

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*3. Lease Serial No.  
NMNM116572

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.  
CHIMAY 6 FEDERAL COM 15H9. API Well No.  
30-015-4362010. Field and Pool or Exploratory Area  
LOCO HILLS; GLORIETA-YESO11. County or Parish, State  
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator  
COG OPERATING LLCContact: ROBYN RUSSELL  
E-Mail: rrussell@concho.com3a. Address  
600 W. ILLINOIS AVENUE  
MIDLAND, TX 797013b. Phone No. (include area code)  
Ph: 432-685-43854. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
Sec 6 T17S R30E NWSW 2310FSL 350FWL**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

## TYPE OF SUBMISSION

## TYPE OF ACTION

☒ Notice of Intent☐ Subsequent Report☐ Final Abandonment Notice☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Hydraulic Fracturing☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other  
Change to Original A  
PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

COG Operating LLC respectfully requests to make the following changes to this well:

Change SHL &amp; BHL:

SHL: 2310' FSL 10' FEL, Sec 1, 17S, 29E, Unit I

BHL: 2310' FSL 10' FEL, Sec 6, 17S, 30E, Unit I

Change Production Casing String:

Dill 8-3/4" hole and kick off at +/- 3768', building curve to horizontal at 4777' MD 4430' TVD.

Drill 8-3/4" lateral section to TD at +/- 9311' MD 4509' TVD. Run 7"x5-1/2" production casing, 8' to be run from surface to kickoff point and changed over to 5-1/2" casing with DV Tool and ECP at kickoff point. 5-1/2" casing will be run from kickoff point to TD and isolation packers will be set throughout curve and lateral. 7" will be cemented from kickoff point to surface.

2/26/2018 Engineering review completed by m hague

SEE ATTACHED FOR  
CONDITIONS OF APPROVALCONSERVATION  
ARTESIA DISTRICT

MAR 05 2018

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #399715 verified by the BLM Well Information System  
For COG OPERATING LLC, sent to the Carlsbad

RECEIVED

Name (Printed/Typed) ROBYN RUSSELL

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 01/05/2018

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\***

NSP

Rus 3-9-18

NSP RUF 39-18

## Production Cement Breakdown

Well: Chimay 6 Federal Com #15H

| Hole Volumes |                       |        |                                    |        |             |          |
|--------------|-----------------------|--------|------------------------------------|--------|-------------|----------|
| Hole         | Hole Section (Length) | Casing | Capacity (ft <sup>3</sup> /Lin.ft) | Cu.Ft  | Total Cu.Ft | % Excess |
| Prod         | 0-1170 (1170)         | 7"     | 0.1585                             | 185.45 | 185.45      | 0        |
| Prod         | 1170-3768 (2598)      | 7"     | 0.1503                             | 390.5  | 390.5       | 199%     |
|              |                       |        |                                    |        |             |          |
|              |                       |        |                                    |        |             |          |

| Cement Volumes |              |       |        |        |              |
|----------------|--------------|-------|--------|--------|--------------|
| Blend          | Cement Sacks | Yield | Weight | Volume | Total Volume |
| 35:65:6        | 400          | 2.01  | 12.5   | 804    | 1352         |
| 50:50:02       | 400          | 1.37  | 14     | 548    |              |

| % Excess Calculation |         |  |            |
|----------------------|---------|--|------------|
| Total Volume         | 1352    |  | 1166.55    |
| Cu.Ft                | -185.45 |  | /390.5     |
|                      | 1166.55 |  | 199%excess |

7" to be run from surface to kickoff point and changed over to 5 ½" with DV Tool and ECP at kickoff point. 5 ½" casing will be run from kickoff point to td and isolation packers set throughout curve and lateral. 7" to be cemented from kickoff point to surface.

WILDLIFE CONSERVATION  
DISTRICT  
MAR 05 2018

RECEIVED

## **COG OPERATING, LLC**

**Eddy County, NM (NAD83) NMEZ**

**Chimay 6 Federal COM #15H**

**SHL: 2,310' FSL, 10' FEL, Sec 1, T-17S , R-29E, Unit I**

**SHL: 2,303' FSL, 330' FEL, Sec 1, T-17S , R-29E, Unit I**

**PBHL: 2,290' FSL, 10' FEL, Sec 6, T-17S , R-30E, Unit I**

**Plan: Plan #1**

**30-015-43620**

## **Standard Planning Report**

**19 December, 2017**

# Planning Report

**Database:** EDM 5000.14 Single User Db  
**Company:** COG OPERATING, LLC  
**Project:** Eddy County, NM (NAD83) NMEZ  
**Site:** Chimay 6 Federal COM  
**Well:** #15H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #15H  
**TVD Reference:** RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
**MD Reference:** RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

|                    |                              |                      |                |
|--------------------|------------------------------|----------------------|----------------|
| <b>Project</b>     | Eddy County, NM (NAD83) NMEZ |                      |                |
| <b>Map System:</b> | US State Plane 1983          | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983    |                      |                |
| <b>Map Zone:</b>   | New Mexico Eastern Zone      |                      |                |

