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
  -- Well Plat: 1 file(s)

- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 1 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 1 file(s)
  -- Casing Design Assumptions and Worksheet(s): 2 file(s)
  -- Hydrogen sulfide drilling operations plan: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 2 file(s)
  -- Other Facets: 1 file(s)
  -- Other Variances: 1 file(s)

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- New 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)
  -- Construction Materials source location attachment: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Recontouring attachment: 1 file(s)
  -- Other SUPO Attachment: 1 file(s)

- PWD Report
- PWD Attachments
  -- None

- Bond Report
- Bond Attachments
  -- None

Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30-015-56070

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

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 holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 12/19/2024

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.

Approval Date: 12/19/2024

Additional Operator Remarks

Location of Well

0. SHL: NENE / 647 FNL / 311 FEL / TWSP: 18S / RANGE: 30E / SECTION: 36 / LAT: 32.7093605 / LONG: -103.9179148 (TVD: 0 feet, MD: 0 feet)

PPP: SENE / 1750 FNL / 100 FEL / TWSP: 18S / RANGE: 30E / SECTION: 36 / LAT: 32.7063227 / LONG: -103.9172305 (TVD: 7818 feet, MD: 8206 feet)

PPP: SWSE / 1752 FNL / 1320 FEL / TWSP: 18S / RANGE: 30E / SECTION: 36 / LAT: 32.7063268 / LONG: -103.9211969 (TVD: 7818 feet, MD: 9426 feet)

PPP: SENW / 1754 FNL / 2637 FWL / TWSP: 18S / RANGE: 30E / SECTION: 36 / LAT: 32.706326 / LONG: -103.9254904 (TVD: 7818 feet, MD: 10746 feet)

PPP: SWNW / 1752 FNL / 1319 FWL / TWSP: 18S / RANGE: 30E / SECTION: 36 / LAT: 32.706325 / LONG: -103.9297765 (TVD: 7818 feet, MD: 12064 feet)

PPP: SENW / 1754 FNL / 2638 FEL / TWSP: 18S / RANGE: 30E / SECTION: 35 / LAT: 32.7063355 / LONG: -103.9426394 (TVD: 7818 feet, MD: 16021 feet)

PPP: SENE / 1750 FNL / 0 FEL / TWSP: 18S / RANGE: 30E / SECTION: 35 / LAT: 32.7063238 / LONG: -103.9340646 (TVD: 7818 feet, MD: 13383 feet)

BHL: SWNW / 1750 FNL / 10 FWL / TWSP: 18S / RANGE: 30E / SECTION: 35 / LAT: 32.7063461 / LONG: -103.9511901 (TVD: 7818 feet, MD: 18174 feet)

BLM Point of Contact

Name: JANET D ESTES
Title: ADJUDICATOR
Phone: (575) 234-6233
Email: JESTES@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.

PECOS DISTRICT

SURFACE USE

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Centennial Resources
LEASE NO.:	NMNM 093771, NMNM 025503, NMNM 56542
COUNTY:	Eddy County, New Mexico

Wells:

Jakku 36 Fed State Com 112H

Jakku 36 Fed State Com 111H

Jakku 36 Fed State Com 131H

Jakku 36 Fed State Com 132H

Jakku 36 Fed State Com 113H

Jakku 36 Fed State Com 114H

Jakku 36 Fed State Com 133H

Jakku 36 Fed State Com 134H

Approval Date: 12/19/2024

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1. GENERAL PROVISIONS

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. A copy of these conditions of approval shall be present on the location during construction, drilling and reclamation activity. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

1. SPECIAL REQUIREMENTS

1.1. CAVE/KARST

1.1.1. **Road Construction**

- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to alter the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required if subsurface features are discovered during construction.

2.3 WILDLIFE

2.3.1 **Lesser Prairie Chicken**

2.3.1.1 Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

2.3.1.2 Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

2.3.1.3 Ground-level Abandoned Well Marker to avoid raptor perching:

Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at BLM_NM_CFO_Construction_Reclamation@blm.gov.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Centennial Resource Production LLC
WELL NAME & NO.:	Jakku 36 Fed Com 112H
LOCATION:	Sec 36-18S-30E-NMP
COUNTY:	Eddy County, New Mexico

COA

H_2S	○ No		○ Yes	
Potash / WIPP	○ None	◉ Secretary	○ R-111-Q	☐ Open Annulus ☐ WIPP
Cave / Karst	○ Low	◉ Medium	○ High	○ Critical
Wellhead	○ Conventional	◉ Multibowl	○ Both	○ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Capitan Reef	☐ Water Disposal	☑ COM	☐ Unit
Waste Prev.	○ Self-Certification	○ Waste Min. Plan	◉ APD Submitted prior to 06/10/2024	
Additional Language	☑ Flex Hose ☐ Four-String	☐ Casing Clearance ☑ Offline Cementing	☐ Pilot Hole ☑ Fluid-Filled	☐ Break Testing

Break testing is not approved on this well. BOP description and procedure request break testing, but the appropriate documents were not attached. Must sundry if operator wishes break testing to be approved.

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **690** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. ***Set depth adjusted per BLM geologist.***

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping

cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or **500 pounds compressive strength**, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet minimum collapse requirements.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing ***(set at 3740' per BLM geologist)*** is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- Cement should tie-back at least **500 feet** into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

Offline Cementing

Contact the BLM prior to the commencement of any offline cementing procedure.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

Contact Eddy County Petroleum Engineering Inspection Staff:
Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220;
BLM_NM_CFO_DrillingNotifications@BLM.GOV; (575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
    a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
    b. When the operator proposes to set surface casing with Spudder Rig
        i. Notify the BLM when moving in and removing the Spudder Rig.
        ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
        iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-Q potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's

requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    iii. Manufacturer representative shall install the test plug for the initial BOP test.
    iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
    v. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
    i. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
    ii. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve

open. (only applies to single stage cement jobs, prior to the cement setting up.)

iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

iv. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

v. The results of the test shall be reported to the appropriate BLM office.

vi. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

vii. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

viii. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

AFMSS

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

Operator Certification Data Report

12/20/2024

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: ASHLEY BROWN **Signed on:** 05/10/2023

Title: Sr. Regulatory Analyst

Street Address: 300 N MARIENFELD STREET SUITE 1000

City: MIDLAND **State:** TX **Zip:** 79701

Phone: (432)599-5624

Email address: ASHLEY.BROWN@PERMIANRES.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

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

Application Data
12/20/2024

APD ID: 10400092206 **Submission Date:** 05/10/2023

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400092206 **Tie to previous NOS?** N **Submission Date:** 05/10/2023

BLM Office: Carlsbad **User:** ASHLEY BROWN **Title:** Sr. Regulatory Analyst

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM093771 **Lease Acres:**

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? YES **Federal or Indian agreement:** FEDERAL

Agreement number: NMNM135890

Agreement name: IVORE 35 FED COM 3H

Keep application confidential? Y

Permitting Agent? NO **APD Operator:** CENTENNIAL RESOURCE PRODUCTION LLC

Operator letter of

Operator Info

Operator Organization Name: CENTENNIAL RESOURCE PRODUCTION LLC

Operator Address: 300 N MARIENFIELD STREET SUITE 1000 **Zip:** 79701

Operator PO Box:

Operator City: MIDLAND **State:** TX

Operator Phone: (432)695-4222

Operator Internet Address: KANICIA.SCHLICHTING@PERMIANRES.COM

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: JAKKU 36 FED COM **Well Number:** 112H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** Benson **Pool Name:** Bone Spring

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

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

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** N **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** JAKKU 36 NENE **Number:** 1

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: **Distance to nearest well:** 30 FT **Distance to lease line:** 341 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: 10637_JAKKU_36_FED_COM_112H_C102_REV_1_20230510084231.pdf

Well work start Date: 05/04/2024 **Duration:** 18 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 25490 **Reference Datum:** GROUND LEVEL

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
SHL Leg #1	647	FNL	311	FEL	18S	30E	36	Aliquot NENE	32.7093605	-103.9179148	EDDY	NEW MEXICO	FIRST PRIN	S	STATE	3558	0	0	N
KOP Leg #1	647	FNL	311	FEL	18S	30E	36	Aliquot NENE	32.7093605	-103.9179148	EDDY	NEW MEXICO	FIRST PRIN	S	STATE	-3773	7435	7331	N
PPP Leg #1-1	1750	FNL	100	FEL	18S	30E	36	Aliquot SENE	32.7063227	-103.9172305	EDDY	NEW MEXICO	FIRST PRIN	S	STATE	-4260	8206	7818	Y

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

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 Leg #1-2	1752	FNL	1320	FEL	18S	30E	36	Aliquot SWSE	32.7063268	-103.9211969	EDDY	NEW MEXICO	FIRST PRIN	S	STATE	-4260	9426	7818	Y
PPP Leg #1-3	1754	FNL	2637	FWL	18S	30E	36	Aliquot SENW	32.706326	-103.9254904	EDDY	NEW MEXICO	FIRST PRIN	S	STATE	-4260	10746	7818	Y
PPP Leg #1-4	1752	FNL	1319	FWL	18S	30E	36	Aliquot SWNW	32.706325	-103.9297765	EDDY	NEW MEXICO	FIRST PRIN	S	STATE	-4260	12064	7818	Y
PPP Leg #1-5	1750	FNL	0	FEL	18S	30E	35	Aliquot SENE	32.7063238	-103.9340646	EDDY	NEW MEXICO	FIRST PRIN	F	NMNM 093771	-4260	13383	7818	Y
PPP Leg #1-6	1754	FNL	2638	FEL	18S	30E	35	Aliquot SENW	32.7063355	-103.9426394	EDDY	NEW MEXICO	FIRST PRIN	F	NMNM 06245	-4260	16021	7818	Y
EXIT Leg #1	1750	FNL	100	FWL	18S	30E	35	Aliquot SWNW	32.7063446	-103.9508975	EDDY	NEW MEXICO	FIRST PRIN	F	NMNM 06245	-4260	18084	7818	Y
BHL Leg #1	1750	FNL	10	FWL	18S	30E	35	Aliquot SWNW	32.7063461	-103.9511901	EDDY	NEW MEXICO	FIRST PRIN	F	NMNM 06245	-4260	18174	7818	N

