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

RECEIVED
MAY 24 2012
NMOCD ARTESIA

Permit

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
LRE Operating, LLC, 1111 Bagby Street, Suite 4600 Houston, Texas 77002	281994
	[3] API Number 30-015-40339

[4] Property Code	[5] Property Name	[6] Well No
309885	Enron State	#18

[7] Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
D	32	17S	28E		990	N	330	W	Eddy

[8] Pool Information

RedLake, Glorieta-Yeso, NE	96836

Additional Well Information

[9] Work Type	[10] Well Type	[11] Cable/Rotary	[12] Lease Type	[13] Ground Level Elevation
N	O	Rotary	State	3700 2
[14] Multiple	[15] Proposed Depth	[16] Formation	[17] Contractor	[18] Spud Date
N	4250	GLORIETA - YESO	United Drilling, Inc	After 06/15/2012

Depth to Ground water:	Distance from nearest fresh water well	Distance to nearest surface water
40	2 34 miles	3 7 miles

[19] Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	20"	14"	68 7	40	Ready Mix	Surface
Surface	12 25	8 625	24	425	280	Surface
Production	7.875	5 5	17	4250	810	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: Jerry Smith

Printed name Jerry Smith

Title: Assistant Production Supervisor

E-mail Address. jsmith@lmerockresources.com

Date: 5-24-12 Phone 575-748-9724

OIL CONSERVATION DIVISION

Approved By: T. C. Shepard

Title: Geologist

Approved Date: 5/25/2012 Expiration Date 5/25/2014

Conditions of Approval Attached

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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 October 15,2009
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-40339	96836	Red Lake; Glorieta-Yeso NE

4 Property Code	5 Property Name	6 Well Number
309874	ENRON STATE	18

7 OGRID No.	8 Operator Name	9 Elevation
281994	LRE Operating, LLC	3700.2

10 Surface Location

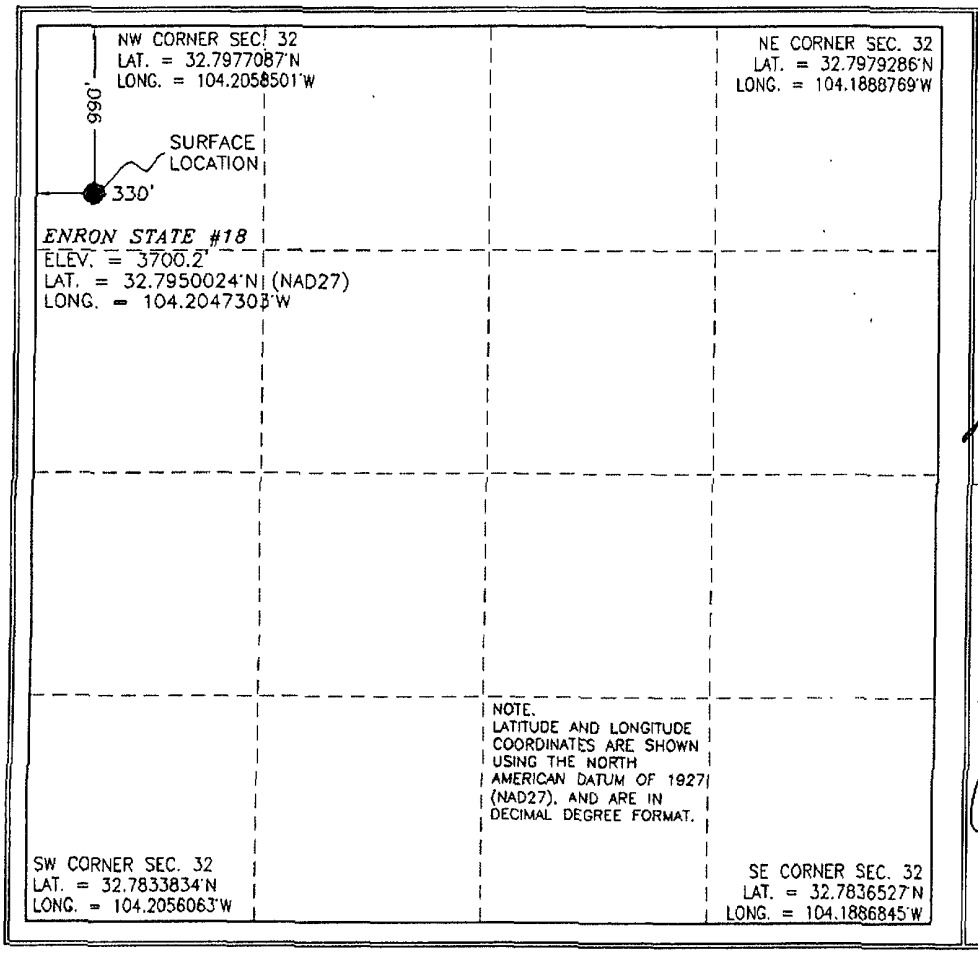
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	32	17 S	28 E		990	NORTH	330	WEST	EDDY