|                              |                      |                          |                  |
|------------------------------|----------------------|--------------------------|------------------|
| <b>Site</b>                  | Chimay 6 Federal COM |                          |                  |
| <b>Site Position:</b>        |                      | <b>Northing:</b>         | 677,697.20 usft  |
| <b>From:</b>                 | Map                  | <b>Easting:</b>          | 637,643.40 usft  |
| <b>Position Uncertainty:</b> | 0.00 usft            | <b>Slot Radius:</b>      | 13-3/16"         |
|                              |                      | <b>Latitude:</b>         | 32° 51' 45.428 N |
|                              |                      | <b>Longitude:</b>        | 104° 1' 10.869 W |
|                              |                      | <b>Grid Convergence:</b> | 0.17 °           |

|                             |              |                            |                                    |
|-----------------------------|--------------|----------------------------|------------------------------------|
| <b>Well</b>                 | #15H         |                            |                                    |
| <b>Well Position</b>        | <b>+N/-S</b> | 0.00 usft                  | <b>Northing:</b> 677,697.20 usft   |
|                             | <b>+E/-W</b> | 0.00 usft                  | <b>Easting:</b> 637,643.40 usft    |
| <b>Position Uncertainty</b> | 0.00 usft    | <b>Wellhead Elevation:</b> | <b>Latitude:</b> 32° 51' 45.428 N  |
|                             |              |                            | <b>Longitude:</b> 104° 1' 10.869 W |
|                             |              |                            | <b>Ground Level:</b> 3,685.00 usft |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | OH                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2015          | 12/19/17           | 7.16                   | 60.57                | 48,214.21942478            |

|                          |                         |              |                      |                  |
|--------------------------|-------------------------|--------------|----------------------|------------------|
| <b>Design</b>            | Plan #1                 |              |                      |                  |
| <b>Audit Notes:</b>      |                         |              |                      |                  |
| <b>Version:</b>          | <b>Phase:</b>           | PLAN         | <b>Tie On Depth:</b> | 0.00             |
| <b>Vertical Section:</b> | <b>Depth From (TVD)</b> | <b>+N/-S</b> | <b>+E/-W</b>         | <b>Direction</b> |
|                          | (usft)                  | (usft)       | (usft)               | (°)              |
|                          | 0.00                    | 0.00         | 0.00                 | 89.65            |

|                                 |                        |                          |                             |                |
|---------------------------------|------------------------|--------------------------|-----------------------------|----------------|
| <b>Plan Survey Tool Program</b> | <b>Date</b>            | 12/19/17                 |                             |                |
| <b>Depth From (usft)</b>        | <b>Depth To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b>            | <b>Remarks</b> |
| 1                               | 0.00                   | 9,311.40 Plan #1 (OH)    | MWD                         |                |
|                                 |                        |                          | MWD v3:standard declination |                |

|                      |                    |                |                     |               |               |                         |                         |                         |            |                  |
|----------------------|--------------------|----------------|---------------------|---------------|---------------|-------------------------|-------------------------|-------------------------|------------|------------------|
| <b>Plan Sections</b> |                    |                |                     |               |               |                         |                         |                         |            |                  |
| <b>Measured</b>      | <b>Inclination</b> | <b>Azimuth</b> | <b>Vertical</b>     | <b>+N/-S</b>  | <b>+E/-W</b>  | <b>Dogleg</b>           | <b>Build</b>            | <b>Turn</b>             | <b>TFO</b> | <b>Target</b>    |
| <b>Depth (usft)</b>  | <b>(°)</b>         | <b>(°)</b>     | <b>Depth (usft)</b> | <b>(usft)</b> | <b>(usft)</b> | <b>Rate (°/100usft)</b> | <b>Rate (°/100usft)</b> | <b>Rate (°/100usft)</b> | <b>(°)</b> |                  |
| 0.00                 | 0.00               | 0.00           | 0.00                | 0.00          | 0.00          | 0.00                    | 0.00                    | 0.00                    | 0.00       |                  |
| 3,767.79             | 0.00               | 0.00           | 3,767.79            | 0.00          | 0.00          | 0.00                    | 0.00                    | 0.00                    | 0.00       |                  |
| 4,176.88             | 45.00              | 91.30          | 4,136.10            | -3.46         | 152.52        | 11.00                   | 11.00                   | 0.00                    | 91.30      |                  |
| 4,376.88             | 45.00              | 91.30          | 4,277.52            | -6.67         | 293.91        | 0.00                    | 0.00                    | 0.00                    | 0.00       |                  |
| 4,776.88             | 89.00              | 91.30          | 4,430.00            | -14.82        | 653.03        | 11.00                   | 11.00                   | 0.00                    | 0.00       |                  |
| 4,859.59             | 89.00              | 89.65          | 4,431.45            | -15.50        | 735.73        | 2.00                    | 0.00                    | -2.00                   | -90.01     |                  |
| 9,311.40             | 89.00              | 89.65          | 4,509.14            | 12.04         | 5,186.77      | 0.00                    | 0.00                    | 0.00                    | 0.00       | PBHL_20S(C6FC#15 |

