

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD Hobbs

HOBBS OCLD

FORM APPROVED  
OMB NO. 1004-0135  
Expires: July 31, 2010**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.*

JUL 31 2013

5. Lease Serial No.  
NMNM01917

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.  
DOS EQUIS 12 FEDERAL COM 4H9. API Well No.  
30-025-4079310. Field and Pool, or Exploratory  
TRIPLE X BONE SPRING WEST11. County or Parish, and State  
LEA COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

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## 1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

## 2. Name of Operator

CIMAREX ENERGY COMPANY

Contact: PAULA BRUNSON

E-Mail: pbrunson@cimarex.com

## 3a. Address

600 NORTH MARIENFELD STREET STE 600  
MIDLAND, TX 79701

## 3b. Phone No. (include area code)

Ph: 432-571-7848

## 4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 12 T24S R32E NWNW 330FNL 660FWL

## 12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION                                   | TYPE OF ACTION                                |                                           |                                                    |                                           |
|------------------------------------------------------|-----------------------------------------------|-------------------------------------------|----------------------------------------------------|-------------------------------------------|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize              | <input type="checkbox"/> Deepen           | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off   |
| <input type="checkbox"/> Subsequent Report           | <input type="checkbox"/> Alter Casing         | <input type="checkbox"/> Fracture Treat   | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity   |
| <input type="checkbox"/> Final Abandonment Notice    | <input type="checkbox"/> Casing Repair        | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete                | <input checked="" type="checkbox"/> Other |
|                                                      | <input type="checkbox"/> Change Plans         | <input type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon       | Change to Original APD                    |
|                                                      | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back        | <input type="checkbox"/> Water Disposal            |                                           |

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 recomple 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 shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Cimarex Energy respectfully requests approval to change the following in regards to the approved APD:

Cimarex proposes a pilot hole drilled to 11300' TVD.

Mix and pump 500 sks Type H cement w/ 0.7% Low Fluid Loss Control and 0.2% Dispersant @ 17.5 ppg, 0.95 cuft/sk from pilot hole TD to KOP. Kick-off cement plug, drill curve and lateral to TD. Run production csg to TD & cement.

Proposed Intermediate Casing change:

Lead Cement - 9-5/8: Change lead sacks to 1300 sacks, 12.9 ppg, 1.88 yield based on offset cement results

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

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

Electronic Submission #215068 verified by the BLM Well Information System  
For CIMAREX ENERGY COMPANY, sent to the Hobbs  
Committed to AFMSS for processing by WESLEY INGRAM on 07/29/2013 ()

Name (Printed/Typed) PAULA BRUNSON

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 07/27/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

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

BUREAU OF LAND MANAGEMENT  
CARLSBAD FIELD 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.

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

AUG 01 2013

**Additional data for EC transaction #215068 that would not fit on the form**

**32. Additional remarks, continued**

Proposed Production Casing change : *10,452' per directional plan*  
5-1/2", 17# P110 BTC/LTC from KOP to TD (KOP = ~~10400~~ 10400; TD = 15422)  
Centralizers: 1 per joint in curve and 1 every 4th joint from KOP to 4800'  
Downsize the lateral drilled hole size from 8-3/4" to 8-1/2".

Please see new preliminary directional plan attached.



Cimarex

ST01 Rev0



|                              |          |          |                  |      |               |                                                     |                |        |                  |            |            |           |                                      |                  |               |  |  |
|------------------------------|----------|----------|------------------|------|---------------|-----------------------------------------------------|----------------|--------|------------------|------------|------------|-----------|--------------------------------------|------------------|---------------|--|--|
| WELL                         |          |          | Noram 23         |      |               | FIELD                                               |                |        | NM Lea County    |            |            | STRUCTURE |                                      |                  | Noram 23      |  |  |
| Dos Equis 12 Federal Com #4H |          |          |                  |      |               |                                                     |                |        |                  |            |            |           |                                      |                  |               |  |  |
| Mapnet Parameters            |          |          | Surface Location |      |               | NAD83 New Mexico State Plane, Eastern Zone, US Feet |                |        | Miscellaneous    |            |            |           |                                      |                  |               |  |  |
| Model                        | R00M1013 | Map Date | 01/12/13         | Date | July 23, 2013 | Lat                                                 | N 32 14 18.877 | North  | 113520 MD: 11300 | Unit Conv  | 6.373      | Plot      | Two Lines 12 Federal Com #10 TVD Ref | KHUS90 above MSL |               |  |  |
|                              |          | Map Time | 1:02:14          | FS   | 08/06/13      | Lon                                                 | W 103 38 4.773 | Eastng | 55335 MD: 10118  | Scale Fact | 0.00002551 | Plan      | ST01 Rev0 RUS 23-06-13               | Sony Data        | July 23, 2013 |  |  |

