

**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 Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

Form C-101  
August 1, 2011

Permit 322636

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

|                                                                                                            |                                                   |                               |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------|
| 1. Operator Name and Address<br>Catena Resources Operating, LLC<br>1001 Fannin Street<br>Houston, TX 77002 |                                                   | 2. OGRID Number<br>328449     |
|                                                                                                            |                                                   | 3. API Number<br>30-025-50758 |
| 4. Property Code<br>333489                                                                                 | 5. Property Name<br>ALPHA E2W2 04 33 W1 STATE COM | 6. Well No.<br>001H           |

**7. Surface Location**

|               |              |                 |              |              |                  |               |                   |               |               |
|---------------|--------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|---------------|
| UL - Lot<br>C | Section<br>9 | Township<br>19S | Range<br>35E | Lot Idn<br>C | Feet From<br>300 | N/S Line<br>N | Feet From<br>1649 | E/W Line<br>W | County<br>Lea |
|---------------|--------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|---------------|

**8. Proposed Bottom Hole Location**

|               |               |                 |              |              |                  |               |                   |               |               |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|---------------|
| UL - Lot<br>C | Section<br>33 | Township<br>18S | Range<br>35E | Lot Idn<br>C | Feet From<br>100 | N/S Line<br>N | Feet From<br>2260 | E/W Line<br>W | County<br>Lea |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|---------------|

**9. Pool Information**

|                 |       |
|-----------------|-------|
| SCHARB;WOLFCAMP | 55640 |
|-----------------|-------|

**Additional Well Information**

|                           |                             |                                        |                         |                                    |
|---------------------------|-----------------------------|----------------------------------------|-------------------------|------------------------------------|
| 11. Work Type<br>New Well | 12. Well Type<br>OIL        | 13. Cable/Rotary                       | 14. Lease Type<br>State | 15. Ground Level Elevation<br>3860 |
| 16. Multiple<br>N         | 17. Proposed Depth<br>21540 | 18. Formation<br>Wolfcamp              | 19. Contractor          | 20. Spud Date<br>10/1/2022         |
| Depth to Ground water     |                             | Distance from nearest fresh water well |                         | Distance to nearest surface water  |

☒ We will be using a closed-loop system in lieu of lined pits

**21. Proposed Casing and Cement Program**

| Type | Hole Size | Casing Size | Casing Weight/ft | Setting Depth | Sacks of Cement | Estimated TOC |
|------|-----------|-------------|------------------|---------------|-----------------|---------------|
| Surf | 17.5      | 13.375      | 54.5             | 1850          | 1610            | 0             |
| Int1 | 12.75     | 9.625       | 45.5             | 3950          | 1250            | 0             |
| Prod | 8.75      | 5.5         | 20               | 21540         | 3000            | 5000          |

**Casing/Cement Program: Additional Comments**

|  |
|--|
|  |
|--|

**22. Proposed Blowout Prevention Program**

| Type       | Working Pressure | Test Pressure | Manufacturer |
|------------|------------------|---------------|--------------|
| Double Ram | 10000            | 10000         | Cameron      |

|                                                                                                                                                                                                                                                                                                    |                                  |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------|
| 23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.<br>I further certify I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> if applicable. | <b>OIL CONSERVATION DIVISION</b> |                                 |
| Signature:                                                                                                                                                                                                                                                                                         |                                  |                                 |
| Printed Name: Electronically filed by Cato Clark                                                                                                                                                                                                                                                   | Approved By: Paul F Kautz        |                                 |
| Title:                                                                                                                                                                                                                                                                                             | Title: Geologist                 |                                 |
| Email Address: clark@catenares.com                                                                                                                                                                                                                                                                 | Approved Date: 10/27/2022        | Expiration Date: 10/27/2024     |
| Date: 10/21/2022                                                                                                                                                                                                                                                                                   | Phone: 346-200-7894              | Conditions of Approval Attached |

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State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, N.M. 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>30-025-50758 | <sup>2</sup> Pool Code<br>55640                               | <sup>3</sup> Pool Name<br>Scharb; Wolfcamp |
| <sup>4</sup> Property Code<br>332884    | <sup>5</sup> Property Name<br>Alpha E2W2 04 33 W1 State Com   | <sup>6</sup> Well Number<br>1H             |
| <sup>7</sup> GRID No.<br>328449         | <sup>8</sup> Operator Name<br>Catena Resources Operating, LLC | <sup>9</sup> Elevation<br>3860             |

<sup>10</sup> Surface Location

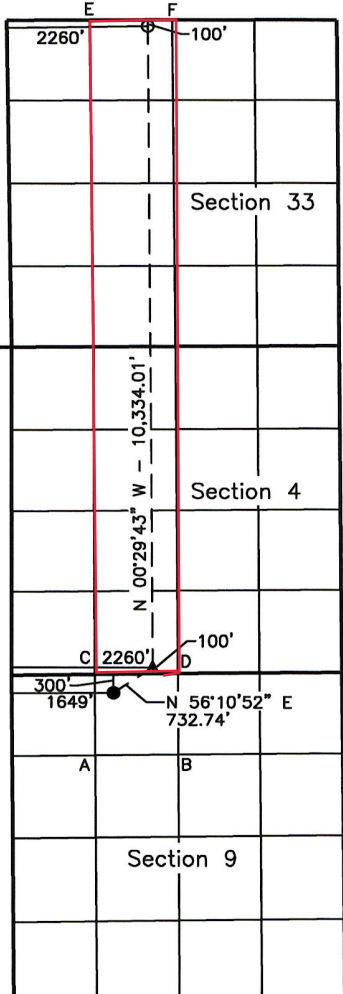
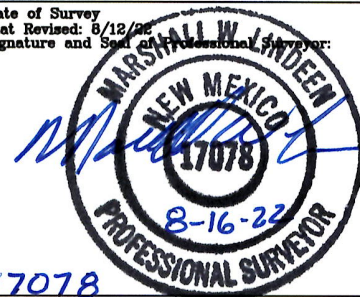
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| C             | 9       | 19 S     | 35 E  |         | 300           | North            | 1649          | West           | Lea    |

<sup>11</sup> 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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| C             | 33      | 18 S     | 35 E  |         | 100           | North            | 2260          | West           | Lea    |

|                                         |                               |                                       |                         |
|-----------------------------------------|-------------------------------|---------------------------------------|-------------------------|
| <sup>12</sup> Dedicated Acres<br>319.70 | <sup>13</sup> Joint or Infill | <sup>14</sup> Consolidation Code<br>C | <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

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>16</p>  | <p>SCALE: 1"=3000'</p> <p>Legend:<br/>● = Surface Location<br/>○ = Bottom Hole Location<br/>△ = First Take Point (FTP)</p> <p>SURFACE LOCATION<br/>NAD 83 NME<br/>Y=612786.91 N<br/>X=808312.06 E<br/>LAT.=32.6815946° N<br/>LONG.=103.4656255° W</p> <p>FIRST TAKE POINT<br/>100' FSL, 2260' FWL<br/>SEC. 4, T19S, R35E<br/>NAD 83 NME<br/>Y=613194.73 N<br/>X=808920.82 E<br/>LAT.=32.6827018° N<br/>LONG.=103.4636362° W</p> <p>BOTTOM HOLE LOCATION<br/>NAD 83 NME<br/>Y=623528.35 N<br/>X=808831.50 E<br/>LAT.=32.7111045° N<br/>LONG.=103.4636512° W</p> <p>CORNER COORDINATES TABLE<br/>NAD 83 NME<br/>A - Y= 611756.19 N, X= 808001.82 E<br/>B - Y= 611773.12 N, X= 809331.57 E<br/>C - Y= 613082.75 N, X= 807991.67 E<br/>D - Y= 613099.90 N, X= 809322.31 E<br/>E - Y= 623624.26 N, X= 807893.95 E<br/>F - Y= 623630.04 N, X= 809218.09 E</p> <p>CORNER COORDINATES TABLE<br/>NAD 83 NME<br/>A - LAT.=32.6787687° N, LONG.=103.4666611° W<br/>B - LAT.=32.6787853° N, LONG.=103.4623393° W<br/>C - LAT.=32.6824149° N, LONG.=103.4666588° W<br/>D - LAT.=32.6824321° N, LONG.=103.4623340° W<br/>E - LAT.=32.7113892° N, LONG.=103.4666965° W<br/>F - LAT.=32.7113753° N, LONG.=103.4623917° W</p> | <p>17 OPERATOR CERTIFICATION</p> <p>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>Byron Barnes</i> 8/17/2022<br/>Signature Date<br/>Byron Barnes<br/>Printed Name<br/>barnes@catenares.com<br/>E-mail Address</p> <p>18 SURVEYOR CERTIFICATION</p> <p>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>03/16/22<br/>Date of Survey<br/>Plat Revised: 8/12/22<br/>Signature and Seal of Professional Surveyor:<br/><br/>17078<br/>Certificate Number</p> |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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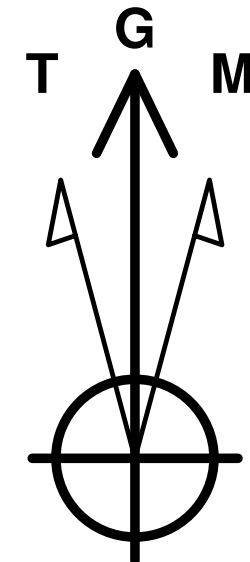
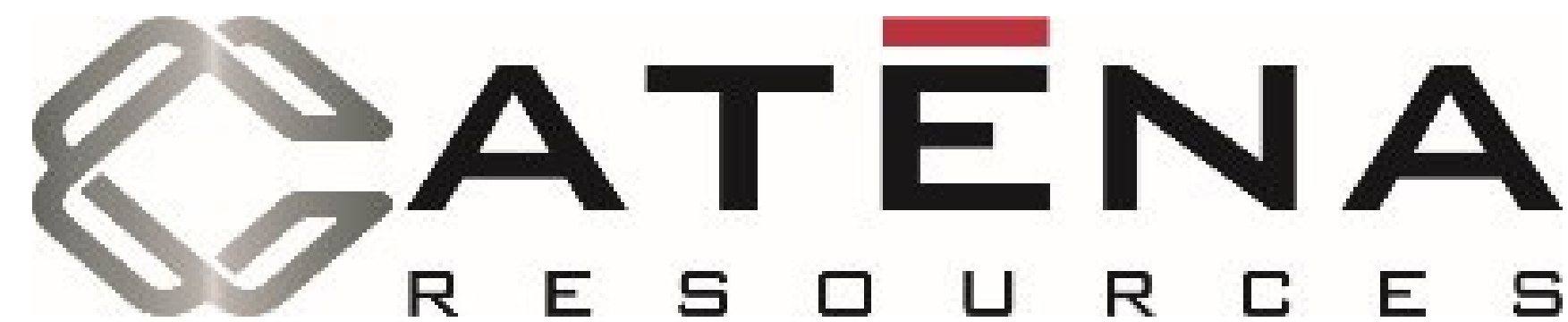
Form APD Conditions

