

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

HOBBS OGD

AUG 16 2018

RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on page 2

|                                                                                                                                                     |                                                       |                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------|
| 1. Type of Well<br><input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other                    |                                                       | 8. Well Name and No.<br>JAMES 19 FEDERAL 34H           |
| 2. Name of Operator<br>CIMAREX ENERGY COMPANY<br>Contact: ARICKA EASTERLING<br>E-Mail: aeasterling@cimarex.com                                      |                                                       | 9. API Well No.<br>30-025-45020-00-X1                  |
| 3a. Address<br>600 N. MARIENFELD SUITE 600<br>MIDLAND, TX 79701                                                                                     | 3b. Phone No. (include area code)<br>Ph: 918.560.7060 | 10. Field and Pool or Exploratory Area<br>BONE SPRINGS |
| 4. Location of Well (Footage, Sec., T., R., M., or Survey Description)<br>Sec 19 T23S R32E NWNE 330FNL 2390FEL<br>32.296329 N Lat, 103.712944 W Lon |                                                       | 11. County or Parish, State<br>LEA COUNTY, NM          |

## 12. CHECK THE 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"/> Hydraulic Fracturing | <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 A                      |
|                                                      | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back            | <input type="checkbox"/> Water Disposal            | PD                                        |

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

Cimarex respectfully requests approval to change the SHL and BHL of the James 19 Fed 34H well.  
There is no additional surface disturbance.

Carlsbad Field Office  
OCD Hobbs

Approved:  
SHL: 330 FNL & 2390 FEL  
BHL: 330 FSL & 1430 FEL

Proposed:  
SHL: 390 FNL & 2310 FEL  
BHL: 100 FSL & 2260 FEL

Please see attached plat, directional plan, and drilling plan for changes

Surface good. COA's still apply  
8/13/2018 SL

Engineering is Good. All previous COAs still apply. ZS 8/9/18

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

Electronic Submission #429125 verified by the BLM Well Information System  
For CIMAREX ENERGY COMPANY, sent to the Hobbs  
Committed to AFMSS for processing by PRISCILLA PEREZ on 08/02/2018 (18PP1575SE)

|                                        |                          |
|----------------------------------------|--------------------------|
| Name (Printed/Typed) ARICKA EASTERLING | Title REGULATORY ANALYST |
| Signature (Electronic Submission)      | Date 07/30/2018          |

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

|                                                                                                                                                                                                                                                           |                   |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------|
| Approved By <i>Cody H. [Signature]</i>                                                                                                                                                                                                                    | Title AFM - L & M | Date 08/14/2018 |
| 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 CPO        |                 |

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

(Instructions on page 2)

\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\*

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|                                         |  |                                                  |  |                                                         |                                   |
|-----------------------------------------|--|--------------------------------------------------|--|---------------------------------------------------------|-----------------------------------|
| <sup>1</sup> API Number<br>30-025-45020 |  | <sup>2</sup> Pool Code<br>53805                  |  | <sup>3</sup> Pool Name<br>Sand Dunes; Bone Spring South |                                   |
| <sup>4</sup> Property Code<br>313485    |  | <sup>5</sup> Property Name<br>JAMES 19 FEDERAL   |  |                                                         | <sup>6</sup> Well Number<br>34H   |
| <sup>7</sup> OGRID No.<br>215099        |  | <sup>8</sup> Operator Name<br>CIMAREX ENERGY CO. |  |                                                         | <sup>9</sup> Elevation<br>3639.4' |

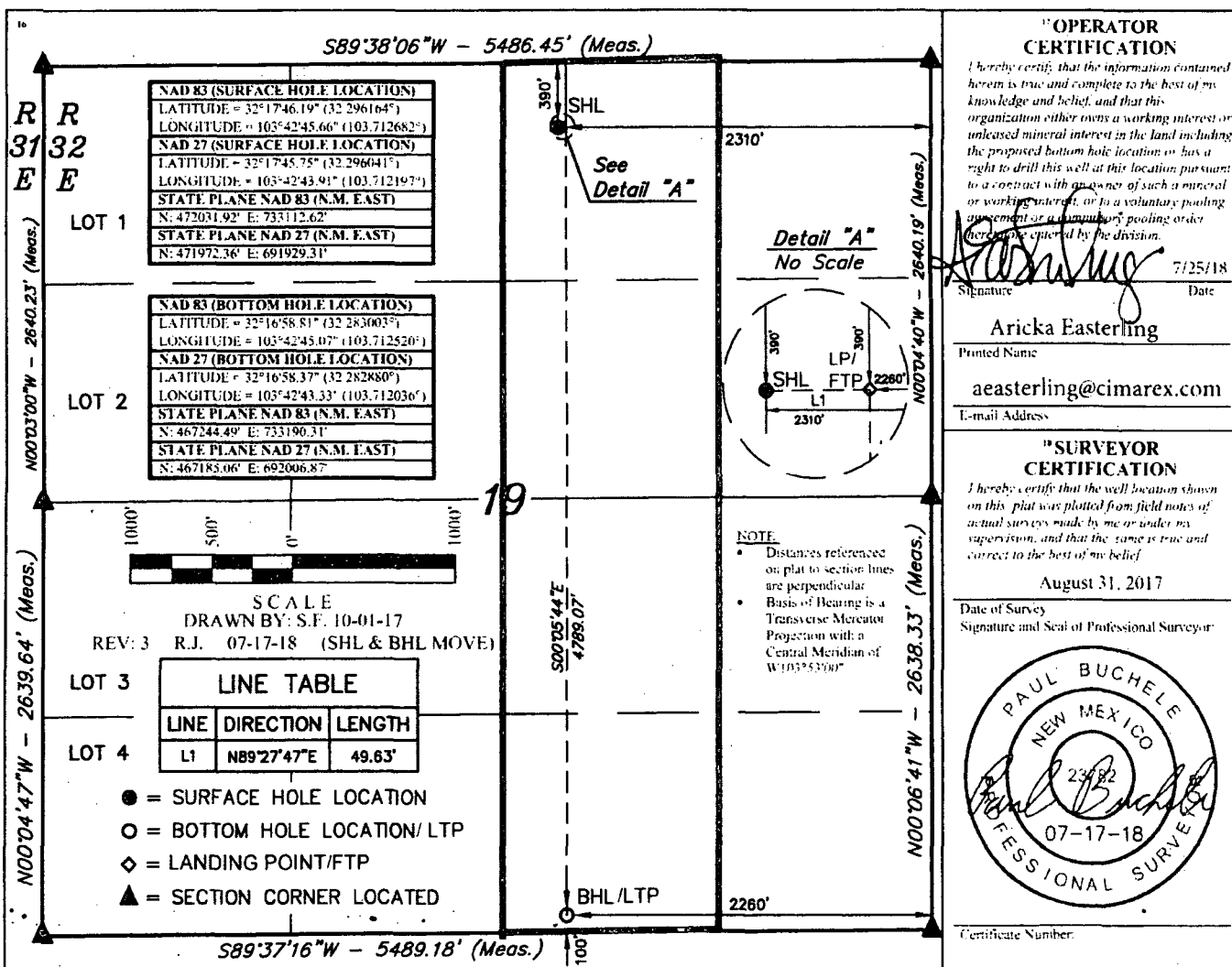
" Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| B             | 19      | 23S      | 32E   |         | 390           | NORTH            | 2310          | EAST           | LEA    |

