

HOBBS OCD

14-217

JUL 01 2015

Form 3160-3
(March 2012)

OCD Hobbs RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014UNITED 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. SHLABHL: NM0392082A	
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. <i>OF COLORADO</i> <i>(162683)</i>		7. If Unit or CA Agreement, Name and No.	
3a. Address 600 N. Marienfield St. Ste. 600 Midland Tx 79071		8. Lease Name and Well No. <i>(38778)</i> Hallertau 5 Federal #8H	
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30025 <i>42666</i>	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At Surface 500' FSL 330' FWL <i>(u)</i> At proposed prod. Zone 330' FNL 380' FWL <i>(D)</i> Bone Spring		10. Field and Pool, or Exploratory <i>91858</i> <i>JENNINGS; B3 UPPER SHALE</i>	
11. Sec., T. R. M. or Blk. and Survey and Area 5, 26S, 32E		12. County or Parish Lea	
13. State NM		14. Distance in miles and direction from nearest town or post office* Malaga is approx. 25 miles to the North West of location	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 330' FWL	16. No of acres in lease NM0392082A=1400.00 acres	17. Spacing Unit dedicated to this well 160.00	
18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft. 330' from the #4	19. Proposed Depth Pilot Hole TD: N/A 13,059 MD 8,750 TVD	20. BLM/BIA Bond No. on File NM-2575; NMB000835	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3271 GR	22. Approximate date work will start* 1/5/14	23. Estimated duration 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 <i>Paula Brunson</i>	Name (Printed/Typed) Paula Brunson	Date 11/22/13
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Title

Regulatory Compliance

Approved By (Signature) <i>Steve Caffey</i>	Name (Printed/Typed) Steve Caffey	Date JUN 26 2015
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.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.

(Continued on page 2)

* (Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL
JUL 07 2015

Application to Drill
Hallertau 5 Federal #8H
 Cimarex Energy Co.
 UL: M, Sec. 5, 26S, 32E
 Lea Co., NM

JUL 01 2015

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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 500' FSL 330' FWL
BHL 330' FNL 380' FWL
2. **Elevation Above Sea Level:** 3,271' 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:** 13,059 MD 8,750 TVD Pilot Hole TD: N/A
6. **Estimated Tops of Geological Markers:**

Formation	Est Top	Bearing
Rustler	1135	N/A
Top Salt	1485	N/A
Castille	2560	N/A
Base Last Salt	4200	N/A
Lamar	4435	N/A
Bell Canyon	4475	N/A
Cherry Canyon	5700	N/A
Brushy Canyon	7375	N/A
Bone Spring	8520	Hydrocarbons
U. Avalon (Leonard)	8675	Hydrocarbons
L. Avalon	9000	Hydrocarbons

7. **Possible Mineral Bearing Formation:** Shown above

- 7A. **OSE Ground Water Estimated Depth:** 275'

8. **Casing Program:**

See COA for depth changes

Name	Casing Depth From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Open Hole Size (inches)	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	BHP (psig)	Anticipated Mud Weight (ppg)	Collapse SF at Full Evacuation(1.125)	Collapse SF at 1/3 Evacuation(1.125)	Burst SF (1.125)	Cumulative Air Weight	Cumulative Bouyed Weight (lbs)	Bouyant Tension SF (1.8)
Surface	0	1185 1325	1185	17 1/2	13-3/8"	48.00	H-40	ST&C	New	511	8.3	1.45		3.38	56,880	49,672	6.48
Intermediate	0	4450 4400	4450	12 1/4	9-5/8"	36.00	J-55	LT&C	New	2314	10.0		1.33	1.52	160,200	135,742	3.34
Production	0	8273	8273	8 3/4	5-1/2"	17.00	L-80	LT&C	New	3871	9.0	1.62		2.00	148,750	128,311	2.63
Production	8273	13059	8750	8 3/4	5-1/2"	17.00	L-80	BT&C	New	4095	9.0	1.54		1.89	8,109	6,995	56.76

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Lea Co., NM

8A. Casing Design and Casing Loading Assumptions:

Surface	Tension	A 1.8 design factor with effects of buoyancy: 8.30 ppg.
	Collapse	A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.30 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Intermediate	Tension	A 1.8 design factor with effects of buoyancy: 10.00 ppg.
	Collapse	A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.00 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Production and/or Production Liner	Tension	A 1.8 design factor with effects of buoyancy: 9.00 ppg.
	Collapse	A 1.125 design factor with full internal evacuation of next casing string with a collapse force equal to a 9.00 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

9. Cementing Program:

Casing Type	Type	Sacks	Yield	Weight	Cubic Feet	Cement Blend
Surface	Lead	753	1.75	13.50	1317	Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	153	1.34	14.80	205	Class C + LCM, 6.32 gps water
	TOC: 0	85% Excess		Centralizers per Onshore Order 2.III.B.1f		
Intermediate	Lead	989	1.88	12.90	1859	35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water
	Tail	260	1.34	14.80	348	Class C + retarder + LCM, 6.32 gps water
	TOC: 0	80% Excess				
Production	Lead	459	2.40	11.90	1100	35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
	Tail	1347	1.24	14.50	1670	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: 4250' 4200'	25% Excess		No centralizers planned in the lateral section. 1 every jt from EOC to KOP. 1 every 4th joint from KOP to 500' inside previous casing.		

Cement volumes will be adjusted depending on hole size

9a. Proposed Drilling Plan:

Pilot Hole TD: No Pilot KOP: 8,273' EOC: 9,023'

Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drilling lateral through the curve to TD. Run prod casing & cement.