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**MD Reference:** RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>SHL(C6FC#15H)</b>  |                 |             |                       |              |              |                         |                         |                        |                       |
| 100.00                | 0.00            | 0.00        | 100.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 200.00                | 0.00            | 0.00        | 200.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 300.00                | 0.00            | 0.00        | 300.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 325.00                | 0.00            | 0.00        | 325.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Rustier</b>        |                 |             |                       |              |              |                         |                         |                        |                       |
| 400.00                | 0.00            | 0.00        | 400.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 500.00                | 0.00            | 0.00        | 500.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 595.00                | 0.00            | 0.00        | 595.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Top of Salt</b>    |                 |             |                       |              |              |                         |                         |                        |                       |
| 600.00                | 0.00            | 0.00        | 600.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 700.00                | 0.00            | 0.00        | 700.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 800.00                | 0.00            | 0.00        | 800.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 900.00                | 0.00            | 0.00        | 900.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,000.00              | 0.00            | 0.00        | 1,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,070.00              | 0.00            | 0.00        | 1,070.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Tansill</b>        |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,100.00              | 0.00            | 0.00        | 1,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,180.00              | 0.00            | 0.00        | 1,180.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Yates</b>          |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,200.00              | 0.00            | 0.00        | 1,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,300.00              | 0.00            | 0.00        | 1,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,400.00              | 0.00            | 0.00        | 1,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,460.00              | 0.00            | 0.00        | 1,460.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Seven Rivers</b>   |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,500.00              | 0.00            | 0.00        | 1,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,600.00              | 0.00            | 0.00        | 1,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,700.00              | 0.00            | 0.00        | 1,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,800.00              | 0.00            | 0.00        | 1,800.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,900.00              | 0.00            | 0.00        | 1,900.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,000.00              | 0.00            | 0.00        | 2,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,065.00              | 0.00            | 0.00        | 2,065.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Queen</b>          |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,100.00              | 0.00            | 0.00        | 2,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,200.00              | 0.00            | 0.00        | 2,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,300.00              | 0.00            | 0.00        | 2,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,400.00              | 0.00            | 0.00        | 2,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,475.00              | 0.00            | 0.00        | 2,475.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Grayburg</b>       |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,500.00              | 0.00            | 0.00        | 2,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,600.00              | 0.00            | 0.00        | 2,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,700.00              | 0.00            | 0.00        | 2,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,785.00              | 0.00            | 0.00        | 2,785.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>San Andres</b>     |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,800.00              | 0.00            | 0.00        | 2,800.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,900.00              | 0.00            | 0.00        | 2,900.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,000.00              | 0.00            | 0.00        | 3,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,100.00              | 0.00            | 0.00        | 3,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,200.00              | 0.00            | 0.00        | 3,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,300.00              | 0.00            | 0.00        | 3,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,400.00              | 0.00            | 0.00        | 3,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,500.00              | 0.00            | 0.00        | 3,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |

# Planning Report

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 Wellbore: OH  
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Local Co-ordinate Reference: Well #15H  
 TVD Reference: RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
 MD Reference: RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