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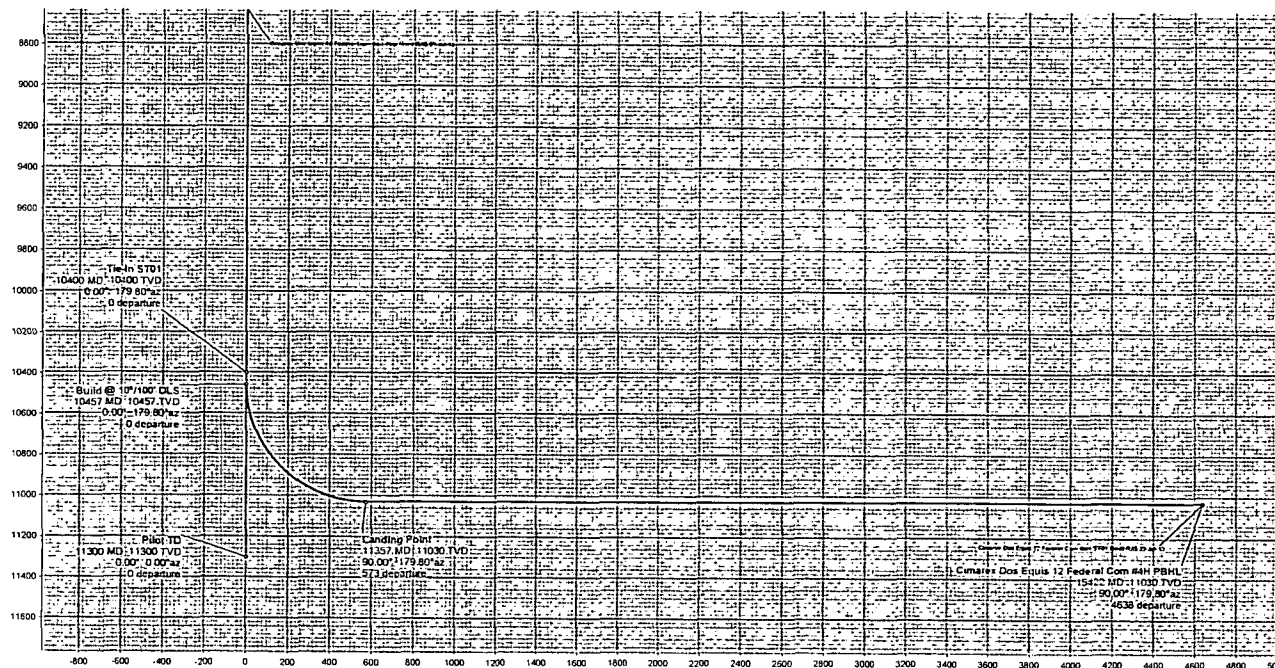
Grid North  
Tot Corr (M->G 7.0890°)  
Mag Dec (7.462°)  
Grid Conv (0.373°)

