

HOBBS OCD

OCD Hobbs

ATS-12-660

Form 3160-3
(April 2004)

AUG 13 2012

RECEIVED

SECRETARY'S POTASH

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER		7. If Unit or CA Agreement, Name and No. Pending	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		8. Lease Name and Well No Lynch 23 Federal Com No. 4 38591	
2. Name of Operator Cimarex Energy Co. of Colorado		9. API Well No. 30-025- 40726	
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701	3b. Phone No. (include area code) 432-571-7800	10. Field and Pool, or Exploratory Lea; Bone Spring, S 37580	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 326 FNL & 1727 FEL At Bottom Hole 330 FSL & 1980 FEL Unit B At proposed prod. Zone 330 FSL & 1980 FEL Horizontal Bone Spring test Unit D		11. Sec., T., R. M. or Blk. and Survey or Area 23-20S-34E	
14. Distance in miles and direction from nearest town or post office*		12. County or Parish Lea	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line if any) 326'	16. No of acres in lease NM-123524 - 160 acres NM-124663 - 80 acres	17. Spacing Unit dedicated to this well W2E2 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 103' SE from #1	19. Proposed Depth MD 14070' TVD 9625'	20. BLM/BIA Bond No. on File NM-2575	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3658' GR	22. Approximate date work will start* 10.01.12	23. Estimated duration 25-30 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	Name (Printed/Typed) Zeno Farris	Date 06.20.12
Title Manager Operations Administration		
Approved By (Signature) /s/ Jesse J. Juen	Name (Printed/Typed) /s/ Jesse J. Juen	Date 8-1-2012
Title STATE DIRECTOR	Office NM STATE 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

Title 18 U.S.S. 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.

* (Instructions on page 2)

APPROVAL FOR TWO YEARS

Capitan Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

Drilling Plan
Lynch 23 Federal Com No.4
Cimarex Energy Co. of Colorado
Unit B, Section 23
T20S-R34E, Lea County, NM

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

- 1 **Location:** SHL 326 FNL & 1727 FEL
BHL 330 FSL & 1980 FEL
- 2 **Elevation Above Sea Level:** 3658' GR
- 3 **Geologic Name of Surface Formation:** Quaternary Alluvium Deposits
- 4 **Drilling Tools and Associated Equipment:** Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 **Proposed Drilling Depth:** MD 14070' TVD 9625'
- 6 **Estimated Tops of Geological Markers:**
- | | | | |
|-------------|-------|-------------|-------|
| Rustler | 1600' | Capitan | 4040' |
| Top Salt | 1850' | Delaware | 5760' |
| Bottom Salt | 3440' | Bone Spring | 8300' |
| Yates | 3730' | | |
- 7 **Possible Mineral Bearing Formations:**
- | | |
|----------------|-----|
| Bone Spring | Oil |
| Delaware | Oil |
| Yates/7 Rivers | Oil |

8 **Proposed Mud Circulating System:**

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 1700'	8.4 - 8.6	28	NC	FW
1700' to 5600'	10.0	30-32	NC	Brine water
5600' to 14070'	8.4 - 9.5	30-32	NC	FW, brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

Proposed drilling Plan

Drill 8¾" hole with kickoff point @ 9257' TVD. Drill through curve to to TMD 14070', TVD 9625'. Run 5½ casing from 0-14070' and cement.

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 T20S-R34E, Lea County, NM

9 Casing & Cementing Program:

String	Hole Size	Depth			Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to	1700'	New	13¾"	54.5#	STC	J-55
Intermediate	12¼"	0'	to	5600'	New	9¾"	40#	LTC	**N-80
Production	8¾"	0'	to	14070'	New	5 ½"	26#	LTC	P-110

10 Cementing:

Surface Lead: 1100 sks Class C + 4% Bentonite + 2% CaCl, 13.5 ppg, 1.75 yield
 Tail: 270 sks Class C + 2% CaCl, 14.8 ppg, 1.34 yield, 100% excess
TOC Surface Centralizers per Onshore Order 2.III.B.1.f

Intermediate Lead: 1200 sks 35:65 Poz C + 6% Bentonite, 12.9 ppg, 1.88 yield
 Tail: 350 sks Class C + 1% CaCl, 14.8 ppg, 1.34 yield, 50% excess
TOC Surface

Production Lead: 660 sks 50:50 Poz H + 10% Bentonite, 11.9 ppg, 2.45 yield, 25% excess
 Tail: 1390 sks 50:50 Poz H, 14.5ppg, 1.22 yield, 25% excess

TOC 5100'

Centralizers every 3rd joint in lateral to provide adequate cement every 100' unless lateral doglegs require greater spacing between centralizers.

According to the State engineer, depth to ground water is 115.' Fresh water zones will be protected by setting 13¾" casing at 1700' and cementing to surface. Hydrocarbon zones will be protected by setting 9¾" casing at 5600' and cementing to surface; and by setting 5½" casing at 14070' and cementing to 5100'.

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6

****Intermediate casing will be kept liquid filled while running in hole to meet BLM minimum collapse safety factor.**

11 Pressure Control Equipment:

Exhibit "E". A 13¾" 5000 PSI working pressure BOP system tested to 3000 psi, consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Mud gas separator will be installed before drilling out of surface casing.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the 13¾" casing through the running of production casing, the well will be equipped with a 5000 psi BOP system.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high.