Permit 322636

**PERMIT CONDITIONS OF APPROVAL**

|                                                                                                                   |                                              |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Operator Name and Address:<br>Catena Resources Operating, LLC [328449]<br>1001 Fannin Street<br>Houston, TX 77002 | API Number:<br>30-025-50758                  |
|                                                                                                                   | Well:<br>ALPHA E2W2 04 33 W1 STATE COM #001H |

| OCD<br>Reviewer | Condition                                                                                                                                                                                                                                                            |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pkautz          | Notify OCD 24 hours prior to casing & cement                                                                                                                                                                                                                         |
| pkautz          | Will require a File As Drilled C-102 and a Directional Survey with the C-104                                                                                                                                                                                         |
| pkautz          | Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string |
| pkautz          | Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system                  |
| pkautz          | Cement is required to circulate on both surface and intermediate1 strings of casing                                                                                                                                                                                  |
| pkautz          | The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud                                                                                                                                                                   |



Azimuths to Grid North  
True North: -0.47°  
Magnetic North: 5.93°

Magnetic Field  
Strength: 47652.7snT  
Dip Angle: 60.29°  
Date: 8/4/2022  
Model: IGRF2020

PROJECT DETAILS: Lea Co, NM (NAD83 NME)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level  
Ground Level: 3860.00  
GL +25' RKB @ 3885.00usft

WELL DETAILS: Alpha E2W2 04 33 W1 State Com 1H

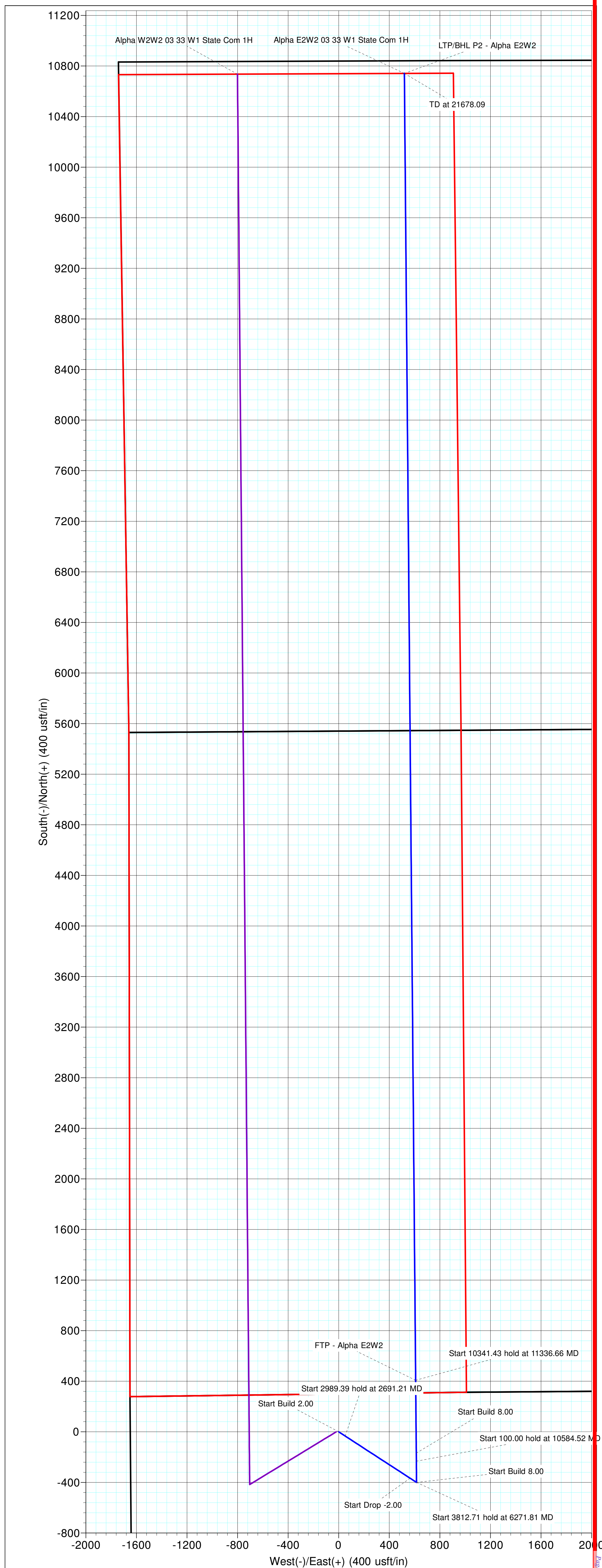
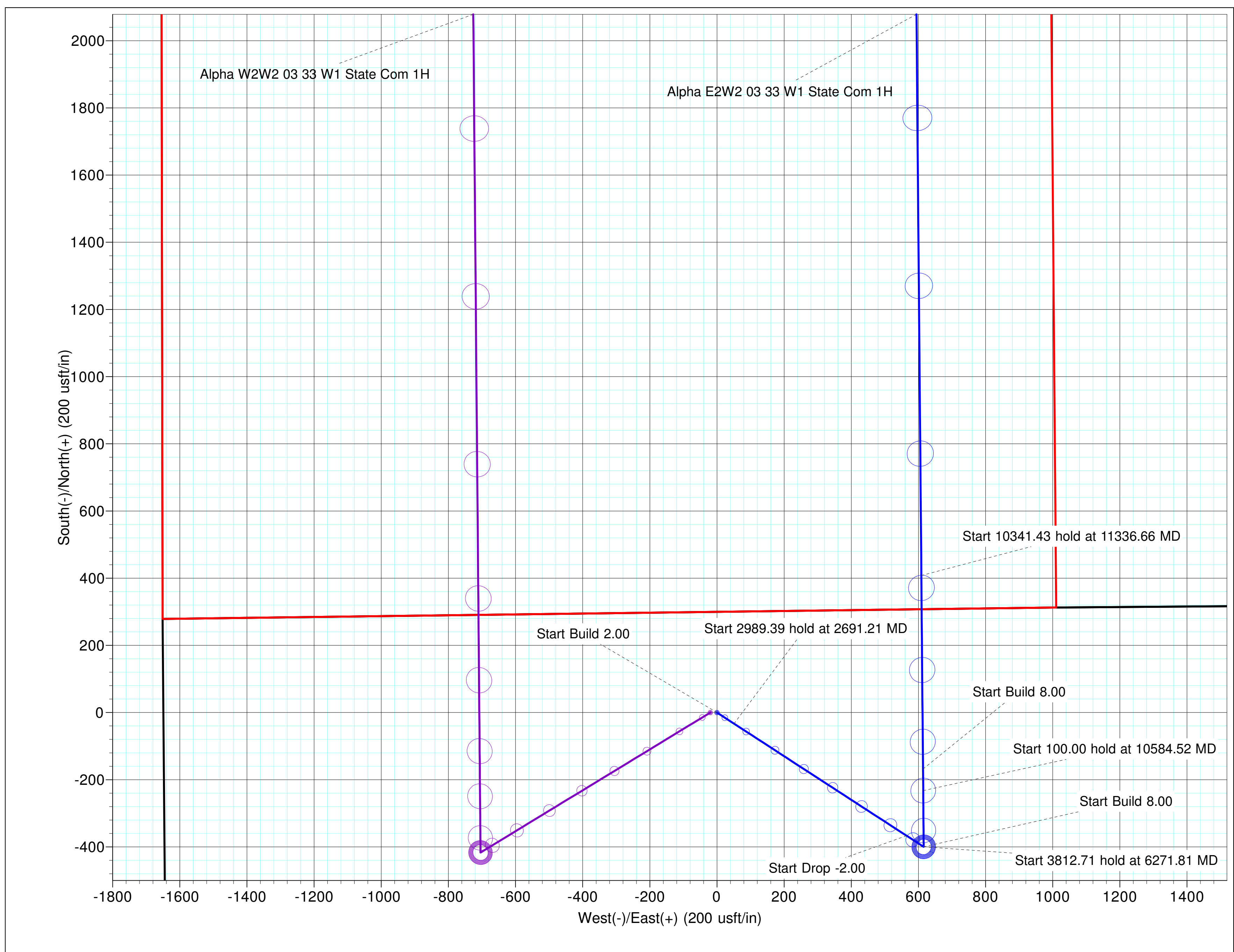
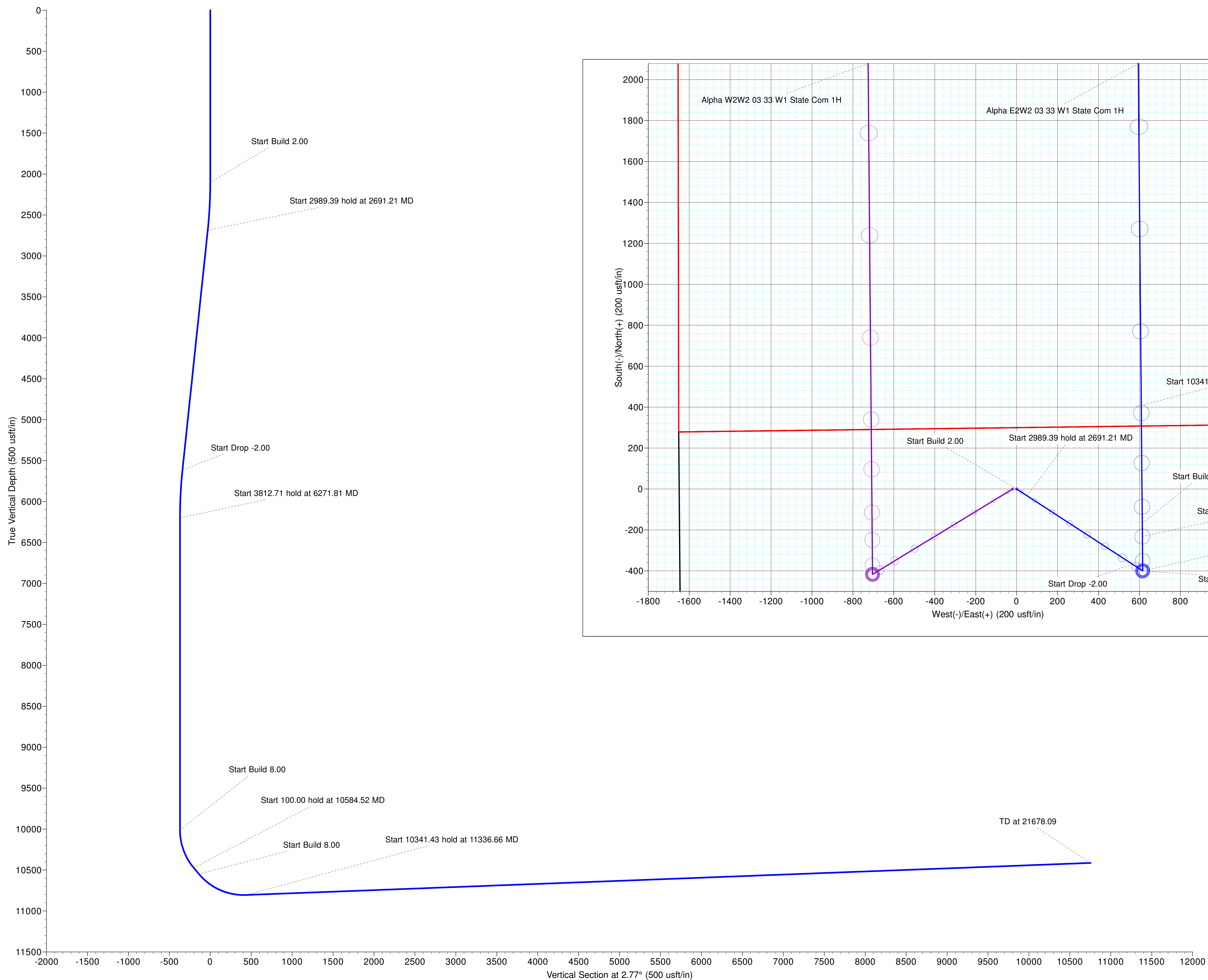
| +N/-S | +E/-W | Northing  | Easting   | Latitude   | Longitude    |
|-------|-------|-----------|-----------|------------|--------------|
| 0.00  | 0.00  | 612786.91 | 808312.06 | 32.6815946 | -103.4656255 |