## Legend

Comments: SHL Dos Equis 12 Fed Com #4H  
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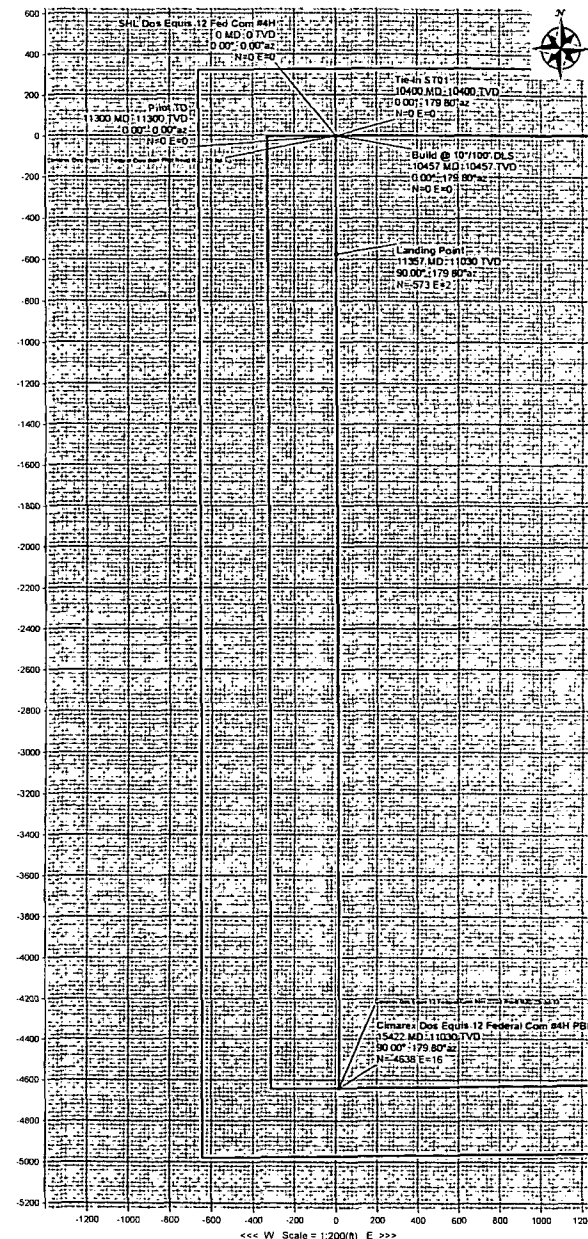
| Critical Points                           |               |                  |              |          |             |         |          |        |                               |                |               |                |              |                |
|-------------------------------------------|---------------|------------------|--------------|----------|-------------|---------|----------|--------|-------------------------------|----------------|---------------|----------------|--------------|----------------|
| Comments                                  | Survey MD(ft) | Inclination(deg) | Azimuth(deg) | TVD(ft)  | Sub-Sea TVD | VS(ft)  | NS(ft)   | EW(ft) | Latitude(deg)                 | Longitude(deg) | Easting(ftUS) | Northing(ftUS) | DLS(f/100ft) | Tool Face(deg) |
| SHL Dos Equis 12 Fed Com #4H              | 0.00          | 0.00             | 0.00         | 0.00     | -3639.00    | 0.00    | 0.00     | 0.00   | N 32 14 18.877 W 103 38 4.773 | 757357.80      | 451230.50     |                |              | 179.80         |
| Tie-In STD1                               | 10400.00      | 0.00             | 179.80       | 10400.00 | 6761.00     | 0.00    | 0.00     | 0.00   | N 32 14 18.877 W 103 38 4.773 | 757357.80      | 451230.50     | 0.00           |              | 179.80         |
| Build @ 10°/100' DLS                      | 10457.00      | 0.00             | 179.80       | 10457.00 | 6818.00     | 0.00    | 0.00     | 0.00   | N 32 14 18.877 W 103 38 4.773 | 757357.80      | 451230.50     | 0.00           |              | 179.80         |
| Landing Point                             | 11357.07      | 90.00            | 179.80       | 11030.00 | 7391.00     | 573.00  | -573.00  | 2.00   | N 32 14 13.208 W 103 38 4.793 | 757359.80      | 450657.53     | 10.00          |              | -90.00         |
| Cimarex Dos Equis 12 Federal Com #4H PBHL | 15421.98      | 90.00            | 179.80       | 11030.00 | 7391.00     | 4637.91 | -4637.88 | 16.30  | N 32 13 32.985 W 103 38 4.934 | 757374.10      | 446592.80     | 0.00           |              |                |

TV Scale = 1:200(f)



Vertical Section (ft) Azim = 179.8° Scale = 1:200(f) Origin = 0 N-S, 0 E-W

&lt;&lt;&lt; S Scale = 1:200(f) N &gt;&gt;&gt;



&lt;&lt;&lt; W Scale = 1:200(f) E &gt;&gt;&gt;

Drawn By: R. Schneider  
Date Created: July 23, 2013 04:42:11 PM  
Checked By:  
Checked Date:  
Approved By:  
Approval Date:



**Cimarex Dos Equis 12 Federal Com #4H ST01 Rev0 RJS 23-Jul-13**  
**Proposal Report**  
(Non-Def Plan)



**Report Date:** July 23, 2013 - 04:40 PM  
**Client:** Cimarex  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Noram 23 / Cimarex Dos Equis 12 Federal Com #4H  
**Well:** Cimarex Dos Equis 12 Federal Com #4H  
**Borehole:** ST01  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex Dos Equis 12 Federal Com #4H ST01 Rev0 RJS 23-Jul-13  
**Survey Date:** July 23, 2013  
**Tort / AHD / DDI / ERD Ratio:** 90.003 ° / 4637.912 ft / 5.766 / 0.420  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 14' 18.87738", W 103° 38' 4.77291"  
**Location Grid N/E Y/X:** N 451230.500 ftUS, E 757357.800 ftUS  
**CRS Grid Convergence Angle:** 0.3727 °  
**Grid Scale Factor:** 0.99996254

