ATS-14-267

# SECRETARY'S POTASH

HOBBS OCD
JAN 25 2016
RECEIVED

Form 3160-3
(March 2012)

~~BLM Carlsbad Field Office~~
OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER Split Estate

| | |
|---|---|
| 1a. Type of Work: ☒ DRILL ☐ REENTER | 5. Lease Serial No.<br>SHL: NMLC066126; BHL: NMNM56265 |
| | 6. If Indian, Allotee or Tribe Name |
| | 7. If Unit or CA Agreement, Name and No. |
| 1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone | 8. Lease Name and Well No. 40102<br>Lea South 25 Federal Com #11H |
| 2. Name of Operator<br>Nearburg Producing Company (15742) | 9. API Well No.<br>30-025- 43036 |
| 3a. Address<br>3300 N A Street, Bldg 2, Ste 120, Midland, TX 79705<br>3b. Phone No. *(include area code)*<br>432-686-8235 | 10. Field and Pool, or Exploratory<br>Lea Bone Spring South (37580) |
| 4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*<br>At Surface 330' FSL 1830' FEL (O)<br>At proposed prod. Zone 330' FNL 1680' FEL (B) *Horizontal Bone Spring test* | 11. Sec., T. R. M. or Blk. and Survey or Area<br>25-20S-34E |
| 14. Distance in miles and direction from nearest town or post office*<br>Approximately 22 miles NW of Eunice NM | 12. County or Parish<br>Lea<br>13. State<br>NM |

| | | |
|---|---|---|
| 15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 330' | 16. No of acres in lease<br>NMNM56265=240 acres;<br>NMLC066126= 800 acres | 17. Spacing Unit dedicated to this well<br>160 |
| 18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.<br>150' from #7H | 19. Proposed Depth<br>14,218' MD 9,800' TVD | 20. BLM/BIA Bond No. on File<br>NM2575; NMB000835 |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.)<br>3744' GR | 22. Approximate date work will start*<br>01.30.13 | 23. Estimated duration<br>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:

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

| | | |
|---|---|---|
| 25. Signature Tim Green | Name *(Printed/Typed)*<br>Tim Green | Date<br>10.14.13 |
| Title<br>Marketing and Production Services Manager | | |
| Approved By *(Signature)*<br>/s/George MacDonell | Name (Printed/Typed) | Date<br>JAN 19 2016 |
| Title<br>FIELD MANAGER | Office<br>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)*

Capitan Controlled Water Basin

KZ
01/26/16

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

JAN 27 2016

Application to Drill
**Lea South 25 Federal Com #11H**
Nearburg Producing Co. Agent: Cimarex Energy Co.
UL: B, Sec. 25-20S-34E
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 330' FSL 1830' FEL
BHL 330' FNL 1680' FEL

2 Elevation above sea level: 3744' 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: 14,218' MD 9,800' TVD

6 Estimated tops of geological markers:

| Formation | Est. Top | Bearing |
|---|---|---|
| Rustler | 1650 | NA |
| Salt | 1800 | NA |
| Tansill | 3400 | NA |
| Yates | 3645 | NA |
| Capitan | 3970 | NA |
| Delaware | 5700 | Hydrocarbons |
| Bone Spring | 8400 | NA |
| Avalon Shale | 8900 | Hydrocarbons |
| 1st BSS | 9600 | Hydrocarbons |
| 2nd BSS | 10150 | NA |
| 3rd Carbonate | 10630 | NA |
| 3rd BSS | 10925 | NA |
| 3rd BS "C" SS | 11015 | Hydrocarbons |

7 Possible mineral bearing formation:
Shown above

7A OSE Ground Water estimated depth: 100'

8 Casing Program:

| 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 | Conditon | BHP (psig) | Anticipated Mud Weight (ppg) | Collapse SF (1.125) | Burst SF (1.125) | Cumulative Air Weight (lbs) | Cumulative Bouyed Weight (lbs) | Bouyant Tension SF (1.8) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface | | | | | | | | | | | | | | | |
| 0' | 1780' | 1780' | 17 1/2 | 13 3/8 | 54.5 | J-55 | ST&C | New | 801 | 8.4 | 1.45 | 3.42 | 97,010 | 84,569 | 6.08 |
| Intermediate | | | | | | | | | | | | | | | |
| 0' | 5700' | 5700' | 12 1/4 | 9 5/8 | 40 | HCK-55 | LT&C | New | 2,565 | 10.2 | 1.40 | 1.54 | 228,000 | 192,495 | 3.61 |
| Production | | | | | | | | | | | | | | | |
| 0' | 9323' | 9323' | 8 3/4 | 5 1/2 | 17 | P-110 | LT&C | New | 2,254 | 9.2 | 1.68 | 4.72 | 166,600 | 143,200 | 3.11 |
| 9323' | 14218' | 9800' | 8 3/4 | 5 1/2 | 17 | P-110 | BT&C | New | 4,410 | 9.2 | 1.60 | 2.41 | 8,109 | 6,970 | 78.34 |

**Casing Design Criteria and Casing Loading Assumptions:**

Surface
Tension A 1.8 design factor with effects of buoyancy. 8.4 ppg
Collapse A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.4 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. 10.2 ppg
Collapse A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.2 ppg mud gradient
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**Drilling Plan**
**Lea South 25 Federal Com #11H**
Nearburg Producing Co. Agent: Cimarex Energy Co.
UL: B, Sec. 25-20S-34E
Lea Co., NM

9 **Cementing Program:**

| ***Surface*** | Sacks | Yield (cuft/sx) | Weight (ppg) | Cubic Feet | Cement Blend |
|---|---|---|---|---|---|
| Lead | 1130 | 1.75 | 13.5 | 1979 | Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water |
| Tail | 240 | 1.34 | 14.8 | 309 | Class C + LCM, 6.32 gps water |

**TOC: 0' 85% Excess Centralizers per Onshore Order 2.III.B.1f**

| ***Intermediate*** | Sacks | Yield (cuft/sx) | Weight (ppg) | Cubic Feet | Cement Blend |
|---|---|---|---|---|---|
| Lead | 1270 | 1.88 | 12.9 | 2387 | 35:65 (poz/C) + Salt + Bentonite + LCM + retarder , 9.65 gps water |
| Tail | 300 | 1.34 | 14.8 | 392 | Class C + retarder + LCM, 6.32 gps water |

**TOC: 0' 81% Excess**

| ***Production*** | Sacks | Yield (cuft/sx) | Weight (ppg) | Cubic Feet | Cement Blend |
|---|---|---|---|---|---|
| Lead | 461 | 2.4 | 11.9 | 1105 | 35:65 (poz/H) + salt + Sodium Metasilcate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.8 gps water |
| Tail | 1380 | 1.24 | 14.5 | 1711 | 50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder , 5.55 gps water |

**Cement volumes will be adjusted depending on hole size.**
**TOC: 5200' 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.**

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.

