

New Mexico Oil Conservation Division, District I
1625 N. French Drive
Hobbs, NM 88240
HOBBS OCD

Form 3160-3
(April 2004)

NOV 01 2011

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

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 <38905> Boxer 3 Federal Com No. 1
2 Name of Operator Cimarex Energy Co. of Colorado		9 API Well No 30-005- 29195
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 Abo/Wolfcamp Wildcat <97715>
4 Location of Well (Report location clearly and in accordance with any State requirements *) At Surface 2135 FNL & 170 FEL Unit H At proposed prod Zone 2265 FNL & 330 FWL Unit E Horizontal Bone Spring test		11 Sec, T R M or Blk and Survey or Area 3-15S-31E
14 Distance in miles and direction from nearest town or post office*		12 County or Parish Eddy Chaves
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line if any) 170'		13 State NM
16 No of acres in lease LC-060850 - 442.24 acres		17 Spacing Unit dedicated to this well S2N2 160 acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 705'		20 BLM/BIA Bond No on File NM-2575
19 Proposed Depth MD 13470 TVD 8770		21 Elevations (Show whether DF, KDB, RT, GL, etc) 4405' GR
22 Approximate date work will start* 10.01.11		23 Estimated duration 25-30 days
24 Attachments ROSWELL CONTROLLED WATER BASIN		

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	Date 07.29.11
Title Manager Operations Administration		
Approved By (Signature) Charles W. Schmidt	Name (Printed/Typed) Charles W. Schmidt	Date 10/28/2011
Title Field Manager	Office ROSWELL 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

APPROVED FOR 2 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)

DECLARED WATER BASIN

**CEMENT BEHIND THE 133"
CASING MUST BE CIRCULATED**

WITNESS

**APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS ATTACHED**

NOV 08 2011

Operator - Landowner Agreement

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Company: Cimarex Energy Co. of Colorado
Proposed Well: Boxer 3 Federal Com No. 1
Federal Lease Number: Private Minerals, LC-060850

This is to advise that Cimarex Energy Co. of Colorado has an agreement with: Billy R. Medlin, PO Box 50, Maljamar, NM 88264), the surface owner, concerning entry and surface restoration after completion of drilling operations at the above described well.

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

July 29, 2011
Date

Zeno Farris

Signature

Zeno Farris

Manager, Operations Administration

Application to Drill
Boxer 3 Federal Com No. 1
 Cimarex Energy Co. of Colorado
 Unit H, Section 3
 T15S-R31E; Chaves County, NM

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

- 1 Location: SHL 2135 FNL & 170 FEL
 BHL 2265 FNL & 330 FWL

- 2 Elevation above sea level: 4405 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 13470 TVD 8770

- 6 Estimated tops of geological markers:

Yates	2375
Queen	3200
San Andres	3900
Tubb	6731
Abo	7420

- 7 Possible mineral bearing formation:

Abo	Oil
Wolfcamp	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 365'	8.4 - 8.6	30-32	May Lose Circ	FW
365' to 3950'	10.0	28-29	May Lose Circ	Brine
3950' to 8444'	8.6 - 9.5	28-29	NC	FW, Brine, use hi-vis sweeps to keep hole clean
8444' to 13470'	8.4 - 8.9	28	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.

Application to Drill
Boxer 3 Federal Com No. 1
 Cimarex Energy Co. of Colorado
 Unit H, Section 3
 T15S-R31E; Chaves County, NM

8 Proposed drilling Plan

After setting surface and production casing (and intermediate if needed), drill out of the bottom of the 7" casing shoe and kick off 6½" lateral @ 8514. Drill to TD @ 13470 MD, 8770 TVD and set 4½" PEAK Completion liner as shown below.

9 Casing & Cementing Program:

String	Hole Size	Depth		Casing OD		Weight	Collar	Grade
Surface	17½"	0'	to 365'	New	13¾"	48#	STC	H40
Intermediate**	12¼"	0'	to 3950'	New	9¾"	40#	LTC	J55
Production	8¾"	0'	to 8444'	New	7"	26#	LTC	P110
Liner	6½"	8244'	to 13470'	New	4½"	11.6#	LTC/BTC*	P-110

* Use BTC from 8244-EOC @ 8965 and LTC from 8965-TD

10 Cementing:

Surface Lead:320SKS C + 4% Bentonite + 2% CaCl 13.5ppg, 1.75yld, 100% Excess
 Tail:220SKS Class C + 2% CaCl 14.8ppg 1.35 yield 25% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

Intermediate Lead:950SKS Econocem + 3% Salt + 2% CaCl + 3# Gilsonite 11.7ppg 2.06yield 75% Excess
Contingency* Tail:215SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess
TOC Surface

Production Lead:2270SKS Econocem + 5% Salt + 5# Gilsonite 14.6ppg 1.54yield 70% Excess
 Tail:500SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess
TOC 3750

Liner No Cement, PEAK Completion Liner
Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

**** Please note that the intermediate string is a contingency string only. Cimarex plans to drill 8¾" production hole out of the bottom of the 13¾" shoe. If wellbore integrity cannot be maintained while drilling the 8¾" hole, it will be reamed out to 12¼" and 9¾" intermediate casing will be set at 3950 and cemented as shown above.**

Depth to ground water is 280 according to the State Engineer. Fresh water zones will be protected by setting 13¾" casing at 365 and cementing to surface. Hydrocarbon zones will be protected by setting 7" casing at 8444 and cementing to 3750 and possible 9¾" casing at 3950 and cementing to surface, if needed.

