AFMSS

## U.S. Department of the Interior

Bureau of Land Management

Application for Permit to Drill

| APD Package Report | Date Printed: |
|--------------------|---------------|
| APD ID:            | Well Status:  |
| APD Received Date: | Well Name:    |
| Operator:          | Well Number:  |

APD Package Report Contents

- Form 3160-3

- Operator Certification Report
- Application Report
- Application Attachments
  - -- Operator Letter of Designation: 1 file(s)
  - -- Well Plat: 2 file(s)
- Drilling Plan Report
- Drilling Plan Attachments
  - -- Blowout Prevention Choke Diagram Attachment: 2 file(s)
  - -- Blowout Prevention BOP Diagram Attachment: 2 file(s)
  - -- Casing Design Assumptions and Worksheet(s): 3 file(s)
  - -- Proposed horizontal/directional/multi-lateral plan submission: 1 file(s)
  - -- Other Facets: 1 file(s)
- SUPO Report
- SUPO Attachments
  - -- Existing Road Map: 1 file(s)
  - -- Attach Well map: 1 file(s)
  - -- Production Facilities map: 1 file(s)
  - -- Water source and transportation map: 1 file(s)
  - -- Well Site Layout Diagram: 1 file(s)
  - -- Existing Vegetation at the well pad attachment: 1 file(s)
  - -- Existing Vegetation at the road attachment: 1 file(s)
  - -- Existing Vegetation Community at the pipeline attachment: 1 file(s)
  - -- Other SUPO Attachment: 11 file(s)
- PWD Report
- PWD Attachments
  - -- None

- Bond Report

- Bond Attachments

-- None

| Form 3160-3<br>(June 2015)<br>UNITED STATES  |   | OMB No                                      | APPROVED<br>b. 1004-0137<br>nuary 31, 2018 |  |  |  |  |
|--|---|---|--|--|--|--|--|
| DEPARTMENT OF THE INT<br>BUREAU OF LAND MANAG  | 5. Lease Serial No.                               |   |  |  |  |  |  |
| APPLICATION FOR PERMIT TO DR   | 6. If Indian, Allotee                             | or Tribe Name                               |  |  |  |  |  |
| 1a. Type of work:   DRILL  | 7. If Unit or CA Agr                              | eement, Name and No.                        |  |  |  |  |  |
| 1b. Type of Well:   Oil Well   Gas Well   Othe   | 8. Lease Name and V                               | Well No                                     |  |  |  |  |  |
| 1c. Type of Completion: Hydraulic Fracturing Sing  | o. Lease Ivalife and wen Ivo.                     |   |  |  |  |  |  |
| 2. Name of Operator  |   | 9. API Well No.                             | -039-31469                                 |  |  |  |  |
| 3a. Address   31   | b. Phone No. (include area code)                  | 10. Field and Pool, c                       |  |  |  |  |  |
| 4. Location of Well ( <i>Report location clearly and in accordance with</i>  | h any State requirements.*)                       | 11. Sec., T. R. M. or                       | Blk. and Survey or Area                    |  |  |  |  |
| At surface   |   |   |  |  |  |  |  |
| At proposed prod. zone   |   |   |  |  |  |  |  |
| 14. Distance in miles and direction from nearest town or post office   | *   | 12. County or Parish                        | 13. State                                  |  |  |  |  |
| 15. Distance from proposed*     1       location to nearest     property or lease line, ft.       (Also to nearest drig. unit line, if any)                        | 6. No of acres in lease 17. Spaci                 | ng Unit dedicated to th                     | is well                                    |  |  |  |  |
| 18. Distance from proposed location*       1         to nearest well, drilling, completed, applied for, on this lease, ft.       1                                 | 9. Proposed Depth 20, BLM.                        | Proposed Depth 20, BLM/BIA Bond No. in file |  |  |  |  |  |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.)   2  | 2. Approximate date work will start*              | 23. Estimated duration                      | uration                                    |  |  |  |  |
|  | 24. Attachments                                   |   |  |  |  |  |  |
| The following, completed in accordance with the requirements of O (as applicable)  | nshore Oil and Gas Order No. 1, and the H         | Hydraulic Fracturing ru                     | ıle per 43 CFR 3162.3-3                    |  |  |  |  |
| <ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> </ol>  | 4. Bond to cover the operation<br>Item 20 above). | ns unless covered by an                     | existing bond on file (see                 |  |  |  |  |
| <ol> <li>A Surface Use Plan (if the location is on National Forest System I<br/>SUPO must be filed with the appropriate Forest Service Office).</li> </ol>         | · · · · · · · · · · · · · · · · · · ·             | rmation and/or plans as                     | may be requested by the                    |  |  |  |  |
| 25. Signature  | Name (Printed/Typed)                              |   | Date                                       |  |  |  |  |
| Title  |   |   |  |  |  |  |  |
| Approved by (Signature)  | Name (Printed/Typed)                              |   | Date                                       |  |  |  |  |
| Title  | Office  |   |  |  |  |  |  |
| Application approval does not warrant or certify that the applicant h<br>applicant to conduct operations thereon.<br>Conditions of approval, if any, are attached. | olds legal or equitable title to those rights     | in the subject lease wh                     | nich would entitle the                     |  |  |  |  |
| Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, mak<br>of the United States any false, fictitious or fraudulent statements or                       |   |   | ny department or agency                    |  |  |  |  |
|  |   |   |  |  |  |  |  |



\*(Instructions on page 2)

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(Continued on page 2)

## INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48( d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## **Additional Operator Remarks**

#### Location of Well

0. SHL: TR H.E.S. 281 / 1671 FNL / 1335 FEL / TWSP: 29N / RANGE: 4W / SECTION: 1 / LAT: 36.756281 / LONG: -107.201648 ( TVD: 0 feet, MD: 0 feet ) PPP: TR H.E.S #281 / 875 FSL / 2565 FEL / TWSP: 29N / RANGE: 4W / SECTION: 1 / LAT: 36.748936 / LONG: -107.205736 ( TVD: 7455 feet, MD: 10353 feet ) PPP: SESE / 875 FSL / 660 FEL / TWSP: 29N / RANGE: 4W / SECTION: 1 / LAT: 36.748829 / LONG: -107.199319 ( TVD: 7455 feet, MD: 8448 feet ) PPP: LOT 14 / 875 FSL / 948 FWL / TWSP: 29N / RANGE: 4W / SECTION: 1 / LAT: 36.74895 / LONG: -107.211503 ( TVD: 7455 feet, MD: 12042 feet ) PPP: SESE / 875 FSL / 0 FEL / TWSP: 29N / RANGE: 4W / SECTION: 2 / LAT: 36.748958 / LONG: -107.2147 ( TVD: 7455 feet, MD: 12990 feet ) BHL: SWSW / 875 FSL / 660 FWL / TWSP: 29N / RANGE: 4W / SECTION: 2 / LAT: 36.749134 / LONG: -107.230071 ( TVD: 7455 feet, MD: 17458 feet )

#### **BLM Point of Contact**

Name: CHRISTOPHER P WENMAN Title: Natural Resource Specialist Phone: (505) 564-7727 Email: cwenman@blm.gov

## **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

## **CONDITIONS OF APPROVAL**

| Operators:       | Robert L. Bayless Producer LLC & Blackhawk Energy Corporation        |
|------------------|--|
| Well Name:       | La Jara Federal 1-2 #001H Natural Gas Wells and SJ-15 ROSA 181 to LA |
|                  | JARA CDP Temporary Water Line Project                                |
| EA Number:       | DOI-BLM-NM-F010-2023-0061-EA   |
| Inspection Date: | April 20, 2023   |
| Lease Number:    | NMNM010431   |

The following conditions of approval will apply to the La Jara Federal 1-2 #001H Natural Gas Wells and SJ-15 ROSA 181 to LA JARA CDP Temporary Water Line Project well pad, access road and pipeline and other associated facilities, unless a particular Surface Managing Agency or private surface owner has supplied to Bureau of Land Management and the operator a contradictory environmental stipulation. The failure of the operator to comply with these requirements may result in the assessment of liquidated damages or penalties pursuant to 43 CFR 3163.1 or 3163.2.

**Disclaimers:** BLM's approval of the APD does not relieve the lessee and operator from obtaining any other authorizations that may be required by the BIA, Navajo Tribe, State, or other jurisdictional entities.

**Copy of Plans:** A complete copy of the APD package, including Surface Use Plan of Operations, Bare Soil Reclamation Plan, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

**Review of NEPA documents:** It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in the Environmental Assessment DOI-BLM-NM-F010-2023-0061-EA, which contains additional design features and best management practices that must be followed. Copies of the EA, Decision Record, and Finding of No Significant Impact may be obtained from the BLM FFO public room, or online at: EplanningUi (blm.gov).

**Best Management Practices (BMPs)**: Farmington Field Office established environmental Best Management Practices (BMP's) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMP's are found in the Gold Book, Fourth Edition-Revised 2007 and at <u>The Gold Book | Bureau of Land Management (blm.gov)</u>. Farmington Field Office BMPs are integrated into the Environmental Assessment, Surface Use Plan of Operations, Bare Soil Reclamation Plan, and COAs.

#### Construction, Production, Facilities, Reclamation & Maintenance

**Construction & Reclamation Notification:** The operator or their contractor will contact the Bureau of Land Management, Farmington Field Office Environmental Protection Staff (505) 564-7600 or by email, at least 48 hours prior to any construction or reclamation on this project.

**Production Facilities:** Design and layout of facilities will be deferred until an onsite with BLM-FFO surface protection staff is conducted to determine the best location. Bayless and BHEC or their contractor will contact the Bureau of Land Management, Farmington Field Office, Surface, and Environmental Protection Staff (505) 564-7600 to schedule a facility layout onsite.

**Berms:** Berms or firewalls will be constructed around all storage facilities sufficient in size to contain the storage capacity of 110% of the largest tank, or 110% of the combined capacity of tanks if a rupture could drain more than one tank. Berm walls will be compacted with appropriate equipment to assure proper

construction. Metal containment barriers, used for secondary containment, will be properly installed, per the manufacturer directions.

**Painting of Equipment:** Within 90 days of installation, all above ground structures not subject to safety requirements shall be painted by the Holder to blend with the natural color of the landscape. A reflective material may be used to reduce hazards that may occur when such structures are near roads. Otherwise, the paint use shall be a non-glare, non-reflective, non-chalking color of: **Juniper Green** 

**Staking:** The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.

**Weather:** No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 6 inches deep, the soil shall be deemed too wet.

**Stockpile of Soil**: The top 6 inches of soil material will be stripped and stockpiled in the construction zones around the pad [construction zones may be restricted or deleted to provide resource avoidance]. The stockpiled soil will be free of brush and tree limbs, trunks and roots. The stockpiled soil material will be spread on the reclaimed portions of the pad [including the cut and fill slopes] prior to re-seeding. Spreading shall not be done when the ground or topsoil is frozen or wet.

**Storage Tanks:** All open top permanent production or storage tanks regardless of diameter made of fiberglass, steel, or other material used for the containment of oil, condensate, produced water and or other production waste shall be screened, netted, or otherwise covered to protect migratory birds and other wildlife from access.

**Compressors:** Compressor units on this well location not equipped with a drip pan for containment of fluids shall be lined with an impervious material at least 8 mils thick and a 12-inch berm. The compressor will be painted to match the well facilities. Any variance to this will be approved by the Authorized Officer (AO). Noise mitigation may be required at the time of compressor installation.

Culverts: Silt Traps/Bell Holes will be built upstream of all culvert locations.

**Driving Surface Area:** All activities associated within the construction, operation, maintenance, and abandonment of the well location is limited to areas approved in the APD or ROW permit. During the production of the well, vehicular traffic is limited to the daily driving surface area established during interim reclamation construction operations. This area typically forms a keyhole or teardrop driving surface from which all production facilities may be serviced or inspected. A v-type ditch will be constructed on the outside of the driving surface to further define the driving surface and to deter vehicular traffic from entering onto the interim reclamation areas.

**Contouring of Cut and Fill Slopes:** The interim cut and fill slope grade shall be as close to the original contour as possible. To obtain this ratio, pits and slopes shall be back sloped into the pad during interim reclamation. Only subsurface soil and material shall be utilized in the contouring of the cut and fill slopes. Under no circumstances shall topsoil be utilized as substrate material for contouring of cut and fill slopes.

**Maintenance:** In order to perform subsequent well operations, right-of-way (ROW) operations, or install new/additional equipment, it may be necessary to drive, park, and operate on restored, interim vegetation within the previously disturbed area. This is generally acceptable provided damage is promptly repaired and reclaimed following use. Where vehicular travel has occurred as a "convenience" and interim reclamation/vegetation has been compromised, immediate remediation of the affected areas is required. Additionally, where erosion has occurred and compromised the reclamation of the well location, the

affected area must be promptly remediated so that future erosion is prevented, and the landform is stabilized.

**Layflat Lines:** Layflat lines used for development of the wells may be on the ground for a maximum of 6 months and shall be retrieved within 30 days of ending completion operations. If the layflat lines are needed for longer than 6 months or cannot be retrieved within 30 days of ending completion operations, a Sundry NOI shall be submitted to the BLM FFO for review and decision that includes a rationale for the time extension.

**"Hotwork" and Construction Affecting Fire Safety:** The holder or its contractors will notify the BLM of any fires and comply with all rules and regulations administered by the BLM concerning the use, prevention and suppression of fires on federal lands, including any fire prevention orders that may be in effect at the time of the permitted activity. The holder or its contractors may be held liable for the cost of fire suppression, stabilization and rehabilitation. In the event of a fire, personal safety will be the first priority of the holder or its contractors.

The holder or its contractors shall:

- 1. Operate all internal and external combustion engines (including off-highway vehicles, chainsaws, generators, heavy equipment, etc.) with a qualified spark arrester. Qualified spark arresters are maintained and not modified and meet the Society of Automotive Engineers (SAE) Recommended Practices J335 or J350. Refer to 43 CFR §8343.1.
  - a. Refueling of any combustible engine equipment must be minimum of 3 meters away from any ignition source (open flame, smoking, etc.).
- 2. Maintain and clean all equipment regularly to remove flammable debris buildup and prevent fluid leaks that can lead to ignitions.
- Carry at least one shovel or wildland fire hand tool (combi, Pulaski, McLeod) per person working, minimum 5 gallons of water, and a fire extinguisher rated at a minimum as ABC - 10 pound on each piece of equipment and each vehicle.
- 4. When conducting "hotwork" such as, but not limited to welding, grinding, cutting, sparkproducing work with metal, work that creates hot material or slag; choose an area large enough to contain all hot material that is naturally free of all flammable vegetation or remove the flammable vegetation in a manner compliant with the permitted activity. If adequate clearance cannot be made, wet an area large enough to contain all hot material prior to the activity and periodically throughout the activity to reduce the risk of wildfire ignition. Regardless of clearance, maintain readiness to respond to an ignition at all times. In addition, keep one hand tool per person and at least one fire extinguisher ready, minimum, as specified earlier (#3) during this activity.
- 5. Keep apprised of current and forecasted weather at <u>https://www.weather.gov/abq/forecasts-fireweather-links</u> and fire conditions at <u>www.wfas.net</u> and take additional fire precautions when fire danger is rated High or greater. Red Flag Warnings are issued by the National Weather Service when fire conditions are most dangerous, and ignitions escape control quickly. Extra precautions are required during these warnings such as additional water, designate a fire watch/patrol and tools. If work is being conducted in an area that is not clear of vegetation within 50 feet of work area; then, when fire danger is rated High or greater and 1. There is a predicted Red Flag warning for your area or 2. If winds are predicted to be greater than 10 mph, stop all hotwork activities for the day at 10 am.
- 6. In the event of an ignition, initiate fire suppression actions in the work area to prevent fire spread to or on federally administered lands. If a fire spreads beyond the capability of workers with the stipulated tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.
- 7. Call **911** or the **Taos Interagency Fire Dispatch Center (575-758-6208)** immediately of the location and status of any fire.

#### AND

Notify the respective BLM field office for which the permit or contract was issued immediately of the incident.

Farmington Field Office at 505-564-7600

#### **Noxious Weeds**

Inventory the proposed site for the presence of noxious and invasive weeds. Noxious weeds are those listed on the New Mexico Noxious Weed List and USDA's Federal Noxious Weed List. The New Mexico Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly check for any changes. Invasive species may or may not be listed as a noxious weed but have been identified to likely cause economic or environmental harm or harm to human health. The following noxious weeds have been identified as occurring on lands within the boundaries of the Farmington Field Office (FFO). There are numerous invasive species on the FFO such as Russian thistle (*Salsola spp.*) and field bindweed (*Convolvulus arvensis*).

| Russian Knapweed (Centaurea repens)         | Musk Thistle (Carduss nutans)             |
|---|---|
| Bull Thistle (Cirsium vulgare)              | Canada Thistle (Cirsium arvense)          |
| Scotch Thistle (Onopordum acanthium)        | Hoary Cress (Cardaria draba)              |
| Perennial Pepperweed (Lepdium latiofolfium) | Halogeton (Halogeton glomeratus)          |
| Spotted Knapweed (Centaurea maculosa)       | Dalmation Toadflax (Linaria genistifolia) |
| Yellow Toadflax (Linaria vulgaris)          | Camelthorn (Alhagi pseudalhagi)           |
| African Rue (Penganum harmala)              | Salt Cedar (Tamarix spp.)                 |
| Diffuse Knapweed (Centaurea diffusa)        | Leafy Spurge (Euphorbia esula)            |

- a. Identified weeds will be treated prior to new surface disturbance if determined by the FFO Noxious Weed Coordinator. A Pesticide Use Proposal (PUP) must be submitted to and approved by the FFO Noxious Weed Coordinator prior to application of pesticide. The FFO Noxious Weeds Coordinator (505-564-7600) can provide assistance in the development of the PUP.
- b. Vehicles and equipment should be inspected and cleaned prior to coming onto the work site. This is especially important on vehicles from out of state or if coming from a weed-infested site.
- c. Fill dirt or gravel may be needed for excavation, road construction/repair, or for spill remediation. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the FFO Noxious Weed Coordinator.
- d. The site shall be monitored for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found the FFO Coordinator shall be notified at (505) 564-7600 and provided with a Weed Management Plan and if necessary, a Pesticide Use Proposal (PUP). The FFO Coordinator can provide assistance developing the Weed Management Plan and/or the Pesticide Use Proposal.
- e. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Bayless and BHEC's weed-control contractor would contact the BLM-FFO prior to using these chemicals.
- f. Noxious/invasive weed treatments must be reported to the FFO Noxious Weed

Coordinator. A Pesticide Use Report (PUR) is required to report any mechanical, chemical, biological, or cultural treatments used to eradicate, and/or control noxious or invasive species. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

**Bare ground vegetation trim-out:** If bare ground vegetation treatment (trim-out) is desired around facility structures, the operator will submit a bare ground/trim-out design included in their Surface Use Plan of Operations (SUPO). The design will address vegetation safety concerns of the operator and BLM while minimizing impacts to interim reclamation efforts. The design must include what structures to be treated and buffer distances of trim-out. Pesticide use for vegetation control around anchor structures is not approved. If pesticides are used for bare ground trim-out, the trim-out will not exceed three feet from the edge of any eligible permanent structure (i.e., well heads, fences, tanks). Additional distance/areas may be requested and must be approved by the FFO authorized officer. The additional information below must also be provided to the FFO:

- a. Pesticide use for trim out will require a Pesticide Use Proposal (PUP). A PUP is required *prior* to any treatment and must be approved by the FFO Noxious Weed Coordinator. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Bayless and BHEC's weed-control contractor would contact the BLM-FFO prior to using these chemicals and provide Pesticide Use Reports (PURs) post treatment.
- b. A Pesticide Use Report (PUR) or a Biological Use Report (BUR) is required to report any chemical, or biological treatments used to eradicate, or control vegetation on site. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

#### **Paleontology**

Any paleontological resource discovered by the Operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant scientific values. The Holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the Holder.

#### **Visual Resources**

Dark Sky COAs need to be applied to existing lighting, which is not dark sky friendly and to any additional lights added as part of pad expansion. All permanent lighting will use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the lowest part of the light source). All permanent lighting will be pointed straight down at the ground in order to prevent light spill to the sides. All permanent lighting will be 4000° Kelvin or less with 3000° Kelvin preferred. Warmer light colors are less noticeable by humans and cause less impact to wildlife. All permanent lighting will be controlled by a switch and/or timer which allows the lights to be turned on when workers are on location during dark periods but will keep the lights off the majority of the time.

#### Wildlife Resources

**Wildlife:** F-4 Timing Limitation Stipulation-Important Seasonal Wildlife Habitat Rosa Mesa Wildlife SDA. No surface use is allowed during the following time period: December 1 - March 31.

**Hazards:** Wildlife hazards associated with the proposed project would be fenced, covered, and/or contained in storage tanks, as necessary.

**Migratory Bird:** Migratory nest survey stipulations. Once drilling and completion activities are complete, any open water that could be harmful to birds and wildlife. must be covered, screened, or netted to prevent entry.

**Threatened, Endangered or Sensitive Species:** If, in operations the operator/holder discovers any Threatened, Endangered, or Sensitive species, work in the vicinity of the discovery will be suspended and the discovery promptly reported to the BLM-FFO T&E specialist at (505) 564-7600. The BLM-FFO will then specify what action is to be taken. Failure to notify the BLM-FFO about a discovery may result in civil or criminal penalties in accordance with The Endangered Species Act (as amended).

**Nesting:** If a bird nest containing eggs or young is encountered in the path of construction the operator will cease construction and consult with BLM to determine appropriate actions. **Livestock Grazing:** Cattle are in allotment between 5/1 and 10/31. Industry may need to coordinate with permittee if concerns of livestock in area during construction.

#### Soil, Air, Water

**Land Farming:** No excavation, remediation or closure activities will be authorized without prior approval, on any federal or Indian mineral estate, federal surface, or federal ROW. A Sundry Notice (DOI, BLM Form 3160-5) must be submitted with an explanation of the remediation or closure plan for on-lease actions.

**Emission Control Standard:** Compressor engines 300 horsepower or less used during well production must be rated by the manufacturer as emitting NOx at 2 grams per horsepower hour or less to comply with the New Mexico Environmental Department, Air Quality Bureau's guidance.

**Waste Disposal:** All fluids (i.e., scrubber cleaners) used during washing of production equipment, including compressors, will be properly disposed of to avoid ground contamination, or hazard to livestock or wildlife.

#### **Cultural Resources**

**Non-Permitted Disturbance:** Construction, construction maintenance or any other activity outside the areas permitted by the APD will require additional approval and may require a new cultural survey and clearance.

**Employee Education:** All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles, and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

**Discovery of Cultural Resources in the Absence of Monitoring:** Discovery of Cultural Resources in the Absence of Monitoring: If, in its operations, operator/holder discovers any previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the discovery promptly reported to BLM Field Manager. BLM will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property,

or in accordance with an approved program alternative. Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive archaeological or alternative mitigation, likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any mitigations determined appropriate through the agency's Section 106 consultation are completed. Failure to notify the BLM about a discovery may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws.

**Discovery of Cultural Resources during Monitoring:** If monitoring confirms the presence of previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the monitor will promptly report the discovery to the BLM Field Manager. BLM will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property, or in accordance with an approved program alternative. Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive archaeological or alternative mitigation, likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any mitigations determined appropriate through the agency's Section 106 consultation are completed.

**Damage to Sites:** If, in its operations, operator/holder damages, or is found to have damaged any previously documented or undocumented historic or prehistoric cultural resources, excluding "discoveries" as noted above, the operator/holder agrees at his/her expense to have a permitted cultural resources consultant prepare a BLM approved damage assessment and/or data recovery plan. The operator/holder agrees at his/her expense to implement a **mitigation** that the agency finds appropriate given the significance of the site, which the agency determines in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property. **This mitigation may entail execution of the data recovery plan by a permitted cultural resources consultant and/or alternative mitigations.** Damage to cultural resources may result in civil or criminal penalties in accordance with the Archeological Resources **Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws.** 

See below additional cultural stipulations.



BLM Report Number: 2024(I)015F USGS Map: Bixler Ranch, NM Activity Code: 1310 <u>NMCRIS No:</u> 154028

#### CULTURAL RESOURCE RECORD OF REVIEW

BUREAU OF LAND MANAGEMENT FARMINGTON FIELD OFFICE

## **1. Description of Report/Project:**

| 1. Description of Report/Project:  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|
| Project Name: La Jara Federal 1-2 Unit 001H Well Pad and Associated Facilities.            |  |  |  |  |  |  |  |  |  |
| Project Sponsor: Bayless Energy Production Co.   |  |  |  |  |  |  |  |  |  |
| Arch. Firm & Report No.: Adkins Consulting Inc; ACI Report No ACI(F)054.                   |  |  |  |  |  |  |  |  |  |
| Location: T29N R4W Section 1.  |  |  |  |  |  |  |  |  |  |
| Well Footages: 1,647' FNL; 1,316' FEL  |  |  |  |  |  |  |  |  |  |
| Split Estate: Yes  |  |  |  |  |  |  |  |  |  |
| Project Dimensions: 550 ft x 300 ft well pad (650 ft x 400 ft w/ 50 ft construction zone). |  |  |  |  |  |  |  |  |  |
| 660 ft x 660 ft – water storage area.  |  |  |  |  |  |  |  |  |  |
| 430  ft x  40  ft - access road.   |  |  |  |  |  |  |  |  |  |
| 1,979 ft x 40 ft – pipeline.   |  |  |  |  |  |  |  |  |  |
| 1,495 ft – bore pipeline.  |  |  |  |  |  |  |  |  |  |
| 90 ft x 30 ft – bore pad.  |  |  |  |  |  |  |  |  |  |
| 623 ft x 473 ft – water storage area.  |  |  |  |  |  |  |  |  |  |
| 637 ft x 473 ft – water storage area.  |  |  |  |  |  |  |  |  |  |
| Sites Located: LA115064/NM-210-49518 (NRHP: Eligible; Update; Avoided; No Further Work).   |  |  |  |  |  |  |  |  |  |
| LA115065/NM-210-49519 (NRHP: Eligible; Update; Avoided).                                   |  |  |  |  |  |  |  |  |  |
| LA115066/NM-210-49520 (NRHP: Not Determined; Update; Avoided; No Further                   |  |  |  |  |  |  |  |  |  |
| Work).   |  |  |  |  |  |  |  |  |  |
| LA115067/NM-210-49521 (NRHP: Eligible; Update; Avoided; No Further Work).                  |  |  |  |  |  |  |  |  |  |
| LA188367/NM-210-49522 – (NRHP: Eligible; Update; Avoided; No Further Work).                |  |  |  |  |  |  |  |  |  |
| LA203588/NM-210-49523 (NRHP: Not Eligible; No Further Work).                               |  |  |  |  |  |  |  |  |  |
| LA203816/NM-210-49524 (NRHP: Not Determined; Avoided; No Further Work).                    |  |  |  |  |  |  |  |  |  |
| Determination: No Effect to Historic Properties  |  |  |  |  |  |  |  |  |  |

Determination: No Effect to Historic Properties.

- 2. Field Check: No.
- **3.** Cultural ACEC: No.
- 4. Sensitive Cultural Area: No.
- **5. Recommendation:** *PROCEED WITH ACTION:* <u>X</u> *STIPULATIONS ATTACHED:* <u>X</u>
- **6. Reviewer /Archaeologist:** Kim Adams **Date**: 12/15/2023

| Report Summary       | BLM  | Other | Total |
|----------------------|------|-------|-------|
| Acres Inventoried    | 0.00 | 44.49 | 44.49 |
| Sites Recorded       | 0    | 2     | 2     |
| Prev. Recorded Sites | 0    | 5     | 5     |
| Sites Avoided        | 0    | 6     | 6     |
| Sites Treated        | 0    | 0     | 0     |

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.

**Note:** If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or <u>kadams@blm.gov.</u>

CULTURAL RESOURCE STIPULATIONS Farmington Field Office BLM Report Number: 2024(I)015F

<u>Project Name:</u> La Jara Federal 1-2 Unit 001H Well Pad and Associated Facilities. <u>Project Sponsor:</u> Bayless Energy Production Co.

#### **1. SITE PROTECTION AND EMPLOYEE EDUCATION:**

All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

#### 2. ARCHAEOLOGICAL MONITORING IS REQUIRED:

A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.

The monitor will:

- Observe all surface disturbing activities within 100'of LA115065.
- Ensure that all disturbance associated with the boring under LA115065 remains at least 20 ft from any cultural deposits.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

**Note:** If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

#### For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18) CULTURAL RESOURCE STIPULATIONS Farmington Field Office BLM Report Number: 2024(I)015F

<u>Project Name:</u> La Jara Federal 1-2 Unit 001H Well Pad and Associated Facilities. <u>Project Sponsor:</u> Bayless Energy Production Co.

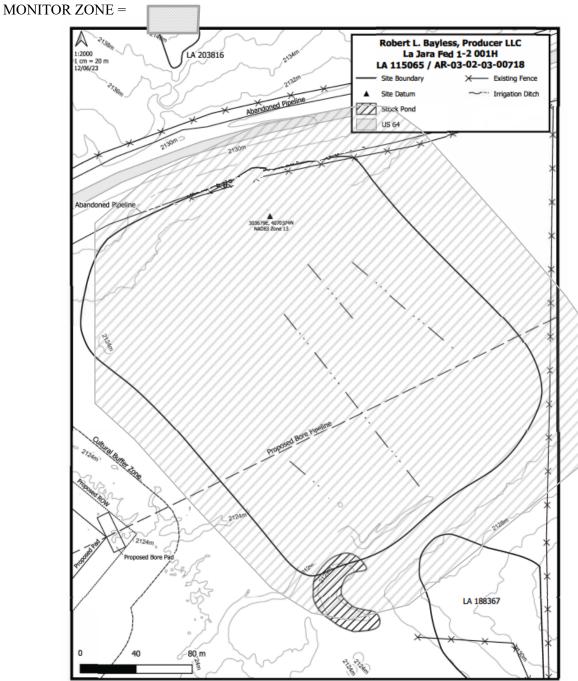


Figure 4. Site map, LA 115065/ AR-03-02-03-00718



## United States Department of the Interior

BUREAU OF LAND MANAGEMENT Farmington District Office 6251 College Blvd, Suite A Farmington, New Mexico 87402



In Reply Refer To: 3162.3-1(NMF0110)

\* Robert L Bayless Producer LLC

#003H LA JARA FED 1-2

Lease: NMNM10431 Agreement: TBD SH: H.E.S. 281 Section 1, T. 29N., R. 4W. Rio Arriba County, New Mexico BH: SWSW Section 2, T. 29N., R. 4W. Rio Arriba County, New Mexico \*Above Data Required on Well Sign

## GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when checked:

- A.  $\boxtimes$  Note all surface/drilling conditions of approval attached.
- B. The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated
- C. ☐ Test all casing strings below the conductor casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield (burst) for a minimum of 30 minutes. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.
- E. The use of co-flex hose is authorized contingent upon the following:
  1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
  2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.

**3**. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

INTERIOR REGION 7 • UPPER COLORADO BASIN

COLORADO, NEW MEXICO, UTAH, WYOMING

## I. <u>GENERAL</u>

- A. Full compliance with all applicable laws and regulations, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.
- B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).
- C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.
- D. For Wildcat wells only, a drilling operations progress report is to be submitted, to the BLM-Field Office, weekly from the spud date until the well is completed and the Well Completion Report is filed. The report should be on  $8-1/2 \times 11$  inch paper, and each page should identify the well by; operator's name, well number, location and lease number.
- E. As soon as practical, notice is required of all blowouts, fires and accidents involving life-threatening injuries or loss of life. (See NTL-3A).
- F. BOP equipment (except the annular preventer) shall be tested utilizing a test plug to full working pressure for 10 minutes. No bleed-off of pressure is acceptable. (See 43 CFR 3172.6(b)(9)(ii)).
- G. The operator shall have sufficient weighting materials and lost circulation materials on location in the event of a pressure kick or in the event of lost circulation. (See 43 CFR 3172.8(a)).
- H. The flare line(s) discharge shall be located not less than 100 feet from the well head, having straight lines unless turns are targeted with running tees, and shall be positioned downwind of the prevailing wind direction and shall be anchored. The flare system shall have an effective method for ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and to maintain a continuous flare. (See 43 CFR 3172.8(b)(7)).
- I. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work, casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a Notice of Intent sundry within three business days. Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to Virgil Lucero at 505-793-1836.
- J. The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.

- K. Unless drilling operations are commenced within two years, approval of the Application for Permit to Drill will expire. A written request for a two-year extension may be granted if submitted prior to expiration.
- L. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all times, unless the well is secured with blowout preventers or cement plugs.
- M. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.
- N. **Commingling**: No production (oil, gas, and water) from the subject well should start until Sundry Notices (if necessary) granting variances from applicable regulations as related to commingling and off-lease measurement are approved by this office.

#### II. <u>REPORTING REQUIREMENTS</u>

- A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.
- B. The following reports shall be filed with the BLM-Authorized Officer online through AFMSS 2 within 30 days after the work is completed.
  - 1. Provide complete information concerning.
    - a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.
    - b. Intervals tested, perforated (include size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.
    - c. Subsequent Report of Abandonment, show the way the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.
  - 2. Well Completion Report will be submitted with 30 days after well has been completed.
    - a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.
  - 3. Submit a cement evaluation log if cement is not circulated to surface.
- C. Production Startup Notification is required no later than the 5<sup>th</sup> business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site or resumes production in the case of a well which has been off production for more than 90 days. The operator shall notify the Authorized Officer by letter or Sundry Notice, Form 3160-5, or orally to be followed

by a letter or Sundry Notice, of the date on which such production has begun or resumed. CFR 43 3162.4-1(c).

#### III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results, 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results, and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

#### IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of \* Days or 50 MMCF following its (completion)(recompletion), whichever first occurs, without the prior, written approval of the authorized officer. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

\*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the first gas to surface.

#### V. SAFETY

- A. All rig heating stoves are to be of the explosion-proof type.
- B. Rig safety lines are to be installed.
- C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

#### VI. <u>CHANGE OF PLANS OR ABANDONMENT</u>

A. Any changes of plans required to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.F.

- B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.F. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.
- C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

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U.S. Department of the Interior BUREAU OF LAND MANAGEMENT

# **Operator Certification Data Report**

Page 21 of 186

### Operator

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

| NAME: ANGELA CALLAWAY     Signed on: 09/26/2023       Title: Regulatory Analyst     Signed on: 09/26/2023 |               |      |  |  |  |  |  |  |  |  |  |  |
|---|---------------|------|--|--|--|--|--|--|--|--|--|--|
| Title: Regulatory Analyst   |               |      |  |  |  |  |  |  |  |  |  |  |
| Street Address: 7000 S YOSEMITE STREET SUITE 290B   |               |      |  |  |  |  |  |  |  |  |  |  |
| Title: Regulatory Analyst   |               |      |  |  |  |  |  |  |  |  |  |  |
| Phone: (303)942-0506  |               |      |  |  |  |  |  |  |  |  |  |  |
| Email address: ACALLAWAY@UF   | PSTREAMPM.COM |      |  |  |  |  |  |  |  |  |  |  |
|   |               |      |  |  |  |  |  |  |  |  |  |  |
| Field   |               |      |  |  |  |  |  |  |  |  |  |  |
| Representative Name:  |               |      |  |  |  |  |  |  |  |  |  |  |
| Street Address:   |               |      |  |  |  |  |  |  |  |  |  |  |
| City: S   | State:        | Zip: |  |  |  |  |  |  |  |  |  |  |
| Phone:  |               |      |  |  |  |  |  |  |  |  |  |  |
| Email address:  |               |      |  |  |  |  |  |  |  |  |  |  |

#### Received by OCD: 7/11/2024 12:03:44 PM

## AFMSS

U.S. Department of the Interior BUREAU OF LAND MANAGEMENT

APD ID: 10400094811

**Operator Name: ROBERT L BAYLESS PRODUCER LLC** Well Name: LA JARA FED 1-2 Well Type: CONVENTIONAL GAS WELL

Submission Date: 09/28/2023

Well Number: 003H

Highlighted data reflects the most recent changes Show Final Text

**Application Data** 

## **Section 1 - General**

| <b>APD ID:</b> 10400094811   | Tie to previous I      | NOS? Y         | Submission Date: 09/28/2023       |
|------------------------------|------------------------|----------------|-----------------------------------|
| BLM Office: Farmington       | User: ANGELA C         | ALLAWAY        | Title: Regulatory Analyst         |
| Federal/Indian APD: FED      | Is the first lease     | penetrated for | production Federal or Indian? FED |
| Lease number: NMNM10431      | Lease Acres:           |                |                                   |
| Surface access agreement i   | n place? Allotted?     | Rese           | ervation:                         |
| Agreement in place? NO       | Federal or India       | n agreement:   |                                   |
| Agreement number:            |                        |                |                                   |
| Agreement name:              |                        |                |                                   |
| Keep application confidentia | al? Y                  |                |                                   |
| Permitting Agent? YES        | APD Operator: F        | OBERT L BAY    | LESS PRODUCER LLC                 |
| Operator letter of           | NM_BLM_Designation_of_ | Agent_Upstrea  | m_20230412111737.pdf              |

## **Operator Info**

**Operator Organization Name: ROBERT L BAYLESS PRODUCER LLC** Operator Address: P. O. BOX 168 Zip: 87488 **Operator PO Box: Operator City: FARMINGTON** State: NM Operator Phone: (505)326-2659 **Operator Internet Address:** 

## **Section 2 - Well Information**

| Well in Master Development Plan? NO       | Master Development Plan name:        |                                     |  |  |  |  |  |  |
|---|--------------------------------------|-------------------------------------|--|--|--|--|--|--|
| Well in Master SUPO? NO                   | Master SUPO name:                    |                                     |  |  |  |  |  |  |
| Well in Master Drilling Plan? NO          | Master Drilling Plan name:           |                                     |  |  |  |  |  |  |
| Well Name: LA JARA FED 1-2                | Well Number: 003H                    | Well API Number:                    |  |  |  |  |  |  |
| Field/Pool or Exploratory? Field and Pool | Field Name: BASIN MANCOS<br>GAS POOL | Pool Name: BASIN MANCOS<br>GAS POOL |  |  |  |  |  |  |

07/11/2024

Well Work Type: Drill

**Operator Name:** ROBERT L BAYLESS PRODUCER LLC **Well Name:** LA JARA FED 1-2

Well Number: 003H

Is the proposed well in an area containing other mineral resources? USEABLE WATER, NATURAL GAS, OIL

| Is the proposed well in a Helium product | ion area? N Use Existing N         | Well Pad? N New surface disturbance? |
|--|------------------------------------|--------------------------------------|
| Type of Well Pad: MULTIPLE WELL          | <b>Multiple Well</b> I<br>Jara Fed | Pad Name: La Number: 1-2             |
| Well Class: HORIZONTAL                   | Number of Le                       | egs: 1                               |
| Well Work Type: Drill                    |                                    |                                      |
| Well Type: CONVENTIONAL GAS WELL         |                                    |                                      |
| Describe Well Type:                      |                                    |                                      |
| Well sub-Type: EXPLORATORY (WILDCA       | .Т)                                |                                      |
| Describe sub-type:                       |                                    |                                      |
| Distance to town: 51 Miles D             | istance to nearest well: 15 F      | FT Distance to lease line: 332 FT    |
| Reservoir well spacing assigned acres N  | leasurement: 640 Acres             |                                      |
| Well plat: La_Jara_Fed_1_2_003H_We       | ell_Location_Plat_041723_202       | 230926140227.pdf                     |
| La_Jara_Fed_1_2_003H_Lea                 | ase_Plat_20230926152209.pd         | df                                   |
| Well work start Date: 11/29/2023         | Duration: 90 E                     | DAYS                                 |

## **Section 3 - Well Location Table**

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Survey number:

#### Vertical Datum: NAVD88

#### Reference Datum: KELLY BUSHING

| Wellbore         | NS-Foot  | NS Indicator | EW-Foot  | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract                 | Latitude      | Longitude           | County            | State             | Meridian          | Lease Type | Lease Number | Elevation | MD       | TVD      | Will this well produce<br>from this |
|------------------|----------|--------------|----------|--------------|------|-------|---------|-----------------------------------|---------------|---------------------|-------------------|-------------------|-------------------|------------|--------------|-----------|----------|----------|-------------------------------------|
| SHL<br>Leg<br>#1 | 167<br>1 | FNL          | 133<br>5 | FEL          | 29N  | 4W    | 1       | <sup>Tract</sup><br>H.E.S.<br>281 | 36.75628<br>1 | -<br>107.2016<br>48 | rio<br>Arri<br>Ba | NEW<br>MEXI<br>CO | NEW<br>MEXI<br>CO | F          | FEE          | 698<br>9  | 0        | 0        | Ν                                   |
| KOP<br>Leg<br>#1 | 167<br>1 | FNL          | 133<br>5 | FEL          | 29N  | 4W    | 1       | Tract<br>H.E.S.<br>281            | 36.75628<br>1 | -<br>107.2016<br>48 | RIO<br>ARRI<br>BA | NEW<br>MEXI<br>CO |                   | F          | FEE          | 167       | 743<br>0 | 682<br>2 | N                                   |

Well Name: LA JARA FED 1-2

#### Well Number: 003H

| Wellbore | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude      | County | State      | Meridian   | Lease Type | Lease Number | Elevation | MD  | TVD | Will this well produce from this |
|----------|---------|--------------|---------|--------------|------|-------|---------|-------------------|----------|----------------|--------|------------|------------|------------|--------------|-----------|-----|-----|----------------------------------|
| PPP      | 875     | FSL          | 660     | FEL          | 29N  | 4W    | 1       | Aliquot           | 36.74882 | -              | RIO    | NEW        |            | F          | NMNM         | -466      | 844 | 745 | Y                                |
| Leg      |         |              |         |              |      |       |         | SESE              | 9        | 107.1993<br>19 | BA     | MEXI<br>CO | MEXI<br>CO |            | 10431        |           | 8   | 5   |                                  |
| #1-1     |         |              |         |              |      |       |         |                   |          |                |        | 00         | 00         |            |              |           |     |     |                                  |
| PPP      | 875     | FSL          | 256     | FEL          | 29N  | 4W    | 1       | Tract             | 36.74893 |                | RIO    | NEW        |            | F          | FEE          | -466      | 103 | 745 | Y                                |
| Leg      |         |              | 5       |              |      |       |         | H.E.S             | 6        | 107.2057       | ARRI   |            | MEXI       |            |              |           | 53  | 5   |                                  |
| #1-2     |         |              |         |              |      |       |         | #281              |          | 36             | BA     | со         | со         |            |              |           |     |     |                                  |
| PPP      | 875     | FSL          | 948     | FW           | 29N  | 4W    | 1       | Lot               | 36.74895 |                | RIO    | NEW        |            | F          | NMNM         | -466      | 120 | 745 | Y                                |
| Leg      |         |              |         | L            |      |       |         | 14                |          | 107.2115       |        |            | MEXI       |            | 10431        |           | 42  | 5   |                                  |
| #1-3     |         |              |         |              |      |       |         |                   |          | 03             | BA     | co         | со         |            |              |           |     |     |                                  |
| PPP      | 875     | FSL          | 0       | FEL          | 29N  | 4W    | 2       | Aliquot           | 36.74895 | -              | RIO    |            |            | F          | NMNM         | -466      |     | 745 | Y                                |
| Leg      |         |              |         |              |      |       |         | SESE              | 8        | 107.2147       |        |            | MEXI       |            | 58137        |           | 90  | 5   |                                  |
| #1-4     |         |              |         |              |      |       |         |                   |          |                | BA     | со         | со         | <u> </u>   |              |           |     |     |                                  |
| EXIT     | 875     | FSL          | 660     | FW           | 29N  | 4W    | 2       | Aliquot           | 36.74913 | -              | RIO    | NEW        | NEW        | F          | NMNM         | -466      | 174 | 745 | Y                                |
| Leg      |         |              |         | L            |      |       |         | SWS               | 4        | 107.2300       |        |            | MEXI       |            | 58137        |           | 58  | 5   |                                  |
| #1       |         |              |         |              |      |       |         | W                 |          | 71             | BA     | co         | со         |            |              |           |     |     |                                  |
| BHL      | 875     | FSL          | 660     | FW           | 29N  | 4W    | 2       | Aliquot           | 36.74913 |                | RIO    | NEW        | NEW        | F          | NMNM         | -466      | 174 | 745 | Y                                |
| Leg      |         |              |         | L            |      |       |         | sws               | 4        | 107.2300       |        |            | MEXI       |            | 58137        |           | 58  | 5   |                                  |
| #1       |         |              |         |              |      |       |         | W                 |          | 71             | BA     | со         | со         |            |              |           |     |     |                                  |



## Robert L. Bayless, Producer LLC

Post Office Box 168 2700 N. Farmington Avenue, Bldg F, Suite 1 Farmington, New Mexico 87499 505-326-2659 office 505-326-6911 fax 621 Seventeenth Street, Suite 2300 Denver, Colorado 80293

303-296-9900 office 303-296-0753 fax

October 12, 2017

Mr. Richard Fields Bureau of Land Management Farmington Field Office 6251 College Boulevard, Suite a Farmington, NM 87402

RE: Designation of Permit Agent **Robert L. Bayless, Producer** Notice of Stakings Applications for Permit to Drill Right-of-Ways Sundry Notices Authorized Agency – All BLM New Mexico Offices

Dear Mr. Fields:

Robert L. Bayless, Producer hereby designates Upstream Petroleum Management, Inc.: Kimberly J. Rodell, Andrea J. Gross, Mitchell R. Dix, and Angela Callaway as authorized agents for matters relative to Notice of Stakings, Applications for Permit to Drill, Rights-of-Ways, Sundry Notices, and regulatory matters associated with Robert L. Bayless, Producer's oil and gas drilling, completion, and production activities for the State of New Mexico.

All matters regarding drilling, completion, production and regulatory compliance will be handled through the Robert L. Bayless, Producer's office.

Should you have any questions relative to this authorization, please feel free to contact me by phone at 505-326-2659 or by e-mail at kmccord@rlbayless.com, at your convenience.

Sincerely,

Kevin McCord Operations Manager

cc: Upstream Petroleum Management, Inc.

#### Received by OCD: 7/11/2024 12:03:44 PM

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

State of New Mexico Energy, Minerals & Natural Resources Department F**Page-26**20f 186 Revised August 1, 2011

Submit one copy to Appropriate District Office

AMENDED REPORT

## OIL CONSERVATION DIVISION

1220 South St. Francis Drive Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

| 1 A   | PI Number                      | <u> </u> |                    | ²Pool Cod | le                    |                  | °Pool Nam       | е        |            |               |  |
|---|--------------------------------|----------|--------------------|-----------|-----------------------|------------------|-----------------|----------|------------|---------------|--|
| 30-039  | -31469                         |          |                    | 97232     |                       |                  | BASIN MAN       | COS      |            |               |  |
| ⁴Property   | Code                           |          | 1                  |           | <sup>5</sup> Property | Name             |                 |          | ۴We        | ll Number     |  |
| 336203  | 3                              |          |                    | (         | НЕОС                  |                  |                 |          |            |               |  |
| 'OGRID N  | No.                            |          |                    |           | *Operator             | Name             |                 |          | °Elevation |               |  |
| 15018   | 2                              |          |                    | ROBERT    | L. BAYLESS            | 6, PRODUCER L    | LC              |          |            | 6967'         |  |
|   | <sup>10</sup> Surface Location |          |                    |           |                       |                  |                 |          |            |               |  |
| UL or lot no.   | Section                        | Township | Range              | Lot Idn   | Feet from the         | North/South line | Feet from the   | East/Wes | t line     | County        |  |
| G   | 1                              | 29N      | 4W                 |           | 1671                  | NORTH            | 1335            | EAS      | ST         | RIO<br>ARRIBA |  |
|   |                                | 1:       | <sup>1</sup> Botto | m Hole    | Location I            | f Different f    | -<br>rom Surfac | е        |            |               |  |
| UL or lot no.   | Section                        | Township | Range              | Lot Idn   | Feet from the         | North/South line | Feet from the   | East/Wes | t line     | County        |  |
| М   | 2                              | 29N      | 4W                 |           | 875                   | SOUTH            | 660             | WES      | ST         | RIO<br>ARRIBA |  |
| <sup>12</sup> Dedicated Acres     S/2 - Section 1 <sup>13</sup> Joint or Infill <sup>14</sup> Consolidation Code <sup>15</sup> Order No.       640.00     S/2 - Section 2     Signature     Signature     Signature     Signature |                                |          |                    |           |                       |                  |                 |          |            |               |  |

LAST TAKE POINT 875' FSL 660' FWL SECTION 2, T29N, R4W LAT 36.749126 °N LONG -107.229472 °W DATUM: NAD1927

LAT 36.749134 °N LONG -107.230071 °W DATUM: NAD1983

35

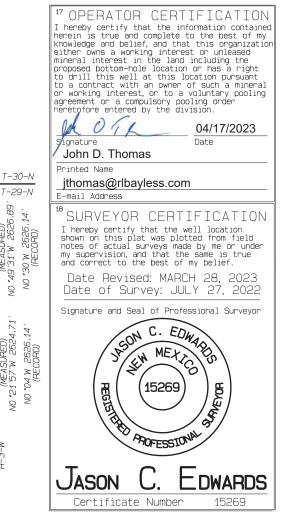
SURFACE LOCATION 1671' FNL 1335' FEL SECTION 1, T29N, R4W LAT 36.756273 °N LONG -107.201049 °W DATUM: NAD1927

LAT 36.756281 °N LONG -107.201648 °W DATUM: NAD1983 FIRST TAKE POINT 875' FSL 660' FEL SECTION 1, T29N, R4W LAT 36.748821 °N LONG -107.198721 °W DATUM: NAD1927

LAT 36.748829 °N LONG –107.199319 °W DATUM: NAD1983

36

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



(RECORD) (RECORD) N89 °16 W 2572.68 (RECORD) N89 °16 W 2572.68 (RECORD) N89 °16 W 2572.68 N89 °16 W 2572.68 N89 °37 '35 ''W 2574.51 (MEASURED) N89 \*38 29 W 2576.17 N89 °42 '13 "W 2593.20 N89 \*40 '03 "W 2555.30 (MEASURED) (MEASURED) (MEASURED) 16 LOT 5 LOT LOT LOT LOT LOT LOT LOT 89 11-0 Δ 3 2 3 6 LOT 4 (MEASURED) 9'31"W 2626.1 (CALCULATED) 5276.04 ' (RECORD) LOT 1335 (MEASURED) ? 10 "E 5264.77 9 LOT 12 .49 5268.: 20RD) 10 LOT SI4°29.5'E 2797.4' 5251.83 2 8 2 1 •04 E (REC LOT LOT 25 11 12 (MEASURED) 1 57 "W 2624.71 M., 80, 71, NORTH So 2 20 LOT To s 13 2 660 660 ŝ. N89°39.8'W 9010.1' LOT LOT 875 Ē , N 14 15 6 N89 °29'10 "W 5049.31' (CALCULATED) N89 °50 '00 "W 5282.92 ' (MEASURED) <u>R-4-W</u> <u>R-3-W</u> WEST 5290.56 '(RECORD) S89 \*56 W 5299.80 ' (RECORD)

Released to Imaging: 8/9/2024 1:38:58 PM

Receiped DCD: 7/11/2024 12:03:44 PM 1525 N. French Drive, Hobbs, NM 88240 Phone: (575) 393–6161 Fax: (575) 393–0720

16

NORTH 5276.04 (RECORD) 4'08"W 5251.83 (CALCULATED)

M. 80. FT.

8 660

District II 811 S. First Street, Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 District III 1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 District IV 1220 Phone:

State of New Mexico Energy, Minerals & Natural Resources Department For Page-2020f 186 Revised August 1, 2011

15269

Certificate Number

Submit one copy to Appropriate District Office

AMENDED REPORT

## OIL CONSERVATION DIVISION

South St. Francis Drive Santa Fe. NM 87505 1220

| District IV<br>1220 S. St. Francis Dr<br>Phone: (505) 476–3460                                | rive, Santa Fe, NM 6<br>Fax:(505) 476-3462                              | 37505   | Sant  | a Fe, NM 875   | 505  |                           |   |   |
|---|---|---|---|--|--|---------------------------|---|---|
|   | WELL  | LOCATIO   | ON AND  | ACREAGE DED  |  |                           |   |   |
| <sup>1</sup> API Numbe  | er 🛛  | °Pool Cod<br>97232  |   |  | Pool<br>BASIN  | Name<br>MANCOS            |   |   |
| *Property Code  |   |   | the second se | erty Name<br>A FED 1-2   |  |                           | "Well N<br>003  | and the second se |
| 70GRID No.  |   |   |   | ator Name  |  |                           | "Eleva  | en sere en  |
| 150182  |   | ROBERT  | <sup>10</sup> Surfac  | ESS, PRODUCER  |  |                           | 696   |   |
| UL or lot no. Section<br>G 1  | Township Range<br>29N 4W  | Lot Idn   | Feet from the   |  | Feet from t<br>1335  |                           | st line   | RIO<br>ARRIBA   |
|   |   | TA DALLA IN TA DAMA DAL SOLICO  |   | I If Different   | OF 102 INTERDEDICT AVECAGINES                                  | AND SWILL WEIGHNARY.      |   |   |
| UL or lot no. Section<br>M 2  | Township Range<br>29N 4W  | Lot Idn   | Feet from t   | he North/South line<br>SOUTH   | Feet from t  |                           | sat line<br>ST A  | RIO<br>ARRIBA   |
|   | 6/2 - Section<br>6/2 - Section  |   | <sup>13</sup> Joint or Infi   | 11 <sup>44</sup> Consolidation Code  | <sup>15</sup> Order No.  |                           | F   |   |
| ONG -107.229472 W<br>DATUM: NAD1927<br>LAT 36.749134 N<br>ONG -107.230071 W<br>DATUM: NAD1983 | Lå  | DNG -107.20<br>DATUM: NAD<br>LAT 36.7562<br>DNG -107.20<br>DATUM: NAD | 91927<br>281 °N<br>1648 °W<br>1983  | LONG -107.19872<br>DATUM: NAD192<br>LAT 36.748829<br>LONG -107.19931<br>DATUM: NAD198. | 7<br>*N<br>9 *W  |                           | ify that the ir<br>e and complete<br>belief, and the<br>working intere<br>est in the land<br>om-hole location<br>well at this J<br>with an owner<br>terest, or to a<br>a compulsory potered by the di | information contains<br>to the best of my<br>at this organizati<br>set or unleased<br>including the<br>n or has a right<br>location pursuant<br>of such a mineral<br>voluntary pooling<br>poling order  |
| energiesenderstation alberte Maria and  | (RECORD)<br>189 *16 W 2572.68 '<br>9 *38 '29 "W 2576.17 '<br>(MEASURED) | (REC<br>N89 *16 W<br>N89 *42 *13 *V<br>(MEASU                         | ¥ 2593.20°  | (RECORD)<br>N89 *16 W 2572.68 '<br>N89 *40 '03 'W 2555.30<br>(MEASURED)                | ,<br>T-30-N  | John D. T<br>Printed Name | in_   | 04/17/2023<br>Date  |
| LOT LOT LOT 3   | 8137<br>LOT<br>2<br>LOT<br>1  | LOT<br>4  |   |  | NO "30 W 2626.14" &  | E-mail Addres             | SING CERT   | IFICATION<br>well location<br>tted from field<br>de by me or under<br>e same is true<br>my belief.  |
| 2-  |   | 50 °04 E 5268.12'<br>(PECORD)   |   | 9<br>514°295E<br>2797.4'   | L (MEA<br>ND - 49 - 31<br>ND - 30 W                            | Date Re<br>Date of        | vised: MAR(<br>Survey: JU   | CH 28, 2023   |
| 60'   | W   | 50.04   | 11 10 C   |  | NO '21'57"W 2624.71'<br>NO '20 W 2626.14'<br>NO '04 W 2626.14' | 1 1                       | 15/ \   | essional Surveyor.  |
| 813i  | NB9"39.8'W 9010.1'  | LOT<br>14   | /   | LOT<br>15  | NO 21<br>NO 00   | REGISIN                   | (15269)   | HO LU   |
| NB9 "29 '10 "W 5049.31<br>WEST 5290.56 '  |   |   |   | 2.92 ' (MEASURED)<br>9.80 ' (RECORD)   | R-3-W<br>R-3-W   |                           | AD AROFESSIL  | AND 3'  |
|   |   |   |   |  | α.] Ψ  | JASON                     | C. E  |   |



APD ID: 10400094811

U.S. Department of the Interior BUREAU OF LAND MANAGEMENT

Submission Date: 09/28/2023

Operator Name: ROBERT L BAYLESS PRODUCER LLC

Well Name: LA JARA FED 1-2

Well Type: CONVENTIONAL GAS WELL

Well Number: 003H

Well Work Type: Drill

Highlighted data reflects the most recent changes

07/11/2024

Drilling Plan Data Report

Show Final Text

## **Section 1 - Geologic Formations**

| Formation |                 |           | True Vertical | Measured |                                      | Mineral Resources         | Producing |
|-----------|-----------------|-----------|---------------|----------|--------------------------------------|---------------------------|-----------|
| ID        | Formation Name  | Elevation |               | Depth    | Lithologies                          |                           | Formatio  |
| 13755107  | SAN JOSE        | 6989      | 0             | Ó        | SANDSTONE, SHALE,<br>SILTSTONE       | NONE                      | N         |
| 13755108  | NACIMIENTO      | 4423      | 2566          | 2700     | SHALE, SILTSTONE                     | NONE                      | N         |
| 13755109  | OJO ALAMAO      | 3772      | 3217          | 3424     | SANDSTONE,<br>SILTSTONE              | NONE                      | N         |
| 13755110  | KIRTLAND        | 3610      | 3379          | 3604     | SANDSTONE, SHALE,<br>SILTSTONE       | NONE                      | N         |
| 13755111  | FRUITLAND       | 3444      | 3545          | 3789     | COAL, SANDSTONE,<br>SHALE            | COAL, NATURAL GAS,<br>OIL | N         |
| 13755112  | PICTURED CLIFFS | 3318      | 3671          | 3929     | SANDSTONE,<br>SILTSTONE              | NATURAL GAS               | N         |
| 13755113  | LEWIS           | 3007      | 3982          | 4274     | SHALE, SILTSTONE                     | NATURAL GAS               | N         |
| 13755114  | CLIFFHOUSE      | 1260      | 5729          | 6216     | SANDSTONE, SHALE,<br>SILTSTONE       | NATURAL GAS               | N         |
| 13755121  | MENEFEE         | 1172      | 5817          | 6314     | COAL, SANDSTONE,<br>SHALE, SILTSTONE | COAL, NATURAL GAS         | N         |
| 13755122  | POINT LOOKOUT   | 1047      | 5942          | 6453     | SANDSTONE, SHALE,<br>SILTSTONE       | NATURAL GAS               | N         |
| 13755123  | MANCOS          | 619       | 6370          | 6928     | SANDSTONE, SHALE,<br>SILTSTONE       | NATURAL GAS               | Y         |

## Section 2 - Blowout Prevention

#### Pressure Rating (PSI): 5M

Rating Depth: 7455

**Equipment:** Annular preventer, pipe ram, blind ram, and, if conditions warrant, as specified by the authorized officer, another pipe ram shall also be required, a second pipe ram preventer shall be used with a tapered drill string, drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 3-inch minimum diameter, kill side shall be at least 2-inch diameter), 3 inch diameter choke line, 2 choke line valves (3 inch minimum), kill line (2 inch minimum), 2 chokes with 1 remotely controlled from rig floor (refer to diagram in attachment 1), 2 kill line valves and a check valve (2 inch minimum), upper kelly cock valve with handle available, when the expected pressures approach working pressure of the system, 1 remote kill line tested to stack pressure (which shall run to the outer edge of the substructure and be unobstructed), lower kelly cock valve with handle available, safety valve(s) and subs to fit all drill string connections in use, inside BOP or float sub available, pressure gauge on choke manifold, all BOPE connections subjected to well

Well Name: LA JARA FED 1-2

Well Number: 003H

pressure shall be flanged, welded, or clamped, fill-up line above the uppermost preventer. The 13-5/8" 5M will be used for the surface and intermediate sections and 11" 5M will be used for the production section. Both BOP Diagrams are attached.

#### Requesting Variance? YES

**Variance request:** Pursuant to Onshore Order No. 2 Section III, Subsection B(i), Formation Integrity Tests (FIT) must be performed on either exploratory wells or any well permitted to utilize 5M BOPE. Bayless requests a variance to this rule, by not performing an FIT test at the surface casing shoe as it is common to encounter zones in formations below the shoe that fail at a lower Equivalent Mud Weight (EMW) than a typical FIT test. An FIT would be planned after drilling out the intermediate casing shoe, to be tested to 13 lb/gal.

**Testing Procedure:** THE BOPE will be tested to 250psi (Low) for 5 minutes and 5000psi (High) for 10 minutes prior to drilling out surface and intermediate casing. Annular preventer will be tested to 50% of rated working pressure and maintained for at least 10 minutes. A BOPE testing unit will be utilized with a chart recorder and appropriate test plug for testing. BOP equipment will be tested every 30 days, after any repairs are made to the BOP equipment, and after the BOP equipment is subjected to pressure. Annular preventers will be functionally operated at least once per well. Pipe and blind rams shall be activated each trip but not more than once a day. The New Mexico Oil and Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of BOPE. All tests and inspection will be recorded and logged with time and results. A full BOP test will be conducted when initially installed for the first well on the pad or if seals subject to test pressure are broken, following related repairs and at a minimum 30 day intervals. A BOPE shell test only will be conducted for subsequent wells on the pad when seals that are subject to pressure have not been broken or repaired and fall within the 30 day interval of first full test. All casing strings will be pressure tested to 0.22 psi/ft or 1500 psi, whichever is greater, not to exceed 70% of internal yield of the casing. All testing procedures will be in accordance with all the requirements per the Onshore Order 2.

