

OCD Artesia

Form 3160-3  
(April 2004)

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

|                                                                                                                                                                                                                        |                                                                   |                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|
| 1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER                                                                                                                           |                                                                   | 5. Lease Serial No.<br>LC-068960                                  |
| 1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone |                                                                   | 6. If Indian, Allottee or Tribe Name                              |
| 2. Name of Operator<br>Cimarex Energy Co. of Colorado 162483                                                                                                                                                           |                                                                   | 7. If Unit or CA Agreement, Name and No.                          |
| 3a. Address<br>600 N. Marienfeld St., Ste. 600; Midland, TX 79701                                                                                                                                                      | 3b. Phone No. (include area code)<br>432-571-7800                 | 8. Lease Name and Well No.<br>Bluetail 8 Federal No. 3            |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *)<br>At Surface 2060 FNL & 990 FWL<br>At proposed prod. Zone 2310 FNL & 990 FWL                                           |                                                                   | 9. API Well No.<br>30-015- 38598                                  |
| 14. Distance in miles and direction from nearest town or post office*                                                                                                                                                  |                                                                   | 10. Field and Pool, or Exploratory<br>Empire; Glorieta-Yeso, East |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 740                                                                                               |                                                                   | 11. Sec., T. R. M. or Blk. and Survey or Area<br>8-17S-29E        |
| 16. No of acres in lease<br>40                                                                                                                                                                                         | 17. Spacing Unit dedicated to this well<br>SWNW 40                | 12. County or Parish<br>Eddy                                      |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 402'                                                                                                        | 19. Proposed Depth<br>MD 6013, TVD 6000                           | 13. State<br>NM                                                   |
| 20. BLM/BIA Bond No. on File<br>NM-2575                                                                                                                                                                                | 21. Elevations (Show whether DF, KDB, RT, GL, etc.)<br>3649' GR ✓ | 22. Approximate date work will start*<br>02.15.11                 |
| 23. Estimated duration<br>20-25 days                                                                                                                                                                                   |                                                                   |                                                                   |

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NMOCD ARTESIA

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

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

|                                             |                                     |                    |
|---------------------------------------------|-------------------------------------|--------------------|
| 25. Signature<br>Zeno Farris                | Name (Printed/Typed)<br>Zeno Farris | Date<br>12.09.10   |
| Title<br>Manager Operations Administration  |                                     |                    |
| Approved By (Signature)<br>Is/ Don Peterson | Name (Printed/Typed)                | Date<br>MAR 2 2011 |
| 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.

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.

\* (Instructions on page 2)

APPROVAL FOR TWO YEARS

Roswell Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

10

**Application to Drill**  
**Bluetail 8 Federal No. 1**  
**Cimarex Energy Co. of Colorado**  
Unit E, Section 8  
T17S R29E, Eddy County, NM

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

- 1 Location: SHL 2060 FNL & 990 FWL  
BHL 2310 FNL & 990 FWL
- 2 Elevation above sea level: 3649' GR
- 3 Geologic name of surface formation: Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth: MD 6013, TVD 6000
- 6 Estimated tops of geological markers:

|            |       |
|------------|-------|
| Yates      | 850'  |
| San Andres | 2410' |
| Glorieta   | 3820' |
| Paddock    | 3900' |
| Blaine     | 4375' |
| Tubb       | 5220' |
- 7 Possible mineral bearing formation:

|         |     |
|---------|-----|
| Paddock | Oil |
| Blaine  | Oil |

8 Proposed Mud Circulating System:

| Depth                         | Mud Wt     | Visc  | Fluid Loss | Type Mud  |
|-------------------------------|------------|-------|------------|-----------|
| 0' to <del>450'</del><br>210' | 8.4 - 8.8  | 40-45 | NC         | FW        |
| <del>450'</del> to 1100'      | 9.9 - 10.1 | 28-32 | NC         | Brine     |
| 1100' to 6013'                | 9.1        | 28-32 | NC         | 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.

8a Drilling Plans:

Set surface and intermediate casing. Kick off for directional at 3500' and drill to TD at 6013.' Set production casing from 0-6013' and cement.

Application to Drill  
Bluetail 8 Federal No. 1  
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Unit E, Section 8  
T17S R29E, Eddy County, NM

9 Casing Plan:

| String       | Hole Size | Depth                      | Casing OD   | Weight | Thread | Collar | Grade |
|--------------|-----------|----------------------------|-------------|--------|--------|--------|-------|
| Surface      | 16"       | 0' to 210' <sup>500'</sup> | New 11 3/4" | 42#    | 8-R    | STC    | H-40  |
| Intermediate | 11"       | 0' to 1100'                | New 8 5/8"  | 24#    | 8-R    | STC    | J-55  |
| Production   | 7 7/8"    | 0' to 6013'                | New 5 1/2"  | 17#    | 8-R    | LTC    | J-55  |

10 Cementing:

**Surface**

Lead: 150 sx Class "C" + 4% D020 (Extender) + 2% S001 (CaCl2) + 0.2% D046 (Defoamer) , Mixed at 12.9 ppg, 1.97 cuft/sx, 10.861 gal/sx fresh water

Tail: 200 sx Class C + 1% S001 (wt 14.8, yield 1.34)

**TOC Surface**

**Intermediate**

Lead: 200 sx 50:50 Poz: Class "C" + 0.2% Defoamer (D046) + 5% D044 (Salt) +10% D020 (Extender Gel) + 1/8 pps Polyflake (D130) + 2 pps Gilsonite (D042) Mixed at 11.8 ppg, Yeild 2.57 cuft/sx, 15.061 gal/sx fresh water