C-102	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024
Submit Electronically Via OCD Permitting		Submittal Type: ☒ Initial Submittal ☐ Amended Report ☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name	
30-015-56070	5200	Benson; Bone Spring	
Property Code	Property Name		Well Number
336879	JAKKU 36 FED COM		112H
OGRID No.	Operator Name		Ground Level Elevation
372165	PERMIAN RESOURCES OPERATING, LLC		3558'
Surface Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☒ Federal	

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
A	36	18-S	30-E		647' N	311' E	32.70936	-103.91791	EDDY

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
E	35	18-S	30-E		1750' N	10' W	32.70635	-103.95119	EDDY

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
320	Defining			
Order Numbers.			Well setbacks are under Common Ownership: ☒Yes ☐No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
A	36	18-S	30-E		647' N	311' E	32.70936	-103.91791	EDDY

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
A	36	18-S	30-E		1750' N	100' E	32.70633	-103.91723	EDDY

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
E	35	18-S	30-E		1750' S	100' W	32.70635	-103.95090	EDDY

Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:

OPERATOR CERTIFICATIONS

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.

Jennifer Elrod 1/1/2025

Signature Date

Jennifer Elrod

Printed Name

jennifer.elrod@permianres.com

Email Address

SURVEYOR CERTIFICATIONS

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my beliefs.

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

12/31/2024

Signature and Seal of Professional Surveyor

Certificate Number

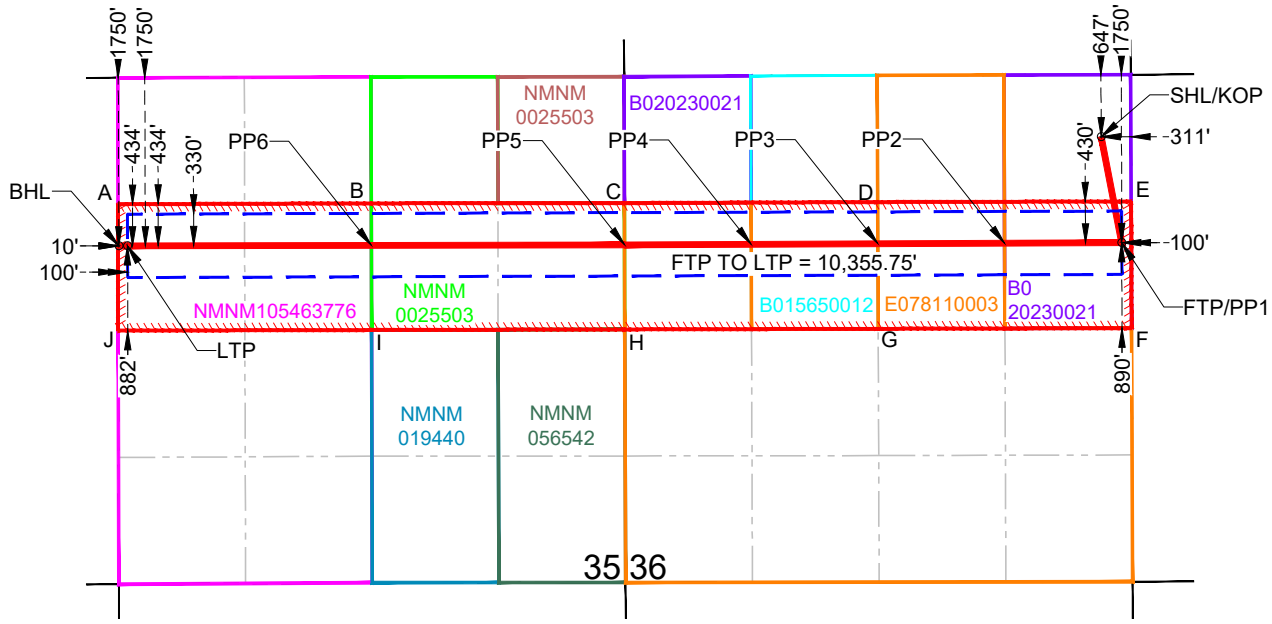
Date of Survey

Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

ACREAGE DEDICATION PLATS

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

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



HSU COORDINATE TABLE		
POINT	N: (83)	E: (83)
A	621345.72	658870.01
B	621355.00	661509.47
C	621357.56	664147.18
D	621368.30	666783.91
E	621374.82	669424.68
F	620054.98	669429.55
G	620048.45	666789.07
H	620041.93	664150.42
I	620035.76	661513.15
J	620029.58	658871.72

SURFACE HOLE LOCATION (SHL)
KICK OFF POINT (KOP)
NEW MEXICO EAST - NAD 83
X=669111.45 LAT.= 32.70936° N
Y=622047.06 LONG.= 103.91791° W
NEW MEXICO EAST - NAD 27
X=627932.24 LAT.= 32.70924° N
Y=621984.03 LONG.= 103.91741° W
647' FNL, 311' FEL - SECTION 36

FIRST TAKE POINT (FTP)
PENETRATION POINT 1 (PP1)
NEW MEXICO EAST - NAD 83
X=669326.27 LAT.= 32.70633° N
Y=620944.43 LONG.= 103.91723° W
NEW MEXICO EAST - NAD 27
X=628147.02 LAT.= 32.70621° N
Y=620881.42 LONG.= 103.91673° W
1750' FNL, 100' FEL - SECTION 36
430' FNL, 100' FEL - LEASE

PENETRATION POINT 3 (PP3)
NEW MEXICO EAST - NAD 83
X=666785.60 LAT.= 32.70633° N
Y=620934.01 LONG.= 103.92549° W
NEW MEXICO EAST - NAD 27
X=625606.35 LAT.= 32.70621° N
Y=620871.02 LONG.= 103.92499° W
1754' FNL, 2637' FWL - SECTION 36
434' FNL, 0' FEL - LEASE

PENETRATION POINT 5 (PP5)
NEW MEXICO EAST - NAD 83
X=664148.25 LAT.= 32.70632° N
Y=620923.20 LONG.= 103.93406° W
NEW MEXICO EAST - NAD 27
X=622968.98 LAT.= 32.70621° N
Y=620860.23 LONG.= 103.93356° W
1750' FNL, 0' FWL - SECTION 36
434' FNL, 0' FWL - LEASE

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=658970.57 LAT.= 32.70635° N
Y=620912.23 LONG.= 103.95090° W
NEW MEXICO EAST - NAD 27
X=617791.28 LAT.= 32.70623° N
Y=620849.30 LONG.= 103.95039° W
1750' FNL, 100' FWL - SECTION 35
434' FNL, 100' FWL - LEASE

PENETRATION POINT 2 (PP2)
NEW MEXICO EAST - NAD 83
X=668106.24 LAT.= 32.70633° N
Y=620939.42 LONG.= 103.92120° W
NEW MEXICO EAST - NAD 27
X=626926.99 LAT.= 32.70621° N
Y=620876.43 LONG.= 103.92069° W
1752' FNL, 1320' FEL - SECTION 36
432' FNL, 0' FWL - LEASE

PENETRATION POINT 4 (PP4)
NEW MEXICO EAST - NAD 83
X=665467.23 LAT.= 32.70633° N
Y=620928.61 LONG.= 103.92978° W
NEW MEXICO EAST - NAD 27
X=624287.97 LAT.= 32.70621° N
Y=620865.63 LONG.= 103.92927° W
1752' FNL, 1319' FWL - SECTION 36
434' FNL, 0' FWL - LEASE

PENETRATION POINT 6 (PP6)
NEW MEXICO EAST - NAD 83
X=661510.69 LAT.= 32.70634° N
Y=620917.61 LONG.= 103.94264° W
NEW MEXICO EAST - NAD 27
X=620331.41 LAT.= 32.70622° N
Y=620854.66 LONG.= 103.94213° W
1754' FNL, 2638' FEL - SECTION 35
437' FNL, 0' FEL - LEASE

BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=658880.57 LAT.= 32.70635° N
Y=620911.90 LONG.= 103.95119° W
NEW MEXICO EAST - NAD 27
X=617701.28 LAT.= 32.70623° N
Y=620848.97 LONG.= 103.95068° W
1750' FNL, 10' FWL - SECTION 35
434' FNL, 10' FWL - LEASE

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

Drilling Plan Data Report
12/20/2024

APD ID: 10400092206 **Submission Date:** 05/10/2023

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
14720093	RUSTLER	3052	535	535	SANDSTONE	USEABLE WATER	N
14720094	TOP SALT	2185	867	867	SALT	NONE	N
14720095	TANSILL	1067	1985	1985	ANHYDRITE, SHALE	NONE	N
14720096	YATES	927	2125	2125	ANHYDRITE, SHALE	NATURAL GAS, OIL	N
14720097	SEVEN RIVERS	562	2490	2490	OTHER : CARBONATE	NATURAL GAS, OIL	N
14720098	QUEEN	-63	3115	3115	OTHER : CARBONATE	NATURAL GAS, OIL	N
14720099	DELAWARE SAND	-913	3965	3965	SANDSTONE	NATURAL GAS, OIL	N
14720100	BONE SPRING LIME	-3043	6095	6095	OTHER, SHALE : CARBONATE	NATURAL GAS, OIL	N
14720101	FIRST BONE SPRING SAND	-4583	7635	7635	OTHER, SANDSTONE, SHALE : CARBONATE	NATURAL GAS, OIL	Y
14720102	2ND BONE SPRING LIME	-5503	8555	8555	OTHER, SANDSTONE, SHALE : CARBONATE	NATURAL GAS, OIL	N
14720103	BONE SPRING 3RD	-6303	9355	9355	OTHER, SANDSTONE, SHALE : CARBONATE	NATURAL GAS, OIL	N
14720104	WOLFCAMP	-6718	9770	9770	OTHER, SANDSTONE, SHALE : CARBONATE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 7918

Equipment: BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing.

