

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

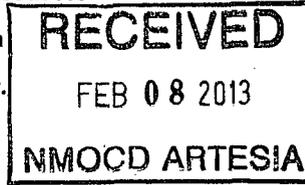
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico

Form C-101  
Revised December 16, 2011

Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505



Permit

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

<sup>1</sup> Operator Name and Address LRE Operating, LLC 1111 Bagby Street, Suite 4600 Houston, Texas 77042		<sup>2</sup> OGRID Number 281994
		<sup>3</sup> API Number 30-015-97082
<sup>4</sup> Property Code 309901	<sup>5</sup> Property Name AID 24 State	<sup>6</sup> Well No. #27

<sup>7</sup> Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
N	24	17S	28E		190	S	2390	W	Eddy

<sup>8</sup> Pool Information

Empire; Glorieta-Yeso	96210
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Additional Well Information

<sup>9</sup> Work Type N	<sup>10</sup> Well Type O	<sup>11</sup> Cable/Rotary R	<sup>12</sup> Lease Type S	<sup>13</sup> Ground Level Elevation 3679.1
<sup>14</sup> Multiple N	<sup>15</sup> Proposed Depth 5400' TVD / 5422' MD	<sup>16</sup> Formation Yeso	<sup>17</sup> Contractor United Drilling, Inc.	<sup>18</sup> Spud Date After 2/25/2013
Depth to Ground water: 55 Feet		Distance from nearest fresh water well: 0.97 Miles		Distance to nearest surface water: 11.03 Miles

<sup>19</sup> 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	12-1/4"	8-5/8"	24	490	325	Surface
Production	7-7/8"	5-1/2"	17	5422	975	Surface

Casing/Cement Program: Additional Comments

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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: *Eric P. McClusky*  
Printed name: Eric McClusky  
Title: Production Engineer  
E-mail Address: emcclusky@limerockresources.com  
Date: 2/6/13  
Phone: 713-360-5714

OIL CONSERVATION DIVISION

Approved By: *T. L. Shepard*  
Title: *Geologist*  
Approved Date: 2/11/2013  
Expiration Date: 2/11/2015  
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>30-015-41082</b>		<sup>2</sup> Pool Code <b>96210</b>		<sup>3</sup> Pool Name <b>Empire; Gloria - YESO</b>	
<sup>4</sup> Property Code <b>709901</b>		<sup>5</sup> Property Name <b>AID "24" STATE</b>			<sup>6</sup> Well Number <b>27</b>
<sup>7</sup> OGRID No. <b>281994</b>		<sup>8</sup> Operator Name <b>LRE OPERATING, LLC</b>			<sup>9</sup> Elevation <b>3679.1</b>

