

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

**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 382369

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

|                                                                                                                        |                                             |                               |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------|
| 1. Operator Name and Address<br>Permian Resources Operating, LLC<br>300 N. Marienfeld St Ste 1000<br>Midland, TX 79701 |                                             | 2. OGRID Number<br>372165     |
|                                                                                                                        |                                             | 3. API Number<br>30-025-54263 |
| 4. Property Code<br>336595                                                                                             | 5. Property Name<br>CASA BONITA 5 STATE COM | 6. Well No.<br>304H           |

**7. Surface Location**

|               |              |                 |              |              |                  |               |                   |               |               |
|---------------|--------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|---------------|
| UL - Lot<br>A | Section<br>5 | Township<br>22S | Range<br>35E | Lot Idn<br>1 | Feet From<br>607 | N/S Line<br>N | Feet From<br>1333 | E/W Line<br>E | County<br>Lea |
|---------------|--------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|---------------|

**8. Proposed Bottom Hole Location**

|               |               |                 |              |              |                  |               |                  |               |                |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|------------------|---------------|----------------|
| UL - Lot<br>P | Section<br>17 | Township<br>22S | Range<br>35E | Lot Idn<br>P | Feet From<br>100 | N/S Line<br>S | Feet From<br>660 | E/W Line<br>E | County<br>Eddy |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|------------------|---------------|----------------|

**9. Pool Information**

|                                  |       |
|----------------------------------|-------|
| WC-025 G-07 S223505N;BONE SPRING | 98136 |
|----------------------------------|-------|

**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>3628 |
| 16. Multiple<br>N         | 17. Proposed Depth<br>24971 | 18. Formation<br>Bone Spring           | 19. Contractor          | 20. Spud Date<br>2/5/2025          |
| 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             | 1857          | 1400            | 0             |
| Int1 | 12.25     | 9.625       | 40               | 5705          | 670             | 0             |
| Prod | 8.5       | 5.5         | 20               | 24971         | 2680            | 8938          |
| Prod | 8.75      | 5.5         | 20               | 9688          | 540             | 5205          |

**Casing/Cement Program: Additional Comments**

|                                                                                     |
|-------------------------------------------------------------------------------------|
| DV Tool @ 3733 Plug Back cmt job requested with 720 sx class C to make TOC @ 8562ft |
|-------------------------------------------------------------------------------------|

**22. Proposed Blowout Prevention Program**

| Type       | Working Pressure | Test Pressure | Manufacturer |
|------------|------------------|---------------|--------------|
| Double Ram | 5000             | 5000          |              |

|                                                                                                                                                                                                                                                                                                    |                                  |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------|
| 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 Stephanie Rabadue                                                                                                                                                                                                                                            | Approved By: Matthew Gomez       |                                 |
| Title: Regulatory Manager                                                                                                                                                                                                                                                                          | Title:                           |                                 |
| Email Address: stephanie.rabadue@permianres.com                                                                                                                                                                                                                                                    | Approved Date: 1/28/2025         | Expiration Date: 1/28/2027      |
| Date: 1/28/2025                                                                                                                                                                                                                                                                                    | Phone: 432-260-4388              | Conditions of Approval Attached |

|                                                                 |                                                                                                            |                      |                                                       |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------|
| <b>C-102</b><br><br>Submit Electronically<br>Via OCD Permitting | State of New Mexico<br>Energy, Minerals & Natural Resources Department<br><b>OIL CONSERVATION DIVISION</b> | Revised July 9, 2024 |                                                       |
|                                                                 |                                                                                                            | Submittal<br>Type:   | <input checked="" type="checkbox"/> Initial Submittal |
|                                                                 |                                                                                                            |                      | <input type="checkbox"/> Amended Report               |
|                                                                 |                                                                                                            |                      | <input type="checkbox"/> As Drilled                   |

## WELL LOCATION INFORMATION

|                                                                                                                                                        |                                                          |                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| API Number<br><b>30-025-54263</b>                                                                                                                      | Pool Code<br>98136                                       | Pool Name<br>WC-025 G-07 S223505N; Bone Spring                                                                                                         |
| Property Code<br><b>336595</b>                                                                                                                         | Property Name<br><b>CASA BONITA 5 STATE COM</b>          | Well Number<br><b>304H</b>                                                                                                                             |
| OGRID No.<br><b>372165</b>                                                                                                                             | Operator Name<br><b>PERMIAN RESOURCES OPERATING, LLC</b> | Ground Level Elevation<br><b>3,628.05'</b>                                                                                                             |
| Surface Owner: <input checked="" type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal |                                                          | Mineral Owner: <input checked="" type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input type="checkbox"/> Federal |

## Surface Location

|                    |                     |                        |                     |     |                                 |                                   |                               |                                  |                      |
|--------------------|---------------------|------------------------|---------------------|-----|---------------------------------|-----------------------------------|-------------------------------|----------------------------------|----------------------|
| UL<br><b>LOT 1</b> | Section<br><b>5</b> | Township<br><b>22S</b> | Range<br><b>35E</b> | Lot | Ft. from N/S<br><b>607' FNL</b> | Ft. from E/W<br><b>1,333' FEL</b> | Latitude<br><b>32.426556°</b> | Longitude<br><b>-103.385344°</b> | County<br><b>LEA</b> |
|--------------------|---------------------|------------------------|---------------------|-----|---------------------------------|-----------------------------------|-------------------------------|----------------------------------|----------------------|

## Bottom Hole Location

|                |                      |                        |                     |     |                                 |                                 |                               |                                  |                      |
|----------------|----------------------|------------------------|---------------------|-----|---------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------|
| UL<br><b>P</b> | Section<br><b>17</b> | Township<br><b>22S</b> | Range<br><b>35E</b> | Lot | Ft. from N/S<br><b>100' FSL</b> | Ft. from E/W<br><b>660' FEL</b> | Latitude<br><b>32.384769°</b> | Longitude<br><b>-103.383232°</b> | County<br><b>LEA</b> |
|----------------|----------------------|------------------------|---------------------|-----|---------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------|

|                        |                                     |                   |                                                                                                               |                    |
|------------------------|-------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|--------------------|
| Dedicated Acres<br>480 | Infill or Defining Well<br>Defining | Defining Well API | Overlapping Spacing Unit (Y/N)<br>N                                                                           | Consolidation Code |
| Order Numbers.         |                                     |                   | Well setbacks are under Common Ownership: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                    |

## Kick Off Point (KOP)

|                    |                     |                        |                     |     |                                 |                                   |                               |                                  |                      |
|--------------------|---------------------|------------------------|---------------------|-----|---------------------------------|-----------------------------------|-------------------------------|----------------------------------|----------------------|
| UL<br><b>LOT 1</b> | Section<br><b>5</b> | Township<br><b>22S</b> | Range<br><b>35E</b> | Lot | Ft. from N/S<br><b>607' FNL</b> | Ft. from E/W<br><b>1,333' FEL</b> | Latitude<br><b>32.426556°</b> | Longitude<br><b>-103.385344°</b> | County<br><b>LEA</b> |
|--------------------|---------------------|------------------------|---------------------|-----|---------------------------------|-----------------------------------|-------------------------------|----------------------------------|----------------------|

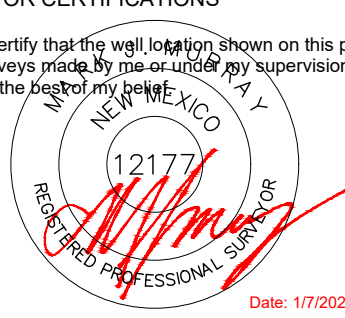
## First Take Point (FTP)

|                    |                     |                        |                     |     |                                 |                                 |                               |                                  |                      |
|--------------------|---------------------|------------------------|---------------------|-----|---------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------|
| UL<br><b>LOT 1</b> | Section<br><b>5</b> | Township<br><b>22S</b> | Range<br><b>35E</b> | Lot | Ft. from N/S<br><b>100' FNL</b> | Ft. from E/W<br><b>660' FEL</b> | Latitude<br><b>32.427952°</b> | Longitude<br><b>-103.383154°</b> | County<br><b>LEA</b> |
|--------------------|---------------------|------------------------|---------------------|-----|---------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------|

## Last Take Point (LTP)

|                |                      |                        |                     |     |                                 |                                 |                               |                                  |                      |
|----------------|----------------------|------------------------|---------------------|-----|---------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------|
| UL<br><b>P</b> | Section<br><b>17</b> | Township<br><b>22S</b> | Range<br><b>35E</b> | Lot | Ft. from N/S<br><b>100' FSL</b> | Ft. from E/W<br><b>660' FEL</b> | Latitude<br><b>32.384769°</b> | Longitude<br><b>-103.383232°</b> | County<br><b>LEA</b> |
|----------------|----------------------|------------------------|---------------------|-----|---------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------|

|                                           |                                                                                                    |                         |
|-------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------|
| Unitized Area or Area of Uniform Interest | Spacing Unit Type <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical | Ground Floor Elevation: |
|-------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------|

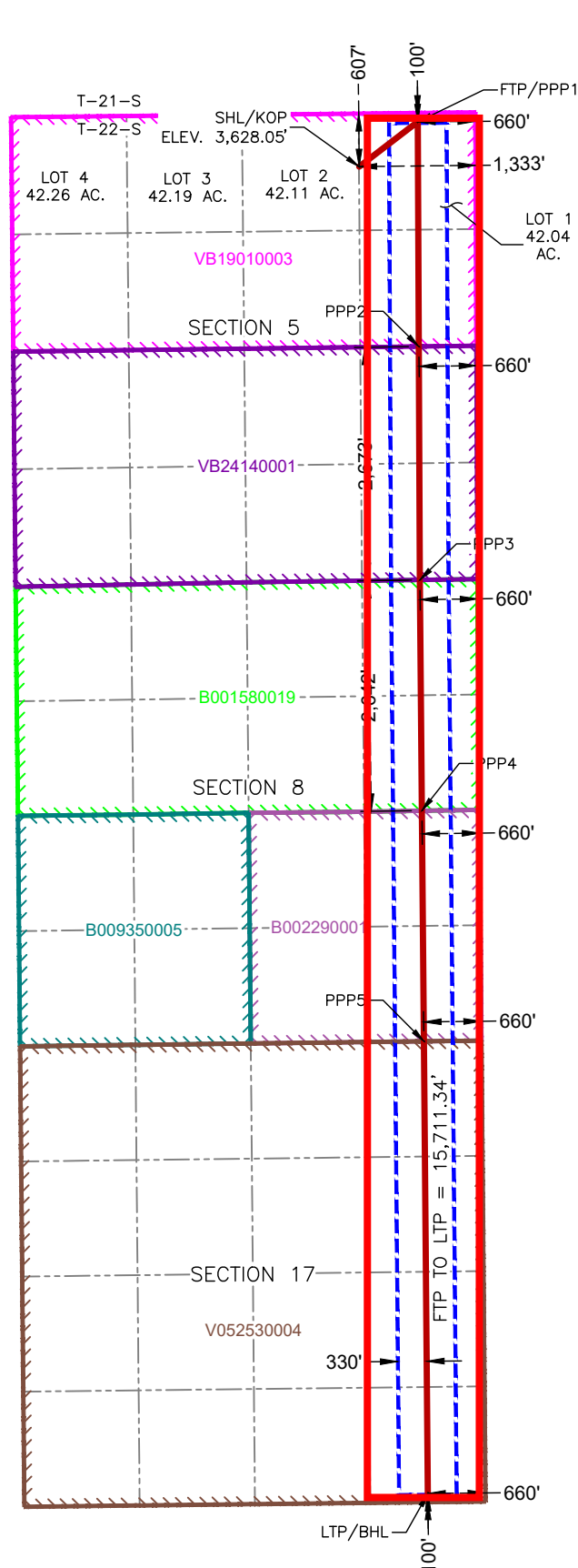
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                   |                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>OPERATOR CERTIFICATIONS</b><br><br>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.<br><br>If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division. |  | <b>SURVEYOR CERTIFICATIONS</b><br><br>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.<br><br><br>Date: 1/7/2025 |                            |
| Signature<br><br>Date<br>1/24/25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Signature and Seal of Professional Surveyor                                                                                                                                                                                                                                                                                                                       |                            |
| Printed Name<br>Cassie Evans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | Certificate Number<br>12177                                                                                                                                                                                                                                                                                                                                       | Date of Survey<br>1/7/2025 |
| Email Address<br>Cassie.Evans@permianres.com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                                                                                                                                                                                                                                                                                                                   |                            |

Note: 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.

## ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.



**SURFACE HOLE LOCATION  
& KICK-OFF POINT**  
607' FNL & 1,333' FEL  
ELEV. = 3,628.05'

NAD 83 X = 833,840.07'  
NAD 83 Y = 520,209.73'  
NAD 83 LAT = 32.426556°  
NAD 83 LONG = -103.385344°  
NAD 27 X = 792,656.58'  
NAD 27 Y = 520,148.59'  
NAD 27 LAT = 32.426431°  
NAD 27 LONG = -103.384866°

**FIRST TAKE POINT &  
PENETRATION POINT 1**  
100' FNL & 660' FEL

NAD 83 X = 834,511.28'  
NAD 83 Y = 520,723.81'  
NAD 83 LAT = 32.427952°  
NAD 83 LONG = -103.383154°  
NAD 27 X = 793,327.78'  
NAD 27 Y = 520,662.65'  
NAD 27 LAT = 32.427828°  
NAD 27 LONG = -103.382677°

**PENETRATION POINT 2**  
2,673' FSL & 660' FEL

NAD 83 X = 834,522.59'  
NAD 83 Y = 518,149.77'  
NAD 83 LAT = 32.420877°  
NAD 83 LONG = -103.383191°  
NAD 27 X = 793,339.04'  
NAD 27 Y = 518,088.67'  
NAD 27 LAT = 32.420753°  
NAD 27 LONG = -103.382714°

**PENETRATION POINT 3**  
0' FSL & 660' FEL

NAD 83 X = 834,534.34'  
NAD 83 Y = 515,476.42'  
NAD 83 LAT = 32.413530°  
NAD 83 LONG = -103.383230°  
NAD 27 X = 793,350.74'  
NAD 27 Y = 515,415.39'  
NAD 27 LAT = 32.413405°  
NAD 27 LONG = -103.382753°

**PENETRATION POINT 4**  
2,642' FNL & 660' FEL

NAD 83 X = 834,557.70'  
NAD 83 Y = 512,834.23'  
NAD 83 LAT = 32.406267°  
NAD 83 LONG = -103.383231°  
NAD 27 X = 793,374.05'  
NAD 27 Y = 512,773.28'  
NAD 27 LAT = 32.406142°  
NAD 27 LONG = -103.382754°

**PENETRATION POINT 5**  
0' FSL & 660' FEL

NAD 83 X = 834,581.06'  
NAD 83 Y = 510,191.94'  
NAD 83 LAT = 32.399004°  
NAD 83 LONG = -103.383231°  
NAD 27 X = 793,397.35'  
NAD 27 Y = 510,131.06'  
NAD 27 LAT = 32.398880°  
NAD 27 LONG = -103.382755°

**LAST TAKE POINT &  
BOTTOM HOLE LOCATION**  
100' FSL & 660' FEL

NAD 83 X = 834,626.66'  
NAD 83 Y = 505,012.93'  
NAD 83 LAT = 32.384769°  
NAD 83 LONG = -103.383232°  
NAD 27 X = 793,442.85'  
NAD 27 Y = 504,952.19'  
NAD 27 LAT = 32.384644°  
NAD 27 LONG = -103.382756°

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**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

Form APD Conditions

Permit 382369

**PERMIT CONDITIONS OF APPROVAL**

|                                                                                                                               |                                        |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Operator Name and Address:<br>Permian Resources Operating, LLC [372165]<br>300 N. Marienfeld St Ste 1000<br>Midland, TX 79701 | API Number:<br>30-025-54263            |
|                                                                                                                               | Well:<br>CASA BONITA 5 STATE COM #304H |

| OCD Reviewer  | Condition                                                                                                                                                                                                                                                             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| matthew.gomez | A [C-103] Sub. Drilling (C-103N) is required within (10) days of spud.                                                                                                                                                                                                |
| matthew.gomez | Notify the OCD 24 hours prior to casing & cement.                                                                                                                                                                                                                     |
| matthew.gomez | 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. |
| matthew.gomez | 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.                  |
| matthew.gomez | Cement is required to circulate on both surface and intermediate1 strings of casing.                                                                                                                                                                                  |
| matthew.gomez | If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.                                                                                                                                                            |
| matthew.gomez | File As Drilled C-102 and a directional Survey with C-104 completion packet.                                                                                                                                                                                          |
| matthew.gomez | Brine water shall not be used in the Capitan Reef. Only fresh water shall be utilized until the Capitan Reef is cased and cemented.                                                                                                                                   |

# **NEW MEXICO**

**(SP) LEA**

**CASA BONITA PROJECT**

**CASA BONITA 5 STATE COM 304H**

**OWB**

**Plan: PWP0**

## **Standard Planning Report - Geographic**

**07 January, 2025**

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWP0                         |                                     |                                 |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | (SP) LEA                  |                      |                |
| <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                  |     | CASA BONITA PROJECT |                 |            |                  |
|-----------------------|-----|---------------------|-----------------|------------|------------------|
| Site Position:        |     | Northing:           | 513,047.06 usft | Latitude:  | 32° 24' 24.711 N |
| From:                 | Map | Easting:            | 834,057.80 usft | Longitude: | 103° 23' 5.439 W |
| Position Uncertainty: |     | 0.0 usft            | Slot Radius:    | 13-3/16 "  |                  |

| Well                 | CASA BONITA 5 STATE COM 304H |          |                     |                 |               |                  |
|----------------------|------------------------------|----------|---------------------|-----------------|---------------|------------------|
| Well Position        | +N/-S                        | 0.0 usft | Northing:           | 520,352.65 usft | Latitude:     | 32° 25' 37.011 N |
|                      | +E/-W                        | 0.0 usft | Easting:            | 833,878.47 usft | Longitude:    | 103° 23' 6.775 W |
| Position Uncertainty |                              | 0.0 usft | Wellhead Elevation: | usft            | Ground Level: | 3,626.0 usft     |
| Grid Convergence:    |                              | 0.51 °   |                     |                 |               |                  |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | OWB               |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF200510        | 12/31/2009         | 7.68                   | 60.46                | 48,935.05562552            |

|                          |                                |                     |                     |                      |     |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|-----|
| <b>Design</b>            | PWP0                           |                     |                     |                      |     |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |     |
| <b>Version:</b>          |                                | <b>Phase:</b>       | PROTOTYPE           | <b>Tie On Depth:</b> | 0.0 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |     |
|                          | 0.0                            | 0.0                 | 0.0                 | 177.21               |     |

|                                 |                        |                          |                       |                |  |
|---------------------------------|------------------------|--------------------------|-----------------------|----------------|--|
| <b>Plan Survey Tool Program</b> | <b>Date</b>            | 1/7/2025                 |                       |                |  |
| <b>Depth From (usft)</b>        | <b>Depth To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b>      | <b>Remarks</b> |  |
| 1                               | 0.0                    | 24,971.9 PWP0 (OWB)      | MWD                   |                |  |
|                                 |                        |                          | OWSG_Rev2_ MWD - Star |                |  |

Planning Report - Geographic

|           |                              |                              |                                 |
|-----------|------------------------------|------------------------------|---------------------------------|
| Database: | Compass_17                   | Local Co-ordinate Reference: | Well CASA BONITA5 STATE COM304H |
| Company:  | NEW MEXICO                   | TVD Reference:               | KB @ 3656.0usft                 |
| Project:  | (SP) LEA                     | MD Reference:                | KB @ 3656.0usft                 |
| Site:     | CASA BONITA PROJECT          | North Reference:             | Grid                            |
| Well:     | CASA BONITA 5 STATE COM 304H | Survey Calculation Method:   | Minimum Curvature               |
| Wellbore: | OWB                          |                              |                                 |
| Design:   | PWP0                         |                              |                                 |

| Plan Sections         |                 |             |                       |              |              |                         |                        |                       |         |                    |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|--------------------|
| 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             |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 2,000.0               | 0.00            | 0.00        | 2,000.0               | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 2,600.0               | 12.00           | 56.35       | 2,595.6               | 34.7         | 52.1         | 2.00                    | 2.00                   | 0.00                  | 56.35   |                    |
| 5,654.0               | 12.00           | 56.35       | 5,582.9               | 386.5        | 580.7        | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 6,254.0               | 0.00            | 0.00        | 6,178.5               | 421.2        | 632.8        | 2.00                    | -2.00                  | 0.00                  | 180.00  |                    |
| 8,938.0               | 0.00            | 0.00        | 8,862.5               | 421.2        | 632.8        | 0.00                    | 0.00                   | 0.00                  | 0.00    |                    |
| 9,688.0               | 90.00           | 179.58      | 9,340.0               | -56.3        | 636.3        | 12.00                   | 12.00                  | 0.00                  | 179.58  | LTP/BHL CB5SC 304H |
| 11,834.3              | 90.00           | 179.58      | 9,340.0               | -2,202.5     | 652.0        | 0.00                    | 0.00                   | 0.00                  | 0.00    | PP2 CB5SC 304H     |
| 14,507.3              | 90.00           | 179.58      | 9,340.0               | -4,875.5     | 671.6        | 0.00                    | 0.00                   | 0.00                  | 0.00    | PP3 CB5SC 304H     |
| 17,149.8              | 90.00           | 179.58      | 9,340.0               | -7,517.8     | 690.9        | 0.00                    | 0.00                   | 0.00                  | 0.00    | PP4 CB5SC 304H     |
| 19,792.3              | 90.00           | 179.58      | 9,340.0               | -10,160.3    | 710.3        | 0.00                    | 0.00                   | 0.00                  | 0.00    | PP5 CB5SC 304H     |
| 24,971.9              | 90.00           | 179.58      | 9,340.0               | -15,339.7    | 748.2        | 0.00                    | 0.00                   | 0.00                  | 0.00    | LTP/BHL CB5SC 304H |

