

ATS-11-143

OCD-ARTESIA

Form 3160-3
(April 2004)

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. SHL NM-34462, LC-067132	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Cimarex Energy Co. of Colorado <162683>		7. If Unit or CA Agreement, Name and No. Pending	
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701		8. Lease Name and Well No. Empire A Federal Com No. 3H <21500>	
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30-015- 38659	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 330 FSL & 810 FWL (M) At proposed prod. Zone 330 FNL & 660 FWL Horizontal Bone Spring test		10. Field and Pool, or Exploratory Bone Spring Wildcat <96403>	
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area 27-18S-29E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 330'		12. County or Parish Eddy	
16. No of acres in lease NM-34462 - 200 acres LC-067132 - 720 acres		13. State NM	
17. Spacing Unit dedicated to this well W2W2 160 acres		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. N/A	
19. Proposed Depth Pilot Hole 7950 MD 12356 TVD 7850		20. BLM/BIA Bond No. on File NM-2575	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3448' GR		22. Approximate date work will start* 02.28.11	
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 Zeno Farris	Name (Printed/Typed) Zeno Farris	RECEIVED MAR 15 2011 NMOOD ARTESIA	Date 12.17.10
Title Manager Operations Administration			
Approved By (Signature) /s/ Don Peterson	Name (Printed/Typed)		Date
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE		MAR 11 2011

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.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)

Capitan Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

IKZ 04/04/11

Application to Drill
Empire A Federal Com No. 3
 Cimarex Energy Co. of Colorado
 Unit M, Section 27
 T18S-R29E, Eddy 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 330 FSL & 810 FWL
 BHL 330 FNL & 660 FWL

- 2 Elevation above sea level: 3,448 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: Pilot Hole 7950 MD 12356 TVD 7850

- 6 Estimated tops of geological markers:

T. Salt	250
B. Salt	856
San Andres	2906
F Bone Spring	6776
S Bone Spring	7672
T Bone Spring	8418

- 7 Possible mineral bearing formation:
 Bone Spring Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 300' 450'	8.4 - 8.6	28	NC	FW
450' to 2500'	10.0	30-32	NC	Brine water
2500' to 12356'	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" pilot hole to 7950' and log. Set 165 sx Class H cmt plug from 7340-7950.' Kick off 8¾" lateral @ 7590' and drill to TD @ 12356.' Run 5½" 17# P-110 LTC from 0-12356.'

Application to Drill
Empire A Federal Com No. 3
 Cimarex Energy Co. of Colorado
 Unit M, Section 27
 T18S-R29E, Eddy County, NM

9 Casing & Cementing Program:

See
COA

String	Hole Size	Depth		Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to 300' 450'	New	13⅝"	48#	STC	H-40
Intermediate	12¼"	0'	to 2500'	New	9⅝"	36#	LTC	J-55
Production	8¾"	0'	to 12356'	New	5½"	17#	LTC	P-110

10 Cementing:

Surface

Lead: 500SKS Halcem C + 4% Bentomite + 2% CaCl 14.2ppg 1.34yield 100% Excess

TOC Surface

Intermediate

Lead: 770SKS EconoCem + 5% salt + 5 lbm gilsonite 14.6ppg 1.54yield 70% Excess

Tail: 195SKS HalCem + 1% CaCl 14.8ppg 1.34 yield 25% Excess

TOC Surface

Production

Lead: 775SKS EconoCem - H + 0.2 % HR-601 2.44 11.9ppg 2.44 yield 50% Excess

Tail: 1350SKS Versacem - H + 0.5% Halad(R)-344 + 0.4% CFR-3 + 1 lbm/sk salt + 0.1% HR-601 14.5ppg 1.43 yield 50% Excess

TOC 2300'

Depth to ground water is 165 according to the State Engineer. Fresh water zones will be protected by setting 13⅝" casing at 450' and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 2500 and cementing to surface, and by setting 5½" casing at 12356 and cementing to 2500.

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

11 Pressure control Equipment:

Exhibit "E". A 13⅝" 5000 PSI working pressure BOP 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.

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 surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

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 3000 psi high.

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Cimarex Energy Co. of Colorado
Unit M, Section 27
T18S-R29E, Eddy County, NM

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

- A. Mud logging program: 2 man unit from 2500' to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- 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 **3000 psi** Estimated BHT **130°**

14 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.**



Cimarex Energy Co.

