

OCD-ARTESIA

ATS-12-451

FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7 If Unit or CA Agreement, Name and No.	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. WILLIAMS A FEDERAL #10 <i>C3098777</i>	
2 Name of Operator LRE OPERATING, LLC. <i>C281994</i>		9 API Well No. <i>30-015-40480</i> <i>TC</i> <i>7/13/2012</i>	
3a. Address 1111 BAGBY STREET, SUITE 4600 HOUSTON, TX. 77002	3b. Phone No. (include area code) 713-292-9526 (SID ASHWORTH)	10. Field and Pool, or Exploratory <i>Red Lake, Gloria - Yeso, NE</i> <i>C968302</i>	
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 600 FSL & 645 FWL At proposed prod. zone 360 FSL & 360 FWL		11. Sec., T. R. M. or Blk. and Survey or Area SECTION 29, T. 17 S., R. 28 E.	
14 Distance in miles and direction from nearest town or post office* 9 MILES EAST OF ARTESIA, NM		12. County or Parish EDDY	13. State NM
15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 600 ft.	16 No. of acres in lease 400	17 Spacing Unit dedicated to this well 40	
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 120 ft.	19. Proposed Depth 3733' MD 3650 ft. 3662' TVD	20 BLM/BIA Bond No. on file NMB-000499	
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3645' GL	22 Approximate date work will start*	23. Estimated duration 30 days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25 Signature <i>Barry W. Hunt</i>	Name (Printed/Typed) BARRY W. HUNT	Date <i>3/5/12</i>
Title PERMIT AGENT FOR LRE OPERATING, LLC.		
Approved by (Signature) <i>Don Peterson</i>	Name (Printed/Typed)	Date <i>JUL 12 2012</i>
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

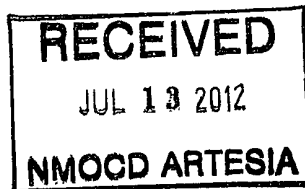
APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL



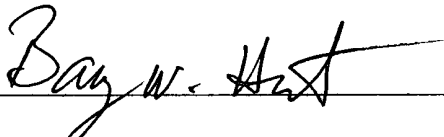
Roswell Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or LRE Operating, LLC. are responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 5th. day of March 2012.

Signed: _____



Printed Name: Barry Hunt

Position: Agent for Lime Rock Resources II - A, L.P.

Address: 1403 Springs Farm Place, Carlsbad, NM 88220

Telephone: (575) 361-4078

E-mail: specialtpermitting@gmail.com

Field Representative: Jerry Smith - Asst. Production Supervisor - LRE Operating, LLC.

Address: P. O. Box 1302, Artesia, NM 88211-1302

Telephone: Office: (575) 748-9724, Cell: (505) 918-0556

POWER OF ATTORNEY

DESIGNATION OF AGENT

LRE Operating, LLC hereby names the following person as its agent:

Name of Agent: Barry W. Hunt d/b /a/ Special T Permitting

Agent's Address: 1403 Springs Farm Place, Carlsbad, NM 88220

Agent's Telephone Number: (575) 885-1417

GRANT OF SPECIAL AUTHORITY

LRE Operating, LLC grants its agent the authority to act for it with the respect to the following only:

1. *Executing forms required to be filed with the Oil Conservation Division of the New Mexico Energy, Minerals, and Natural Resources Department.*
2. *Executive forms required to be filed with the Bureau of Land Management of the Department of Interior of the United States of America.*

EFFECTIVE DATE

This power of attorney is effective immediately.

RELIANCE ON THIS POWER OF ATTORNEY

Any person, including the agent, may rely upon the validity of this power of attorney or a copy of it unless that person knows it has terminated or is invalid.

SIGNATURE AND ACKNOWLEDGEMENT

LRE Operating, LLC

By: [Signature]

Name: Charles Adcock

Title: Co-Chief Executive Officer

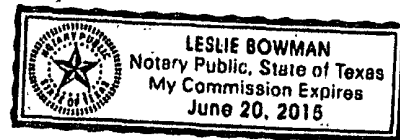
Date: 12/05/2011

Address: 1111 Bagby Street, Suite 4600, Houston, TX 77002

State of TEXAS
County of HARRIS

This instrument was acknowledged before me on December 5, 2011 by Charles Adcock,
CEO of LRE Operating, LLC acting on behalf of said limited liability corporation.

Signature of notarial officer: Leslie Bowman
My commission expires: June 20, 2015



DISTRICT I
1625 N French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S First St., Artesia, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-9720

DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-40480	Pool Code 96836	Pool Name Artesia Red Lake; Gloriaeta - Yeso, NE
Property Code 309877	Property Name WILLIAMS A FEDERAL	Well Number 10
OGRID No 281994	Operator Name LRE OPERATING, LLC	Elevation 3645'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	29	17-S	28-E		600	SOUTH	645	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	29	17-S	28-E		360	SOUTH	360	WEST	EDDY

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No 7/12 3733
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>DETAIL</p> <p>3634.7' 3648.6' 3649.1' 3650.7' 600'</p>		<p>GEODETIC COORDINATES NAD 27 NME</p> <p>SURFACE LOCATION Y=654565.1 N X=539801.7 E</p> <p>LAT.=32.799422° N LONG.=104.203802° W</p>		<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division</p> <p><i>Berry W. Hunt</i> 3/5/12 Signature Date</p> <p>Berry W. Hunt Printed Name</p> <p>E-mail Address</p>	
<p>GRID</p> <p>645' 360' 360' 600'</p> <p>GRID AZ.=229°30'19" HORZ. DIST.=377.1'</p>		<p>BOTTOM HOLE LOCATION Y=654320.3 N X=539515.1 E</p>		<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>SEPTEMBER 13, 2011</p> <p>Date of Survey</p> <p>Signature of Registered Professional Surveyor: <i>Ronald J. Eidson</i> 03/07/2012</p> <p>RONALD J. EIDSON REGISTERED PROFESSIONAL SURVEYOR NEW MEXICO 3239</p> <p>Certificate No. 12641 Ronald J. Eidson 3239</p> <p>DSS Rev 3/5/12 JWSC W.O.: 12.13.0522</p>	
<p>CORNER COORDINATES TABLE</p> <p>(A) - Y=655277.4, X=539161.5</p> <p>(B) - Y=653954.3, X=539152.7</p> <p>(C) - Y=655293.1, X=540468.1</p> <p>(D) - Y=653976.0, X=540457.8</p>					