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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See COA

| 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 | Conditon | BHP (psig) | Anticipated Mud Weight (ppg) | Collapse SF (1.125) | Burst SF (1.125) | Cumulative Air Weight (lbs) | Cumulative Bouyed Weight (lbs) | Bouyant Tension SF (1.8) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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See COA

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Application to Drill

**Lea South 25 Federal Com #11H**

Nearburg Producing Co. Agent: Cimarex Energy Co.

UL: B, Sec. 25-20S-34E

Lea Co., NM

See COA

11 Proposed Mud Circulating System:

| Depth | | | Mud Wt | Visc | Fluid Loss | Type Mud |
|---|---|---|---|---|---|---|
| 0' | to | ~~1780'~~ 1850' | 8.4 | 28 | NC | FW Spud Mud |
| 1780' | to | 5700' | 10.2 | 30-32 | NC | Brine water |
| 5700' | to | 14218' | 9.2 | 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 Proposed Drilling Plan

Pilot Hole TD: No Pilot Hole KOP: 9,323' EOC: 10073'

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

13 Testing, Logging and Coring Program:

A. Mud logging program: 2 man unit from 5700' 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

14 Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough $H_2S$ from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "$H_2S$ Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an $H_2S$ Safety package on all wells, attached is an "$H_2S$ 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.

See COA

Estimated BHP **4410 psi** Estimated BHT **160°**

15 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.

16 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from TD over possible pay intervals.
Bone Spring pay will be perforated and stimulated.
The proposed well will be tested and potentialed as **Oil**

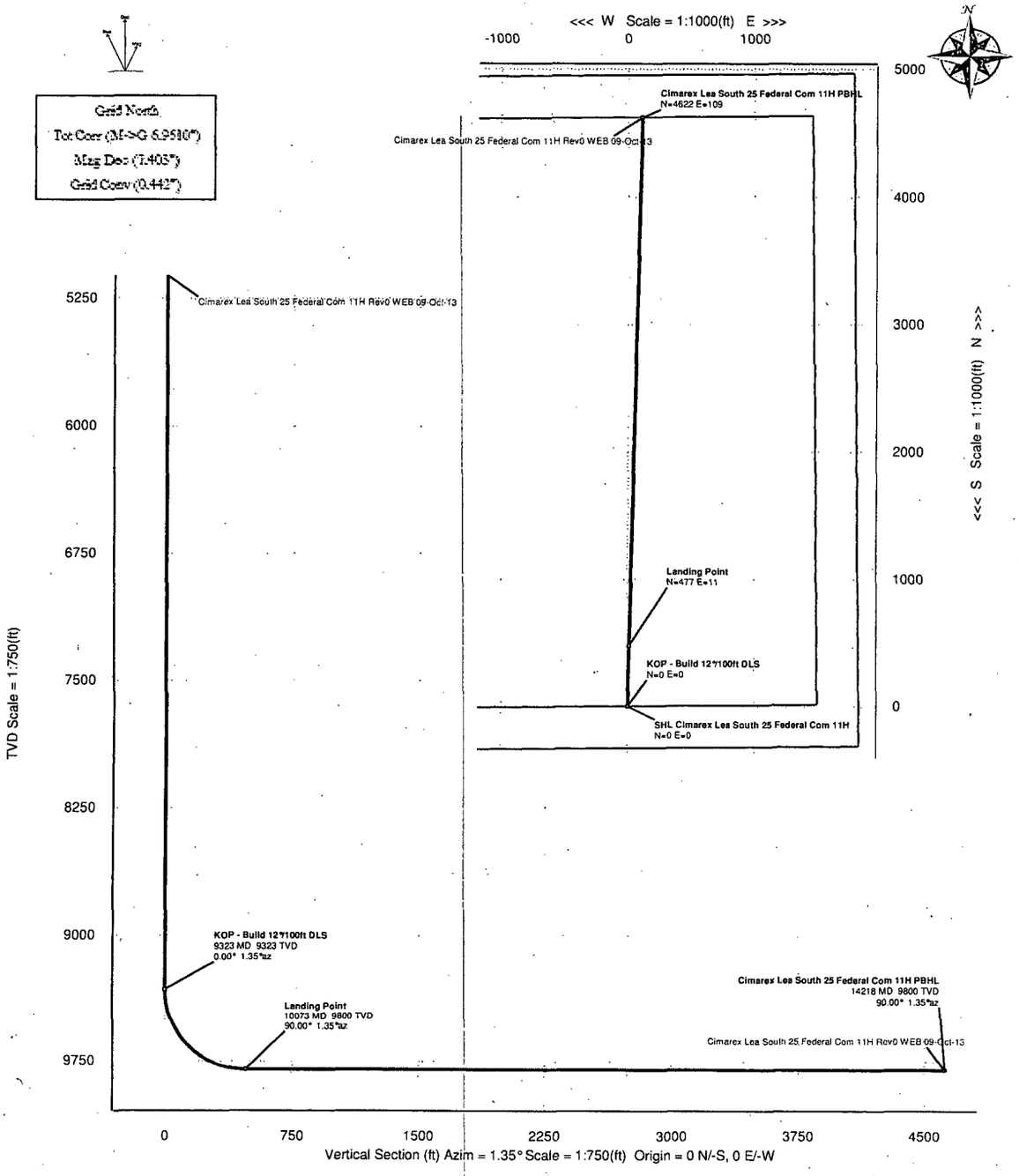
CIMAREX

# Cimarex

PATHFINDER
A Schlumberger Company

| WELL | FIELD | STRUCTURE |
|---|---|---|
| Lea South 25 Federal Com 11H | NM Lea County | TBD |