Drilling Plan
Lynch 23 Federal Com No.4
Cimarex Energy Co. of Colorado
Unit B, Section 23
T20S-R34E, Lea County, NM

12 Testing, Logging and Coring Program: *See Corr*

- A. Mud logging program: 2 man unit from 5600' to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR - Surface to TD
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S Drilling Operations Plan." Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP **4331 psi** Estimated BHT **130°**

14 Road and Location Construction:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take 30-35 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

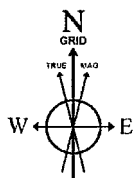
Bone Spring pay will be perforated and stimulated.

The proposed well will be tested and potentialized as **an oil well.**

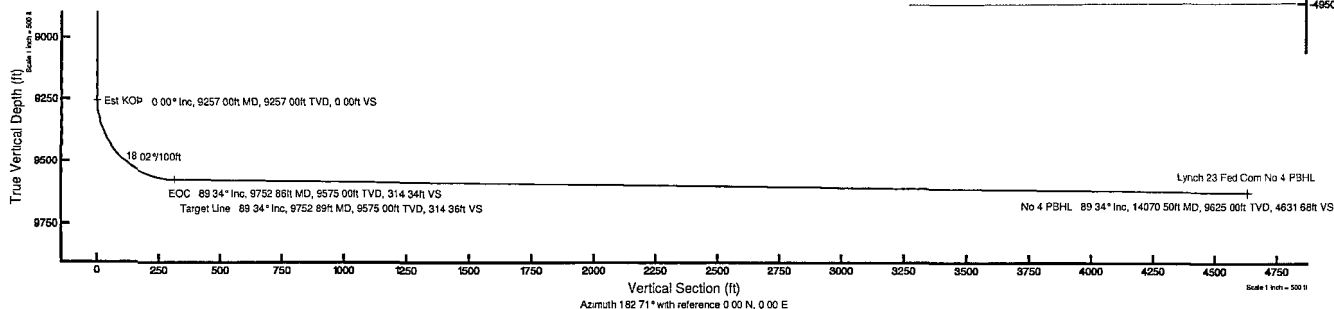
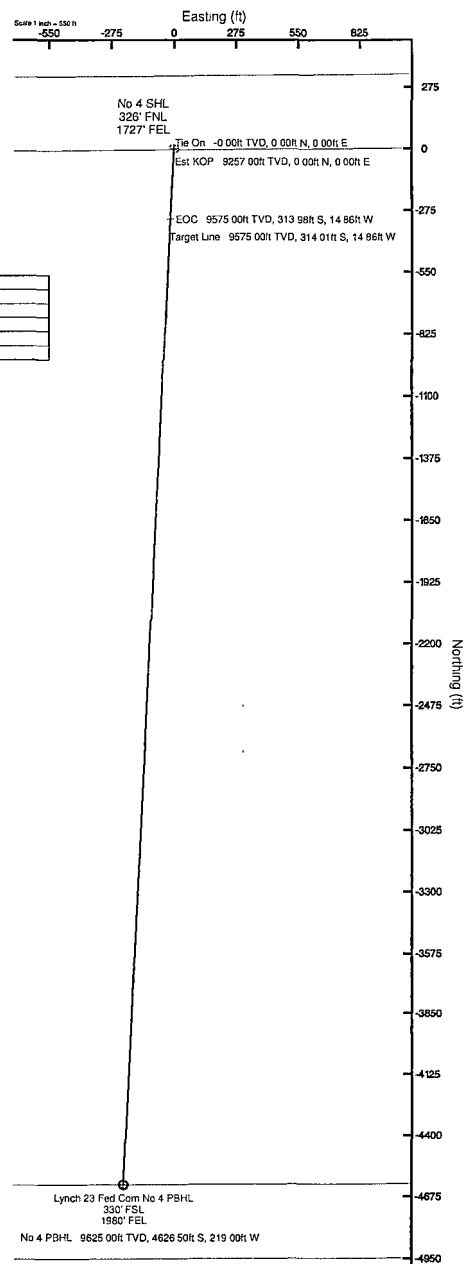


Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	0 00	0 000	182 710	0 00	0 00	0 00	0 00
Est KOP	9257 00	0 000	182 710	9257 00	0 00	0 00	0 00
EOC	9752 86	89 336	182 710	9575 00	-313 98	-14 86	314 34
Target Line	9752 89	89 336	182 710	9575 00	-314 01	-14 86	314 36
No 4 PBHL	14070 50	89 336	182 710	9625 00	-4626 50	-219 00	4631 68

Plot reference wellpath is $\mu_{\text{wellm}} 1$	
True vertical depths are referenced to Rig on No 4 SHL (RT)	Grid System NAD83 / TM New Mexico SP, Eastern Zone (3001) US feet
Measured depths are referenced to Rig on No 4 SHL (RT)	North Reference Grid north
Rig on No 4 SHL (RT) to Mean Sea Level 3556 feet	Scale True distance
Mean Sea Level to Mud line (At Slot No 4 SHL) -3556 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by gentry on 2/27/2012



BGGM (1945 0 to 2013 0) Dip 80 46° Field 48764 9 nT
Magnetic North is 7 58 degrees East of True North (at 2/27/2012)
Grid North is 0 43 degrees East of True North
To correct azimuth from True to Grid subtract 0 43 degrees
To correct azimuth from Magnetic to Grid add 7 15 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = $90 + 7.15 = 97.15$





Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4 SHL
Area	Lea County, NM	Well	No.4
Field	(Lynch) Sec 23, T20S, R34E	Wellbore	No.4 PWB
Facility	Lynch 23 Fed Com No.4		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect@ 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.99998	Report Generated	2/27/2012 at 12:08:11 PM
Convergence at slot	0.43° East	Database/Source file	WA Midland/No.4_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W
Facility Reference Pt			789464.50	570208.80	32°33'53.925"N	103°31'40.534"W
Field Reference Pt			789361.60	570203.60	32°33'53.881"N	103°31'41.737"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.4 SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No.4 SHL (RT) to Mean Sea Level	3656.00ft
Vertical Reference Pt	Rig on No.4 SHL (RT)	Rig on No.4 SHL (RT) to Mud Line at Slot (No.4 SHL)	0.00ft
MD Reference Pt	Rig on No.4 SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	182.71°



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Field	(Lynch) Sec 23, T20S, R34E	Wellbore	No.4 PWB
Facility	Lynch 23 Fed Com No.4		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	182.710	0.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	Tie On
100.00†	0.000	182.710	100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
200.00†	0.000	182.710	200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
300.00†	0.000	182.710	300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
400.00†	0.000	182.710	400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
500.00†	0.000	182.710	500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
600.00†	0.000	182.710	600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
700.00†	0.000	182.710	700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
800.00†	0.000	182.710	800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
900.00†	0.000	182.710	900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1000.00†	0.000	182.710	1000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1100.00†	0.000	182.710	1100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1200.00†	0.000	182.710	1200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1300.00†	0.000	182.710	1300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1400.00†	0.000	182.710	1400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1500.00†	0.000	182.710	1500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1600.00†	0.000	182.710	1600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1700.00†	0.000	182.710	1700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1800.00†	0.000	182.710	1800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
1900.00†	0.000	182.710	1900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2000.00†	0.000	182.710	2000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2100.00†	0.000	182.710	2100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2200.00†	0.000	182.710	2200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2300.00†	0.000	182.710	2300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2400.00†	0.000	182.710	2400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2500.00†	0.000	182.710	2500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2600.00†	0.000	182.710	2600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2700.00†	0.000	182.710	2700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2800.00†	0.000	182.710	2800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
2900.00†	0.000	182.710	2900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3000.00†	0.000	182.710	3000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3100.00†	0.000	182.710	3100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3200.00†	0.000	182.710	3200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3300.00†	0.000	182.710	3300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3400.00†	0.000	182.710	3400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3500.00†	0.000	182.710	3500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3600.00†	0.000	182.710	3600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3700.00†	0.000	182.710	3700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3800.00†	0.000	182.710	3800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
3900.00†	0.000	182.710	3900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4000.00†	0.000	182.710	4000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4100.00†	0.000	182.710	4100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4200.00†	0.000	182.710	4200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4300.00†	0.000	182.710	4300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4400.00†	0.000	182.710	4400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