#### **Choke Diagram Attachment:**

5M\_BOP\_11\_Inch\_20230412125327.pdf

5M\_BOP\_13\_5\_8\_Inch\_20230412125327.pdf

#### **BOP Diagram Attachment:**

5M\_BOP\_11\_Inch\_20230412125340.pdf

5M\_BOP\_13\_5\_8\_Inch\_20230412125340.pdf

| <b>Section</b> | 3 - | Casing |
|----------------|-----|--------|
|----------------|-----|--------|

| Casing ID | String Type    | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing<br>length MD | Grade     | Weight | Joint Type        | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|-----------|----------------|-----------|----------|-----------|----------|----------------|------------|---------------|-------------|----------------|-------------|----------------|--------------------------------|-----------|--------|-------------------|-------------|----------|---------------|----------|--------------|---------|
|           | CONDUCT<br>OR  | 30        | 20.0     | NEW       | API      | Ν              | 0          | 120           | 0           | 120            | 6989        | 6869           | 1                              | OTH<br>ER |        | OTHER -<br>Welded |             |          |               |          |              |         |
| 2         | SURFACE        | 17.5      | 13.375   | NEW       | API      | N              | 0          | 320           | 0           | 320            | 6989        | 6669           | 320                            | J-55      | 54.5   | ST&C              | 7.5         | 1.8      | BUOY          | 4.5      | BUOY         | 4.5     |
| 3         |                | 12.2<br>5 | 9.625    | NEW       | API      | N              | 0          | 7100          | 0           | 6524           | 6967        | 465            | 7100                           | N-80      | 43.5   | LT&C              | 1.19        | 2        | BUOY          | 2.3      | BUOY         | 2.3     |
| 4         | PRODUCTI<br>ON | 8.75      | 5.5      | NEW       | API      | N              | 0          | 17458         | 0           | 7455           | 0           | -466           | 17458                          | P-<br>110 | 20     | BUTT              | 2.2         | 3.2      | BUOY          | 3        | BUOY         | 3       |

Received by OCD: 7/11/2024 12:03:44 PM Page 30 of 186 **Operator Name: ROBERT L BAYLESS PRODUCER LLC** Well Name: LA JARA FED 1-2 Well Number: 003H **Casing Attachments** Casing ID: 1 CONDUCTOR String **Inspection Document:** Spec Document: **Tapered String Spec:** Casing Design Assumptions and Worksheet(s): Casing ID: 2 String SURFACE **Inspection Document: Spec Document: Tapered String Spec:** Casing Design Assumptions and Worksheet(s): La\_Jara\_Fed\_1\_2\_003H\_Casing\_Safety\_Calculations\_\_\_Surface\_20230927153433.pdf Casing ID: 3 INTERMEDIATE String **Inspection Document: Spec Document: Tapered String Spec:** Casing Design Assumptions and Worksheet(s): La\_Jara\_Fed\_1\_2\_003H\_Casing\_Safety\_Calculations\_\_\_Intermediate\_20230927153510.pdf

Well Name: LA JARA FED 1-2

Well Number: 003H

Page 31 of 186

| Casing ID:  | 4 | String | PRODUCTION   |
|-------------|---|--------|--------------|
| eacing in t | • | eang   | I Repeterion |

**Inspection Document:** 

Spec Document:

**Tapered String Spec:** 

#### Casing Design Assumptions and Worksheet(s):

La\_Jara\_Fed\_1\_2\_003H\_Casing\_Safety\_Calculations\_\_\_Production\_20230927153455.pdf

| Section     | 4 - Ce    | emen                | t      |           |              |       |         |       |         |             |           |
|-------------|-----------|---------------------|--------|-----------|--------------|-------|---------|-------|---------|-------------|-----------|
| String Type | Lead/Tail | Stage Tool<br>Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
| CONDUCTOR   | Lead      |                     | 0      | 120       | 319          | 1.18  | 15.6    | 376   | 15      | Class III   | None      |

| SURFACE | Lead | 0 | 320 | 237 | 1.17 | 15.8 | 277 | 25 | Type I-II (Neat G) | 15.8 lb/gal Premium |
|---------|------|---|-----|-----|------|------|-----|----|--------------------|---------------------|
|         |      |   |     |     |      |      |     |    |                    | Class G, 2% P-401,  |
|         |      |   |     |     |      |      |     |    |                    | 0.003gps P-713      |

| INTERMEDIATE | Lead |      | 0    | 3171 | 510 | 2.53 | 12   | 1291 | 30 | Туре III | 10 bbls fresh water<br>spacer followed by 20<br>bbls Chemwash spacer |
|--------------|------|------|------|------|-----|------|------|------|----|----------|--|
| INTERMEDIATE | Tail |      | 3171 | 3671 | 102 | 1.99 | 12.8 | 203  | 30 | Class G  | Displaced with drilling mud or water                                 |
| INTERMEDIATE | Lead | 5100 | 3671 | 4600 | 164 | 2.3  | 12.3 | 378  | 30 | Type III | 10 bbls fresh water<br>spacer followed by 20<br>bbls Chemwash spacer |
| INTERMEDIATE | Tail |      | 4600 | 5100 | 136 | 1.5  | 13.5 | 204  | 30 | Class G  | Dispaced with drilling mud or water                                  |
| INTERMEDIATE | Lead |      | 5100 | 6600 | 266 | 2.3  | 12.3 | 611  | 30 | Type III | 10 bbls fresh water<br>spacer followed by 30<br>bbls Chemwash spacer |

Well Name: LA JARA FED 1-2

Well Number: 003H

| String Type  | Lead/Tail | Stage Tool<br>Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives  |
|--------------|-----------|---------------------|--------|-----------|--------------|-------|---------|-------|---------|-------------|--|
| INTERMEDIATE | Tail      |                     | 6600   | 7100      | 177          | 1.15  | 15.8    | 204   | 30      | Class G     | Displaced with drilling mud or water   |
| PRODUCTION   | Lead      |                     | 6600   | 1745<br>8 | 2578         | 1.33  | 13.3    | 3429  | 25      |             | Spacer 1: 60 bbls tuned<br>water spacer, HALCEM<br>TM system or<br>equivalent, Tail spacer:<br>40 bbls of micro matrix<br>cement retarder.<br>Displace with remaining<br>drilling mud or water |

## **Section 5 - Circulating Medium**

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

**Describe what will be on location to control well or mitigate other conditions:** Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blowout will be available at the well site during drilling operations.

**Describe the mud monitoring system utilized:** A PVT, Stroke Counter, and flow sensor will be installed to check for flow and monitor pit volume.

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type           | Min Weight (Ibs/gal) | Max Weight (Ibs/gal) | Density (Ibs/cu ft) | Gel Strength (lbs/100 sqft) | Hd | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics   |
|-----------|--------------|--------------------|----------------------|----------------------|---------------------|-----------------------------|----|----------------|----------------|-----------------|--|
| 7100      | 1745<br>8    | OIL-BASED<br>MUD   | 11                   | 13                   |                     |                             | 9  |                |                |                 | Mud Summary: MW: 11 - 13<br>ppg; pH: 9; Funnel Viscosity:<br>30 - 45; Filtration: 4 - 10 |
| 0         | 320          | WATER-BASED<br>MUD | 8.35                 | 9                    |                     |                             | 9  |                |                |                 | Mud Summary: MW: 8.35 - 9<br>ppg; pH: 9; Funnel Viscosity:<br>20 - 80; Filtration: NC    |

Well Name: LA JARA FED 1-2

Well Number: 003H

| Top Depth | Bottom Depth | Mud Type           | Min Weight (Ibs/gal) | Max Weight (Ibs/gal) | Density (Ibs/cu ft) | Gel Strength (lbs/100 sqft) | Hd | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics   |
|-----------|--------------|--------------------|----------------------|----------------------|---------------------|-----------------------------|----|----------------|----------------|-----------------|--|
| 320       | 7100         | WATER-BASED<br>MUD | 8.35                 | 9.4                  |                     |                             | 9  |                |                |                 | Mud Summary: MW: 8.35 - 9<br>.4 ppg; pH: 9; Funnel<br>Viscosity: 30 - 100; Filtration:<br>6 - NC |

## Section 6 - Test, Logging, Coring

#### List of production tests including testing procedures, equipment and safety measures:

None planned

#### List of open and cased hole logs run in the well:

CEMENT BOND LOG, GAMMA RAY LOG, MEASUREMENT WHILE DRILLING, MUD LOG/GEOLOGICAL LITHOLOGY LOG, OTHER,

## Other log type(s):

LWD GR: from surface casing to TD; CBL/CCL/GR: ~60deg to 500ft above TOC in production casing

#### Coring operation description for the well:

None Planned

## **Section 7 - Pressure**

Anticipated Bottom Hole Pressure: 4846

Anticipated Surface Pressure: 3205

Anticipated Bottom Hole Temperature(F): 170

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations

Well Name: LA JARA FED 1-2

Well Number: 003H

## **Section 8 - Other Information**

#### Proposed horizontal/directional/multi-lateral plan submission:

La\_Jara\_Fed\_1\_2\_003H\_Horizontal\_and\_Anticollision\_Plan\_20230926151712.pdf

#### Other proposed operations facets description:

Bayless is in the process of unitizing this area. The pending La Jara Unit is identified by Serial Register Number NMNM105770971 comprised of 8,638.58 acres.

#### Other proposed operations facets attachment:

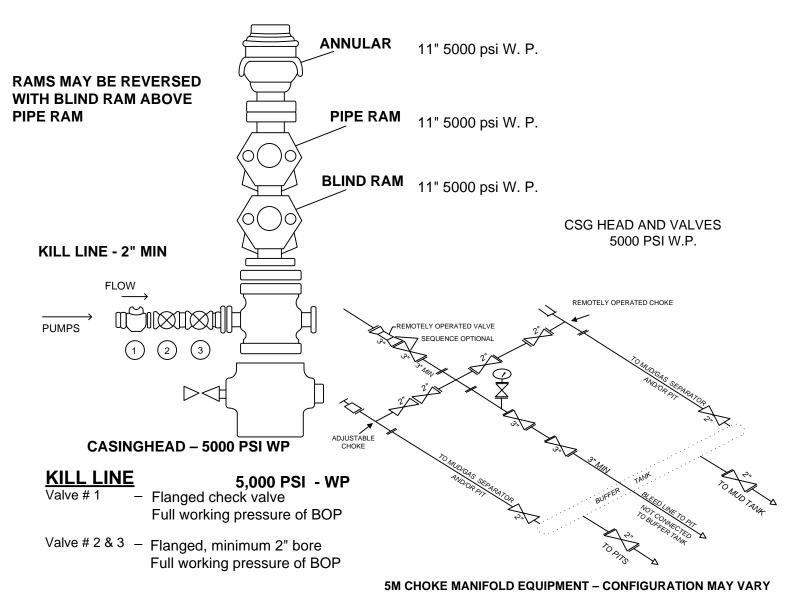
La\_Jara\_Fed\_1\_2\_003H\_Drilling\_Program\_010924\_20240109154118.pdf

#### Other Variance attachment:

# MINIMUM BOP Requirements

## <u>5000 PSI</u>

## FILL LINE ABOVE THE UPPERMOST PREVENTER



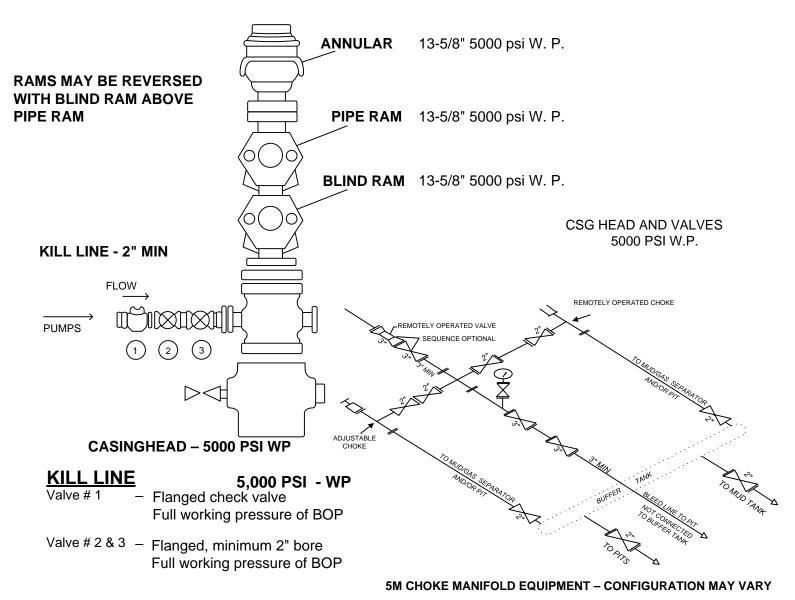
## GENERAL RULES AND RECOMMENDATIONS

All lines to manifold are to be at right angles (90 deg.). No 45 deg. Angles are to be used. Blind flanges are to be used for blanking. All studs and nuts are to be installed on all flanges.

# MINIMUM BOP Requirements

## 5000 PSI

### FILL LINE ABOVE THE UPPERMOST PREVENTER



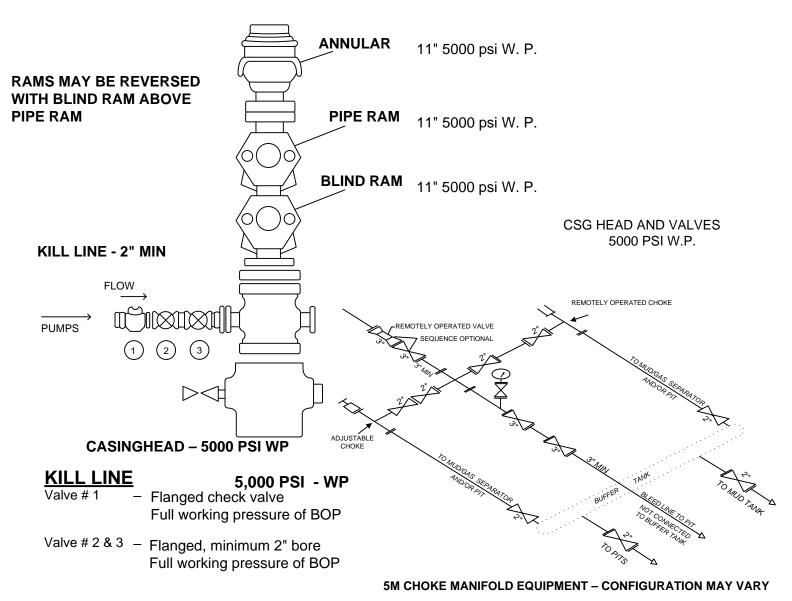
## GENERAL RULES AND RECOMMENDATIONS

All lines to manifold are to be at right angles (90 deg.). No 45 deg. Angles are to be used. Blind flanges are to be used for blanking. All studs and nuts are to be installed on all flanges.

# MINIMUM BOP Requirements

# <u>5000 PSI</u>

## FILL LINE ABOVE THE UPPERMOST PREVENTER



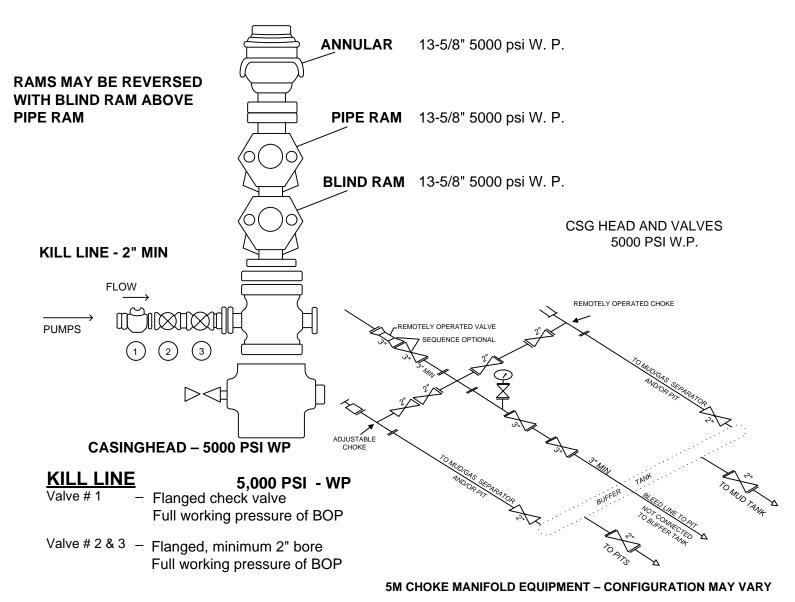
# GENERAL RULES AND RECOMMENDATIONS

All lines to manifold are to be at right angles (90 deg.). No 45 deg. Angles are to be used. Blind flanges are to be used for blanking. All studs and nuts are to be installed on all flanges.

# MINIMUM BOP Requirements

# 5000 PSI

### FILL LINE ABOVE THE UPPERMOST PREVENTER



## GENERAL RULES AND RECOMMENDATIONS

All lines to manifold are to be at right angles (90 deg.). No 45 deg. Angles are to be used. Blind flanges are to be used for blanking. All studs and nuts are to be installed on all flanges.

# **Robert L. Bayless Producer LLC**

# La Jara Fed 1-2 003H

# **Casing and Safety Factor Calculations**

Surface Casing Calculations:

| Surface casing @ 320' MD; 13.375 54.5# J-55 Purpose: Protect shallow fresh water and contain MASP to TD |         |        |
|---|---------|--------|
| Maximum anticipated mud weight at surface casing depth:   | 9.0     | ppg    |
| Maximum anticipated mud weight at intermediate TD:  | 9.4     |        |
| Maximum anticipated mud weight at production TD:  | 13.0    |        |
| TVD at intermediate casing point:   | 6,527   |        |
| TVD at production casing point:   | 7,455   |        |
| Surface setting depth   | 320     |        |
| Intermediate max pore pressure  | 0.46    | psi/ft |
| Production max pore pressure  |         | psi/ft |
| Collapse Design:  |         |        |
| Evacuated 13.375in 54.5# J-55 casing with 9 ppg drilling fluid density:                                 |         |        |
| Load = $9 \times 0.052 \times 320'$   | 150     | psig   |
| Rating  | 1,130   |        |
| S.F.  | 7.5     | p=.9   |
| Burst Design:   |         |        |
| Assume kick with partially evacuated hole and influx gradient of 0.22 psi/ft                            |         |        |
| (Calculations assumes shoe will not break down)   |         |        |
| MASP (Load) = 6527ft * (0.46-0.22)  | 1,554   | nsia   |
| Rating  | 2,730   |        |
| S.F.  | 1.8     | 13     |
| Tensile Design:   |         |        |
| 13.375in 54.5# J-55: Designed on Air Weight * Buoyancy + overpull margin                                |         |        |
| Load = 320'* 54.5# * .86 + 100.000 lbs (OPM)  | 115,033 | lbs    |
|   | 514,000 |        |
| Rating:   | 4.5     |        |
| Rating:<br>S.F.   | 4.5     |        |

\*Surface casing - 13-3/8" notched regular pattern guide shoe. Run one (1) standard centralizer on each of the bottom three (3) joints of surface casing.

# **Robert L. Bayless Producer LLC**

# La Jara Fed 1-2 003H

# **Casing and Safety Factor Calculations**

Production Casing Calculations:

| Maximum Anticipated Mu   | ud Weight at Total Depth   | 13.0 ppg   |                      |
|--|--|--|----------------------|
|  | uivalent Formation Pressure at Total Depth                                     | 12.5 ppg   |                      |
| TVD  |  | 7,455  |                      |
| Hanger Depth   |  | N/A  |                      |
| Maximum Surface Treatin  | ng Pressure for Fracture Operations  | 11,491   |                      |
| Assumed Gas Gradient fo  | or Production Operations   | .115 psi/ft  |                      |
| Collapse Design:   |  |  |                      |
| Designed on evacuated ca   | asing properties with 13 ppg drilling fluid density with no inte               | ernal back-up  |                      |
| Load = 13ppg * 0.052 * 74  | 455'   | 5,040  | psig                 |
| Rating   |  | 11,080   |                      |
| S.F.   |  | 2.2  |                      |
| Burst Design:  |  |  |                      |
|  |  |  |                      |
| Design Consideration #1:   | Maximum Surface Shut-In Pressure   |  |                      |
|  |  | 3,982  | psig                 |
| MASSIP (Load) = 7455' *  |  | 3,982<br>12,640  |                      |
| Design Consideration #1:<br>MASSIP (Load) = 7455' *<br>Rating<br>S.F.  |  |  | psig                 |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.  |  | 12,640<br>3.2  | psig                 |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.<br>Design Consideration #2:  | (0.65-0.115) psi/ft  | 12,640<br>3.2<br>ons<br>11,491                             | psig                 |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.  | (0.65-0.115) psi/ft  | 12,640<br>3.2<br>ons                                       | psig                 |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.<br>Design Consideration #2:<br>MATP:<br>Rating   | (0.65-0.115) psi/ft  | 12,640<br>3.2<br>ons<br>11,491                             | psig<br>psig         |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.<br>Design Consideration #2:<br>MATP:<br>Rating<br>S.F.<br>Tensile Design:  | (0.65-0.115) psi/ft<br>Maximum Surface Treating Pressure During Frac Operation | 12,640<br>3.2<br>ons<br>11,491<br>12,640                   | psig<br>psig         |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.<br><u>Design Consideration #2:</u><br>MATP:<br>Rating<br>S.F.<br>Tensile Design:<br>Designed on Air Weight *                                       | Maximum Surface Treating Pressure During Frac Operatio                         | 12,640<br>3.2<br>ons<br>11,491<br>12,640                   | psig<br>psig         |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.<br><u>Design Consideration #2:</u><br>MATP:<br>Rating<br>S.F.<br>Tensile Design:<br>Designed on Air Weight *                                       | (0.65-0.115) psi/ft<br>Maximum Surface Treating Pressure During Frac Operation | 12,640<br>3.2<br>0ns<br>11,491<br>12,640<br>1.1<br>222,560 | psig<br>psig<br>psig |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.<br>Design Consideration #2:<br>MATP:<br>Rating<br>S.F.<br>Tensile Design:<br>Designed on Air Weight *  | Maximum Surface Treating Pressure During Frac Operatio                         | 12,640<br>3.2<br>ons<br>11,491<br>12,640<br>1.1            | psig<br>psig<br>psig |
| MASSIP (Load) = 7455' *<br>Rating<br>S.F.<br><u>Design Consideration #2:</u><br>MATP:<br>Rating<br>S.F.<br><u>Tensile Design:</u><br>Designed on Air Weight *<br>Load = (7455ft * 20 lb/ft * | Maximum Surface Treating Pressure During Frac Operatio                         | 12,640<br>3.2<br>0ns<br>11,491<br>12,640<br>1.1<br>222,560 | psig<br>psig<br>psig |

\*Production casing - Run 5-1/2" casing with cement nose guide float shoe, 5-1/2" full or pup joint as necessary, landing collar, 5-1/2" full or pup joints as necessary, at least one (1) RSI (rapid stage initiator or sliding sleeve) positioned inside the applicable production area. Centralizer program will be determined by wellbore conditions. Production casing to be pressure tested during completion operations with frack stack installed.

# **Robert L. Bayless Producer LLC**

# La Jara Fed 1-2 003H

# **Casing and Safety Factor Calculations**

Intermediate Casing Calculations:

| Maximum Anticipated Mud We   | ight at Total Depth                                | 9.40 ppg                |                    |
|--|--|-------------------------|--------------------|
|  | nt Fm Pressure at Production Total Depth           | 12.5 ppg                |                    |
| Maximum Surface Treating Pre   |  | 11,491                  |                    |
| Assumed Gas Gradient for Pro   | duction Operations                                 | .115 psi/ft             |                    |
| Collapse Design:   |  |                         |                    |
| Designed on evacuated casing   | properties with 9.4 ppg drilling fluid density wit | h no internal back-up   |                    |
| Load = 9.4 * 0.052 * 6524'   |  | 3,189                   | psig               |
| Rating   |  | 3,810                   | psig               |
| S.F.   |  | 1.19                    |                    |
| Burst Design:  |  |                         |                    |
|  |  |                         |                    |
| Assume kick with partially evac  | cuated hole and influx gradient of 0.22 psi/ft     |                         |                    |
|  |  |                         |                    |
| (Calculations assumes shoe wi  | II not break down)                                 | 3,199                   | psig               |
| Assume kick with partially evac<br>(Calculations assumes shoe wi<br>MASP (Load) = 7455ft * (0.65-0<br>Rating   | II not break down)                                 | 3,199<br>6,330          |                    |
| (Calculations assumes shoe wi<br>MASP (Load) = 7455ft * (0.65-0  | II not break down)                                 |                         | psig               |
| (Calculations assumes shoe wi<br>MASP (Load) = 7455ft * (0.65-0<br>Rating  | II not break down)                                 | 6,330                   | psig               |
| (Calculations assumes shoe wi<br>MASP (Load) = 7455ft * (0.65-0<br>Rating<br>S.F.  | II not break down)<br>0.22) psi/ft                 | 6,330                   | psig               |
| (Calculations assumes shoe wi<br>MASP (Load) = 7455ft * (0.65-0<br>Rating<br>S.F.<br>Tensile Design:<br>Designed on Air Weight * Buoy                                      | II not break down)<br>0.22) psi/ft<br>ancy         | 6,330                   | psig               |
| (Calculations assumes shoe wi<br>MASP (Load) = 7455ft * (0.65-0<br>Rating<br>S.F.<br>Tensile Design:   | II not break down)<br>0.22) psi/ft<br>ancy         | 6,330<br>2.0            | psig<br>Ibs        |
| (Calculations assumes shoe wi<br>MASP (Load) = 7455ft * (0.65-0<br>Rating<br>S.F.<br>Tensile Design:<br>Designed on Air Weight * Buoy<br>Load = (7100ft *43.5 lb/ft * 0.86 | II not break down)<br>0.22) psi/ft<br>ancy         | 6,330<br>2.0<br>365,611 | psig<br>Ibs<br>Ibs |

\*Intermediate casing - 9-5/8" cement nose guide shoe with a self-fill insert float. Place float collar one (1) joint above the shoe. Install one (1) centralizer on each of the bottom three (3) joints and one standard centralizer every three (3) joints to 2500ft. Run one (1) centralizer at 2500ft, 2300ft, 2000ft, 1500ft, and 1000ft. Optional DV tools two (2) will be strategically placed above loss circulation zones anticipated in the Mesaverde and Fruitland Coal. Optional use of cancelation plugs for DV tools may be used if losses while cementing are not encountered.

# **Robert L Bayless, Producer LLC**

Rio Arriba, NM (NAD83) La Jara Fed 1-2 La Jara Fed 1-2 #3H

OH

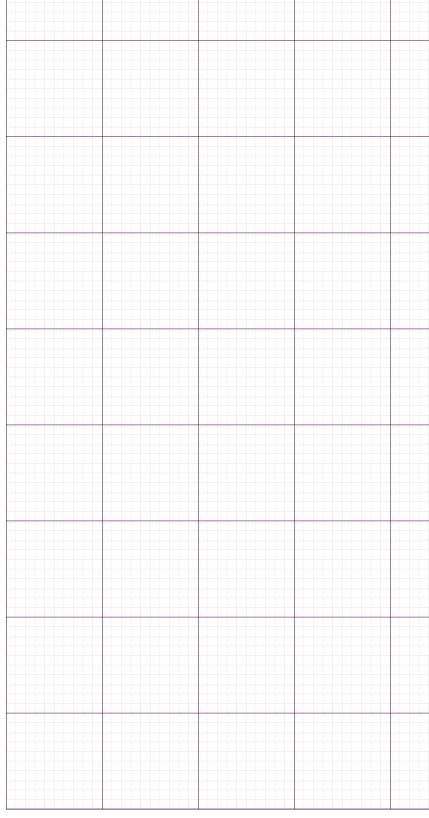
Plan: Plan #1

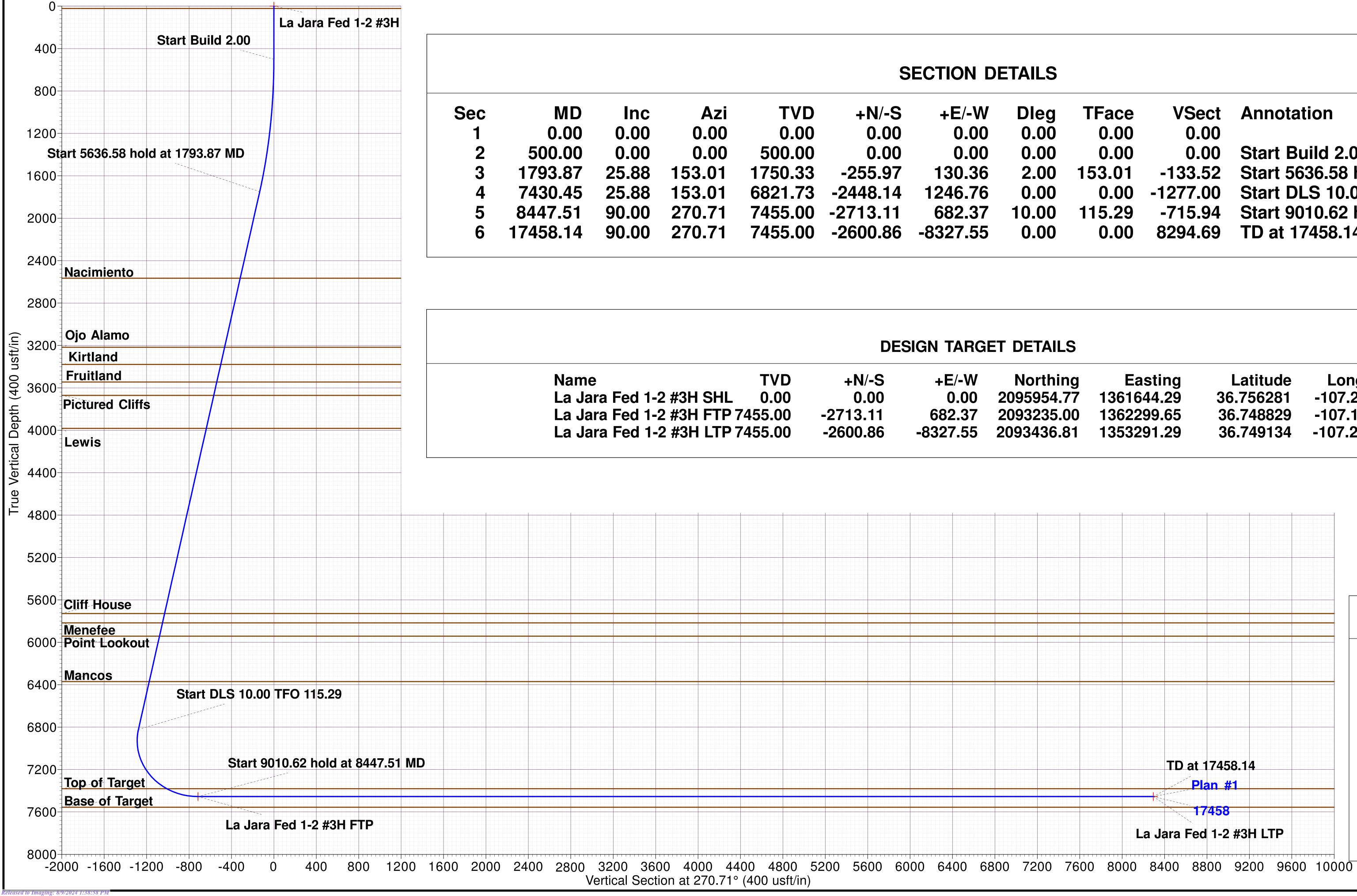
# **Standard Planning Report**

04 April, 2023



# -11200-10800-10400-10000 -9600





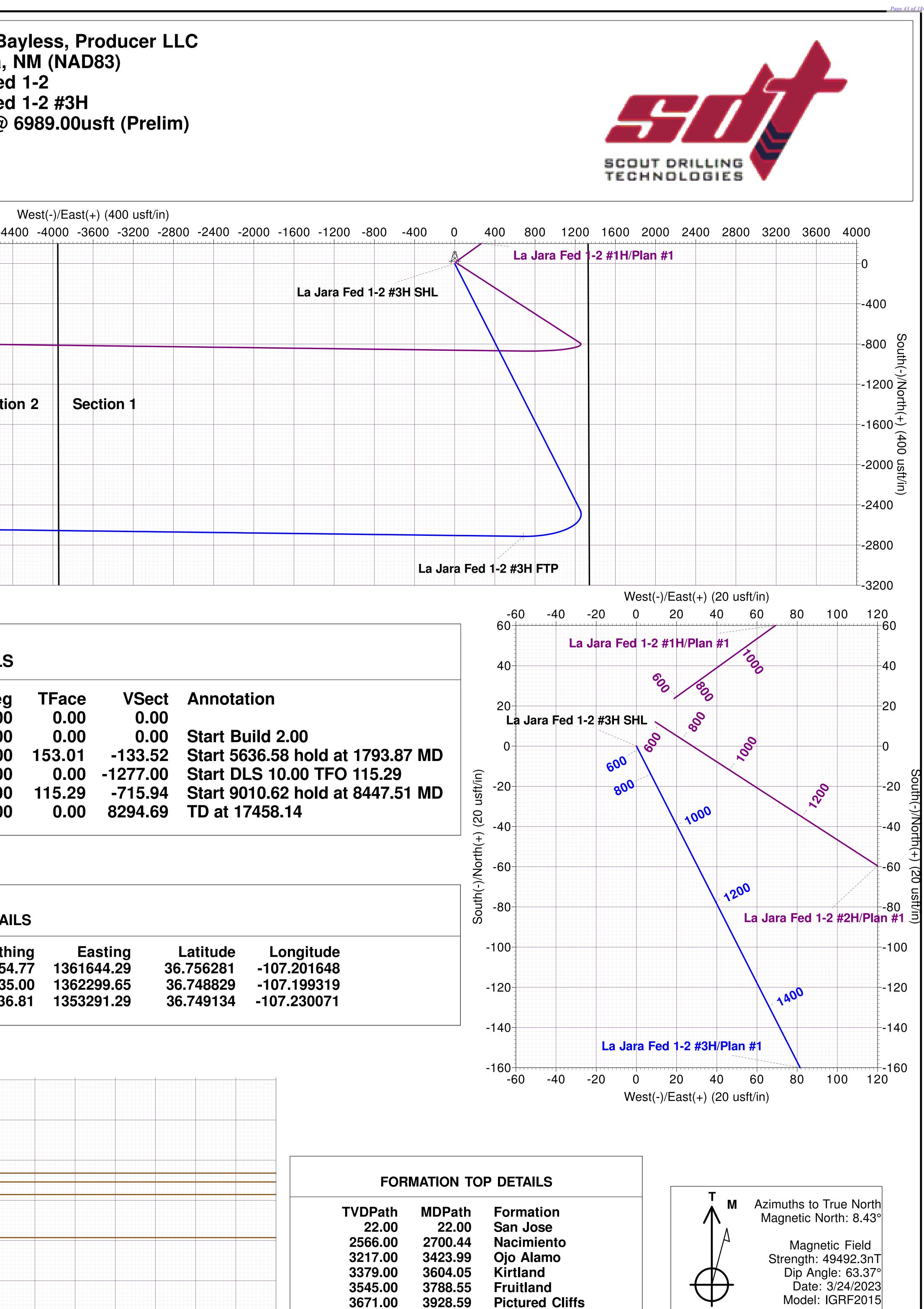
|       | <b>Company:</b>   | Robert L Ba      |
|-------|-------------------|------------------|
|       | County:           | Rio Arriba,      |
|       | Site:             | La Jara Feo      |
|       | Well:             | La Jara Feo      |
| Depth | <b>Reference:</b> | <b>6967+22</b> @ |
| •     |                   | Prelim           |
|       |                   | Plan #1          |
|       |                   | Prelim           |
|       |                   |                  |

| -9200 | -8800 | -8400 | -8000    |         |         | -6800  | -6400 | -6000 | -5600 | -5200 | -4800 | -44  |
|-------|-------|-------|----------|---------|---------|--------|-------|-------|-------|-------|-------|------|
|       |       |       |          |         |         |        |       |       |       |       |       |      |
|       |       | 745   | 5        |         |         |        |       |       |       |       |       |      |
|       |       | L     | a Jara I | Fed 1-2 | 2 #2H/P | lan #1 |       |       |       |       |       |      |
|       |       |       |          |         |         |        |       |       |       |       | Se    | ctic |
|       |       | La    | a Jara F | ed 1-2  | #3H/PI  | an #1  |       |       |       |       |       |      |
|       |       | 745   |          |         |         |        |       |       |       |       |       |      |
|       |       |       | La Jara  | Fed 1   | -2 #3H  | LTP    |       |       |       |       |       |      |
|       |       |       |          |         |         |        |       |       |       |       |       |      |

| Dleg  | +E/-W    | +N/-S    | TVD     | Azi    | Inc   | MD      |
|-------|----------|----------|---------|--------|-------|---------|
| 0.00  | 0.00     | 0.00     | 0.00    | 0.00   | 0.00  | 0.00    |
| 0.00  | 0.00     | 0.00     | 500.00  | 0.00   | 0.00  | 500.00  |
| 2.00  | 130.36   | -255.97  | 1750.33 | 153.01 | 25.88 | 1793.87 |
| 0.00  | 1246.76  | -2448.14 | 6821.73 | 153.01 | 25.88 | 7430.45 |
| 10.00 | 682.37   | -2713.11 | 7455.00 | 270.71 | 90.00 | 8447.51 |
| 0.00  | -8327.55 | -2600.86 | 7455.00 | 270.71 | 90.00 | 7458.14 |
|       |          |          |         |        |       |         |

| Name                    | TVD     | +N/-S    | +E/-W    | North   |
|-------------------------|---------|----------|----------|---------|
| La Jara Fed 1-2 #3H SHL | 0.00    | 0.00     | 0.00     | 2095954 |
| La Jara Fed 1-2 #3H FTP | 7455.00 | -2713.11 | 682.37   | 2093235 |
| La Jara Fed 1-2 #3H LTP | 7455.00 | -2600.86 | -8327.55 | 2093436 |

# , NM (NAD83) d 1-2 d 1-2 #3H 6989.00usft (Prelim)



3928.59 3671.00 **Pictured Cliffs** TD at 17458.14 3982.00 4274.25 Lewis 5729.00 Cliff House 6215.95 Plan #1 6313.75 5817.00 Menefee 17458 6452.68 5942.00

La Jara Fed 1-2 #3H LTP

Point Lookout Mancos

6928.38

8140.05

6370.00

7381.00

**TOTAL CORRECTION: 8.43°** 

Top of Target

| From:       Lat/Long       Easting:       1,361,663.27       ust       Longitude:       -107.20         Position Uncertainty:       0.00       ust       Slot Radius:       13.316 **       Longitude:       -107.20         Well       La Jara Fed 1-2 #3H       **       2,095,595,76       ust       Longitude:       -107.20         Position Uncertainty       0.00 ust       Northing:       2,095,595,76       ust       Longitude:       -107.20         Position Uncertainty       0.00 ust       Northing:       2,095,595,76       ust       Longitude:       -107.20         Position Uncertainty       0.00 ust       Northing:       2,095,595,76       ust       Longitude:       -107.20         Position Uncertainty       0.00 ust       Wellhead Elevation:       ust       Ground Level:       6,967.00         Grid Convergence:       -0.57 *       3/24/2023       8.43       63.37       49.492.27171422         Design       Plan #1       Audit Notes:       Plan #1       0.00       0.00       0.00       270.71         Version:       Plan #1       0.00       0.00       0.00       0.00       270.71       0.00         Plan Survey Tool Projet       Depth From (TVD)       +N/S       +E/AV  | Database:<br>Company:<br>Project:<br>Site:<br>Well:<br>Wellbore:<br>Design: | Rober<br>Rio Ar<br>La Jar | 5000 Multi Use<br>t L Bayless, Pr<br>riba, NM (NAD<br>a Fed 1-2<br>a Fed 1-2 #3H | oducer LLC<br>83)    |                        | TVD Refer<br>MD Refere<br>North Ref | ence:         |              | 0             | 89.00usft (Prelir<br>89.00usft (Prelir | ,   |
|--|---|---------------------------|--|----------------------|------------------------|-------------------------------------|---------------|--------------|---------------|--|---|
| North American Datum 1983           Map Zone:         North American Datum 1983         Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"           Site         La Jana Fed 1-2         Northing:         2.095.978.24 usft         Lattude:         Site 7         Site 7           Site Point:         Lattude:         Northing:         2.095.978.24 usft         Lattude:         Site 7         Site 7           Point:         Lattude:         Site Realing:         1.361.663.27 usft         Lattude:         Site 7         Site 7           Well         La Jana Fed 1-2 #3H         Easting:         1.381.644.29 usft         Lattude:         Site 7           Well Position         +M/S         0.00 usft         Beating:         1.381.644.29 usft         Latinger:         -107.20           Position Uncertainty         0.00 usft         Beating:         1.381.644.29 usft         Latinger:         -107.20           Mellbore         OH         Sample Date         Declination         Dip Angle         Field Strength         -107.20           Mellbore         OH         Sample Date         Declination         Dip Angle         Field Strength         -107.20           Variable Scion:         Users         Plan         Lating in A <th< th=""><th>Project</th><th>Rio Arri</th><th>iba, NM (NAD8</th><th>33)</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th<>  | Project   | Rio Arri                  | iba, NM (NAD8  | 33)                  |                        |                                     |               |              |               |  |   |
| Site Position Incertainty:         LatLong         Northing:<br>Easting:         2,005,078.24 usft<br>1,361,663.27 usft<br>1,361,663.27 usft         Latitude:<br>Longitude:         36.75<br>-107.20           Position Uncertainty:         0.00 usft         Northing:         2,205,097.6.24 usft<br>1,361,663.27 usft         Latitude:         -107.20           Weil         La Jara Fed 1-2 #3H         2005,095,76.04 usft         Latitude:         -36.72           Weil Position Uncertainty         0.00 usft         Northing:         2,205,095,76.04 usft         Latitude:         -36.72           Position Uncertainty         0.00 usft         Northing:         2,005,095,76.04 usft         Latitude:         -36.72           Position Uncertainty         0.00 usft         Weilhead Elevation:         usft         Ground Level:         6,967.00           Grid Convergence:         -0.57 *         3/24/2023         8.43         63.37         49,492.27171422           Design         Plan #1         Audit Notes:         Plan #1         0.00         0.00         0.00         270.71           Vertical Section:         Plan #1 (H/2023         Plan #1 (usft)         Doelin From (TVD)         #LAWS         HE/WS         Plan #1           Number HIRGM OWSG RevS OWSG MWD + HRGM         OWSG MWD + HRGM         OWSG MWD + HRGM         Plan #1  | Geo Datum:  | North An                  | nerican Datum  |                      |                        | System Dat                          | tum:          | М            | ean Sea Level |  |   |
| Prom:         Lat/Long         Easting:         1,361,663.27         LongHude:         -107.20           Position Uncertainty:         0.00         usft         Stot Radius:         133/16 *         LongHude:         -107.20           Weil         La Jara Fed 1-2 #3H         *         2.095,594.76 usft         LongHude:         -367.7           Weil         Weil *         0.00 usft         Northing:         2.095,594.76 usft         LongHude:         -07.20           Position Uncertainty         0.00 usft         Basting:         1,361,644.29 usft         LongHude:         -07.20           Position Uncertainty         0.00 usft         Weilheed Elevation:         usft         Ground Level:         6,967.00           Grid Convergence:         -0.57 *          Stot Radius:         107.20         63.37         49,492.27171422           Weilhore         OH           10.00         10.07         (nt)         (nt)         (nt)           Version:         Plans#1          New Plans:         PLAN         Te On Depth:         0.00         270.71           Version:         Version:         Oute 4/4/2023         Version:         0.00         270.71         0.00         10.00         17,458.14   | Site  | La Jara                   | Fed 1-2  |                      |                        |                                     |               |              |               |  |   |
| Well Position         +H/-S<br>+E/-W         0.00 usft<br>0.00 usft         Northing:<br>Easting:         2.095,954.76 usft<br>1.361,644.29 usft         Latitude:<br>Longitude:         367.76<br>-107.20<br>Conjuncte:           Position Uncertainty<br>Grid Convergence:         0.00 usft         Wellbace         usft         Cangitude:         -107.20<br>Conjuncte:           Wellbore         0.01 usft         Wellbace         usft         Ground Lovel:         6.967.00           Wellbore         0.01         Sample Date         Declination<br>(')         Dip Angle<br>(')         Field Strength<br>(')         6.967.00           Megnetics         Model Name         Sample Date         Declination<br>(')         Dip Angle<br>(')         6.93.37         49.492.27171422           Design         Plan #1         Image: Plan #1           Audit Notes:         Vertical Section:         Plan #1         Image: Plan #1         Image   | From:   |                           | 0  | Eastin               | g:                     | 1,361,                              | 663.27 usft   |              |               |  | 36.756346<br>-107.201584                  |
| +E/-W         0.00 ust<br>0.00 ust<br>0.00 ust<br>Grid Convergence:         1,361,644.29 ust<br>0.00 ust<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.   | Well  | La Jara                   | Fed 1-2 #3H  |                      |                        |                                     |               |              |               |  |   |
| Magnetics         Nodel Name         Sample Date         Declination (*)         Dip (*)         Dip (*)         Ideal Strength (rot)           1GRF2015         3/24/2023         8.43         63.37         49.492.27171422           Design         Plan #1         1000         19 and 1000         0.00         0.00         0.00         0.00         0.00           Version:         '         Plan #1         Plan *1         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         270.71         0.00         0.00         0.00         0.00         270.71         0.00         0.00         0.00         0.00         270.71         0.00         0.00         0.00         0.00         0.00         270.71         0.00 <td>Position Uncertain</td> <td>+E/-W</td> <td>0.0</td> <td>00 usft Ea</td> <td>sting:</td> <td>ion:</td> <td></td> <td>usft Lo</td> <td>ngitude:</td> <td></td> <td>36.756281<br/>-107.201648<br/>6,967.00 usft</td>  | Position Uncertain  | +E/-W                     | 0.0  | 00 usft Ea           | sting:                 | ion:                                |               | usft Lo      | ngitude:      |  | 36.756281<br>-107.201648<br>6,967.00 usft |
| (°)       (nT)         IGRF 2015       3/24/2023       8.43       63.37       49,492.27171422         Design       Plan #1       Image: Plan Barget B  | Wellbore  | ОН                        |  |                      |                        |                                     |               |              |               |  |   |
| Design         Plan #1           Audit Notes:<br>Version:         Phase:         PLAN         Tie On Depth:         0.00           Vertical Section:         Depth From (TVD)<br>(usft)         +N/-S<br>(usft)         +E/-W<br>(usft)         Direction<br>(")           Plan Survey Tool Program         Date         4/4/2023         Passe:         Fool Name         Remarks           1         0.00         17.458.14         Plan #1 (OH)         MWD+HRGM OWSG Rev5<br>OWSG MWD + HRGM         Survey         Vertical         Popth From ('')         Vertical         Dogleg MWD + HRGM         Build Rate         Turn<br>Rate         TFO         Target           Plan Sections         Vertical (usft)         Vertical Measured (usft)         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00           0.00   | Magnetics   | Мо                        |  |                      |                        |                                     |               |              | °)            | (n                                     | T)  |
| Audit Notes:<br>Version:         Phase:         PLAN         Tie On Depth:         0.00           Vertical Section:         Depth From (TVD)<br>(usft)         +N/-S<br>(usft)         +E/-W<br>(usft)         Direction<br>(°)           Plan Survey Tool Program         Date         4/4/2023           Depth From<br>(usft)         Depth To<br>(usft)         Tool Name         Remarks           1         0.00         17,458.14         Plan #1 (OH)         MWD+HRGM OWSG Rev5<br>OWSG MWD + HRGM           Plan Sections         Vertical<br>(usft)         Vertical<br>Depth<br>(usft)         Vertical<br>Depth<br>(usft)         Vertical<br>(usft)         HV-S<br>(usft)         Dogleg<br>(usft)         Build<br>Rate<br>(°/100usft)         Turn<br>Rate<br>(°/100usft)         TFO<br>(°/100usft)         Target           0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00   |   |                           | IGRF2015   |                      | 3/24/2023              |                                     | 8.43          |              | 63.37         | 49,4                                   | 92.27171422                               |
| Version:       Phase:       PLAN       Tie On Depth:       0.00         Vertical Section:       Depth From (TVD)<br>(usft)       +N/-S<br>(usft)       +E/-W<br>(usft)       Direction<br>(usft)       Direction         0       0.00       0.00       0.00       0.00       270.71         Plan Survey Tool Program       Date 4/4/2023         Depth From<br>(usft)       Depth To<br>(usft)       Survey (Wellbore)       Tool Name       Remarks         1       0.00       17.458.14       Plan #1 (OH)       MWD+HRGM OWSG Rev5<br>OWSG MWD + HRGM       Survey (Wellbore)       Tool Name       Trop (Y100usft)       Trop (Y100usft)       Trop (Y100usft)       Trop (Y100usft)       Trop (Y100usft)       Target         Plan Sections       Inclination<br>(Y)       Azimuth<br>(Y)       Vertical<br>Depth (usft)       +N/-S<br>(usft)       Lefty       Dogleg<br>Rate<br>(Y100usft)       Build<br>Rate<br>(Y100usft)       Trop<br>(Y100usft)       Trop<br>(Y)       Target         0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00   | Design  | Plan #1                   | I  |                      |                        |                                     |               |              |               |  |   |
| Image: constraint of the series of |   |                           |  | Phase                | 9: F                   | PLAN                                | Tie           | On Depth:    |               | 0.00                                   |   |
| Depth From<br>(usft)Depth To<br>(usft)Survey (Wellbore)Tool NameRemarks10.0017,458.14Plan #1 (OH) $MWD+HRGM OWSG Rev5$<br>OWSG MWD + HRGM $MWD+HRGM OWSG Rev5$<br>OWSG MWD + HRGMPlan SectionsVertical<br>Depth<br>(usft)Vertical<br>OutputDepth<br>(usft)Dogleg<br>Rate<br>(°/100usft)Build<br>Rate<br>(°/100usft)Turn<br>Rate<br>(°/100usft)TFO<br>(°)Target0.00   | Vertical Section:   |                           | [  | (usft)               | ′D)                    | (usft)                              | (u            | sft)         |               | (°)                                    |   |
| Measured<br>Depth<br>(usft)Inclination<br>(°)Azimuth<br>Azimuth<br>(°)Vertical<br>Depth<br>(usft)+N/-S<br>(usft)Dogleg<br>Rate<br>(°/100usft)Build<br>Rate<br>(°/100usft)Turn<br>Rate<br>(°/100usft)TFO<br>(°)Target0.000.000.000.000.000.000.000.000.000.00500.000.000.000.000.000.000.000.000.000.00   | Depth From<br>(usft)  | u Depti<br>(us            | h To<br>ft) Survey   | (Wellbore)           |                        | MWD+HRGM                            |               | Remarks      |               |  |   |
| Depth<br>(usft)         Inclination<br>(°)         Azimuth<br>(°)         Depth<br>(usft)         +N/-S<br>(usft)         +E/-W<br>(usft)         Rate<br>(°/100usft)         Rate<br>(°/100usft)         Rate<br>(°/100usft)         TFO<br>(°)         Target           0.00 <td< td=""><td>Plan Sections</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>  | Plan Sections   |                           |  |                      |                        |                                     |               |              |               |  |   |
| 500.00 0.00 500.00 0.00 0.00 0.00 0.00   | Depth In  |                           |  | Depth                |                        |                                     | Rate          | Rate         | Rate          |  | Target                                    |
| 1,193.01 23.00 133.01 1,130.33 -233.91 130.30 2.00 2.00 0.00 153.01  |   |                           |  |                      |                        |                                     |               |              | 0.00          |  |   |
| 7,430.45         25.88         153.01         6,821.73         -2,448.14         1,246.76         0.00         0.00         0.00         0.00           8,447.52         90.00         270.71         7,455.00         -2,713.11         682.37         10.00         6.30         11.57         115.29         La Jara Fed 1-2 #           17,458.14         90.00         270.71         7,455.00         -2,600.86         -8,327.55         0.00         0.00         0.00         La Jara Fed 1-2 #   | 7,430.45<br>8,447.52  | 25.88<br>90.00            | 153.01<br>270.71   | 6,821.73<br>7,455.00 | -2,448.14<br>-2,713.11 | 1,246.76<br>682.37                  | 0.00<br>10.00 | 0.00<br>6.30 | 0.00<br>11.57 | 0.00<br>115.29 I                       |   |

4/4/2023 6:20:44PM

| Database: | EDM 5000 Multi User Db         | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|-----------|--------------------------------|------------------------------|--------------------------------|
| Company:  | Robert L Bayless, Producer LLC | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Project:  | Rio Arriba, NM (NAD83)         | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site:     | La Jara Fed 1-2                | North Reference:             | True                           |
| Well:     | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Wellbore: | ОН                             |                              |                                |
| Design:   | Plan #1                        |                              |                                |

Planned Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°)   | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft)    | +E/-W<br>(usft)  | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|------------------|-----------------------------|--------------------|------------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 0.00                        | 0.00               | 0.00             | 0.00                        | 0.00               | 0.00             | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 22.00                       | 0.00               | 0.00             | 22.00                       | 0.00               | 0.00             | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| San Jose                    |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 100.00                      | 0.00               | 0.00             | 100.00                      | 0.00               | 0.00             | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 200.00                      | 0.00               | 0.00             | 200.00                      | 0.00               | 0.00             | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 300.00                      | 0.00               | 0.00             | 300.00                      | 0.00               | 0.00             | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 400.00                      | 0.00               | 0.00             | 400.00                      | 0.00               | 0.00             | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 500.00                      | 0.00               | 0.00             | 500.00                      | 0.00               | 0.00             | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| Start Build 2               |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 600.00                      | 2.00               | 153.01           | 599.98                      | -1.56              | 0.79             | -0.81                         | 2.00                          | 2.00                         | 0.00                        |
| 700.00<br>800.00            | 4.00<br>6.00       | 153.01<br>153.01 | 699.84<br>799.45            | -6.22<br>-13.98    | 3.17<br>7.12     | -3.24<br>-7.29                | 2.00<br>2.00                  | 2.00<br>2.00                 | 0.00<br>0.00                |
|                             |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 900.00                      | 8.00               | 153.01           | 898.70                      | -24.84             | 12.65            | -12.96                        | 2.00                          | 2.00                         | 0.00                        |
| 1,000.00                    | 10.00              | 153.01           | 997.47                      | -38.78             | 19.75            | -20.23                        | 2.00                          | 2.00                         | 0.00                        |
| 1,100.00                    | 12.00              | 153.01           | 1,095.62                    | -55.79             | 28.41            | -29.10                        | 2.00                          | 2.00                         | 0.00                        |
| 1,200.00<br>1,300.00        | 14.00<br>16.00     | 153.01<br>153.01 | 1,193.06<br>1,289.64        | -75.83<br>-98.89   | 38.62<br>50.36   | -39.55<br>-51.58              | 2.00<br>2.00                  | 2.00<br>2.00                 | 0.00<br>0.00                |
|                             |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 1,400.00                    | 18.00              | 153.01           | 1,385.27                    | -124.94            | 63.63            | -65.17                        | 2.00                          | 2.00                         | 0.00                        |
| 1,500.00                    | 20.00              | 153.01           | 1,479.82                    | -153.95            | 78.40            | -80.30                        | 2.00                          | 2.00                         | 0.00                        |
| 1,600.00<br>1,700.00        | 22.00<br>24.00     | 153.01<br>153.01 | 1,573.17<br>1,665.21        | -185.89<br>-220.70 | 94.67<br>112.40  | -96.96<br>-115.12             | 2.00<br>2.00                  | 2.00<br>2.00                 | 0.00<br>0.00                |
| 1,793.87                    | 24.00<br>25.88     | 153.01           | 1,005.21                    | -220.70<br>-255.97 | 130.36           | -113.12                       | 2.00                          | 2.00                         | 0.00                        |
| ,                           | 3 hold at 1793.87  |                  | 1,100.00                    | 200.07             | 100.00           | 100.02                        | 2.00                          | 2.00                         | 0.00                        |
|                             |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 1,800.00                    | 25.88              | 153.01           | 1,755.84                    | -258.35            | 131.57           | -134.76                       | 0.00                          | 0.00                         | 0.00                        |
| 1,900.00<br>2,000.00        | 25.88<br>25.88     | 153.01<br>153.01 | 1,845.82<br>1,935.79        | -297.25<br>-336.14 | 151.38<br>171.18 | -155.05<br>-175.34            | 0.00<br>0.00                  | 0.00<br>0.00                 | 0.00<br>0.00                |
| 2,000.00                    | 25.88              | 153.01           | 2,025.76                    | -375.03            | 190.99           | -195.62                       | 0.00                          | 0.00                         | 0.00                        |
| 2,200.00                    | 25.88              | 153.01           | 2,115.74                    | -413.92            | 210.80           | -215.91                       | 0.00                          | 0.00                         | 0.00                        |
| 2,300.00                    | 25.88              | 153.01           | 2,205.71                    | -452.81            | 230.60           | -236.20                       | 0.00                          | 0.00                         | 0.00                        |
| 2,300.00                    | 25.88              | 153.01           | 2,205.71<br>2,295.68        | -452.61<br>-491.71 | 250.60           | -236.20<br>-256.48            | 0.00                          | 0.00                         | 0.00                        |
| 2,500.00                    | 25.88              | 153.01           | 2,385.65                    | -530.60            | 270.22           | -276.77                       | 0.00                          | 0.00                         | 0.00                        |
| 2,600.00                    | 25.88              | 153.01           | 2,475.63                    | -569.49            | 290.02           | -297.06                       | 0.00                          | 0.00                         | 0.00                        |
| 2,700.00                    | 25.88              | 153.01           | 2,565.60                    | -608.38            | 309.83           | -317.34                       | 0.00                          | 0.00                         | 0.00                        |
| 2,700.44                    | 25.88              | 153.01           | 2,566.00                    | -608.55            | 309.92           | -317.43                       | 0.00                          | 0.00                         | 0.00                        |
| Nacimiento                  | 20.00              | 100.01           | 2,000.00                    | 000.00             | 000.02           | 011.10                        | 0.00                          | 0.00                         | 0.00                        |
| 2,800.00                    | 25.88              | 153.01           | 2,655.57                    | -647.27            | 329.63           | -337.63                       | 0.00                          | 0.00                         | 0.00                        |
| 2,900.00                    | 25.88              | 153.01           | 2,745.55                    | -686.17            | 349.44           | -357.92                       | 0.00                          | 0.00                         | 0.00                        |
| 3,000.00                    | 25.88              | 153.01           | 2,835.52                    | -725.06            | 369.25           | -378.20                       | 0.00                          | 0.00                         | 0.00                        |
| 3,100.00                    | 25.88              | 153.01           | 2,925.49                    | -763.95            | 389.05           | -398.49                       | 0.00                          | 0.00                         | 0.00                        |
| 3,200.00                    | 25.88              | 153.01           | 3,015.47                    | -802.84            | 408.86           | -418.78                       | 0.00                          | 0.00                         | 0.00                        |
| 3,300.00                    | 25.88              | 153.01           | 3,105.44                    | -841.73            | 428.67           | -439.06                       | 0.00                          | 0.00                         | 0.00                        |
| 3,400.00                    | 25.88              | 153.01           | 3,195.41                    | -880.62            | 448.47           | -459.35                       | 0.00                          | 0.00                         | 0.00                        |
| 3,424.00                    | 25.88              | 153.01           | 3,217.00                    | -889.96            | 453.22           | -464.22                       | 0.00                          | 0.00                         | 0.00                        |
| Ojo Alamo                   |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 3,500.00                    | 25.88              | 153.01           | 3,285.38                    | -919.52            | 468.28           | -479.64                       | 0.00                          | 0.00                         | 0.00                        |
| 3,600.00                    | 25.88              | 153.01           | 3,375.36                    | -958.41            | 488.08           | -499.92                       | 0.00                          | 0.00                         | 0.00                        |
| 3,604.05                    | 25.88              | 153.01           | 3,379.00                    | -959.98            | 488.89           | -500.74                       | 0.00                          | 0.00                         | 0.00                        |
| Kirtland                    |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 3,700.00                    | 25.88              | 153.01           | 3,465.33                    | -997.30            | 507.89           | -520.21                       | 0.00                          | 0.00                         | 0.00                        |
| 3,788.55                    | 25.88              | 153.01           | 3,545.00                    | -1,031.74          | 525.43           | -538.17                       | 0.00                          | 0.00                         | 0.00                        |
| Fruitland                   |                    |                  |                             |                    |                  |                               |                               |                              |                             |
| 3,800.00                    | 25.88              | 153.01           | 3,555.30                    | -1,036.19          | 527.70           | -540.50                       | 0.00                          | 0.00                         | 0.00                        |
| 3,900.00                    | 25.88              | 153.01           | 3,645.28                    | -1,075.08          | 547.50           | -560.78                       | 0.00                          | 0.00                         | 0.00                        |