| Magnetic Parameters | | | | Surface Location | | | | Miscellaneous | |
|---|---|---|---|---|---|---|---|---|---|
| Model: BGGM 2013 | Dip: 60.421° | Date: October 09, 2013 | | Lat: N 32 32 15.924 | Northing: 560344.50 flUS | Grid Conv: 0.442° | | Slot: Cimarex Lea South 25 Federal TD'd Rst H Ground level(3744ft above MSL) | |
| | Mag Dec: 7.403° | FS: 48566.8nT | | Lon: W 103 30 39.978 | Easting: 784723.30 flUS | Scale Fact: 0.99998262 | | Plan: Rev0 WEB 09-Oct-13 | Srvy Date: October 09, 2013 |




## Critical Points

| Critical Point | MD | INCL | AZIM | TVD | VSEC | N(+) / S(-) | E(+) / W(-) | DLS |
|---|---|---|---|---|---|---|---|---|
| SHL Cimarex Lea South 25 Federal Com 11H | 0.00 | 0.00 | 1.35 | 0.00 | 0.00 | 0.00 | 0.00 | |
| KOP - Build 12°/100ft DLS | 9322.50 | 0.00 | 1.35 | 9322.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landing Point | 10072.56 | 90.00 | 1.35 | 9800.00 | 477.50 | 477.37 | 11.25 | 12.00 |
| Cimarex Lea South 25 Federal Com 11H PBHL | 14218.23 | 90.00 | 1.35 | 9800.00 | 4623.17 | 4621.89 | 109.00 | 0.00 |