Requesting Variance? YES

Variance request: Permian Resources Operating, LLC hereby requests to use a flex hose on H&P choke manifold for this well. The Flex Hose specifications are listed attached on page 8.
Testing Procedure: The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Choke Diagram Attachment:

Choke_Diagram_Attachment_Jakku_36_Fed_Com_112H_20230510093849.pdf

BOP Diagram Attachment:

BOP_Diagram_Attachment_Jakku_36_Fed_Com_112H_20230510093854.pdf

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Section 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 length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	560	0	560	3558	2998	560	J-55	54.5	OTHER - BTC	4.08	2.19	DRY	6.96	DRY	6.54
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3915	0	3915	3557	-357	3915	J-55	36	OTHER - BTC	2.92	1.66	DRY	2.65	DRY	2.34
3	PRODUCTION	8.75	5.5	NEW	API	N	0	8206	0	7818	3557	-4260	8206	P-110	17	OTHER - GEOCONN	1.84	1.92	DRY	2.34	DRY	2.34
4	PRODUCTION	7.875	5.5	NEW	API	N	8206	18174	7818	7818	-4260	-4260	9968	P-110	17	OTHER - GEOCONN	1.84	1.92	DRY	2.34	DRY	2.34

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Worksheet_Jakku_36_Fed_Com_112H_20230510094250.pdf

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Casing Attachments

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Worksheet_Jakku_36_Fed_Com_112H_20230510094330.pdf

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Section 4 - Cement

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	560	450	1.34	14.8	590	50	Class C	Accelerator
INTERMEDIATE	Lead		0	3130	690	2.08	12.7	1420	50	Class C	Salt, Extender, and LCM
INTERMEDIATE	Tail		3130	3915	280	1.34	14.8	370	50	Class C	Accelerator
PRODUCTION	Lead		3415	7435	580	2.41	11.5	1380	40	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Tail		7435	18174	1400	1.73	12.5	2410	25	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Lead		3415	7435	580	2.41	11.5	1380	40	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Tail		7435	18174	1400	1.73	12.5	2410	25	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

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

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

Circulating Medium Table

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	560	WATER-BASED MUD	8.6	9.5							
560	3915	SALT SATURATED	10	10							
3915	8206	OTHER : BRINE	9	10							
8206	18174	OIL-BASED MUD	9	10							

Section 6 - Test, Logging, Coring

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

Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.

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

GAMMA RAY LOG,DIRECTIONAL SURVEY,

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4070 **Anticipated Surface Pressure:** 2350

Anticipated Bottom Hole Temperature(F): 136

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

H2S_Contingency_Plan_Jakku_36_Fed_Com_111H__112H__131H__132H_20230508111216.pdf

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Jakku_36_Fed_State_Com_112H_Plan_1_20230510095925.pdf

Jakku_36_Fed_State_Com_112H_Plan_1_AC_Report_20230510100042.pdf

Other proposed operations facets description:

Please see attached Drilling Plan, including multi-bowl diagram and procedure, proposed WBD, and casing connection data sheet. We also plan to batch drill this well along with offline cementing, see details under variance request below. Permian Resources Operating, LLC requests to use a flex hose on H&P choke manifold for this well. The Flex Hose specifications are attached below.

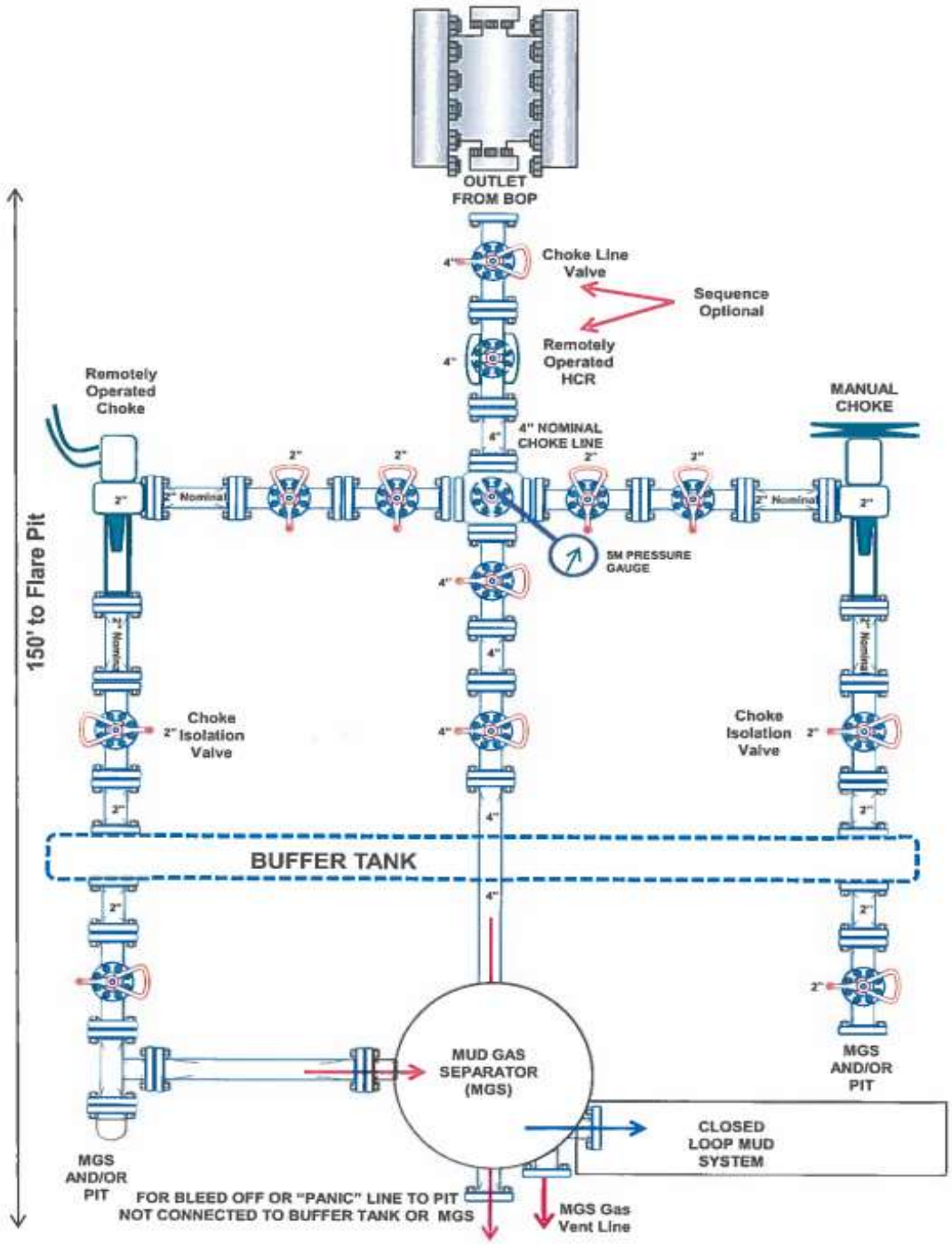
Other proposed operations facets attachment:

Jakku_36_Fed_Com_112H_Drilling_Packet_20230510100238.pdf

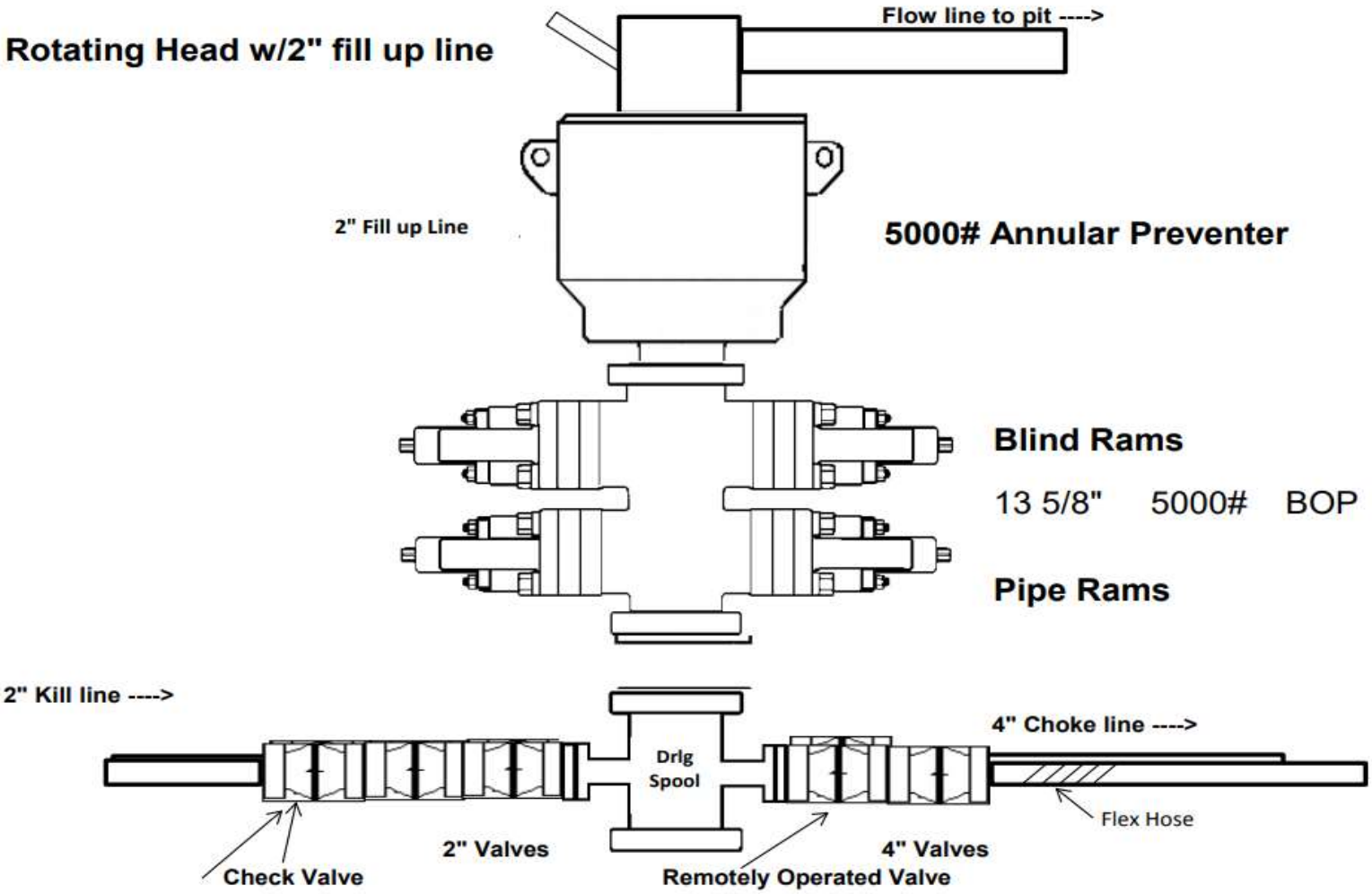
Other Variance attachment:

Other_Variance_Attachments_Jakku_36_Fed_Com_112H_20230510100246.pdf

5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



5,000 psi BOP Schematic



Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
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Intermediate I

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<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
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      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
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Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
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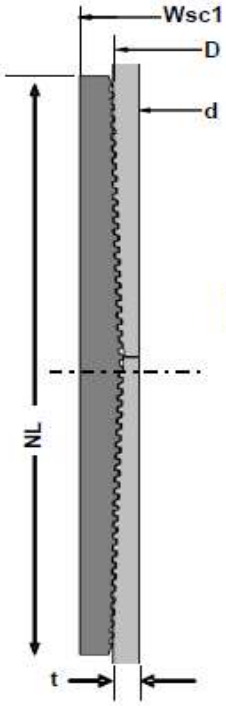
Metal One Corp.	GEOCONN-SC Pipe: SeAH P110RY 95%PBW (SMYS110ksi) *1 Coupling: P110RY (SMYS110ksi) Connection Data Sheet	Page	MAI GC 5.5 17 SeAH P110RY 95%RBW+SC-Cplg6.050 P110RY
Metal One		Date	3-Feb-21
		Rev.	0

Geometry

GEOCONN-SC



Pipe Body

		Imperial		S.I.	
Grade *1	P110RY	-	P110RY	-
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	17.00	lb/ft	25.33	kg/m
Wall Thickness (t)	0.304	in	7.72	mm
Pipe ID (d)	4.892	in	124.26	mm
Drift Dia.	4.767	in	121.08	mm

Connection

Coupling SMYS	110	ksi	110	ksi
SC-Coupling OD (Wsc1)	6.050	in	153.67	mm
Coupling Length (NL)	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	4.96	in^2	3,202	mm^2
Box Critical Area	6.10	in^2	3,937	mm^2
Thread Taper	1 / 16 (3/4" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

		Imperial		S.I.	
S.M.Y.S. *1	546	kips	2,428	kN
M.I.Y.P. *1	11,550	psi	79.66	MPa
Collapse Strength *1	7,480	psi	51.59	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1: SeAH P110RY 95%RBW: SMYS110ksi, MIYP11,550psi

Performance Properties for Connection

Min. Connection Joint Strength	100% of S.M.Y.S.
Min. Compression Yield	100% of S.M.Y.S.
Internal Pressure	100% of M.I.Y.P.
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	>90

Recommended Torque

Min.	10,800	ft-lb	14,600	N-m
Opti.	12,000	ft-lb	16,200	N-m
Max.	13,200	ft-lb	17,800	N-m
Operational Max.	15,600	ft-lb	21,100	N-m

Note : Operational Max. torque can be applied for high torque application

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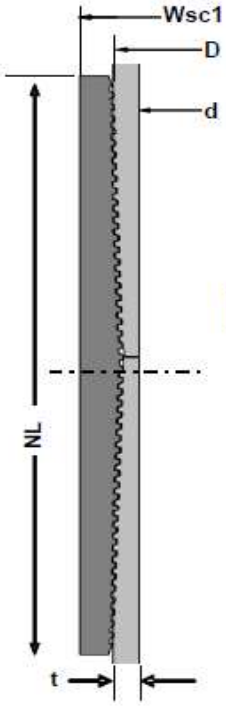

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Max.	13,200	ft-lb	17,800	N-m
Operational Max.	15,600	ft-lb	21,100	N-m

Note : Operational Max. torque can be applied for high torque application

PERMIAN RESOURCES

H_2S CONTINGENCY PLAN

FOR

Permian Resources Corporation

Jakku 36 Fed State Com 111H, 112H, 131H, 132H

Eddy County, New Mexico

03-27-2023
This plan is subject to updating

Permian Resources Corporation	H_2S Contingency Plan Jakku 36 Fed State Com 111H, 112H, 131H, 132H	Eddy County, New Mexico

Table of Contents

Section 1.0 – Introduction

I. Purpose

The purpose of this contingency plan (Plan) is to provide Permian Resources Corporation. (Permian Resources) with an organized plan of action for alerting and protecting Permian Resources employees, the general public, and any potential first responders prior to any intentional release or immediately following the accidental / unintentional release of a potentially hazardous volume / concentration of Hydrogen Sulfide Gas (H2S).

II. Scope & Applicability

This Plan applies to all planned, unplanned, uncontrolled and/or unauthorized releases of hazardous concentrations of H_2S or any associated hazardous byproducts of combustion, occurring at any Permian Resources owned or operated facilities including but not limited to: wells, flowlines, pipelines, tank batteries, production facilities, SWD facilities, compressor stations, gas processing plants, drilling / completions / workover operations, and any other applicable company owned property.

Section 2.0 - Plan Implementation

I. Activation Requirements

In accordance with the requirements of Bureau of Land Management Onshore Order #6 and NMAC 19.15.11, this Plan shall be activated in advance of any authorized, planned, unplanned, uncontrolled, or unauthorized release of a hazardous volume / concentration of H_2S gas, or SO^2, which could potentially adversely impact the workers, general public or the environment.

II. Emergency Evacuation

In the event of an unplanned, uncontrolled, or unauthorized release of a hazardous volume / concentration of H_2S gas, the first priority is to ensure the safety of the workers and general public. Upon discovery and subsequent determination of an applicable release, which cannot be quickly mitigated, immediately by using 911, notify local authorities to begin the process of alerting the general public, evacuate any residents within the Radius of Exposure (ROE), and limit any general public or employee access to any areas within the ROE of the affected facility.

III. Emergency Response Activities

The purpose of emergency response actions is to take steps to quickly mitigate / stop the ongoing release of the hazardous source of H_2S. Upon discovery of any hazardous release, immediately notify Permian Resources management to activate the Emergency Response Team (ERT). Once Permian Resources supervision arrives and assesses the situation, a work plan identifying the proper procedures shall be developed to stop the release.

Section 3.0 - Potential Hazardous Conditions & Response Actions

During a planned or unplanned release of H_2S, there are several hazardous conditions that are presented both to employees, the general public, and emergency responders. These specific hazardous conditions are identified in the tables below.

H2S OPERATING CONDITIONS – RESPONSE ACTIONS TO CONSIDER	✓
H_2S CONDITION 1: POTENTIAL DANGER TO LIFE AND HEALTH –> WARNING SIGN GREEN	
H_2S concentration <10 ppm detected by location monitors	❑
General Actions During Condition 1	❑
Notify Site Supervisor / Permian Resources Person-in-Charge (PIC) of any observed increase in ambient H_2S concentrations	❑
All personnel check safety equipment is in adequate working order & store in accessible location	❑
Sensitize crews with safety meetings.	❑
Limit visitors and non-essential personnel on location	❑
Continuously monitor H_2S concentrations and check calibration of sensors	❑
Ensure H_2S scavenger is on location.	❑
H_2S CONDITION 2: MODERATE DANGER TO LIFE AND HEALTH → WARNING SIGN YELLOW	
H_2S concentration >10 ppm and < 30 ppm in atmosphere detected by location monitors:	❑
General Actions During Condition 2	❑
Sound H_2S alarm and/or display yellow flag.	❑
Account for on-site personnel	❑
Upon sounding of an area or personal H_2S monitor alarm when 10 ppm is reached, proceed to a safe briefing area upwind of the location immediately (see **MA-4**, **Figure 5-1**).	❑
Don proper respiratory protection.	❑
Alert other affected personnel	❑
If trained and safe to do so undertake measures to control source H2S discharge and eliminate possible ignition sources. Initiate Emergency Shutdown procedures as deemed necessary to correct or control the specific situation.	❑
Account for on-site personnel at safe briefing area.	❑
Stay in safe briefing area if not working to correct the situation.	❑
Keep Site Supervisor / Permian Resources PIC informed. Notify applicable government agencies **(Appendix A)** If off-site impact; notify any neighbors within Radius of Exposure **(ROE)**, **Fig 5.11**	❑
Continuously monitor H_2S until readings below 10 ppm.	❑
Evacuated area shall not be re-entered except by trained and authorized personnel utilizing appropriate respiratory protection; or until "all clear" sounded by Permian Resources PIC / Site Supervisor.	