DESIGN TARGET DETAILS

| Name                    | TVD      | +N/-S    | +E/-W  | Northing  | Easting   | Latitude   | Longitude    |
|-------------------------|----------|----------|--------|-----------|-----------|------------|--------------|
| LTP/BHL P2 - Alpha E2W2 | 10413.26 | 10741.44 | 519.44 | 623528.35 | 808831.50 | 32.7111045 | -103.4636511 |
| FTP - Alpha E2W2        | 10805.00 | 407.82   | 608.76 | 613194.73 | 808920.82 | 32.6827017 | -103.4636362 |

ANNOTATIONS

| TVD      | MD       | Inc   | Azi    | +N/-S    | +E/-W  | VSect    | Departure | Annotation                         |
|----------|----------|-------|--------|----------|--------|----------|-----------|------------------------------------|
| 2100.00  | 2100.00  | 0.00  | 0.00   | 0.00     | 0.00   | 0.00     | 0.00      | Start Build 2.00                   |
| 2687.02  | 2691.21  | 11.82 | 122.99 | -33.10   | 50.98  | -30.60   | 60.79     | Start 2989.39 hold at 2691.21 MD   |
| 5612.98  | 5680.60  | 11.82 | 122.99 | -366.65  | 564.76 | -338.95  | 673.34    | Start Drop -2.00                   |
| 6200.00  | 6271.81  | 0.00  | 0.00   | -399.76  | 615.74 | -369.55  | 734.13    | Start 3812.71 hold at 6271.81 MD   |
| 10012.71 | 10084.52 | 0.00  | 0.00   | -399.76  | 615.74 | -369.55  | 734.13    | Start Build 8.00                   |
| 10473.08 | 10584.52 | 40.00 | 359.50 | -232.20  | 614.29 | -202.26  | 901.68    | Start 100.00 hold at 10584.52 MD   |
| 10549.68 | 10684.52 | 40.00 | 359.50 | -167.93  | 613.74 | -138.09  | 965.96    | Start Build 8.00                   |
| 10805.00 | 11336.66 | 92.17 | 359.50 | 407.82   | 608.76 | 436.75   | 1541.73   | Start 10341.43 hold at 11336.66 MD |
| 10413.26 | 21678.09 | 92.17 | 359.50 | 10741.44 | 519.44 | 10754.00 | 11875.74  | TD at 21678.09                     |





## **Catena Resources Operating, LLC**

**Lea Co, NM (NAD83 NME)**

**Sec 9-T19S-R35E**

**Alpha E2W2 04 33 W1 State Com 1H**

**Wellbore #1**

**Plan: Plan #2**

## **Standard Planning Report**

**26 August, 2022**





## Planning Report



|                  |                                  |                                     |                                       |
|------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well Alpha E2W2 03 33 W1 State Com 1H |
| <b>Company:</b>  | Catena Resources Operating, LLC  | <b>TVD Reference:</b>               | GL +25' RKB @ 3885.00usft             |
| <b>Project:</b>  | Lea Co, NM (NAD83 NME)           | <b>MD Reference:</b>                | GL +25' RKB @ 3885.00usft             |
| <b>Site:</b>     | Sec 9-T19S-R35E                  | <b>North Reference:</b>             | Grid                                  |
| <b>Well:</b>     | Alpha E2W2 03 33 W1 State Com 1H | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                                       |
| <b>Design:</b>   | Plan #2                          |                                     |                                       |

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

|                       |           |                 |                 |                   |              |
|-----------------------|-----------|-----------------|-----------------|-------------------|--------------|
| Site                  |           | Sec 9-T19S-R35E |                 |                   |              |
| Site Position:        |           | Northing:       | 612,786.91 usft | Latitude:         | 32.6815946   |
| From:                 | Map       | Easting:        | 808,312.06 usft | Longitude:        | -103.4656255 |
| Position Uncertainty: | 0.00 usft | Slot Radius:    | 13-3/16 "       | Grid Convergence: | 0.47 °       |

|                      |                                  |           |                     |                 |               |               |
|----------------------|----------------------------------|-----------|---------------------|-----------------|---------------|---------------|
| Well                 | Alpha E2W2 03 33 W1 State Com 1H |           |                     |                 |               |               |
| Well Position        | +N/-S                            | 0.00 usft | Northing:           | 612,786.91 usft | Latitude:     | 32.6815946    |
|                      | +E/-W                            | 0.00 usft | Easting:            | 808,312.06 usft | Longitude:    | -103.4656255  |
| Position Uncertainty |                                  | 0.00 usft | Wellhead Elevation: | 0.00 usft       | Ground Level: | 3,860.00 usft |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2020          | 8/4/2022           | 6.40                   | 60.29                | 47,653                     |

|                          |                                |                     |                      |                      |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| <b>Design</b>            | Plan #2                        |                     |                      |                      |
| <b>Audit Notes:</b>      |                                |                     |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                  | PLAN                | <b>Tie On Depth:</b> | 0.00                 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b>  | <b>Direction (°)</b> |
|                          | 0.00                           | 0.00                | 0.00                 | 2.77                 |

| <b>Plan Sections</b>  |                 |             |                       |              |              |                         |                        |                       |         |                    |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|--------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target             |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 2,100.00              | 0.00            | 0.00        | 2,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 2,691.21              | 11.82           | 122.99      | 2,687.02              | -33.10       | 50.98        | 2.00                    | 2.00                   | 0.00                  | 122.99  |                    |
| 5,680.60              | 11.82           | 122.99      | 5,612.98              | -366.65      | 564.76       | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 6,271.81              | 0.00            | 0.00        | 6,200.00              | -399.76      | 615.74       | 2.00                    | -2.00                  | 0.00                  | 180.00  |                    |
| 10,084.52             | 0.00            | 0.00        | 10,012.71             | -399.76      | 615.74       | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 10,584.52             | 40.00           | 359.50      | 10,473.08             | -232.20      | 614.29       | 8.00                    | 8.00                   | 0.00                  | 359.50  |                    |
| 10,684.52             | 40.00           | 359.50      | 10,549.68             | -167.93      | 613.74       | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 11,336.66             | 92.17           | 359.50      | 10,805.00             | 407.82       | 608.76       | 8.00                    | 8.00                   | 0.00                  | 0.00    |                    |
| 21,678.09             | 92.17           | 359.50      | 10,413.26             | 10,741.44    | 519.44       | 0.00                    | 0.00                   | 0.00                  | 0.00    | LTP/BHL P2 - Alpha |



