

OCD Hobbs

Form 3160-3  
(March 2012)**UNORTHODOX  
LOCATION**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 20145. Lease Serial No.  
SHLABHL: NMNM085939

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.  
Colibri Federal #25H

9. API Well No.

10. Field and Pool, or Exploratory

11. Sec., T. R. M. or Blk. and Survey and Area

10, 23S, 32E

12. County or Parish

13. State

Lea

NM

1a. Type of Work ☒ DRILL ☐ REENTER1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator

Cimarex Energy Co.

3a. Address

202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103

3b. Phone No. (include area code)

918-585-1100

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

At Surface 327' FNL 1779' FWL

At proposed prod. Zone 330' FSL 2200' FWL

Bone Spring

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

Malaga NM is 24.8 miles southwesterly

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any)

327

16. No of acres in lease

NMNM085939=640.00 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.

2030' to the #  
24H

19. Proposed Depth

Pilot Hole TD: N/A

14,139 MD

9,700 TVD

20. BLM/BIA Bond No. on File

NM2575; NMB000835

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

3712 GR

22. Approximate date work will start\*

7/21/14

23. Estimated duration

35 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:

- Well plat certified by a registered surveyor
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator Certification
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature

Aricka Easterling

Name (Printed/Typed)

Aricka Easterling

Date

3/19/14

Title

Regulatory Compliance

Approved By (Signature)

Steve Caffey

Name (Printed/Typed)

CARLSBAD FIELD OFFICE

Date

OCT - 7 2014

Title

FIELD MANAGER

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  
OCT 16 2014

Application to Drill  
**Colibri Federal #25H**  
 Cimarex Energy Co.  
 UL: C, Sec. 10, 23S, 32E  
 Lea Co., 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 327' FNL 1779' FWL  
BHL 330' FSL 2200' FWL
2. **Elevation Above Sea Level:** 3,712' 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:** 14,139 MD 9,700 TVD Pilot Hole TD: N/A
6. **Estimated Tops of Geological Markers:**

| Formation           | Est Top | Bearing      |
|---------------------|---------|--------------|
| Rustler             | 1160    | N/A          |
| Salt                | 1340    | N/A          |
| Castille            | 3450    | N/A          |
| Base Salt           | 4600    | N/A          |
| Lamaar              | 4840    | N/A          |
| Bell Canyon         | 4880    | N/A          |
| Cherry Canyon       | 7025    | N/A          |
| Brushy Canyon       | 7180    | N/A          |
| Basal Brushy Canyon | 8500    | N/A          |
| Bone Spring         | 8725    | Hydrocarbons |
| Avalon Shale        | 9490    | Hydrocarbons |
| 1st BSS             | 9885    | Hydrocarbons |

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

7A. **OSE Ground Water Estimated Depth:** 475'

8. **Casing Program:**

| 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                      | 4210                         | 1250' 4210                    | 17 1/2                  | 13-3/8"              | 48.00                 | H-40         | ST&C   | New       | 553        | 8.8                          | 1.34                                  |                                      | 3.12             | 58,080                | 50,277                         | 6.40                     |
| Intermediate | 0                      | 4860                         | 4860                          | 12 1/4                  | 9-5/8"               | 36.00                 | J-55         | LT&C   | New       | 2552       | 10.1                         |                                       | 1.19                                 | 1.38             | 174,960               | 147,981                        | 3.06                     |
| Production   | 0                      | 9223                         | 9223                          | 8 3/4                   | 5-1/2"               | 17.00                 | L-80         | LT&C   | New       | 4412       | 9.2                          | 1.43                                  |                                      | 1.75             | 164,900               | 141,738                        | 2.38                     |
| Production   | 9223                   | 14139                        | 9700                          | 8 3/4                   | 5-1/2"               | 17.00                 | L-80         | BT&C   | New       | 4640       | 9.2                          | 1.36                                  |                                      | 1.67             | 8,109                 | 6,970                          | 56.96                    |

Note: Operator may drill a 8-1/2" OH from end of curve to TD of the well. This is to reduce the need to ream the conventionally drilled curve to run a RSS assembly into the lateral.

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**8A. Casing Design and Casing Loading Assumptions:**

|                                                      |          |                                                                                                                                   |
|------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| Surface                                              | Tension  | A 1.8 design factor with effects of buoyancy: 8.80 ppg.                                                                           |
|                                                      | Collapse | A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.80 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: 10.10 ppg.                                                                          |
|                                                      | Collapse | A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.10 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<br>Production<br>Completion System | Tension  | A 1.8 design factor with effects of buoyancy: 9.20 ppg.                                                                           |
|                                                      | Collapse | A 1.125 design factor with full internal evacuation of next casing string with a collapse force equal to a 9.20 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      | 576   | 1.75       | 13.50  | 1008       | Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water                                                                          |
|                                | Tail      | 157   | 1.34       | 14.80  | 210        | Class C + LCM, 6.32 gps water                                                                                                          |
|                                | TOC: 0    |       | 45% Excess |        |            | Centralizers per Onshore Order 2.III.B.1f                                                                                              |
| Intermediate<br><i>See COA</i> | Lead      | 872   | 1.88       | 12.90  | 1638       | 35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water                                                                      |
|                                | Tail      | 284   | 1.34       | 14.80  | 380        | Class C + retarder + LCM, 6.32 gps water                                                                                               |
|                                | TOC: 0    |       | 44% Excess |        |            |                                                                                                                                        |
| Production<br><i>See COA</i>   | Lead      | 530   | 2.40       | 11.90  | 1271       | 35:65 (poz/H) + salt + Sodium Metasilicate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water                     |
|                                | Tail      | 1214  | 1.24       | 14.50  | 1505       | 50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water                                            |
|                                | TOC: 4660 |       | 16% 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: 9,223'                      EOC: 9,973'

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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Lea Co., NM

See COA

**11. Proposed Mud Circulating System:**

| Depth           | Mud Weight   | Visc  | Fluid Loss | Type Mud     |
|-----------------|--------------|-------|------------|--------------|
| 0' to 1250'     | 8.30 - 8.80  | 28    | NC         | FW Spud Mud  |
| 1210' to 4860'  | 9.60 - 10.10 | 30-32 | NC         | Brine Water  |
| 4860' to 14139' | 8.70 - 9.20  | 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 4860 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:**

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H<sub>2</sub>S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H<sub>2</sub>S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H<sub>2</sub>S Safety package on all wells, attached is an "H<sub>2</sub>S 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: 4365 psi

