

ATS-10-585

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AUG 26 2010
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Form 3,60-3
(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. LC-063586		
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			7. If Unit or CA Agreement, Name and No.		
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701			8. Lease Name and Well No. <i>L31971</i> Southern California 29 Federal No. 17H		
3b. Phone No. (include area code) 432-571-7800			9. API Well No. 30-025- <i>39888</i>		
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 1980 FSL & 330 FWL <i>Unit L</i> At proposed prod Zone 1980 FSL & 1650 FEL <i>Unit J</i> Horizontal Bone Spring test			10. Field and Pool, or Exploratory Lusk; Bone Spring, South <i>L41460</i>		
14. Distance in miles and direction from nearest town or post office*			11. Sec., T. R. M. or Blk. and Survey or Area 29-19S-32E		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg unit line if any) 330'		16. No of acres in lease 640		17. Spacing Unit dedicated to this well N2SW & NESE 120 acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. N/A		19. Proposed Depth Pilot Hole 9550' MD 12492' TVD 9300'		20. BLM/BIA Bond No. on File NM-2575	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3350' GR		22. Approximate date work will start* 07.15.10		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
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 <i>Natalie Krueger</i>		Name (Printed/Typed) Natalie Krueger	Date 05.29.10
Regulatory Analyst			
Approved By (Signature) <i>/s/ Don Peterson</i>		Name (Printed/Typed) <i>/s/ Don Peterson</i>	Date <i>AUG 24 2010</i>
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

* (Instructions on page 2)

PETROLEUM ENGINEER
K2 08/31/10

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

**Approval Subject to General Requirements
& Special Stipulations Attached**

Capitan Controlled Water Basin

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

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AUG 26 2010

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State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised October 15, 2009

Submit one copy to appropriate
District Office

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39888	Pool Code 41460	Pool Name Lusk; Bone Spring, S
Property Code 31971	Property Name SOUTHERN CALIFORNIA "29" FEDERAL	Well Number 17 H
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3350'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	29	19 S	32 E		1980	SOUTH	330	WEST	LEA

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
J	29	19 S	32 E		1980	SOUTH	1650	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
120			

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

SURFACE LOCATION Lat - N 32°37'46.69" Long - W 103°47'45.18" NMSPCE- N 593211.0 E 706793.3 (NAD-83) PROPOSED BOTTOM HOLE LOCATION Lat - N 32°37'46.60" Long - W 103°47'06.32" NMSPCE- N 593218.4 E 710116.3 (NAD-83) LC-063586 SHL & P.P. Bone Spring 1980 FSL & 330 FWL EOC/Beg of Prod Interval 1980 FSL & 518 FWL BHL/End of Prod Interval 1980 FSL & 1650 FEL	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this 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. <i>Natalie Krueger</i> 6/1/2010 Signature Date Natalie Krueger Printed Name SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. <i>Gary L. Jones</i> Signature & Seal of Professional Surveyor 6/1/2010 Date Surveyed Certificate No. Gary L. Jones 7977 BASIN SURVEYS
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Application to Drill
Southern California 29 Federal No. 17
 Cimarex Energy Co. of Colorado
 Unit L, Section 29
 T19S-R32E, 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 1980 FSL & 330 FWL
 BHL 1980 FSL & 1650 FEL

- 2 Elevation above sea level: 3350' 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 9550' MD 12492' TVD 9300'

- 6 Estimated tops of geological markers:

Rustler	882'	7 Rivers	2725'
Capitan	2844'	Delaware Sands	4400'
T. Salt	4500' ??	Bone Spring	7201'
B. Salt	2224'	FBSS	8400'
Yates	2387'	SBSS	9050'

- 7 Possible mineral bearing formation:
 Bone Spring Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 920'	8.4 - 8.6	28	NC	FW
920' to 4000'	10.0	30-32	NC	Brine water
4000' to 9550'	8.4 - 9.5	30-32	NC	FW, brine
9059' to 12492'	8.4	28-32	NC	2% KCl

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

After drilling and setting surface casing, drill to vertical TD 9550' and log. Set 7" casing to 9000' and cross over to 2 7/8" 2000 psi IJ fiberglass tubing underneath to 9550' and cement in place. Drill out of the bottom of the 7" with a 6 1/2" bit and through cement and fiberglass tubing to KOP @ 9059' and kick off to drill the lateral. The fiberglass tubing effectively circulates cement to surface and plugs back the open hole.