Tail: 300 sx Class "C" + 1% S001 (CaCl2), Mixed at 14.8 ppg, 1.33 cuft/sx, 6.365 gal/sx fresh water

**TOC Surface**

**Production**

Lead: 450 sacks (100 lb per sx of Blend)LiteCrete + 0.2% Defoamer (D046) + 0.3% Dispersant (D065) + 1 lb/sx Extender (D042) + 0.03% gal/sx Retarder (D177) Mixed at 10.2 ppg. Yeild 2.16 cuft/sx, 7.558 gal/sx Fresh Water

Tail: 400 sacks PVL + 1.3% NaCl (D044) + 0.2% Fluid Loss (D167) + 0.2% Cement Retarder (D013) + 0.2% Dispersant (D065). Mixed at 13.0 ppg, Yeild 1.40 cuft/sx, 7.277 gal/sx Fresh Water

**TOC 900'**

According to the State Engineer, average depth to ground water is 75.' Fresh water zones will be protected by setting 11 3/4" casing at 450' and cementing to surface. Hydrocarbon zones will be protected by setting 8 5/8" casing at 1100' and cementing to surface and by setting 5 1/2" casing at 6013' and cementing to 900.'

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

**Application to Drill**  
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11 Pressure control Equipment:

Exhibit "E-1" - An 11¾" 3000 PSI working pressure B.O.P. consisting of a one set of blind rams and one set of pipe rams and a 3000 psi annular-type preventor. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. Below intermediate casing shoe, BOP will be operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the surface pipe through the running of production casing, the well will be equipped with a 3000 psi BOP system.

Test BOP equipment and choke manifold to 250 psi low and 3000 psi high and annular BOP to 250 psi low and 1500 psi high by an independent service company.

12 Testing, Logging and Coring Program: *See COA*

- A. Mud logging                      No mud logging program.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. The area has a potential H2S hazard. An H2S drilling plan is attached. 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        **2300 psi**        Estimated BHT        **110°**

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

Drilling expected to take        20-25 days

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

15 Other Facets of Operations:

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

Yes                      pay will be perforated and stimulated.

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



# Planned Wellpath Report

Prelim\_2  
Page 1 of 3



## REFERENCE WELLPATH IDENTIFICATION

|          |                             |          |           |
|----------|-----------------------------|----------|-----------|
| Operator | Cimarex Energy Co.          | Slot     | No.3 SHL  |
| Area     | Eddy County, NM             | Well     | No. 3     |
| Field    | (Bluetail) Sec 8,T17S, R29E | Wellbore | No. 3 PWB |
| Facility | Bluetail 8 Fed No.3         |          |           |

## REPORT SETUP INFORMATION

|                     |                                                                  |                      |                          |
|---------------------|------------------------------------------------------------------|----------------------|--------------------------|
| Projection System   | NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet | Software System      | WellArchitect® 2.0       |
| North Reference     | Grid                                                             | User                 | Gomeoscr                 |
| Scale               | 0.999915                                                         | Report Generated     | 12/8/2010 at 10:39:18 AM |
| Convergence at slot | 0.13° East                                                       | Database/Source file | WA Midland/No._3_PWB.xml |

## WELLPATH LOCATION

|                       | Local coordinates |          | Grid coordinates |                | Geographic coordinates |                 |
|-----------------------|-------------------|----------|------------------|----------------|------------------------|-----------------|
|                       | North[ft]         | East[ft] | Easting[USft]    | Northing[USft] | Latitude               | Longitude       |
| Slot Location         | 0.00              | 0.00     | 612258.60        | 673289.20      | 32°51'02.458"N         | 104°06'08.602"W |
| Facility Reference Pt |                   |          | 612258.60        | 673289.20      | 32°51'02.458"N         | 104°06'08.602"W |
| Field Reference Pt    |                   |          | 612258.60        | 673289.20      | 32°51'02.458"N         | 104°06'08.602"W |

## WELLPATH DATUM

|                          |                      |                                                 |                   |
|--------------------------|----------------------|-------------------------------------------------|-------------------|
| Calculation method       | Minimum curvature    | Rig on No.3 SHL (RT) to Facility Vertical Datum | 0.00ft            |
| Horizontal Reference Pt  | Slot                 | Rig on No.3 SHL (RT) to Mean Sea Level          | 3641.00ft         |
| Vertical Reference Pt    | Rig on No.3 SHL (RT) | Facility Vertical Datum to Mud Line (Facility)  | 0.00ft            |
| MD Reference Pt          | Rig on No.3 SHL (RT) | Section Origin                                  | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level       | Section Azimuth                                 | 179.78°           |



# Planned Wellpath Report

Prelim\_2  
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INTEQ

| REFERENCE WELLPATH IDENTIFICATION |                             |          |           |
|-----------------------------------|-----------------------------|----------|-----------|
| Operator                          | Cimarex Energy Co.          | Slot     | No.3 SHL  |
| Area                              | Eddy County, NM             | Well     | No. 3     |
| Field                             | (Bluetail) Sec 8,T17S, R29E | Wellbore | No. 3 PWB |
| Facility                          | Bluetail 8 Fed No.3         |          |           |