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

Application to Drill
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Cimarex Energy Co. of Colorado
Unit H, Section 3
T15S-R31E; Chaves County, NM

11 Pressure control Equipment:

Exhibit "E". A 13 $\frac{3}{8}$ " 5000 PSI working pressure B.O.P. 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 below 6000.' 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 utilized if drilling in potential H2S area.

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.

12 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 1100 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.

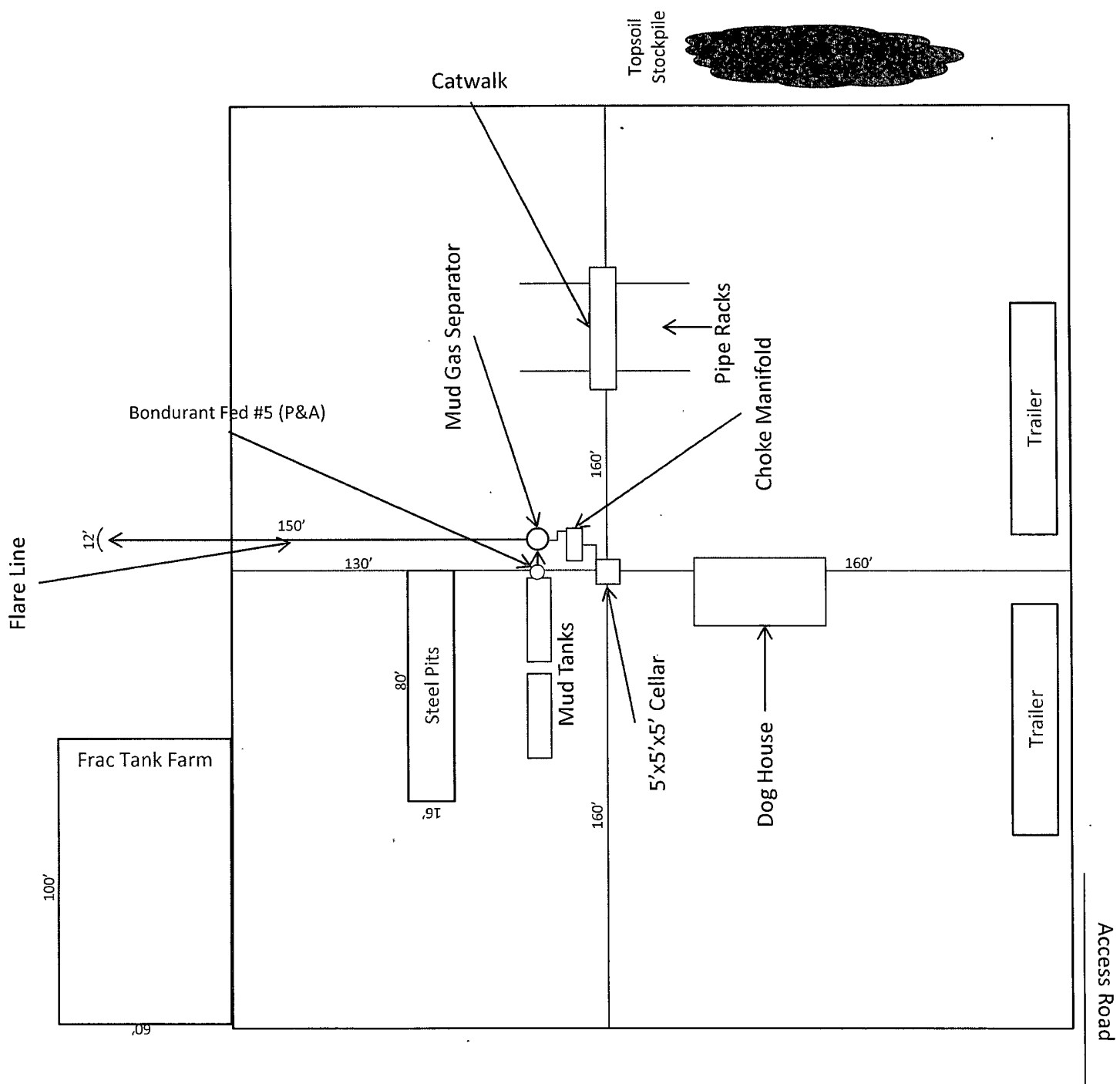
15 Other Facets of Operations:

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

Abo/Wolfcam pay will be perforated and stimulated.