LRE OPERATING, LLC.
DRILLING PLAN

WILLIAMS A FEDERAL #10
SHL: 600' FSL & 645' FWL
BHL: 360 FSL & 360 FWL
Unit "M" Section 29-17S-28E
Eddy County, NM

1. The elevation of the unprepared ground is 3645' feet above sea level.
2. The geologic name of the surface formation is Quaternary - Alluvium.
3. A rotary rig will be utilized to drill a shallow S directional well to 3650' and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
4. Proposed total depth is TVD: 3650' and MD: 3733'.
5. Estimated tops of geologic markers:

	TVD	MD
Quaternary – Alluvium	Surface	
Seven rivers	557'	557'
Queen	1,119'	1152'
Grayburg	1,492'	1560'
Premier	1,762'	1833'
San Andres	1,851'	1922'
Glorieta	3,264'	3336'
Yeso	3,358'	3249'
TD	3,650'	3733'

3662' per directional log

6. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

		TVD	MD
Triassic	Water	80'-230'	
Seven Rivers	Oil	557'	557'
Queen	Oil	1119'	1152'
Grayburg	Oil	1492'	1560'
San Andres	Oil	1851'	1922'
Glorieta	Oil	3264'	3336'
Yeso	Oil	3358'	3429'
TD		3650'	3733'

3662' per directional log

7. The proposed casing program is as follows:

Surface: 12 1/4" Hole. 8/5/8" Casing, 24# J-55 ST&C, new casing set from 0' – 425'

Tension SF 2.0, Collapse SF 1.2, Burst SF 1.18.

Production: 7 7/8" Hole. 5-1/2" Casing, 17# J-55 LT&C, new casing set from 0' – 3733'

Tension SF 2.0, Collapse SF 1.2, Burst SF 1.18.

8. Casing setting depth and cementing program:

- a. 8-5/8" surface casing set at 425'. Circulate cement to surface with 280 sx Class "C" cement + 0.25 lbs/sk Cello Flake + 2% CaCl₁₅. 14.8 ppg, 1.35 cf/sk yield. TOC Surface. 150 % excess.
- b. 5-1/2" production casing set at 3,650'. Lead: 300 sx (35:65) Poz/CL C cement + 5% NaCl + 0.125 lbs/sk Cello Flake + 5 lbs/sk LCM-1 + 0.2% R-3 + 6% Gel. 12.8 ppg, Yield 1.903 cf/sk.
Tail: 350 sx Class C with 0.25% R-3 + ¼ pps Cello Flake. 14.8 ppg. Yield 1.33. TOC Surface. 100 % excess.

9. Pressure Control Equipment

The blowout preventor equipment (BOP) will consist of a 11", 2000 psi double ram type preventor and rotating head. Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and drill pipe rams on bottom. A 2M BOP, with a 11" bore, will be installed on the 8-5/8" surface casing and utilized continuously until total depth is reached. All casing strings will be tested as per Onshore Order #2.

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log.

10. Mud Program:

0' – 425'	Fresh Water mud. 8.5 to 9.2 ppg Mud weight, Vis 28 to 34, pH 10, WL NC. Pump rate: 300-350 gpm. LCM as required.
425' - 3,350'	Brine water. 9.9 to 10.2 ppg, Mud weight, Vis 30 to 32, pH 10 to 11.5, WL NC. Solids less than 1%. Pump rate: 350-400 gpm. Salt gel, & MF as required. Pmp Hi Vis sweeps to control solids.
3,350' – 3,650'	Brine, Salt Gel and Starch. 9.9 to 10.2 ppg, Mud Weight, Vis 32 to 35, pH 10 to 11.5, WL control 15-20 cc with starch. Solids less than 1%. Pump rate: 400-475 gpm. Salt gel, acid & MF as required. Pmp Hi Vis sweeps to control solids.

11. Testing, Logging and Coring Program:

Testing program: No drillstem tests are anticipated.

Electric logging program: TD – Surface Casing: GR-DLL, GR-CND. 425' to surface: G/R/Neutron.

Coring program: None.

12. Potential Hazards:

No abnormal pressures or temperatures are expected. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6.

All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 1606 psi based on $0.44 \times \text{TD}$. The estimated BHT 96 degree F.

13. Anticipated Starting Date and Duration of Operations:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be soon after BLM approval and as soon as a rig will be available.

Move in operations and drilling is expected to take 32 days. An additional 30 days will be needed to complete the well and to construct surface facilities.

LIME ROCK RESOURCES

EDDY COUNTY, NM (FLAT EARTH)