" 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 |
|--------------------------------------|---------|-------------------------------|-------|----------------------------------|---------------|-------------------------|---------------|----------------|--------|
| O                                    | 19      | 23S                           | 32E   |                                  | 100           | SOUTH                   | 2260          | EAST           | LEA    |
| <sup>12</sup> Dedicated Acres<br>160 |         | <sup>13</sup> Joint or Infill |       | <sup>14</sup> Consolidation Code |               | <sup>15</sup> Order No. |               |                |        |

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.





# Cimarex James 19 Federal 34H Rev2 RM 26July18 Proposal Geodetic Report (Def Plan)



**Report Date:** July 26, 2018 - 10:48 AM  
**Client:** Cimarex  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Cimarex James 19 Federal 34H / Cimarex James 19 Federal 34H  
**Well:** Cimarex James 19 Federal 34H  
**Borehole:** Original Borehole  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex James 19 Federal 34H Rev2 RM 26July18  
**Survey Date:** July 26, 2018  
**Tort / AHD / DDI / ERO Ratio:** 92.213 ° / 4797.058 ft / 5.822 / 0.525  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 17' 46.18919", W 103° 42' 45.65529"  
**Location Grid N/E Y/X:** N 472031.920 RUS, E 733112.620 RUS  
**CRS Grid Convergence Angle:** 0.3316 °  
**Grid Scale Factor:** 0.99995121  
**Version / Patch:** 2.10.740.0

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 180.000 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3665.400 ft above MSL  
**Seabed / Ground Elevation:** 3639.400 ft above MSL  
**Magnetic Declination:** 6.866 °  
**Total Gravity Field Strength:** 998.4379mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 48056.700 nT  
**Magnetic Dip Angle:** 60.044 °  
**Declination Date:** July 26, 2018  
**Magnetic Declination Model:** HDGM 2018  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.3316 °  
**Total Corr Mag North->Grid North:** 6.5340 °  
**Local Coord Referenced To:** Structure Reference Point

| Comments                     | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(RUS) | Latitude<br>(N/S ° ' ")      | Longitude<br>(E/W ° ' ") |
|------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|------------------|------------------------------|--------------------------|
| SHL [390' FNL,<br>2310' FEL] | 0.00       | 0.00        | 0.00             | 0.00        | 0.00         | 0.00       | 0.00       | N/A              | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 100.00     | 0.00        | 160.75           | 100.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 200.00     | 0.00        | 160.75           | 200.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 300.00     | 0.00        | 160.75           | 300.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 400.00     | 0.00        | 160.75           | 400.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 500.00     | 0.00        | 160.75           | 500.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 600.00     | 0.00        | 160.75           | 600.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 700.00     | 0.00        | 160.75           | 700.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 800.00     | 0.00        | 160.75           | 800.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 900.00     | 0.00        | 160.75           | 900.00      | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1000.00    | 0.00        | 160.75           | 1000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1100.00    | 0.00        | 160.75           | 1100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
| Rustler                      | 1160.00    | 0.00        | 160.75           | 1160.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1200.00    | 0.00        | 160.75           | 1200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1300.00    | 0.00        | 160.75           | 1300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1400.00    | 0.00        | 160.75           | 1400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1500.00    | 0.00        | 160.75           | 1500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1600.00    | 0.00        | 160.75           | 1600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1700.00    | 0.00        | 160.75           | 1700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1800.00    | 0.00        | 160.75           | 1800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 1900.00    | 0.00        | 160.75           | 1900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 2000.00    | 0.00        | 160.75           | 2000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 2100.00    | 0.00        | 160.75           | 2100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 2200.00    | 0.00        | 160.75           | 2200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
| Top of Salt                  | 2260.00    | 0.00        | 160.75           | 2260.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 2300.00    | 0.00        | 160.75           | 2300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 2400.00    | 0.00        | 160.75           | 2400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 2500.00    | 0.00        | 160.75           | 2500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |

