

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

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

¹ Operator Name and Address LRE OPERATING, LLC 1111 BAGBY ST., STE 4000, HOUSTON, TX 77002		² OGRID Number 281994
⁴ Property Code 309885	³ Property Name ENRON STATE	⁵ API Number 30-015-39996
		⁶ Well No 17

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
C	32	17S	28E		230'	N	2420'	W	EDDY

⁸ Pool Information

ARTESIA - ; GLORIETA - YESO	96830
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Additional Well Information

⁹ Work Type N	¹⁰ Well Type O	¹¹ Cable/Rotary R	¹² Lease Type S	¹³ Ground Level Elevation 3702.5
¹⁴ Multiple NO	¹⁵ Proposed Depth 4200'	¹⁶ Formation GLORIETA - YESO	¹⁷ Contractor UNITED DRILLING	¹⁸ Spud Date ASAP
Depth to Ground water 300'		Distance from nearest fresh water well 3 MILES		Distance to nearest surface water 4 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"	84#	40'	READY MIX	SURFACE
SURFACE	12 1/4"	8-5/8"	24#	425'	300	SURFACE
PRODUCTION	7-7/8"	5-1/2"	17#	4200'	745	SURFACE

Casing/Cement Program: Additional Comments

SEE ATTACHED DRILLING AND DIRECTIONAL PLAN

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
XLT 11"	5,000#	2,000#	NATIONAL BARCO

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

Printed name:

Title

E-mail Address

Date

[Signature]

Robert S. Ashworth

Production Engineer

sashworth@lime-rock-resources.com

2/23/12

Phone

713-292-9526

OIL CONSERVATION DIVISION

Approved By

Title

Approved Date

Expiration Date

[Signature]
Geologist

3/5/2012

3/5/2014

Conditions of Approval Attached

1. 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 examination is either in my own working interest or without material interest in the tract or, holding the proposed horizon hole location or has a right to drill there with an interest purpose to a contract with interest of such material working interest or that I cannot be paid in compensation of it, including processing order hereon, entered by the division.

 2/23/12
Signature Date

Printed Name
ROBERT S. ASHWORTH

2. 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 2, 2011

Date of Survey


Signature and Seal of Professional Surveyor

Certificate Number: **FRANKLIN E. JARAMILLO, PLS 12797**
SURVEY NO 57

LRE Operating, LLC

Enron State #17 Drilling Permit Application

Drilling, Casing & Cementing, and Mud Program

LRE Operating, LLC proposes drilling and testing the Glorieta-Yeso formation at this surface location, but drilling directionally back to a legal location before pay sands are intersected (see directional plan attached).

Casing Program

Type	Hole Size	Casing Size	Weight	Grade	Thread	Depth
Conductor	20"	14"	84	B	Weld	40
Surface	12-1/4"	8-5/8"	24	J-55	ST&C	425
Production	7-7/8"	5-1/2"	17	J-55	ST&C	4227

Surface Casing Cement – 300 SX 12.8 ppg, 1.85 cu ft per sack of Class C Cmt, 2% Calcium Chloride and 0.25 pps of Cello Flakes Circulated to Surface

Production Casing Cement - Lead Slurry

310 SX 35:65 Poz, Class C cement, 6% gel, 0.2% R-3, 0.25 pps
Cello Flake and 5% Sodium Chloride,

- Tail Slurry

435 SX Class C cement, 0.25% R-3 and 0.25% Cello Flake
Circulated to surface

Mud Program

Mud Program

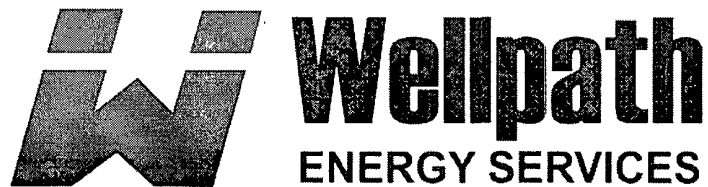
Depth		0-425	425-3900	3900-4227
Mud Type		Fresh Water	Brine	Brine w/ Gel & Starch
Properties				
	MW	8.5-9.2	9.9-10.2	9.9-10.2
	pH	10	10-11.5	10-11.5
	WL	NC	NC	15-10
	Vis	28-34	30-32	34-36
	MC	NC	NC	1
	Solids	NC	<1%	<1%