<sup>10</sup> Surface Location

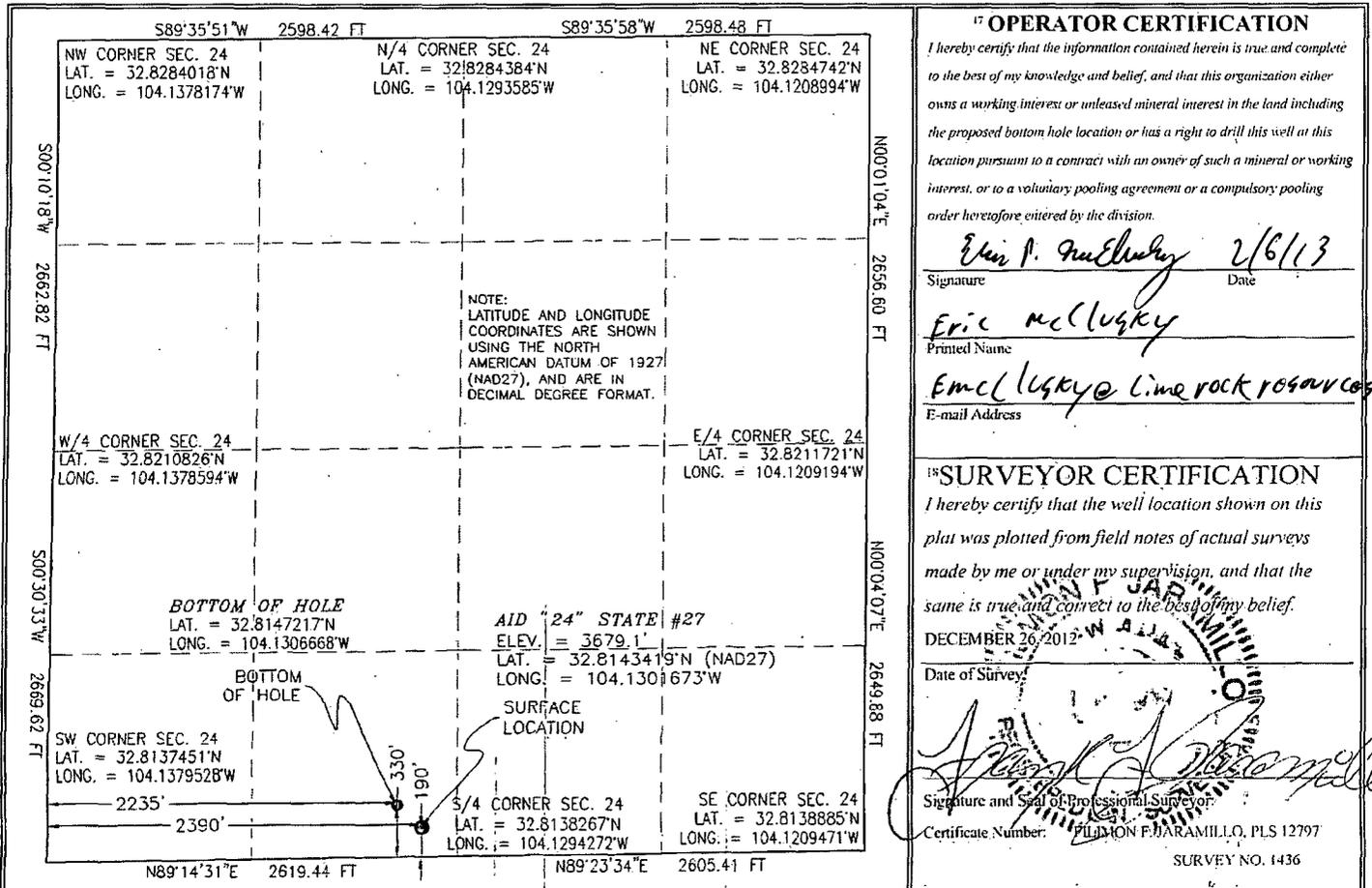
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	24	17 S	28 E		190	SOUTH	2390	WEST	EDDY

<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
N	24	17 S	28 E		330	SOUTH	2235	WEST	EDDY

