

HOBBS OCD

## DISTRICT I

1826 N. French Dr., Hobbs, NM 88240  
Phone (505) 893-8101 Fax (505) 893-0720

## DISTRICT II

811 S. First St., Artesia, NM 88210  
Phone (505) 740-1205 Fax (505) 740-0720

## DISTRICT III

1000 Rio Bravos Rd., Aztec, NM 87410  
Phone (505) 834-8170 Fax (505) 834-8170

## DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone (505) 470-3460 Fax (505) 470-0425State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102

Revised August 1, 2011

Submit one copy to appropriate  
District Office

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## CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

|                                  |                                                      |                                                      |
|----------------------------------|------------------------------------------------------|------------------------------------------------------|
| API Number<br><b>30025-40967</b> | Pool Code<br><b>28432</b>                            | Pool Name<br><b>Gramma Ridge; Bone Springs, West</b> |
| Property Code<br><b>39674</b>    | Property Name<br><b>WEST GRAMA RIDGE 8 STATE COM</b> | Well Number<br><b>3</b>                              |
| OGRID No.<br><b>215099</b>       | Operator Name<br><b>CIMAREX ENERGY CO.</b>           | Elevation<br><b>3531'</b>                            |

## Surface Location

| UL or lot No. | Section  | Township    | Range       | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County     |
|---------------|----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|------------|
| <b>0</b>      | <b>8</b> | <b>22 S</b> | <b>34 E</b> |         | <b>330</b>    | <b>SOUTH</b>     | <b>1980</b>   | <b>EAST</b>    | <b>LEA</b> |

## Bottom Hole Location If Different From Surface

| UL or lot No. | Section  | Township    | Range       | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County     |
|---------------|----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|------------|
| <b>B</b>      | <b>8</b> | <b>22 S</b> | <b>34 E</b> |         | <b>330</b>    | <b>NORTH</b>     | <b>1980</b>   | <b>EAST</b>    | <b>LEA</b> |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
| <b>160</b>      |                 |                    |           |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