11 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

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
40			

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.



17 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.

Signature — 5-24-2012 Date

Printed Name: Jerry Smith

18 SURVEYOR CERTIFICATION

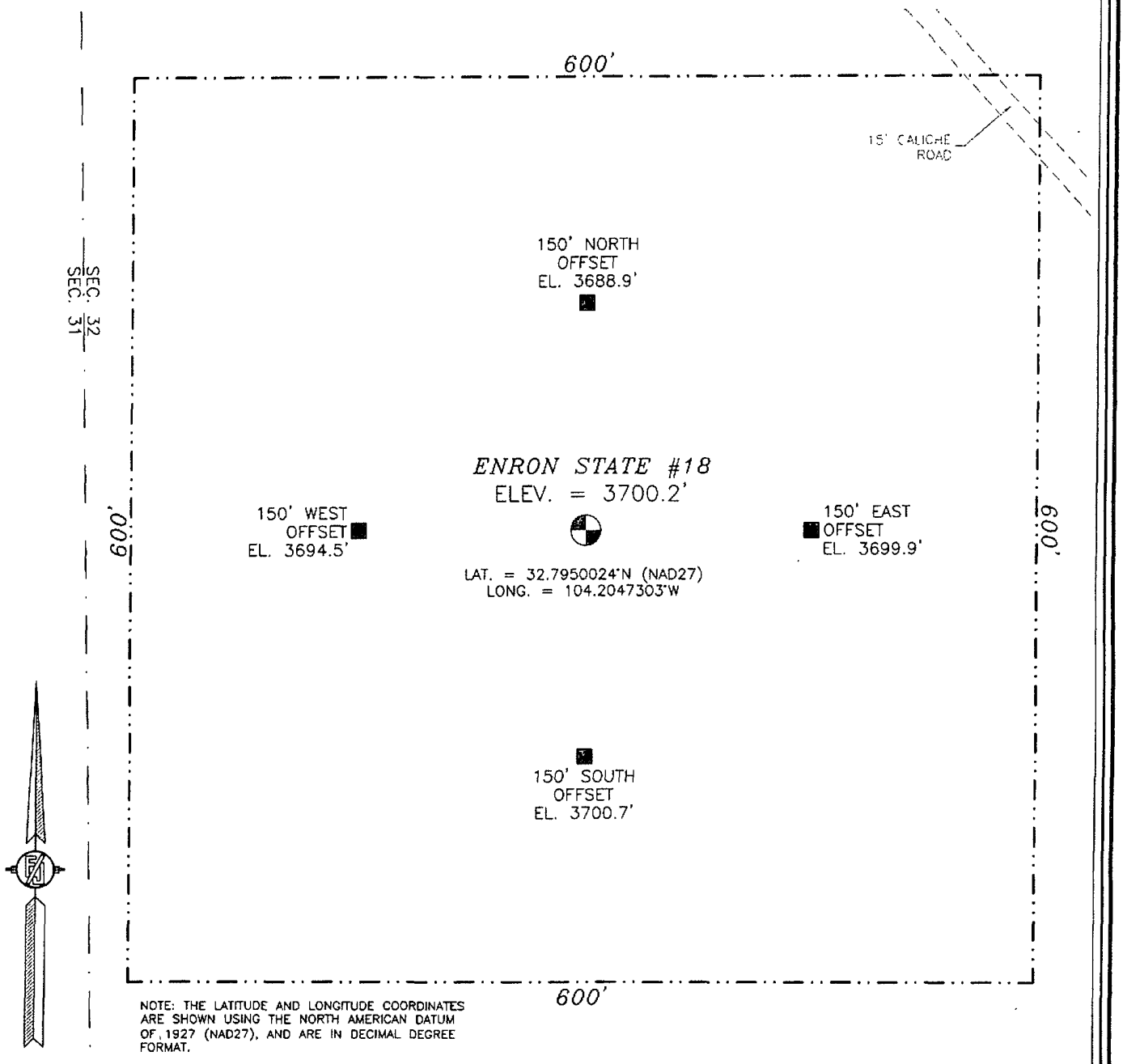
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 1, 2011
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: FILIMON F. JARAMILLO PLS 12797 — SURVEY NO. 578

