OCD-ARTESIA

AIS-11-581

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

5 Lease Serial No.: LC-028480-B

6 If Indian, Allotee or Tribe Name:

1a. Type of Work. ☒ DRILL ✓ ☐ REENTER

7. If Unit or CA Agreement, Name and No.:

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: Hawker 7 Federal No. 1

2. Name of Operator: Cimarex Energy Co. of Colorado

9. API Well No.: 30-015- 39398

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: Empire; Glorieta-Yeso <96610>

4 Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At Surface: 2310 FNL & 890 FEL

At proposed prod Zone: 2310 FNL & 330 FEL

11. Sec., T. R. M. or Blk and Survey or Area: 7-17S-29E

14 Distance in miles and direction from nearest town or post office*

12. County or Parish: Eddy

13 State: NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
330	120	SENE 40
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20 BLM/BIA Bond No. on File**
50'	5240 MD, 5200 TVD	NM-2575
21 Elevations (Show whether DF, KDB, RT, GL, etc)	**22 Approximate date work will start***	**23 Estimated duration**
3673' GR ✓	04.15.11	10-15 days

RECEIVED
AUG 24 2011
NMOCD ARTESIA

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
2 A Drilling Plan
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).
4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator Certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25 Signature	Name *(Printed/Typed)*	Date
Zeno Farris	Zeno Farris	03.24.11

Title: Manager Operations Administration

Approved By *(Signature)*	Name (Printed/Typed)	Date
/s/ Don Peterson		AUG 23 2011
Title	**Office**	
FIELD MANAGER	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.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)*

Roswell Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Application to Drill
Hawker 7 Federal No. 1
Cimarex Energy Co. of Colorado
Unit H, Section 7
T17S 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 2310 FNL & 890 FEL
BHL 2310 FNL & 330 FEL

2 Elevation above sea level: 3673' GR

3 Geologic name of surface formation: Quaternery 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: 5240 MD, 5200 TVD

6 Estimated tops of geological markers:

Rustler	294'
Top of Salt	250'
Base of Salt	600'
Tansill	700'
Yates	830'
Seven Rivers	1057'
San Andres	2393'
Glorieta	3760'
Paddock	3880'
Blinebry	4330'
Tubb	5200'

7 Possible mineral bearing formation:

Paddock	Oil
Blinebry	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 210'	8.4 - 8.8	40-45	NC	FW
210' to 1100'	*9.9 - 10.1*	*28-32*	*NC*	*Brine****
1100' to 5240'	9.1	28-32	NC	Cut 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.

**** This is for the intermediate contingency plan.*

Application to Drill
Hawker 7 Federal No. 1
Cimarex Energy Co. of Colorado
Unit H, Section 7
T17S R29E, Eddy County, NM

9 Casing Plan:

Cimarex plans to set surface casing, then drill 11" hole to 1100. If no lost returns, occur, switch to 7⅞" hole and drill to TD and set 5½" casing from 0-5240. If lost returns do occur, set 8⅝" casing at 1100 and cement, then drill to TD and set 5½ casing to TD and cement. Kick off for directional at 1200, regardless of intermediate casing situation. Build and hold to 5240 MD, 5200 TVD.

String	Hole Size	Depth			Casing OD		Weight	Thread	Collar	Grade
Surface	16"	0'	to	210'	New	11¾"	42#	8-R	STC	H40
Int Contingency	11"	0'	to	1100'	New	8⅝"	24#	8-R	STC	J55
Production	7⅞"	0'	to	5240'	New	5½"	17#	8-R	LTC	N80

10 Cementing:

Surface

Lead: 160 sx Class "C" + 10% W-60 + 1% CaCl2 + 0.25% R-38 + 5# Gilsonite per sx ,14.4 ppg, 1.56 cuft/sx, 7.04 gal fw.
Tail: 225 sx Class C + 2% CaCl2 + 0.25% R-38, 14.8 ppg, 1.35 cuft/sx, 6.34 gal fw.
100% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