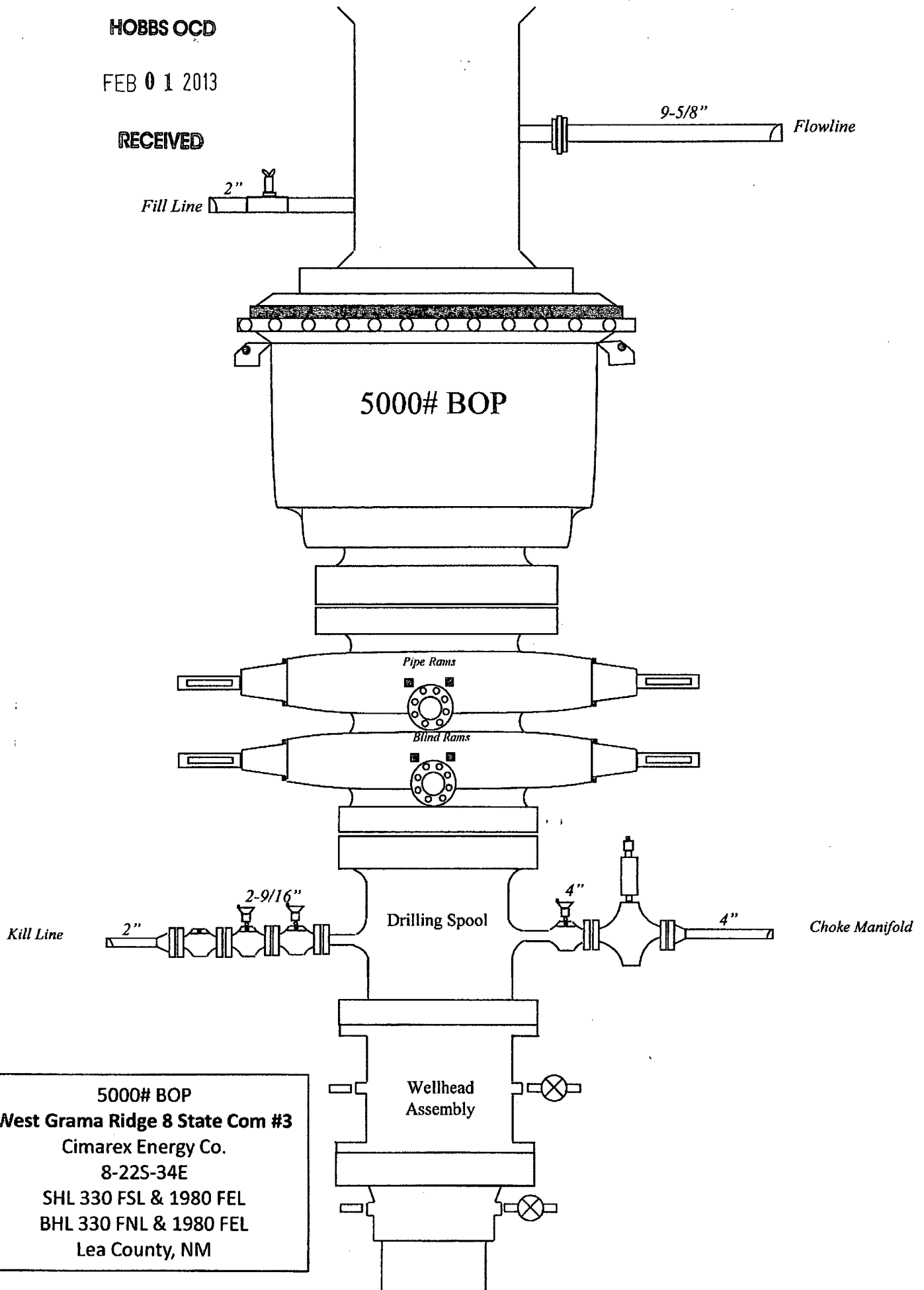
|                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>PROPOSED BOTTOM HOLE LOCATION</b><br/>Lat - N 32°24'45.29"<br/>Long - W 103°29'23.75"<br/>NAD83 - N 514855.0<br/>E 801609.0<br/>(NAD-83)</p> | <p><b>OPERATOR CERTIFICATION</b><br/>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.</p> <p><i>Michelle Chappell</i> 01/30/2013<br/>Signature Date<br/><b>Michelle Chappell</b><br/>Printed Name<br/><b>mchappell@cimarex.com</b><br/>Email Address</p> |
| <p><b>SURFACE LOCATION</b><br/>Lat - N 32°23'59.59"<br/>Long - W 103°29'23.83"<br/>NAD83 - N 510235.9<br/>E 801638.2<br/>(NAD-83)</p>              | <p><b>SURVEYOR CERTIFICATION</b><br/>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.</p> <p><b>GARY L. JONES</b>, 2012<br/>Date Surveyed<br/>Signature &amp; Seal of Professional Surveyor<br/>Certificate No. <b>Gary L. Jones 7977</b><br/><b>26189</b><br/>BASIN SURVEYS</p>                                                                                                                                                                                                                                                                    |