## Planning Report



|                  |                                  |                                     |                                       |
|------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well Alpha E2W2 03 33 W1 State Com 1H |
| <b>Company:</b>  | Catena Resources Operating, LLC  | <b>TVD Reference:</b>               | GL +25' RKB @ 3885.00usft             |
| <b>Project:</b>  | Lea Co, NM (NAD83 NME)           | <b>MD Reference:</b>                | GL +25' RKB @ 3885.00usft             |
| <b>Site:</b>     | Sec 9-T19S-R35E                  | <b>North Reference:</b>             | Grid                                  |
| <b>Well:</b>     | Alpha E2W2 03 33 W1 State Com 1H | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                                       |
| <b>Design:</b>   | Plan #2                          |                                     |                                       |

| Planned Survey                          |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)                   | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 0.00                                    | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 100.00                                  | 0.00            | 0.00        | 100.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 200.00                                  | 0.00            | 0.00        | 200.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 300.00                                  | 0.00            | 0.00        | 300.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 400.00                                  | 0.00            | 0.00        | 400.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 500.00                                  | 0.00            | 0.00        | 500.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 600.00                                  | 0.00            | 0.00        | 600.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 700.00                                  | 0.00            | 0.00        | 700.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 800.00                                  | 0.00            | 0.00        | 800.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 900.00                                  | 0.00            | 0.00        | 900.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,000.00                                | 0.00            | 0.00        | 1,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,100.00                                | 0.00            | 0.00        | 1,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,200.00                                | 0.00            | 0.00        | 1,200.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,300.00                                | 0.00            | 0.00        | 1,300.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,400.00                                | 0.00            | 0.00        | 1,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,500.00                                | 0.00            | 0.00        | 1,500.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,600.00                                | 0.00            | 0.00        | 1,600.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,700.00                                | 0.00            | 0.00        | 1,700.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,800.00                                | 0.00            | 0.00        | 1,800.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 1,900.00                                | 0.00            | 0.00        | 1,900.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 2,000.00                                | 0.00            | 0.00        | 2,000.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Surface Csg</b>                      |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,100.00                                | 0.00            | 0.00        | 2,100.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Start Build 2.00</b>                 |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,200.00                                | 2.00            | 122.99      | 2,199.98              | -0.95        | 1.46         | -0.88                   | 2.00                    | 2.00                   | 0.00                  |
| 2,300.00                                | 4.00            | 122.99      | 2,299.84              | -3.80        | 5.85         | -3.51                   | 2.00                    | 2.00                   | 0.00                  |
| 2,400.00                                | 6.00            | 122.99      | 2,399.45              | -8.55        | 13.16        | -7.90                   | 2.00                    | 2.00                   | 0.00                  |
| 2,500.00                                | 8.00            | 122.99      | 2,498.70              | -15.18       | 23.38        | -14.03                  | 2.00                    | 2.00                   | 0.00                  |
| 2,600.00                                | 10.00           | 122.99      | 2,597.47              | -23.70       | 36.50        | -21.91                  | 2.00                    | 2.00                   | 0.00                  |
| 2,691.21                                | 11.82           | 122.99      | 2,687.02              | -33.10       | 50.98        | -30.60                  | 2.00                    | 2.00                   | 0.00                  |
| <b>Start 2989.39 hold at 2691.21 MD</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,700.00                                | 11.82           | 122.99      | 2,695.63              | -34.08       | 52.50        | -31.51                  | 0.00                    | 0.00                   | 0.00                  |
| 2,800.00                                | 11.82           | 122.99      | 2,793.50              | -45.24       | 69.68        | -41.82                  | 0.00                    | 0.00                   | 0.00                  |
| 2,900.00                                | 11.82           | 122.99      | 2,891.38              | -56.40       | 86.87        | -52.14                  | 0.00                    | 0.00                   | 0.00                  |
| 3,000.00                                | 11.82           | 122.99      | 2,989.26              | -67.56       | 104.06       | -62.45                  | 0.00                    | 0.00                   | 0.00                  |
| 3,100.00                                | 11.82           | 122.99      | 3,087.14              | -78.71       | 121.24       | -72.77                  | 0.00                    | 0.00                   | 0.00                  |
| 3,200.00                                | 11.82           | 122.99      | 3,185.02              | -89.87       | 138.43       | -83.08                  | 0.00                    | 0.00                   | 0.00                  |
| 3,300.00                                | 11.82           | 122.99      | 3,282.89              | -101.03      | 155.62       | -93.40                  | 0.00                    | 0.00                   | 0.00                  |
| 3,400.00                                | 11.82           | 122.99      | 3,380.77              | -112.19      | 172.80       | -103.71                 | 0.00                    | 0.00                   | 0.00                  |
| 3,500.00                                | 11.82           | 122.99      | 3,478.65              | -123.35      | 189.99       | -114.02                 | 0.00                    | 0.00                   | 0.00                  |
| 3,600.00                                | 11.82           | 122.99      | 3,576.53              | -134.50      | 207.17       | -124.34                 | 0.00                    | 0.00                   | 0.00                  |
| 3,700.00                                | 11.82           | 122.99      | 3,674.41              | -145.66      | 224.36       | -134.65                 | 0.00                    | 0.00                   | 0.00                  |
| 3,800.00                                | 11.82           | 122.99      | 3,772.29              | -156.82      | 241.55       | -144.97                 | 0.00                    | 0.00                   | 0.00                  |
| 3,900.00                                | 11.82           | 122.99      | 3,870.16              | -167.98      | 258.73       | -155.28                 | 0.00                    | 0.00                   | 0.00                  |
| 4,000.00                                | 11.82           | 122.99      | 3,968.04              | -179.13      | 275.92       | -165.60                 | 0.00                    | 0.00                   | 0.00                  |
| 4,032.65                                | 11.82           | 122.99      | 4,000.00              | -182.78      | 281.53       | -168.97                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Interm Csh</b>                       |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,100.00                                | 11.82           | 122.99      | 4,065.92              | -190.29      | 293.11       | -175.91                 | 0.00                    | 0.00                   | 0.00                  |
| 4,200.00                                | 11.82           | 122.99      | 4,163.80              | -201.45      | 310.29       | -186.23                 | 0.00                    | 0.00                   | 0.00                  |
| 4,300.00                                | 11.82           | 122.99      | 4,261.68              | -212.61      | 327.48       | -196.54                 | 0.00                    | 0.00                   | 0.00                  |
| 4,400.00                                | 11.82           | 122.99      | 4,359.55              | -223.77      | 344.67       | -206.86                 | 0.00                    | 0.00                   | 0.00                  |
| 4,500.00                                | 11.82           | 122.99      | 4,457.43              | -234.92      | 361.85       | -217.17                 | 0.00                    | 0.00                   | 0.00                  |
| 4,600.00                                | 11.82           | 122.99      | 4,555.31              | -246.08      | 379.04       | -227.49                 | 0.00                    | 0.00                   | 0.00                  |
| 4,700.00                                | 11.82           | 122.99      | 4,653.19              | -257.24      | 396.23       | -237.80                 | 0.00                    | 0.00                   | 0.00                  |



## Planning Report



|                  |                                  |                                     |                                       |
|------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well Alpha E2W2 03 33 W1 State Com 1H |
| <b>Company:</b>  | Catena Resources Operating, LLC  | <b>TVD Reference:</b>               | GL +25' RKB @ 3885.00usft             |
| <b>Project:</b>  | Lea Co, NM (NAD83 NME)           | <b>MD Reference:</b>                | GL +25' RKB @ 3885.00usft             |
| <b>Site:</b>     | Sec 9-T19S-R35E                  | <b>North Reference:</b>             | Grid                                  |
| <b>Well:</b>     | Alpha E2W2 03 33 W1 State Com 1H | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                                       |
| <b>Design:</b>   | Plan #2                          |                                     |                                       |

