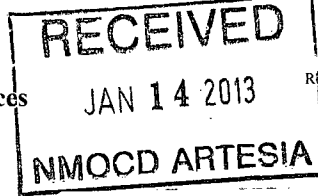


District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505



Form C-101  
Revised December 16, 2011

Permit

www.emnrd.state.nm.us  
Current forms are available on our website and should be used when filing regulatory documents.

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, P

Operator Name and Address Lime Rock Resources II-A 1111 Bagby Street, Suite 4600 Houston, Texas 77042		277558
Property Code 39636	Property Name Brainard 11 P	API Number 30-015-40978 p/p
Well No. #4		
Surface Location		
UL - Lot P	Section 11	Township 18S
Range 26E	Lot Idn	Feet from 990
N/S Line S	Feet From 330	E/W Line E
County Eddy		

Pool Information		51120 -3230
Artoke, Glorieta-Yeso		

Additional Well Information

Work Type N	Well Type O	Cable/Rotary R	Lease Type P	Ground Level Elevation 3304.4
Multiple N	Proposed Depth 4650	Formation Yeso	Contractor United Drilling, Inc.	Spud Date After 2/22/2013
Depth to Ground water: 23 Feet		Distance from nearest fresh water well: 0.23 Miles		Distance to nearest surface water: 0.93 Miles

Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	26"	20"	91.5	40	Ready Mix	Surface
Surface	12-1/4"	8-5/8"	24	425	300	Surface
Production	7-7/8"	5-1/2"	17	4650	920	Surface

Casing/Cement Program: Additional Comments

--

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
XLT 11"	5000	2000	National Varco

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

I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.

Signature: *Spencer Cox*

Printed name: Spencer Cox

Title: Production Engineer

E-mail Address: scox@limerockresources.com

Date: 1-11-13

Phone: 713-292-9528

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-015-40978</b>	<sup>2</sup> Well Code <b>51120</b>	<sup>3</sup> Well Name <b>RED LAKE, GL-4850</b>
<sup>4</sup> Property Code <b>39636</b>	<sup>5</sup> Property Name <b>BRAINARD "11" P</b>	<sup>6</sup> Well Number <b>4</b>
<sup>7</sup> OGRID No. <b>277558</b>	<sup>8</sup> Operator Name <b>LIME ROCK RESOURCES II A, L.P.</b>	<sup>9</sup> Elevation <b>3304.4</b>

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>P</b>	<b>11</b>	<b>18 S</b>	<b>26 E</b>		<b>990</b>	<b>SOUTH</b>	<b>330</b>	<b>EAST</b>	<b>EDDY</b>

<sup>11</sup> 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

<sup>12</sup> Dedicated Acres <b>40</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
--	-------------------------------	----------------------------------	-------------------------

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.

N89°40'15"W 2652.58 FT		N89°40'15"W 2652.58 FT	
NW CORNER SEC. 11 LAT. = 32.7696820°N LONG. = 104.3605564°W	COMPUTED	NE CORNER SEC. 11 LAT. = 32.7696007°N LONG. = 104.3433017°W	COMPUTED
NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE FORMAT.			
W/4 CORNER SEC. 11 LAT. = 32.7623791°N LONG. = 104.3605823°W			COMPUTED
S00°11'13"W 2657.50 FT		N00°32'26"E 2649.24 FT	
S00°10'43"W 2640.40 FT		N00°32'26"E 2649.23 FT	
S89°39'53"E 2636.03 FT		S89°39'53"E 2636.03 FT	
SW CORNER SEC. 11 LAT. = 32.7551232°N LONG. = 104.3606069°W		SE CORNER SEC. 11 LAT. = 32.7550409°N LONG. = 104.3434628°W	
COMPUTED		COMPUTED	
		SURFACE LOCATION BRAINARD "11" P #4 ELEV. = 3304.4' LAT. = 32.7527668°N (NAD27) LONG. = 104.3445060°W	