Location: Eddy County, NM
Field: (Empire) Sec 27, T18S, R29E
Facility: Empire A Federal Com No.3H

Slot: No. 3H SHL
Well: No. 3H
Wellbore: No. 3H PWB



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	357.955	0.00	0.00	0.00	0.00	0.00
Est. KOP	7590.00	0.000	357.955	7590.00	0.00	0.00	0.00	0.00
End of Curve	7998.54	90.001	357.955	7850.08	259.92	-9.28	22.03	260.09
No. 3H PBHL	12355.93	90.001	357.955	7850.00	4614.53	-164.78	0.00	4617.47

Plot reference wellpath is Prelim 1

True vertical depths are referenced to Rig on No. 3H SHL (RT)

Measured depths are referenced to Rig on No. 3H SHL (RT)

Rig on No. 3H SHL (RT) to Mean Sea Level: 3448 feet

Mean Sea Level to Mud line (Facility: Empire A Federal Com No.3H): -3448 feet

Coordinates are in feet referenced to Slot

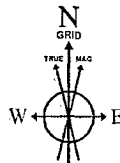
Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet

North Reference: Grid north

Scale: True distance

Depths are in feet

Created by: gomeoscr on 12/3/2010



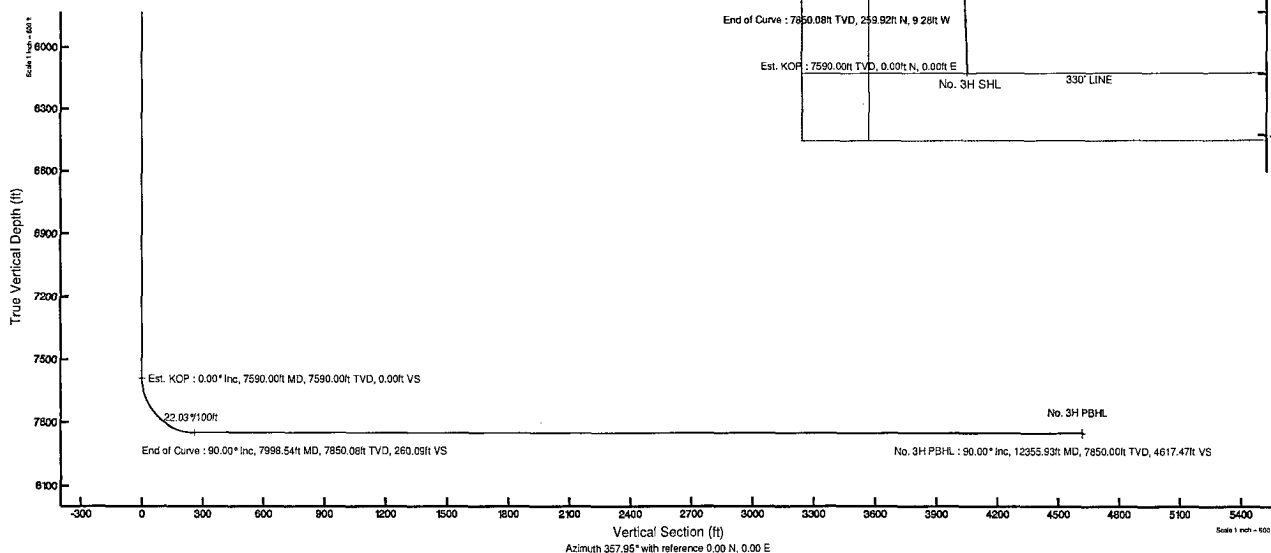
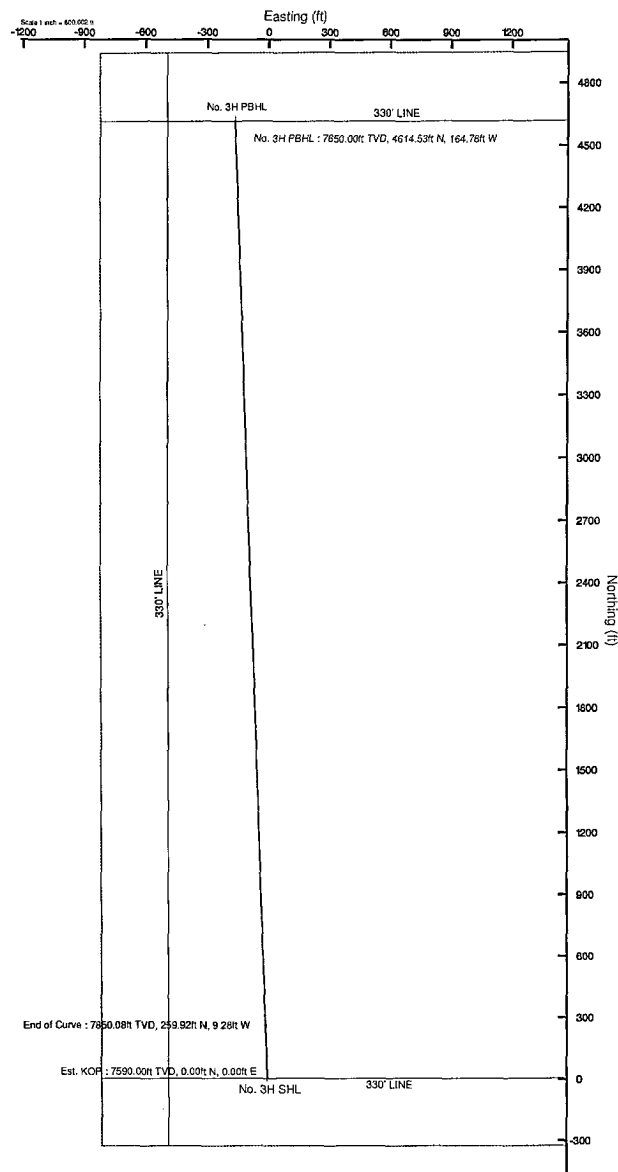
BGGM (1945.0 to 2011.0) Dip: 60.58° Field: 48976.8 nT
Magnetic North is 7.95 degrees East of True North (at 12/3/2010)

