

AUG 16 2007  
OCD-ARTESIAIf earthen pits are used in  
association with the drilling of this  
well, an OCD pit permit must be  
obtained prior to pit construction.ATS-07-500  
EA-07-990FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007UNITED 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		UNORTHODOX LOCATION	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone			
2. Name of Operator LCX ENERGY, LLC. (LARRY GILLETTE 432-262-4011) 218885		8. Lease Name and Well No. 36678 COLLINS RANCH FED. COM #3H	
3a. Address 110 NORTH MARIENFELD SUITE 200 MIDLAND, TEXAS 79701		9. API Well No. 30-015-35758-07 UNIT per California	
3b. Phone No. (include area code) 432-262-4011		10. Field and Pool, or Exploratory Gopher - WOLFCAMP	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 200' FNL & 1711' FEL SECTION 31 T17S-R24E EDDY CO. NM At proposed prod. zone 660' FNL & 1880' FEL SECTION 30 T17S-R24E EDDY CO.		11. Sec., T. R. M. or Blk. and Survey or Area SECTION 31 T17S-R24E	
14. Distance in miles and direction from nearest town or post office* Approximately 15 miles West of Artesia New Mexico Roswell Controlled Water Basin		12. County or Parish EDDY CO.	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 200'	16. No. of acres in lease 880	17. Spacing Unit dedicated to this well 320	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. NA	19. Proposed Depth MD-9580' TVD-4690'	20. BLM/BIA Bond No. on file NMB000094 RLB-0008129	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3873' GL	22. Approximate date work will start* WHEN APPROVED	23. Estimated duration 45 days	

## 24. Attachments

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

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

25. Signature <i>Joe T. Janica</i>	Name (Printed/Typed) Joe T. Janica	Date 06/18/07
Title Agent		
Approved by (Signature)	Name (Printed/Typed)	Date
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.

SEE ATTACHED FOR  
CONDITIONS OF APPROVALAPPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
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 and Natural Resources Department

Form C-102  
Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505



AUG 16 2007

☐ AMENDED REPORT

OCDA ARTESIA

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 77660	Pool Name Gopher - WOLFCAMP
Property Code	Property Name COLLINS RANCH UNIT FED COM	Well Number 3H
OGRID No. 218885	Operator Name LCX ENERGY	Elevation 3873'

Surface Location

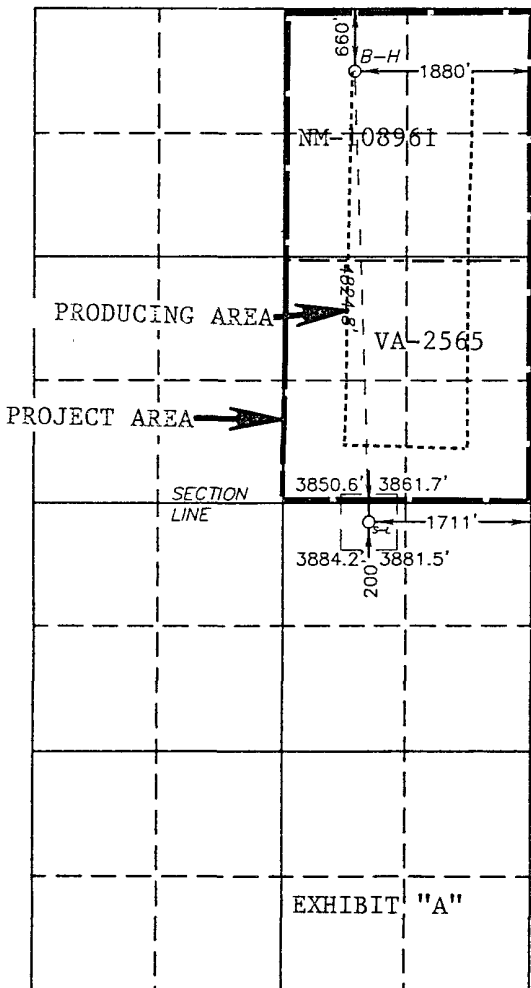
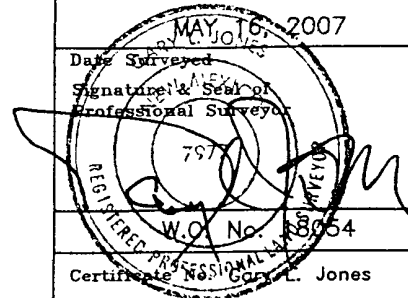
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	31	17 S	24 E		200	NORTH	1711	EAST	EDDY

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
B	30	17 S	24 E		660	NORTH	1880	EAST	EDDY

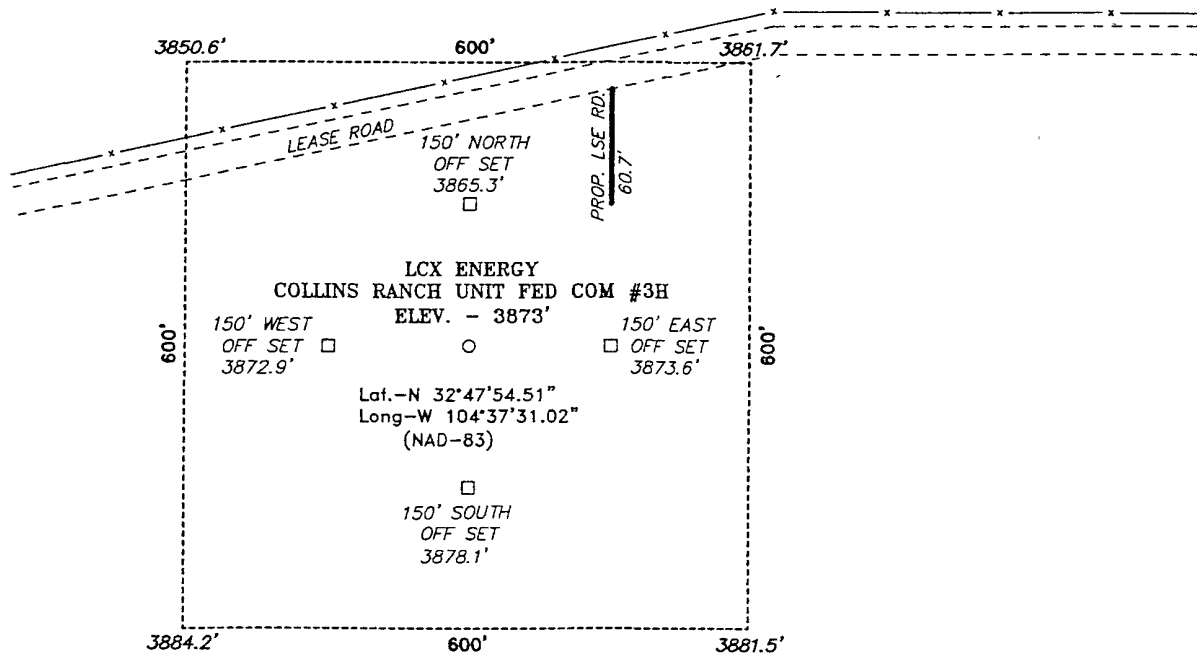
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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><b>BOTTOM HOLE LOCATION</b> Lat - N32°48'42.22" Long - W104°37'33.07" N.: 659162.920 E.: 451467.202 (NAD-83)</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>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 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.</p> <p><i>Joe T. Janica</i> Signature Date 06/18/07</p> <p>Joe T. Janica Printed Name Agent</p>
	<p><b>SURFACE LOCATION</b> Lat - N32°47'54.51" Long - W104°37'31.02" N.: 654340.825 E.: 451628.845 (NAD-83)</p>	<p><b>SURVEYOR CERTIFICATION</b></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></p> <p>W.O. No. 88054 Certificate No. 7977 BASIN SURVEYS</p>