Estimated BHT: 158°

**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: 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:**

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

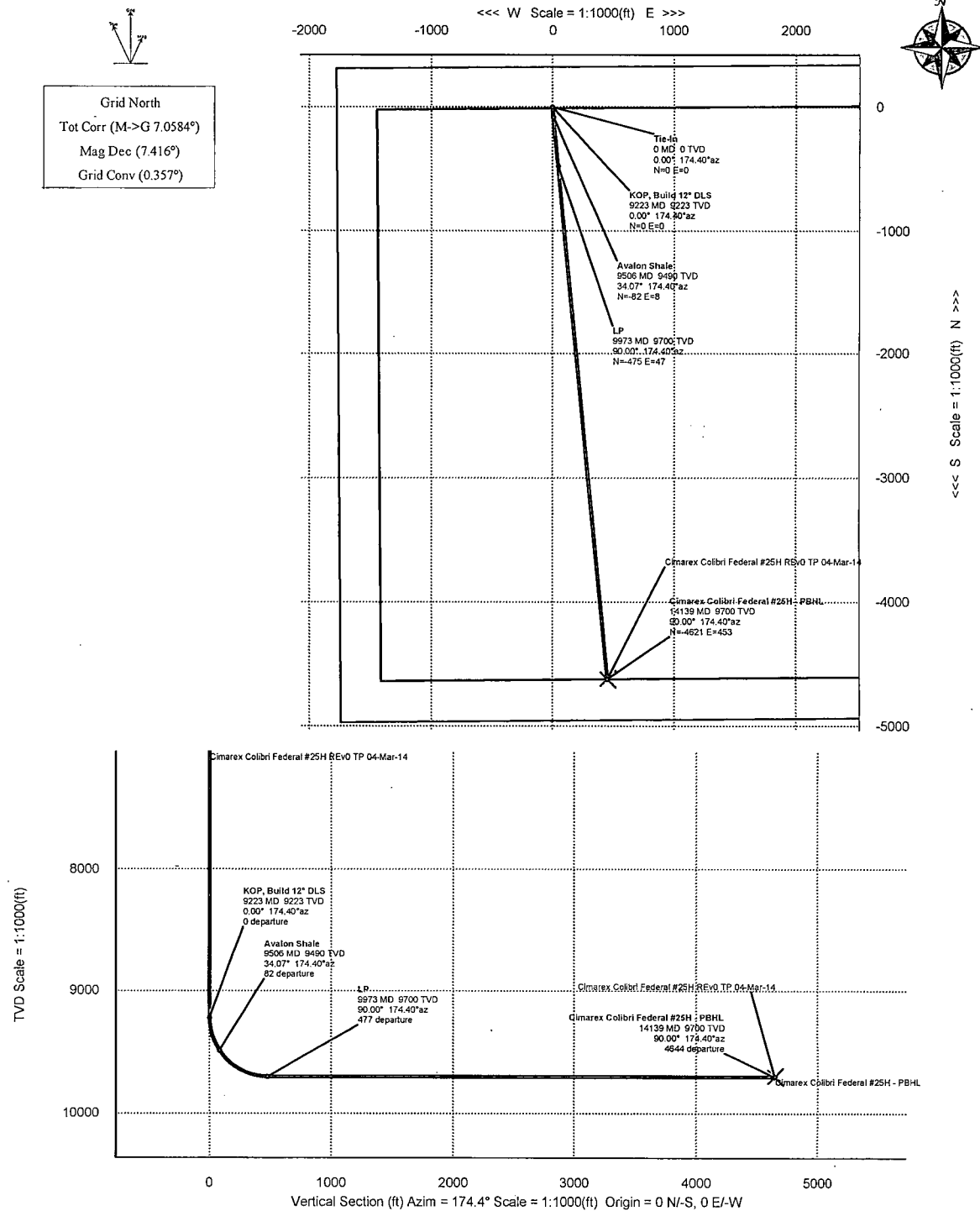
Bone Spring pay will be perforated and stimulated.

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

See COA



|                     |                                                     |                                        |                                                                 |                                                                                                                                                       |                                                                                                  |
|---------------------|-----------------------------------------------------|----------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| WELL                | Colibri Federal #25H                                | FIELD                                  | NM Lea County (NAD 83)                                          | STRUCTURE                                                                                                                                             | Cimarex Colibri Federal #25H                                                                     |
| Magnetic Parameters | Dip: 60.163°<br>Model: 800M 2013<br>Mag Dec: 7.416° | Date: March 04, 2014<br>P.S.: 48373 5m | Surface Location<br>Lat: N 32 19 31.915<br>Lon: W 103 38 55.150 | NAD83 New Mexico State Plane, Eastern Zone, US Feet<br>Northing: 443004.33 RUS<br>Easting: 747680.35 RUS<br>Grid Conv: 0.327<br>Scale Fact: 0.9995783 | Miscellaneous<br>Site: Colibri Federal #25H<br>Plan: Cimarex Colibri Federal #25H Rev 02/08/2014 |



#### Critical Points

| Critical Point MD                   | INCL     | AZIM   | TVD    | VSEC    | N(+) / S(-) | E(+) / W(-) | DLS    |
|-------------------------------------|----------|--------|--------|---------|-------------|-------------|--------|
| Tie-In                              | 0.00     | 174.40 | 0.00   | 0.00    | 0.00        | 0.00        |        |
| KOP, Build 12° DLS                  | 9222.54  | 0.00   | 174.40 | 9222.54 | 0.00        | 0.00        | 0.00   |
| Avalon Shale                        | 9506.44  | 34.07  | 174.40 | 9490.00 | 81.95       | -81.56      | 12.00  |
| LP                                  | 9972.54  | 90.00  | 174.40 | 9700.00 | 477.46      | -475.19     | 12.00  |
| Cimarex Colibri Federal #25H - PBHL | 14138.59 | 90.00  | 174.40 | 9700.00 | 4643.52     | -4621.39    | 452.79 |
|                                     |          |        |        |         |             |             | 0.00   |

**Cimarex Colibri Federal #25H REv0 TP 04-Mar-14 Proposal Report**  
(Non-Def Plan)

Report Date: March 04, 2014 - 01:46 PM  
Client:  
Field: NM Lea County (NAD 83)  
Structure / Slot: Cimarex Colibri Federal #25H / Colibri Federal #25H  
Well: Colibri Federal #25H  
Borehole: Original Borehole  
UWI / API#: Unknown / Unknown  
Survey Name: Cimarex Colibri Federal #25H REv0 TP 04-Mar-14  
Survey Date: March 04, 2014  
Tort / AHD / DDI / ERD Ratio: 90.000 ° / 4643.523 ft / 5.785 / 0.479  
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet  
Location Lat / Long: N 32° 19' 31.91889", W 103° 39' 55.15616"  
Location Grid N/E Y/X: N 482804.330 ftUS, E 747680.350 ftUS  
CRS Grid Convergence Angle: 0.3572 °  
Grid Scale Factor: 0.99995785

Survey / DLS Computation: Minimum Curvature / Lubinski  
Vertical Section Azimuth: 174.404 ° (Grid North)  
Vertical Section Origin: 0.000 ft, 0.000 ft  
TVD Reference Datum: Unknown  
TVD Reference Elevation: 3712.000 ft above MSL  
Seabed / Ground Elevation: 3712.000 ft above MSL  
Magnetic Declination: 7.416 °  
Total Field Strength: 48373.466 nT  
Magnetic Dip Angle: 60.183 °  
Declination Date: March 04, 2014  
Magnetic Declination Model: BGGM 2013  
North Reference: Grid North  
Grid Convergence Used: 0.3572 °  
Total Corr Mag North->Grid North: 7.0584 °  
Local Coord Referenced To: Structure Reference Point

| Comments | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ") | Longitude<br>(E/W ° ' ") | Closure<br>(ft) | Closure Azimuth<br>(°) | DLS<br>(°/100ft) |
|----------|------------|-------------|------------------|-------------|--------------|------------|------------|--------------------|-------------------|-------------------------|--------------------------|-----------------|------------------------|------------------|
| Tie-In   | 0.00       | 0.00        | 174.40           | 0.00        | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | N/A              |
|          | 100.00     | 0.00        | 174.40           | 100.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 200.00     | 0.00        | 174.40           | 200.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 300.00     | 0.00        | 174.40           | 300.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 400.00     | 0.00        | 174.40           | 400.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 500.00     | 0.00        | 174.40           | 500.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 600.00     | 0.00        | 174.40           | 600.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 700.00     | 0.00        | 174.40           | 700.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 800.00     | 0.00        | 174.40           | 800.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 900.00     | 0.00        | 174.40           | 900.00      | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1000.00    | 0.00        | 174.40           | 1000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1100.00    | 0.00        | 174.40           | 1100.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1200.00    | 0.00        | 174.40           | 1200.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1300.00    | 0.00        | 174.40           | 1300.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1400.00    | 0.00        | 174.40           | 1400.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1500.00    | 0.00        | 174.40           | 1500.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1600.00    | 0.00        | 174.40           | 1600.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1700.00    | 0.00        | 174.40           | 1700.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1800.00    | 0.00        | 174.40           | 1800.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 1900.00    | 0.00        | 174.40           | 1900.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2000.00    | 0.00        | 174.40           | 2000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2100.00    | 0.00        | 174.40           | 2100.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2200.00    | 0.00        | 174.40           | 2200.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2300.00    | 0.00        | 174.40           | 2300.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2400.00    | 0.00        | 174.40           | 2400.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2500.00    | 0.00        | 174.40           | 2500.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2600.00    | 0.00        | 174.40           | 2600.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2700.00    | 0.00        | 174.40           | 2700.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2800.00    | 0.00        | 174.40           | 2800.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 2900.00    | 0.00        | 174.40           | 2900.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3000.00    | 0.00        | 174.40           | 3000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3100.00    | 0.00        | 174.40           | 3100.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3200.00    | 0.00        | 174.40           | 3200.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |

| Comments | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ") | Longitude<br>(E/W ° ' ") | Closure<br>(ft) | Closure Azimuth<br>(°) | DLS<br>(°/100ft) |
|----------|------------|-------------|------------------|-------------|--------------|------------|------------|--------------------|-------------------|-------------------------|--------------------------|-----------------|------------------------|------------------|
|          | 3300.00    | 0.00        | 174.40           | 3300.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3400.00    | 0.00        | 174.40           | 3400.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3500.00    | 0.00        | 174.40           | 3500.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3600.00    | 0.00        | 174.40           | 3600.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3700.00    | 0.00        | 174.40           | 3700.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3800.00    | 0.00        | 174.40           | 3800.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 3900.00    | 0.00        | 174.40           | 3900.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4000.00    | 0.00        | 174.40           | 4000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4100.00    | 0.00        | 174.40           | 4100.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4200.00    | 0.00        | 174.40           | 4200.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4300.00    | 0.00        | 174.40           | 4300.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4400.00    | 0.00        | 174.40           | 4400.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4500.00    | 0.00        | 174.40           | 4500.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4600.00    | 0.00        | 174.40           | 4600.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4700.00    | 0.00        | 174.40           | 4700.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4800.00    | 0.00        | 174.40           | 4800.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 4900.00    | 0.00        | 174.40           | 4900.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5000.00    | 0.00        | 174.40           | 5000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5100.00    | 0.00        | 174.40           | 5100.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5200.00    | 0.00        | 174.40           | 5200.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5300.00    | 0.00        | 174.40           | 5300.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5400.00    | 0.00        | 174.40           | 5400.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5500.00    | 0.00        | 174.40           | 5500.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5600.00    | 0.00        | 174.40           | 5600.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5700.00    | 0.00        | 174.40           | 5700.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5800.00    | 0.00        | 174.40           | 5800.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 5900.00    | 0.00        | 174.40           | 5900.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6000.00    | 0.00        | 174.40           | 6000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6100.00    | 0.00        | 174.40           | 6100.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6200.00    | 0.00        | 174.40           | 6200.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6300.00    | 0.00        | 174.40           | 6300.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6400.00    | 0.00        | 174.40           | 6400.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6500.00    | 0.00        | 174.40           | 6500.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6600.00    | 0.00        | 174.40           | 6600.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6700.00    | 0.00        | 174.40           | 6700.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6800.00    | 0.00        | 174.40           | 6800.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 6900.00    | 0.00        | 174.40           | 6900.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 7000.00    | 0.00        | 174.40           | 7000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92           | W 103 39 55.16           | 0.00            | 0.00                   | 0.00             |
|          | 7100.00    | 0.00        | 174.40           | 71          |              |            |            |                    |                   |                         |                          |                 |                        |                  |