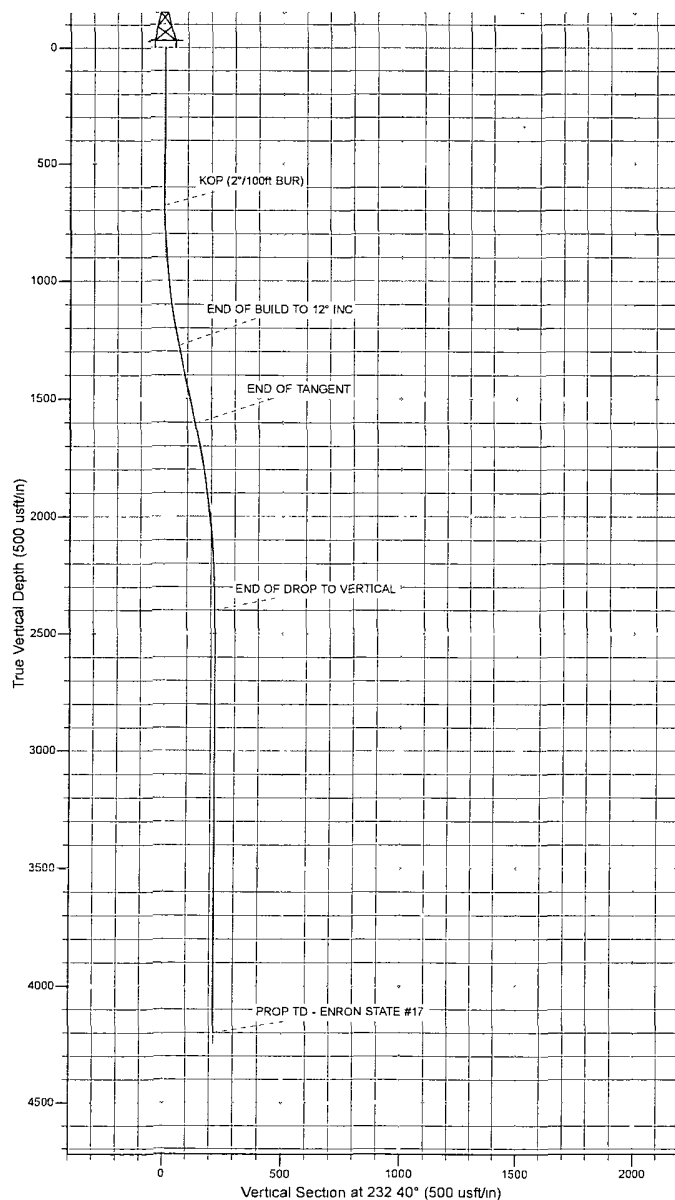
LIME ROCK RESOURCES

**EDDY COUNTY, NM (NAD 27)
SEC. 32 T17S RGE. 28E
ENRON STATE #17**

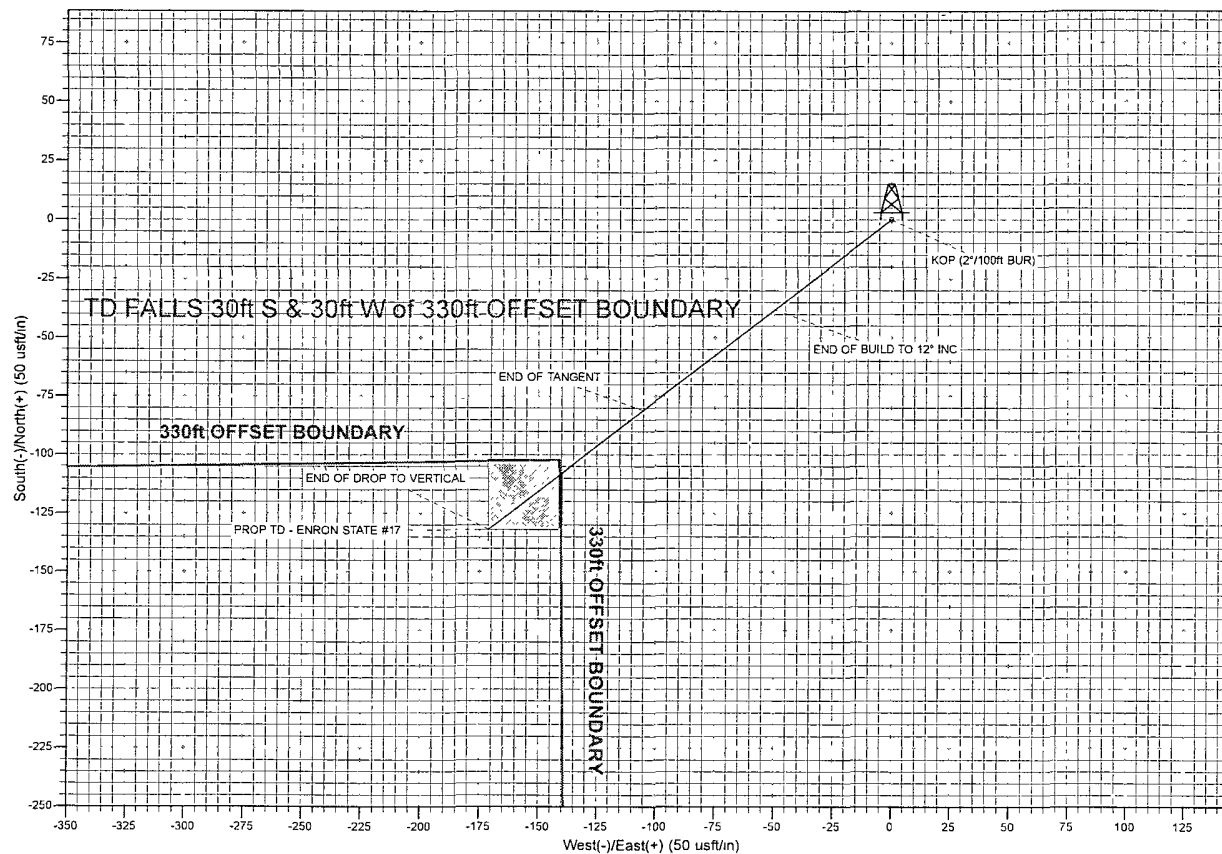
**ORIGINAL WELLBORE
21 February, 2012**

Plan: PROPOSAL #2





Project: EDDY COUNTY, NM (NAD 27)
 Site: SEC. 32 T17S RGE. 28E
 Well: ENRON STATE #17
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #2



Azimuths to True North
 Magnetic North 7 83°

Magnetic Field
 Strength 48821 2snT
 Dip Angle 60 59°
 Date 19/02/2012
 Model IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Annotation
680 2	680 2	0 00	0 00	0 0	0 0	0 0	KOP (2"/100ft BUR)
1275 8	1280 2	12 00	232 40	-38 2	-49 6	62 6	END OF BUILD TO 12" INC
1605 9	1617 6	12 00	232 40	-81 0	-105 2	132 7	END OF TANGENT
2400 0	2417 6	0 00	0 00	-131 9	-171 3	216 2	END OF DROP TO VERTICAL
4200 0	4217 6	0 00	0 00	-131 9	-171 3	216 2	PROP TD - ENRON STATE #17

Database: EDM_5000_1_7
Company: LIME ROCK RESOURCES
Project: EDDY COUNTY, NM (NAD 27)
Site: SEC. 32 T17S RGE. 28E
Well: ENRON STATE #17
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

Local Co-ordinate Reference: Well ENRON STATE #17
TVD Reference: KB-EST @ 3714 0usft (Original Well Elev)
MD Reference: KB-EST @ 3714 0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project EDDY COUNTY, NM (NAD 27)

Map System: US State Plane 1927 (Exact solution)

System Datum:

Mean Sea Level

Geo Datum: NAD 1927 (NADCON CONUS)

Map Zone: New Mexico East 3001

Using geodetic scale factor

Site SEC. 32 T17S RGE. 28E

Site Position:		Northing:	653,751.34 usft	Latitude:	32° 47' 49.844 N
From:	Lat/Long	Easting:	541,595.94 usft	Longitude:	104° 11' 52.679 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.07 °