| Planned Survey                   |                 |             |                       |              |              |                         |                         |                        |                       |
|----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)            | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 4,800.00                         | 11.82           | 122.99      | 4,751.07              | -268.40      | 413.41       | -248.12                 | 0.00                    | 0.00                   | 0.00                  |
| 4,900.00                         | 11.82           | 122.99      | 4,848.94              | -279.56      | 430.60       | -258.43                 | 0.00                    | 0.00                   | 0.00                  |
| 5,000.00                         | 11.82           | 122.99      | 4,946.82              | -290.71      | 447.79       | -268.75                 | 0.00                    | 0.00                   | 0.00                  |
| 5,100.00                         | 11.82           | 122.99      | 5,044.70              | -301.87      | 464.97       | -279.06                 | 0.00                    | 0.00                   | 0.00                  |
| 5,200.00                         | 11.82           | 122.99      | 5,142.58              | -313.03      | 482.16       | -289.38                 | 0.00                    | 0.00                   | 0.00                  |
| 5,300.00                         | 11.82           | 122.99      | 5,240.46              | -324.19      | 499.34       | -299.69                 | 0.00                    | 0.00                   | 0.00                  |
| 5,400.00                         | 11.82           | 122.99      | 5,338.34              | -335.35      | 516.53       | -310.01                 | 0.00                    | 0.00                   | 0.00                  |
| 5,500.00                         | 11.82           | 122.99      | 5,436.21              | -346.50      | 533.72       | -320.32                 | 0.00                    | 0.00                   | 0.00                  |
| 5,600.00                         | 11.82           | 122.99      | 5,534.09              | -357.66      | 550.90       | -330.63                 | 0.00                    | 0.00                   | 0.00                  |
| 5,680.60                         | 11.82           | 122.99      | 5,612.98              | -366.65      | 564.76       | -338.95                 | 0.00                    | 0.00                   | 0.00                  |
| Start Drop -2.00                 |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,700.00                         | 11.44           | 122.99      | 5,631.98              | -368.78      | 568.04       | -340.92                 | 2.00                    | -2.00                  | 0.00                  |
| 5,800.00                         | 9.44            | 122.99      | 5,730.32              | -378.65      | 583.23       | -350.03                 | 2.00                    | -2.00                  | 0.00                  |
| 5,900.00                         | 7.44            | 122.99      | 5,829.24              | -386.64      | 595.53       | -357.42                 | 2.00                    | -2.00                  | 0.00                  |
| 6,000.00                         | 5.44            | 122.99      | 5,928.60              | -392.74      | 604.93       | -363.06                 | 2.00                    | -2.00                  | 0.00                  |
| 6,100.00                         | 3.44            | 122.99      | 6,028.30              | -396.95      | 611.42       | -366.96                 | 2.00                    | -2.00                  | 0.00                  |
| 6,200.00                         | 1.44            | 122.99      | 6,128.20              | -399.27      | 614.99       | -369.09                 | 2.00                    | -2.00                  | 0.00                  |
| 6,271.81                         | 0.00            | 0.00        | 6,200.00              | -399.76      | 615.74       | -369.55                 | 2.00                    | -2.00                  | 0.00                  |
| Start 3812.71 hold at 6271.81 MD |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,300.00                         | 0.00            | 0.00        | 6,228.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 6,400.00                         | 0.00            | 0.00        | 6,328.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 6,500.00                         | 0.00            | 0.00        | 6,428.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 6,600.00                         | 0.00            | 0.00        | 6,528.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 6,700.00                         | 0.00            | 0.00        | 6,628.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 6,800.00                         | 0.00            | 0.00        | 6,728.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 6,900.00                         | 0.00            | 0.00        | 6,828.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,000.00                         | 0.00            | 0.00        | 6,928.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,100.00                         | 0.00            | 0.00        | 7,028.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,200.00                         | 0.00            | 0.00        | 7,128.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,300.00                         | 0.00            | 0.00        | 7,228.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,400.00                         | 0.00            | 0.00        | 7,328.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,500.00                         | 0.00            | 0.00        | 7,428.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,600.00                         | 0.00            | 0.00        | 7,528.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,700.00                         | 0.00            | 0.00        | 7,628.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,800.00                         | 0.00            | 0.00        | 7,728.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 7,900.00                         | 0.00            | 0.00        | 7,828.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,000.00                         | 0.00            | 0.00        | 7,928.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,100.00                         | 0.00            | 0.00        | 8,028.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,200.00                         | 0.00            | 0.00        | 8,128.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,300.00                         | 0.00            | 0.00        | 8,228.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,400.00                         | 0.00            | 0.00        | 8,328.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,500.00                         | 0.00            | 0.00        | 8,428.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,600.00                         | 0.00            | 0.00        | 8,528.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,700.00                         | 0.00            | 0.00        | 8,628.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,800.00                         | 0.00            | 0.00        | 8,728.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 8,900.00                         | 0.00            | 0.00        | 8,828.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,000.00                         | 0.00            | 0.00        | 8,928.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,100.00                         | 0.00            | 0.00        | 9,028.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,200.00                         | 0.00            | 0.00        | 9,128.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,300.00                         | 0.00            | 0.00        | 9,228.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,400.00                         | 0.00            | 0.00        | 9,328.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,500.00                         | 0.00            | 0.00        | 9,428.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,600.00                         | 0.00            | 0.00        | 9,528.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |



## Planning Report



|                  |                                  |                                     |                                       |
|------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well Alpha E2W2 03 33 W1 State Com 1H |
| <b>Company:</b>  | Catena Resources Operating, LLC  | <b>TVD Reference:</b>               | GL +25' RKB @ 3885.00usft             |
| <b>Project:</b>  | Lea Co, NM (NAD83 NME)           | <b>MD Reference:</b>                | GL +25' RKB @ 3885.00usft             |
| <b>Site:</b>     | Sec 9-T19S-R35E                  | <b>North Reference:</b>             | Grid                                  |
| <b>Well:</b>     | Alpha E2W2 03 33 W1 State Com 1H | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                                       |
| <b>Design:</b>   | Plan #2                          |                                     |                                       |

| Planned Survey                            |                 |             |                       |              |              |                         |                         |                        |                       |
|-------------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)                     | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 9,700.00                                  | 0.00            | 0.00        | 9,628.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,800.00                                  | 0.00            | 0.00        | 9,728.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 9,900.00                                  | 0.00            | 0.00        | 9,828.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 10,000.00                                 | 0.00            | 0.00        | 9,928.19              | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| 10,084.52                                 | 0.00            | 0.00        | 10,012.71             | -399.76      | 615.74       | -369.55                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Start Build 8.00</b>                   |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,100.00                                 | 1.24            | 359.50      | 10,028.19             | -399.59      | 615.74       | -369.38                 | 8.00                    | 8.00                   | 0.00                  |
| 10,150.00                                 | 5.24            | 359.50      | 10,078.10             | -396.76      | 615.72       | -366.56                 | 8.00                    | 8.00                   | 0.00                  |
| 10,200.00                                 | 9.24            | 359.50      | 10,127.69             | -390.47      | 615.66       | -360.27                 | 8.00                    | 8.00                   | 0.00                  |
| 10,250.00                                 | 13.24           | 359.50      | 10,176.73             | -380.72      | 615.58       | -350.55                 | 8.00                    | 8.00                   | 0.00                  |
| 10,300.00                                 | 17.24           | 359.50      | 10,224.96             | -367.58      | 615.46       | -337.43                 | 8.00                    | 8.00                   | 0.00                  |
| 10,350.00                                 | 21.24           | 359.50      | 10,272.16             | -351.11      | 615.32       | -320.98                 | 8.00                    | 8.00                   | 0.00                  |
| 10,400.00                                 | 25.24           | 359.50      | 10,318.09             | -331.39      | 615.15       | -301.29                 | 8.00                    | 8.00                   | 0.00                  |
| 10,450.00                                 | 29.24           | 359.50      | 10,362.54             | -308.51      | 614.95       | -278.45                 | 8.00                    | 8.00                   | 0.00                  |
| 10,500.00                                 | 33.24           | 359.50      | 10,405.28             | -282.59      | 614.73       | -252.57                 | 8.00                    | 8.00                   | 0.00                  |
| 10,550.00                                 | 37.24           | 359.50      | 10,446.11             | -253.75      | 614.48       | -223.77                 | 8.00                    | 8.00                   | 0.00                  |
| 10,584.52                                 | 40.00           | 359.50      | 10,473.08             | -232.20      | 614.29       | -202.26                 | 8.00                    | 8.00                   | 0.00                  |
| <b>Start 100.00 hold at 10584.52 MD</b>   |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,600.00                                 | 40.00           | 359.50      | 10,484.93             | -222.25      | 614.21       | -192.33                 | 0.00                    | 0.00                   | 0.00                  |
| 10,684.52                                 | 40.00           | 359.50      | 10,549.68             | -167.93      | 613.74       | -138.09                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Start Build 8.00</b>                   |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,700.00                                 | 41.24           | 359.50      | 10,561.43             | -157.85      | 613.65       | -128.02                 | 8.00                    | 8.00                   | 0.00                  |
| 10,750.00                                 | 45.24           | 359.50      | 10,597.85             | -123.61      | 613.35       | -93.84                  | 8.00                    | 8.00                   | 0.00                  |
| 10,800.00                                 | 49.24           | 359.50      | 10,631.79             | -86.90       | 613.04       | -57.19                  | 8.00                    | 8.00                   | 0.00                  |
| 10,850.00                                 | 53.24           | 359.50      | 10,663.09             | -47.93       | 612.70       | -18.28                  | 8.00                    | 8.00                   | 0.00                  |
| 10,900.00                                 | 57.24           | 359.50      | 10,691.59             | -6.86        | 612.34       | 22.73                   | 8.00                    | 8.00                   | 0.00                  |
| 10,950.00                                 | 61.24           | 359.50      | 10,717.16             | 36.10        | 611.97       | 65.61                   | 8.00                    | 8.00                   | 0.00                  |
| 11,000.00                                 | 65.24           | 359.50      | 10,739.67             | 80.73        | 611.59       | 110.18                  | 8.00                    | 8.00                   | 0.00                  |
| 11,050.00                                 | 69.24           | 359.50      | 10,759.01             | 126.82       | 611.19       | 156.20                  | 8.00                    | 8.00                   | 0.00                  |
| 11,100.00                                 | 73.24           | 359.50      | 10,775.09             | 174.16       | 610.78       | 203.45                  | 8.00                    | 8.00                   | 0.00                  |
| 11,150.00                                 | 77.24           | 359.50      | 10,787.82             | 222.49       | 610.36       | 251.72                  | 8.00                    | 8.00                   | 0.00                  |
| 11,200.00                                 | 81.24           | 359.50      | 10,797.16             | 271.60       | 609.94       | 300.75                  | 8.00                    | 8.00                   | 0.00                  |
| 11,250.00                                 | 85.24           | 359.50      | 10,803.04             | 321.24       | 609.51       | 350.31                  | 8.00                    | 8.00                   | 0.00                  |
| 11,300.00                                 | 89.24           | 359.50      | 10,805.45             | 371.17       | 609.08       | 400.16                  | 8.00                    | 8.00                   | 0.00                  |
| 11,336.66                                 | 92.17           | 359.50      | 10,805.00             | 407.82       | 608.76       | 436.75                  | 8.00                    | 8.00                   | 0.00                  |
| <b>Start 10341.43 hold at 11336.66 MD</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 11,400.00                                 | 92.17           | 359.50      | 10,802.60             | 471.12       | 608.21       | 499.94                  | 0.00                    | 0.00                   | 0.00                  |
| 11,500.00                                 | 92.17           | 359.50      | 10,798.81             | 571.04       | 607.35       | 599.71                  | 0.00                    | 0.00                   | 0.00                  |
| 11,600.00                                 | 92.17           | 359.50      | 10,795.02             | 670.97       | 606.49       | 699.48                  | 0.00                    | 0.00                   | 0.00                  |
| 11,700.00                                 | 92.17           | 359.50      | 10,791.24             | 770.89       | 605.62       | 799.24                  | 0.00                    | 0.00                   | 0.00                  |
| 11,800.00                                 | 92.17           | 359.50      | 10,787.45             | 870.82       | 604.76       | 899.01                  | 0.00                    | 0.00                   | 0.00                  |
| 11,900.00                                 | 92.17           | 359.50      | 10,783.66             | 970.74       | 603.89       | 998.78                  | 0.00                    | 0.00                   | 0.00                  |
| 12,000.00                                 | 92.17           | 359.50      | 10,779.87             | 1,070.66     | 603.03       | 1,098.54                | 0.00                    | 0.00                   | 0.00                  |
| 12,100.00                                 | 92.17           | 359.50      | 10,776.08             | 1,170.59     | 602.17       | 1,198.31                | 0.00                    | 0.00                   | 0.00                  |
| 12,200.00                                 | 92.17           | 359.50      | 10,772.30             | 1,270.51     | 601.30       | 1,298.07                | 0.00                    | 0.00                   | 0.00                  |
| 12,300.00                                 | 92.17           | 359.50      | 10,768.51             | 1,370.44     | 600.44       | 1,397.84                | 0.00                    | 0.00                   | 0.00                  |
| 12,400.00                                 | 92.17           | 359.50      | 10,764.72             | 1,470.36     | 599.58       | 1,497.61                | 0.00                    | 0.00                   | 0.00                  |
| 12,500.00                                 | 92.17           | 359.50      | 10,760.93             | 1,570.29     | 598.71       | 1,597.37                | 0.00                    | 0.00                   | 0.00                  |
| 12,600.00                                 | 92.17           | 359.50      | 10,757.14             | 1,670.21     | 597.85       | 1,697.14                | 0.00                    | 0.00                   | 0.00                  |
| 12,700.00                                 | 92.17           | 359.50      | 10,753.36             | 1,770.14     | 596.98       | 1,796.90                | 0.00                    | 0.00                   | 0.00                  |
| 12,800.00                                 | 92.17           | 359.50      | 10,749.57             | 1,870.06     | 596.12       | 1,896.67                | 0.00                    | 0.00                   | 0.00                  |
| 12,900.00                                 | 92.17           | 359.50      | 10,745.78             | 1,969.98     | 595.26       | 1,996.44                | 0.00                    | 0.00                   | 0.00                  |
| 13,000.00                                 | 92.17           | 359.50      | 10,741.99             | 2,069.91     | 594.39       | 2,096.20                | 0.00                    | 0.00                   | 0.00                  |