| WELLPATH DATA (63 stations) † = interpolated/extrapolated station |                    |                |             |                   |               |              |                       |                        |                |                 |                  |          |
|-------------------------------------------------------------------|--------------------|----------------|-------------|-------------------|---------------|--------------|-----------------------|------------------------|----------------|-----------------|------------------|----------|
| MD<br>[ft]                                                        | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>[ft] | Vert Sect<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[srv ft] | Grid North<br>[srv ft] | Latitude       | Longitude       | DLS<br>[°/100ft] | Comments |
| 0.00                                                              | 0.000              | 179.784        | 0.00        | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             | Tie On   |
| 100.00†                                                           | 0.000              | 179.784        | 100.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 200.00†                                                           | 0.000              | 179.784        | 200.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 300.00†                                                           | 0.000              | 179.784        | 300.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 400.00†                                                           | 0.000              | 179.784        | 400.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 500.00†                                                           | 0.000              | 179.784        | 500.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 600.00†                                                           | 0.000              | 179.784        | 600.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 700.00†                                                           | 0.000              | 179.784        | 700.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 800.00†                                                           | 0.000              | 179.784        | 800.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 900.00†                                                           | 0.000              | 179.784        | 900.00      | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1000.00†                                                          | 0.000              | 179.784        | 1000.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1100.00†                                                          | 0.000              | 179.784        | 1100.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1200.00†                                                          | 0.000              | 179.784        | 1200.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1300.00†                                                          | 0.000              | 179.784        | 1300.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1400.00†                                                          | 0.000              | 179.784        | 1400.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1500.00†                                                          | 0.000              | 179.784        | 1500.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1600.00†                                                          | 0.000              | 179.784        | 1600.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1700.00†                                                          | 0.000              | 179.784        | 1700.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1800.00†                                                          | 0.000              | 179.784        | 1800.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 1900.00†                                                          | 0.000              | 179.784        | 1900.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2000.00†                                                          | 0.000              | 179.784        | 2000.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2100.00†                                                          | 0.000              | 179.784        | 2100.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2200.00†                                                          | 0.000              | 179.784        | 2200.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2300.00†                                                          | 0.000              | 179.784        | 2300.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2400.00†                                                          | 0.000              | 179.784        | 2400.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2500.00†                                                          | 0.000              | 179.784        | 2500.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2600.00†                                                          | 0.000              | 179.784        | 2600.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2700.00†                                                          | 0.000              | 179.784        | 2700.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2800.00†                                                          | 0.000              | 179.784        | 2800.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 2900.00†                                                          | 0.000              | 179.784        | 2900.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 3000.00†                                                          | 0.000              | 179.784        | 3000.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 3100.00†                                                          | 0.000              | 179.784        | 3100.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 3200.00†                                                          | 0.000              | 179.784        | 3200.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 3300.00†                                                          | 0.000              | 179.784        | 3300.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 3400.00†                                                          | 0.000              | 179.784        | 3400.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             |          |
| 3500.00                                                           | 0.000              | 179.784        | 3500.00     | 0.00              | 0.00          | 0.00         | 612258.60             | 673289.20              | 32°51'02.458"N | 104°06'08.602"W | 0.00             | Est KOP  |
| 3600.00†                                                          | 2.500              | 179.784        | 3599.97     | 2.18              | -2.18         | 0.01         | 612258.61             | 673287.02              | 32°51'02.437"N | 104°06'08.602"W | 2.50             |          |
| 3700.00†                                                          | 5.000              | 179.784        | 3699.75     | 8.72              | -8.72         | 0.03         | 612258.63             | 673280.48              | 32°51'02.372"N | 104°06'08.602"W | 2.50             |          |
| 3739.49                                                           | 5.987              | 179.784        | 3739.05     | 12.50             | -12.50        | 0.05         | 612258.65             | 673276.70              | 32°51'02.335"N | 104°06'08.602"W | 2.50             | EOB      |
| 3800.00†                                                          | 5.987              | 179.784        | 3799.23     | 18.81             | -18.81        | 0.07         | 612258.67             | 673270.39              | 32°51'02.272"N | 104°06'08.601"W | 0.00             |          |
| 3900.00†                                                          | 5.987              | 179.784        | 3898.69     | 29.24             | -29.24        | 0.11         | 612258.71             | 673259.96              | 32°51'02.169"N | 104°06'08.601"W | 0.00             |          |
| 4000.00†                                                          | 5.987              | 179.784        | 3998.14     | 39.67             | -39.67        | 0.15         | 612258.75             | 673249.53              | 32°51'02.066"N | 104°06'08.601"W | 0.00             |          |
| 4100.00†                                                          | 5.987              | 179.784        | 4097.60     | 50.10             | -50.10        | 0.19         | 612258.79             | 673239.10              | 32°51'01.963"N | 104°06'08.601"W | 0.00             |          |
| 4200.00†                                                          | 5.987              | 179.784        | 4197.05     | 60.54             | -60.53        | 0.23         | 612258.83             | 673228.67              | 32°51'01.859"N | 104°06'08.601"W | 0.00             |          |
| 4300.00†                                                          | 5.987              | 179.784        | 4296.51     | 70.97             | -70.97        | 0.27         | 612258.87             | 673218.24              | 32°51'01.756"N | 104°06'08.600"W | 0.00             |          |



# Planned Wellpath Report

Prelim\_2

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INTEQ

## REFERENCE WELLPATH IDENTIFICATION

|          |                             |          |           |
|----------|-----------------------------|----------|-----------|
| Operator | Cimarex Energy Co.          | Slot     | No.3 SHL  |
| Area     | Eddy County, NM             | Well     | No. 3     |
| Field    | (Bluetail) Sec 8,T17S, R29E | Wellbore | No. 3 PWB |
| Facility | Bluetail 8 Fed No.3         |          |           |