## Planned Survey

| Measured Depth (usft)                                                    | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|--------------------------------------------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 3,600.00                                                                 | 0.00            | 0.00        | 3,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,700.00                                                                 | 0.00            | 0.00        | 3,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 3,767.79                                                                 | 0.00            | 0.00        | 3,767.79              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>KOP: 3767.79' MD, 3767.79' TVD - KOP(C6FC#15H)</b>                    |                 |             |                       |              |              |                         |                         |                        |                       |
| 3,800.00                                                                 | 3.54            | 91.30       | 3,799.98              | -0.02        | 1.00         | 1.00                    | 11.00                   | 11.00                  | 0.00                  |
| 3,850.00                                                                 | 9.04            | 91.30       | 3,849.66              | -0.15        | 6.47         | 6.47                    | 11.00                   | 11.00                  | 0.00                  |
| 3,900.00                                                                 | 14.54           | 91.30       | 3,898.59              | -0.38        | 16.68        | 16.68                   | 11.00                   | 11.00                  | 0.00                  |
| 3,950.00                                                                 | 20.04           | 91.30       | 3,946.31              | -0.72        | 31.54        | 31.53                   | 11.00                   | 11.00                  | 0.00                  |
| 4,000.00                                                                 | 25.54           | 91.30       | 3,992.38              | -1.15        | 50.90        | 50.89                   | 11.00                   | 11.00                  | 0.00                  |
| 4,050.00                                                                 | 31.04           | 91.30       | 4,036.39              | -1.69        | 74.58        | 74.57                   | 11.00                   | 11.00                  | 0.00                  |
| 4,100.00                                                                 | 36.54           | 91.30       | 4,077.93              | -2.32        | 102.37       | 102.36                  | 11.00                   | 11.00                  | 0.00                  |
| 4,150.00                                                                 | 42.04           | 91.30       | 4,116.61              | -3.04        | 134.02       | 134.00                  | 11.00                   | 11.00                  | 0.00                  |
| 4,176.88                                                                 | 45.00           | 91.30       | 4,136.10              | -3.46        | 152.52       | 152.50                  | 11.00                   | 11.00                  | 0.00                  |
| 4,200.00                                                                 | 45.00           | 91.30       | 4,152.45              | -3.83        | 168.86       | 168.84                  | 0.00                    | 0.00                   | 0.00                  |
| 4,288.46                                                                 | 45.00           | 91.30       | 4,215.00              | -5.25        | 231.40       | 231.36                  | 0.00                    | 0.00                   | 0.00                  |
| <b>Glorieta</b>                                                          |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,300.00                                                                 | 45.00           | 91.30       | 4,223.16              | -5.44        | 239.56       | 239.52                  | 0.00                    | 0.00                   | 0.00                  |
| 4,376.88                                                                 | 45.00           | 91.30       | 4,277.52              | -6.67        | 293.91       | 293.86                  | 0.00                    | 0.00                   | 0.00                  |
| 4,387.57                                                                 | 46.18           | 91.30       | 4,285.00              | -6.84        | 301.54       | 301.49                  | 11.00                   | 11.00                  | 0.00                  |
| <b>Paddock</b>                                                           |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,400.00                                                                 | 47.54           | 91.30       | 4,293.50              | -7.05        | 310.61       | 310.56                  | 11.00                   | 11.00                  | 0.00                  |
| 4,438.62                                                                 | 51.79           | 91.30       | 4,318.49              | -7.72        | 340.03       | 339.98                  | 11.00                   | 11.00                  | 0.00                  |
| <b>PP(C6FC#15H)</b>                                                      |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,450.00                                                                 | 53.04           | 91.30       | 4,325.43              | -7.92        | 349.05       | 348.99                  | 11.00                   | 11.00                  | 0.00                  |
| 4,500.00                                                                 | 58.54           | 91.30       | 4,353.53              | -8.86        | 390.37       | 390.31                  | 11.00                   | 11.00                  | 0.00                  |
| 4,550.00                                                                 | 64.04           | 91.30       | 4,377.54              | -9.85        | 434.20       | 434.13                  | 11.00                   | 11.00                  | 0.00                  |
| 4,600.00                                                                 | 69.54           | 91.30       | 4,397.23              | -10.90       | 480.12       | 480.05                  | 11.00                   | 11.00                  | 0.00                  |
| 4,650.00                                                                 | 75.04           | 91.30       | 4,412.44              | -11.98       | 527.72       | 527.64                  | 11.00                   | 11.00                  | 0.00                  |
| 4,700.00                                                                 | 80.54           | 91.30       | 4,423.00              | -13.08       | 576.56       | 576.47                  | 11.00                   | 11.00                  | 0.00                  |
| 4,750.00                                                                 | 86.04           | 91.30       | 4,428.84              | -14.21       | 626.19       | 626.09                  | 11.00                   | 11.00                  | 0.00                  |
| 4,776.88                                                                 | 89.00           | 91.30       | 4,430.00              | -14.82       | 653.03       | 652.93                  | 11.00                   | 11.00                  | 0.00                  |
| <b>EOC: 4776.88' MD, 4430.00' TVD, 89.00° INC, 91.30° AZ, 652.93' VS</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,800.00                                                                 | 89.00           | 90.84       | 4,430.41              | -15.25       | 676.15       | 676.04                  | 2.00                    | 0.00                   | -2.00                 |
| 4,859.59                                                                 | 89.00           | 89.65       | 4,431.45              | -15.50       | 735.73       | 735.62                  | 2.00                    | 0.00                   | -2.00                 |
| 4,900.00                                                                 | 89.00           | 89.65       | 4,432.15              | -15.25       | 776.13       | 776.02                  | 0.00                    | 0.00                   | 0.00                  |
| 5,000.00                                                                 | 89.00           | 89.65       | 4,433.90              | -14.63       | 876.11       | 876.00                  | 0.00                    | 0.00                   | 0.00                  |
| 5,100.00                                                                 | 89.00           | 89.65       | 4,435.64              | -14.01       | 976.09       | 975.99                  | 0.00                    | 0.00                   | 0.00                  |
| 5,200.00                                                                 | 89.00           | 89.65       | 4,437.39              | -13.40       | 1,076.08     | 1,075.97                | 0.00                    | 0.00                   | 0.00                  |
| 5,300.00                                                                 | 89.00           | 89.65       | 4,439.13              | -12.78       | 1,176.06     | 1,175.96                | 0.00                    | 0.00                   | 0.00                  |
| 5,400.00                                                                 | 89.00           | 89.65       | 4,440.88              | -12.16       | 1,276.04     | 1,275.94                | 0.00                    | 0.00                   | 0.00                  |
| 5,500.00                                                                 | 89.00           | 89.65       | 4,442.62              | -11.54       | 1,376.02     | 1,375.93                | 0.00                    | 0.00                   | 0.00                  |
| 5,600.00                                                                 | 89.00           | 89.65       | 4,444.37              | -10.92       | 1,476.01     | 1,475.91                | 0.00                    | 0.00                   | 0.00                  |
| 5,700.00                                                                 | 89.00           | 89.65       | 4,446.11              | -10.30       | 1,575.99     | 1,575.90                | 0.00                    | 0.00                   | 0.00                  |
| 5,800.00                                                                 | 89.00           | 89.65       | 4,447.86              | -9.68        | 1,675.97     | 1,675.88                | 0.00                    | 0.00                   | 0.00                  |
| 5,900.00                                                                 | 89.00           | 89.65       | 4,449.60              | -9.07        | 1,775.96     | 1,775.87                | 0.00                    | 0.00                   | 0.00                  |
| 6,000.00                                                                 | 89.00           | 89.65       | 4,451.35              | -8.45        | 1,875.94     | 1,875.85                | 0.00                    | 0.00                   | 0.00                  |
| 6,100.00                                                                 | 89.00           | 89.65       | 4,453.09              | -7.83        | 1,975.92     | 1,975.84                | 0.00                    | 0.00                   | 0.00                  |
| 6,200.00                                                                 | 89.00           | 89.65       | 4,454.84              | -7.21        | 2,075.90     | 2,075.82                | 0.00                    | 0.00                   | 0.00                  |
| 6,300.00                                                                 | 89.00           | 89.65       | 4,456.58              | -6.59        | 2,175.89     | 2,175.81                | 0.00                    | 0.00                   | 0.00                  |
| 6,400.00                                                                 | 89.00           | 89.65       | 4,458.33              | -5.97        | 2,275.87     | 2,275.79                | 0.00                    | 0.00                   | 0.00                  |
| 6,500.00                                                                 | 89.00           | 89.65       | 4,460.08              | -5.35        | 2,375.85     | 2,375.78                | 0.00                    | 0.00                   | 0.00                  |
| 6,600.00                                                                 | 89.00           | 89.65       | 4,461.82              | -4.74        | 2,475.84     | 2,475.76                | 0.00                    | 0.00                   | 0.00                  |
| 6,700.00                                                                 | 89.00           | 89.65       | 4,463.57              | -4.12        | 2,575.82     | 2,575.75                | 0.00                    | 0.00                   | 0.00                  |