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COMPASS 5000.17 Build 101

| Database:            | EDM 5000 Multi User Db<br>Robert L Bayless, Producer LLC | Local Co-ordinate Reference:    | Well La Jara Fed 1-2 #3H   |
|----------------------|--|---------------------------------|--|
| Company:<br>Project: | Rio Arriba, NM (NAD83)                                   | TVD Reference:<br>MD Reference: | 6967+22 @ 6989.00usft (Prelim)<br>6967+22 @ 6989.00usft (Prelim) |
| Site:                | La Jara Fed 1-2  | North Reference:                | True   |
| Well:                | La Jara Fed 1-2 #3H                                      | Survey Calculation Method:      | Minimum Curvature  |
| Wellbore:            | ОН   |                                 |  |
| Design:              | Plan #1  |                                 |  |

#### Planned Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 3,928.59                    | 25.88              | 153.01         | 3,671.00                    | -1,086.20       | 553.17          | -566.58                       | 0.00                          | 0.00                         | 0.00                        |
| Pictured Clif               | ifs                |                |                             |                 |                 |                               |                               |                              |                             |
| 4,000.00                    | 25.88              | 153.01         | 3,735.25                    | -1,113.98       | 567.31          | -581.07                       | 0.00                          | 0.00                         | 0.00                        |
| 4,100.00                    | 25.88              | 153.01         | 3,825.22                    | -1,152.87       | 587.12          | -601.36                       | 0.00                          | 0.00                         | 0.00                        |
| 4,200.00                    | 25.88              | 153.01         | 3,915.19                    | -1,191.76       | 606.92          | -621.64                       | 0.00                          | 0.00                         | 0.00                        |
|                             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 4,274.25                    | 25.88              | 153.01         | 3,982.00                    | -1,220.64       | 621.63          | -636.71                       | 0.00                          | 0.00                         | 0.00                        |
| Lewis                       |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 4,300.00                    | 25.88              | 153.01         | 4,005.17                    | -1,230.65       | 626.73          | -641.93                       | 0.00                          | 0.00                         | 0.00                        |
| 4,400.00                    | 25.88              | 153.01         | 4,095.14                    | -1,269.54       | 646.54          | -662.22                       | 0.00                          | 0.00                         | 0.00                        |
| 4,500.00                    | 25.88              | 153.01         | 4,185.11                    | -1,308.44       | 666.34          | -682.50                       | 0.00                          | 0.00                         | 0.00                        |
| 4,600.00                    | 25.88              | 153.01         | 4,275.09                    | -1,347.33       | 686.15          | -702.79                       | 0.00                          | 0.00                         | 0.00                        |
|                             |                    |                |                             | ,               |                 |                               |                               |                              |                             |
| 4,700.00                    | 25.88              | 153.01         | 4,365.06                    | -1,386.22       | 705.95          | -723.08                       | 0.00                          | 0.00                         | 0.00                        |
| 4,800.00                    | 25.88              | 153.01         | 4,455.03                    | -1,425.11       | 725.76          | -743.36                       | 0.00                          | 0.00                         | 0.00                        |
| 4,900.00                    | 25.88              | 153.01         | 4,545.01                    | -1,464.00       | 745.57          | -763.65                       | 0.00                          | 0.00                         | 0.00                        |
| 5,000.00                    | 25.88              | 153.01         | 4,634.98                    | -1,502.89       | 765.37          | -783.94                       | 0.00                          | 0.00                         | 0.00                        |
| 5,100.00                    | 25.88              | 153.01         | 4,724.95                    | -1,541.79       | 785.18          | -804.22                       | 0.00                          | 0.00                         | 0.00                        |
| 5,200.00                    | 25.88              | 153.01         | 4,814.92                    | -1,580.68       | 804.99          | -824.51                       | 0.00                          | 0.00                         | 0.00                        |
| 5,300.00                    | 25.88              | 153.01         | 4,904.90                    | -1,619.57       | 824.79          | -844.80                       | 0.00                          | 0.00                         | 0.00                        |
| 5,400.00                    | 25.88              | 153.01         | 4,994.87                    | -1,658.46       | 844.60          | -865.08                       | 0.00                          | 0.00                         | 0.00                        |
| 5,400.00<br>5,500.00        | 25.88              | 153.01         | 4,994.87<br>5,084.84        | -1,697.35       | 864.40          | -885.37                       | 0.00                          | 0.00                         | 0.00                        |
| 5,600.00                    | 25.88              | 153.01         | 5,174.82                    | -1,736.25       | 884.21          | -905.66                       | 0.00                          | 0.00                         | 0.00                        |
| 5,000.00                    | 20.00              | 155.01         | 5,174.02                    | -1,730.25       | 004.21          | -905.00                       | 0.00                          | 0.00                         | 0.00                        |
| 5,700.00                    | 25.88              | 153.01         | 5,264.79                    | -1,775.14       | 904.02          | -925.94                       | 0.00                          | 0.00                         | 0.00                        |
| 5,800.00                    | 25.88              | 153.01         | 5,354.76                    | -1,814.03       | 923.82          | -946.23                       | 0.00                          | 0.00                         | 0.00                        |
| 5,900.00                    | 25.88              | 153.01         | 5,444.74                    | -1,852.92       | 943.63          | -966.52                       | 0.00                          | 0.00                         | 0.00                        |
| 6,000.00                    | 25.88              | 153.01         | 5,534.71                    | -1,891.81       | 963.44          | -986.80                       | 0.00                          | 0.00                         | 0.00                        |
| 6,100.00                    | 25.88              | 153.01         | 5,624.68                    | -1,930.70       | 983.24          | -1,007.09                     | 0.00                          | 0.00                         | 0.00                        |
|                             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 6,200.00                    | 25.88              | 153.01         | 5,714.65                    | -1,969.60       | 1,003.05        | -1,027.38                     | 0.00                          | 0.00                         | 0.00                        |
| 6,215.95                    | 25.88              | 153.01         | 5,729.00                    | -1,975.80       | 1,006.21        | -1,030.61                     | 0.00                          | 0.00                         | 0.00                        |
| Cliff House                 |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 6,300.00                    | 25.88              | 153.01         | 5,804.63                    | -2,008.49       | 1,022.86        | -1,047.66                     | 0.00                          | 0.00                         | 0.00                        |
| 6,313.75                    | 25.88              | 153.01         | 5,817.00                    | -2,013.84       | 1,025.58        | -1,050.45                     | 0.00                          | 0.00                         | 0.00                        |
| Menefee                     |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 6,400.00                    | 25.88              | 153.01         | 5,894.60                    | -2,047.38       | 1,042.66        | -1,067.95                     | 0.00                          | 0.00                         | 0.00                        |
| 0 450 00                    | 05.00              | 450.04         | 5 0 4 0 0 0                 | 0 007 07        | 1 050 40        | 4 070 04                      | 0.00                          | 0.00                         | 0.00                        |
| 6,452.68                    | 25.88              | 153.01         | 5,942.00                    | -2,067.87       | 1,053.10        | -1,078.64                     | 0.00                          | 0.00                         | 0.00                        |
| Point Looko                 |                    |                |                             |                 |                 |                               |                               |                              | _                           |
| 6,500.00                    | 25.88              | 153.01         | 5,984.57                    | -2,086.27       | 1,062.47        | -1,088.24                     | 0.00                          | 0.00                         | 0.00                        |
| 6,600.00                    | 25.88              | 153.01         | 6,074.55                    | -2,125.16       | 1,082.27        | -1,108.53                     | 0.00                          | 0.00                         | 0.00                        |
| 6,700.00                    | 25.88              | 153.01         | 6,164.52                    | -2,164.06       | 1,102.08        | -1,128.81                     | 0.00                          | 0.00                         | 0.00                        |
| 6,800.00                    | 25.88              | 153.01         | 6,254.49                    | -2,202.95       | 1,121.89        | -1,149.10                     | 0.00                          | 0.00                         | 0.00                        |
| 6,900.00                    | 25.88              | 153.01         | 6,344.46                    | -2,241.84       | 1,141.69        | -1,169.39                     | 0.00                          | 0.00                         | 0.00                        |
| 6,928.38                    | 25.88              | 153.01         | 6,370.00                    | -2,252.88       | 1,147.31        | -1,175.14                     | 0.00                          | 0.00                         | 0.00                        |
| Mancos                      | 20.00              |                | 0,010.00                    | 2,232.00        | .,              | .,                            | 0.00                          | 0.00                         | 0.00                        |
| 7,000.00                    | 25.88              | 153.01         | 6,434.44                    | -2,280.73       | 1,161.50        | -1,189.67                     | 0.00                          | 0.00                         | 0.00                        |
| 7,000.00                    |                    |                | 6,434.44<br>6,524.41        |                 |                 |                               | 0.00                          |                              |                             |
|                             | 25.88              | 153.01         |                             | -2,319.62       | 1,181.31        | -1,209.96                     |                               | 0.00                         | 0.00                        |
| 7,200.00                    | 25.88              | 153.01         | 6,614.38                    | -2,358.52       | 1,201.11        | -1,230.25                     | 0.00                          | 0.00                         | 0.00                        |
| 7,300.00                    | 25.88              | 153.01         | 6,704.36                    | -2,397.41       | 1,220.92        | -1,250.53                     | 0.00                          | 0.00                         | 0.00                        |
| 7,400.00                    | 25.88              | 153.01         | 6,794.33                    | -2,436.30       | 1,240.72        | -1,270.82                     | 0.00                          | 0.00                         | 0.00                        |
| 7,430.45                    | 25.88              | 153.01         | 6,821.73                    | -2,448.14       | 1,246.76        | -1,277.00                     | 0.00                          | 0.00                         | 0.00                        |
| ,                           | .00 TFO 115.29     |                |                             |                 |                 |                               |                               |                              |                             |
| 7,450.00                    | 25.10              | 157.18         | 6,839.37                    | -2,455.77       | 1,250.30        | -1,280.63                     | 10.00                         | -3.97                        | 21.33                       |
| 7,500.00                    | 23.70              | 168.82         | 6,884.93                    | -2,475.41       | 1,256.37        | -1,286.94                     | 10.00                         | -2.81                        | 21.33                       |
|                             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 7,550.00                    | 23.24              | 181.34         | 6,930.83                    | -2,495.14       | 1,258.08        | -1,288.91                     | 10.00                         | -0.91                        | 25.05                       |
| 7,600.00                    | 23.80              | 193.82         | 6,976.70                    | -2,514.81       | 1,255.44        | -1,286.51                     | 10.00                         | 1.10                         | 24.95                       |

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| Database: | EDM 5000 Multi User Db         | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|-----------|--------------------------------|------------------------------|--------------------------------|
| Company:  | Robert L Bayless, Producer LLC | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Project:  | Rio Arriba, NM (NAD83)         | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site:     | La Jara Fed 1-2                | North Reference:             | True                           |
| Well:     | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Wellbore: | ОН                             |                              |                                |
| Design:   | Plan #1                        |                              |                                |

#### Planned Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°)   | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft)        | +E/-W<br>(usft)        | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|------------------|-----------------------------|------------------------|------------------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 7,650.00                    | 25.29              | 205.33           | 7,022.21                    | -2,534.27              | 1,248.46               | -1,279.77                     | 10.00                         | 2.98                         | 23.02                       |
| 7,700.00                    | 27.56              | 215.35           | 7,067.00                    | -2,553.37              | 1,237.19               | -1,268.74                     | 10.00                         | 4.55                         | 20.04                       |
| 7,750.00                    | 30.45              | 223.78           | 7,110.75                    | -2,571.97              | 1,221.72               | -1,253.50                     | 10.00                         | 5.77                         | 16.87                       |
| 7,800.00                    | 33.79              | 230.79           | 7,153.10                    | -2,589.92              | 1,202.17               | -1,234.17                     | 10.00                         | 6.68                         | 14.02                       |
| 7,850.00                    | 37.46              | 236.63           | 7,193.75                    | -2,607.08              | 1,178.68               | -1,210.89                     | 10.00                         | 7.34                         | 11.67                       |
| 7,900.00                    | 41.38              | 241.53           | 7,232.37                    | -2,623.34              | 1,151.44               | -1,183.85                     | 10.00                         | 7.83                         | 9.81                        |
| 7,950.00                    | 45.47              | 245.72           | 7,268.69                    | -2,638.55              | 1,120.64               | -1,153.25                     | 10.00                         | 8.18                         | 8.37                        |
| 8,000.00                    | 49.69              | 249.35           | 7,302.42                    | -2,652.61              | 1,086.54               | -1,119.32                     | 10.00                         | 8.45                         | 7.25                        |
| 8,050.00                    | 54.02              | 252.54           | 7,333.30                    | -2,665.41              | 1,049.38               | -1,082.32                     | 10.00                         | 8.65                         | 6.39                        |
| 8,100.00                    | 58.42              | 255.40           | 7,361.10                    | -2,676.86              | 1,009.44               | -1,042.54                     | 10.00                         | 8.80                         | 5.72                        |
| 8,140.05                    | 61.98              | 257.50           | 7,381.00                    | -2,684.98              | 975.66                 | -1,008.86                     | 10.00                         | 8.91                         | 5.24                        |
| Top of Targe                | t                  |                  |                             |                        |                        |                               |                               |                              |                             |
| 8,150.00                    | 62.87              | 258.00           | 7,385.61                    | -2,686.85              | 967.04                 | -1,000.26                     | 10.00                         | 8.95                         | 5.02                        |
| 8,200.00                    | 67.37              | 260.40           | 7,406.64                    | -2,695.33              | 922.50                 | -955.83                       | 10.00                         | 9.00                         | 4.80                        |
| 8,250.00                    | 71.91              | 262.65           | 7,424.03                    | -2,702.22              | 876.15                 | -909.56                       | 10.00                         | 9.07                         | 4.49                        |
| 8,300.00                    | 76.47              | 264.78           | 7,437.65                    | -2,707.48              | 828.34                 | -861.83                       | 10.00                         | 9.12                         | 4.27                        |
| 8,350.00                    | 81.05              | 266.83           | 7,447.39                    | -2,711.06              | 779.45                 | -812.98                       | 10.00                         | 9.15                         | 4.10                        |
| 8,400.00                    | 85.63              | 268.84           | 7,453.19                    | -2,712.93              | 729.84                 | -763.40                       | 10.00                         | 9.18                         | 4.00                        |
| 8,447.52                    | 90.00              | 270.71           | 7,455.00                    | -2,713.11              | 682.37                 | -715.94                       | 10.00                         | 9.19                         | 3.95                        |
| Start 9010.62               | hold at 8447.51    | MD               |                             |                        |                        |                               |                               |                              |                             |
| 8,500.00                    | 90.00              | 270.71           | 7,455.00                    | -2,712.46              | 629.89                 | -663.45                       | 0.00                          | 0.00                         | 0.00                        |
| 8,600.00                    | 90.00              | 270.71           | 7,455.00                    | -2,711.21              | 529.90                 | -563.45                       | 0.00                          | 0.00                         | 0.00                        |
| 8,700.00                    | 90.00              | 270.71           | 7,455.00                    | -2.709.97              | 429.91                 | -463.45                       | 0.00                          | 0.00                         | 0.00                        |
| 8,800.00                    | 90.00              | 270.71           | 7,455.00                    | -2,708.72              | 329.91                 | -363.45                       | 0.00                          | 0.00                         | 0.00                        |
| 8,900.00                    | 90.00              | 270.71           | 7,455.00                    | -2,707.48              | 229.92                 | -263.45                       | 0.00                          | 0.00                         | 0.00                        |
| 9,000.00                    | 90.00              | 270.71           | 7,455.00                    | -2,706.23              | 129.93                 | -163.45                       | 0.00                          | 0.00                         | 0.00                        |
| 9,100.00                    | 90.00              | 270.71           | 7,455.00                    | -2,704.99              | 29.94                  | -63.45                        | 0.00                          | 0.00                         | 0.00                        |
| 9,200.00                    | 90.00              | 270.71           | 7,455.00                    | -2,703.74              | -70.06                 | 36.55                         | 0.00                          | 0.00                         | 0.00                        |
| 9,300.00                    | 90.00              | 270.71           | 7,455.00                    | -2,702.49              | -170.05                | 136.55                        | 0.00                          | 0.00                         | 0.00                        |
| 9,400.00                    | 90.00              | 270.71           | 7,455.00                    | -2,701.25              | -270.04                | 236.55                        | 0.00                          | 0.00                         | 0.00                        |
| 9,500.00                    | 90.00              | 270.71           | 7,455.00                    | -2,700.00              | -370.03                | 336.55                        | 0.00                          | 0.00                         | 0.00                        |
| 9,600.00                    | 90.00              | 270.71           | 7,455.00                    | -2,698.76              | -470.02                | 436.55                        | 0.00                          | 0.00                         | 0.00                        |
| ,                           | 90.00              | 270.71           | 7,455.00                    | ,                      |                        | 430.55<br>536.55              | 0.00                          | 0.00                         | 0.00                        |
| 9,700.00                    |                    | 270.71           | 7,455.00                    | -2,697.51              | -570.02<br>-670.01     |                               | 0.00                          | 0.00                         | 0.00                        |
| 9,800.00<br>9,900.00        | 90.00<br>90.00     | 270.71           | 7,455.00<br>7,455.00        | -2,696.26<br>-2,695.02 | -670.01                | 636.55<br>736.55              | 0.00                          | 0.00                         | 0.00                        |
|                             |                    |                  |                             |                        |                        |                               |                               |                              |                             |
| 10,000.00                   | 90.00              | 270.71           | 7,455.00                    | -2,693.77              | -869.99                | 836.55                        | 0.00                          | 0.00                         | 0.00                        |
| 10,100.00                   | 90.00              | 270.71           | 7,455.00                    | -2,692.53              | -969.99                | 936.55                        | 0.00                          | 0.00                         | 0.00                        |
| 10,200.00                   | 90.00              | 270.71           | 7,455.00                    | -2,691.28              | -1,069.98              | 1,036.55                      | 0.00                          | 0.00                         | 0.00                        |
| 10,300.00<br>10,400.00      | 90.00<br>90.00     | 270.71<br>270.71 | 7,455.00<br>7,455.00        | -2,690.04<br>-2.688.79 | -1,169.97<br>-1,269.96 | 1,136.55<br>1,236.55          | 0.00<br>0.00                  | 0.00<br>0.00                 | 0.00<br>0.00                |
| ,                           |                    |                  | ,                           | ,                      | ,                      |                               |                               |                              |                             |
| 10,500.00                   | 90.00              | 270.71           | 7,455.00                    | -2,687.54              | -1,369.96              | 1,336.55                      | 0.00                          | 0.00                         | 0.00                        |
| 10,600.00                   | 90.00              | 270.71           | 7,455.00                    | -2,686.30              | -1,469.95              | 1,436.55                      | 0.00                          | 0.00                         | 0.00                        |
| 10,700.00                   | 90.00              | 270.71           | 7,455.00                    | -2,685.05              | -1,569.94              | 1,536.55                      | 0.00                          | 0.00                         | 0.00                        |
| 10,800.00                   | 90.00              | 270.71           | 7,455.00                    | -2,683.81              | -1,669.93              | 1,636.55                      | 0.00                          | 0.00                         | 0.00                        |
| 10,900.00                   | 90.00              | 270.71           | 7,455.00                    | -2,682.56              | -1,769.92              | 1,736.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,000.00                   | 90.00              | 270.71           | 7,455.00                    | -2,681.32              | -1,869.92              | 1,836.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,100.00                   | 90.00              | 270.71           | 7,455.00                    | -2,680.07              | -1,969.91              | 1,936.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,200.00                   | 90.00              | 270.71           | 7,455.00                    | -2,678.82              | -2,069.90              | 2,036.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,300.00                   | 90.00              | 270.71           | 7,455.00                    | -2,677.58              | -2,169.89              | 2,136.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,400.00                   | 90.00              | 270.71           | 7,455.00                    | -2,676.33              | -2,269.89              | 2,236.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,500.00                   | 90.00              | 270.71           | 7,455.00                    | -2,675.09              | -2,369.88              | 2,336.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,600.00                   | 90.00              | 270.71           | 7,455.00                    | -2,673.84              | -2,469.87              | 2,436.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,700.00                   | 90.00              | 270.71           | 7,455.00                    | -2,672.60              | -2,569.86              | 2,536.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11,800.00                   | 90.00              | 270.71           | 7,455.00                    | -2,671.35              | -2.669.85              | 2,636.55                      | 0.00                          | 0.00                         | 0.00                        |

4/4/2023 6:20:44PM

COMPASS 5000.17 Build 101

| Database:<br>Company: | EDM 5000 Multi User Db<br>Robert L Bayless, Producer LLC | Local Co-ordinate Reference:    | Well La Jara Fed 1-2 #3H   |
|-----------------------|--|---------------------------------|--|
| Project:              | Rio Arriba, NM (NAD83)                                   | TVD Reference:<br>MD Reference: | 6967+22 @ 6989.00usft (Prelim)<br>6967+22 @ 6989.00usft (Prelim) |
| Site:                 | La Jara Fed 1-2  | North Reference:                | True   |
| Well:                 | La Jara Fed 1-2 #3H                                      | Survey Calculation Method:      | Minimum Curvature  |
| Wellbore:             | ОН   |                                 |  |
| Design:               | Plan #1  |                                 |  |

#### Planned Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 11,900.00                   | 90.00              | 270.71         | 7,455.00                    | -2,670.10       | -2,769.85       | 2,736.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,000.00                   | 90.00              | 270.71         | 7,455.00                    | -2,668.86       | -2,869.84       | 2,836.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,100.00                   | 90.00              | 270.71         | 7,455.00                    | -2,667.61       | -2,969.83       | 2,936.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,200.00                   | 90.00              | 270.71         | 7,455.00                    | -2,666.37       | -3,069.82       | 3,036.55                      | 0.00                          | 0.00                         | 0.00                        |
|                             |                    |                |                             | ,               |                 |                               |                               |                              |                             |
| 12,300.00                   | 90.00              | 270.71         | 7,455.00                    | -2,665.12       | -3,169.82       | 3,136.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,400.00                   | 90.00              | 270.71         | 7,455.00                    | -2,663.88       | -3,269.81       | 3,236.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,500.00                   | 90.00              | 270.71         | 7,455.00                    | -2,662.63       | -3,369.80       | 3,336.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,600.00                   | 90.00              | 270.71         | 7,455.00                    | -2,661.38       | -3,469.79       | 3,436.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,700.00                   | 90.00              | 270.71         | 7,455.00                    | -2,660.14       | -3,569.78       | 3,536.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,800.00                   | 90.00              | 270.71         | 7,455.00                    | -2,658.89       | -3,669.78       | 3,636.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,900.00                   | 90.00              | 270.71         | 7,455.00                    | -2,657.65       | -3,769.77       | 3,736.55                      | 0.00                          | 0.00                         | 0.00                        |
| 12,300.00                   | 30.00              | 210.11         | 7,400.00                    | -2,007.00       | -0,700.77       | 5,750.55                      |                               | 0.00                         | 0.00                        |
| 13,000.00                   | 90.00              | 270.71         | 7,455.00                    | -2,656.40       | -3,869.76       | 3,836.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,100.00                   | 90.00              | 270.71         | 7,455.00                    | -2,655.15       | -3,969.75       | 3,936.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,200.00                   | 90.00              | 270.71         | 7,455.00                    | -2,653.91       | -4,069.75       | 4,036.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,300.00                   | 90.00              | 270.71         | 7,455.00                    | -2,652.66       | -4,169.74       | 4,136.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,400.00                   | 90.00              | 270.71         | 7,455.00                    | -2,651.42       | -4,269.73       | 4,236.55                      | 0.00                          | 0.00                         | 0.00                        |
|                             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 13,500.00                   | 90.00              | 270.71         | 7,455.00                    | -2,650.17       | -4,369.72       | 4,336.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,600.00                   | 90.00              | 270.71         | 7,455.00                    | -2,648.93       | -4,469.71       | 4,436.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,700.00                   | 90.00              | 270.71         | 7,455.00                    | -2,647.68       | -4,569.71       | 4,536.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,800.00                   | 90.00              | 270.71         | 7,455.00                    | -2,646.43       | -4,669.70       | 4,636.55                      | 0.00                          | 0.00                         | 0.00                        |
| 13,900.00                   | 90.00              | 270.71         | 7,455.00                    | -2,645.19       | -4,769.69       | 4,736.55                      | 0.00                          | 0.00                         | 0.00                        |
| 11.000.00                   | 00.00              | 070 74         | 7 455 00                    | 0.040.04        | 1 000 00        | 1 000 55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,000.00                   | 90.00              | 270.71         | 7,455.00                    | -2,643.94       | -4,869.68       | 4,836.55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,100.00                   | 90.00              | 270.71         | 7,455.00                    | -2,642.70       | -4,969.68       | 4,936.55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,200.00                   | 90.00              | 270.71         | 7,455.00                    | -2,641.45       | -5,069.67       | 5,036.55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,300.00                   | 90.00              | 270.71         | 7,455.00                    | -2,640.21       | -5,169.66       | 5,136.55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,400.00                   | 90.00              | 270.71         | 7,455.00                    | -2,638.96       | -5,269.65       | 5,236.55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,500.00                   | 90.00              | 270.71         | 7,455.00                    | -2,637.71       | -5,369.64       | 5,336.55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,600.00                   | 90.00              | 270.71         | 7,455.00                    | -2,636.47       | -5,469.64       | 5,436.55                      | 0.00                          | 0.00                         | 0.00                        |
| ,                           |                    | 270.71         |                             |                 |                 |                               | 0.00                          | 0.00                         | 0.00                        |
| 14,700.00                   | 90.00              |                | 7,455.00                    | -2,635.22       | -5,569.63       | 5,536.55                      |                               |                              |                             |
| 14,800.00                   | 90.00              | 270.71         | 7,455.00                    | -2,633.98       | -5,669.62       | 5,636.55                      | 0.00                          | 0.00                         | 0.00                        |
| 14,900.00                   | 90.00              | 270.71         | 7,455.00                    | -2,632.73       | -5,769.61       | 5,736.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,000.00                   | 90.00              | 270.71         | 7,455.00                    | -2,631.49       | -5,869.61       | 5,836.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,100.00                   | 90.00              | 270.71         | 7,455.00                    | -2,630.24       | -5,969.60       | 5,936.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,200.00                   | 90.00              | 270.71         | 7,455.00                    | -2,628.99       | -6,069.59       | 6,036.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,300.00                   | 90.00              | 270.71         | 7,455.00                    | -2,627.75       | -6,169.58       | 6,136.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,400.00                   | 90.00              | 270.71         | 7,455.00                    | -2,626.50       | -6,269.58       | 6,236.55                      | 0.00                          | 0.00                         | 0.00                        |
| 10,+00.00                   | 30.00              | 210.11         | 7,-55.00                    | -2,020.00       | -0,209.00       | 0,200.00                      |                               |                              |                             |
| 15,500.00                   | 90.00              | 270.71         | 7,455.00                    | -2,625.26       | -6,369.57       | 6,336.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,600.00                   | 90.00              | 270.71         | 7,455.00                    | -2,624.01       | -6,469.56       | 6,436.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,700.00                   | 90.00              | 270.71         | 7,455.00                    | -2,622.76       | -6,569.55       | 6,536.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,800.00                   | 90.00              | 270.71         | 7,455.00                    | -2,621.52       | -6,669.54       | 6,636.55                      | 0.00                          | 0.00                         | 0.00                        |
| 15,900.00                   | 90.00              | 270.71         | 7,455.00                    | -2,620.27       | -6,769.54       | 6,736.55                      | 0.00                          | 0.00                         | 0.00                        |
|                             |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 16,000.00                   | 90.00              | 270.71         | 7,455.00                    | -2,619.03       | -6,869.53       | 6,836.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,100.00                   | 90.00              | 270.71         | 7,455.00                    | -2,617.78       | -6,969.52       | 6,936.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,200.00                   | 90.00              | 270.71         | 7,455.00                    | -2,616.54       | -7,069.51       | 7,036.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,300.00                   | 90.00              | 270.71         | 7,455.00                    | -2,615.29       | -7,169.51       | 7,136.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,400.00                   | 90.00              | 270.71         | 7,455.00                    | -2,614.04       | -7,269.50       | 7,236.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,500.00                   | 90.00              | 270.71         | 7,455.00                    | -2,612.80       | -7,369.49       | 7,336.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,600.00                   |                    |                | ,                           | -2,612.60       | ,               | ,                             |                               |                              |                             |
| ,                           | 90.00              | 270.71         | 7,455.00                    | ,               | -7,469.48       | 7,436.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,700.00                   | 90.00              | 270.71         | 7,455.00                    | -2,610.31       | -7,569.47       | 7,536.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,800.00                   | 90.00              | 270.71         | 7,455.00                    | -2,609.06       | -7,669.47       | 7,636.55                      | 0.00                          | 0.00                         | 0.00                        |
| 16,900.00                   | 90.00              | 270.71         | 7,455.00                    | -2,607.82       | -7,769.46       | 7,736.55                      | 0.00                          | 0.00                         | 0.00                        |
| 17,000.00                   | 90.00              | 270.71         | 7,455.00                    | -2,606.57       | -7,869.45       | 7,836.55                      | 0.00                          | 0.00                         | 0.00                        |
| 17,100.00                   | 90.00              | 270.71         | 7,455.00                    | -2,605.32       | -7,969.44       | 7,936.55                      | 0.00                          | 0.00                         | 0.00                        |
|                             | 00.00              |                | .,                          | _,              | .,              | .,                            | 0.00                          | 0.00                         | 0.00                        |

4/4/2023 6:20:44PM

COMPASS 5000.17 Build 101

| Database: | EDM 5000 Multi User Db         | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|-----------|--------------------------------|------------------------------|--------------------------------|
| Company:  | Robert L Bayless, Producer LLC | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Project:  | Rio Arriba, NM (NAD83)         | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site:     | La Jara Fed 1-2                | North Reference:             | True                           |
| Well:     | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Wellbore: | ОН                             |                              |                                |
| Design:   | Plan #1                        |                              |                                |

#### Planned Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 17,300.00                   | 90.00              | 270.71         | 7,455.00                    | -2,602.83       | -8,169.43       | 8,136.55                      | 0.00                          | 0.00                         | 0.00                        |
| 17,400.00                   | 90.00              | 270.71         | 7,455.00                    | -2,601.59       | -8,269.42       | 8,236.55                      | 0.00                          | 0.00                         | 0.00                        |
| 17,458.14                   | 90.00              | 270.71         | 7,455.00                    | -2,600.86       | -8,327.55       | 8,294.69                      | 0.00                          | 0.00                         | 0.00                        |
| TD at 17458.1               | 4                  |                |                             |                 |                 |                               |                               |                              |                             |

| Design Targets  |                  |                 |               |                 |                 |                    |                   |           |             |
|---|------------------|-----------------|---------------|-----------------|-----------------|--------------------|-------------------|-----------|-------------|
| Target Name<br>- hit/miss target<br>- Shape                   | Dip Angle<br>(°) | Dip Dir.<br>(°) | TVD<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Northing<br>(usft) | Easting<br>(usft) | Latitude  | Longitude   |
| La Jara Fed 1-2 #3H SH<br>- plan hits target cen<br>- Point   | 0.00<br>ter      | 0.00            | 0.00          | 0.00            | 0.00            | 2,095,954.76       | 1,361,644.29      | 36.756281 | -107.201648 |
| La Jara Fed 1-2 #3H LTF<br>- plan hits target cent<br>- Point | 0.00<br>ter      | 0.00            | 7,455.00      | -2,600.86       | -8,327.55       | 2,093,436.81       | 1,353,291.29      | 36.749134 | -107.230071 |
| La Jara Fed 1-2 #3H FT<br>- plan hits target cen<br>- Point   | 0.00<br>ter      | 0.00            | 7,455.00      | -2,713.11       | 682.37          | 2,093,235.00       | 1,362,299.66      | 36.748829 | -107.199319 |

#### Formations

| De | isured<br>epth<br>isft) | Vertical<br>Depth<br>(usft) |                 | Name | Lithology | Dip<br>(°) | Dip<br>Direction<br>(°) |  |
|----|-------------------------|-----------------------------|-----------------|------|-----------|------------|-------------------------|--|
|    | 22.00                   | 22.00                       | San Jose        |      |           |            |                         |  |
| 2  | 2,700.44                | 2,566.00                    | Nacimiento      |      |           |            |                         |  |
| 3  | 3,424.00                | 3,217.00                    | Ojo Alamo       |      |           |            |                         |  |
| 3  | 3,604.05                | 3,379.00                    | Kirtland        |      |           |            |                         |  |
| 3  | 8,788.55                | 3,545.00                    | Fruitland       |      |           |            |                         |  |
| 3  | 3,928.59                | 3,671.00                    | Pictured Cliffs |      |           |            |                         |  |
| 4  | ,274.25                 | 3,982.00                    | Lewis           |      |           |            |                         |  |
| 6  | 6,215.95                | 5,729.00                    | Cliff House     |      |           |            |                         |  |
| 6  | 6,313.75                | 5,817.00                    | Menefee         |      |           |            |                         |  |
| 6  | 6,452.68                | 5,942.00                    | Point Lookout   |      |           |            |                         |  |
| 6  | 6,928.38                | 6,370.00                    | Mancos          |      |           |            |                         |  |
| 8  | 3,140.05                | 7,381.00                    | Top of Target   |      |           |            |                         |  |

| Measured  | Vertical | Local Coor | dinates   |                                  |
|-----------|----------|------------|-----------|----------------------------------|
| Depth     | Depth    | +N/-S      | +E/-W     |                                  |
| (usft)    | (usft)   | (usft)     | (usft)    | Comment                          |
| 500.00    | 500.00   | 0.00       | 0.00      | Start Build 2.00                 |
| 1,793.87  | 1,750.33 | -255.97    | 130.36    | Start 5636.58 hold at 1793.87 MD |
| 7,430.45  | 6,821.73 | -2,448.14  | 1,246.76  | Start DLS 10.00 TFO 115.29       |
| 8,447.52  | 7,455.00 | -2,713.11  | 682.37    | Start 9010.62 hold at 8447.51 MD |
| 17,458.14 | 7,455.00 | -2,600.86  | -8,327.55 | TD at 17458.14                   |

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# Robert L Bayless, Producer LLC

Rio Arriba, NM (NAD83) La Jara Fed 1-2 La Jara Fed 1-2 #3H

OH Plan #1

# **Anticollision Report**

04 April, 2023

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference:      | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|-----------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:                    | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                     | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:                  | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:        | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at              | 2.00 sigma                     |
| Reference Wellbore | ОН                             | Database:                         | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:             | Offset Datum                   |
|                    |                                |                                   |                                |
| Reference          | Plan #1                        |                                   |                                |
|                    |                                | - Leader the O. Charles and the t |                                |

| Results Limited by:<br>Warning Levels Evaluate | Maximum centre distance of 19,999.96usft<br>d at: 2.00 Sigma        | Error Surface:<br>Casing Method: | Pedal Curve<br>Not applied         |  |  |  |  |  |
|--|---|----------------------------------|------------------------------------|--|--|--|--|--|
| Depth Range:<br>Besults Limited by:            | Unlimited   | Scan Method:                     | Closest Approach 3D<br>Redal Curve |  |  |  |  |  |
| Interpolation Method:                          | Stations  | Error Model:                     | ISCWSA                             |  |  |  |  |  |
| Filter type:                                   | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                                  |                                    |  |  |  |  |  |

| Survey Tool Program |              | Date 4/4/2023     |                    |                 |
|---------------------|--------------|-------------------|--------------------|-----------------|
| From<br>(usft)      | To<br>(usft) | Survey (Wellbore) | Tool Name          | Description     |
| 0.00                | 17,458.14    | ↓ Plan #1 (OH)    | MWD+HRGM OWSG Rev5 | OWSG MWD + HRGM |

|  | Reference                            | Offset                               | Dista                            | nce                              |  |         |
|--|--------------------------------------|--------------------------------------|----------------------------------|----------------------------------|--|---------|
| Site Name<br>Offset Well - Wellbore - Design   | Measured<br>Depth<br>(usft)          | Measured<br>Depth<br>(usft)          | Between<br>Centres<br>(usft)     | Between<br>Ellipses<br>(usft)    | Separation<br>Factor                         | Warning |
| La Jara Fed 1-2  |                                      |                                      |                                  |                                  |  |         |
| La Jara Fed 1-2 #1H - OH - Plan #1<br>La Jara Fed 1-2 #1H - OH - Plan #1<br>La Jara Fed 1-2 #2H - OH - Plan #1<br>La Jara Fed 1-2 #2H - OH - Plan #1 | 500.00<br>600.00<br>500.00<br>600.00 | 500.00<br>598.93<br>500.00<br>599.94 | 30.19<br>32.60<br>15.24<br>16.13 | 25.01<br>26.68<br>10.06<br>10.50 | 5.828 CC<br>5.506 SF<br>2.942 CC<br>2.866 SF | ,       |

| Offset Des                        | sign: La                      | Jara Fed 1                  | -2 - La Ja      | ra Fed 1-2          | #1H - OH             | - Plan #1       |                 |                 |                   |                               |                      |            | Offset Site Error:            | 0.00 usft |
|-----------------------------------|-------------------------------|-----------------------------|-----------------|---------------------|----------------------|-----------------|-----------------|-----------------|-------------------|-------------------------------|----------------------|------------|-------------------------------|-----------|
| Survey Progr<br>Refer<br>Measured | ram: 0-M<br>rence<br>Vertical | /WD+HRGM<br>Off<br>Measured |                 | Semi M<br>Reference | laior Axis<br>Offset | Highside        | Offset Wellbo   | ore Centre      | Dis<br>Between    | Rule Assi<br>tance<br>Between | gned:<br>Minimum     | Separation | Offset Well Error:<br>Warning | 0.00 usft |
| Depth<br>(usft)                   | Depth<br>(usft)               | Depth<br>(usft)             | Depth<br>(usft) | (usft)              | (usft)               | Toolface<br>(°) | +N/-S<br>(usft) | +E/-W<br>(usft) | Centres<br>(usft) | Ellipses<br>(usft)            | Separation<br>(usft) | Factor     | warning                       |           |
| 0.00                              | 0.00                          | 0.00                        | 0.00            | 0.00                | 0.00                 | 38.39           | 23.67           | 18.75           | 30.19             |                               |                      |            |                               |           |
| 100.00                            | 100.00                        | 100.00                      | 100.00          | 0.90                | 0.90                 | 38.39           | 23.67           | 18.75           | 30.19             | 28.40                         | 1.79                 | 16.825     |                               |           |
| 200.00                            | 200.00                        | 200.00                      | 200.00          | 1.48                | 1.48                 | 38.39           | 23.67           | 18.75           | 30.19             | 27.22                         | 2.97                 | 10.166     |                               |           |
| 300.00                            | 300.00                        | 300.00                      | 300.00          | 1.92                | 1.92                 | 38.39           | 23.67           | 18.75           | 30.19             | 26.35                         | 3.84                 | 7.855      |                               |           |
| 400.00                            | 400.00                        | 400.00                      | 400.00          | 2.28                | 2.28                 | 38.39           | 23.67           | 18.75           | 30.19             | 25.63                         | 4.56                 | 6.623      |                               |           |
| 500.00                            | 500.00                        | 500.00                      | 500.00          | 2.59                | 2.59                 | 38.39           | 23.67           | 18.75           | 30.19             | 25.01                         | 5.18                 | 5.828 CC,  | ES                            |           |
| 600.00                            | 599.98                        | 598.93                      | 598.91          | 2.95                | 3.12                 | -116.52         | 24.66           | 20.14           | 32.60             | 26.68                         | 5.92                 | 5.506 SF   |                               |           |
| 700.00                            | 699.84                        | 697.45                      | 697.29          | 3.92                | 4.04                 | -120.80         | 27.64           | 24.27           | 39.98             | 32.76                         | 7.21                 | 5.542      |                               |           |
| 800.00                            | 799.45                        | 795.15                      | 794.63          | 4.72                | 4.82                 | -125.17         | 32.54           | 31.08           | 52.55             | 44.18                         | 8.37                 | 6.278      |                               |           |
| 900.00                            | 898.70                        | 891.66                      | 890.44          | 5.44                | 5.51                 | -128.56         | 39.28           | 40.45           | 70.38             | 60.94                         | 9.43                 | 7.461      |                               |           |
| 1,000.00                          | 997.47                        | 986.61                      | 984.28          | 6.11                | 6.14                 | -130.93         | 47.75           | 52.21           | 93.36             | 82.94                         | 10.42                | 8.960      |                               |           |
| 1,100.00                          | 1,095.62                      | 1,079.67                    | 1,075.72        | 6.74                | 6.73                 | -132.51         | 57.81           | 66.18           | 121.35            | 110.01                        | 11.35                | 10.694     |                               |           |
| 1,200.00                          | 1,193.06                      | 1,170.52                    | 1,164.42        | 7.35                | 7.31                 | -133.52         | 69.30           | 82.15           | 154.20            | 141.94                        | 12.26                | 12.578     |                               |           |
| 1,300.00                          | 1,289.64                      | 1,261.70                    | 1,252.90        | 7.93                | 7.76                 | -134.28         | 82.17           | 100.03          | 191.31            | 178.23                        | 13.08                | 14.625     |                               |           |
| 1,400.00                          | 1,385.27                      | 1,353.36                    | 1,341.78        | 8.51                | 8.06                 | -135.21         | 95.23           | 118.17          | 230.96            | 217.14                        | 13.82                | 16.707     |                               |           |
| 1,500.00                          | 1,479.82                      | 1,443.84                    | 1,429.53        | 9.07                | 8.33                 | -136.21         | 108.12          | 136.09          | 273.02            | 258.46                        | 14.56                | 18.755     |                               |           |
| 1,600.00                          | 1,573.17                      | 1,533.04                    | 1,516.03        | 9.62                | 8.62                 | -137.20         | 120.84          | 153.75          | 317.54            | 302.23                        | 15.31                | 20.743     |                               |           |
| 1,700.00                          | 1,665.21                      | 1,620.85                    | 1,601.20        | 10.16               | 8.91                 | -138.15         | 133.35          | 171.13          | 364.56            | 348.48                        | 16.07                | 22.681     |                               |           |
| 1,793.87                          | 1,750.33                      | 1,701.93                    | 1,679.82        | 10.64               | 9.18                 | -138.99         | 144.90          | 187.19          | 410.98            | 394.19                        | 16.78                | 24.489     |                               |           |
| 1,800.00                          | 1,755.84                      | 1,707.17                    | 1,684.91        | 10.66               | 9.20                 | -139.09         | 145.65          | 188.23          | 414.08            | 397.26                        | 16.82                | 24.614     |                               |           |
| 1,900.00                          | 1,845.82                      | 1,792.81                    | 1,767.96        | 11.05               | 9.51                 | -140.52         | 157.86          | 205.18          | 464.84            | 447.31                        | 17.53                | 26.519     |                               |           |
| 2,000.00                          | 1,935.79                      | 1,878.44                    | 1,851.00        | 11.41               | 9.82                 | -141.67         | 170.06          | 222.13          | 515.77            | 497.57                        | 18.20                | 28.336     |                               |           |
| 2,100.00                          | 2,025.76                      | 1,964.08                    | 1,934.05        | 11.78               | 10.14                | -142.62         | 182.26          | 239.09          | 566.83            | 547.94                        | 18.89                | 30.007     |                               |           |

4/4/2023 6:21:00PM

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation Page 2

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | ОН                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #1H - OH - Plan #1

| urvey Progr<br>Refer |                   | MWD+HRGM          |                   | Semi N    | lajor Axis |                      | Offset Wellb | ore Centre | Dist               | Rule Assi<br>tance  | gned:                 |                      | Offset Well Error: | 0.00 us |
|----------------------|-------------------|-------------------|-------------------|-----------|------------|----------------------|--------------|------------|--------------------|---------------------|-----------------------|----------------------|--------------------|---------|
| Measured<br>Depth    | Vertical<br>Depth | Measured<br>Depth | Vertical<br>Depth | Reference | Offset     | Highside<br>Toolface | +N/-S        | +E/-W      | Between<br>Centres | Between<br>Ellipses | Minimum<br>Separation | Separation<br>Factor | Warning            |         |
| (usft)               | (usft)            | (usft)            | (usft)            | (usft)    | (usft)     | (°)                  | (usft)       | (usft)     | (usft)             | (usft)              | (usft)                |                      |                    |         |
| 2,200.00             | 2,115.74          | 2,049.71          | 2,017.10          | 12.16     | 10.47      | -143.41              | 194.47       | 256.04     | 617.99             | 598.40              | 19.59                 | 31.542               |                    |         |
| 2,300.00             | 2,205.71          | 2,135.34          | 2,100.14          | 12.56     | 10.80      | -144.08              | 206.67       | 273.00     | 669.22             | 648.92              | 20.31                 | 32.954               |                    |         |
| 2,400.00             | 2,295.68          | 2,220.98          | 2,183.19          | 12.96     | 11.14      | -144.66              | 218.87       | 289.95     | 720.51             | 699.48              | 21.04                 | 34.253               |                    |         |
| 2,500.00             | 2,385.65          | 2,306.61          | 2,266.24          | 13.38     | 11.49      | -145.16              | 231.08       | 306.91     | 771.85             | 750.08              | 21.77                 | 35.449               |                    |         |
| 2,600.00             | 2,475.63          | 2,392.24          | 2,349.28          | 13.80     | 11.84      | -145.60              | 243.28       | 323.86     | 823.23             | 800.70              | 22.52                 | 36.551               |                    |         |
| 2,700.00             | 2,565.60          | 2,477.88          | 2,432.33          | 14.24     | 12.19      | -145.98              | 255.48       | 340.82     | 874.63             | 851.35              | 23.28                 | 37.568               |                    |         |
| 2,800.00             | 2,655.57          | 2,563.51          | 2,515.38          | 14.67     | 12.55      | -146.33              | 267.69       | 357.77     | 926.07             | 902.02              | 24.05                 | 38.508               |                    |         |
| 2,900.00             | 2,745.55          | 2,649.15          | 2,598.42          | 15.12     | 12.91      | -146.64              | 279.89       | 374.73     | 977.52             | 952.70              | 24.82                 | 39.379               |                    |         |
| 3,000.00             | 2,835.52          | 2,734.78          | 2,681.47          | 15.57     | 13.28      | -146.91              | 292.09       | 391.68     | 1,029.00           | 1,003.39            | 25.61                 | 40.187               |                    |         |
| 3,100.00             | 2,925.49          | 2,820.41          | 2,764.52          | 16.03     | 13.65      | -147.16              | 304.30       | 408.63     | 1,080.49           | 1,054.09            | 26.39                 | 40.937               |                    |         |
| 3,200.00             | 3,015.47          | 2,906.05          | 2,847.56          | 16.49     | 14.02      | -147.39              | 316.50       | 425.59     | 1,131.99           | 1,104.80            | 27.19                 | 41.635               |                    |         |
| 3,300.00             | 3,105.44          | 2,991.68          | 2,930.61          | 16.96     | 14.39      | -147.60              | 328.71       | 442.54     | 1,183.50           | 1,155.52            | 27.99                 | 42.285               |                    |         |
| 3,400.00             | 3,195.41          | 3,077.32          | 3,013.66          | 17.43     | 14.77      | -147.79              | 340.91       | 459.50     | 1,235.03           | 1,206.24            | 28.79                 | 42.892               |                    |         |
| 3,500.00             | 3,285.38          | 3,162.95          | 3,096.70          | 17.91     | 15.15      | -147.97              | 353.11       | 476.45     | 1,286.57           | 1,256.96            | 29.60                 | 43.459               |                    |         |
| 3,600.00             | 3,375.36          | 3,248.58          | 3,179.75          | 18.40     | 15.53      | -148.13              | 365.32       | 493.41     | 1,338.11           | 1,307.69            | 30.42                 | 43.989               |                    |         |
| 3,700.00             | 3,465.33          | 3,334.22          | 3,262.80          | 18.95     | 15.92      | -148.28              | 377.52       | 510.36     | 1,389.66           | 1,358.42            | 31.24                 | 44.487               |                    |         |
| 3,800.00             | 3,555.30          | 3,419.85          | 3,345.84          | 19.59     | 16.30      | -148.42              | 389.72       | 527.32     | 1,441.22           | 1,409.16            | 32.06                 | 44.954               |                    |         |
| 3,900.00             | 3,645.28          | 3,505.48          | 3,428.89          | 20.26     | 16.69      | -148.55              | 401.93       | 544.27     | 1,492.78           | 1,459.90            | 32.89                 | 45.393               |                    |         |
| 4,000.00             | 3,735.25          | 3,591.12          | 3,511.94          | 20.93     | 17.08      | -148.67              | 414.13       | 561.23     | 1,544.35           | 1,510.64            | 33.71                 | 45.807               |                    |         |
| 4,100.00             | 3,825.22          | 3,676.75          | 3,594.98          | 21.60     | 17.47      | -148.78              | 426.33       | 578.18     | 1,595.92           | 1,561.38            | 34.55                 | 46.196               |                    |         |
| 4,200.00             | 3,915.19          | 3,762.39          | 3,678.03          | 22.28     | 17.86      | -148.89              | 438.54       | 595.13     | 1,647.50           | 1,612.12            | 35.38                 | 46.564               |                    |         |
| 4,300.00             | 4,005.17          | 3,848.02          | 3,761.08          | 22.96     | 18.25      | -148.99              | 450.74       | 612.09     | 1,699.08           | 1,662.86            | 36.22                 | 46.911               |                    |         |
| 4,400.00             | 4,095.14          | 3,933.65          | 3,844.12          | 23.63     | 18.65      | -149.08              | 462.95       | 629.04     | 1,750.67           | 1,713.61            | 37.06                 | 47.240               |                    |         |
| 4,500.00             | 4,185.11          | 4,019.29          | 3,927.17          | 24.31     | 19.04      | -149.17              | 475.15       | 646.00     | 1,802.25           | 1,764.35            | 37.90                 | 47.551               |                    |         |
| 4,600.00             | 4,275.09          | 4,104.92          | 4,010.22          | 24.99     | 19.44      | -149.25              | 487.35       | 662.95     | 1,853.85           | 1,815.10            | 38.75                 | 47.847               |                    |         |
| 4,700.00             | 4,365.06          | 4,190.55          | 4,093.26          | 25.67     | 19.84      | -149.33              | 499.56       | 679.91     | 1,905.44           | 1,865.85            | 39.59                 | 48.127               |                    |         |
| 4,800.00             | 4,455.03          | 4,276.19          | 4,176.31          | 26.35     | 20.24      | -149.41              | 511.76       | 696.86     | 1,957.04           | 1,916.60            | 40.44                 | 48.393               |                    |         |
| 4,900.00             | 4,545.01          | 4,361.82          | 4,259.36          | 27.03     | 20.63      | -149.48              | 523.96       | 713.82     | 2,008.63           | 1,967.34            | 41.29                 | 48.646               |                    |         |
| 5,000.00             | 4,634.98          | 4,447.46          | 4,342.40          | 27.71     | 21.04      | -149.54              | 536.17       | 730.77     | 2,060.24           | 2,018.09            | 42.14                 | 48.887               |                    |         |
| 5,100.00             | 4,724.95          | 4,533.09          | 4,425.45          | 28.39     | 21.44      | -149.61              | 548.37       | 747.73     | 2,111.84           | 2,068.84            | 43.00                 | 49.116               |                    |         |
| 5,200.00             | 4,814.92          | 4,618.72          | 4,508.50          | 29.07     | 21.84      | -149.67              | 560.57       | 764.68     | 2,163.44           | 2,119.59            | 43.85                 | 49.335               |                    |         |
| 5,300.00             | 4,904.90          | 4,704.36          | 4,591.54          | 29.75     | 22.24      | -149.73              | 572.78       | 781.63     | 2,215.05           | 2,170.34            | 44.71                 | 49.544               |                    |         |
| 5,400.00             | 4,994.87          | 4,789.99          | 4,674.59          | 30.44     | 22.64      | -149.78              | 584.98       | 798.59     | 2,266.66           | 2,221.09            | 45.57                 | 49.743               |                    |         |
| 5,500.00             | 5,084.84          | 4,875.62          | 4,757.64          | 31.12     | 23.05      | -149.84              | 597.19       | 815.54     | 2,318.27           | 2,271.84            | 46.43                 | 49.934               |                    |         |
| 5,600.00             | 5,174.82          | 4,961.26          | 4,840.69          | 31.80     | 23.45      | -149.89              | 609.39       | 832.50     | 2,369.88           | 2,322.59            | 47.29                 | 50.117               |                    |         |
| 5,700.00             | 5,264.79          | 5,046.89          | 4,923.73          | 32.48     | 23.86      | -149.94              | 621.59       | 849.45     | 2,421.49           | 2,373.34            | 48.15                 | 50.291               |                    |         |
| 5,800.00             | 5,354.76          | 5,132.53          | 5,006.78          | 33.17     | 24.27      | -149.98              | 633.80       | 866.41     | 2,473.10           | 2,424.09            | 49.01                 | 50.459               |                    |         |
| 5,900.00             | 5,444.74          | 5,218.16          | 5,089.83          | 33.85     | 24.67      | -150.03              | 646.00       | 883.36     | 2,524.72           | 2,474.84            | 49.88                 | 50.619               |                    |         |
| 6,000.00             | 5,534.71          | 5,303.79          | 5,172.87          | 34.53     | 25.08      | -150.07              | 658.20       | 900.32     | 2,576.33           | 2,525.59            | 50.74                 | 50.773               |                    |         |
| 6,100.00             | 5,624.68          | 5,389.43          | 5,255.92          | 35.22     | 25.49      | -150.11              | 670.41       | 917.27     | 2,627.95           | 2,576.34            | 51.61                 | 50.921               |                    |         |
| 6,200.00             | 5,714.65          | 5,475.06          | 5,338.97          | 35.90     | 25.89      | -150.15              | 682.61       | 934.23     | 2,679.57           | 2,627.09            | 52.48                 | 51.063               |                    |         |
| 6,300.00             | 5,804.63          | 5,560.69          | 5,422.01          | 36.59     | 26.30      | -150.19              | 694.81       | 951.18     | 2,731.19           | 2,677.84            | 53.34                 | 51.199               |                    |         |
| 6,400.00             | 5,894.60          | 5,646.33          | 5,505.06          | 37.27     | 26.71      | -150.23              | 707.02       | 968.13     | 2,782.81           | 2,728.59            | 54.21                 | 51.330               |                    |         |
| 6,500.00             | 5,984.57          | 5,731.96          | 5,588.11          | 37.96     | 27.12      | -150.26              | 719.22       | 985.09     | 2,834.43           | 2,779.34            | 55.08                 | 51.457               |                    |         |
| 6,600.00             | 6,074.55          | 5,817.60          | 5,671.15          | 38.64     | 27.53      | -150.30              | 731.43       | 1,002.04   | 2,886.05           | 2,830.09            | 55.95                 | 51.578               |                    |         |
| 6,700.00             | 6,164.52          | 5,903.23          | 5,754.20          | 39.32     | 27.94      | -150.33              | 743.63       | 1,019.00   | 2,937.67           | 2,880.84            | 56.83                 | 51.695               |                    |         |
| 6,800.00             | 6,254.49          | 5,988.86          | 5,837.25          | 40.01     | 28.35      | -150.36              | 755.83       | 1,035.95   | 2,989.29           | 2,931.59            | 57.70                 | 51.808               |                    |         |
| 6,900.00             | 6,344.46          | 6,074.50          | 5,920.29          | 40.69     | 28.76      | -150.39              | 768.04       | 1,052.91   | 3,040.91           | 2,982.34            | 58.57                 | 51.917               |                    |         |
| 7,000.00             | 6,434.44          | 6,160.13          | 6,003.34          | 41.38     | 29.17      | -150.42              | 780.24       | 1,069.86   | 3,092.54           | 3,033.09            | 59.45                 | 52.022               |                    |         |
| 7,100.00             | 6,524.41          | 6,245.77          | 6,086.39          | 42.06     | 29.59      | -150.45              | 792.44       | 1,086.82   | 3,144.16           | 3,083.84            | 60.32                 | 52.123               |                    |         |
| 7,200.00             | 6,614.38          | 6,331.40          | 6,169.43          | 42.75     | 30.00      | -150.48              | 804.65       | 1,103.77   | 3,195.79           | 3,134.59            | 61.20                 | 52.221               |                    |         |
|                      |                   |                   | 6,252.48          | 43.44     | 30.41      | -150.50              | 816.85       | 1,120.73   | 3,247.41           | 3,185.34            | 62.07                 | 52.315               |                    |         |