FEB 04 2013

HOBBS OCD

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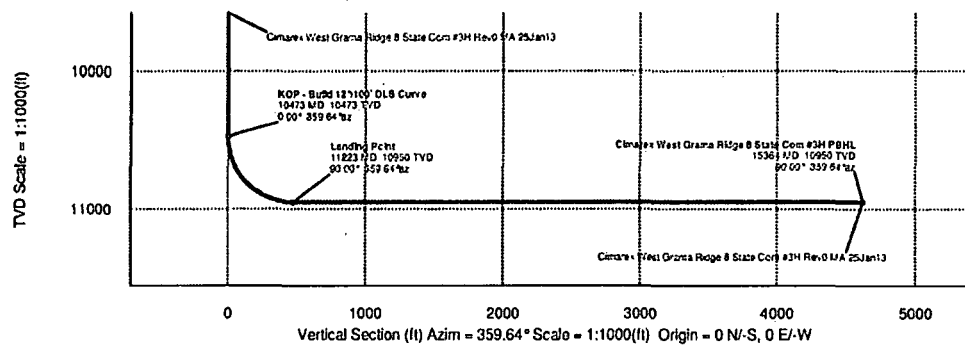
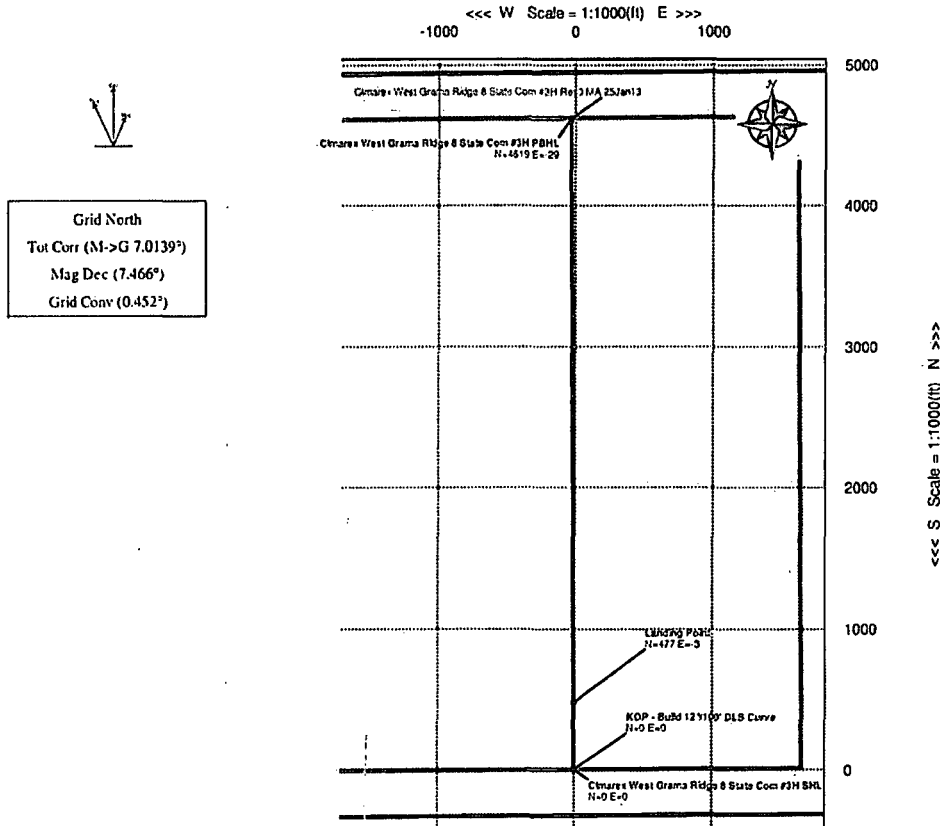




Cimarex

**PATHFINDER**  
A Schlumberger Company

|                              |      |         |               |                  |                  |                              |      |            |
|------------------------------|------|---------|---------------|------------------|------------------|------------------------------|------|------------|
| West Grama Ridge 8 State #3H |      |         | NM Lea County |                  |                  | West Grama Ridge 8 State #3H |      |            |
| Magnum Parameters            | Dr   | 61.234° | Corr          | January 28, 2013 | Surface Location | NAUT 1000 Feet               | East | 1000 Feet  |
| Model                        | 8500 | 1.411°  | 1.8           | 41112.10°        | Lat              | 33.433333                    | Long | 102.100000 |
|                              |      |         |               |                  | Lat              | 33.433333                    | Long | 102.100000 |
|                              |      |         |               |                  | Lat              | 33.433333                    | Long | 102.100000 |



| Critical Point                                | MD       | INCL  | AZIM   | TVD      | USEC    | N(e)/S(e) | E(e)/W(e) | DLS   |
|-----------------------------------------------|----------|-------|--------|----------|---------|-----------|-----------|-------|
| Cimarex West Grama Ridge 8 State Com #3H SHL  | 0.00     | 0.00  | 359.64 | 0.00     | 0.00    | 0.00      | 0.00      |       |
| KOP - Build 12°/100' DLS Curve                | 10472.50 | 0.00  | 359.64 | 10472.50 | 0.00    | 0.00      | 0.00      | 0.00  |
| Landing Point                                 | 11222.56 | 90.00 | 359.64 | 10950.00 | 477.50  | 477.49    | -3.00     | 12.00 |
| Cimarex West Grama Ridge 8 State Com #3H PRHL | 15364.32 | 90.00 | 359.64 | 10950.00 | 4619.26 | 4619.17   | -29.20    | 0.00  |