10. Pressure Control Equipment:

Exhibit "E-1". A BOP consisting of two rams with blind rams and pipe rams, and one annular preventer. Below the surface casing, a 2M system will be used. Below the intermediate casing, a 3M system will be used. See attachments for BOP and choke manifold diagrams. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A Rotating head may be installed 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 and associated equipment will be installed, used, maintained, and tested in a manner necessary to assure well control and shall be in place and operational prior to drilling the surface casing shoe. The Annular Preventer shall be functioned at least weekly. The pipe and blind rams will be operated each trip. No abnormal pressure or temperature is expected while drilling.

BOPS will be tested by an independent service company. The ram preventers, choke manifold, and safety valves will be tested as follows: On the surface casing, pressure tests will be made to 250 psi low and 2000 psi high. On the intermediate casing, pressure tests will be made to 250 psi low and 3000 psi high.

The Annular Preventer will be tested to 250 psi low and 1000 psi high on the surface casing, and 250 low and 1500 high on the intermediate casing.

See COA

Cimarex Energy Co. of Colorado requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached (please see Exhibit F, F-1, F-2, F-3). The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

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11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1185' <i>1225'</i>		8.30 28	NC	FW Spud Mud
1185' to 4450' <i>4400'</i>	10.00	30-32	NC	Brine Water
4450' to 13059'	9.00	30-32	NC	FW/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.

The Mud Monitoring System is an electronic Pason System satisfying requirements of Onshore Order 1.

12. Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 4450 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL /GR -- Inter. Csg to TD
CNL /GR -- Surf to Inter. Csg
- C. No DSTs or cores are planned at this time
- D. CBL w/ CCL from as far as gravity will let it fall to TOC

13. Potential Hazards: *See COA for H₂S*

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: 3938 psi

Estimated BHT: 150°

14. Construction and Drilling:

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

Drilling expected to take: 30 days.

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

15. Other Facets of Operations:

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

L. Avalon pay will be perforated and stimulated.

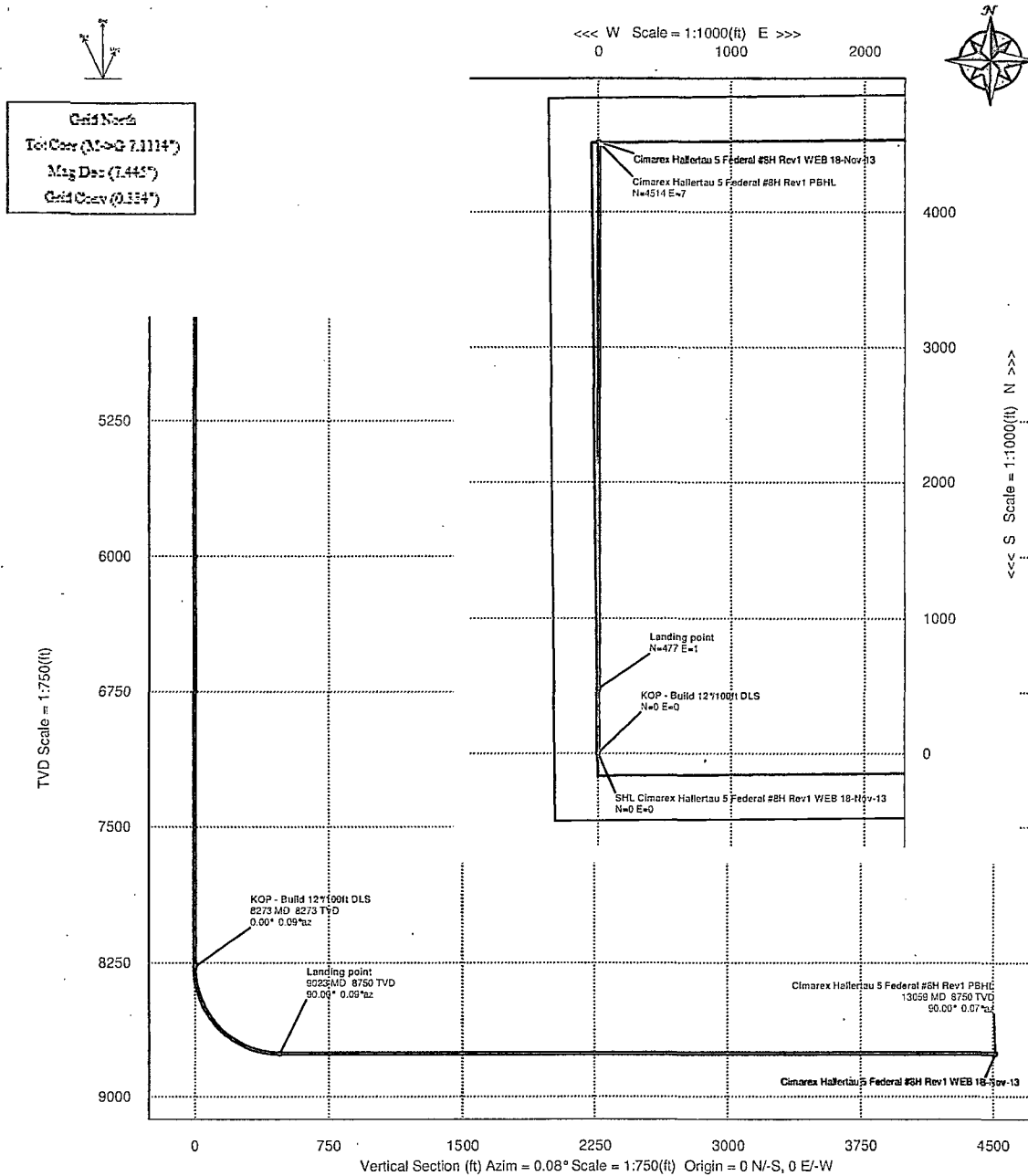
The proposed well will be tested and potentialed as **Oil**