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

Precision Drilling Rig 77



1"=50'

N

Rig Diagram
Boxer 3 Fee No. 1
 Cimarex Energy Co. of Colorado
 3-15S-31E
 SHL 2135 FNL & 170 FEL
 BHL 2265 FNL & 330 FWL
 Chaves County, NM

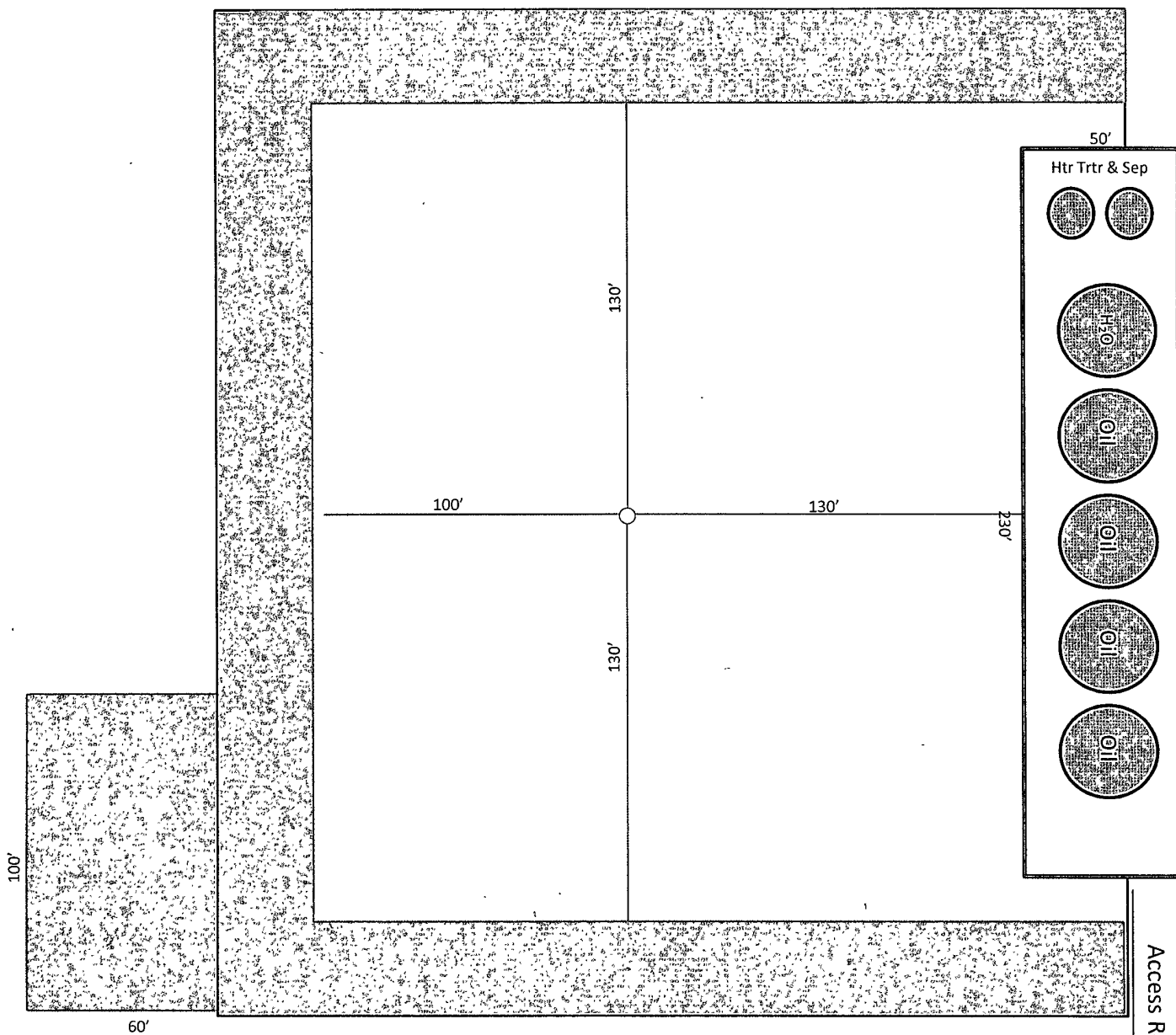
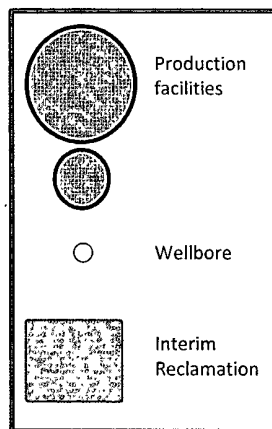


Exhibit D-1
 Production Facilities Layout Diagram
Boxer 3 Fee No. 1
 Cimarex Energy Co. of Colorado
 3-15S-31E
 SHL 2135 FNL & 170 FEL
 BHL 2265 FNL & 330 FWL
 Chaves County, NM



1"=50'