# Cimarex West Grama Ridge 8 State Com #3H Rev0 MA 25Jan13 Proposal Report

(Non-Def Plan)



|                                      |                                                                                     |                                             |                              |
|--------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------|------------------------------|
| <b>Report Date:</b>                  | January 25, 2013 - 09:47 AM                                                         | <b>Survey / DLS Computation:</b>            | Minimum Curvature / Lubinski |
| <b>Client:</b>                       | Cimarex                                                                             | <b>Vertical Section Azimuth:</b>            | 359.638 ° (Grid North)       |
| <b>Field:</b>                        | NM Lea County (NAD 83)                                                              | <b>Vertical Section Origin:</b>             | 0.000 ft, 0.000 ft           |
| <b>Structure / Slot:</b>             | Cimarex West Grama Ridge 8 State Com #3H / Cimarex West Grama Ridge 8 State Com #3H | <b>TVD Reference Datum:</b>                 | Ground Level                 |
| <b>Well:</b>                         | Cimarex West Grama Ridge 8 State Com #3H                                            | <b>TVD Reference Elevation:</b>             | 3531.000 ft above MSL        |
| <b>Borehole:</b>                     | Original Borehole                                                                   | <b>Seabed / Ground Elevation:</b>           | 3531.000 ft above MSL        |
| <b>UWI / API#:</b>                   | Unknown / Unknown                                                                   | <b>Magnetic Declination:</b>                | 7.466 °                      |
| <b>Survey Name:</b>                  | Cimarex West Grama Ridge 8 State Com #3H Rev0 MA 25Jan13                            | <b>Total Gravity Field Strength:</b>        | 998.4897 mgn (9.80665 Based) |
| <b>Survey Date:</b>                  | January 25, 2013                                                                    | <b>Total Magnetic Field Strength:</b>       | 48552.887 nT                 |
| <b>Tort / AHD / DDI / ERD Ratio:</b> | 90.005 ° / 4619.263 ft / 5.766 / 0.422                                              | <b>Magnetic Dip Angle:</b>                  | 60.286 °                     |
| <b>Coordinate Reference System:</b>  | NAD83 New Mexico State Plane, Eastern Zone, US Feet                                 | <b>Declination Date:</b>                    | January 25, 2013             |
| <b>Location Lat / Long:</b>          | N 32° 23' 59.58407", W 103° 29' 23.83242"                                           | <b>Magnetic Declination Model:</b>          | BGGM 2012                    |
| <b>Location Grid N/E Y/X:</b>        | N 510235.900 ftUS, E 801638.200 ftUS                                                | <b>North Reference:</b>                     | Grid North                   |
| <b>CRS Grid Convergence Angle:</b>   | 0.4519 °                                                                            | <b>Grid Convergence Used:</b>               | 0.4519 °                     |
| <b>Grid Scale Factor:</b>            | 0.99998669                                                                          | <b>Total Corr Mag North-&gt;Grid North:</b> | 7.0139 °                     |
|                                      |                                                                                     | <b>Local Coord Referenced To:</b>           | Structure Reference Point    |

| Comments                                     | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | Northing (ftUS) | Easting (ftUS) | Latitude (N/S ° ' ") | Longitude (E/W ° ' ") | Closure (ft) | Closure Azimuth (°) | DLS (°/100ft) |
|----------------------------------------------|---------|----------|---------------|----------|-----------|---------|---------|-----------------|----------------|----------------------|-----------------------|--------------|---------------------|---------------|
| Cimarex West Grama Ridge 8 State Com #3H SHL | 0.00    | 0.00     | 359.64        | 0.00     | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | N/A           |
|                                              | 100.00  | 0.00     | 359.64        | 100.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 200.00  | 0.00     | 359.64        | 200.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 300.00  | 0.00     | 359.64        | 300.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 400.00  | 0.00     | 359.64        | 400.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 500.00  | 0.00     | 359.64        | 500.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 600.00  | 0.00     | 359.64        | 600.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 700.00  | 0.00     | 359.64        | 700.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 800.00  | 0.00     | 359.64        | 800.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 900.00  | 0.00     | 359.64        | 900.00   | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1000.00 | 0.00     | 359.64        | 1000.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1100.00 | 0.00     | 359.64        | 1100.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1200.00 | 0.00     | 359.64        | 1200.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1300.00 | 0.00     | 359.64        | 1300.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1400.00 | 0.00     | 359.64        | 1400.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1500.00 | 0.00     | 359.64        | 1500.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1600.00 | 0.00     | 359.64        | 1600.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1700.00 | 0.00     | 359.64        | 1700.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1800.00 | 0.00     | 359.64        | 1800.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 1900.00 | 0.00     | 359.64        | 1900.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 2000.00 | 0.00     | 359.64        | 2000.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 2100.00 | 0.00     | 359.64        | 2100.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 2200.00 | 0.00     | 359.64        | 2200.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 2300.00 | 0.00     | 359.64        | 2300.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 2400.00 | 0.00     | 359.64        | 2400.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 2500.00 | 0.00     | 359.64        | 2500.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |
|                                              | 2600.00 | 0.00     | 359.64        | 2600.00  | 0.00      | 0.00    | 0.00    | 510235.90       | 801638.20      | N 32 23 59.58        | W 103 29 23.83        | 0.00         | 0.00                | 0.00          |