# Planning Report

**Database:** EDM 5000.14 Single User Db  
**Company:** COG OPERATING, LLC  
**Project:** Eddy County, NM (NAD83) NMEZ  
**Site:** Chimay 6 Federal COM  
**Well:** #15H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #15H  
**TVD Reference:** RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
**MD Reference:** RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## Planned Survey

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 6,800.00              | 89.00           | 89.65       | 4,465.31              | -3.50        | 2,675.80     | 2,675.73                | 0.00                    | 0.00                   | 0.00                  |
| 6,900.00              | 89.00           | 89.65       | 4,467.06              | -2.88        | 2,775.78     | 2,775.72                | 0.00                    | 0.00                   | 0.00                  |
| 7,000.00              | 89.00           | 89.65       | 4,468.80              | -2.26        | 2,875.77     | 2,875.70                | 0.00                    | 0.00                   | 0.00                  |
| 7,100.00              | 89.00           | 89.65       | 4,470.55              | -1.64        | 2,975.75     | 2,975.68                | 0.00                    | 0.00                   | 0.00                  |
| 7,200.00              | 89.00           | 89.65       | 4,472.29              | -1.02        | 3,075.73     | 3,075.67                | 0.00                    | 0.00                   | 0.00                  |
| 7,300.00              | 89.00           | 89.65       | 4,474.04              | -0.41        | 3,175.72     | 3,175.65                | 0.00                    | 0.00                   | 0.00                  |
| 7,400.00              | 89.00           | 89.65       | 4,475.78              | 0.21         | 3,275.70     | 3,275.64                | 0.00                    | 0.00                   | 0.00                  |
| 7,500.00              | 89.00           | 89.65       | 4,477.53              | 0.83         | 3,375.68     | 3,375.62                | 0.00                    | 0.00                   | 0.00                  |
| 7,600.00              | 89.00           | 89.65       | 4,479.27              | 1.45         | 3,475.66     | 3,475.61                | 0.00                    | 0.00                   | 0.00                  |
| 7,700.00              | 89.00           | 89.65       | 4,481.02              | 2.07         | 3,575.65     | 3,575.59                | 0.00                    | 0.00                   | 0.00                  |
| 7,800.00              | 89.00           | 89.65       | 4,482.76              | 2.69         | 3,675.63     | 3,675.58                | 0.00                    | 0.00                   | 0.00                  |
| 7,900.00              | 89.00           | 89.65       | 4,484.51              | 3.31         | 3,775.61     | 3,775.56                | 0.00                    | 0.00                   | 0.00                  |
| 8,000.00              | 89.00           | 89.65       | 4,486.25              | 3.92         | 3,875.60     | 3,875.55                | 0.00                    | 0.00                   | 0.00                  |
| 8,100.00              | 89.00           | 89.65       | 4,488.00              | 4.54         | 3,975.58     | 3,975.53                | 0.00                    | 0.00                   | 0.00                  |
| 8,200.00              | 89.00           | 89.65       | 4,489.74              | 5.16         | 4,075.56     | 4,075.52                | 0.00                    | 0.00                   | 0.00                  |
| 8,300.00              | 89.00           | 89.65       | 4,491.49              | 5.78         | 4,175.54     | 4,175.50                | 0.00                    | 0.00                   | 0.00                  |
| 8,400.00              | 89.00           | 89.65       | 4,493.23              | 6.40         | 4,275.53     | 4,275.49                | 0.00                    | 0.00                   | 0.00                  |
| 8,500.00              | 89.00           | 89.65       | 4,494.98              | 7.02         | 4,375.51     | 4,375.47                | 0.00                    | 0.00                   | 0.00                  |
| 8,600.00              | 89.00           | 89.65       | 4,496.72              | 7.64         | 4,475.49     | 4,475.46                | 0.00                    | 0.00                   | 0.00                  |
| 8,700.00              | 89.00           | 89.65       | 4,498.47              | 8.25         | 4,575.48     | 4,575.44                | 0.00                    | 0.00                   | 0.00                  |
| 8,800.00              | 89.00           | 89.65       | 4,500.22              | 8.87         | 4,675.46     | 4,675.43                | 0.00                    | 0.00                   | 0.00                  |
| 8,900.00              | 89.00           | 89.65       | 4,501.96              | 9.49         | 4,775.44     | 4,775.41                | 0.00                    | 0.00                   | 0.00                  |
| 9,000.00              | 89.00           | 89.65       | 4,503.71              | 10.11        | 4,875.42     | 4,875.40                | 0.00                    | 0.00                   | 0.00                  |
| 9,100.00              | 89.00           | 89.65       | 4,505.45              | 10.73        | 4,975.41     | 4,975.38                | 0.00                    | 0.00                   | 0.00                  |
| 9,200.00              | 89.00           | 89.65       | 4,507.20              | 11.35        | 5,075.39     | 5,075.36                | 0.00                    | 0.00                   | 0.00                  |
| 9,300.00              | 89.00           | 89.65       | 4,508.94              | 11.97        | 5,175.37     | 5,175.35                | 0.00                    | 0.00                   | 0.00                  |
| 9,311.40              | 89.00           | 89.65       | 4,509.14              | 12.04        | 5,186.77     | 5,186.75                | 0.00                    | 0.00                   | 0.00                  |