SECTION 32, TOWNSHIP 17 SOUTH, RANGE 28 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.

0 10 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION
FROM U.S. HWY 82 AND PAVED CR. #206 (ILLINOIS CAMP), SOUTH ON CR 206 335' TURN RIGHT ON CALICHE LEASE ROAD AND GO NORTHWEST 0.17 MILES BEND LEFT AND GO SOUTHWEST 0.17 BEND RIGHT AND GO WEST 0.1 MILES WHERE ROAD BENDS RIGHT AND LOCATION IS 635' WEST

LRE Operating, LLC

ENRON STATE #18

LOCATED 990 FT. FROM THE NORTH LINE AND 330 FT. FROM THE WEST LINE OF SECTION 32, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

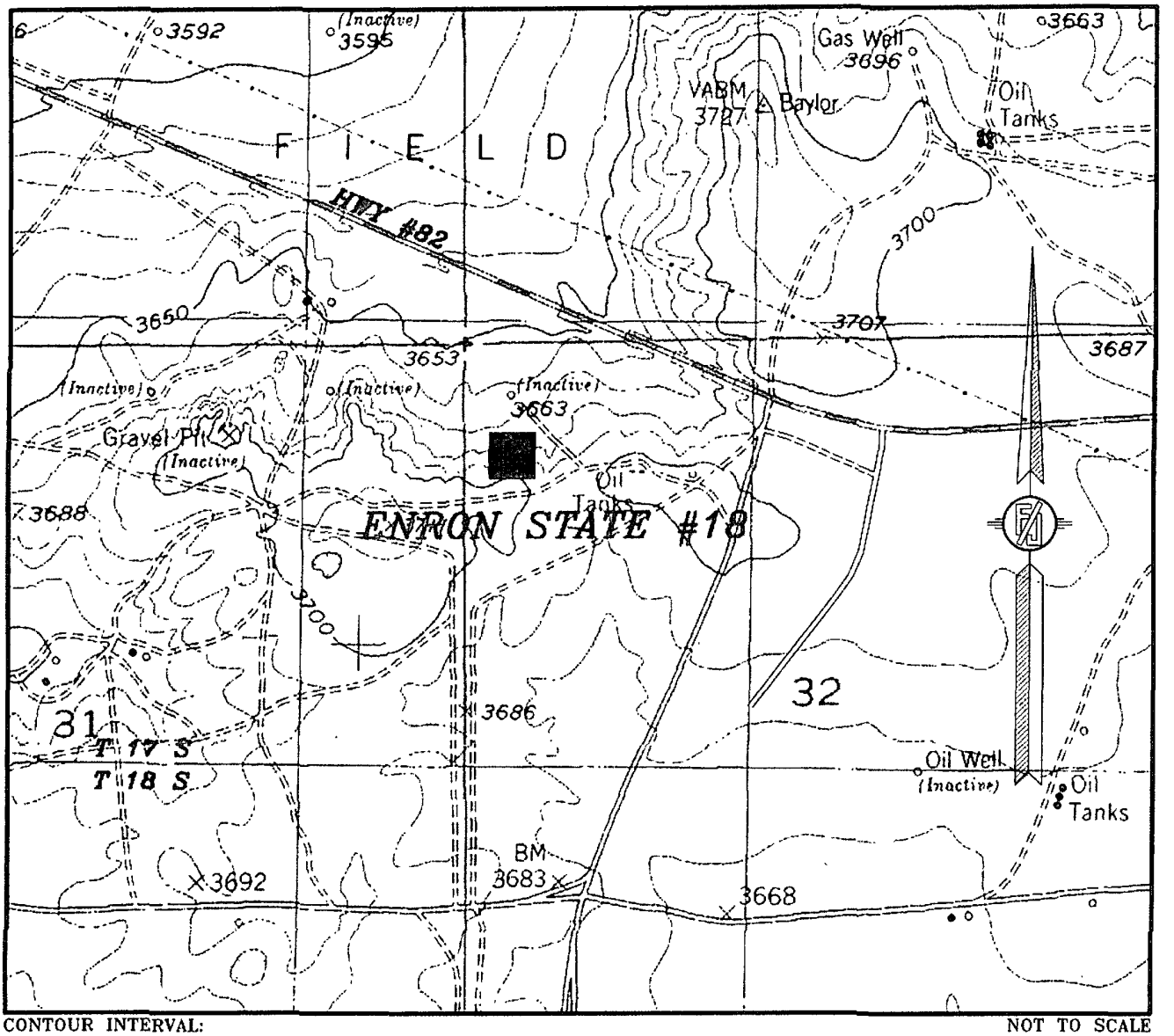
SEPTEMBER 2, 2011

SURVEY NO. 578

MADRON SURVEYING, INC. 30' SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 32, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



CONTOUR INTERVAL:
RED LAKE, NM

NOT TO SCALE

LRE Operating, LLC

ENRON STATE #18

LOCATED 990 FT. FROM THE NORTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 32, TOWNSHIP 17 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