1/30/2013 2:12 PM Page 2 of 4

| Comments             | MD<br>(ft) | Incl<br>(°) | Azlm Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' '') | Longitude<br>(E/W ° ' '') | Closure<br>(ft) | Closure Azimuth<br>(°) | DLS<br>(ft/100ft) |
|----------------------|------------|-------------|------------------|-------------|--------------|------------|------------|--------------------|-------------------|--------------------------|---------------------------|-----------------|------------------------|-------------------|
|                      | 8200.00    | 0.00        | 359.64           | 8200.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 8300.00    | 0.00        | 359.64           | 8300.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 8400.00    | 0.00        | 359.64           | 8400.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 8500.00    | 0.00        | 359.64           | 8500.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 8600.00    | 0.00        | 359.64           | 8600.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 8700.00    | 0.00        | 359.64           | 8700.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 8800.00    | 0.00        | 359.64           | 8800.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 8900.00    | 0.00        | 359.64           | 8900.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9000.00    | 0.00        | 359.64           | 9000.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9100.00    | 0.00        | 359.64           | 9100.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9200.00    | 0.00        | 359.64           | 9200.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9300.00    | 0.00        | 359.64           | 9300.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9400.00    | 0.00        | 359.64           | 9400.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9500.00    | 0.00        | 359.64           | 9500.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9600.00    | 0.00        | 359.64           | 9600.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9700.00    | 0.00        | 359.64           | 9700.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9800.00    | 0.00        | 359.64           | 9800.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 9900.00    | 0.00        | 359.64           | 9900.00     | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 10000.00   | 0.00        | 359.64           | 10000.00    | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 10100.00   | 0.00        | 359.64           | 10100.00    | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 10200.00   | 0.00        | 359.64           | 10200.00    | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 10300.00   | 0.00        | 359.64           | 10300.00    | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
|                      | 10400.00   | 0.00        | 359.64           | 10400.00    | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
| KOP - Build 12"/100' | 10472.50   | 0.00        | 359.64           | 10472.50    | 0.00         | 0.00       | 0.00       | 510235.90          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.00            | 0.00                   | 0.00              |
| DLS Curve            | 10500.00   | 3.30        | 359.64           | 10499.88    | 0.79         | 0.79       | 0.00       | 510236.69          | 801638.20         | N 32 23 59.58            | W 103 29 23.83            | 0.79            | 359.64                 | 12.00             |
|                      | 10600.00   | 15.30       | 359.64           | 10598.49    | 16.92        | 16.92      | -0.11      | 510252.82          | 801638.09         | N 32 23 59.75            | W 103 29 23.83            | 16.92           | 359.64                 | 12.00             |
|                      | 10700.00   | 27.30       | 359.64           | 10591.49    | 53.18        | 53.18      | -0.33      | 510289.08          | 801637.87         | N 32 24 0.11             | W 103 29 23.83            | 53.18           | 359.64                 | 12.00             |
|                      | 10800.00   | 39.30       | 359.64           | 10774.92    | 107.98       | 107.97     | -0.68      | 510343.87          | 801637.52         | N 32 24 0.65             | W 103 29 23.83            | 107.98          | 359.64                 | 12.00             |
|                      | 10900.00   | 51.30       | 359.64           | 10845.14    | 178.92       | 178.92     | -1.12      | 510414.82          | 801637.08         | N 32 24 1.35             | W 103 29 23.83            | 178.92          | 359.64                 | 12.00             |
|                      | 11000.00   | 63.30       | 359.64           | 10899.07    | 262.92       | 262.91     | -1.85      | 510498.81          | 801636.55         | N 32 24 2.19             | W 103 29 23.83            | 262.92          | 359.64                 | 12.00             |
|                      | 11100.00   | 75.29       | 359.64           | 10934.38    | 356.28       | 356.28     | -2.24      | 510592.17          | 801635.96         | N 32 24 3.11             | W 103 29 23.83            | 356.28          | 359.64                 | 12.00             |
|                      | 11200.00   | 87.29       | 359.64           | 10949.47    | 454.95       | 454.94     | -2.86      | 510690.84          | 801635.34         | N 32 24 4.09             | W 103 29 23.82            | 454.95          | 359.64                 | 12.00             |
| Landing Point        | 11222.56   | 90.00       | 359.64           | 10950.00    | 477.50       | 477.49     | -3.00      | 510713.38          | 801635.20         | N 32 24 4.31             | W 103 29 23.82            | 477.50          | 359.64                 | 12.00             |