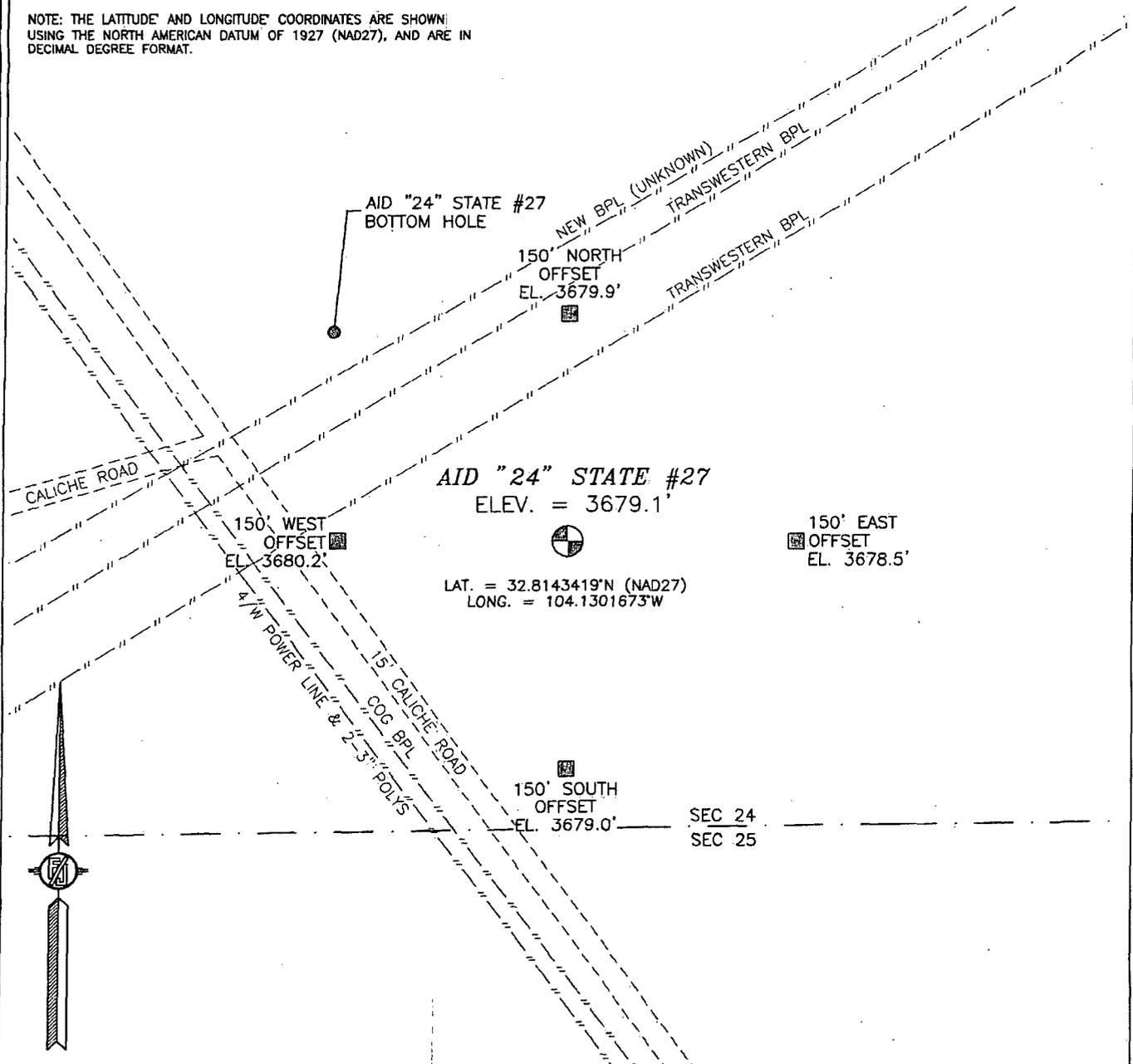
<sup>12</sup> Dedicated Acres <b>40</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



**SECTION 24, 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.



SCALE 1" = 100'

**DIRECTIONS TO LOCATION**  
 FROM STATE HIGHWAY 82 AND CR 209 (TURKEY TRACK) GO EAST ON STATE HIGHWAY 82 1.1 MILES, TURN LEFT ON CALICHE ROAD AND GO NORTH 0.6 MILES, TURN LEFT AND GO NORTHWEST 815 FT AND LOCATION IS ON THE RIGHT (EAST) 160 FT.

**LRE OPERATING, LLC  
 AID "24" STATE #27  
 LOCATED 190 FT. FROM THE SOUTH LINE  
 AND 2390 FT. FROM THE WEST LINE OF  
 SECTION 24, TOWNSHIP 17 SOUTH,  
 RANGE 28 EAST, N.M.P.M.  
 EDDY COUNTY, STATE OF NEW MEXICO**