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWP0                         |                                     |                                 |

| Planned Survey                        |                 |             |                       |              |              |                     |                    |                  |                  |
|---------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|------------------|------------------|
| Measured Depth (usft)                 | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude         | Longitude        |
| 0.0                                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 100.0                                 | 0.00            | 0.00        | 100.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 200.0                                 | 0.00            | 0.00        | 200.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 300.0                                 | 0.00            | 0.00        | 300.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 400.0                                 | 0.00            | 0.00        | 400.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 500.0                                 | 0.00            | 0.00        | 500.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 600.0                                 | 0.00            | 0.00        | 600.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 700.0                                 | 0.00            | 0.00        | 700.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 800.0                                 | 0.00            | 0.00        | 800.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 900.0                                 | 0.00            | 0.00        | 900.0                 | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,000.0                               | 0.00            | 0.00        | 1,000.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,100.0                               | 0.00            | 0.00        | 1,100.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,200.0                               | 0.00            | 0.00        | 1,200.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,300.0                               | 0.00            | 0.00        | 1,300.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,400.0                               | 0.00            | 0.00        | 1,400.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,500.0                               | 0.00            | 0.00        | 1,500.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,600.0                               | 0.00            | 0.00        | 1,600.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,700.0                               | 0.00            | 0.00        | 1,700.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,800.0                               | 0.00            | 0.00        | 1,800.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 1,900.0                               | 0.00            | 0.00        | 1,900.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| 2,000.0                               | 0.00            | 0.00        | 2,000.0               | 0.0          | 0.0          | 520,352.65          | 833,878.47         | 32° 25' 37.011 N | 103° 23' 6.775 W |
| <b>Start Build 2.00</b>               |                 |             |                       |              |              |                     |                    |                  |                  |
| 2,100.0                               | 2.00            | 56.35       | 2,100.0               | 1.0          | 1.5          | 520,353.62          | 833,879.92         | 32° 25' 37.021 N | 103° 23' 6.758 W |
| 2,200.0                               | 4.00            | 56.35       | 2,199.8               | 3.9          | 5.8          | 520,356.52          | 833,884.28         | 32° 25' 37.049 N | 103° 23' 6.706 W |
| 2,300.0                               | 6.00            | 56.35       | 2,299.5               | 8.7          | 13.1         | 520,361.35          | 833,891.53         | 32° 25' 37.096 N | 103° 23' 6.621 W |
| 2,400.0                               | 8.00            | 56.35       | 2,398.7               | 15.4         | 23.2         | 520,368.10          | 833,901.68         | 32° 25' 37.162 N | 103° 23' 6.502 W |
| 2,500.0                               | 10.00           | 56.35       | 2,497.5               | 24.1         | 36.2         | 520,376.77          | 833,914.70         | 32° 25' 37.247 N | 103° 23' 6.349 W |
| 2,600.0                               | 12.00           | 56.35       | 2,595.6               | 34.7         | 52.1         | 520,387.34          | 833,930.58         | 32° 25' 37.350 N | 103° 23' 6.163 W |
| <b>Start 3054.0 hold at 2600.0 MD</b> |                 |             |                       |              |              |                     |                    |                  |                  |
| 2,700.0                               | 12.00           | 56.35       | 2,693.4               | 46.2         | 69.4         | 520,398.86          | 833,947.89         | 32° 25' 37.462 N | 103° 23' 5.960 W |
| 2,800.0                               | 12.00           | 56.35       | 2,791.3               | 57.7         | 86.7         | 520,410.38          | 833,965.20         | 32° 25' 37.575 N | 103° 23' 5.757 W |
| 2,900.0                               | 12.00           | 56.35       | 2,889.1               | 69.2         | 104.0        | 520,421.90          | 833,982.51         | 32° 25' 37.687 N | 103° 23' 5.554 W |
| 3,000.0                               | 12.00           | 56.35       | 2,986.9               | 80.8         | 121.3        | 520,433.42          | 833,999.81         | 32° 25' 37.800 N | 103° 23' 5.351 W |
| 3,100.0                               | 12.00           | 56.35       | 3,084.7               | 92.3         | 138.7        | 520,444.94          | 834,017.12         | 32° 25' 37.912 N | 103° 23' 5.148 W |
| 3,200.0                               | 12.00           | 56.35       | 3,182.5               | 103.8        | 156.0        | 520,456.46          | 834,034.43         | 32° 25' 38.025 N | 103° 23' 4.944 W |
| 3,300.0                               | 12.00           | 56.35       | 3,280.3               | 115.3        | 173.3        | 520,467.98          | 834,051.74         | 32° 25' 38.137 N | 103° 23' 4.741 W |
| 3,400.0                               | 12.00           | 56.35       | 3,378.1               | 126.8        | 190.6        | 520,479.50          | 834,069.05         | 32° 25' 38.250 N | 103° 23' 4.538 W |
| 3,500.0                               | 12.00           | 56.35       | 3,476.0               | 138.4        | 207.9        | 520,491.02          | 834,086.35         | 32° 25' 38.362 N | 103° 23' 4.335 W |
| 3,600.0                               | 12.00           | 56.35       | 3,573.8               | 149.9        | 225.2        | 520,502.54          | 834,103.66         | 32° 25' 38.475 N | 103° 23' 4.132 W |
| 3,700.0                               | 12.00           | 56.35       | 3,671.6               | 161.4        | 242.5        | 520,514.06          | 834,120.97         | 32° 25' 38.587 N | 103° 23' 3.929 W |
| 3,800.0                               | 12.00           | 56.35       | 3,769.4               | 172.9        | 259.8        | 520,525.58          | 834,138.28         | 32° 25' 38.699 N | 103° 23' 3.726 W |
| 3,900.0                               | 12.00           | 56.35       | 3,867.2               | 184.4        | 277.1        | 520,537.10          | 834,155.58         | 32° 25' 38.812 N | 103° 23' 3.523 W |
| 4,000.0                               | 12.00           | 56.35       | 3,965.0               | 196.0        | 294.4        | 520,548.62          | 834,172.89         | 32° 25' 38.924 N | 103° 23' 3.320 W |
| 4,100.0                               | 12.00           | 56.35       | 4,062.8               | 207.5        | 311.7        | 520,560.14          | 834,190.20         | 32° 25' 39.037 N | 103° 23' 3.116 W |
| 4,200.0                               | 12.00           | 56.35       | 4,160.7               | 219.0        | 329.0        | 520,571.66          | 834,207.51         | 32° 25' 39.149 N | 103° 23' 2.913 W |
| 4,300.0                               | 12.00           | 56.35       | 4,258.5               | 230.5        | 346.3        | 520,583.18          | 834,224.82         | 32° 25' 39.262 N | 103° 23' 2.710 W |
| 4,400.0                               | 12.00           | 56.35       | 4,356.3               | 242.0        | 363.7        | 520,594.70          | 834,242.12         | 32° 25' 39.374 N | 103° 23' 2.507 W |
| 4,500.0                               | 12.00           | 56.35       | 4,454.1               | 253.6        | 381.0        | 520,606.22          | 834,259.43         | 32° 25' 39.487 N | 103° 23' 2.304 W |
| 4,600.0                               | 12.00           | 56.35       | 4,551.9               | 265.1        | 398.3        | 520,617.74          | 834,276.74         | 32° 25' 39.599 N | 103° 23' 2.101 W |
| 4,700.0                               | 12.00           | 56.35       | 4,649.7               | 276.6        | 415.6        | 520,629.26          | 834,294.05         | 32° 25' 39.712 N | 103° 23' 1.898 W |
| 4,800.0                               | 12.00           | 56.35       | 4,747.5               | 288.1        | 432.9        | 520,640.78          | 834,311.35         | 32° 25' 39.824 N | 103° 23' 1.695 W |
| 4,900.0                               | 12.00           | 56.35       | 4,845.4               | 299.6        | 450.2        | 520,652.30          | 834,328.66         | 32° 25' 39.937 N | 103° 23' 1.492 W |
| 5,000.0                               | 12.00           | 56.35       | 4,943.2               | 311.2        | 467.5        | 520,663.82          | 834,345.97         | 32° 25' 40.049 N | 103° 23' 1.288 W |
| 5,100.0                               | 12.00           | 56.35       | 5,041.0               | 322.7        | 484.8        | 520,675.34          | 834,363.28         | 32° 25' 40.162 N | 103° 23' 1.085 W |

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWPO                         |                                     |                                 |

| Planned Survey                 |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
|--------------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|------------------|-------------------|--|
| Measured<br>Depth<br>(usft)    | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude         | Longitude         |  |
| 5,200.0                        | 12.00              | 56.35          | 5,138.8                     | 334.2           | 502.1           | 520,686.86                | 834,380.59               | 32° 25' 40.274 N | 103° 23' 0.882 W  |  |
| 5,300.0                        | 12.00              | 56.35          | 5,236.6                     | 345.7           | 519.4           | 520,698.38                | 834,397.89               | 32° 25' 40.386 N | 103° 23' 0.679 W  |  |
| 5,400.0                        | 12.00              | 56.35          | 5,334.4                     | 357.3           | 536.7           | 520,709.90                | 834,415.20               | 32° 25' 40.499 N | 103° 23' 0.476 W  |  |
| 5,500.0                        | 12.00              | 56.35          | 5,432.3                     | 368.8           | 554.0           | 520,721.42                | 834,432.51               | 32° 25' 40.611 N | 103° 23' 0.273 W  |  |
| 5,600.0                        | 12.00              | 56.35          | 5,530.1                     | 380.3           | 571.3           | 520,732.94                | 834,449.82               | 32° 25' 40.724 N | 103° 23' 0.070 W  |  |
| 5,654.0                        | 12.00              | 56.35          | 5,582.9                     | 386.5           | 580.7           | 520,739.16                | 834,459.16               | 32° 25' 40.785 N | 103° 22' 59.960 W |  |
| Start Drop -2.00               |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
| 5,700.0                        | 11.08              | 56.35          | 5,628.0                     | 391.6           | 588.4           | 520,744.26                | 834,466.82               | 32° 25' 40.834 N | 103° 22' 59.870 W |  |
| 5,800.0                        | 9.08               | 56.35          | 5,726.4                     | 401.3           | 602.9           | 520,753.96                | 834,481.39               | 32° 25' 40.929 N | 103° 22' 59.699 W |  |
| 5,900.0                        | 7.08               | 56.35          | 5,825.4                     | 409.1           | 614.6           | 520,761.75                | 834,493.09               | 32° 25' 41.005 N | 103° 22' 59.562 W |  |
| 6,000.0                        | 5.08               | 56.35          | 5,924.8                     | 415.0           | 623.4           | 520,767.62                | 834,501.91               | 32° 25' 41.062 N | 103° 22' 59.458 W |  |
| 6,100.0                        | 3.08               | 56.35          | 6,024.6                     | 418.9           | 629.4           | 520,771.56                | 834,507.83               | 32° 25' 41.101 N | 103° 22' 59.389 W |  |
| 6,200.0                        | 1.08               | 56.35          | 6,124.5                     | 420.9           | 632.4           | 520,773.57                | 834,510.85               | 32° 25' 41.120 N | 103° 22' 59.353 W |  |
| 6,254.0                        | 0.00               | 0.00           | 6,178.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| Start 2684.0 hold at 6254.0 MD |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
| 6,300.0                        | 0.00               | 0.00           | 6,224.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 6,400.0                        | 0.00               | 0.00           | 6,324.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 6,500.0                        | 0.00               | 0.00           | 6,424.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 6,600.0                        | 0.00               | 0.00           | 6,524.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 6,700.0                        | 0.00               | 0.00           | 6,624.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 6,800.0                        | 0.00               | 0.00           | 6,724.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 6,900.0                        | 0.00               | 0.00           | 6,824.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,000.0                        | 0.00               | 0.00           | 6,924.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,100.0                        | 0.00               | 0.00           | 7,024.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,200.0                        | 0.00               | 0.00           | 7,124.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,300.0                        | 0.00               | 0.00           | 7,224.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,400.0                        | 0.00               | 0.00           | 7,324.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,500.0                        | 0.00               | 0.00           | 7,424.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,600.0                        | 0.00               | 0.00           | 7,524.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,700.0                        | 0.00               | 0.00           | 7,624.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,800.0                        | 0.00               | 0.00           | 7,724.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 7,900.0                        | 0.00               | 0.00           | 7,824.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,000.0                        | 0.00               | 0.00           | 7,924.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,100.0                        | 0.00               | 0.00           | 8,024.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,200.0                        | 0.00               | 0.00           | 8,124.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,300.0                        | 0.00               | 0.00           | 8,224.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,400.0                        | 0.00               | 0.00           | 8,324.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,500.0                        | 0.00               | 0.00           | 8,424.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,600.0                        | 0.00               | 0.00           | 8,524.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,700.0                        | 0.00               | 0.00           | 8,624.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,800.0                        | 0.00               | 0.00           | 8,724.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,900.0                        | 0.00               | 0.00           | 8,824.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| 8,938.0                        | 0.00               | 0.00           | 8,862.5                     | 421.2           | 632.8           | 520,773.85                | 834,511.28               | 32° 25' 41.123 N | 103° 22' 59.348 W |  |
| Start Build 12.00              |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
| 8,950.0                        | 1.44               | 179.58         | 8,874.5                     | 421.0           | 632.8           | 520,773.70                | 834,511.28               | 32° 25' 41.122 N | 103° 22' 59.348 W |  |
| 8,975.0                        | 4.44               | 179.58         | 8,899.5                     | 419.8           | 632.8           | 520,772.42                | 834,511.29               | 32° 25' 41.109 N | 103° 22' 59.348 W |  |
| 9,000.0                        | 7.44               | 179.58         | 8,924.3                     | 417.2           | 632.8           | 520,769.83                | 834,511.31               | 32° 25' 41.083 N | 103° 22' 59.349 W |  |
| 9,025.0                        | 10.44              | 179.58         | 8,949.0                     | 413.3           | 632.9           | 520,765.95                | 834,511.34               | 32° 25' 41.045 N | 103° 22' 59.349 W |  |
| 9,050.0                        | 13.44              | 179.58         | 8,973.5                     | 408.1           | 632.9           | 520,760.77                | 834,511.37               | 32° 25' 40.994 N | 103° 22' 59.349 W |  |
| 9,075.0                        | 16.44              | 179.58         | 8,997.6                     | 401.7           | 633.0           | 520,754.33                | 834,511.42               | 32° 25' 40.930 N | 103° 22' 59.349 W |  |
| 9,100.0                        | 19.44              | 179.58         | 9,021.4                     | 394.0           | 633.0           | 520,746.63                | 834,511.48               | 32° 25' 40.854 N | 103° 22' 59.349 W |  |
| 9,125.0                        | 22.44              | 179.58         | 9,044.8                     | 385.0           | 633.1           | 520,737.70                | 834,511.54               | 32° 25' 40.765 N | 103° 22' 59.349 W |  |
| 9,150.0                        | 25.44              | 179.58         | 9,067.6                     | 374.9           | 633.1           | 520,727.55                | 834,511.62               | 32° 25' 40.665 N | 103° 22' 59.349 W |  |
| 9,175.0                        | 28.44              | 179.58         | 9,089.9                     | 363.6           | 633.2           | 520,716.23                | 834,511.70               | 32° 25' 40.553 N | 103° 22' 59.350 W |  |