Well ENRON STATE #17

Well Position	+N/-S	0.0 usft	Northing:	653,751.34 usft	Latitude:	32° 47' 49.844 N
	+E/-W	0.0 usft	Easting:	541,595.94 usft	Longitude:	104° 11' 52.679 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,702.5 usft

Wellbore ORIGINAL WELLBORE

Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	19/02/2012	(°) 7.83	(°) 60.59	(nT) 48,821

Design PROPOSAL #2

Audit Notes:

Version: **Phase:** PROTOTYPE **Tie On Depth:** 0.0

Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	232.40

Plan Sections

MD	Inc	Azi	Vertical	SS	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
(usft)	(°)	(°)	Depth	(usft)	(usft)	(usft)	Rate	Rate	Rate	(°)	
							(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	-3,714.0	0.0	0.0	0.00	0.00	0.00	0.00	
680.2	0.00	0.00	680.2	-3,033.8	0.0	0.0	0.00	0.00	0.00	0.00	
1,280.2	12.00	232.40	1,275.8	-2,438.2	-38.2	-49.6	2.00	2.00	0.00	232.40	
1,617.6	12.00	232.40	1,605.8	-2,108.2	-81.0	-105.2	0.00	0.00	0.00	0.00	
2,417.6	0.00	0.00	2,400.0	-1,314.0	-131.9	-171.3	1.50	-1.50	0.00	180.00	
4,217.6	0.00	0.00	4,200.0	486.0	-131.9	-171.3	0.00	0.00	0.00	0.00	PROP TD - ENRON

Database: EDM_5000_1_7
 Company: LIME ROCK RESOURCES
 Project: EDDY COUNTY, NM (NAD 27)
 Site: SEC. 32 T17S RGE. 28E
 Well: ENRON STATE #17
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #2