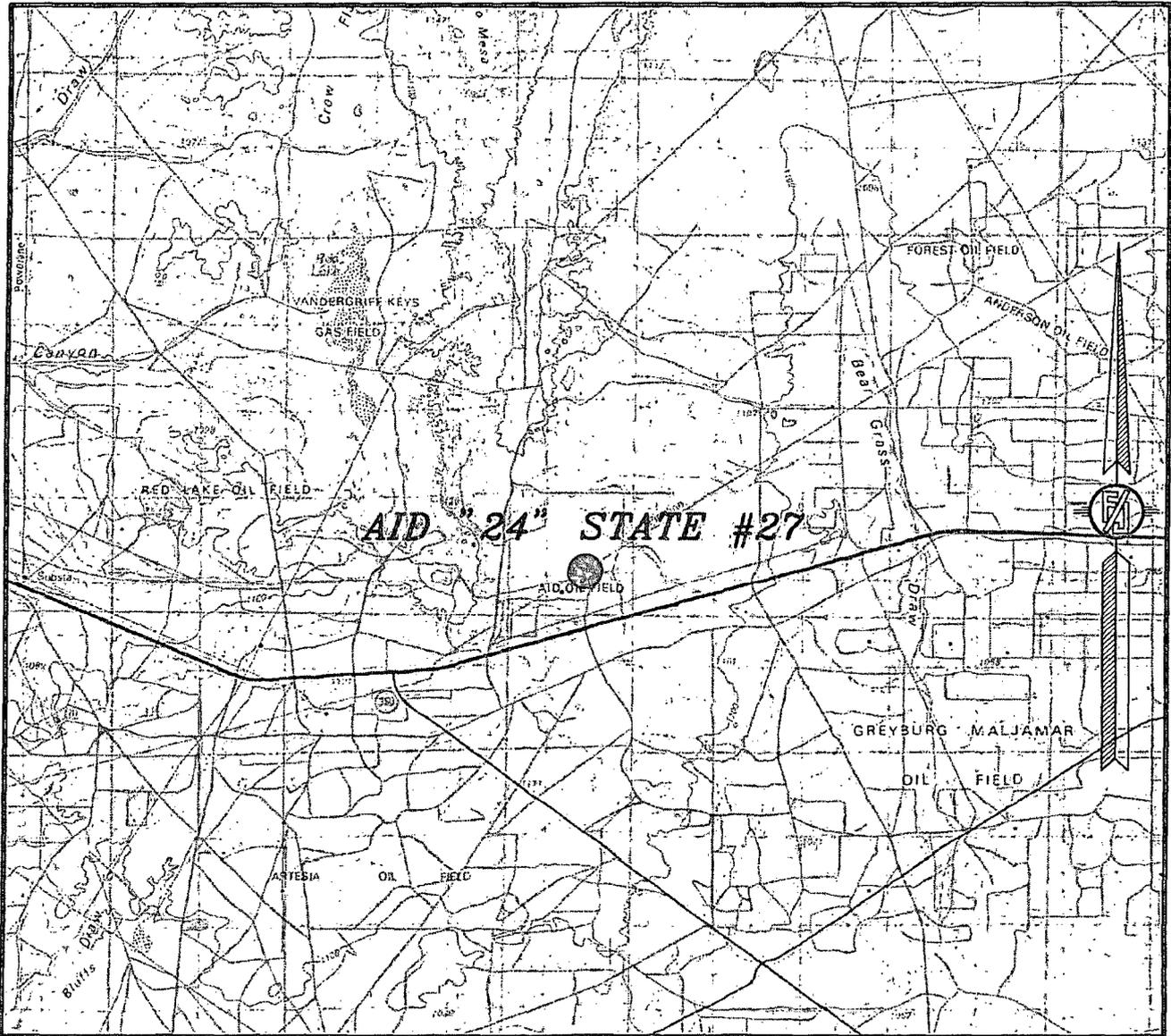
DECEMBER 26, 2012

SURVEY NO. 1436

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



SECTION 24, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
VICINITY MAP



NOT TO SCALE

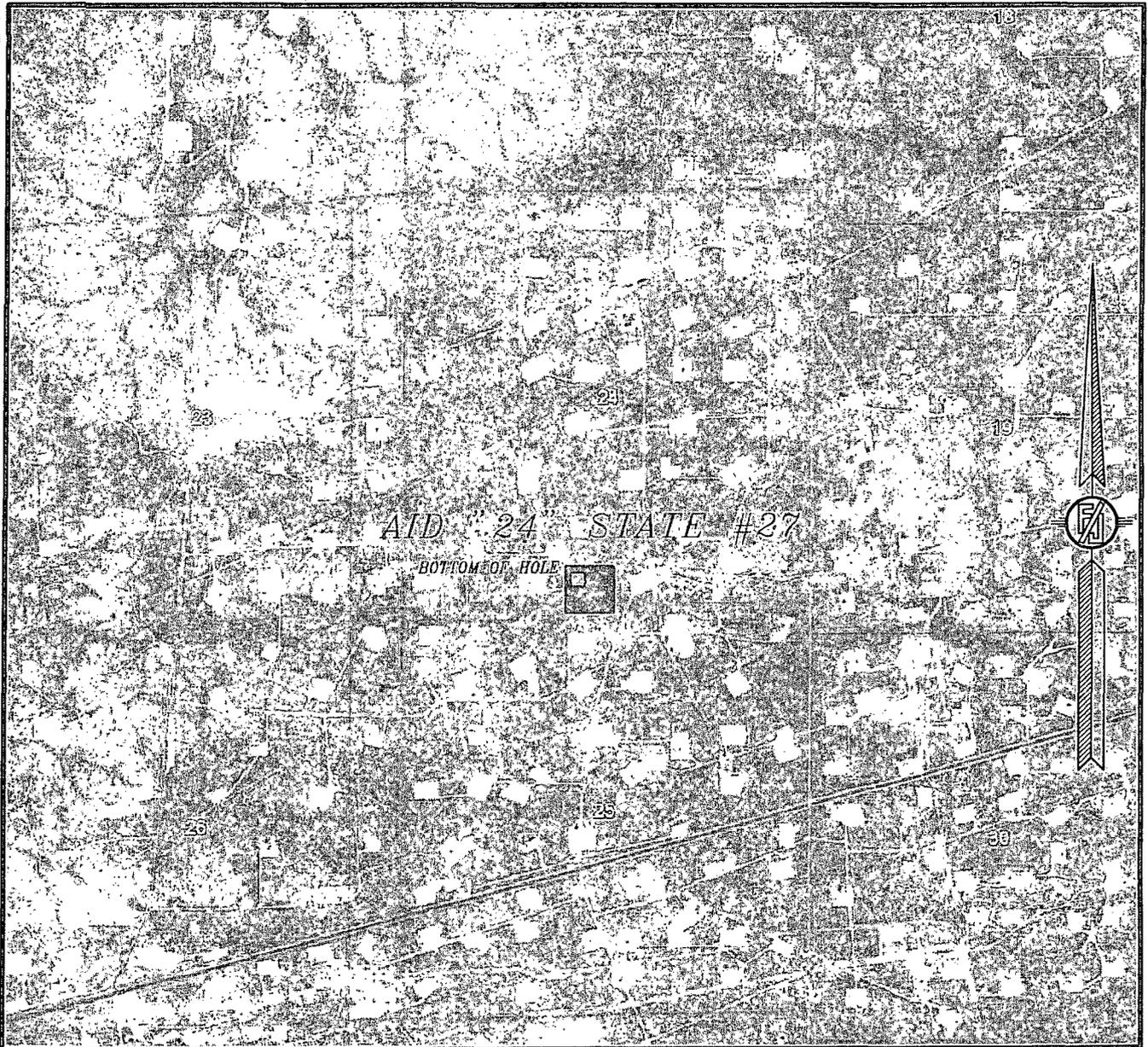
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SECTION 24, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
AERIAL PHOTO



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
JUNE 2011

LRE OPERATING, LLC  
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## 9. Proposed Mud Program is as follows

Depth	0-490	490-5250	5250-5422
Mud Type	Fresh Water Mud	Brine	Brine, Salt Gel, & Starch
<b>Properties</b>			
MW	8.4-9.2	9.8-10.1	9.9-10.1
pH	9.0-10.5	10-12	10.0-12.0
WL	NC	NC	20-30
Vis	28-34	28-29	32-34
MC	NC	NC	<2
Solids	NC	<2	<3
Pump Rate	300-350	375-425	400-425
Special		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.

## 10. Pressure Control Equipment: See Attached Description and diagram of Pressure Control Equipment.

## 11. Testing, Logging and Coring Program

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

**Electric Logging Program:** SGR-DLL-CDL-CNL Quad Combo from 5422' to surf. Csg. SGR-CNL to Surf.

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

## 12. 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 2376 psi based on 0.44 x TD. The estimated BHT is 125 degrees F.

