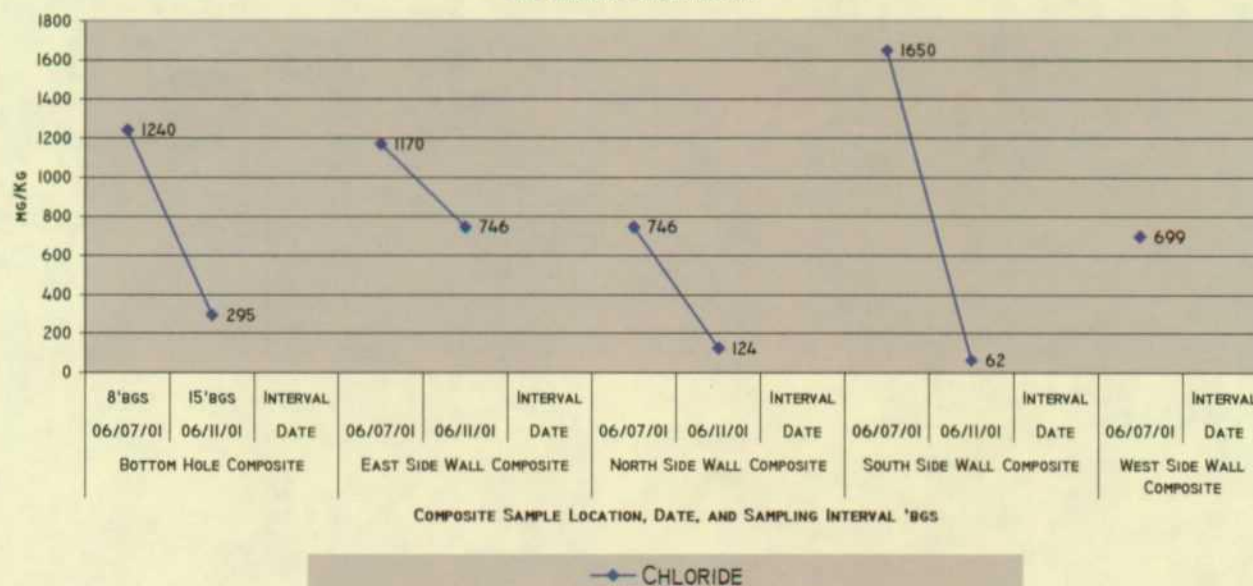
The Gasoline Range Organics (GRO) were not detected above 50 mg/Kg and the Diesel Range Organics (DRO) at 142 mg/Kg. If the GRO value of 50 mg/Kg is considered to be "de-minimus" and added to the DRO value the TPH is 192 mg/Kg. Even though this value is above the 100 mg/Kg NMOCD remedial goal it does not pose a legitimate risk to the environment. The soil chloride at this location is 699 mg/Kg.

Data Illustrations

CHEVRON USA
HUGH #12 FLOW LINE
TOTAL PETROLEUM HYDROCARBON (TPH) CONCENTRATIONS



CHEVRON USA
HUGH #12 FLOW LINE SITE
SOIL CHLORIDE CONCENTRATIONS



2.3 Soil Disposal and Backfilling

942 yd³ were disposed of at the NMOCD approved Rhino Environmental Facility. A similar volume of clean backfill was used to bring the excavation to grade and purchased from Sims/Kennann, the landowner.