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | ОН                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #1H - OH - Plan #1

| URVOV Bross        |                    | -MWD+HRGM          | OWSG Pav5          |                 |                 |                      |                 |                 |                    | Pulo Acel           | anod                  |                      | Offect Wall Error  | 0.00 us |
|--------------------|--------------------|--------------------|--------------------|-----------------|-----------------|----------------------|-----------------|-----------------|--------------------|---------------------|-----------------------|----------------------|--------------------|---------|
|                    | rence              | Off                | set                |                 | lajor Axis      |                      | Offset Wellb    | ore Centre      |                    | Rule Assi<br>tance  |                       |                      | Offset Well Error: | 0.00 U  |
| Measured<br>Depth  | Vertical<br>Depth  | Measured<br>Depth  | Vertical<br>Depth  | Reference       | Offset          | Highside<br>Toolface | +N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres | Between<br>Ellipses | Minimum<br>Separation | Separation<br>Factor | Warning            |         |
| (usft)<br>7,400.00 | (usft)<br>6,794.33 | (usft)<br>6,502.67 | (usft)<br>6,335.53 | (usft)<br>44.12 | (usft)<br>30.82 | (°)<br>-150.53       | 829.05          | 1,137.68        | (usft)<br>3,299.04 | (usft)<br>3,236.09  | (usft)<br>62.95       | 52.406               |                    |         |
| 7,400.00           | 6,821.73           | 6,528.74           | 6,360.82           | 44.12           | 30.82           | -150.53              | 832.77          | 1,137.08        | 3,314.76           | 3,251.54            | 63.22                 | 52.400               |                    |         |
| 7,450.00           | 6,839.37           | 6,545.47           | 6,377.04           | 44.46           | 31.03           | -155.48              | 835.15          | 1,146.16        | 3,324.87           | 3,261.49            | 63.39                 | 52.455               |                    |         |
|                    |                    |                    |                    |                 |                 |                      |                 |                 |                    |                     |                       |                      |                    |         |
| 7,500.00           | 6,884.93           | 6,588.06           | 6,418.34           | 44.80           | 31.23           | -169.06              | 841.22          | 1,154.59        | 3,350.84           | 3,287.02            | 63.82                 | 52.504               |                    |         |
| 7,550.00           | 6,930.83           | 6,630.09           | 6,459.10           | 45.14           | 31.44           | 176.55               | 847.21          | 1,162.91        | 3,376.82           | 3,312.58            | 64.24                 | 52.567               |                    |         |
| 7,600.00           | 6,976.70           | 6,671.25           | 6,499.02           | 45.42           | 31.64           | 162.32               | 853.08          | 1,171.06        | 3,402.65           | 3,338.01            | 64.64                 | 52.642               |                    |         |
| 7,650.00           | 7,022.21           | 6,711.23           | 6,537.79           | 45.65           | 31.83           | 149.19               | 858.78          | 1,178.97        | 3,428.16           | 3,363.14            | 65.02                 | 52.724               |                    |         |
| 7,700.00           | 7,067.00           | 6,749.72           | 6,575.12           | 45.83           | 32.01           | 137.69               | 864.26          | 1,186.59        | 3,453.22           | 3,387.83            | 65.39                 | 52.808               |                    |         |
| 7,750.00           | 7,110.75           | 6,786.43           | 6,610.71           | 45.96           | 32.19           | 127.94               | 869.49          | 1,193.86        | 3,477.71           | 3,411.97            | 65.74                 | 52.897               |                    |         |
| 7,800.00           | 7,153.10           | 6,821.07           | 6,644.31           | 46.07           | 32.36           | 119.77               | 874.43          | 1,200.72        | 3,501.51           | 3,435.44            | 66.07                 | 52.996               |                    |         |
| 7,850.00           | 7,193.75           | 6,853.39           | 6,675.66           | 46.15           | 32.51           | 112.95               | 879.04          | 1,207.12        | 3,524.52           | 3,458.15            | 66.37                 | 53.104               |                    |         |
| 7,900.00           | 7,232.37           | 6,883.14           | 6,704.51           | 46.21           | 32.66           | 107.21               | 883.28          | 1,213.01        | 3,546.65           | 3,480.01            | 66.64                 | 53.218               |                    |         |
| 7,950.00           | 7,268.69           | 6,910.10           | 6,730.65           | 46.26           | 32.79           | 102.36               | 887.12          | 1,218.35        | 3,567.82           | 3,500.93            | 66.89                 | 53.335               |                    |         |
| 8,000.00           | 7,302.42           | 6,934.05           | 6,753.88           | 46.29           | 32.90           | 98.23                | 890.53          | 1,223.09        | 3,587.95           | 3,520.82            | 67.13                 | 53.450               |                    |         |
| 8,050.00           | 7,333.30           | 6,954.82           | 6,774.02           | 46.30           | 33.00           | 94.69                | 893.49          | 1,227.20        | 3,606.97           | 3,539.62            | 67.35                 | 53.556               |                    |         |
| 8,100.00           | 7,361.10           | 6,978.72           | 6,797.26           | 46.30           | 33.11           | 91.75                | 896.91          | 1,231.57        | 3,624.78           | 3,557.15            | 67.63                 | 53.595               |                    |         |
| 8,150.00           | 7,385.61           | 7,004.38           | 6,822.39           | 46.28           | 33.23           | 89.31                | 900.62          | 1,235.17        | 3,641.30           | 3,573.34            | 67.97                 | 53.576               |                    |         |
| 8,200.00           | 7,406.64           | 7,031.23           | 6,848.84           | 46.26           | 33.36           | 87.31                | 904.54          | 1,237.72        | 3,656.45           | 3,588.10            | 68.35                 | 53.495               |                    |         |
| 8,250.00           | 7,424.03           | 7,060.04           | 6,877.30           | 46.22           | 33.48           | 85.72                | 908.78          | 1,239.06        | 3,670.15           | 3,601.36            | 68.78                 | 53.357               |                    |         |
| 8,300.00           | 7,437.65           | 7,092.27           | 6,909.17           | 46.18           | 33.61           | 84.54                | 913.55          | 1,238.84        | 3,682.34           | 3,613.08            | 69.27                 | 53.163               |                    |         |
| 8,350.00           | 7,447.39           | 7,131.12           | 6,947.49           | 46.13           | 33.73           | 83.79                | 919.31          | 1,236.17        | 3,692.98           | 3,623.15            | 69.83                 | 52.884               |                    |         |
| 8,400.00           | 7,453.19           | 7,185.33           | 7,000.46           | 46.08           | 33.82           | 83.59                | 927.34          | 1,228.07        | 3,701.99           | 3,631.47            | 70.52                 | 52.494               |                    |         |
| 8,447.52           | 7,455.00           | 7,281.55           | 7,091.73           | 46.03           | 33.77           | 84.33                | 941.31          | 1,201.39        | 3,708.93           | 3,637.63            | 71.30                 | 52.017               |                    |         |
| 8,500.00           | 7,455.00           | 7,760.68           | 7,417.18           | 45.97           | 33.35           | 89.42                | 994.09          | 873.07          | 3,714.71           | 3,642.75            | 71.96                 | 51.624               |                    |         |
| 8,600.00           | 7,455.00           | 8,062.09           | 7,455.00           | 45.87           | 34.42           | 90.00                | 1,003.46        | 576.46          | 3,714.97           | 3,641.31            | 73.66                 | 50.434               |                    |         |
| 8,700.00           | 7,455.00           | 8,162.09           | 7,455.00           | 45.78           | 35.03           | 90.00                | 1,004.71        | 476.47          | 3,714.97           | 3,639.71            | 75.26                 | 49.361               |                    |         |
| 8,800.00           | 7,455.00           | 8,262.09           | 7,455.00           | 45.71           | 35.77           | 90.00                | 1,005.97        | 376.48          | 3,714.98           | 3,637.84            | 77.15                 | 48.155               |                    |         |
| 8,900.00           | 7,455.00           | 8,362.09           | 7,455.00           | 45.73           | 36.64           | 90.00                | 1,007.22        | 276.48          | 3,714.99           | 3,635.70            | 79.29                 | 46.854               |                    |         |
| 9,000.00           | 7,455.00           | 8,462.09           | 7,455.00           | 46.55           | 37.65           | 90.00                | 1,008.47        | 176.49          | 3,715.00           | 3,633.33            | 81.67                 | 45.489               |                    |         |
| 9,100.00           | 7,455.00           | 8,562.09           | 7,455.00           | 47.76           | 38.79           | 90.00                | 1,009.73        | 76.50           | 3,715.00           | 3,630.74            | 84.26                 | 44.088               |                    |         |
| 9,200.00           | 7,455.00           | 8,662.09           | 7,455.00           | 49.07           | 40.06           | 90.00                | 1,010.98        | -23.49          | 3,715.01           | 3,627.96            | 87.06                 | 42.674               |                    |         |
| 9,300.00           | 7,455.00           | 8,762.09           | 7,455.00           | 50.46           | 41.45           | 90.00                | 1,012.23        | -123.48         | 3,715.02           | 3,624.99            | 90.03                 | 41.266               |                    |         |
| 9,400.00           | 7,455.00           | 8,862.09           | 7,455.00           | 51.93           | 42.95           | 90.00                | 1,013.49        | -223.48         | 3,715.03           | 3,621.87            | 93.15                 | 39.880               |                    |         |
| 9,500.00           | 7,455.00           | 8,962.09           | 7,455.00           | 53.47           | 44.55           | 90.00                | 1,014.74        | -323.47         | 3,715.03           | 3,618.61            | 96.43                 | 38.527               |                    |         |
| 9,600.00           | 7,455.00           | 9,062.09           | 7,455.00           | 55.07           | 46.23           | 90.00                | 1,015.99        | -423.46         | 3,715.04           | 3,615.21            | 99.83                 | 37.214               |                    |         |
| 9,700.00           | 7,455.00           | 9,162.09           | 7,455.00           | 56.73           | 47.98           | 90.00                | 1,017.25        | -523.45         | 3,715.05           | 3,611.70            | 103.35                | 35.947               |                    |         |
| 9,800.00           | 7,455.00           | 9,262.09           | 7,455.00           | 58.44           | 49.80           | 90.00                | 1,018.50        | -623.44         | 3,715.06           | 3,608.09            | 106.97                | 34.729               |                    |         |
| 9,900.00           | 7,455.00           | 9,362.09           | 7,455.00           | 60.19           | 51.68           | 90.00                | 1,019.75        | -723.44         | 3,715.07           | 3,604.37            | 110.69                | 33.563               |                    |         |
| 10,000.00          | 7,455.00           | 9,462.09           | 7,455.00           | 62.00           | 53.61           | 90.00                | 1,021.01        | -823.43         | 3,715.07           | 3,600.58            | 114.49                | 32.448               |                    |         |
| 10,100.00          | 7,455.00           | 9,562.09           | 7,455.00           | 63.84           | 55.59           | 90.00                | 1,022.26        | -923.42         | 3,715.08           | 3,596.71            | 118.38                | 31.384               |                    |         |
| 10,200.00          | 7,455.00           | 9,662.09           | 7,455.00           | 65.72           | 57.60           | 90.00                | 1,023.51        | -1,023.41       | 3,715.09           | 3,592.76            | 122.33                | 30.370               |                    |         |
| 10,300.00          | 7,455.00           | 9,762.09           | 7,455.00           | 67.63           | 59.65           | 90.00                | 1,024.77        | -1,123.41       | 3,715.10           | 3,588.76            | 126.34                | 29.405               |                    |         |
| 10,400.00          | 7,455.00           | 9,862.09           | 7,455.00           | 69.58           | 61.73           | 90.00                | 1,026.02        | -1,223.40       | 3,715.10           | 3,584.69            | 130.41                | 28.487               |                    |         |
| 10,500.00          | 7,455.00           | 9,962.09           | 7,455.00           | 71.56           | 63.84           | 90.00                | 1,027.27        | -1,323.39       | 3,715.11           | 3,580.57            | 134.54                | 27.614               |                    |         |
| 10,600.00          | 7,455.00           | 10,062.09          | 7,455.00           | 73.56           | 65.97           | 90.00                | 1,028.53        | -1,423.38       | 3,715.12           | 3,576.41            | 138.71                | 26.784               |                    |         |
| 10,700.00          | 7,455.00           | 10,162.09          | 7,455.00           | 75.59           | 68.13           | 90.00                | 1,029.78        | -1,523.37       | 3,715.13           | 3,572.20            | 142.92                | 25.994               |                    |         |
| 10,800.00          | 7,455.00           | 10,262.09          | 7,455.00           | 77.64           | 70.30           | 90.00                | 1,031.03        | -1,623.37       | 3,715.13           | 3,567.95            | 147.18                | 25.242               |                    |         |
| 10,900.00          | 7,455.00           | 10,362.09          | 7,455.00           | 79.71           | 72.49           | 90.00                | 1,032.29        | -1,723.36       | 3,715.14           | 3,563.67            | 151.47                | 24.527               |                    |         |
| 11,000.00          | 7,455.00           | 10,462.09          | 7,455.00           | 81.80           | 74.70           | 90.00                | 1,033.54        | -1,823.35       | 3,715.15           | 3,559.35            | 155.80                | 23.846               |                    |         |
| 11,100.00          | 7,455.00           | 10,562.09          | 7,455.00           | 83.91           | 76.93           | 90.00                | 1,034.80        | -1,923.34       | 3,715.16           | 3,555.00            | 160.15                | 23.197               |                    |         |
| 11,200.00          | 7,455.00           | 10,662.09          | 7,455.00           | 86.04           | 79.16           | 90.00                | 1,036.05        | -2,023.33       | 3,715.16           | 3,550.63            | 164.54                | 22.579               |                    |         |
| 11,300.00          | 7,455.00           | 10,762.09          | 7,455.00           | 88.18           | 81.41           | 90.00                | 1,037.30        | -2,123.33       | 3,715.17           | 3,546.22            | 168.95                | 21.990               |                    |         |

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | OH                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #1H - OH - Plan #1

| ey Prog          |                      | WD+HRGM                |                      | o                   |                      |                 | 044-114-11           | one Contra             |                      | Rule Assi            | gned:                |                  | Offset Well Error: | 0.00 |
|------------------|----------------------|------------------------|----------------------|---------------------|----------------------|-----------------|----------------------|------------------------|----------------------|----------------------|----------------------|------------------|--------------------|------|
| Refe<br>asured   | rence<br>Vertical    | Off:<br>Measured       | set<br>Vertical      | Semi N<br>Reference | lajor Axis<br>Offset | Highside        | Offset Wellb         | ore Centre             | Dis<br>Between       | ance<br>Between      | Minimum              | Separation       | Warning            |      |
| epth<br>usft)    | Depth<br>(usft)      | Depth<br>(usft)        | Depth<br>(usft)      | (usft)              | (usft)               | Toolface<br>(°) | +N/-S<br>(usft)      | +E/-W<br>(usft)        | Centres<br>(usft)    | Ellipses<br>(usft)   | Separation<br>(usft) | Factor           | -                  |      |
| 400.00           | 7,455.00             | 10,862.09              | 7,455.00             | 90.34               | 83.67                | 90.00           | 1,038.56             | -2,223.32              | 3,715.18             | 3,541.79             | 173.39               | 21.427           |                    |      |
| 500.00           | 7,455.00             | 10,962.09              | 7,455.00             | 92.51               | 85.94                | 90.00           | 1,039.81             | -2,323.31              | 3,715.19             | 3,537.34             | 177.84               | 20.890           |                    |      |
| 600.00           | 7,455.00             | 11,062.09              | 7,455.00             | 94.69               | 88.22                | 90.00           | 1,041.06             | -2,423.30              | 3,715.20             | 3,532.87             | 182.32               | 20.377           |                    |      |
| 700.00           | 7,455.00             | 11,162.09              | 7,455.00             | 96.88               | 90.51                | 90.00           | 1,042.32             | -2,523.30              | 3,715.20             | 3,528.38             | 186.82               | 19.886           |                    |      |
| 800.00           | 7,455.00             | 11,262.09              | 7,455.00             | 99.09               | 92.81                | 90.00           | 1,043.57             | -2,623.29              | 3,715.21             | 3,523.87             | 191.34               | 19.417           |                    |      |
| 900.00           | 7,455.00             | 11,362.09              | 7,455.00             | 101.31              | 95.11                | 90.00           | 1,044.82             | -2,723.28              | 3,715.22             | 3,519.35             | 195.87               | 18.968           |                    |      |
| 000.00           | 7,455.00             | 11,462.09              | 7,455.00             | 103.53              | 97.42                | 90.00           | 1,046.08             | -2,823.27              | 3,715.23             | 3,514.81             | 200.42               | 18.537           |                    |      |
| 100.00           | 7,455.00             | 11,562.09              | 7,455.00             | 105.77              | 99.73                | 90.00           | 1,047.33             | -2,923.26              | 3,715.23             | 3,510.25             | 204.98               | 18.125           |                    |      |
| 200.00           | 7,455.00             | 11,662.09              | 7,455.00             | 108.01              | 102.06               | 90.00           | 1,048.58             | -3,023.26              | 3,715.24             | 3,505.68             | 209.56               | 17.729           |                    |      |
| 300.00           | 7,455.00             | 11,762.09              | 7,455.00             | 110.26              | 104.38               | 90.00           | 1,049.84             | -3,123.25              | 3,715.25             | 3,501.10             | 214.15               | 17.349           |                    |      |
| 400.00           | 7,455.00             | 11,862.09              | 7,455.00             | 112.52              | 106.72               | 90.00           | 1,051.09             | -3,223.24              | 3,715.26             | 3,496.50             | 218.75               | 16.984           |                    |      |
| 500.00           | 7,455.00             | 11,962.09              | 7,455.00             | 114.79              | 109.05               | 90.00           | 1,052.34             | -3,323.23              | 3,715.26             | 3,491.90             | 223.37               | 16.633           |                    |      |
| 600.00           | 7,455.00             | 12,062.09              | 7,455.00             | 117.06              | 111.39               | 90.00           | 1,053.60             | -3,423.22              | 3,715.27             | 3,487.28             | 227.99               | 16.296           |                    |      |
| 700.00           | 7,455.00             | 12,002.09              | 7,455.00             | 119.34              | 113.74               | 90.00           | 1,054.85             | -3,523.22              | 3,715.28             | 3,482.65             | 232.62               | 15.971           |                    |      |
| 800.00           | 7,455.00             | 12,162.09              | 7,455.00             | 121.62              | 116.09               | 90.00           | 1,054.85             | -3,623.22              | 3,715.28             | 3,482.05             | 232.02               | 15.659           |                    |      |
| 900.00           | 7,455.00             | 12,362.09              | 7,455.00             | 123.91              | 118.44               | 90.00           | 1,057.36             | -3,723.20              | 3,715.29             | 3,473.37             | 241.92               | 15.358           |                    |      |
| 000.00           | 7,455.00             | 12,462.09              | 7,455.00             | 126.21              | 120.80               | 90.00           | 1,058.61             | -3,823.19              | 3,715.30             | 3,468.72             | 246.58               | 15.067           |                    |      |
| 100.00           | 7,455.00             | 12,562.09              | 7,455.00             | 128.51              | 123.16               | 90.00           | 1,059.86             | -3,923.19              | 3,715.30             | 3,464.06             | 240.30               | 14.787           |                    |      |
|                  |                      |                        |                      |                     |                      |                 |                      |                        | 3,715.31             |                      |                      |                  |                    |      |
| 200.00           | 7,455.00             | 12,662.09              | 7,455.00             | 130.82              | 125.52               | 90.00           | 1,061.12             | -4,023.18              |                      | 3,459.39             | 255.93               | 14.517           |                    |      |
| 300.00<br>400.00 | 7,455.00<br>7,455.00 | 12,762.09<br>12,862.09 | 7,455.00<br>7,455.00 | 133.13<br>135.44    | 127.89<br>130.25     | 90.00<br>90.00  | 1,062.37<br>1,063.62 | -4,123.17<br>-4,223.16 | 3,715.33<br>3,715.33 | 3,454.72<br>3,450.03 | 260.61<br>265.30     | 14.256<br>14.004 |                    |      |
| -00.00           | 7 455 00             | 40.000.00              | 7 455 00             | 407.70              | 100.00               | 00.00           |                      |                        | 0 745 04             |                      | 000.00               | 40 704           |                    |      |
| 500.00           | 7,455.00             | 12,962.09              | 7,455.00             | 137.76              | 132.62               | 90.00           | 1,064.88             | -4,323.15              | 3,715.34             | 3,445.35             | 269.99               | 13.761           |                    |      |
| 600.00           | 7,455.00             | 13,062.09              | 7,455.00             | 140.08              | 135.00               | 90.00           | 1,066.13             | -4,423.15              | 3,715.35             | 3,440.65             | 274.70               | 13.525           |                    |      |
| 700.00           | 7,455.00             | 13,162.09              | 7,455.00             | 142.41              | 137.37               | 90.00           | 1,067.38             | -4,523.14              | 3,715.36             | 3,435.95             | 279.41               | 13.297           |                    |      |
| 800.00<br>900.00 | 7,455.00<br>7,455.00 | 13,262.09<br>13,362.09 | 7,455.00<br>7,455.00 | 144.74<br>147.07    | 139.75<br>142.13     | 90.00<br>90.00  | 1,068.64<br>1,069.89 | -4,623.13<br>-4,723.12 | 3,715.36<br>3,715.37 | 3,431.24<br>3,426.53 | 284.12<br>288.84     | 13.077<br>12.863 |                    |      |
|                  |                      |                        |                      |                     | 144.51               |                 |                      | -4,823.11              | 3,715.38             | 3,421.82             | 293.56               |                  |                    |      |
| 000.00           | 7,455.00             | 13,462.09              | 7,455.00             | 149.41              |                      | 90.00           | 1,071.14             |                        |                      |                      | 293.56               | 12.656           |                    |      |
| 100.00           | 7,455.00             | 13,562.09              | 7,455.00             | 151.75              | 146.89               | 90.00           | 1,072.40             | -4,923.11              | 3,715.39             | 3,417.10             |                      | 12.456           |                    |      |
| 200.00           | 7,455.00             | 13,662.09              | 7,455.00             | 154.09              | 149.28               | 90.00           | 1,073.65             | -5,023.10              | 3,715.39             | 3,412.37             | 303.02               | 12.261           |                    |      |
| 300.00           | 7,455.00             | 13,762.09              | 7,455.00             | 156.44              | 151.66               | 90.00           | 1,074.90             | -5,123.09              | 3,715.40             | 3,407.64             | 307.76               | 12.072           |                    |      |
| 400.00           | 7,455.00             | 13,862.09              | 7,455.00             | 158.79              | 154.05               | 90.00           | 1,076.16             | -5,223.08              | 3,715.41             | 3,402.91             | 312.50               | 11.889           |                    |      |
| 500.00           | 7,455.00             | 13,962.09              | 7,455.00             | 161.14              | 156.44               | 90.00           | 1,077.41             | -5,323.08              | 3,715.42             | 3,398.17             | 317.25               | 11.711           |                    |      |
| 600.00           | 7,455.00             | 14,062.09              | 7,455.00             | 163.49              | 158.83               | 90.00           | 1,078.66             | -5,423.07              | 3,715.42             | 3,393.43             | 321.99               | 11.539           |                    |      |
| 700.00           | 7,455.00             | 14,162.09              | 7,455.00             | 165.85              | 161.23               | 90.00           | 1,079.92             | -5,523.06              | 3,715.43             | 3,388.69             | 326.75               | 11.371           |                    |      |
| 800.00           | 7,455.00             | 14,262.09              | 7,455.00             | 168.20              | 163.62               | 90.00           | 1,081.17             | -5,623.05              | 3,715.44             | 3,383.94             | 331.50               | 11.208           |                    |      |
| 900.00           | 7,455.00             | 14,362.09              | 7,455.00             | 170.56              | 166.01               | 90.00           | 1,082.42             | -5,723.04              | 3,715.45             | 3,379.19             | 336.26               | 11.049           |                    |      |
| 00.00            | 7,455.00             | 14,462.09              | 7,455.00             | 172.93              | 168.41               | 90.00           | 1,083.68             | -5,823.04              | 3,715.46             | 3,374.43             | 341.02               | 10.895           |                    |      |
| 100.00           | 7,455.00             | 14,562.09              | 7,455.00             | 175.29              | 170.81               | 90.00           | 1,084.93             | -5,923.03              | 3,715.46             | 3,369.67             | 345.79               | 10.745           |                    |      |
| 200.00           | 7,455.00             | 14,662.09              | 7,455.00             | 177.66              | 173.20               | 90.00           | 1,086.18             | -6,023.02              | 3,715.47             | 3,364.91             | 350.56               | 10.599           |                    |      |
| 300.00           | 7,455.00             | 14,762.09              | 7,455.00             | 180.02              | 175.60               | 90.00           | 1,087.44             | -6,123.01              | 3,715.48             | 3,360.15             | 355.33               | 10.456           |                    |      |
| 400.00           | 7,455.00             | 14,862.09              | 7,455.00             | 182.39              | 178.00               | 90.00           | 1,088.69             | -6,223.00              | 3,715.49             | 3,355.38             | 360.10               | 10.318           |                    |      |
| 500.00           | 7,455.00             | 14,962.09              | 7,455.00             | 184.76              | 180.41               | 90.00           | 1,089.94             | -6,323.00              | 3,715.49             | 3,350.62             | 364.88               | 10.183           |                    |      |
| 600.00           | 7,455.00             | 15,062.09              | 7,455.00             | 187.14              | 182.81               | 90.00           | 1,091.20             | -6,422.99              | 3,715.50             | 3,345.84             | 369.66               | 10.051           |                    |      |
| 700.00           | 7,455.00             | 15,162.09              | 7,455.00             | 189.51              | 185.21               | 90.00           | 1,092.45             | -6,522.98              | 3,715.51             | 3,341.07             | 374.44               | 9.923            |                    |      |
| 800.00           | 7,455.00             | 15,262.09              | 7,455.00             | 191.89              | 187.61               | 90.00           | 1,093.71             | -6,622.97              | 3,715.52             | 3,336.30             | 379.22               | 9.798            |                    |      |
| 900.00           | 7,455.00             | 15,362.09              | 7,455.00             | 194.26              | 190.02               | 90.00           | 1,094.96             | -6,722.97              | 3,715.52             | 3,331.52             | 384.01               | 9.676            |                    |      |
| 000.00           | 7,455.00             | 15,462.09              | 7,455.00             | 196.64              | 192.42               | 90.00           | 1,096.21             | -6,822.96              | 3,715.53             | 3,326.74             | 388.79               | 9.557            |                    |      |
| 100.00           | 7,455.00             | 15,562.09              | 7,455.00             | 199.02              | 194.83               | 90.00           | 1,097.47             | -6,922.95              | 3,715.54             | 3,321.96             | 393.58               | 9.440            |                    |      |
| 200.00           | 7,455.00             | 15,662.09              | 7,455.00             | 201.41              | 197.24               | 90.00           | 1,098.72             | -7,022.94              | 3,715.55             | 3,317.17             | 398.37               | 9.327            |                    |      |
| 300.00           | 7,455.00             | 15,762.09              | 7,455.00             | 201.41              | 197.24               | 90.00           | 1,099.97             | -7,122.93              | 3,715.55             | 3,312.39             | 403.17               | 9.216            |                    |      |
| 400.00           | 7,455.00             | 15,862.09              | 7,455.00             | 203.79              | 202.05               | 90.00           | 1,101.23             | -7,222.93              | 3,715.55             | 3,307.60             | 403.17               | 9.210            |                    |      |
|                  |                      |                        |                      |                     |                      |                 |                      |                        |                      |                      |                      |                  |                    |      |
| 500.00           | 7,455.00             | 15,962.09              | 7,455.00             | 208.56              | 204.46               | 90.00           | 1,102.48             | -7,322.92              | 3,715.57             | 3,302.81             | 412.76               | 9.002            |                    |      |

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | OH                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #1H - OH - Plan #1

| Offset Des                  | sign: La                    | a Jara Fed 1                | -2 - La Ja                  | la reu 1-2          | #10-00           | - Plan #1                   |                 |                 |                              |                               |                                 |                      | Offset Site Error: | 0.00 usft |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|-----------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|--------------------|-----------|
| Survey Progr<br>Refe        | ram: C<br>rence             | -MWD+HRGM (<br>Off          | set                         | Semi N              | lajor Axis       |                             | Offset Wellb    | ore Centre      | Dis                          | Rule Assi<br>tance            | gned:                           |                      | Offset Well Error: | 0.00 usft |
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) | Highside<br>Toolface<br>(°) | +N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning            |           |
| 16,600.00                   | 7,455.00                    | 16,062.09                   | 7,455.00                    | 210.94              | 206.87           | 90.00                       | 1,103.73        | -7,422.91       | 3,715.58                     | 3,298.02                      | 417.56                          | 8.898                |                    |           |
| 16,700.00                   | 7,455.00                    | 16,162.09                   | 7,455.00                    | 213.33              | 209.28           | 90.00                       | 1,104.99        | -7,522.90       | 3,715.58                     | 3,293.23                      | 422.36                          | 8.797                |                    |           |
| 16,800.00                   | 7,455.00                    | 16,262.09                   | 7,455.00                    | 215.72              | 211.69           | 90.00                       | 1,106.24        | -7,622.89       | 3,715.59                     | 3,288.43                      | 427.16                          | 8.698                |                    |           |
| 16,900.00                   | 7,455.00                    | 16,362.09                   | 7,455.00                    | 218.11              | 214.11           | 90.00                       | 1,107.49        | -7,722.89       | 3,715.60                     | 3,283.64                      | 431.96                          | 8.602                |                    |           |
| 17,000.00                   | 7,455.00                    | 16,462.09                   | 7,455.00                    | 220.50              | 216.52           | 90.00                       | 1,108.75        | -7,822.88       | 3,715.61                     | 3,278.84                      | 436.77                          | 8.507                |                    |           |
| 17,100.00                   | 7,455.00                    | 16,562.09                   | 7,455.00                    | 222.89              | 218.93           | 90.00                       | 1,110.00        | -7,922.87       | 3,715.62                     | 3,274.04                      | 441.58                          | 8.414                |                    |           |
| 17,200.00                   | 7,455.00                    | 16,662.09                   | 7,455.00                    | 225.28              | 221.34           | 90.00                       | 1,111.25        | -8,022.86       | 3,715.62                     | 3,269.24                      | 446.38                          | 8.324                |                    |           |
| 17,300.00                   | 7,455.00                    | 16,762.09                   | 7,455.00                    | 227.68              | 223.76           | 90.00                       | 1,112.51        | -8,122.86       | 3,715.63                     | 3,264.44                      | 451.19                          | 8.235                |                    |           |
| 17,400.00                   | 7,455.00                    | 16,862.09                   | 7,455.00                    | 230.07              | 226.17           | 90.00                       | 1,113.76        | -8,222.85       | 3,715.64                     | 3,259.64                      | 456.00                          | 8.148                |                    |           |
| 17,458.14                   | 7,455.00                    | 16,920.23                   | 7,455.00                    | 231.46              | 227.57           | 90.00                       | 1,114.49        | -8,280.98       | 3,715.64                     | 3,256.84                      | 458.80                          | 8.099                |                    |           |

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | ОН                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #2H - OH - Plan #1

| rvey Prog<br>Refe           | rence                       | -MWD+HRGM<br>Off            |                             |                     | lajor Axis       |                             | Offset Wellb    | ore Centre      | Dist                         | Rule Assi<br>tance            |                                 |                      | Offset Well Error: | 0.00 ı |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|-----------------|-----------------|------------------------------|-------------------------------|---------------------------------|----------------------|--------------------|--------|
| leasured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) | Highside<br>Toolface<br>(°) | +N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning            |        |
| 0.00                        | 0.00                        | 0.00                        | 0.00                        | 0.00                | 0.00             | 37.96                       | 12.01           | 9.37            | 15.24                        |                               |                                 |                      |                    |        |
| 100.00                      | 100.00                      | 100.00                      | 100.00                      | 0.90                | 0.90             | 37.96                       | 12.01           | 9.37            | 15.24                        | 13.44                         | 1.79                            | 8.492                |                    |        |
| 200.00                      | 200.00                      | 200.00                      | 200.00                      | 1.48                | 1.48             | 37.96                       | 12.01           | 9.37            | 15.24                        | 12.27                         | 2.97                            | 5.131                |                    |        |
| 300.00                      | 300.00                      | 300.00                      | 300.00                      | 1.92                | 1.92             | 37.96                       | 12.01           | 9.37            | 15.24                        | 11.40                         | 3.84                            | 3.965                |                    |        |
| 400.00                      | 400.00                      | 400.00                      | 400.00                      | 2.28                | 2.28             | 37.96                       | 12.01           | 9.37            | 15.24                        | 10.68                         | 4.56                            | 3.343                |                    |        |
| 500.00                      | 500.00                      | 500.00                      | 500.00                      | 2.59                | 2.59             | 37.96                       | 12.01           | 9.37            | 15.24                        | 10.06                         | 5.18                            | 2.942 CC, I          | ES                 |        |
| 600.00                      | 599.98                      | 599.94                      | 599.92                      | 2.95                | 2.99             | -114.48                     | 11.07           | 10.84           | 16.13                        | 10.50                         | 5.63                            | 2.866 SF             |                    |        |
| 700.00                      | 699.84                      | 699.84                      | 699.68                      | 3.92                | 3.95             | -113.08                     | 8.23            | 15.22           | 18.82                        | 12.56                         | 6.26                            | 3.006                |                    |        |
| 800.00                      | 799.45                      | 799.64                      | 799.09                      | 4.72                | 4.75             | -111.47                     | 3.51            | 22.52           | 23.31                        | 16.48                         | 6.83                            | 3.411                |                    |        |
| 900.00                      | 898.70                      | 899.29                      | 898.00                      | 5.44                | 5.47             | -110.01                     | -3.07           | 32.70           | 29.60                        | 22.22                         | 7.38                            | 4.011                |                    |        |
| 1,000.00                    | 997.47                      | 998.75                      | 996.23                      | 6.11                | 6.13             | -108.82                     | -11.50          | 45.74           | 37.69                        | 29.77                         | 7.92                            | 4.757                |                    |        |
| 1,100.00                    | 1,095.62                    | 1,097.97                    | 1,093.64                    | 6.74                | 6.76             | -107.88                     | -21.76          | 61.59           | 47.57                        | 39.08                         | 8.48                            | 5.607                |                    |        |
| 1,200.00                    | 1,193.06                    | 1,196.91                    | 1,190.06                    | 7.35                | 7.33             | -107.14                     | -33.80          | 80.20           | 59.20                        | 50.13                         | 9.07                            | 6.528                |                    |        |
| 1,300.00                    | 1,289.64                    | 1,296.04                    | 1,286.27                    | 7.93                | 7.81             | -107.86                     | -46.77          | 100.26          | 72.23                        | 62.20                         | 10.03                           | 7.201                |                    |        |
| 1,400.00                    | 1,385.27                    | 1,394.95                    | 1,382.26                    | 8.51                | 8.10             | -110.48                     | -59.71          | 120.27          | 86.44                        | 75.68                         | 10.77                           | 8.028                |                    |        |
| 1,500.00                    | 1,479.82                    | 1,493.49                    | 1,477.90                    | 9.07                | 8.41             | -114.08                     | -72.61          | 140.21          | 102.18                       | 90.55                         | 11.63                           | 8.788                |                    |        |
| 1,600.00                    | 1,573.17                    | 1,591.56                    | 1,573.08                    | 9.62                | 8.73             | -118.10                     | -85.44          | 160.05          | 119.85                       | 107.22                        | 12.63                           | 9.491                |                    |        |
| 1,700.00                    | 1,665.21                    | 1,689.04                    | 1,667.69                    | 10.16               | 9.06             | -122.19                     | -98.20          | 179.78          | 139.83                       | 126.08                        | 13.75                           | 10.173               |                    |        |
| 1,793.87                    | 1,750.33                    | 1,779.90                    | 1,755.87                    | 10.64               | 9.37             | -125.91                     | -110.09         | 198.16          | 160.96                       | 146.10                        | 14.86                           | 10.834               |                    |        |
| 1,800.00                    | 1,755.84                    | 1,785.81                    | 1,761.60                    | 10.66               | 9.40             | -126.17                     | -110.87         | 199.36          | 162.42                       | 147.50                        | 14.92                           | 10.884               |                    |        |
| 1,900.00                    | 1,845.82                    | 1,882.23                    | 1,855.18                    | 11.05               | 9.75             | -129.81                     | -123.48         | 218.86          | 186.64                       | 170.57                        | 16.07                           | 11.611               |                    |        |
| 2,000.00                    | 1,935.79                    | 1,978.65                    | 1,948.76                    | 11.41               | 10.11            | -132.62                     | -136.10         | 238.37          | 211.42                       | 194.30                        | 17.11                           | 12.355               |                    |        |
| 2,100.00                    | 2,025.76                    | 2,075.06                    | 2,042.33                    | 11.78               | 10.48            | -134.83                     | -148.72         | 257.88          | 236.57                       | 218.46                        | 18.11                           | 13.062               |                    |        |
| 2,200.00                    | 2,115.74                    | 2,171.48                    | 2,135.91                    | 12.16               | 10.85            | -136.62                     | -161.34         | 277.39          | 261.99                       | 242.91                        | 19.09                           | 13.727               |                    |        |
| 2,300.00                    | 2,205.71                    | 2,267.90                    | 2,229.49                    | 12.56               | 11.24            | -138.10                     | -173.96         | 296.90          | 287.61                       | 267.57                        | 20.04                           | 14.349               |                    |        |
| 2,400.00                    | 2,295.68                    | 2,364.32                    | 2,323.07                    | 12.96               | 11.63            | -139.33                     | -186.58         | 316.41          | 313.38                       | 292.39                        | 20.99                           | 14.929               |                    |        |
| 2,500.00                    | 2,385.65                    | 2,460.74                    | 2,416.64                    | 13.38               | 12.02            | -140.38                     | -199.20         | 335.92          | 339.27                       | 317.34                        | 21.93                           | 15.469               |                    |        |
| 2,600.00                    | 2,475.63                    | 2,557.16                    | 2,510.22                    | 13.80               | 12.43            | -141.28                     | -211.81         | 355.43          | 365.25                       | 342.38                        | 22.87                           | 15.971               |                    |        |
| 2,700.00                    | 2,565.60                    | 2,653.58                    | 2,603.80                    | 14.24               | 12.83            | -142.06                     | -224.43         | 374.94          | 391.30                       | 367.49                        | 23.81                           | 16.437               |                    |        |
| 2,800.00                    | 2,655.57                    | 2,750.00                    | 2,697.38                    | 14.67               | 13.24            | -142.74                     | -237.05         | 394.45          | 417.41                       | 392.67                        | 24.74                           | 16.872               |                    |        |
| 2,900.00                    | 2,745.55                    | 2,846.42                    | 2,790.96                    | 15.12               | 13.66            | -143.34                     | -249.67         | 413.95          | 443.57                       | 417.89                        | 25.67                           | 17.276               |                    |        |
| 3,000.00                    | 2,835.52                    | 2,942.84                    | 2,884.53                    | 15.57               | 14.08            | -143.88                     | -262.29         | 433.46          | 469.77                       | 443.16                        | 26.61                           | 17.653               |                    |        |
| 3,100.00                    | 2,925.49                    | 3,039.25                    | 2,978.11                    | 16.03               | 14.50            | -144.36                     | -274.91         | 452.97          | 496.00                       | 468.45                        | 27.55                           | 18.005               |                    |        |
| 3,200.00                    | 3,015.47                    | 3,135.67                    | 3,071.69                    | 16.49               | 14.93            | -144.79                     | -287.52         | 472.48          | 522.26                       | 493.78                        | 28.49                           | 18.333               |                    |        |
| 3,300.00                    | 3,105.44                    | 3,232.09                    | 3,165.27                    | 16.96               | 15.35            | -145.18                     | -300.14         | 491.99          | 548.55                       | 519.12                        | 29.43                           | 18.641               |                    |        |
| 3,400.00                    | 3,195.41                    | 3,328.51                    | 3,258.84                    | 17.43               | 15.78            | -145.53                     | -312.76         | 511.50          | 574.86                       | 544.49                        | 30.37                           | 18.928               |                    |        |
| 3,500.00                    | 3,285.38                    | 3,424.93                    | 3,352.42                    | 17.91               | 16.22            | -145.86                     | -325.38         | 531.01          | 601.19                       | 569.87                        | 31.31                           | 19.198               |                    |        |
| 3,600.00                    | 3,375.36                    | 3,521.35                    | 3,446.00                    | 18.40               | 16.65            | -146.15                     | -338.00         | 550.52          | 627.53                       | 595.27                        | 32.26                           | 19.452               |                    |        |
| 3,700.00                    | 3,465.33                    | 3,617.77                    | 3,539.58                    | 18.95               | 17.09            | -146.42                     | -350.62         | 570.03          | 653.89                       | 620.68                        | 33.21                           | 19.690               |                    |        |
| 3,800.00                    | 3,555.30                    | 3,714.19                    | 3,633.16                    | 19.59               | 17.53            | -146.67                     | -363.24         | 589.54          | 680.26                       | 646.10                        | 34.16                           | 19.914               |                    |        |
| 3,900.00                    | 3,645.28                    | 3,810.61                    | 3,726.73                    | 20.26               | 17.97            | -146.91                     | -375.85         | 609.04          | 706.64                       | 671.53                        | 35.11                           | 20.125               |                    |        |
| 4,000.00                    | 3,735.25                    | 3,907.03                    | 3,820.31                    | 20.93               | 18.41            | -147.12                     | -388.47         | 628.55          | 733.04                       | 696.97                        | 36.07                           | 20.325               |                    |        |
| 4,100.00                    | 3,825.22                    | 4,003.44                    | 3,913.89                    | 21.60               | 18.86            | -147.32                     | -401.09         | 648.06          | 759.44                       | 722.42                        | 37.02                           | 20.513               |                    |        |
| 4,200.00                    | 3,915.19                    | 4,099.86                    | 4,007.47                    | 22.28               | 19.30            | -147.51                     | -413.71         | 667.57          | 785.85                       | 747.87                        | 37.98                           | 20.692               |                    |        |
| 4,300.00                    | 4,005.17                    | 4,196.28                    | 4,101.04                    | 22.96               | 19.75            | -147.68                     | -426.33         | 687.08          | 812.26                       | 773.33                        | 38.94                           | 20.861               |                    |        |
| 4,400.00                    | 4,095.14                    | 4,292.70                    | 4,194.62                    | 23.63               | 20.20            | -147.85                     | -438.95         | 706.59          | 838.69                       | 798.79                        | 39.90                           | 21.021               |                    |        |
| 4,500.00                    | 4,185.11                    | 4,389.12                    | 4,288.20                    | 24.31               | 20.65            | -148.00                     | -451.56         | 726.10          | 865.12                       | 824.26                        | 40.86                           | 21.173               |                    |        |
| 4,600.00                    | 4,275.09                    | 4,485.54                    | 4,381.78                    | 24.99               | 21.10            | -148.15                     | -464.18         | 745.61          | 891.55                       | 849.73                        | 41.82                           | 21.318               |                    |        |
| 4,700.00                    | 4,365.06                    | 4,581.96                    | 4,475.36                    | 25.67               | 21.55            | -148.28                     | -476.80         | 765.12          | 917.99                       | 875.20                        | 42.79                           | 21.455               |                    |        |
| 4,800.00                    | 4,455.03                    | 4,678.38                    | 4,568.93                    | 26.35               | 22.00            | -148.41                     | -489.42         | 784.63          | 944.43                       | 900.68                        | 43.75                           | 21.586               |                    |        |
| 4,900.00                    | 4,545.01                    | 4,774.80                    | 4,662.51                    | 27.03               | 22.45            | -148.53                     | -502.04         | 804.13          | 970.88                       | 926.16                        | 44.72                           | 21.711               |                    |        |
| 5,000.00                    | 4,634.98                    | 4,871.22                    | 4,756.09                    | 27.71               | 22.91            | -148.65                     | -514.66         | 823.64          | 997.33                       | 951.65                        | 45.69                           | 21.830               |                    |        |

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | ОН                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #2H - OH - Plan #1

| rvey Prog                   | ram:                             | D-MWD+HRGM                  | OWSG Rev5                   |                     |                  |                             |                    |                  |                              | Rule Assi                     | gned:                           |                      | Offset Well Error: | 0.00 us |
|-----------------------------|----------------------------------|-----------------------------|-----------------------------|---------------------|------------------|-----------------------------|--------------------|------------------|------------------------------|-------------------------------|---------------------------------|----------------------|--------------------|---------|
| Refe                        | rence                            | Off                         | set                         |                     | laior Axis       | 11 - h - l - h -            | Offset Wellbo      | ore Centre       |                              | tance                         |                                 | 0                    |                    |         |
| leasured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft)      | Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Reference<br>(usft) | Offset<br>(usft) | Highside<br>Toolface<br>(°) | +N/-S<br>(usft)    | +E/-W<br>(usft)  | Between<br>Centres<br>(usft) | Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning            |         |
| 5,100.00                    | 4,724.95                         |                             | 4,849.67                    | 28.39               | 23.36            | -148.76                     | -527.28            | 843.15           | 1,023.79                     | 977.14                        | 46.66                           | 21.944               |                    |         |
| 5,200.00                    | 4,814.92                         |                             | 4,943.24                    | 29.07               | 23.82            | -148.86                     | -539.89            | 862.66           | 1,050.25                     | 1,002.62                      | 47.63                           | 22.052               |                    |         |
| 5,300.00                    | 4,904.90                         |                             | 5,036.82                    | 29.75               | 24.27            | -148.96                     | -552.51            | 882.17           | 1,076.71                     | 1,028.12                      | 48.60                           | 22.156               |                    |         |
| 5,400.00                    | 4,994.87                         |                             | 5,130.40                    | 30.44               | 24.73            | -149.06                     | -565.13            | 901.68           | 1,103.18                     | 1,053.61                      | 49.57                           | 22.256               |                    |         |
| 5,500.00                    | 5,084.84                         |                             | 5,223.98                    | 31.12               | 25.19            | -149.15                     | -577.75            | 921.19           | 1,129.64                     | 1,079.10                      | 50.54                           | 22.351               |                    |         |
| 5,600.00                    | 5,174.82                         |                             | 5,317.56                    | 31.80               | 25.65            | -149.23                     | -590.37            | 940.70           | 1,156.12                     | 1,104.60                      | 51.51                           | 22.443               |                    |         |
| 5,700.00                    | 5,264.79                         | 5,546.15                    | 5,411.13                    | 32.48               | 26.10            | -149.31                     | -602.99            | 960.21           | 1,182.59                     | 1,130.10                      | 52.49                           | 22.530               |                    |         |
| 5,800.00                    | 5,354.76                         |                             | 5,504.71                    | 33.17               | 26.56            | -149.39                     | -615.60            | 979.72           | 1,209.06                     | 1,155.60                      | 53.46                           | 22.615               |                    |         |
| 5,900.00                    | 5,444.74                         | 5,738.99                    | 5,598.29                    | 33.85               | 27.02            | -149.47                     | -628.22            | 999.22           | 1,235.54                     | 1,181.10                      | 54.44                           | 22.696               |                    |         |
| 6,000.00                    | 5,534.7                          | 5,835.41                    | 5,691.87                    | 34.53               | 27.48            | -149.54                     | -640.84            | 1,018.73         | 1,262.02                     | 1,206.60                      | 55.42                           | 22.774               |                    |         |
| 6,100.00                    | 5,624.68                         | 5,931.82                    | 5,785.44                    | 35.22               | 27.94            | -149.61                     | -653.46            | 1,038.24         | 1,288.50                     | 1,232.10                      | 56.39                           | 22.848               |                    |         |
| 6,200.00                    | 5,714.65                         | 6,028.24                    | 5,879.02                    | 35.90               | 28.41            | -149.67                     | -666.08            | 1,057.75         | 1,314.98                     | 1,257.61                      | 57.37                           | 22.921               |                    |         |
| 6,300.00                    | 5,804.63                         | 6,124.66                    | 5,972.60                    | 36.59               | 28.87            | -149.74                     | -678.70            | 1,077.26         | 1,341.46                     | 1,283.11                      | 58.35                           | 22.990               |                    |         |
| 6,400.00                    | 5,894.60                         | 6,221.08                    | 6,066.18                    | 37.27               | 29.33            | -149.80                     | -691.32            | 1,096.77         | 1,367.95                     | 1,308.62                      | 59.33                           | 23.057               |                    |         |
| 6,500.00                    | 5,984.57                         |                             | 6,159.76                    | 37.96               | 29.79            | -149.85                     | -703.93            | 1,116.28         | 1,394.43                     | 1,334.13                      | 60.31                           | 23.122               |                    |         |
| 6,600.00                    | 6,074.55                         | 6,413.92                    | 6,253.33                    | 38.64               | 30.26            | -149.91                     | -716.55            | 1,135.79         | 1,420.92                     | 1,359.63                      | 61.29                           | 23.184               |                    |         |
| 6,700.00                    | 6,164.52                         | 6,510.34                    | 6,346.91                    | 39.32               | 30.72            | -149.97                     | -729.17            | 1,155.30         | 1,447.41                     | 1,385.14                      | 62.27                           | 23.244               |                    |         |
| 6,800.00                    | 6,254.49                         | 6,606.76                    | 6,440.49                    | 40.01               | 31.18            | -150.02                     | -741.79            | 1,174.80         | 1,473.90                     | 1,410.65                      | 63.25                           | 23.302               |                    |         |
| 6,900.00                    | 6,344.46                         | 6,703.18                    | 6,534.07                    | 40.69               | 31.65            | -150.07                     | -754.41            | 1,194.31         | 1,500.39                     | 1,436.16                      | 64.23                           | 23.359               |                    |         |
| 7,000.00                    | 6,434.44                         | 6,799.60                    | 6,627.64                    | 41.38               | 32.11            | -150.12                     | -767.03            | 1,213.82         | 1,526.88                     | 1,461.67                      | 65.21                           | 23.413               |                    |         |
| 7,100.00                    | 6,524.41                         | 6,896.01                    | 6,721.22                    | 42.06               | 32.58            | -150.16                     | -779.64            | 1,233.33         | 1,553.38                     | 1,487.18                      | 66.20                           | 23.466               |                    |         |
| 7,200.00                    | 6,614.38                         | 6,995.06                    | 6,817.69                    | 42.75               | 33.06            | -150.29                     | -792.63            | 1,251.42         | 1,579.83                     | 1,512.61                      | 67.22                           | 23.503               |                    |         |
| 7,300.00                    | 6,704.36                         | 5 7,093.99                  | 6,915.58                    | 43.44               | 33.46            | -150.94                     | -805.62            | 1,254.81         | 1,606.10                     | 1,537.88                      | 68.22                           | 23.542               |                    |         |
| 7,400.00                    | 6,794.33                         | 3 7,184.59                  | 7,004.56                    | 44.12               | 33.58            | -152.06                     | -817.23            | 1,242.99         | 1,632.66                     | 1,563.56                      | 69.09                           | 23.629               |                    |         |
| 7,430.45                    | 6,821.73                         | 3 7,210.03                  | 7,029.11                    | 44.33               | 33.56            | -152.45                     | -820.41            | 1,237.13         | 1,640.92                     | 1,571.60                      | 69.32                           | 23.670               |                    |         |
| 7,450.00                    | 6,839.37                         | 7,225.93                    | 7,044.31                    | 44.46               | 33.54            | -157.03                     | -822.36            | 1,232.91         | 1,646.30                     | 1,576.85                      | 69.45                           | 23.704               |                    |         |
| 7,500.00                    | 6,884.93                         | 7,265.88                    | 7,081.96                    | 44.80               | 33.48            | -169.71                     | -827.19            | 1,220.46         | 1,660.35                     | 1,590.60                      | 69.75                           | 23.805               |                    |         |
| 7,550.00                    | 6,930.83                         | 3 7,304.95                  | 7,117.85                    | 45.14               | 33.40            | 176.73                      | -831.75            | 1,205.75         | 1,674.69                     | 1,604.73                      | 69.96                           | 23.937               |                    |         |
| 7,600.00                    | 6,976.70                         | 7,343.25                    | 7,152.01                    | 45.42               | 33.32            | 163.26                      | -836.06            | 1,188.97         | 1,689.20                     | 1,619.09                      | 70.11                           | 24.095               |                    |         |
| 7,650.00                    | 7,022.21                         | 7,380.93                    | 7,184.45                    | 45.65               | 33.23            | 150.80                      | -840.11            | 1,170.25         | 1,703.71                     | 1,633.51                      | 70.20                           | 24.269               |                    |         |
| 7,700.00                    | 7,067.00                         | 7,418.07                    | 7,215.17                    | 45.83               | 33.15            | 139.91                      | -843.92            | 1,149.74         | 1,718.09                     | 1,647.83                      | 70.26                           | 24.454               |                    |         |
| 7,750.00                    | 7,110.75                         | 5 7,450.00                  | 7,240.48                    | 45.96               | 33.08            | 130.74                      | -847.02            | 1,130.54         | 1,732.22                     | 1,661.98                      | 70.24                           | 24.662               |                    |         |
| 7,800.00                    | 7,153.10                         | 7,491.11                    | 7,271.45                    | 46.07               | 32.99            | 123.02                      | -850.78            | 1,103.77         | 1,745.93                     | 1,675.67                      | 70.26                           | 24.850               |                    |         |
| 7,850.00                    | 7,193.75                         |                             | 7,296.97                    | 46.15               | 32.92            | 116.63                      | -853.84            | 1,078.52         | 1,759.13                     | 1,688.92                      | 70.21                           | 25.055               |                    |         |
| 7,900.00                    | 7,232.37                         |                             | 7,320.71                    | 46.21               | 32.86            | 111.32                      | -856.65            | 1,051.89         | 1,771.69                     | 1,701.55                      | 70.14                           | 25.260               |                    |         |
| 7,950.00                    | 7,268.69                         | 9 7,600.00                  | 7,343.51                    | 46.26               | 32.80            | 106.87                      | -859.30            | 1,022.81         | 1,783.51                     | 1,713.44                      | 70.07                           | 25.455               |                    |         |
| 8,000.00                    | 7,302.42                         | 2 7,633.97                  | 7,362.73                    | 46.29               | 32.76            | 103.15                      | -861.49            | 994.89           | 1,794.47                     | 1,724.50                      | 69.98                           | 25.643               |                    |         |
| 8,050.00                    | 7,333.30                         | 7,669.28                    | 7,380.95                    | 46.30               | 32.73            | 100.04                      | -863.52            | 964.71           | 1,804.50                     | 1,734.59                      | 69.92                           | 25.809               |                    |         |
| 8,100.00                    | 7,361.10                         | 7,700.00                    | 7,395.26                    | 46.30               | 32.71            | 97.46                       | -865.08            | 937.58           | 1,813.52                     | 1,743.68                      | 69.84                           | 25.965               |                    |         |
| 8,150.00<br>8,200.00        | 7,385.6 <sup>2</sup><br>7,406.64 |                             | 7,411.58                    | 46.28<br>46.26      | 32.70<br>32.72   | 95.30<br>93.56              | -866.79<br>-868.01 | 901.49<br>868.65 | 1,821.43<br>1,828.20         | 1,751.53<br>1 758 23          | 69.90<br>69.97                  | 26.058<br>26.129     |                    |         |
|                             |                                  |                             | 7,423.94                    |                     | 52.12            |                             |                    |                  | 1,020.20                     | 1,758.23                      |                                 |                      |                    |         |
| 8,250.00<br>8,300.00        | 7,424.03                         |                             | 7,434.27                    | 46.22               | 32.75            | 92.20                       | -868.96            | 835.14           | 1,833.76                     | 1,763.66                      | 70.09                           | 26.161               |                    |         |
|                             | 7,437.65                         |                             | 7,443.57                    | 46.18               | 32.81            | 91.17                       | -869.70            | 796.10           | 1,838.07                     | 1,767.74                      | 70.33                           | 26.134               |                    |         |
| 8,350.00                    | 7,447.39                         |                             | 7,448.74<br>7 452 84        | 46.13<br>46.08      | 32.87<br>32.97   | 90.47<br>90.08              | -870.01<br>-870.12 | 766.56<br>731.71 | 1,841.09<br>1,842.81         | 1,770.53<br>1 771 90          | 70.56<br>70.91                  | 26.091<br>25.988     |                    |         |
| 8,400.00<br>8,447.52        | 7,453.19<br>7,455.00             |                             | 7,452.84<br>7,454.80        | 46.08<br>46.03      | 32.97            | 90.08<br>89.99              | -870.12<br>-869.94 | 696.86           | 1,842.81                     | 1,771.90<br>1,771.92          | 70.91<br>71.31                  | 25.988<br>25.847     |                    |         |
|                             |                                  |                             |                             |                     |                  |                             |                    |                  |                              |                               |                                 |                      |                    |         |
| 8,472.51                    | 7,455.00<br>7,455.00             |                             | 7,455.00<br>7,455.00        | 46.00<br>45.97      | 33.14<br>33.24   | 90.00<br>90.00              | -869.76<br>-869.42 | 680.43<br>652.94 | 1,843.18<br>1,843.19         | 1,771.65<br>1,771.33          | 71.53<br>71.86                  | 25.768<br>25.650     |                    |         |
| 8,500.00                    |                                  |                             |                             |                     | 33.24<br>33.71   |                             |                    |                  |                              |                               |                                 |                      |                    |         |
| 8,600.00<br>8,700.00        | 7,455.00<br>7,455.00             |                             | 7,455.00<br>7,455.00        | 45.87<br>45.78      | 33.71<br>34.31   | 90.00                       | -868.17<br>-866.92 | 552.95<br>452.96 | 1,843.19<br>1,843.20         | 1,769.92<br>1,768.22          | 73.27<br>74.98                  | 25.157<br>24.584     |                    |         |
| 8,700.00                    | 7,455.00                         |                             | 7,455.00<br>7,455.00        | 45.78<br>45.71      | 34.31            | 90.00<br>90.00              | -865.67            | 452.96<br>352.96 | 1,843.20                     | 1,768.22                      | 74.98<br>76.96                  | 24.584<br>23.951     |                    |         |
|                             |                                  |                             |                             |                     |                  |                             |                    |                  |                              |                               |                                 |                      |                    |         |
| 8,900.00                    | 7,455.00                         | 8,393.93                    | 7,455.00                    | 45.73               | 35.97            | 90.00                       | -864.42            | 252.97           | 1,843.21                     | 1,764.01                      | 79.19                           | 23.275               |                    |         |

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | OH                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

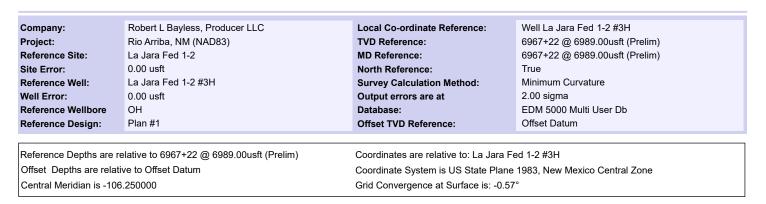
#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #2H - OH - Plan #1

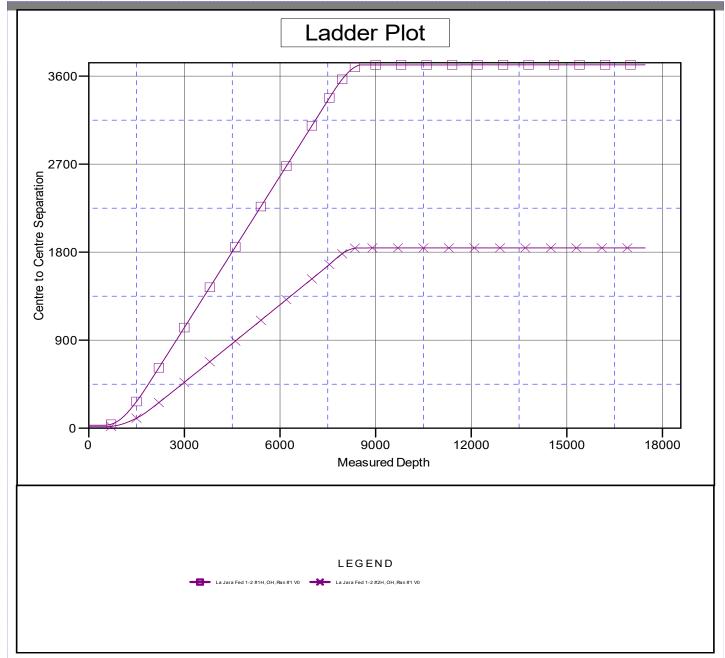
| urvey Prog      |                   | MWD+HRGM        |                 | S         | laior Avia           |                 | Offered Michile | oro Contro      | D'                | Rule Assi          | gnea:                |            | Offset Well Error: | 0.00 u |
|-----------------|-------------------|-----------------|-----------------|-----------|----------------------|-----------------|-----------------|-----------------|-------------------|--------------------|----------------------|------------|--------------------|--------|
| leasured        | rence<br>Vertical | Off<br>Measured | Vertical        | Reference | laior Axis<br>Offset | Highside        | Offset Wellb    |                 | Between           | tance<br>Between   | Minimum              | Separation | Warning            |        |
| Depth<br>(usft) | Depth<br>(usft)   | Depth<br>(usft) | Depth<br>(usft) | (usft)    | (usft)               | Toolface<br>(°) | +N/-S<br>(usft) | +E/-W<br>(usft) | Centres<br>(usft) | Ellipses<br>(usft) | Separation<br>(usft) | Factor     |                    |        |
| 9,000.00        | 7,455.00          | 8,493.93        | 7,455.00        | 46.55     | 37.03                | 90.00           | -863.16         | 152.98          | 1,843.21          | 1,761.55           | 81.66                | 22.572     |                    |        |
| 9,100.00        | 7,455.00          | 8,593.93        | 7,455.00        | 47.76     | 38.26                | 90.00           | -861.91         | 52.99           | 1,843.22          | 1,758.88           | 84.34                | 21.856     |                    |        |
| 9,200.00        | 7,455.00          | 8,693.93        | 7,455.00        | 49.07     | 39.62                | 90.00           | -860.66         | -47.00          | 1,843.22          | 1,756.02           | 87.20                | 21.137     |                    |        |
| 9,300.00        | 7,455.00          | 8,793.93        | 7,455.00        | 50.46     | 41.11                | 90.00           | -859.41         | -147.00         | 1,843.22          | 1,752.99           | 90.24                | 20.426     |                    |        |
| 9,400.00        | 7,455.00          | 8,893.93        | 7,455.00        | 51.93     | 42.70                | 90.00           | -858.16         | -246.99         | 1,843.23          | 1,749.80           | 93.43                | 19.729     |                    |        |
| 9,500.00        | 7,455.00          | 8,993.93        | 7,455.00        | 53.47     | 44.39                | 90.00           | -856.91         | -346.98         | 1,843.23          | 1,746.48           | 96.76                | 19.050     |                    |        |
| 9,600.00        | 7,455.00          | 9,093.93        | 7,455.00        | 55.07     | 46.16                | 90.00           | -855.66         | -446.97         | 1,843.24          | 1,743.03           | 100.21               | 18.394     |                    |        |
| 9,700.00        | 7,455.00          | 9,193.93        | 7,455.00        | 56.73     | 47.99                | 90.00           | -854.41         | -546.96         | 1,843.24          | 1,739.47           | 103.78               | 17.762     |                    |        |
| 9,800.00        | 7,455.00          | 9,293.93        | 7,455.00        | 58.44     | 49.89                | 90.00           | -853.16         | -646.96         | 1,843.25          | 1,735.81           | 107.44               | 17.156     |                    |        |
| 9,900.00        | 7,455.00          | 9,393.93        | 7,455.00        | 60.19     | 51.84                | 90.00           | -851.91         | -746.95         | 1,843.25          | 1,732.06           | 111.20               | 16.576     |                    |        |
| 10,000.00       | 7,455.00          | 9,493.93        | 7,455.00        | 62.00     | 53.83                | 90.00           | -850.66         | -846.94         | 1,843.26          | 1,728.22           | 115.04               | 16.023     |                    |        |
| 0,100.00        | 7,455.00          | 9,593.93        | 7,455.00        | 63.84     | 55.86                | 90.00           | -849.41         | -946.93         | 1,843.26          | 1,724.31           | 118.95               | 15.496     |                    |        |
| 10,200.00       | 7,455.00          | 9,693.93        | 7,455.00        | 65.72     | 57.93                | 90.00           | -848.16         | -1,046.93       | 1,843.27          | 1,720.34           | 122.93               | 14.994     |                    |        |
| 10,300.00       | 7,455.00          | 9,793.93        | 7,455.00        | 67.63     | 60.02                | 90.00           | -846.91         | -1,146.92       | 1,843.27          | 1,716.30           | 126.97               | 14.517     |                    |        |
| 10,400.00       | 7,455.00          | 9,893.93        | 7,455.00        | 69.58     | 62.15                | 90.00           | -845.66         | -1,246.91       | 1,843.28          | 1,712.21           | 131.07               | 14.063     |                    |        |
| 10,500.00       | 7,455.00          | 9,993.93        | 7,455.00        | 71.56     | 64.29                | 90.00           | -844.41         | -1,346.90       | 1,843.28          | 1,708.07           | 135.22               | 13.632     |                    |        |
| 10,600.00       | 7,455.00          | 10,093.93       | 7,455.00        | 73.56     | 66.46                | 90.00           | -843.15         | -1,446.89       | 1,843.29          | 1,703.88           | 139.41               | 13.222     |                    |        |
| 0,700.00        | 7,455.00          | 10,193.93       | 7,455.00        | 75.59     | 68.65                | 90.00           | -841.90         | -1,546.89       | 1,843.29          | 1,699.65           | 143.65               | 12.832     |                    |        |
| 10,800.00       | 7,455.00          | 10,293.93       | 7,455.00        | 77.64     | 70.86                | 90.00           | -840.65         | -1,646.88       | 1,843.30          | 1,695.38           | 147.92               | 12.461     |                    |        |
| 10,900.00       | 7,455.00          | 10,393.93       | 7,455.00        | 79.71     | 73.08                | 90.00           | -839.40         | -1,746.87       | 1,843.30          | 1,691.07           | 152.23               | 12.109     |                    |        |
| 1,000.00        | 7,455.00          | 10,493.93       | 7,455.00        | 81.80     | 75.31                | 90.00           | -838.15         | -1,846.86       | 1,843.31          | 1,686.74           | 156.57               | 11.773     |                    |        |
| 11,100.00       | 7,455.00          | 10,593.93       | 7,455.00        | 83.91     | 77.56                | 90.00           | -836.90         | -1,946.86       | 1,843.31          | 1,682.37           | 160.94               | 11.453     |                    |        |
| 1,200.00        | 7,455.00          | 10,693.93       | 7,455.00        | 86.04     | 79.82                | 90.00           | -835.65         | -2,046.85       | 1,843.32          | 1,677.98           | 165.34               | 11.149     |                    |        |
| 11,300.00       | 7,455.00          | 10,793.93       | 7,455.00        | 88.18     | 82.09                | 90.00           | -834.40         | -2,146.84       | 1,843.32          | 1,673.56           | 169.77               | 10.858     |                    |        |
| 11,400.00       | 7,455.00          | 10,893.93       | 7,455.00        | 90.34     | 84.37                | 90.00           | -833.15         | -2,246.83       | 1,843.33          | 1,669.11           | 174.21               | 10.581     |                    |        |
| 1,500.00        | 7,455.00          | 10,993.93       | 7,455.00        | 92.51     | 86.65                | 90.00           | -831.90         | -2,346.82       | 1,843.33          | 1,664.65           | 178.68               | 10.316     |                    |        |
| 11,600.00       | 7,455.00          | 11,093.93       | 7,455.00        | 94.69     | 88.95                | 90.00           | -830.65         | -2,446.82       | 1,843.34          | 1,660.16           | 183.17               | 10.063     |                    |        |
| 11,700.00       | 7,455.00          | 11,193.93       | 7,455.00        | 96.88     | 91.25                | 90.00           | -829.40         | -2,546.81       | 1,843.34          | 1,655.66           | 187.68               | 9.822      |                    |        |
| 11,800.00       | 7,455.00          | 11,293.93       | 7,455.00        | 99.09     | 93.57                | 90.00           | -828.15         | -2,646.80       | 1,843.35          | 1,651.14           | 192.21               | 9.590      |                    |        |
| 11,900.00       | 7,455.00          | 11,393.93       | 7,455.00        | 101.31    | 95.88                | 90.00           | -826.90         | -2,746.79       | 1,843.35          | 1,646.60           | 196.75               | 9.369      |                    |        |
| 12,000.00       | 7,455.00          | 11,493.93       | 7,455.00        | 103.53    | 98.20                | 90.00           | -825.65         | -2,846.78       | 1,843.36          | 1,642.05           | 201.31               | 9.157      |                    |        |
| 12,100.00       | 7,455.00          | 11,593.93       | 7,455.00        | 105.77    | 100.53               | 90.00           | -824.39         | -2,946.78       | 1,843.36          | 1,637.48           | 205.88               | 8.954      |                    |        |
| 12,200.00       | 7,455.00          | 11,693.93       | 7,455.00        | 108.01    | 102.87               | 90.00           | -823.14         | -3,046.77       | 1,843.37          | 1,632.90           | 210.47               | 8.759      |                    |        |
| 12,300.00       | 7,455.00          | 11,793.93       | 7,455.00        | 110.26    | 105.21               | 90.00           | -821.89         | -3,146.76       | 1,843.37          | 1,628.31           | 215.06               | 8.571      |                    |        |
| 2,400.00        | 7,455.00          | 11,893.93       | 7,455.00        | 112.52    | 107.55               | 90.00           | -820.64         | -3,246.75       | 1,843.38          | 1,623.70           | 219.67               | 8.391      |                    |        |
| 2,500.00        | 7,455.00          | 11,993.93       | 7,455.00        | 114.79    | 109.89               | 90.00           | -819.39         | -3,346.75       | 1,843.38          | 1,619.09           | 224.29               | 8.219      |                    |        |
| 2,600.00        | 7,455.00          | 12,093.93       | 7,455.00        | 117.06    | 112.25               | 90.00           | -818.14         | -3,446.74       | 1,843.39          | 1,614.46           | 228.92               | 8.052      |                    |        |
| 2,700.00        | 7,455.00          | 12,193.93       | 7,455.00        | 119.34    | 114.60               | 90.00           | -816.89         | -3,546.73       | 1,843.39          | 1,609.83           | 233.56               | 7.892      |                    |        |
| 2,800.00        | 7,455.00          | 12,293.93       | 7,455.00        | 121.62    | 116.96               | 90.00           | -815.64         | -3,646.72       | 1,843.40          | 1,605.18           | 238.21               | 7.738      |                    |        |
| 2,900.00        | 7,455.00          | 12,393.93       | 7,455.00        | 123.91    | 119.32               | 90.00           | -814.39         | -3,746.71       | 1,843.40          | 1,600.53           | 242.87               | 7.590      |                    |        |
| 3,000.00        | 7,455.00          | 12,493.93       | 7,455.00        | 126.21    | 121.68               | 90.00           | -813.14         | -3,846.71       | 1,843.41          | 1,595.87           | 247.54               | 7.447      |                    |        |
| 3,100.00        | 7,455.00          | 12,593.93       | 7,455.00        | 128.51    | 124.05               | 90.00           | -811.89         | -3,946.70       | 1,843.41          | 1,591.20           | 252.21               | 7.309      |                    |        |
| 3,200.00        | 7,455.00          | 12,693.93       | 7,455.00        | 130.82    | 126.42               | 90.00           | -810.64         | -4,046.69       | 1,843.42          | 1,586.52           | 256.89               | 7.176      |                    |        |
| 13,300.00       | 7,455.00          | 12,793.93       | 7,455.00        | 133.13    | 128.79               | 90.00           | -809.39         | -4,146.68       | 1,843.42          | 1,581.84           | 261.58               | 7.047      |                    |        |
| 3,400.00        | 7,455.00          | 12,893.93       | 7,455.00        | 135.44    | 131.17               | 90.00           | -808.14         | -4,246.68       | 1,843.43          | 1,577.15           | 266.27               | 6.923      |                    |        |
| 3,500.00        | 7,455.00          | 12,993.93       | 7,455.00        | 137.76    | 133.54               | 90.00           | -806.89         | -4,346.67       | 1,843.43          | 1,572.46           | 270.97               | 6.803      |                    |        |
| 3,600.00        | 7,455.00          | 13,093.93       | 7,455.00        | 140.08    | 135.92               | 90.00           | -805.64         | -4,446.66       | 1,843.43          | 1,567.75           | 275.68               | 6.687      |                    |        |
| 3,700.00        | 7,455.00          | 13,193.93       | 7,455.00        | 142.41    | 138.30               | 90.00           | -804.38         | -4,546.65       | 1,843.44          | 1,563.05           | 280.39               | 6.575      |                    |        |
| 3,800.00        | 7,455.00          | 13,293.93       | 7,455.00        | 144.74    | 140.68               | 90.00           | -803.13         | -4,646.64       | 1,843.44          | 1,558.34           | 285.11               | 6.466      |                    |        |
| 3,900.00        | 7,455.00          | 13,393.93       | 7,455.00        | 147.07    | 143.07               | 90.00           | -801.88         | -4,746.64       | 1,843.45          | 1,553.62           | 289.83               | 6.360      |                    |        |
| 4,000.00        | 7,455.00          | 13,493.93       | 7,455.00        | 149.41    | 145.45               | 90.00           | -800.63         | -4,846.63       | 1,843.45          | 1,548.90           | 294.56               | 6.258      |                    |        |
| 4,100.00        | 7,455.00          | 13,593.93       | 7,455.00        | 151.75    |                      |                 |                 |                 |                   |                    |                      | 6.159      |                    |        |