## 13. 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**

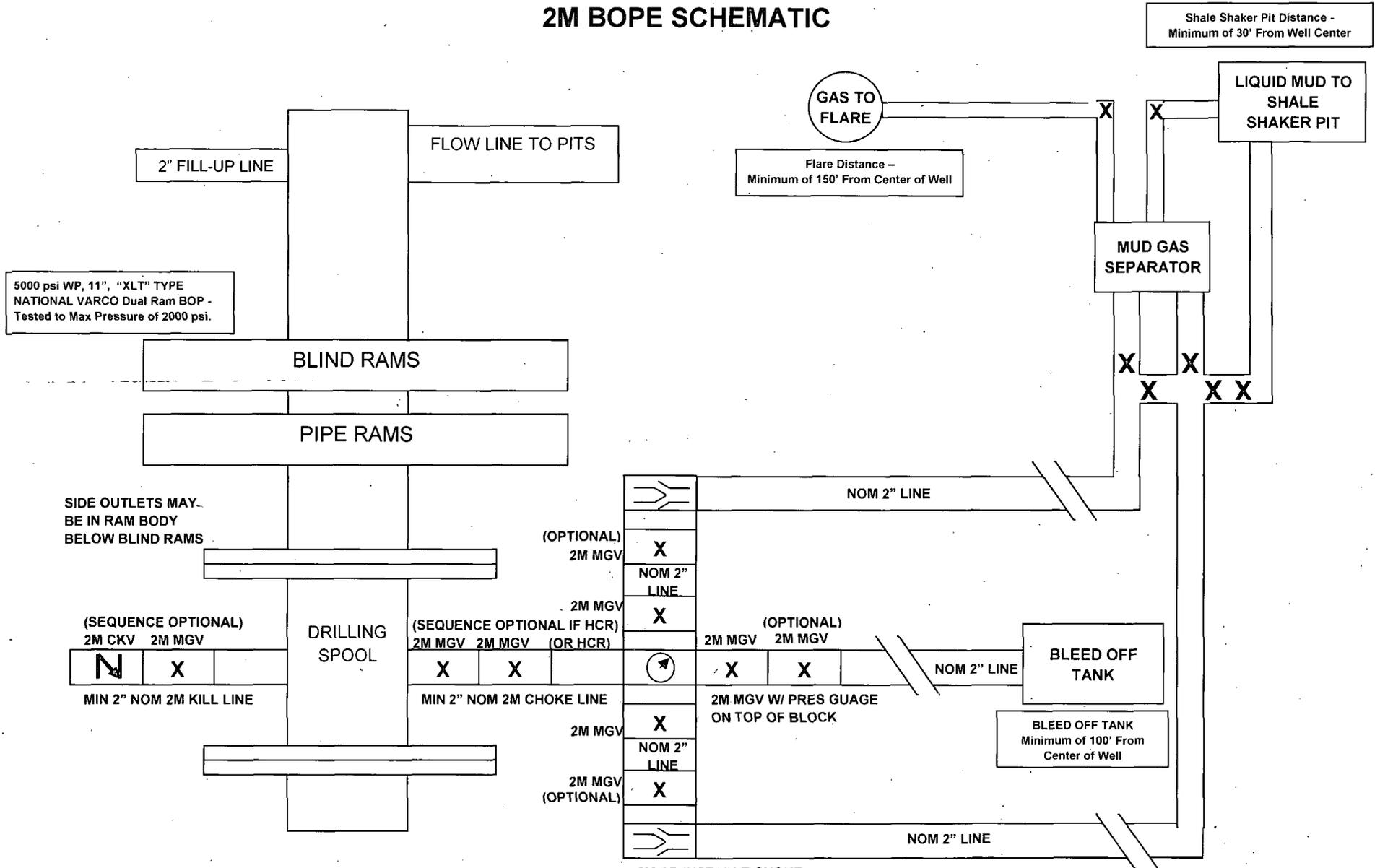
The blowout preventer equipment (BOP) will consist of a 5000 psi rated, "XLT" type, National VARCO double ram preventer that will be tested to a maximum pressure of 2000 psi. The unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe rams 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



Shale Shaker Pit Distance - Minimum of 30' From Well Center

GAS TO FLARE  
Flare Distance - Minimum of 150' From Center of Well

5000 psi WP, 11", "XLT" TYPE NATIONAL VARCO Dual Ram BOP - Tested to Max Pressure of 2000 psi.