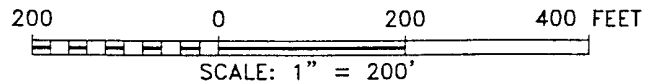
SCALE 1" = 2000'

SECTION 31, TOWNSHIP 17 SOUTH, RANGE 24 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF US. HWY. 285 AND US HWY 82, PROCEED WEST ON US. HWY 82 TO MILE MARKER 97, FROM MILE MARKER 97 PROCEED WEST 0.2 MILE TO LEASE ROAD, ON LEASE ROAD PROCEED SOUTH 1.9 MILE THENCE WEST 0.2 MILE TO A "T", FROM THE "T" PROCEED SOUTHERLY 0.9 MILE TO A PAD THENCE SOUTH 0.2 MILE TO A "T", FROM THE "T" PROCEED WEST 0.6 MILE TO A LEASE ROAD, ON LEASE ROAD PROCEED WEST 0.3 TO A FENCE, CONTINUE WEST ANOTHER (0.7) MILE TO PROPOSED LEASE ROAD.



**LCX ENERGY**

REF: COLLINS RANCH UNIT FED COM #3H / WELL PAD TOPO

THE COLLINS RANCH UNIT FED COM #3H LOCATED 200' FROM

THE NORTH LINE AND 1711' FROM THE EAST LINE OF

SECTION 31, TOWNSHIP 17 SOUTH, RANGE 24 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 18054 Drawn By: J. M. SMALL

Date: 05-17-2007 Disk: JMS 18054W

Survey Date: 05-16-2007 Sheet 1 of 1 Sheets

# APPLICATION TO DRILL

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E EDDY CO. NM

In response to questions asked under Section II of Bulletin NTL-6, the following information on the above will is provided for your information.

1. LOCATION: SURFACE: 200' FNL & 1711' FEL SEC. 31 T17S-R24E EDDY CO. NM  
END OF HOLE: 660' FNL & 1880' FEL SEC. 30 T17S-R24E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 3873' GL
3. GEOLOGIC NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits.
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.
5. PROPOSED DRILLING DEPTH: MD. 9580' TVD 4960'
6. ESTIMATED TOPS OF GEOLOGICAL MARKERS:

San Andres	575'
Glorietta	1715'
Tubb	3200'
Abo	3875'
Wolfcamp	4675'

## 7. POSSIBLE MINERAL BEARING FORMATION:

Wolfcamp	Gas
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## 8. CASING PROGRAM:

Hole Size	Interval	OD of Casing	Weight	Thread	Collar	Grade
26"	0-40	20"	NA	NA	NA	Conductor
17½"	0-350	13 3/8"	48#	8-R	ST&C	H-40
12½"	0-1200'	8 5/8" or 9 5/8"	24# 36#	8-R	ST&C	J-55
7 7/8" 8 3/4"	0-9580'	5½"	17#	8-R	LT&C	N-80

COLLAPSE 1.25 BURST 1.00 TENSION 1.8 BODY YIELD 1.5

## APPLICATION TO DRILL

LCX ENERGY, LLC.  
 COLLINS RANCH FEDERAL COM. #3H  
 UNIT "B" SECTION 31  
 T17S-R24E EDDY CO. NM

9. SETTING DEPTHS & CEMENTING:

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix
2. Drill 17 1/2" hole to 350'. Run and set 350' of 13 3/8" 48# H-40 ST&C casing. Cement with 195 Sx. of 35/65 Class "C" POZ + 6% D20, + 4 pps D24 + .125 pps D130. + 3% S1 WT 12.7 ppg, yield 1.94, tail in with 260 Sx. of Class "C" cement + 2% S1, +.125 ppg D130, + 2pps D24, WT 14.8 ppg, yield 1.34.
3. Drill 12 1/4" hole to 1200'. Run and set 1200' of 9 5/8" 36# J-55 ST&C casing. Cement with 280 Sx. of 35/65 Class "C" POZ cement + 6% D20, + 5 pps D24, + 3% S1, +.125 pps D130, WT 12.7 ppg, yield 1.95, tail in with 245 Sx. of Class "C" cement + 2% S1 WT 14.8 ppg, yield 1.34, circulate cement to surface. 8 5/8" 24# J-55 ST&C casing may be substituted for the 9 5/8" 36# J-55 ST&C casing, depending on the hole conditions.
4. Drill 7 7/8" hole to a measured depth of 9580' + . Run and set 9580' of 5 1/2" 17# N-80 LT&C casing. Cement with 495 Sx. of Class "C" 50/50 POZ + 5% D44 (bwow), + 10% D20, + .125 pps D130, + .3% D112 WT 11.9 ppg, yield 2.46., tail in with 370 Sx. of TWI Lightweight, + 100% D151, + 2% D174, + .6% D65, + 2% S1, +.2% D46. WT 13.0 ppg, yield 2.79. Estimate top of cement 1000'.

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 900 Series 3000 PSI WP B.O.P. consisting of an annular bag type preventor, middle blind rams, and bottom pipe rams. The B.O.P. will be nipped up on the 9 5/8" casing and tested to API specifications. The B.O.P. will be operated at least once each day and blind rams will be worked when the drill pipe is out of the hole. Full opening stabbing valve and upper kelly cock will be utilized. Exhibit "-1" shows a hydraulically operated closing unit and a 3" 5000 PSI WP choke manifold with dual adjustable chokes. No abnormal pressures or temperatures are expected while drilling this well.

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-350	8.4-8.7	29-34	NC	Fresh water use paper to control seepage.
350-1200	8.4-8.7	29-38	NC	Fresh water use paper to control seepage.
1200-5000'±	9.0-9.5	29-38	NC	Cut Brine, high viscosity sweeps, circulate outer reserve.
5000-9580'	9.0-9.6	29-38	*15 cc or less	Same as above use starch to control water loss and high viscosity sweeps to clean hole.

Water loss may have to be controlled in order to run casing.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run casing, water loss may have to be controlled.

APPLICATION TO DRILL

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

- A. Open hole logs: Log vertical hole with Dual Induction, SNP, MSFL, LDT, Gamma Ray, Caliper from TVD back to the 9 5/8" casing shoe.
- B. Cased hole log Gamma Ray, Neutron from 9 5/8" casing shoe back to surface.
- C. Rig up mud logger on hole at 3700'±.
- D. No cores or DST's are planned at this time.