| Comments           | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' '') | Longitude<br>(E/W ° ' '') | Closure<br>(ft) | Closure Azimuth<br>(°) | DLS<br>(*/100ft) |
|--------------------|------------|-------------|------------------|-------------|--------------|------------|------------|--------------------|-------------------|--------------------------|---------------------------|-----------------|------------------------|------------------|
|                    | 8800.00    | 0.00        | 174.40           | 8800.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92            | W 103 39 55.16            | 0.00            | 0.00                   | 0.00             |
|                    | 8900.00    | 0.00        | 174.40           | 8900.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92            | W 103 39 55.16            | 0.00            | 0.00                   | 0.00             |
|                    | 9000.00    | 0.00        | 174.40           | 9000.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92            | W 103 39 55.16            | 0.00            | 0.00                   | 0.00             |
|                    | 9100.00    | 0.00        | 174.40           | 9100.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92            | W 103 39 55.16            | 0.00            | 0.00                   | 0.00             |
|                    | 9200.00    | 0.00        | 174.40           | 9200.00     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92            | W 103 39 55.16            | 0.00            | 0.00                   | 0.00             |
| KOP, Build 12" DLS | 9222.54    | 0.00        | 174.40           | 9222.54     | 0.00         | 0.00       | 0.00       | 482804.33          | 747680.35         | N 32 19 31.92            | W 103 39 55.16            | 0.00            | 0.00                   | 0.00             |
|                    | 9300.00    | 9.30        | 174.40           | 9299.66     | 6.27         | -6.24      | 0.61       | 482798.09          | 747680.96         | N 32 19 31.86            | W 103 39 55.15            | 6.27            | 174.40                 | 12.00            |
|                    | 9400.00    | 21.30       | 174.40           | 9395.94     | 32.60        | -32.45     | 3.18       | 482771.88          | 747683.53         | N 32 19 31.60            | W 103 39 55.12            | 32.60           | 174.40                 | 12.00            |
| Avalon Shale       | 9500.00    | 33.30       | 174.40           | 9484.64     | 78.38        | -78.00     | 7.64       | 482726.33          | 747687.99         | N 32 19 31.15            | W 103 39 55.07            | 78.38           | 174.40                 | 12.00            |
|                    | 9505.44    | 34.07       | 174.40           | 9490.00     | 81.95        | -81.56     | 7.99       | 482722.78          | 747688.34         | N 32 19 31.11            | W 103 39 55.07            | 81.95           | 174.40                 | 12.00            |
|                    | 9600.00    | 45.30       | 174.40           | 9561.89     | 141.59       | -140.92    | 13.81      | 482663.42          | 747694.16         | N 32 19 30.52            | W 103 39 55.01            | 141.59          | 174.40                 | 12.00            |
|                    | 9700.00    | 57.30       | 174.40           | 9624.31     | 219.49       | -218.44    | 21.40      | 482585.90          | 747701.75         | N 32 19 29.76            | W 103 39 54.92            | 219.49          | 174.40                 | 12.00            |
|                    | 9800.00    | 69.30       | 174.40           | 9669.16     | 308.66       | -307.19    | 30.10      | 482497.15          | 747710.45         | N 32 19 28.88            | W 103 39 54.83            | 308.66          | 174.40                 | 12.00            |
| LP                 | 9900.00    | 81.30       | 174.40           | 9694.50     | 405.21       | -403.28    | 39.51      | 482401.07          | 747719.86         | N 32 19 27.93            | W 103 39 54.73            | 405.21          | 174.40                 | 12.00            |
|                    | 9972.54    | 90.00       | 174.40           | 9700.00     | 477.46       | -475.19    | 46.56      | 482329.16          | 747726.91         | N 32 19 27.21            | W 103 39 54.65            | 477.46          | 174.40                 | 12.00            |
|                    | 10000.00   | 90.00       | 174.40           | 9700.00     | 504.93       | -502.52    | 49.24      | 482301.83          | 747729.58         | N 32 19 26.94            | W 103 39 54.62            | 504.93          | 174.40                 | 0.00             |
|                    | 10100.00   | 90.00       | 174.40           | 9700.00     | 604.93       | -602.05    | 58.99      | 482202.31          | 747739.33         | N 32 19 25.96            | W 103 39 54.51            | 604.93          | 174.40                 | 0.00             |
|                    | 10200.00   | 90.00       | 174.40           | 9700.00     | 704.93       | -701.57    | 68.74      | 482102.79          | 747749.08         | N 32 19 24.97            | W 103 39 54.41            | 704.93          | 174.40                 | 0.00             |
|                    | 10300.00   | 90.00       | 174.40           | 9700.00     | 804.93       | -801.09    | 78.49      | 482003.27          | 747758.84         | N 32 19 23.99            | W 103 39 54.30            | 804.93          | 174.40                 | 0.00             |
|                    | 10400.00   | 90.00       | 174.40           | 9700.00     | 904.93       | -900.62    | 88.24      | 481903.75          | 747768.59         | N 32 19 23.00            | W 103 39 54.19            | 904.93          | 174.40                 | 0.00             |
|                    | 10500.00   | 90.00       | 174.40           | 9700.00     | 1004.93      | -1000.14   | 97.99      | 481804.23          | 747778.34         | N 32 19 22.02            | W 103 39 54.09            | 1004.93         | 174.40                 | 0.00             |
|                    | 10600.00   | 90.00       | 174.40           | 9700.00     | 1104.93      | -1099.66   | 107.74     | 481704.71          | 747788.09         | N 32 19 21.03            | W 103 39 53.98            | 1104.93         | 174.40                 | 0.00             |
|                    | 10700.00   | 90.00       | 174.40           | 9700.00     | 1204.93      | -1199.19   | 117.49     | 481605.20          | 747797.84         | N 32 19 20.05            | W 103 39 53.87            | 1204.93         | 174.40                 | 0.00             |
|                    | 10800.00   | 90.00       | 174.40           | 9700.00     | 1304.93      | -1298.71   | 127.24     | 481505.68          | 747807.59         | N 32 19 19.06            | W 103 39 53.77            | 1304.93         | 174.40                 | 0.00             |
|                    | 10900.00   | 90.00       | 174.40           | 9700.00     | 1404.93      | -1398.23   | 136.99     | 481406.16          | 747817.34         | N 32 19 18.08            | W 103 39 53.66            | 1404.93         | 174.40                 | 0.00             |
|                    | 11000.00   | 90.00       | 174.40           | 9700.00     | 1504.93      | -1497.76   | 146.75     | 481306.64          | 747827.09         | N 32 19 17.09            | W 103 39 53.55            | 1504.93         | 174.40                 | 0.00             |
|                    | 11100.00   | 90.00       | 174.40           | 9700.00     | 1604.93      | -1597.28   | 156.50     | 481207.12          | 747836.84         | N 32 19 16.10            | W 103 39 53.45            | 1604.93         | 174.40                 | 0.00             |
|                    | 11200.00   | 90.00       | 174.40           | 9700.00     | 1704.93      | -1696.80   | 166.25     | 481107.60          | 747846.59         | N 32 19 15.12            | W 103 39 53.34            | 1704.93         | 174.40                 | 0.00             |
|                    | 11300.00   | 90.00       | 174.40           | 9700.00     | 1804.93      | -1796.33   | 176.00     | 481008.08          | 747856.34         | N 32 19 14.13            | W 103 39 53.24            | 1804.93         | 174.40                 | 0.00             |
|                    | 11400.00   | 90.00       | 174.40           | 9700.00     | 1904.93      | -1895.85   | 185.75     | 480908.56          | 747866.09         | N 32 19 13.15            | W 103 39 53.13            | 1904.93         | 174.40                 | 0.00             |
|                    | 11500.00   | 90.00       | 174.40           | 9700.00     | 2004.93      | -1995.38   | 195.50     | 480809.04          | 747875.84         | N 32 19 12.16            | W 103 39 53.02            | 2004.93         | 174.40                 | 0.00             |
|                    | 11600.00   | 90.00       | 174.40           | 9700.00     | 2104.93      | -2094.90   | 205.25     | 480709.52          | 747885.59         | N 32 19 11.18            | W 103 39 52.92            | 2104.93         | 174.40                 | 0.00             |
|                    | 11700.00   | 90.00       | 174.40           | 9700.00     | 2204.93      | -2194.42   | 215.00     | 480610.00          | 747895.34         | N 32 19 10.19            | W 103 39 52.81            | 2204.93         | 174.40                 | 0.00             |
|                    | 11800.00   | 90.00       | 174.40           | 9700.00     | 2304.93      | -2293.95   | 224.75     | 480510.49          | 747905.09         | N 32 19 9.21             | W 103 39 52.70            | 2304.93         | 174.40                 | 0.00             |
|                    | 11900.00   | 90.00       | 174.40           | 9700.00     | 2404.93      | -2393.47   | 234.50     | 480410.97          | 747914.84         | N 32 19 8.22             | W 103 39 52.60            | 2404.93         | 174.40                 | 0.00             |
|                    | 12000.00   | 90.00       | 174.40           | 9700.00     | 2504.93      | -2492.99   | 244.26     | 480311.45          | 747924.59         | N 32 19 7.24             | W 103 39 52.49            | 2504.93         | 174.40                 | 0.00             |
|                    | 12100.00   | 90.00       | 174.40           | 9700.00     | 2604.93      | -2592.52   | 254.01     | 480211.93          | 747934.35         | N 32 19 6.25             | W 103 39 52.38            | 2604.93         | 174.40                 | 0.00             |
|                    | 12200.00   | 90.00       | 174.40           | 9700.00     | 2704.93      | -2692.04   | 263.76     | 480112.41          | 747944.10         | N 32 19 5.27             | W 103 39 52.28            | 2704.93         | 174.40                 | 0.00             |
|                    | 12300.00   | 90.00       | 174.40           | 9700.00     | 2804.93      | -2791.56   | 273.51     | 480012.89          | 747953.85         | N 32 19 4.28             | W 103 39 52.17            | 2804.93         | 174.40                 | 0.00             |
|                    | 12400.00   | 90.00       | 174.40           | 9700.00     | 2904.93      | -2891.09   | 283.26     | 479913.37          | 747963.60         | N 32 19 3.29             | W 103 39 52.07            | 2904.93         | 174.40                 | 0.00             |
|                    | 12500.00   | 90.00       | 174.40           | 9700.00     | 3004.93      | -2990.61   | 293.01     | 479813.85          | 747973.35         | N 32 19 2.31             | W 103 39 51.96            | 3004.93         | 174.40                 | 0.00             |
|                    | 12600.00   | 90.00       | 174.40           | 9700.00     | 3104.93      | -3090.13   | 302.76     | 479714.33          | 747983.10         | N 32 19 1.32             | W 103 39 51.85            | 3104.93         | 174.40                 | 0.00             |
|                    | 12700.00   | 90.00       | 174.40           | 9700.00     | 3204.93      | -3189.66   | 312.51     | 479614.81          | 747992.85         | N 32 19 0.34             | W 103 39 51.75            | 3204.93         | 174.40                 | 0.00             |
|                    | 12800.00   | 90.00       | 174.40           | 9700.00     | 3304.93      | -3289.18   | 322.26     | 479515.30          | 748002.60         | N 32 18 59.35            | W 103 39 51.64            | 3304.93         | 174.40                 | 0.00             |
|                    | 12900.00   | 90.00       | 174.40           | 9700.00     | 3404.93      | -3388.70   | 332.01     | 479415.78          | 748012.35         | N 32 18 58.37            | W 103 39 51.53            | 3404.93         | 174.40                 | 0.00             |
|                    | 13000.00   | 90.00       | 174.40           | 9700.00     | 3504.93      | -3488.23   | 341.77     | 479316.26          | 748022.10         | N 32 18 57.38            | W 103 39 51.43            | 3504.93         | 174.40                 | 0.00             |
|                    | 13100.00   | 90.00       | 174.40           | 9700.00     | 3604.93      | -3587.75   | 351.52     | 479216.74          | 748031.85         | N 32 18 56.40            | W 103 39 51.32            | 3604.93         | 174.40                 | 0.00             |
|                    | 13200.00   | 90.00       | 174.40           | 9700.00     | 3704.93      | -3687.27   | 361.27     | 479117.22          | 748041.60         | N 32 18 55.41            | W 103 39 51.21            | 3704.93         | 174.40                 | 0.00             |
|                    | 13300.00   | 90.00       | 174.40           | 9700.00     | 3804.93      | -3786.80   | 371.02     | 479017.70          | 748051.35         | N 32 18 54.43            | W 103 39 51.11            | 3804.93         | 174.40                 | 0.00             |
|                    | 13400.00   | 90.00       | 174.40           | 9700.00     | 3904.93      | -3886.32   | 380.77     | 478918.18          | 748061.10         | N 32 18 53.44            | W 103 39 51.00            | 3904.93         | 174.40                 | 0.00             |
|                    | 13500.00   | 90.00       | 174.40           | 9700.00     | 4004.93      | -3985.84   | 390.52     | 478818.66          | 748070.85         | N 32 18 52.46            | W 103 39 50.90            | 4004.93         | 174.40                 | 0.00             |
|                    | 13600.00   | 90.00       | 174.40           | 9700.00     | 4104.93      | -4085.37   | 400.27     | 478719.14          | 748080.60         | N 32 18 51.47            | W 103 39 50.79            | 4104.93         | 174.40                 | 0.00             |
|                    | 13700.00   | 90.00       | 174.40           | 9700.00     | 4204.93      | -4184.89   | 410.02     | 478619.62          | 748090.35         | N 32 18 50.48            | W 103 39 50.68            | 4204.93         | 174.40                 | 0.00             |
|                    | 13800.00   | 90.00       | 174.40           | 9700.00     | 4304.93      | -4284.41   | 419.77     | 478520.10          | 748100.11         | N 32 18 49.50            | W 103 39 50.58            | 4304.93         | 174.40                 | 0.00             |