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9 Casing & Cementing Program:

String	Hole Size	Depth		Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to 920'	New	13¾"	48#	STC	H-40
Intermediate	12¼"	0'	to 4000'	New	9⅝"	40#	LTC	J/K-55
Production	8¾"	0'	to 9000'	New	7"	26#	LTC	P-110
Production	8¾"	9000'	to 9550'	New	2⅝"	2.18#	0	IJ
Lateral Pt. 1	6⅝"	8900'	to 9356'	New	4½"	11.6#	BTC	P-110
Lateral Pt. 2	6⅝"	9356'	to 12492'	New	4½"	11.6#	LTC	P-110

10 Cementing:

Surface 820 sx Premium Plus + 2% CaCl₂ (wt 14.8, yld 1.35)

TOC Surface

Intermediate Lead: 215 sx Econocem + 3% Salt + 2% CaCl₂ + 3 lbm/sk Gilsonite (wt 11.7, yld 2.06)

Tail: 650 sks Premium Plus + 1% CaCl₂ (wt 14.8, yld 1.34)

TOC Surface

Production Lead: 460 sx EconoCem + 3% Salt + 5 lbm/sk gilsonite (wt 13.0, yld 1.71)

Tail: 400 sx HalCem (wt 14.8, yld 1.34)

TOC 3800'

Lateral No cement needed. Peak completion assembly.

See
COA

Fresh water zones will be protected by setting 13¾" casing at 920' and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 4000' and cementing to surface, and by setting 7" casing at 9000' and fiberglass to 9550' and cementing to 3800.'

<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 13¾" 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 1500 psi high.

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12 Testing, Logging and Coring Program:

See COA

- A. Mud logging program: 2 man unit from 4000' 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 potential as **an oil well.**

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Planned Wellpath Report

 Prelim_1
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**INTEQ****REFERENCE WELLPATH IDENTIFICATION**

Operator	Cimarex Energy Co.	Slot	No. 17H SHL
Area	Lea County, NM	Well	No. 17H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 17H PWB
Facility	Southern California 29 Fed No. 17H		

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	Florroll
Scale	0.99994	Report Generated	5/28/2010 at 11:35:27 AM
Convergence at slot	0.29° East	Database/Source file	WA_Midland/No. 17H_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	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W
Facility Reference Pt			706793.30	593211.00	32°37'46.691"N	103°47'45.177"W
Field Reference Pt			706799.20	591606.30	32°37'30.812"N	103°47'45.203"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 17H SHL (GL) to Ground Level	0.00ft
Horizontal Reference Pt	Slot Location	Rig on No. 17H SHL (GL) to Mean Sea Level	3350.00ft
Vertical Reference Pt	Rig on No. 17H SHL (GL)	Ground Level to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 17H SHL (GL)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	89.87°



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WELLPATH DATA (128 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	89.872	0.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	Tie On
100.00†	0.000	89.872	100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
200.00†	0.000	89.872	200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
300.00†	0.000	89.872	300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
400.00†	0.000	89.872	400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
500.00†	0.000	89.872	500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
600.00†	0.000	89.872	600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
700.00†	0.000	89.872	700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
800.00†	0.000	89.872	800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
900.00†	0.000	89.872	900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1000.00†	0.000	89.872	1000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1100.00†	0.000	89.872	1100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1200.00†	0.000	89.872	1200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1300.00†	0.000	89.872	1300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1400.00†	0.000	89.872	1400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1500.00†	0.000	89.872	1500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1600.00†	0.000	89.872	1600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1700.00†	0.000	89.872	1700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1800.00†	0.000	89.872	1800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
1900.00†	0.000	89.872	1900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2000.00†	0.000	89.872	2000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2100.00†	0.000	89.872	2100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2200.00†	0.000	89.872	2200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2300.00†	0.000	89.872	2300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2400.00†	0.000	89.872	2400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2500.00†	0.000	89.872	2500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2600.00†	0.000	89.872	2600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2700.00†	0.000	89.872	2700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2800.00†	0.000	89.872	2800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
2900.00†	0.000	89.872	2900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	