13. POTENTIAL HAZARDS:

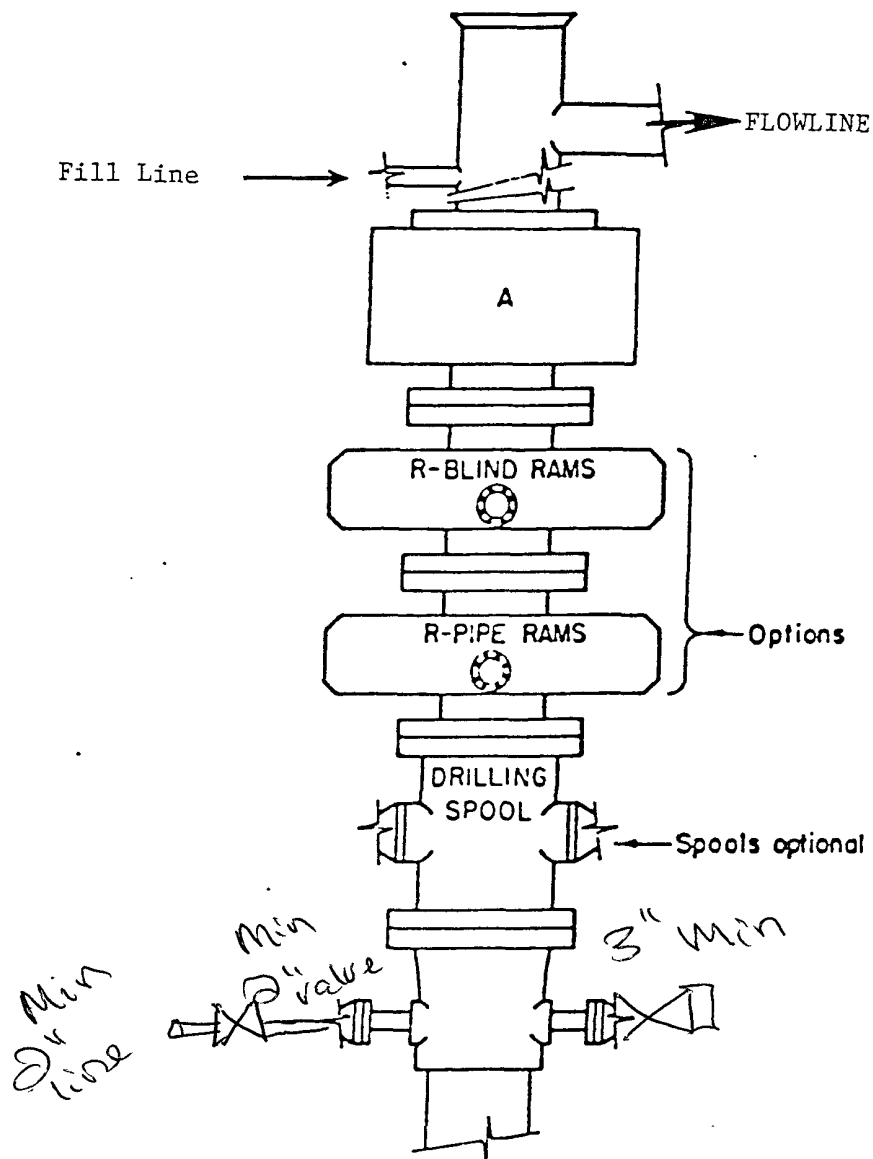
No abnormal pressures or temperatures are expected. There is no known presence of H<sup>2</sup>S in this area. If H<sup>2</sup>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3500 PSI, and Estimated BHT 165°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 40 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Wolfcamp formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as a gas well.



# **ARRANGEMENT SRRA**

SERIES 900 3000 PSI WP

EXHIBIT "E"  
SKETCH OF B.O.P. TO BE USED ON

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E. EDDY CO. NM

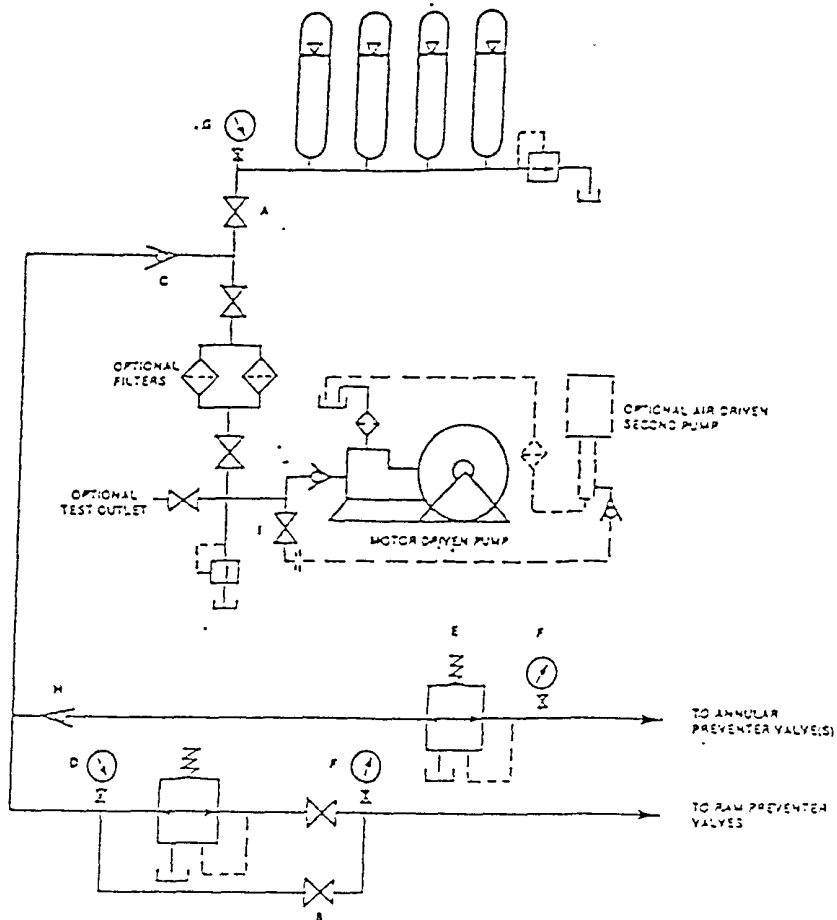


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

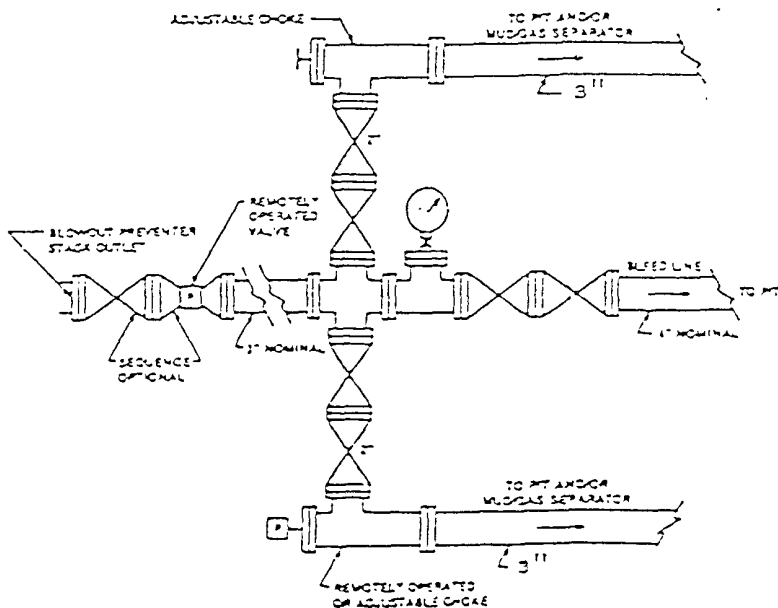


FIGURE K4-1. Typical choke manifold assembly for 5M rated wellhead pressure service - surface installation.