|                      | 11300.00   | 90.00       | 359.64           | 10950.00    | 554.94       | 554.93     | -3.49      | 510790.83          | 801634.71         | N 32 24 5.08             | W 103 29 23.82            | 554.94          | 359.64                 | 0.00              |
|                      | 11400.00   | 90.00       | 359.64           | 10950.00    | 654.94       | 654.93     | -4.12      | 510890.82          | 801634.08         | N 32 24 6.06             | W 103 29 23.82            | 654.94          | 359.64                 | 0.00              |
|                      | 11500.00   | 90.00       | 359.64           | 10950.00    | 754.94       | 754.93     | -4.74      | 510990.82          | 801633.46         | N 32 24 7.05             | W 103 29 23.82            | 754.94          | 359.64                 | 0.00              |
|                      | 11600.00   | 90.00       | 359.64           | 10950.00    | 854.94       | 854.93     | -5.37      | 511090.81          | 801632.83         | N 32 24 8.04             | W 103 29 23.82            | 854.94          | 359.64                 | 0.00              |
|                      | 11700.00   | 90.00       | 359.64           | 10950.00    | 954.94       | 954.93     | -6.00      | 511190.81          | 801632.20         | N 32 24 9.03             | W 103 29 23.81            | 954.94          | 359.64                 | 0.00              |
|                      | 11800.00   | 90.00       | 359.64           | 10950.00    | 1054.94      | 1054.92    | -6.63      | 511290.81          | 801631.57         | N 32 24 10.02            | W 103 29 23.81            | 1054.94         | 359.64                 | 0.00              |
|                      | 11900.00   | 90.00       | 359.64           | 10950.00    | 1154.94      | 1154.92    | -7.26      | 511390.80          | 801630.94         | N 32 24 11.01            | W 103 29 23.81            | 1154.94         | 359.64                 | 0.00              |
|                      | 12000.00   | 90.00       | 359.64           | 10950.00    | 1254.94      | 1254.92    | -7.89      | 511490.80          | 801630.31         | N 32 24 12.00            | W 103 29 23.81            | 1254.94         | 359.64                 | 0.00              |
|                      | 12100.00   | 90.00       | 359.64           | 10950.00    | 1354.94      | 1354.92    | -8.52      | 511590.80          | 801629.68         | N 32 24 12.99            | W 103 29 23.81            | 1354.94         | 359.64                 | 0.00              |
|                      | 12200.00   | 90.00       | 359.64           | 10950.00    | 1454.94      | 1454.92    | -9.15      | 511690.79          | 801629.05         | N 32 24 13.98            | W 103 29 23.81            | 1454.94         | 359.64                 | 0.00              |
|                      | 12300.00   | 90.00       | 359.64           | 10950.00    | 1554.94      | 1554.91    | -9.78      | 511790.79          | 801628.42         | N 32 24 14.97            | W 103 29 23.80            | 1554.94         | 359.64                 | 0.00              |
|                      | 12400.00   | 90.00       | 359.64           | 10950.00    | 1654.94      | 1654.91    | -10.41     | 511890.79          | 801627.79         | N 32 24 15.96            | W 103 29 23.80            | 1654.94         | 359.64                 | 0.00              |
|                      | 12500.00   | 90.00       | 359.64           | 10950.00    | 1754.94      | 1754.91    | -11.04     | 511990.78          | 801627.16         | N 32 24 16.95            | W 103 29 23.80            | 1754.94         | 359.64                 | 0.00              |
|                      | 12600.00   | 90.00       | 359.64           | 10950.00    | 1854.94      | 1854.91    | -11.67     | 512090.78          | 801626.53         | N 32 24 17.94            | W 103 29 23.80            | 1854.94         | 359.64                 | 0.00              |
|                      | 12700.00   | 90.00       | 359.64           | 10950.00    | 1954.94      | 1954.91    | -12.31     | 512190.78          | 801625.89         | N 32 24 18.93            | W 103 29 23.80            | 1954.94         | 359.64                 | 0.00              |
|                      | 12800.00   | 90.00       | 359.64           | 10950.00    | 2054.94      | 2054.90    | -12.94     | 512290.77          | 801625.26         | N 32 24 19.92            | W 103 29 23.79            | 2054.94         | 359.64                 | 0.00              |
|                      | 12900.00   | 90.00       | 359.64           | 10950.00    | 2154.94      | 2154.90    | -13.57     | 512390.77          | 801624.63         | N 32 24 20.91            | W 103 29 23.79            | 2154.94         | 359.64                 | 0.00              |
|                      | 13000.00   | 90.00       | 359.64           | 10950.00    | 2254.94      | 2254.90    | -14.20     | 512490.77          | 801624.00         | N 32 24 21.90            | W 103 29 23.79            | 2254.94         | 359.64                 | 0.00              |
|                      | 13100.00   | 90.00       | 359.64           | 10950.00    | 2354.94      | 2354.90    | -14.83     | 512590.76          | 801623.37         | N 32 24 22.89            | W 103 29 23.79            | 2354.94         | 359.64                 | 0.00              |
|                      | 13200.00   | 90.00       | 359.64           | 10950.00    | 2454.94      | 2454.90    | -15.47     | 512690.76          | 801622.74         | N 32 24 23.88            | W 103 29 23.79            | 2454.94         | 359.64                 | 0.00              |
|                      | 13300.00   | 90.00       | 359.64           | 10950.00    | 2554.94      | 2554.89    | -16.10     | 512790.75          | 801622.10         | N 32 24 24.86            | W 103 29 23.79            | 2554.94         | 359.64                 | 0.00              |