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Area	Lea County, NM	Well	No.4
Field	(Lynch) Sec 23, T20S, R34E	Wellbore	No.4 PWB
Facility	Lynch 23 Fed Com No.4		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00†	0.000	182.710	4500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4600.00†	0.000	182.710	4600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4700.00†	0.000	182.710	4700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4800.00†	0.000	182.710	4800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
4900.00†	0.000	182.710	4900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5000.00†	0.000	182.710	5000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5100.00†	0.000	182.710	5100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5200.00†	0.000	182.710	5200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5300.00†	0.000	182.710	5300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5400.00†	0.000	182.710	5400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5500.00†	0.000	182.710	5500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5530.00†	0.000	182.710	5530.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	Cherry Canyon
5600.00†	0.000	182.710	5600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5700.00†	0.000	182.710	5700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5800.00†	0.000	182.710	5800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
5900.00†	0.000	182.710	5900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6000.00†	0.000	182.710	6000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6100.00†	0.000	182.710	6100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6200.00†	0.000	182.710	6200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6300.00†	0.000	182.710	6300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6400.00†	0.000	182.710	6400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6500.00†	0.000	182.710	6500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6600.00†	0.000	182.710	6600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6700.00†	0.000	182.710	6700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6800.00†	0.000	182.710	6800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
6900.00†	0.000	182.710	6900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7000.00†	0.000	182.710	7000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7100.00†	0.000	182.710	7100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7200.00†	0.000	182.710	7200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7300.00†	0.000	182.710	7300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7400.00†	0.000	182.710	7400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7500.00†	0.000	182.710	7500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7600.00†	0.000	182.710	7600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7700.00†	0.000	182.710	7700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7800.00†	0.000	182.710	7800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
7900.00†	0.000	182.710	7900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8000.00†	0.000	182.710	8000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8100.00†	0.000	182.710	8100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8200.00†	0.000	182.710	8200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8300.00†	0.000	182.710	8300.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8317.00†	0.000	182.710	8317.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	Bone Spring
8400.00†	0.000	182.710	8400.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8500.00†	0.000	182.710	8500.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8600.00†	0.000	182.710	8600.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8700.00†	0.000	182.710	8700.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4 SHL
Area	Lea County, NM	Well	No.4
Field	(Lynch) Sec 23, T20S, R34E	Wellbore	No.4 PWB
Facility	Lynch 23 Fed Com No.4		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8800.00†	0.000	182.710	8800.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
8900.00†	0.000	182.710	8900.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
9000.00†	0.000	182.710	9000.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
9100.00†	0.000	182.710	9100.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
9200.00†	0.000	182.710	9200.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	
9257.00	0.000	182.710	9257.00	0.00	0.00	0.00	789464.50	570208.80	32°33'53.925"N	103°31'40.534"W	0.00	Est KOP
9300.00†	7.747	182.710	9299.87	2.90	-2.90	-0.14	789464.36	570205.90	32°33'53.896"N	103°31'40.536"W	18.02	
9400.00†	25.763	182.710	9395.23	31.61	-31.58	-1.49	789463.01	570177.22	32°33'53.612"N	103°31'40.555"W	18.02	
9500.00†	43.780	182.710	9477.03	88.41	-88.31	-4.18	789460.32	570120.49	32°33'53.051"N	103°31'40.591"W	18.02	
9585.26†	59.141	182.710	9530.00	154.90	-154.73	-7.32	789457.18	570054.08	32°33'52.394"N	103°31'40.634"W	18.02	1st BSS
9600.00†	61.796	182.710	9537.26	167.72	-167.53	-7.93	789456.57	570041.27	32°33'52.268"N	103°31'40.642"W	18.02	
9700.00†	79.812	182.710	9570.01	261.77	-261.48	-12.38	789452.12	569947.33	32°33'51.338"N	103°31'40.702"W	18.02	
9752.86	89.336	182.710	9575.00	314.34	-313.98	-14.86	789449.64	569894.82	32°33'50.819"N	103°31'40.736"W	18.02	EOC
9752.89	89.336	182.710	9575.00	314.36	-314.01	-14.86	789449.64	569894.80	32°33'50.819"N	103°31'40.736"W	2.00	Target Line
9800.00†	89.336	182.710	9575.55	361.47	-361.07	-17.09	789447.41	569847.74	32°33'50.353"N	103°31'40.766"W	0.00	
9900.00†	89.336	182.710	9576.70	461.46	-460.95	-21.82	789442.68	569747.86	32°33'49.365"N	103°31'40.830"W	0.00	
10000.00†	89.336	182.710	9577.86	561.46	-560.83	-26.55	789437.95	569647.98	32°33'48.378"N	103°31'40.894"W	0.00	
10100.00†	89.336	182.710	9579.02	661.45	-660.71	-31.28	789433.23	569548.10	32°33'47.390"N	103°31'40.958"W	0.00	
10200.00†	89.336	182.710	9580.18	761.44	-760.59	-36.00	789428.50	569448.22	32°33'46.402"N	103°31'41.022"W	0.00	
10300.00†	89.336	182.710	9581.34	861.44	-860.47	-40.73	789423.77	569348.34	32°33'45.414"N	103°31'41.086"W	0.00	
10400.00†	89.336	182.710	9582.49	961.43	-960.36	-45.46	789419.04	569248.47	32°33'44.426"N	103°31'41.150"W	0.00	
10500.00†	89.336	182.710	9583.65	1061.42	-1060.24	-50.19	789414.31	569148.59	32°33'43.438"N	103°31'41.214"W	0.00	
10600.00†	89.336	182.710	9584.81	1161.42	-1160.12	-54.92	789409.59	569048.71	32°33'42.450"N	103°31'41.278"W	0.00	
10700.00†	89.336	182.710	9585.97	1261.41	-1260.00	-59.64	789404.86	568948.83	32°33'41.462"N	103°31'41.343"W	0.00	
10800.00†	89.336	182.710	9587.13	1361.40	-1359.88	-64.37	789400.13	568848.95	32°33'40.474"N	103°31'41.407"W	0.00	
10900.00†	89.336	182.710	9588.28	1461.40	-1459.76	-69.10	789395.40	568749.07	32°33'39.486"N	103°31'41.471"W	0.00	
11000.00†	89.336	182.710	9589.44	1561.39	-1559.64	-73.83	789390.67	568649.19	32°33'38.499"N	103°31'41.535"W	0.00	
11100.00†	89.336	182.710	9590.60	1661.38	-1659.53	-78.56	789385.95	568549.31	32°33'37.511"N	103°31'41.599"W	0.00	
11200.00†	89.336	182.710	9591.76	1761.38	-1759.41	-83.28	789381.22	568449.43	32°33'36.523"N	103°31'41.663"W	0.00	
11300.00†	89.336	182.710	9592.92	1861.37	-1859.29	-88.01	789376.49	568349.55	32°33'35.535"N	103°31'41.727"W	0.00	
11400.00†	89.336	182.710	9594.07	1961.36	-1959.17	-92.74	789371.76	568249.67	32°33'34.547"N	103°31'41.791"W	0.00	
11500.00†	89.336	182.710	9595.23	2061.36	-2059.05	-97.47	789367.03	568149.79	32°33'33.559"N	103°31'41.855"W	0.00	
11600.00†	89.336	182.710	9596.39	2161.35	-2158.93	-102.20	789362.31	568049.92	32°33'32.571"N	103°31'41.919"W	0.00	
11700.00†	89.336	182.710	9597.55	2261.34	-2258.81	-106.92	789357.58	567950.04	32°33'31.583"N	103°31'41.983"W	0.00	
11800.00†	89.336	182.710	9598.71	2361.34	-2358.70	-111.65	789352.85	567850.16	32°33'30.595"N	103°31'42.047"W	0.00	
11900.00†	89.336	182.710	9599.86	2461.33	-2458.58	-116.38	789348.12	567750.28	32°33'29.607"N	103°31'42.111"W	0.00	
12000.00†	89.336	182.710	9601.02	2561.32	-2558.46	-121.11	789343.39	567650.40	32°33'28.619"N	103°31'42.175"W	0.00	
12100.00†	89.336	182.710	9602.18	2661.32	-2658.34	-125.84	789338.67	567550.52	32°33'27.632"N	103°31'42.239"W	0.00	
12200.00†	89.336	182.710	9603.34	2761.31	-2758.22	-130.57	789333.94	567450.64	32°33'26.644"N	103°31'42.304"W	0.00	
12300.00†	89.336	182.710	9604.50	2861.30	-2858.10	-135.29	789329.21	567350.76	32°33'25.656"N	103°31'42.368"W	0.00	
12400.00†	89.336	182.710	9605.65	2961.30	-2957.98	-140.02	789324.48	567250.88	32°33'24.668"N	103°31'42.432"W	0.00	
12500.00†	89.336	182.710	9606.81	3061.29	-3057.87	-144.75	789319.75	567151.00	32°33'23.680"N	103°31'42.496"W	0.00	
12600.00†	89.336	182.710	9607.97	3161.28	-3157.75	-149.48	789315.03	567051.12	32°33'22.692"N	103°31'42.560"W	0.00	
12700.00†	89.336	182.710	9609.13	3261.28	-3257.63	-154.21	789310.30	566951.24	32°33'21.704"N	103°31'42.624"W	0.00	
12800.00†	89.336	182.710	9610.29	3361.27	-3357.51	-158.93	789305.57	566851.36	32°33'20.716"N	103°31'42.688"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4 SHL
Area	Lea County, NM	Well	No.4
Field	(Lynch) Sec 23, T20S, R34E	Wellbore	No.4 PWB
Facility	Lynch 23 Fed Com No.4		