CIMAREX

# Cimarex Lea South 25 Federal Com 11H Rev0 WEB 09-Oct-13 Proposal
## Report 100' Interpolated
(Non-Def Plan)

PATHFINDER
A Schlumberger Company

| | | | |
|---|---|---|---|
| **Report Date:** | October 09, 2013 - 12:38 PM | **Survey / DLS Computation:** | Minimum Curvature / Lubinski |
| **Client:** | Cimarex | **Vertical Section Azimuth:** | 1.351 ° (Grid North) |
| **Field:** | NM Lea County (NAD 83) | **Vertical Section Origin:** | 0.000 ft, 0.000 ft |
| **Structure / Slot:** | TBD / Cimarex Lea South 25 Federal Com 11H | **TVD Reference Datum:** | Ground level |
| **Well:** | Cimarex Lea South 25 Federal Com 11H | **TVD Reference Elevation:** | 3744.000 ft above MSL |
| **Borehole:** | Original Hole | **Seabed / Ground Elevation:** | 3744.000 ft above MSL |
| **UWI / API#:** | Unknown / Unknown | **Magnetic Declination:** | 7.403 ° |
| **Survey Name:** | Cimarex Lea South 25 Federal Com 11H Rev0 WEB 09-Oct-13 | **Total Gravity Field Strength:** | 998.4808mgn (9.80665 Based) |
| **Survey Date:** | October 09, 2013 | **Total Magnetic Field Strength:** | 48566.839 nT |
| **Tort / AHD / DDI / ERD Ratio:** | 90.002 ° / 4623.175 ft / 5.781 / 0.472 | **Magnetic Dip Angle:** | 60.421 ° |
| **Coordinate Reference System:** | NAD83 New Mexico State Plane, Eastern Zone, US Feet | **Declination Date:** | October 09, 2013 |
| **Location Lat / Long:** | N 32° 32' 15.92413", W 103° 30' 39.97845" | **Magnetic Declination Model:** | BGGM 2013 |
| **Location Grid N/E Y/X:** | N 560344.500 ftUS, E 794723.300 ftUS | **North Reference:** | Grid North |
| **CRS Grid Convergence Angle:** | 0.4423 ° | **Grid Convergence Used:** | 0.4423 ° |
| **Grid Scale Factor:** | 0.99998262 | **Total Corr Mag North->Grid North:** | 6.9610 ° |
| | | **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 Lea South 25 Federal Com 11H | 0.00 | 0.00 | 1.35 | 0.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | N/A |
| | 100.00 | 0.00 | 1.35 | 100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 200.00 | 0.00 | 1.35 | 200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 300.00 | 0.00 | 1.35 | 300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 400.00 | 0.00 | 1.35 | 400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 500.00 | 0.00 | 1.35 | 500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 600.00 | 0.00 | 1.35 | 600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 700.00 | 0.00 | 1.35 | 700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 800.00 | 0.00 | 1.35 | 800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 900.00 | 0.00 | 1.35 | 900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1000.00 | 0.00 | 1.35 | 1000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1100.00 | 0.00 | 1.35 | 1100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1200.00 | 0.00 | 1.35 | 1200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1300.00 | 0.00 | 1.35 | 1300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1400.00 | 0.00 | 1.35 | 1400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1500.00 | 0.00 | 1.35 | 1500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1600.00 | 0.00 | 1.35 | 1600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1700.00 | 0.00 | 1.35 | 1700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1800.00 | 0.00 | 1.35 | 1800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 1900.00 | 0.00 | 1.35 | 1900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2000.00 | 0.00 | 1.35 | 2000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2100.00 | 0.00 | 1.35 | 2100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2200.00 | 0.00 | 1.35 | 2200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2300.00 | 0.00 | 1.35 | 2300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2400.00 | 0.00 | 1.35 | 2400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2500.00 | 0.00 | 1.35 | 2500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2600.00 | 0.00 | 1.35 | 2600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2700.00 | 0.00 | 1.35 | 2700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2800.00 | 0.00 | 1.35 | 2800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 2900.00 | 0.00 | 1.35 | 2900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3000.00 | 0.00 | 1.35 | 3000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3100.00 | 0.00 | 1.35 | 3100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3200.00 | 0.00 | 1.35 | 3200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3300.00 | 0.00 | 1.35 | 3300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3400.00 | 0.00 | 1.35 | 3400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3500.00 | 0.00 | 1.35 | 3500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3600.00 | 0.00 | 1.35 | 3600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3700.00 | 0.00 | 1.35 | 3700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3800.00 | 0.00 | 1.35 | 3800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 3900.00 | 0.00 | 1.35 | 3900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4000.00 | 0.00 | 1.35 | 4000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4100.00 | 0.00 | 1.35 | 4100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4200.00 | 0.00 | 1.35 | 4200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4300.00 | 0.00 | 1.35 | 4300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4400.00 | 0.00 | 1.35 | 4400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4500.00 | 0.00 | 1.35 | 4500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4600.00 | 0.00 | 1.35 | 4600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4700.00 | 0.00 | 1.35 | 4700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4800.00 | 0.00 | 1.35 | 4800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 4900.00 | 0.00 | 1.35 | 4900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5000.00 | 0.00 | 1.35 | 5000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5100.00 | 0.00 | 1.35 | 5100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5200.00 | 0.00 | 1.35 | 5200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5300.00 | 0.00 | 1.35 | 5300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5400.00 | 0.00 | 1.35 | 5400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5500.00 | 0.00 | 1.35 | 5500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5600.00 | 0.00 | 1.35 | 5600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5700.00 | 0.00 | 1.35 | 5700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5800.00 | 0.00 | 1.35 | 5800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 5900.00 | 0.00 | 1.35 | 5900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6000.00 | 0.00 | 1.35 | 6000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6100.00 | 0.00 | 1.35 | 6100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6200.00 | 0.00 | 1.35 | 6200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6300.00 | 0.00 | 1.35 | 6300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6400.00 | 0.00 | 1.35 | 6400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6500.00 | 0.00 | 1.35 | 6500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6600.00 | 0.00 | 1.35 | 6600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6700.00 | 0.00 | 1.35 | 6700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6800.00 | 0.00 | 1.35 | 6800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 6900.00 | 0.00 | 1.35 | 6900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7000.00 | 0.00 | 1.35 | 7000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7100.00 | 0.00 | 1.35 | 7100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7200.00 | 0.00 | 1.35 | 7200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7300.00 | 0.00 | 1.35 | 7300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7400.00 | 0.00 | 1.35 | 7400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7500.00 | 0.00 | 1.35 | 7500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7600.00 | 0.00 | 1.35 | 7600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7700.00 | 0.00 | 1.35 | 7700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7800.00 | 0.00 | 1.35 | 7800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 7900.00 | 0.00 | 1.35 | 7900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8000.00 | 0.00 | 1.35 | 8000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8100.00 | 0.00 | 1.35 | 8100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8200.00 | 0.00 | 1.35 | 8200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8300.00 | 0.00 | 1.35 | 8300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8400.00 | 0.00 | 1.35 | 8400.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8500.00 | 0.00 | 1.35 | 8500.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8600.00 | 0.00 | 1.35 | 8600.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8700.00 | 0.00 | 1.35 | 8700.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8800.00 | 0.00 | 1.35 | 8800.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 8900.00 | 0.00 | 1.35 | 8900.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 9000.00 | 0.00 | 1.35 | 9000.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 9100.00 | 0.00 | 1.35 | 9100.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 9200.00 | 0.00 | 1.35 | 9200.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 9300.00 | 0.00 | 1.35 | 9300.00 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| KOP - Build 12°/100ft DLS | 9322.50 | 0.00 | 1.35 | 9322.50 | 0.00 | 0.00 | 0.00 | 560344.50 | 794723.30 | N 32 32 15.92 | W 103 30 39.98 | 0.00 | 0.00 | 0.00 |
| | 9400.00 | 9.30 | 1.35 | 9399.66 | 6.28 | 6.27 | 0.15 | 560350.77 | 794723.45 | N 32 32 15.99 | W 103 30 39.98 | 6.28 | 1.35 | 12.00 |
| | 9500.00 | 21.30 | 1.35 | 9495.94 | 32.61 | 32.60 | 0.77 | 560377.10 | 794724.07 | N 32 32 16.25 | W 103 30 39.97 | 32.61 | 1.35 | 12.00 |
| | 9600.00 | 33.30 | 1.35 | 9584.64 | 78.39 | 78.37 | 1.85 | 560422.87 | 794725.15 | N 32 32 16.70 | W 103 30 39.95 | 78.39 | 1.35 | 12.00 |
| | 9700.00 | 45.30 | 1.35 | 9661.89 | 141.61 | 141.57 | 3.34 | 560486.07 | 794726.64 | N 32 32 17.32 | W 103 30 39.93 | 141.61 | 1.35 | 12.00 |
| | 9800.00 | 57.30 | 1.35 | 9724.30 | 219.51 | 219.44 | 5.17 | 560563.94 | 794728.47 | N 32 32 18.10 | W 103 30 39.90 | 219.51 | 1.35 | 12.00 |
| | 9900.00 | 69.29 | 1.35 | 9769.16 | 308.68 | 308.59 | 7.27 | 560653.08 | 794730.57 | N 32 32 18.98 | W 103 30 39.87 | 308.68 | 1.35 | 12.00 |
| | 10000.00 | 81.29 | 1.35 | 9794.50 | 405.22 | 405.11 | 9.55 | 560749.60 | 794732.85 | N 32 32 19.93 | W 103 30 39.83 | 405.22 | 1.35 | 12.00 |
| Landing Point | 10072.56 | 90.00 | 1.35 | 9800.00 | 477.50 | 477.37 | 11.25 | 560821.86 | 794734.55 | N 32 32 20.65 | W 103 30 39.80 | 477.50 | 1.35 | 12.00 |
| | 10100.00 | 90.00 | 1.35 | 9800.00 | 504.94 | 504.80 | 11.90 | 560849.29 | 794735.20 | N 32 32 20.92 | W 103 30 39.79 | 504.94 | 1.35 | 0.00 |
| | 10200.00 | 90.00 | 1.35 | 9800.00 | 604.94 | 604.78 | 14.25 | 560949.27 | 794737.55 | N 32 32 21.91 | W 103 30 39.76 | 604.94 | 1.35 | 0.00 |
| | 10300.00 | 90.00 | 1.35 | 9800.00 | 704.94 | 704.75 | 16.61 | 561049.24 | 794739.91 | N 32 32 22.90 | W 103 30 39.72 | 704.94 | 1.35 | 0.00 |
| | 10400.00 | 90.00 | 1.35 | 9800.00 | 804.94 | 804.72 | 18.96 | 561149.21 | 794742.26 | N 32 32 23.88 | W 103 30 39.68 | 804.94 | 1.35 | 0.00 |
| | 10500.00 | 90.00 | 1.35 | 9800.00 | 904.94 | 904.69 | 21.32 | 561249.18 | 794744.62 | N 32 32 24.87 | W 103 30 39.65 | 904.94 | 1.35 | 0.00 |
| | 10600.00 | 90.00 | 1.35 | 9800.00 | 1004.94 | 1004.67 | 23.68 | 561349.15 | 794746.98 | N 32 32 25.86 | W 103 30 39.61 | 1004.94 | 1.35 | 0.00 |
| | 10700.00 | 90.00 | 1.35 | 9800.00 | 1104.94 | 1104.64 | 26.03 | 561449.12 | 794749.33 | N 32 32 26.85 | W 103 30 39.57 | 1104.94 | 1.35 | 0.00 |