TD: 9311.40' MD, 4509.14' TVD - PBHL(C6FC#15H) - PBHL\_20S(C6FC#15H)

## Design Targets

### Target Name

| - hit/miss target<br>- Shape                                                                                              | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude        |
|---------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|------------------|
| SHL(C6FC#15H)<br>- plan hits target center<br>- Point                                                                     | 0.00          | 0.00         | 0.00       | 0.00         | 0.00         | 677,697.20      | 637,643.40     | 32° 51' 45.428 N | 104° 1' 10.869 W |
| KOP(C6FC#15H)<br>- plan hits target center<br>- Point                                                                     | 0.00          | 0.00         | 3,767.79   | 0.00         | 0.00         | 677,697.20      | 637,643.40     | 32° 51' 45.428 N | 104° 1' 10.869 W |
| PP(C6FC#15H)<br>- plan hits target center<br>- Point                                                                      | 0.00          | 0.00         | 4,318.49   | -7.72        | 340.03       | 677,689.48      | 637,983.43     | 32° 51' 45.341 N | 104° 1' 6.883 W  |
| PBHL(C6FC#15H)<br>- plan misses target center by 20.06usft at 9311.40usft MD (4509.14 TVD, 12.04 N, 5186.77 E)<br>- Point | 0.00          | 0.00         | 4,509.14   | 32.10        | 5,186.70     | 677,729.30      | 642,830.10     | 32° 51' 45.589 N | 104° 0' 10.058 W |
| PBHL_20S(C6FC#15H)<br>- plan hits target center<br>- Point                                                                | 0.00          | 0.00         | 4,509.14   | 12.04        | 5,186.77     | 677,709.23      | 642,830.18     | 32° 51' 45.390 N | 104° 0' 10.058 W |

# Planning Report

**Database:** EDM 5000.14 Single User Db  
**Company:** COG OPERATING, LLC  
**Project:** Eddy County, NM (NAD83) NMEZ  
**Site:** Chimay 6 Federal COM  
**Well:** #15H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well #15H  
**TVD Reference:** RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
**MD Reference:** RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

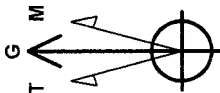
| Formations            |                       |              |           |         |                   |  |
|-----------------------|-----------------------|--------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name         | Lithology | Dip (°) | Dip Direction (°) |  |
| 325.00                | 325.00                | Rustler      |           |         |                   |  |
| 595.00                | 595.00                | Top of Salt  |           |         |                   |  |
| 1,070.00              | 1,070.00              | Tansill      |           |         |                   |  |
| 1,180.00              | 1,180.00              | Yates        |           |         |                   |  |
| 1,460.00              | 1,460.00              | Seven Rivers |           |         |                   |  |
| 2,065.00              | 2,065.00              | Queen        |           |         |                   |  |
| 2,475.00              | 2,475.00              | Grayburg     |           |         |                   |  |
| 2,785.00              | 2,785.00              | San Andres   |           |         |                   |  |
| 4,288.46              | 4,215.00              | Glorieta     |           |         |                   |  |
| 4,387.57              | 4,285.00              | Paddock      |           |         |                   |  |

| Plan Annotations      |                       |                   |              |                                                                   |  |
|-----------------------|-----------------------|-------------------|--------------|-------------------------------------------------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              |                                                                   |  |
|                       |                       | +N/-S (usft)      | +E/-W (usft) | Comment                                                           |  |
| 3,767.79              | 3,767.79              | 0.00              | 0.00         | KOP: 3767.79' MD, 3767.79' TVD                                    |  |
| 4,776.88              | 4,430.00              | -14.82            | 653.03       | EOC: 4776.88' MD, 4430.00' TVD, 89.00° INC, 91.30° AZ, 652.93' VS |  |
| 9,311.40              | 4,509.14              | 12.04             | 5,186.77     | TD: 9311.40' MD, 4509.14' TVD                                     |  |