Production

Lead Slurry: 700 sacks Class C 50/50 Poz + 10% Bentonite + 0.3% FL-10 + 0.25% R-38 + 5% Salt, Mixed at 11.92 ppg. Yeild 2.37 cuft/sx, 13.52 gal/sx Fresh Water.
Tail Slurry: 320 sacks C Star Bond + 0.3% FL-10 + 0.1% C-20 + 0.25% R-38. Mixed at 13.2 ppg, Yeild 1.55 cuft/sx, 7.86 gal/sx Fresh Water.
50% Excess
TOC Surface Centralizers bottom 10 joints, then every other joint to above zone of interest (Blinebry/Paddock)

In case of lost returns while drilling 11" hole to 1100, Cimarex will run a contingency intermediate casing string.

Intermediate Contingency Cement

Lead: 200 sx 50:50 Poz: C +0.2% Defoamer (D046) +5% D044 (Salt) +10% D020 (Extender) +1/8 pps Polyflake (D130) +2 pps Gilsonite (D042), 11.8 ppg, Yeild 2.57, 15.061 gal/sx water.
Tail: 300 sx C +1%S001 (CaCl2), 14.8 ppg, 1.35 yeild, 6.365 gal/sx water.
50% Excess
TOC Surface

Production Cement in case of Intermediate Contingency

Lead Slurry: 460 sacks Class C 50/50 Poz + 10% Bentonite + 0.3% FL-10 + 0.25% R-38 + 5% Salt, Mixed at 11.92 ppg. Yeild 2.37 cuft/sx, 13.52 gal/sx Fresh Water.
Tail Slurry: 320 sacks C Star Bond + 0.3% FL-10 + 0.1% C-20 + 0.25% R-38. Mixed at 13.2 ppg, Yeild 1.55 cuft/sx, 7.86 gal/sx Fresh Water.
50% Excess
TOC Surface Centralizers bottom 10 joints, then every other joint to above zone of interest (Blinebry/Paddock)

According to the State Engineer, average depth to ground water is 60.' Fresh water zones will be protected by setting 9⅝" casing at 210 and cementing to surface. Hydrocarbon zones will be protected by setting 5½" casing at 5240 and cementing to surface, and if needed, setting 8⅝" casing at 1100 and cementing to surface.

Collapse Factor	*Burst Factor*	*Tension Factor*
1.125	1.125	1.6

Application to Drill
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Unit H, Section 7
T17S R29E, Eddy County, NM

11 Pressure control Equipment:
Exhibit "E-1" - An 11" 3000 PSI working pressure B.O.P. consisting of a one set of blind rams and one set of pipe rams and a 3000 psi annular-type preventor. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. 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 seperator will be available if drilling in H2S areas.

BOP unit will be hydraulically operated. Below intermediate casing shoe, BOP will be 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 3000 psi BOP system.

Test BOP equipment and choke manifold to 250 psi low and 3000 psi high and annular BOP to 250 psi low and 1500 psi high by an independent service company.

12 Testing, Logging and Coring Program: See COA
A. Mud logging No mud logging program.
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. The area has a potiential H2S hazard. An H2S drilling plan is attached. 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 **2300 psi** Estimated BHT **110°**

14 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.
Drilling expected to take 10-15 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.
Blinebry pay will be perforated and stimulated.
The proposed well will be tested and potentialed as **an oil well.**

Cimarex Energy Co.

Location	Eddy County, NM	Slot	No. 1 SHL
Field	(Hawker) Sec 7 T17S, R29E	Well	No. 1
Facility	Hawker 7 Fed No.1	Wellbore	No. 1 PWB