WELLPATH DATA (148 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12900.00†	89.336	182.710	9611.45	3461.26	-3457.39	-163.66	789300.84	566751.49	32°33'19.728"N	103°31'42.752"W	0.00	
13000.00†	89.336	182.710	9612.60	3561.26	-3557.27	-168.39	789296.11	566651.61	32°33'18.740"N	103°31'42.816"W	0.00	
13100.00†	89.336	182.710	9613.76	3661.25	-3657.16	-173.12	789291.39	566551.73	32°33'17.752"N	103°31'42.880"W	0.00	
13200.00†	89.336	182.710	9614.92	3761.24	-3757.04	-177.85	789286.66	566451.85	32°33'16.765"N	103°31'42.944"W	0.00	
13300.00†	89.336	182.710	9616.08	3861.24	-3856.92	-182.57	789281.93	566351.97	32°33'15.777"N	103°31'43.008"W	0.00	
13400.00†	89.336	182.710	9617.24	3961.23	-3956.80	-187.30	789277.20	566252.09	32°33'14.789"N	103°31'43.072"W	0.00	
13500.00†	89.336	182.710	9618.39	4061.22	-4056.68	-192.03	789272.47	566152.21	32°33'13.801"N	103°31'43.136"W	0.00	
13600.00†	89.336	182.710	9619.55	4161.22	-4156.56	-196.76	789267.75	566052.33	32°33'12.813"N	103°31'43.200"W	0.00	
13700.00†	89.336	182.710	9620.71	4261.21	-4256.44	-201.49	789263.02	565952.45	32°33'11.825"N	103°31'43.264"W	0.00	
13800.00†	89.336	182.710	9621.87	4361.20	-4356.33	-206.22	789258.29	565852.57	32°33'10.837"N	103°31'43.328"W	0.00	
13900.00†	89.336	182.710	9623.03	4461.20	-4456.21	-210.94	789253.56	565752.69	32°33'09.849"N	103°31'43.392"W	0.00	
14000.00†	89.336	182.710	9624.18	4561.19	-4556.09	-215.67	789248.83	565652.81	32°33'08.861"N	103°31'43.457"W	0.00	
14070.50	89.336	182.710	9625.00	4631.68	-4626.50	-219.00	789245.50	565582.40	32°33'08.165"N	103°31'43.502"W	0.00	No.4 PBHL

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) Lynch 23 Fed Com No.4 PBHL	14070.50	9625.00	-4626.50	-219.00	789245.50	565582.40	32°33'08.165"N	103°31'43.502"W	point

SURVEY PROGRAM - Ref Wellbore: No.4 PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	14070.50	NaviTrak (Standard)		No.4 PWB