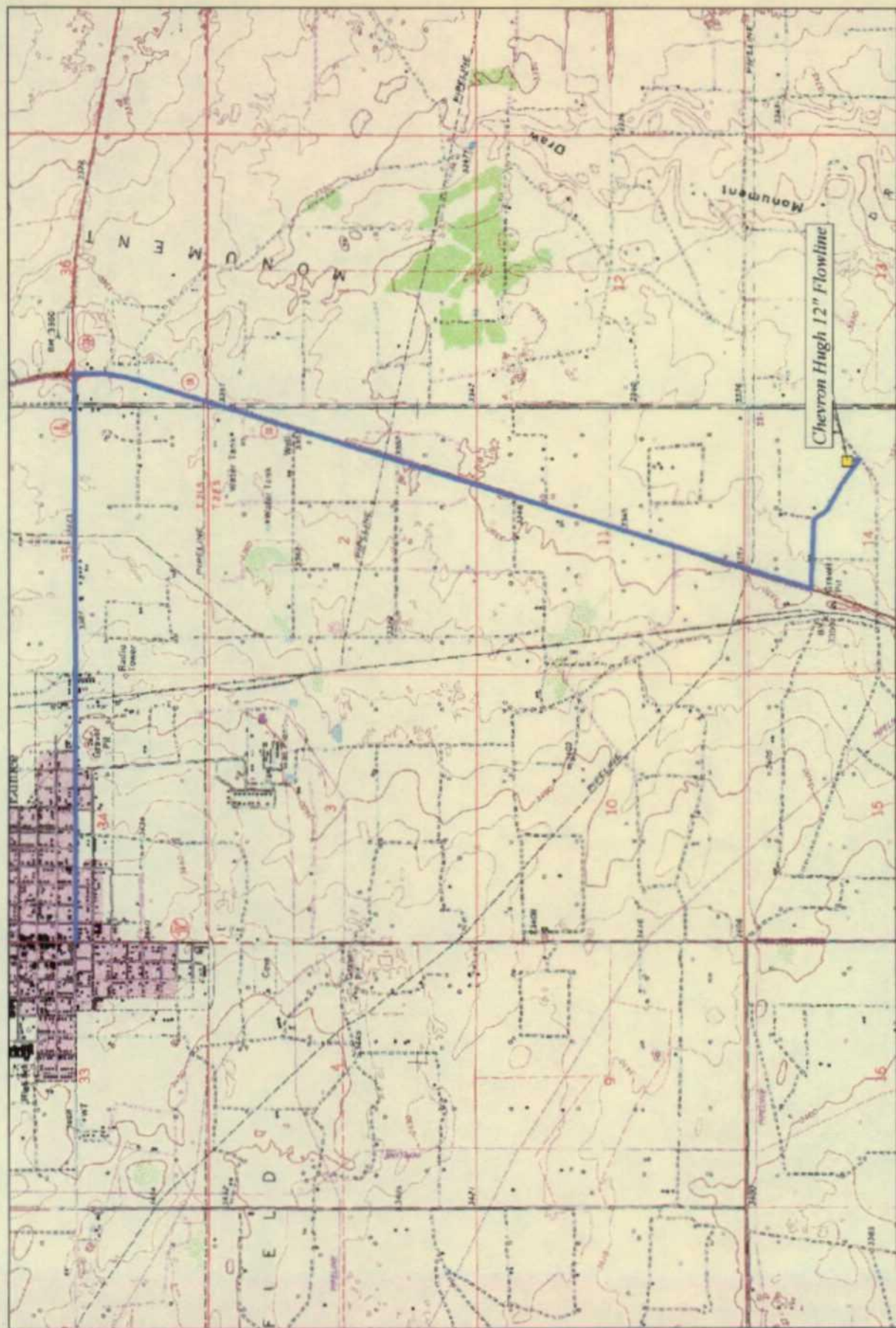
2.4 Conclusion

Production fluid contamination at this site resulted in hydrocarbon contamination above the NMOCD remedial guidelines. The data support the conclusion that the site has been remediated to acceptable levels for the hydrocarbon CoCs and as such justifies seeking a "no further action" declaration from the NMOCD.

2.5 Follow Up

The site will be reseeded with native grasses at a time amenable to germination.

Attachment I: Site Map



Copyright © 2000 DeLorme. TopoTools Advanced Print Kit TE. Scale: 1 : 31,250. Zoom Level: 13.0 Datum: NAD27

CHEVRON USA
HUGH #12 FLOW
LINE
NW/4 SEC 14
T22S R37E
AFFECTED
SURFACE
~2242 SQ FT

THE EAST/WEST HUGH #12 FLOW LINE
HAS BEEN REMOVED AND IS NOT SHOWN.

E.O.T.T. PIPELINE
E.O.T.T. PIPELINE
E.O.T.T. PIPELINE

SOIL COLUMN USED TO SUPPORT PIPELINES
DURING EXCAVATION OF THE NORTH AND SOUTH
SECTIONS AND WAS REMOVED AFTER THE NORTH
AND SOUTH SECTIONS HAD BEEN BACKFILLED.