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWP0                         |                                     |                                 |

| Planned Survey                  |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
|---------------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|------------------|-------------------|--|
| Measured<br>Depth<br>(usft)     | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude         | Longitude         |  |
| 9,200.0                         | 31.44              | 179.58         | 9,111.6                     | 351.1           | 633.3           | 520,703.75                | 834,511.79               | 32° 25' 40.430 N | 103° 22' 59.350 W |  |
| 9,225.0                         | 34.44              | 179.58         | 9,132.5                     | 337.5           | 633.4           | 520,690.16                | 834,511.89               | 32° 25' 40.295 N | 103° 22' 59.350 W |  |
| 9,250.0                         | 37.44              | 179.58         | 9,152.8                     | 322.8           | 633.5           | 520,675.49                | 834,512.00               | 32° 25' 40.150 N | 103° 22' 59.350 W |  |
| 9,275.0                         | 40.44              | 179.58         | 9,172.2                     | 307.1           | 633.6           | 520,659.78                | 834,512.11               | 32° 25' 39.994 N | 103° 22' 59.351 W |  |
| 9,300.0                         | 43.44              | 179.58         | 9,190.8                     | 290.4           | 633.8           | 520,643.07                | 834,512.24               | 32° 25' 39.829 N | 103° 22' 59.351 W |  |
| 9,325.0                         | 46.44              | 179.58         | 9,208.5                     | 272.8           | 633.9           | 520,625.41                | 834,512.37               | 32° 25' 39.654 N | 103° 22' 59.351 W |  |
| 9,350.0                         | 49.44              | 179.58         | 9,225.2                     | 254.2           | 634.0           | 520,606.85                | 834,512.50               | 32° 25' 39.471 N | 103° 22' 59.352 W |  |
| 9,375.0                         | 52.44              | 179.58         | 9,241.0                     | 234.8           | 634.2           | 520,587.44                | 834,512.64               | 32° 25' 39.279 N | 103° 22' 59.352 W |  |
| 9,400.0                         | 55.44              | 179.58         | 9,255.7                     | 214.6           | 634.3           | 520,567.24                | 834,512.79               | 32° 25' 39.079 N | 103° 22' 59.352 W |  |
| 9,425.0                         | 58.44              | 179.58         | 9,269.3                     | 193.6           | 634.5           | 520,546.29                | 834,512.94               | 32° 25' 38.871 N | 103° 22' 59.353 W |  |
| 9,450.0                         | 61.44              | 179.58         | 9,281.9                     | 172.0           | 634.6           | 520,524.65                | 834,513.10               | 32° 25' 38.657 N | 103° 22' 59.353 W |  |
| 9,475.0                         | 64.44              | 179.58         | 9,293.2                     | 149.7           | 634.8           | 520,502.39                | 834,513.27               | 32° 25' 38.437 N | 103° 22' 59.353 W |  |
| 9,500.0                         | 67.44              | 179.58         | 9,303.4                     | 126.9           | 635.0           | 520,479.57                | 834,513.43               | 32° 25' 38.211 N | 103° 22' 59.354 W |  |
| 9,525.0                         | 70.44              | 179.58         | 9,312.4                     | 103.6           | 635.1           | 520,456.24                | 834,513.60               | 32° 25' 37.980 N | 103° 22' 59.354 W |  |
| 9,550.0                         | 73.44              | 179.58         | 9,320.2                     | 79.8            | 635.3           | 520,432.47                | 834,513.78               | 32° 25' 37.745 N | 103° 22' 59.355 W |  |
| 9,575.0                         | 76.44              | 179.58         | 9,326.7                     | 55.7            | 635.5           | 520,408.34                | 834,513.95               | 32° 25' 37.506 N | 103° 22' 59.355 W |  |
| 9,600.0                         | 79.44              | 179.58         | 9,331.9                     | 31.2            | 635.7           | 520,383.89                | 834,514.13               | 32° 25' 37.265 N | 103° 22' 59.356 W |  |
| 9,625.0                         | 82.44              | 179.58         | 9,335.8                     | 6.6             | 635.8           | 520,359.21                | 834,514.31               | 32° 25' 37.020 N | 103° 22' 59.356 W |  |
| 9,650.0                         | 85.44              | 179.58         | 9,338.5                     | -18.3           | 636.0           | 520,334.35                | 834,514.50               | 32° 25' 36.774 N | 103° 22' 59.357 W |  |
| 9,675.0                         | 88.44              | 179.58         | 9,339.8                     | -43.3           | 636.2           | 520,309.39                | 834,514.68               | 32° 25' 36.527 N | 103° 22' 59.357 W |  |
| 9,688.0                         | 90.00              | 179.58         | 9,340.0                     | -56.3           | 636.3           | 520,296.40                | 834,514.77               | 32° 25' 36.399 N | 103° 22' 59.357 W |  |
| Start 2064.2 hold at 9688.0 MD  |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
| 9,700.0                         | 90.00              | 179.58         | 9,340.0                     | -68.3           | 636.4           | 520,284.39                | 834,514.86               | 32° 25' 36.280 N | 103° 22' 59.357 W |  |
| 9,800.0                         | 90.00              | 179.58         | 9,340.0                     | -168.3          | 637.1           | 520,184.39                | 834,515.59               | 32° 25' 35.290 N | 103° 22' 59.359 W |  |
| 9,900.0                         | 90.00              | 179.58         | 9,340.0                     | -268.3          | 637.9           | 520,084.40                | 834,516.33               | 32° 25' 34.301 N | 103° 22' 59.361 W |  |
| 10,000.0                        | 90.00              | 179.58         | 9,340.0                     | -368.3          | 638.6           | 519,984.40                | 834,517.06               | 32° 25' 33.312 N | 103° 22' 59.363 W |  |
| 10,100.0                        | 90.00              | 179.58         | 9,340.0                     | -468.2          | 639.3           | 519,884.40                | 834,517.79               | 32° 25' 32.322 N | 103° 22' 59.365 W |  |
| 10,200.0                        | 90.00              | 179.58         | 9,340.0                     | -568.2          | 640.1           | 519,784.40                | 834,518.52               | 32° 25' 31.333 N | 103° 22' 59.367 W |  |
| 10,300.0                        | 90.00              | 179.58         | 9,340.0                     | -668.2          | 640.8           | 519,684.41                | 834,519.25               | 32° 25' 30.343 N | 103° 22' 59.368 W |  |
| 10,400.0                        | 90.00              | 179.58         | 9,340.0                     | -768.2          | 641.5           | 519,584.41                | 834,519.99               | 32° 25' 29.354 N | 103° 22' 59.370 W |  |
| 10,500.0                        | 90.00              | 179.58         | 9,340.0                     | -868.2          | 642.2           | 519,484.41                | 834,520.72               | 32° 25' 28.364 N | 103° 22' 59.372 W |  |
| 10,600.0                        | 90.00              | 179.58         | 9,340.0                     | -968.2          | 643.0           | 519,384.42                | 834,521.45               | 32° 25' 27.375 N | 103° 22' 59.374 W |  |
| 10,700.0                        | 90.00              | 179.58         | 9,340.0                     | -1,068.2        | 643.7           | 519,284.42                | 834,522.18               | 32° 25' 26.385 N | 103° 22' 59.376 W |  |
| 10,800.0                        | 90.00              | 179.58         | 9,340.0                     | -1,168.2        | 644.4           | 519,184.42                | 834,522.91               | 32° 25' 25.396 N | 103° 22' 59.378 W |  |
| 10,900.0                        | 90.00              | 179.58         | 9,340.0                     | -1,268.2        | 645.2           | 519,084.42                | 834,523.65               | 32° 25' 24.406 N | 103° 22' 59.379 W |  |
| 11,000.0                        | 90.00              | 179.58         | 9,340.0                     | -1,368.2        | 645.9           | 518,984.43                | 834,524.38               | 32° 25' 23.417 N | 103° 22' 59.381 W |  |
| 11,100.0                        | 90.00              | 179.58         | 9,340.0                     | -1,468.2        | 646.6           | 518,884.43                | 834,525.11               | 32° 25' 22.427 N | 103° 22' 59.383 W |  |
| 11,200.0                        | 90.00              | 179.58         | 9,340.0                     | -1,568.2        | 647.4           | 518,784.43                | 834,525.84               | 32° 25' 21.438 N | 103° 22' 59.385 W |  |
| 11,300.0                        | 90.00              | 179.58         | 9,340.0                     | -1,668.2        | 648.1           | 518,684.43                | 834,526.57               | 32° 25' 20.448 N | 103° 22' 59.387 W |  |
| 11,400.0                        | 90.00              | 179.58         | 9,340.0                     | -1,768.2        | 648.8           | 518,584.44                | 834,527.31               | 32° 25' 19.459 N | 103° 22' 59.389 W |  |
| 11,500.0                        | 90.00              | 179.58         | 9,340.0                     | -1,868.2        | 649.6           | 518,484.44                | 834,528.04               | 32° 25' 18.469 N | 103° 22' 59.390 W |  |
| 11,600.0                        | 90.00              | 179.58         | 9,340.0                     | -1,968.2        | 650.3           | 518,384.44                | 834,528.77               | 32° 25' 17.480 N | 103° 22' 59.392 W |  |
| 11,700.0                        | 90.00              | 179.58         | 9,340.0                     | -2,068.2        | 651.0           | 518,284.44                | 834,529.50               | 32° 25' 16.490 N | 103° 22' 59.394 W |  |
| 11,752.1                        | 90.00              | 179.58         | 9,340.0                     | -2,120.4        | 651.4           | 518,232.30                | 834,529.88               | 32° 25' 15.974 N | 103° 22' 59.395 W |  |
| Start 2751.1 hold at 11752.1 MD |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
| 11,800.0                        | 90.00              | 179.58         | 9,340.0                     | -2,168.2        | 651.8           | 518,184.45                | 834,530.23               | 32° 25' 15.501 N | 103° 22' 59.396 W |  |
| 11,834.3                        | 90.00              | 179.58         | 9,340.0                     | -2,202.5        | 652.0           | 518,150.16                | 834,530.49               | 32° 25' 15.162 N | 103° 22' 59.397 W |  |
| 11,900.0                        | 90.00              | 179.58         | 9,340.0                     | -2,268.2        | 652.5           | 518,084.45                | 834,530.97               | 32° 25' 14.511 N | 103° 22' 59.398 W |  |
| 12,000.0                        | 90.00              | 179.58         | 9,340.0                     | -2,368.2        | 653.2           | 517,984.45                | 834,531.70               | 32° 25' 13.522 N | 103° 22' 59.400 W |  |
| 12,100.0                        | 90.00              | 179.58         | 9,340.0                     | -2,468.2        | 654.0           | 517,884.46                | 834,532.43               | 32° 25' 12.533 N | 103° 22' 59.401 W |  |
| 12,200.0                        | 90.00              | 179.58         | 9,340.0                     | -2,568.2        | 654.7           | 517,784.46                | 834,533.16               | 32° 25' 11.543 N | 103° 22' 59.403 W |  |
| 12,300.0                        | 90.00              | 179.58         | 9,340.0                     | -2,668.2        | 655.4           | 517,684.46                | 834,533.89               | 32° 25' 10.554 N | 103° 22' 59.405 W |  |
| 12,400.0                        | 90.00              | 179.58         | 9,340.0                     | -2,768.2        | 656.2           | 517,584.46                | 834,534.63               | 32° 25' 9.564 N  | 103° 22' 59.407 W |  |
| 12,500.0                        | 90.00              | 179.58         | 9,340.0                     | -2,868.2        | 656.9           | 517,484.47                | 834,535.36               | 32° 25' 8.575 N  | 103° 22' 59.409 W |  |