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 179.799 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** KB  
**TVD Reference Elevation:** 3639.000 ft above MSL  
**Seabed / Ground Elevation:** 3611.000 ft above MSL  
**Magnetic Declination:** 7.462 °  
**Total Gravity Field Strength:** 998.4678mgn (9.80665 Based)  
**Total Magnetic Field Strength:** 48396.301 nT  
**Magnetic Dip Angle:** 60.126 °  
**Declination Date:** July 23, 2013  
**Magnetic Declination Model:** BGGM 2013  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.3727 °  
**Total Corr Mag North->Grid North:** 7.0890 °  
**Local Coord Referenced To:** Structure Reference Point

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| Comments                                                         | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(%/100ft) | BR<br>(%/100ft) | TR<br>(%/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ")     | Longitude<br>(E/W ° ' ") |
|------------------------------------------------------------------|------------|-------------|------------------|-------------|---------------|--------------|------------|------------|------------------|-----------------|-----------------|--------------------|-------------------|-----------------------------|--------------------------|
| Tie-In ST01                                                      | 10400.00   | 0.00        | 179.80           | 10400.00    | 6761.00       | 0.00         | 0.00       | 0.00       | N/A              | N/A             | N/A             | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38 4.77 |                          |
| Build @ 10°/100'                                                 | 10457.00   | 0.00        | 179.80           | 10457.00    | 6818.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38 4.77 |                          |
| DLS                                                              | 11357.07   | 90.00       | 179.80           | 11030.00    | 7391.00       | 573.00       | -573.00    | 2.00       | 10.00            | 10.00           | 0.00            | 450657.53          | 757359.80         | N 32 14 13.21 W 103 38 4.79 |                          |
| Landing Point<br>Cimarex Dos Equis<br>12 Federal Com<br>#4H PBHL | 15421.98   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4637.91      | -4637.88   | 16.30      | 0.00             | 0.00            | 0.00            | 446592.80          | 757374.10         | N 32 13 32.98 W 103 38 4.93 |                          |

**Survey Type:** Non-Def Plan

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

| Description | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in) | Casing<br>Diameter<br>(in) | Survey Tool Type       | Borehole / Survey                                           |
|-------------|-----------------|---------------|------------------|-------------------|----------------------------|------------------------|-------------------------------------------------------------|
|             | 0.000           | 28.000        | 1/100.000        | 30.000            | 30.000                     | SLB_MWD-STD-Depth Only | Pilot Borehole / Cimarex Dos Equis 12 Federal Com #4H Pilot |
|             | 28.000          | 10400.000     | 1/100.000        | 30.000            | 30.000                     | SLB_MWD-STD            | Pilot Borehole / Cimarex Dos Equis 12 Federal Com #4H Pilot |
|             | 10400.000       | 15421.978     | 1/100.000        | 30.000            | 30.000                     | SLB_MWD-STD            | ST01 / Cimarex Dos Equis 12 Federal Com #4H ST01 Rev0       |



Cimarex Dos Equis 12 Federal Com #4H ST01 Rev0 RJS 23-Jul-13  
Proposal Report 100' Interpolated  
(Non-Def Plan)



Report Date: July 23, 2013 - 04:41 PM  
Client: Cimarex  
Field: NM Lea County (NAD 83)  
Structure / Slot: Noram 23 / Cimarex Dos Equis 12 Federal Com #4H  
Well: Cimarex Dos Equis 12 Federal Com #4H  
Borehole: ST01  
UWI / API#: Unknown / Unknown  
Survey Name: Cimarex Dos Equis 12 Federal Com #4H ST01 Rev0 RJS 23-Jul-13  
Survey Date: July 23, 2013  
Tort / AHD / DDI / ERD Ratio: 90.003 ° / 4637.912 ft / 5.766 / 0.420  
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet  
Location Lat / Long: N 32° 14' 18.87738", W 103° 38' 4.77291"  
Location Grid N/E Y/X: N 451230.500 ftUS, E 757357.800 ftUS  
CRS Grid Convergence Angle: 0.3727 °  
Grid Scale Factor: 0.99996254

Survey / DLS Computation: Minimum Curvature / Lubinski  
Vertical Section Azimuth: 179.799 ° (Grid North)  
Vertical Section Origin: 0.000 ft, 0.000 ft  
TVD Reference Datum: KB  
TVD Reference Elevation: 3639.000 ft above MSL  
Seabed / Ground Elevation: 3611.000 ft above MSL  
Magnetic Declination: 7.462 °  
Total Gravity Field Strength: 998.4678mgn (9.80665 Based)  
Total Magnetic Field Strength: 48396.301 nT  
Magnetic Dip Angle: 60.126 °  
Declination Date: July 23, 2013  
Magnetic Declination Model: BGGM 2013  
North Reference: Grid North  
Grid Convergence Used: 0.3727 °  
Total Corr Mag North->Grid North: 7.0890 °  
Local Coord Referenced To: Structure Reference Point