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | OH                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

#### Offset Design: La Jara Fed 1-2 - La Jara Fed 1-2 #2H - OH - Plan #1

| Offset De                   | sign: L                               | a Jara Fed 1                        | -2 - La Ja                  | ra ⊦ed 1-2          | #2H - OH                       | - Plan #1                   |                                 |                 |                              |  |                                 |                      | Offset Site Error: | 0.00 usft |
|-----------------------------|---------------------------------------|-------------------------------------|-----------------------------|---------------------|--------------------------------|-----------------------------|---------------------------------|-----------------|------------------------------|--|---------------------------------|----------------------|--------------------|-----------|
| Survey Prog                 |                                       | -MWD+HRGM                           |                             | 0                   |                                |                             | 0//                             |                 | <b>D</b> 1-                  | Rule Assi                              | gned:                           |                      | Offset Well Error: | 0.00 usft |
| Measured<br>Depth<br>(usft) | erence<br>Vertical<br>Depth<br>(usft) | Offs<br>Measured<br>Depth<br>(usft) | vertical<br>Depth<br>(usft) | Reference<br>(usft) | lajor Axis<br>Offset<br>(usft) | Highside<br>Toolface<br>(°) | Offset Wellb<br>+N/-S<br>(usft) | +E/-W<br>(usft) | Between<br>Centres<br>(usft) | tance<br>Between<br>Ellipses<br>(usft) | Minimum<br>Separation<br>(usft) | Separation<br>Factor | Warning            |           |
| 14,200.00                   | 7,455.00                              | 13,693.93                           | 7,455.00                    | 154.09              | 150.23                         | 90.00                       | -798.13                         | -5,046.61       | 1,843.46                     | 1,539.44                               | 304.03                          | 6.063                |                    |           |
| 14,300.00                   | 7,455.00                              | 13,793.93                           | 7,455.00                    | 156.44              | 152.62                         | 90.00                       | -796.88                         | -5,146.61       | 1,843.47                     | 1,534.70                               | 308.77                          | 5.970                |                    |           |
| 14,400.00                   | 7,455.00                              | 13,893.93                           | 7,455.00                    | 158.79              | 155.01                         | 90.00                       | -795.63                         | -5,246.60       | 1,843.47                     | 1,529.96                               | 313.51                          | 5.880                |                    |           |
| 14,500.00                   | 7,455.00                              | 13,993.93                           | 7,455.00                    | 161.14              | 157.41                         | 90.00                       | -794.38                         | -5,346.59       | 1,843.48                     | 1,525.22                               | 318.26                          | 5.792                |                    |           |
| 14,600.00                   | 7,455.00                              | 14,093.93                           | 7,455.00                    | 163.49              | 159.80                         | 90.00                       | -793.13                         | -5,446.58       | 1,843.48                     | 1,520.47                               | 323.01                          | 5.707                |                    |           |
| 14,700.00                   | 7,455.00                              | 14,193.93                           | 7,455.00                    | 165.85              | 162.20                         | 90.00                       | -791.88                         | -5,546.57       | 1,843.49                     | 1,515.72                               | 327.77                          | 5.624                |                    |           |
| 14,800.00                   | 7,455.00                              | 14,293.93                           | 7,455.00                    | 168.20              | 164.60                         | 90.00                       | -790.63                         | -5,646.57       | 1,843.49                     | 1,510.97                               | 332.52                          | 5.544                |                    |           |
| 14,900.00                   | 7,455.00                              | 14,393.93                           | 7,455.00                    | 170.56              | 166.99                         | 90.00                       | -789.38                         | -5,746.56       | 1,843.50                     | 1,506.21                               | 337.29                          | 5.466                |                    |           |
| 15,000.00                   | 7,455.00                              | 14,493.93                           | 7,455.00                    | 172.93              | 169.39                         | 90.00                       | -788.13                         | -5,846.55       | 1,843.50                     | 1,501.45                               | 342.05                          | 5.390                |                    |           |
| 15,100.00                   | 7,455.00                              | 14,593.93                           | 7,455.00                    | 175.29              | 171.79                         | 90.00                       | -786.88                         | -5,946.54       | 1,843.51                     | 1,496.69                               | 346.82                          | 5.315                |                    |           |
| 15,200.00                   | 7,455.00                              | 14,693.93                           | 7,455.00                    | 177.66              | 174.20                         | 90.00                       | -785.63                         | -6,046.53       | 1,843.51                     | 1,491.92                               | 351.59                          | 5.243                |                    |           |
| 15,300.00                   | 7,455.00                              | 14,793.93                           | 7,455.00                    | 180.02              | 176.60                         | 90.00                       | -784.37                         | -6,146.53       | 1,843.52                     | 1,487.16                               | 356.36                          | 5.173                |                    |           |
| 15,400.00                   | 7,455.00                              | 14,893.93                           | 7,455.00                    | 182.39              | 179.00                         | 90.00                       | -783.12                         | -6,246.52       | 1,843.52                     | 1,482.38                               | 361.14                          | 5.105                |                    |           |
| 15,500.00                   | 7,455.00                              | 14,993.93                           | 7,455.00                    | 184.76              | 181.41                         | 90.00                       | -781.87                         | -6,346.51       | 1,843.53                     | 1,477.61                               | 365.92                          | 5.038                |                    |           |
| 15,600.00                   | 7,455.00                              | 15,093.93                           | 7,455.00                    | 187.14              | 183.81                         | 90.00                       | -780.62                         | -6,446.50       | 1,843.53                     | 1,472.83                               | 370.70                          | 4.973                |                    |           |
| 15,700.00                   | 7,455.00                              | 15,193.93                           | 7,455.00                    | 189.51              | 186.22                         | 90.00                       | -779.37                         | -6,546.50       | 1,843.54                     | 1,468.06                               | 375.48                          | 4.910                |                    |           |
| 15,800.00                   | 7,455.00                              | 15,293.93                           | 7,455.00                    | 191.89              | 188.62                         | 90.00                       | -778.12                         | -6,646.49       | 1,843.54                     | 1,463.28                               | 380.27                          | 4.848                |                    |           |
| 15,900.00                   | 7,455.00                              | 15,393.93                           | 7,455.00                    | 194.26              | 191.03                         | 90.00                       | -776.87                         | -6,746.48       | 1,843.55                     | 1,458.49                               | 385.05                          | 4.788                |                    |           |
| 16,000.00                   | 7,455.00                              | 15,493.93                           | 7,455.00                    | 196.64              | 193.44                         | 90.00                       | -775.62                         | -6,846.47       | 1,843.55                     | 1,453.71                               | 389.84                          | 4.729                |                    |           |
| 16,100.00                   | 7,455.00                              | 15,593.93                           | 7,455.00                    | 199.02              | 195.85                         | 90.00                       | -774.37                         | -6,946.46       | 1,843.56                     | 1,448.92                               | 394.63                          | 4.672                |                    |           |
| 16,200.00                   | 7,455.00                              | 15,693.93                           | 7,455.00                    | 201.41              | 198.26                         | 90.00                       | -773.12                         | -7,046.46       | 1,843.56                     | 1,444.13                               | 399.43                          | 4.616                |                    |           |
| 16,300.00                   | 7,455.00                              | 15,793.93                           | 7,455.00                    | 203.79              | 200.67                         | 90.00                       | -771.87                         | -7,146.45       | 1,843.57                     | 1,439.34                               | 404.22                          | 4.561                |                    |           |
| 16,400.00                   | 7,455.00                              | 15,893.93                           | 7,455.00                    | 206.17              | 203.08                         | 90.00                       | -770.62                         | -7,246.44       | 1,843.57                     | 1,434.55                               | 409.02                          | 4.507                |                    |           |
| 16,500.00                   | 7,455.00                              | 15,993.93                           | 7,455.00                    | 208.56              | 205.49                         | 90.00                       | -769.37                         | -7,346.43       | 1,843.58                     | 1,429.76                               | 413.82                          | 4.455                |                    |           |
| 16,600.00                   | 7,455.00                              | 16,093.93                           | 7,455.00                    | 210.94              | 207.90                         | 90.00                       | -768.12                         | -7,446.43       | 1,843.58                     | 1,424.96                               | 418.62                          | 4.404                |                    |           |
| 16,700.00                   | 7,455.00                              | 16,193.93                           | 7,455.00                    | 213.33              | 210.31                         | 90.00                       | -766.87                         | -7,546.42       | 1,843.59                     | 1,420.17                               | 423.42                          | 4.354                |                    |           |
| 16,800.00                   | 7,455.00                              | 16,293.93                           | 7,455.00                    | 215.72              | 212.73                         | 90.00                       | -765.61                         | -7,646.41       | 1,843.59                     | 1,415.37                               | 428.22                          | 4.305                |                    |           |
| 16,900.00                   | 7,455.00                              |                                     | 7,455.00                    | 218.11              | 215.14                         | 90.00                       | -764.36                         | -7,746.40       | 1,843.60                     | 1,410.57                               | 433.03                          | 4.257                |                    |           |
| 17,000.00                   | 7,455.00                              |                                     | 7,455.00                    | 220.50              | 217.55                         | 90.00                       | -763.11                         | -7,846.39       | 1,843.60                     | 1,405.77                               | 437.84                          | 4.211                |                    |           |
| 17,100.00                   | 7,455.00                              |                                     | 7,455.00                    | 222.89              | 219.97                         | 90.00                       | -761.86                         | -7,946.39       | 1,843.61                     | 1,400.96                               | 442.64                          | 4.165                |                    |           |
| 17,200.00                   | 7,455.00                              |                                     | 7,455.00                    | 225.28              | 222.38                         | 90.00                       | -760.61                         | -8,046.38       | 1,843.61                     | 1,396.16                               | 447.45                          | 4.120                |                    |           |
| 17,300.00                   | 7,455.00                              | 16,793.93                           | 7,455.00                    | 227.68              | 224.80                         | 90.00                       | -759.36                         | -8,146.37       | 1,843.62                     | 1,391.35                               | 452.26                          | 4.076                |                    |           |
| 17,400.00                   | 7,455.00                              |                                     | 7,455.00                    | 230.07              | 224.00                         | 90.00                       | -758.11                         | -8,246.36       | 1,843.62                     | 1,386.55                               | 457.07                          | 4.070                |                    |           |
| 17,400.00                   | 7,455.00                              |                                     | 7,455.00                    | 230.07              | 228.62                         | 90.00                       | -757.38                         | -8,304.50       | 1,843.62                     | 1,383.75                               | 459.87                          | 4.034                |                    |           |
| 17,400.14                   | 7,400.00                              | 10,952.07                           | 7,400.00                    | 231.40              | 220.02                         | 90.00                       | -101.30                         | -0,304.30       | 1,043.02                     | 1,303.75                               | 409.07                          | 4.005                |                    |           |

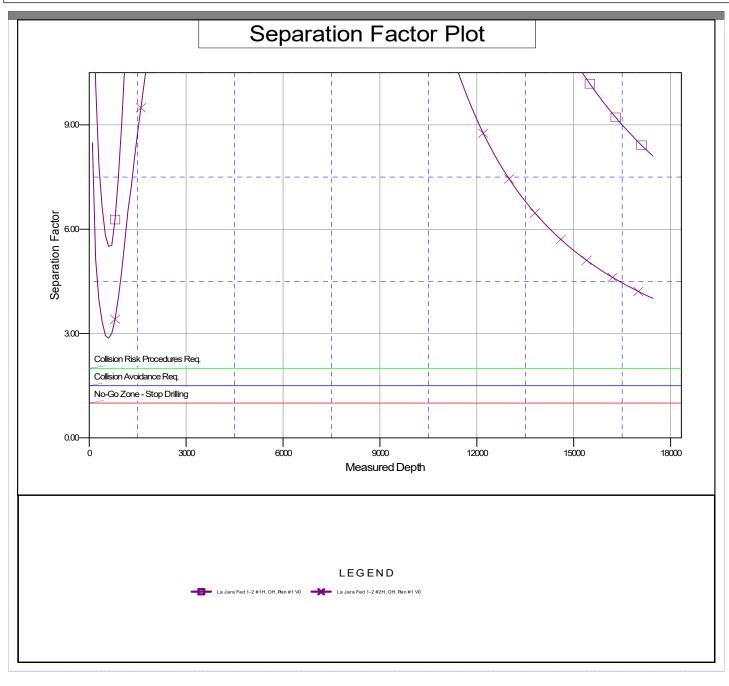




CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| Company:           | Robert L Bayless, Producer LLC | Local Co-ordinate Reference: | Well La Jara Fed 1-2 #3H       |
|--------------------|--------------------------------|------------------------------|--------------------------------|
| • •                |                                |                              |                                |
| Project:           | Rio Arriba, NM (NAD83)         | TVD Reference:               | 6967+22 @ 6989.00usft (Prelim) |
| Reference Site:    | La Jara Fed 1-2                | MD Reference:                | 6967+22 @ 6989.00usft (Prelim) |
| Site Error:        | 0.00 usft                      | North Reference:             | True                           |
| Reference Well:    | La Jara Fed 1-2 #3H            | Survey Calculation Method:   | Minimum Curvature              |
| Well Error:        | 0.00 usft                      | Output errors are at         | 2.00 sigma                     |
| Reference Wellbore | ОН                             | Database:                    | EDM 5000 Multi User Db         |
| Reference Design:  | Plan #1                        | Offset TVD Reference:        | Offset Datum                   |

Reference Depths are relative to 6967+22 @ 6989.00usft (Prelim) Offset Depths are relative to Offset Datum Central Meridian is -106.250000 Coordinates are relative to: La Jara Fed 1-2 #3H Coordinate System is US State Plane 1983, New Mexico Central Zone Grid Convergence at Surface is: -0.57°



CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

#### ROBERT L. BAYLESS, PRODUCER LLC Drilling Program

 Well Name - La Jara Fed 1-2 #003H
 Pad Name - La Jara Fed 1-2

 Surface Location:
 SENE Sec 1 T29N R4W

 Bottom Hole Location:
 SWSW Sec 2 T29N R4W

 Surface County:
 Rio Arriba

#### 1. Estimated Tops of Important Geologic Markers

| FORMATION       | ESTIMATED TOP – TVD | Fm TOP - MD | Oil/Gas/Water |
|-----------------|---------------------|-------------|---------------|
| San Jose        | Surface             | Surface     |               |
| Nacimiento      | 2566                | 2700        |               |
| Ojo Alamo       | 3217                | 3424        |               |
| Kirtland        | 3379                | 3604        |               |
| Fruitland       | 3545                | 3788        | Gas           |
| Pictured Cliffs | 3671                | 3929        | Gas           |
| Lewis           | 3982                | 4274        |               |
| Cliff House     | 5729                | 6216        | Gas           |
| Menefee         | 5817                | 6314        |               |
| Point Lookout   | 5942                | 6453        | Gas           |
| Mancos          | 6370                | 6938        | Gas           |
| Top of Target   | 7381                | 8140        | Gas           |
| Permit TD       | 7455                | 17458       | Estimated MD  |

The proposed casing and cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use.

The surface casing shall be set at 320' and cemented back to surface. Cementing to surface will isolate all potential fresh water zones.

Intermediate casing shall be kept full while running in the hole in mitigate collapse potential. Intermediate casing will be cemented back into surface casing via primary single stage or two/three-stage cement job. Estimated placement of the stage collars will be at ~5100ft MD and 3671ft MD with 3-5 cement baskets run immediate below the collar to aid in cement lift in the second-third stages. If cement does not circulate to the DV tool(s) or to surface, a CBL will be run to determine the top of cement.

Production casing is designed to have cement lifted at least 100' above the intermediate casing shoe. A CBL, or alternatively, a temperature survey will be used to determine top of cement. A pressure actuated toe sleeve would be run above the float collar in the production section to aid in wireline pump down and stage 1 preparation of hydraulic stimulation.

#### 2. Proposed Casing and Cementing Program

A. Casing Program: All New

| Hole Size (in) | Casing Size (in) | Depth Set MD<br>(ft) | Wt./Ft., Grade, & Joint | Cement  |
|----------------|------------------|----------------------|-------------------------|---|
| 30             | 20               | 120                  | Line Pipe               | To surface w/Class 3: 319 sx (15.6 ppg)   |
| 17.5           | 13.375           | 320                  | 54.5 lb/ft, J-55, STC   | Cemented to surface w/: Lead 237<br>sx Neat G (15.8 ppg)  |
| 12.25          | 9.625            | 7100                 | 43.5 lb/ft, N-80, LTC   | Cemented to surface using 3-stage<br>cement design w/ Stage 1<br>Tail: 177 sx Class G (15.8 ppg)<br>Stage 1 Lead: 266 sx Type III (12.3<br>ppg) Stage 2 Tail: 136 sx Class G<br>(13.5 ppg) Stage 2 Lead: 164 sx<br>Type III (12.3 ppg) Stage 3 Tail: 102<br>sx Class G (12.8 ppg) Stage 3<br>Lead: 510 sx Type III (12 ppg) |
| 8.75           | 5.5              | 17458                | 20 lb/ft, P-110, BTC    | Cemented 500' above Intermediate<br>Casing Shoe w/ Lead: 2578 sx<br>Class G (13.3 ppg)  |

| Yields: Neat G (Surface)<br>Stage 1 Type III Lead                   | Yield = 1.174 ft3/sx (15.8 ppg)                                  |
|---|--|
| (Intermediate)<br>Stage 1 Class G Tail                              | Yield = 2.3 ft3/sx (12.3 ppg)                                    |
| (Intermediate)  | Yield = 1.15 ft3/sx (15.8 ppg)                                   |
| Stage 2 Type III Lead<br>(Intermediate)                             | Yield = 2.3 ft3/sx (12.3 ppg)                                    |
| Stage 2 Class G Tail<br>(Intermediate)                              | Yield = 1.5 ft3/sx (13.5 ppg)                                    |
| Stage 3 Type III Lead<br>(Intermediate)                             | Yield = 2.53 ft3/sx (12 ppg)                                     |
| Stage 3 Class G Tail<br>(Intermediate)<br>Class G Lead (Production) | Yield = 1.99 ft3/sx (12.8 ppg)<br>Yield = 1.33 ft3/sx (13.3 ppg) |

# CEMENTING VOLUME DESIGN CLARIFICATIONS

| Surface Casing @ 520 | $^-$ *Slurry designed from surface TD to surface. Volume assumes 17-1/2" hole plus 25% excess. |
|----------------------|--|
| Intermediate Casing  | *Slurry designed from intermediate TD to surface. Volume assumes 12-1/4" hole plus 30% excess. |
| Production Casing    |  |
|                      | volume calcuations.  |

#### CEMENT CALCULATIONS AND MINIMUM REQUIREMENTS

\*Cement calculations are used to estimate the required volume of cement. However, the final cement job design will depend on the conditions at the well site.

\*The actual volumes of cement needed will be calculated based on the on-site conditions. All cement slurries used will meet or exceed the minimum requirements set by the BLM and the New Mexico Oil Conservation Division.

\*The specific cement slurries used will either be those listed above or equivalent slurries, depending on the service provider selected. Please note that the cement yields may vary depending on the type of slurries used.

\*To ensure sufficient cement strength, all waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

#### FLOAT EQUIPMENT

\*Surface casing - 13-3/8" notched regular pattern guide shoe. Run one (1) standard centralizer on each of the bottom three (3) joints of surface casing.

\*Intermediate casing - 9-5/8" cement nose guide shoe with a self-fill insert float. Place float collar one (1) joint above the shoe. Install one (1) centralizer on each of the bottom three (3) joints and one standard centralizer every three (3) joints to 2500ft. Run one (1) centralizer at 2500ft, 2300ft, 1500ft, and 1000ft. Optional DV tools two (2) will be strategically placed above loss circulation zones anticipated in the Mesaverde and Fruitland Coal. Optional use of cancelation plugs for DV tools may be used if losses while cementing are not encountered.

\*Production casing - Run 5-1/2" casing with cement nose guide float shoe, 5-1/2" full or pup joint as necessary, landing collar, 5-1/2" full or pup joints as necessary, at least one (1) RSI (rapid stage initiator or sliding sleeve) positioned inside the applicable production area. Centralizer program will be determined by wellbore conditions. Production casing to be pressure tested during completion operations with frack stack installed.

| Casing String |                |       |            |  |  |  |  |
|---------------|----------------|-------|------------|--|--|--|--|
| Size (in)     | Weight (lb/ft) | Grade | Connection |  |  |  |  |
| 13 3/8        | 54.5           | J-55  | STC        |  |  |  |  |
| 9 5/8         | 43.5           | N-80  | LTC        |  |  |  |  |
| 5 1/2         | 20             | P-110 | BTC        |  |  |  |  |

| Casing Strength Properties                        |       |       |     |
|---|-------|-------|-----|
| Size Collapse (psi) Burst (psi) Tensile (1000 lb) |       |       |     |
| 13 3/8  | 1130  | 2730  | 514 |
| 9 5/8   | 3810  | 6330  | 825 |
| 5 1/2   | 11080 | 12640 | 667 |

| 1 | Minimum Design Factors |          |       |         |  |
|---|------------------------|----------|-------|---------|--|
|   | Size                   | Collapse | Burst | Tension |  |
|   | 13 3/8                 | 1.00     | 1.10  | 1.30    |  |
|   | 9 5/8                  | 1.00     | 1.10  | 1.30    |  |

2 of 5

.

| 5 1/2         | 1.00 1.10 1.30   |                            |
|---------------|--|----------------------------|
| sing Design C | Considerations/Safety Factors:   |                            |
| 5 5           | Surface casing @ 320' MD; 13.375 54.5# J-55  |                            |
|               | Purpose: Protect shallow fresh water and contain MASP to TD<br>Maximum anticipated mud weight at surface casing depth: | 9.0 ppg                    |
|               | Maximum anticipated mud weight at intermediate TD:   | 9.4 ppg                    |
|               | Maximum anticipated mud weight at production TD:   | 13.0 ppg                   |
|               | TVD at intermediate casing point:  | 6,524 ft                   |
|               | TVD at production casing point:  | 7,455 ft                   |
|               | Surface setting depth  | 320 ft<br>0.46 psi/ft      |
|               | Intermediate max pore pressure<br>Production max pore pressure   | 0.46 psi/ft<br>0.65 psi/ft |
|               | Collapse Design:   |                            |
|               | Evacuated 13.375in 54.5# J-55 casing with 9 ppg drilling fluid density:  |                            |
|               | Load = 9 * 0.052 * 320'  | 150 psig                   |
|               | Rating   | 1,130 psig                 |
|               | S.F.   | 7.5                        |
|               | Burst Design:  |                            |
|               | Assume kick with partially evacuated hole and influx gradient of 0.22 psi/ft   |                            |
|               | (Calculations assumes shoe will not break down)  |                            |
|               | MASP (Load) = 6524ft * (0.46-0.22)   | 1,554 psig                 |
|               | Rating<br>S.F.   | 2,730 psig<br>1.8          |
|               | Tensile Design:  |                            |
|               | 13.375in 54.5# J-55: Designed on Air Weight * Buoyancy + overpull margin   |                            |
|               | Load = 320'* 54.5# * .86 + 100,000 lbs (OPM)   | 115,033 lbs                |
|               | Rating:  | 514,000 lbs                |
|               | S.F.   | 4.5                        |
|               | Overpull with S.F. = 514000 lbs / 1.3 - 15033 lbs  | 380,351 lbs                |
|               | Intermediate Casing @ 7100' MD; 9.625in 43.5# N-80   |                            |
|               | Maximum Anticipated Mud Weight at Total Depth  | 9.40 ppg                   |
|               | Maximum Anticipated Equivalent Fm Pressure at Production Total Depth   | 12.5 ppg                   |
|               | Maximum Surface Treating Pressure for Fracture Operations  | 11,491 psi                 |
|               | Assumed Gas Gradient for Production Operations   | .115 psi/ft                |
|               | Collapse Design:   |                            |
|               | Designed on evacuated casing properties with 9.4 ppg drilling fluid density with no internal back-up                   | 0.400                      |
|               | Load = 9.4 * 0.052 * 6524'   | 3,189 psig                 |
|               | Rating   | 3,810 psig                 |
|               | S.F.   | 1.19                       |
|               | Burst Design:<br>Assume kick with partially evacuated hole and influx gradient of 0.22 psi/ft                          |                            |
|               | (Calculations assumes shoe will not break down)  |                            |
|               | MASP (Load) = 7455ft * (0.65-0.22) psi/ft  | 3,199 psig                 |
|               | Rating   | 6,330 psig                 |
|               | S.F.   | 2.0                        |
|               | Tensile Design:  |                            |
|               | Designed on Air Weight * Buoyancy  |                            |
|               | Load = (7100ft *43.5 lb/ft * 0.86) + 100,000 lbs (OPM)   | 365,611 lbs                |
|               | Rating   | 825,000 lbs                |
|               | S.F.   | 2.3                        |
|               | Overpull with SF = 825000 lbs/1.3 - 265611 lbs   | 369,004 lbs                |
|               | Production Casing @ 17458' MD; 5.5in 20# P-110   |                            |
|               | Maximum Anticipated Mud Weight at Total Depth  | 13.0 ppg                   |
|               | Maximum Anticipated Equivalent Formation Pressure at Total Depth   | 12.5 ppg                   |
|               | TVD  | 7,455                      |
|               | Hanger Depth   | N/A                        |
|               | Maximum Surface Treating Pressure for Fracture Operations  | 11,491                     |
|               | Assumed Gas Gradient for Production Operations   | .115 psi/ft                |
|               | Collapse Design:   |                            |

Collapse Design:

| Designed on evacuated casing properties with 13 ppg drilling fluid density with no internal back-up<br>Load = 13ppg * 0.052 * 7455'<br>Rating<br>S.F. | 5,040 psig<br>11,080 psig<br>2.2  |
|---|-----------------------------------|
| Burst Design:   |                                   |
| Design Consideration #1: Maximum Surface Shut-In Pressure   |                                   |
| MASSIP (Load) = 7455' * (0.65-0.115) psi/ft<br>Rating<br>S.F.   | 3,982 psig<br>12,640 psig<br>3.2  |
| Design Consideration #2: Maximum Surface Treating Pressure During Frac Operations   |                                   |
| MATP:<br>Rating<br>S.F.   | 11,491 psig<br>12,640 psig<br>1.1 |
| Tensile Design:<br>Designed on Air Weight * Buoyancy<br>Load = (7455ft * 20 lb/ft * 0.822) + 100,000 lbs (OPM)<br>Rating<br>S.F.                      | 222,560 lbs<br>667,000 lbs<br>3.0 |
| Overpull with SF = 667000 lbs/1.3 - 122560 lbs  | 390,517 lbs                       |

#### 3. Pressure Control Equipment (5,000 psi Schematic Attached)

THE BOPE will be tested to 250psi (Low) for 5 minutes and 5000psi (High) for 10 minutes prior to drilling out surface and intermediate casing. Annular preventer will be tested to 50% of rated working pressure and maintained for at least 10 minutes. A BOPE testing unit will be utilized with a chart recorder and appropriate test plug for testing. BOP equipment will be tested every 30 days, after any repairs are made to the BOP equipment, and after the BOP equipment is subjected to pressure. Annular preventers will be functionally operated at least once per well. Pipe and blind rams shall be activated each trip but not more than once a day. The New Mexico Oil and Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of BOPE. All tests and inspeciton will be recorded and logged with time and results. A full BOP test will be condicted when initially installed for the first well on the pad or if seals subject to test pressure are broken, following related repairs and at a minimum 30 day intervals. A BOPE shell test only will be conducted for subsequent wells on the pad when seals that are subject to pressure have not been broken or repaired and fall within the 30 day interval of first full test.

All casing strings will be pressure tested to 0.22 psi/ft or 1500 psi, whichever is greater, not to exceed 70% of internal yield of the casing.

All other requirements from Onshore Orders #2 III.A.2.i.(i-xi) will be adhered to during well construction.

#### 4. Mud Program

| Interval     | Mud Weight* | Fluid Loss | Viscosity | Mud Type              |
|--------------|-------------|------------|-----------|-----------------------|
| 0' - 320'    | 8.35 - 9.0  | NC         | 20 – 80   | Water                 |
| 320' - 7100' | 6.0 - 9.4   | 6 - NC     | 30 – 100  | Water                 |
| 7100' - TD   | 11.0 - 13.0 | 4 - 10     | 30 – 45   | Invert Emulsion (OBM) |

LSND mud (WBM) will be used to drill the 17-1/2" surface hole as well as the 12-1/4" directional intermediate hole. Mud systems with designed and appropriately sized LCM will be considered in the intermediate section to reduce hydrostatic pressure on weaker coal and sandstone formations. Oil based mud (OBM) will be used to drill the 8-3/4" curve and lateral portion of the wellbore. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify operation engineer of any mud losses. Mud weights of up to 13.0 lb/gal will be used as necessary to maintain sufficient overbalance to reservior pressure.

Managed pressure drilling equipment for the production section will be utilized to minimize the equivalent circulating density in the production section.

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blowout will be available at the well site during drilling operations.

\*Mud weights reflect the true Equivalent Circulating Density (ECD) experienced in the wellbore.

#### 5. Auxiliary Equipment

- 1. Upper Kelly cock (lower Kelly cock to be available on rig floor)
- 2. Inside BOP or stab-in valve (available on rig floor)
- 3. Mud Monitoring will be visually observed.
- 4. Gas detectors will be used during surface and production hole drilling.

#### 6. Evaluation Program

| Logs: | LWD GR      |
|-------|-------------|
|       | CBL/CCL/GR: |

~60deg to 500ft above TOC in production casing

from surface casing to TD

Mudlogging

None

from KOP to production TD

The proposed Evaluation Program may change at the discretion of the well-site geologist.

Completion procedures will be determined after reviewing data. Whether the well is completed as a dry hole or as a producer, the Well Completion Report and Log will be submitted not later than thirty (30) days after the completion of the well or after completion of operations being performed.

#### 7. Abnormal Conditions

- 1. Pressures: Mancos is abnormal at .65 psi/ft gradient
- 2. Temperatures: No abnormal temperatures are anticipated.
- 3.  $H_2S$ : No  $H_2S$  has been encountered in or known to exist in the general area.
- 4. Estimated bottom-hole pressure: 4846 psi

#### **Formation Integrity Testing**

Pursuant to Onshore Order No. 2 Section III, Subsection B(i), Formation Integrity Tests (FIT) must be performed on either exploratory wells or any well permitted to utilize 5M BOPE. Bayless requests a variance to this rule, by not performing an FIT test at the surface casing shoe as it is common to encounter zones in formations below the shoe that fail at a lower Equivalent Mud Weight (EMW) than a typical FIT test. An FIT would be planned after drilling out the intermediate casing shoe, to be tested to 13 lb/gal.

#### 8. Anticipated Starting Dates/ Bayless Contact

| A. Anticipated Starting Dates:                     | September 1, 2023       |
|--|-------------------------|
| Anticipated Commencement Date:                     | 30 days from start date |
| Drilling Days:                                     | Approximately 20 days   |
| Completion Days:                                   | Approximately 15 days   |
| B. Please contact Nate Denzin at phone no:         | 303-382-0906            |
| With any questions or concerns regarding this dril | ling program.           |

Cell Phone: 720-338-3639

| Received by OCD: 7/11/2024 12:03:44 PM                       |                             | Page 67 of 18                       |
|--|-----------------------------|-------------------------------------|
| <b>VAFMSS</b>  | SUP                         | O Data Report                       |
| U.S. Department of the Interior<br>BUREAU OF LAND MANAGEMENT |                             | 07/11/2024                          |
| APD ID: 10400094811  | Submission Date: 09/28/2023 | Highlighted data                    |
| Operator Name: ROBERT L BAYLESS PRODUCER LLC                 |                             | reflects the most<br>recent changes |
| Well Name: LA JARA FED 1-2                                   | Well Number: 003H           | Show Final Text                     |
| Well Type: CONVENTIONAL GAS WELL                             | Well Work Type: Drill       |                                     |

## **Section 1 - Existing Roads**

Will existing roads be used? YES

Existing Road Map:

La\_Jara\_Fed\_1\_2\_Access\_Road\_Map\_040424\_20240404141927.pdf

Existing Road Purpose: ACCESS, FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

**Existing Road Improvement Description:** Existing roads will be maintained in the same or better condition using best management practices and surface operating standard & guidelines for Oil & Gas (Gold Book).

**Existing Road Improvement Attachment:** 

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

# Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

**Operator Name: ROBERT L BAYLESS PRODUCER LLC** 

Well Name: LA JARA FED 1-2

Well Number: 003H

La\_Jara\_Fed\_1\_2\_Nearby\_Wells\_Map\_and\_Table\_012924\_20240130144337.pdf

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

**Production Facilities description:** 

#### **Production Facilities map:**

La\_Jara\_Fed\_1\_2\_\_Facilities\_Layout\_20230602110442.pdf

| Section 5 - Location and Typ | es of Water Supply |
|------------------------------|--------------------|
|------------------------------|--------------------|

Water Source Table

Water source type: OTHER

**Describe type:** Water for construction, drilling, dust suppression and completion operations will be utilized from the La Jara water pond which will be constructed on private surface.

| Water source use type:             | DUST CONTROL                                     |                                       |
|------------------------------------|--|---------------------------------------|
|                                    | SURFACE CASING                                   |                                       |
|                                    | INTERMEDIATE/PRODUCTION<br>CASING<br>STIMULATION |                                       |
| Source latitude: 36.755092         |  | Source longitude: -107.202803         |
| Source datum: NAD83                |  |                                       |
| Water source permit type:          | OTHER  |                                       |
| Water source transport method:     | PIPELINE   |                                       |
| Source land ownership: PRIVATE     |  |                                       |
| Source transportation land owners  | ship: PRIVATE                                    |                                       |
| Water source volume (barrels): 600 | 0000   | Source volume (acre-feet): 77.3358578 |
| Source volume (gal): 25200000      |  |                                       |
|                                    |  |                                       |

#### Water source and transportation

La\_Jara\_Fed\_1\_2\_Water\_Source\_Map\_Revised\_043024\_20240502130446.pdf

**Water source comments:** Robert Bayless will be using the proposed La Jara Water Pond that is located to the west of the proposed wellpad. The water pond is located on private surface. Each well drilling and completion will use approximately 75 acre-ft of fresh water. Fresh water has been contracted from San Juan Water Haulers Association who has rights from the Jicarilla Nation (confirmation of volume for first wells

#### **Operator Name: ROBERT L BAYLESS PRODUCER LLC**

Well Name: LA JARA FED 1-2

Well Number: 003H

attached) at the Navajo Dam Reservoir. Water will be transferred and stored onsite in two freshwater storage ponds. Frac tanks may be used on well pad for buffer for Hydraulic Fracturing pumps. Water will be transferred from Navajo Dam Reservoir to location ponds using a combination of existing pipelines owned by Enterprise Products and Black Hawk Energy Corporation and by temporary lay flat-water lines. Deisel powered centrifugal pumps will be used to pump the water. Water will be pumped from the Rosa 181 take point. Using 12 inch lay flat water lines and pumps, the water will then travel south along the existing roads and pipeline to the La Jara CDP where it will enter the existing Black Hawk Energy Corporation Cabresto 12 inch pipeline. The water will then be transported using the existing and proposed pipelines for drilling and completions. (See attached Map). San Juan Water Haulers Association has agreed to provide 180 acre feet of water rights for industrial use in connection with oil and gas drilling.

#### New water well? N

| New Water Well In                   | fo              |                      |
|-------------------------------------|-----------------|----------------------|
| Well latitude:                      | Well Longitude: | Well datum:          |
| Well target aquifer:                |                 |                      |
| Est. depth to top of aquifer(ft):   | Est thicknes    | ss of aquifer:       |
| Aquifer comments:                   |                 |                      |
| Aquifer documentation:              |                 |                      |
| Well depth (ft):                    | Well casing ty  | pe:                  |
| Well casing outside diameter (in.): | Well casing in  | side diameter (in.): |
| New water well casing?              | Used casing s   | ource:               |
| Drilling method:                    | Drill material: |                      |
| Grout material:                     | Grout depth:    |                      |
| Casing length (ft.):                | Casing top de   | pth (ft.):           |
| Well Production type:               | Completion M    | ethod:               |
| Water well additional information:  |                 |                      |
| State appropriation permit:         |                 |                      |
| Additional information attachment:  |                 |                      |

## **Section 6 - Construction Materials**

Using any construction materials: YES

**Construction Materials description:** A contractor/source has not been determined or contracted yet for this location. Robert Bayless will submit a sundry notice to BLM prior to construction to notify them of chosen contractor prior to construction.

#### **Construction Materials source location**

Well Name: LA JARA FED 1-2

Well Number: 003H

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## Section 7 - Methods for Handling

Waste type: DRILLING

Waste content description: Drilling water

Amount of waste: 5000 barrels

Waste disposal frequency : One Time Only

**Safe containment description:** A closed loop system will be utilized. Drilling fluids will be disposed of at a commercial disposal facility. Total amount of drilling water will be ~5000 bbl. Drilling is anticipated to be take 10-15 days for a total of 330-500 bbl per day until the drilling has been completed. **Safe containmant attachment:** 

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: PRIVATE FACILITY

Disposal type description:

Disposal location description: Trucked by 3rd party contractor.

Waste type: COMPLETIONS/STIMULATION

Waste content description: Completions fluids

Amount of waste: 8000 barrels

Waste disposal frequency : Daily

**Safe containment description:** Completion fluid amount is only calculated for the time the completion procedure occurs. Once the completion procedure is done, there will be no additional waste for completion/stimulation. Completion is anticipated to take four to six days. Completion fluids will be hauled to a commercial disposal facility.

#### Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: INDIAN (TRIBAL/ALLOTTED) FACILITY Disposal type description:

**Disposal location description:** Completion fluids will be hauled by a 3rd party contractor.

Waste type: FLOWBACK

Waste content description: Flowback water

Amount of waste: 400 barrels

Waste disposal frequency : Daily

**Safe containment description:** Flowback water will be contained in a holding tank and subsequently hauled to a commercial disposal facility. **Safe containmant attachment:** 

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: PRIVATE FACILITY Disposal type description:

Disposal location description: Hauled by 3rd party contractor.

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Waste type: SEWAGE

Waste content description: Sewage

Amount of waste: gallons

Waste disposal frequency : Weekly

Safe containment description: Port-a-potties

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: PRIVATE FACILITY Disposal type description:

Disposal location description: Sewage will be maintained and hauled by 3rd party contractor.

Waste type: GARBAGE

Waste content description: Garbage and other solid waste.

Amount of waste: pounds

Waste disposal frequency : Weekly

**Safe containment description:** Garbage and other solid waste will be contained in a portable trash cage which will be totally enclosed with small mesh wire. **Safe containmant attachment:** 

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: PRIVATE FACILITY Disposal type description:

Disposal location description: Trucked by 3rd party contractors.

Waste type: PRODUCED WATER

Waste content description: Produced water.

Amount of waste: 800 barrels

Waste disposal frequency : Daily

**Safe containment description:** Produced water will be contained in tanks during completion and testing. Once testing is completed the produced water will be hauled to a commercial disposal facility. **Safe containmant attachment:** 

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: PRIVATE FACILITY Disposal type description:

Disposal location description: All produced water will be hauled by 3rd party contractor.

**Reserve Pit** 

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

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Well Name: LA JARA FED 1-2

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Reserve pit volume (cu. yd.)

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Reserve pit length (ft.)

Reserve pit depth (ft.)

Is at least 50% of the reserve pit in cut?

**Reserve pit liner** 

Reserve pit liner specifications and installation description

## **Cuttings Area**

Reserve pit width (ft.)

Cuttings Area being used? NO

Are you storing cuttings on location? Y

Description of cuttings location The steel cuttings pit and closed loop system will contain the drilling fluids including salts and chemicals. Cuttings will be treated in the drying cutting area before being hauled to Industrial Ecosystems Industries on Crouch Mesa. Cuttings area length (ft.) Cuttings area width (ft.)

Cuttings area length (ft.) Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

**Ancillary Facilities** 

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

La\_Jara\_Fed\_1\_2\_Wellsite\_Layout\_Drawings\_092823\_20230928103401.pdf

Comments:

Well Name: LA JARA FED 1-2

Well Number: 003H

### Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: La Jara Fed

Multiple Well Pad Number: 1-2

#### Recontouring

**Drainage/Erosion control construction:** Straw wattles are to be installed around areas of the wellpad. The cut slopes on the wellpad are not to be graded to a smooth surface, but are to be left in a roughened condition. Any other combination of the following Best Management Practices may also be installed for erosion control methods; Diversion Ditches, Water Bars, Road Surface Slope, Drainage Dips, Roadside Ditches, Turnouts, Wing Ditches, Road Crowning, Culverts, Berms, Silt Fence, Straw Bales, Straw Crimping, Surface Roughening, Catch Basins, Sediment Traps, Permanent Vegetation, Existing Vegetation and Mulching. The BMP selection will be determined on an individual basis and as site conditions dictate.

**Drainage/Erosion control reclamation:** Earthen berms are to be placed at the top of cut slopes. An earthen berm is to be placed on the perimeter of the wellpad to fill sections to divert run-off from fill slopes to minimize erosion. The graded slopes are to be left in a rough condition to minimize wind and water erosion. At the completion of the facilities installation, the stockpiled material for the production equipment dikes will no longer exist. Straw wattles are to be installed and maintained. Any other combination of the following Best Management Practices may be installed for erosion control methods; Diversion Ditches, Water Bars, Road Surface Slope, Drainage Dips, Roadside Ditches, Turnouts, Wing Ditches, Road Crowning, Culverts, Berms, Silt Fence, Straw Bales, Straw Crimping, Surface Roughening, Catch Basins, Sediment Traps, Permanent Vegetation, Existing Vegetation and Mulching. The BMP selection will be determined on an individual basis and as site conditions dictate.

| Well pad proposed disturbance<br>(acres): 5.97     | Well pad interim reclamation (acres): 1.37        | Well pad long term disturbance<br>(acres): 4.6  |
|--|---|---|
| Road proposed disturbance (acres): 0.5             | Road interim reclamation (acres): 0               | Road long term disturbance (acres): 0           |
| Powerline proposed disturbance<br>(acres): 0       | Powerline interim reclamation (acres):            | Powerline long term disturbance (acres): 0      |
| Pipeline proposed disturbance (acres): 7.41        | <b>Pipeline interim reclamation (acres):</b> 0.43 | Pipeline long term disturbance<br>(acres): 6.98 |
| Other proposed disturbance (acres): 0              | Other interim reclamation (acres): 0              | Other long term disturbance (acres): 0          |
| Total proposed disturbance:<br>13.8799999999999999 | Total interim reclamation: 1.8                    | Total long term disturbance: 11.58              |

#### **Disturbance Comments:**

**Reconstruction method:** Final reconstruction will include all disturbed areas, including roads, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Re-salvaged topsoil will be spread evenly over the entire disturbed site to ensure successful revegetation. To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, woody debris, and large rocks over recontoured cut\fill slopes.

**Topsoil redistribution:** Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet. Distribute topsoil evenly over the location, and seed according to the seed mixture. The access road and location shall be ripped or disked prior to seeding. Perennial vegetation must be established. Additional work shall be required in case of seeding failures, etc.

**Soil treatment:** Earthwork for interim and final reclamation will be completed within six (6) months of well completion or plugging (weather permitting).

Existing Vegetation at the well pad:

Existing Vegetation at the well pad

La\_Jara\_Fed\_1\_2\_NRCS\_Map\_Unit\_and\_Plants\_Wellpad\_20230413113200.pdf

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### Existing Vegetation Community at the road:

#### Existing Vegetation Community at the road

La\_Jara\_Fed\_1\_2\_NRCS\_Map\_Unit\_and\_Plants\_Access\_Road\_20230413121601.pdf

**Existing Vegetation Community at the pipeline:** All pipeline surface disturbance on USFS will be reclaimed completely. The 5.29 acres of pipeline disturbance on fee surface will remain unreclaimed. This is calculated with 5758.3' length X 40' width; however, the only "disturbance" are the actual pipelines being placed on the surface.

#### **Existing Vegetation Community at the pipeline**

La\_Jara\_Fed\_1\_2\_NRCS\_Map\_Unit\_and\_Plants\_Pipeline\_040324\_20240404142049.pdf

Existing Vegetation Community at other disturbances: No other disturbances are required.

#### **Existing Vegetation Community at other disturbances**

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed

Seed Table

| Seed Su   | ummary      |
|-----------|-------------|
| Seed Type | Pounds/Acre |

Total pounds/Acre:

Seed reclamation

#### **Operator Contact/Responsible Official**

First Name: John

Phone: (303)296-9900

Last Name: Thomas

Email: jthomas@rlbayless.com

Seedbed prep: Initial seedbed preparation will consist of backfilling, leveling, and ripping all compacted

Well Name: LA JARA FED 1-2

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areas. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix to meet reclamation standards will be used. The seed mix will be used on all disturbed surfaces including all roads and cut/fill slopes.

**Seed BMP:** All disturbed areas, including roads, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Re-salvaged topsoil will be spread evenly over the entire disturbed site to ensure successful revegetation. To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, woody debris, and large rocks over recontoured cut\fill slopes.

**Seed method:** Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix to meet reclamation standards will be used. The seed mix will be used on all disturbed surfaces including all roads and cut/fill slopes.

Existing invasive species? N

#### Existing invasive species treatment description:

#### Existing invasive species treatment

Weed treatment plan description: Annual or noxious weeds shall be controlled on all disturbed areas. A weed monitoring and control program will be implemented beginning the first growing season and throughout the life of the well. Noxious weeds that have been identified during construction and monitoring will be promptly treated and controlled. A Pesticide Use Permit will be acquired from the BLM/USFS prior to the use of herbicides. All construction and reclamation equipment will be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species. The operator will coordinate all weed and insect control measures with the BLM/USFS, state and/or local management agencies. Reclamation equipment will be cleaned before moving the equipment onto the location and will be cleaned again before leaving the location.

#### Weed treatment plan

**Monitoring plan description:** Reclaimed areas will be monitored annually. Actions will be taken to ensure that reclamation standards are met as quickly as reasonably practical. Reclamation monitoring will be documented in a reclamation report and submitted to the Authorized Officer. The report will document compliance with all aspects of the reclamation objectives and standards, identify whether the reclamation objectives and standards are likely to be achieved in the near future without additional actions, and identify actions that have been or will be taken to meet the objectives and standards. The report will also include acreage figures for: Initial Disturbed Acres; Successful Interim Reclaimed Acres; and Successful Final Reclaimed Acres.

#### Monitoring plan

**Success standards:** Reclamation will be considered successful if the following criteria are met: 70 percent of predisturbance cover; 90 percent dominate species (the vegetation will consist of species included in the seed mix and/or occurring in the surrounding natural vegetation); and erosion features are equal to or less than surrounding area.

Pit closure description: No pits are being used.

Pit closure attachment:

Section 11 - Surface Ownership

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Operator Name: ROBERT L BAYLESS PRODUCER LLC

Well Name: LA JARA FED 1-2

Well Number: 003H

Disturbance type: WELL PAD **Describe:** Surface Owner: PRIVATE OWNERSHIP Other surface owner description: **BIA Local Office: BOR Local Office: COE Local Office: DOD Local Office: NPS Local Office:** State Local Office: **Military Local Office: USFWS Local Office: Other Local Office: USFS** Region: **USFS Forest/Grassland: USFS Ranger District:** 

Surface use plan certification: NO Surface use plan certification document:

Surface access agreement or bond: AGREEMENT Surface Access Agreement Need description: Bayless has a Surface Use Agreement in place. Surface Access Bond BLM or Forest Service: BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: EXISTING ACCESS ROAD Describe: Surface Owner: PRIVATE OWNERSHIP Other surface owner description: BIA Local Office:

Well Name: LA JARA FED 1-2

Well Number: 003H

COE Local Office: DOD Local Office: NPS Local Office: State Local Office: Military Local Office: USFWS Local Office: Other Local Office: USFS Region: USFS Forest/Grassland:

#### **USFS** Ranger District:

Surface use plan certification: NO Surface use plan certification document:

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: Bayless has a Surface Use Agreement in place.

Surface Access Bond BLM or Forest Service:

**BLM Surface Access Bond number:** 

USFS Surface access bond number:

Disturbance type: PIPELINE Describe: Surface Owner: U.S. FOREST SERVICE Other surface owner description: BIA Local Office: BOR Local Office: COE Local Office: DOD Local Office: NPS Local Office: State Local Office:

Well Name: LA JARA FED 1-2

Well Number: 003H

### Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region: REGION 3

USFS Forest/Grassland:

**USFS Ranger District:** JICARILLA

Disturbance type: PIPELINE Describe: Surface Owner: PRIVATE OWNERSHIP Other surface owner description: BIA Local Office: BOR Local Office: COE Local Office: DOD Local Office: NPS Local Office: State Local Office: Military Local Office: USFWS Local Office: Other Local Office:

**USFS Region:** 

USFS Forest/Grassland:

**USFS Ranger District:** 

Well Name: LA JARA FED 1-2

Well Number: 003H

Surface use plan certification: NO Surface use plan certification document:

Surface access agreement or bond: AGREEMENT

Surface Access Agreement Need description: Bayless has a Surface Use Agreement in place.

Surface Access Bond BLM or Forest Service:

**BLM Surface Access Bond number:** 

USFS Surface access bond number:

Section 12 - Other

Right of Way needed? N ROW Type(s):

Use APD as ROW?