5M

### EXHIBIT "E-1" CHOKE MANIFOLD & CLOSING UNIT

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E EDDY CO. NM



## APPLICATION TO DRILL

LCK ENERGY, LLC.  
 COLLINS RANCH UNIT FED. COM. #3H  
 UNIT "B" SECTION 31  
 T17S-R24E EDDY CO. NM

HORIZONTAL DRILLING PROCEDURE  
 WOLFCAMP WELLS  
 EDDY CO. NEW MEXICO

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix
2. Drill 17 1/2" hole to 350'. Run and set 350' of 13 3/8" 48# H-40 ST&C casing. Cement with 195 Sx. of 35/65 Class "C" POZ + 6% D20, + 4 pps D24 + .125 pps D130 + 3% S1 WT 12.7 ppg, yield 1.94, tail in with 260 Sx. of Class "C" cement + 2% S1, +.125 ppg D130, + 2pps D24, WT 14.8 ppg, yield 1.34.
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4. Drill 7 7/8" hole to a measured depth of 9580' + . Run and set 9580' of 5 1/2" 17# N-80 LT&C casing. Cement with 495 Sx. of Class "C" 50/50 POZ + 5% D44 (bwow), + 10% D20, + .125pps D130, + .3% D112 WT 11.9 ppg, yield 2.46., tail in with 370 Sx. of TWI Lightweight, + 100% D151, + 2% D174, + .6% D65, + 2% S1, +.2% D46. WT 13.0ppg, yield 2.79. Estimate top of cement 1000'.

Contingency Strings:

If lost circulation occurs in the surface hole:

- 2a. Run and set 350' of 13-3/8" 48# H-40 ST&C casing. Cement with 200 sx 35/65 Poz/C + 6% gel and tail in with 200 sx of Class "C" cement + 2% CaCl, circulate cement to surface.

If hole conditions dictate running a 7" <sup>STC</sup> contingency string in the 8-3/4" hole:

- 4a. Run approx. 5100 ft 7" 28# J55 or stronger casing to TD. Cement with 700 sx class 'C' cement + add's attempting bringing TOC to approx. 1,000 ft. This may be done in the vertical pilot hole or at the end of the 8-3/4" curve section.
- 4b. Run whipstock and cut a window in the 7" casing (or drill out with 6-1/8" BHA if 7" set at end of curve). Drill to TD.
- 5a. Step 5 will be omitted.
- 6a. Run and set approximately 4400 ft 4-1/2" 11.6# N/L80 liner from TD to approximately 200' above the window/7" casing shoe. Cement with approx. 110 sx C + 200% CaCO3 (acid soluble cement) + add's attempting to bring TOC above liner top.

*yld 2.60  
 per Joe Janica  
 8/2/2007*

FRESH WATER WILL BE USED TO DRILL THE 350' SURFACE HOLE AND THE 1200' INTERMEDIATE HOLE.

THERE IS NO KNOWN PRESENCE OF ANY H<sub>2</sub>S IN THIS AREA. OTHER WELLS DRILLED HAVE NOT ENCOUNTERED ANY H<sub>2</sub>S WHILE DRILLING.

# Proposal

<b>Report Date:</b> May 25, 2007	<b>Survey / DLS Computation Method:</b> Minimum Curvature / Lubinski
<b>Client:</b> LCX Energy	<b>Vertical Section Azimuth:</b> 358.080°
<b>Field:</b> Eddy County, NM Nad 83	<b>Vertical Section Origin:</b> N 0.000 ft, E 0.000 ft
<b>Structure / Slot:</b> Collins Ranch State #3 / Collins Ranch State #3	<b>TVD Reference Datum:</b> RKB
<b>Well:</b> Collins Ranch State #3	<b>TVD Reference Elevation:</b> 0.0 ft relative to
<b>Borehole:</b> Collins Ranch State #3	<b>Sea Bed / Ground Level Elevation:</b> 0.000 ft relative to
<b>UWI/API#:</b>	<b>Magnetic Declination:</b> 8 581°
<b>Survey Name / Date:</b> Collins Ranch State #3_r1 / May 25, 2007	<b>Total Field Strength:</b> 49292.059 nT
<b>Tort / AHD / DDI / ERD ratio:</b> 90 000° / 4825.21 ft / 5 924 / 0.973	<b>Magnetic Dip:</b> 60.637°
<b>Grid Coordinate System:</b> NAD83 New Mexico State Planes, Eastern Zone, US Feet	<b>Declination Date:</b> May 25, 2007
<b>Location Lat/Long:</b> N 32 47 54.504, W 104 37 31.026	<b>Magnetic Declination Model:</b> IGRF 2005
<b>Location Grid N/E Y/X:</b> N 654340.825 ftUS, E 451628.845 ftUS	<b>North Reference:</b> Gnd North
<b>Grid Convergence Angle:</b> -0.15814711°	<b>Total Corr Mag North -&gt; Grid North:</b> +8.739°
<b>Grid Scale Factor:</b> 0.99991831	<b>Local Coordinates Referenced To:</b> Well Head