| | 10800.00 | 90.00 | 1.35 | 9800.00 | 1204.94 | 1204.61 | 28.39 | 561549.09 | 794751.69 | N 32 32 27.84 | W 103 30 39.54 | 1204.94 | 1.35 | 0.00 |
| | 10900.00 | 90.00 | 1.35 | 9800.00 | 1304.94 | 1304.58 | 30.75 | 561649.06 | 794754.05 | N 32 32 28.83 | W 103 30 39.50 | 1304.94 | 1.35 | 0.00 |
| | 11000.00 | 90.00 | 1.35 | 9800.00 | 1404.94 | 1404.55 | 33.10 | 561749.03 | 794756.40 | N 32 32 29.82 | W 103 30 39.47 | 1404.94 | 1.35 | 0.00 |
| | 11100.00 | 90.00 | 1.35 | 9800.00 | 1504.94 | 1504.53 | 35.46 | 561849.00 | 794758.76 | N 32 32 30.81 | W 103 30 39.43 | 1504.94 | 1.35 | 0.00 |
| | 11200.00 | 90.00 | 1.35 | 9800.00 | 1604.94 | 1604.50 | 37.82 | 561948.97 | 794761.12 | N 32 32 31.80 | W 103 30 39.39 | 1604.94 | 1.35 | 0.00 |
| | 11300.00 | 90.00 | 1.35 | 9800.00 | 1704.94 | 1704.47 | 40.18 | 562048.94 | 794763.47 | N 32 32 32.79 | W 103 30 39.36 | 1704.94 | 1.35 | 0.00 |
| | 11400.00 | 90.00 | 1.35 | 9800.00 | 1804.94 | 1804.44 | 42.53 | 562148.91 | 794765.83 | N 32 32 33.77 | W 103 30 39.32 | 1804.94 | 1.35 | 0.00 |
| | 11500.00 | 90.00 | 1.35 | 9800.00 | 1904.94 | 1904.42 | 44.89 | 562248.88 | 794768.19 | N 32 32 34.76 | W 103 30 39.28 | 1904.94 | 1.35 | 0.00 |
| | 11600.00 | 90.00 | 1.35 | 9800.00 | 2004.94 | 2004.39 | 47.25 | 562348.85 | 794770.55 | N 32 32 35.75 | W 103 30 39.25 | 2004.94 | 1.35 | 0.00 |
| | 11700.00 | 90.00 | 1.35 | 9800.00 | 2104.94 | 2104.36 | 49.60 | 562448.82 | 794772.90 | N 32 32 36.74 | W 103 30 39.21 | 2104.94 | 1.35 | 0.00 |
| | 11800.00 | 90.00 | 1.35 | 9800.00 | 2204.94 | 2204.33 | 51.96 | 562548.79 | 794775.26 | N 32 32 37.73 | W 103 30 39.17 | 2204.94 | 1.35 | 0.00 |
| | 11900.00 | 90.00 | 1.35 | 9800.00 | 2304.94 | 2304.30 | 54.32 | 562648.76 | 794777.62 | N 32 32 38.72 | W 103 30 39.14 | 2304.94 | 1.35 | 0.00 |
| | 12000.00 | 90.00 | 1.35 | 9800.00 | 2404.94 | 2404.28 | 56.68 | 562748.73 | 794779.98 | N 32 32 39.71 | W 103 30 39.10 | 2404.94 | 1.35 | 0.00 |
| | 12100.00 | 90.00 | 1.35 | 9800.00 | 2504.94 | 2504.25 | 59.04 | 562848.70 | 794782.33 | N 32 32 40.70 | W 103 30 39.06 | 2504.94 | 1.35 | 0.00 |
| | 12200.00 | 90.00 | 1.35 | 9800.00 | 2604.94 | 2604.22 | 61.39 | 562948.67 | 794784.69 | N 32 32 41.69 | W 103 30 39.03 | 2604.94 | 1.35 | 0.00 |
| | 12300.00 | 90.00 | 1.35 | 9800.00 | 2704.94 | 2704.19 | 63.75 | 563048.64 | 794787.05 | N 32 32 42.68 | W 103 30 38.99 | 2704.94 | 1.35 | 0.00 |
| | 12400.00 | 90.00 | 1.35 | 9800.00 | 2804.94 | 2804.17 | 66.11 | 563148.61 | 794789.41 | N 32 32 43.66 | W 103 30 38.95 | 2804.94 | 1.35 | 0.00 |
| | 12500.00 | 90.00 | 1.35 | 9800.00 | 2904.94 | 2904.14 | 68.47 | 563248.58 | 794791.77 | N 32 32 44.65 | W 103 30 38.92 | 2904.94 | 1.35 | 0.00 |
| | 12600.00 | 90.00 | 1.35 | 9800.00 | 3004.94 | 3004.11 | 70.83 | 563348.55 | 794794.12 | N 32 32 45.64 | W 103 30 38.88 | 3004.94 | 1.35 | 0.00 |
| | 12700.00 | 90.00 | 1.35 | 9800.00 | 3104.94 | 3104.08 | 73.18 | 563448.52 | 794796.48 | N 32 32 46.63 | W 103 30 38.84 | 3104.94 | 1.35 | 0.00 |
| | 12800.00 | 90.00 | 1.35 | 9800.00 | 3204.94 | 3204.05 | 75.54 | 563548.49 | 794798.84 | N 32 32 47.62 | W 103 30 38.81 | 3204.94 | 1.35 | 0.00 |
| | 12900.00 | 90.00 | 1.35 | 9800.00 | 3304.94 | 3304.03 | 77.90 | 563648.46 | 794801.20 | N 32 32 48.61 | W 103 30 38.77 | 3304.94 | 1.35 | 0.00 |
| | 13000.00 | 90.00 | 1.35 | 9800.00 | 3404.94 | 3404.00 | 80.26 | 563748.43 | 794803.56 | N 32 32 49.60 | W 103 30 38.73 | 3404.94 | 1.35 | 0.00 |
| | 13100.00 | 90.00 | 1.35 | 9800.00 | 3504.94 | 3503.97 | 82.62 | 563848.40 | 794805.92 | N 32 32 50.59 | W 103 30 38.70 | 3504.94 | 1.35 | 0.00 |
| | 13200.00 | 90.00 | 1.35 | 9800.00 | 3604.94 | 3603.94 | 84.98 | 563948.37 | 794808.28 | N 32 32 51.58 | W 103 30 38.66 | 3604.94 | 1.35 | 0.00 |
| | 13300.00 | 90.00 | 1.35 | 9800.00 | 3704.94 | 3703.92 | 87.34 | 564048.34 | 794810.64 | N 32 32 52.57 | W 103 30 38.62 | 3704.94 | 1.35 | 0.00 |
| | 13400.00 | 90.00 | 1.35 | 9800.00 | 3804.94 | 3803.89 | 89.70 | 564148.31 | 794812.99 | N 32 32 53.55 | W 103 30 38.59 | 3804.94 | 1.35 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 13500.00 | 90.00 | 1.35 | 9800.00 | 3904.94 | 3903.86 | 92.06 | 564248.28 | 794815.35 | N 32 32 54.54 | W 103 30 38.55 | 3904.94 | 1.35 | 0.00 |
| | 13600.00 | 90.00 | 1.35 | 9800.00 | 4004.94 | 4003.83 | 94.41 | 564348.25 | 794817.71 | N 32 32 55.53 | W 103 30 38.51 | 4004.94 | 1.35 | 0.00 |
| | 13700.00 | 90.00 | 1.35 | 9800.00 | 4104.94 | 4103.80 | 96.77 | 564448.22 | 794820.07 | N 32 32 56.52 | W 103 30 38.48 | 4104.94 | 1.35 | 0.00 |
| | 13800.00 | 90.00 | 1.35 | 9800.00 | 4204.94 | 4203.78 | 99.13 | 564548.19 | 794822.43 | N 32 32 57.51 | W 103 30 38.44 | 4204.94 | 1.35 | 0.00 |
| | 13900.00 | 90.00 | 1.35 | 9800.00 | 4304.94 | 4303.75 | 101.49 | 564648.16 | 794824.79 | N 32 32 58.50 | W 103 30 38.40 | 4304.94 | 1.35 | 0.00 |
| | 14000.00 | 90.00 | 1.35 | 9800.00 | 4404.94 | 4403.72 | 103.85 | 564748.14 | 794827.15 | N 32 32 59.49 | W 103 30 38.37 | 4404.94 | 1.35 | 0.00 |
| | 14100.00 | 90.00 | 1.35 | 9800.00 | 4504.94 | 4503.69 | 106.21 | 564848.11 | 794829.51 | N 32 33 0.48 | W 103 30 38.33 | 4504.94 | 1.35 | 0.00 |
| | 14200.00 | 90.00 | 1.35 | 9800.00 | 4604.94 | 4603.66 | 108.57 | 564948.08 | 794831.87 | N 32 33 1.47 | W 103 30 38.29 | 4604.94 | 1.35 | 0.00 |
| Cimarex Lea South 25 Federal Com 11H PBHL | 14218.23 | 90.00 | 1.35 | 9800.00 | 4623.17 | 4621.89 | 109.00 | 564966.30 | 794832.30 | N 32 33 1.65 | W 103 30 38.29 | 4623.17 | 1.35 | 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 (ft) | MD To (ft) | EOU Freq (ft) | Hole Size (in) | Casing Diameter (in) | Survey Tool Type | Borehole / Survey |
|---|---|---|---|---|---|---|---|
| | 0.000 | 9325.000 | 1/100.000 | 30.000 | 30.000 | SLB_MWD-POOR | Original Hole / Cimarex Lea South 25 Federal Com 11H Rev0 WEB |
| | 9325.000 | 14218.230 | 1/100.000 | 30.000 | 30.000 | SLB_MWD-STD | Original Hole / Cimarex Lea South 25 Federal Com 11H Rev0 WEB |