SEC. 29 T. 17S RGE. 28E

WILLIAMSA FEDERAL #10

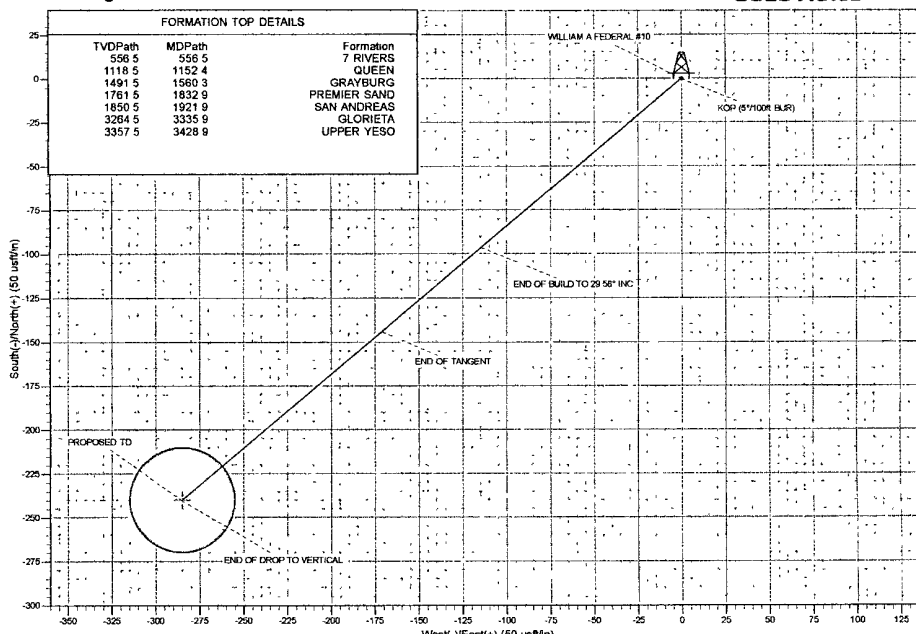
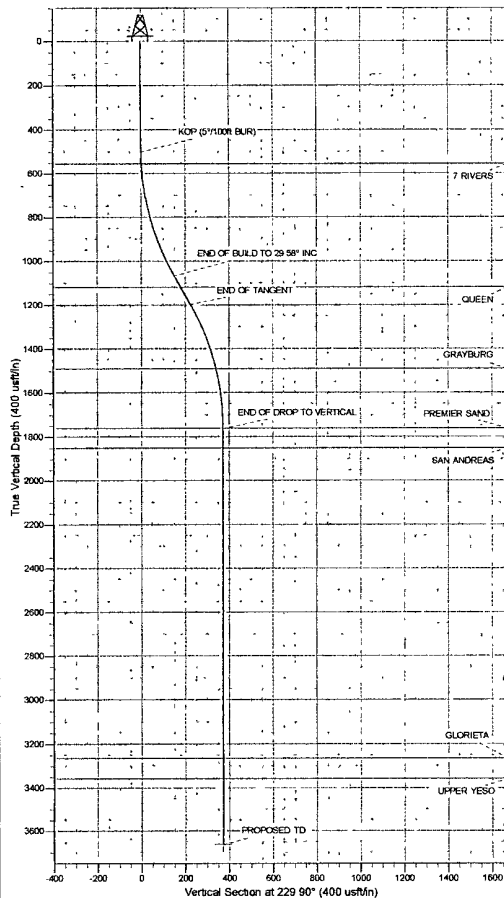
ORIGINAL WELLBORE

24 October, 2011

Plan: PROPOSAL #1



Project: EDDY COUNTY, NM (FLAT EARTH)
 Site: SEC. 29 T. 17S RGE. 28E
 Well: WILLIAM A FEDERAL #10
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #1



FORMATION TOP DETAILS									
TVDPath	MDPath	Formation							
556.5	556.5	7 RIVERS							
1110.5	1152.4	QUEEN							
1491.5	1560.3	GRAYBURG							
1761.5	1832.9	PREMIER SAND							
1850.5	1921.9	SAN ANDREAS							
3204.5	3335.9	GLORIETA							
3357.5	3428.9	UPPER YESO							

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect			
500.0	500.0	0.00	0.00	0.0	0.0	0.0			
1065.7	1091.7	29.58	229.90	-96.2	-114.3	148.4			
1195.8	1241.2	29.58	229.90	-143.8	-170.7	223.2			
1761.5	1832.9	0.00	0.00	-240.0	-285.0	372.6			
3661.5	3732.9	0.00	0.00	-240.0	-285.0	372.6			

Azimuths to True North
 Magnetic North 0.00°
 Magnetic Field
 Strength 0.00T
 Dip Angle 0.00°
 Date 24/10/2011
 Model USER DEFINED

Planning Report



Database:	EDM 5000 1 7	Local Co-ordinate Reference:	Well WILLIAM A FEDERAL #10
Company:	LIME ROCK RESOURCES	TVD Reference:	KB-EST @ 3640.0usft (Original Well Elev)
Project:	EDDY COUNTY, NM (FLAT EARTH)	MD Reference:	KB-EST @ 3640.0usft (Original Well Elev)
Site:	SEC. 29 T. 17S RGE. 28E	North Reference:	True
Well:	WILLIAM A FEDERAL #10	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project:	EDDY COUNTY, NM (FLAT EARTH)		
Map System:	Flat Earth	System Datum:	Mean Sea Level
Geo Datum:	WGS 1984		
Map Zone:	No Conversions		Using geodetic scale factor

Site:	SEC. 29 T. 17S RGE. 28E		
Site Position:		Northing:	0.00 usft
From:	None	Easting:	0.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	0° 0' 0.000 N
		Longitude:	0° 0' 0.000 E
		Grid Convergence:	0.00 °

Well:	WILLIAM A FEDERAL #10		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	30° 59' 24.512 N
		Longitude:	105° 55' 44.137 W
		Ground Level:	3,628.5 usft

Wellbore:	ORIGINAL WELLBORE		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	24/10/2011	0.00	0.00	0

Design:	PROPOSAL #1		
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Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	229.90

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	-3,640.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	-3,140.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,091.7	29.58	229.90	1,065.7	-2,574.3	-96.2	-114.3	5.00	5.00	0.00	229.90	
1,241.2	29.58	229.90	1,195.8	-2,444.2	-143.8	-170.7	0.00	0.00	0.00	0.00	
1,832.9	0.00	0.00	1,761.5	-1,878.5	-240.0	-285.0	5.00	-5.00	0.00	180.00	
3,732.9	0.00	0.00	3,661.5	21.5	-240.0	-285.0	0.00	0.00	0.00	0.00	PROPOSED TD - V