## Planning Report



|                  |                                  |                                     |                                       |
|------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well Alpha E2W2 03 33 W1 State Com 1H |
| <b>Company:</b>  | Catena Resources Operating, LLC  | <b>TVD Reference:</b>               | GL +25' RKB @ 3885.00usft             |
| <b>Project:</b>  | Lea Co, NM (NAD83 NME)           | <b>MD Reference:</b>                | GL +25' RKB @ 3885.00usft             |
| <b>Site:</b>     | Sec 9-T19S-R35E                  | <b>North Reference:</b>             | Grid                                  |
| <b>Well:</b>     | Alpha E2W2 03 33 W1 State Com 1H | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                                       |
| <b>Design:</b>   | Plan #2                          |                                     |                                       |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 13,100.00             | 92.17           | 359.50      | 10,738.20             | 2,169.83     | 593.53       | 2,195.97                | 0.00                    | 0.00                   | 0.00                  |
| 13,200.00             | 92.17           | 359.50      | 10,734.42             | 2,269.76     | 592.67       | 2,295.74                | 0.00                    | 0.00                   | 0.00                  |
| 13,300.00             | 92.17           | 359.50      | 10,730.63             | 2,369.68     | 591.80       | 2,395.50                | 0.00                    | 0.00                   | 0.00                  |
| 13,400.00             | 92.17           | 359.50      | 10,726.84             | 2,469.61     | 590.94       | 2,495.27                | 0.00                    | 0.00                   | 0.00                  |
| 13,500.00             | 92.17           | 359.50      | 10,723.05             | 2,569.53     | 590.07       | 2,595.03                | 0.00                    | 0.00                   | 0.00                  |
| 13,600.00             | 92.17           | 359.50      | 10,719.26             | 2,669.46     | 589.21       | 2,694.80                | 0.00                    | 0.00                   | 0.00                  |
| 13,700.00             | 92.17           | 359.50      | 10,715.48             | 2,769.38     | 588.35       | 2,794.57                | 0.00                    | 0.00                   | 0.00                  |
| 13,800.00             | 92.17           | 359.50      | 10,711.69             | 2,869.31     | 587.48       | 2,894.33                | 0.00                    | 0.00                   | 0.00                  |
| 13,900.00             | 92.17           | 359.50      | 10,707.90             | 2,969.23     | 586.62       | 2,994.10                | 0.00                    | 0.00                   | 0.00                  |
| 14,000.00             | 92.17           | 359.50      | 10,704.11             | 3,069.15     | 585.76       | 3,093.86                | 0.00                    | 0.00                   | 0.00                  |
| 14,100.00             | 92.17           | 359.50      | 10,700.32             | 3,169.08     | 584.89       | 3,193.63                | 0.00                    | 0.00                   | 0.00                  |
| 14,200.00             | 92.17           | 359.50      | 10,696.54             | 3,269.00     | 584.03       | 3,293.40                | 0.00                    | 0.00                   | 0.00                  |
| 14,300.00             | 92.17           | 359.50      | 10,692.75             | 3,368.93     | 583.16       | 3,393.16                | 0.00                    | 0.00                   | 0.00                  |
| 14,400.00             | 92.17           | 359.50      | 10,688.96             | 3,468.85     | 582.30       | 3,492.93                | 0.00                    | 0.00                   | 0.00                  |
| 14,500.00             | 92.17           | 359.50      | 10,685.17             | 3,568.78     | 581.44       | 3,592.70                | 0.00                    | 0.00                   | 0.00                  |
| 14,600.00             | 92.17           | 359.50      | 10,681.38             | 3,668.70     | 580.57       | 3,692.46                | 0.00                    | 0.00                   | 0.00                  |
| 14,700.00             | 92.17           | 359.50      | 10,677.60             | 3,768.63     | 579.71       | 3,792.23                | 0.00                    | 0.00                   | 0.00                  |
| 14,800.00             | 92.17           | 359.50      | 10,673.81             | 3,868.55     | 578.85       | 3,891.99                | 0.00                    | 0.00                   | 0.00                  |
| 14,900.00             | 92.17           | 359.50      | 10,670.02             | 3,968.47     | 577.98       | 3,991.76                | 0.00                    | 0.00                   | 0.00                  |
| 15,000.00             | 92.17           | 359.50      | 10,666.23             | 4,068.40     | 577.12       | 4,091.53                | 0.00                    | 0.00                   | 0.00                  |
| 15,100.00             | 92.17           | 359.50      | 10,662.44             | 4,168.32     | 576.25       | 4,191.29                | 0.00                    | 0.00                   | 0.00                  |
| 15,200.00             | 92.17           | 359.50      | 10,658.66             | 4,268.25     | 575.39       | 4,291.06                | 0.00                    | 0.00                   | 0.00                  |
| 15,300.00             | 92.17           | 359.50      | 10,654.87             | 4,368.17     | 574.53       | 4,390.82                | 0.00                    | 0.00                   | 0.00                  |
| 15,400.00             | 92.17           | 359.50      | 10,651.08             | 4,468.10     | 573.66       | 4,490.59                | 0.00                    | 0.00                   | 0.00                  |
| 15,500.00             | 92.17           | 359.50      | 10,647.29             | 4,568.02     | 572.80       | 4,590.36                | 0.00                    | 0.00                   | 0.00                  |
| 15,600.00             | 92.17           | 359.50      | 10,643.50             | 4,667.95     | 571.94       | 4,690.12                | 0.00                    | 0.00                   | 0.00                  |
| 15,700.00             | 92.17           | 359.50      | 10,639.72             | 4,767.87     | 571.07       | 4,789.89                | 0.00                    | 0.00                   | 0.00                  |
| 15,800.00             | 92.17           | 359.50      | 10,635.93             | 4,867.80     | 570.21       | 4,889.66                | 0.00                    | 0.00                   | 0.00                  |
| 15,900.00             | 92.17           | 359.50      | 10,632.14             | 4,967.72     | 569.34       | 4,989.42                | 0.00                    | 0.00                   | 0.00                  |
| 16,000.00             | 92.17           | 359.50      | 10,628.35             | 5,067.64     | 568.48       | 5,089.19                | 0.00                    | 0.00                   | 0.00                  |
| 16,100.00             | 92.17           | 359.50      | 10,624.56             | 5,167.57     | 567.62       | 5,188.95                | 0.00                    | 0.00                   | 0.00                  |
| 16,200.00             | 92.17           | 359.50      | 10,620.78             | 5,267.49     | 566.75       | 5,288.72                | 0.00                    | 0.00                   | 0.00                  |
| 16,300.00             | 92.17           | 359.50      | 10,616.99             | 5,367.42     | 565.89       | 5,388.49                | 0.00                    | 0.00                   | 0.00                  |
| 16,400.00             | 92.17           | 359.50      | 10,613.20             | 5,467.34     | 565.03       | 5,488.25                | 0.00                    | 0.00                   | 0.00                  |
| 16,500.00             | 92.17           | 359.50      | 10,609.41             | 5,567.27     | 564.16       | 5,588.02                | 0.00                    | 0.00                   | 0.00                  |
| 16,600.00             | 92.17           | 359.50      | 10,605.62             | 5,667.19     | 563.30       | 5,687.78                | 0.00                    | 0.00                   | 0.00                  |
| 16,700.00             | 92.17           | 359.50      | 10,601.84             | 5,767.12     | 562.43       | 5,787.55                | 0.00                    | 0.00                   | 0.00                  |
| 16,800.00             | 92.17           | 359.50      | 10,598.05             | 5,867.04     | 561.57       | 5,887.32                | 0.00                    | 0.00                   | 0.00                  |
| 16,900.00             | 92.17           | 359.50      | 10,594.26             | 5,966.96     | 560.71       | 5,987.08                | 0.00                    | 0.00                   | 0.00                  |
| 17,000.00             | 92.17           | 359.50      | 10,590.47             | 6,066.89     | 559.84       | 6,086.85                | 0.00                    | 0.00                   | 0.00                  |
| 17,100.00             | 92.17           | 359.50      | 10,586.68             | 6,166.81     | 558.98       | 6,186.62                | 0.00                    | 0.00                   | 0.00                  |
| 17,200.00             | 92.17           | 359.50      | 10,582.90             | 6,266.74     | 558.12       | 6,286.38                | 0.00                    | 0.00                   | 0.00                  |
| 17,300.00             | 92.17           | 359.50      | 10,579.11             | 6,366.66     | 557.25       | 6,386.15                | 0.00                    | 0.00                   | 0.00                  |
| 17,400.00             | 92.17           | 359.50      | 10,575.32             | 6,466.59     | 556.39       | 6,485.91                | 0.00                    | 0.00                   | 0.00                  |
| 17,500.00             | 92.17           | 359.50      | 10,571.53             | 6,566.51     | 555.52       | 6,585.68                | 0.00                    | 0.00                   | 0.00                  |
| 17,600.00             | 92.17           | 359.50      | 10,567.74             | 6,666.44     | 554.66       | 6,685.45                | 0.00                    | 0.00                   | 0.00                  |
| 17,700.00             | 92.17           | 359.50      | 10,563.95             | 6,766.36     | 553.80       | 6,785.21                | 0.00                    | 0.00                   | 0.00                  |
| 17,800.00             | 92.17           | 359.50      | 10,560.17             | 6,866.28     | 552.93       | 6,884.98                | 0.00                    | 0.00                   | 0.00                  |
| 17,900.00             | 92.17           | 359.50      | 10,556.38             | 6,966.21     | 552.07       | 6,984.74                | 0.00                    | 0.00                   | 0.00                  |
| 18,000.00             | 92.17           | 359.50      | 10,552.59             | 7,066.13     | 551.21       | 7,084.51                | 0.00                    | 0.00                   | 0.00                  |
| 18,100.00             | 92.17           | 359.50      | 10,548.80             | 7,166.06     | 550.34       | 7,184.28                | 0.00                    | 0.00                   | 0.00                  |
| 18,200.00             | 92.17           | 359.50      | 10,545.01             | 7,265.98     | 549.48       | 7,284.04                | 0.00                    | 0.00                   | 0.00                  |
| 18,300.00             | 92.17           | 359.50      | 10,541.23             | 7,365.91     | 548.61       | 7,383.81                | 0.00                    | 0.00                   | 0.00                  |
| 18,400.00             | 92.17           | 359.50      | 10,537.44             | 7,465.83     | 547.75       | 7,483.58                | 0.00                    | 0.00                   | 0.00                  |