Cimarex

PATHFINDER
 A Schlumberger Company

WELL	Hallertau 5 Federal #8H			FIELD	NM Lea County			STRUCTURE	TBD
Magnetic Parameters Model: 800M 2013 Mag Dec: 2.441° Date: November 18, 2013 Survey Location Lat: N 32 3 58.556 Lon: W 103 48 17.456 Acquiring Station: 75553.621855 Easting: 0.00002561 NAD83 New Mexico State Plane, Eastern Zone, US Feet Grid Cont.: 8.334 Scale Factor: 0.9999551 Metadata Owner: Cimarex Hallertau 5 Federal #8H Rev1 Plant: Rev1 WEB 18 Nov 13 Survey Date: November 18, 2013 Ground Level: 5271 ft above MSL									



Critical Points

Critical Point MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
SHL Cimarex Hallertau 5 Federal #8H Rev1 WEB 18- Nov-13	0.00	0.00	0.09	0.00	0.00	0.00	
KOP - Build 12°/100ft DLS	8272.50	0.00	0.09	8272.50	0.00	0.00	0.00
Landing point	9022.56	90.00	0.09	8750.00	477.50	0.75	12.00
Cimarex Hallertau 5 Federal #8H Rev1 PBHL	13058.88	90.00	0.07	8750.00	4513.83	6.50	0.00



Cimarex Hallertau 5 Federal #8H Rev1 WEB 18-Nov-13 Proposal Report 100'

Interpolated

(Non-Def Plan)



Report Date: November 18, 2013 - 12:00 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: TBD / Cimarex Hallertau 5 Federal #8H
Well: Cimarex Hallertau 5 Federal #8H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Hallertau 5 Federal #8H Rev1 WEB 18-Nov-13
Survey Date: November 18, 2013
Tort / AHD / DDI / ERD Ratio: 90.017 ° / 4513.828 ft / 5.783 / 0.516
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 3' 58.56577", W 103° 42' 17.10550"
Location Grid N/E Y/X: N 388413.000 ftUS, E 736051.800 ftUS
CRS Grid Convergence Angle: 0.3337 °
Grid Scale Factor: 0.99995251