| Comments                                  | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ") | Longitude<br>(E/W ° ' ") | Closure<br>(ft) | Closure Azimuth<br>(°) | DLS<br>(°/100ft) |
|-------------------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|--------------------|-------------------|-------------------------|--------------------------|-----------------|------------------------|------------------|
|                                           | 13900.00   | 90.00       | 174.40           | 9700.00     | 4404.93      | -4383.94   | 429.52     | 478420.59          | 748109.86         | N 32 18 48.51           | W 103 39 50.47           | 4404.93         | 174.40                 | 0.00             |
|                                           | 14000.00   | 90.00       | 174.40           | 9700.00     | 4504.93      | -4483.46   | 439.28     | 478321.07          | 748119.61         | N 32 18 47.53           | W 103 39 50.36           | 4504.93         | 174.40                 | 0.00             |
|                                           | 14100.00   | 90.00       | 174.40           | 9700.00     | 4604.93      | -4582.99   | 449.03     | 478221.55          | 748129.36         | N 32 18 46.54           | W 103 39 50.26           | 4604.93         | 174.40                 | 0.00             |
| Cimarex Colibri<br>Federal #25H -<br>PBHL | 14138.59   | 90.00       | 174.40           | 9700.00     | 4643.52      | -4621.39   | 452.79     | 478183.14          | 748133.12         | N 32 18 46.16           | W 103 39 50.22           | 4643.52         | 174.40                 | 0.00             |

Survey Type: Non-Def Plan

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

| Description | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in) | Casing Diameter<br>(in) | Survey Tool Type | Borehole / Survey                                               |
|-------------|-----------------|---------------|------------------|-------------------|-------------------------|------------------|-----------------------------------------------------------------|
|             | 0.000           | 9506.436      | 1/100.000        | 30.000            | 30.000                  | SLB_MWD-POOR     | Original Borehole / Cimarex<br>Colibri Federal #25H REv0 TP 04- |
|             | 9506.436        | 14138.593     | 1/100.000        | 30.000            | 30.000                  | SLB_MWD-STD      | Original Borehole / Cimarex<br>Colibri Federal #25H REv0 TP 04- |

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

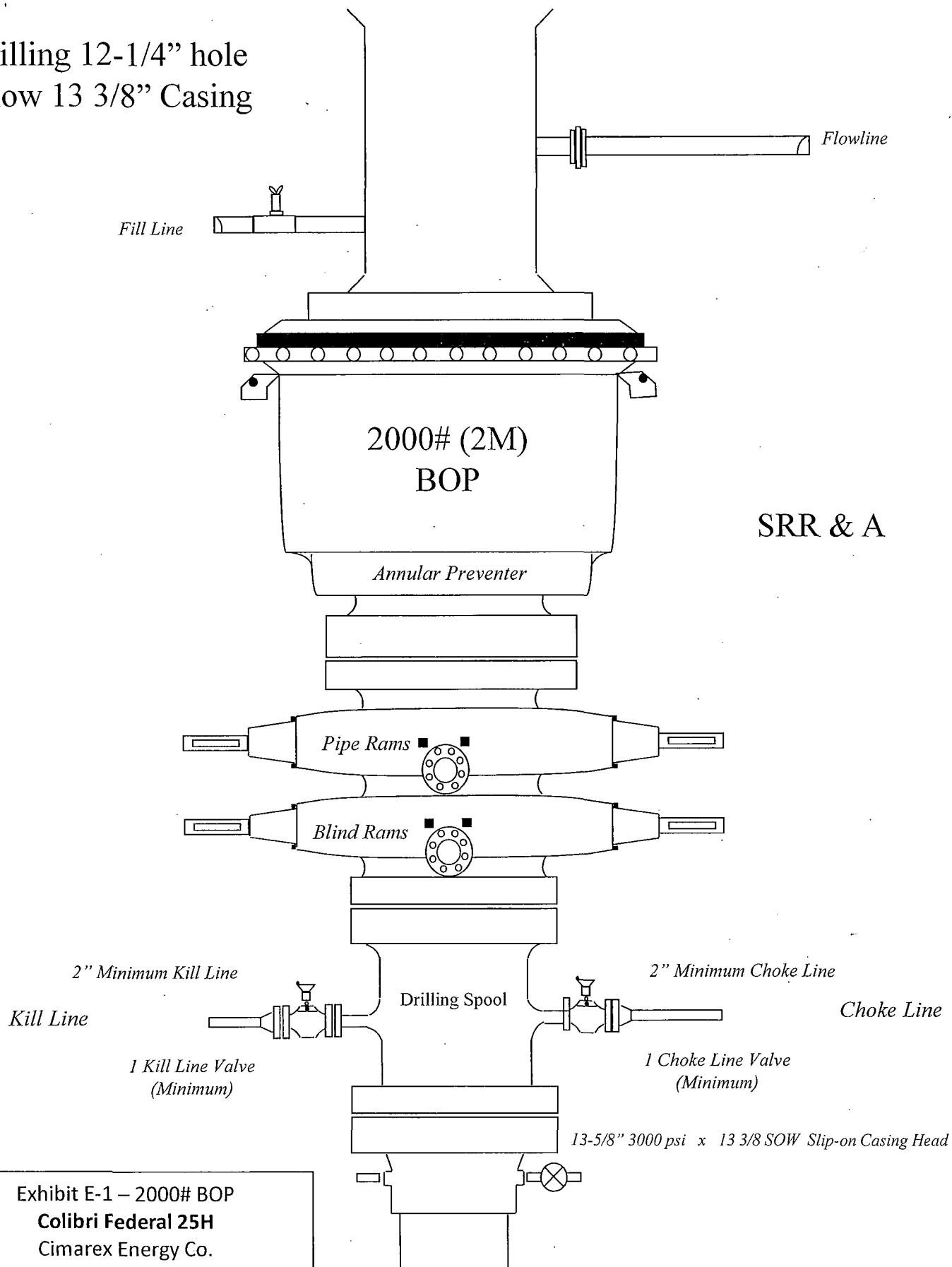


Exhibit E-1 – 2000# BOP

**Colibri Federal 25H**

Cimarex Energy Co.