| Comments                                               | MD<br>(ft) | Incl<br>(°) | Azlm Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' '') | Longitude<br>(E/W ° ' '') | Closure<br>(ft) | Closure Azimuth<br>(°) | DLS<br>(*/100ft) |
|--------------------------------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|--------------------|-------------------|--------------------------|---------------------------|-----------------|------------------------|------------------|
|                                                        | 13400.00   | 90.00       | 359.64           | 10950.00    | 2654.94      | 2654.89    | -16.73     | 512890.75          | 801621.47         | N 32 24 25.85            | W 103 29 23.78            | 2654.94         | 359.64                 | 0.00             |
|                                                        | 13500.00   | 90.00       | 359.64           | 10950.00    | 2754.94      | 2754.89    | -17.36     | 512890.75          | 801620.84         | N 32 24 26.84            | W 103 29 23.78            | 2754.94         | 359.64                 | 0.00             |
|                                                        | 13600.00   | 90.00       | 359.64           | 10950.00    | 2854.94      | 2854.89    | -18.00     | 513090.74          | 801620.20         | N 32 24 27.83            | W 103 29 23.78            | 2854.94         | 359.64                 | 0.00             |
|                                                        | 13700.00   | 90.00       | 359.64           | 10950.00    | 2954.94      | 2954.89    | -18.63     | 513190.74          | 801619.57         | N 32 24 28.82            | W 103 29 23.78            | 2954.94         | 359.64                 | 0.00             |
|                                                        | 13800.00   | 90.00       | 359.64           | 10950.00    | 3054.94      | 3054.88    | -19.26     | 513290.74          | 801618.94         | N 32 24 29.81            | W 103 29 23.78            | 3054.94         | 359.64                 | 0.00             |
|                                                        | 13900.00   | 90.00       | 359.64           | 10950.00    | 3154.94      | 3154.88    | -19.90     | 513390.73          | 801618.30         | N 32 24 30.80            | W 103 29 23.77            | 3154.94         | 359.64                 | 0.00             |
|                                                        | 14000.00   | 90.00       | 359.64           | 10950.00    | 3254.94      | 3254.88    | -20.53     | 513490.73          | 801617.67         | N 32 24 31.79            | W 103 29 23.77            | 3254.94         | 359.64                 | 0.00             |
|                                                        | 14100.00   | 90.00       | 359.64           | 10950.00    | 3354.94      | 3354.88    | -21.17     | 513590.73          | 801617.04         | N 32 24 32.78            | W 103 29 23.77            | 3354.94         | 359.64                 | 0.00             |
|                                                        | 14200.00   | 90.00       | 359.64           | 10950.00    | 3454.94      | 3454.88    | -21.80     | 513690.72          | 801616.40         | N 32 24 33.77            | W 103 29 23.77            | 3454.94         | 359.64                 | 0.00             |
|                                                        | 14300.00   | 90.00       | 359.64           | 10950.00    | 3554.94      | 3554.87    | -22.43     | 513790.72          | 801615.77         | N 32 24 34.76            | W 103 29 23.77            | 3554.94         | 359.64                 | 0.00             |
|                                                        | 14400.00   | 90.00       | 359.64           | 10950.00    | 3654.94      | 3654.87    | -23.07     | 513890.72          | 801615.13         | N 32 24 35.75            | W 103 29 23.77            | 3654.94         | 359.64                 | 0.00             |