SR & A

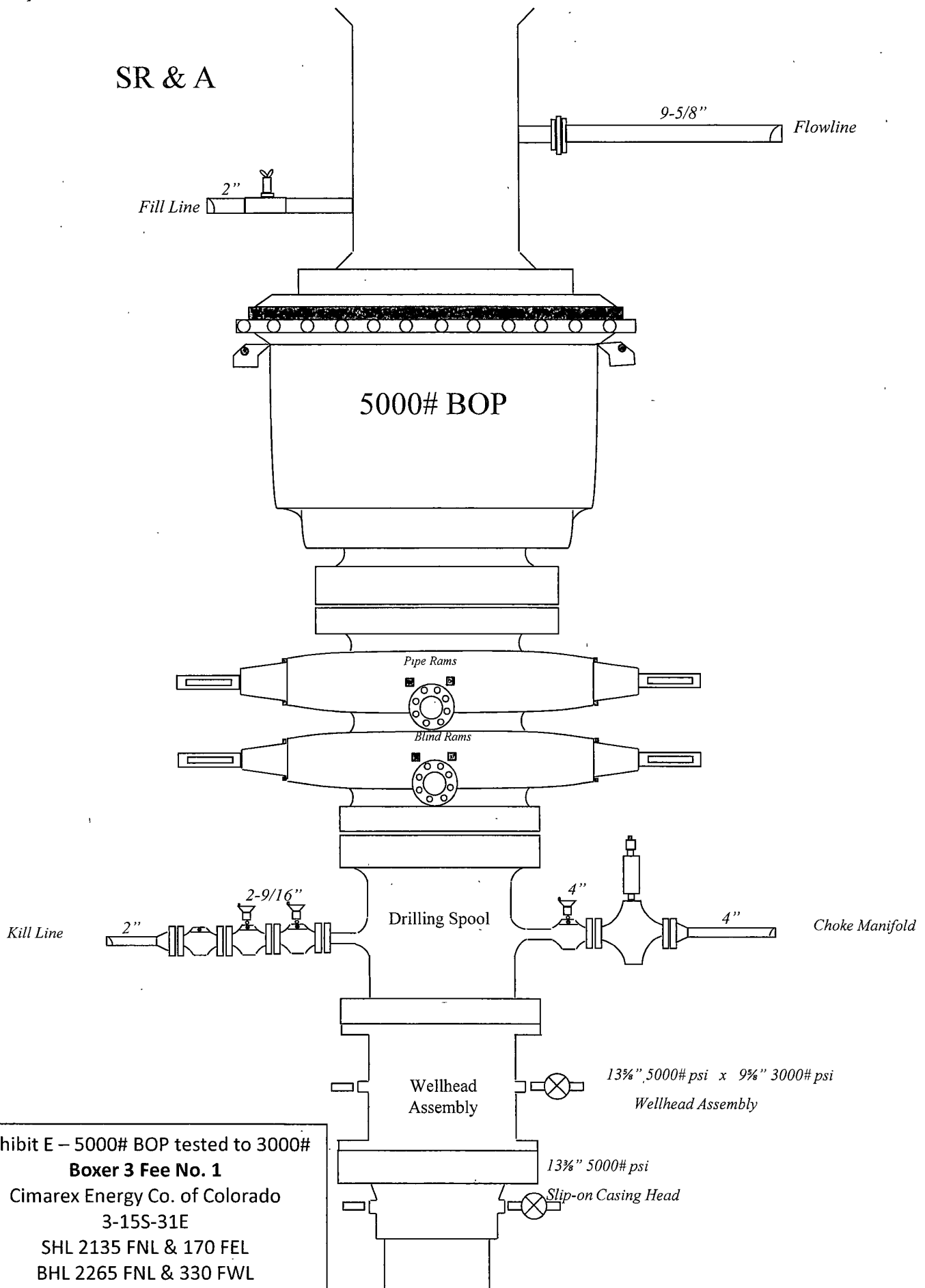


Exhibit E – 5000# BOP tested to 3000#
Boxer 3 Fee No. 1
Cimarex Energy Co. of Colorado
3-15S-31E
SHL 2135 FNL & 170 FEL
BHL 2265 FNL & 330 FWL
Chaves County, NM