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWP0                         |                                     |                                 |

| Planned Survey                  |                 |             |                       |              |              |                     |                    |                  |                   |
|---------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|------------------|-------------------|
| Measured Depth (usft)           | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude         | Longitude         |
| 12,600.0                        | 90.00           | 179.58      | 9,340.0               | -2,968.2     | 657.6        | 517,384.47          | 834,536.09         | 32° 25' 7.585 N  | 103° 22' 59.411 W |
| 12,700.0                        | 90.00           | 179.58      | 9,340.0               | -3,068.2     | 658.4        | 517,284.47          | 834,536.82         | 32° 25' 6.596 N  | 103° 22' 59.412 W |
| 12,800.0                        | 90.00           | 179.58      | 9,340.0               | -3,168.2     | 659.1        | 517,184.47          | 834,537.56         | 32° 25' 5.606 N  | 103° 22' 59.414 W |
| 12,900.0                        | 90.00           | 179.58      | 9,340.0               | -3,268.2     | 659.8        | 517,084.48          | 834,538.29         | 32° 25' 4.617 N  | 103° 22' 59.416 W |
| 13,000.0                        | 90.00           | 179.58      | 9,340.0               | -3,368.2     | 660.6        | 516,984.48          | 834,539.02         | 32° 25' 3.627 N  | 103° 22' 59.418 W |
| 13,100.0                        | 90.00           | 179.58      | 9,340.0               | -3,468.2     | 661.3        | 516,884.48          | 834,539.75         | 32° 25' 2.638 N  | 103° 22' 59.420 W |
| 13,200.0                        | 90.00           | 179.58      | 9,340.0               | -3,568.2     | 662.0        | 516,784.48          | 834,540.48         | 32° 25' 1.648 N  | 103° 22' 59.422 W |
| 13,300.0                        | 90.00           | 179.58      | 9,340.0               | -3,668.2     | 662.7        | 516,684.49          | 834,541.22         | 32° 25' 0.659 N  | 103° 22' 59.423 W |
| 13,400.0                        | 90.00           | 179.58      | 9,340.0               | -3,768.2     | 663.5        | 516,584.49          | 834,541.95         | 32° 24' 59.669 N | 103° 22' 59.425 W |
| 13,500.0                        | 90.00           | 179.58      | 9,340.0               | -3,868.2     | 664.2        | 516,484.49          | 834,542.68         | 32° 24' 58.680 N | 103° 22' 59.427 W |
| 13,600.0                        | 90.00           | 179.58      | 9,340.0               | -3,968.2     | 664.9        | 516,384.50          | 834,543.41         | 32° 24' 57.690 N | 103° 22' 59.429 W |
| 13,700.0                        | 90.00           | 179.58      | 9,340.0               | -4,068.2     | 665.7        | 516,284.50          | 834,544.14         | 32° 24' 56.701 N | 103° 22' 59.431 W |
| 13,800.0                        | 90.00           | 179.58      | 9,340.0               | -4,168.2     | 666.4        | 516,184.50          | 834,544.88         | 32° 24' 55.711 N | 103° 22' 59.433 W |
| 13,900.0                        | 90.00           | 179.58      | 9,340.0               | -4,268.1     | 667.1        | 516,084.50          | 834,545.61         | 32° 24' 54.722 N | 103° 22' 59.434 W |
| 14,000.0                        | 90.00           | 179.58      | 9,340.0               | -4,368.1     | 667.9        | 515,984.51          | 834,546.34         | 32° 24' 53.732 N | 103° 22' 59.436 W |
| 14,100.0                        | 90.00           | 179.58      | 9,340.0               | -4,468.1     | 668.6        | 515,884.51          | 834,547.07         | 32° 24' 52.743 N | 103° 22' 59.438 W |
| 14,200.0                        | 90.00           | 179.58      | 9,340.0               | -4,568.1     | 669.3        | 515,784.51          | 834,547.80         | 32° 24' 51.753 N | 103° 22' 59.440 W |
| 14,300.0                        | 90.00           | 179.58      | 9,340.0               | -4,668.1     | 670.1        | 515,684.51          | 834,548.54         | 32° 24' 50.764 N | 103° 22' 59.442 W |
| 14,400.0                        | 90.00           | 179.58      | 9,340.0               | -4,768.1     | 670.8        | 515,584.52          | 834,549.27         | 32° 24' 49.775 N | 103° 22' 59.444 W |
| 14,503.3                        | 90.00           | 179.58      | 9,340.0               | -4,871.4     | 671.6        | 515,481.24          | 834,550.02         | 32° 24' 48.753 N | 103° 22' 59.445 W |
| Start 2645.5 hold at 14503.3 MD |                 |             |                       |              |              |                     |                    |                  |                   |
| 14,507.3                        | 90.00           | 179.58      | 9,340.0               | -4,875.5     | 671.6        | 515,477.19          | 834,550.05         | 32° 24' 48.713 N | 103° 22' 59.446 W |
| 14,600.0                        | 90.00           | 179.58      | 9,340.0               | -4,968.1     | 672.3        | 515,384.52          | 834,550.73         | 32° 24' 47.796 N | 103° 22' 59.447 W |
| 14,700.0                        | 90.00           | 179.58      | 9,340.0               | -5,068.1     | 673.0        | 515,284.53          | 834,551.46         | 32° 24' 46.806 N | 103° 22' 59.449 W |
| 14,800.0                        | 90.00           | 179.58      | 9,340.0               | -5,168.1     | 673.7        | 515,184.53          | 834,552.20         | 32° 24' 45.817 N | 103° 22' 59.451 W |
| 14,900.0                        | 90.00           | 179.58      | 9,340.0               | -5,268.1     | 674.5        | 515,084.53          | 834,552.93         | 32° 24' 44.827 N | 103° 22' 59.453 W |
| 15,000.0                        | 90.00           | 179.58      | 9,340.0               | -5,368.1     | 675.2        | 514,984.53          | 834,553.66         | 32° 24' 43.838 N | 103° 22' 59.455 W |
| 15,100.0                        | 90.00           | 179.58      | 9,340.0               | -5,468.1     | 675.9        | 514,884.54          | 834,554.39         | 32° 24' 42.848 N | 103° 22' 59.456 W |
| 15,200.0                        | 90.00           | 179.58      | 9,340.0               | -5,568.1     | 676.7        | 514,784.54          | 834,555.12         | 32° 24' 41.859 N | 103° 22' 59.458 W |
| 15,300.0                        | 90.00           | 179.58      | 9,340.0               | -5,668.1     | 677.4        | 514,684.54          | 834,555.86         | 32° 24' 40.869 N | 103° 22' 59.460 W |
| 15,400.0                        | 90.00           | 179.58      | 9,340.0               | -5,768.1     | 678.1        | 514,584.54          | 834,556.59         | 32° 24' 39.880 N | 103° 22' 59.462 W |
| 15,500.0                        | 90.00           | 179.58      | 9,340.0               | -5,868.1     | 678.9        | 514,484.55          | 834,557.32         | 32° 24' 38.890 N | 103° 22' 59.464 W |
| 15,600.0                        | 90.00           | 179.58      | 9,340.0               | -5,968.1     | 679.6        | 514,384.55          | 834,558.05         | 32° 24' 37.901 N | 103° 22' 59.466 W |
| 15,700.0                        | 90.00           | 179.58      | 9,340.0               | -6,068.1     | 680.3        | 514,284.55          | 834,558.78         | 32° 24' 36.911 N | 103° 22' 59.467 W |
| 15,800.0                        | 90.00           | 179.58      | 9,340.0               | -6,168.1     | 681.0        | 514,184.55          | 834,559.52         | 32° 24' 35.922 N | 103° 22' 59.469 W |
| 15,900.0                        | 90.00           | 179.58      | 9,340.0               | -6,268.1     | 681.8        | 514,084.56          | 834,560.25         | 32° 24' 34.932 N | 103° 22' 59.471 W |
| 16,000.0                        | 90.00           | 179.58      | 9,340.0               | -6,368.1     | 682.5        | 513,984.56          | 834,560.98         | 32° 24' 33.943 N | 103° 22' 59.473 W |
| 16,100.0                        | 90.00           | 179.58      | 9,340.0               | -6,468.1     | 683.2        | 513,884.56          | 834,561.71         | 32° 24' 32.953 N | 103° 22' 59.475 W |
| 16,200.0                        | 90.00           | 179.58      | 9,340.0               | -6,568.1     | 684.0        | 513,784.57          | 834,562.44         | 32° 24' 31.964 N | 103° 22' 59.477 W |
| 16,300.0                        | 90.00           | 179.58      | 9,340.0               | -6,668.1     | 684.7        | 513,684.57          | 834,563.18         | 32° 24' 30.974 N | 103° 22' 59.478 W |
| 16,400.0                        | 90.00           | 179.58      | 9,340.0               | -6,768.1     | 685.4        | 513,584.57          | 834,563.91         | 32° 24' 29.985 N | 103° 22' 59.480 W |
| 16,500.0                        | 90.00           | 179.58      | 9,340.0               | -6,868.1     | 686.2        | 513,484.57          | 834,564.64         | 32° 24' 28.995 N | 103° 22' 59.482 W |
| 16,600.0                        | 90.00           | 179.58      | 9,340.0               | -6,968.1     | 686.9        | 513,384.58          | 834,565.37         | 32° 24' 28.006 N | 103° 22' 59.484 W |
| 16,700.0                        | 90.00           | 179.58      | 9,340.0               | -7,068.1     | 687.6        | 513,284.58          | 834,566.10         | 32° 24' 27.017 N | 103° 22' 59.486 W |
| 16,800.0                        | 90.00           | 179.58      | 9,340.0               | -7,168.1     | 688.4        | 513,184.58          | 834,566.84         | 32° 24' 26.027 N | 103° 22' 59.487 W |
| 16,900.0                        | 90.00           | 179.58      | 9,340.0               | -7,268.1     | 689.1        | 513,084.58          | 834,567.57         | 32° 24' 25.038 N | 103° 22' 59.489 W |
| 17,000.0                        | 90.00           | 179.58      | 9,340.0               | -7,368.1     | 689.8        | 512,984.59          | 834,568.30         | 32° 24' 24.048 N | 103° 22' 59.491 W |
| 17,100.0                        | 90.00           | 179.58      | 9,340.0               | -7,468.1     | 690.6        | 512,884.59          | 834,569.03         | 32° 24' 23.059 N | 103° 22' 59.493 W |
| 17,148.7                        | 90.00           | 179.58      | 9,340.0               | -7,516.8     | 690.9        | 512,835.84          | 834,569.39         | 32° 24' 22.576 N | 103° 22' 59.494 W |
| Start 2643.3 hold at 17148.7 MD |                 |             |                       |              |              |                     |                    |                  |                   |
| 17,149.8                        | 90.00           | 179.58      | 9,340.0               | -7,517.8     | 690.9        | 512,834.80          | 834,569.40         | 32° 24' 22.566 N | 103° 22' 59.494 W |
| 17,200.0                        | 90.00           | 179.58      | 9,340.0               | -7,568.1     | 691.3        | 512,784.59          | 834,569.77         | 32° 24' 22.069 N | 103° 22' 59.495 W |
| 17,300.0                        | 90.00           | 179.58      | 9,340.0               | -7,668.1     | 692.0        | 512,684.59          | 834,570.50         | 32° 24' 21.080 N | 103° 22' 59.497 W |
| 17,400.0                        | 90.00           | 179.58      | 9,340.0               | -7,768.1     | 692.8        | 512,584.60          | 834,571.23         | 32° 24' 20.090 N | 103° 22' 59.498 W |