Planning Report



Database:	EDM_5000_1_7	Local Co-ordinate Reference:	Well WILLIAM A FEDERAL #10
Company:	LIME ROCK RESOURCES	TVD Reference:	KB-EST @ 3640.0usft (Original Well Elev)
Project:	EDDY COUNTY, NM (FLAT EARTH)	MD Reference:	KB-EST @ 3640.0usft (Original Well Elev)
Site:	SEC. 29 T. 17S RGE. 28E	North Reference:	True
Well:	WILLIAM A FEDERAL #10	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	3,640.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	3,540.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	3,440.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	3,340.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	3,240.00	0.0	0.0	0.0	0.00	0.00	0.00
KOP (5°/100ft BUR)										
500.0	0.00	0.00	500.0	3,140.00	0.0	0.0	0.0	0.00	0.00	0.00
7 RIVERS										
556.5	2.83	229.90	556.5	3,083.50	-0.9	-1.1	1.4	5.00	5.00	0.00
600.0	5.00	229.90	599.9	3,040.13	-2.8	-3.3	4.4	5.00	5.00	0.00
700.0	10.00	229.90	699.0	2,941.01	-11.2	-13.3	17.4	5.00	5.00	0.00
800.0	15.00	229.90	796.6	2,843.42	-25.2	-29.9	39.0	5.00	5.00	0.00
900.0	20.00	229.90	891.9	2,748.07	-44.5	-52.9	69.1	5.00	5.00	0.00
1,000.0	25.00	229.90	984.3	2,655.72	-69.2	-82.1	107.4	5.00	5.00	0.00
END OF BUILD TO 29.58° INC										
1,091.7	29.58	229.90	1,065.7	2,574.28	-96.2	-114.3	149.4	5.00	5.00	0.00
1,100.0	29.58	229.90	1,073.0	2,567.03	-98.9	-117.4	153.5	0.00	0.00	0.00
QUEEN										
1,152.4	29.58	229.90	1,118.5	2,521.50	-115.5	-137.2	179.3	0.00	0.00	0.00
1,200.0	29.58	229.90	1,159.9	2,480.06	-130.7	-155.2	202.9	0.00	0.00	0.00
END OF TANGENT										
1,241.2	29.58	229.90	1,195.8	2,444.22	-143.8	-170.7	223.2	0.00	0.00	0.00
1,300.0	26.64	229.90	1,247.6	2,392.38	-161.6	-191.9	250.9	5.00	-5.00	0.00
1,400.0	21.64	229.90	1,338.8	2,301.15	-188.0	-223.2	291.8	5.00	-5.00	0.00
1,500.0	16.64	229.90	1,433.3	2,206.71	-209.1	-248.3	324.6	5.00	-5.00	0.00
GRAYBURG										
1,560.3	13.63	229.90	1,491.5	2,148.50	-219.2	-260.3	340.3	5.00	-5.00	0.00
1,600.0	11.64	229.90	1,530.2	2,109.78	-224.8	-267.0	349.0	5.00	-5.00	0.00
1,700.0	6.64	229.90	1,628.9	2,011.08	-235.0	-279.1	364.9	5.00	-5.00	0.00
1,800.0	1.64	229.90	1,728.6	1,911.37	-239.7	-284.6	372.1	5.00	-5.00	0.00
END OF DROP TO VERTICAL - PREMIER SAND										
1,832.9	0.00	0.00	1,761.5	1,878.50	-240.0	-285.0	372.6	5.00	-5.00	395.74
1,900.0	0.00	0.00	1,828.6	1,811.38	-240.0	-285.0	372.6	0.00	0.00	0.00
SAN ANDREAS										
1,921.9	0.00	0.00	1,850.5	1,789.50	-240.0	-285.0	372.6	0.00	0.00	0.00
2,000.0	0.00	0.00	1,928.6	1,711.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,100.0	0.00	0.00	2,028.6	1,611.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,200.0	0.00	0.00	2,128.6	1,511.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,300.0	0.00	0.00	2,228.6	1,411.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,400.0	0.00	0.00	2,328.6	1,311.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,500.0	0.00	0.00	2,428.6	1,211.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,600.0	0.00	0.00	2,528.6	1,111.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,700.0	0.00	0.00	2,628.6	1,011.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,800.0	0.00	0.00	2,728.6	911.38	-240.0	-285.0	372.6	0.00	0.00	0.00
2,900.0	0.00	0.00	2,828.6	811.38	-240.0	-285.0	372.6	0.00	0.00	0.00
3,000.0	0.00	0.00	2,928.6	711.38	-240.0	-285.0	372.6	0.00	0.00	0.00
3,100.0	0.00	0.00	3,028.6	611.38	-240.0	-285.0	372.6	0.00	0.00	0.00
3,200.0	0.00	0.00	3,128.6	511.38	-240.0	-285.0	372.6	0.00	0.00	0.00
3,300.0	0.00	0.00	3,228.6	411.38	-240.0	-285.0	372.6	0.00	0.00	0.00
GLORIETA										
3,335.9	0.00	0.00	3,264.5	375.50	-240.0	-285.0	372.6	0.00	0.00	0.00
3,400.0	0.00	0.00	3,328.6	311.38	-240.0	-285.0	372.6	0.00	0.00	0.00
UPPER YESO										

Planning Report



Database:	EDM_5000_1_7	Local Co-ordinate Reference:	Well WILLIAM A FEDERAL #10
Company:	LIME ROCK RESOURCES	TVD Reference:	KB-EST @ 3640.0usft (Original Well Elev)
Project:	EDDY COUNTY, NM (FLAT EARTH)	MD Reference:	KB-EST @ 3640.0usft (Original Well Elev)
Site:	SEC. 29 T. 17S RGE. 28E	North Reference:	True
Well:	WILLIAM A FEDERAL #10	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,428.9	0.00	0.00	3,357.5	282.50	-240.0	-285.0	372.6	0.00	0.00	0.00
3,500.0	0.00	0.00	3,428.6	211.38	-240.0	-285.0	372.6	0.00	0.00	0.00
3,600.0	0.00	0.00	3,528.6	111.38	-240.0	-285.0	372.6	0.00	0.00	0.00
3,700.0	0.00	0.00	3,628.6	11.38	-240.0	-285.0	372.6	0.00	0.00	0.00
PROPOSED TD										
3,732.9	0.00	0.00	3,661.5	-21.50	-240.0	-285.0	372.6	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
556.5	556.5	7 RIVERS		0.00	
1,152.4	1,118.5	QUEEN		0.00	
1,560.3	1,491.5	GRAYBURG		0.00	
1,832.9	1,761.5	PREMIER SAND		0.00	
1,921.9	1,850.5	SAN ANDREAS		0.00	
3,335.9	3,264.5	GLORIETA		0.00	
3,428.9	3,357.5	UPPER YESO		0.00	