## Planning Report



|                  |                                  |                                     |                                       |
|------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well Alpha E2W2 03 33 W1 State Com 1H |
| <b>Company:</b>  | Catena Resources Operating, LLC  | <b>TVD Reference:</b>               | GL +25' RKB @ 3885.00usft             |
| <b>Project:</b>  | Lea Co, NM (NAD83 NME)           | <b>MD Reference:</b>                | GL +25' RKB @ 3885.00usft             |
| <b>Site:</b>     | Sec 9-T19S-R35E                  | <b>North Reference:</b>             | Grid                                  |
| <b>Well:</b>     | Alpha E2W2 03 33 W1 State Com 1H | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                                       |
| <b>Design:</b>   | Plan #2                          |                                     |                                       |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 18,500.00             | 92.17           | 359.50      | 10,533.65             | 7,565.76     | 546.89       | 7,583.34                | 0.00                    | 0.00                   | 0.00                  |
| 18,600.00             | 92.17           | 359.50      | 10,529.86             | 7,665.68     | 546.02       | 7,683.11                | 0.00                    | 0.00                   | 0.00                  |
| 18,700.00             | 92.17           | 359.50      | 10,526.07             | 7,765.61     | 545.16       | 7,782.87                | 0.00                    | 0.00                   | 0.00                  |
| 18,800.00             | 92.17           | 359.50      | 10,522.29             | 7,865.53     | 544.29       | 7,882.64                | 0.00                    | 0.00                   | 0.00                  |
| 18,900.00             | 92.17           | 359.50      | 10,518.50             | 7,965.45     | 543.43       | 7,982.41                | 0.00                    | 0.00                   | 0.00                  |
| 19,000.00             | 92.17           | 359.50      | 10,514.71             | 8,065.38     | 542.57       | 8,082.17                | 0.00                    | 0.00                   | 0.00                  |
| 19,100.00             | 92.17           | 359.50      | 10,510.92             | 8,165.30     | 541.70       | 8,181.94                | 0.00                    | 0.00                   | 0.00                  |
| 19,200.00             | 92.17           | 359.50      | 10,507.13             | 8,265.23     | 540.84       | 8,281.70                | 0.00                    | 0.00                   | 0.00                  |
| 19,300.00             | 92.17           | 359.50      | 10,503.35             | 8,365.15     | 539.98       | 8,381.47                | 0.00                    | 0.00                   | 0.00                  |
| 19,400.00             | 92.17           | 359.50      | 10,499.56             | 8,465.08     | 539.11       | 8,481.24                | 0.00                    | 0.00                   | 0.00                  |
| 19,500.00             | 92.17           | 359.50      | 10,495.77             | 8,565.00     | 538.25       | 8,581.00                | 0.00                    | 0.00                   | 0.00                  |
| 19,600.00             | 92.17           | 359.50      | 10,491.98             | 8,664.93     | 537.38       | 8,680.77                | 0.00                    | 0.00                   | 0.00                  |
| 19,700.00             | 92.17           | 359.50      | 10,488.19             | 8,764.85     | 536.52       | 8,780.53                | 0.00                    | 0.00                   | 0.00                  |
| 19,800.00             | 92.17           | 359.50      | 10,484.41             | 8,864.77     | 535.66       | 8,880.30                | 0.00                    | 0.00                   | 0.00                  |
| 19,900.00             | 92.17           | 359.50      | 10,480.62             | 8,964.70     | 534.79       | 8,980.07                | 0.00                    | 0.00                   | 0.00                  |
| 20,000.00             | 92.17           | 359.50      | 10,476.83             | 9,064.62     | 533.93       | 9,079.83                | 0.00                    | 0.00                   | 0.00                  |
| 20,100.00             | 92.17           | 359.50      | 10,473.04             | 9,164.55     | 533.07       | 9,179.60                | 0.00                    | 0.00                   | 0.00                  |
| 20,200.00             | 92.17           | 359.50      | 10,469.25             | 9,264.47     | 532.20       | 9,279.37                | 0.00                    | 0.00                   | 0.00                  |
| 20,300.00             | 92.17           | 359.50      | 10,465.47             | 9,364.40     | 531.34       | 9,379.13                | 0.00                    | 0.00                   | 0.00                  |
| 20,400.00             | 92.17           | 359.50      | 10,461.68             | 9,464.32     | 530.47       | 9,478.90                | 0.00                    | 0.00                   | 0.00                  |
| 20,500.00             | 92.17           | 359.50      | 10,457.89             | 9,564.25     | 529.61       | 9,578.66                | 0.00                    | 0.00                   | 0.00                  |
| 20,600.00             | 92.17           | 359.50      | 10,454.10             | 9,664.17     | 528.75       | 9,678.43                | 0.00                    | 0.00                   | 0.00                  |
| 20,700.00             | 92.17           | 359.50      | 10,450.31             | 9,764.10     | 527.88       | 9,778.20                | 0.00                    | 0.00                   | 0.00                  |
| 20,800.00             | 92.17           | 359.50      | 10,446.53             | 9,864.02     | 527.02       | 9,877.96                | 0.00                    | 0.00                   | 0.00                  |
| 20,900.00             | 92.17           | 359.50      | 10,442.74             | 9,963.94     | 526.16       | 9,977.73                | 0.00                    | 0.00                   | 0.00                  |
| 21,000.00             | 92.17           | 359.50      | 10,438.95             | 10,063.87    | 525.29       | 10,077.49               | 0.00                    | 0.00                   | 0.00                  |
| 21,100.00             | 92.17           | 359.50      | 10,435.16             | 10,163.79    | 524.43       | 10,177.26               | 0.00                    | 0.00                   | 0.00                  |
| 21,200.00             | 92.17           | 359.50      | 10,431.37             | 10,263.72    | 523.56       | 10,277.03               | 0.00                    | 0.00                   | 0.00                  |
| 21,300.00             | 92.17           | 359.50      | 10,427.59             | 10,363.64    | 522.70       | 10,376.79               | 0.00                    | 0.00                   | 0.00                  |
| 21,400.00             | 92.17           | 359.50      | 10,423.80             | 10,463.57    | 521.84       | 10,476.56               | 0.00                    | 0.00                   | 0.00                  |
| 21,500.00             | 92.17           | 359.50      | 10,420.01             | 10,563.49    | 520.97       | 10,576.33               | 0.00                    | 0.00                   | 0.00                  |
| 21,600.00             | 92.17           | 359.50      | 10,416.22             | 10,663.42    | 520.11       | 10,676.09               | 0.00                    | 0.00                   | 0.00                  |
| 21,678.09             | 92.17           | 359.50      | 10,413.26             | 10,741.44    | 519.44       | 10,754.00               | 0.00                    | 0.00                   | 0.00                  |
| TD at 21678.09        |                 |             |                       |              |              |                         |                         |                        |                       |

| Design Targets            |               |              |            |              |              |                 |                |            |              |
|---------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------|--------------|
| Target Name               | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude   | Longitude    |
| - hit/miss target         |               |              |            |              |              |                 |                |            |              |
| - Shape                   |               |              |            |              |              |                 |                |            |              |
| LTP/BHL P2 - Alpha E      | 0.00          | 0.00         | 10,413.26  | 10,741.44    | 519.44       | 623,528.36      | 808,831.49     | 32.7111045 | -103.4636511 |
| - plan hits target center |               |              |            |              |              |                 |                |            |              |
| - Point                   |               |              |            |              |              |                 |                |            |              |
| FTP - Alpha E2W2          | 0.00          | 0.00         | 10,805.00  | 407.82       | 608.76       | 613,194.73      | 808,920.82     | 32.6827018 | -103.4636362 |
| - plan hits target center |               |              |            |              |              |                 |                |            |              |
| - Point                   |               |              |            |              |              |                 |                |            |              |