## WELLPATH DATA (63 stations) † = interpolated/extrapolated station

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude       | Longitude       | DLS [°/100ft] | Comments  |
|----------|-----------------|-------------|----------|----------------|------------|-----------|--------------------|---------------------|----------------|-----------------|---------------|-----------|
| 4400.00† | 5.987           | 179.784     | 4395.96  | 81.40          | -81.40     | 0.31      | 612258.91          | 673207.81           | 32°51'01.653"N | 104°06'08.600"W | 0.00          |           |
| 4500.00† | 5.987           | 179.784     | 4495.42  | 91.83          | -91.83     | 0.35      | 612258.95          | 673197.38           | 32°51'01.550"N | 104°06'08.600"W | 0.00          |           |
| 4600.00† | 5.987           | 179.784     | 4594.87  | 102.26         | -102.26    | 0.39      | 612258.99          | 673186.95           | 32°51'01.447"N | 104°06'08.600"W | 0.00          |           |
| 4700.00† | 5.987           | 179.784     | 4694.33  | 112.69         | -112.69    | 0.42      | 612259.02          | 673176.52           | 32°51'01.343"N | 104°06'08.600"W | 0.00          |           |
| 4800.00† | 5.987           | 179.784     | 4793.78  | 123.12         | -123.12    | 0.46      | 612259.06          | 673166.09           | 32°51'01.240"N | 104°06'08.599"W | 0.00          |           |
| 4900.00† | 5.987           | 179.784     | 4893.23  | 133.55         | -133.55    | 0.50      | 612259.10          | 673155.66           | 32°51'01.137"N | 104°06'08.599"W | 0.00          |           |
| 5000.00† | 5.987           | 179.784     | 4992.69  | 143.98         | -143.98    | 0.54      | 612259.14          | 673145.23           | 32°51'01.034"N | 104°06'08.599"W | 0.00          |           |
| 5100.00† | 5.987           | 179.784     | 5092.14  | 154.41         | -154.41    | 0.58      | 612259.18          | 673134.80           | 32°51'00.931"N | 104°06'08.599"W | 0.00          |           |
| 5200.00† | 5.987           | 179.784     | 5191.60  | 164.84         | -164.84    | 0.62      | 612259.22          | 673124.38           | 32°51'00.827"N | 104°06'08.599"W | 0.00          |           |
| 5300.00† | 5.987           | 179.784     | 5291.05  | 175.27         | -175.27    | 0.66      | 612259.26          | 673113.95           | 32°51'00.724"N | 104°06'08.599"W | 0.00          |           |
| 5400.00† | 5.987           | 179.784     | 5390.51  | 185.70         | -185.70    | 0.70      | 612259.30          | 673103.52           | 32°51'00.621"N | 104°06'08.598"W | 0.00          |           |
| 5500.00† | 5.987           | 179.784     | 5489.96  | 196.13         | -196.13    | 0.74      | 612259.34          | 673093.09           | 32°51'00.518"N | 104°06'08.598"W | 0.00          |           |
| 5600.00† | 5.987           | 179.784     | 5589.42  | 206.56         | -206.56    | 0.78      | 612259.38          | 673082.66           | 32°51'00.415"N | 104°06'08.598"W | 0.00          |           |
| 5700.00† | 5.987           | 179.784     | 5688.87  | 216.99         | -216.99    | 0.82      | 612259.42          | 673072.23           | 32°51'00.311"N | 104°06'08.598"W | 0.00          |           |
| 5800.00† | 5.987           | 179.784     | 5788.32  | 227.42         | -227.42    | 0.86      | 612259.46          | 673061.80           | 32°51'00.208"N | 104°06'08.598"W | 0.00          |           |
| 5900.00† | 5.987           | 179.784     | 5887.78  | 237.85         | -237.85    | 0.90      | 612259.50          | 673051.37           | 32°51'00.105"N | 104°06'08.597"W | 0.00          |           |
| 6000.00† | 5.987           | 179.784     | 5987.23  | 248.28         | -248.28    | 0.94      | 612259.53          | 673040.94           | 32°51'00.002"N | 104°06'08.597"W | 0.00          |           |
| 6012.84  | 5.987           | 179.784     | 6000.00† | 249.62         | -249.62    | 0.94      | 612259.54          | 673039.60           | 32°50'59.989"N | 104°06'08.597"W | 0.00          | No.3 PBHL |

## HOLE & CASING SECTIONS Ref Wellbore: No. 3 PWB Ref Wellpath: Prelim\_2

| String/Diameter   | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] |
|-------------------|---------------|-------------|---------------|----------------|--------------|----------------|----------------|--------------|--------------|
| 8.625in Casing    | 0.00          | 1100.00     | 1100.00       | 0.00           | 1100.00      | 0.00           | 0.00           | 0.00         | 0.00         |
| 7.875in Open Hole | 1100.00       | 6012.84     | 4912.84       | 1100.00        | 6000.00      | 0.00           | 0.00           | -249.62      | 0.94         |

## TARGETS

| Name          | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude       | Longitude       | Shape |
|---------------|---------|----------|------------|-----------|--------------------|---------------------|----------------|-----------------|-------|
| 1) No. 3 PBHL | 6012.84 | 6000.00  | -249.62    | 0.94      | 612259.54          | 673039.60           | 32°50'59.989"N | 104°06'08.597"W | point |

## SURVEY PROGRAM Ref Wellbore: No. 3 PWB Ref Wellpath: Prelim\_2

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore  |
|---------------|-------------|------------------------------|------------------|-----------|
| 0.00          | 6012.84     | NaviTrak (Standard)          |                  | No. 3 PWB |