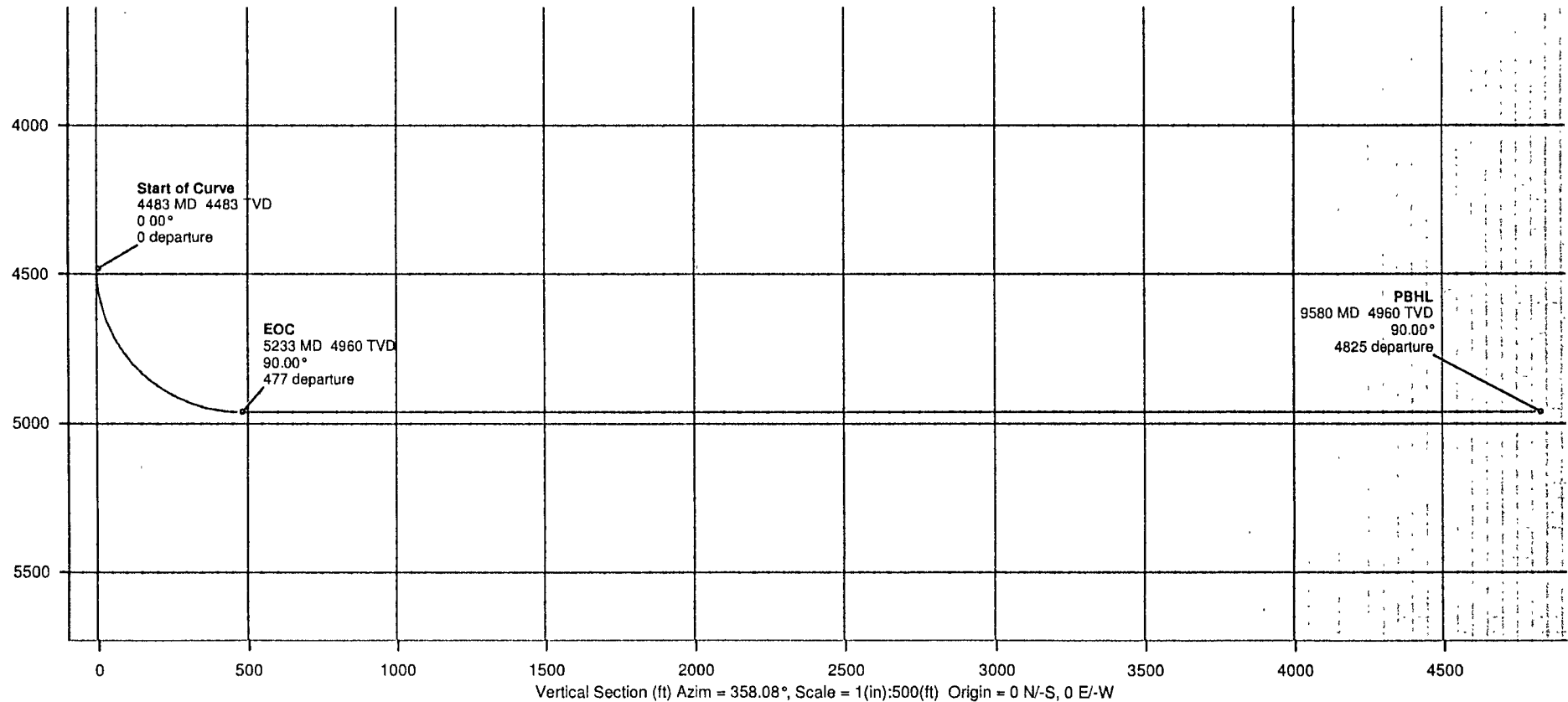
Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)
Tie-In	0.00	0.00	358.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	100.00	0.00	358.08	100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	200.00	0.00	358.08	200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	300.00	0.00	358.08	300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	400.00	0.00	358.08	400.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	500.00	0.00	358.08	500.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	600.00	0.00	358.08	600.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	700.00	0.00	358.08	700.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	800.00	0.00	358.08	800.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	900.00	0.00	358.08	900.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1000.00	0.00	358.08	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1100.00	0.00	358.08	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1200.00	0.00	358.08	1200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1300.00	0.00	358.08	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1400.00	0.00	358.08	1400.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1500.00	0.00	358.08	1500.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1600.00	0.00	358.08	1600.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1700.00	0.00	358.08	1700.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1800.00	0.00	358.08	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1900.00	0.00	358.08	1900.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2000.00	0.00	358.08	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2100.00	0.00	358.08	2100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2200.00	0.00	358.08	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2300.00	0.00	358.08	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2400.00	0.00	358.08	2400.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2500.00	0.00	358.08	2500.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2600.00	0.00	358.08	2600.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2700.00	0.00	358.08	2700.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2800.00	0.00	358.08	2800.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2900.00	0.00	358.08	2900.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3000.00	0.00	358.08	3000.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3100.00	0.00	358.08	3100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3200.00	0.00	358.08	3200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3300.00	0.00	358.08	3300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3400.00	0.00	358.08	3400.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3500.00	0.00	358.08	3500.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3600.00	0.00	358.08	3600.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3700.00	0.00	358.08	3700.00	0.00	0.00	0.00	0.00	0.00	0.00	---

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)
	3800.00	0.00	358.08	3800.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	3900.00	0.00	358.08	3900.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	4000.00	0.00	358.08	4000.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	4100.00	0.00	358.08	4100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	4200.00	0.00	358.08	4200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	4300.00	0.00	358.08	4300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	4400.00	0.00	358.08	4400.00	0.00	0.00	0.00	0.00	0.00	0.00	---
Start of Curve	4482.54	0.00	358.08	4482.54	0.00	0.00	0.00	0.00	0.00	0.00	358.08M
	4500.00	2.10	358.08	4500.00	0.32	0.32	-0.01	0.32	358.08	12.00	358.08M
	4600.00	14.10	358.08	4598.82	14.38	14.37	-0.48	14.38	358.08	12.00	HS
	4700.00	26.10	358.08	4692.56	48.67	48.65	-1.63	48.67	358.08	12.00	HS
	4800.00	38.10	358.08	4777.12	101.71	101.65	-3.41	101.71	358.08	12.00	HS
	4900.00	50.10	358.08	4848.81	171.17	171.07	-5.73	171.17	358.08	12.00	HS
	5000.00	62.10	358.08	4904.49	254.01	253.87	-8.51	254.01	358.08	12.00	HS
	5100.00	74.10	358.08	4941.72	346.63	346.43	-11.61	346.63	358.08	12.00	HS
EOC	5200.00	86.10	358.08	4958.89	444.95	444.71	-14.91	444.95	358.08	12.00	HS
	5232.54	90.00	358.08	4960.00	477.46	477.20	-16.00	477.46	358.08	12.00	LS
	5300.00	90.00	358.08	4960.00	544.93	544.62	-18.26	544.93	358.08	0.00	---
	5400.00	90.00	358.08	4960.00	644.93	644.57	-21.61	644.93	358.08	0.00	---
	5500.00	90.00	358.08	4960.00	744.93	744.51	-24.96	744.93	358.08	0.00	---
	5600.00	90.00	358.08	4960.00	844.93	844.46	-28.31	844.93	358.08	0.00	---
	5700.00	90.00	358.08	4960.00	944.93	944.40	-31.66	944.93	358.08	0.00	---
	5800.00	90.00	358.08	4960.00	1044.93	1044.34	-35.01	1044.93	358.08	0.00	---
	5900.00	90.00	358.08	4960.00	1144.93	1144.29	-38.36	1144.93	358.08	0.00	---
	6000.00	90.00	358.08	4960.00	1244.93	1244.23	-41.71	1244.93	358.08	0.00	---
	6100.00	90.00	358.08	4960.00	1344.93	1344.17	-45.06	1344.93	358.08	0.00	---
	6200.00	90.00	358.08	4960.00	1444.93	1444.12	-48.41	1444.93	358.08	0.00	---
	6300.00	90.00	358.08	4960.00	1544.93	1544.06	-51.76	1544.93	358.08	0.00	---
	6400.00	90.00	358.08	4960.00	1644.93	1644.01	-55.11	1644.93	358.08	0.00	---
	6500.00	90.00	358.08	4960.00	1744.93	1743.95	-58.46	1744.93	358.08	0.00	---
	6600.00	90.00	358.08	4960.00	1844.93	1843.89	-61.81	1844.93	358.08	0.00	---
	6700.00	90.00	358.08	4960.00	1944.93	1943.84	-65.16	1944.93	358.08	0.00	---
	6800.00	90.00	358.08	4960.00	2044.93	2043.78	-68.51	2044.93	358.08	0.00	---
	6900.00	90.00	358.08	4960.00	2144.93	2143.73	-71.86	2144.93	358.08	0.00	---
	7000.00	90.00	358.08	4960.00	2244.93	2243.67	-75.21	2244.93	358.08	0.00	---
	7100.00	90.00	358.08	4960.00	2344.93	2343.61	-78.56	2344.93	358.08	0.00	---
	7200.00	90.00	358.08	4960.00	2444.93	2443.56	-81.91	2444.93	358.08	0.00	---
	7300.00	90.00	358.08	4960.00	2544.93	2543.50	-85.26	2544.93	358.08	0.00	---
	7400.00	90.00	358.08	4960.00	2644.93	2643.44	-88.61	2644.93	358.08	0.00	---
	7500.00	90.00	358.08	4960.00	2744.93	2743.39	-91.96	2744.93	358.08	0.00	---
	7600.00	90.00	358.08	4960.00	2844.93	2843.33	-95.31	2844.93	358.08	0.00	---
	7700.00	90.00	358.08	4960.00	2944.93	2943.28	-98.66	2944.93	358.08	0.00	---
	7800.00	90.00	358.08	4960.00	3044.93	3043.22	-102.01	3044.93	358.08	0.00	---
	7900.00	90.00	358.08	4960.00	3144.93	3143.16	-105.36	3144.93	358.08	0.00	---
	8000.00	90.00	358.08	4960.00	3244.93	3243.11	-108.71	3244.93	358.08	0.00	---
	8100.00	90.00	358.08	4960.00	3344.93	3343.05	-112.06	3344.93	358.08	0.00	---
	8200.00	90.00	358.08	4960.00	3444.93	3443.00	-115.41	3444.93	358.08	0.00	---
	8300.00	90.00	358.08	4960.00	3544.93	3542.94	-118.76	3544.93	358.08	0.00	---
	8400.00	90.00	358.08	4960.00	3644.93	3642.88	-122.11	3644.93	358.08	0.00	---
	8500.00	90.00	358.08	4960.00	3744.93	3742.83	-125.46	3744.93	358.08	0.00	---
	8600.00	90.00	358.08	4960.00	3844.93	3842.77	-128.81	3844.93	358.08	0.00	---
	8700.00	90.00	358.08	4960.00	3944.93	3942.72	-132.17	3944.93	358.08	0.00	---
	8800.00	90.00	358.08	4960.00	4044.93	4042.66	-135.52	4044.93	358.08	0.00	---
	8900.00	90.00	358.08	4960.00	4144.93	4142.60	-138.87	4144.93	358.08	0.00	---