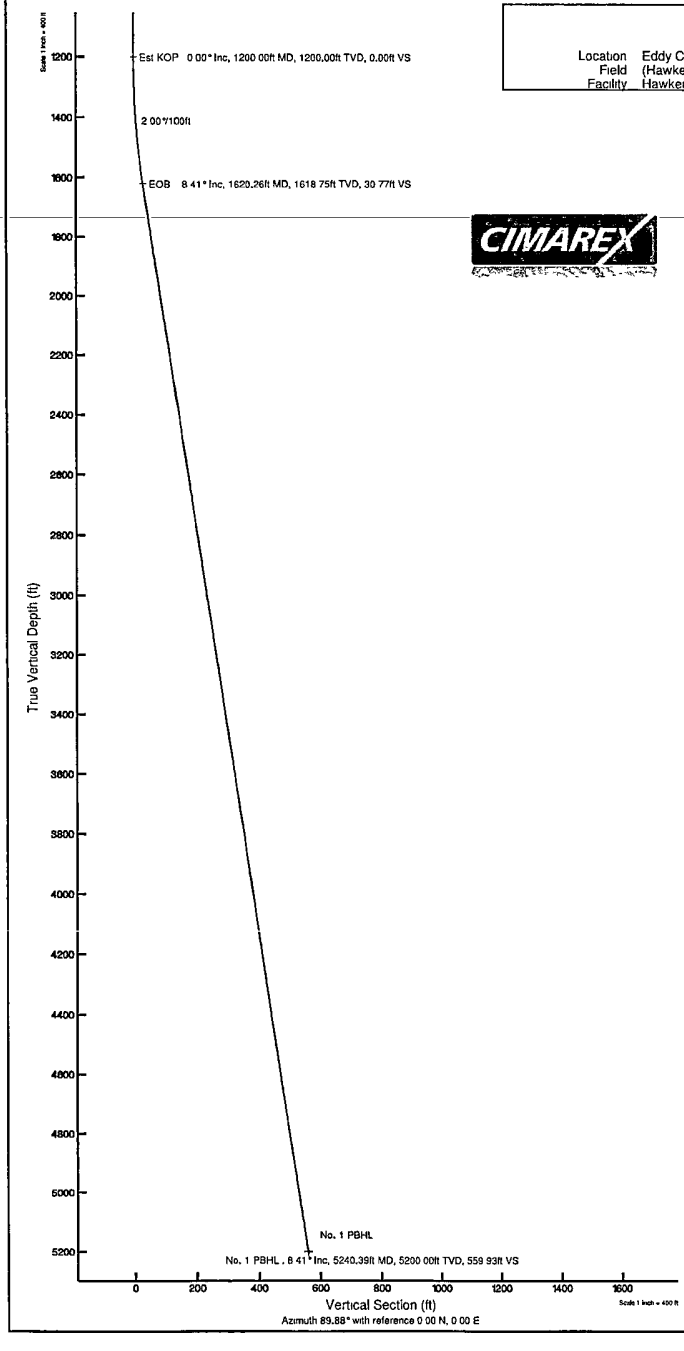
BAKER HUGHES INTEQ

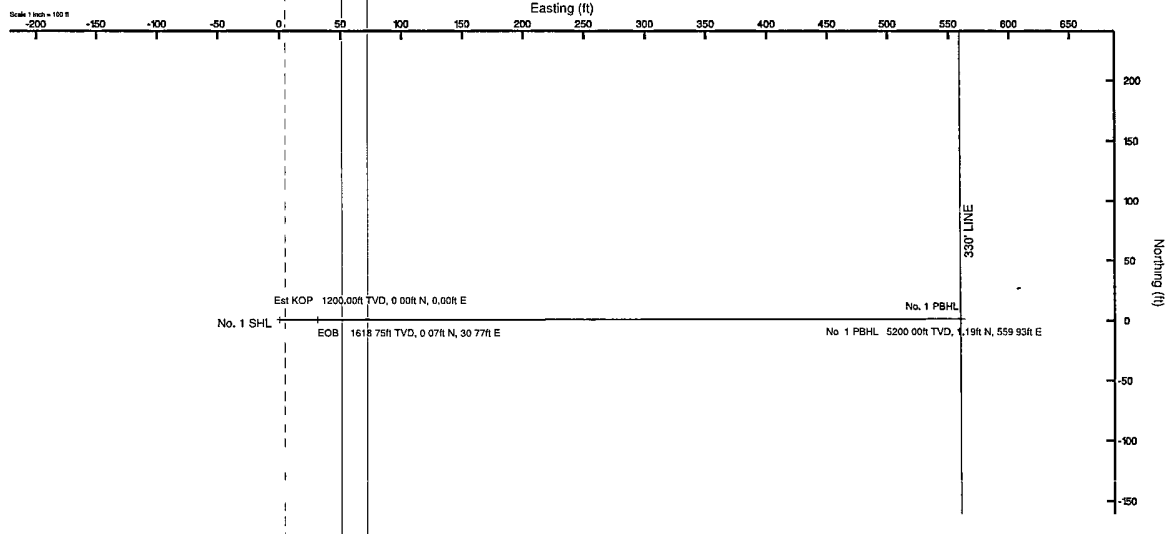
CIMAREX

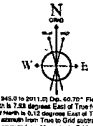
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	89.878	0.00	0.00	0.00	0.00	0.00
Est KOP	1200.00	0.000	89.878	1200.00	0.00	0.00	0.00	0.00
EOB	1620.26	8.405	89.878	1618.75	0.07	30.77	2.00	30.77
No. 1 PBHL	5240.39	8.405	89.878	5200.00	1.19	559.93	0.00	559.93

Plot reference wellpath is Prelim_1	
True vertical depths are referenced to Rig on No. 1 SHL (RT)	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 1 SHL (RT)	North Reference: Grid north
Rig on No. 1 SHL (RT) to Mean Sea Level: 3673 feet	Scale: True distance
Mean Sea Level to Mud line (Facility: Hawker 7 Fed No.1): -3673 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gomeoscr on 12/8/2010







BGGM (1945.0 to 2011.0) Dip: 60.75° Field: 49093.1 nT
Magnetic North is 7.88 degrees East of True North (at 12/8/2010)
Grid North is 0.12 degrees East of True North
To correct azimuth from True to Grid subtract 0.12 degrees
To correct azimuth from Magnetic to Grid add 7.88 degrees
For example: If the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.88 = 97.88

Planned Wellpath Report

Prelim_1

INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Cimarex Energy Co.**	Slot	**No. 1 SHL**
Area	**Eddy County, NM**	Well	**No. 1**
Field	**(Hawker) Sec 7 T17S, R29E**	Wellbore	**No. 1 PWB**
Facility	**Hawker 7 Fed No.1**		

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	**0.999915**	Report Generated	**12/8/2010** at **12:39:15 PM**
Convergence at slot	**0.12° East**	Database/Source file	**WA Midland/No._1_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**	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W
Facility Reference Pt			**610380.00**	**673036.90**	32°51'00.002"N	104°06'30.630"W
Field Reference Pt			**610380.00**	**673036.90**	32°51'00.002"N	104°06'30.630"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on No. 1 SHL (RT) to Facility Vertical Datum	**0.00ft**
Horizontal Reference Pt	**Slot**	Rig on No. 1 SHL (RT) to Mean Sea Level	**3673.00ft**
Vertical Reference Pt	**Rig on No. 1 SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00ft**
MD Reference Pt	**Rig on No. 1 SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**89.88°**

Planned Wellpath Report

Prelim_1

INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1 SHL
Area	Eddy County, NM	Well	No. 1
Field	(Hawker) Sec 7 T17S, R29E	Wellbore	No. 1 PWB
Facility	Hawker 7 Fed No.1		