<sup>17</sup> OPERATOR CERTIFICATION

I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Spencer Cox* 1-11-13  
Signature Date  
*Spencer Cox*  
Printed Name  
*scx@limerockresources.com*  
E-mail Address

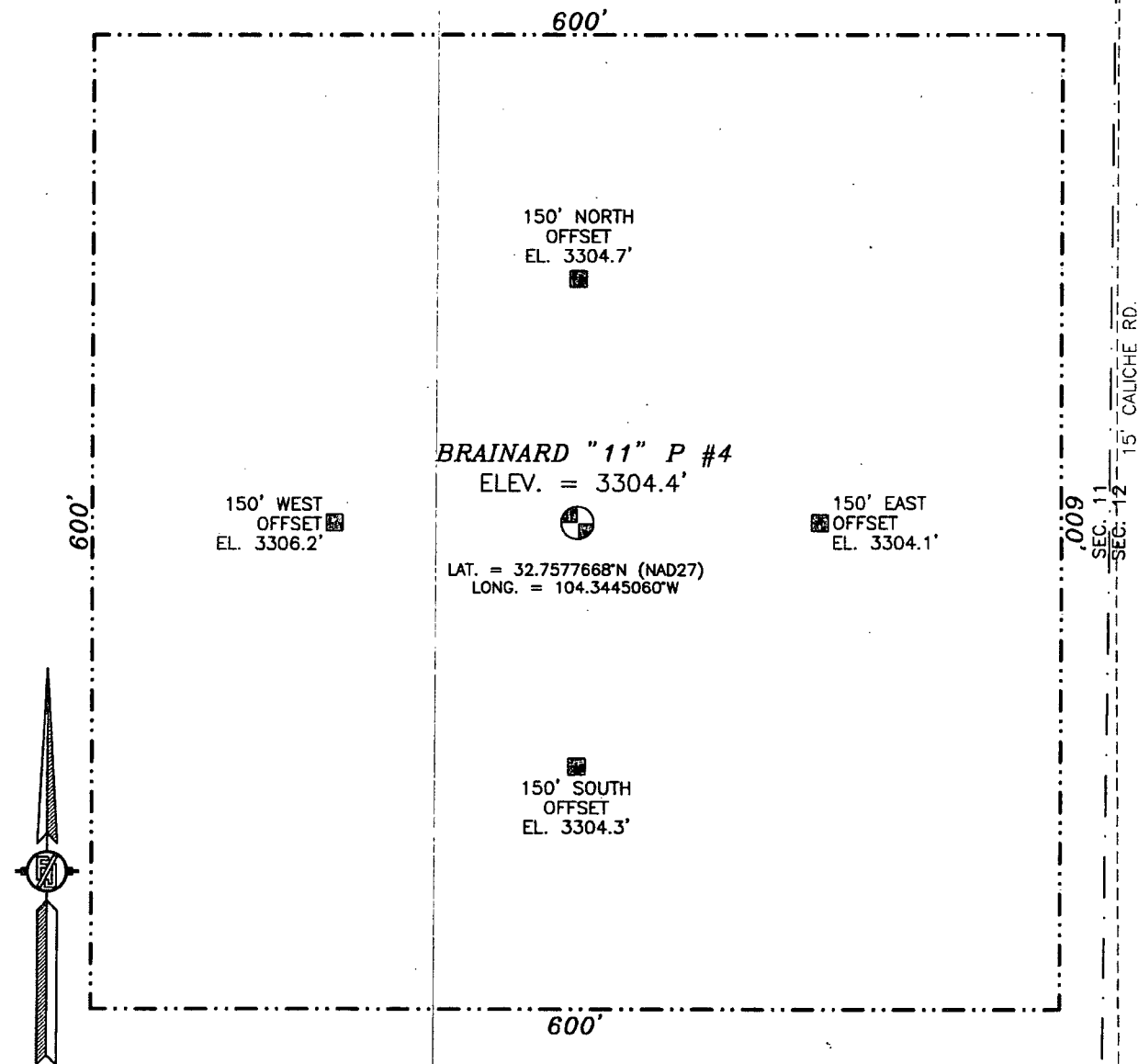
<sup>18</sup> SURVEYOR CERTIFICATION

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.