INITIAL AFFECTED AREA

EXCAVATION PERIMETER

N

SCALE 1 IN : 15 FT



FEET

LAT/LONG
NAD 1927 (WESTERN US)

MULTIPLE FILES
6/30/2001



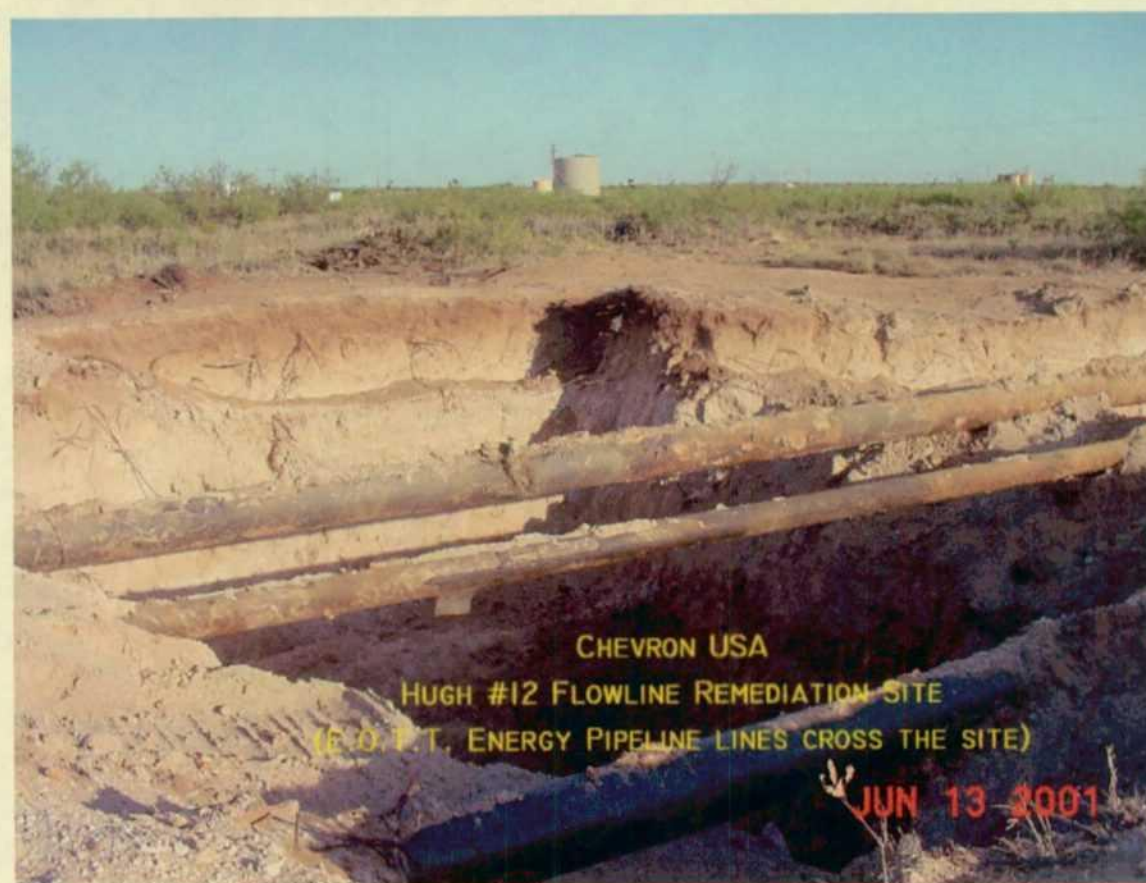
New Mexico Office of the State Engineer
Well Reports and Downloads

Township: Range: Sections: NAD27 X: Y: Zone: Search Radius: County: Basin: Number: Suffix: Owner Name: (First) (Last) ☐ Non-Domestic ☐ Domestic
☒ All

AVERAGE DEPTH OF WATER REPORT 06/30/2001

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet)		
								Min	Max	Avg
No Records found, try again										