WELLPATH DATA (55 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	89.878	0.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	Tie On
100.00†	0.000	89.878	100.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
200.00†	0.000	89.878	200.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
300.00†	0.000	89.878	300.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
400.00†	0.000	89.878	400.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
500.00†	0.000	89.878	500.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
600.00†	0.000	89.878	600.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
700.00†	0.000	89.878	700.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
800.00†	0.000	89.878	800.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
900.00†	0.000	89.878	900.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
1000.00†	0.000	89.878	1000.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
1100.00†	0.000	89.878	1100.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	
1200.00	0.000	89.878	1200.00	0.00	0.00	0.00	610380.00	673036.90	32°51'00.002"N	104°06'30.630"W	0.00	Est-KOP
1300.00†	2.000	89.878	1299.98	1.75	0.00	1.75	610381.74	673036.90	32°51'00.002"N	104°06'30.610"W	2.00	
1400.00†	4.000	89.878	1399.84	6.98	0.01	6.98	610386.98	673036.91	32°51'00.002"N	104°06'30.549"W	2.00	
1500.00†	6.000	89.878	1499.45	15.69	0.03	15.69	610395.69	673036.93	32°51'00.002"N	104°06'30.447"W	2.00	
1600.00†	8.000	89.878	1598.70	27.88	0.06	27.88	610407.88	673036.96	32°51'00.002"N	104°06'30.304"W	2.00	
1620.26	8.405	89.878	1618.75	30.77	0.07	30.77	610410.77	673036.97	32°51'00.002"N	104°06'30.270"W	2.00	EOB
1700.00†	8.405	89.878	1697.64	42.43	0.09	42.43	610422.42	673036.99	32°51'00.002"N	104°06'30.133"W	0.00	
1800.00†	8.405	89.878	1796.56	57.04	0.12	57.04	610437.04	673037.02	32°51'00.002"N	104°06'29.962"W	0.00	
1900.00†	8.405	89.878	1895.49	71.66	0.15	71.66	610451.65	673037.05	32°51'00.002"N	104°06'29.790"W	0.00	
2000.00†	8.405	89.878	1994.42	86.28	0.18	86.28	610466.27	673037.08	32°51'00.002"N	104°06'29.619"W	0.00	
2100.00†	8.405	89.878	2093.34	100.89	0.21	100.89	610480.89	673037.11	32°51'00.002"N	104°06'29.448"W	0.00	
2200.00†	8.405	89.878	2192.27	115.51	0.25	115.51	610495.50	673037.15	32°51'00.002"N	104°06'29.276"W	0.00	
2300.00†	8.405	89.878	2291.19	130.13	0.28	130.13	610510.12	673037.18	32°51'00.002"N	104°06'29.105"W	0.00	
2400.00†	8.405	89.878	2390.12	144.75	0.31	144.75	610524.73	673037.21	32°51'00.002"N	104°06'28.934"W	0.00	
2500.00†	8.405	89.878	2489.05	159.36	0.34	159.36	610539.35	673037.24	32°51'00.002"N	104°06'28.762"W	0.00	
2600.00†	8.405	89.878	2587.97	173.98	0.37	173.98	610553.96	673037.27	32°51'00.002"N	104°06'28.591"W	0.00	
2700.00†	8.405	89.878	2686.90	188.60	0.40	188.60	610568.58	673037.30	32°51'00.002"N	104°06'28.420"W	0.00	
2800.00†	8.405	89.878	2785.82	203.21	0.43	203.21	610583.20	673037.33	32°51'00.002"N	104°06'28.248"W	0.00	
2900.00†	8.405	89.878	2884.75	217.83	0.46	217.83	610597.81	673037.36	32°51'00.002"N	104°06'28.077"W	0.00	
3000.00†	8.405	89.878	2983.67	232.45	0.49	232.45	610612.43	673037.39	32°51'00.002"N	104°06'27.906"W	0.00	
3100.00†	8.405	89.878	3082.60	247.07	0.53	247.07	610627.04	673037.43	32°51'00.002"N	104°06'27.734"W	0.00	
3200.00†	8.405	89.878	3181.53	261.68	0.56	261.68	610641.66	673037.46	32°51'00.002"N	104°06'27.563"W	0.00	
3300.00†	8.405	89.878	3280.45	276.30	0.59	276.30	610656.28	673037.49	32°51'00.002"N	104°06'27.392"W	0.00	
3400.00†	8.405	89.878	3379.38	290.92	0.62	290.92	610670.89	673037.52	32°51'00.002"N	104°06'27.220"W	0.00	
3500.00†	8.405	89.878	3478.30	305.53	0.65	305.53	610685.51	673037.55	32°51'00.002"N	104°06'27.049"W	0.00	
3600.00†	8.405	89.878	3577.23	320.15	0.68	320.15	610700.12	673037.58	32°51'00.002"N	104°06'26.878"W	0.00	
3700.00†	8.405	89.878	3676.16	334.77	0.71	334.77	610714.74	673037.61	32°51'00.002"N	104°06'26.706"W	0.00	
3800.00†	8.405	89.878	3775.08	349.39	0.74	349.39	610729.36	673037.64	32°51'00.002"N	104°06'26.535"W	0.00	
3900.00†	8.405	89.878	3874.01	364.00	0.77	364.00	610743.97	673037.67	32°51'00.002"N	104°06'26.364"W	0.00	
4000.00†	8.405	89.878	3972.93	378.62	0.80	378.62	610758.59	673037.70	32°51'00.002"N	104°06'26.192"W	0.00	
4100.00†	8.405	89.878	4071.86	393.24	0.84	393.24	610773.20	673037.74	32°51'00.002"N	104°06'26.021"W	0.00	
4200.00†	8.405	89.878	4170.79	407.86	0.87	407.85	610787.82	673037.77	32°51'00.002"N	104°06'25.850"W	0.00	
4300.00†	8.405	89.878	4269.71	422.47	0.90	422.47	610802.43	673037.80	32°51'00.002"N	104°06'25.678"W	0.00	