JULY 20, 2012  
Date of Survey  
*Frank Jaramillo*  
Signature and Seal of Professional Surveyor  
Certificate Number: F114002 FRANK JARAMILLO, PLS 12797  
SURVEY NO. 1097

**SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO**

NOTE: THE LATITUDE AND LONGITUDE COORDINATES ARE SHOWN  
USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN  
DECIMAL DEGREE FORMAT.



010 50 100 200

SCALE 1" = 100'

**DIRECTIONS TO LOCATION**

FROM CR. #44 (FANNING) AND CR #39 (4-DINKUS) GO EAST ON CR  
#39 0.25 MILES, TURN LEFT AND GO NORTH 0.2 MILES AND  
LOCATION IS ON THE LEFT (WEST) 330'

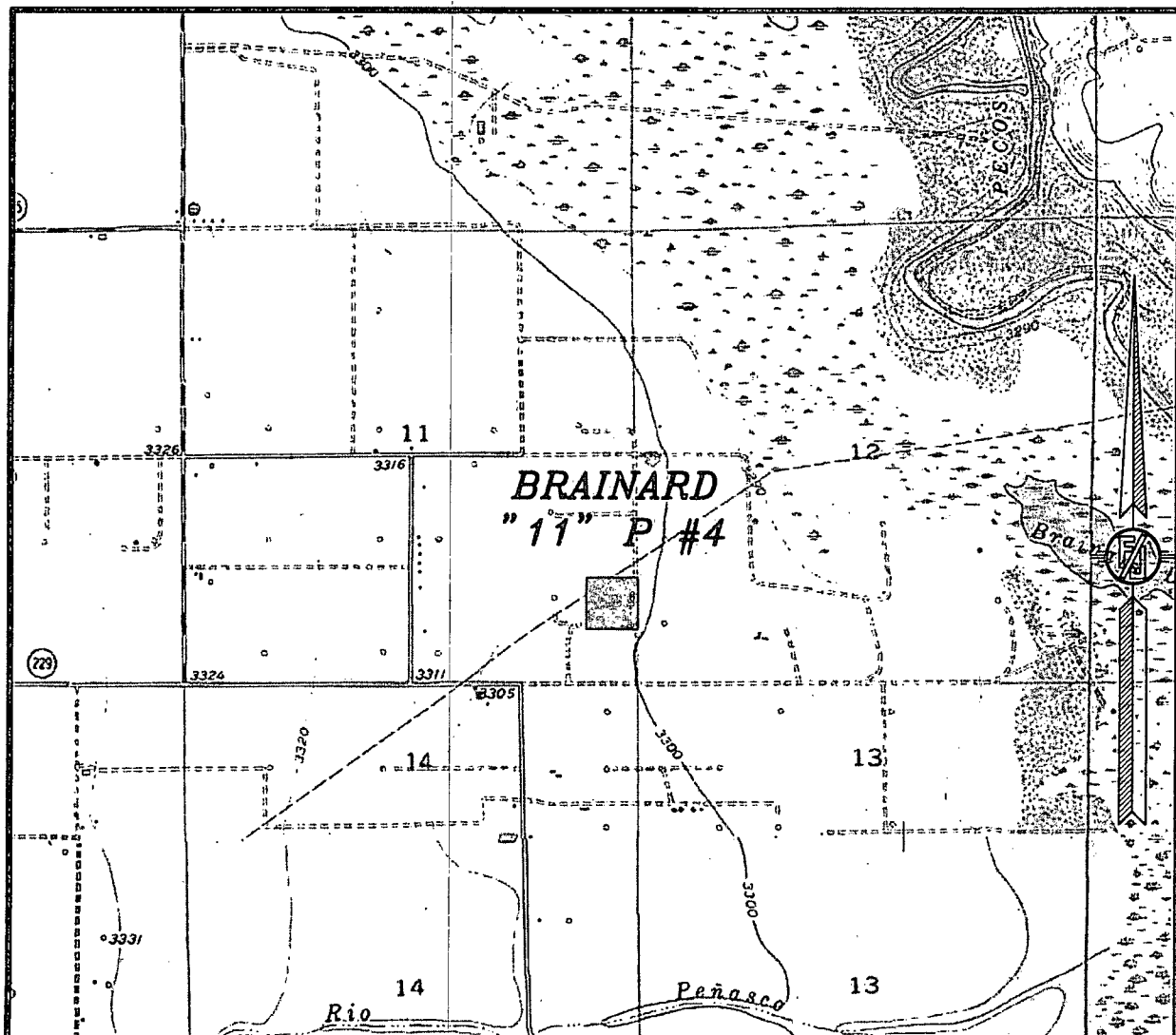
**LIME ROCK RESOURCES II-A, L.P.  
BRAINARD "11" P #4  
LOCATED 990 FT. FROM THE SOUTH LINE  
AND 330 FT. FROM THE EAST LINE OF  
SECTION 11, TOWNSHIP 18 SOUTH,  
RANGE 26 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO**