| Comments       | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(RUS) | Easting<br>(RUS) | Latitude<br>(N/S ° ' ")      | Longitude<br>(E/W ° ' ") |
|----------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|-------------------|------------------|------------------------------|--------------------------|
|                | 2600.00    | 0.00        | 160.75           | 2600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 2700.00    | 0.00        | 160.75           | 2700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 2800.00    | 0.00        | 160.75           | 2800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 2900.00    | 0.00        | 160.75           | 2900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3000.00    | 0.00        | 160.75           | 3000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3100.00    | 0.00        | 160.75           | 3100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3200.00    | 0.00        | 160.75           | 3200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
| Castille       | 3260.00    | 0.00        | 160.75           | 3260.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3300.00    | 0.00        | 160.75           | 3300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3400.00    | 0.00        | 160.75           | 3400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3500.00    | 0.00        | 160.75           | 3500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3600.00    | 0.00        | 160.75           | 3600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3700.00    | 0.00        | 160.75           | 3700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3800.00    | 0.00        | 160.75           | 3800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 3900.00    | 0.00        | 160.75           | 3900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4000.00    | 0.00        | 160.75           | 4000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4100.00    | 0.00        | 160.75           | 4100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4200.00    | 0.00        | 160.75           | 4200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4300.00    | 0.00        | 160.75           | 4300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4400.00    | 0.00        | 160.75           | 4400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4500.00    | 0.00        | 160.75           | 4500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
| Base of Salt   | 4510.00    | 0.00        | 160.75           | 4510.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4600.00    | 0.00        | 160.75           | 4600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4700.00    | 0.00        | 160.75           | 4700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
| Delaware Sands | 4720.00    | 0.00        | 160.75           | 4720.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4800.00    | 0.00        | 160.75           | 4800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 4900.00    | 0.00        | 160.75           | 4900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5000.00    | 0.00        | 160.75           | 5000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5100.00    | 0.00        | 160.75           | 5100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5200.00    | 0.00        | 160.75           | 5200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5300.00    | 0.00        | 160.75           | 5300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5400.00    | 0.00        | 160.75           | 5400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5500.00    | 0.00        | 160.75           | 5500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5600.00    | 0.00        | 160.75           | 5600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5700.00    | 0.00        | 160.75           | 5700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5800.00    | 0.00        | 160.75           | 5800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 5900.00    | 0.00        | 160.75           | 5900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6000.00    | 0.00        | 160.75           | 6000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6100.00    | 0.00        | 160.75           | 6100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6200.00    | 0.00        | 160.75           | 6200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6300.00    | 0.00        | 160.75           | 6300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6400.00    | 0.00        | 160.75           | 6400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6500.00    | 0.00        | 160.75           | 6500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6600.00    | 0.00        | 160.75           | 6600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6700.00    | 0.00        | 160.75           | 6700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6800.00    | 0.00        | 160.75           | 6800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 6900.00    | 0.00        | 160.75           | 6900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7000.00    | 0.00        | 160.75           | 7000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7100.00    | 0.00        | 160.75           | 7100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7200.00    | 0.00        | 160.75           | 7200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7300.00    | 0.00        | 160.75           | 7300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7400.00    | 0.00        | 160.75           | 7400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7500.00    | 0.00        | 160.75           | 7500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7600.00    | 0.00        | 160.75           | 7600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7700.00    | 0.00        | 160.75           | 7700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7800.00    | 0.00        | 160.75           | 7800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 7900.00    | 0.00        | 160.75           | 7900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |
|                | 8000.00    | 0.00        | 160.75           | 8000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92         | 733112.62        | N 32 17 46.19 W 103 42 45.66 |                          |