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)
	9000.00	90.00	358.08	4960.00	4244.93	4242.55	-142.22	4244.93	358.08	0.00	---
	9100.00	90.00	358.08	4960.00	4344.93	4342.49	-145.57	4344.93	358.08	0.00	---
	9200.00	90.00	358.08	4960.00	4444.93	4442.43	-148.92	4444.93	358.08	0.00	---
	9300.00	90.00	358.08	4960.00	4544.93	4542.38	-152.27	4544.93	358.08	0.00	---
	9400.00	90.00	358.08	4960.00	4644.93	4642.32	-155.62	4644.93	358.08	0.00	---
	9500.00	90.00	358.08	4960.00	4744.93	4742.27	-158.97	4744.93	358.08	0.00	---
PBHL	9580.28	90.00	358.08	4960.00	4825.21	4822.50	-161.66	4825.21	358.08	0.00	---

# LCX Energy

WELL Collins Ranch State #3				FIELD Eddy County, NM Nad 83				STRUCTURE Collins Ranch State #3			
Magnetic Parameters Model IGRF 2005				Surface Location Lat N32 47 54.504 Lon W104 37 31.026				Miscellaneous Sta Collins Ranch State #3 Plan Collins Ranch State #3.11			
Dip 80.837° Mag Dec -8.581°				Date May 25 2007 FS 49292.1 nT				TVD Ref RKB 40.00 ft above Srvy Date May 25, 2007			
				Northing 654340.82 RUS Easting 451628.84 RUS Scale Fact 0.9999183067							