Drilling Operations Choke Manifold 5M Service tested to 3M

Exhibit E-2 – Choke Manifold Diagram

Boxer 3 Fee No. 1

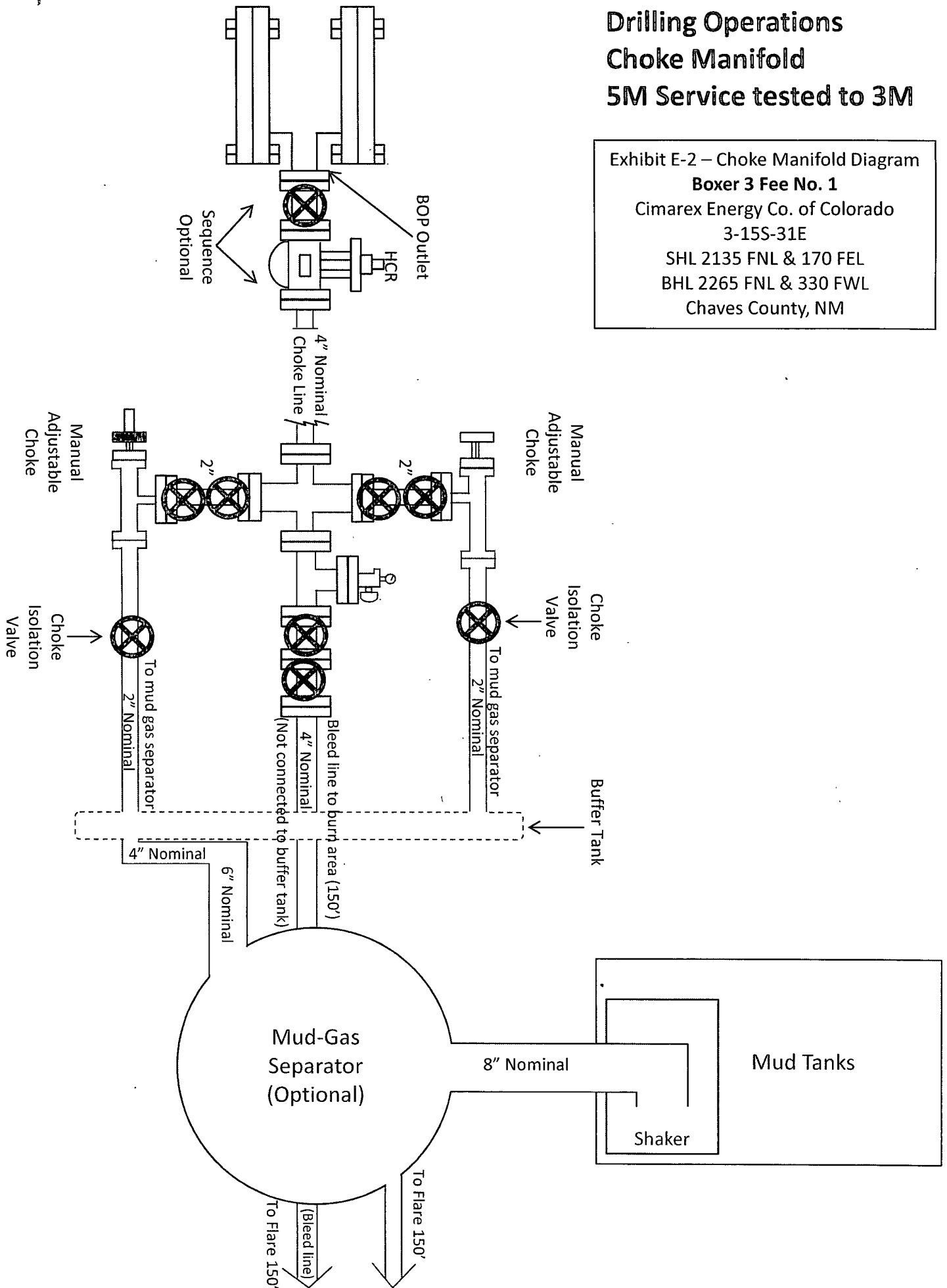
Cimarex Energy Co. of Colorado

3-15S-31E

SHL 2135 FNL & 170 FEL

BHL 2265 FNL & 330 FWL

Chaves County, NM





Cimarex Energy Co.

Location: Chaves County, NM
Field: (Boxer) Sec 3, T15S, R31E
Facility: Boxer 3 Fed Com

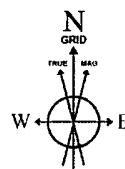
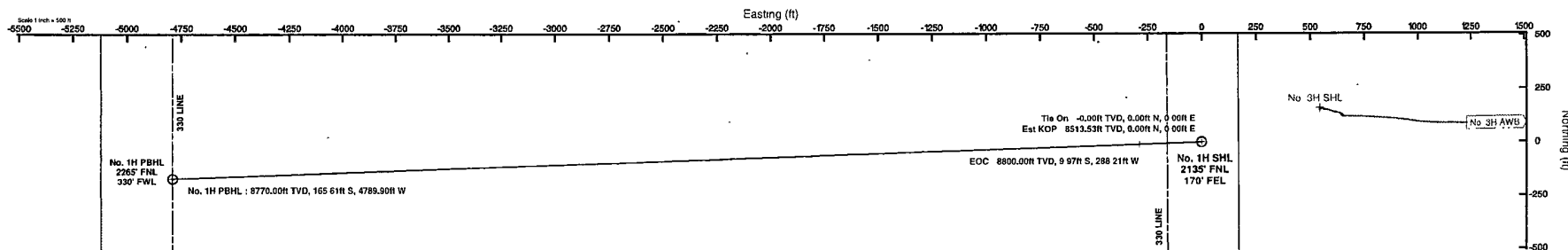
Slot: No. 1H SHL
Well: No. 1H
Wellbore: No. 1H PWB



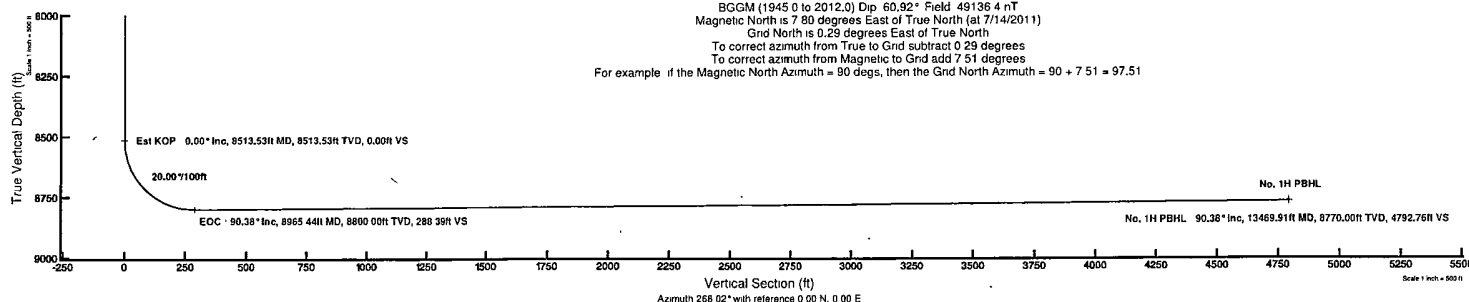
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
Tie On	0.00	0.000	268.020	0.00	0.00	0.00	0.00	0.00
Est KOP	8513.53	0.000	268.020	8513.53	0.00	0.00	0.00	0.00
EOC	8965.44	90.382	268.020	8800.00	-9.97	-288.21	20.00	288.39
No. 1H PBHL	13469.91	90.382	268.020	8770.00	-165.61	-4789.90	0.00	4792.76