| Comments                     | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ")      | Longitude<br>(E/W ° ' ") |
|------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|------------------------------|--------------------------|
|                              | 8100.00    | 0.00        | 160.75           | 8100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62         | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 8200.00    | 0.00        | 160.75           | 8200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62         | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 8300.00    | 0.00        | 160.75           | 8300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62         | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 8400.00    | 0.00        | 160.75           | 8400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62         | N 32 17 46.19 W 103 42 45.66 |                          |
| Bone Spring                  | 8500.00    | 0.00        | 160.75           | 8500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62         | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 8600.00    | 0.00        | 160.75           | 8600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62         | N 32 17 46.19 W 103 42 45.66 |                          |
| KOP - Build<br>12°/100' DLS  | 8647.84    | 0.00        | 160.75           | 8647.84     | 0.00         | 0.00       | 0.00       | 0.00             | 472031.92          | 733112.62         | N 32 17 46.19 W 103 42 45.66 |                          |
|                              | 8700.00    | 6.26        | 160.75           | 8699.90     | 2.69         | -2.69      | 0.94       | 12.00            | 472029.23          | 733113.56         | N 32 17 46.16 W 103 42 45.64 |                          |
|                              | 8800.00    | 18.26       | 160.75           | 8797.44     | 22.70        | -22.70     | 7.93       | 12.00            | 472009.22          | 733120.54         | N 32 17 45.96 W 103 42 45.56 |                          |
|                              | 8900.00    | 30.26       | 160.75           | 8888.44     | 61.42        | -61.42     | 21.44      | 12.00            | 471970.50          | 733134.06         | N 32 17 45.58 W 103 42 45.41 |                          |
| Build & Turn<br>12°/100' DLS | 8939.50    | 35.00       | 160.75           | 8921.70     | 81.52        | -81.52     | 28.46      | 12.00            | 471950.40          | 733141.08         | N 32 17 45.38 W 103 42 45.33 |                          |
|                              | 9000.00    | 41.76       | 165.02           | 8969.10     | 117.41       | -117.41    | 39.41      | 12.00            | 471914.51          | 733152.02         | N 32 17 45.03 W 103 42 45.20 |                          |
|                              | 9100.00    | 53.18       | 170.05           | 9036.61     | 189.27       | -189.27    | 54.99      | 12.00            | 471842.66          | 733167.60         | N 32 17 44.31 W 103 42 45.03 |                          |
| Avalon Shale                 | 9123.07    | 55.84       | 170.99           | 9050.00     | 207.80       | -207.80    | 58.08      | 12.00            | 471824.13          | 733170.70         | N 32 17 44.13 W 103 42 44.99 |                          |
|                              | 9200.00    | 64.76       | 173.75           | 9088.08     | 273.96       | -273.96    | 66.87      | 12.00            | 471757.97          | 733179.48         | N 32 17 43.47 W 103 42 44.89 |                          |
|                              | 9300.00    | 76.41       | 176.80           | 9121.27     | 367.79       | -367.79    | 74.53      | 12.00            | 471664.15          | 733187.15         | N 32 17 42.55 W 103 42 44.81 |                          |
|                              | 9400.00    | 88.10       | 179.56           | 9134.73     | 466.65       | -466.65    | 77.64      | 12.00            | 471565.30          | 733190.25         | N 32 17 41.57 W 103 42 44.78 |                          |
| Landing Point                | 9416.28    | 90.00       | 180.00           | 9135.00     | 482.92       | -482.92    | 77.70      | 12.00            | 471549.02          | 733190.31         | N 32 17 41.41 W 103 42 44.78 |                          |
|                              | 9500.00    | 90.00       | 180.00           | 9135.00     | 566.64       | -566.64    | 77.70      | 0.00             | 471465.30          | 733190.31         | N 32 17 40.58 W 103 42 44.79 |                          |
|                              | 9600.00    | 90.00       | 180.00           | 9135.00     | 666.64       | -666.64    | 77.70      | 0.00             | 471365.31          | 733190.31         | N 32 17 39.59 W 103 42 44.80 |                          |
|                              | 9700.00    | 90.00       | 180.00           | 9135.00     | 766.64       | -766.64    | 77.70      | 0.00             | 471265.32          | 733190.31         | N 32 17 38.60 W 103 42 44.80 |                          |
|                              | 9800.00    | 90.00       | 180.00           | 9135.00     | 866.64       | -866.64    | 77.70      | 0.00             | 471165.32          | 733190.31         | N 32 17 37.61 W 103 42 44.81 |                          |
|                              | 9900.00    | 90.00       | 180.00           | 9135.00     | 966.64       | -966.64    | 77.70      | 0.00             | 471065.33          | 733190.31         | N 32 17 36.62 W 103 42 44.82 |                          |
|                              | 10000.00   | 90.00       | 180.00           | 9135.00     | 1066.64      | -1066.64   | 77.70      | 0.00             | 470965.33          | 733190.31         | N 32 17 35.63 W 103 42 44.82 |                          |
|                              | 10100.00   | 90.00       | 180.00           | 9135.00     | 1166.64      | -1166.64   | 77.70      | 0.00             | 470865.34          | 733190.31         | N 32 17 34.64 W 103 42 44.83 |                          |
|                              | 10200.00   | 90.00       | 180.00           | 9135.00     | 1266.64      | -1266.64   | 77.70      | 0.00             | 470765.34          | 733190.31         | N 32 17 33.65 W 103 42 44.84 |                          |
|                              | 10300.00   | 90.00       | 180.00           | 9135.00     | 1366.64      | -1366.64   | 77.70      | 0.00             | 470665.35          | 733190.31         | N 32 17 32.66 W 103 42 44.84 |                          |
|                              | 10400.00   | 90.00       | 180.00           | 9135.00     | 1466.64      | -1466.64   | 77.70      | 0.00             | 470565.35          | 733190.31         | N 32 17 31.67 W 103 42 44.85 |                          |
|                              | 10500.00   | 90.00       | 180.00           | 9135.00     | 1566.64      | -1566.64   | 77.70      | 0.00             | 470465.36          | 733190.31         | N 32 17 30.68 W 103 42 44.86 |                          |
|                              | 10600.00   | 90.00       | 180.00           | 9135.00     | 1666.64      | -1666.64   | 77.70      | 0.00             | 470365.36          | 733190.31         | N 32 17 29.69 W 103 42 44.86 |                          |
|                              | 10700.00   | 90.00       | 180.00           | 9135.00     | 1766.64      | -1766.64   | 77.70      | 0.00             | 470265.37          | 733190.31         | N 32 17 28.70 W 103 42 44.87 |                          |
|                              | 10800.00   | 90.00       | 180.00           | 9135.00     | 1866.64      | -1866.64   | 77.70      | 0.00             | 470165.37          | 733190.31         | N 32 17 27.71 W 103 42 44.88 |                          |
|                              | 10900.00   | 90.00       | 180.00           | 9135.00     | 1966.64      | -1966.64   | 77.70      | 0.00             | 470065.38          | 733190.31         | N 32 17 26.73 W 103 42 44.88 |                          |
|                              | 11000.00   | 90.00       | 180.00           | 9135.00     | 2066.64      | -2066.64   | 77.70      | 0.00             | 469965.38          | 733190.31         | N 32 17 25.74 W 103 42 44.89 |                          |
|                              | 11100.00   | 90.00       | 180.00           | 9135.00     | 2166.64      | -2166.64   | 77.70      | 0.00             | 469865.39          | 733190.31         | N 32 17 24.75 W 103 42 44.90 |                          |
|                              | 11200.00   | 90.00       | 180.00           | 9135.00     | 2266.64      | -2266.64   | 77.70      | 0.00             | 469765.39          | 733190.31         | N 32 17 23.76 W 103 42 44.90 |                          |
|                              | 11300.00   | 90.00       | 180.00           | 9135.00     | 2366.64      | -2366.64   | 77.70      | 0.00             | 469665.40          | 733190.31         | N 32 17 22.77 W 103 42 44.91 |                          |
|                              | 11400.00   | 90.00       | 180.00           | 9135.00     | 2466.64      | -2466.64   | 77.70      | 0.00             | 469565.40          | 733190.31         | N 32 17 21.78 W 103 42 44.92 |                          |
|                              | 11500.00   | 90.00       | 180.00           | 9135.00     | 2566.64      | -2566.64   | 77.70      | 0.00             | 469465.41          | 733190.31         | N 32 17 20.79 W 103 42 44.92 |                          |
|                              | 11600.00   | 90.00       | 180.00           | 9135.00     | 2666.64      | -2666.64   | 77.70      | 0.00             | 469365.41          | 733190.31         | N 32 17 19.80 W 103 42 44.93 |                          |
|                              | 11700.00   | 90.00       | 180.00           | 9135.00     | 2766.64      | -2766.64   | 77.70      | 0.00             | 469265.42          | 733190.31         | N 32 17 18.81 W 103 42 44.94 |                          |
|                              | 11800.00   | 90.00       | 180.00           | 9135.00     | 2866.64      | -2866.64   | 77.70      | 0.00             | 469165.42          | 733190.31         | N 32 17 17.82 W 103 42 44.94 |                          |
|                              | 11900.00   | 90.00       | 180.00           | 9135.00     | 2966.64      | -2966.64   | 77.70      | 0.00             | 469065.43          | 733190.31         | N 32 17 16.83 W 103 42 44.95 |                          |
|                              | 12000.00   | 90.00       | 180.00           | 9135.00     | 3066.64      | -3066.64   | 77.70      | 0.00             | 468965.43          | 733190.31         | N 32 17 15.84 W 103 42 44.96 |                          |
|                              | 12100.00   | 90.00       | 180.00           | 9135.00     | 3166.64      | -3166.64   | 77.70      | 0.00             | 468865.44          | 733190.31         | N 32 17 14.85 W 103 42 44.96 |                          |
|                              | 12200.00   | 90.00       | 180.00           | 9135.00     | 3266.64      | -3266.64   | 77.70      | 0.00             | 468765.44          | 733190.31         | N 32 17 13.86 W 103 42 44.97 |                          |
|                              | 12300.00   | 90.00       | 180.00           | 9135.00     | 3366.64      | -3366.64   | 77.70      | 0.00             | 468665.45          | 733190.31         | N 32 17 12.87 W 103 42 44.98 |                          |
|                              | 12400.00   | 90.00       | 180.00           | 9135.00     | 3466.64      | -3466.64   | 77.70      | 0.00             | 468565.45          | 733190.31         | N 32 17 11.88 W 103 42 44.98 |                          |
|                              | 12500.00   | 90.00       | 180.00           | 9135.00     | 3566.64      | -3566.64   | 77.69      | 0.00             | 468465.46          | 733190.31         | N 32 17 10.89 W 103 42 44.99 |                          |
|                              | 12600.00   | 90.00       | 180.00           | 9135.00     | 3666.64      | -3666.64   | 77.69      | 0.00             | 468365.46          | 733190.31         | N 32 17 9.90 W 103 42 45.00  |                          |
|                              | 12700.00   | 90.00       | 180.00           | 9135.00     | 3766.64      | -3766.64   | 77.69      | 0.00             | 468265.47          | 733190.31         | N 32 17 8.91 W 103 42 45.00  |                          |
|                              | 12800.00   | 90.00       | 180.00           | 9135.00     | 3866.64      | -3866.64   | 77.69      | 0.00             | 468165.47          | 733190.31         | N 32 17 7.92 W 103 42 45.01  |                          |
|                              | 12900.00   | 90.00       | 180.00           | 9135.00     | 3966.64      | -3966.64   | 77.69      | 0.00             | 468065.48          | 733190.31         | N 32 17 6.94 W 103 42 45.02  |                          |
|                              | 13000.00   | 90.00       | 180.00           | 9135.00     | 4066.64      | -4066.64   | 77.69      | 0.00             | 467965.48          | 733190.31         | N 32 17 5.95 W 103 42 45.02  |                          |
|                              | 13100.00   | 90.00       | 180.00           | 9135.00     | 4166.64      | -4166.64   | 77.69      | 0.00             | 467865.49          | 733190.31         | N 32 17 4.96 W 103 42 45.03  |                          |
|                              | 13200.00   | 90.00       | 180.00           | 9135.00     | 4266.64      | -4266.64   | 77.69      | 0.00             | 467765.49          | 733190.31         | N 32 17 3.97 W 103 42 45.04  |                          |
|                              | 13300.00   | 90.00       | 180.00           | 9135.00     | 4366.64      | -4366.64   | 77.69      | 0.00             | 467665.50          | 733190.31         | N 32 17 2.98 W 103 42 45.04  |                          |