Grid North is 0.14 degrees East of True North

To correct azimuth from True to Grid subtract 0.14 degrees

To correct azimuth from Magnetic to Grid add 7.81 degrees

For example: If the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.81 = 97.81





Planned Wellpath Report

Prelim_1

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Empire) Sec 27, T18S, R29E	Wellbore	No. 3H PWB
Facility	Empire A Federal Com No.3H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Gomeoscr
Scale	0.999917	Report Generated	12/3/2010 at 11:27:37 AM
Convergence at slot	0.14° East	Database/Source file	WA Midland/No._3H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W
Facility Reference Pt			622778.80	622900.90	32°42'43.618"N	104°04'06.754"W
Field Reference Pt			622778.80	622900.90	32°42'43.618"N	104°04'06.754"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 3H SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No. 3H SHL (RT) to Mean Sea Level	3448.00ft
Vertical Reference Pt	Rig on No. 3H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 3H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	357.95°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
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Field	(Empire) Sec 27, T18S, R29E	Wellbore	No. 3H PWB
Facility	Empire A Federal Com No.3H		

WELLPATH DATA (127 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	357.955	0.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	Tie On
100.00†	0.000	357.955	100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
200.00†	0.000	357.955	200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
300.00†	0.000	357.955	300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
400.00†	0.000	357.955	400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
500.00†	0.000	357.955	500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
600.00†	0.000	357.955	600.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
700.00†	0.000	357.955	700.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
800.00†	0.000	357.955	800.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
900.00†	0.000	357.955	900.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1000.00†	0.000	357.955	1000.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1100.00†	0.000	357.955	1100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1200.00†	0.000	357.955	1200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1300.00†	0.000	357.955	1300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1400.00†	0.000	357.955	1400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1500.00†	0.000	357.955	1500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1600.00†	0.000	357.955	1600.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1700.00†	0.000	357.955	1700.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1800.00†	0.000	357.955	1800.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
1900.00†	0.000	357.955	1900.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2000.00†	0.000	357.955	2000.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2100.00†	0.000	357.955	2100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2200.00†	0.000	357.955	2200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2300.00†	0.000	357.955	2300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2400.00†	0.000	357.955	2400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2500.00†	0.000	357.955	2500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2600.00†	0.000	357.955	2600.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2700.00†	0.000	357.955	2700.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2800.00†	0.000	357.955	2800.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
2900.00†	0.000	357.955	2900.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3000.00†	0.000	357.955	3000.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3100.00†	0.000	357.955	3100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3200.00†	0.000	357.955	3200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3300.00†	0.000	357.955	3300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3400.00†	0.000	357.955	3400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3500.00†	0.000	357.955	3500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3600.00†	0.000	357.955	3600.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3700.00†	0.000	357.955	3700.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3800.00†	0.000	357.955	3800.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
3900.00†	0.000	357.955	3900.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4000.00†	0.000	357.955	4000.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4100.00†	0.000	357.955	4100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4200.00†	0.000	357.955	4200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4300.00†	0.000	357.955	4300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4400.00†	0.000	357.955	4400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Empire) Sec 27, T18S, R29E	Wellbore	No. 3H PWB
Facility	Empire A Federal Com No.3H		