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.083 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3271.000 ft above MSL
Seabed / Ground Elevation: 3271.000 ft above MSL
Magnetic Declination: 7.445 °
Total Gravity Field Strength: 998.4869mgn (9.80665 Based)
Total Magnetic Field Strength: 48248.277 nT
Magnetic Dip Angle: 59.942 °
Declination Date: November 18, 2013
Magnetic Declination Model: BGGM 2013
North Reference: Grid North
Grid Convergence Used: 0.3337 °
Total Corr Mag North->Grid North: 7.1114 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
SHL Cimarex Hallertau 5 Federal #8H Rev1 WEB 18- Nov-13	0.00	0.00	0.09	0.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	N/A
	100.00	0.00	0.09	100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	200.00	0.00	0.09	200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	300.00	0.00	0.09	300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	400.00	0.00	0.09	400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	500.00	0.00	0.09	500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	600.00	0.00	0.09	600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	700.00	0.00	0.09	700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	800.00	0.00	0.09	800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	900.00	0.00	0.09	900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1000.00	0.00	0.09	1000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1100.00	0.00	0.09	1100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1200.00	0.00	0.09	1200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1300.00	0.00	0.09	1300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1400.00	0.00	0.09	1400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1500.00	0.00	0.09	1500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1600.00	0.00	0.09	1600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1700.00	0.00	0.09	1700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1800.00	0.00	0.09	1800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	1900.00	0.00	0.09	1900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2000.00	0.00	0.09	2000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2100.00	0.00	0.09	2100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2200.00	0.00	0.09	2200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2300.00	0.00	0.09	2300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2400.00	0.00	0.09	2400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2500.00	0.00	0.09	2500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2600.00	0.00	0.09	2600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
	2700.00	0.00	0.09	2700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2800.00	0.00	0.09	2800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	2900.00	0.00	0.09	2900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3000.00	0.00	0.09	3000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3100.00	0.00	0.09	3100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3200.00	0.00	0.09	3200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3300.00	0.00	0.09	3300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3400.00	0.00	0.09	3400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3500.00	0.00	0.09	3500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3600.00	0.00	0.09	3600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3700.00	0.00	0.09	3700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3800.00	0.00	0.09	3800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	3900.00	0.00	0.09	3900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4000.00	0.00	0.09	4000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4100.00	0.00	0.09	4100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4200.00	0.00	0.09	4200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4300.00	0.00	0.09	4300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4400.00	0.00	0.09	4400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4500.00	0.00	0.09	4500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4600.00	0.00	0.09	4600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4700.00	0.00	0.09	4700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4800.00	0.00	0.09	4800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	4900.00	0.00	0.09	4900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5000.00	0.00	0.09	5000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5100.00	0.00	0.09	5100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5200.00	0.00	0.09	5200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5300.00	0.00	0.09	5300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5400.00	0.00	0.09	5400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5500.00	0.00	0.09	5500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5600.00	0.00	0.09	5600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5700.00	0.00	0.09	5700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5800.00	0.00	0.09	5800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	5900.00	0.00	0.09	5900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6000.00	0.00	0.09	6000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6100.00	0.00	0.09	6100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6200.00	0.00	0.09	6200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6300.00	0.00	0.09	6300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6400.00	0.00	0.09	6400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6500.00	0.00	0.09	6500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6600.00	0.00	0.09	6600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6700.00	0.00	0.09	6700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6800.00	0.00	0.09	6800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	6900.00	0.00	0.09	6900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7000.00	0.00	0.09	7000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7100.00	0.00	0.09	7100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7200.00	0.00	0.09	7200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7300.00	0.00	0.09	7300.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7400.00	0.00	0.09	7400.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7500.00	0.00	0.09	7500.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7600.00	0.00	0.09	7600.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7700.00	0.00	0.09	7700.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7800.00	0.00	0.09	7800.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	7900.00	0.00	0.09	7900.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	8000.00	0.00	0.09	8000.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	8100.00	0.00	0.09	8100.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
KOP - Build 12"/100ft DLS	8200.00	0.00	0.09	8200.00	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	8272.50	0.00	0.09	8272.50	0.00	0.00	0.00	388413.00	736051.80	N 32 3 58.57	W 103 42 17.11	0.00	0.00	0.00
	8300.00	3.30	0.09	8299.98	0.79	0.79	0.00	388413.79	736051.80	N 32 3 58.57	W 103 42 17.11	0.79	0.09	12.00
	8400.00	15.30	0.09	8398.49	16.92	16.92	0.03	388429.92	736051.83	N 32 3 58.73	W 103 42 17.10	16.92	0.09	12.00
	8500.00	27.30	0.09	8491.49	53.18	53.18	0.08	388466.17	736051.88	N 32 3 59.09	W 103 42 17.10	53.18	0.09	12.00
	8600.00	39.30	0.09	8574.92	107.98	107.98	0.17	388520.97	736051.97	N 32 3 59.63	W 103 42 17.10	107.98	0.09	12.00
	8700.00	51.30	0.09	8645.14	178.92	178.92	0.28	388591.91	736052.08	N 32 4 0 34	W 103 42 17.09	178.92	0.09	12.00
	8800.00	63.30	0.09	8699.07	262.92	262.92	0.41	388675.90	736052.21	N 32 4 1 17	W 103 42 17.08	262.92	0.09	12.00
Landing point	8900.00	75.29	0.09	8734.36	356.29	356.29	0.56	388769.27	736052.36	N 32 4 2 09	W 103 42 17.07	356.29	0.09	12.00
	9000.00	87.29	0.09	8749.47	454.95	454.95	0.71	388867.93	736052.51	N 32 4 3 07	W 103 42 17.07	454.95	0.09	12.00
	9022.56	90.00	0.09	8750.00	477.50	477.50	0.75	388890.48	736052.55	N 32 4 3 29	W 103 42 17.06	477.50	0.09	12.00
	9100.00	90.00	0.09	8750.00	554.94	554.94	0.87	388967.92	736052.67	N 32 4 4 06	W 103 42 17.06	554.94	0.09	0.00
	9200.00	90.00	0.09	8750.00	654.94	654.94	1.03	389067.91	736052.83	N 32 4 5 05	W 103 42 17.05	654.94	0.09	0.00
	9300.00	90.00	0.09	8750.00	754.94	754.94	1.18	389167.91	736052.98	N 32 4 6 04	W 103 42 17.04	754.94	0.09	0.00
	9400.00	90.00	0.09	8750.00	854.94	854.94	1.34	389267.90	736053.14	N 32 4 7 03	W 103 42 17.03	854.94	0.09	0.00
	9500.00	90.00	0.09	8750.00	954.94	954.94	1.49	389367.90	736053.29	N 32 4 8 02	W 103 42 17.02	954.94	0.09	0.00
	9600.00	90.00	0.09	8750.00	1054.94	1054.94	1.65	389467.89	736053.44	N 32 4 9 00	W 103 42 17.01	1054.94	0.09	0.00
	9700.00	90.00	0.09	8750.00	1154.94	1154.94	1.80	389567.89	736053.60	N 32 4 9 99	W 103 42 17.01	1154.94	0.09	0.00
	9800.00	90.00	0.09	8750.00	1254.94	1254.94	1.95	389667.88	736053.75	N 32 4 10 98	W 103 42 17.00	1254.94	0.09	0.00
	9900.00	90.00	0.09	8750.00	1354.94	1354.94	2.10	389767.88	736053.90	N 32 4 11 97	W 103 42 16.99	1354.94	0.09	0.00
	10000.00	90.00	0.09	8750.00	1454.94	1454.94	2.25	389867.87	736054.05	N 32 4 12 96	W 103 42 16.98	1454.94	0.09	0.00
	10100.00	90.00	0.09	8750.00	1554.94	1554.94	2.40	389967.87	736054.20	N 32 4 13 95	W 103 42 16.97	1554.94	0.09	0.00
	10200.00	90.00	0.09	8750.00	1654.94	1654.94	2.55	390067.86	736054.35	N 32 4 14 94	W 103 42 16.96	1654.94	0.09	0.00
	10300.00	90.00	0.08	8750.00	1754.94	1754.94	2.70	390167.86	736054.50	N 32 4 15 93	W 103 42 16.96	1754.94	0.09	0.00
	10400.00	90.00	0.08	8750.00	1854.94	1854.94	2.85	390267.85	736054.64	N 32 4 16 92	W 103 42 16.95	1854.94	0.09	0.00
	10500.00	90.00	0.08	8750.00	1954.94	1954.94	2.99	390367.85	736054.79	N 32 4 17 91	W 103 42 16.94	1954.94	0.09	0.00
	10600.00	90.00	0.08	8750.00	2054.94	2054.94	3.14	390467.84	736054.94	N 32 4 18 90	W 103 42 16.93	2054.94	0.09	0.00
	10700.00	90.00	0.08	8750.00	2154.94	2154.94	3.28	390567.84	736055.08	N 32 4 19 89	W 103 42 16.92	2154.94	0.09	0.00
	10800.00	90.00	0.08	8750.00	2254.94	2254.94	3.43	390667.83	736055.23	N 32 4 20 88	W 103 42 16.91	2254.94	0.09	0.00
	10900.00	90.00	0.08	8750.00	2354.94	2354.94	3.57	390767.83	736055.37	N 32 4 21 87	W 103 42 16.90	2354.94	0.09	0.00
	11000.00	90.00	0.08	8750.00	2454.94	2454.94	3.71	390867.82	736055.51	N 32 4 22 86	W 103 42 16.90	2454.94	0.09	0.00
	11100.00	90.00	0.08	8750.00	2554.94	2554.94	3.86	390967.82	736055.66	N 32 4 23 85	W 103 42 16.89	2554.94	0.09	0.00
	11200.00	90.00	0.08	8750.00	2654.94	2654.94	4.00	391067.81	736055.80	N 32 4 24 84	W 103 42 16.88	2654.94	0.09	0.00
	11300.00	90.00	0.08	8750.00	2754.94	2754.94	4.14	391167.81	736055.94	N 32 4 25 83	W 103 42 16.87	2754.94	0.09	0.00
	11400.00	90.00	0.08	8750.00	2854.94	2854.94	4.28	391267.80	736056.08	N 32 4 26 82	W 103 42 16.86	2854.94	0.09	0.00
	11500.00	90.00	0.08	8750.00	2954.94	2954.94	4.42	391367.80	736056.22	N 32 4 27 81	W 103 42 16.85	2954.94	0.09	0.00
	11600.00	90.00	0.08	8750.00	3054.94	3054.94	4.56	391467.79	736056.36	N 32 4 28 79	W 103 42 16.85	3054.94	0.09	0.00
	11700.00	90.00	0.08	8750.00	3154.94	3154.94	4.70	391567.79	736056.50	N 32 4 29 78	W 103 42 16.84	3154.94	0.09	0.00
	11800.00	90.00	0.08	8750.00	3254.94	3254.94	4.83	391667.78	736056.63	N 32 4 30 77	W 103 42 16.83	3254.94	0.09	0.00
	11900.00	90.00	0.08	8750.00	3354.94	3354.94	4.97	391767.78	736056.77	N 32 4 31 76	W 103 42 16.82	3354.94	0.08	0.00
	12000.00	90.00	0.08	8750.00	3454.94	3454.94	5.11	391867.77	736056.91	N 32 4 32 75	W 103 42 16.81	3454.94	0.08	0.00
	12100.00	90.00	0.08	8750.00	3554.94	3554.94	5.24	391967.76	736057.04	N 32 4 33 74	W 103 42 16.80	3554.94	0.08	0.00
	12200.00	90.00	0.08	8750.00	3654.94	3654.94	5.38	392067.76	736057.18	N 32 4 34 73	W 103 42 16.80	3654.94	0.08	0.00
	12300.00	90.00	0.08	8750.00	3754.94	3754.94	5.51	392167.75	736057.31	N 32 4 35 72	W 103 42 16.79	3754.94	0.08	0.00
	12400.00	90.00	0.08	8750.00	3854.94	3854.94	5.64	392267.75	736057.44	N 32 4 36 71	W 103 42 16.78	3854.94	0.08	0.00
	12500.00	90.00	0.08	8750.00	3954.94	3954.94	5.77	392367.74	736057.57	N 32 4 37 70	W 103 42 16.77	3954.94	0.08	0.00
	12600.00	90.00	0.08	8750.00	4054.94	4054.94	5.91	392467.74	736057.71	N 32 4 38 69	W 103 42 16.76	4054.94	0.08	0.00
	12700.00	90.00	0.07	8750.00	4154.94	4154.94	6.04	392567.73	736057.84	N 32 4 39 68	W 103 42 16.75	4154.94	0.08	0.00
	12800.00	90.00	0.07	8750.00	4254.94	4254.94	6.17	392667.73	736057.97	N 32 4 40 67	W 103 42 16.75	4254.94	0.08	0.00
	12900.00	90.00	0.07	8750.00	4354.94	4354.94	6.30	392767.72	736058.10	N 32 4 41 66	W 103 42 16.74	4354.94	0.08	0.00
	13000.00	90.00	0.07	8750.00	4454.94	4454.94	6.42	392867.72	736058.22	N 32 4 42 65	W 103 42 16.73	4454.94	0.08	0.00
Cimarex Hallertau 5 Federal #8H Rev1 PBHL	13058.88	90.00	0.07	8750.00	4513.83	4513.82	6.50	392926.60	736058.30	N 32 4 43 23	W 103 42 16.72	4513.83	0.08	0.00