ROW

SUPO Additional Information: The onsite was held on April 20, 2023 for this location. Attending was John Thomas, Billy Schneider - Robert L. Bayless, LLC; Emmanuel Adeloye - BLM; Ron Kellermueller - New Mexico Department of Game and Fish; JJ Miller - US Forest Service. Use a previously conducted onsite? N

**Previous Onsite information:** 

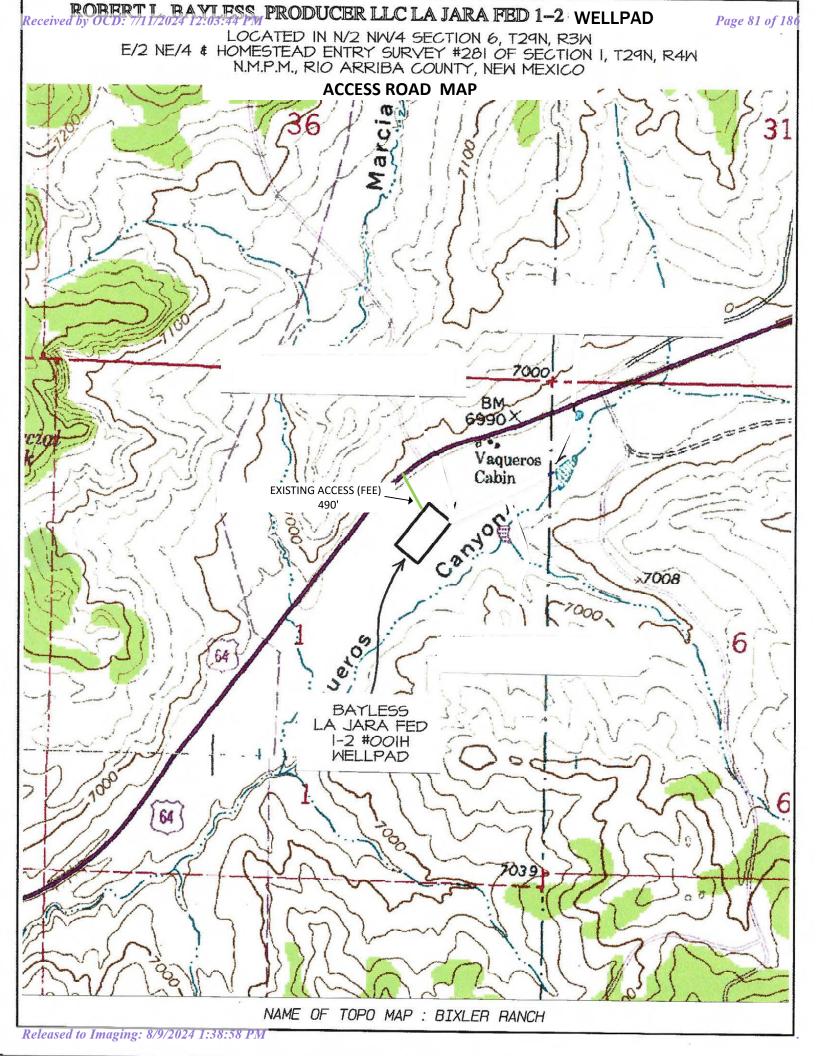
#### **Other SUPO**

La\_Jara\_Fed\_1\_2\_Pad\_Self\_Cert\_for\_Access\_and\_Wellpad\_Signed\_20230417083316.pdf R\_22406\_Case\_22918\_20230613134727.pdf La\_Jara\_Fed\_1\_2\_APD\_BLM\_Letter\_092723\_20230927153320.pdf La\_Jara\_Fed\_1\_2\_003H\_Payment\_Receipt\_20230928103520.pdf La\_Jara\_Fed\_1\_2\_APD\_BLM\_Letter\_120623\_20231206140601.pdf La\_Jara\_Fed\_1\_2\_APD\_BLM\_Letter\_010924\_20240109154144.pdf La\_Jara\_Fed\_1\_2\_APD\_BLM\_Letter\_040424\_20240404142624.pdf La\_Jara\_Fed\_1\_2\_APD\_BLM\_Letter\_041624\_20240416160421.pdf

Well Name: LA JARA FED 1-2

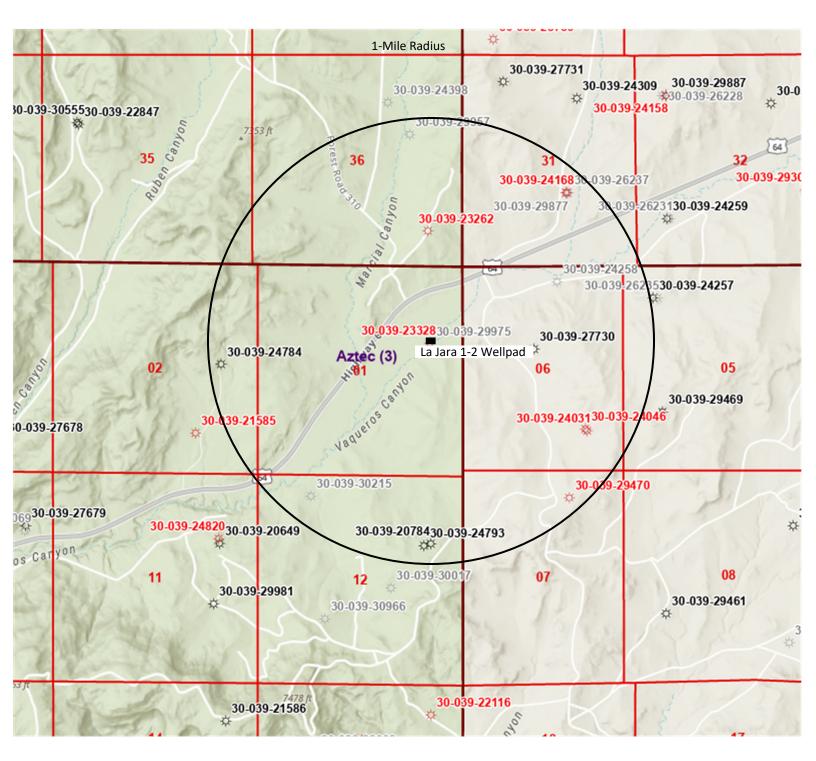
Well Number: 003H

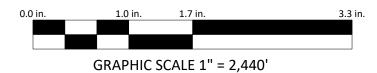
La\_Jara\_Fed\_1\_2\_Gas\_and\_Water\_Pipelines\_Plats\_042524\_20240502130559.pdf La\_Jara\_Fed\_1\_2\_Surface\_Use\_Plan\_Master\_Revised\_050224\_20240502130614.pdf La\_Jara\_Fed\_1\_2\_APD\_BLM\_Letter\_050224\_20240502130621.pdf



### Robert Bayless Producer, LLC La Jara Fed 1-2 Wellpad Sec. 1 T29N R4W (H.E.S. #281) Rio Arriba County, NM Surface: Fee

### Nearby Wells Map



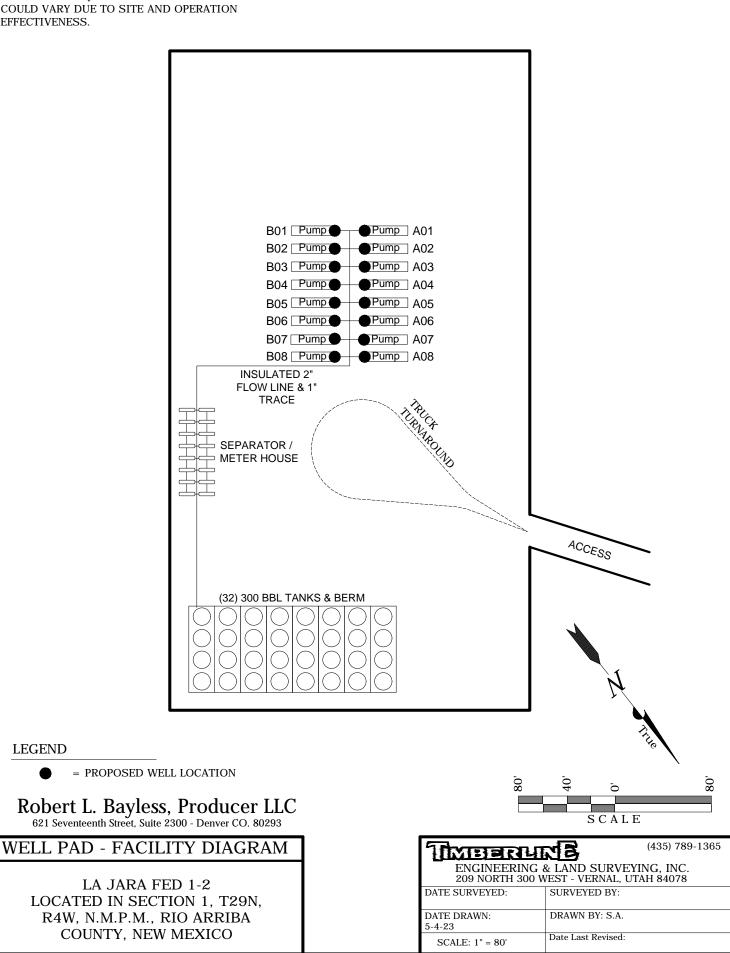


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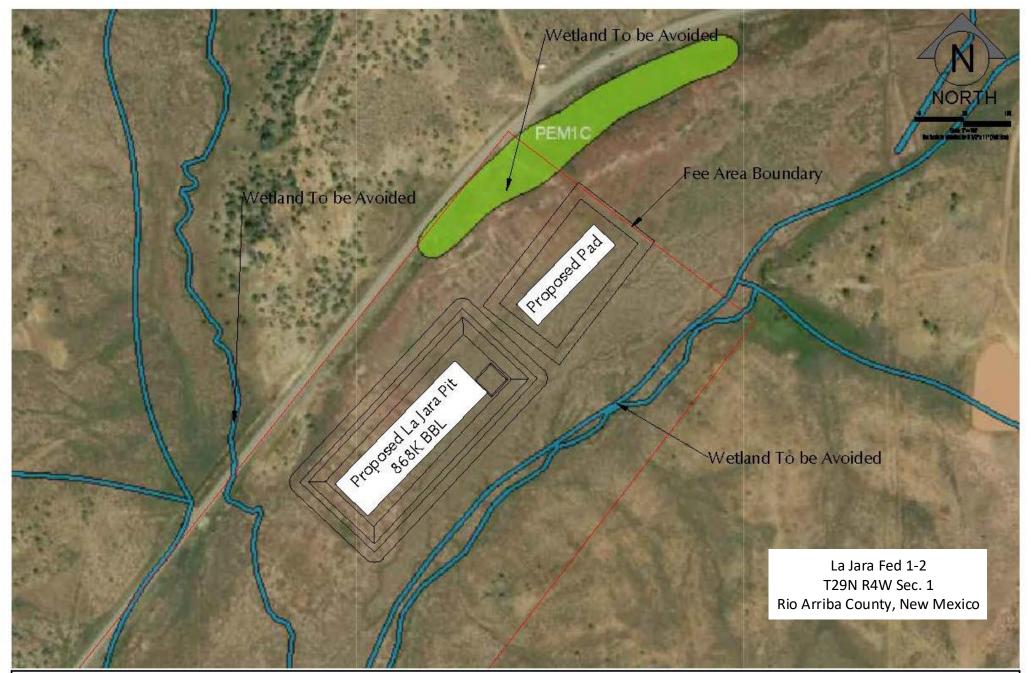
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| API          | Well Name                     | Well Type Code<br>Well Type<br>Well Status Code | Well Status             | OGRID  | OGRID Name                      | County     | PLSS Location (ULSTR) | Latitude | Longitude | Datum | Well Bore Direction | SPUD Year | SPUD Date | Lease Type  | Measured Depth | Vertical Depth     | Associated Pools  | Effective Date | Last Produced | Plug Date<br>OBJECTID | x              | y                  |
|--------------|-------------------------------|---|-------------------------|--------|---------------------------------|------------|-----------------------|----------|-----------|-------|---------------------|-----------|-----------|-------------|----------------|--------------------|---|----------------|---------------|-----------------------|----------------|--------------------|
| 30-039-24784 | BURNS RANCH #300              | G Gas A   | Active                  | 330132 | MorningStar Operating LLC       | Rio Arriba | H-02-29N-04W          | 36.7542  | -107.2178 | NAD83 | v                   | 1990 5    | 5/30/1990 | Federal 4   | 4,135 4,       | 1051               | [71629] BASIN FRUITLAND COAL (GAS); [72400] BLANCO PICTURED<br>CLIFFS, EAST (GAS)                                   | 8/20/2020      | 11/1/2023     | 12/31/9999 771        | 1 -11935435.39 | 4404894.4593369365 |
| 30-039-30215 | 5 MANY CANYONS 29 04 12 #012H | G Gas C   | Cancelled               | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | C-12-29N-04W          | 36.7451  | -107.2101 | NAD83 | No Data             | 9999 1    | 2/31/9999 | Federal     | 0              | 0 [                | [74960] CHOZA MESA PICTURED CLIFFS (GAS)  | 8/12/2010      | 12/31/9999    | 12/31/9999 863        | 3 -11934579.1  | 4403638.016262642  |
| 30-039-29957 | MANY CANYONS 30 04 36 #023H   | G Gas C   | Cancelled               | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | H-36-30N-04W          | 36.7699  | -107.2017 | NAD83 | Н                   | 9999 1    | 2/31/9999 | Federal     | 0              | 0 [                | [72400] BLANCO PICTURED CLIFFS, EAST (GAS)  | 4/16/2007      | 12/31/9999    | 12/31/9999 1080       | 2 -11933637.91 | 4407088.451358493  |
| 30-039-24793 | 29-4 CARSON 12 #001           | G Gas A   | Active                  | 328537 | NueVida Resources, LLC          | Rio Arriba | H-12-29N-04W          | 36.7417  | -107.2004 | NAD83 | V                   | 1990 7    | /12/1990  | Federal 3   | 3,752 3,       | ,752 [             | [71629] BASIN FRUITLAND COAL (GAS)  | 2/26/2020      | 5/1/2023      | 12/31/9999 1091       | 7 -11933498.43 | 4403159.250533905  |
| 30-039-20784 | CARSON 29 04 #005             | G Gas A   | Active                  | 11859  | JICARILLA ENERGY CO             | Rio Arriba | H-12-29N-04W          | 36.7418  | -107.1999 | NAD83 | V                   | 1973 1    | 0/26/1973 | Federal 8   | 8,572 8,       | ,572 [             | [73720] CAMPO GALLUP (GAS)  | 9/7/2018       | 11/1/2023     | 12/31/9999 1105       | 6 -11933437.2  | 4403181.477210246  |
| 30-039-29975 | 5 MANY CANYONS 29 04 01 #024H | G Gas C   | Cancelled               | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | H-01-29N-04W          | 36.7555  | -107.1999 | NAD83 | No Data             | 9999 1    | 2/31/9999 | Federal     | 0              | 0 [                | [72400] BLANCO PICTURED CLIFFS, EAST (GAS)  | 8/12/2010      | 12/31/9999    | 12/31/9999 1117       | 8 -11933439.06 | 4405086.861        |
| 30-039-23262 | SIMMS FEDERAL #004            | G Gas P   | Plugged (site released) | 162928 | ENERGEN RESOURCES CORPORATION   | Rio Arriba | P-36-30N-04W          | 36.7633  | -107.2001 | NAD83 | V                   | 1983 8    | 3/15/1983 | Federal 4   | 4,115 4,       | ,115 [             | [71629] BASIN FRUITLAND COAL (GAS)  | 8/1/1997       | 10/1/2003     | 8/3/2004 1119         | 0 -11933462.11 | 4406165.023        |
| 30-039-23328 | PRE-ONGARD WELL #001          | G Gas P   | Plugged (site released) | 214263 | PRE-ONGARD WELL OPERATOR        | Rio Arriba | H-01-29N-04W          | 36.7556  | -107.2    | NAD83 | V                   | 1984 1    | /20/1984  | Private     | 0 3,           | ,975 [             | [72400] BLANCO PICTURED CLIFFS, EAST (GAS)  | 10/27/1983     | 12/31/9999    | 1/28/1984 1119        | 1 -11933445.97 | 4405096.451163291  |
| 30-039-29877 | 7 JICARILLA 464 31 #041       | G Gas C   | Cancelled               | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | N-31-30N-03W          | 36.7641  | -107.195  | NAD83 | No Data             | 9999 1    | 2/31/9999 | Jicarilla   | 0              | 0 [                | [72400] BLANCO PICTURED CLIFFS, EAST (GAS)  | 12/20/2013     | 12/31/9999    | 12/31/9999 1253       | 1 -11932890.24 | 4406280.749914186  |
| 30-039-27730 | ) JICARILLA 452 06 #023       | G Gas A   | Active                  | 11859  | JICARILLA ENERGY CO             | Rio Arriba | G-06-29N-03W          | 36.7552  | -107.191  | NAD83 | v                   | 2004      | 6/5/2004  | Jicarilla S | 3,800 3,       | , <sub>800</sub> [ | [71629] BASIN FRUITLAND COAL (GAS); [72400] BLANCO PICTURED<br>CLIFFS, EAST (GAS); [97037] CABRESTO CANYON TERTIARY | 9/7/2018       | 6/1/2023      | 12/31/9999 1377       | 2 -11932448.05 | 4405038.679396282  |
| 30-039-24258 | PRE-ONGARD WELL #3            | G Gas C   | Cancelled               | 214263 | PRE-ONGARD WELL OPERATOR        | Rio Arriba | B-06-29N-03W          | 36.7598  | -107.189  | NAD83 | No Data             | 9999 1    | 2/31/9999 | Jicarilla   | 0              | 0 1                | No Data   | 7/7/1988       | 12/31/9999    | 12/31/9999 1505       | 0 -11932227.46 | 4405684.605341813  |
| 30-039-26237 | JICARILLA 464 SJ #004         | G Gas C   | Cancelled               | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | J-31-30N-03W          | 36.7659  | -107.1881 | NAD83 | No Data             | 9999 1    | 2/31/9999 | Jicarilla   | 0              | 0 1                | No Data   | 12/7/2001      | 12/31/9999    | 12/31/9999 1518       | 2 -11932120.33 | 4406532.403116277  |
| 30-039-24046 | JICARILLA 452 #001Y           | G Gas P   | Plugged (site released) | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | P-06-29N-03W          | 36.7497  | -107.1866 | NAD83 | V                   | 1986 6    | 5/23/1986 | Jicarilla   | 3,935 3,       | ,935 [             | [71629] BASIN FRUITLAND COAL (GAS)  | 1/1/1997       | 4/1/2003      | 5/14/2005 1519        | 3 -11931958    | 4404278.657325449  |
| 30-039-24168 | JICARILLA 464 #004            | G Gas P   | Plugged (site released) | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | J-31-30N-03W          | 36.7659  | -107.1883 | NAD83 | V                   | 1988 2    | 2/27/1988 | Jicarilla 4 | 4,075 4,       | ,075 [             | [72400] BLANCO PICTURED CLIFFS, EAST (GAS)  | 1/1/1997       | 3/1/2008      | 1/18/2010 1523        | 3 -11932147.4  | 4406531.844492916  |
| 30-039-29470 | JICARILLA 452 07 #013         | G Gas P   | Plugged (site released) | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | B-07-29N-03W          | 36.745   | -107.188  | NAD83 | Н                   | 2006 1    | 1/4/2006  | Federal 5   | 5,846 3,       | ,813 [             | [72400] BLANCO PICTURED CLIFFS, EAST (GAS)  | 7/12/2006      | 12/1/2009     | 10/14/2015 1530       | 2 -11932110.87 | 4403622.561302523  |
| 30-039-24031 | PRE-ONGARD WELL #001          | G Gas P   | Plugged (site released) | 214263 | PRE-ONGARD WELL OPERATOR        | Rio Arriba | P-06-29N-03W          | 36.7496  | -107.1865 | NAD83 | V                   | 1986 5    | 5/12/1986 | Jicarilla   | 0 1,           | ,700 [             | [96928] WC D3, PICTURED CLIFFS  | 5/7/1986       | 12/31/9999    | 6/23/1986 1537        | 8 -11931944.41 | 4404263.291553489  |
| 30-039-30195 | 5 JICARILLA 464 31 #233       | G Gas P   | Plugged (site released) | 13925  | BLACK HILLS GAS RESOURCES, INC. | Rio Arriba | J-31-30N-03W          | 36.7659  | -107.1882 | NAD83 | No Data             | 2008      | 4/8/2008  | Jicarilla   | 9,642 3,       | ,606 [             | [71629] BASIN FRUITLAND COAL (GAS); [72400] BLANCO PICTURED<br>CLIFFS, EAST (GAS)                                   | 11/28/2007     | 10/1/2013     | 10/25/2013 1550       | 7 -11932136.35 | 4406528.134        |

NOTE PRODUCTION EQUIPMENT LOCATION COULD VARY DUE TO SITE AND OPERATION EFFECTIVENESS.

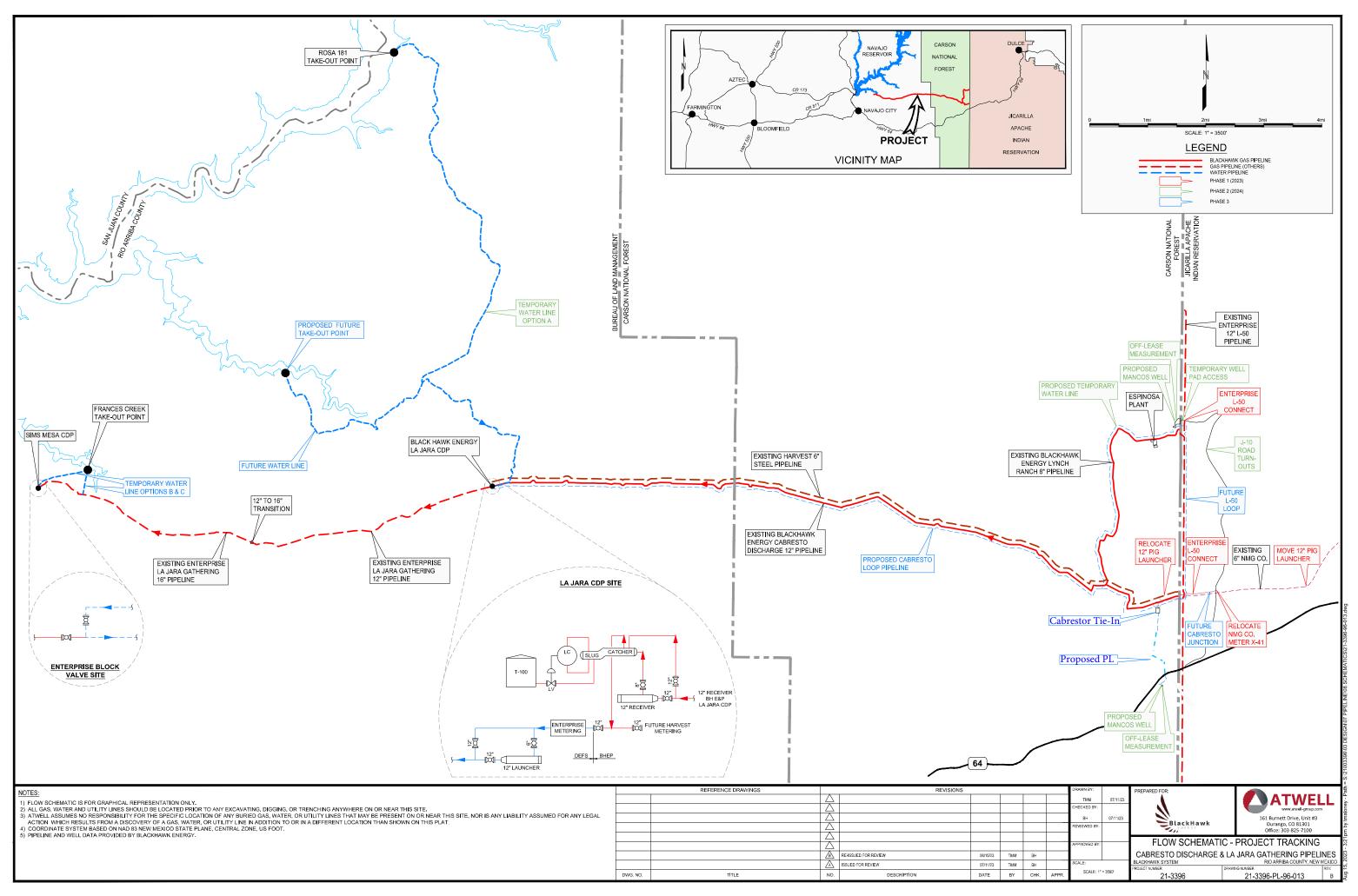


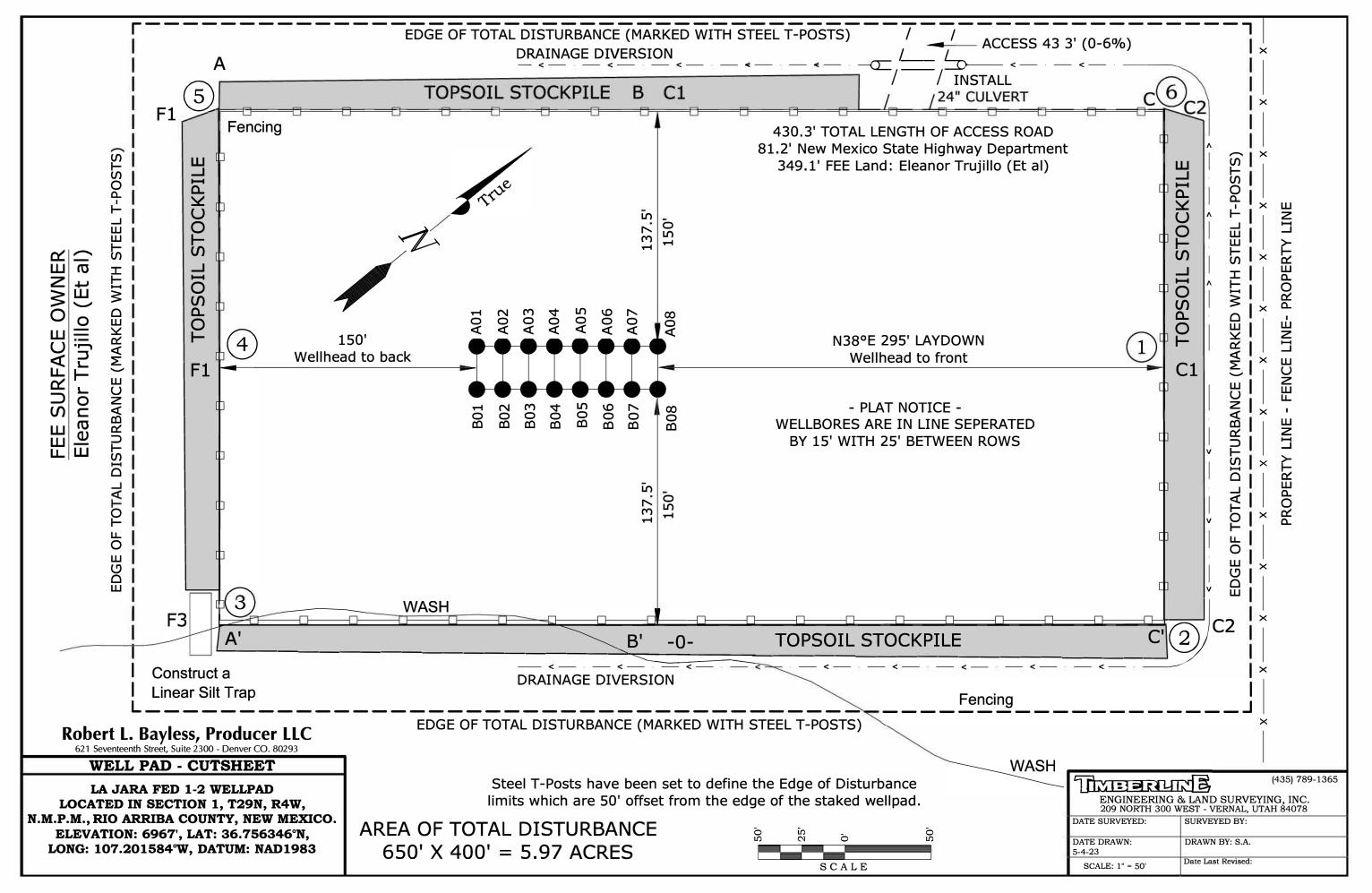
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Water Source La Jara Fresh Water Pits Robert L. Bayless Producer, LLC Project No. PRELIM Figure 1



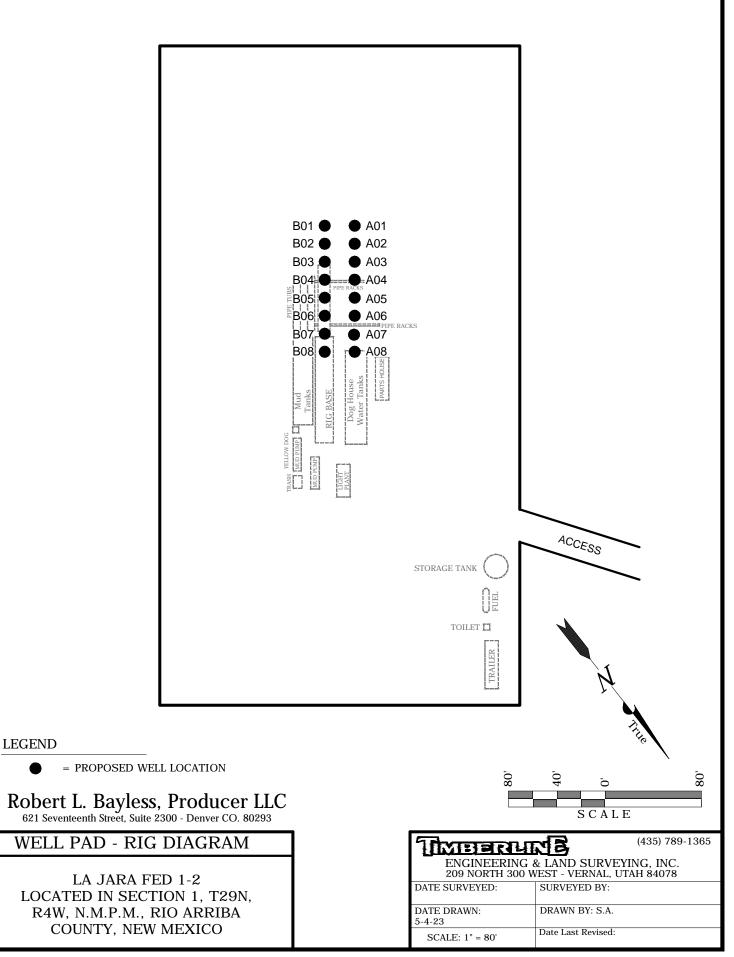


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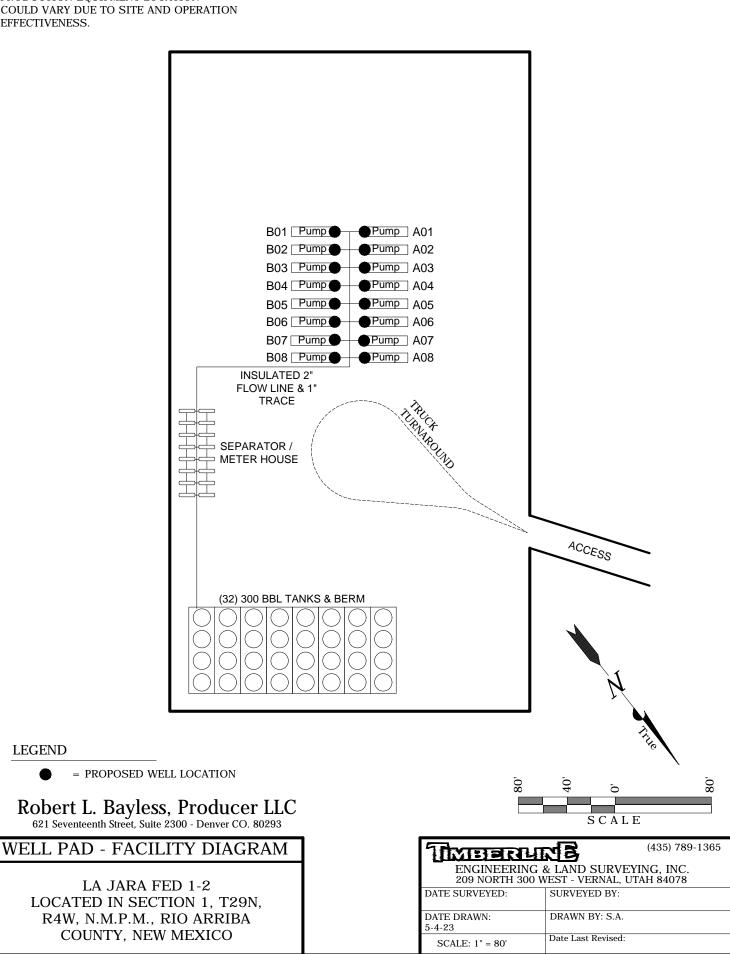
|        | HORIZONT<br> "=       |                           | С                   | 1                    |  | VERTICAL SCALE<br>I"=30'        |                         |  |
|--------|-----------------------|---------------------------|---------------------|----------------------|--|---------------------------------|-------------------------|--|
| A - A' |                       |                           |                     | 2 2 3 2 X A          | 20 12 12 12 13                         |                                 |                         |  |
| 6977'  |                       |                           |                     |                      | (************************************* |                                 |                         |  |
| 6967'  |                       |                           |                     |                      |  |                                 | ~ - /                   |  |
| 6957'  |                       | ्त हाइन हड्व हड्व         |                     | ( # (0 # # )         |  | . हरूल स्टल स्टल                |                         |  |
|        |                       |                           |                     | a a cas a la         |  | a an an sa an ta' an ta' an ta' | 6 a 20 8 9 5 10 6 50 10 | 5 (18) A A (18) A A (18) A             |
|        |                       |                           |                     | C                    | /L                                     |                                 |                         |  |
| B-B'   |                       |                           |                     | 5 8 362 8 8          | 8.3 15.8 3                             |                                 | 5871 8871 8881 8        |  |
| 6977'  |                       |                           |                     | ्र<br>स्टब्स्ट कर कर | LS .                                   |                                 |                         | 5 des este ses este a lus a            |
| 6967'  |                       |                           |                     |                      | [                                      |                                 |                         | in a                                   |
| 6957'  |                       |                           |                     |                      | र्वे ज्ञास्ट व ।<br>।                  |                                 |                         | 1961 X X 196 X X X X X                 |
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|        |                       |                           | ,                   | C                    | ۲L                                     |                                 |                         |  |
| C-C'   | <u>693)693,665</u> ,6 | 9 6 8 9 6 8 9 6 8 9 6 8 ° | <u> 229 239 239</u> | 1.1 × 1.1 × 1.1      | 8 8 <sup>1</sup> 6 8 1                 | <u> 688 686 686</u>             | <u>. 19 899 89 89 8</u> | 化石油化石油石                                |
| 6977'  |                       |                           |                     |                      | 5 X Z (5 X )                           |                                 |                         | 1.111.111.111.111.111.111.111.111.111. |
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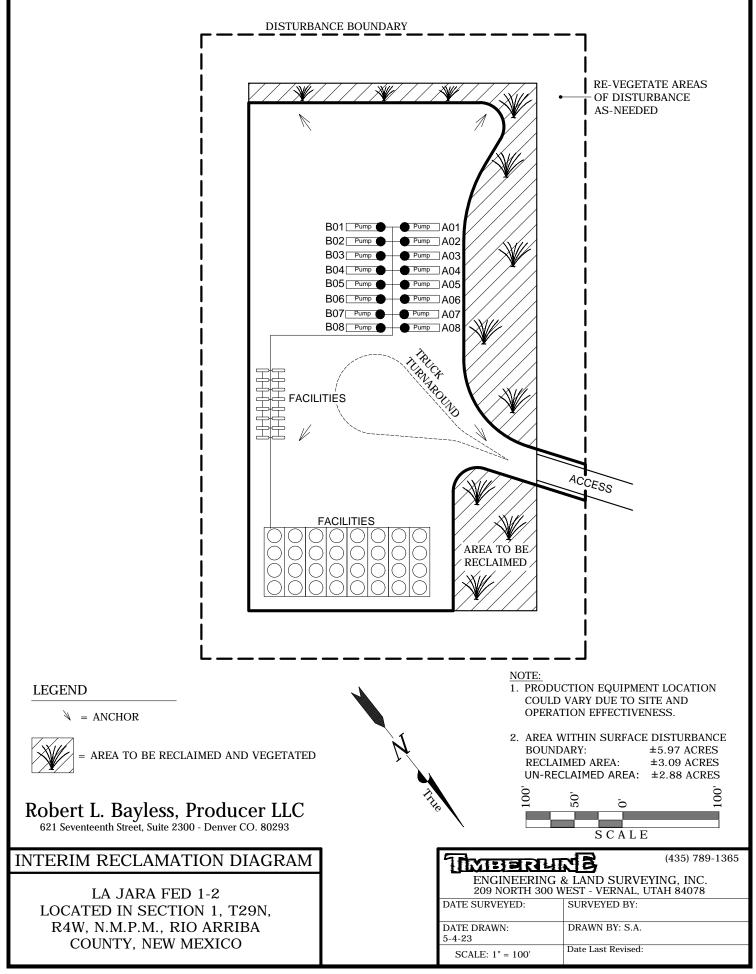


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NOTE PRODUCTION EQUIPMENT LOCATION COULD VARY DUE TO SITE AND OPERATION EFFECTIVENESS.



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### Carson National Forest, New Mexico, Part of Rio Arriba County

## SzB—Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2tl8q Elevation: 6,560 to 7,400 feet Mean annual precipitation: 12 to 16 inches Mean annual air temperature: 45 to 49 degrees F Frost-free period: 100 to 130 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Sparham, saline, sodic, bottomland, and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Sparham, Saline, Sodic, Bottomland

#### Setting

Landform: Flood plains, drainageways Landform position (three-dimensional): Talf, dip Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 2 inches: clay loam

- C1 2 to 35 inches: clay
- C2 35 to 80 inches: clay

#### **Properties and qualities**

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneRare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)



#### Interpretive groups

Land capability classification (irrigated): 4s Land capability classification (nonirrigated): 7s Hydrologic Soil Group: D Ecological site: R036XB010NM - Salty Bottomland Hydric soil rating: No

#### **Minor Components**

#### Lindrith

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Royosa

Percent of map unit: 4 percent Landform: Dunes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Rise Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB011NM - Sandy Hydric soil rating: No

#### Teromote

Percent of map unit: 4 percent Landform: Alluvial fans Down-slope shape: Linear Across-slope shape: Linear Ecological site: R036XB017NM - Swale Hydric soil rating: No

#### Nalivag

Percent of map unit: 1 percent Landform: Fan remnants Landform position (two-dimensional): Footslope Landform position (three-dimensional): Tread Down-slope shape: Convex Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Gojiya, freq ponded

Percent of map unit: 1 percent Landform: Valley floors Landform position (three-dimensional): Side slope, tread Down-slope shape: Linear, concave Across-slope shape: Linear, concave Map Unit Description: Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

*Ecological site:* R036XB009NM - Salt Meadow *Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 9, Sep 8, 2022



.

| Carson National Forest, New Mexico  | o, Part of Rio Arriba County  |                |                 |                     |                            |             |
|---|-------------------------------|----------------|-----------------|---------------------|----------------------------|-------------|
| Map unit symbol and soil name   | Ecological site               | Total          | dry-weight prod | uction              | Characteristic vegetation  | Rangeland   |
|   |                               | Favorable year | Normal year     | Unfavorable<br>year |                            | compositior |
|   |                               | Lb/ac          | Lb/ac           | Lb/ac               |                            | Pct         |
| SzB—Sparham clay loam, saline,<br>sodic, bottomland, 0 to 3 percent<br>slopes |                               |                |                 |                     |                            |             |
| Sparham, saline, sodic,   | R036XB010NM: Salty Bottomland | 1,500          | 1,050           | 600                 | Alkali sacaton             | 30          |
| bottomland  |                               |                |                 |                     | Western wheatgrass         | 20          |
|   |                               |                |                 |                     | Galleta                    | 10          |
|   |                               |                |                 |                     | Thinleaf fourwing saltbush | 7           |
|   |                               |                |                 |                     | Miscellaneous annual forbs | 5           |
|   |                               |                |                 |                     | Winterfat                  | 5           |
|   |                               |                |                 |                     | Blue grama                 | 5           |
|   |                               |                |                 |                     | Greasewood                 | 5           |
|   |                               |                |                 |                     | Shadscale saltbush         | 4           |
|   |                               |                |                 |                     | Goldenweed                 | 2           |
|   |                               |                |                 |                     | Groundsel                  | 2           |
|   |                               |                |                 |                     | Iodinebush                 | 2           |
|   |                               |                |                 |                     | Miscellaneous shrubs       | 2           |
|   |                               |                |                 |                     | Cuman ragweed              | 1           |

### Carson National Forest, New Mexico, Part of Rio Arriba County

#### VmC—Vosburg-Millpaw complex, 2 to 8 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2tl7l Elevation: 5,500 to 7,460 feet Mean annual precipitation: 8 to 20 inches Mean annual air temperature: 42 to 52 degrees F Frost-free period: 80 to 160 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Vosburg and similar soils: 55 percent Millpaw and similar soils: 35 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Vosburg**

#### Setting

Landform: Valley sides Landform position (three-dimensional): Rise Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 3 inches: fine sandy loam Bt - 3 to 25 inches: sandy clay loam Btk1 - 25 to 35 inches: sandy clay loam Btk2 - 35 to 80 inches: sandy clay loam

#### **Properties and qualities**

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.1 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e

Map Unit Description: Vosburg-Millpaw complex, 2 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

*Hydrologic Soil Group:* C *Ecological site:* R036XB006NM - Loamy *Hydric soil rating:* No

#### **Description of Millpaw**

#### Setting

Landform: Valley floors Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 3 inches: loam Bt - 3 to 23 inches: clay loam Btk - 23 to 80 inches: clay loam

#### **Properties and qualities**

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: High (about 11.2 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C Ecological site: R036XB002NM - Clayey Hydric soil rating: No

#### **Minor Components**

#### Jaythree

Percent of map unit: 3 percent Landform: Valley floors Down-slope shape: Linear Across-slope shape: Concave Ecological site: F035XG134NM - Gravelly - Woodland Hydric soil rating: No

#### Parkelei

Percent of map unit: 3 percent Landform: Hills Landform position (two-dimensional): Summit Map Unit Description: Vosburg-Millpaw complex, 2 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

Landform position (three-dimensional): Crest Down-slope shape: Convex Across-slope shape: Convex Ecological site: F036XB133NM - Pinyon-Utah juniper/skunkbush sumac Hydric soil rating: No

#### Orlie

Percent of map unit: 3 percent Landform: Fan remnants, mesas Landform position (two-dimensional): Footslope Landform position (three-dimensional): Side slope, talf Down-slope shape: Convex, linear Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Gilco

Percent of map unit: 1 percent Landform: Flood plains Landform position (three-dimensional): Tread, talf Down-slope shape: Linear Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

### **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 9, Sep 8, 2022

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| Indension is a proper series of the stand of the   | Carson National Forest, New Mexico | , Part of Rio Arriba County |                |                  |        |                               |             |
|--|------------------------------------|-----------------------------|----------------|------------------|--------|-------------------------------|-------------|
| Indication of the initial controlInitial controlInitian controlInitial control   | Map unit symbol and soil name      | Ecological site             | Total          | dry-weight produ | uction | Characteristic vegetation     | Rangeland   |
| MICVosburg-Millpav complex, 2 Sosburg R036XB006NM: Leamy I,100 S0 (Western wheatgrass) S0 (Western wheatgrass) I,100 S0 (Western wheatgrass) Needle and thread I (Seedle and thread) S0 (Seedle and threa   |                                    |                             | Favorable year | Normal year      |        |                               | composition |
| 0 8 percent slopesN305XB005IM: Loamy1,10850Medice and incregrass25100 regras000<   |                                    |                             | Lb/ac          | Lb/ac            | Lb/ac  |                               | Pct         |
| Millow Substrain Part of the properties of th  |                                    |                             |                |                  |        |                               |             |
| Milipaw Note:Standing of the series of the serie   | Vosburg                            | R036XB006NM: Loamy          | 1,100          | 850              | 600    | Western wheatgrass            | 25          |
| Nillpaw Note: Some of the properties o   |                                    |                             |                |                  |        | Blue grama                    | 10          |
| Milpaw Milpaw Milpaw R35XB002Mt: Clayee Norman Server S  |                                    |                             |                |                  |        | Indian ricegrass              | 7           |
| Mileaune end of the set of the  |                                    |                             |                |                  |        | Needle and thread             | 7           |
| Millpaw R05K8002NM: Clayey NOR K002NM: Clayey 1,200  |                                    |                             |                |                  |        | Galleta                       | 5           |
| NIIIPAW NOTE CASES INTERPORT IN PART OF CONTR NOTE CASES INTERPORT  |                                    |                             |                |                  |        | Miscellaneous annual grasses  | 5           |
| NIIIPAW NII  |                                    |                             |                |                  |        | Big sagebrush                 | 5           |
| NIIIPARA PAIR PAIR PARA PARA PARA PARA PA  |                                    |                             |                |                  |        | Prairie junegrass             | 4           |
| Number index i   |                                    |                             |                |                  |        | Spike muhly                   | 4           |
| Millpaw Norder Shubsheit Norder Shubs   |                                    |                             |                |                  | 600    | Alkali sacaton                | 4           |
| Miscellaneous shrubs 1 Norman 1 Norm  |                                    |                             | 1,200          |                  |        | Fringed sagewort              | 4           |
| Milenance  |                                    |                             |                |                  |        | Thinleaf fourwing saltbush    | 3           |
| MidningenesisMathematican ParticipantMathematican Participant <td></td> <td rowspan="2"></td> <td>Miscellaneous shrubs</td> <td>3</td>   |                                    |                             |                |                  |        | Miscellaneous shrubs          | 3           |
| Burgen ParticipantBurgen ParticipantBurge  |                                    |                             |                |                  |        | Winterfat                     | 3           |
| Burgen ParticipantBurgen ParticipantBurge  |                                    |                             |                | 900              |        | Muttongrass                   | 3           |
| AllhowRoger <th< td=""><td></td><td></td><td></td><td>3</td></th<>  |                                    |                             |                |                  |        |                               | 3           |
| AutilipawR036XB02NM: Clayey1,200900Robitorian (2000)250000Numper presentation (2000)0,000000,000000,000000,00000Numper presentation (2000)0,000000,000000,000000,00000Numper presentation (2000)0,000000,000000,000000,00000Numper presentation (2000)0,000000,000000,000000,00000Numper presentation (2000)0,000000,000000,000000,00000Numper presentation (2000)0,000000,000000,000000,00000Numper presentation (2000)0,0000000,000000,000000,00000Numper presentation (2000)0,0000000,000000,000000,00000Numper presentation (2000)0,0000000,0000000,000000,00000Numper presentation (2000)0,0000000,0000000,000000,00000Numper presentation (2000)0,00000000,0000000,0000000,000000Numper presentation (2000)0,000000000,0000000,0000000,000000Numper presentation (2000)0,000000000,00000000,0000000,000000Numper presentation (2000)0,0000000000,00000000,00000000,0000000Numper presentation (2000)0,0000000000000000,00000000000,0000000000,000000000Numper presentation (2000)0,00000000000000000000000000000000000   |                                    |                             |                |                  |        | Miscellaneous perennial forbs | 3           |
| Millpaw       R036XB002NM: Clayey       1,200       900       Metern wheatgrass       20         Alkali sacaton       20         Bottlebrush squirreltail       7         Galleta       61         Blue grama       5         Big agebrush       5         Parite Junegrass       5         Big agebrush       6         Parite Junegrass       6         Big agebrush       6         Parite Junegrass       6         Big agebrush       6   |                                    |                             |                |                  |        |                               |             |
| <ul> <li>Alkali sacaton</li> <li>20</li> <li>Bottlebrush squirreltail</li> <li>Galleta</li> <li>Galleta</li> <li>Galleta</li> <li>Blue grama</li> <li>Sicellaneous perennial grasses</li> <li>Gigs agebrush</li> <li>Galleta</li> <li>Sigs agebrush</li> <li>Sicellaneous perennial grasses</li> <li>Giber mulhy</li> <li>Galleta</li> <l< td=""><td>Millpaw</td><td>R036XB002NM: Clavey</td><td></td><td></td></l<></ul> | Millpaw                            | R036XB002NM: Clavey         |                |                  |        |                               |             |
| Bottlebrush squirreltail7Galleta6aletaBlue grama5Miscellaneous perennial grasses5Big sagebrush6aletaPraire junegrass4Muttongrass3Spike muhly3Fourwing saltbush3Praire janegowort3Praire janegowort2Miscellaneous prubles2Miscellaneous shrubs2Miscellaneous shrubs2M  | , mpari                            |                             |                |                  |        | -                             |             |
| Galleta6Blue grama5Miscellaneous perennial grasses5Big sagebrush5Praire junegrass4Muttongrass4Spike muhly3Spike muhly3Fourwing saltbush3Winterfat2Praire sagewort2Miscellaneous shrubs2Miscellaneous shrubs2Globemallow2   |                                    |                             |                |                  |        |                               |             |
| Blue grama5Miscellaneous perennial grasses5Big sagebrush5Praire junegrass4Muttongrass4Spike muhly3Fourwing saltbush3Winterfat2Praire janeous annual forbs2Miscellaneous shrubs2Globemallow2  |                                    |                             |                |                  |        |                               |             |
| Niscellaneous perennial grasses5Big sagebrush5Prairie junegrass4Muttongrass4Spike muhly3Fourwing saltbush3Winterfat2Prairie sagewort2Miscellaneous shrubs2Miscellaneous shrubs2Globemallow2  |                                    |                             |                |                  |        |                               |             |
| Big sagebrush5Prairie junegrass4Muttongrass4Spike muhly3Fourwing saltbush3Winterfat2Prairie sagewort2Miscellaneous annual forbs2Miscellaneous shrubs2Globemallow2  |                                    |                             |                |                  |        |                               |             |
| Prairie junegrass 4<br>Muttongrass 4<br>Spike muhly 3<br>Fourwing saltbush 3<br>Winterfat 2<br>Prairie sagewort 2<br>Miscellaneous annual forbs 2<br>Miscellaneous shrubs 2<br>Globemallow 2   |                                    |                             |                |                  |        |                               |             |
| Muttongrass4Spike muhly3Fourwing saltbush3Winterfat2Prairie sagewort2Miscellaneous annual forbs2Miscellaneous shrubs2Globemallow2  |                                    |                             |                |                  |        |                               |             |
| Spike muhly 3<br>Fourwing saltbush 3<br>Winterfat 2<br>Prairie sagewort 2<br>Miscellaneous annual forbs 2<br>Miscellaneous shrubs 2<br>Globemallow 2   |                                    |                             |                |                  |        |                               |             |
| Fourwing saltbush 3<br>Winterfat 2<br>Prairie sagewort 2<br>Miscellaneous annual forbs 2<br>Miscellaneous shrubs 2<br>Globemallow 2  |                                    |                             |                |                  |        |                               |             |
| Winterfat 2<br>Prairie sagewort 2<br>Miscellaneous annual forbs 2<br>Miscellaneous shrubs 2<br>Globemallow 2   |                                    |                             |                |                  |        |                               |             |
| Prairie sagewort 2<br>Miscellaneous annual forbs 2<br>Miscellaneous shrubs 2<br>Globemallow 2  |                                    |                             |                |                  |        | -                             |             |
| Miscellaneous annual forbs 2<br>Miscellaneous shrubs 2<br>Globemallow 2  |                                    |                             |                |                  |        |                               |             |
| Miscellaneous shrubs 2<br>Globemallow 2  |                                    |                             |                |                  |        | -                             |             |
| Globernallow 2   |                                    |                             |                |                  |        |                               |             |
|  |                                    |                             |                |                  |        |                               |             |
| Buckwheat 2  |                                    |                             |                |                  |        |                               |             |
| Rabbitbrush 1  |                                    |                             |                |                  |        |                               |             |

### Carson National Forest, New Mexico, Part of Rio Arriba County

## SzB—Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2tl8q Elevation: 6,560 to 7,400 feet Mean annual precipitation: 12 to 16 inches Mean annual air temperature: 45 to 49 degrees F Frost-free period: 100 to 130 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Sparham, saline, sodic, bottomland, and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Sparham, Saline, Sodic, Bottomland

#### Setting

Landform: Flood plains, drainageways Landform position (three-dimensional): Talf, dip Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 2 inches: clay loam

- C1 2 to 35 inches: clay
- C2 35 to 80 inches: clay

#### **Properties and qualities**

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneRare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)



Map Unit Description: Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

#### Interpretive groups

Land capability classification (irrigated): 4s Land capability classification (nonirrigated): 7s Hydrologic Soil Group: D Ecological site: R036XB010NM - Salty Bottomland Hydric soil rating: No

#### **Minor Components**

#### Lindrith

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Royosa

Percent of map unit: 4 percent Landform: Dunes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Rise Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB011NM - Sandy Hydric soil rating: No

#### Teromote

Percent of map unit: 4 percent Landform: Alluvial fans Down-slope shape: Linear Across-slope shape: Linear Ecological site: R036XB017NM - Swale Hydric soil rating: No

#### Nalivag

Percent of map unit: 1 percent Landform: Fan remnants Landform position (two-dimensional): Footslope Landform position (three-dimensional): Tread Down-slope shape: Convex Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Gojiya, freq ponded

Percent of map unit: 1 percent Landform: Valley floors Landform position (three-dimensional): Side slope, tread Down-slope shape: Linear, concave Across-slope shape: Linear, concave Map Unit Description: Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

*Ecological site:* R036XB009NM - Salt Meadow *Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 9, Sep 8, 2022



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| Carson National Forest, New Mexico  | o, Part of Rio Arriba County  |                |                  |                     |                            |             |
|---|-------------------------------|----------------|------------------|---------------------|----------------------------|-------------|
| Map unit symbol and soil name   | Ecological site               | Total          | dry-weight produ | uction              | Characteristic vegetation  | Rangeland   |
|   |                               | Favorable year | Normal year      | Unfavorable<br>year |                            | composition |
|   |                               | Lb/ac          | Lb/ac            | Lb/ac               |                            | Pct         |
| SzB—Sparham clay loam, saline,<br>sodic, bottomland, 0 to 3 percent<br>slopes |                               |                |                  |                     |                            |             |
| Sparham, saline, sodic,   | R036XB010NM: Salty Bottomland | 1,500          | 1,050            | 600                 | Alkali sacaton             | 30          |
| bottomland  |                               |                |                  |                     | Western wheatgrass         | 20          |
|   |                               |                |                  |                     | Galleta                    | 10          |
|   |                               |                |                  |                     | Thinleaf fourwing saltbush | 7           |
|   |                               |                |                  |                     | Miscellaneous annual forbs | 5           |
|   |                               |                |                  |                     | Winterfat                  | 5           |
|   |                               |                |                  |                     | Blue grama                 | 5           |
|   |                               |                |                  |                     | Greasewood                 | 5           |
|   |                               |                |                  |                     | Shadscale saltbush         | 4           |
|   |                               |                |                  |                     | Goldenweed                 | 2           |
|   |                               |                |                  |                     | Groundsel                  | 2           |
|   |                               |                |                  |                     | Iodinebush                 | 2           |
|   |                               |                |                  |                     | Miscellaneous shrubs       | 2           |
|   |                               |                |                  |                     | Cuman ragweed              | 1           |

### Carson National Forest, New Mexico, Part of Rio Arriba County

#### VmC—Vosburg-Millpaw complex, 2 to 8 percent slopes

#### Map Unit Setting

National map unit symbol: 2tl7l Elevation: 5,500 to 7,460 feet Mean annual precipitation: 8 to 20 inches Mean annual air temperature: 42 to 52 degrees F Frost-free period: 80 to 160 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Vosburg and similar soils: 55 percent Millpaw and similar soils: 35 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Vosburg**

#### Setting

Landform: Valley sides Landform position (three-dimensional): Rise Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 3 inches: fine sandy loam Bt - 3 to 25 inches: sandy clay loam Btk1 - 25 to 35 inches: sandy clay loam Btk2 - 35 to 80 inches: sandy clay loam

#### **Properties and qualities**

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.1 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e

Map Unit Description: Vosburg-Millpaw complex, 2 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

*Hydrologic Soil Group:* C *Ecological site:* R036XB006NM - Loamy *Hydric soil rating:* No

#### **Description of Millpaw**

#### Setting

Landform: Valley floors Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 3 inches: loam Bt - 3 to 23 inches: clay loam Btk - 23 to 80 inches: clay loam

#### **Properties and qualities**

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: High (about 11.2 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C Ecological site: R036XB002NM - Clayey Hydric soil rating: No

#### **Minor Components**

#### Jaythree

Percent of map unit: 3 percent Landform: Valley floors Down-slope shape: Linear Across-slope shape: Concave Ecological site: F035XG134NM - Gravelly - Woodland Hydric soil rating: No

#### Parkelei

Percent of map unit: 3 percent Landform: Hills Landform position (two-dimensional): Summit Map Unit Description: Vosburg-Millpaw complex, 2 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

Landform position (three-dimensional): Crest Down-slope shape: Convex Across-slope shape: Convex Ecological site: F036XB133NM - Pinyon-Utah juniper/skunkbush sumac Hydric soil rating: No

#### Orlie

Percent of map unit: 3 percent Landform: Fan remnants, mesas Landform position (two-dimensional): Footslope Landform position (three-dimensional): Side slope, talf Down-slope shape: Convex, linear Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Gilco

Percent of map unit: 1 percent Landform: Flood plains Landform position (three-dimensional): Tread, talf Down-slope shape: Linear Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

### **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 9, Sep 8, 2022

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|--|---------------------|----------------|---------------------------------|-------------|---------------------------------|--------------------------|
| Map unit symbol and soil name                        | Ecological site     | Favorable year | dry-weight produ<br>Normal year | Unfavorable | Characteristic vegetation       | Rangeland<br>composition |
|  |                     |                |                                 | year        |                                 | 0.1                      |
|  |                     | Lb/ac          | Lb/ac                           | Lb/ac       |                                 | Pct                      |
| /mC—Vosburg-Millpaw complex, 2<br>o 8 percent slopes |                     |                |                                 |             |                                 |                          |
| Vosburg  | R036XB006NM: Loamy  | 1,100          | 850                             | 600         | Western wheatgrass              | 25                       |
|  |                     |                |                                 |             | Blue grama                      | 10                       |
|  |                     |                |                                 |             | Indian ricegrass                | 7                        |
|  |                     |                |                                 |             | Needle and thread               | 7                        |
|  |                     |                |                                 |             | Galleta                         | 5                        |
|  |                     |                |                                 |             | Miscellaneous annual grasses    | 5                        |
|  |                     |                |                                 |             | Big sagebrush                   | 5                        |
|  |                     |                |                                 |             | Prairie junegrass               | 4                        |
|  |                     |                |                                 |             | Spike muhly                     | 4                        |
|  |                     |                |                                 |             | Alkali sacaton                  | 4                        |
|  |                     |                |                                 |             | Fringed sagewort                | 4                        |
|  |                     |                |                                 |             | Thinleaf fourwing saltbush      | 3                        |
|  |                     |                |                                 |             | Miscellaneous shrubs            | 3                        |
|  |                     |                |                                 |             | Winterfat                       | 3                        |
|  |                     |                |                                 |             | Muttongrass                     | 3                        |
|  |                     |                |                                 |             | Buckwheat                       | 3                        |
|  |                     |                |                                 |             | Miscellaneous perennial forbs   | 3                        |
|  |                     |                |                                 |             | Rabbitbrush                     | 2                        |
| Millpaw  | R036XB002NM: Clayey | 1,200          | 900                             | 600         | Western wheatgrass              | 25                       |
|  | ,-,                 |                |                                 |             | Alkali sacaton                  | 20                       |
|  |                     |                |                                 |             | Bottlebrush squirreltail        | 7                        |
|  |                     |                |                                 |             | Galleta                         | 6                        |
|  |                     |                |                                 |             | Blue grama                      | 5                        |
|  |                     |                |                                 |             | Miscellaneous perennial grasses | 5                        |
|  |                     |                |                                 |             | Big sagebrush                   | 5                        |
|  |                     |                |                                 |             | Prairie junegrass               | 4                        |
|  |                     |                |                                 |             | Muttongrass                     | 4                        |
|  |                     |                |                                 |             | Spike muhly                     | 3                        |
|  |                     |                |                                 |             | Fourwing saltbush               | 3                        |
|  |                     |                |                                 |             | Winterfat                       | 2                        |
|  |                     |                |                                 |             |                                 | 2                        |
|  |                     |                |                                 |             | Prairie sagewort                | 2                        |
|  |                     |                |                                 |             | Miscellaneous annual forbs      |                          |
|  |                     |                |                                 |             | Miscellaneous shrubs            | 2                        |
|  |                     |                |                                 |             | Globernallow                    | 2                        |
|  |                     |                |                                 |             | Buckwheat                       | 2                        |

### Carson National Forest, New Mexico, Part of Rio Arriba County

# SzB—Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes

#### Map Unit Setting

National map unit symbol: 2tl8q Elevation: 6,560 to 7,400 feet Mean annual precipitation: 12 to 16 inches Mean annual air temperature: 45 to 49 degrees F Frost-free period: 100 to 130 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Sparham, saline, sodic, bottomland, and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Sparham, Saline, Sodic, Bottomland

#### Setting

Landform: Flood plains, drainageways Landform position (three-dimensional): Talf, dip Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 2 inches: clay loam

- C1 2 to 35 inches: clay
- C2 35 to 80 inches: clay

#### **Properties and qualities**

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneRare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)



Map Unit Description: Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

#### Interpretive groups

Land capability classification (irrigated): 4s Land capability classification (nonirrigated): 7s Hydrologic Soil Group: D Ecological site: R036XB010NM - Salty Bottomland Hydric soil rating: No

#### **Minor Components**

#### Lindrith

Percent of map unit: 5 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Royosa

Percent of map unit: 4 percent Landform: Dunes Landform position (two-dimensional): Backslope Landform position (three-dimensional): Rise Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB011NM - Sandy Hydric soil rating: No

#### Teromote

Percent of map unit: 4 percent Landform: Alluvial fans Down-slope shape: Linear Across-slope shape: Linear Ecological site: R036XB017NM - Swale Hydric soil rating: No

#### Nalivag

Percent of map unit: 1 percent Landform: Fan remnants Landform position (two-dimensional): Footslope Landform position (three-dimensional): Tread Down-slope shape: Convex Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

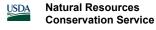
#### Gojiya, freq ponded

Percent of map unit: 1 percent Landform: Valley floors Landform position (three-dimensional): Side slope, tread Down-slope shape: Linear, concave Across-slope shape: Linear, concave Map Unit Description: Sparham clay loam, saline, sodic, bottomland, 0 to 3 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

*Ecological site:* R036XB009NM - Salt Meadow *Hydric soil rating:* Yes

# **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 9, Sep 8, 2022



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| Carson National Forest, New Mexico  | o, Part of Rio Arriba County  |                |                  |                     |                            |             |
|---|-------------------------------|----------------|------------------|---------------------|----------------------------|-------------|
| Map unit symbol and soil name   | Ecological site               | Total          | dry-weight produ | uction              | Characteristic vegetation  | Rangeland   |
|   |                               | Favorable year | Normal year      | Unfavorable<br>year |                            | composition |
|   |                               | Lb/ac          | Lb/ac            | Lb/ac               |                            | Pct         |
| SzB—Sparham clay loam, saline,<br>sodic, bottomland, 0 to 3 percent<br>slopes |                               |                |                  |                     |                            |             |
| Sparham, saline, sodic,<br>bottomland   | R036XB010NM: Salty Bottomland | 1,500          | 1,500 1,050      | 600                 | Alkali sacaton             | 30          |
|   |                               |                |                  |                     | Western wheatgrass         | 20          |
|   |                               |                |                  |                     | Galleta                    | 10          |
|   |                               |                |                  |                     | Thinleaf fourwing saltbush | 7           |
|   |                               |                |                  |                     | Miscellaneous annual forbs | 5           |
|   |                               |                |                  |                     | Winterfat                  | 5           |
|   |                               |                |                  |                     | Blue grama                 | 5           |
|   |                               |                |                  |                     | Greasewood                 | 5           |
|   |                               |                |                  |                     | Shadscale saltbush         | 4           |
|   |                               |                |                  |                     | Goldenweed                 | 2           |
|   |                               |                |                  |                     | Groundsel                  | 2           |
|   |                               |                |                  |                     | Iodinebush                 | 2           |
|   |                               |                |                  |                     | Miscellaneous shrubs       | 2           |
|   |                               |                |                  |                     | Cuman ragweed              | 1           |

# Carson National Forest, New Mexico, Part of Rio Arriba County

## VmC—Vosburg-Millpaw complex, 2 to 8 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2tl7l Elevation: 5,500 to 7,460 feet Mean annual precipitation: 8 to 20 inches Mean annual air temperature: 42 to 52 degrees F Frost-free period: 80 to 160 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Vosburg and similar soils: 55 percent Millpaw and similar soils: 35 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Vosburg**

#### Setting

Landform: Valley sides Landform position (three-dimensional): Rise Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 3 inches: fine sandy loam Bt - 3 to 25 inches: sandy clay loam Btk1 - 25 to 35 inches: sandy clay loam Btk2 - 35 to 80 inches: sandy clay loam

#### **Properties and qualities**

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.1 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e

Map Unit Description: Vosburg-Millpaw complex, 2 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

*Hydrologic Soil Group:* C *Ecological site:* R036XB006NM - Loamy *Hydric soil rating:* No

#### **Description of Millpaw**

#### Setting

Landform: Valley floors Landform position (three-dimensional): Talf Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 3 inches: loam Bt - 3 to 23 inches: clay loam Btk - 23 to 80 inches: clay loam

#### **Properties and qualities**

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: High (about 11.2 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: C Ecological site: R036XB002NM - Clayey Hydric soil rating: No

#### **Minor Components**

#### Jaythree

Percent of map unit: 3 percent Landform: Valley floors Down-slope shape: Linear Across-slope shape: Concave Ecological site: F035XG134NM - Gravelly - Woodland Hydric soil rating: No

#### Parkelei

Percent of map unit: 3 percent Landform: Hills Landform position (two-dimensional): Summit Map Unit Description: Vosburg-Millpaw complex, 2 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

Landform position (three-dimensional): Crest Down-slope shape: Convex Across-slope shape: Convex Ecological site: F036XB133NM - Pinyon-Utah juniper/skunkbush sumac Hydric soil rating: No

#### Orlie

Percent of map unit: 3 percent Landform: Fan remnants, mesas Landform position (two-dimensional): Footslope Landform position (three-dimensional): Side slope, talf Down-slope shape: Convex, linear Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Gilco