H_2S CONDITION 3: EXTREME DANGER TO LIFE AND HEALTH → WARNING SIGN RED	
> **30 ppm H_2S** concentration in air detected by location monitors: Extreme danger to life	❑
General Actions During Condition 3	❑
Sound H_2S alarm and/or display red flag.	❑
Account for on-site personnel	❑
Move away from H_2S source and get out of the affected area.	❑
Proceed to designated safe briefing area; alert other affected personnel.	❑
Account for personnel at safe briefing area.	❑
If trained and safe to do so undertake measures to control source H2S discharge and eliminate possible ignition sources. Initiate Emergency Shutdown procedures as deemed necessary to correct or control the specific situation.	❑
Notify vehicles or situation and divert all traffic away from location.	❑
Permian Resources Peron-in-Charge will make appropriate community notifications.	❑
Red warning flag must be on display until the situation has been corrected and the Permian Resources Person-in-Charge determines it is safe to resume operations under **Condition 1**.	❑
Notify management of the condition and action taken. If H_2S concentration is increasing and steps to correct the situation are not successful – or at any time if well control is questionable – alert all responsible parties for possible activation of the H_2S Contingency Plan. If well control at the surface is lost, determine if situation warrants igniting the well.	❑
If uncontrolled flow at the surface occurs, the Permian Resources PIC, with approval, if possible, from those coordinating the emergency **(as specified in the site-specific H_2S Contingency Plan)** are responsible for determining if the situation warrants igniting the flow of the uncontrolled well. This decision should be made only as a last resort and in a situation where it is obvious that human life is in danger and there is no hope of controlling the flow under prevailing conditions.	❑
If the flow is ignited, burning H_2S will be converted to sulphur dioxide (SO_2), which is also highly toxic. Do not assume that area is safe after the flow is ignited. If the well is ignited, evacuation of the area is mandatory, because SO_2 will remain in low-lying places under no-wind conditions.	❑
Keep Site Supervisor / Permian Resources PIC informed. Notify applicable government agencies and local law enforcement **(Appendix A)** If off-site impact; notify any neighbours within the Radius of Exposure **(ROE)**, see example in **Figure 5-11.**	❑
Continuously monitor H_2S until readings fall below 10 ppm.	❑

Evacuated area shall not be re-entered except by trained and authorized personnel utilizing appropriate respiratory protection; or until "all clear" sounded by Permian Resources PIC / Site Supervisor.	❑
IF ABOVE ACTIONS CANNOT BE ACCOMPLISHED IN TIME TO PREVENT EXPOSURE TO THE PUBLIC	
Alert public (directly or through appropriate government agencies) who may be subject to potentially harmful exposure levels.	❑
Make recommendations to public officials regarding blocking unauthorized access to the unsafe area and assist as appropriate.	❑
Make recommendations to public officials regarding evacuating the public and assist as appropriate.	❑
Monitor ambient air in the area of exposure (after following abatement measures) to determine when it is safe for re-entry.	❑

Section 4.0 - Notification of H_2S Release Event

I. Local & State Law Enforcement

Prior to the planned / controlled release of a hazardous concentration of H_2S gas or any associated byproducts of the combustion of H_2S gas, notify local law enforcement agencies regarding the contents of this plan.

In the event of the discovery of an unplanned/uncontrolled release of a hazardous concentration of H_2S gas or any associated byproducts of combustion, immediately notify local and/or state law enforcement agencies of the situation and ask for their assistance.

II. General Public

In the event of a planned or unplanned release of a hazardous concentration of H_2S gas or any associated byproducts of combustion, notify local law enforcement agencies and ask for their assistance in alerting the general public and limiting access to any public roads that may be impacted by such a release.

III. New Mexico Oil Conservation Division

The Permian Resources HSE Department will make any applicable notification to the New Mexico OCD regarding any release of a hazardous concentration of H_2S Gas or any associated byproducts of combustion.

IV. New Mexico Environment Department

The Permian Resources HSE Department will make any applicable notifications to the NMED regarding any release of a hazardous concentration of H_2S gas or any associated byproducts of combustion.

V. **Bureau of Land Management**

The Permian Resources Regulatory Department will make any applicable notifications to the BLM regarding any release of a hazardous concentration of H_2S gas or any associated byproducts of

combustion.

Section 5.0 - Emergency Contact List

EMERGENCY CONTACT LIST				
PERMIAN RESOURCES CORPORATION.				
POSITION	**NAME**	**OFFICE**	**CELL**	**ALT PHONE**
Operations				
Operations Superintendent	Rick Lawson		432.530.3188	
TX Operations Superintendent	Josh Graham	432.940.3191	432.940.3191	
NM Operations Superintendent	Manual Mata	432.664.0278	575.408.0216	
Drilling Manager	Jason Fitzgerald	432.315.0146	318.347.3916	
Drilling Engineer	Ronny Hise	432.315.0144	432.770.4786	
Production Manager	Levi Harris	432.219.8568	720.261.4633	
SVP Development Ops	Clayton Smith	720.499.1416	361.215.2494	
SVP Production Ops	Casey McCain	432.695.4239	432.664.6140	
HSE & Regulatory				
H&S Manager	Adam Hicks	720.499.2377	903.426.4556	
Regulatory Manager	Sarah Ferreyros	720.499.1454	720.854.9020	
Environmental Manager	Montgomery Floyd	432-315-0123	432-425-8321	
Environmental Representative				
HSE Consultant	Blake Wisdom		918-323-2343	
Local, State, & Federal Agencies				
Eddy County Sheriff		575-887-7551		911
New Mexico State Highway Patrol		505-757-2297		911
Eunice Fire / EMS		575-628-5450		911
Carlsbad Medical Center		575-887-4100		
Secorp – Safety Contractor	Ricky Stephens		(325)-262-0707	
New Mexico Oil Conservation Division – District 1 Office – Hobbs, NM.		575-393-6161		
New Mexico Environment Department – District III Office – Hobbs, NM		575-397-6910		
New Mexico Oil Conservation Division – Hobbs, NM	24 Hour Emergency	575-393-6161		
Bureau of Land Management – Carlsbad, NM		575-234-5972		
U.S. Fish & Wildlife		502-248-6911		

Section 6.0 – Drilling Location Information

I. Site Safety Information

1. Safe Briefing Area

a. There shall be two areas that will be designated as "SAFE BRIEFING AREAs". If H_2S is detected in concentrations equal to or in excess of 10 ppm all personnel not assigned emergency duties are to assemble in the designated Safe Briefing area for instructions. These two areas shall be positioned in accessible locations to facilitate the availability of self-contained breathing air devices. The briefing areas shall be positioned no less than 250' from the wellhead and in such locations that at least one briefing area will be up-wind from the well at all times.

2. Wind Indicators
   a. 4 Windsocks will be installed at strategic points on the facility.
3. Danger Signs
   a. A warning sign indicating the possible well conditions will be displayed at the location entrance.

DANGER
POISONOUS GAS
HYDROGEN SULFIDE
DO NOT APPROACH IF AMBER LIGHTS ARE FLASHING

4. H_2S Detectors and Alarms
   a. Continuous monitoring type H_2S detectors, capable of sensing a minimum of 5ppm H_2S in air will be located centrally located at the tanks, heater treater, and combustor. Continuous monitoring type SO_2 detector will also be located at the combustor. The automatic H_2S alarm/flashing light will be located at the site entrance and in front of tank battery.

5. Safety Trailer
   a. A safety trailer equipped with an emergency cascade breathing air system with 2 ea. Work/escape packs, a stretcher, 2 OSHA approved full body harnesses, and a 20# Class ABC fire extinguisher shall be available at the site in close proximity to the safe briefing area. The cascade system shall be able to be deployed to the drill floor when needed to provide safe breathing air to the workers as needed.

6. Well Control Equipment
   a. The location shall have a flare line to a remote automatic ignitor and back up flare gun, placed 150' from the wellhead.
   b. The location shall be equipped with a remotely operated choke system and a mud gas separator.

7. Mud Program
   a. Company shall have a mud program that contains sufficient weight and additives to control H_2S.

8. Metallurgy
   a. All drill strings, casing, tubing, wellhead, BOP, spools, kill lines, choke manifold and lines, and valves shall be suitable for anticipated H_2S volume and pressure.

9. Communication
   a. The location shall be equipped with a means of effective communication such as a cell phones, intercoms, satellite phones or landlines.