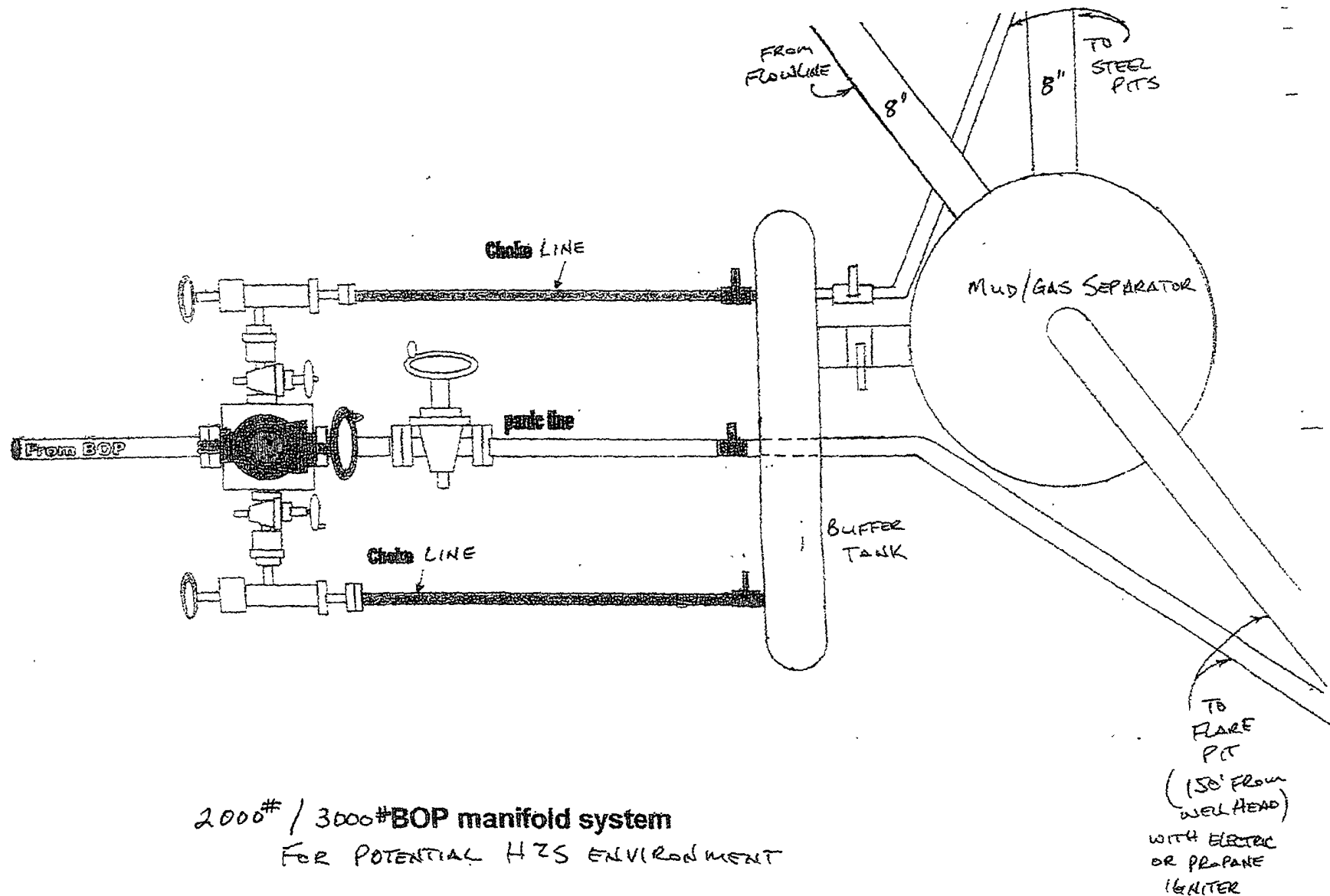
Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.0	500.0	0.0	0.0	KOP (5°/100ft BUR)
1,091.7	1,065.7	-96.2	-114.3	END OF BUILD TO 29.58° INC
1,241.2	1,195.8	-143.8	-170.7	END OF TANGENT
1,832.9	1,761.5	-240.0	-285.0	END OF DROP TO VERTICAL
3,732.9	3,661.5	-240.0	-285.0	PROPOSED TD

The diagram illustrates a wellhead assembly with the following components and connections:

- ROTATING HEAD (OPTIONAL)**: Located at the top center.
- 2" FILL-UP LINE**: Connected to the left side of the rotating head.
- FLOW LINE TO PITS**: Connected to the right side of the rotating head.
- BLIND RAMS**: A horizontal bar below the rotating head.
- PIPE RAMS**: A horizontal bar below the blind rams.
- SIDE OUTLETS MAY BE IN RAM BODY BELOW BLIND RAMS**: Note indicating potential outlet locations.
- DRILLING SPOOL**: The central vertical component below the pipe rams.
- (SEQUENCE OPTIONAL) 2M CKV 2M MGVS**: Two control valves on the left side of the drilling spool.
 - The first valve is labeled **MIN 2" NOM 2M KILL LINE**.
 - The second valve is labeled **X**.
- (SEQUENCE OPTIONAL IF HCR) 2M MGVS (OR HCR)**: Three control valves on the right side of the drilling spool.
 - The first valve is labeled **MIN 3" NOM 2M CHOKE LINE**.
 - The second valve is labeled **X**.
 - The third valve is labeled **X**.
- 2M ADJUSTABLE CHOKE (1)**: Located at the top right, connected to a **NOM 2" LINE**.
- 2M MGVS**: Multiple control valves on the right side of the drilling spool.
 - One is labeled **2ND MGVS OPTIONAL**.
 - Another is labeled **2M MGVS W/ PRES GAUGE ON TOP OF BLOCK**.
 - A third is labeled **2ND MGVS OPTIONAL**.
- 2M ADJUSTABLE CHOKE (REMOTE OPERATED CHOKE OPTIONAL FOR ONE SIDE ONLY)**: Located at the bottom right, connected to a **NOM 2" LINE**.

- MGV - Manual Gate Valve**
CKV - Check Valve
HCR - Hydraulically Controlled Remote Valve



DESIGN: Closed Loop System with roll-off steel bins (pits)

CRI/Hobbs will supply (2) bins () volume, rails and transportation relating to the Close Loop system. Specifications of Close Loop System attached.

Contacts: Gary Wallace 432-638-4076 Office # 575-393-1079

Scemi Oil Tool: Supervisor: Armando Soto – 432-553-7978 Hobbs, NM
Monitoring 24 hour service

Equipment:

Centrifuges (brand): Derrick

Rig Shakers (brand): Brandt

D-watering Unit

Air pumps on location for immediate remediation process

Layout of Close Loop System with bins, centrifuges and shakers attached.

Cuttings and associated liquids will be hauled to a State regulated third party disposal site: CRI (Controlled Recovery, Inc.) Disposal Facility Permit # R9166

2-250 bbl tanks to hold fluid

2- CRI Bins with track system

2- 500 bbl frac tanks for fresh water

2-500 bbl frac tanks for brine water

OPERATIONS:

Closed Loop equipment will be inspected daily by each tour and any necessary maintenance performed.