Planned Wellpath Report

Prelim_1

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INTEQ

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WELLPATH DATA (128 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
3000.00†	0.000	89.872	3000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3100.00†	0.000	89.872	3100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3200.00†	0.000	89.872	3200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3300.00†	0.000	89.872	3300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3400.00†	0.000	89.872	3400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3500.00†	0.000	89.872	3500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3600.00†	0.000	89.872	3600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3700.00†	0.000	89.872	3700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3800.00†	0.000	89.872	3800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
3900.00†	0.000	89.872	3900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4000.00†	0.000	89.872	4000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4100.00†	0.000	89.872	4100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4200.00†	0.000	89.872	4200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4300.00†	0.000	89.872	4300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4400.00†	0.000	89.872	4400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4500.00†	0.000	89.872	4500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4600.00†	0.000	89.872	4600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4700.00†	0.000	89.872	4700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4800.00†	0.000	89.872	4800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
4900.00†	0.000	89.872	4900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5000.00†	0.000	89.872	5000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5100.00†	0.000	89.872	5100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5200.00†	0.000	89.872	5200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5300.00†	0.000	89.872	5300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5400.00†	0.000	89.872	5400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5500.00†	0.000	89.872	5500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5600.00†	0.000	89.872	5600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5700.00†	0.000	89.872	5700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5800.00†	0.000	89.872	5800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
5900.00†	0.000	89.872	5900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	



Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 17H SHL
Area	Lea County, NM	Well	No. 17H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 17H PWB
Facility	Southern California 29 Fed No. 17H		

WELLPATH DATA (128 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
6000.00†	0.000	89.872	6000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6100.00†	0.000	89.872	6100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6200.00†	0.000	89.872	6200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6300.00†	0.000	89.872	6300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6400.00†	0.000	89.872	6400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6500.00†	0.000	89.872	6500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6600.00†	0.000	89.872	6600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6700.00†	0.000	89.872	6700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6800.00†	0.000	89.872	6800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
6900.00†	0.000	89.872	6900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7000.00†	0.000	89.872	7000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7100.00†	0.000	89.872	7100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7200.00†	0.000	89.872	7200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7300.00†	0.000	89.872	7300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7400.00†	0.000	89.872	7400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7500.00†	0.000	89.872	7500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7600.00†	0.000	89.872	7600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7700.00†	0.000	89.872	7700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7800.00†	0.000	89.872	7800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
7900.00†	0.000	89.872	7900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8000.00†	0.000	89.872	8000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8100.00†	0.000	89.872	8100.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8200.00†	0.000	89.872	8200.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8300.00†	0.000	89.872	8300.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8400.00†	0.000	89.872	8400.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8500.00†	0.000	89.872	8500.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8600.00†	0.000	89.872	8600.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8700.00†	0.000	89.872	8700.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8800.00†	0.000	89.872	8800.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
8900.00†	0.000	89.872	8900.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	



Planned Wellpath Report

Prelim 1

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 17H SHL
Area	Lea County, NM	Well	No. 17H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 17H PWB
Facility	Southern California 29 Fed No. 17H		