SR & A

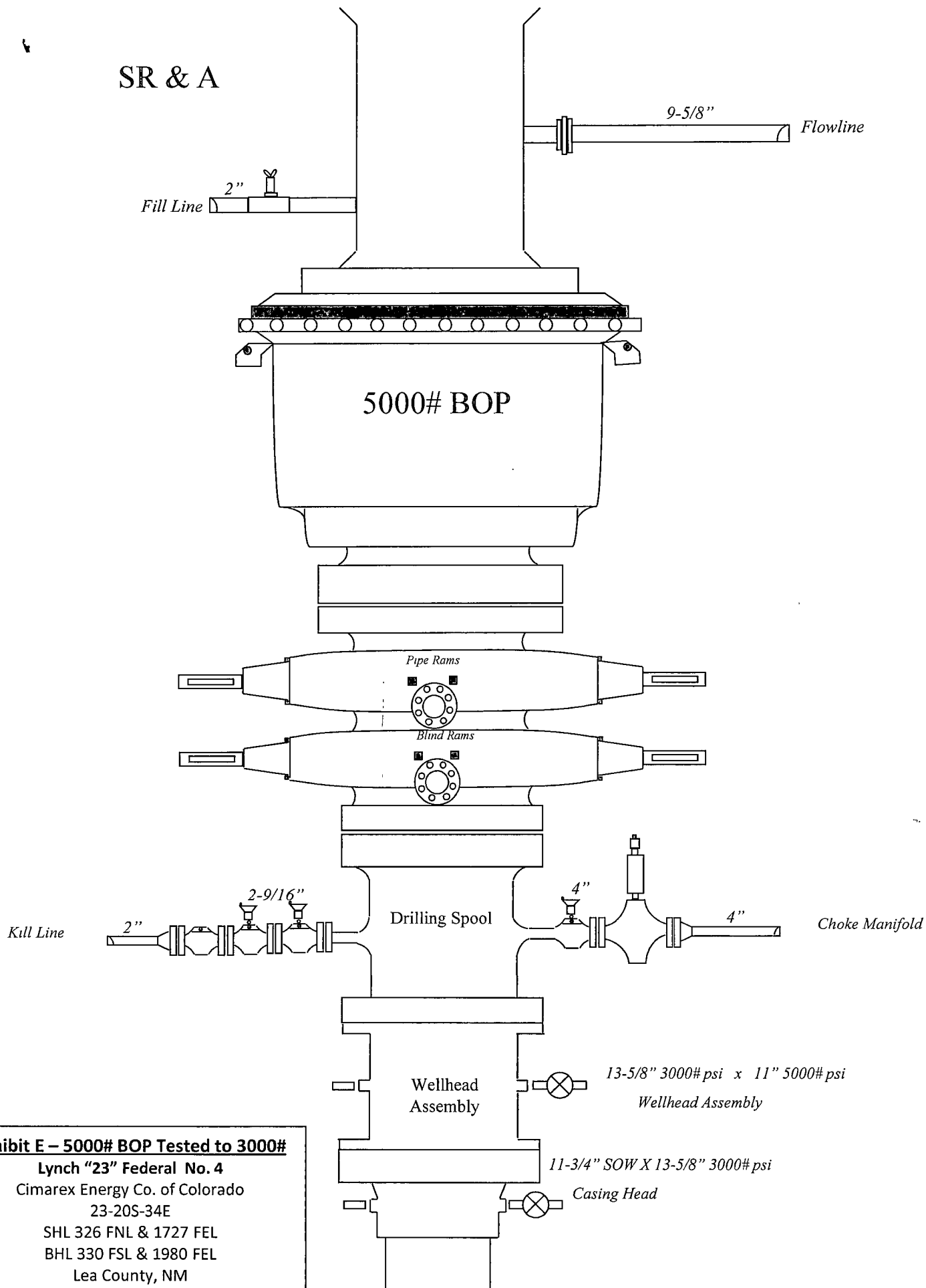


Exhibit E – 5000# BOP Tested to 3000#

Lynch "23" Federal No. 4

Cimarex Energy Co. of Colorado

23-20S-34E

SHL 326 FNL & 1727 FEL

BHL 330 FSL & 1980 FEL

Lea County, NM

Drilling Operations Choke Manifold 5M Service Tested to 3M

Exhibit E-1 – Choke Manifold Diagram

Lynch "23" Federal No. 4

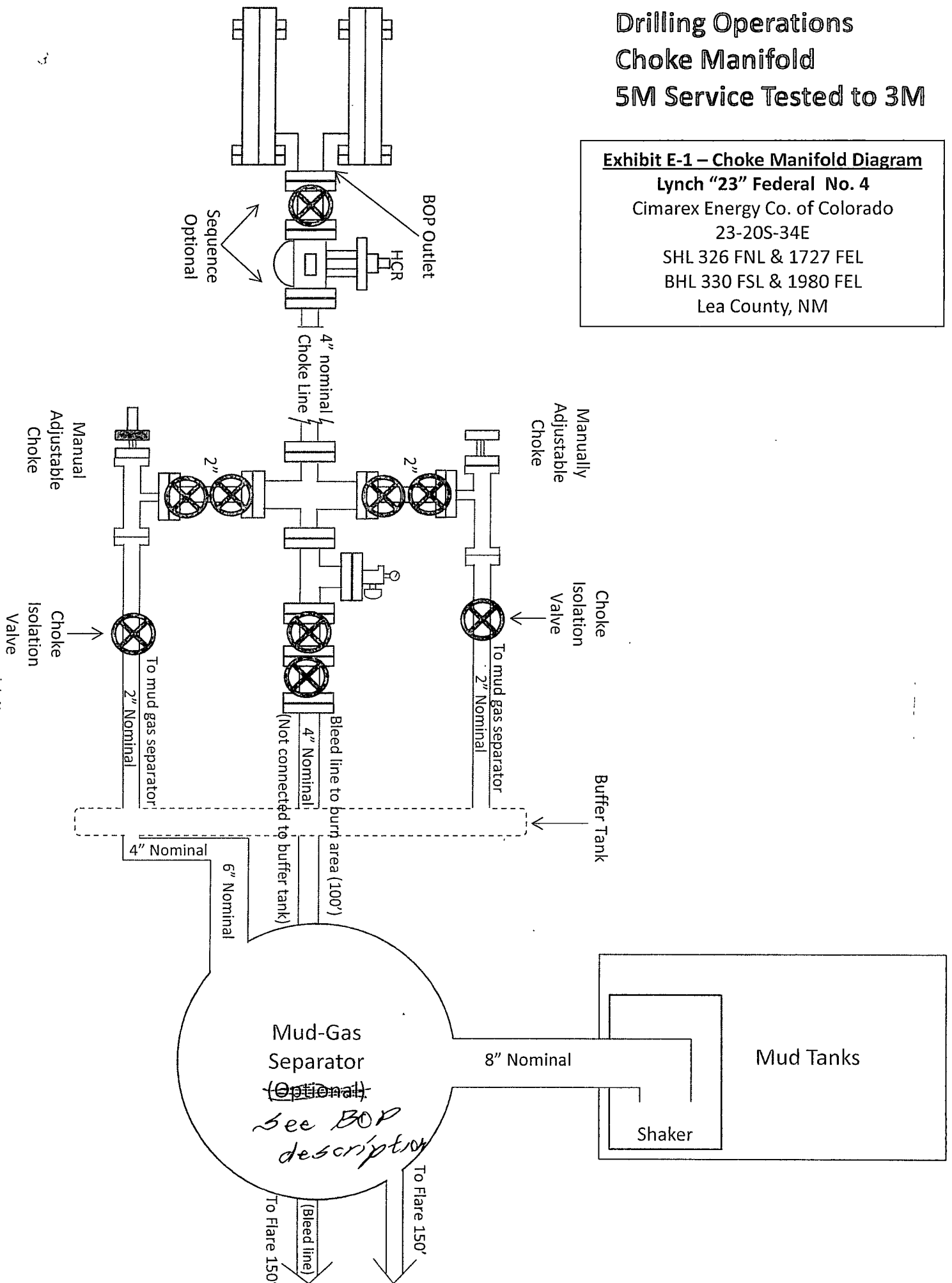
Cimarex Energy Co. of Colorado

23-20S-34E

SHL 326 FNL & 1727 FEL

BHL 330 FSL & 1980 FEL

Lea County, NM



Cimarex Energy Co. of Colorado – Closed-Loop System Design Plan

Equipment List

- Primary Shakers
- Mud Cleaner – hydro-cyclones
- 1 or 2 Centrifuges (depending on well depth)
- De-watering system with pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing (may not be necessary for shallower wells)