**JULY 20, 2012**

**SURVEY NO. 1097**

**MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO**

SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.  
 EDDY COUNTY, STATE OF NEW MEXICO  
 LOCATION VERIFICATION MAP



USGS QUAD MAP:  
 SPRING LAKE

NOT TO SCALE

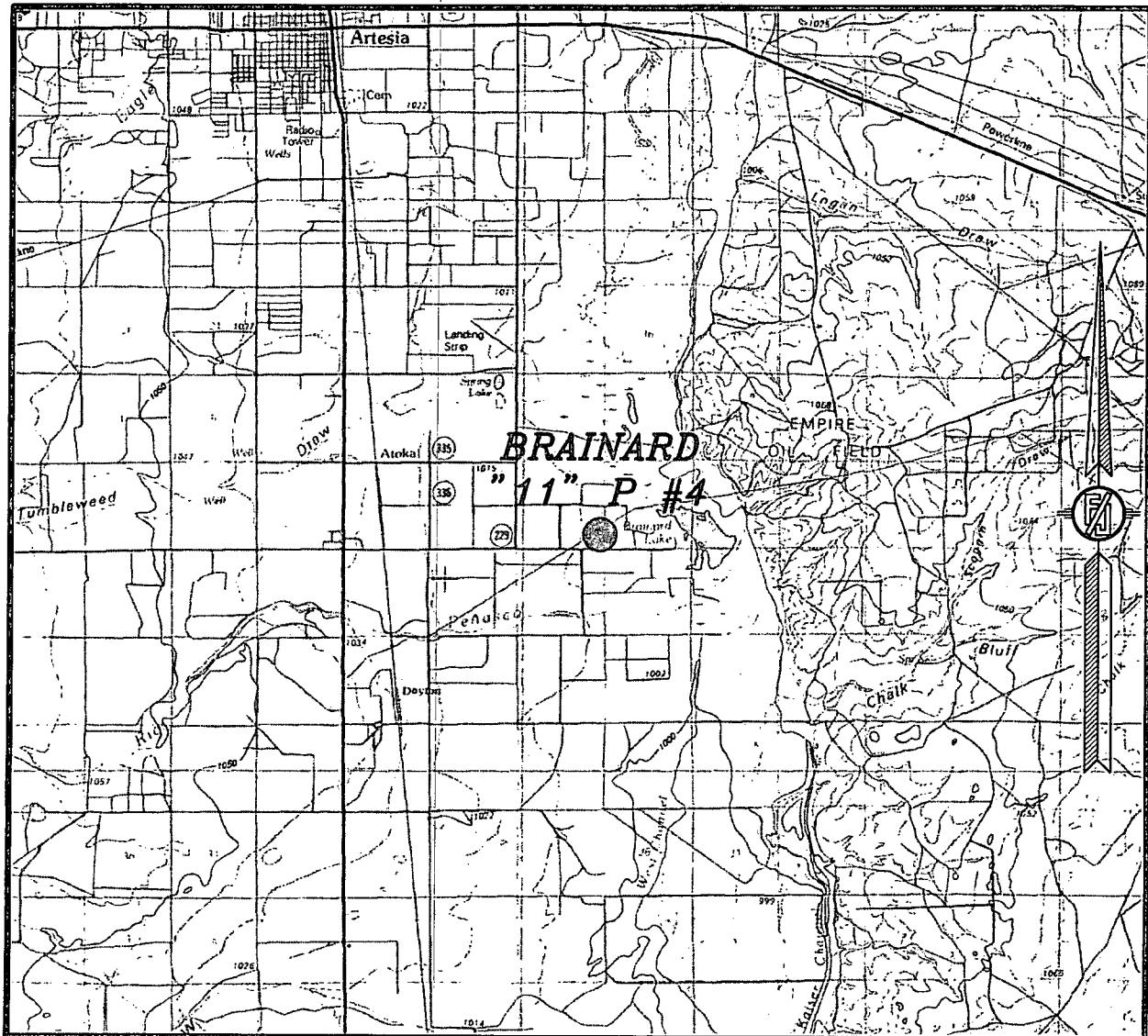
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 EDDY COUNTY, STATE OF NEW MEXICO