Percent of map unit: 1 percent Landform: Flood plains Landform position (three-dimensional): Tread, talf Down-slope shape: Linear Across-slope shape: Linear Ecological site: R036XB006NM - Loamy Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 9, Sep 8, 2022

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| Carson National Forest, New Mexico                   | , Part of Rio Arriba County |                             |             |                     |                                 |             |
|--|-----------------------------|-----------------------------|-------------|---------------------|---------------------------------|-------------|
| Map unit symbol and soil name                        | Ecological site             | Total dry-weight production |             |                     | Characteristic vegetation       | Rangeland   |
|  |                             | Favorable year              | Normal year | Unfavorable<br>year |                                 | composition |
|  |                             | Lb/ac                       | Lb/ac       | Lb/ac               |                                 | Pct         |
| /mC—Vosburg-Millpaw complex, 2<br>o 8 percent slopes |                             |                             |             |                     |                                 |             |
| Vosburg  | R036XB006NM: Loamy          | 1,100                       | 850         | 600                 | Western wheatgrass              | 25          |
|  |                             |                             |             |                     | Blue grama                      | 10          |
|  |                             |                             |             |                     | Indian ricegrass                | 7           |
|  |                             |                             |             |                     | Needle and thread               | 7           |
|  |                             |                             |             |                     | Galleta                         | 5           |
|  |                             |                             |             |                     | Miscellaneous annual grasses    | 5           |
|  |                             |                             |             |                     | Big sagebrush                   | 5           |
|  |                             |                             |             |                     | Prairie junegrass               | 4           |
|  |                             |                             |             |                     | Spike muhly                     | 4           |
|  |                             |                             |             |                     | Alkali sacaton                  | 4           |
|  |                             |                             |             |                     | Fringed sagewort                | 4           |
|  |                             |                             |             |                     | Thinleaf fourwing saltbush      | 3           |
|  |                             |                             |             |                     | Miscellaneous shrubs            | 3           |
|  |                             |                             |             |                     | Winterfat                       | 3           |
|  |                             |                             |             |                     | Muttongrass                     | 3           |
|  |                             |                             |             |                     | Buckwheat                       | 3           |
|  |                             |                             |             |                     | Miscellaneous perennial forbs   | 3           |
|  |                             |                             |             |                     | Rabbitbrush                     | 2           |
| Millpaw  | R036XB002NM: Clayey         | 1,200                       | 900         | 600                 | Western wheatgrass              | 25          |
|  | , ,                         |                             |             |                     | Alkali sacaton                  | 20          |
|  |                             |                             |             |                     | Bottlebrush squirreltail        | 7           |
|  |                             |                             |             |                     | Galleta                         | 6           |
|  |                             |                             |             |                     | Blue grama                      | 5           |
|  |                             |                             |             |                     | Miscellaneous perennial grasses | 5           |
|  |                             |                             |             |                     | Big sagebrush                   | 5           |
|  |                             |                             |             |                     | Prairie junegrass               | 4           |
|  |                             |                             |             |                     | Muttongrass                     | 4           |
|  |                             |                             |             |                     | Spike muhly                     | 3           |
|  |                             |                             |             |                     | Fourwing saltbush               | 3           |
|  |                             |                             |             |                     | Winterfat                       | 2           |
|  |                             |                             |             |                     | Prairie sagewort                | 2           |
|  |                             |                             |             |                     | Miscellaneous annual forbs      | 2           |
|  |                             |                             |             |                     | Miscellaneous shrubs            | 2           |
|  |                             |                             |             |                     | Globernallow                    | 2           |
|  |                             |                             |             |                     | Buckwheat                       | 2           |
|  |                             |                             |             | Rabbitbrush         | 1                               |             |

# Carson National Forest, New Mexico, Part of Rio Arriba County

# PmF—Parkelei-Menefee-Vessilla complex, 2 to 20 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2tdl8 Elevation: 6,560 to 7,750 feet Mean annual precipitation: 12 to 17 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 100 to 130 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Parkelei and similar soils: 45 percent Menefee and similar soils: 20 percent Vessilla and similar soils: 20 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Parkelei**

#### Setting

Landform: Hills Landform position (two-dimensional): Summit Landform position (three-dimensional): Crest Down-slope shape: Convex Across-slope shape: Convex Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 2 inches: fine sandy loam Bt - 2 to 38 inches: sandy clay loam Bk - 38 to 80 inches: sandy loam

#### **Properties and qualities**

Slope: 2 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4c Hydrologic Soil Group: C Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### **Description of Menefee**

#### Setting

Landform: Hills Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Residuum weathered from shale and/or slope alluvium derived from shale

#### **Typical profile**

A - 0 to 3 inches: clay loam AC - 3 to 9 inches: clay loam Cr - 9 to 60 inches: bedrock

#### **Properties and qualities**

Slope: 5 to 20 percent
Depth to restrictive feature: 8 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.00 to 0.28 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7s Hydrologic Soil Group: D Ecological site: F036XA001NM - Pinyon Upland Hydric soil rating: No

#### **Description of Vessilla**

#### Setting

Landform: Ridges Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex *Parent material:* Alluvium derived from sandstone and/or eolian deposits derived from sandstone and/or residuum weathered from sandstone

#### **Typical profile**

A - 0 to 3 inches: sandy loam

C - 3 to 17 inches: sandy loam

R - 17 to 27 inches: bedrock

#### **Properties and qualities**

Slope: 5 to 20 percent
Depth to restrictive feature: 6 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 2.0 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7s Hydrologic Soil Group: D Ecological site: F035XF627AZ - Sandstone Upland (JUOS, PIED) 13-17" p.z. (Provisional) Other vegetative classification: pinyon juniper woodland (null\_5) Hydric soil rating: No

#### **Minor Components**

#### Teequee

Percent of map unit: 4 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB015NM - Shallow Savanna Hydric soil rating: No

#### Lindrith

Percent of map unit: 4 percent Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Nalivag

Percent of map unit: 4 percent Landform: Stream terraces Landform position (three-dimensional): Tread Down-slope shape: Concave Across-slope shape: Concave Ecological site: R036XB006NM - Loamy Hydric soil rating: No

#### Royosa

Percent of map unit: 2 percent Landform: Dunes Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Ecological site: R036XB011NM - Sandy Hydric soil rating: No

#### **Rock outcrop**

Percent of map unit: 1 percent Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 10, Sep 7, 2023



## Received by OCD: 7/11/2024 12:03:44 PM

| Carson National Forest, New Mexico                               | , Part of Rio Arriba County |                |                 |                          |                            | 6           |                      |   |  |             |  |
|--|-----------------------------|----------------|-----------------|--------------------------|----------------------------|-------------|----------------------|---|--|-------------|--|
| Map unit symbol and soil name                                    | Ecological site             | Total          | dry-weight prod | uction                   | Characteristic vegetation  | Rangeland   |                      |   |  |             |  |
|  |                             | Favorable year | Normal year     | Unfavorable<br>year      |                            | composition |                      |   |  |             |  |
|  |                             | Lb/ac          | Lb/ac           | Lb/ac                    |                            | Pct         |                      |   |  |             |  |
| PmF—Parkelei-Menefee-Vessilla<br>complex, 2 to 20 percent slopes |                             |                |                 |                          |                            |             |                      |   |  |             |  |
| Parkelei   | R036XB006NM: Loamy          | 1,100          | 850             | 600                      | Miscellaneous annual forbs | _           |                      |   |  |             |  |
|  |                             |                |                 |                          | Gambel oak                 | —           |                      |   |  |             |  |
|  |                             |                |                 |                          | Wyoming big sagebrush      | —           |                      |   |  |             |  |
|  |                             |                |                 |                          | Blue grama                 | -           |                      |   |  |             |  |
|  |                             |                |                 |                          | Lupine                     | _           |                      |   |  |             |  |
|  |                             |                |                 |                          | Arizona fescue             | -           |                      |   |  |             |  |
|  |                             |                |                 |                          | Indian ricegrass           | -           |                      |   |  |             |  |
|  |                             |                |                 |                          | Antelope bitterbrush       | -           |                      |   |  |             |  |
|  |                             |                |                 |                          | Oneseed juniper            | _           |                      |   |  |             |  |
|  |                             |                |                 | Prairie junegrass        | _                          |             |                      |   |  |             |  |
|  |                             |                |                 | Pingue hymenoxys         | —                          |             |                      |   |  |             |  |
|  |                             |                |                 | Galleta                  | -                          |             |                      |   |  |             |  |
|  |                             |                |                 | Bottlebrush squirreltail | -                          |             |                      |   |  |             |  |
|  |                             |                |                 |                          | Western wheatgrass         | _           |                      |   |  |             |  |
|  |                             |                |                 |                          | Bluegrass                  | —           |                      |   |  |             |  |
|  |                             |                |                 |                          |                            |             | Yucca                | _ |  |             |  |
|  |                             |                |                 |                          |                            |             | Miscellaneous shrubs | - |  |             |  |
|  |                             |                |                 |                          |                            |             |                      |   |  |             |  |
|  |                             |                |                 |                          |                            |             |                      |   |  | Pricklypear |  |

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| Menefee  | _              | 800 | 600     | 400                          | True mountain mahogany       | _ |
|----------|----------------|-----|---------|------------------------------|------------------------------|---|
|          |                |     |         | Blue grama                   | -                            |   |
|          |                |     |         | Indian ricegrass             | -                            |   |
|          |                |     |         | Western wheatgrass           | -                            |   |
|          |                |     |         | Pricklypear                  | -                            |   |
|          |                |     |         | Antelope bitterbrush         | -                            |   |
|          |                |     |         | Miscellaneous shrubs         | -                            |   |
|          |                |     |         |                              | Big sagebrush                | - |
|          |                |     |         |                              | Miscellaneous annual forbs   | - |
|          |                |     |         |                              | Yucca                        | - |
|          |                |     |         |                              | Bottlebrush squirreltail     | - |
|          |                |     |         |                              | Galleta                      | - |
|          |                |     |         |                              | Miscellaneous annual grasses | - |
|          |                |     |         |                              | Gambel oak                   | - |
| Vessilla | Vessilla – 800 | 800 | 800 600 | 400                          | Miscellaneous annual forbs   | - |
|          |                |     |         | Yucca                        | -                            |   |
|          |                |     |         | Miscellaneous shrubs         | -                            |   |
|          |                |     |         | Big sagebrush                | -                            |   |
|          |                |     |         |                              | Pricklypear                  | - |
|          |                |     |         |                              | Antelope bitterbrush         | - |
|          |                |     |         |                              | Pingue hymenoxys             | - |
|          |                |     |         |                              | Prairie junegrass            | - |
|          |                |     |         |                              | Mountain big sagebrush       | - |
|          |                |     |         | Blue grama                   | -                            |   |
|          |                |     |         | Indian ricegrass             | -                            |   |
|          |                |     |         | Miscellaneous annual grasses | -                            |   |
|          |                |     |         | Elk sedge                    | -                            |   |
|          |                |     |         |                              | Bottlebrush squirreltail     | - |

# Carson National Forest, New Mexico, Part of Rio Arriba County

# 765—Vibo family, Lithic Ustorthents, mesic, and Rock outcrop soils, 0 to 40 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2sw61 Elevation: 6,720 to 7,540 feet Mean annual precipitation: 16 to 20 inches Mean annual air temperature: 45 to 48 degrees F Frost-free period: 110 to 130 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Vibo family and similar soils: 40 percent Lithic ustorthents, mesic, and similar soils: 35 percent Rock outcrop: 15 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Vibo Family**

#### Setting

Landform: Hills Landform position (three-dimensional): Interfluve, side slope Down-slope shape: Linear Across-slope shape: Linear Parent material: Residuum weathered from sandstone and shale

#### **Typical profile**

A - 0 to 2 inches: sandy loam Bt - 2 to 24 inches: clay loam BCk - 24 to 80 inches: cobbly loam R - 80 to 87 inches: bedrock

#### **Properties and qualities**

Slope: 0 to 40 percent
Depth to restrictive feature: 40 to 80 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 17 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0



Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 6e Hydrologic Soil Group: C Other vegetative classification: PIED/JUMO/QUGA/ARTR2 Twoneedle pinyon/One-seed juniper/Gambel oak/Big sagebrush (31)Hydric soil rating: No

#### **Description of Lithic Ustorthents, Mesic**

#### Settina

Landform: Hills Landform position (three-dimensional): Side slope *Down-slope shape:* Convex Across-slope shape: Convex Parent material: Residuum weathered from sandstone and shale

#### **Typical profile**

A - 0 to 2 inches: sandy loam

- C 2 to 9 inches: sandy loam
- *R* 9 to 60 inches: bedrock

#### **Properties and gualities**

Slope: 0 to 40 percent Depth to restrictive feature: 0 to 20 inches to lithic bedrock Drainage class: Well drained Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Calcium carbonate, maximum content: 5 percent Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 1.2 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7s Hydrologic Soil Group: D Other vegetative classification: PIED/JUMO/QUGA/ARTR2 Twoneedle pinyon/One-seed juniper/Gambel oak/Big sagebrush (31)Hydric soil rating: No

#### **Description of Rock Outcrop**

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 8

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Hydric soil rating: Unranked

#### **Minor Components**

#### Haplustepts, mesic

Percent of map unit: 5 percent Landform: Hills Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Convex Other vegetative classification: PIPO/PIED/QUGA/ARTR2 Ponderosa pine/Two-needle pinyon/Gambel oak/Big sagebrush (23) Hydric soil rating: No

Typic ustorthents, mesic

Percent of map unit: 5 percent Landform: Hills Landform position (three-dimensional): Side slope Down-slope shape: Linear Across-slope shape: Convex Other vegetative classification: PIPO/PIED/QUGA/ARTR2 Ponderosa pine/Two-needle pinyon/Gambel oak/Big sagebrush (23) Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 10, Sep 7, 2023

## Received by OCD: 7/11/2024 12:03:44 PM

| Carson National Forest, New Mexico, Par   | rt of Rio Arriba County |                             |             |                     |                           |             |
|---|-------------------------|-----------------------------|-------------|---------------------|---------------------------|-------------|
| Map unit symbol and soil name   | Ecological site         | Total dry-weight production |             |                     | Characteristic vegetation | Rangeland   |
|   |                         | Favorable year              | Normal year | Unfavorable<br>year |                           | composition |
|   |                         | Lb/ac                       | Lb/ac       | Lb/ac               |                           | Pct         |
| 765—Vibo family, Lithic<br>Ustorthents, mesic, and Rock<br>outcrop soils, 0 to 40 percent<br>slopes |                         |                             |             |                     |                           |             |
| Vibo family —   |                         | 1,200                       | 740         | 275                 | Pinyon                    | 25          |
|   |                         |                             |             |                     | Rocky mountain juniper    | 10          |
|   |                         |                             |             |                     | Big sagebrush             | 5           |
|   |                         |                             |             |                     | Gambel oak                | 5           |
|   |                         |                             |             |                     | Oneseed juniper           | 5           |
|   |                         |                             |             |                     | Blue grama                | 5           |
|   |                         |                             |             |                     | True mountain mahogany    | 2           |
|   |                         |                             |             |                     | Bitterbrush               | 2           |
|   |                         |                             |             | Indian ricegrass    | 1                         |             |
| Lithic ustorthents, mesic –   | 1,                      | 1,475                       | 5 775       | 75                  | Pinyon                    | 25          |
|   |                         |                             |             |                     | Rocky mountain juniper    | 10          |
|   |                         |                             |             |                     | Blue grama                | 5           |
|   |                         |                             |             |                     | Oneseed juniper           | 5           |
|   |                         |                             |             |                     | Big sagebrush             | 5           |
|   |                         |                             |             |                     | Gambel oak                | 5           |
|   |                         |                             |             |                     | Bitterbrush               | 2           |
|   |                         |                             |             |                     | True mountain mahogany    | 2           |
|   |                         |                             |             |                     | Indian ricegrass          | 1           |
| Rock outcrop –  |                         | _                           | _           | _                   | _                         | _           |

# Carson National Forest, New Mexico, Part of Rio Arriba County

### OiC—Orlie loam, 0 to 8 percent slopes

#### **Map Unit Setting**

National map unit symbol: 2vd1v Elevation: 6,000 to 7,750 feet Mean annual precipitation: 10 to 16 inches Mean annual air temperature: 45 to 52 degrees F Frost-free period: 100 to 140 days Farmland classification: Not prime farmland

#### **Map Unit Composition**

Orlie and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Orlie**

#### Setting

Landform: Valley sides Landform position (three-dimensional): Rise Down-slope shape: Concave Across-slope shape: Concave Parent material: Alluvium derived from sandstone and shale

#### **Typical profile**

A - 0 to 2 inches: loam Bt - 2 to 22 inches: clay loam C - 22 to 80 inches: clay loam

#### **Properties and qualities**

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.21 to 0.71 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: High (about 9.2 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 6c

Map Unit Description: Orlie Ioam, 0 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

*Hydrologic Soil Group:* C *Ecological site:* R036XB006NM - Loamy *Hydric soil rating:* No

#### **Minor Components**

#### Millpaw

Percent of map unit: 5 percent Landform: Fans Down-slope shape: Linear, convex Across-slope shape: Linear Ecological site: R036XB002NM - Clayey Hydric soil rating: No

#### Cementlake

Percent of map unit: 4 percent Landform: Valley sides, terraces Down-slope shape: Convex Across-slope shape: Linear Ecological site: R036XB010NM - Salty Bottomland Hydric soil rating: No

#### Menefee

Percent of map unit: 3 percent Landform: Hills Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Convex Ecological site: F036XA001NM - Pinyon Upland Hydric soil rating: No

#### Vessilla

Percent of map unit: 2 percent Landform: Hills, ridges, breaks, mesas, structural benches Landform position (two-dimensional): Footslope Landform position (three-dimensional): Lower third of mountainflank Down-slope shape: Convex, linear Across-slope shape: Convex, linear Ecological site: F036XB133NM - Pinyon-Utah juniper/skunkbush sumac Hydric soil rating: No

#### San mateo

Percent of map unit: 1 percent Landform: Flood plains Landform position (three-dimensional): Talf Down-slope shape: Linear Across-slope shape: Linear Ecological site: R036XB010NM - Salty Bottomland Map Unit Description: Orlie Ioam, 0 to 8 percent slopes---Carson National Forest, New Mexico, Part of Rio Arriba County

Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Carson National Forest, New Mexico, Part of Rio Arriba County Survey Area Data: Version 10, Sep 7, 2023



## Received by OCD: 7/11/2024 12:03:44 PM

| Carson National Forest, New Mexico      | , Part of Rio Arriba County |                |                  |                            |                               | (                     |
|---|-----------------------------|----------------|------------------|----------------------------|-------------------------------|-----------------------|
| Map unit symbol and soil name           | Ecological site             | Total          | dry-weight produ | uction                     | Characteristic vegetation     | Rangeland composition |
|   |                             | Favorable year | Normal year      | Unfavorable<br>year        |                               |                       |
|   |                             | Lb/ac          | Lb/ac            | Lb/ac                      |                               | Pct                   |
| DiC—Orlie loam, 0 to 8 percent<br>lopes |                             |                |                  |                            |                               |                       |
| Orlie                                   | R036XB006NM: Loamy          | 1,100          | 850              | 600                        | Western wheatgrass            | 25                    |
|   |                             |                |                  |                            | Blue grama                    | 10                    |
|   |                             |                |                  |                            | Needle and thread             | 7                     |
|   |                             |                |                  |                            | Indian ricegrass              | 7                     |
|   |                             |                |                  |                            | Big sagebrush                 | 5                     |
|   |                             |                |                  |                            | Galleta                       | 5                     |
|   |                             |                |                  |                            | Miscellaneous annual grasses  | 5                     |
|   |                             |                |                  |                            | Alkali sacaton                | 4                     |
|   |                             |                |                  |                            | Spike muhly                   | 4                     |
|   |                             |                |                  |                            | Prairie junegrass             | 4                     |
|   |                             |                |                  |                            | Prairie sagewort              | 4                     |
|   |                             |                |                  |                            | Winterfat                     | 3                     |
|   |                             |                |                  |                            | Miscellaneous perennial forbs | 3                     |
|   |                             |                |                  |                            | Muttongrass                   | 3                     |
|   |                             |                |                  |                            | Miscellaneous shrubs          | 3                     |
|   |                             |                |                  |                            | Buckwheat                     | 3                     |
|   |                             |                |                  | Thinleaf fourwing saltbush | 3                             |                       |
|   |                             |                |                  | Rabbitbrush                | 2                             |                       |

# SELF-CERTIFICATION STATEMENT FROM LESSEE/OPERATOR

# SURFACE OWNER IDENTIFICATION

| Federal or Indian Lease No. | NMNM010431, NMNM058137   |
|-----------------------------|--|
| Well(s) Number and Location | La Jara Fed 1-2 001H, La Jara Fed 1-2 002H, La Jara Fed 1-2 003H |
|                             | Section 1 T29N R4W (H.E.S 280)                                   |

I hereby certify the Authorized Officer of the Bureau of Land Management that I have reached one of the following agreements with the Surface Owner; or after failure of my good-faith effort to come to an agreement of any kind with the Surface Owner, I will provide a bond:

I have a signed access agreement to enter the leased lands.
 I have a signed waiver from the surface owner.
 I have entered into an agreement regarding compensation to the surface owner for damages for loss of crops and tangible improvements.
 Because I have been unable to reach either 1), 2), or 3) with the surface owner, I will obtain a bond to cover loss of crops and damages to tangible improvements.

Surface owner information: (if available after diligent effort)

| Surface Owner Name:                                    | Manuel and Eleanor Ferran                    |
|--|--|
| Surface Owner Address:                                 | 2114 Mt. Daniels Drive, Ellensburg, WA 98926 |
| Surface Owner Phone Number:                            | 505-265-7899                                 |
| Signed this <u>14<sup>th</sup></u> day of <u>April</u> | , _2023                                      |
| John OTh   |  |

Robert L. Bayless Producer, LLC John D Thomas-COO

## STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

# IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION TO CONSIDER:

Case No. 22918 Order No. R-22406

# APPLICATION OF ROBERT L. BAYLESS, PRODUCER LLC TO REVOKE ORDER NO. R-14686 AND APPROVE THE LA JARA (MANCOS) UNIT AS AMENDED, RIO ARRIBA COUNTY, NEW MEXICO

## **ORDER OF THE DIVISION**

### **BY THE DIVISION:**

The Director of the New Mexico Oil Conservation Division ("OCD"), having heard this matter through a Hearing Examiner on July 7, 2022, and after considering the testimony, evidence, and the recommendations of the Hearing Examiner,

## FINDS THAT:

(1) Due public notice has been given, and the OCD has jurisdiction of this case and its subject matter.

(2) The La Jara Mancos Unit ("Initial Unit") was approved by the OCD on May 21, 2018, though Order No. R-14686 issued in Case No. 15946. Robert L. Bayless, Producer LLC ("Bayless" or "Applicant") was designated the unit operator for the Initial Unit. The Initial Unit consisted of the Mancos formation underlying 10,878.58 acres of the following lands situated in Rio Arriba County, New Mexico.

Township 29 North, Range 4 West, NMPM

Section 1: A11 Section 2: All Section 11: A11 Section 12: All Section 13: A11 Section 14: All Section 20: All Section 21: All Section 22: All

Case 22918 R-22406 Page **2** of **4** 

Section 23: All Section 24: All Section 25: All Section 26: All Section 27: All Section 28: All Section 29: All Section 32: A11

(3) Order No. R-14686 required the Unit Operator to provide inter-well communication data within the Initial Unit to the Aztec District office of the Division no later than 18 months after its effective date.

(4) Applicant did not develop the Initial Unit as it was initially approved. Applicant is now seeking approval from the U.S. Bureau of Land Management ("BLM") of a new La Jara Mancos Unit ("Unit") consisting of 4,160 acres of the following lands situated in Rio Arriba County, New Mexico ("Unit Area"):

Township 29 North, Range 4 West, NMPM

Section 22:AllSection 23:AllSection 24:AllSection 25:AllSection 26:AllSection 27:AllSection 28:E/2

(5) Applicant is seeking to have Order No. R-14686 revoked.

(6) Unitized Interval: The unitized interval for the Unit is the Mancos Shale Formation, which is defined as the stratigraphic equivalent of the base of the Point Lookout Sandstone of the Mesa Verde Group or top of the Mancos formation at a measured depth of 6,824 feet to the base of the Mancos formation or top of the Dakota Sandstone at a measured depth of 8,586 feet in the San Juan 29-4 Unit No. 24 well located in the NW/4 NE/4 of Section 8 of Township 29 North, Range 4 West, N.M.P.M. in Rio Arriba County, New Mexico (API No. 30-039-22844).

(7) Applicant presented testimony and exhibits as follows:

a. The Unit is a proposed federal exploratory unit and the entirety of the Mancos formation will be unitized.

Case 22918 R-22406 Page **3** of **4** 

b. The Unit is comprised of seven (7) tracts of which seven (7) are federal tracts, zero (0) are state tracts, and zero (0) are fee tracts.

c. The Unit obligation well is the La Jara 26-3 No. 1H well, a horizontal well with a surface location in the NW/4 NE/4 of Section 26 of Township 29 North, Range 4 West (API No. 30-039-31365) and a bottomhole location in the SE/4 SW/4 of Section 21, of Township 29 North, Range 4 West. The well will be completed in the Basin Mancos Pool (Pool Code 97232).

e. Applicant presented the proposed Unit Agreement ("Unit Agreement"). The Unit Agreement designates Applicant as the Unit Operator and has provisions for expansion or contraction of the Unit.

f. Applicant has received a logical designation letter from the BLM, indicating the land proposed for unitization is logically subject to exploration and development. The BLM assigned NMNM 105770971 as the case serial number to the Unit.

g. Notice was provided of this application to the record title owners, royalty owners and overriding royalty owners within the Unit Area.

h. The stipulation within Order No. R-14686 that required the Unit Operator to provide inter-well communication data within the Unit to the Aztec District Office of the Division no later than 18 months after its effective date is no longer necessary.

(8) No other party appeared at the hearing or otherwise opposed this application.

(9) All proposed unit acreage appears prospective for recovery of oil and gas from the target formations under the concept proposed by the Applicant. These acres should be unitized and should equally share in the benefits from future oil and gas recovery.

(10) The approval of the Unit will serve to prevent waste and protect correlative rights within the lands assigned to the Unit Area.

# IT IS THEREFORE ORDERED THAT:

(1) OCD recommends approval of the Unit.

(2) Order No. R-14686 is hereby revoked.

(3) The Unit Area comprises 4,160 acres situated in Rio Arriba County, New Mexico and described above.

(4) This Order shall become effective upon the signature of all parties to the Unit Agreement.

Case 22918 R-22406 Page **4** of **4** 

(5) OCD recognizes that Robert L. Bayless, Producer LLC (OGRID No. 150182) is designated the Unit Operator under the Unit Agreement.

(6) Upon the approval of the Unit Agreement and filing of the Unit Agreement with the OCD, the Unit Area will be recognized by the OCD as a "unitized area" as provided in 19.15.16 NMAC.

(7) The Unit Operator will ensure that the names of the Unit wells are uniform and include the name of the Unit.

(8) The plan contained in the Unit Agreement for the development and operation of the above-described Unit Area is hereby approved in principle; provided, however, notwithstanding any of the provisions contained in the Unit Agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation that is now, or may hereafter be, vested in the OCD to supervise and control operations for the unit and production of oil and gas therefrom.

(9) The Unit Operator shall file with the OCD the fully executed Unit Agreement within 30 days of the effective date of the Unit Agreement. In the event of (a) subsequent joinder by any other party, (b) expansion or contraction of the Unit Area, (c) change of Unit Operator, or (d) termination of the Unit or Unit Agreement, the Unit Operator shall file with OCD, within 30 days after approval or notification of BLM, the amended Unit Agreement or other documentation reflecting the changes.

(10) All filings required by this Order shall be submitted to the OCD Engineering Bureau (<u>OCD.Engineer@emnrd.nm.gov</u>). OCD may notify the Unit Operator of any changes to the filing process without need to amend this Order.

(11) Jurisdiction of this case is retained for the entry of such further orders as the OCD may deem necessary.

STATE OF NEW MEXICO OIL CONSERVATION DIVISION



ADRIENNE SANDOVAL DIRECTOR Date: 11/23/2022



September 27, 2023

## VIA AFMSS II

Ms. Maureen Joe Bureau of Land Management Farmington Field Office 6251 College Blvd., Suite A Farmington, NM 87402

RE: Application for Permit to Drill – BLM Robert L. Bayless, Producer LLC
La Jara Fed 1-2 Wellpad La Jara 1-2 001H: APD ID 10400091600 – Previously Submitted La Jara 1-2 002H: APD ID: 10400094740 –Submitted La Jara 1-2 003H: APD ID: 10400094811 –Submitted Sec. 1 T29N R4W (H.E.S. 281) Rio Arriba County, New Mexico Surface: Fee

Dear Ms. Joe:

The Application for Permit to Drills (APD) the above captioned wells are being filed via the AFMSS II electronic filing system on behalf of Robert L. Bayless Producer LLC (Bayless). One payment of Eleven Thousand Eight Hundred Five Dollars (\$11,805.00) was paid directly to <u>www.pay.gov</u> via credit card for each filing fee. A copy of the payment receipt has been included in the filing for each well.

This APD BLM filing contains the following attachments: Designation of Permit Agent Letter, Well Location Plat, Lease Plat, two 5M BOP Diagrams, Casing Safety Calculations, Horizontal Plan, Access Road and Pipeline Map, Existing Wells Map and Table, Water Transportation Map, Wellsite Layout Drawings, Wellpad NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Wellpad, NRCS Map Unit Description and Plant Composition for Pipeline, Pipeline Map (Option 2), Self-Certification for Wellpad and Access Road, BLM Payment Receipt, and Letter to BLM dated September 27, 2023.

The La Jara Fed 1-2 wellpad is located in Sec. 1 T29N R4W (H.E.S. 281) was surveyed on July 27, 2022, by Jason C. Edwars, surveyor.

All wells will be co-located on one common wellpad with enough room to accommodate 16 wells. All wells planned or existing are listed below including the applied for wells.

La Jara Fed 1-2 001H La Jara Fed 1-2 Future well La Jara Fed 1-2 002H La Jara Fed 1-2 Future well La Jara Fed 1-2 003H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well

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Ms. Maureen Joe September 27, 2023 Page 2

Please send a copy of all correspondence to Upstream Petroleum Management, Inc. at 7000 S. Yosemite St. Suite 290B, Englewood, CO 80112. Please contact Angela Callaway at 214-364-3713 or Kim Rodell or at 303-942-0506, or acallaway@upstreampm.com or krodell@upstreampm.com, respectively, if you have any questions.

Your early attention to this application is greatly appreciated. Thank you for your assistance.

Sincerely,

Ungela G. Callaway

Angela G. Callaway Permit Agent for Robert L. Bayless, Producer LLC

Enclosures

cc: Robert L. Bayless, Producer LLC

# **Kim Rodell**

From: Sent: To: Subject: notification@pay.gov Wednesday, September 27, 2023 3:28 PM Kim Rodell Pay.gov Payment Confirmation: BLM Oil and Gas Online Payment



An official email of the United States government



Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact BLM OC CBS Customer Service at (303) 236-6795 or BLM\_OC\_CBS\_Customer\_Service@blm.gov.

Application Name: BLM Oil and Gas Online Payment Pay.gov Tracking ID: 2781R1HN Agency Tracking ID: 76506119462 Transaction Type: Sale Transaction Date: 09/27/2023 05:28:15 PM EDT Account Holder Name: Kimberly J. Rodell Transaction Amount: \$11,805.00 Card Type: Visa Card Number: \*\*\*\*\*\*\*\*\*1932

Company: Robert L. Bayless Producer LLC APD IDs: 10400094811 Lease Numbers: NMNM10431 Well Numbers: 003H Note: You will need your Pay.gov Tracking ID to complete your APD transaction in AFMSS II. Please ensure you write this number down upon completion of payment.

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.



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## VIA AFMSS II

Ms. Maureen Joe Bureau of Land Management Farmington Field Office 6251 College Blvd., Suite A Farmington, NM 87402

RE: Application for Permit to Drill – BLM Robert L. Bayless, Producer LLC
La Jara Fed 1-2 Wellpad La Jara 1-2 001H: APD ID 10400091600 – Response to Deficiency La Jara 1-2 002H: APD ID: 10400094740 – Response to Deficiency La Jara 1-2 003H: APD ID: 10400094811 – Response to Deficiency Sec. 1 T29N R4W (H.E.S. 281) Rio Arriba County, New Mexico Surface: Fee

Dear Ms. Joe:

The Applications for Permits to Drill (APD) the above captioned wells are being resubmitted via the AFMSS II electronic filing system on behalf of Robert L. Bayless Producer LLC (Bayless). This resubmission is in response to the deficiency letters dated November 29, 2023.

This APD BLM filing contains the following attachments: Designation of Permit Agent Letter, Well Location Plat, Lease Plat, two 5M BOP Diagrams, Revised Casing Safety Calculations, Horizontal Plan, Access Road and Pipeline Map 120523, Existing Wells Map and Table, Water Transportation Map, Revised Wellsite Layout Drawings, Wellpad NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Wellpad, Self-Certification for Wellpad and Access Road, BLM Payment Receipt, Surface Use Plan Master document Revised 120623, letter to BLM dated September 27, 2023, Response to Deficiency letter to BLM dated October 2, 2023, and Response to Deficiency letter to BLM dated December 6, 2023.

The La Jara Fed 1-2 wellpad is located in Sec. 1 T29N R4W (H.E.S. 281) was surveyed on July 27, 2022, by Jason C. Edwards, surveyor.

All wells will be co-located on one common wellpad with enough room to accommodate 16 wells. All wells planned or existing are listed below including the applied for wells.

La Jara Fed 1-2 001H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well La Jara Fed 1-2 002H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well La Jara Fed 1-2 003H La Jara Fed 1-2 Future well JIC 29-04-01 246H JIC 29-04-01 Future well

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December 6, 2023

Ms. Maureen Joe December 6, 2023 Page 2

The La Jara Fed 1-2 001H was originally submitted on July 3, 2023. The La Jara Fed 1-2 002H and 003H were submitted on September 28, 2023. The BLM APD Deficiency letters dated November 29, 2023 was received via email in our office. Below are the well deficiencies and the responses to them. All deficiency letters for all three La Jara wells are identical.

ADDENDUM – Incomplete/Deficient ADDENDUM – Deficient Surface Comments

> SUPO Review: Other submitted information are inadequate and/or incomplete Onshore Order #1 Section III-4 SUPO attachment is missing. Attach SUPO pdf *The Surface Use Plan Master has been attached in Section 12 of the SUPO per BLM request.*

The Certification of Private Surface Owner Access Agreement was attached in Section 12 of the SUPO. Additionally, a copy was provided to Abiodun Adeloye via email.

Please use the revised information. Everything else in the APD will remain the same.

Please send a copy of all correspondence to Upstream Petroleum Management, Inc. at 7000 S. Yosemite St. Suite 290B, Englewood, CO 80112. Please contact Angela Callaway at 214-364-3713 or Kim Rodell or at 303-942-0506, or acallaway@upstreampm.com or krodell@upstreampm.com, respectively, if you have any questions.

Your early attention to this application is greatly appreciated. Thank you for your assistance.

Sincerely,

angela G. Callaway

Angela G. Callaway Permit Agent for Robert L. Bayless, Producer LLC

Enclosures

cc: Robert L. Bayless, Producer LLC



## VIA AFMSS II

Ms. Maureen Joe Bureau of Land Management Farmington Field Office 6251 College Blvd., Suite A Farmington, NM 87402

RE: Application for Permit to Drill – BLM Robert L. Bayless, Producer LLC
La Jara Fed 1-2 Wellpad La Jara 1-2 001H: APD ID 10400091600 – Response to Deficiency La Jara 1-2 002H: APD ID: 10400094740 – Response to Deficiency La Jara 1-2 003H: APD ID: 10400094811 – Response to Deficiency Sec. 1 T29N R4W (H.E.S. 281) Rio Arriba County, New Mexico Surface: Fee

Dear Ms. Joe:

The Applications for Permits to Drill (APD) the above captioned wells are being resubmitted via the AFMSS II electronic filing system on behalf of Robert L. Bayless Producer LLC (Bayless). This resubmission is in response to the deficiency letters dated January 9, 2024.

This APD BLM filing contains the following attachments: Designation of Permit Agent Letter, Well Location Plat, Lease Plat, two 5M BOP Diagrams, Revised Casing Safety Calculations, Horizontal Plan, Drilling Plan 010924, Access Road and Pipeline Map 120523, Existing Wells Map and Table, Water Transportation Map, Revised Wellsite Layout Drawings, Wellpad NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Wellpad and Access Road, BLM Payment Receipt, Surface Use Plan Master document Revised 120623, letter to BLM dated September 27, 2023, Response to Deficiency letter to BLM dated November 14, 2023, Response to Deficiency letter to BLM dated December 6, 2023, and Letter to BLM dated January 9, 2024.

The La Jara Fed 1-2 wellpad is located in Sec. 1 T29N R4W (H.E.S. 281) was surveyed on July 27, 2022, by Jason C. Edwards, surveyor.

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La Jara Fed 1-2 001H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well

La Jara Fed 1-2 002H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well La Jara Fed 1-2 003H La Jara Fed 1-2 Future well JIC 29-04-01 246H JIC 29-04-01 Future well

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January 9, 2024

Ms. Maureen Joe January 9, 2024 Page 2

The La Jara Fed 1-2 001H was originally submitted on July 3, 2023. The La Jara Fed 1-2 002H and 003H were submitted on September 28, 2023. The BLM APD Deficiency letters dated January 9, 2024, was received via email in our office. Below are the well deficiencies and the responses to them. All deficiency letters for all three La Jara wells are identical.

ADDENDUM – Incomplete/Deficient ADDENDUM – Deficient Geologic Comments There is no Operator authored Drill Plan attached to the APD as required in Onshore Order 1.III.C.3.a-i. *The Drilling Plan has been attached to the APD in Section 8 – Other Information of the Drilling Plan Data as requested by BLM.* 

SUPO Review: Other submitted information are inadequate and/or incomplete Onshore Order #1 Section III-4 SUPO attachment is missing. Attach SUPO pdf

The Surface Use Plan Master has been attached in Section 12 of the SUPO per BLM request in prior submittals.

The Certification of Private Surface Owner Access Agreement was attached in Section 12 of the SUPO. Additionally, a copy was provided to Abiodun Adeloye via email.

Please use the revised information. Everything else in the APD will remain the same.

Please send a copy of all correspondence to Upstream Petroleum Management, Inc. at 7000 S. Yosemite St. Suite 290B, Englewood, CO 80112. Please contact Angela Callaway at 214-364-3713 or Kim Rodell or at 303-942-0506, or acallaway@upstreampm.com or krodell@upstreampm.com, respectively, if you have any questions.

Your early attention to this application is greatly appreciated. Thank you for your assistance.

Sincerely,

Ungela G. Callaway

Angela G. Callaway Permit Agent for Robert L. Bayless, Producer LLC

Enclosures

cc: Robert L. Bayless, Producer LLC



## VIA AFMSS II

April 4, 2024

Ms. Maureen Joe Bureau of Land Management Farmington Field Office 6251 College Blvd., Suite A Farmington, NM 87402

RE: Application for Permit to Drill – BLM Robert L. Bayless, Producer LLC
La Jara Fed 1-2 Wellpad La Jara 1-2 001H: APD ID 10400091600 – Response to Deferral Letter La Jara 1-2 002H: APD ID: 10400094740 – Response to Deferral Letter La Jara 1-2 003H: APD ID: 10400094811 – Response to Deferral Letter Sec. 1 T29N R4W (H.E.S. 281) Rio Arriba County, New Mexico Surface: Fee

Dear Ms. Joe:

The Applications for Permits to Drill (APD) the above captioned wells are being resubmitted via the AFMSS II electronic filing system on behalf of Robert L. Bayless Producer LLC (Bayless). This resubmission is in response to the deferral letters dated March 20, 2024.

This APD BLM filing contains the following attachments: Designation of Permit Agent Letter, Well Location Plat, Lease Plat, two 5M BOP Diagrams, Revised Casing Safety Calculations, Horizontal Plan, Drilling Plan 010924, Access Road and Pipeline Map 120523, Existing Wells Map and Table, Water Transportation Map, Revised Wellsite Layout Drawings, Wellpad NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Wellpad and Access Road, BLM Payment Receipt, Surface Use Plan Master document Revised 040424, Pipeline Specifications and Pipeline Plats dated 032924, letter to BLM dated September 27, 2023, Response to Deficiency letter to BLM dated October 2, 2023, and Response to Deficiency letter to BLM dated December 6, 2023, Letter to BLM dated January 9, 2024, and letter to BLM dated April 4, 2024.

The La Jara Fed 1-2 wellpad is located in Sec. 1 T29N R4W (H.E.S. 281) was surveyed on July 27, 2022, by Jason C. Edwards, surveyor.

All wells will be co-located on one common wellpad with enough room to accommodate 16 wells. All wells planned or existing are listed below including the applied for wells.

La Jara Fed 1-2 001H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well La Jara Fed 1-2 002H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well

Your Assets / Our Expertise

La Jara Fed 1-2 003H La Jara Fed 1-2 Future well JIC 29-04-01 246H JIC 29-04-01 Future well

Government Relations

- Storm-water Management Plans 
   Project Coordination
  - EA/EIS Assistance

Ms. Maureen Joe April 4, 2024 Page 2

The La Jara Fed 1-2 001H was originally submitted on July 3, 2023. The La Jara Fed 1-2 002H and 003H were submitted on September 28, 2023. The BLM APD Deferral letters dated March 20, 2024, was received via email in our office. The APD's were returned via Deferral to allow the Operator to revise Pipeline Routes as discussed in the BLM/Bayless meetings. All changes to the Pipeline Routes have been made to all three La Jara Fed APD's.

Please use the revised information. Everything else in the APD will remain the same.

Please send a copy of all correspondence to Upstream Petroleum Management, Inc. at 7000 S. Yosemite St. Suite 290B, Englewood, CO 80112. Please contact Angela Callaway at 214-364-3713 or Kim Rodell or at 303-942-0506, or acallaway@upstreampm.com or krodell@upstreampm.com, respectively, if you have any questions.

Your early attention to this application is greatly appreciated. Thank you for your assistance.

Sincerely,

Ungela G. Callaway

Angela G. Callaway Permit Agent for Robert L. Bayless, Producer LLC

Enclosures

cc: Robert L. Bayless, Producer LLC



## VIA AFMSS II

April 16, 2024

Ms. Maureen Joe Bureau of Land Management Farmington Field Office 6251 College Blvd., Suite A Farmington, NM 87402

RE: Application for Permit to Drill – BLM Robert L. Bayless, Producer LLC
La Jara Fed 1-2 Wellpad La Jara 1-2 001H: APD ID 10400091600 – Response to Deferral Letter La Jara 1-2 002H: APD ID: 10400094740 – Response to Deferral Letter La Jara 1-2 003H: APD ID: 10400094811 – Response to Deferral Letter Sec. 1 T29N R4W (H.E.S. 281) Rio Arriba County, New Mexico Surface: Fee
Dear Ms. Joe:

The Applications for Permits to Drill (APD) the above captioned wells are being resubmitted via the AFMSS II electronic filing system on behalf of Robert L. Bayless Producer LLC (Bayless). This resubmission is in response to the deferral letters dated April 12, 2024.

This APD BLM filing contains the following attachments: Designation of Permit Agent Letter, Well Location Plat, Lease Plat, two 5M BOP Diagrams, Revised Casing Safety Calculations, Horizontal Plan, Drilling Plan 010924, Access Road and Pipeline Map 120523, Existing Wells Map and Table, Water Transportation Map Revised 041624, Revised Wellsite Layout Drawings, Wellpad NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Wellpad and Access Road, BLM Payment Receipt, Surface Use Plan Master document Revised 040424, Pipeline Specifications and Pipeline Plats dated 032924, letter to BLM dated September 27, 2023, Response to Deficiency letter to BLM dated December 6, 2023, Letter to BLM dated January 9, 2024, letter to BLM dated April 4, 2024, and letter to BLM dated April 16, 2024.

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All wells will be co-located on one common wellpad with enough room to accommodate 16 wells. All wells planned or existing are listed below including the applied for wells.

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Ms. Maureen Joe April 16, 2024 Page 2

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Please use the revised information. Everything else in the APD will remain the same.

Please send a copy of all correspondence to Upstream Petroleum Management, Inc. at 7000 S. Yosemite St. Suite 290B, Englewood, CO 80112. Please contact Angela Callaway at 214-364-3713 or Kim Rodell or at 303-942-0506, or acallaway@upstreampm.com or krodell@upstreampm.com, respectively, if you have any questions.

Your early attention to this application is greatly appreciated. Thank you for your assistance.

Sincerely,

Ungela G. Callaway

Angela G. Callaway Permit Agent for Robert L. Bayless, Producer LLC

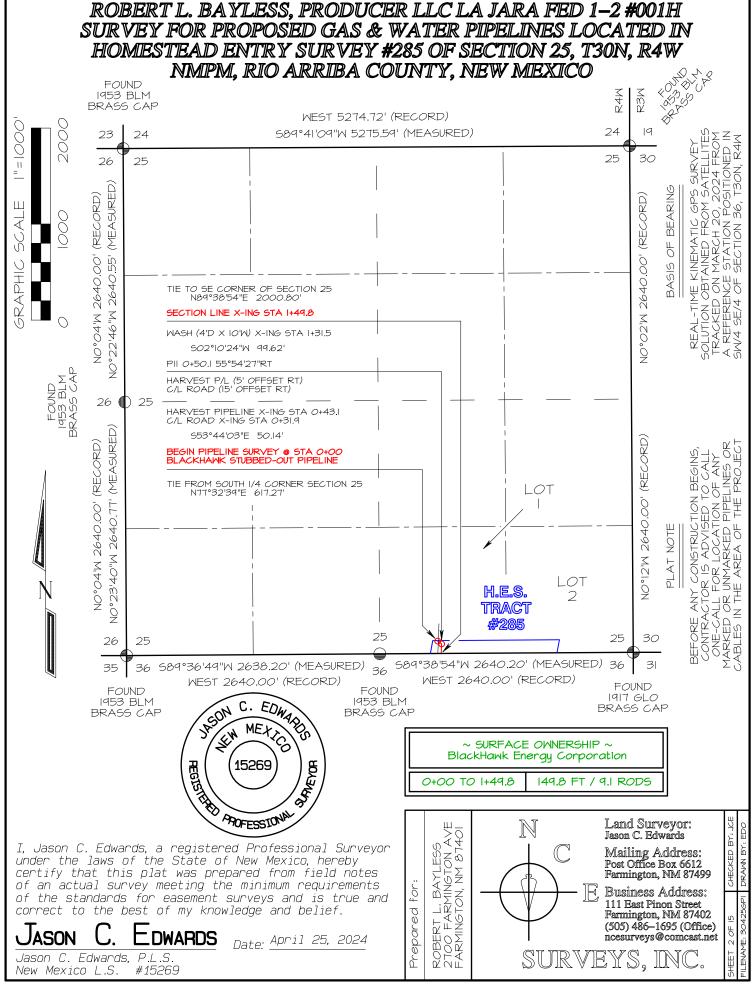
Enclosures

cc: Robert L. Bayless, Producer LLC

### ROBERT L. BAYLESS, PRODUCER LLC LA JARA FED 1-2 #001H PIPELINE LOCATED IN HOMESTEAD ENTRY SURVEY #285 OF SECTION 25, T3ON, R4W SW/4 SE/4 & HOMESTEAD ENTRY SURVEY #285 OF SECTION 36, T3ON, R4W NW/4 NE/4 & HOMESTEAD ENTRY SURVEY #281 OF SECTION 1, T29N, R4W

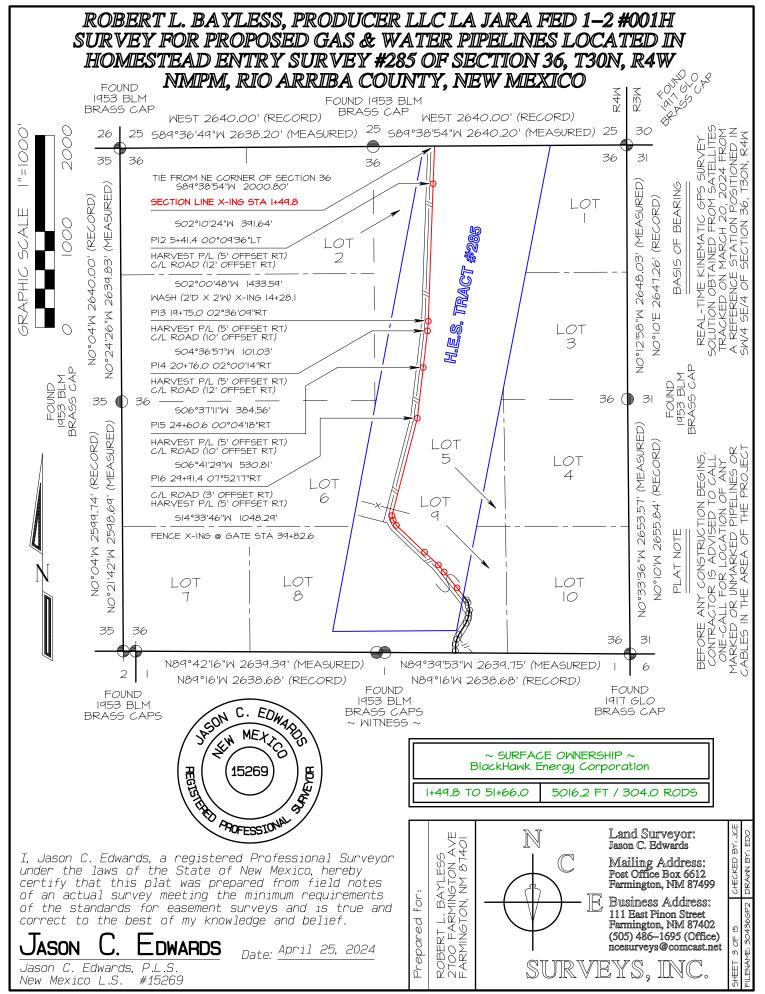
N.M.P.M., RIO ARRIBA COUNTY, NEW MEXICO

Tank 258 7269 Marcial Tank H 07339 2728 Wall 0.30 Canyon Bixlér Ranch 7/69 jă NEW PIPELINE 5166.0' (BLACKHAWK ENERGY) 040 Marcial 35 36 31 ,7082 Ruben 7002 700 6990 -Vaquero Cabin NEW PIPELINE 663.9' NEW PIPELINE 1938.8' Cantol ELEANOR TRUJILLO FEE ) (CARSON FOREST) ( and the second 6 67401 BAYLESS LA JARA FED 64 1-2 #00IH WELLPAD MARCH BM S. 5961 CANY Wel NAME OF TOPO MAP : BIXLER RANCH

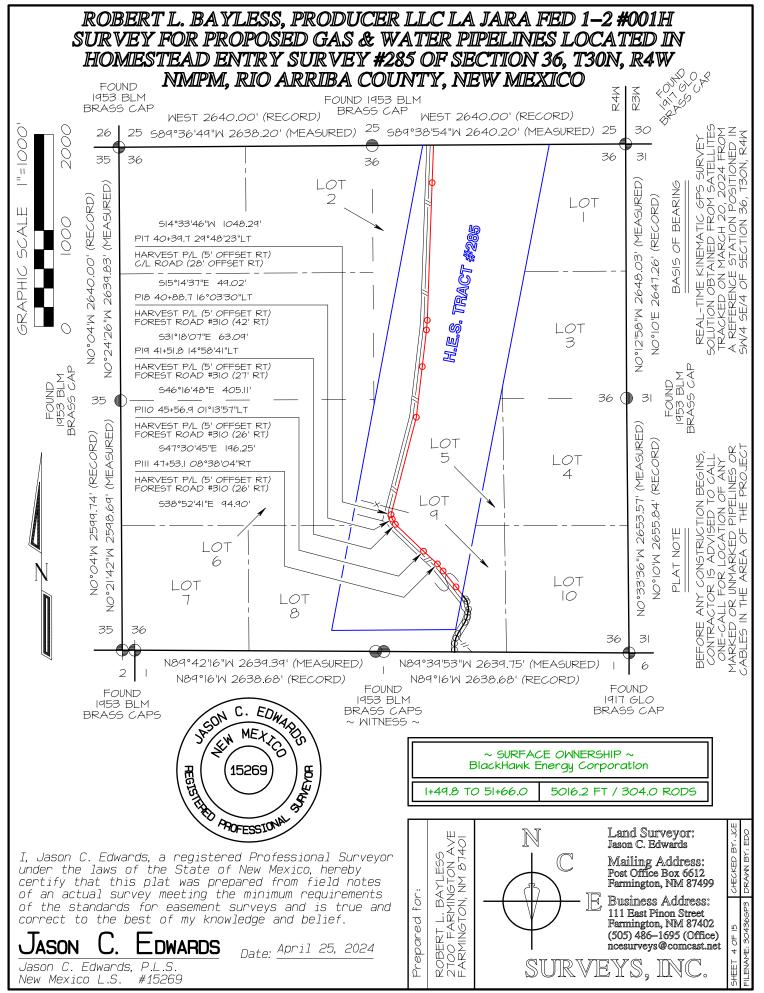


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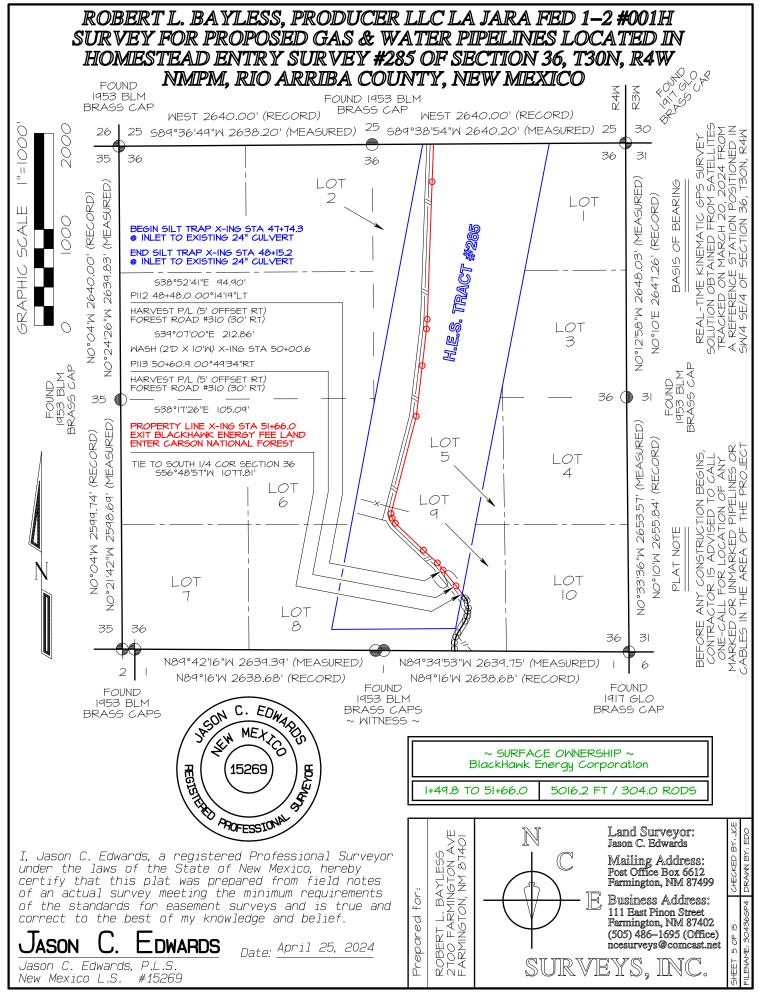
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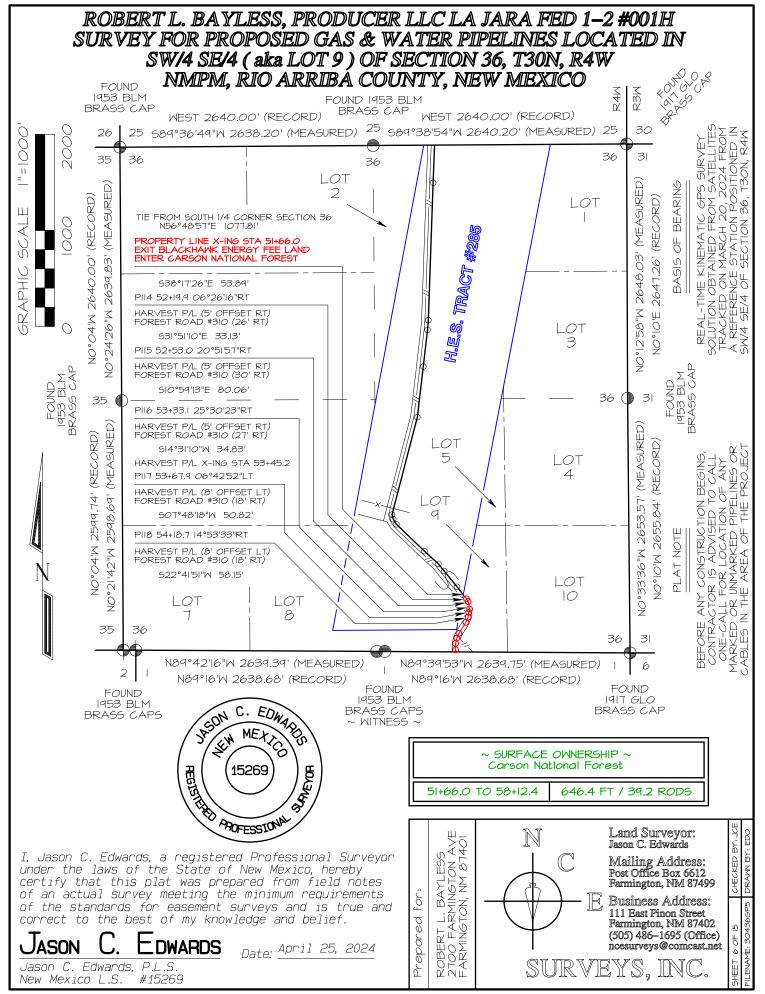
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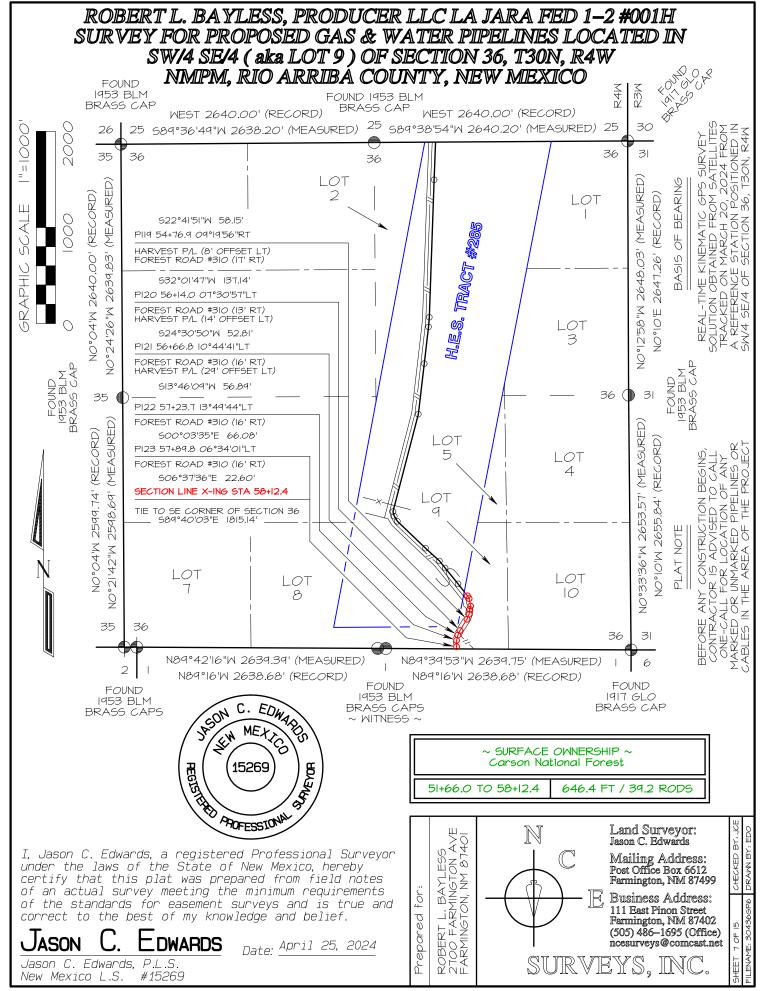
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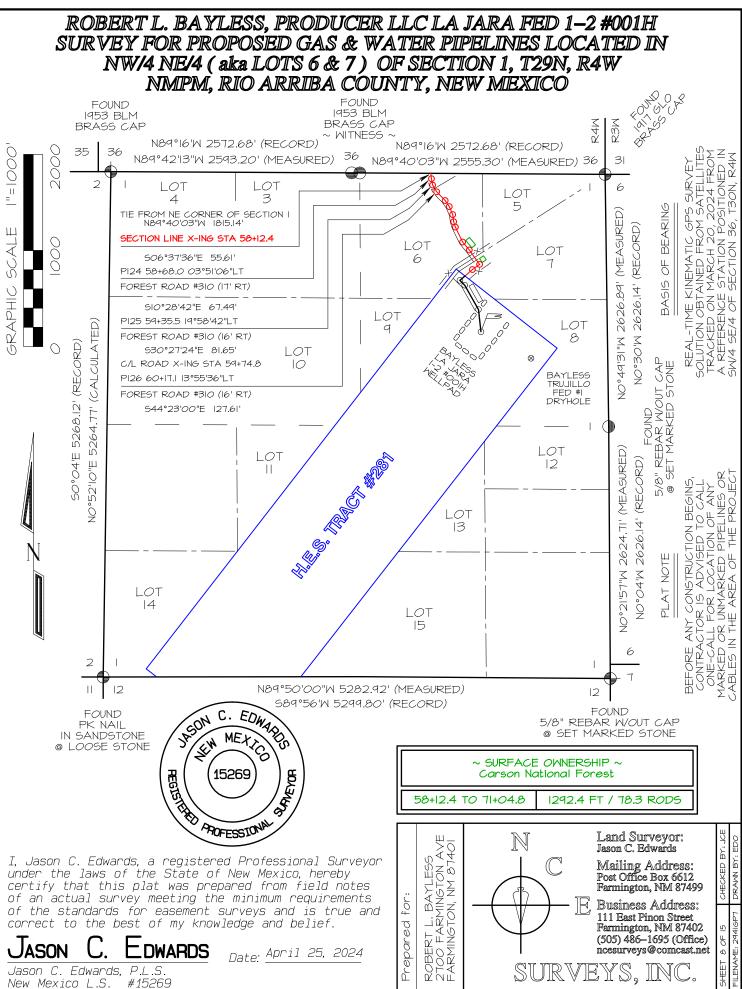