WELLPATH DATA (128 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
9000.00†	0.000	89.872	9000.00	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	
9059.10	0.000	89.872	9059.10	0.00	0.00	0.00	706793.30	593211.00	32°37'46.691"N	103°47'45.177"W	0.00	Est. KOP
9100.00†	12.270	89.872	9099.69	4.36	0.01	4.36	706797.66	593211.01	32°37'46.691"N	103°47'45.126"W	30.00	
9200.00†	42.270	89.872	9187.56	49.66	0.11	49.66	706842.96	593211.11	32°37'46.690"N	103°47'44.596"W	30.00	
9300.00†	72.270	89.872	9241.01	132.82	0.30	132.82	706926.12	593211.30	32°37'46.687"N	103°47'43.624"W	30.00	
9356.06	89.087	89.872	9250.06	187.94	0.42	187.94	706981.23	593211.42	32°37'46.686"N	103°47'42.979"W	30.00	End of Curve
9400.00†	89.087	89.872	9250.76	231.88	0.52	231.88	707025.17	593211.52	32°37'46.684"N	103°47'42.466"W	0.00	
9500.00†	89.087	89.872	9252.35	331.87	0.74	331.87	707125.15	593211.74	32°37'46.682"N	103°47'41.297"W	0.00	
9600.00†	89.087	89.872	9253.95	431.86	0.96	431.85	707225.13	593211.96	32°37'46.679"N	103°47'40.127"W	0.00	
9700.00†	89.087	89.872	9255.54	531.84	1.18	531.84	707325.11	593212.18	32°37'46.676"N	103°47'38.958"W	0.00	
9800.00†	89.087	89.872	9257.13	631.83	1.41	631.83	707425.09	593212.41	32°37'46.673"N	103°47'37.789"W	0.00	
9900.00†	89.087	89.872	9258.72	731.82	1.63	731.82	707525.07	593212.63	32°37'46.670"N	103°47'36.620"W	0.00	
10000.00†	89.087	89.872	9260.32	831.80	1.85	831.80	707625.05	593212.85	32°37'46.668"N	103°47'35.451"W	0.00	
10100.00†	89.087	89.872	9261.91	931.79	2.08	931.79	707725.03	593213.07	32°37'46.665"N	103°47'34.282"W	0.00	
10200.00†	89.087	89.872	9263.50	1031.78	2.30	1031.78	707825.01	593213.30	32°37'46.662"N	103°47'33.113"W	0.00	
10300.00†	89.087	89.872	9265.09	1131.77	2.52	1131.76	707924.99	593213.52	32°37'46.659"N	103°47'31.943"W	0.00	
10400.00†	89.087	89.872	9266.69	1231.75	2.74	1231.75	708024.97	593213.74	32°37'46.656"N	103°47'30.774"W	0.00	
10500.00†	89.087	89.872	9268.28	1331.74	2.97	1331.74	708124.96	593213.97	32°37'46.653"N	103°47'29.605"W	0.00	
10600.00†	89.087	89.872	9269.87	1431.73	3.19	1431.72	708224.94	593214.19	32°37'46.651"N	103°47'28.436"W	0.00	
10700.00†	89.087	89.872	9271.47	1531.72	3.41	1531.71	708324.92	593214.41	32°37'46.648"N	103°47'27.267"W	0.00	
10800.00†	89.087	89.872	9273.06	1631.70	3.63	1631.70	708424.90	593214.63	32°37'46.645"N	103°47'26.098"W	0.00	
10900.00†	89.087	89.872	9274.65	1731.69	3.86	1731.69	708524.88	593214.86	32°37'46.642"N	103°47'24.929"W	0.00	
11000.00†	89.087	89.872	9276.24	1831.68	4.08	1831.67	708624.86	593215.08	32°37'46.639"N	103°47'23.760"W	0.00	
11100.00†	89.087	89.872	9277.84	1931.66	4.30	1931.66	708724.84	593215.30	32°37'46.636"N	103°47'22.590"W	0.00	
11200.00†	89.087	89.872	9279.43	2031.65	4.52	2031.65	708824.82	593215.52	32°37'46.633"N	103°47'21.421"W	0.00	
11300.00†	89.087	89.872	9281.02	2131.64	4.75	2131.63	708924.80	593215.75	32°37'46.631"N	103°47'20.252"W	0.00	
11400.00†	89.087	89.872	9282.61	2231.63	4.97	2231.62	709024.78	593215.97	32°37'46.628"N	103°47'19.083"W	0.00	
11500.00†	89.087	89.872	9284.21	2331.61	5.19	2331.61	709124.76	593216.19	32°37'46.625"N	103°47'17.914"W	0.00	
11600.00†	89.087	89.872	9285.80	2431.60	5.41	2431.60	709224.75	593216.41	32°37'46.622"N	103°47'16.745"W	0.00	
11700.00†	89.087	89.872	9287.39	2531.59	5.64	2531.58	709324.73	593216.64	32°37'46.619"N	103°47'15.576"W	0.00	