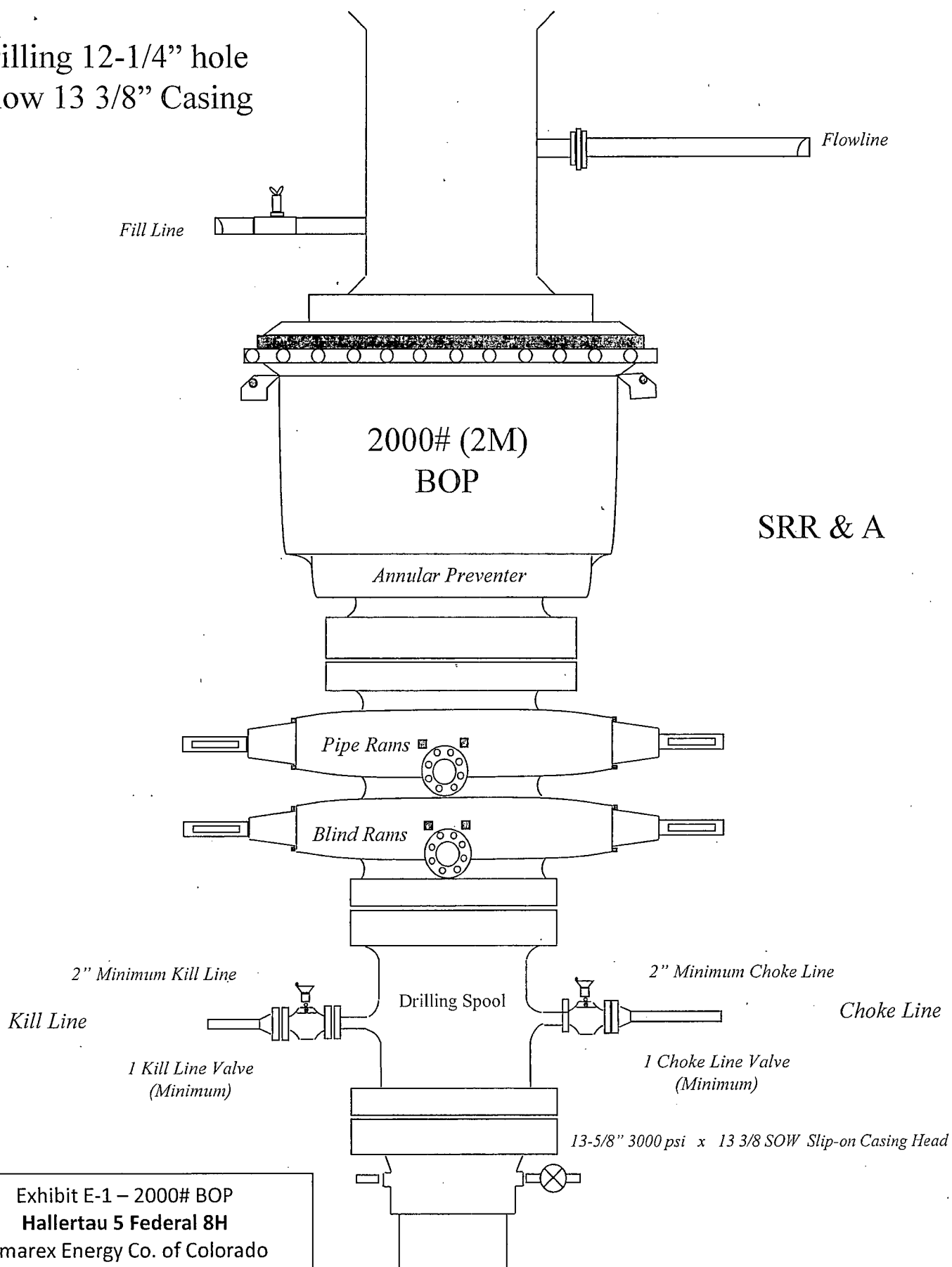
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)
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Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	8272.500	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Hallertau 5 Federal #8H Rev1
	8272.500	13058.883	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Hallertau 5 Federal #8H Rev1