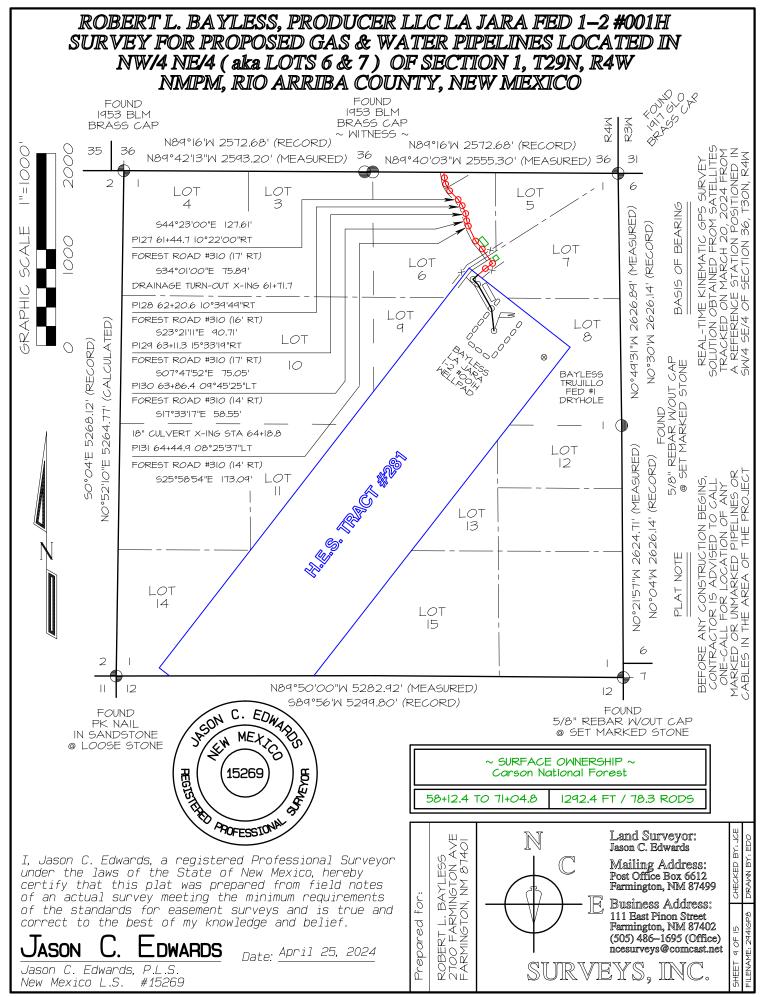
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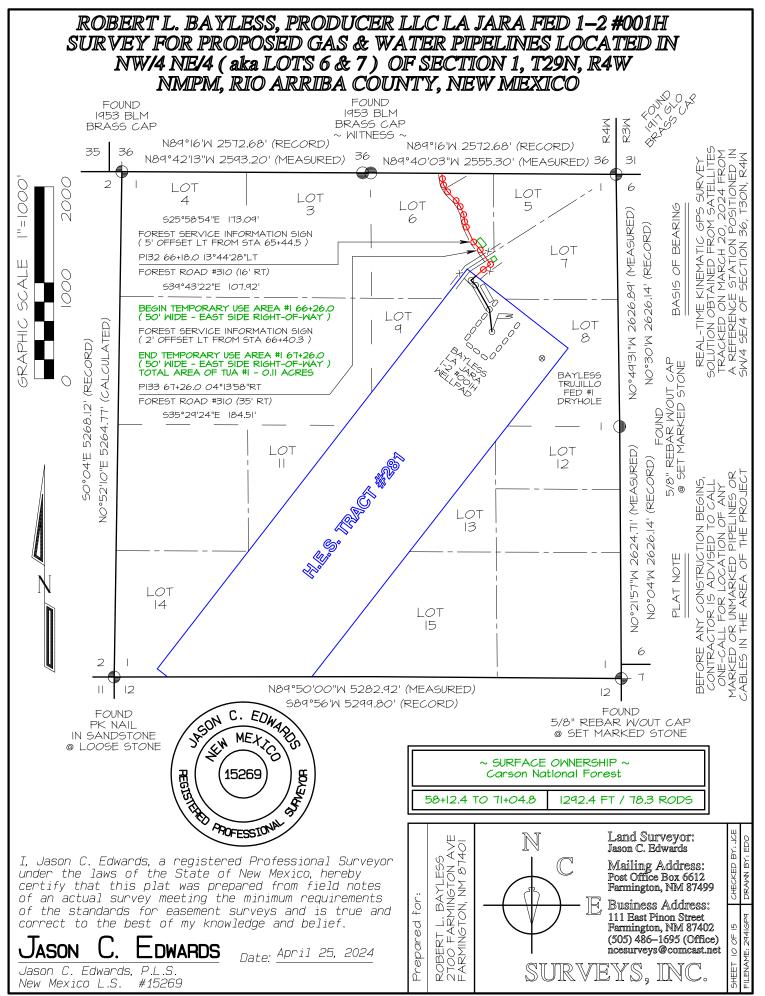


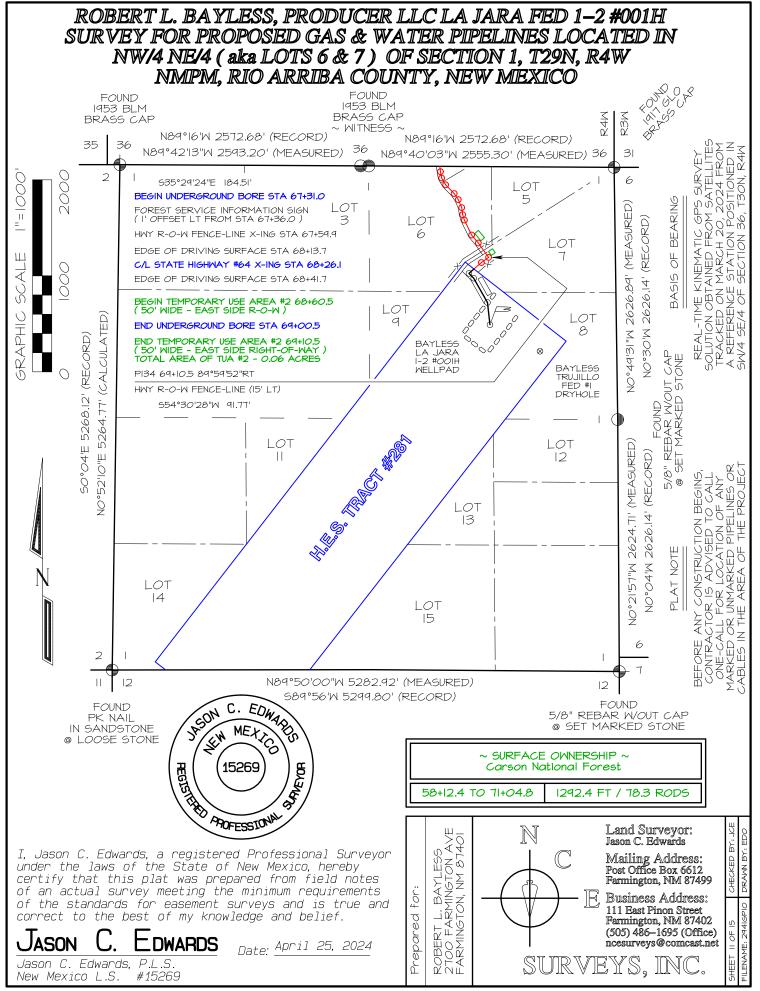
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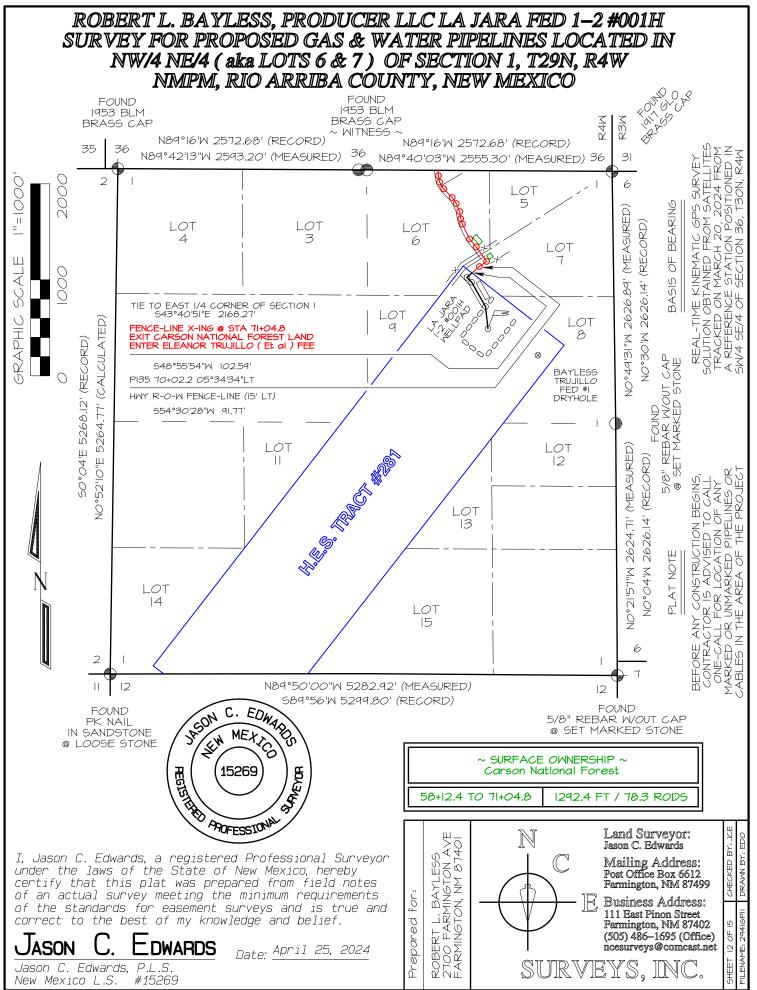


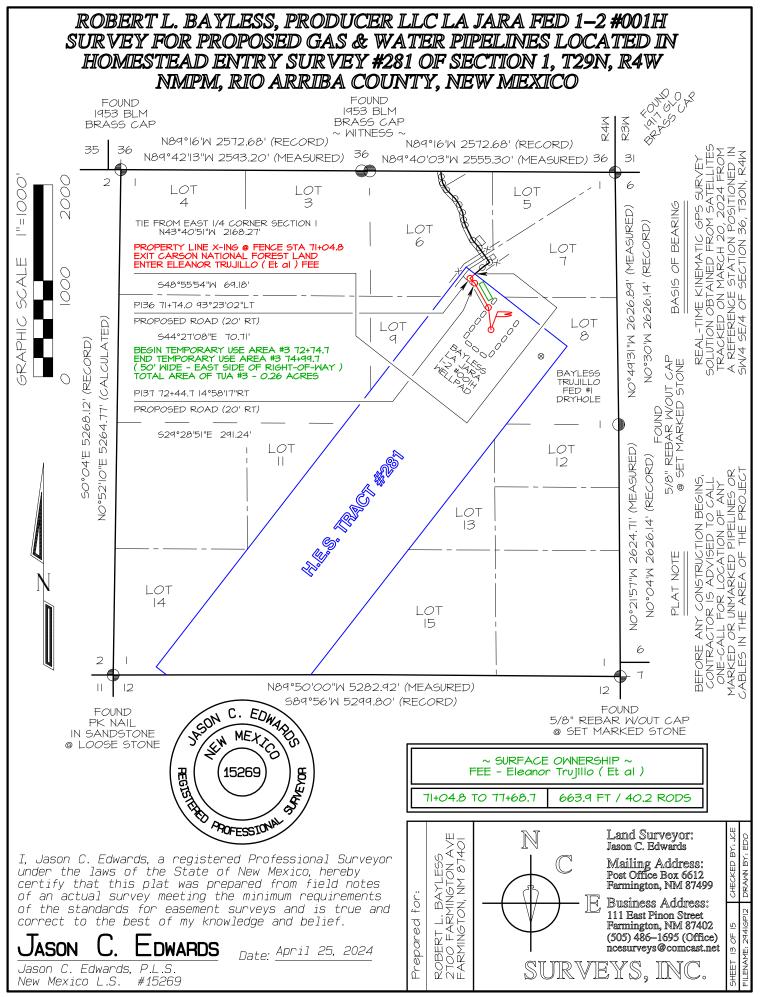


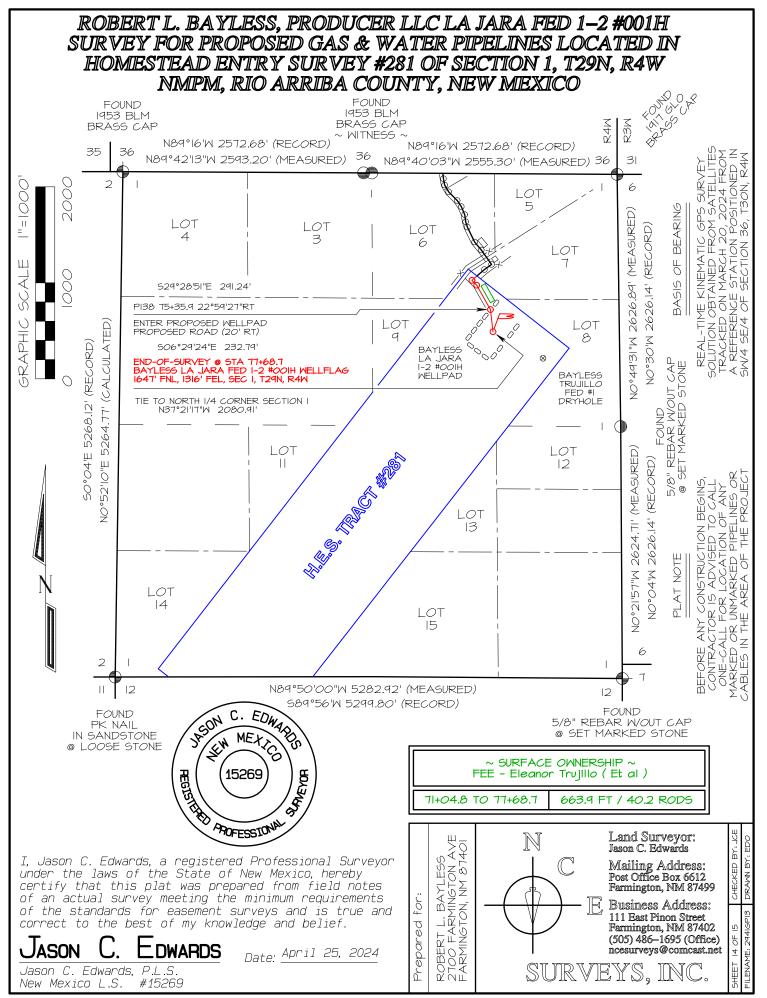




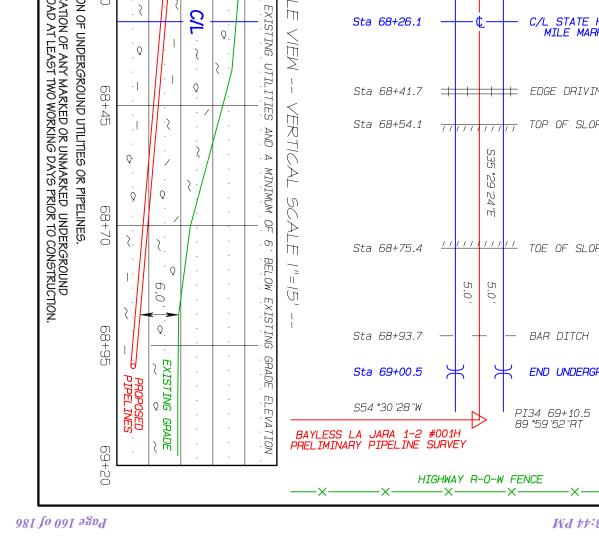


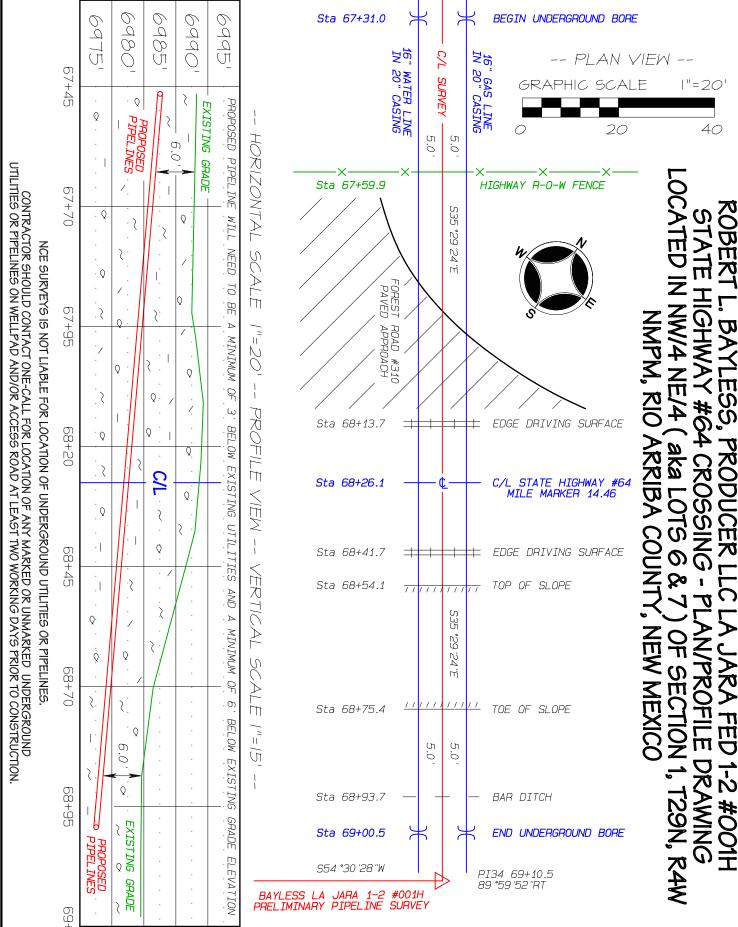






X





# La Jara Fed 1-2 Wellpad: Pipeline Specifications

### 12" Line

12" Gas transportation pipeline (Private Surface: Eleanor Trujillo and Blackhawk Energy): 12-1/2" O.D. (12" nominal) Diameter: 0.375" Wall Thickness: Grade: "B" FBE coated linepipe w/ welded or beveled connection **Design Pressure:** 790 psi (test) Actual Pressure: 630 psi Pressure Test Fluid: Natural gas from well Field Test Pressure: Pipeline Depth: Surface Anticipated Operating **Temperature:** 100° 12" Line 12" Water transportation pipeline (Private Surface: Eleanor Trujillo and Blackhawk Energy): Diameter: 12-3/4" O.D. (12" nominal) 1.159" Wall Thickness: DR-11 High Density Polyethylene Grade: connection 200 psi (test) **Design Pressure:** Actual Pressure: 200 psi Pressure Test Fluid: Water for Drilling/Frac Field Test Pressure: Pipeline Depth: Surface Anticipated Operating **Temperature:**  $60^{\circ}$ 16" Line 16" Gas transportation pipeline (Bore and Trenched Section on USFS): 16" O.D. (16" nominal) Diameter: 0.562" Wall Thickness: "B" FBE coated linepipe w/ welded or beveled

Grade: "B" FBE coated 1 connection Design Pressure: 1,870 psi (test) Actual Pressure: 1,500 psi Pressure Test Fluid: Hydrotest Field Test Pressure: Pipeline Depth: 48" – 60" Anticipated Operating Temperature: 100°

### 16" Line

16" Water transportation pipeline (Bore and Trenched Section on USFS): 16" O.D. (16" nominal) Diameter: Wall Thickness: 1.455" DR-11 High Density Polyethylene Grade: Design Pressure: 200 psi (test) Actual Pressure: 200 psi Water for Drilling/Frac Pressure Test Fluid: Field Test Pressure: Pipeline Depth: 48" - 60" Anticipated Operating Temperature: 60°

La Jara Fed 1-2 Wellpad Sec. 1 T29N R4W H.E.S. 281 Rio Arriba County, New Mexico Surface: Fee

### MULTI-WELLPAD SURFACE USE PLAN OF OPERATIONS

This multi-well pad will be utilized by both Robert L. Bayless Producer, LLC and Jicarilla Apache Energy Corporation for drilling all 16 wells on the wellpad.

Pursuant to Onshore Order No. 1 (43 CFR 3160), this Surface Use Plan of Operations (SUPO) has been prepared for the Bureau of Land Management (BLM) Farmington Field Office as part of the Applications for Permits to Drill (APDs) wells on the La Jara Fed 1-2 multi-well pad. The information provided to the BLM is to give an accurate account of the proposed action.

### WELL LOCATION AND INTRODUCTION:

Three (3) wells, La Jara Fed 1-2 001H, La Jara Fed 002H, and La Jara Fed 003H, were initially staked on July 27, 2002, by Jason C. Edwards, surveyor, on a site that was geologically and topographically acceptable. A total of 16 wells will be drilled from this wellpad as indicated on the construction layout drawings.

A Notice of Staking was submitted to BLM in Farmington on March 22, 2023 for the initial locations. An onsite meeting was held on April 20, 2023. Present were Emmanuel Adeloye - BLM; Ron Kellermueller – New Mexico Department of Game and Fish, JJ Miller – United States Forest Service, Billy Schnieder and John D. Thomas –Bayless. Requirements were discussed at the onsite meeting. All associated facilities for all wells will also be contained on this multi-well pad.

### 1) EXISTING ROADS

- A) This wellpad is located in Rio Arriba New Mexico. From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel easterly on US Hwy 64 for 50.1 miles to Mile Marker 114.4 to the existing access road on right-hand side which continues for 490' to La Jara Fed 1-2 wellpad.
- B) These wells are exploratory wells.
- C) Existing roads within 1.0 miles consist of US Highway 64 which will provide access to the proposed location.
- D) Existing roads will be maintained in the same or better condition using best management practices and surface operating standards and guidelines for oil and gas (Gold Book).
- E) Private surface roads that are part of the access to reach this location will be maintained to BLM Manual section 9113 standards. Maintenance will be done prior to the commencement of operations and will continue until final abandonment and reclamation of the wellpad.
- F) BLM Best Management Practices (BMPs) as outlined in the "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development" (the Gold Book) will be utilized for all construction and operational activity related to this facility.

### SURFACE USE PLAN OF OPERATIONS La Jara Fed 1-2 Wellpad

G) On April 20, 2023, an onsite inspection was conducted. The Surface Owner requested that the existing access road be re-routed around the southern edge of location, and across the large wash. The road will be improved on the southern edge of the wash heading to the southwest. A 24' cattle guard will be added at the entrance to the property with a double gate. New Mexico Department of Transportation (NMDOT) will administrate any improvements to the pull-off of Highway 64.

### 2) <u>NEW OR RECONSTRUCTED ACCESS ROADS</u>

A) There are no new roads needed for this location.

#### 3) LOCATION OF EXISTING WELLS

Oil and Gas Wells:See AFMSS attachments.Water Wells:None.

#### LOCATION OF EXISTING PRODUCING FACILITIES

There are currently no production facilities on this location. If the well is completed as a producer, production facilities will be engineered and implemented at that time. Operations will follow 43 CFR 3160 and a Sundry Notice on Form 3160-5 will be submitted with construction facilities prior to commencing any construction activities.

#### 4) LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES

- BLM will be contacted prior to construction of production facilities. A Sundry Notice (SN) will be filed if requested by BLM.
- B) Please see AFMSS attachments.
- C) The facilities will be constructed on the wellpad.
- D) Traveled portion of wellpad will be gravel surfaced. If necessary, additional surfacing material will be obtained from commercial sources or an approved borrow area. Construction and maintenance will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet.
- E) Production equipment will be painted light reflective colors to limit evaporation and waste of liquid hydrocarbons. All above ground permanent structures will be painted to blend with the surrounding landscape. The color specified at the BLM onsite will be Juniper Green.
- F) Production facilities may vary according to the actual reservoir and will be engineered upon completion of well tests. Production facilities will be clustered and placed away from cut/fill slopes to allow the maximum recontouring of cut/fill slopes. To reduce the view of production facilities from visibility corridors and private residences, facilities will not be placed in visually exposed locations (such as ridgelines and hilltops).
- G) A berm will be constructed around the tanks. The berm materials will be constructed of suitable materials and impermeable to the fluid contained. The berms will have sufficient volume to contain a minimum of 110% of the total volume of the largest tank containing liquid hydrocarbons within the facility/battery and sufficient freeboard to contain precipitation, unless more stringent protective requirements are deemed necessary by the Authorized Officer.
- H) If the well is a producer all production facilities will be authorized by a SN.

 There will be a total of 7,768.70' of new pipelines on both fee and United States Forest Service (USFS) – Carson National Forest. Of that 663.9' of new pipelines will be on fee surface (Eleanor Trujillo); 1,938.8' of new pipelines within the Carson Forest (USFS) ROW (1,565' of pipelines which will follow Forest Service Road 310 and 169.5' which will bore under Highway 64 and 204.3' alongside Hwy 64 in the ROW); and 5,166' of new pipelines on fee surface (Blackhawk Energy) to the existing Cabresto pipeline connection point. Please see AFMSS attachments for pipeline plats.

| Pipeline<br>Length (ft) | Location  | Surface Owner   |
|-------------------------|---|---|
| 663.9'                  | T29N R4W Sec. 1: HES 281                        | Eleanor Trujillo - Fee  |
|                         | Temporary Use Area #3                           | Eleanor Trujillo – Fee (Boring equipment only. 0.26 acres)                                  |
|                         | Temporary Use Area #2                           | Eleanor Trujillo – Fee (Boring equipment only. 0.06 acres)                                  |
| 1,769.3'                | T30N R4W Sec. 36: Lot 9<br>T29N R4W Sec.1 Lot 6 | US Forest Service   |
| 169.5'                  | T29N R4W  | US Forest Service Bore under<br>Highway 64; Not included in surface<br>disturbance acreage. |
|                         | Temporary Use Area #1                           | US Forest Service – Boring<br>equipment only. 0.11 acres)                                   |
| 5,166.0'                | T30N R4W Sec. 36: HES 285                       | Blackhawk Energy - Fee  |
| 7,768.7'                |   | <b>Total Pipeline Construction</b>  |

### 5) <u>LOCATION AND TYPES OF WATER SUPPLY</u>

- A) Operators will be using the proposed La Jara Water Pond that is located to the west of the proposed wellpad for construction, drilling, dust suppression and completion operations. The water pond is located on private surface.
- B) Anticipated water use: Anticipated water use of approximately 600,000 barrels.
- C) Each well drilling and completion will use approximately 75 acre-ft of fresh water. Fresh water has been contracted from San Juan Water Haulers Association who has rights from the Jicarilla Nation (confirmation of volume for first wells attached) at the Navajo Dam Reservoir. Water will be transferred and stored onsite in two freshwater storage ponds. Frac tanks may be used on well pad for buffer for Hydraulic Fracturing pumps.

Water will be transferred from Navajo Dam Reservoir to location ponds using a combination of existing pipelines owned by Enterprise Products and Black Hawk Energy Corporation and by temporary lay flat-water lines. Deisel powered centrifugal pumps will be used to pump the water.

Water will be pumped from the Rosa 181 take point. Using 12 inch lay flat water lines and pumps, the water will then travel south along the existing roads and pipeline to the "La Jara CDP" where it will enter the existing Black Hawk Energy Corporation Cabresto 12 inch pipeline. The water will then be transported using the existing and proposed pipelines for drilling and completions. (See attached Map).

- D) See AFMSS attachments.
- E) San Juan Water Haulers Association has agreed to provide 180-acre feet of water rights for industrial use in connection with oil and gas drilling.

#### SURFACE USE PLAN OF OPERATIONS La Jara Fed 1-2 Wellpad

### 6) <u>SOURCE OF CONSTRUCTION MATERIALS</u>

- A) Construction materials will consist of native materials from borrow ditches and location areas.
- B) Surfacing materials will be obtained from available permitted sources, if needed, and consist of pit gravel. A contractor/source has not been determined or contracted yet for this location.

#### 7) <u>METHODS FOR HANDLING WASTE DISPOSAL</u>

- A) Drilling
  - A closed loop system will be utilized. Drilling fluids will be disposed of at a commercial disposal facility. Total amount of drilling water will be approximately 5,000 bbls. Drilling is anticipated to take 10-15 days for a total of 330-500 bbl per day until the drilling has been completed.
- B) Completions/Stimulation
  - Completion fluid amount is only calculated for the time the completion procedure occurs. Once the completion procedure is done, there will be no additional waste for completion/stimulation. Completion is anticipated to take four to six days. Completion fluids will be hauled to a commercial disposal facility.
  - Amount of waste is anticipated to be 800 bbls and disposed of daily.
- C) Flowback
  - Flowback water will be contained in a holding tank and subsequently hauled to a commercial disposal facility.
  - Amount of waste is anticipated to be 400 barrels and disposed of daily.
- D) Sewage
  - Portable toilets will be provided and maintained as needed.
- E) Garbage
  - Garbage and other solid waste will be contained in a portable trash cage which will be totally enclosed with small mesh wire.
  - Waste will be disposed of weekly by 3<sup>rd</sup> party contractors.
- F) Produced Water
  - Produced water will be contained in tanks during completion and testing. Once testing is completed the produced water will be hauled to a commercial disposal facility.
  - Anticipated amount of produced water is 800 bbls and will be disposed of daily.
- G) Reserve Pit
  - There is no reserve pit
- H) Cutting Area
  - The steel cuttings pit and closed loop system will contain the drilling fluids including salts and chemicals. Cuttings will be treated in the drying cutting area before being hauled to Industrial Ecosystems Industries on Crouch Mesa.
- I) Upon release of the drilling rig, rathole and mousehole will be filled. Debris and equipment not required for production will be removed.

Page 5

### SURFACE USE PLAN OF OPERATIONS La Jara Fed 1-2 Wellpad

### 8) <u>ANCILLARY FACILITIES</u>

No ancillary facilities will be necessary.

### 9) <u>WELLSITE LAYOUT</u>

A) See AFMSS attachments.

#### 10) PLANS FOR SURFACE RECLAMATION: New Surface Disturbance

- A) Drainage/Erosion Control construction:
  - Straw wattles are to be installed around areas of the wellpad. The cut slopes on the wellpad are not to be graded to a smooth surface but are to be left in a roughened condition. Any other combination of the following Best Management Practices may also be installed for erosion control methods; Diversion Ditches, Water Bars, Road Surface Slope, Drainage Dips, Roadside Ditches, Turnouts, Wing Ditches, Road Crowning, Culverts, Berms, Silt Fence, Straw Bales, Straw Crimping, Surface Roughening, Catch Basins, Sediment Traps, Permanent Vegetation, Existing Vegetation and Mulching. The BMP selection will be determined on an individual basis and as site conditions dictate.
- B) Drainage/Erosion Control Reclamation
  - Earthen berms are to be placed at the top of cut slopes. An earthen berm is to be placed on the perimeter of the wellpad to fill sections to divert run-off from fill slopes to minimize erosion. The graded slopes are to be left in a rough condition to minimize wind and water erosion. At the completion of the facilities installation, the stockpiled material for the production equipment dikes will no longer exist. Straw wattles are to be installed and maintained. Any other combination of the following Best Management Practices may be installed for erosion control methods; Diversion Ditches, Water Bars, Road Surface Slope, Drainage Dips, Roadside Ditches, Turnouts, Wing Ditches, Road Crowning, Culverts, Berms, Silt Fence, Straw Bales, Straw Crimping, Surface Roughening, Catch Basins, Sediment Traps, Permanent Vegetation, Existing Vegetation and Mulching. The BMP selection will be determined on an individual basis and as site conditions dictate.
- C) Wellpad Proposed Disturbance/Interim Reclamation/Long Term Reclamation
- D) Disturbance Comments: Reconstruction Method:
  - Final reconstruction will include all disturbed areas, including roads, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Re-salvaged topsoil will be spread evenly over the entire disturbed site to ensure successful revegetation. To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, woody debris, and large rocks over recontoured cut\fill slopes.
  - Topsoil redistribution: Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet. Distribute topsoil evenly over the location, and seed according to the seed

### Page 6

mixture. The access road and location shall be ripped or disked prior to seeding. Perennial vegetation must be established. Additional work shall be required in case of seeding failures, etc.

- Soil treatment: Earthwork for interim and final reclamation will be completed within six (6) months of well completion or plugging (weather permitting).
- E) Please see AFMSS attachments.
- F) Seeding
  - Seedbed prep: Initial seedbed preparation will consist of backfilling, leveling, and ripping all compacted areas. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix to meet reclamation standards will be used. The seed mix will be used on all disturbed surfaces including all roads and cut/fill slopes.
  - Seed BMP: All disturbed areas, including roads, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Re-salvaged topsoil will be spread evenly over the entire disturbed site to ensure successful revegetation. To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, woody debris, and large rocks over recontoured cut/fill slopes.
  - Seed method: Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation. A certified weed-free seed mix to meet reclamation standards will be used. The seed mix will be used on all disturbed surfaces including all roads and cut/fill slopes.
  - Weed treatment plan description: Annual or noxious weeds shall be controlled on all disturbed areas. A weed monitoring and control program will be implemented beginning the first growing season and throughout the life of the well. Noxious weeds that have been identified during construction and monitoring will be promptly treated and controlled. A Pesticide Use Permit will be acquired from the BLM/USFS prior to the use of herbicides. All construction and reclamation equipment will be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species.
  - The operator will coordinate all weed and insect control measures with the BLM/USFS, state and/or local management agencies. Reclamation equipment will be cleaned before moving the equipment onto the location and will be cleaned again before leaving the location.
  - Success standards: Reclamation will be considered successful if the following criteria are met: 70 percent of predisturbance cover; 90 percent dominate species (the vegetation will consist of species included in the seed mix and/or occurring in the surrounding natural vegetation); and erosion features are equal to or less than surrounding area.
- G) OPERATOR CONTACT/RESPONSIBLE OFFICIAL Robert L. Bayless Producer, LLC
  - John Thomas: Phone 303-296-9900; E-mail <u>ithoas@rlbayless.com</u>

### SURFACE USE PLAN OF OPERATIONS La Jara Fed 1-2 Wellpad

Jicarilla Apache Energy Corporation

• Daniel Manus: Phone – 505-634-5100; E-mail - dmanus@blackhawkenergycorp.com

### 11) <u>SURFACE OWNERSHIP</u>

This wellpad is located on private surface.

The existing access road is located on private surface and U.S. Forest Service.

### 12) OTHER INFORMATION

None.



### VIA AFMSS II

May 2, 2024

Ms. Maureen Joe Bureau of Land Management Farmington Field Office 6251 College Blvd., Suite A Farmington, NM 87402

RE: Application for Permit to Drill – BLM Robert L. Bayless, Producer LLC
La Jara Fed 1-2 Wellpad La Jara 1-2 001H: APD ID 10400091600 – Response to Deferral Letter La Jara 1-2 002H: APD ID: 10400094740 – Response to Deferral Letter La Jara 1-2 003H: APD ID: 10400094811 – Response to Deferral Letter Sec. 1 T29N R4W (H.E.S. 281) Rio Arriba County, New Mexico Surface: Fee
Dear Ms. Joe:

The Applications for Permits to Drill (APD) the above captioned wells are being resubmitted via the AFMSS II electronic filing system on behalf of Robert L. Bayless Producer LLC (Bayless). This resubmission is in response to the deferral letters dated April 29, 2024.

This APD BLM filing contains the following attachments: Designation of Permit Agent Letter, Well Location Plat, Lease Plat, two 5M BOP Diagrams, Revised Casing Safety Calculations, Horizontal Plan, Drilling Plan 010924, Access Road and Pipeline Map 120523, Existing Wells Map and Table, Water Transportation Map Revised 043024, Revised Wellsite Layout Drawings, Wellpad NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Access Road, NRCS Map Unit Description and Plant Composition for Wellpad and Access Road, BLM Payment Receipt, Surface Use Plan Master document Revised 050224, Pipeline Specifications, Pipeline Plats dated 042524, letter to BLM dated September 27, 2023, Response to Deficiency letter to BLM dated December 6, 2023, Letter to BLM dated January 9, 2024, letter to BLM dated April 4, 2024, letter to BLM dated April 16, 2024, and letter to BLM dated May 2, 2024.

The La Jara Fed 1-2 wellpad is located in Sec. 1 T29N R4W (H.E.S. 281) was surveyed on July 27, 2022, by Jason C. Edwards, surveyor.

All wells will be co-located on one common wellpad with enough room to accommodate 16 wells. All wells planned or existing are listed below including the applied for wells.

La Jara Fed 1-2 001H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well La Jara Fed 1-2 002H La Jara Fed 1-2 Future well La Jara Fed 1-2 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well JIC 29-04-01 Future well

Your Assets / Our Expertise

La Jara Fed 1-2 003H La Jara Fed 1-2 Future well JIC 29-04-01 246H JIC 29-04-01 Future well

Government Relations

- Storm-water Management Plans 
   Project Coordination
  - EA/EIS Assistance

Ms. Maureen Joe May 2, 2024 Page 2

The La Jara Fed 1-2 001H was originally submitted on July 3, 2023. The La Jara Fed 1-2 002H and 003H were submitted on September 28, 2023. The BLM APD Deferral letters dated April 29, 2024, were received via email in our office. The APD's were returned via Deferral to allow the Operator to revise the pipeline route plats and pipeline verbiage in the SUPO. All changes to the SUPO have been made to all three La Jara Fed APD's.

Please use the revised information. Everything else in the APD will remain the same.

Please send a copy of all correspondence to Upstream Petroleum Management, Inc. at 7000 S. Yosemite St. Suite 290B, Englewood, CO 80112. Please contact Angela Callaway at 214-364-3713 or Kim Rodell or at 303-942-0506, or acallaway@upstreampm.com or krodell@upstreampm.com, respectively, if you have any questions.

Your early attention to this application is greatly appreciated. Thank you for your assistance.

Sincerely,

Ungela G. Callaway

Angela G. Callaway Permit Agent for Robert L. Bayless, Producer LLC

Enclosures

cc: Robert L. Bayless, Producer LLC



**Section 1 - General** 

Would you like to address long-term produced water disposal? NO

### Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N Produced Water Disposal (PWD) Location: PWD surface owner: Lined pit PWD on or off channel: Lined pit PWD discharge volume (bbl/day): Lined pit Pit liner description: **Pit liner manufacturers** Precipitated solids disposal: Decribe precipitated solids disposal: Precipitated solids disposal Lined pit precipitated solids disposal schedule: Lined pit precipitated solids disposal schedule Lined pit reclamation description: Lined pit reclamation Leak detection system description: Leak detection system

**PWD** disturbance (acres):

**Operator Name: ROBERT L BAYLESS PRODUCER LLC** 

Well Name: LA JARA FED 1-2

Well Number: 003H

## Lined pit Monitor description:

Lined pit Monitor

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information

### **Section 3 - Unlined**

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres):

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

**Unlined pit** 

Precipitated solids disposal:

Decribe precipitated solids disposal:

### Precipitated solids disposal

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule

Unlined pit reclamation description:

**Unlined pit reclamation** 

Unlined pit Monitor description:

**Unlined pit Monitor** 

Do you propose to put the produced water to beneficial use?

Beneficial use user

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic

State

**Unlined Produced Water Pit Estimated** 

Unlined pit: do you have a reclamation bond for the pit?

**Operator Name: ROBERT L BAYLESS PRODUCER LLC** 

Well Name: LA JARA FED 1-2

Well Number: 003H

PWD disturbance (acres):

Injection well name:

Injection well API number:

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information

### Section 4 -

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

**PWD surface owner:** 

Injection well number:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

**Mineral protection** 

**Underground Injection Control (UIC) Permit?** 

**UIC Permit** 

### **Section 5 - Surface**

Would you like to utilize Surface Discharge PWD options? N

 Produced Water Disposal (PWD) Location:

 PWD surface owner:
 PWD disturbance (acres):

 Surface discharge PWD discharge volume (bbl/day):
 PWD disturbance (acres):

 Surface Discharge NPDES Permit?
 Surface Discharge NPDES Permit attachment:

 Surface Discharge site facilities information:
 Surface discharge site facilities map:

 Section 6 Section 6 

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

Other PWD discharge volume (bbl/day):

PWD disturbance (acres):

### Operator Name: ROBERT L BAYLESS PRODUCER LLC

Well Name: LA JARA FED 1-2

Well Number: 003H

### Other PWD type description:

Other PWD type

Have other regulatory requirements been met?

Other regulatory requirements

## AFMSS

U.S. Department of the Interior

BUREAU OF LAND MANAGEMENT

APD ID: 10400094811 **Operator Name: ROBERT L BAYLESS PRODUCER LLC** Well Name: LA JARA FED 1-2 Well Type: CONVENTIONAL GAS WELL

### Submission Date: 09/28/2023

and the second second

Well Number: 003H Well Work Type: Drill Highlighted data reflects the most recent changes Show Final Text

Bond Info Data

Bond

Federal/Indian APD: FED

**BLM Bond number:** 

**BIA Bond number:** 

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

**BLM reclamation bond number:** 

Forest Service reclamation bond number:

**Forest Service reclamation bond** 

**Reclamation bond number:** 

**Reclamation bond amount:** 

**Reclamation bond rider amount:** 

Additional reclamation bond information

07/11/2024

|  | Ener           | Stat<br>gy, Minerals a | e of New Me<br>nd Natural Re                    |                                       | partment                 | Sub<br>Via               | mit Electronically<br>E-permitting                                    |
|--|----------------|------------------------|---|---------------------------------------|--------------------------|--------------------------|---|
|  |                | 1220 \$                | onservation D<br>South St. Fran<br>ta Fe, NM 87 | cis Dr.                               |                          |                          |   |
|  | NA             | FURAL GA               | AS MANA   | GEMEN                                 | T PLAN                   |                          |   |
| This Natural Gas Manageme  | ent Plan must  | be submitted wi        | th each Applica                                 | tion for Pern                         | nit to Drill (A          | PD) for a new o          | r recompleted well.   |
|  |                |                        | <u>1 – Plan D</u><br>fective May 25             |                                       | <u>on</u>                |                          |   |
| I. Operator: <u>ROBERT L B</u>   | AYLESS, PF     | RODUCER LLC            | OGR   | <b>D</b> : <u>150182</u>              |                          | Date:                    | _06/17/2024   |
| II. Type: 🛛 Original 🗆 Aı  | nendment du    | e to 🗆 19.15.27        | .9.D(6)(a) NMA                                  | C□ 19.15.2                            | 27.9.D(6)(b) N           | MAC 🗆 Other              |   |
| If Other, please describe:   |                |                        |   |                                       |                          |                          |   |
| <b>III. Well(s):</b> Provide the follow the follow the recompleted from a single           |                |                        |   |                                       | set of wells pr          | roposed to be dr         | illed or proposed to  |
| Well Name  | API            | ULSTR                  | Foot  | ages                                  | Anticipated<br>Oil BBL/D | Anticipated<br>Gas MCF/D | Anticipated<br>Produced Water<br>BBL/D                                |
|  |                |                        |   |                                       |                          |                          |   |
| -  |                |                        |   |                                       |                          |                          | -   |
|  |                |                        |   |                                       |                          |                          |   |
| IV. Central Delivery Point V. Anticipated Schedule: P proposed to be recompleted Well Name | rovide the fol | lowing informa         | tion for each new                               | w or recomp<br>ral delivery p<br>Comp | eted well or s           |                          | 27.9(D)(1) NMAC]<br>osed to be drilled or<br>First Production<br>Date |
| LA JARA FED 1-2 #001H  | 30-039-        | 2024                   | PENDING   | PENDING                               |                          | PENDING                  | PENDING   |
| LA JARA FED 1-2 #001H  | 30-039-        | 2024                   | PENDING   | PENDING                               |                          | PENDING                  | PENDING   |
| LA JARA FED 1-2 #001H  | 30-039-        | 2024                   | PENDING   | PENDING                               |                          | PENDING                  | PENDING   |
| VI. Separation Equipment   | • 🛛 Attach a   | complete descri        | ntion of how Or                                 | erator will a                         | iza sanaration           | aquinment to or          |   |
| vi. Separation Equipment   |                | complete descri        | puon or now Of                                  | erator will s                         | ze separation            | equipment to of          | punnze gas capture.   |
| VII. Operational Practices   |                | 1 4 1                  | 1 1 0 1   | (' O                                  | 111 - 1                  | 1 1/1                    | d   |

during active and planned maintenance.

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### 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.

 $\Box$  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<br>Natural Gas Rate MCF/D | Anticipated Volume of Natural<br>Gas for the First Year MCF |
|-----------------------|---------|---|---|
| LA JARA FED 1-2 #001H | 30-039- | 15080   |   |
| LA JARA FED 1-2 #002H | 30-039- | 15080   |   |
| LA JARA FED 1-2 #003H | 30-039- | 15080   |   |
|                       |         |   |   |
|                       |         |   |   |

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

| Operator       | System           | ULSTR of Tie-in | Anticipated Gathering | Available Maximum Daily Capacity |
|----------------|------------------|-----------------|-----------------------|----------------------------------|
|                |                  |                 | Start Date            | of System Segment Tie-in         |
| BlackHawk Corp | Cabresto-12 inch | O-25-30N-4W     | NOVEMBER 2024         | 170 MMCFD                        |
| Enterprise     | La Jara CDP      | B-24-30N-6W     | NOVEMBER 2024         | 90 MMCFD                         |

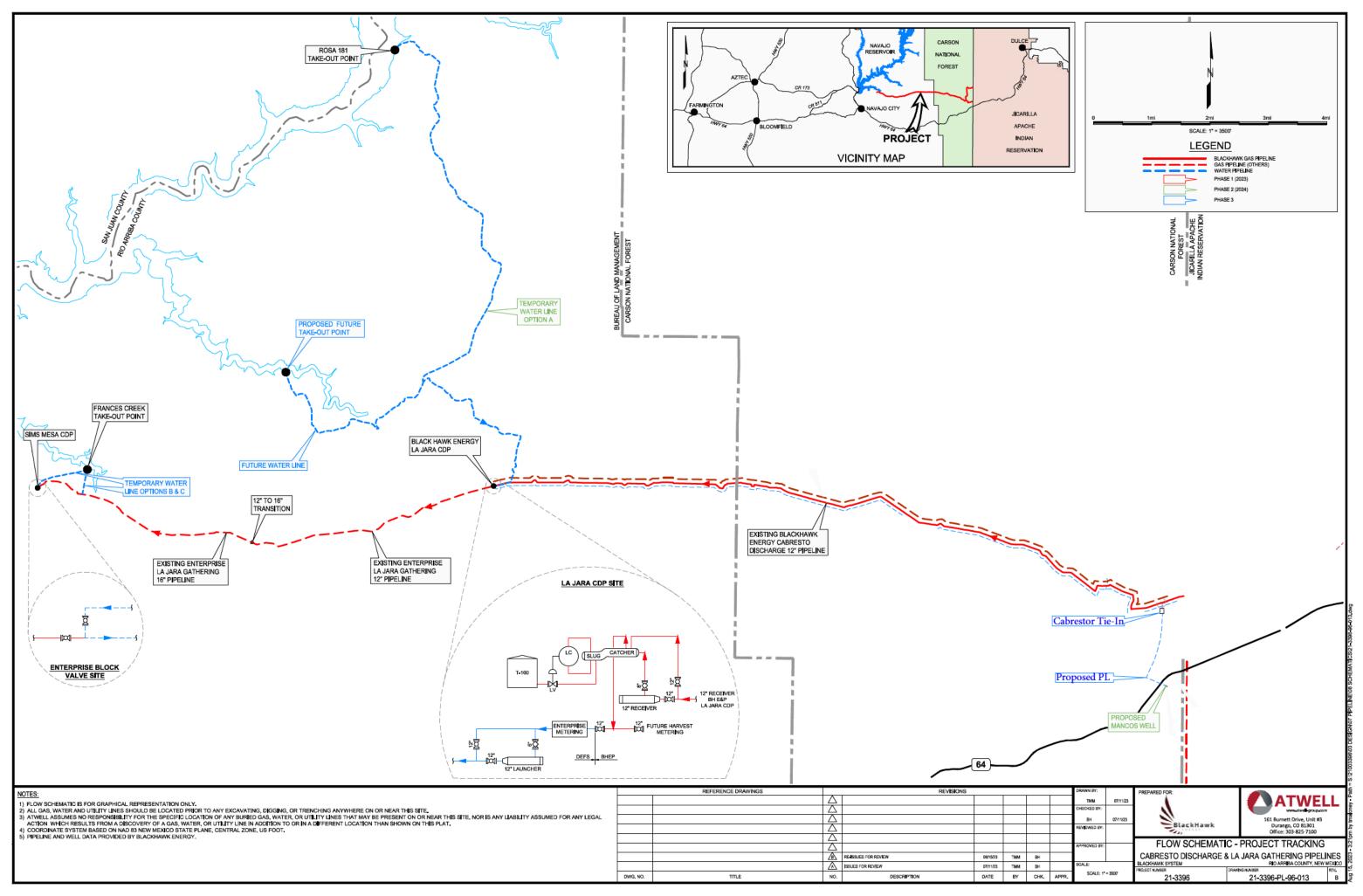
**XI. Map.**  $\boxtimes$  Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or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

**XII. Line Capacity.** The natural gas gathering system  $\boxtimes$  will  $\square$  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  $\boxtimes$  does  $\square$  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).

 $\Box$  Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:**  $\boxtimes$  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.



### <u>Section 3 - Certifications</u> <u>Effective May 25, 2021</u>

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

 $\boxtimes$  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

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

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

### Section 4 - Notices

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

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

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

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

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

|  | Signature: |  |  |  |  |  |
|--|------------|--|--|--|--|--|
|--|------------|--|--|--|--|--|

Printed Name: John D Thomas

Title: Chief Operating Officer

E-mail Address: jthomas@rlbayless.com

Date: June 18, 2024

Phone: (O) 303-382-0914, (M) 505-320-5234

### OIL CONSERVATION DIVISION

(Only applicable when submitted as a standalone form)

Approved By:

Title:

Approval Date:

Conditions of Approval:

### VI. Separation Equipment

The operator will select separation equipment for the maximum anticipated throughput and pressure to optimize gas capture. Separation equipment is seized according to manufacturer's design specifications. Separation vessels are built following the A.S.M.E section VII division codes for pressure vessel design, fabrication, inspection, testing and certification. Anticipated well pressures and production rates are evaluated to select separation equipment according to the equipment's designed operating pressure and throughput.

After completion, the operator utilizes flowback equipment, including separators, to manage wellbore fluids and solids during the initial separation period. After the initial flowback period is complete the operator utilizes iterative facility separation equipment to ensure that optimal separation is achieved.

### VII. Operational Practices 19.15.27.8 NMAC A through F

- A. The operator will maximize the recovery of natural gas and minimize the amount of gas vented of flared when technically and safely feasible as further described and detailed within the following subsections (B-F of 19.15.27.8). In all cases where natural gas venting and flaring requires regulatory reporting, reporting will be submitted accurately and within the required time frames.
- B. Venting and flaring during drilling operations:
  - a. New Drill HZ Oil Wells: The operator drills wells in the area by utilizing a balanced mud to safely drill the wellbore. This technique prevents gas from coming to the surface during the drilling process. If there is an emergency or malfunction and natural gas does come to surface the natural gas will be captures or combusted, will an appropriately sized and located flare stack, if technically and safely feasible.
  - b. New Drill HZ Oil Wells: The operator drills wells in the area by balancing the mud weight to safely drill the wellbore with as minimal flaring as possible. When gas kicks enter the wellbore, sometimes it is necessary to circulate it out of the wellbore to an appropriately sized and locate flare stack. The operator will estimate the volume flared and appropriately report.
- C. Venting and flaring during completion or recompletion operations:
  - a. New Drill HZ Oil Wells: The operator's facilities are designed to handle the maximum throughput and pressures from the newly drilled and completed wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. During initial flowback and initial separation flowback the operator will utilize contracted flowback equipment, including separators, to manage wellbore fluids and solids. The initial flowback period will be minimized and flow will be sent to separation equipment as soon as possible to reduce the amount of gas that is vented to atmosphere. During the separation flowback period natural gas will be routed to a properly sized and located flare until the natural gas is of pipeline quality (less than 60 days). The natural gas will also be utilized on site as needed for fuel gas or injection gas.
  - b. New Drill HZ Oil Wells: The operator's facilities are designed to handle the maximum throughput and pressures from the newly drilled and completed wellbore. The amount of gas vented and flared will be minimized when technically and safely feasible. During initial flowback and initial separation flowback the operator will utilize contracted flowback equipment, including separators, to manage wellbore fluids and solids. The initial flowback period will be minimized and flow will be sent to separation equipment as soon as possible to reduce the amount of gas that is vented to atmosphere. The natural gas will be utilized on site as needed for fuel gas and natural gas will be sold.

D. Venting and flaring during production operations:

a. New Drill HZ Oil Wells: The operator's facilities are designed to handle the maximum throughput and pressures from producing wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. This facility will operate under a notice to intent (NOI) from the New Mexico Environment Department (NMED).

Operations will effectively manage the following scenarios to minimize the quantity of natural gas that is vented or flared:

- (a) If there is an emergency or malfunction, vented or flared natural gas will be reported, if required, and the emergency or malfunction will be resolved as soon as technically and safely feasible.
- (b) If the wellbore requires liquids to be unloaded to atmosphere, the operator will not vent the well after the week has achieved a stabilized rate and pressure. The operator will remain on site during unloading. Plunger lift systems will be optimized to reduce the amount of natural gas venting. Downhole maintenance, such as workovers, swabbing, ect. will only be conducted as needed and best management practices will be utilized to reduce venting of natural gas.
- (c) The operator will minimize the amount of time that natural gas is vented to atmosphere from gauging and sampling a storage tank or low-pressure vessel, automatic tank gauges will be the primary means of gauging with minor exceptions.
- (d) The operator will reduce the amount of time needed for loading out liquids from a storage tanks or other low-pressure vessels whenever feasible. Operation will utilize a LACT system when available to minimize gas vented during oil tank loading.
- (e) Equipment will be repaired and maintained routinely to minimize the venting or flaring of natural gas. Repairs and maintenance will be conducted in a manner that minimizes the amount of natural gas vented to atmosphere through the isolation of the equipment the is being repaired or maintained.
- (f) Electric controllers and pumps will be installed to replace pneumatic controllers whenever feasible. Pneumatic controllers and pumps will be inspected frequently to ensure that no excess gas is vented to atmosphere.
- (g) Storage tanks and other low-pressure vessel normal operational venting will be minimized during the early life of the well with the installation of a vapor recovery unit to limit the flash and working and breathing emissions to atmosphere.
- (h) No dehydration or amine units are anticipated to be set on location.
- (i) Compressors, compressor engines, turbines, flanges, connectors, values, and flanges will be routinely inspected to ensure that no excess venting occurs outside of normal operation.
- (j) Regulatory required testing, such as bradenhead and packer testing will be performed in a manner that minimizes the amount of natural gas vented to atmosphere.
- (k) When natural gas does not meet gathering pipeline specifications, for example high nitrogen content after a nearby frac, gas samples will be collected twice per week to determine when pipeline specification gas content has achieved. During this time frame gas will be flared and not vented to atmosphere. Natural gas that meets pipeline specifications will be sold via pipeline and natural gas that can be utilized for fuel gas will be used during this time.
- (I) If pipeline, equipment, or facilities need purged of impurities gas losses will be minimized as much as technically and safely feasible.

b. New Drill HZ Gas Wells: The operator's facilities are designed to handle the maximum throughput and pressures from producing wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible.

Operations will effectively manage the following scenarios to minimize the quantity of natural gas that is vented or flared:

- (a) If there is an emergency or malfunction, vented or flared natural gas will be reported, if required, and the emergency or malfunction will be resolved as soon as technically and safely feasible.
- (b) If the wellbore needs to be unloaded to the atmosphere the operator will remain on site during unloading. Plunger lift systems will be optimized to reduce the amount of natural gas venting. Downhole maintenance, such as workovers, swabbing, ect. will only be conducted as needed and best management practices will be utilized to reduce venting of natural gas.
- (c) The operator will minimize the amount of time that natural gas is vented to atmosphere from gauging and sampling a storage tank or low-pressure vessel, automatic tank gauges will be the primary means of gauging. The formation is only anticipated to produce water and therefore tank emissions are anticipated to be negligible.
- (d) The operator will reduce the amount of time needed for loading out liquids from a storage tanks or other low-pressure vessels whenever feasible. Operations will always utilize the water transfer systems when available. Water loading emissions are anticipated to be negligible.
- (e) Equipment will be repaired and maintained routinely to minimize the venting or flaring of natural gas. Repairs and maintenance will be conducted in a manner that minimizes the amount of natural gas vented to atmosphere through the isolation of the equipment that is being repaired or maintained.
- (f) Electric controllers and pumps, or instrument air, will be installed to replace pneumatic controller whenever feasible. Pneumatic controllers and pumps will be inspected frequently to ensure that no excess gas is vented to atmosphere.
- (g) No dehydration or amine units are anticipated to be set on location.
- (h) Compressors, compressor engines, turbines, flanges, connectors, valves, storage tanks, and other low-pressure vessels and flanges will be routinely inspected to ensure that no excess venting occurs outside of normal operations.
- (i) Regulatory required testing, such as bradenhead and packer testing will be performed in a manner that minimizes the amount of natural gas vented to the atmosphere.
- (j) If natural gas does not meet gathering pipeline specifications gas samples will be collected twice per week to determine when pipeline specification gas content has been achieved. During this time frame gas will be flared and not vented to atmosphere. Natural gas that meets pipeline specifications will be sold via pipeline and natural gas that can be utilized for fuel gas will be used during this time.
- (k) If pipeline, equipment, or facilities need purges of impurities gas losses will be minimized as much as technically and safely feasible.
- E. Performance Standards:
  - a. The production facilities are designed to handle the maximum throughput and pressure from producing wellbores and will be designed to minimize waste. The amount of gas vented and flared will be minimized when technically and safely feasible.
  - b. Al tanks that are routed to a control device that is installed after 5/25/2021 will have an automatic gauging system to minimize the amount of vented natural gas.

- c. If a flare stack is installed or replaced after 5/25/2021 it will be equipped with an automatic ignitor or continuous pilot. The flare stack will be properly sized and designed to ensure proper combustion efficiency. The flare stack will be located 100 feet away from the nearest wellhead or storage tank.
- d. AVO inspections will be conducted weekly for the year after completion and for all wells producing greater than 60,000 cubic feet of natural gas daily. The AVO inspection records will be maintained for 5 years which will be available at the department's request. Identified leaks will be repaired as soon as feasible to minimize the amount of vented natural gas.
- F. Measurement or estimation of vented and flared natural gas.
  - a. The volume of natural gas that is vented, flared, or consumed for beneficial use will be measured when possible, or estimated, during drilling, completions, or production operations.
  - Equipment will be installed to measure the volume of natural gas flared for all APD's issued after 5/25/2021 on facilities that will have an average daily gas rate greater than 60,000 cubic feet of natural gas. Measurement equipment will conform to API MPMS Chapter 14.10 regulations. The measurement equipment will not have a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment. If metering is not practical, then the volume of gas will be estimated.

District I 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

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

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

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CONDITIONS

Action 363277

CONDITIONS

| Operator:                     | OGRID:  |
|-------------------------------|---|
| ROBERT L BAYLESS PRODUCER LLC | 150182  |
| 621 17th Street, Suite 2300   | Action Number:  |
| Denver, CO 80293              | 363277  |
|                               | Action Type:  |
|                               | [C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

#### CONDITIONS

| on binono   |  |                   |
|-------------|--|-------------------|
| Created By  | Condition  | Condition<br>Date |
| ward.rikala | Notify OCD 24 hours prior to casing & cement   | 8/9/2024          |
| ward.rikala | Will require a File As Drilled C-102 and a Directional Survey with the C-104   | 8/9/2024          |
| ward.rikala | 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 | 8/9/2024          |
| ward.rikala | Cement is required to circulate on both surface and intermediate1 strings of casing  | 8/9/2024          |
| ward.rikala | If cement does not circulate on any string, a CBL is required for that string of casing  | 8/9/2024          |
| ward.rikala | 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                  | 8/9/2024          |