SIDE OUTLETS MAY BE IN RAM BODY BELOW BLIND RAMS

(SEQUENCE OPTIONAL) 2M CKV 2M MGV

(SEQUENCE OPTIONAL IF HCR) 2M MGV 2M MGV (OR HCR)

(OPTIONAL) 2M MGV 2M MGV

BLEED OFF TANK  
BLEED OFF TANK Minimum of 100' From Center of Well

2M ADJUSTABLE CHOKE (REMOTE OPERATED CHOKE OPTIONAL FOR ONE SIDE ONLY)

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

NOTE: All lines, valves and chokes are shown at the minimum size allowed, but may be larger.

# LRE Operating, LLC

AID 24 State #27

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

Assumed 100 ppm ROE = 3000'

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

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be rigged up and in use when the company drills out from under surface casing. H<sub>2</sub>S monitors, warning signs, wind indicators and flags will be in use.

### EMERGENCY PROCEDURES

#### Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas, or if monitors indicate H<sub>2</sub>S 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<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
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o Equipment used for protection and emergency response.

# H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

## 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	2ppm	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) and BLM Onshore Order #6.

## H<sub>2</sub>S Operations

Though no H<sub>2</sub>S 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<sub>2</sub>S 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<sub>2</sub>S level below 10 ppm, 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	OPERATIONS MANAGER	HOUSTON	713-292-9526	713-906-7750	713-783-1959
SPENCER COX	PRODUCTION ENGINEER	HOUSTON	713-292-9528	432-254-5140	SAME AS CELL
ERIC MCCLUSKY	PRODUCTION ENGINEER	HOUSTON	713-360-5714	405-821-0534	832-491-3079
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
DALW KENNARD	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	575-420-1651	NA
GARY MCELLAND	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	903-503-8997	NA
BRAD TATE	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	575-441-1966	NA
DAVE WILLIAMSON	WELL SITE SUPERVISOR	ROTATES ON SITE	NA	575-308-9980	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

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

# LRE Operating, LLC

## AID 24 State #27

### UNIT N, S24-T17S-R28E, Eddy COUNTY, NM

#### **Design: Closed Loop System with roll-off steel bins (pits)**

CRI/HOBBS will supply (2) bins (100 bbl) volume, rails and transportation relating to the Close Loop System. Specification of the Closed Loop System is attached.

Contacts: Gary Wallace (432) 638-4076 Cell (575) 393-1079 Office

#### **Scomi Oil Tool: Supervisor – Armando Soto (432) 553-7979 Hobbs, NM**

Monitoring 24 Hour service

Equipment:

Centrifuges – Derrick Brand

Rig Shakers – Brandt Brand

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 or Controlled Recovery, Inc.). The disposal site permit is DFP = #R9166.

2- (250 bbl) tanks to hold fluid

2-CRI bins with track system

2-500 bbl frac tanks with fresh water

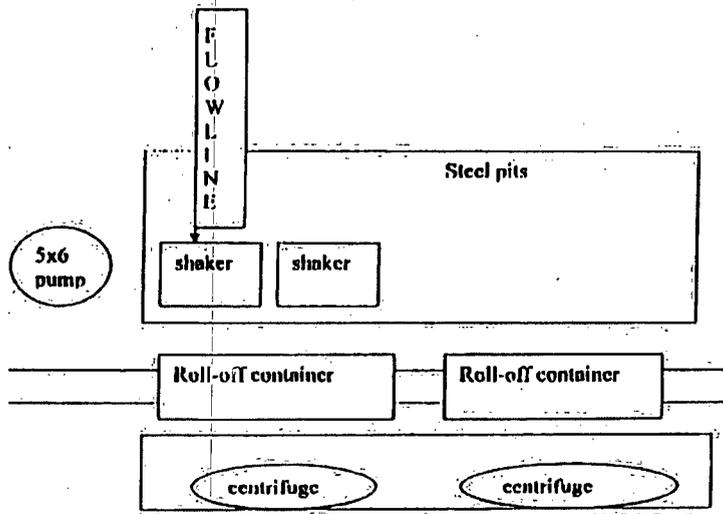
2-500 bbl frac tanks for brine water

#### **Operations:**

Closed Loop System 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 any spill. Remediation process will start immediately.

#### **Closure:**

During drilling operations all liquids, drilling fluids and cuttings will be hauled off via CRI equipment to DFP #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