# WELL DETAILS: #15H

Ground Elevation:: 3685.00  
 RKB Elevation: RKB @ 3703.00usft (Silver Oak 3 - KB=18')  
 Rig Name: Silver Oak 3 - KB=18'

Northing 677697.20  
 Easting 637643.40  
 Surface Hole Location  
 Latitude 32° 51' 45.428 N  
 Longitude 104° 1' 10.869 W



Azimuths to Grid North  
 True North: -0.17°  
 Magnetic North: 6.99°  
 Magnetic Field  
 Strength: 48214.2snT  
 Dip Angle: 60.57°  
 Date: 12/19/2017  
 Model: IGRF11

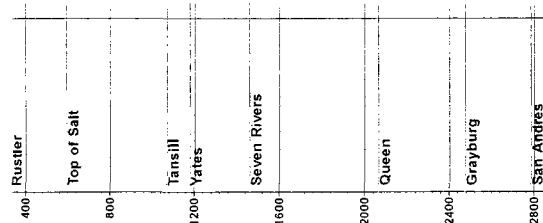
PROJECT DETAILS: Eddy County, NM (NAD83) NMEZ  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Mean Sea Level  
 Local North: Grid

COG OPERATING, LLC  
 Project: Eddy County, NM (NAD83) NMEZ  
 Site: Chimay 6 Federal COM

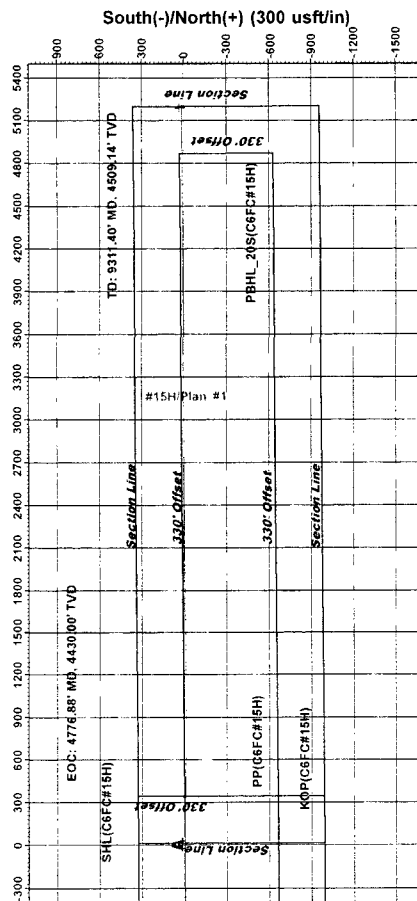
Well: #15H  
 Wellbore: OH  
 Plan: Plan #1 (#15H/OH)

## Section Details

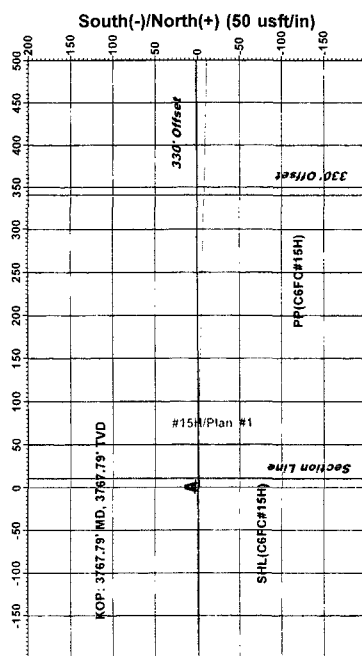
| Sec | MD      | Inc   | Azi   | TVD     | +N-S   | +E-W    | Dleg  | TFace  | Vsect   |
|-----|---------|-------|-------|---------|--------|---------|-------|--------|---------|
| 1   | 0.00    | 0.00  | 0.00  | 0.00    | 0.00   | 0.00    | 0.00  | 0.00   | 0.00    |
| 2   | 3767.79 | 0.00  | 0.00  | 3767.79 | 0.00   | 0.00    | 0.00  | 0.00   | 0.00    |
| 3   | 4176.88 | 45.00 | 91.30 | 4136.10 | -3.46  | 152.52  | 11.00 | 91.30  | 152.50  |
| 4   | 4376.88 | 45.00 | 91.30 | 4277.52 | -6.67  | 293.91  | 0.00  | 0.00   | 293.86  |
| 5   | 4776.88 | 89.00 | 91.30 | 4430.00 | -14.82 | 653.03  | 11.00 | 0.00   | 652.93  |
| 6   | 4859.59 | 89.00 | 89.65 | 4431.45 | -15.50 | 735.73  | 2.00  | -90.01 | 735.62  |
| 7   | 9311.40 | 89.00 | 89.65 | 4509.14 | 12.04  | 5186.77 | 0.00  | 0.00   | 5186.75 |