| Comments                                                           | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ") | Longitude<br>(E/W ° ' ") |
|--------------------------------------------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|-------------------------|--------------------------|
| Cimarex James<br>19 Federal 34H -<br>PBHL [100'<br>FSL, 2260' FEL] | 13400.00   | 90.00       | 180.00           | 9135.00     | 4466.64      | -4466.64   | 77.69      | 0.00             | 467565.50          | 733190.31         | N 32 17 1.99 W          | 103 42 45.05             |
|                                                                    | 13500.00   | 90.00       | 180.00           | 9135.00     | 4566.64      | -4566.64   | 77.69      | 0.00             | 467465.51          | 733190.31         | N 32 17 1.00 W          | 103 42 45.06             |
|                                                                    | 13600.00   | 90.00       | 180.00           | 9135.00     | 4666.64      | -4666.64   | 77.69      | 0.00             | 467365.51          | 733190.31         | N 32 17 0.01 W          | 103 42 45.06             |
|                                                                    | 13700.00   | 90.00       | 180.00           | 9135.00     | 4766.64      | -4766.64   | 77.69      | 0.00             | 467265.52          | 733190.31         | N 32 16 59.02 W         | 103 42 45.07             |
|                                                                    | 13721.03   | 90.00       | 180.00           | 9135.00     | 4787.67      | -4787.67   | 77.69      | 0.00             | 467244.49          | 733190.31         | N 32 16 58.81 W         | 103 42 45.07             |

Survey Type: Def Plan

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

| Description | Part | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in) | Casing<br>Diameter<br>(in) | Expected Max<br>Inclination<br>(deg) | Survey Tool Type           | Borehole / Survey                                                       |
|-------------|------|-----------------|---------------|------------------|-------------------|----------------------------|--------------------------------------|----------------------------|-------------------------------------------------------------------------|
|             | 1    | 0.000           | 26.000        | 1/100.000        | 30.000            | 30.000                     |                                      | NAL_MWD_IFR1+MS-Depth Only | Original Borehole / Cimarex<br>James 19 Federal 34H Rev2 RM<br>26July18 |
|             | 1    | 26.000          | 13721.029     | 1/100.000        | 30.000            | 30.000                     |                                      | NAL_MWD_IFR1+MS            | Original Borehole / Cimarex<br>James 19 Federal 34H Rev2 RM             |

|                   |                              |                        |                              |
|-------------------|------------------------------|------------------------|------------------------------|
| Borehole:         | Well:                        | Field:                 | Structure:                   |
| Original Borehole | Cimarex James 19 Federal 34H | NM Lea County (NAD 83) | Cimarex James 19 Federal 34H |