# Planned Wellpath Report

Prelim\_2  
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| REFERENCE WELLPATH IDENTIFICATION |                             |          |           |
|-----------------------------------|-----------------------------|----------|-----------|
| Operator                          | Cimarex Energy Co.          | Slot     | No.3 SHL  |
| Area                              | Eddy County, NM             | Well     | No. 3     |
| Field                             | (Bluetail) Sec 8,T17S, R29E | Wellbore | No. 3 PWB |
| Facility                          | Bluetail 8 Fed No.3         |          |           |

| WELLPATH DATA (63 stations) † = interpolated/extrapolated station |                 |             |          |                |            |           |                    |                     |                |                 |               |          |
|-------------------------------------------------------------------|-----------------|-------------|----------|----------------|------------|-----------|--------------------|---------------------|----------------|-----------------|---------------|----------|
| MD [ft]                                                           | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude       | Longitude       | DLS [°/100ft] | Comments |
| 0.00                                                              | 0.000           | 179.784     | 0.00     | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          | Tie On   |
| 100.00†                                                           | 0.000           | 179.784     | 100.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 200.00†                                                           | 0.000           | 179.784     | 200.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 300.00†                                                           | 0.000           | 179.784     | 300.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 400.00†                                                           | 0.000           | 179.784     | 400.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 500.00†                                                           | 0.000           | 179.784     | 500.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 600.00†                                                           | 0.000           | 179.784     | 600.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 700.00†                                                           | 0.000           | 179.784     | 700.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 800.00†                                                           | 0.000           | 179.784     | 800.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 900.00†                                                           | 0.000           | 179.784     | 900.00   | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1000.00†                                                          | 0.000           | 179.784     | 1000.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1100.00†                                                          | 0.000           | 179.784     | 1100.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1200.00†                                                          | 0.000           | 179.784     | 1200.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1300.00†                                                          | 0.000           | 179.784     | 1300.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1400.00†                                                          | 0.000           | 179.784     | 1400.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1500.00†                                                          | 0.000           | 179.784     | 1500.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1600.00†                                                          | 0.000           | 179.784     | 1600.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1700.00†                                                          | 0.000           | 179.784     | 1700.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1800.00†                                                          | 0.000           | 179.784     | 1800.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 1900.00†                                                          | 0.000           | 179.784     | 1900.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2000.00†                                                          | 0.000           | 179.784     | 2000.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2100.00†                                                          | 0.000           | 179.784     | 2100.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2200.00†                                                          | 0.000           | 179.784     | 2200.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2300.00†                                                          | 0.000           | 179.784     | 2300.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2400.00†                                                          | 0.000           | 179.784     | 2400.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2500.00†                                                          | 0.000           | 179.784     | 2500.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2600.00†                                                          | 0.000           | 179.784     | 2600.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2700.00†                                                          | 0.000           | 179.784     | 2700.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2800.00†                                                          | 0.000           | 179.784     | 2800.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 2900.00†                                                          | 0.000           | 179.784     | 2900.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 3000.00†                                                          | 0.000           | 179.784     | 3000.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 3100.00†                                                          | 0.000           | 179.784     | 3100.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 3200.00†                                                          | 0.000           | 179.784     | 3200.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 3300.00†                                                          | 0.000           | 179.784     | 3300.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 3400.00†                                                          | 0.000           | 179.784     | 3400.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          |          |
| 3500.00                                                           | 0.000           | 179.784     | 3500.00  | 0.00           | 0.00       | 0.00      | 612258.60          | 673289.20           | 32°51'02.458"N | 104°06'08.602"W | 0.00          | Est KOP  |
| 3600.00†                                                          | 2.500           | 179.784     | 3599.97  | 2.18           | -2.18      | 0.01      | 612258.61          | 673287.02           | 32°51'02.437"N | 104°06'08.602"W | 2.50          |          |
| 3700.00†                                                          | 5.000           | 179.784     | 3699.75  | 8.72           | -8.72      | 0.03      | 612258.63          | 673280.48           | 32°51'02.372"N | 104°06'08.602"W | 2.50          |          |
| 3739.49                                                           | 5.987           | 179.784     | 3739.05  | 12.50          | -12.50     | 0.05      | 612258.65          | 673276.70           | 32°51'02.335"N | 104°06'08.602"W | 2.50          | EOB      |
| 3800.00†                                                          | 5.987           | 179.784     | 3799.23  | 18.81          | -18.81     | 0.07      | 612258.67          | 673270.39           | 32°51'02.272"N | 104°06'08.601"W | 0.00          |          |
| 3900.00†                                                          | 5.987           | 179.784     | 3898.69  | 29.24          | -29.24     | 0.11      | 612258.71          | 673259.96           | 32°51'02.169"N | 104°06'08.601"W | 0.00          |          |
| 4000.00†                                                          | 5.987           | 179.784     | 3998.14  | 39.67          | -39.67     | 0.15      | 612258.75          | 673249.53           | 32°51'02.066"N | 104°06'08.601"W | 0.00          |          |
| 4100.00†                                                          | 5.987           | 179.784     | 4097.60  | 50.10          | -50.10     | 0.19      | 612258.79          | 673239.10           | 32°51'01.963"N | 104°06'08.601"W | 0.00          |          |
| 4200.00†                                                          | 5.987           | 179.784     | 4197.05  | 60.54          | -60.53     | 0.23      | 612258.83          | 673228.67           | 32°51'01.859"N | 104°06'08.601"W | 0.00          |          |
| 4300.00†                                                          | 5.987           | 179.784     | 4296.51  | 70.97          | -70.97     | 0.27      | 612258.87          | 673218.24           | 32°51'01.756"N | 104°06'08.600"W | 0.00          |          |