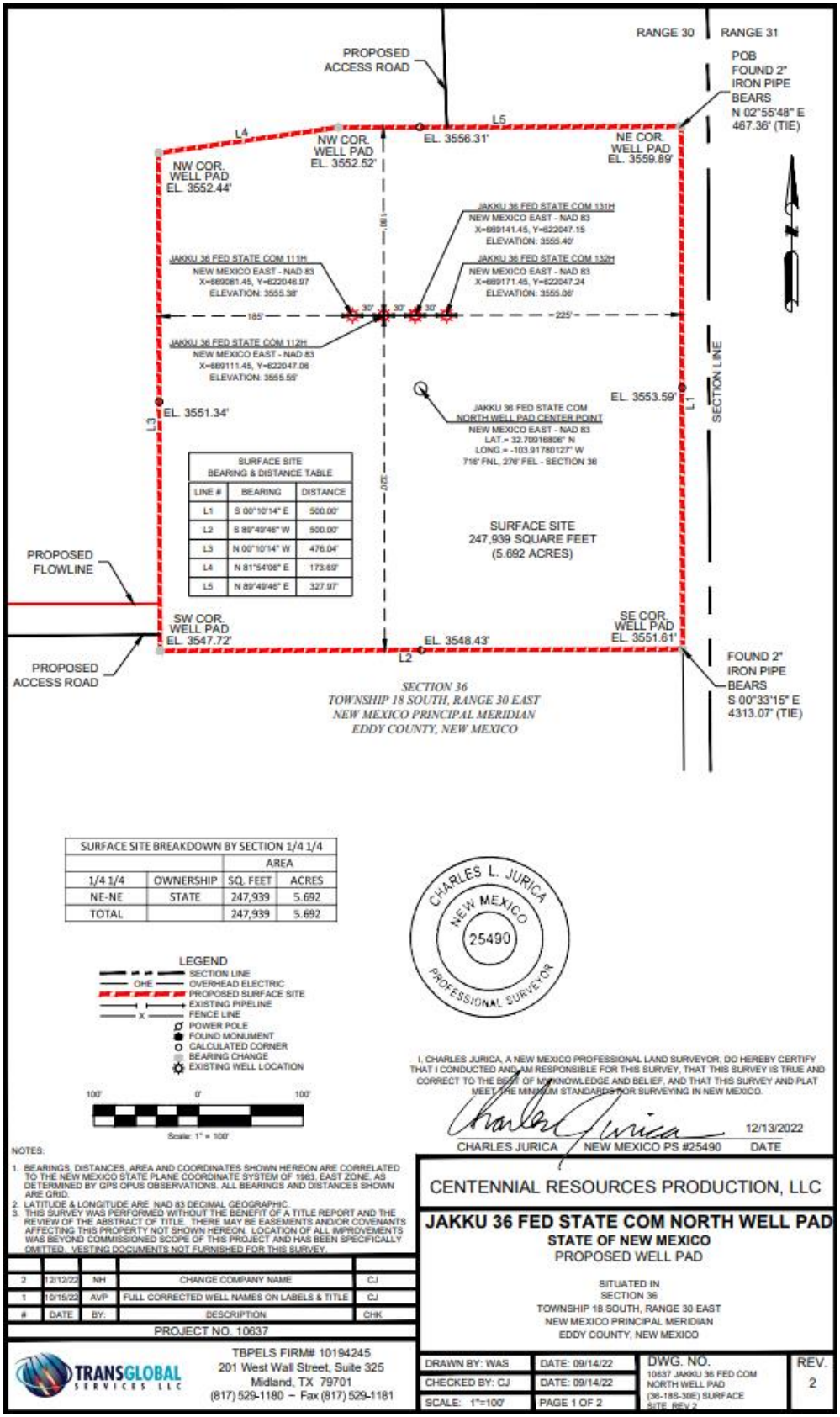
Permian Resources Corporation	H_2S Contingency Plan Jakku 36 Fed State Com 111H, 112H, 131H, 132H	Eddy County, New Mexico

II. Directions to Location

DIRECTIONS TO LOCATION FROM INTERSECTION OF NM 360 AND CR-251 GO NORTH ON CR-251 FOR 1.84 MILES, TURN RIGHT ON CR-250 AND GO EAST 4.2 MILES, TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

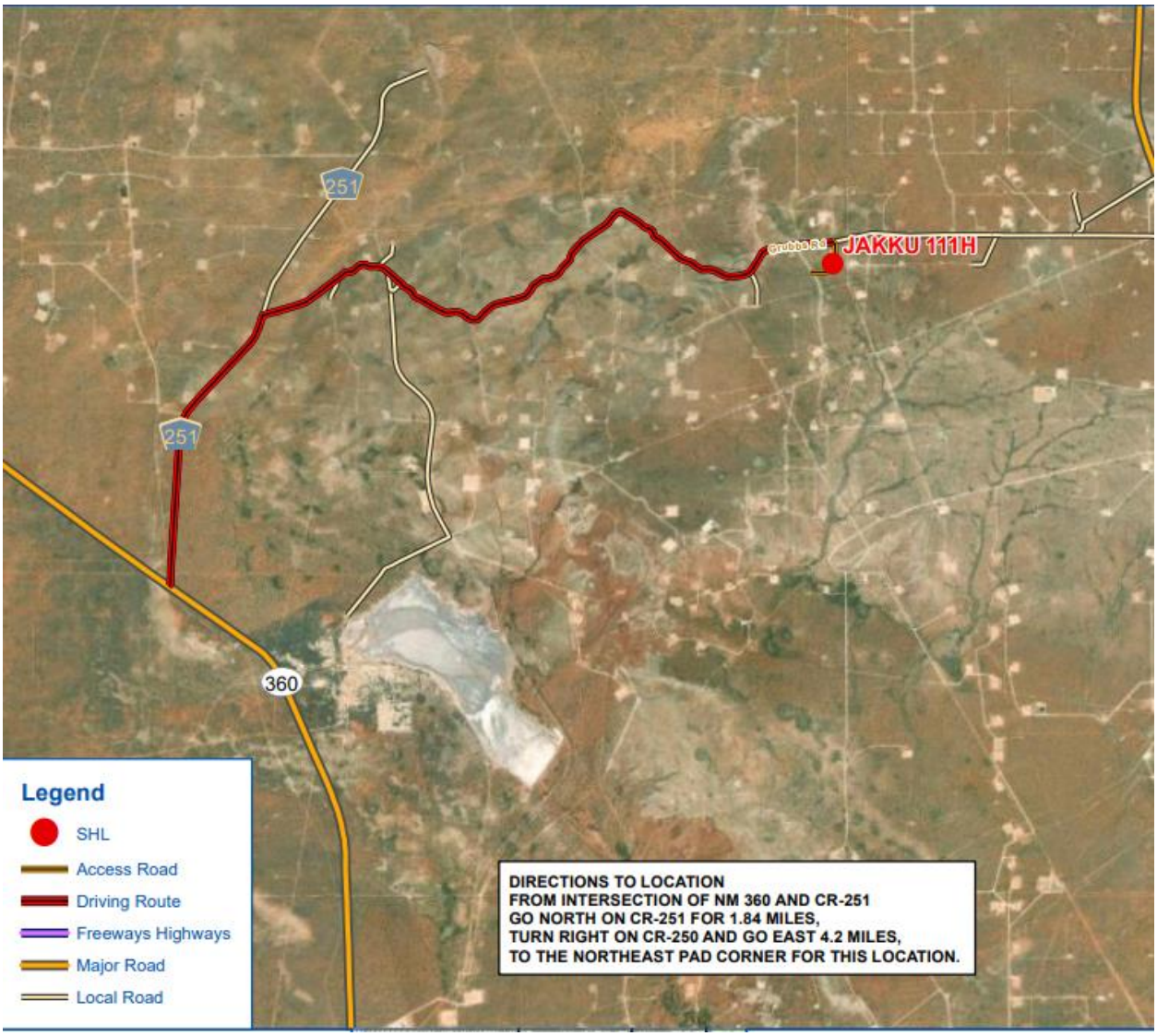
Permian Resources Corporation	H_2S Contingency Plan Jakku 36 Fed State Com 111H, 112H, 131H, 132H	Eddy County, New Mexico

Plat of Location



Permian Resources Corporation	H_2S Contingency Plan Jakku 36 Fed State Com 111H, 112H, 131H, 132H	Eddy County, New Mexico

1. Routes of Ingress & Egress (MAP)

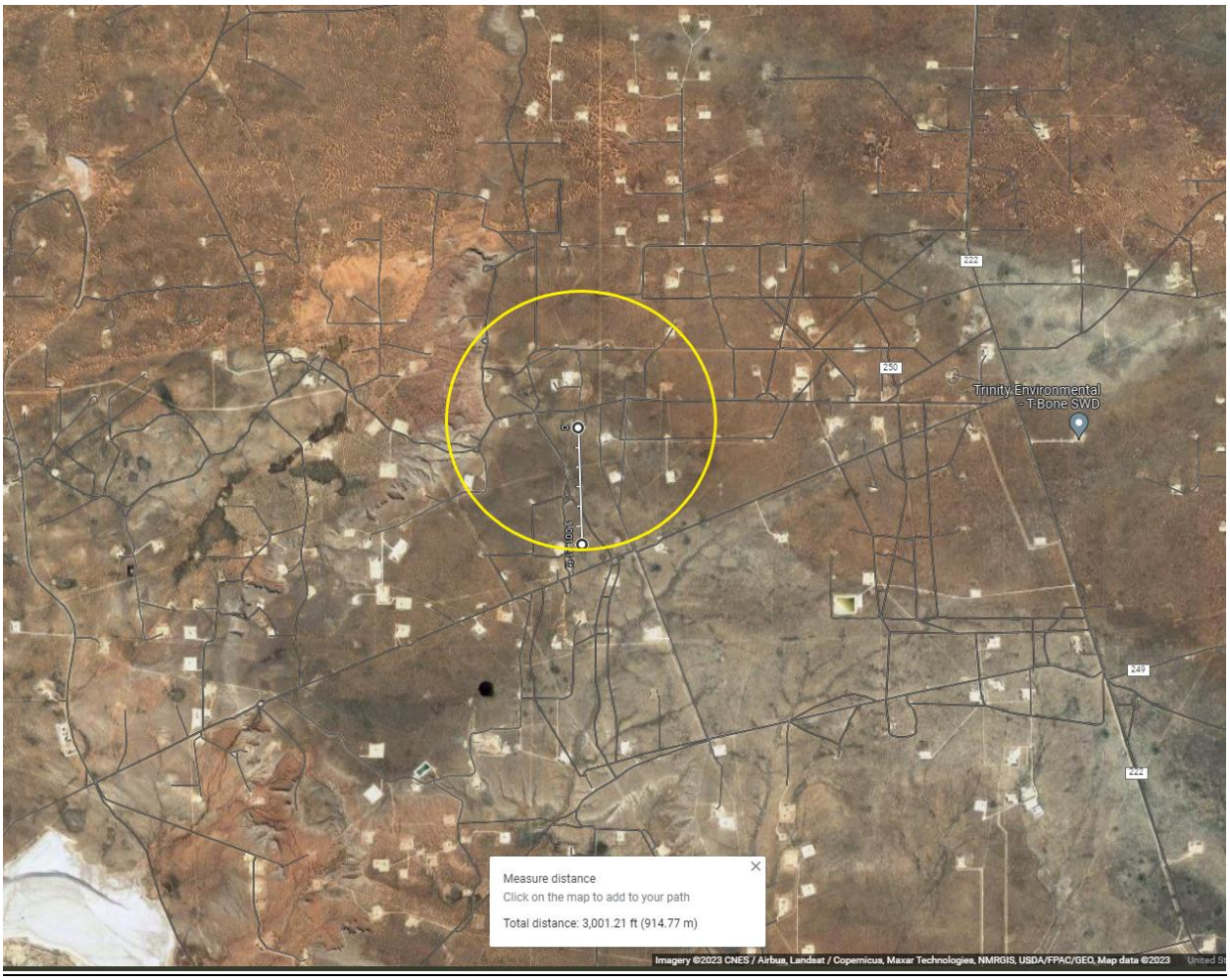


2. Residences in proximity to the 3000' Radius of Exposure (ROE) (MAP)

There are no residences or public gathering places with the 3000' ROE, 100 PPM, 300 PPM, or 500 PPM ROE.