JULY 20, 2012

SURVEY NO. 1097

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
 (575) 234-3341

SECTION 11, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
VICINITY MAP



NOT TO SCALE

LIME ROCK RESOURCES II-A, L.P.

**BRAINARD "11" P #4**

LOCATED 990 FT. FROM THE SOUTH LINE  
AND 330 FT. FROM THE EAST LINE OF  
SECTION 11, TOWNSHIP 18 SOUTH,  
RANGE 26 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

JULY 20, 2012

SURVEY NO. 1097

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO  
(575) 234-3341

# **Lime Rock Resources II-A Drilling Plan**

**Brainard 11 P #4  
990' FSL 330' FEL  
P-S11-T18S-R26E  
Eddy County, NM**

1. The elevation of the unprepared ground is 3304.4' feet above sea level.
2. The geologic name of the surface formation is Quaternary – Alluvium.
3. A rotary rig will be utilized to drill the well to 4650' and run casing. This equipment will be rigged down and the well will be completed with a workover rig.
4. Proposed total depth is 4650'.
5. Estimated tops of geologic markers:

Quaternary – Alluvium	Surface
Queen	338
Grayburg	724
San Andres	997
Glorieta	2366
Yeso	2473
Tubb	3950
TD	4650'

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

Queen	338
Grayburg	724
San Andres	997
Glorieta	2366
Yeso	2473
Tubb	3950
TD	4650'

7. Proposed Casing and Cement program is as follows:

Type	Hole Size	Casing Size	Wt	Grade	Thread	Depth	Sx	Density	Yield	Components
Conductor	26"	20"	91.5	B	Welded	40				Ready Mix
Surface	12-1/4"	8-5/8"	24	J-55	ST&C	425	300	14.8	1.35	Cl C Cmt + 0.25 lbs/sk Cello Flake + 2% CaCl2
Production	7-7/8"	5-1/2"	17	J-55	LT&C	4650	200	12.8	1.903	35:65 Poz/Cl H w/ 6% Gel, 0.125 lbs/sk Cello Flake, 5 pps LCM-1 and retarder
							720	14.8	1.330	Cl H w/ 0.6% R-3, 0.125% Cello Flake, 2% Gel