# Planned Wellpath Report

Prelim\_2  
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| REFERENCE WELLPATH IDENTIFICATION |                             |          |           |
|-----------------------------------|-----------------------------|----------|-----------|
| Operator                          | Cimarex Energy Co.          | Slot     | No.3 SHL  |
| Area                              | Eddy County, NM             | Well     | No. 3     |
| Field                             | (Bluetail) Sec 8,T17S, R29E | Wellbore | No. 3 PWB |
| Facility                          | Bluetail 8 Fed No.3         |          |           |

| WELLPATH DATA (63 stations) † = interpolated/extrapolated station |                 |             |          |                |            |           |                    |                     |                |                 |               |           |
|-------------------------------------------------------------------|-----------------|-------------|----------|----------------|------------|-----------|--------------------|---------------------|----------------|-----------------|---------------|-----------|
| MD [ft]                                                           | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude       | Longitude       | DLS [°/100ft] | Comments  |
| 4400.00†                                                          | 5.987           | 179.784     | 4395.96  | 81.40          | -81.40     | 0.31      | 612258.91          | 673207.81           | 32°51'01.653"N | 104°06'08.600"W | 0.00          |           |
| 4500.00†                                                          | 5.987           | 179.784     | 4495.42  | 91.83          | -91.83     | 0.35      | 612258.95          | 673197.38           | 32°51'01.550"N | 104°06'08.600"W | 0.00          |           |
| 4600.00†                                                          | 5.987           | 179.784     | 4594.87  | 102.26         | -102.26    | 0.39      | 612258.99          | 673186.95           | 32°51'01.447"N | 104°06'08.600"W | 0.00          |           |
| 4700.00†                                                          | 5.987           | 179.784     | 4694.33  | 112.69         | -112.69    | 0.42      | 612259.02          | 673176.52           | 32°51'01.343"N | 104°06'08.600"W | 0.00          |           |
| 4800.00†                                                          | 5.987           | 179.784     | 4793.78  | 123.12         | -123.12    | 0.46      | 612259.06          | 673166.09           | 32°51'01.240"N | 104°06'08.599"W | 0.00          |           |
| 4900.00†                                                          | 5.987           | 179.784     | 4893.23  | 133.55         | -133.55    | 0.50      | 612259.10          | 673155.66           | 32°51'01.137"N | 104°06'08.599"W | 0.00          |           |
| 5000.00†                                                          | 5.987           | 179.784     | 4992.69  | 143.98         | -143.98    | 0.54      | 612259.14          | 673145.23           | 32°51'01.034"N | 104°06'08.599"W | 0.00          |           |
| 5100.00†                                                          | 5.987           | 179.784     | 5092.14  | 154.41         | -154.41    | 0.58      | 612259.18          | 673134.80           | 32°51'00.931"N | 104°06'08.599"W | 0.00          |           |
| 5200.00†                                                          | 5.987           | 179.784     | 5191.60  | 164.84         | -164.84    | 0.62      | 612259.22          | 673124.38           | 32°51'00.827"N | 104°06'08.599"W | 0.00          |           |
| 5300.00†                                                          | 5.987           | 179.784     | 5291.05  | 175.27         | -175.27    | 0.66      | 612259.26          | 673113.95           | 32°51'00.724"N | 104°06'08.599"W | 0.00          |           |
| 5400.00†                                                          | 5.987           | 179.784     | 5390.51  | 185.70         | -185.70    | 0.70      | 612259.30          | 673103.52           | 32°51'00.621"N | 104°06'08.598"W | 0.00          |           |
| 5500.00†                                                          | 5.987           | 179.784     | 5489.96  | 196.13         | -196.13    | 0.74      | 612259.34          | 673093.09           | 32°51'00.518"N | 104°06'08.598"W | 0.00          |           |
| 5600.00†                                                          | 5.987           | 179.784     | 5589.42  | 206.56         | -206.56    | 0.78      | 612259.38          | 673082.66           | 32°51'00.415"N | 104°06'08.598"W | 0.00          |           |
| 5700.00†                                                          | 5.987           | 179.784     | 5688.87  | 216.99         | -216.99    | 0.82      | 612259.42          | 673072.23           | 32°51'00.311"N | 104°06'08.598"W | 0.00          |           |
| 5800.00†                                                          | 5.987           | 179.784     | 5788.32  | 227.42         | -227.42    | 0.86      | 612259.46          | 673061.80           | 32°51'00.208"N | 104°06'08.598"W | 0.00          |           |
| 5900.00†                                                          | 5.987           | 179.784     | 5887.78  | 237.85         | -237.85    | 0.90      | 612259.50          | 673051.37           | 32°51'00.105"N | 104°06'08.597"W | 0.00          |           |
| 6000.00†                                                          | 5.987           | 179.784     | 5987.23  | 248.28         | -248.28    | 0.94      | 612259.53          | 673040.94           | 32°51'00.002"N | 104°06'08.597"W | 0.00          |           |
| 6012.84                                                           | 5.987           | 179.784     | 6000.00† | 249.62         | -249.62    | 0.94      | 612259.54          | 673039.60           | 32°50'59.989"N | 104°06'08.597"W | 0.00          | No.3 PBHL |

| HOLE & CASING SECTIONS Ref Wellbore: No. 3 PWB Ref Wellpath: Prelim_2 |               |             |               |                |              |                |                |              |              |
|-----------------------------------------------------------------------|---------------|-------------|---------------|----------------|--------------|----------------|----------------|--------------|--------------|
| String/Diameter                                                       | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] |
| 8.625in Casing                                                        | 0.00          | 1100.00     | 1100.00       | 0.00           | 1100.00      | 0.00           | 0.00           | 0.00         | 0.00         |
| 7.875in Open Hole                                                     | 1100.00       | 6012.84     | 4912.84       | 1100.00        | 6000.00      | 0.00           | 0.00           | -249.62      | 0.94         |