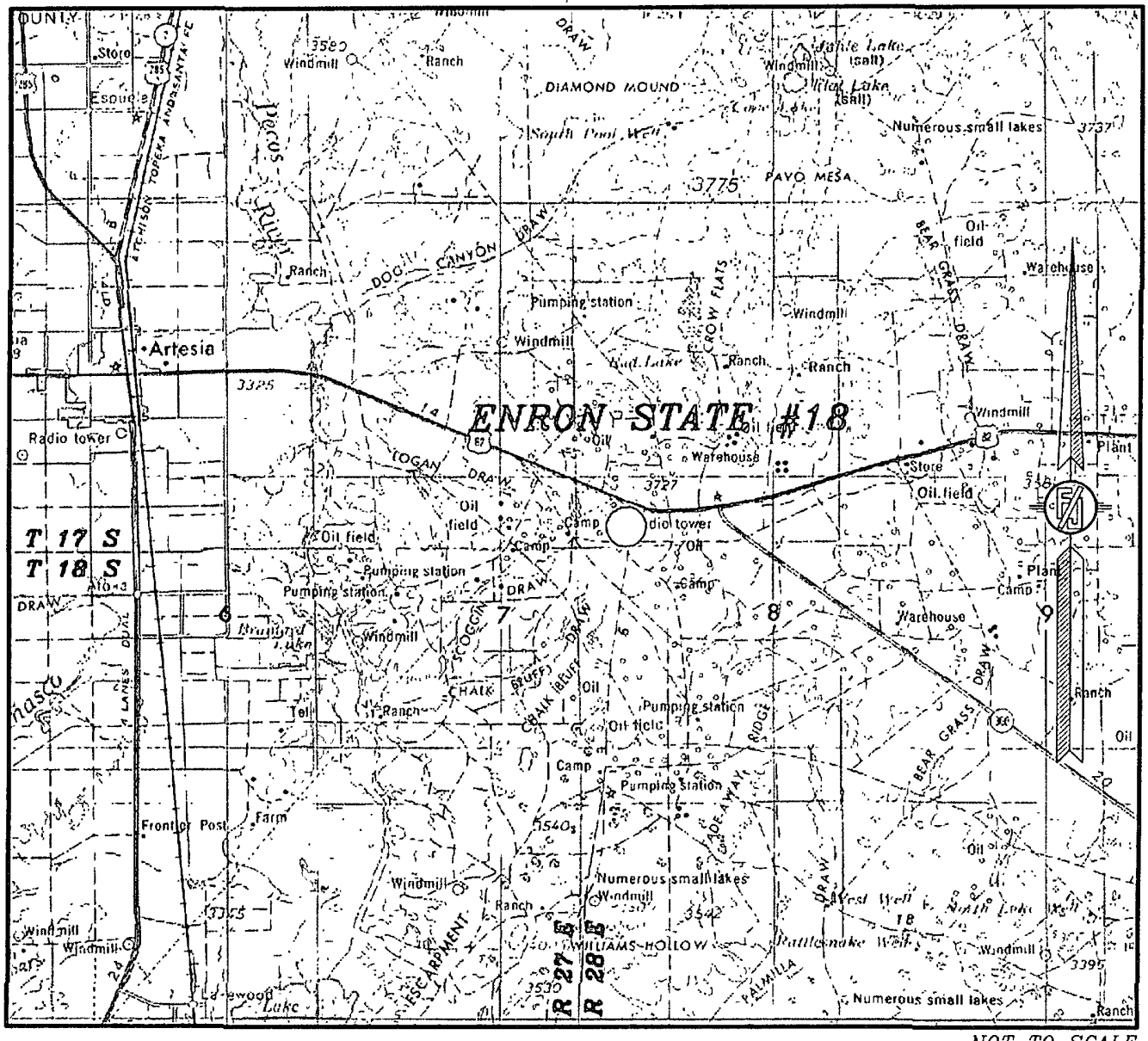
SEPTEMBER 1, 2011

SURVEY NO. 578

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 706-9672 *CARLSBAD, NEW MEXICO*

SECTION 32, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

VICINITY MAP



NOT TO SCALE

LRE Operating, LLC

ENRON STATE #18

LOCATED 990 FT. FROM THE NORTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 32, TOWNSHIP 17 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