Permian Resources Corporation	H_2S Contingency Plan Jakku 36 Fed State Com 111H, 112H, 131H, 132H	Eddy County, New Mexico

Map of 3000' ROE Perimeter



100 PPM, 300 PPM, & 500 PPM Max ROE under worst case scenario

Enter H_2S in PPM	1500	
Enter Gas flow in mcf/day (maximum worst case conditions)	2500	
500 ppm radius of exposure (public road)	**105**	feet
300 ppm radius of exposure	**146**	feet
100 ppm radius of exposure (public area)	**230**	feet

- Location GPS Coordinates ***Lat: 32.70936064, Long: -103.91801238***

3. Public Roads in proximity of the Radius of Exposure (ROE)

There are no public roads that would be within the 500 PPM ROE. The closest public road is New Mexico County Road 250, which is 500' from the location.

Section 7.0 – Hazard Communication

I. Physical Characteristics of Hydrogen Sulfide Gas

Hydrogen sulfide (H_2S) is a colorless, poisonous gas that is soluble in water. It can be present in crude oils, condensates, natural gas and wastewater streams.

H_2S is heavier than air with a vapor density of 1.189 (air = 1.0); however, H_2S is most often mixed with other gases. These mixtures of H_2S and other gases can be heavier or lighter than air. If the H_2S-containing mixture is heavier, it can collect in low areas such as ditches, ravines, firewalls, and pits; in storage tanks; and in areas of poor ventilation. Please see physical properties in **Table 7.0.**

With H_2S the sense of smell is rapidly lost allowing lethal concentrations to be accumulated without warning. The toxicity of hydrogen sulfide at varying concentrations is indicated in the **Table 7.1.**

Warning: Do not use the mouth-to-mouth method if a victim ingested or inhaled hydrogen sulfide. Give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Table 7.0. Physical Properties of H_2S

Properties of H2S	Description
Vapor Density > 1 = 1.189 Air = 1	▪ H2S gas is slightly heavier than air, which can cause it to settle in low places and build in concentration. ▪ Produced as a mixture with other gases associated with oil and gas production.
Flammable Range 4.3%-46% 43000 ppm – 460000 ppm	▪ H2S can be extremely flammable / explosive when these concentrations are reached by volume in air.

Although H_2S is primarily a respiratory hazard, it is also flammable and forms an explosive mixture at concentrations of 4.3%–46.0% (40,000ppm – 460,000 ppm) by volume in air.

H_2S can be encountered when:

- Venting and draining equipment.
- Opening equipment (separators, pumps, and tanks).
- Opening piping connections ("line breaking").
- Gauging and sampling storage tanks.
- Entering confined spaces.
- Working around wastewater pits, skimmers, and treatment facilities.

II. Human Health Hazards - Toxicological Information

Table 7.1. Hazards & Toxicity

Concentration (ppm)	Symptoms/Effects
0.00011-0.00033 ppm	Typical background concentrations
0.01-1.5 ppm	Odor threshold (when rotten egg smell is first noticeable to some). Odor becomes more offensive at 3-5 ppm. Above 30 ppm, odor described as sweet or sickeningly sweet.
2-5 ppm	Prolonged exposure may cause nausea, tearing of the eyes, headaches or loss of sleep. Airway problems (bronchial constriction) in some asthma patients.
20 ppm	Possible fatigue, loss of appetite, headache, irritability, poor memory, dizziness.
50-100 ppm	Slight conjunctivitis ("gas eye") and respiratory tract irritation after 1 hour. May cause digestive upset and loss of appetite.
100 ppm	Coughing, eye irritation, loss of smell after 2-15 minutes (olfactory fatigue). Altered breathing, drowsiness after 15-30 minutes. Throat irritation after 1 hour. Gradual increase in severity of symptoms over several hours. Death may occur after 48 hours.
100-150 ppm	Loss of smell (olfactory fatigue or paralysis).
200-300 ppm	Marked conjunctivitis and respiratory tract irritation after 1 hour. Pulmonary edema may occur from prolonged exposure.
500-700 ppm	Staggering, collapse in 5 minutes. Serious damage to the eyes in 30 minutes. Death after 30-60 minutes.
700-1000 ppm	Rapid unconsciousness, "knockdown" or immediate collapse within 1 to 2 breaths, breathing stops, death within minutes.
1000-2000 ppm	Nearly instant death

III. Environmental Hazards

H_2S and its associated byproducts from combustion presents a serious environmental hazard. Sulphur Dioxide SO_2 is produced as a constituent of flaring H_2S Gas and can present hazards associated, which are

similar to H_2S. Although SO_2 is heavier than air, it will be picked up by a breeze and carried downwind at elevated temperatures. Since Sulfur Dioxide is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect. The following table indicates the toxic nature of the gas. Please see the attached SDS in Appendix B for reference.

SULFUR DIOXIDE TOXICITY		
Concentration		Effects
$\%SO_2$	PPM	
0.0005	3 to 5	Pungent odor-normally a person can detect SO_2 in this range.
0.0012	12	Throat irritation, coughing, and constriction of the chest tearing and smarting of eyes.
0.15	150	So irritating that it can only be endured for a few minutes.
0.05	500	Causes a sense of suffocation, even with first breath.

Section 8.0 - Regulatory Information

I. OSHA & NIOSH Information

II. Table 8.0. OSHA & NIOSH H_2S Information

PEL, IDLH, TLV	Description
NIOSH PEL 10 PPM	▪ PEL is the Permissible Exposure Limit that an employee may be exposed up to 8 hr / day.
OSHA General Industry Ceiling PEL – 20 PPM	▪ The maximum exposure limit, which cannot be exceeded for any length of time.
IDLH 100 PPM	▪ Immediately Dangerous to Life and Health
Permian Resources PEL 10 PPM	▪ Permian Resources Policy Regarding H2S for employee safety

III. New Mexico OCD & BLM – H_2S Concentration Threshold Requirements

New Mexico NMAC 19.15.11 and Onshore Order #6 identify two Radii of Exposure (ROE) that identify potential danger to the public and require additional compliance measures. Permian Resources is required to install safety devices, establish safety procedures and develop a written H_2S contingency plan for sites where the H_2S concentrations are as follows.

Table 8.1. Calculating H_2S Radius of Exposure

H_2S Radius of Exposure	Description	Control and Equipment Requirements

100 ppm	Distance from a release to where the H_2S concentration in the air will dilute below 100ppm	ROE > 50-ft and includes any part of a "public area" (residence, school, business, etc., or any area that can be expected to be populated). ROE > 3,000-ft
500 ppm	Distance from a release to where the H_2S concentration in the air will dilute below 500ppm	ROE > 50-ft and includes any part of a public road (public roads are tax supported roads or any road used for public access or use)

Calculating H_2S Radius of Exposure

The ROE of an H_2S release is calculated to determine if a potentially hazardous volume of H_2S gas at 100 or 500 parts per million (ppm) is within a regulated distance requiring further action. If information about the concentration of H_2S and the potential gas release volume is known, the location of the Muster Areas will be set, and safety measures will be implemented based on the calculated radius of exposure (ROE). NMAC 19.15.11 – Hydrogen Sulfide Safety defines the ROE as the radius constructed with the gas's point of escape as its center and its length calculated by the following Pasquill-Gifford equations:

To determine the extent of the **100 ppm ROE**:

$x = [(1.589)\ (\text{mole fraction } H_2S)(Q)]^{(.6258)}$.

To determine the extent of the **500 ppm ROE**:

$x = [(0.4546)\ (\text{mole fraction } H_2S)(Q)]^{(.6258)}$.

Table 8.2. Calculating H2S Radius of Exposure

ROE Variable	Description
X =	ROE in feet
Q =	**Max volume of gas released determined to be released in cubic feet per day (ft^3/d)** normalized to standard temperature and pressure, 60°F and 14.65 psia
Mole fraction H_2S =	Mole fraction of H_2S in the gaseous mixture released.

The volume used as the escape rate in determining the ROE is specified in the rule as follows:

- The maximum daily volume rate of gas containing H_2S handled by that system element for which the ROE is calculated.
- For existing gas wells, the current adjusted open-flow rate, or the operator's estimate of the well's capacity to flow against zero back-pressure at the wellhead.