|                                                        | 14500.00   | 90.00       | 359.64           | 10950.00    | 3754.94      | 3754.87    | -23.70     | 513990.71          | 801614.50         | N 32 24 36.74            | W 103 29 23.76            | 3754.94         | 359.64                 | 0.00             |
|                                                        | 14600.00   | 90.00       | 359.64           | 10950.00    | 3854.94      | 3854.87    | -24.34     | 514090.71          | 801613.86         | N 32 24 37.73            | W 103 29 23.76            | 3854.94         | 359.64                 | 0.00             |
|                                                        | 14700.00   | 90.00       | 359.64           | 10950.00    | 3954.94      | 3954.87    | -24.97     | 514190.71          | 801613.23         | N 32 24 38.72            | W 103 29 23.76            | 3954.94         | 359.64                 | 0.00             |
|                                                        | 14800.00   | 90.00       | 359.64           | 10950.00    | 4054.94      | 4054.86    | -25.61     | 514290.70          | 801612.59         | N 32 24 39.71            | W 103 29 23.76            | 4054.94         | 359.64                 | 0.00             |
|                                                        | 14900.00   | 90.00       | 359.64           | 10950.00    | 4154.94      | 4154.86    | -26.25     | 514390.70          | 801611.95         | N 32 24 40.70            | W 103 29 23.76            | 4154.94         | 359.64                 | 0.00             |
|                                                        | 15000.00   | 90.00       | 359.64           | 10950.00    | 4254.94      | 4254.86    | -26.88     | 514490.69          | 801611.32         | N 32 24 41.69            | W 103 29 23.75            | 4254.94         | 359.64                 | 0.00             |
|                                                        | 15100.00   | 90.00       | 359.64           | 10950.00    | 4354.94      | 4354.86    | -27.52     | 514590.69          | 801610.68         | N 32 24 42.68            | W 103 29 23.75            | 4354.94         | 359.64                 | 0.00             |
|                                                        | 15200.00   | 90.00       | 359.64           | 10950.00    | 4454.94      | 4454.86    | -28.15     | 514690.69          | 801610.05         | N 32 24 43.67            | W 103 29 23.75            | 4454.94         | 359.64                 | 0.00             |
|                                                        | 15300.00   | 90.00       | 359.64           | 10950.00    | 4554.94      | 4554.85    | -28.79     | 514790.68          | 801609.41         | N 32 24 44.65            | W 103 29 23.75            | 4554.94         | 359.64                 | 0.00             |
| Cimarex West<br>Grama Ridge 8<br>State Com #3H<br>PBHL | 15364.32   | 90.00       | 359.64           | 10950.00    | 4619.26      | 4619.17    | -29.20     | 514855.00          | 801609.00         | N 32 24 45.29            | W 103 29 23.75            | 4619.25         | 359.64                 | 0.00             |

Survey Type: Non-Def Plan

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

| Description | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in) | Casing Diameter<br>(in) | Survey Tool Type | Borehole / Survey                                               |
|-------------|-----------------|---------------|------------------|-------------------|-------------------------|------------------|-----------------------------------------------------------------|
|             | 0.000           | 15364.318     | 1/100.000        | 30.000            | 30.000                  | SLB_MWD-STD      | Original Borehole / Cimarex West<br>Grama Ridge 8 State Com #3H |