Local Co-ordinate Reference: Well ENRON STATE #17
 TVD Reference: KB-EST @ 3714 0usft (Original Well Elev)
 MD Reference: KB-EST @ 3714 0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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	3,714.00	0 0	0 0	0.0	0.00	0 00	0.00
100.0	0 00	0 00	100 0	3,614.00	0.0	0.0	0.0	0 00	0 00	0.00
200 0	0 00	0 00	200 0	3,514.00	0.0	0.0	0.0	0.00	0.00	0 00
300 0	0 00	0 00	300.0	3,414.00	0.0	0.0	0.0	0 00	0.00	0 00
400.0	0 00	0 00	400.0	3,314.00	0.0	0.0	0 0	0 00	0.00	0 00
500 0	0.00	0.00	500.0	3,214.00	0.0	0.0	0.0	0.00	0.00	0.00
600 0	0.00	0.00	600.0	3,114.00	0 0	0 0	0.0	0 00	0 00	0 00
KOP (2°/100ft BUR)										
680.2	0.00	0.00	680.2	3,033.80	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.40	232.40	700.0	3,014.00	0.0	-0.1	0.1	2.00	2.00	0.00
800 0	2.40	232.40	800 0	2,914.03	-1.5	-2.0	2.5	2.00	2.00	0 00
900.0	4.40	232.40	899.8	2,814.22	-5.1	-6.7	8.4	2.00	2.00	0 00
1,000.0	6.40	232.40	999.3	2,714.66	-10.9	-14.1	17.8	2.00	2.00	0.00
1,100.0	8.40	232.40	1,098.5	2,615.50	-18.7	-24.3	30.7	2.00	2.00	0.00
1,200.0	10.40	232.40	1,197.2	2,516.85	-28.7	-37.3	47.0	2.00	2.00	0.00
END OF BUILD TO 12° INC										
1,280.2	12.00	232.40	1,275.8	2,438.18	-38.2	-49.6	62.6	2.00	2.00	0.00
1,300.0	12.00	232.40	1,295.2	2,418.81	-40.7	-52.9	66.7	0.00	0.00	0.00
1,400.0	12.00	232.40	1,393.0	2,320.99	-53.4	-69.3	87.5	0.00	0 00	0.00
1,500.0	12.00	232.40	1,490.8	2,223.18	-66.1	-85.8	108.3	0.00	0 00	0 00
1,600.0	12.00	232.40	1,588.6	2,125.36	-78.8	-102.3	129.1	0.00	0.00	0.00
END OF TANGENT										
1,617.6	12.00	232.40	1,605.9	2,108.15	-81.0	-105.2	132.7	0.00	0.00	0.00
1,700.0	10.76	232.40	1,686.6	2,027.37	-90.9	-118.1	149.0	1.50	-1.50	0 00
1,800 0	9.26	232.40	1,785.1	1,928.90	-101.5	-131.8	166.4	1.50	-1.50	0 00
1,900.0	7.76	232.40	1,884.0	1,830.00	-110.6	-143.6	181.2	1.50	-1.50	0.00
2,000 0	6.26	232.40	1,983.2	1,730.75	-118.0	-153.2	193.4	1.50	-1.50	0.00
2,100.0	4.76	232.40	2,082.8	1,631.22	-123.9	-160.8	203.0	1.50	-1.50	0.00
2,200.0	3.26	232.40	2,182.5	1,531.47	-128.1	-166.4	210.0	1.50	-1.50	0.00
2,300.0	1.76	232.40	2,282.4	1,431.57	-130.8	-169.9	214.4	1.50	-1.50	0 00
2,400 0	0.26	232.40	2,382.4	1,331.58	-131.9	-171.3	216.2	1.50	-1.50	0 00
END OF DROP TO VERTICAL										
2,417.6	0.00	0.00	2,400.0	1,313.98	-131.9	-171.3	216.2	1.50	-1.50	0.00
2,500 0	0.00	0.00	2,482.4	1,231.58	-131.9	-171.3	216.2	0.00	0 00	0 00
2,600 0	0 00	0.00	2,582.4	1,131.58	-131.9	-171.3	216.2	0 00	0 00	0 00
2,700 0	0 00	0.00	2,682.4	1,031.58	-131.9	-171.3	216.2	0 00	0 00	0 00
2,800.0	0 00	0.00	2,782.4	931.58	-131.9	-171.3	216.2	0 00	0.00	0 00
2,900 0	0.00	0.00	2,882.4	831.58	-131.9	-171.3	216.2	0 00	0 00	0.00
3,000.0	0 00	0.00	2,982.4	731.58	-131.9	-171.3	216.2	0.00	0 00	0 00
3,100.0	0.00	0.00	3,082.4	631.58	-131.9	-171.3	216.2	0 00	0.00	0 00
3,200 0	0.00	0.00	3,182.4	531.58	-131.9	-171.3	216.2	0 00	0 00	0 00
3,300.0	0 00	0.00	3,282.4	431.58	-131.9	-171.3	216.2	0 00	0.00	0 00
3,400 0	0.00	0.00	3,382.4	331.58	-131.9	-171.3	216.2	0 00	0 00	0 00
3,500 0	0.00	0.00	3,482.4	231.58	-131.9	-171.3	216.2	0.00	0 00	0 00
3,600.0	0.00	0.00	3,582.4	131.58	-131.9	-171.3	216.2	0.00	0 00	0 00
3,700.0	0 00	0.00	3,682.4	31.58	-131.9	-171.3	216.2	0 00	0 00	0 00
3,800 0	0 00	0.00	3,782.4	-68.42	-131.9	-171.3	216.2	0.00	0 00	0 00
3,900 0	0.00	0.00	3,882.4	-168.42	-131.9	-171.3	216.2	0.00	0.00	0 00
4,000 0	0.00	0.00	3,982.4	-268.42	-131.9	-171.3	216.2	0.00	0 00	0 00
4,100.0	0.00	0.00	4,082.4	-368.42	-131.9	-171.3	216.2	0.00	0 00	0 00
4,200.0	0 00	0.00	4,182.4	-468.42	-131.9	-171.3	216.2	0.00	0.00	0 00
4,217.6	0.00	0.00	4,200.0	-486.00	-131.9	-171.3	216.2	0.00	0.00	0.00