| Comments                        | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | BR<br>(°/100ft) | TR<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ") | Longitude<br>(E/W ° ' ") |
|---------------------------------|------------|-------------|------------------|-------------|---------------|--------------|------------|------------|------------------|-----------------|-----------------|--------------------|-------------------|-------------------------|--------------------------|
| SHL Dos Equis 12<br>Fed Com #4H | 0.00       | 0.00        | 0.00             | 0.00        | -3639.00      | 0.00         | 0.00       | 0.00       | N/A              | N/A             | N/A             | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 100.00     | 0.00        | 179.80           | 100.00      | -3539.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 200.00     | 0.00        | 179.80           | 200.00      | -3439.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 300.00     | 0.00        | 179.80           | 300.00      | -3339.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 400.00     | 0.00        | 179.80           | 400.00      | -3239.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 500.00     | 0.00        | 179.80           | 500.00      | -3139.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 600.00     | 0.00        | 179.80           | 600.00      | -3039.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 700.00     | 0.00        | 179.80           | 700.00      | -2939.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 800.00     | 0.00        | 179.80           | 800.00      | -2839.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 900.00     | 0.00        | 179.80           | 900.00      | -2739.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1000.00    | 0.00        | 179.80           | 1000.00     | -2639.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1100.00    | 0.00        | 179.80           | 1100.00     | -2539.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1200.00    | 0.00        | 179.80           | 1200.00     | -2439.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1300.00    | 0.00        | 179.80           | 1300.00     | -2339.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1400.00    | 0.00        | 179.80           | 1400.00     | -2239.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1500.00    | 0.00        | 179.80           | 1500.00     | -2139.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1600.00    | 0.00        | 179.80           | 1600.00     | -2039.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1700.00    | 0.00        | 179.80           | 1700.00     | -1939.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1800.00    | 0.00        | 179.80           | 1800.00     | -1839.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 1900.00    | 0.00        | 179.80           | 1900.00     | -1739.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2000.00    | 0.00        | 179.80           | 2000.00     | -1639.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2100.00    | 0.00        | 179.80           | 2100.00     | -1539.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2200.00    | 0.00        | 179.80           | 2200.00     | -1439.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2300.00    | 0.00        | 179.80           | 2300.00     | -1339.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2400.00    | 0.00        | 179.80           | 2400.00     | -1239.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2500.00    | 0.00        | 179.80           | 2500.00     | -1139.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2600.00    | 0.00        | 179.80           | 2600.00     | -1039.00      | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2700.00    | 0.00        | 179.80           | 2700.00     | -939.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2800.00    | 0.00        | 179.80           | 2800.00     | -839.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 2900.00    | 0.00        | 179.80           | 2900.00     | -739.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 3000.00    | 0.00        | 179.80           | 3000.00     | -639.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 3100.00    | 0.00        | 179.80           | 3100.00     | -539.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 3200.00    | 0.00        | 179.80           | 3200.00     | -439.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                                 | 3300.00    | 0.00        | 179.80           | 3300.00     | -339.00       | 0.00         | 0.00       | 0.00       | 0.00             | 0.00            | 0.00            | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |

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| Comments                | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°100ft) | BR<br>(°100ft) | TR<br>(°100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ") | Longitude<br>(E/W ° ' ") |
|-------------------------|------------|-------------|------------------|-------------|---------------|--------------|------------|------------|-----------------|----------------|----------------|--------------------|-------------------|-------------------------|--------------------------|
|                         | 9500.00    | 0.00        | 179.80           | 9500.00     | 5861.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 9600.00    | 0.00        | 179.80           | 9600.00     | 5961.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 9700.00    | 0.00        | 179.80           | 9700.00     | 6061.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 9800.00    | 0.00        | 179.80           | 9800.00     | 6161.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 9900.00    | 0.00        | 179.80           | 9900.00     | 6261.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 10000.00   | 0.00        | 179.80           | 10000.00    | 6361.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 10100.00   | 0.00        | 179.80           | 10100.00    | 6461.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 10200.00   | 0.00        | 179.80           | 10200.00    | 6561.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 10300.00   | 0.00        | 179.80           | 10300.00    | 6661.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
| Tie-In ST01             | 10400.00   | 0.00        | 179.80           | 10400.00    | 6761.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
| Build @ 10°/100'<br>DLS | 10457.00   | 0.00        | 179.80           | 10457.00    | 6818.00       | 0.00         | 0.00       | 0.00       | 0.00            | 0.00           | 0.00           | 451230.50          | 757357.80         | N 32 14 18.88 W 103 38  | 4.77                     |
|                         | 10500.00   | 4.30        | 179.80           | 10499.96    | 6860.96       | 1.61         | -1.61      | 0.01       | 10.00           | 10.00          | 0.00           | 451228.89          | 757357.81         | N 32 14 18.86 W 103 38  | 4.77                     |
|                         | 10600.00   | 14.30       | 179.80           | 10598.52    | 6959.52       | 17.75        | -17.75     | 0.06       | 10.00           | 10.00          | 0.00           | 451212.75          | 757357.86         | N 32 14 18.70 W 103 38  | 4.77                     |
|                         | 10700.00   | 24.30       | 179.80           | 10692.78    | 7053.78       | 50.76        | -50.76     | 0.18       | 10.00           | 10.00          | 0.00           | 451179.74          | 757357.98         | N 32 14 18.38 W 103 38  | 4.77                     |
|                         | 10800.00   | 34.30       | 179.80           | 10779.88    | 7140.88       | 99.63        | -99.63     | 0.35       | 10.00           | 10.00          | 0.00           | 451130.87          | 757358.15         | N 32 14 17.89 W 103 38  | 4.78                     |
|                         | 10900.00   | 44.30       | 179.80           | 10657.17    | 7218.17       | 162.89       | -162.88    | 0.57       | 10.00           | 10.00          | 0.00           | 451067.62          | 757358.37         | N 32 14 17.27 W 103 38  | 4.78                     |
|                         | 11000.00   | 54.30       | 179.80           | 10922.30    | 7283.30       | 238.60       | -238.60    | 0.83       | 10.00           | 10.00          | 0.00           | 450991.91          | 757358.63         | N 32 14 16.52 W 103 38  | 4.78                     |
|                         | 11100.00   | 64.30       | 179.80           | 10973.30    | 7334.30       | 324.47       | -324.47    | 1.13       | 10.00           | 10.00          | 0.00           | 450906.04          | 757358.93         | N 32 14 15.67 W 103 38  | 4.78                     |
|                         | 11200.00   | 74.29       | 179.80           | 11008.61    | 7369.61       | 417.89       | -417.89    | 1.46       | 10.00           | 10.00          | 0.00           | 450812.63          | 757359.26         | N 32 14 14.74 W 103 38  | 4.79                     |
|                         | 11300.00   | 84.29       | 179.80           | 11027.16    | 7388.16       | 516.03       | -516.02    | 1.80       | 10.00           | 10.00          | 0.00           | 450714.50          | 757359.60         | N 32 14 13.77 W 103 38  | 4.79                     |
| Landing Point           | 11357.07   | 90.00       | 179.80           | 11030.00    | 7391.00       | 573.00       | -573.00    | 2.00       | 10.00           | 10.00          | 0.00           | 450657.53          | 757359.80         | N 32 14 13.21 W 103 38  | 4.79                     |
|                         | 11400.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 615.93       | -615.93    | 2.15       | 0.00            | 0.00           | 0.00           | 450614.59          | 757359.95         | N 32 14 12.78 W 103 38  | 4.79                     |
|                         | 11500.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 715.93       | -715.93    | 2.50       | 0.00            | 0.00           | 0.00           | 450514.60          | 757360.30         | N 32 14 11.79 W 103 38  | 4.80                     |
|                         | 11600.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 815.93       | -815.93    | 2.85       | 0.00            | 0.00           | 0.00           | 450414.60          | 757360.65         | N 32 14 10.80 W 103 38  | 4.80                     |
|                         | 11700.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 915.93       | -915.93    | 3.20       | 0.00            | 0.00           | 0.00           | 450314.61          | 757361.00         | N 32 14 9.81 W 103 38   | 4.81                     |
|                         | 11800.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1015.93      | -1015.93   | 3.55       | 0.00            | 0.00           | 0.00           | 450214.61          | 757361.35         | N 32 14 8.82 W 103 38   | 4.81                     |
|                         | 11900.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1115.93      | -1115.93   | 3.90       | 0.00            | 0.00           | 0.00           | 450114.62          | 757361.70         | N 32 14 7.84 W 103 38   | 4.81                     |
|                         | 12000.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1215.93      | -1215.93   | 4.25       | 0.00            | 0.00           | 0.00           | 450014.62          | 757362.05         | N 32 14 6.85 W 103 38   | 4.82                     |
|                         | 12100.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1315.93      | -1315.93   | 4.60       | 0.00            | 0.00           | 0.00           | 449914.63          | 757362.40         | N 32 14 5.86 W 103 38   | 4.82                     |
|                         | 12200.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1415.93      | -1415.93   | 4.95       | 0.00            | 0.00           | 0.00           | 449814.63          | 757362.75         | N 32 14 4.87 W 103 38   | 4.82                     |
|                         | 12300.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1515.93      | -1515.92   | 5.30       | 0.00            | 0.00           | 0.00           | 449714.64          | 757363.10         | N 32 14 3.88 W 103 38   | 4.83                     |