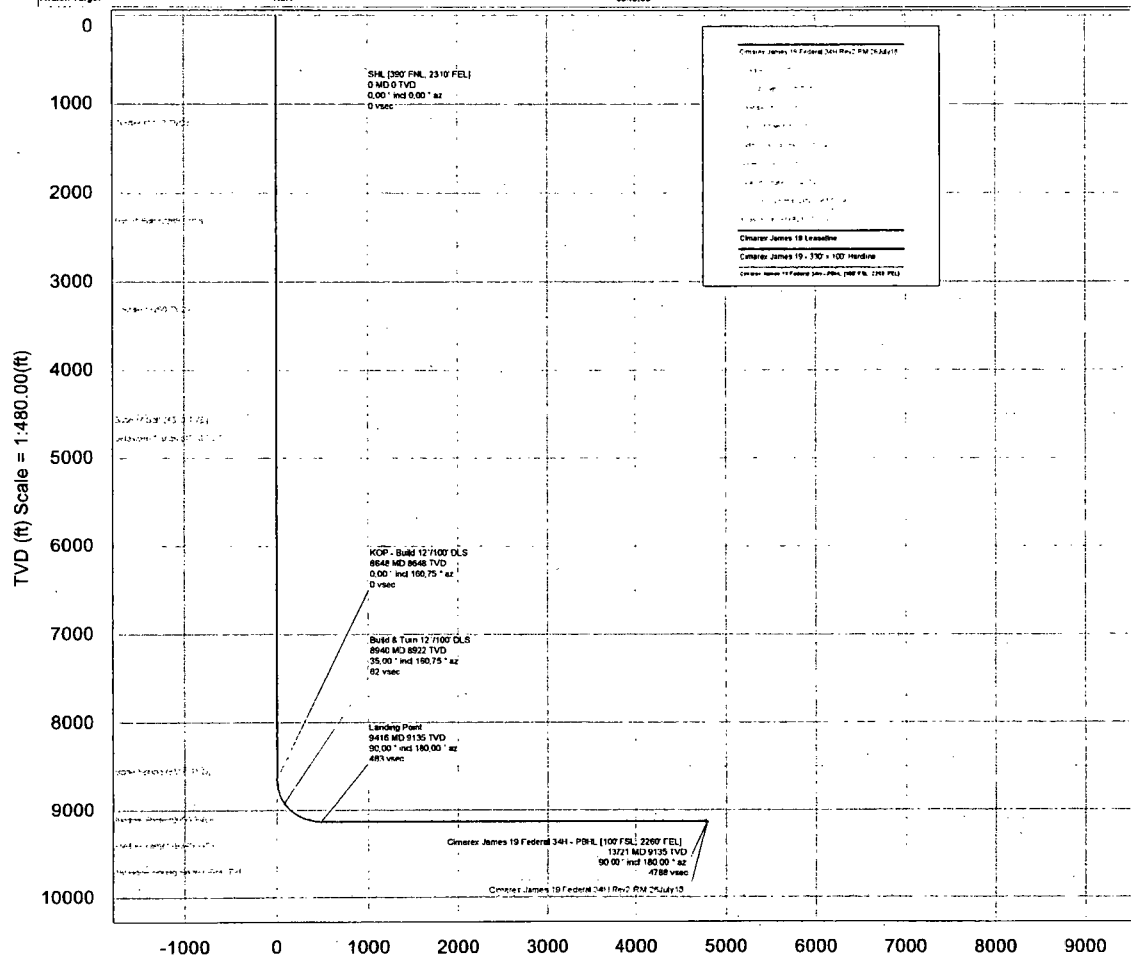
|                                        |                     |                                                     |                                                     |
|----------------------------------------|---------------------|-----------------------------------------------------|-----------------------------------------------------|
| Gravity & Magnetic Parameters          | Surface Location    | NADE3 New Mexico State Plane, Eastern Zone, US Feet | Micro-Resistivity                                   |
| Model: HDGM 2018                       | Lat: N 32 17 46.19  | Northings: 472051.3271US                            | Slot: Cimarex James 19                              |
| MagDec: 0.966°                         | Lon: W 103 42 45.66 | Eastings: 733112.6271US                             | Plan: Cimarex James 19 Federal 34H                  |
| Dip: 60.944°                           |                     | Grid Conv: 0.3316°                                  | TYD Ref: RND(3665.4R above MSL)                     |
| FS: 48094.7mT                          |                     | Scale Fact: 0.99995121                              | Plan: Cimarex James 19 Federal 34H Rev2 RM 26July18 |
| Date: 26-Jul-2018                      |                     |                                                     |                                                     |
| Gravity FS: 998.438mgm (9.80665 Based) |                     |                                                     |                                                     |

| Critical Point                                            | MD       | INCL  | AZIM   | TVD     | VSEC    | N(+)/S(-) | E(+)/W(-) | DLS   |
|-----------------------------------------------------------|----------|-------|--------|---------|---------|-----------|-----------|-------|
| SHL [390° FNL, 2310° FEL]                                 | 0.00     | 0.00  | 0.00   | 0.00    | 0.00    | 0.00      | 0.00      | 0.00  |
| Rustler                                                   | 1180.00  | 0.00  | 160.75 | 1180.00 | 0.00    | 0.00      | 0.00      | 0.00  |
| Top of Salt                                               | 2260.00  | 0.00  | 160.75 | 2260.00 | 0.00    | 0.00      | 0.00      | 0.00  |
| Castile                                                   | 3260.00  | 0.00  | 160.75 | 3260.00 | 0.00    | 0.00      | 0.00      | 0.00  |
| Base of Salt                                              | 4510.00  | 0.00  | 160.75 | 4510.00 | 0.00    | 0.00      | 0.00      | 0.00  |
| Delaware Sands                                            | 4720.00  | 0.00  | 160.75 | 4720.00 | 0.00    | 0.00      | 0.00      | 0.00  |
| Bone Spring                                               | 8500.00  | 0.00  | 160.75 | 8500.00 | 0.00    | 0.00      | 0.00      | 0.00  |
| KOP - Build 12°/100° DLS                                  | 8647.84  | 0.00  | 160.75 | 8647.84 | 0.00    | 0.00      | 0.00      | 0.00  |
| Build & Turn 12°/100° DLS                                 | 8939.50  | 35.00 | 160.75 | 8921.70 | 81.52   | -81.52    | 28.46     | 12.00 |
| Avalon Shale                                              | 9123.07  | 55.84 | 170.99 | 9050.00 | 207.80  | -207.80   | 58.08     | 12.00 |
| Landing Point                                             | 9416.28  | 90.00 | 180.00 | 9135.00 | 482.92  | -482.92   | 77.70     | 12.00 |
| Cimarex James 19 Federal 34H - PBHL [100° FSL, 2260° FEL] | 13721.03 | 90.00 | 180.00 | 9135.00 | 4787.67 | -4787.67  | 77.69     | 0.00  |
| 1st Bone Spring Sand                                      | NaN      |       |        | 9650.00 |         |           |           |       |
| Avalon Target                                             | NaN      |       |        | 9345.00 |         |           |           |       |