Attachment II: Photographs





Chevron Hugh #12 Flow Line Final Contour

Attachment III: Analyses

Chevron USA

Hugh #12 Flow Line Data Summary

Sample Description	Date	Sampling Interval	SAMPLE ID#	VOC ⁴ Headspace	Chloride	TPH (GRO) ⁵	TPH (DRO) ⁶	TPH (DRO+GRO)	TPH ³ 418.1	BTEX ⁷	Benzene	Toluene	Ethyl Benzene	Total Xylene
Bottom Hole Composite	06/07/01	8	CHS60701BH	62.5	1240	50	1660	1710	na	0.055	0.005	0.013	0.005	0.032
Bottom Hole Composite	06/11/01	15	CHS61101BH-15	na	295	na	na	na	32.5	0.031	0.005	0.006	0.005	0.015
East Side Wall Composite	06/07/01	na	CHS60701ESW	20.0	1170	50	309	359	na	0.036	0.005	0.011	0.005	0.015
East Side Wall Composite	06/11/01	na	CHS61101ESW	na	746	na	na	na	34.7	0.032	0.005	0.007	0.005	0.015
North Side Wall Composite	06/07/01	na	CHS60701NSW	50.0	746	50	1290	1340	na	0.035	0.005	0.007	0.005	0.018
North Side Wall Composite	06/11/01	na	CHS61101NSW	na	124	na	na	na	10	0.031	0.005	0.006	0.005	0.015
South Side Wall Composite	06/07/01	na	CHS60701SSW	88.0	1650	50	805	855	na	0.033	0.005	0.008	0.005	0.015
South Side Wall Composite	06/11/01	na	CHS61101SSW	na	62	na	na	na	10	0.032	0.005	0.007	0.005	0.015
West Side Wall Composite	06/07/01	na	CHS60701WSW	9.5	699	50	142	192	na	0.032	0.005	0.007	0.005	0.015

¹bgs - feet below ground surface

²Italicized values are < the instrument detection limit.

³TPH - Total Petroleum Hydrocarbon

⁴VOC - Volatile Organic Constituents/Contaminants

⁵GRO - Gasoline Range Organics (C₆-C₁₀)

⁶DRO - Diesel Range Organics (C₁₁-C₃₀)

⁷BTEX - The sum of Benzene, Toluene, Ethyl Benzene, and Xylene. Values reported below the instrument detection limit are considered "de-minimus" and are included in the sum.



ARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

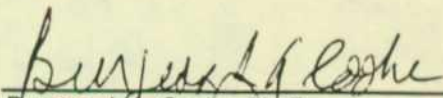
Receiving Date: 06/11/01
Reporting Date: 06/13/01
Project Number: NOT GIVEN
Project Name: HUGH
Project Location: NOT GIVEN

Sampling Date: 06/11/01
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	TPH (mg/Kg)	CI* (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		06/12/01	06/12/01	06/12/01	06/12/01	06/12/01	06/12/01
H5919-1	CHS61101BH 15'	32.5	295	<0.005	0.006	<0.005	<0.015
H5919-2	CHS61101NSW	<10	124	<0.005	0.006	<0.005	<0.015
H5919-3	CHS61101SSW	<10	62	<0.005	0.007	<0.005	<0.015
H5919-4	CHS61101ESW	34.7	746	<0.005	0.007	<0.005	<0.015
Quality Control		240	971	0.108	0.102	0.105	0.301
True Value QC		240	1000	0.100	0.100	0.100	0.300
% Recovery		100	97.1	108	102	105	100
Relative Percent Difference		7.2	2.1	0.9	1.0	2.9	0.39

METHODS: TRPHC-EPA 600/4-79-020 418.1; CI-Std. Methods 4500-CIB; BTEX-EPA SW-846 8260

*Analyses performed on 1:4 w:v aqueous extracts.


Burgess J. A. Cooke, Ph. D.

6/13/01
Date

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[illegible]

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.



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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 06/07/01
Reporting Date: 06/11/01
Project Owner: RICK MASSEY
Project Name: HUGH
Project Location: NOT GIVEN

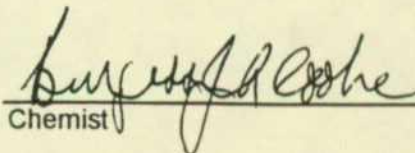
Sampling Date: 06/07/01
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC/HM

LAB NUMBER	SAMPLE ID	GRO (C ₆ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)	Cl* (mg/Kg)
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ANALYSIS DATE		06/09/01	06/09/01	06/08/01
H5913-1	CHS60701SSW	<50	805	1650
H5913-2	CHS60701ESW	<50	309	1170
H5913-3	CHS60701NSW	<50	1290	746
H5913-4	CHS60701WSW	<50	142	699
H5913-5	CHS60701BH	<50	1660	1240
Quality Control		719	833	991
True Value QC		800	800	1000
% Recovery		89.9	104	99.1
Relative Percent Difference		0.1	7.7	2.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl*: Std. Methods 4500-Cl*B

*Analyses performed on 1:4 w:v aqueous extracts.