- Drying Augur
- Sump Drying Augur
- Sump
- Cuttings Boxes
- Reserve Fluids Tank Farm
- Wire Mesh Trash Enclosure (spent motor oils kept in separate containers and later sent to approved landfill)

Operation and Maintenance

The Cimarex Zero Discharge system is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This ensures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

These closed loop operations can be monitored by our service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

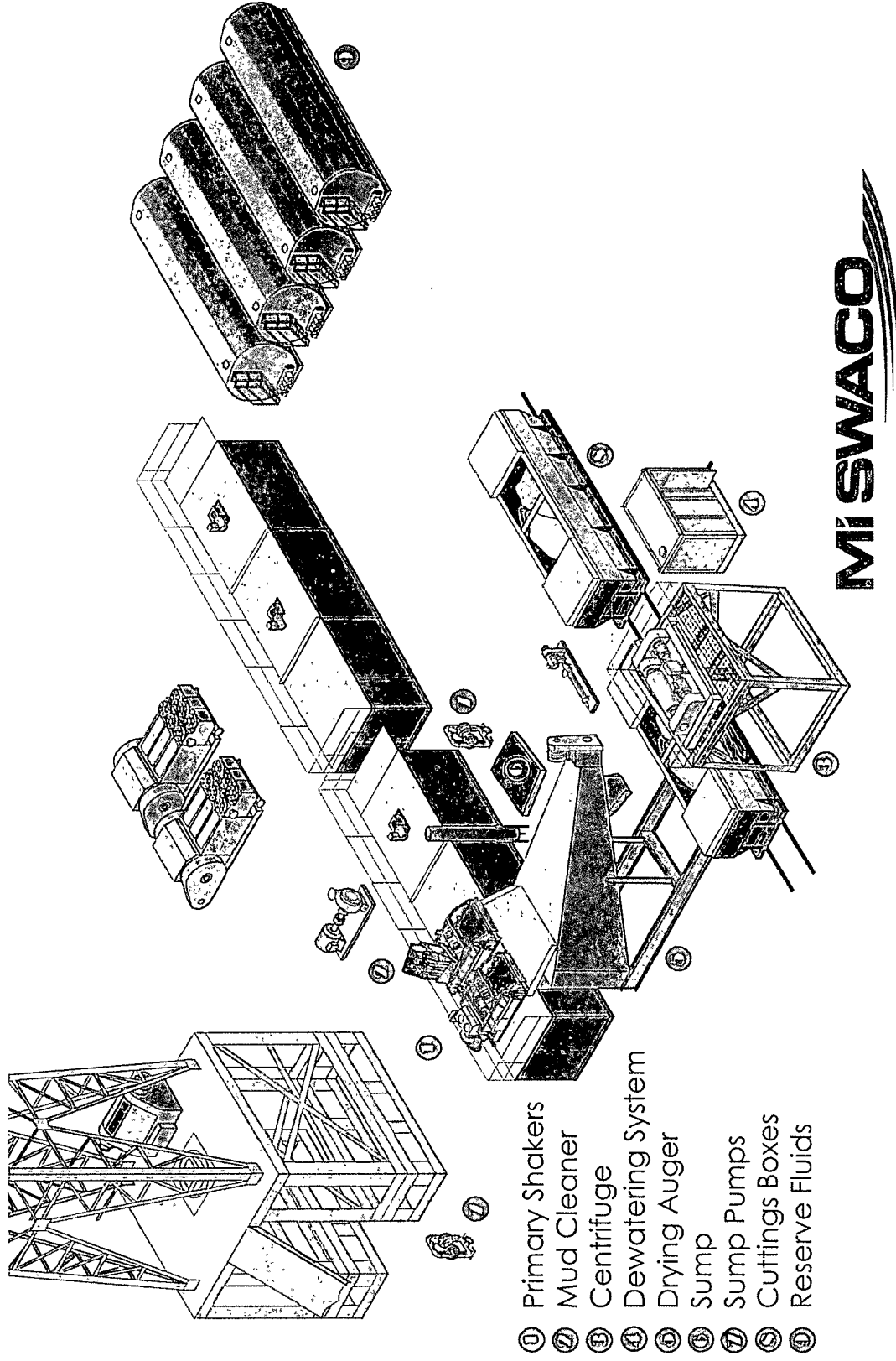
Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and tested for all regulated toxic materials. If found they are removed and disposed of per regulatory requirements.