Plot reference wellpath is Prelim_1	
True vertical depths are referenced to Rig on No. 1H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 1H SHL (KB)	North Reference: Grid north
Rig on No. 1H SHL (KB) to Mean Sea Level: 4405 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot No. 1H SHL): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: calphphk on 7/14/2011



BGGM (1945.0 to 2012.0) Dip: 60.92° Field: 49136.4 nT
Magnetic North is 7.80 degrees East of True North (at 7/14/2011)
Grid North is 0.29 degrees East of True North
To correct azimuth from True to Grid subtract 0.29 degrees
To correct azimuth from Magnetic to Grid add 7.51 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.51 = 97.51





Planned Wellpath Report

Prelim_1
Page 1 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Chaves County, NM	Well	No. 1H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 1H PWB
Facility	Boxer 3 Fed Com		

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	Calhphik
Scale	0.99994	Report Generated	7/14/2011 at 4:00:13 PM
Convergence at slot	0.29° East	Database/Source file	WA Midland/No._1H_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	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W
Facility Reference Pt			704300.70	744842.30	33°02'47.157"N	103°48'05.399"W
Field Reference Pt			702479.90	746588.40	33°03'04.524"N	103°48'26.688"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 1H SHL (KB) to GL	4405.00ft
Horizontal Reference Pt	Slot	Rig on No. 1H SHL (KB) to Mean Sea Level	4405.00ft
Vertical Reference Pt	Rig on No. 1H SHL (KB)	Rig on No. 1H SHL (KB) to Mud Line at Slot (No. 1H SHL)	4405.00ft
MD Reference Pt	Rig on No. 1H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	268.02°



Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Chaves County, NM	Well	No. 1H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 1H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (139 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	268.020	0.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	Tie On
100.00†	0.000	268.020	100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
200.00†	0.000	268.020	200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
300.00†	0.000	268.020	300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
400.00†	0.000	268.020	400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
500.00†	0.000	268.020	500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
600.00†	0.000	268.020	600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
700.00†	0.000	268.020	700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
800.00†	0.000	268.020	800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
900.00†	0.000	268.020	900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1000.00†	0.000	268.020	1000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1100.00†	0.000	268.020	1100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1200.00†	0.000	268.020	1200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1300.00†	0.000	268.020	1300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1400.00†	0.000	268.020	1400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1500.00†	0.000	268.020	1500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1600.00†	0.000	268.020	1600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1700.00†	0.000	268.020	1700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1800.00†	0.000	268.020	1800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
1900.00†	0.000	268.020	1900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2000.00†	0.000	268.020	2000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2100.00†	0.000	268.020	2100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2200.00†	0.000	268.020	2200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2300.00†	0.000	268.020	2300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2400.00†	0.000	268.020	2400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2500.00†	0.000	268.020	2500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2600.00†	0.000	268.020	2600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2700.00†	0.000	268.020	2700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2800.00†	0.000	268.020	2800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
2900.00†	0.000	268.020	2900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3000.00†	0.000	268.020	3000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3100.00†	0.000	268.020	3100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3200.00†	0.000	268.020	3200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3300.00†	0.000	268.020	3300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3400.00†	0.000	268.020	3400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3500.00†	0.000	268.020	3500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3600.00†	0.000	268.020	3600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3700.00†	0.000	268.020	3700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3800.00†	0.000	268.020	3800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
3900.00†	0.000	268.020	3900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4000.00†	0.000	268.020	4000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4100.00†	0.000	268.020	4100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4200.00†	0.000	268.020	4200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4300.00†	0.000	268.020	4300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4400.00†	0.000	268.020	4400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Chaves County, NM	Well	No. 1H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 1H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (139 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	268.020	4500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4600.00†	0.000	268.020	4600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4700.00†	0.000	268.020	4700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4800.00†	0.000	268.020	4800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
4900.00†	0.000	268.020	4900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5000.00†	0.000	268.020	5000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5100.00†	0.000	268.020	5100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5200.00†	0.000	268.020	5200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5300.00†	0.000	268.020	5300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5400.00†	0.000	268.020	5400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5500.00†	0.000	268.020	5500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5600.00†	0.000	268.020	5600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5700.00†	0.000	268.020	5700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5800.00†	0.000	268.020	5800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
5900.00†	0.000	268.020	5900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6000.00†	0.000	268.020	6000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6100.00†	0.000	268.020	6100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6200.00†	0.000	268.020	6200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6300.00†	0.000	268.020	6300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6400.00†	0.000	268.020	6400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6500.00†	0.000	268.020	6500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6600.00†	0.000	268.020	6600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6700.00†	0.000	268.020	6700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6800.00†	0.000	268.020	6800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
6900.00†	0.000	268.020	6900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7000.00†	0.000	268.020	7000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7100.00†	0.000	268.020	7100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7200.00†	0.000	268.020	7200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7300.00†	0.000	268.020	7300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7400.00†	0.000	268.020	7400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7500.00†	0.000	268.020	7500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	Abo Shale
7600.00†	0.000	268.020	7600.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7700.00†	0.000	268.020	7700.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7800.00†	0.000	268.020	7800.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
7900.00†	0.000	268.020	7900.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
8000.00†	0.000	268.020	8000.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
8100.00†	0.000	268.020	8100.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
8200.00†	0.000	268.020	8200.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
8300.00†	0.000	268.020	8300.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
8400.00†	0.000	268.020	8400.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
8500.00†	0.000	268.020	8500.00	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	
8513.53	0.000	268.020	8513.53	0.00	0.00	0.00	704300.70	744842.30	33°02'47.157"N	103°48'05.399"W	0.00	Est KOP
8600.00†	17.294	268.020	8598.69	12.95	-0.45	-12.94	704287.76	744841.85	33°02'47.153"N	103°48'05.551"W	20.00	
8700.00†	37.294	268.020	8687.11	58.57	-2.02	-58.54	704242.16	744840.28	33°02'47.140"N	103°48'06.087"W	20.00	
8791.69†	55.633	268.020	8750.00	124.76	-4.31	-124.69	704176.02	744837.99	33°02'47.120"N	103°48'06.864"W	20.00	Lower Abo Dolomite