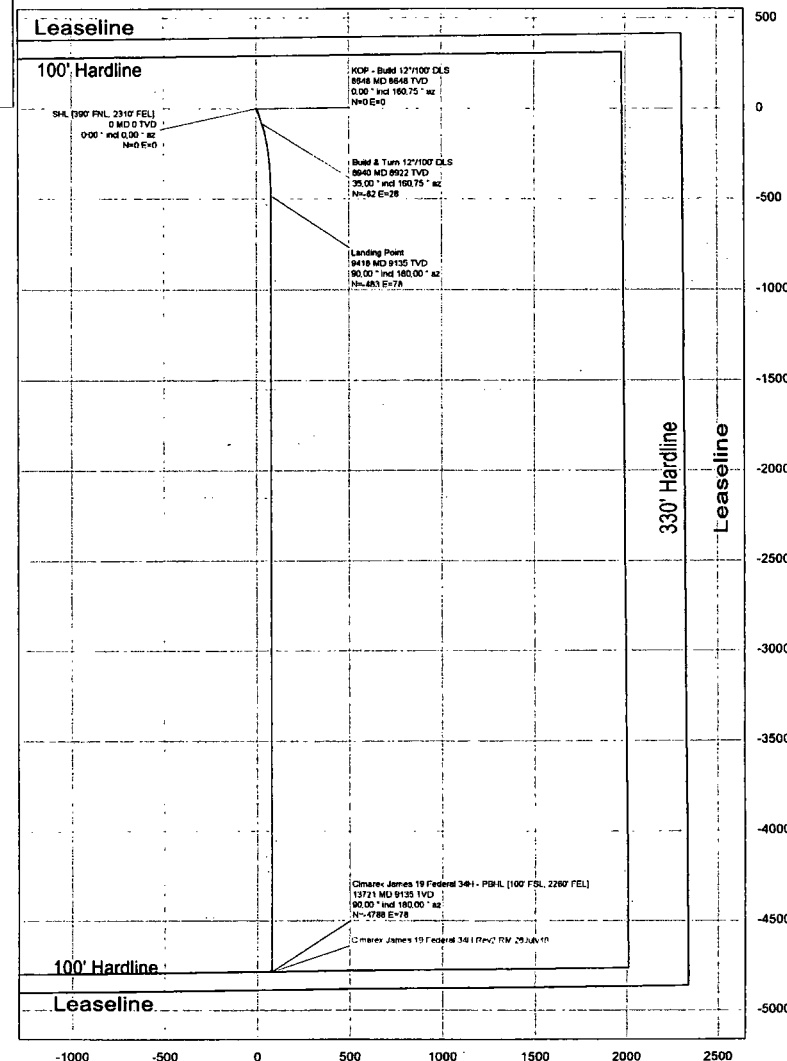


Grid  
True  
Mag  
Grid North  
Tot Cor (M=+G 8.534")  
Mag Dec (8.866")  
Grid Conv (0.332")

| CONTROLLED |                                               |
|------------|-----------------------------------------------|
| Plan of    | Cimarex James 19 Federal 34H Rev2 RM 26July18 |
| Drawing of |                                               |
| Drawn by   | WJ                                            |
| Date       | 26-Jul-2018                                   |
| 1. Check   |                                               |
| 2. Draw    |                                               |
| 3. Office  |                                               |
| 4. Office  |                                               |
| 5. Office  |                                               |
| 6. Office  |                                               |



Vertical Section (ft) Azim = 180.00° Scale = 1:480.00(ft) Origin = 0N



EW (ft) Scale = 1:234.43(ft)

**1. Geological Formations**

TVD of target 9,135

Pilot Hole TD N/A

MD at TD 13,721

Deepest expected fresh water

| Formation            | Depth (TVD) from KB | Water/Mineral Bearing/Target Zone | Hazards |
|----------------------|---------------------|-----------------------------------|---------|
| Rustler              | 1160                | N/A                               |         |
| Salado               | 2260                | N/A                               |         |
| Castille             | 3260                | N/A                               |         |
| Base of Salt         | 4510                | N/A                               |         |
| Delaware Sands       | 7420                | Hydrocarbons                      |         |
| Bone Spring          | 8500                | Hydrocarbons                      |         |
| Avalon shale         | 9050                | Hydrocarbons                      |         |
| Avalon Target        | 9345                | Hydrocarbons                      |         |
| 1st Bone Spring Sand | 9650                | Hydrocarbons                      |         |

**2. Casing Program**

| Hole Size                 | Casing Depth From | Casing Depth To | Casing Size | Weight (lb/ft) | Grade            | Conn. | SF Collapse | SF Burst | SF Tension         |
|---------------------------|-------------------|-----------------|-------------|----------------|------------------|-------|-------------|----------|--------------------|
| 17 1/2                    | 0                 | 1210            | 13-3/8"     | 48.00          | H-40/J-55 Hybrid | ST&C  | 1.34        | 3.12     | 5.54               |
| 12 1/4                    | 0                 | 4700            | 9-5/8"      | 40.00          | J-55             | LT&C  | 1.59        | 1.58     | 2.77               |
| 8 3/4                     | 0                 | 8648            | 5-1/2"      | 17.00          | L-80             | LT&C  | 1.55        | 1.91     | 2.18               |
| 8 3/4                     | 8648              | 13721           | 5-1/2"      | 17.00          | L-80             | BT&C  | 1.47        | 1.81     | 47.95              |
| BLM Minimum Safety Factor |                   |                 |             |                |                  |       | 1.125       | 1        | 1.6 Dry<br>1.8 Wet |