Planned Wellpath Report

Prelim_1

INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1 SHL
Area	Eddy County, NM	Well	No. 1
Field	(Hawker) Sec 7 T17S, R29E	Wellbore	No. 1 PWB
Facility	Hawker 7 Fed No.1		

WELLPATH DATA (55 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
4400.00†	8.405	89.878	4368.64	437.09	0.93	437.09	610817.05	673037.83	32°51'00.002"N	104°06'25.507"W	0.00	
4500.00†	8.405	89.878	4467.56	451.71	0.96	451.71	610831.67	673037.86	32°51'00.002"N	104°06'25.336"W	0.00	
4600.00†	8.405	89.878	4566.49	466.32	0.99	466.32	610846.28	673037.89	32°51'00.002"N	104°06'25.164"W	0.00	
4700.00†	8.405	89.878	4665.42	480.94	1.02	480.94	610860.90	673037.92	32°51'00.002"N	104°06'24.993"W	0.00	
4800.00†	8.405	89.878	4764.34	495.56	1.05	495.56	610875.51	673037.95	32°51'00.002"N	104°06'24.822"W	0.00	
4900.00†	8.405	89.878	4863.27	510.18	1.08	510.17	610890.13	673037.98	32°51'00.002"N	104°06'24.650"W	0.00	
5000.00†	8.405	89.878	4962.19	524.79	1.12	524.79	610904.75	673038.02	32°51'00.002"N	104°06'24.479"W	0.00	
5100.00†	8.405	89.878	5061.12	539.41	1.15	539.41	610919.36	673038.05	32°51'00.002"N	104°06'24.308"W	0.00	
5200.00†	8.405	89.878	5160.05	554.03	1.18	554.03	610933.98	673038.08	32°51'00.002"N	104°06'24.136"W	0.00	
5240.39	8.405	89.878	5200.00[1]	559.93	1.19	559.93	610939.88	673038.09	32°51'00.002"N	104°06'24.067"W	0.00	No. 1 PBHL

HOLE & CASING SECTIONS Ref Wellbore: No. 1 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]
8.625in Casing	0.00	1100.00	1100.00	0.00	1100.00	0.00	0.00	0.00	0.00
7.875in Open Hole	1100.00	5240.39	4140.39	1100.00	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. 1 PBHL	5240.39	5200.00	1.19	559.93	**610939.88**	**673038.09**	32°51'00.002"N	104°06'24.067"W	point

SURVEY PROGRAM Ref Wellbore: No. 1 PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	5240.39	NaviTrak (Standard)		No. 1 PWB