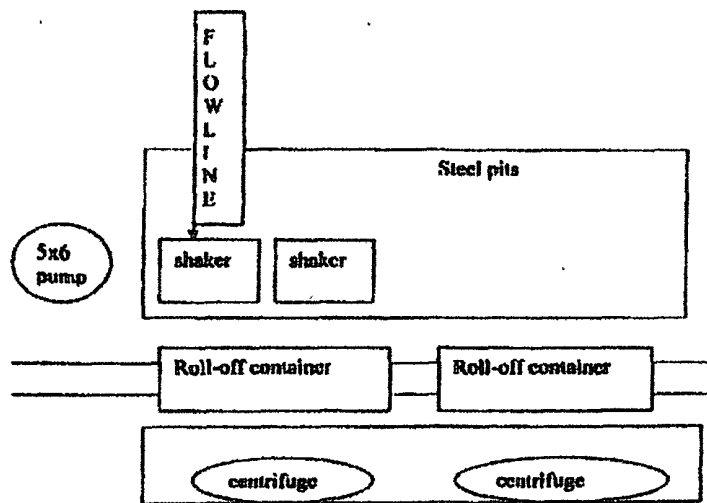
Any leak in system will be repaired and or/contained immediately

OCD will be notified within 48 hours of the spill.

Remediation process started immediately

CLOSURE:

During drilling operations all liquids, drilling fluids and cuttings will be hauled off via CRI (Controlled Recovery Incorporated) Disposal Facility Permit # R9166



This will be maintained by 24 hour solids control personnel that stay on location.

TOMMY WILSON



**CLOSED LOOP
SPECIALTY**

Office: 575.746.1689

Cell: 575.748.6367

LRE OPERATING, LLC.

Williams A Federal #10 Well HYDROGEN SULFIDE (H₂S) CONTINGENCY DRILLING PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

This is an open drilling site. H₂S monitoring equipment, along with a choke manifold, mud/gas separator, and flare will be rigged up and in use when the company drills out from under surface casing. H₂S monitors, warning signs, wind indicators and flags will be in use.

SUMMARY PLAN

1. All personnel shall receive proper H₂S training in accordance with Onshore Oil and Gas Order No. 6.III.C.3.a. A minimum of an initial training session and weekly H₂S and well control drills for all personnel in each working crew shall be conducted. The initial training session for each well shall include a review of the this Drilling Operations Plan and site specific measures and areas set up when the rig is moved onto location.
2. The company has caused the drilling contractor and other vendors to install 2000 psi well control systems including:
 - A. A choke manifold with:
 - i. One remotely operated choke,
 - ii. a flare line and flare that is 150' from the wellhead to be ignited, in the event the plan is put into effect, with an electronic ignition system or a back up flare gun,
 - iii. a mud/gas separator downstream of the of the choke and upstream of the flare,
 - iv. All BOP equipment required for a 2000 psi well control system will be in place and tested by a third party to 250 psi low pressure and 2000 psi high pressure. This test will include testing all lines and equipment associated with the choke manifold and kill line. Weekly BOP function and control drills will be performed with all applicable crews and personnel on location.
3. At rig move in, two perpendicular briefing areas readily accessible will be designated and marked with signage. A clear foot path for escape will be designated and marked.
4. The following protective equipment for essential personnel will be located on location at rig move in:
 - A. Breathing apparatus:
 - i. Rescue Packs (1 at each briefing area and 2 stored in the designated safety equipment storage area), shall be on location,
 - ii. 4 work/escape packs shall be stored on the rig floor with sufficient hose to allow work activity,
 - iii. 4 Emergency escape packs shall be stored in the rig doghouse for emergency evacuation,

H2S CONTINGENCY DRILLING PLAN

B. Auxiliary Rescue Equipment will be available in the designated safety equipment storage area and will include:

- i. Stretcher,
- ii. Two OSHA approved full body harnesses,
- iii. 100 feet of 5/8 inch OSHA approved rope,
- iv. 2-20# Class ABC fire extinguishers.

5. H₂S detection and monitoring equipment shall be in place before drilling out surface casing. There will be a stationary detector in the rig dog house and another with the mud log equipment on the end of the flow line. Three sensors will be placed on the rig floor, the wellhead/cellar, and on the closed loop equipment. The detection level for H₂S will be set at 10 ppm and the alarm will sound if any level of the gas is detected over 10 ppm.
6. Visual warning systems will be in place at rig move in and before the surface casing is drilled out. Color coded signage will be placed at the entrance to location indicating H₂S is possible, and furthermore, the color will be changed should the site condition dictate. If H₂S is detected, then a color coded condition flag will be displayed to indicate levels of detection. Wind socks will be placed at the location entrance and one other fully visible site to allow personnel to determine wind direction and safe escape/briefing routes.
7. The mud program utilized on this well is intended to provide sufficient density to exclude H₂S from the wellbore. Furthermore, Loss Circulation Material will be added before any known loss circulation (low pressure) zones are encountered. Corrosion inhibitors are included in the mud system to prevent failures in the event H₂S does enter the wellbore, and seal rings are used to prevent the use of elastomers on the wellhead equipment. In the event a rotating head is necessary, elastomers will be designed to operate in H₂S conditions. Drill collars and other bottom hole assembly components are to be inspected after each well, and in the event H₂S is encountered in the wellbore, drill pipe shall be inspected as well.
8. The location shall be equipped with one cell telephone in the rig doghouse, one cell telephone with the well site supervisor, two way communication devices to communicate between mud system personnel, rig floor personnel, mud log personnel, and safety personnel on location. In the event H₂S is detected, a company vehicle with two way radios shall be moved into a safe briefing area and manned for communication with all vendors, company personnel or agency personnel as required.

H2S CONTINGENCY DRILLING PLAN

EMERGENCY PROCEDURES

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas, or if monitors indicate H₂S is present. Escape will take place via the entry road away from the flare stack, or a foot path marked and designated before the well is spud by on site personnel. Once crews and other personnel are a safe distance, the crews will move to evacuate any persons in the Radius of Exposure, followed by blocking access to the Radius of Exposure.

There are no homes or buildings within the Radius of Exposure ("ROE"), so efforts will be concentrated on evacuating any third parties within the ROE. Immediate response will include evacuation of any persons potentially affected by toxic or flammable gasses. Once evacuation is under way, perimeter monitoring and control of access will be executed to ensure safe areas and stage areas.