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

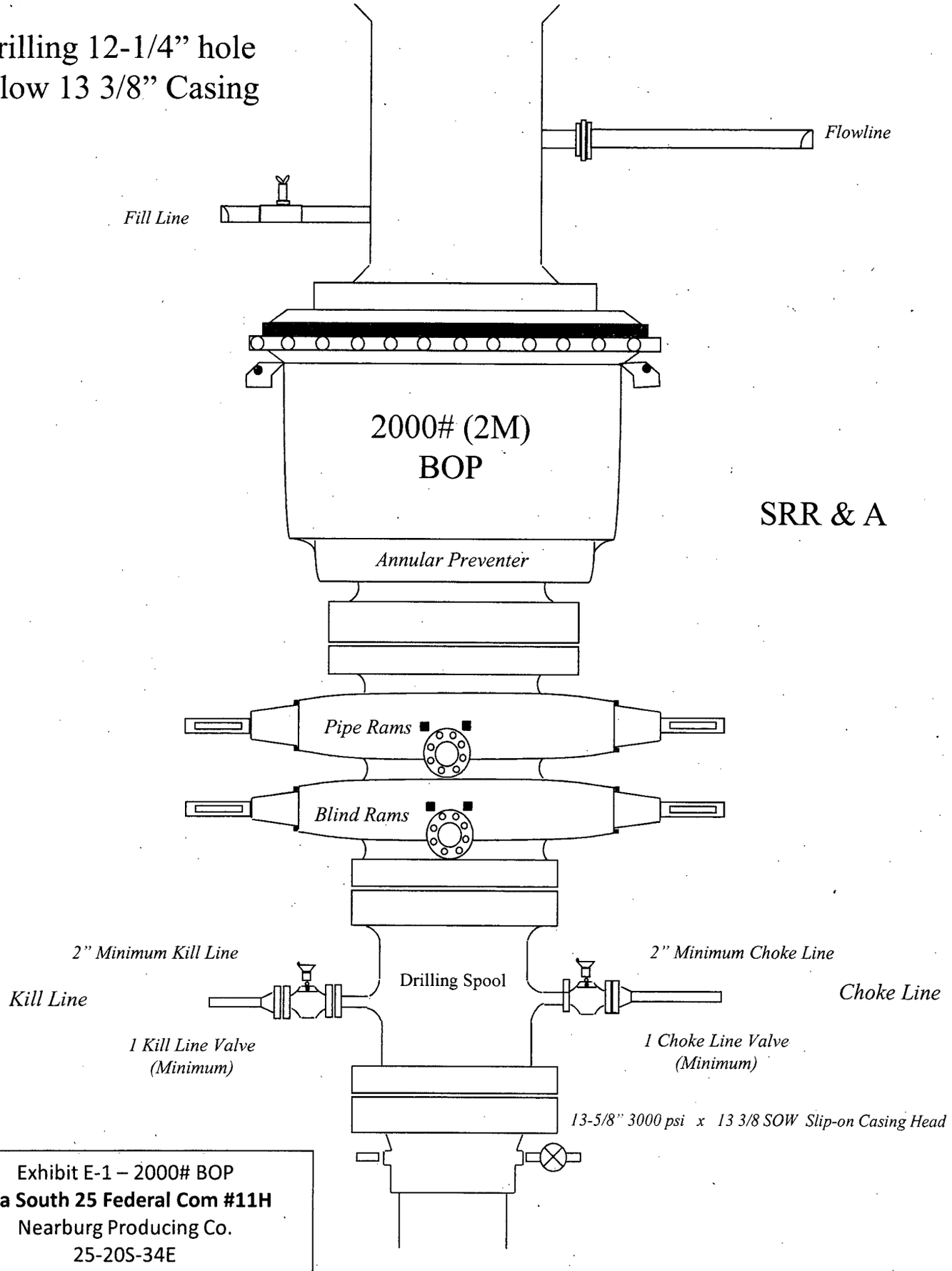
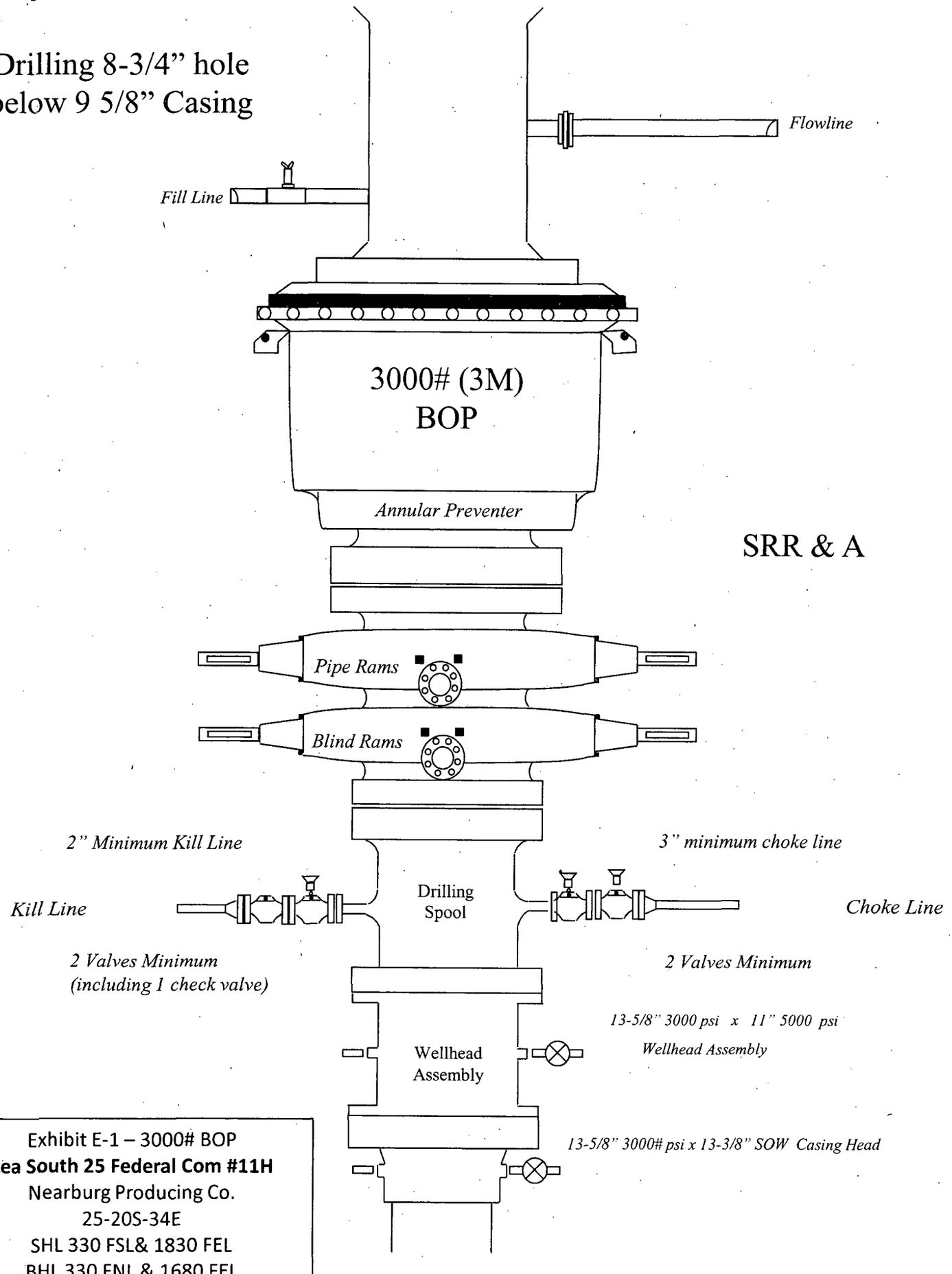