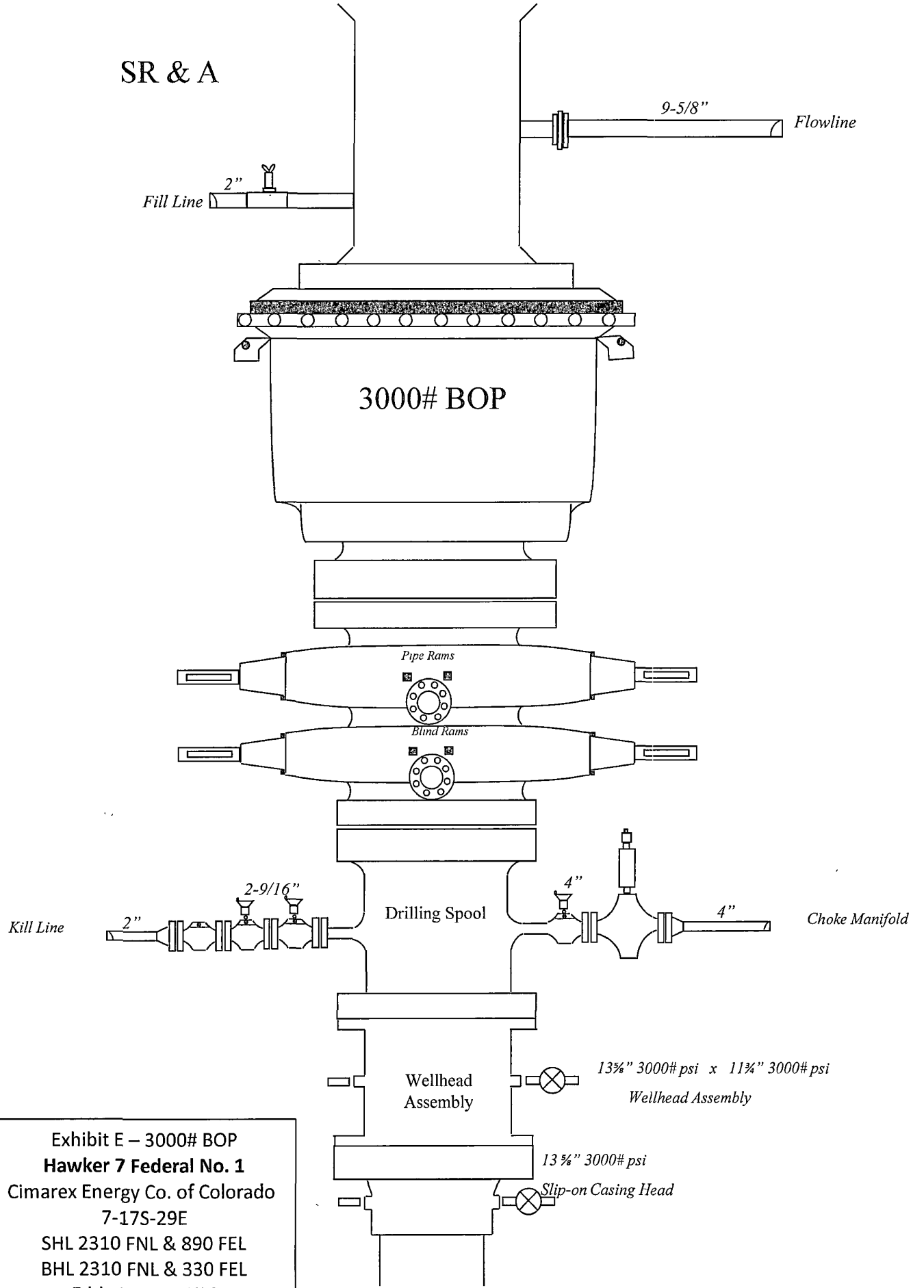


Exhibit E – 3000# BOP
Hawker 7 Federal No. 1
Cimarex Energy Co. of Colorado
7-17S-29E
SHL 2310 FNL & 890 FEL
BHL 2310 FNL & 330 FEL
Eddy County, NM

Drilling Operations
Choke Manifold
3M Service

Exhibit E-1 – Choke Manifold Diagram
Hawker 7 Federal No. 1
Cimarex Energy Co. of Colorado
7-17S-29E
SHL 2310 FNL & 890 FEL
BHL 2310 FNL & 330 FEL
Eddy County, NM