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWP0                         |                                     |                                 |

| Planned Survey                         |                 |             |                       |              |              |                     |                    |                  |                   |
|----------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|------------------|-------------------|
| Measured Depth (usft)                  | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude         | Longitude         |
| 17,500.0                               | 90.00           | 179.58      | 9,340.0               | -7,868.1     | 693.5        | 512,484.60          | 834,571.96         | 32° 24' 19.101 N | 103° 22' 59.500 W |
| 17,600.0                               | 90.00           | 179.58      | 9,340.0               | -7,968.0     | 694.2        | 512,384.60          | 834,572.69         | 32° 24' 18.111 N | 103° 22' 59.502 W |
| 17,700.0                               | 90.00           | 179.58      | 9,340.0               | -8,068.0     | 695.0        | 512,284.61          | 834,573.43         | 32° 24' 17.122 N | 103° 22' 59.504 W |
| 17,800.0                               | 90.00           | 179.58      | 9,340.0               | -8,168.0     | 695.7        | 512,184.61          | 834,574.16         | 32° 24' 16.132 N | 103° 22' 59.506 W |
| 17,900.0                               | 90.00           | 179.58      | 9,340.0               | -8,268.0     | 696.4        | 512,084.61          | 834,574.89         | 32° 24' 15.143 N | 103° 22' 59.508 W |
| 18,000.0                               | 90.00           | 179.58      | 9,340.0               | -8,368.0     | 697.2        | 511,984.61          | 834,575.62         | 32° 24' 14.153 N | 103° 22' 59.509 W |
| 18,100.0                               | 90.00           | 179.58      | 9,340.0               | -8,468.0     | 697.9        | 511,884.62          | 834,576.35         | 32° 24' 13.164 N | 103° 22' 59.511 W |
| 18,200.0                               | 90.00           | 179.58      | 9,340.0               | -8,568.0     | 698.6        | 511,784.62          | 834,577.09         | 32° 24' 12.174 N | 103° 22' 59.513 W |
| 18,300.0                               | 90.00           | 179.58      | 9,340.0               | -8,668.0     | 699.3        | 511,684.62          | 834,577.82         | 32° 24' 11.185 N | 103° 22' 59.515 W |
| 18,400.0                               | 90.00           | 179.58      | 9,340.0               | -8,768.0     | 700.1        | 511,584.62          | 834,578.55         | 32° 24' 10.195 N | 103° 22' 59.517 W |
| 18,500.0                               | 90.00           | 179.58      | 9,340.0               | -8,868.0     | 700.8        | 511,484.63          | 834,579.28         | 32° 24' 9.206 N  | 103° 22' 59.519 W |
| 18,600.0                               | 90.00           | 179.58      | 9,340.0               | -8,968.0     | 701.5        | 511,384.63          | 834,580.01         | 32° 24' 8.216 N  | 103° 22' 59.520 W |
| 18,700.0                               | 90.00           | 179.58      | 9,340.0               | -9,068.0     | 702.3        | 511,284.63          | 834,580.75         | 32° 24' 7.227 N  | 103° 22' 59.522 W |
| 18,800.0                               | 90.00           | 179.58      | 9,340.0               | -9,168.0     | 703.0        | 511,184.63          | 834,581.48         | 32° 24' 6.237 N  | 103° 22' 59.524 W |
| 18,900.0                               | 90.00           | 179.58      | 9,340.0               | -9,268.0     | 703.7        | 511,084.64          | 834,582.21         | 32° 24' 5.248 N  | 103° 22' 59.526 W |
| 19,000.0                               | 90.00           | 179.58      | 9,340.0               | -9,368.0     | 704.5        | 510,984.64          | 834,582.94         | 32° 24' 4.259 N  | 103° 22' 59.528 W |
| 19,100.0                               | 90.00           | 179.58      | 9,340.0               | -9,468.0     | 705.2        | 510,884.64          | 834,583.67         | 32° 24' 3.269 N  | 103° 22' 59.530 W |
| 19,200.0                               | 90.00           | 179.58      | 9,340.0               | -9,568.0     | 705.9        | 510,784.65          | 834,584.41         | 32° 24' 2.280 N  | 103° 22' 59.531 W |
| 19,300.0                               | 90.00           | 179.58      | 9,340.0               | -9,668.0     | 706.7        | 510,684.65          | 834,585.14         | 32° 24' 1.290 N  | 103° 22' 59.533 W |
| 19,400.0                               | 90.00           | 179.58      | 9,340.0               | -9,768.0     | 707.4        | 510,584.65          | 834,585.87         | 32° 24' 0.301 N  | 103° 22' 59.535 W |
| 19,500.0                               | 90.00           | 179.58      | 9,340.0               | -9,868.0     | 708.1        | 510,484.65          | 834,586.60         | 32° 23' 59.311 N | 103° 22' 59.537 W |
| 19,600.0                               | 90.00           | 179.58      | 9,340.0               | -9,968.0     | 708.9        | 510,384.66          | 834,587.33         | 32° 23' 58.322 N | 103° 22' 59.539 W |
| 19,700.0                               | 90.00           | 179.58      | 9,340.0               | -10,068.0    | 709.6        | 510,284.66          | 834,588.07         | 32° 23' 57.332 N | 103° 22' 59.540 W |
| 19,792.0                               | 90.00           | 179.58      | 9,340.0               | -10,160.0    | 710.3        | 510,192.65          | 834,588.74         | 32° 23' 56.422 N | 103° 22' 59.542 W |
| <b>Start 5179.9 hold at 19792.0 MD</b> |                 |             |                       |              |              |                     |                    |                  |                   |
| 19,792.3                               | 90.00           | 179.58      | 9,340.0               | -10,160.3    | 710.3        | 510,192.32          | 834,588.74         | 32° 23' 56.418 N | 103° 22' 59.542 W |
| 19,800.0                               | 90.00           | 179.58      | 9,340.0               | -10,168.0    | 710.3        | 510,184.66          | 834,588.80         | 32° 23' 56.343 N | 103° 22' 59.542 W |
| 19,900.0                               | 90.00           | 179.58      | 9,340.0               | -10,268.0    | 711.1        | 510,084.66          | 834,589.53         | 32° 23' 55.353 N | 103° 22' 59.544 W |
| 20,000.0                               | 90.00           | 179.58      | 9,340.0               | -10,368.0    | 711.8        | 509,984.67          | 834,590.26         | 32° 23' 54.364 N | 103° 22' 59.546 W |
| 20,100.0                               | 90.00           | 179.58      | 9,340.0               | -10,468.0    | 712.5        | 509,884.67          | 834,590.99         | 32° 23' 53.374 N | 103° 22' 59.548 W |
| 20,200.0                               | 90.00           | 179.58      | 9,340.0               | -10,568.0    | 713.3        | 509,784.67          | 834,591.73         | 32° 23' 52.385 N | 103° 22' 59.550 W |
| 20,300.0                               | 90.00           | 179.58      | 9,340.0               | -10,668.0    | 714.0        | 509,684.67          | 834,592.46         | 32° 23' 51.395 N | 103° 22' 59.551 W |
| 20,400.0                               | 90.00           | 179.58      | 9,340.0               | -10,768.0    | 714.7        | 509,584.68          | 834,593.19         | 32° 23' 50.406 N | 103° 22' 59.553 W |
| 20,500.0                               | 90.00           | 179.58      | 9,340.0               | -10,868.0    | 715.5        | 509,484.68          | 834,593.92         | 32° 23' 49.416 N | 103° 22' 59.555 W |
| 20,600.0                               | 90.00           | 179.58      | 9,340.0               | -10,968.0    | 716.2        | 509,384.68          | 834,594.65         | 32° 23' 48.427 N | 103° 22' 59.557 W |
| 20,700.0                               | 90.00           | 179.58      | 9,340.0               | -11,068.0    | 716.9        | 509,284.69          | 834,595.39         | 32° 23' 47.437 N | 103° 22' 59.559 W |
| 20,800.0                               | 90.00           | 179.58      | 9,340.0               | -11,168.0    | 717.7        | 509,184.69          | 834,596.12         | 32° 23' 46.448 N | 103° 22' 59.561 W |
| 20,900.0                               | 90.00           | 179.58      | 9,340.0               | -11,268.0    | 718.4        | 509,084.69          | 834,596.85         | 32° 23' 45.458 N | 103° 22' 59.562 W |
| 21,000.0                               | 90.00           | 179.58      | 9,340.0               | -11,368.0    | 719.1        | 508,984.69          | 834,597.58         | 32° 23' 44.469 N | 103° 22' 59.564 W |
| 21,100.0                               | 90.00           | 179.58      | 9,340.0               | -11,468.0    | 719.8        | 508,884.70          | 834,598.31         | 32° 23' 43.479 N | 103° 22' 59.566 W |
| 21,200.0                               | 90.00           | 179.58      | 9,340.0               | -11,568.0    | 720.6        | 508,784.70          | 834,599.05         | 32° 23' 42.490 N | 103° 22' 59.568 W |
| 21,300.0                               | 90.00           | 179.58      | 9,340.0               | -11,667.9    | 721.3        | 508,684.70          | 834,599.78         | 32° 23' 41.500 N | 103° 22' 59.570 W |
| 21,400.0                               | 90.00           | 179.58      | 9,340.0               | -11,767.9    | 722.0        | 508,584.70          | 834,600.51         | 32° 23' 40.511 N | 103° 22' 59.571 W |
| 21,500.0                               | 90.00           | 179.58      | 9,340.0               | -11,867.9    | 722.8        | 508,484.71          | 834,601.24         | 32° 23' 39.521 N | 103° 22' 59.573 W |
| 21,600.0                               | 90.00           | 179.58      | 9,340.0               | -11,967.9    | 723.5        | 508,384.71          | 834,601.98         | 32° 23' 38.532 N | 103° 22' 59.575 W |
| 21,700.0                               | 90.00           | 179.58      | 9,340.0               | -12,067.9    | 724.2        | 508,284.71          | 834,602.71         | 32° 23' 37.543 N | 103° 22' 59.577 W |
| 21,800.0                               | 90.00           | 179.58      | 9,340.0               | -12,167.9    | 725.0        | 508,184.72          | 834,603.44         | 32° 23' 36.553 N | 103° 22' 59.579 W |
| 21,900.0                               | 90.00           | 179.58      | 9,340.0               | -12,267.9    | 725.7        | 508,084.72          | 834,604.17         | 32° 23' 35.564 N | 103° 22' 59.581 W |
| 22,000.0                               | 90.00           | 179.58      | 9,340.0               | -12,367.9    | 726.4        | 507,984.72          | 834,604.90         | 32° 23' 34.574 N | 103° 22' 59.582 W |
| 22,100.0                               | 90.00           | 179.58      | 9,340.0               | -12,467.9    | 727.2        | 507,884.72          | 834,605.64         | 32° 23' 33.585 N | 103° 22' 59.584 W |
| 22,200.0                               | 90.00           | 179.58      | 9,340.0               | -12,567.9    | 727.9        | 507,784.73          | 834,606.37         | 32° 23' 32.595 N | 103° 22' 59.586 W |
| 22,300.0                               | 90.00           | 179.58      | 9,340.0               | -12,667.9    | 728.6        | 507,684.73          | 834,607.10         | 32° 23' 31.606 N | 103° 22' 59.588 W |
| 22,400.0                               | 90.00           | 179.58      | 9,340.0               | -12,767.9    | 729.4        | 507,584.73          | 834,607.83         | 32° 23' 30.616 N | 103° 22' 59.590 W |
| 22,500.0                               | 90.00           | 179.58      | 9,340.0               | -12,867.9    | 730.1        | 507,484.73          | 834,608.56         | 32° 23' 29.627 N | 103° 22' 59.592 W |