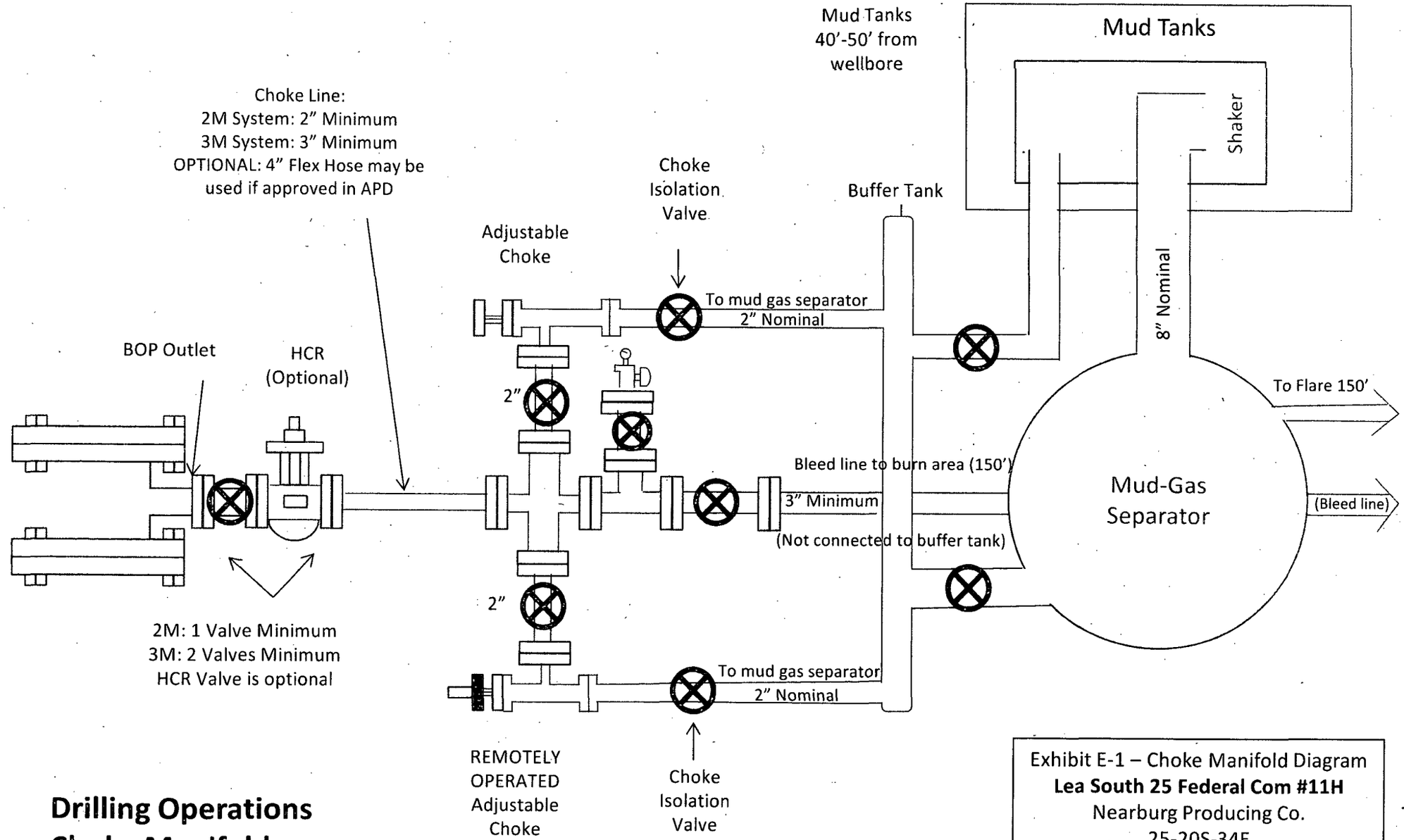

Exhibit E-1 – 2000# BOP
**Lea South 25 Federal Com #11H**
Nearburg Producing Co.
25-20S-34E
SHL 330 FSL& 1830 FEL
BHL 330 FNL & 1680 FEL
Lea County, NM

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




SRR & A

Exhibit E-1 – 3000# BOP
**Lea South 25 Federal Com #11H**
Nearburg Producing Co.
25-20S-34E
SHL 330 FSL& 1830 FEL
BHL 330 FNL & 1680 FEL
Lea County, NM




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

Exhibit E-1 – Choke Manifold Diagram
**Lea South 25 Federal Com #11H**
Nearburg Producing Co.
25-20S-34E
SHL 330 FSL& 1830 FEL
BHL 330 FNL & 1680 FEL
Lea County, NM