WELLPATH DATA (127 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4500.00†	0.000	357.955	4500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4600.00†	0.000	357.955	4600.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4700.00†	0.000	357.955	4700.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4800.00†	0.000	357.955	4800.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
4900.00†	0.000	357.955	4900.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5000.00†	0.000	357.955	5000.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5100.00†	0.000	357.955	5100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5200.00†	0.000	357.955	5200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5300.00†	0.000	357.955	5300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5400.00†	0.000	357.955	5400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5500.00†	0.000	357.955	5500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5600.00†	0.000	357.955	5600.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5700.00†	0.000	357.955	5700.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5800.00†	0.000	357.955	5800.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
5900.00†	0.000	357.955	5900.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6000.00†	0.000	357.955	6000.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6100.00†	0.000	357.955	6100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6200.00†	0.000	357.955	6200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6300.00†	0.000	357.955	6300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6400.00†	0.000	357.955	6400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6500.00†	0.000	357.955	6500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6600.00†	0.000	357.955	6600.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6700.00†	0.000	357.955	6700.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6800.00†	0.000	357.955	6800.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
6900.00†	0.000	357.955	6900.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
7000.00†	0.000	357.955	7000.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
7100.00†	0.000	357.955	7100.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
7200.00†	0.000	357.955	7200.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
7300.00†	0.000	357.955	7300.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
7400.00†	0.000	357.955	7400.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
7500.00†	0.000	357.955	7500.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	
7590.00	0.000	357.955	7590.00	0.00	0.00	0.00	622778.80	622900.90	32°42'43.618"N	104°04'06.754"W	0.00	Est. KOP
7600.00†	2.203	357.955	7600.00	0.19	0.19	-0.01	622778.79	622901.09	32°42'43.619"N	104°04'06.754"W	22.03	
7700.00†	24.233	357.955	7696.75	22.92	22.90	-0.82	622777.98	622923.80	32°42'43.844"N	104°04'06.763"W	22.03	
7800.00†	46.263	357.955	7777.91	80.27	80.22	-2.86	622775.94	622981.12	32°42'44.411"N	104°04'06.785"W	22.03	
7900.00†	68.293	357.955	7831.64	163.89	163.78	-5.85	622772.95	623064.67	32°42'45.238"N	104°04'06.818"W	22.03	
7998.54	90.001	357.955	7850.08	260.09	259.92	-9.28	622769.52	623160.80	32°42'46.189"N	104°04'06.855"W	22.03	End of Curve
8000.00†	90.001	357.955	7850.08	261.55	261.38	-9.33	622769.47	623162.26	32°42'46.204"N	104°04'06.856"W	0.00	
8100.00†	90.001	357.955	7850.08	361.55	361.32	-12.90	622765.90	623262.19	32°42'47.193"N	104°04'06.894"W	0.00	
8200.00†	90.001	357.955	7850.08	461.55	461.25	-16.47	622762.33	623362.11	32°42'48.182"N	104°04'06.933"W	0.00	
8300.00†	90.001	357.955	7850.08	561.55	561.19	-20.04	622758.76	623462.04	32°42'49.171"N	104°04'06.972"W	0.00	
8400.00†	90.001	357.955	7850.07	661.55	661.13	-23.61	622755.19	623561.97	32°42'50.159"N	104°04'07.011"W	0.00	
8500.00†	90.001	357.955	7850.07	761.55	761.06	-27.18	622751.62	623661.90	32°42'51.148"N	104°04'07.050"W	0.00	
8600.00†	90.001	357.955	7850.07	861.55	861.00	-30.75	622748.06	623761.82	32°42'52.137"N	104°04'07.089"W	0.00	
8700.00†	90.001	357.955	7850.07	961.55	960.93	-34.31	622744.49	623861.75	32°42'53.126"N	104°04'07.128"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Empire) Sec 27, T18S, R29E	Wellbore	No. 3H PWB
Facility	Empire A Federal Com No.3H		