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air= 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air= 1	2ppm	N/A	1000 ppm

H2S CONTINGENCY DRILLING PLAN

Contacting Authorities

Lime Rock Resources personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Lime Rock Resources response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER) and BLM Onshore Order #6.

H₂S OPERATIONS

Though no H₂S is anticipated during the drilling operation, this contingency plan will provide for methods to ensure the well is kept under control in the event an H₂S reading of 100 ppm or more are encountered.

Once personnel are safe and the proper protective gear is in place and on personnel, the operator and rig crew essential personnel will ensure the well is under control, suspend drilling operations and shut-in the well (unless pressure build up or other operational situations dictate suspending operations will prevent well control), increase the mud weight and circulate all gas from the hole utilizing the mud/gas separator downstream of the choke, the choke manifold and the emergency flare system located 150' from the well. Bring the mud system into compliance and the H₂S level below 10 ppm, and then notify all emergency officers that drilling ahead is practical and safe.

Proceed with drilling ahead only after all provisions of Onshore Order 6, Section III.C. have been satisfied.

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

<u>Company Offices -</u>	Lime Rock Houston Office Answering Service (After Hours) Artesia, NM Office Roswell, NM	713-292-9510 713-292-9555 575-748-9724 575-623-8424
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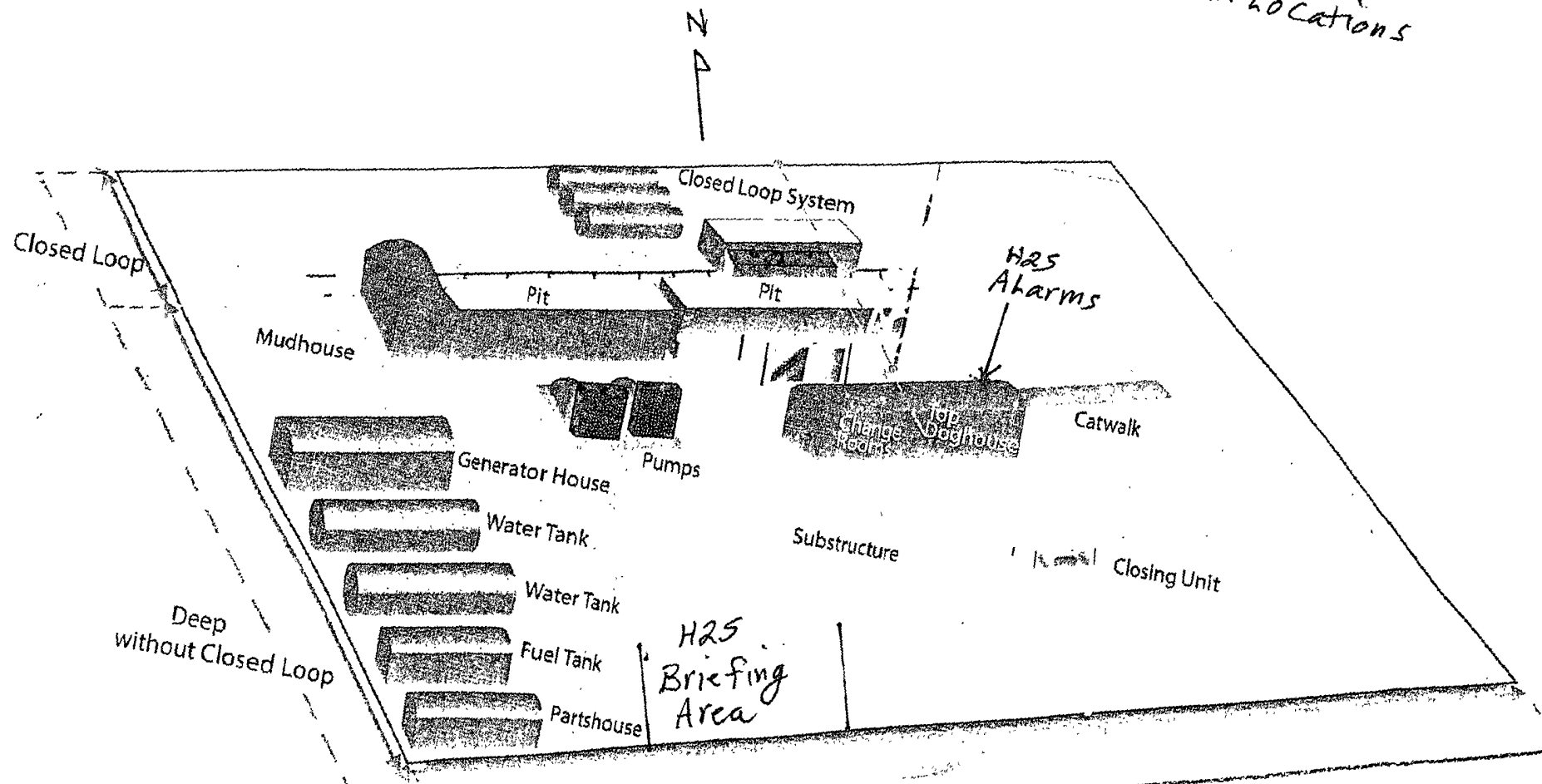
KEY PERSONNEL					
Name	Title	Location	Office #	Cell #	Home #
SID ASHWORTH	PRODUCTION ENGINEER	HOUSTON	713-292-9526	713-906-7750	713-783-1959
JERRY SMITH	ASSISTANT PRODUCTION SUPERVISOR	ARTESIA	575-748-9724	505-918-0556	575-746-2478
MICHAEL BARRETT	PRODUCTION SUPERVISOR	ROSWELL	575-623-8424	505-353-2644	575-623-4707
GARY FATHEREE	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	940-389-6044	NA
GARY MCCELLAND	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	903-503-8997	NA

Agency Call List		
City	Agency or Office	Telephone Number
Artesia	Ambulance	911
Artesia	State Police	575-746-2703
Artesia	Sheriff's Office	575-746-9888
Artesia	City Police	575-746-2703
Artesia	Fire Department	575-746-2701
Artesia	Local Emergency Planning Committee	575-746-2122
Artesia	New Mexico OCD District II	575-748-1283
Carlsbad	Ambulance	911
Carlsbad	State Police	575-885-3137
Carlsbad	Sheriff's Office	575-887-7551
Carlsbad	City Police	575-885-2111
Carlsbad	Fire Department	575-885-2111
Carlsbad	Local Emergency Planning Committee	575-887-3798
Carlsbad	US DOI Bureau of Land Management	575-887-6544
State Wide	New Mexico Emergency Response Commission ("NMERC")	505-476-9600
State Wide	NMERC 24 hour Number	505-827-9126
State Wide	New Mexico State Emergency Operations Center	505-476-9635
National	National Emergency Response Center (Washington, D.C.)	800-424-8802