|                         | 12400.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1615.93      | -1615.92   | 5.65       | 0.00            | 0.00           | 0.00           | 449614.64          | 757363.45         | N 32 14 2.89 W 103 38   | 4.83                     |
|                         | 12500.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1715.93      | -1715.92   | 6.00       | 0.00            | 0.00           | 0.00           | 449514.64          | 757363.80         | N 32 14 1.90 W 103 38   | 4.83                     |
|                         | 12600.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1815.93      | -1815.92   | 6.35       | 0.00            | 0.00           | 0.00           | 449414.65          | 757364.15         | N 32 14 0.91 W 103 38   | 4.84                     |
|                         | 12700.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 1915.93      | -1915.92   | 6.70       | 0.00            | 0.00           | 0.00           | 449314.65          | 757364.50         | N 32 13 59.92 W 103 38  | 4.84                     |
|                         | 12800.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2015.93      | -2015.92   | 7.05       | 0.00            | 0.00           | 0.00           | 449214.66          | 757364.85         | N 32 13 58.93 W 103 38  | 4.84                     |
|                         | 12900.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2115.93      | -2115.92   | 7.40       | 0.00            | 0.00           | 0.00           | 449114.66          | 757365.20         | N 32 13 57.94 W 103 38  | 4.85                     |
|                         | 13000.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2215.93      | -2215.92   | 7.75       | 0.00            | 0.00           | 0.00           | 449014.67          | 757365.55         | N 32 13 56.95 W 103 38  | 4.85                     |
|                         | 13100.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2315.93      | -2315.92   | 8.10       | 0.00            | 0.00           | 0.00           | 448914.67          | 757365.90         | N 32 13 55.96 W 103 38  | 4.85                     |
|                         | 13200.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2415.93      | -2415.92   | 8.46       | 0.00            | 0.00           | 0.00           | 448814.68          | 757366.26         | N 32 13 54.97 W 103 38  | 4.86                     |
|                         | 13300.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2515.93      | -2515.92   | 8.81       | 0.00            | 0.00           | 0.00           | 448714.68          | 757366.61         | N 32 13 53.98 W 103 38  | 4.86                     |
|                         | 13400.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2615.93      | -2615.92   | 9.16       | 0.00            | 0.00           | 0.00           | 448614.69          | 757366.96         | N 32 13 52.99 W 103 38  | 4.86                     |
|                         | 13500.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2715.93      | -2715.92   | 9.51       | 0.00            | 0.00           | 0.00           | 448514.69          | 757367.31         | N 32 13 52.00 W 103 38  | 4.87                     |
|                         | 13600.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2815.93      | -2815.92   | 9.86       | 0.00            | 0.00           | 0.00           | 448414.69          | 757367.66         | N 32 13 51.01 W 103 38  | 4.87                     |
|                         | 13700.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 2915.93      | -2915.92   | 10.22      | 0.00            | 0.00           | 0.00           | 448314.70          | 757368.02         | N 32 13 50.02 W 103 38  | 4.87                     |
|                         | 13800.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3015.93      | -3015.92   | 10.57      | 0.00            | 0.00           | 0.00           | 448214.70          | 757368.37         | N 32 13 49.03 W 103 38  | 4.88                     |
|                         | 13900.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3115.93      | -3115.91   | 10.92      | 0.00            | 0.00           | 0.00           | 448114.71          | 757368.72         | N 32 13 48.04 W 103 38  | 4.88                     |
|                         | 14000.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3215.93      | -3215.91   | 11.27      | 0.00            | 0.00           | 0.00           | 448014.71          | 757369.07         | N 32 13 47.06 W 103 38  | 4.89                     |
|                         | 14100.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3315.93      | -3315.91   | 11.63      | 0.00            | 0.00           | 0.00           | 447914.72          | 757369.42         | N 32 13 46.07 W 103 38  | 4.89                     |
|                         | 14200.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3415.93      | -3415.91   | 11.98      | 0.00            | 0.00           | 0.00           | 447814.72          | 757369.78         | N 32 13 45.08 W 103 38  | 4.89                     |
|                         | 14300.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3515.93      | -3515.91   | 12.33      | 0.00            | 0.00           | 0.00           | 447714.73          | 757370.13         | N 32 13 44.09 W 103 38  | 4.90                     |
|                         | 14400.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3615.93      | -3615.91   | 12.68      | 0.00            | 0.00           | 0.00           | 447614.73          | 757370.48         | N 32 13 43.10 W 103 38  | 4.90                     |
|                         | 14500.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3715.93      | -3715.91   | 13.04      | 0.00            | 0.00           | 0.00           | 447514.74          | 757370.84         | N 32 13 42.11 W 103 38  | 4.90                     |
|                         | 14600.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3815.93      | -3815.91   | 13.39      | 0.00            | 0.00           | 0.00           | 447414.74          | 757371.19         | N 32 13 41.12 W 103 38  | 4.91                     |
|                         | 14700.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 3915.93      | -3915.91   | 13.74      | 0.00            | 0.00           | 0.00           | 447314.74          | 757371.54         | N 32 13 40.13 W 103 38  | 4.91                     |
|                         | 14800.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4015.93      | -4015.91   | 14.10      | 0.00            | 0.00           | 0.00           | 447214.75          | 757371.90         | N 32 13 39.14 W 103 38  | 4.91                     |
|                         | 14900.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4115.93      | -4115.91   | 14.45      | 0.00            | 0.00           | 0.00           | 447114.75          | 757372.25         | N 32 13 38.15 W 103 38  | 4.92                     |
|                         | 15000.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4215.93      | -4215.91   | 14.81      | 0.00            | 0.00           | 0.00           | 447014.76          | 757372.61         | N 32 13 37.16 W 103 38  | 4.92                     |
|                         | 15100.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4315.93      | -4315.91   | 15.16      | 0.00            | 0.00           | 0.00           | 446914.76          | 757372.96         | N 32 13 36.17 W 103 38  | 4.92                     |
|                         | 15200.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4415.93      | -4415.91   | 15.51      | 0.00            | 0.00           | 0.00           | 446814.77          | 757373.31         | N 32 13 35.18 W 103 38  | 4.93                     |