WELLPATH DATA (127 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8800.00†	90.001	357.955	7850.07	1061.55	1060.87	-37.88	622740.92	623961.68	32°42'54.115"N	104°04'07.166"W	0.00	
8900.00†	90.001	357.955	7850.06	1161.55	1160.81	-41.45	622737.35	624061.61	32°42'55.104"N	104°04'07.205"W	0.00	
9000.00†	90.001	357.955	7850.06	1261.55	1260.74	-45.02	622733.78	624161.54	32°42'56.093"N	104°04'07.244"W	0.00	
9100.00†	90.001	357.955	7850.06	1361.55	1360.68	-48.59	622730.21	624261.46	32°42'57.082"N	104°04'07.283"W	0.00	
9200.00†	90.001	357.955	7850.06	1461.55	1460.62	-52.16	622726.65	624361.39	32°42'58.071"N	104°04'07.322"W	0.00	
9300.00†	90.001	357.955	7850.06	1561.55	1560.55	-55.73	622723.08	624461.32	32°42'59.060"N	104°04'07.361"W	0.00	
9400.00†	90.001	357.955	7850.05	1661.55	1660.49	-59.30	622719.51	624561.25	32°43'00.048"N	104°04'07.399"W	0.00	
9500.00†	90.001	357.955	7850.05	1761.55	1760.42	-62.86	622715.94	624661.17	32°43'01.037"N	104°04'07.438"W	0.00	
9600.00†	90.001	357.955	7850.05	1861.55	1860.36	-66.43	622712.37	624761.10	32°43'02.026"N	104°04'07.477"W	0.00	
9700.00†	90.001	357.955	7850.05	1961.55	1960.30	-70.00	622708.80	624861.03	32°43'03.015"N	104°04'07.516"W	0.00	
9800.00†	90.001	357.955	7850.05	2061.55	2060.23	-73.57	622705.24	624960.96	32°43'04.004"N	104°04'07.555"W	0.00	
9900.00†	90.001	357.955	7850.05	2161.55	2160.17	-77.14	622701.67	625060.89	32°43'04.993"N	104°04'07.594"W	0.00	
10000.00†	90.001	357.955	7850.04	2261.55	2260.11	-80.71	622698.10	625160.81	32°43'05.982"N	104°04'07.633"W	0.00	
10100.00†	90.001	357.955	7850.04	2361.55	2360.04	-84.28	622694.53	625260.74	32°43'06.971"N	104°04'07.671"W	0.00	
10200.00†	90.001	357.955	7850.04	2461.55	2459.98	-87.85	622690.96	625360.67	32°43'07.960"N	104°04'07.710"W	0.00	
10300.00†	90.001	357.955	7850.04	2561.55	2559.92	-91.41	622687.39	625460.60	32°43'08.948"N	104°04'07.749"W	0.00	
10400.00†	90.001	357.955	7850.04	2661.55	2659.85	-94.98	622683.83	625560.52	32°43'09.937"N	104°04'07.788"W	0.00	
10500.00†	90.001	357.955	7850.03	2761.55	2759.79	-98.55	622680.26	625660.45	32°43'10.926"N	104°04'07.827"W	0.00	
10600.00†	90.001	357.955	7850.03	2861.55	2859.72	-102.12	622676.69	625760.38	32°43'11.915"N	104°04'07.866"W	0.00	
10700.00†	90.001	357.955	7850.03	2961.55	2959.66	-105.69	622673.12	625860.31	32°43'12.904"N	104°04'07.905"W	0.00	
10800.00†	90.001	357.955	7850.03	3061.55	3059.60	-109.26	622669.55	625960.24	32°43'13.893"N	104°04'07.943"W	0.00	
10900.00†	90.001	357.955	7850.03	3161.55	3159.53	-112.83	622665.98	626060.16	32°43'14.882"N	104°04'07.982"W	0.00	
11000.00†	90.001	357.955	7850.03	3261.55	3259.47	-116.39	622662.41	626160.09	32°43'15.871"N	104°04'08.021"W	0.00	
11100.00†	90.001	357.955	7850.02	3361.55	3359.41	-119.96	622658.85	626260.02	32°43'16.860"N	104°04'08.060"W	0.00	
11200.00†	90.001	357.955	7850.02	3461.55	3459.34	-123.53	622655.28	626359.95	32°43'17.848"N	104°04'08.099"W	0.00	
11300.00†	90.001	357.955	7850.02	3561.55	3559.28	-127.10	622651.71	626459.87	32°43'18.837"N	104°04'08.138"W	0.00	
11400.00†	90.001	357.955	7850.02	3661.55	3659.21	-130.67	622648.14	626559.80	32°43'19.826"N	104°04'08.177"W	0.00	
11500.00†	90.001	357.955	7850.02	3761.55	3759.15	-134.24	622644.57	626659.73	32°43'20.815"N	104°04'08.215"W	0.00	
11600.00†	90.001	357.955	7850.01	3861.55	3859.09	-137.81	622641.00	626759.66	32°43'21.804"N	104°04'08.254"W	0.00	
11700.00†	90.001	357.955	7850.01	3961.55	3959.02	-141.38	622637.44	626859.59	32°43'22.793"N	104°04'08.293"W	0.00	
11800.00†	90.001	357.955	7850.01	4061.55	4058.96	-144.94	622633.87	626959.51	32°43'23.782"N	104°04'08.332"W	0.00	
11900.00†	90.001	357.955	7850.01	4161.55	4158.90	-148.51	622630.30	627059.44	32°43'24.771"N	104°04'08.371"W	0.00	
12000.00†	90.001	357.955	7850.01	4261.55	4258.83	-152.08	622626.73	627159.37	32°43'25.760"N	104°04'08.410"W	0.00	
12100.00†	90.001	357.955	7850.00	4361.55	4358.77	-155.65	622623.16	627259.30	32°43'26.748"N	104°04'08.448"W	0.00	
12200.00†	90.001	357.955	7850.00	4461.55	4458.70	-159.22	622619.59	627359.22	32°43'27.737"N	104°04'08.487"W	0.00	
12300.00†	90.001	357.955	7850.00	4561.55	4558.64	-162.79	622616.03	627459.15	32°43'28.726"N	104°04'08.526"W	0.00	
12355.93	90.001	357.955	7850.00 ¹	4617.47	4614.53	-164.78	622614.03	627515.04	32°43'29.279"N	104°04'08.548"W	0.00	No. 3H PBHL