TVD was used on all calculations.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h



|                                                                                                                                                  | Y or N |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Is casing new? If used, attach certification as required in Onshore Order #1                                                                     | Y      |
| Does casing meet API specifications? If no, attach casing specification sheet.                                                                   | Y      |
| Is premium or uncommon casing planned? If yes attach casing specification sheet.                                                                 | N      |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y      |
| Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?                | Y      |
| Is well located within Capitan Reef?                                                                                                             | N      |
| If yes, does production casing cement tie back a minimum of 50' above the Reef?                                                                  | N      |
| Is well within the designated 4 string boundary.                                                                                                 | N      |
| Is well located in SOPA but not in R-111-P?                                                                                                      | N      |
| If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?                                   | N      |
| Is well located in R-111-P and SOPA?                                                                                                             | N      |
| If yes, are the first three strings cemented to surface?                                                                                         | N      |
| Is 2nd string set 100' to 600' below the base of salt?                                                                                           | N      |
| Is well located in high Cave/Karst?                                                                                                              | N      |
| If yes, are there two strings cemented to surface?                                                                                               | N      |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?                                                           | N      |
| Is well located in critical Cave/Karst?                                                                                                          | N      |
| If yes, are there three strings cemented to surface?                                                                                             | N      |
| Is AC Report included?                                                                                                                           | N      |

**3. Cementing Program**

| Casing       | # Sks | Wt.<br>lb/gal | Yld<br>ft <sup>3</sup> /sack | H <sub>2</sub> O<br>gal/sk | 500# Comp.<br>Strength<br>(hours) | Slurry Description                                                     |
|--------------|-------|---------------|------------------------------|----------------------------|-----------------------------------|------------------------------------------------------------------------|
| Surface      | 587   | 13.50         | 1.72                         | 9.15                       | 15.5                              | Lead: Class C + Bentonite                                              |
|              | 157   | 14.80         | 1.34                         | 6.32                       | 9.5                               | Tail: Class C + LCM                                                    |
|              |       |               |                              |                            |                                   |                                                                        |
| Intermediate | 880   | 12.90         | 1.88                         | 9.65                       | 12                                | Lead: 35:65 (Poz:C) + Salt + Bentonite                                 |
|              | 275   | 14.80         | 1.34                         | 6.32                       | 9.5                               | Tail: Class C + LCM                                                    |
|              |       |               |                              |                            |                                   |                                                                        |
| Production   | 357   | 10.30         | 3.64                         | 22.18                      |                                   | Lead: Tuned Light + LCM                                                |
|              | 1085  | 14.20         | 1.30                         | 5.86                       | 14:30                             | Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS |
|              |       |               |                              |                            |                                   |                                                                        |

| Casing String | TOC  | % Excess |
|---------------|------|----------|
| Surface       | 0    | 45       |
| Intermediate  | 0    | 51       |
| Production    | 4500 | 17       |

**4. Pressure Control Equipment**

| A variance is requested for the use of a diverter on the surface casing. See attached for schematic. |        |                 |            |   |                         |
|------------------------------------------------------------------------------------------------------|--------|-----------------|------------|---|-------------------------|
| BOP installed and tested before drilling which hole?                                                 | Size   | Min Required WP | Type       |   | Tested To               |
| 12 1/4                                                                                               | 13 5/8 | 2M              | Annular    | X | 50% of working pressure |
|                                                                                                      |        |                 | Blind Ram  |   | 2M                      |
|                                                                                                      |        |                 | Pipe Ram   |   |                         |
|                                                                                                      |        |                 | Double Ram | X |                         |
|                                                                                                      |        |                 | Other      |   |                         |
| 8 3/4                                                                                                | 13 5/8 | 3M              | Annular    | X | 50% of working pressure |
|                                                                                                      |        |                 | Blind Ram  |   | 3M                      |
|                                                                                                      |        |                 | Pipe Ram   |   |                         |
|                                                                                                      |        |                 | Double Ram | X |                         |
|                                                                                                      |        |                 | Other      |   |                         |

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

|   |                                                                                                                                                                                                                                                                                                               |  |  |  |  |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|   | Formation integrity test will be performed per Onshore Order #2.<br>On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. |  |  |  |  |
| X | A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.                                                                                                                                                               |  |  |  |  |
| N | Are anchors required by manufacturer?                                                                                                                                                                                                                                                                         |  |  |  |  |

**5. Mud Program**

| Depth           | Type         | Weight (ppg) | Viscosity | Water Loss |
|-----------------|--------------|--------------|-----------|------------|
| 0' to 1210'     | FW Spud Mud  | 8.30 - 8.80  | 30-32     | N/C        |
| 1210' to 4700'  | Brine Water  | 9.70 - 10.20 | 30-32     | N/C        |
| 4700' to 13721' | FW/Cut Brine | 8.50 - 9.00  | 30-32     | N/C        |

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

|                                                         |                             |
|---------------------------------------------------------|-----------------------------|
| What will be used to monitor the loss or gain of fluid? | PVT/Pason/Visual Monitoring |
|---------------------------------------------------------|-----------------------------|

**6. Logging and Testing Procedures**

| Logging, Coring and Testing |                                                                                                                                                             |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X                           | Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM. |
|                             | No logs are planned based on well control or offset log information.                                                                                        |
|                             | Drill stem test?                                                                                                                                            |
|                             | Coring?                                                                                                                                                     |

| Additional Logs Planned | Interval |
|-------------------------|----------|
|-------------------------|----------|

**7. Drilling Conditions**

| Condition                  |          |
|----------------------------|----------|
| BH Pressure at deepest TVD | 4275 psi |
| Abnormal Temperature       | No       |

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

|   |                                   |
|---|-----------------------------------|
| X | H <sub>2</sub> S is present       |
| X | H <sub>2</sub> S plan is attached |

**8. Other Facets of Operation****9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

The casing string utilizing steel body pack-off will be tested to 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.