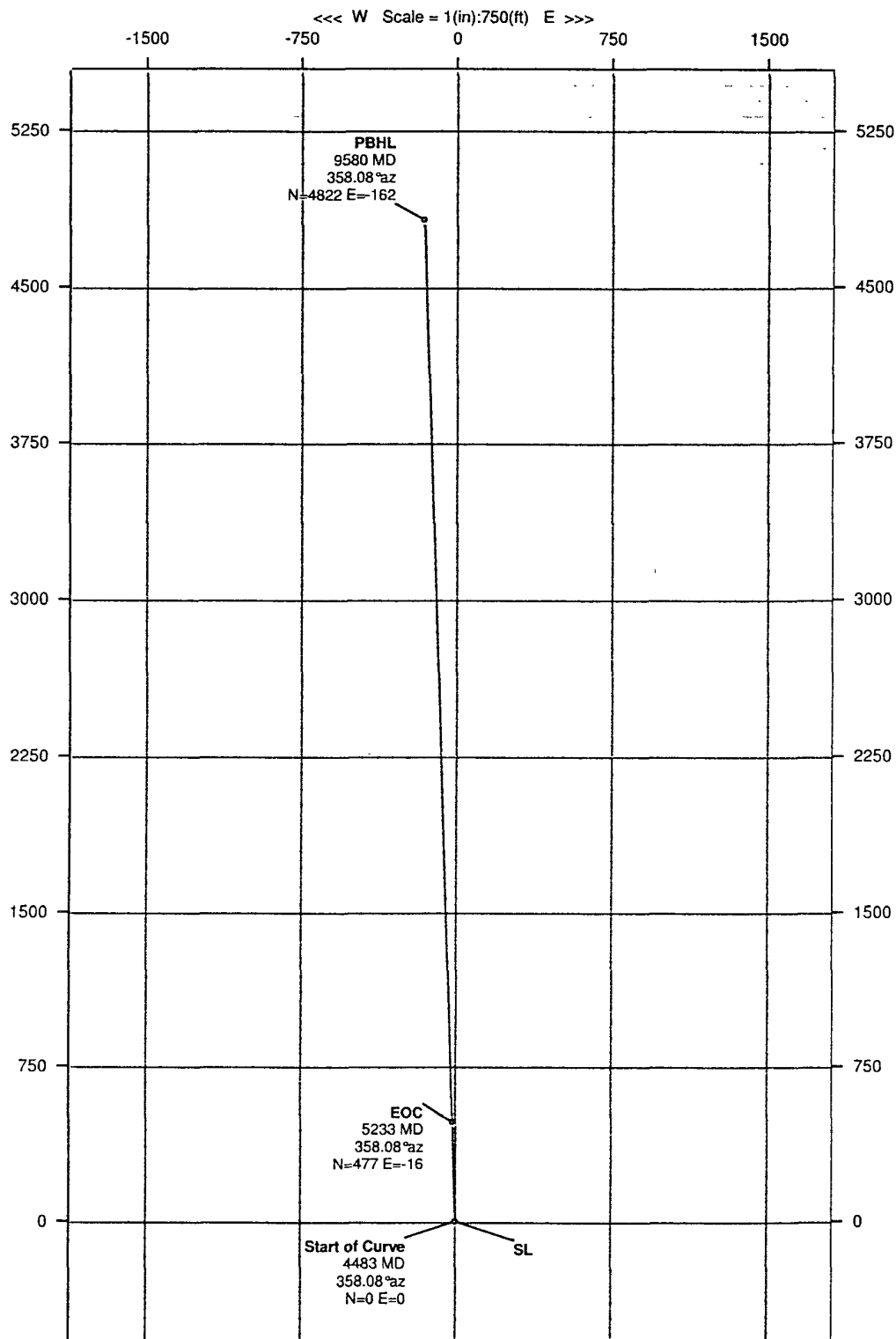


**INTREPID**  
Directional Drilling Specialists



# LCX Energy

WELL	Collins Ranch State #3	FIELD	Eddy County, NM Nad 83	STRUCTURE	Collins Ranch State #3
Magnetic Parameters	Dev: 60 637° Model: IGRF 2005	Date: May 25, 2007 Mag Dec: +8.581°	Surface Location Lat: N32 47 54.504 Lon: W104 37 31 026	NAD83 New Mexico State Plane, Eastern Zone, US Feet Northing: 454340.82 RLGS Easting: 451628.94 RLGS Grid Conv: -0.15814711° Scale Fact: 0.9909183067	Miscellaneous Stat: Collins Ranch State #3 Plan: Collins Ranch State #3, #1 TVD Ref: FK3 (0.00 ft above) Srvy Date: May 25, 2007



**INTREPID**  
Directional Drilling Specialists



**LCX ENERGY, LLC**  
110 N. Marienfeld St., Suite 200  
Midland, TX 79701

**Horizontal Drilling Procedure  
Abo Wildcat Horizontals  
(Eddy Co., NM)**

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17-1/2" hole to 350'.
3. Drill 12-1/4" hole to 1200'. Run and set 1200' of 9-5/8" 36# J-55 ST&C or 8-5/8" 24# J55 casing. Cement to surface with 35/65 Poz/C + 5% NaCl + 6% Bentonite lead cement, tail in with 100 sx. of Class "C" cement + 2% CaCl<sub>2</sub>.
4. Drill 7-7/8" or 8-3/4" hole. Drill 7-7/8" curve and land lateral in pay zone (approx. 4900 ft TVD). Pickup lateral drilling assembly with an 8-3/4" or 7-7/8" bit and drill a +/-4000' lateral to 660' from lease line (approx. 4000 ft vertical section).
5. Run and set 5-1/2" 17# N80 or stronger production casing. Cement 5-1/2" with acid soluble cement through the lateral and 400 sx 50/50 Poz/C + 10% gel and tail in with 200 sx C + 200% CaCO<sub>3</sub> (acid soluble cement) + fluid loss additive + retarder (as required), attempting to bring top of cement to 1,000'.

**Contingency Strings:**

If lost circulation occurs in the surface hole:

- 2a. Run and set 350' of 13-3/8" 48# H-40 ST&C casing. Cement with 200 sx 35/65 Poz/C + 6% gel and tail in with 200 sx of Class "C" cement + 2% CaCl, circulate cement to surface.

If hole conditions dictate running a 7" contingency string in the 8-3/4" hole :

- 4a. Run approx. 5100 ft 7" 26# J55 or stronger casing to TD. Cement with 700 sx class 'C' cement + add's attempting bringing TOC to approx. 1,000 ft. This may be done in the vertical pilot hole or at the end of the 8-3/4" curve section.
- 4b. Run whipstock and cut a window in the 7" casing (or drill out with 6-1/8" BHA if 7" set at end of curve). Drill to TD.
- 5a. Step 5 will be omitted.
- 6a. Run and set approximately 4400 ft 4-1/2" 11.6# N/L80 liner from TD to approximately 200' above the window/7" casing shoe. Cement with approx. 110 sx C + 200% CaCO<sub>3</sub> (acid soluble cement) + add's attempting to bring TOC above liner top.

FRESH WATER WILL BE USED TO DRILL THE 350' SURFACE HOLE AND THE 1200' INTERMEDIATE HOLE.

THERE IS NO KNOWN PRESENCE OF ANY H<sub>2</sub>S IN THIS AREA. OTHER WELLS DRILLED HAVE NOT ENCOUNTERED ANY H<sub>2</sub>S WHILE DRILLING.

## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
2. H<sub>2</sub>S Detection and Alarm Systems
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
3. Windsock and/or wind streamers
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area should be high enough to be visible.
  - C. There should be a windsock at entrance to location.
4. Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H<sub>2</sub>S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
  - A. See exhibit "E"
6. Communication
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
  - A. Exhausts will be watered.
  - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
  - C. If location is near any dwelling a closed D.S.T. will be performed.



## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

8. Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
9. If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

SURFACE USE PLAN

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E EDDY CO. NM

1. EXISTING AND PROPOSED ROADS:

- A. Exhibit "B" is a reproduction of a County General Hi-way map showing existing roads. Exhibit "C" is a reproduction of a USGS topographic map showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed to BLM specifications.
- B. Exhibit "A" shows the proposed well site as staked.
- C. Directions to location: From the junction of US Hi-way 285 and US Hi-way 82 go West 9.75± miles, turn Right (South) go 1.9± miles bear Right (West) go .6± miles bear Left (South ) go 1 mile turn Right (West) go 2.3 miles and location is on the South side of road.
- D. There are no dwellings within 1 mile of location.
- E. Exhibit "C" shows existing and proposed roads.

2. PLANNED ACCESS ROADS: Approximately 300' of new road will be constructed.

- A. The access roads will be crowned and sitched to a 14' wide travel surface, within a 30' R-O-W.
- B. Gradient of all roads will be less than 5%.
- C. Turn-outs will be constructed where necessary.
- D. If require new access roads will be surface with a minimum of 4-6" of caliche. this material will be obtained from a local source.
- E. Center line for new roads will be flagged, road construction will be done as field conditions require.
- F. Culverts will be placed in the access road as drainage conditions require. Roads will be constructed to use low water crossings for drainage as required by the topographic conditions.

3. LOCATION OF EXISTING WELLS WITHIN A ONE MILE RADIUS: EXHIBIT "A-1"

- A. Water wells - None within 1 mile of location.
- B. Disposal wells - None known
- C. Drilling wells - None known
- D. Producing wells - As shown on Exhibit "A-1"
- E. Abandoned wells - As shown on Exhibit "A-1"

## SURFACE USE PLAN

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E EDDY CO. NM

4. If on completion this well is a producer the operator will lay pipelines and construct powerlines along existing road R-O-W's or other existing R-O-W's. Exhibit "C" shows proposed roads , flowlines and powerlines.