Planned Wellpath Report

Prelim_1

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 17H SHL
Area	Lea County, NM	Well	No. 17H
Field	(SC) Sec 29, T19S, R32E	Wellbore	No. 17H PWB
Facility	Southern California 29 Fed No. 17H		

WELLPATH DATA (128 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
11800.00†	89.087	89.872	9288.98	2631.58	5.86	2631.57	709424.71	593216.86	32°37'46.616"N	103°47'14.406"W	0.00	
11900.00†	89.087	89.872	9290.58	2731.56	6.08	2731.56	709524.69	593217.08	32°37'46.613"N	103°47'13.237"W	0.00	
12000.00†	89.087	89.872	9292.17	2831.55	6.31	2831.54	709624.67	593217.31	32°37'46.610"N	103°47'12.068"W	0.00	
12100.00†	89.087	89.872	9293.76	2931.54	6.53	2931.53	709724.65	593217.53	32°37'46.608"N	103°47'10.899"W	0.00	
12200.00†	89.087	89.872	9295.35	3031.53	6.75	3031.52	709824.63	593217.75	32°37'46.605"N	103°47'09.730"W	0.00	
12300.00†	89.087	89.872	9296.95	3131.51	6.97	3131.50	709924.61	593217.97	32°37'46.602"N	103°47'08.561"W	0.00	
12400.00†	89.087	89.872	9298.54	3231.50	7.20	3231.49	710024.59	593218.20	32°37'46.599"N	103°47'07.392"W	0.00	
12491.72	89.087	89.872	9300.00†	3323.21	7.40	3323.20	710116.30	593218.40	32°37'46.596"N	103°47'06.319"W	0.00	No. 17H PBH

HOLE & CASING SECTIONS Ref Wellbore: No. 17H 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]
7in Casing Intermediate	0.00	8850.00	8850.00	0.00	8850.00	0.00	0.00	0.00	0.00

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 17H PBHL	12491.72	9300.00	7.40	3323.20	710116.30	593218.40	32°37'46.596"N	103°47'06.319"W	point

SURVEY PROGRAM Ref Wellbore: No. 17H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	12491.72	NaviTrak (Standard)		No. 17H PWB

Cimarex Energy Co.