Chemist

6/11/01
Date

H5913A.XLS

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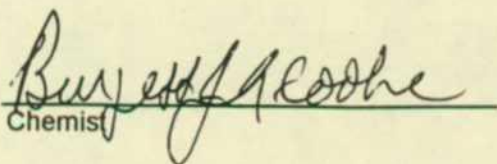
ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO:

Receiving Date: 06/07/01
Reporting Date: 06/11/01
Project Owner: RICK MASSEY
Project Name: HUGH
Project Location: NOT GIVEN

Sampling Date: 06/07/01
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		06/08/01	06/08/01	06/08/01	06/08/01
H5913-1	CHS60701SSW	<0.005	0.008	<0.005	<0.015
H5913-2	CHS60701ESW	<0.005	0.011	<0.005	<0.015
H5913-3	CHS60701NSW	<0.005	0.007	<0.005	0.018
H5913-4	CHS60701WSW	<0.005	0.007	<0.005	<0.015
H5913-5	CHS60701BH	<0.005	0.013	<0.005	0.032
Quality Control		0.107	0.100	0.102	0.289
True Value QC		0.100	0.100	0.100	0.300
% Recovery		107	100	102	96.4
Relative Percent Difference		0.4	4.5	2.7	3.1

METHOD: EPA SW-846 8260


Chemist

6/11/01
Date

H5913B.XLS

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Company: ENVIRONMENTAL PLUS INC. Project Manager: PAT MCCASLAND Address: 1324 M. City: FORT WORTH State: TX Zip: 76101 Phone #: 394-3481 Project #: Project Name: Hugh Project Location: Sampler Name: Roger Boone		BILL TO P.O. #: EPT Company: EPT Attn: Pat McCasland Address: SEE LEFT City: SEE LEFT State: Zip: Phone #: Fax #:		ANALYSIS REQUEST														
Lab I.D.	Sample I.D.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	PRESERV	MATRIX	DATE	TIME	TPH	BTEX	Chlorides
NS913-1	CH560701SSW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6-7-01	1:30 PM	✓	✓	✓
-2	CH560701ESW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6-7-01	1:55 PM	✓	✓	✓
-3	CH560701NSW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6-7-01	1:58 PM	✓	✓	✓
-4	CH560701WSW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6-7-01	2:00 PM	✓	✓	✓
-5	CH560701B+	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6-7-01	3:30 PM	✓	✓	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's obligations remain for any other claims whatsoever that are not covered by the contract for the services. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors 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 causes of action.

Terms and Conditions: Invoiced will be charged on all amounts more than 30 days past due at the rate of 2.0% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

Phone Result: ☐ Yes ☐ No
 Fax Result: ☐ Yes ☐ No
 Add'l Phone #:
 Add'l Fax #:
 REMARKS: FAX TO P. McCasland

Relinquished By: Roger Boone Date: 6-7-01 Time: 4:15	Received By: Cady Miller Date: 6-7-01 Time: 4:30 PM	Checked By: Cady Miller Date: 6-7-01 Time: 4:30 PM
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Attachment IV: Site Metrics and Information Form

Site Metrics and Information Form

SITE: Chevron Hugh #12 Flow Line		Assigned Site Reference #:	
Company: Chevron USA			
Company Street Address: 2401 Avenue O			
Company Mailing Address: P.O. Box 1949			
Company City, State, Zip: Eunice, New Mexico			
Company Representative: Rick Massey			
Company Representative Telephone: 505.390.7188			
Company Telephone: 505.394.1237 Fax:			
Fluid volume released (bbls) = 20 with 5 recovered			
>25 bbls : Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)			
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)			
Leak, Spill, or Pit (LSP) Name: Hugh #12 Flow Line			
Source of contamination: Production Pipeline			
Land Owner, i.e., BLM, ST, Fee, Other: Sims/Kennann			
LSP Dimensions: affected area leak origin pooling area = 40' x 20' Flow path =			
LSP Area = ~2,242 ft ²			
Location of Reference Point (RP):			
Location distance and direction from RP:			
Latitude: 32° 23'37.5" N			
Longitude: 103° 07'43.5" W			
Elevation above mean sea level: ~ 3450 amsl			
Feet from South Section Line			
Feet from West Section Line			
Location- Unit or ¼¼ = NE¼			
Location- Section = 14			
Location- Township = 22S			
Location- Range = 37E			
Surface water body within 1000' radius of site: None			
Domestic water wells within 1000' radius of site: None			
Agricultural water wells within 1000' radius of site: None			
Public water supply wells within 1000' radius of site: None			
Depth from land surface to ground water (DG): ~60'bgs			
Depth of contamination (DC): 15'bgs			
Depth to ground water (DG - DC = Calculated Depth to GW) 45'bgs			
1. Ground Water		2. Wellhead Protection Area	
If Depth to GW <50 feet: <i>20 points</i>		If <1000' from water source, or;<200' from private domestic water source: <i>20 points</i>	
If Depth to GW 50 to 99 feet: <i>10 points</i>			
If Depth to GW >100 feet: <i>0 points</i>		If >1000' from water source, or; >200' from private domestic water source: <i>0 points</i>	
Ground water Score = 20		Wellhead Protection Area Score = 0	
Site Rank (1+2+3) = = <i>20 points</i>			
Total Site Ranking Score and Acceptable Concentrations			
Parameter	>19	10-19	0-9
Benzene ¹	10 ppm	10 ppm	10 ppm
BTEX ¹	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm
¹ 100 ppm field VOC headspace measurement may be substituted for lab analysis			