10-23S-32E

SHL 327 FNL & 1779 FWL

BHL 330 FSL & 2200 FWL

Lea County, NM

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

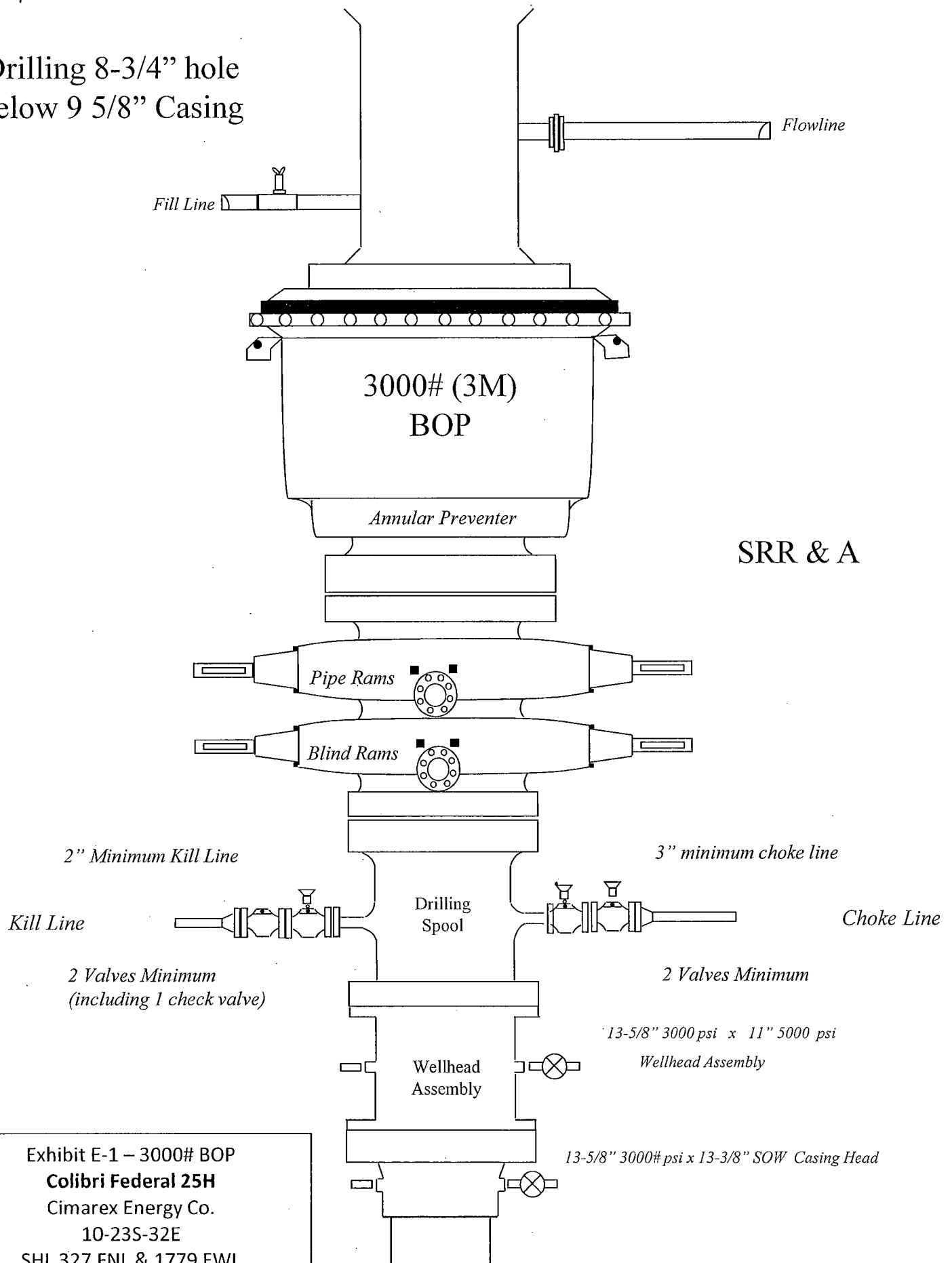


Exhibit E-1 – 3000# BOP

**Colibri Federal 25H**

Cimarex Energy Co.

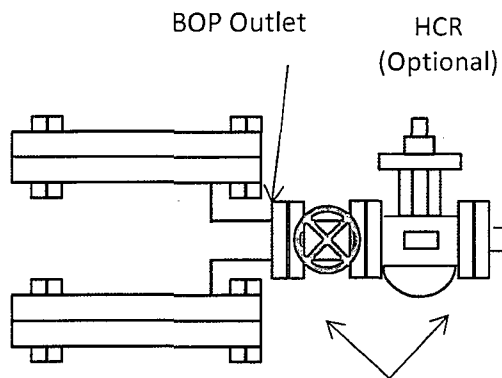
10-23S-32E

SHL 327 FNL & 1779 FWL

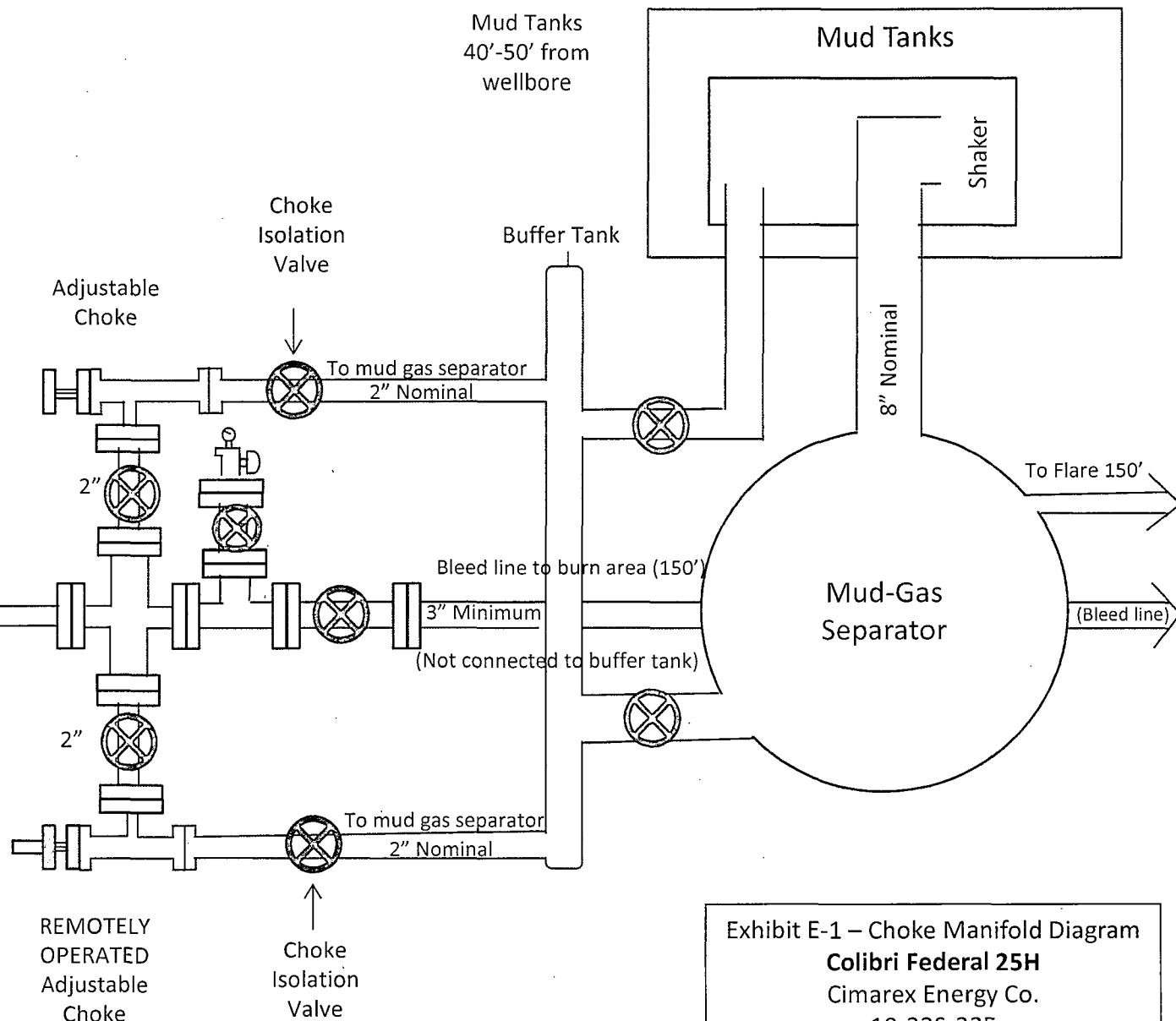
BHL 330 FSL & 2200 FWL

Lea County, NM

Choke Line:  
 2M System: 2" Minimum  
 3M System: 3" Minimum  
 OPTIONAL: 4" Flex Hose may be  
 used if approved in APD



2M: 1 Valve Minimum  
 3M: 2 Valves Minimum  
 HCR Valve is optional



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

Exhibit E-1 – Choke Manifold Diagram  
**Colibri Federal 25H**  
 Cimarex Energy Co.  
 10-23S-32E  
 SHL 327 FNL & 1779 FWL  
 BHL 330 FSL & 2200 FWL  
 Lea County, NM

Exhibit F-1 – Co-Flex Hose Hydrostatic Test

Colibri Federal 25H

Cimarex Energy Co.