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

Emergency Services				
Name	Service	Location	Telephone Number	Alternate Number
Boots & Coots International Well Control	Well Control	Houston / Odessa	1-800-256-9688	281-931-8884
Cudd Pressure Control	Well Control & Pumping	Odessa	915-699-0139	915-563-3356
Baker Hughes Inc.	Pumping Service	Artesia, Hobbs and Odessa	575-746-2757	SAME
Total Safety	Safety Equipment and Personnel	Artesia	575-746-2847	SAME
Cutter Oilfield Services	Drilling Systems Equipment	Midland	432-488-6707	SAME
Assurance Fire & Safety	Safety Equipment and Personnel	Artesia	575-396-9702	575-441-2224
Flight for Life	Emergency Helicopter Evacuation	Lubbock	806-743-9911	SAME
Aerocare	Emergency Helicopter Evacuation	Lubbock	806-747-8923	SAME
Med Flight Air Ambulance	Emergency Helicopter Evacuation	Albuquerque	505-842-4433	SAME
Artesia General Hospital	Emergency Medical Care	Artesia	575-748-3333	702 North 13 Street

H2S Briefing Areas & Alarm Locations



Location size without Closed Loop System
200' Deep X 225' Wide

Location size with Closed Loop System
Deep X Wide

from front of location to hole

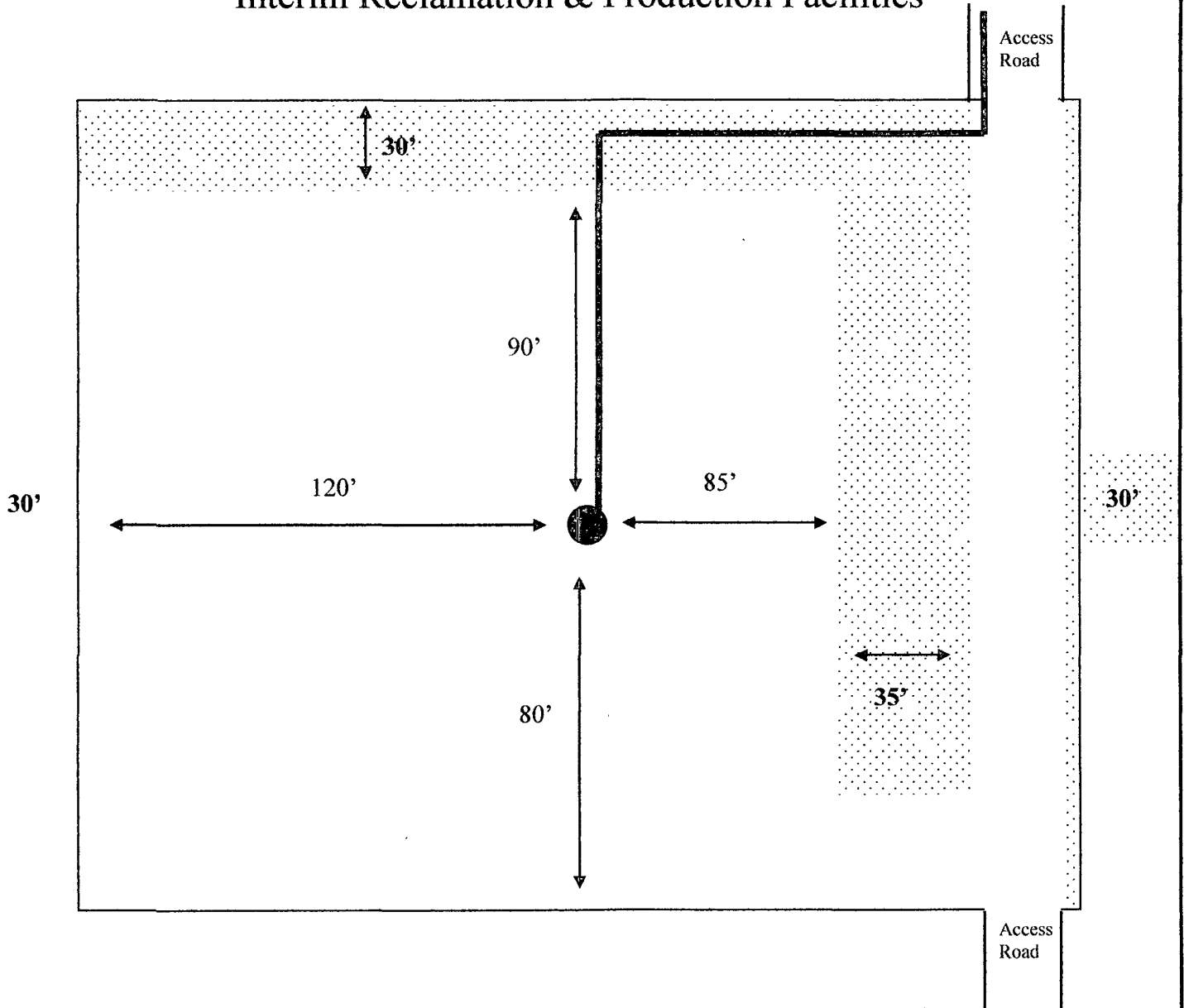
from left of location to hole

from hole to back of location (without closed loop)

from hole to back of location (with closed loop)

EXHIBIT 'D'

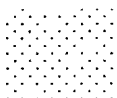
Interim Reclamation & Production Facilities



LEGEND



Well Bore



Interim Reclamation

Production Facilities



Flowline



NORTH

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	LRE OPERATING, LLC
LEASE NO.:	NM048344
WELL NAME & NO.:	10 WILLIAMS A FEDERAL
SURFACE HOLE FOOTAGE:	600' FSL & 645' FWL
BOTTOM HOLE FOOTAGE:	360' FSL & 360' FWL
LOCATION:	Section 29, T.17 S., R.28 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Cave/Karst
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - H2S – Onshore Order 6 requirements
 - High cave/karst
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☒ **Interim Reclamation**
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