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWP0                         |                                     |                                 |

| Planned Survey        |                 |             |                       |              |              |                     |                    |                  |                   |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|------------------|-------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude         | Longitude         |  |
| 22,600.0              | 90.00           | 179.58      | 9,340.0               | -12,967.9    | 730.8        | 507,384.74          | 834,609.30         | 32° 23' 28.637 N | 103° 22' 59.593 W |  |
| 22,700.0              | 90.00           | 179.58      | 9,340.0               | -13,067.9    | 731.6        | 507,284.74          | 834,610.03         | 32° 23' 27.648 N | 103° 22' 59.595 W |  |
| 22,800.0              | 90.00           | 179.58      | 9,340.0               | -13,167.9    | 732.3        | 507,184.74          | 834,610.76         | 32° 23' 26.658 N | 103° 22' 59.597 W |  |
| 22,900.0              | 90.00           | 179.58      | 9,340.0               | -13,267.9    | 733.0        | 507,084.74          | 834,611.49         | 32° 23' 25.669 N | 103° 22' 59.599 W |  |
| 23,000.0              | 90.00           | 179.58      | 9,340.0               | -13,367.9    | 733.8        | 506,984.75          | 834,612.22         | 32° 23' 24.679 N | 103° 22' 59.601 W |  |
| 23,100.0              | 90.00           | 179.58      | 9,340.0               | -13,467.9    | 734.5        | 506,884.75          | 834,612.96         | 32° 23' 23.690 N | 103° 22' 59.602 W |  |
| 23,200.0              | 90.00           | 179.58      | 9,340.0               | -13,567.9    | 735.2        | 506,784.75          | 834,613.69         | 32° 23' 22.700 N | 103° 22' 59.604 W |  |
| 23,300.0              | 90.00           | 179.58      | 9,340.0               | -13,667.9    | 736.0        | 506,684.76          | 834,614.42         | 32° 23' 21.711 N | 103° 22' 59.606 W |  |
| 23,400.0              | 90.00           | 179.58      | 9,340.0               | -13,767.9    | 736.7        | 506,584.76          | 834,615.15         | 32° 23' 20.721 N | 103° 22' 59.608 W |  |
| 23,500.0              | 90.00           | 179.58      | 9,340.0               | -13,867.9    | 737.4        | 506,484.76          | 834,615.88         | 32° 23' 19.732 N | 103° 22' 59.610 W |  |
| 23,600.0              | 90.00           | 179.58      | 9,340.0               | -13,967.9    | 738.1        | 506,384.76          | 834,616.62         | 32° 23' 18.742 N | 103° 22' 59.612 W |  |
| 23,700.0              | 90.00           | 179.58      | 9,340.0               | -14,067.9    | 738.9        | 506,284.77          | 834,617.35         | 32° 23' 17.753 N | 103° 22' 59.613 W |  |
| 23,800.0              | 90.00           | 179.58      | 9,340.0               | -14,167.9    | 739.6        | 506,184.77          | 834,618.08         | 32° 23' 16.763 N | 103° 22' 59.615 W |  |
| 23,900.0              | 90.00           | 179.58      | 9,340.0               | -14,267.9    | 740.3        | 506,084.77          | 834,618.81         | 32° 23' 15.774 N | 103° 22' 59.617 W |  |
| 24,000.0              | 90.00           | 179.58      | 9,340.0               | -14,367.9    | 741.1        | 505,984.77          | 834,619.54         | 32° 23' 14.784 N | 103° 22' 59.619 W |  |
| 24,100.0              | 90.00           | 179.58      | 9,340.0               | -14,467.9    | 741.8        | 505,884.78          | 834,620.28         | 32° 23' 13.795 N | 103° 22' 59.621 W |  |
| 24,200.0              | 90.00           | 179.58      | 9,340.0               | -14,567.9    | 742.5        | 505,784.78          | 834,621.01         | 32° 23' 12.805 N | 103° 22' 59.623 W |  |
| 24,300.0              | 90.00           | 179.58      | 9,340.0               | -14,667.9    | 743.3        | 505,684.78          | 834,621.74         | 32° 23' 11.816 N | 103° 22' 59.624 W |  |
| 24,400.0              | 90.00           | 179.58      | 9,340.0               | -14,767.9    | 744.0        | 505,584.78          | 834,622.47         | 32° 23' 10.827 N | 103° 22' 59.626 W |  |
| 24,500.0              | 90.00           | 179.58      | 9,340.0               | -14,867.9    | 744.7        | 505,484.79          | 834,623.20         | 32° 23' 9.837 N  | 103° 22' 59.628 W |  |
| 24,600.0              | 90.00           | 179.58      | 9,340.0               | -14,967.9    | 745.5        | 505,384.79          | 834,623.94         | 32° 23' 8.848 N  | 103° 22' 59.630 W |  |
| 24,700.0              | 90.00           | 179.58      | 9,340.0               | -15,067.9    | 746.2        | 505,284.79          | 834,624.67         | 32° 23' 7.858 N  | 103° 22' 59.632 W |  |
| 24,800.0              | 90.00           | 179.58      | 9,340.0               | -15,167.9    | 746.9        | 505,184.80          | 834,625.40         | 32° 23' 6.869 N  | 103° 22' 59.633 W |  |
| 24,900.0              | 90.00           | 179.58      | 9,340.0               | -15,267.9    | 747.7        | 505,084.80          | 834,626.13         | 32° 23' 5.879 N  | 103° 22' 59.635 W |  |
| 24,971.9              | 90.00           | 179.58      | 9,340.0               | -15,339.7    | 748.2        | 505,012.93          | 834,626.66         | 32° 23' 5.168 N  | 103° 22' 59.637 W |  |
| TD at 24971.9         |                 |             |                       |              |              |                     |                    |                  |                   |  |

| Design Targets     |                                                                                            |               |              |            |              |              |                 |                |                  |                   |
|--------------------|--------------------------------------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|-------------------|
| Target Name        | - hit/miss target                                                                          | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude         |
| PP2 CB5SC 304H     | - plan misses target center by 7.9usft at 11834.6usft MD (9340.0 TVD, -2202.8 N, 652.0 E)  | 0.00          | 0.00         | 9,340.0    | -2,202.9     | 644.1        | 518,149.77      | 834,522.59     | 32° 25' 15.159 N | 103° 22' 59.489 W |
|                    | - Point                                                                                    |               |              |            |              |              |                 |                |                  |                   |
| PP5 CB5SC 304H     | - plan misses target center by 7.7usft at 19792.7usft MD (9340.0 TVD, -10160.7 N, 710.3 E) | 0.00          | 0.00         | 9,340.0    | -10,160.7    | 702.6        | 510,191.94      | 834,581.06     | 32° 23' 56.415 N | 103° 22' 59.632 W |
|                    | - Point                                                                                    |               |              |            |              |              |                 |                |                  |                   |
| LTP/BHL CB5SC 304I | - plan hits target center                                                                  | 0.00          | 0.00         | 9,340.0    | -15,339.7    | 748.2        | 505,012.93      | 834,626.66     | 32° 23' 5.168 N  | 103° 22' 59.637 W |
|                    | - Point                                                                                    |               |              |            |              |              |                 |                |                  |                   |
| PP4 CB5SC 304H     | - plan misses target center by 11.7usft at 17150.3usft MD (9340.0 TVD, -7518.3 N, 690.9 E) | 0.00          | 0.00         | 9,340.0    | -7,518.4     | 679.2        | 512,834.23      | 834,557.70     | 32° 24' 22.561 N | 103° 22' 59.630 W |
|                    | - Point                                                                                    |               |              |            |              |              |                 |                |                  |                   |
| FTP CB5SC 304H     | - plan misses target center by 163.4usft at 9340.0usft MD (9218.7 TVD, 261.7 N, 634.0 E)   | 0.00          | 0.00         | 9,340.0    | 371.2        | 632.8        | 520,723.81      | 834,511.28     | 32° 25' 40.628 N | 103° 22' 59.354 W |
|                    | - Point                                                                                    |               |              |            |              |              |                 |                |                  |                   |
| PP3 CB5SC 304H     | - plan misses target center by 15.7usft at 14508.0usft MD (9340.0 TVD, -4876.1 N, 671.6 E) | 0.00          | 0.00         | 9,340.0    | -4,876.2     | 655.9        | 515,476.42      | 834,534.34     | 32° 24' 48.706 N | 103° 22' 59.629 W |
|                    | - Point                                                                                    |               |              |            |              |              |                 |                |                  |                   |

## Planning Report - Geographic

|                  |                              |                                     |                                 |
|------------------|------------------------------|-------------------------------------|---------------------------------|
| <b>Database:</b> | Compass_17                   | <b>Local Co-ordinate Reference:</b> | Well CASA BONITA5 STATE COM304H |
| <b>Company:</b>  | NEW MEXICO                   | <b>TVD Reference:</b>               | KB @ 3656.0usft                 |
| <b>Project:</b>  | (SP) LEA                     | <b>MD Reference:</b>                | KB @ 3656.0usft                 |
| <b>Site:</b>     | CASA BONITA PROJECT          | <b>North Reference:</b>             | Grid                            |
| <b>Well:</b>     | CASA BONITA 5 STATE COM 304H | <b>Survey Calculation Method:</b>   | Minimum Curvature               |
| <b>Wellbore:</b> | OWB                          |                                     |                                 |
| <b>Design:</b>   | PWP0                         |                                     |                                 |

| Plan Annotations      |                       |                   |              |                                 |
|-----------------------|-----------------------|-------------------|--------------|---------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                         |
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                                 |
| 2,000.0               | 2,000.0               | 0.0               | 0.0          | Start Build 2.00                |
| 2,600.0               | 2,595.6               | 34.7              | 52.1         | Start 3054.0 hold at 2600.0 MD  |
| 5,654.0               | 5,582.9               | 386.5             | 580.7        | Start Drop -2.00                |
| 6,254.0               | 6,178.5               | 421.2             | 632.8        | Start 2684.0 hold at 6254.0 MD  |
| 8,938.0               | 8,862.5               | 421.2             | 632.8        | Start Build 12.00               |
| 9,688.0               | 9,340.0               | -56.3             | 636.3        | Start 2064.2 hold at 9688.0 MD  |
| 11,752.1              | 9,340.0               | -2,120.4          | 651.4        | Start 2751.1 hold at 11752.1 MD |
| 14,503.3              | 9,340.0               | -4,871.4          | 671.6        | Start 2645.5 hold at 14503.3 MD |
| 17,148.7              | 9,340.0               | -7,516.8          | 690.9        | Start 2643.3 hold at 17148.7 MD |
| 19,792.0              | 9,340.0               | -10,160.0         | 710.3        | Start 5179.9 hold at 19792.0 MD |
| 24,971.9              | 9,340.0               | -15,339.7         | 748.2        | TD at 24971.9                   |

Permian Resources - Casa Bonita 5 State Com 304H

1. Geologic Formations

| Formation            | Elevation | TVD   | Target |
|----------------------|-----------|-------|--------|
| Rustler              | 1826      | 1832  | No     |
| Top of Salt          | 1350      | 2308  | No     |
| Yates                | -50       | 3708  | No     |
| Capitan              | -535      | 4193  | No     |
| Cherry Canyon        | -1997     | 5655  | No     |
| Brushy Canyon        | -3289     | 6947  | No     |
| Bone Spring Lime     | -4718     | 8376  | No     |
| 1st Bone Spring Sand | -5775     | 9433  | Yes    |
| 2nd Bone Spring Sand | -5963     | 9621  | No     |
| 3rd Bone Spring Sand | -6710     | 10368 | No     |
| Wolfcamp             | -8896     | 12554 | No     |

2. Blowout Prevention

| BOP installed and tested before drilling | Size?   | Min. Required WP | Type       | x | Tested to: |
|------------------------------------------|---------|------------------|------------|---|------------|
| 12.25                                    | 13-5/8" | 5M               | Annular    | x | 2500 psi   |
|                                          |         |                  | Blind Ram  | x | 5000 psi   |
|                                          |         |                  | Pipe Ram   | x |            |
|                                          |         |                  | Double Ram |   |            |
|                                          |         |                  | Other*     |   |            |
| 8.75                                     | 13-5/8" | 5M               | Annular    | x | 2500 psi   |
|                                          |         |                  | Blind Ram  | x | 5000 psi   |
|                                          |         |                  | Pipe Ram   | x |            |
|                                          |         |                  | Double Ram |   |            |
|                                          |         |                  | Other*     |   |            |

**Equipment:** BOPE will meet all requirements for above listed system per 43 CFR 3172. BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The system may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all of the components installed will be functional, tested, and will meet all requirements per 43 CFR 3172. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing of the surface x intermedicate annulus without breaking the connection between the BOP & wellhead. A variance is requested to utilize a flexible choke line (flexhose) from the BOP to choke manifold.