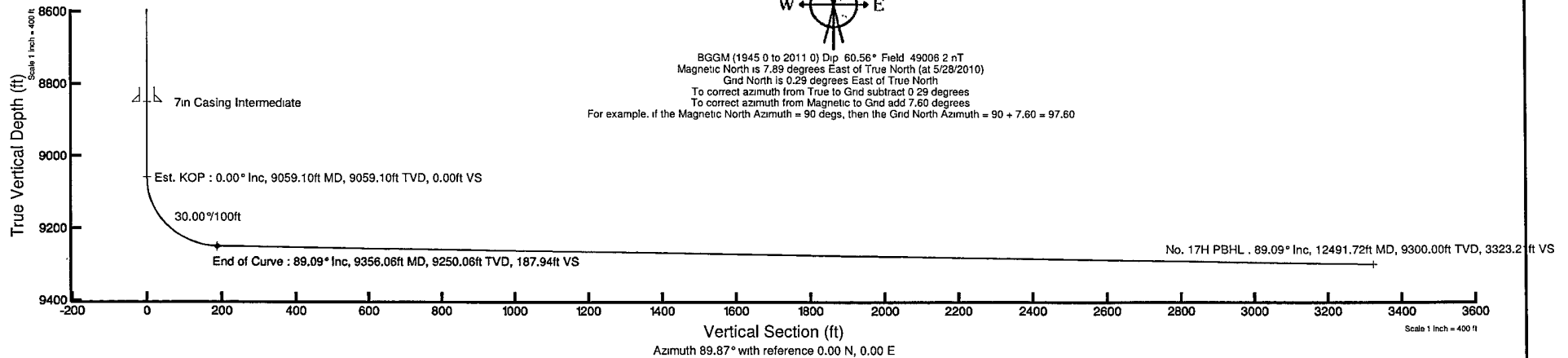
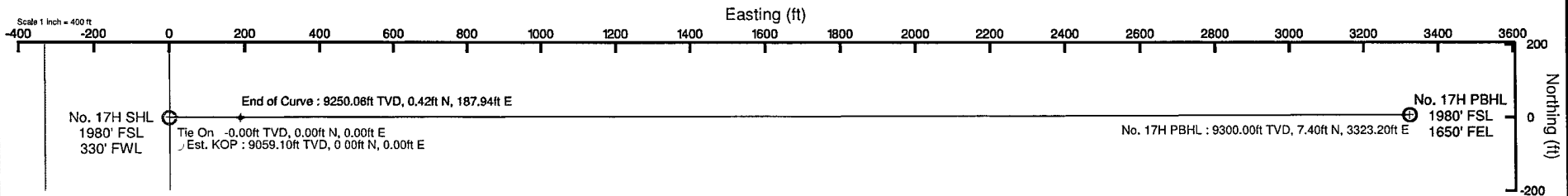
Location: Lea County, NM
Field: (SC) Sec 29, T19S, R32E
Facility: Southern California 29 Fed No. 17H