10-23S-32E

SHL 327 FNL & 1779 FWL

BHL 330 FSL & 2200 FWL

Lea County, NM



# Midwest Hose & Specialty, Inc.

## INTERNAL HYDROSTATIC TEST REPORT

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



Midwest Hose  
& Specialty, Inc.

# Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260

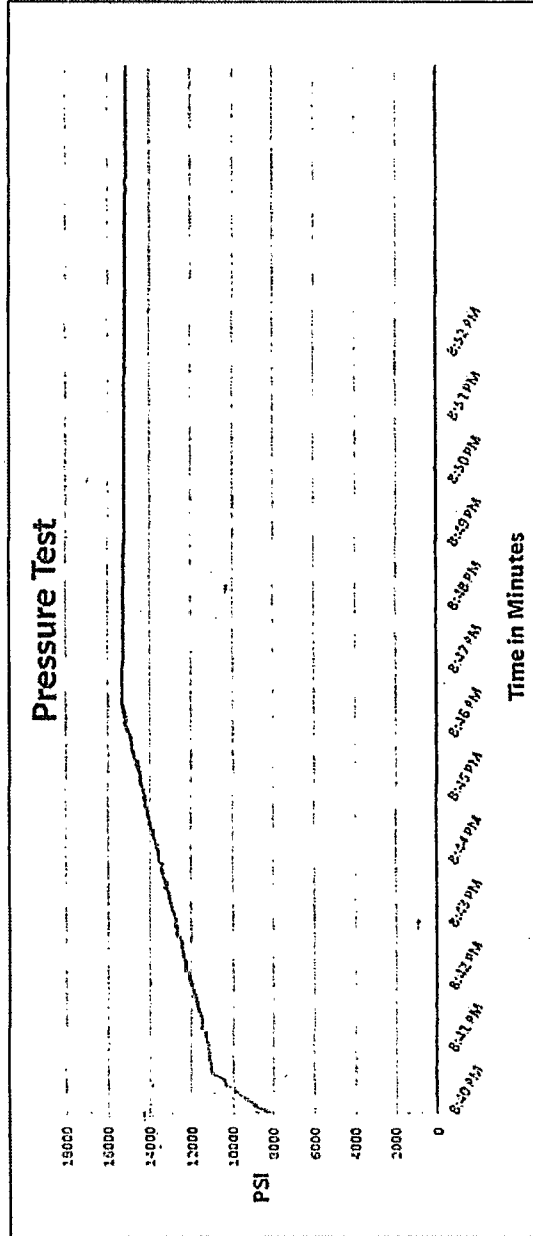
## Hose Specifications

Hose Type: C&K  
I.D.: 4"  
Working Pressure: 10000 PSI  
Length: 45'  
O.D.: 6.09"  
Rurst Pressure: Standard Safety Multiplier Applied

## Verification

Type of Fittings: 4 1/16 10K  
Die Size: 6.38"  
Hose Serial #: 5564  
Couplings Method: Swage  
Final O.D.: 6.25"  
Hose Assembly Serial #: 79793

## 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

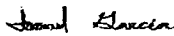
Exhibit F-1 – Co-Flex Hose Hydrostatic Test  
Colibri Federal 25H  
Cimarex Energy Co.  
10-23S-32E  
SHL 327 FNL & 1779 FWL  
BHL 330 FSL & 2200 FWL  
Lea County, NM

Exhibit F-2 – Co-Flex Hose  
Colibri Federal 25H  
Cimarex Energy Co.  
10-23S-32E  
SHL 327 FNL & 1779 FWL  
BHL 330 FSL & 2200 FWL  
Lea County, NM



## Midwest Hose & Specialty, Inc.

### Certificate of Conformity

|                                                                                                                                                                                                                                                                                            |               |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|
| <b>Customer:</b>                                                                                                                                                                                                                                                                           |               | <b>PO</b>    |
| DEM                                                                                                                                                                                                                                                                                        |               | ODYD-271     |
| <b>SPECIFICATIONS</b>                                                                                                                                                                                                                                                                      |               |              |
| <b>Sales Order</b>                                                                                                                                                                                                                                                                         | <b>Dated:</b> |              |
| 79793                                                                                                                                                                                                                                                                                      | 3/8/2011      |              |
| <p>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</p> <p>Supplier:<br/>Midwest Hose &amp; Specialty, Inc.<br/>10640 Tanner Road<br/>Houston, Texas 77041</p> |               |              |
| <b>Comments:</b>                                                                                                                                                                                                                                                                           |               |              |
| <b>Approved:</b>                                                                                                                                                                                                                                                                           |               | <b>Date:</b> |
|                                                                                                                                                                                                         |               | 3/8/2011     |



Midwest Hose  
& Specialty, Inc.

Exhibit F -3- Co-Flex Hose  
Colibri Federal 25H  
Cimarex Energy Co.  
10-23S-32E  
SHL 327 FNL & 1779 FWL  
BHL 330 FSL & 2200 FWL  
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.