**8. Proposed Mud Program is as follows**

<b>Depth</b>	0-425	425-4500	4500-4650
<b>Mud Type</b>	Fresh Water Mud	Brine	Brine, Salt Gel, & Starch
<b>Properties</b>			
<b>MW</b>	8.5-9.4	9.8-10.2	9.9-10.3
<b>pH</b>	12	10-11.6	11/13/2012
<b>WL</b>	NC	NC	20-31
<b>Vis</b>	28-36	29-33	32-36
<b>MC</b>	NC	NC	<2
<b>Solids</b>	NC	<2	<3
<b>Pump Rate</b>	300-352	375-426	400-452
<b>Special</b>		Use Poymers sticks and MF-55 Hi-Vis Sweeps as necessary	Hi Vis Sweeps, add acid and starch as req. Raise Vis to 35 for log.

**9. Pressure Control Equipment: See Attached Description and diagram of Pressure Control Equipment.**

**10. Testing, Logging and Coring Program**

**Testing Program:** No drill stem tests are anticipated

**Electric Logging Program:** SGR-DLL-CDL-CNL Quad Combo from 4650 to surf. Csg. SGR-CNL to Surf.

**Coring Program:** No full or sidewall cores are anticipated.

**11. Potential Hazards:**

No abnormal temperatures or pressures are expected. There is no known presence of H<sub>2</sub>S in this area. If H<sub>2</sub>S 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 2046 psi based on 0.44 x TD. The estimated BHT is 125 degrees F.

**12. Duration of Operations:**

Anticipated spud date will be soon after approval and as soon as a rig will be available. Move in operations and drilling is expected to take 10 days. An additional 14 days will be needed it complete the well and to construct surface facilities.

## **Pressure Control Equipment**

The blowout preventer equipment (BOP) will consist of a 5000 psi rated, "XLT" type, National VARCO double ram preventer that will be tested to a maximum pressure of 2000 psi. The unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe rams on bottom. The 2M BOP 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. This also includes a thirty day (30) test, should the rig still be operating on the same well in thirty days.