Slot: No. 17H SHL
Well: No. 17H
Wellbore: No. 17H PWB

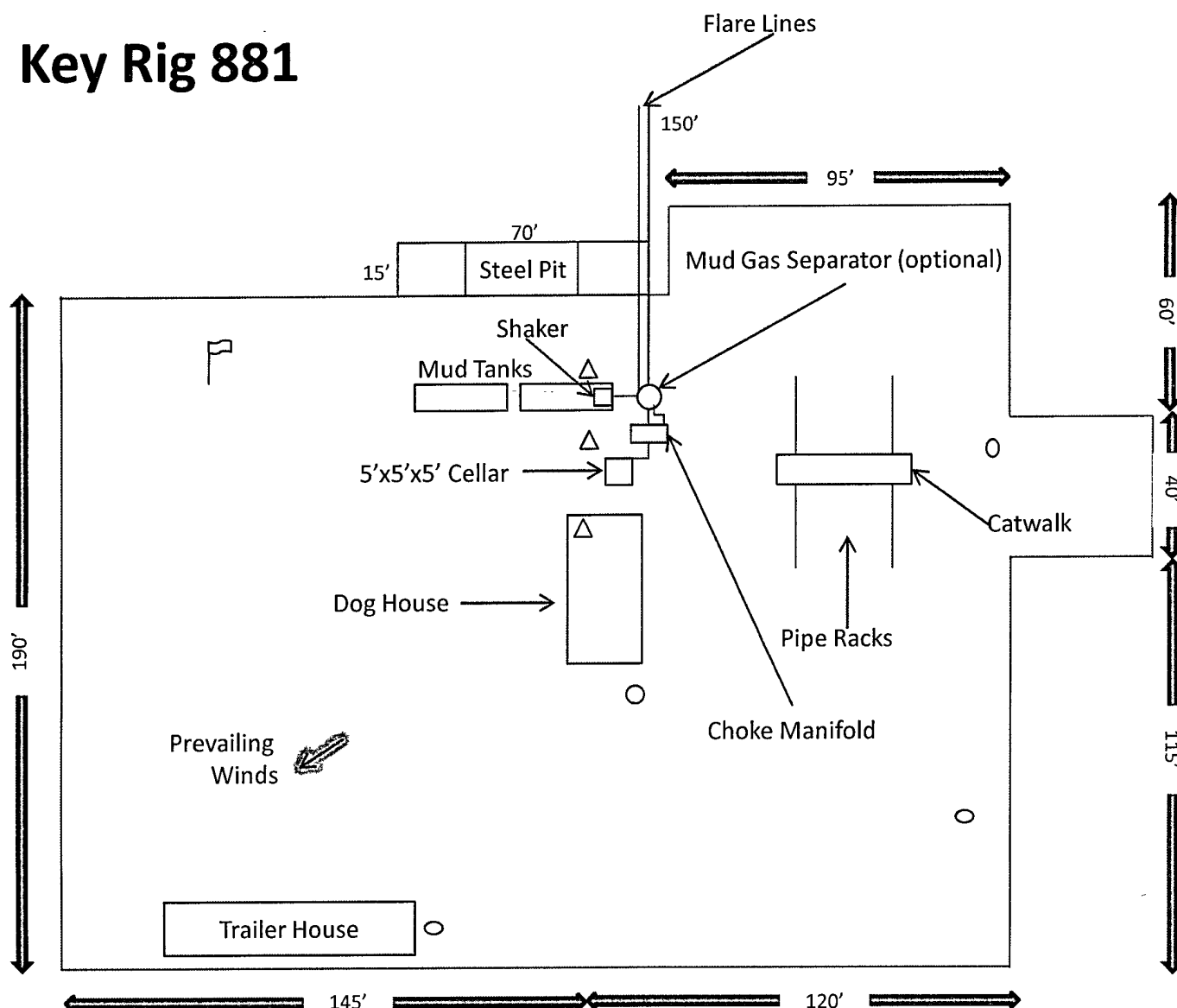
Plot reference wellpath is Prelim_1	
True vertical depths are referenced to Rig on No. 17H SHL (GL)	Grid System: NAD83 / TM New Mexico State Planes Eastern Zone (3001) US feet
Measured depths are referenced to Rig on No. 17H SHL (GL)	North Reference: Grid north
Rig on No. 17H SHL (GL) to Mean Sea Level 3350 feet	Scale: True distance
Mean Sea Level to Mud line (Facility Southern California 29 Fed No. 17H) -3350 feet	Depths are in feet
Coordinates are in feet referenced to Slot Location	Created by: Roland Flores on 5/28/2010



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	89.872	0.00	0.00	0.00	0.00	0.00
Est. KOP	9059.10	0.000	89.872	9059.10	0.00	0.00	0.00	0.00
End of Curve	9356.06	89.087	89.872	9250.06	0.42	187.94	30.00	187.94
No. 17H PBHL	12491.72	89.087	89.872	9300.00	7.40	3323.20	0.00	3323.21



Key Rig 881



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

Exhibit D – Rig Diagram
Southern California 29 Federal No. 17
 Cimarex Energy Co. of Colorado
 29-19S-32E
 SHL 1980 FSL & 330 FWL
 BHL 1980 FSL & 1650 FEL
 Lea County, NM