Closure Plan

During drilling operations, all liquids, drilling fluids, and cuttings will be hauled off via CRI (Controlled Recovery Incorporated, Permit R-9166).

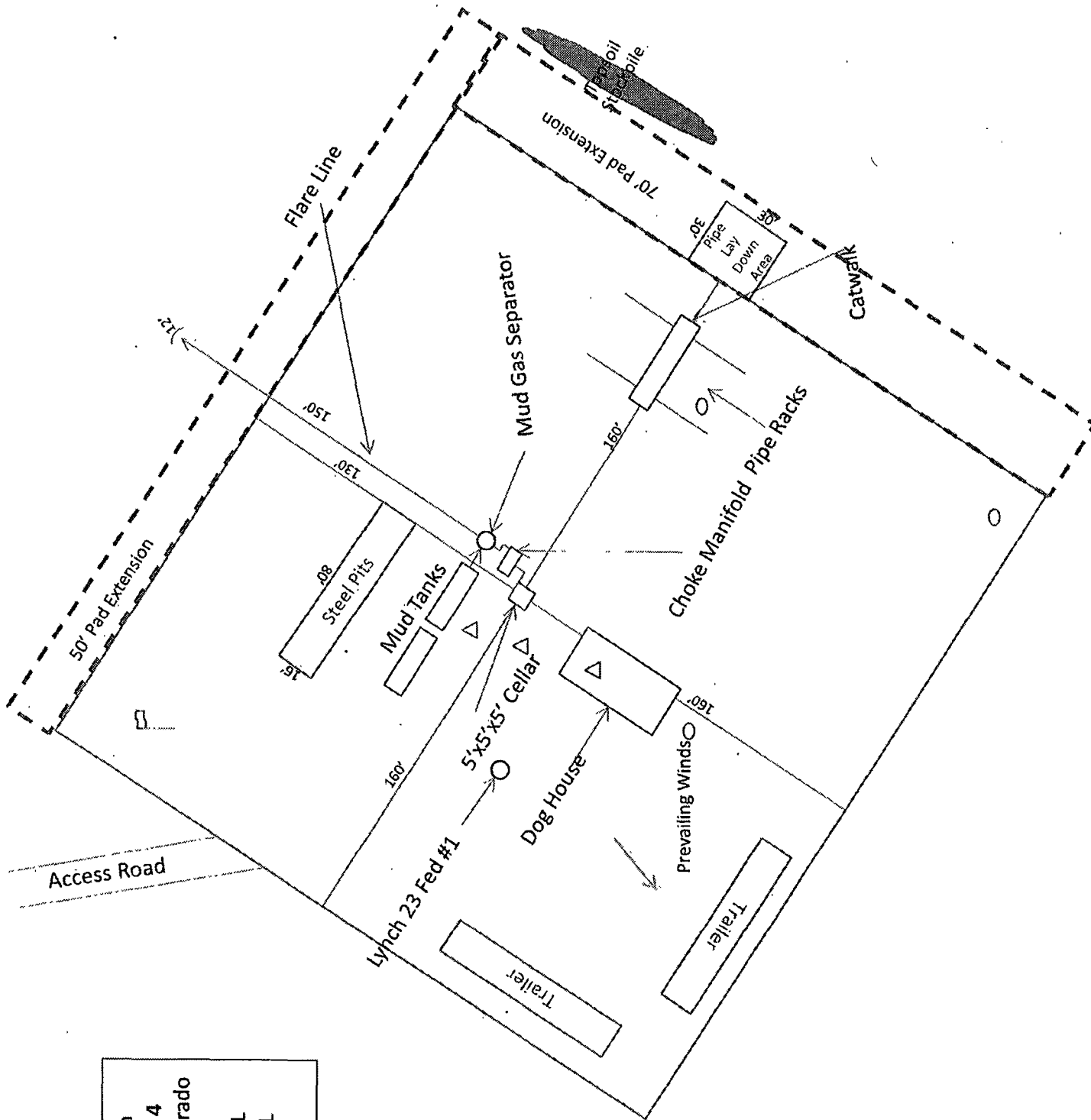


Closed Loop with Drying Auger and Dewatering System



Key 881

Exhibit D - Rig Diagram
 Lynch "23" Federal No. 4
 Cimarex Energy Co. of Colorado
 23-20S-34E
 SHL 326 FNL & 1727 FEL
 BHL 330 FSL & 1980 FEL
 Lea County, NM



N

- Wind Direction Indicators
(wind sock or streamers)
- H2S Monitors
(alarms at bell nipple and shale shaker)
- Briefing Areas

Operator - Landowner Agreement

Company: Cimarex Energy Co. of Colorado
Proposed Well: Lynch 23 Federal Com No. 3
Federal Lease Number: SHL NM-123524, BHL NM-028880

This is to advise that Cimarex Energy Co. of Colorado has an agreement with: Kenneth Smith Inc. (267 Ranch Road Hobbs NM 88240, the surface owner, concerning entry and, surface restoration after completion of drilling operations at the above described well.

After abandonment of the well, all equipment and trash will be removed from the well site. No other requirements were made concerning restoration of the well site.

May 1, 2012
Date

Zeno Farris
Signature Zeno Farris
Manager, Operations Administration