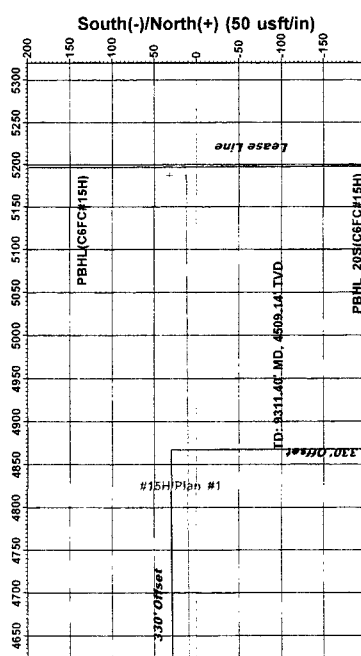
## West(-)/East(+) (300 usft/in)



## West(-)/East(+) (50 usft/in)

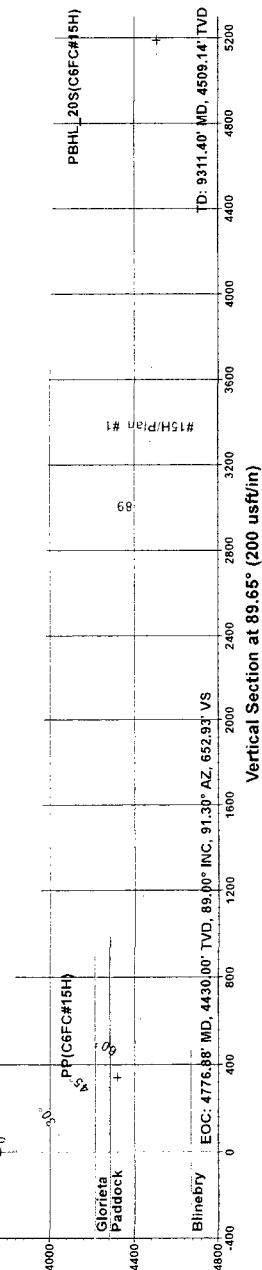


## West(-)/East(+) (50 usft/in)



## DESIGN TARGET DETAILS

| Name               | +N-S  | +E-W    | Northing  | Easting   |
|--------------------|-------|---------|-----------|-----------|
| KOP(C6FC#15H)      | 0.00  | 0.00    | 677697.20 | 637643.40 |
| PP(C6FC#15H)       | 32.10 | 5186.77 | 677729.30 | 642830.10 |
| PBHL_20S(C6FC#15H) | 12.04 | 5186.77 | 677709.24 | 642830.17 |
| PP(C6FC#15H)       | -7.72 | 340.03  | 677697.20 | 637983.43 |
| SHL(C6FC#15H)      | 0.00  | 0.00    | 677697.20 | 637643.40 |



VON Directional  
 2407 E. Murphy St. Bldg. E3 Odessa, TX 79761  
 Phone: 432-232-8838

Plan: Plan #1 (#15H/OH)  
 Created By: Gabriel Cruz Date: 10-53, December 19 2017

# PECOS DISTRICT CONDITIONS OF APPROVAL

|                       |                                    |
|-----------------------|------------------------------------|
| OPERATOR'S NAME:      | COG Operating LLC                  |
| LEASE NO.:            | NMNM116572                         |
| WELL NAME & NO.:      | 15H – Chimay 6 Federal Com         |
| SURFACE HOLE FOOTAGE: | 2310'S & 10'E                      |
| BOTTOM HOLE FOOTAGE   | 2310'S & 10'E                      |
| LOCATION:             | Section 01, T 17 S., R 29 E., NMPM |
| COUNTY:               | Eddy County, New Mexico            |

|                      |                                               |                                         |                               |
|----------------------|-----------------------------------------------|-----------------------------------------|-------------------------------|
| Potash               | <input checked="" type="radio"/> None         | <input type="radio"/> Secretary         | <input type="radio"/> R-111-P |
| Cave/Karst Potential | <input type="radio"/> Low                     | <input checked="" type="radio"/> Medium | <input type="radio"/> High    |
| Variance             | <input checked="" type="radio"/> None         | <input type="radio"/> Flex Hose         | <input type="radio"/> Other   |
| Wellhead             | <input checked="" type="radio"/> Conventional | <input type="radio"/> Multibowl         |                               |
| Other                | <input type="checkbox"/> 4 String Area        | <input type="checkbox"/> Capitan Reef   | <input type="checkbox"/> WIPP |

**All previous COAs still apply except for the following:**

## **A. CASING**

1. The minimum required fill of cement behind the 7 X 5 1/2 inch production casing is:

**Operator has proposed DV tool at depth of 3768' (KOP)**

- a. First stage to DV tool: - Cement not required – using isolation packer system.
- b. Second stage above DV tool:
  - Cement as proposed. Operator shall provide method of verification.

## **B. SPECIAL REQUIREMENT(S)**

**Operator shall file a NSL (Non Standard Location) application with NMOCD.**

**MHH 02026018**

## GENERAL REQUIREMENTS

### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.