SR & A

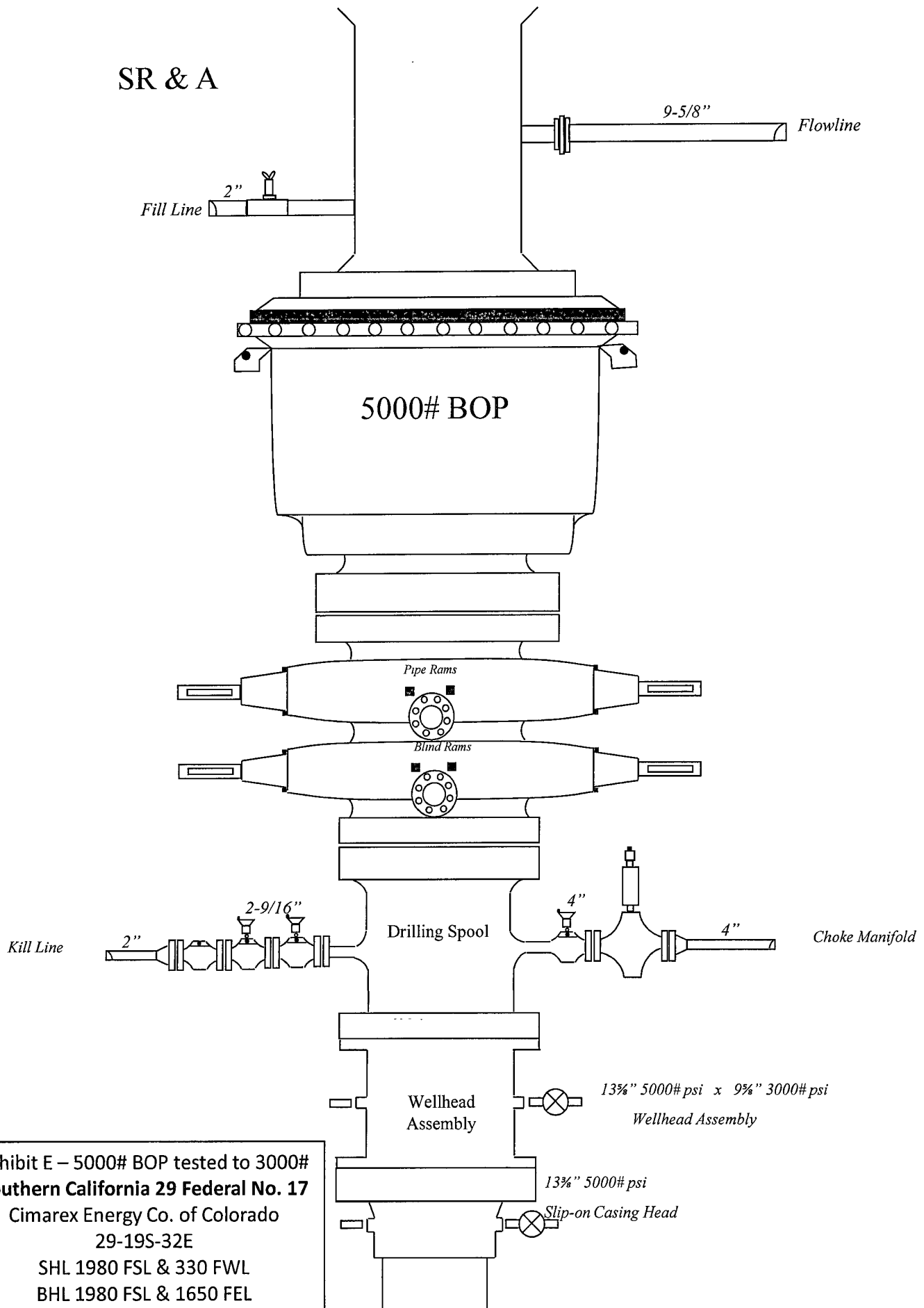


Exhibit E – 5000# BOP tested to 3000#
Southern California 29 Federal No. 17

Cimarex Energy Co. of Colorado

29-19S-32E

SHL 1980 FSL & 330 FWL

BHL 1980 FSL & 1650 FEL

Lea County, NM

Drilling Operations Choke Manifold 5M Service (tested to 3M)

Exhibit E-1 – Choke Manifold Diagram
Southern California 29 Federal No. 17
Cimarex Energy Co. of Colorado
29-19S-32E
SHL 1980 FSL & 330 FWL
BHL 1980 FSL & 1650 FEL
Lea County, NM