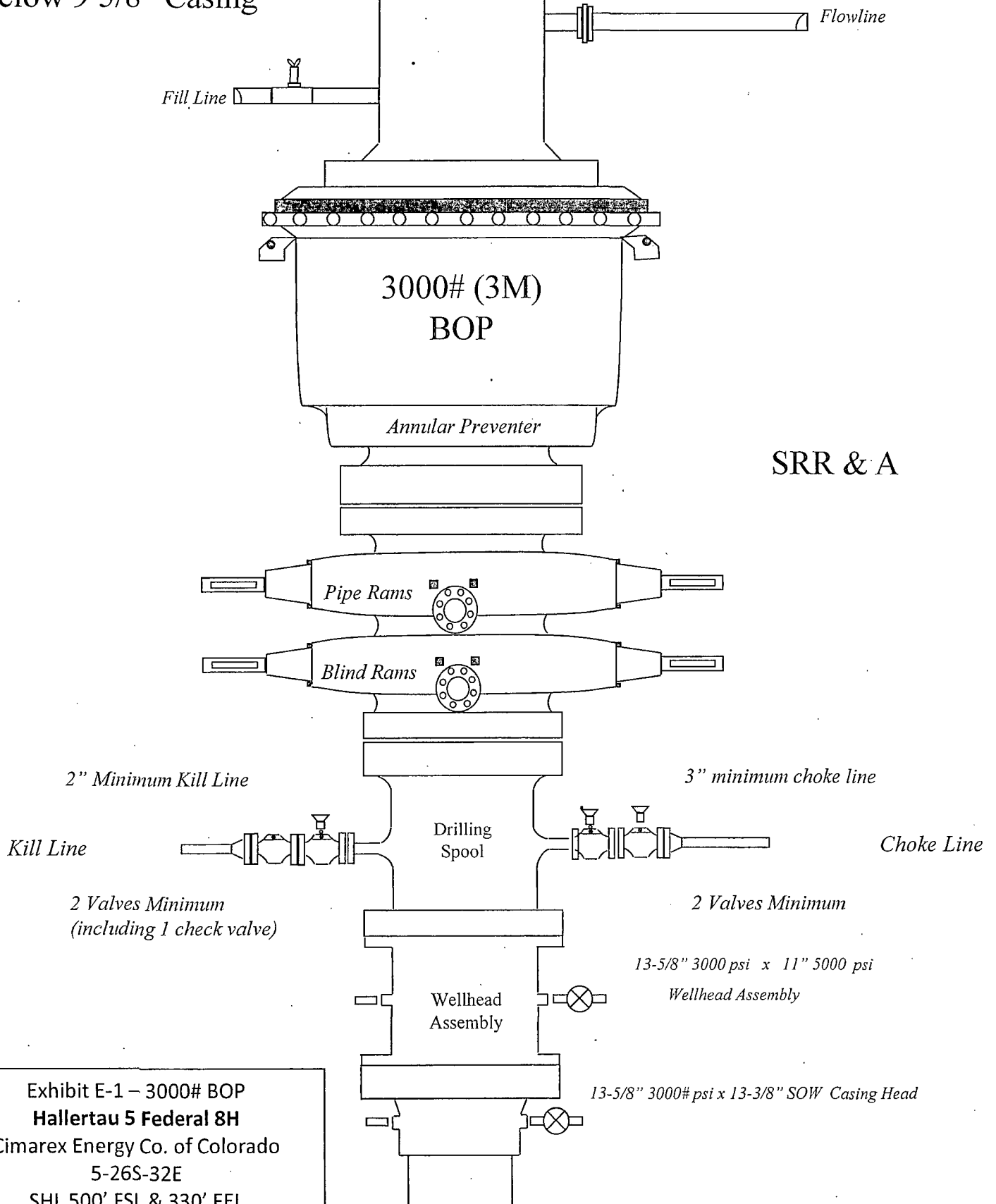
Drilling 12-1/4" hole
below 13 3/8" Casing