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Chaves County, NM	Well	No. 1H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 1H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (139 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†	57.294	268.020	8754.59	131.69	-4.55	-131.61	704169.10	744837.75	33°02'47.118"N	103°48'06.945"W	20.00	
8900.00†	77.294	268.020	8792.99	223.47	-7.72	-223.33	704077.38	744834.58	33°02'47.092"N	103°48'08.023"W	20.00	
8965.44	90.382	268.020	8800.00	288.39	-9.97	-288.21	704012.50	744832.34	33°02'47.073"N	103°48'08.786"W	20.00	EOC
9000.00†	90.382	268.020	8799.77	322.95	-11.16	-322.76	703977.96	744831.14	33°02'47.062"N	103°48'09.191"W	0.00	
9100.00†	90.382	268.020	8799.11	422.95	-14.61	-422.69	703878.03	744827.69	33°02'47.033"N	103°48'10.366"W	0.00	
9200.00†	90.382	268.020	8798.44	522.94	-18.07	-522.63	703778.10	744824.23	33°02'47.004"N	103°48'11.540"W	0.00	
9300.00†	90.382	268.020	8797.77	622.94	-21.53	-622.57	703678.17	744820.78	33°02'46.975"N	103°48'12.714"W	0.00	
9400.00†	90.382	268.020	8797.11	722.94	-24.98	-722.51	703578.24	744817.32	33°02'46.946"N	103°48'13.888"W	0.00	
9500.00†	90.382	268.020	8796.44	822.94	-28.44	-822.45	703478.31	744813.87	33°02'46.916"N	103°48'15.063"W	0.00	
9600.00†	90.382	268.020	8795.78	922.93	-31.89	-922.38	703378.37	744810.41	33°02'46.887"N	103°48'16.237"W	0.00	
9700.00†	90.382	268.020	8795.11	1022.93	-35.35	-1022.32	703278.44	744806.96	33°02'46.858"N	103°48'17.411"W	0.00	
9800.00†	90.382	268.020	8794.44	1122.93	-38.80	-1122.26	703178.51	744803.50	33°02'46.829"N	103°48'18.585"W	0.00	
9900.00†	90.382	268.020	8793.78	1222.93	-42.26	-1222.20	703078.58	744800.05	33°02'46.800"N	103°48'19.759"W	0.00	
10000.00†	90.382	268.020	8793.11	1322.93	-45.71	-1322.14	702978.65	744796.59	33°02'46.770"N	103°48'20.934"W	0.00	
10100.00†	90.382	268.020	8792.45	1422.92	-49.17	-1422.07	702878.71	744793.13	33°02'46.741"N	103°48'22.108"W	0.00	
10200.00†	90.382	268.020	8791.78	1522.92	-52.62	-1522.01	702778.78	744789.68	33°02'46.712"N	103°48'23.282"W	0.00	
10300.00†	90.382	268.020	8791.11	1622.92	-56.08	-1621.95	702678.85	744786.22	33°02'46.683"N	103°48'24.456"W	0.00	
10400.00†	90.382	268.020	8790.45	1722.92	-59.53	-1721.89	702578.92	744782.77	33°02'46.653"N	103°48'25.631"W	0.00	
10500.00†	90.382	268.020	8789.78	1822.91	-62.99	-1821.83	702478.99	744779.31	33°02'46.624"N	103°48'26.805"W	0.00	
10600.00†	90.382	268.020	8789.12	1922.91	-66.44	-1921.76	702379.06	744775.86	33°02'46.595"N	103°48'27.979"W	0.00	
10700.00†	90.382	268.020	8788.45	2022.91	-69.90	-2021.70	702279.12	744772.40	33°02'46.566"N	103°48'29.153"W	0.00	
10800.00†	90.382	268.020	8787.78	2122.91	-73.36	-2121.64	702179.19	744768.95	33°02'46.537"N	103°48'30.327"W	0.00	
10900.00†	90.382	268.020	8787.12	2222.91	-76.81	-2221.58	702079.26	744765.49	33°02'46.507"N	103°48'31.502"W	0.00	
11000.00†	90.382	268.020	8786.45	2322.90	-80.27	-2321.52	701979.33	744762.04	33°02'46.478"N	103°48'32.676"W	0.00	
11100.00†	90.382	268.020	8785.79	2422.90	-83.72	-2421.45	701879.40	744758.58	33°02'46.449"N	103°48'33.850"W	0.00	
11200.00†	90.382	268.020	8785.12	2522.90	-87.18	-2521.39	701779.46	744755.13	33°02'46.420"N	103°48'35.024"W	0.00	