| Comments                                        | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | BR<br>(°/100ft) | TR<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ") | Longitude<br>(E/W ° ' ") |
|-------------------------------------------------|------------|-------------|------------------|-------------|---------------|--------------|------------|------------|------------------|-----------------|-----------------|--------------------|-------------------|-------------------------|--------------------------|
| Cimarex Dos Equis<br>12 Federal Com<br>#4H PBHL | 15300.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4515.93      | -4515.91   | 15.87      | 0.00             | 0.00            | 0.00            | 446714.77          | 757373.67         | N 32 13 34.19 W 103 38  | 4.93                     |
|                                                 | 15400.00   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4615.93      | -4615.91   | 16.22      | 0.00             | 0.00            | 0.00            | 446614.78          | 757374.02         | N 32 13 33.20 W 103 38  | 4.93                     |
|                                                 | 15421.98   | 90.00       | 179.80           | 11030.00    | 7391.00       | 4637.91      | -4637.88   | 16.30      | 0.00             | 0.00            | 0.00            | 446592.80          | 757374.10         | N 32 13 32.98 W 103 38  | 4.93                     |

Survey Type: Non-Def Plan

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

| Description | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in) | Casing<br>Diameter<br>(in) | Survey Tool Type       | Borehole / Survey                                           |
|-------------|-----------------|---------------|------------------|-------------------|----------------------------|------------------------|-------------------------------------------------------------|
|             | 0.000           | 28.000        | 1/100.000        | 30.000            | 30.000                     | SLB_MWD-STD-Depth Only | Pilot Borehole / Cimarex Dos Equis 12 Federal Com #4H Pilot |
|             | 28.000          | 10400.000     | 1/100.000        | 30.000            | 30.000                     | SLB_MWD-STD            | Pilot Borehole / Cimarex Dos Equis 12 Federal Com #4H Pilot |
|             | 10400.000       | 15421.978     | 1/100.000        | 30.000            | 30.000                     | SLB_MWD-STD            | ST01 / Cimarex Dos Equis 12 Federal Com #4H ST01 Rev0       |

## Conditions of Approval

Cimarex Energy Company  
Dos Equis 12 Federal Com 4H  
30-025-40793  
T24S-R32E, Sec 12  
February 11, 2013

### The original COAs still apply with the following drilling modifications:

#### I. DRILLING

##### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,  
(575) 393-3612

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

## **B. CASING**

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. 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.).

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**There exists the possibility of lost circulation in the Delaware and Bone Spring. There exists the possibility of water and brine flows in the Salado, Castile, Delaware and Bone Spring.**

1. The **13 3/8 inch** surface casing shall be set at approximately **1250** feet (**a minimum of 25 feet into the Rustler Anhydrite and above the salt**) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9 5/8** inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

**Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

☒ Cement as proposed. Operator shall provide method of verification.

**The pilot hole plugging procedure is approved as written. Note plug top on drilling report.**

- 4. 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.

## **C. PRESSURE CONTROL**

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi.**
  - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be 5000 (5M) psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

#### **D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

#### **E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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