SRR & A

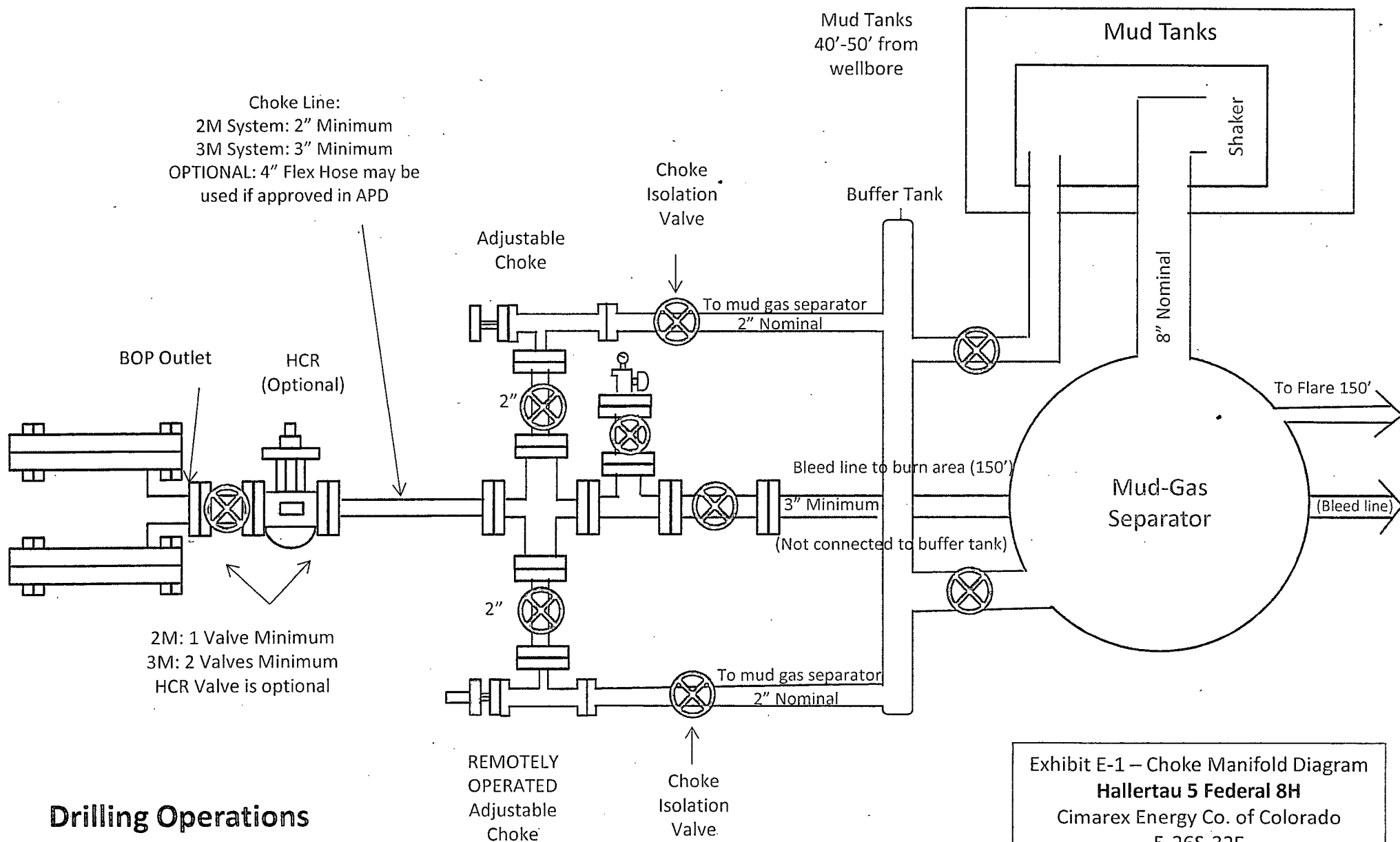
Exhibit E-1 – 2000# BOP
Hallertau 5 Federal 8H
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 500' FSL & 330' FEL
BHL 330' FNL & 380' FEL
Lea County, NM