**Requesting Variance?** YES

**Variance request:** Multibowl Wellhead, Flexhose, Breaktesting, Offline Cementing Variances. Attachments in Section 8.

**Testing Procedure:** Operator requests to ONLY test broken pressure seals per API Standard 53 and the attachments in Section 8. The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed, b. whenever any seal subject to test pressure is broken, c. following related repairs, d. at 21-day intervals. Testing of the ram type preventer(s) and annual type preventer(s) shall be tested per 43 CFR 3172. The BOPE configuration, choke manifold layout, and accumulator system will be in compliance with 43 CFR 3172. Bleed lines will discharge 100' from wellhead in non-H2S scenarios and 150' from wellhead in H2S scenarios.

Choke Diagram Attachemnt: 5M Choke Manifold

BOP Diagram Attachment: BOP Schematic

### 3. Casing

| String                | Hole Size | Casing Size | Top  | Bottom | Top TVD | Bottom TVD | Length | Grade    | Weight | Connection | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|-----------------------|-----------|-------------|------|--------|---------|------------|--------|----------|--------|------------|-------------|----------|---------------|----------|--------------|---------|
| Surface               | 17.5      | 13.375      | 0    | 1857   | 0       | 1857       | 1857   | J55      | 54.5   | BTC        | 1.23        | 1.35     | Dry           | 4.52     | Dry          | 4.24    |
| Intermediate          | 12.25     | 9.625       | 0    | 5705   | 0       | 5705       | 5705   | J55      | 40     | BTC        | 2.53        | 1.54     | Dry           | 2.18     | Dry          | 1.92    |
| Production            | 8.75      | 5.5         | 0    | 9688   | 0       | 9340       | 9688   | VA-SS-95 | 20     | VA Rough   | 2.32        | 2.41     | Dry           | 2.03     | Dry          | 2.03    |
| Production            | 8.5       | 5.5         | 9688 | 24971  | 9340    | 9340       | 15283  | P110RY   | 20     | Rattler    | 2.18        | 2.41     | Dry           | 2.24     | Dry          | 2.24    |
| BLM Min Safety Factor |           |             |      |        |         |            |        |          |        |            | 1.125       | 1        |               | 1.6      |              | 1.6     |

Non API casing spec sheets and casing design assumptions attached.

### 4. Cement

| String                 | Lead/Tail | Top MD | Bottom MD | Quantity (sx) | Yield | Density | Cu Ft | Excess % | Cement Type | Additives                                       |
|------------------------|-----------|--------|-----------|---------------|-------|---------|-------|----------|-------------|-------------------------------------------------|
| Surface                | Lead      | 0      | 1480      | 1100          | 1.88  | 12.9    | 2060  | 100%     | Class C     | EconoCem-HLC + 5% Salt + 5% Kol-Seal            |
| Surface                | Tail      | 1480   | 1857      | 300           | 1.34  | 14.8    | 400   | 50%      | Class C     | Accelerator                                     |
| Intermediate           | Lead      | 3733   | 4560      | 280           | 1.88  | 12.9    | 520   | 100%     | Class C     | EconoCem-HLC + 5% Salt + 5% Kol-Seal            |
| Intermediate           | Tail      | 4560   | 5705      | 390           | 1.34  | 14.8    | 510   | 40%      | Class C     | Retarder                                        |
| Stage Tool Depth       |           | 3733   |           |               |       |         |       |          |             |                                                 |
| Intermediate 2nd Stage | Lead      | 0      | 3233      | 820           | 1.88  | 12.9    | 1540  | 100%     | Class C     | EconoCem-HLC + 5% Salt + 5% Kol-Seal            |
| Intermediate 2nd Stage | Tail      | 3233   | 3733      | 190           | 1.33  | 14.8    | 240   | 50%      | Class C     | Salt                                            |
| Production             | Lead      | 5205   | 8938      | 540           | 2.41  | 13      | 1280  | 40%      | Class H     | POZ, Extender, Fluid Loss, Dispersant, Retarder |
| Production             | Tail      | 8938   | 24971     | 2680          | 1.73  | 10.5    | 4620  | 25%      | Class H     | POZ, Extender, Fluid Loss, Dispersant, Retarder |
| Plug Back              | Tail      | 8562   | 11175     | 720           | 0.97  | 17.5    | 690   | 10%      | Class C     | Defoamer, HR-601, Salt                          |

### 5. Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be used:** No

**Describe what will be on location to control well or mitigate other conditions:** Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

**Describe the mud monitoring system utilized:** Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

**Cuttings Volume:** 13940 Cu Ft

**Circulating Medium Table**

| Top Depth | Bottom Depth | Mud Type        | Min Weight | Max Weight |
|-----------|--------------|-----------------|------------|------------|
| 0         | 1857         | Spud Mud        | 8.6        | 9.5        |
| 1857      | 5705         | Salt Saturated  | 10         | 10         |
| 5705      | 9688         | Water Based Mud | 9          | 10.5       |
| 9688      | 24971        | OBM             | 9          | 10.5       |

6. Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**  
Will utilize MWD/LWD from intermediate hole to TD of the well.

**List of open and cased hole logs run in the well:**  
DIRECTIONAL SURVEY

**Coring operation description for the well:**  
N/A

7. Pressure

|                                                     |      |     |
|-----------------------------------------------------|------|-----|
| Anticipated Bottom Hole Pressure                    | 5100 | psi |
| Anticipated Surface Pressure                        | 3045 | psi |
| Anticipated Bottom Hole Temperature                 | 150  | °F  |
| Anticipated Abnormal pressure, temp, or geo hazards | No   |     |

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

## 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:** Permian Resources Operating, LLC **COGRID:** 372165 **Date:** 12 / 12 / 2024

**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 |
|-------------------|-----|-------|----------|-----------------------|-----------------------|----------------------------------|
| SEE ATTACHED LIST |     |       |          |                       |                       |                                  |
|                   |     |       |          |                       |                       |                                  |

**IV. Central Delivery Point Name:** Butters Stotch/Casa Bonita CTB [See 19.15.27.9(D)(1) NMAC]

**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 |
|-------------------|-----|-----------|-----------------|------------------------------|------------------------|-----------------------|
| SEE ATTACHED LIST |     |           |                 |                              |                        |                       |
|                   |     |           |                 |                              |                        |                       |

**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.

| WELL NAME                    | API | UL/SECT/T/R     | FOOTAGES           | ANTICIPATED OIL BBL/D | ANTICIPATED GAS MCF/D | ANTICIPATED WATER BBL/D |
|------------------------------|-----|-----------------|--------------------|-----------------------|-----------------------|-------------------------|
| CASA BONITA 5 STATE COM 301H |     | N-32-21S-35E    | 316'FSL, 1420'FWL  | 1200                  | 1800                  | 3200                    |
| CASA BONITA 5 STATE COM 302H |     | N-32-21S-35E    | 316'FSL, 1453'FWL  | 1200                  | 1800                  | 3200                    |
| CASA BONITA 5 STATE COM 303H |     | Lot 1-5-22S-35E | 456' FNL, 1323'FEL | 1200                  | 1800                  | 3200                    |
| CASA BONITA 5 STATE COM 304H |     | Lot 1-5-22S-35E | 465'FNL, 1294'FEL  | 1200                  | 1800                  | 3200                    |
|                              |     |                 |                    |                       |                       |                         |
| WELL NAME                    | API | SPUD            | TD                 | COMPLETION DATE       | FLOW BACK DATE        | FIRST PRODUCTION        |
| CASA BONITA 5 STATE COM 301H |     | 29-Jan-25       | 1-Mar-25           | 1-May-25              | 30-May-25             | 31-May-25               |
| CASA BONITA 5 STATE COM 302H |     | 29-Jan-25       | 1-Mar-25           | 1-May-25              | 30-May-25             | 31-May-25               |
| CASA BONITA 5 STATE COM 303H |     | 17-Feb-25       | 30-Mar-25          | 1-May-25              | 30-May-25             | 31-May-25               |
| CASA BONITA 5 STATE COM 304H |     | 17-Feb-25       | 30-Mar-25          | 1-May-25              | 30-May-25             | 31-May-25               |
|                              |     |                 |                    |                       |                       |                         |
|                              |     |                 |                    |                       |                       |                         |

### **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**

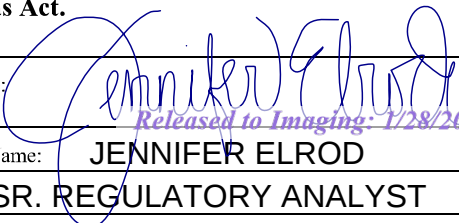
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(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:      | <br><i>Released to Imaging: 1/28/2025 10:15:10 AM</i> |
| Printed Name:   | JENNIFER ELROD                                                                                                                         |
| Title:          | SR. REGULATORY ANALYST                                                                                                                 |
| E-mail Address: | JENNIFER.ELROD@PERMIANRES.COM                                                                                                          |
| Date:           | 12/18/2024                                                                                                                             |
| Phone:          | 940-452-6214                                                                                                                           |

**OIL CONSERVATION DIVISION**  
**(Only applicable when submitted as a standalone form)**

|                         |
|-------------------------|
| Approved By:            |
| Title:                  |
| Approval Date:          |
| Conditions of Approval: |

## Permian Resources Operating, LLC (372165)

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

Permian Resources Operating, LLC (Permian) 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 Permian'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, Permian 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, Permian'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.D(2) & (4). All gas that is flared is metered. All gas that may be vented will be estimated.

*Performance Standards*

Permian 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 Permian'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 Permian'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 ignitor or continuous pilot.
- 3) Anchored and located at least 100 feet from the well and storage tanks.

Permian's field operations and HSE teams have implemented an AVO inspection schedule that adheres to the requirements of 19.15.27.8.E(5).

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

## Permian Resources Operating, LLC (372165)

- 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*

Permian 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:**

Permian Resources 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

## **Enhanced Natural Gas Management Plan**

### **Operator's Plan to Manage Production in Response to Increased Line Pressure**

Permian Resources Operating, LLC (Permian) anticipates that its existing wells connected to the same portion of the natural gas gathering system will continue to meet anticipated increases in line pressure caused by the new wells. Permian will actively monitor line pressure throughout the field and will make necessary adjustments to existing production separators' pressures to send gas to sales. Permian also plans to implement automated alarms on all flare meters to alert of flaring events as they occur. The alarms will send notifications to field operations and engineering staff via text message and email at every occurrence of flaring. In addition, Permian plans to implement automated alarms on all flare meters to alert of any continuous flaring event that has continued for at least 4 hours. The alarms will send notifications to field operations and engineering management. Permian personnel will promptly respond to these alarms, communicate with midstream partners, and take the appropriate action to reduce flaring caused by high line pressure from new well production.