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

Exhibit F – Co-Flex Hose

**Colibri Federal 25H**

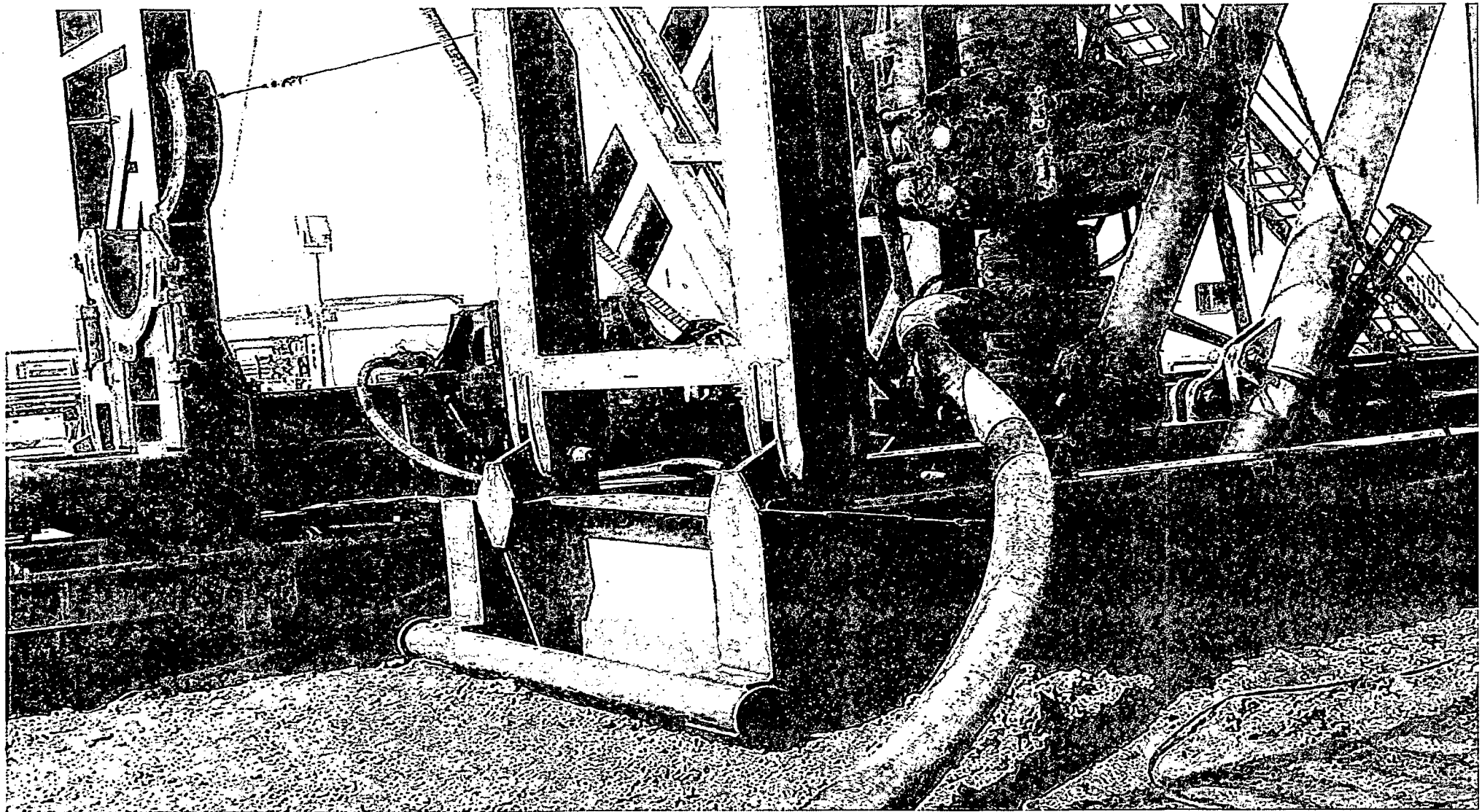
Cimarex Energy Co.

10-23S-32E

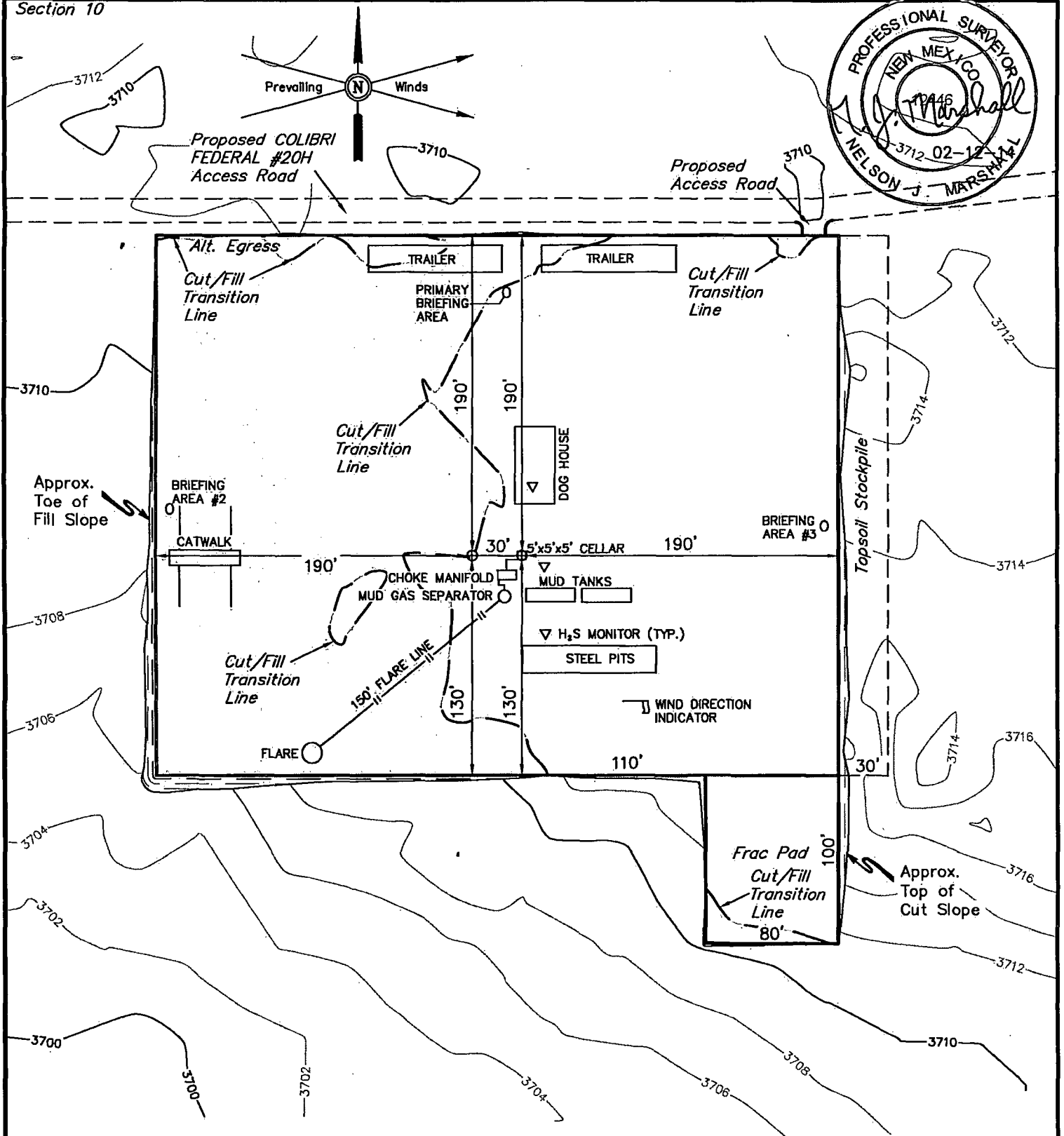
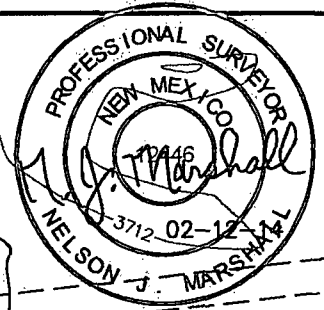
SHL 327 FNL & 1779 FWL

BHL 330 FSL & 2200 FWL

Lea County, NM



Section 3.  
Section 10



NOTES:

- Flare pit is to be located a min. of 160' from the well head.



**CIMAREX ENERGY CO.**

COLIBRI FEDERAL #25H  
SECTION 10, T23S, R32E, N.M.P.M.  
NE 1/4 NW 1/4

DRAWN BY: B.D.H.

SCALE: 1" = 80'

DATE: 01-13-14

REVISED: 02-12-14

**TYPICAL RIG LAYOUT**

**EXHIBIT D**



Corporate Office \* 85 South 200 East  
Vernal, UT 84078 \* (435) 789-1017

Operator Certification Statement

**Colibri Federal #25H**

Cimarex Energy Co.

UL: C, Sec. 10, 23S, 32E

Lea Co., NM

Operator's Representative

Cimarex Energy Co. of Colorado

600 N. Marienfeld St., Ste. 600

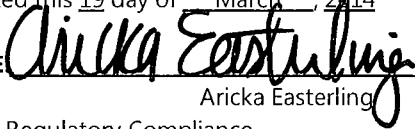
Midland, TX 79701

Office Phone: (432) 571-7800

**CERTIFICATION:** I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 19 day of March, 2014

NAME

  
Aricka Easterling

**TITLE:** Regulatory Compliance

**ADDRESS:** 202 S. Cheyenne Ave., Ste 1000, Tulsa, OK 74103

**TELEPHONE:** 918-585-1100

**EMAIL:** AEasterling@cimarex.com

**Field Representative:** Same as above