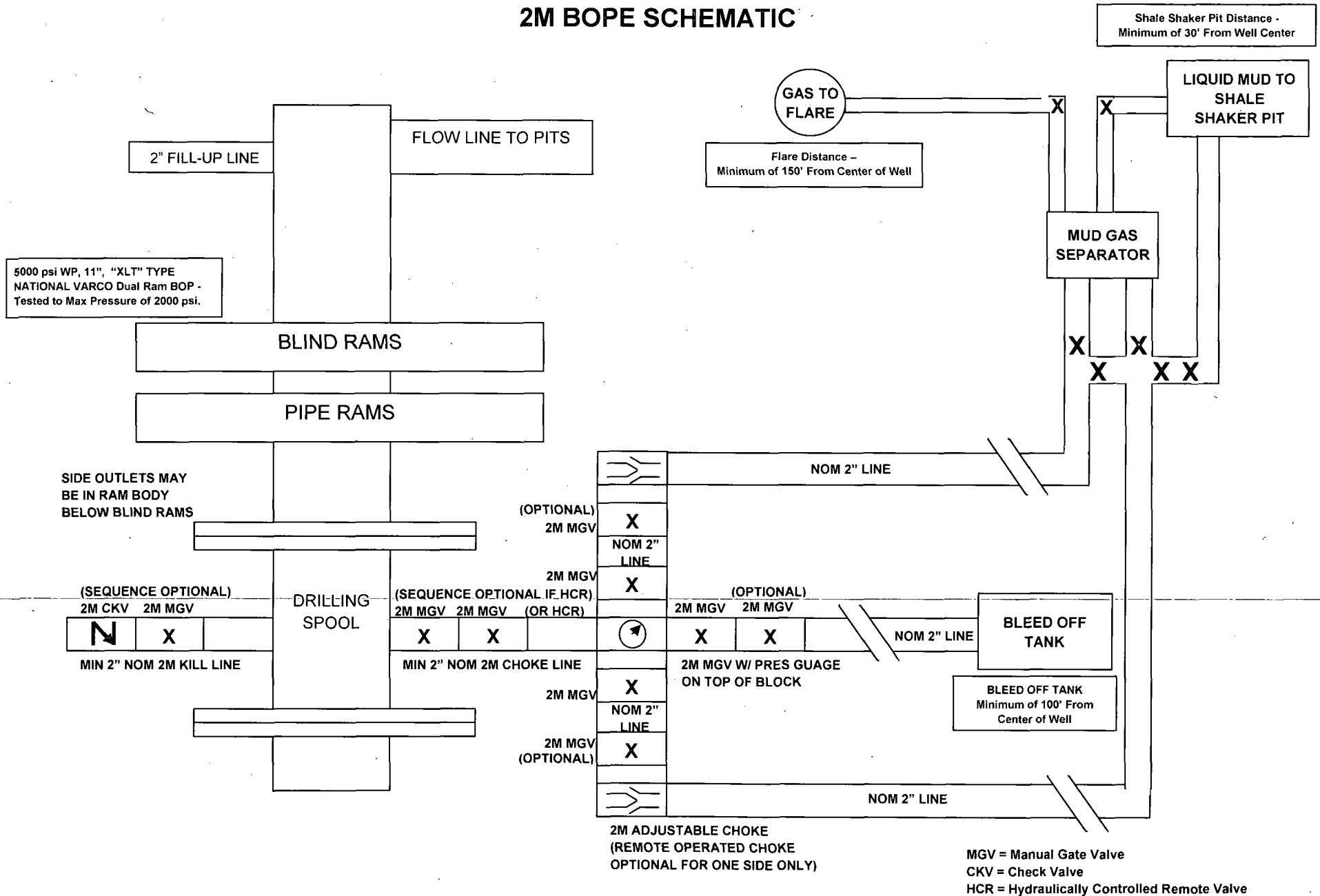
Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drilling logs.

The BOP equipment will consist of the following:

- Double ram with blind rams (top) and pipe rams (bottom),
- Drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 2" minimum diameter, kill side will be at least 2 inch diameter),
- Kill line (2 inch minimum),
- A minimum of 2 choke line valves (2 inch minimum),
- 2 inch diameter choke line,
- 2 kill valves, one of which will be a check valve (2 inch minimum),
- 2 chokes, one of which will be capable of remote operation,
- pressure gauge on choke manifold,
- Upper Kelly cock valve with handle available,
- Safety valve and subs to fit all drill string connections in use,
- All BOPE connections subjected to well pressure will be flanged, welded, or clamped,
- A Fill-up line above the uppermost preventer.



# 2M BOPE SCHEMATIC



## HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### Emergency Procedures

In the event of a release of gas containing H<sub>2</sub>S, 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 H<sub>2</sub>S 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 H<sub>2</sub>S, 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 (SO<sub>2</sub>). 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 H<sub>2</sub>S and SO<sub>2</sub>

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

### 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).

## H<sub>2</sub>S CONTINGENCY PLAN EMERGENCY CONTACTS

**Company Office –Lime Rock Resources** 713-292-9510  
**Answering Service (During Non-Office Hours)** 713-292-9555

### Key Personnel

<u>Name</u>	<u>Title</u>	<u>Phone Number</u>
Richard Ghiselin	Production Engineer	713-345-2136 Cell: 218-507-0386
Mike Barrett	Production Supervisor	575-623-8424 Cell: 505-353-2644

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

### Carlsbad

Ambulance	911
State Police	575-8885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington, DC)	800-424-8802

### Other

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd PressureControl	915-699-0139 or 915-563-3356
Halliburton	575-746-2757
B. J. Services	575-746-3569
Flight For Life – 4000 24 <sup>th</sup> St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuquerque, NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuquerque, NM	505-842-4949