Drilling 8-3/4" hole
below 9 5/8" Casing



SRR & A

Exhibit E-1 – 3000# BOP
Hallertau 5 Federal 8H
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 500' FSL & 330' FEL
BHL 330' FNL & 380' FEL
Lea County, NM



**Drilling Operations
Choke Manifold
2M/3M Service**

Exhibit E-1 – Choke Manifold Diagram
Hallertau 5 Federal 8H
 Cimarex Energy Co. of Colorado
 5-26S-32E
 SHL 500' FSL & 330' FEL
 BHL 330' FNL & 380' FEL
 Lea County, NM

Exhibit F-1 -- Co-Flex Hose Hydrostatic Test

Hallertau 5 Federal 8H

Cimarex Energy Co. of Colorado

5-26S-32E

SHL 500' FSL & 330' FEL

BHL 330' FNL & 380' FEL

Lea County, NM



Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer: Oderco Inc		P.O. Number: odyd-271	
HOSE SPECIFICATIONS			
Type: Stainless Steel Armor Choke & Kill Hose		Hose Length: 45'ft.	
I.D. 4 INCHES		O.D. 9 INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI	BURST PRESSURE 0 PSI	
COUPLINGS			
Stem Part No. OKC OKC		Ferrule No. OKC OKC	
Type of Coupling: Swage-It			
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 15 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
Hose Assembly Serial Number: 79793		Hose Serial Number: OKC	
Comments:			
Date: 3/8/2011	Tested: <i>A. James</i>	Approved: <i>Levi H. H.</i>	



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260

Hose Specifications

Hose Type
C & K

Length
45'

Type of Fittings
41/1610K

Coupling Method
Swage

I.D.
4"

O.D.
6.09"

Dia Size
6.38"

Final O.D.
6.25"

Working Pressure
10000 PSI

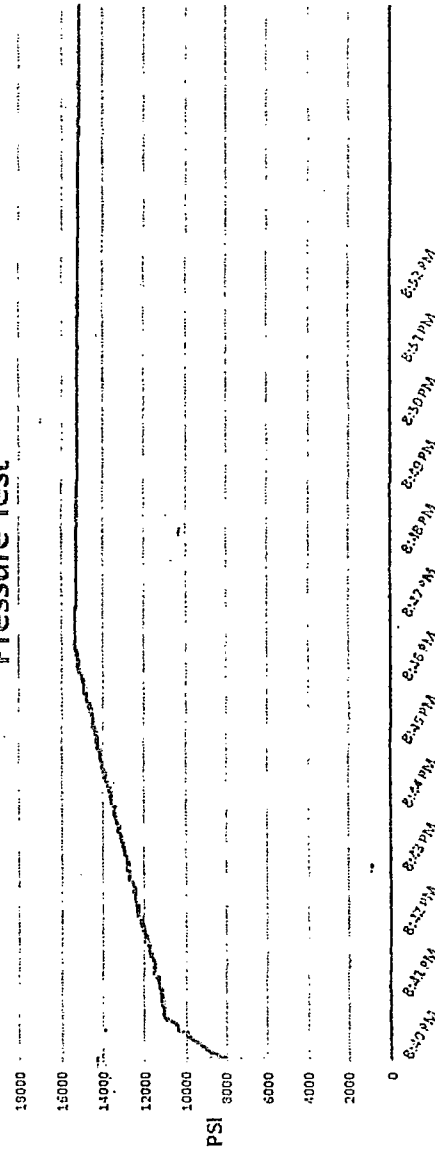
Burst Pressure
Standard Safety Multiplier Applies

Hose Serial #
5544

Hose Assembly Serial #
79793

Verification

Pressure Test



Test Pressure
15000 PSI

Time Held at Test Pressure
11 Minutes

Actual Burst Pressure

Peak Pressure
15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac McConnell

Approved By: Kim Thomas

[Signature]

[Signature]

March 3, 2011

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Hallertau 5 Federal 8H
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 500' FSL & 330' FEL
BHL 330' FNL & 380' FEL
Lea County, NM



Midwest Hose
& Specialty, Inc.

Exhibit F -3- Co-Flex Hose
Hallertau 5 Federal 8H
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 500' FSL & 330' FEL
BHL 330' FNL & 380' FEL
Lea County, NM

Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium components. The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermiculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unbolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

Exhibit F-2 – Co-Flex Hose
Hallertau 5 Federal 8H
Cimarex Energy Co. of Colorado
5-26S-32E

SHL 500' FSL & 330' FEL
BHL 330' FNL & 380' FEL
Lea County, NM



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer:		PO
DEM		ODYD-271
SPECIFICATIONS		
Sales Order	Dated:	
79793	3/8/2011	
We hereby certify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards Supplier: Midwest Hose & Specialty, Inc. 10640 Tanner Road Houston, Texas 77041		
Comments:		
Approved:		Date:
Samuel Garcia		3/8/2011

Exhibit F – Co-Flex Hose
Hallertau 5 Federal 8H
Cimarex Energy Co. of Colorado
5-26S-32E
SHL 500' FSL & 330' FEL
BHL 330' FNL & 380' FEL
Lea County, NM