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Eddy County, NM	Well	No. 3H
Field	(Empire) Sec 27, T18S, R29E	Wellbore	No. 3H PWB
Facility	Empire A Federal Com No.3H		

HOLE & CASING SECTIONS Ref Wellbore: No. 3H PWB Ref Wellpath: Prelim_1									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing	0.00	2500.00	2500.00	0.00	2500.00	0.00	0.00	0.00	0.00
8.75in Open Hole	2500.00	12355.93	9855.93	2500.00	NA	0.00	0.00	NA	NA

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 3H PBHL	12355.93	7850.00	4614.53	-164.78	622614.03	627515.04	32°43'29.279"N	104°04'08.548"W	point

SURVEY PROGRAM Ref Wellbore: No. 3H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	12355.93	NaviTrak (Standard)		No. 3H PWB

SR & A

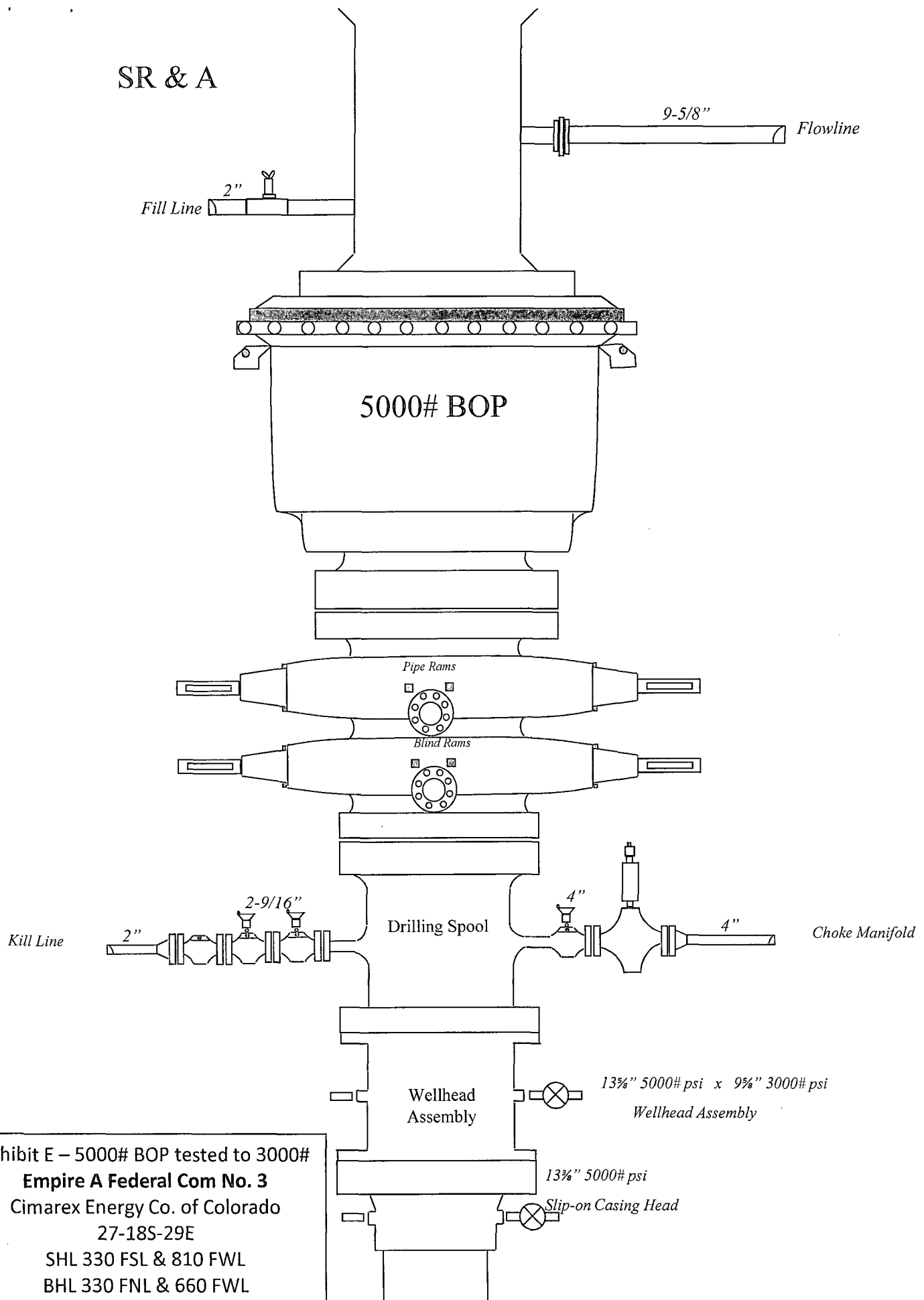
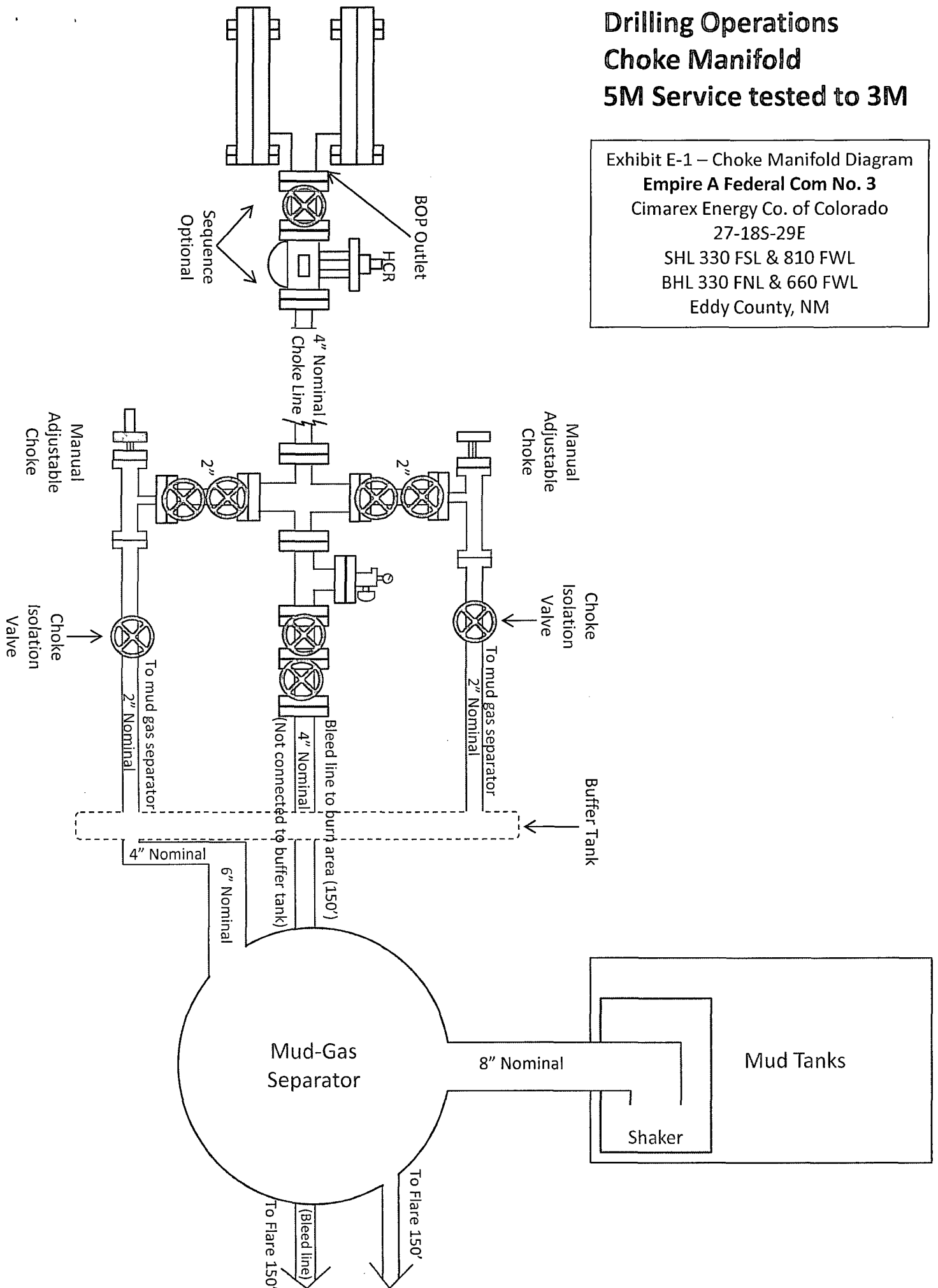