11300.00†	90.382	268.020	8784.45	2622.90	-90.63	-2621.33	701679.53	744751.67	33°02'46.390"N	103°48'36.199"W	0.00	
11400.00†	90.382	268.020	8783.79	2722.89	-94.09	-2721.27	701579.60	744748.22	33°02'46.361"N	103°48'37.373"W	0.00	
11500.00†	90.382	268.020	8783.12	2822.89	-97.54	-2821.21	701479.67	744744.76	33°02'46.332"N	103°48'38.547"W	0.00	
11600.00†	90.382	268.020	8782.45	2922.89	-101.00	-2921.14	701379.74	744741.31	33°02'46.302"N	103°48'39.721"W	0.00	
11700.00†	90.382	268.020	8781.79	3022.89	-104.45	-3021.08	701279.81	744737.85	33°02'46.273"N	103°48'40.895"W	0.00	
11800.00†	90.382	268.020	8781.12	3122.89	-107.91	-3121.02	701179.87	744734.40	33°02'46.244"N	103°48'42.070"W	0.00	
11900.00†	90.382	268.020	8780.46	3222.88	-111.36	-3220.96	701079.94	744730.94	33°02'46.215"N	103°48'43.244"W	0.00	
12000.00†	90.382	268.020	8779.79	3322.88	-114.82	-3320.90	700980.01	744727.49	33°02'46.185"N	103°48'44.418"W	0.00	
12100.00†	90.382	268.020	8779.12	3422.88	-118.28	-3420.84	700880.08	744724.03	33°02'46.156"N	103°48'45.592"W	0.00	
12200.00†	90.382	268.020	8778.46	3522.88	-121.73	-3520.77	700780.15	744720.58	33°02'46.127"N	103°48'46.767"W	0.00	
12300.00†	90.382	268.020	8777.79	3622.87	-125.19	-3620.71	700680.21	744717.12	33°02'46.097"N	103°48'47.941"W	0.00	
12400.00†	90.382	268.020	8777.13	3722.87	-128.64	-3720.65	700580.28	744713.67	33°02'46.068"N	103°48'49.115"W	0.00	
12500.00†	90.382	268.020	8776.46	3822.87	-132.10	-3820.59	700480.35	744710.21	33°02'46.039"N	103°48'50.289"W	0.00	
12600.00†	90.382	268.020	8775.79	3922.87	-135.55	-3920.53	700380.42	744706.76	33°02'46.010"N	103°48'51.463"W	0.00	
12700.00†	90.382	268.020	8775.13	4022.87	-139.01	-4020.46	700280.49	744703.30	33°02'45.980"N	103°48'52.638"W	0.00	
12800.00†	90.382	268.020	8774.46	4122.86	-142.46	-4120.40	700180.56	744699.85	33°02'45.951"N	103°48'53.812"W	0.00	
12900.00†	90.382	268.020	8773.80	4222.86	-145.92	-4220.34	700080.62	744696.39	33°02'45.922"N	103°48'54.986"W	0.00	
13000.00†	90.382	268.020	8773.13	4322.86	-149.37	-4320.28	699980.69	744692.94	33°02'45.892"N	103°48'56.160"W	0.00	
13100.00†	90.382	268.020	8772.46	4422.86	-152.83	-4420.22	699880.76	744689.48	33°02'45.863"N	103°48'57.335"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 1H SHL
Area	Chaves County, NM	Well	No. 1H
Field	(Boxer) Sec 3, T15S, R31E	Wellbore	No. 1H PWB
Facility	Boxer 3 Fed Com		

WELLPATH DATA (139 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
13200.00†	90.382	268.020	8771.80	4522.85	-156.28	-4520.15	699780.83	744686.03	33°02'45.834"N	103°48'58.509"W	0.00	
13300.00†	90.382	268.020	8771.13	4622.85	-159.74	-4620.09	699680.90	744682.57	33°02'45.804"N	103°48'59.683"W	0.00	
13400.00†	90.382	268.020	8770.47	4722.85	-163.19	-4720.03	699580.96	744679.12	33°02'45.775"N	103°49'00.857"W	0.00	
13469.91	90.382	268.020	8770.00†	4792.76	-165.61	-4789.90	699511.10	744676.70	33°02'45.755"N	103°49'01.678"W	0.00	No. 1H PBHL

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No. 1H PBHL	13469.91	8770.00	-165.61	-4789.90	699511.10	744676.70	33°02'45.755"N	103°49'01.678"W	point

SURVEY PROGRAM - Ref Wellbore: No. 1H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
4405.00	13469.91	NaviTrak (Standard)		No. 1H PWB