| TARGETS       |         |          |            |           |                    |                     |                |                 |       |
|---------------|---------|----------|------------|-----------|--------------------|---------------------|----------------|-----------------|-------|
| Name          | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [srv ft] | Grid North [srv ft] | Latitude       | Longitude       | Shape |
| 1) No. 3 PBHL | 6012.84 | 6000.00  | -249.62    | 0.94      | 612259.54          | 673039.60           | 32°50'59.989"N | 104°06'08.597"W | point |

| SURVEY PROGRAM Ref Wellbore: No. 3 PWB Ref Wellpath: Prelim_2 |             |                              |                  |           |
|---------------------------------------------------------------|-------------|------------------------------|------------------|-----------|
| Start MD [ft]                                                 | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore  |
| 0.00                                                          | 6012.84     | NaviTrak (Standard)          |                  | No. 3 PWB |



# Cimarex Energy Co.

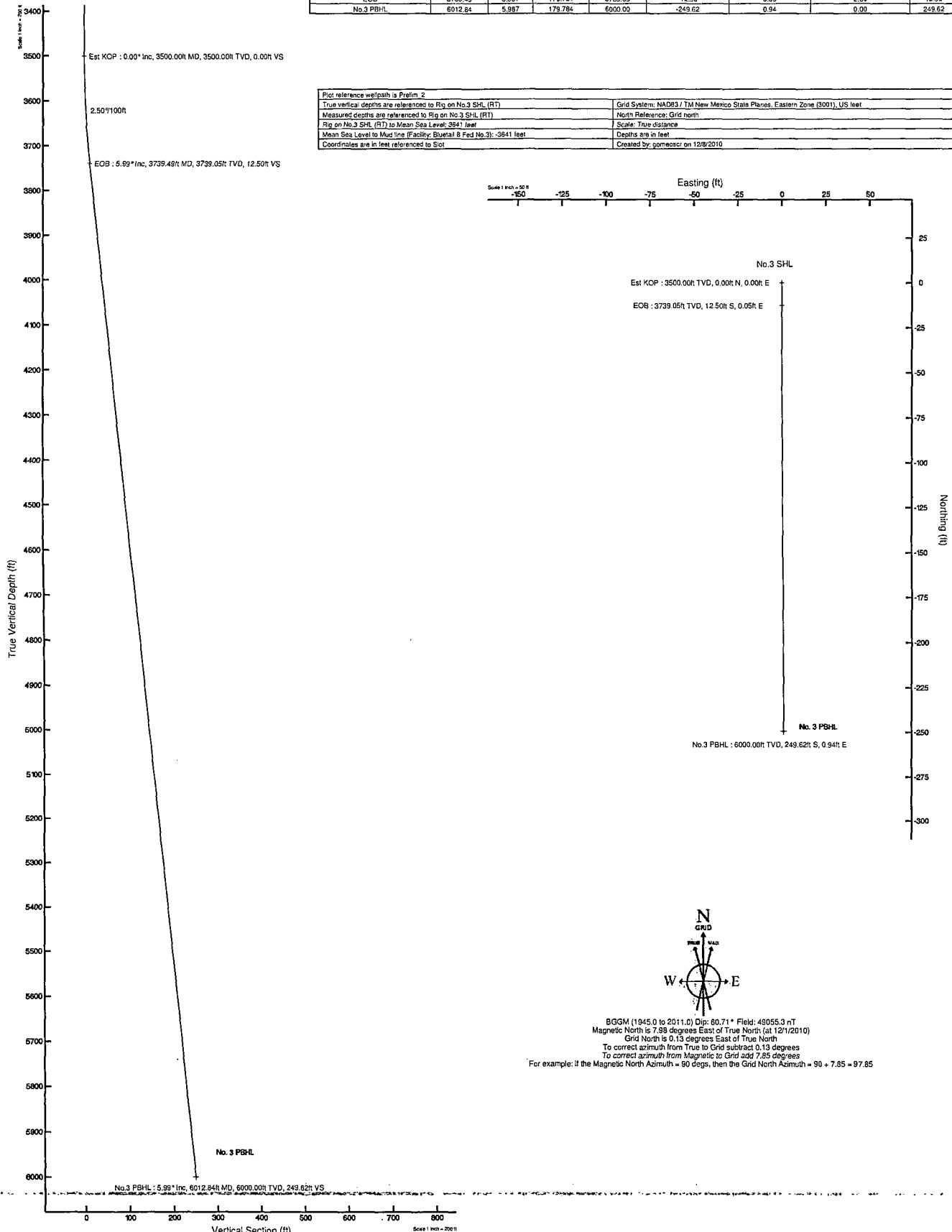
Location: Eddy County, NM  
Field: (Bluetail) Sec 8, T17S, R29E  
Facility: Bluetail 8 Fed No.3