## Planning Report



|                  |                                  |                                     |                                       |
|------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well Alpha E2W2 03 33 W1 State Com 1H |
| <b>Company:</b>  | Catena Resources Operating, LLC  | <b>TVD Reference:</b>               | GL +25' RKB @ 3885.00usft             |
| <b>Project:</b>  | Lea Co, NM (NAD83 NME)           | <b>MD Reference:</b>                | GL +25' RKB @ 3885.00usft             |
| <b>Site:</b>     | Sec 9-T19S-R35E                  | <b>North Reference:</b>             | Grid                                  |
| <b>Well:</b>     | Alpha E2W2 03 33 W1 State Com 1H | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                                       |
| <b>Design:</b>   | Plan #2                          |                                     |                                       |

## Casing Points

| Measured Depth (usft) | Vertical Depth (usft) | Name        | Casing Diameter (") | Hole Diameter (") |
|-----------------------|-----------------------|-------------|---------------------|-------------------|
| 2,000.00              | 2,000.00              | Surface Csg | 10-3/4              | 12-1/4            |
| 4,032.65              | 4,000.00              | Interm Csh  | 7                   | 8-3/4             |

## Plan Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                            |
|-----------------------|-----------------------|-------------------|--------------|------------------------------------|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                                    |
| 2,100.00              | 2,100.00              | 0.00              | 0.00         | Start Build 2.00                   |
| 2,691.21              | 2,687.02              | -33.10            | 50.98        | Start 2989.39 hold at 2691.21 MD   |
| 5,680.60              | 5,612.98              | -366.65           | 564.76       | Start Drop -2.00                   |
| 6,271.81              | 6,200.00              | -399.76           | 615.74       | Start 3812.71 hold at 6271.81 MD   |
| 10,084.52             | 10,012.71             | -399.76           | 615.74       | Start Build 8.00                   |
| 10,584.52             | 10,473.08             | -232.20           | 614.29       | Start 100.00 hold at 10584.52 MD   |
| 10,684.52             | 10,549.68             | -167.93           | 613.74       | Start Build 8.00                   |
| 11,336.66             | 10,805.00             | 407.82            | 608.76       | Start 10341.43 hold at 11336.66 MD |
| 21,678.09             | 10,413.26             | 10,741.44         | 519.44       | TD at 21678.09                     |

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Electronically  
Via E-permitting

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description Effective May 25, 2021

**I. Operator:** Catena Resource Operating, LLC **OGRID:** 328449 **Date:** 08 / 02 / 2022

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

| Well Name                           | API     | ULSTR       | Footages            | Anticipated Oil BBL/D | Anticipated Gas MCF/D | Anticipated Produced Water BBL/D |
|-------------------------------------|---------|-------------|---------------------|-----------------------|-----------------------|----------------------------------|
| Alpha E2W2 04 33 W1<br>State Com 1H | 30-025- | C-9-19S-35E | 300 FNL<br>1649 FWL | 1100 BBL/D            | 600 MCF/D             | 3800 BBL/D                       |
| Alpha W2W2 04 33 W1<br>State Com 1H | 30-025- | C-9-19S-35E | 300 FNL<br>1629 FWL | 1100 BBL/D            | 600 MCF/D             | 3800 BBL/D                       |

**IV. Central Delivery Point Name** Cable CTB

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

| Well Name                           | API     | Spud Date  | TD Reached Date | Completion Commencement Date | Initial Flow Back Date | First Production Date |
|-------------------------------------|---------|------------|-----------------|------------------------------|------------------------|-----------------------|
| Alpha E2W2 04 33 W1<br>State Com 1H | 30-025- | 10/01/2022 | 11/01/2022      | 12/31/2022                   | 01/07/2002             | 12/17/2023            |
| Alpha W2W2 04 33 W1<br>State Com 1H | 30-025- | 11/02/2022 | 12/02/2022      | 12/31/2022                   | 01/07/2002             | 12/17/2023            |

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

## **Section 2 – Enhanced Plan**

### **EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

#### **IX. Anticipated Natural Gas Production:**

| Well | API | Anticipated Average Natural Gas Rate MCF/D | Anticipated Volume of Natural Gas for the First Year MCF |
|------|-----|--------------------------------------------|----------------------------------------------------------|
|      |     |                                            |                                                          |
|      |     |                                            |                                                          |

#### **X. Natural Gas Gathering System (NGGS):**

| Operator | System | ULSTR of Tie-in | Anticipated Gathering Start Date | Available Maximum Daily Capacity of System Segment Tie-in |
|----------|--------|-----------------|----------------------------------|-----------------------------------------------------------|
|          |        |                 |                                  |                                                           |
|          |        |                 |                                  |                                                           |

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

**Section 3 - Certifications****Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

*If Operator checks this box, Operator will select one of the following:*

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

**Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

|                                                                                              |
|----------------------------------------------------------------------------------------------|
| Signature:  |
| Printed Name: Daniel Pyziak                                                                  |
| Title: Senior Operations Engineer                                                            |
| E-mail Address: pyziak@catenares.com                                                         |
| Date: 8/02/2022                                                                              |
| Phone: 303-956-6947                                                                          |
| <b>OIL CONSERVATION DIVISION</b><br>(Only applicable when submitted as a standalone form)    |
| Approved By:                                                                                 |
| Title:                                                                                       |
| Approval Date:                                                                               |
| Conditions of Approval:                                                                      |

## Catena Resources Operating, LLC(328449)

**Natural Gas Management Plan Descriptions****VI. Separation Equipment:**

Catena utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations. Our goal is to maintain 5 minutes of retention time in the test vessel and 20 minutes in the heater treater at peak production rates. The gas produced is routed from the separator to the gas sales line.

**VII. Operational Practices:***Drilling*

During Catena's drilling operations it is uncommon for venting or flaring to occur. If flaring is needed due to safety concerns, gas will be routed to a flare and volumes will be estimated.

*Flowback*

During completion/recompletion flowback operations, after separation flowback begins and as soon as it is technically feasible, Catena routes gas through a permanent separator and the controlled facility where the gas is either sold or flared through a high-pressure flare if needed.

*Production*

Per 19.15.27.8.D, Catena's facilities are designed to minimize waste. Our produced gas will only be vented or flared in an emergency or malfunction situation, except as allowed for normal operations noted in 19.15.27.8.0(2) & (4). All gas that is flared is metered. All gas that may be vented will be estimated.

*Performance Standards*

Catena utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations.

All of Catena's permanent storage tanks associated with production operations which are routed to a flare or control device are equipped with an automatic gauging system.

All of Catena's flare stacks, both currently installed and for future installation, are:

- 1) Appropriately sized and designed to ensure proper combustion efficiency.
- 2) Equipped with an automatic igniter or continuous pilot.
- 3) Anchored and located at least 100 feet from the well and storage tanks.

Catena's field operations and HSE teams have implemented an AVO inspection schedule that adheres to the requirements of 19.15.27.8.E(S).

All of our operations and facilities are designed to minimize waste. We routinely employ the following methods and practices:

- Closed-loop systems
- Enclosed and properly sized tanks

## Catena Resources Operating, LLC(328449)

- Vapor recovery units to maximize recovery of low-pressure gas streams and potential unauthorized emissions
- Low-emitting or electric engines whenever practical
- Combustors and flare stacks in the event of a malfunction or emergency
- Routine facility Inspections to identify leaking components, functioning control devices, such as flares and combustors, and repair/ replacement of malfunctioning components where applicable

*Measurement or estimation*

Catena measures or estimates the volumes of natural gas vented, flared and/or beneficially used for all of our drilling, completing and producing wells. We utilize accepted industry standards and methodology which can be independently verified. Annual GOR testing is completed on our wells and will be submitted as required by the OCD. None of our equipment is designed to allow diversion around metering elements except during inspection, maintenance, and repair operations.

**VIII. Best Management Practices:**

Catena utilizes the following BMPs to minimize venting during active and planned maintenance activities:

- Use a closed-loop process wherever possible during planned maintenance activities, such as blowdowns, liquid removal, and work over operations.
- Employ low-emitting or electric engines for equipment, such as compressors
- Adhere to a strict preventative maintenance program which includes routine facility inspections, identification of component malfunctions, and repairing or replacing components such as hatches, seals, valves, etc. where applicable
- Utilize vapor recovery units (VRU's) to maximize recovery of volumes of low-pressure gas streams and potential unauthorized emissions
- Route low pressure gas and emissions streams to a combustion device to prevent venting where necessary