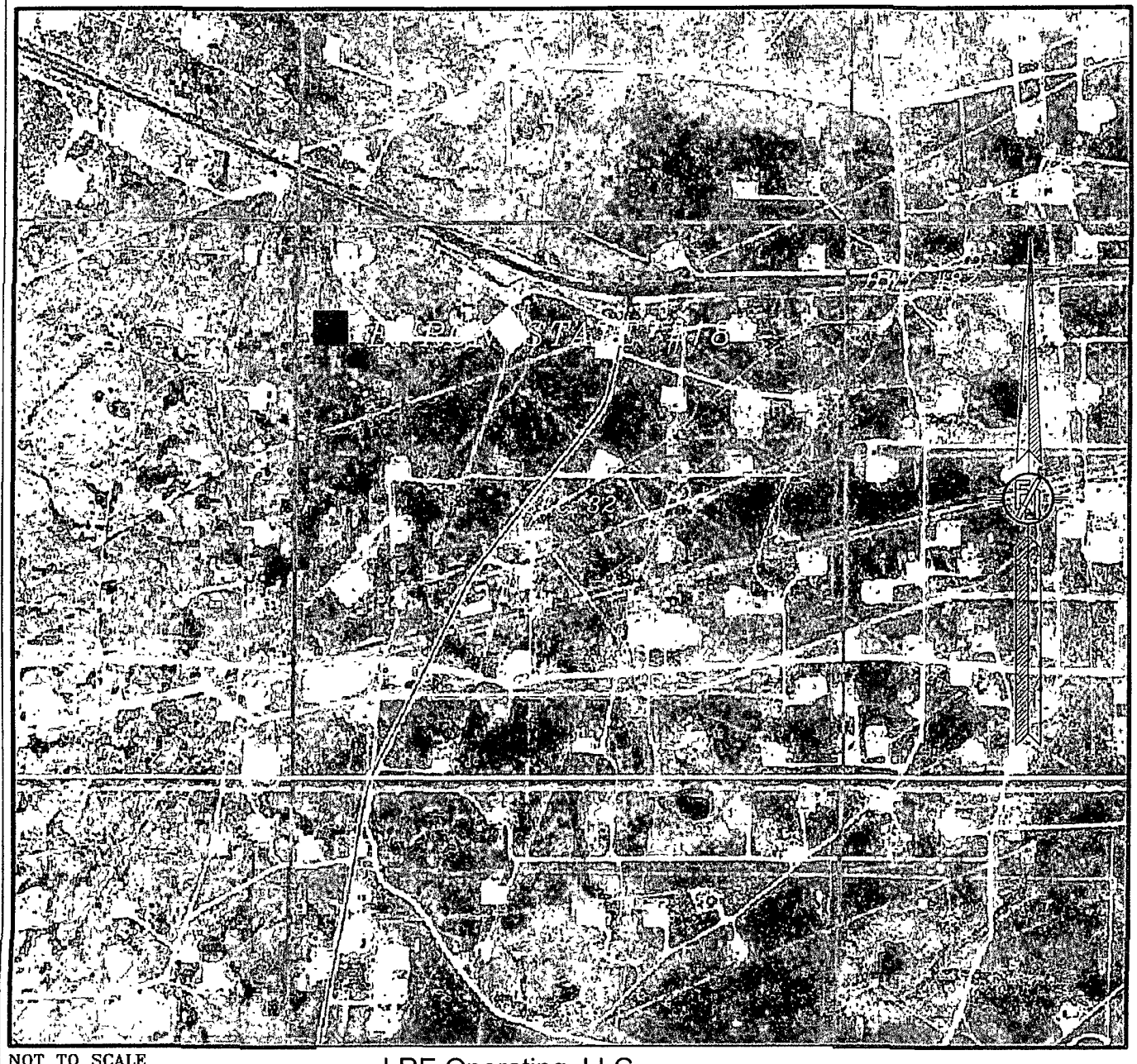
SEPTEMBER 1, 2011

SURVEY NO. 578

MADRON SURVEYING, INC. 311 SOUTH CANAL (575) 706-9677 *CARLSBAD, NEW MEXICO*

SECTION 32, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
USDA-AUG, 2009

LRE Operating, LLC

ENRON STATE #18

LOCATED 990 FT. FROM THE NORTH LINE
AND 330 FT. FROM THE WEST LINE OF
SECTION 32, TOWNSHIP 17 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 1, 2011

SURVEY NO. 578

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 706-9672 CARLSBAD, NEW MEXICO

LRE Operating, LLC
Drilling Plan

Enron State #18
990' FNL 330' FWL
D-S32-T17S-R28E
Eddy County, NM

1. The elevation of the unprepared ground is 3700.2' feet above sea level.
2. The geologic name of the surface formation is Permian with Quaternary Alluvium.
3. A rotary rig will be utilized to Drill the well to 4250' and run casing. This equipment will be rigged down and the well will be completed with a workover rig.
4. Proposed total depth is 4250'.
5. Estimated tops of geologic markers:

Quaternary – Alluvium	Surface
7 Rivers	513
Queen	1080
Grayburg	1507
Premier	1782
San Andres	1820
Glorieta	3203
Yeso	3318
TD	4250'

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

Queen	1080
Grayburg	1507
Premier	1782
San Andres	1820
Glorieta	3203
Yeso	3318
TD	4250'

7. Proposed Casing and Cement program is as follows:

Type	Hole Size	Casing Size	Wt	Grade	Thread	Depth	Sx	Density	Yield	Components
Conductor	20"	14"	68.7	Weld	B	40				Ready Mix
Surface	12.25	8.625	24	ST&C	J-55	425	280	14.8	1.35	Cl C Cmt w/ 1/4 pps Cello Flake + 2% CaCl2
Production	7.875	5.5	17	LT&C	J-55	4200	310	12.8	1.903	(35:65) Poz/Cl C Cmt + 5% NaCl + 0.125 lbs/sk Cello Flake + 5 lbs/sk LCM-1 +0.6% R-3 + 6% Gel
							510	14.8	1.328	Class C w/ 0.6% R-3 and 1/4 pps cello flake

8. Proposed Mud Program is as follows

Depth	425	4000	4000-4250
Mud Type	Fresh Water Mud	Brine	Brine, Salt Gel & Starch
Properties			
MW	8.5-9.2	9.8-10.1	9.9-10.2
pH	10	10-11.5	11-12
WL	NC	NC	20-30
Vis	28-34	29-32	32-35
MC	NC	NC	<2
Solids	NC	<1	<3
Pump Rate	300-350	375-425	400-450
Special		Use Polymers 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 TD 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 H2S expected in the wellbore as the drilling mud program is designed to exclude reservoir fluids from entering the hole. 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 1487.5 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 9 days. An additional 12 days will be needed it complete the well and to construct surface facilities.