Slot: No.3 SHL  
Well: No. 3  
Wellbore: No. 3 PWB



| Well Profile Data |         |         |         |          |              |              |               |         |
|-------------------|---------|---------|---------|----------|--------------|--------------|---------------|---------|
| Design Comment    | MD (ft) | Inc (°) | Az (°)  | TVD (ft) | Local N (ft) | Local E (ft) | DLS (°/100ft) | VS (ft) |
| Tie On            | 0.00    | 0.000   | 179.784 | 0.00     | 0.00         | 0.00         | 0.00          | 0.00    |
| Est KOP           | 3500.00 | 0.000   | 179.784 | 3500.00  | 0.00         | 0.00         | 0.00          | 0.00    |
| EOB               | 3739.49 | 5.987   | 179.784 | 3739.05  | -12.50       | 0.05         | 2.50          | 12.50   |
| No.3 PBHL         | 6012.84 | 5.987   | 179.784 | 6000.00  | -249.62      | 0.94         | 0.00          | 249.62  |

|                                                                       |                                                                               |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Plot reference wellpath is Prelim 2                                   |                                                                               |
| True vertical depths are referenced to Rig on No.3 SHL (RT)           | Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet |
| Measured depths are referenced to Rig on No.3 SHL (RT)                | North Reference: Grid north                                                   |
| Rig on No.3 SHL (RT) to Mean Sea Level: 3641 feet                     | Scale: True distance                                                          |
| Mean Sea Level to Mud line (Facility Bluetail 8 Fed No.3): -3641 feet | Depths are in feet                                                            |
| Coordinates are in feet referenced to Slot                            | Created by: gomezscr on 12/8/2010                                             |



SR & A

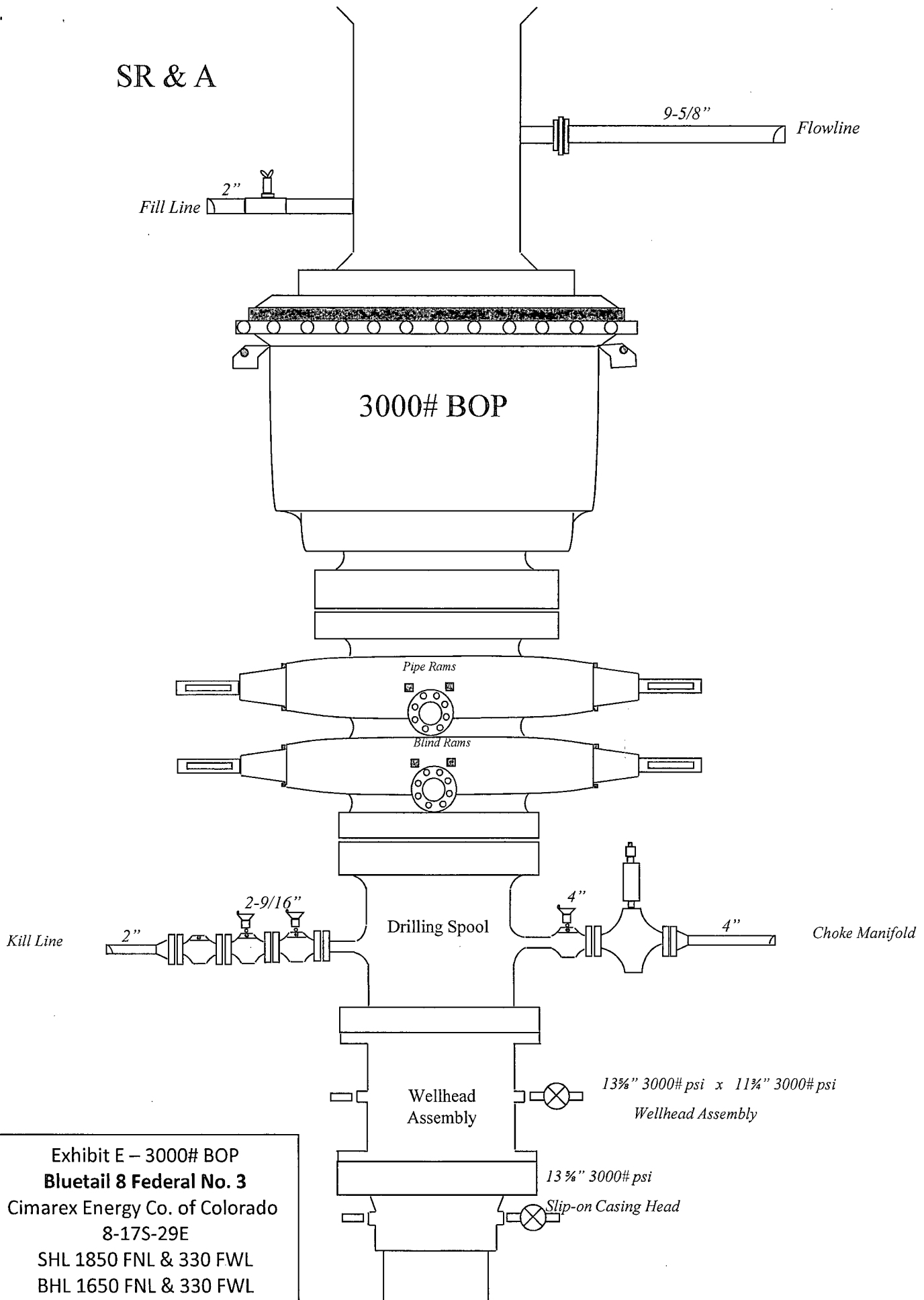


Exhibit E – 3000# BOP  
Bluetail 8 Federal No. 3  
Cimarex Energy Co. of Colorado  
8-17S-29E  
SHL 1850 FNL & 330 FWL  
BHL 1650 FNL & 330 FWL  
Eddy County, NM

# Drilling Operations Choke Manifold 3M Service

Exhibit E-1 – Choke Manifold Diagram

**Bluetail 8 Federal No. 3**

Cimarex Energy Co. of Colorado

8-17S-29E

SHL 1850 FNL & 330 FWL

BHL 1650 FNL & 330 FWL

Eddy County, NM