Database:	EDM_5000_1_7	Local Co-ordinate Reference:	Well ENRON STATE #17
Company:	LIME ROCK RESOURCES	TVD Reference:	KB-EST @ 3714.0usft (Original Well Elev)
Project:	EDDY COUNTY, NM (NAD 27)	MD Reference:	KB-EST @ 3714.0usft (Original Well Elev)
Site:	SEC. 32 T17S RGE. 28E	North Reference:	True
Well:	ENRON STATE #17	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
680.2	680.2	0.0	0.0	KOP (2°/100ft BUR)
1,280.2	1,275.8	-38.2	-49.6	END OF BUILD TO 12° INC
1,617.6	1,605.9	-81.0	-105.2	END OF TANGENT
2,417.6	2,400.0	-131.9	-171.3	END OF DROP TO VERTICAL
4,217.6	4,200.0	-131.9	-171.3	PROP TD - ENRON STATE #17

2000 psi System

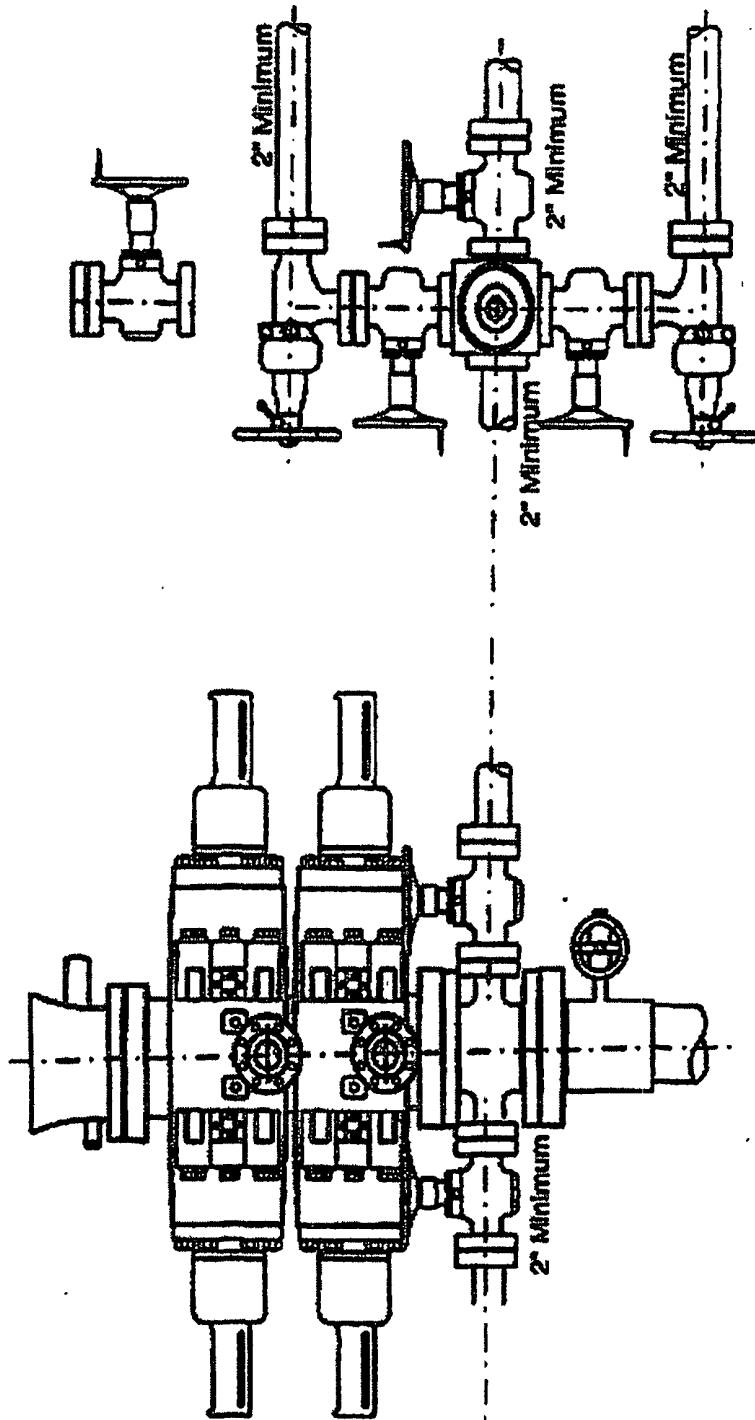


Figure 3-1

LRE Operating, LLC
2000 psi BOP System Diagram