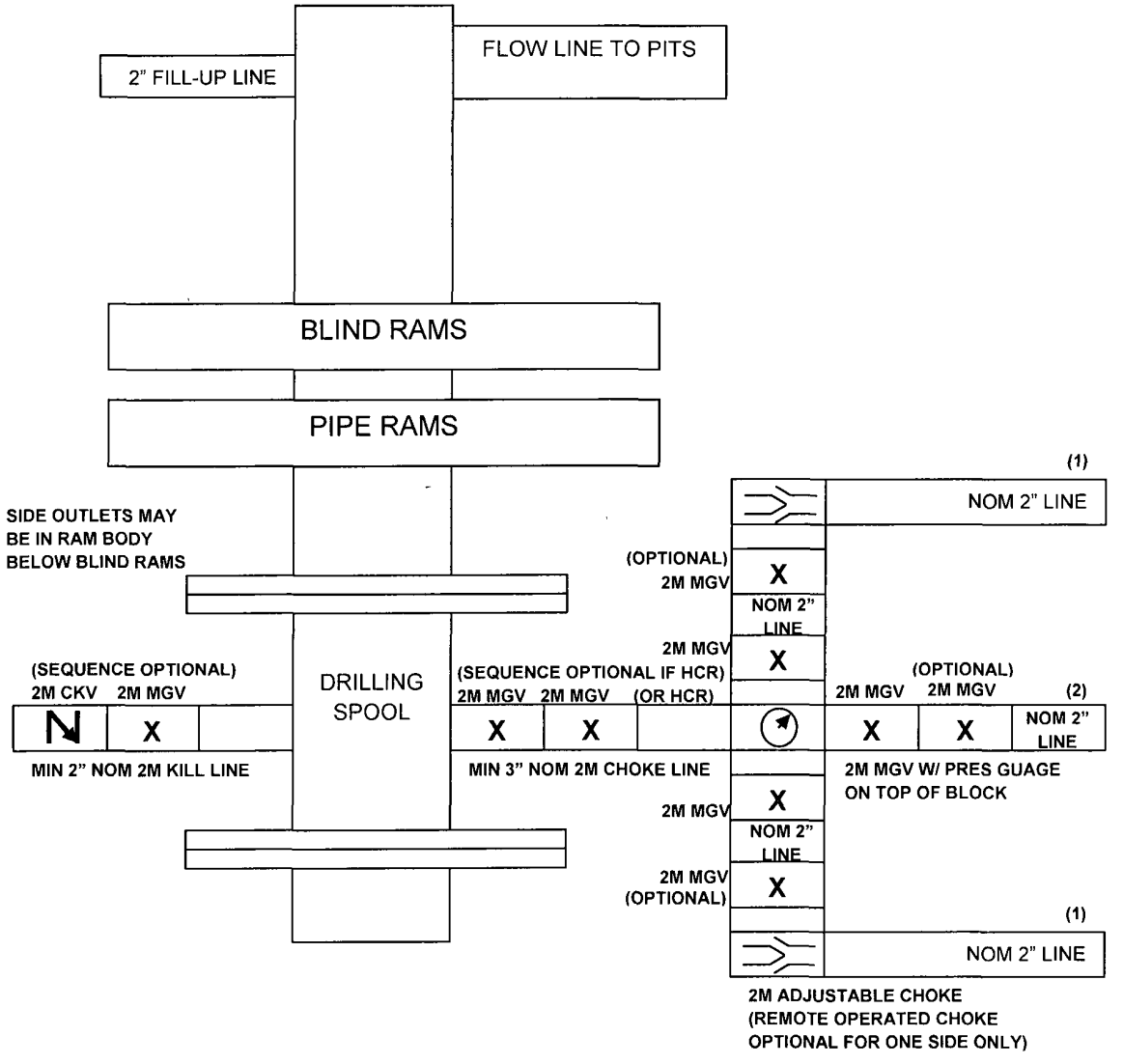
Pressure Control Equipment

The blowout preventer equipment (BOP) will consist of a 2000 psi double ram type preventer, a bag-type (Hydril) preventer and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe rams on bottom. A 2M BOP will be installed on the 8 5/8" surface casing and utilized continuously until the 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 drilling logs.

The BOP equipment will consist of the following:
-Annular preventers
-Double ram with blind rams and pipe rams.
-Drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 3 inch 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)
-3 inch diameter choke line
-2 kill valves, one of which will be a check valve (2 inch minimum)
-2 chokes
-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.
-Fill-up line above the uppermost preventer.

2M BOP SCHEMATIC



(1) Line to mud gas separator and/or pit
(2) Bleed line to pit

MGV = Manual Gate Valve
CKV = Check Valve
HCR = Hydraulically Controlled Remote Valve

LRE Operating, LLC

ENRON STATE #18
HYDROGEN SULFIDE (H_2S) CONTINGENCY DRILLING PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

This is an open drilling site. H_2S 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. H_2S monitors, warning signs, wind indicators and flags will be in use.

SUMMARY PLAN

1. All personnel shall receive proper H_2S training in accordance with Onshore Oil and Gas Order No. 6.III.C.3.a. A minimum of an initial training session and weekly H_2S 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,

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. H_2S 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 H_2S 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 H_2S is possible, and furthermore, the color will be changed should the site condition dictate. If H_2S 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 H_2S 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 H_2S 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 H_2S conditions. Drill collars and other bottom hole assembly components are to be inspected after each well, and in the event H_2S 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 H_2S 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 H_2S 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 H_2S, 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_2S 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_2S, 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 ($S0_2$). 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_2S and $S0_2$

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air= 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	$S0_2$	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.

H_2S OPERATIONS

Though no H_2S 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 H_2S 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 H_2S 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

Company Offices -

Lime Rock Houston Office	713·292·9510
Answering Service (After Hours)	713·292-9555
Artesia, NM Office	575-748-9724
Roswell, NM	575-623-8424

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