Exhibit E – 5000# BOP tested to 3000#
Empire A Federal Com No. 3
Cimarex Energy Co. of Colorado
27-18S-29E
SHL 330 FSL & 810 FWL
BHL 330 FNL & 660 FWL
Eddy County, NM

Exhibit E-1 – Choke Manifold Diagram
Empire A Federal Com No. 3
Cimarex Energy Co. of Colorado
27-18S-29E
SHL 330 FSL & 810 FWL
BHL 330 FNL & 660 FWL
Eddy County, NM



DISTRICT I --- CHECKLIST FOR INTENTS TO DRILL

21500 Operator CIMAREX ENERGY CO. of COLORADO OGRID # 162683
Well Name & # EMPIRE A FEDERAL COM #314 Surface Type (F) (S) (P)
Location: UL M, Sect 27, Township 18 s, RNG 29 e, Sub-surface Type (F) (S) (P)

A. Date C101 rec'd / / C101 reviewed / /

B. 1. Check mark, Information is OK on Forms:

OGRID X, BONDING FED PROP CODE X, WELL # , SIGNATURE

2. Inactive Well list as of: 4/4/11 # wells 1153, # Inactive wells 8

a. District Grant APD but see number of inactive wells:

No letter required X; Sent Letter to Operator , to Santa Fe

3. Additional Bonding as of: 4/4/11

a. District Denial because operator needs addition bonding:

No Letter required X; Sent Letter to Operator , To Santa Fe

b. District Denial because of Inactive well list and Financial Assurance:

No Letter required X; Sent Letter to Operator , To Santa Fe

C. C102 YES , NO , Signature

1. Pool WILDCAT; BONESMITH Code (76403)

a. Dedicated acreage 160, What Units DELM

b. SUR. Location Standard X; Non-Standard Location

c. Well shares acres: Yes , No X, # of wells plus this well #

2. 2nd. Operator in same acreage, Yes , No X

Agreement Letter , Disagreement letter

3. Intent to Directional Drill Yes , No

a. Dedicated acreage 160, What Units DELM

b. Bottomhole Location Standard X, Non-Standard Bottomhole

4. Downhole Commingle: Yes , No X

a. Pool #2 , Code , Acres

Pool #3 , Code , Acres

Pool #4 , Code , Acres

5. POTASH Area Yes , No FED

D. Blowout Preventer Yes X, No

E. H2S Yes , No , PART FED APD

F. C144 Pit Registration Yes , No X, need

G. Does APD require Santa Fe Approval:

1. Non-Standard Location: Yes , No X, NSL #

2. Non-Standard Proration: Yes , No X, NSP #

3. Simultaneous Dedication: Yes , No X, SD #

Number of wells Plus #

4. Injection order Yes , No X; PMX # or WFX #

5. SWD order Yes , NO X; SWD #

6. DHC from SF ; DHC-HOB ; Holding

7. OCD Approval Date / /

API #30-0 14 -- 38659

8. Reviewers KV