Attachment V: Chevron Digging Permit

CHEVRON U.S.A. INC.

WEST ASSET TEAM / DIGGING PERMIT

PERMIT FOR DIGGING, TRENCHING, OR EXCAVATING WITH ANY TYPE OF POWERED TOOL OR MECHANIZED EQUIPMENT

Supervisor: ROGER BOONE EPI Date Authorized: JUNE 6, 2001
 Field Location: HUGH LEASE NE1/4 SW1/4 T23S R37E
 Type Work: EXCAVATE CONTAMINATED SOIL PLACE ON PLASTIC LOAD AND Haul to
RHINO LAND FARM
 Specific Restrictions: _____
 Other: _____

Mechanical digging equipment should not be used within 12" of an underground line.

PERMIT REQUIREMENTS:

Basic Precautions:

- | | Yes | No | N/A |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Has an underground line map been reviewed?
<i>Piping plan must be used when work is performed within a facility.</i> | _____ | _____ | <input checked="" type="checkbox"/> |
| 2. Has the person operating the digging equipment isolated the energy source and performed LOTO?
<i>If electrical energy source cannot be accurately located, utilize electrical contractor with electric line locating equipment.</i> | _____ | _____ | <input checked="" type="checkbox"/> |
| 3. Have digging operations been discussed w/ an employee familiar with the area? | <input checked="" type="checkbox"/> | _____ | _____ |
| 4. Has a metal detecting line finder been used in the area to be excavated? | <input checked="" type="checkbox"/> | _____ | _____ |
| 5. Are there any line markers near the excavation area? | <input checked="" type="checkbox"/> | _____ | _____ |
| 6. Is there a visible right-of-way where the digging will be done? | <input checked="" type="checkbox"/> | _____ | _____ |
| 7. Are there special concerns with any equipment, i.e., tank batteries, satellites, wells, buildings, power poles, etc., within 150' of the excavation area? | <input checked="" type="checkbox"/> | _____ | _____ |
| 8. Are there special concerns with overhead power lines within 100' of the excavation? | _____ | <input checked="" type="checkbox"/> | _____ |
| 9. Will digging exceed 16" in depth?
<i>If yes, see Special Precaution below.</i> | _____ | _____ | _____ |
| 10. Have you discussed the importance of not creating a spill and what to do if one occurs? | <input checked="" type="checkbox"/> | _____ | _____ |

If contact with a line results in a release of oil and/or produced water contact Chevron Representative at Emergency Phone # listed below immediately.

Special Precaution:

If work is to be performed within a 3rd party right-of-way, location near a populated area, designated area, or if underground utilities are in the vicinity then 1-800-545-6005 (TX) or 1-800 321-2537 (NM) (One-Call Notification) MUST be made 48 hours in advance of any excavation work.

1. Has One-Call Notification been called? YES Date of call: JUNE 4th Time of call: 11:48 AM
 2. Permitted start date and time: JUNE 6 11:30 AM Estimated duration of job: _____
 3. One-Call Notification confirmation # 2601230445

THIS PERMIT MUST BE COMPLETED PRIOR TO MECHANICAL DIGGING AND AVAILABLE FOR REVIEW AT THE WORKSITE.

If contact is made with an underground line or cable, this permit will be attached to the accident report, otherwise, it should be attached to the work ticket.

Chevron Representative / Emergency Phone # _____

Contractor _____

Date _____