### 5. LOCATION & TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the location access roads or piped to location in flexible lines laid on top of the ground.

### 6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the excavation of the drill site, if additional material is required it will be obtained from a local source and transported over the location access roads as shown on Exhibit "C".

### 7. METHODS OF HANDLING WASTE:

- A. All trash, junk and other waste material will be contained in trash cages or trash bins in order to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- B. Sewage from living quarters will be drained into holding tanks and will be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of well.
- C. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken out for further drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a State approved disposal site. Later the pits will be broken out to speed drying. Water produced during completion will be stored in tanks and disposed of in State approved disposal site. Oil and condensate produced during completion will be put in storage tanks and sold.
- D. Drill cuttings will be disposed of in reserve pits or if necessary will be taken to a State approved landfarm and disposed of properly.
- E. Any remaining salts or mud additives will be collected by the supplier and to stock, this includes all broken bags.

### 8. ANCILLARY FACILITIES:

- A. No camps or air strips will be constructed on location.

## SURFACE USE PLAN

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E EDDY CO. NM

### 9. WELL SITE LAYOUT:

- A. Exhibit "D" shows the proposed well site layout.
- B. This Exhibit shows the location of reserve pit, sump pits, and living facilities.
- C. Mud pits in the active circulating system will be steel pits and the reserve pits will be unlined unless subsurface conditions encountered during pit construction indicate that a plastic liner is required to contain lateral migration.
- D. If needed the reserve pits will be lined with polyethelane. The pit liner will be no less than 12 mils thick and the liner will be extended at least 3 feet over the top of the dikes and secured in place to keep edge of liner in place.
- E. The reserve pit will be fenced on three sides and fenced with four strands of barbed wire during drilling and completion phases. The 4th side will be fenced after drilling operations are complete and the drilling rig has moved out. If the well is a producer the mud pits will remain fenced in until the mud has dried up enough to break out the pits and reclaimed according to BLM requirements.

### 10. PLANS FOR RESTORATION OF SURFACE:

Rehabilitation of the location and reserve pits will be allowed to dry properly, fluids may be moved and disposed of in accordance with article 7-E as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any will be reshaped to the original configuration with provisions made to alleviate future erosion. In case of the well completed as a producer the drilling pad will be necessary to construct production facilities. After the area has been shaped and contoured top soil from the spoil pile will be placed over the disturbed area to the extent possible so that revegetation procedures can be accomplished to comply with the BLM specifications.

If the well is a dry hole the pad and road area will be contoured to match the existing terrain. Top soil will be spread to the extent possible and revegetation will be carried out according to the BLM specifications.

Should the well be a producer the previously noted procedures will apply to those areas which are not required for production facilities.

SURFACE USE PLAN

LCX ENERGY, LLC.  
COLLINS RANCH UNIT FED. COM. #3H  
UNIT "B" SECTION 31  
T17S-R24E EDDY CO. NM

11. OTHER INFORMATION:

- A. The surface of land in this area consists of rolling plains relatively flat with Northeast exposure and drainage. Soils are tan/brown/grey loamy sandy silte with minor amputns of caliche. The vegetation consists of Heron bill, blatter pod, loco weed, broomweed, snakeweed, prickley pear, cholla and various native grasses.
- B. Portions of this drilling unit are on State lands and minerals and other parts are on Fee lands and Federal minerals *Change per Joe Janica 8-2-07 DJ*
- C. An archeological survey will be conducted on the well location and the access roads, and the report will be filed with The Bureau of Land Management Carlsbad Field Office.
- D. There are no dwellings near this location:

12. OPERATORS REPRESENTATIVE:

BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC.  
P.O. BOX 2188  
HOBBS, NEW MEXICO 88241  
OFFICE PHONE 505-391-8503  
CELL 505-390-1598  
JOE T. JANICA

DURING AND AFTER CONSTRUCTION

LCX ENERGY, LLC.  
110 NORTH MARIENFELD  
SUITE 200  
MIDLAND, TEXAS 79701  
OFFICE PHONE 432-262-4011  
LARRY GILLETTE.

13. CERTIFICATION: I hereby certify that I or persons under my direct supervision have inspected the proposed drill site and access routes, that I am familiar with the conditions which currently exist, that the statements made in this plan are to the best of my knowledge are true, and correct, and that the work associated with the operations proposed herein will be performed by LXC ENERGY, LLC. it's contractors/subcontractors is in the confirmity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of the U.S.C. 1001 for the filing of a false statement.

NAME : Joe T. Janica *Joe T. Janica*

DATE :

06/18/07

TITLE :

Agent

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: LCX Energy, LLC  
Well Name & No. 3H-Collins Ranch Federal Com  
Location SHL: 0200' FNL, 1711' FEL, Sec. 31, T-17-S, R-24-E, Eddy County, NM  
Location BHL: 0660' FNL, 1880' FEL, Sec. 30, T-17-S, R-24-E, Eddy County, NM  
Lease: NM-108958

.....

### I. DRILLING OPERATIONS REQUIREMENTS:

- A. The Bureau of Land Management (BLM) is to be notified a minimum of 2 hours in advance for a representative to witness:
1. Spudding well
  2. Setting and/or Cementing of all casing strings
  3. BOPE tests
- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822
- B. **Although no Hydrogen Sulfide has been reported, it is always a potential hazard.**
- C. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
- D. If floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### II. CASING:

- A. The 13-3/8 inch casing will be used as surface casing when lost circulation occurs prior to 350 feet and cemented to the surface.
1. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  2. Wait on cement (WOC) time for a primary cement job will be a minimum of **18 hours for a water basin** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  3. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  4. **If cement falls back, remedial action will be done prior to drilling out that string.**

Possible lost circulation in the Grayburg and San Andres formations.

Possible bursts of high pressure gas in the Wolfcamp

- B. If lost circulation does not occur in the surface hole, 8-5/8" or 9-5/8" casing shall be set as surface casing at approximately 1200 feet and cemented to the surface. **Otherwise, the casing will be set as intermediate casing and cemented to surface.** If cement does not circulate see A.1 thru 4.

- C. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement to extend a minimum of 200' inside the 8-5/8" or 9-5/8" casing when used as an intermediate string. If 8-5/8" or 9-5/8" is used as surface casing, cement to come to surface on production casing.** If cement does not circulate see A.1 thru 4.

**Running 7" contingency casing string will be dictated by hole conditions and cemented a minimum of 200 feet into next larger casing string. The 7" contingency string can only be used if the 9-5/8" casing string is in place, the 8-5/8" casing will not provide the minimum spacing between casings required in Onshore Order 2.**

**If 4 1/2 inch liner is used, cement to circulate to top of liner.**

- D. If hardband drill pipe is rotated inside casing; returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### **III. PRESSURE CONTROL:**

- A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec 17.
- B. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
1. The tests shall be done by an independent service company.
  2. The results of the test shall be reported to the appropriate BLM office.
  3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

### **IV. DRILLING MUD:**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well

**Engineer on call phone (after hours): 505-706-2779**

**WWI 071107**