New Mexico Oil Conservation Division & BLM Site Requirements under NMAC 19.15.11 & Onshore Order #6

- Two cleared areas will be designated as Safe Briefing Areas. During an emergency, personnel will assemble in one of these areas for instructions from the Permian Resources Person-in-Charge. Prevailing wind direction should be considered in locating the briefing areas 200' or more on either

side of the well head. One area should offset the other at an angle of 45° to 90° with respect to prevailing wind direction to allow for wind shifts during the work period.

- In the event of either an intentional or accidental releases of hydrogen sulfide, safeguards to protect the general public from the harmful effects of hydrogen sulfide must be in place for operations. A summary of the provisions in each of three H_2S ROE cases is included in **Table 8.3**.
    - **CASE 1** -100 ppm ROE < 50'
    - **CASE 2** - 100 ppm ROE is 50' or greater, but < 3000' and does not penetrate public area.
    - **CASE 3** -100 ppm ROE is 50' or greater and penetrates a public area or 500 ppm ROE includes a public road. Also if 100 ppm ROE > 3000' regardless of public area.

Table 8.3. NMAC 19.15.11 Compliance Requirements Drilling & Production

NMAC 19.15.11 & BLM COMPLIANCE REQUIREMENTS - DRILLING & PRODUCTION			
PROVISION	**CASE 1**	**CASE 2**	**CASE 3**
H_2S Concentration Test	X	X	X
H-9	X	X	X
Training	X	X	X
District Office Notification	X	X	X
Drill Stem Tests Restricted	X*	X*	X
BOP Test	X*	X*	X
Materials		X	X
Warning and Marker		X	X
Security		X	X
Contingency Plan			X
Control and Equipment Safety			X
Monitors		X**	X**
Mud (ph Control or Scavenger)			X*
Wind Indicators		X**	X
Protective Breathing Equipment		X**	X
Choke Manifold, Secondary Remote Control, and Mud-Gas Separator			X
Flare Stacks			X*

Section 9.0 - Training Requirements

Training

The following elements are considered a minimum level of training for personnel assigned to operations who may encounter H_2S as part of routine or maintenance work.

- The hazards, characteristics, and properties of hydrogen sulfide (H_2S) and (SO_2).
- Sources of H_2S and SO_2.
- Proper use of H_2S and SO_2 detection methods used at the workplace.
- Recognition of, and proper response to, the warning signals initiated by H_2S and SO_2 detection systems in use at the workplace.
- Symptoms of H_2S exposure; symptoms of SO_2 exposure
- Rescue techniques and first aid to victims of H_2S and SO_2 exposure.

- Proper use and maintenance of breathing equipment for working in H_2S and SO_2 atmospheres, as appropriate theory and hands-on practice, with demonstrated proficiency (29 *CFR* Part 1910.134).
- Workplace practices and relevant maintenance procedures that have been established to protect personnel from the hazards of H_2S and SO_2.
- Wind direction awareness and routes of egress.
- Confined space and enclosed facility entry procedures (if applicable).
- Emergency response procedures that have been developed for the facility or operations.
- Locations and use of safety equipment.
- Locations of safe briefing areas.

Refresher training will be conducted annually.

Section 10.0 - Personal Protective Equipment

I. Personal H_2S Monitors

All personnel engaged in planned or unplanned work activity to mitigate the release of a hazardous concentration of H_2S shall have on their person a personal H2S monitor.

II. Fixed H_2S Detection and Alarms

- 4 channel H_2S monitor
- 4 wireless H_2S monitors
- H_2S alarm system (Audible/Red strobe)
- Personal gas monitor for each person on location
- Gas sample tubes

III. Flame Resistant Clothing

All personnel engaged in planned or unplanned work activity associated with this Plan shall have on the appropriate level of FRC clothing.

IV. Respiratory Protection

The following respiratory protection equipment shall be available at each drilling location.

- Working cascade system available on rig floor and pit system & 750' of air line hose
- Four (4) breathing air manifolds
- Four (4) 30-minute rescue packs
- Five (5) work/Escape units
- Five (5) escape units
- One (1) filler hose for the work/escape/rescue units

Supplied air (airline or SCBA) respiratory protection against hydrogen sulfide exposure is required in the following situations:

- When routine or maintenance work tasks involve exposure to H_2S concentrations of 10 ppm or greater.
- When a fixed location area monitor alarms, and re-entry to the work area is required to complete a job.
- When confined spaces are to be entered without knowledge of H_2S levels present, or if initial measurements are to be taken of H_2S levels.
- During rescue of employees suspected of H_2S overexposure.

- For specific tasks identified with significant exposure potential and outlined in local program guidelines.
- All respiratory equipment for hydrogen sulfide must be of the supplied-air type, equipped with pressure-demand regulators and operated in the pressure-demand mode only. This is the only type of respiratory protection recommended for hydrogen sulfide application. Equipment should be approved by NIOSH/MSHA or other recognized national authority as required. If airline units are used, a five-minute egress bottle should also be carried.
- Gas masks or other air-purifying respirators MUST NEVER BE USED FOR HYDROGEN SULFIDE due to the poor warning properties of the gas.
- Use of respiratory protection should be accompanied by a written respiratory protection program.

Appendix A
H_2S SDS

PRAXAIR

Hydrogen sulfide

Safety Data Sheet E-4611

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 10-15-1979 Revision date: 08-10-2016 Supersedes: 10-15-2013

SECTION 1: Identification

1.1. Product identifier

Product form	:	Substance
Name	:	Hydrogen sulfide
CAS No	:	7783-06-4
Formula	:	H2S
Other means of identification	:	Hydrogen sulfide
Product group	:	Core Products

1.2. Recommended use and restrictions on use

Recommended uses and restrictions	:	Industrial use Use as directed

1.3. Supplier

Praxair Canada inc.
1200 – 1 City Centre Drive
Mississauga - Canada L5B 1M2
T 1-905-803-1600 - F 1-905-803-1682
www.praxair.ca

1.4. Emergency telephone number

Emergency number	:	1-800-363-0042 Call emergency number 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier or Praxair sales representative.

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-CA classification

Flam. Gas 1	H220
Liquefied gas	H280
Acute Tox. 2 (Inhalation: gas)	H330
STOT SE 3	H335

2.2. GHS Label elements, including precautionary statements

GHS-CA labelling

Hazard pictograms :

GHS02 GHS04 GHS06 GHS07

Signal word : DANGER

Hazard statements : **EXTREMELY FLAMMABLE GAS**
CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
FATAL IF INHALED
MAY CAUSE RESPIRATORY IRRITATION
MAY FORM EXPLOSIVE MIXTURES WITH AIR
SYMPTOMS MAY BE DELAYED
EXTENDED EXPOSURE TO GAS REDUCES THE ABILITY TO SMELL SULFIDES

Precautionary statements : Do not handle until all safety precautions have been read and understood
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

PRAXAIR

Hydrogen sulfide

Safety Data Sheet E-4611

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 10-15-1979 Revision date: 08-10-2016 Supersedes: 10-15-2013

Do not breathe gas
Use and store only outdoors or in a well-ventilated area
Avoid release to the environment
Wear protective gloves, protective clothing, eye protection, respiratory protection, and/or face protection
Leaking gas fire: Do not extinguish, unless leak can be stopped safely
In case of leakage, eliminate all ignition sources
Store locked up
Dispose of contents/container in accordance with container Supplier/owner instructions
Protect from sunlight when ambient temperature exceeds 52°C (125°F)
Close valve after each use and when empty
Do not open valve until connected to equipment prepared for use
When returning cylinder, install leak tight valve outlet cap or plug
Do not depend on odour to detect the presence of gas

2.3. Other hazards

Other hazards not contributing to the classification : Contact with liquid may cause cold burns/frostbite.

2.4. Unknown acute toxicity (GHS-CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	CAS No.	% (Vol.)	Common Name (synonyms)
Hydrogen sulfide (Main constituent)	(CAS No) 7783-06-4	100	Hydrogen sulfide (H2S) / Hydrogen sulphide / Sulfur hydride / Sulfureted hydrogen / Dihydrogen sulphide / Hydrogensulfide

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.

First-aid measures after skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Obtain medical assistance. Treat with corticosteroid spray as soon as possible after inhalation.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog. Use extinguishing media appropriate for surrounding fire.

5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Fire hazard	:	**EXTREMELY FLAMMABLE GAS**. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.
Explosion hazard	:	**EXTREMELY FLAMMABLE GAS**. Forms explosive mixtures with air and oxidizing agents.
Reactivity	:	No reactivity hazard other than the effects described in sub-sections below.
Reactivity in case of fire	:	No reactivity hazard other than the effects described in sub-sections below.

5.4. Special protective equipment and precautions for fire-fighters

Firefighting instructions	:	**DANGER! Toxic, flammable liquefied gas** Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and local fire code regulations.
Special protective equipment for fire fighters	:	Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Other information	:	Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by TC.).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	**DANGER! Toxic, flammable liquefied gas** . Forms explosive mixtures with air and oxidizing agents. Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shut off flow if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable vapors may spread from leak and could explode if reignited by sparks or flames. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device.

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up	:	Try to stop release. Reduce vapour with fog or fine water spray. Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Reference to other sections

For further information refer to section 8: Exposure controls/personal protection

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Leak-check system with soapy water; never use a flame All piped systems and associated equipment must be grounded Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g, NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrogen sulfide (7783-06-4)		
USA - ACGIH	ACGIH TLV-TWA (ppm)	1 ppm
USA - ACGIH	ACGIH TLV-STEL (ppm)	5 ppm
USA - OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm
Canada (Quebec)	VECD (mg/m³)	21 mg/m³
Canada (Quebec)	VECD (ppm)	15 ppm
Canada (Quebec)	VEMP (mg/m³)	14 mg/m³
Canada (Quebec)	VEMP (ppm)	10 ppm
Alberta	OEL Ceiling (mg/m³)	21 mg/m³
Alberta	OEL Ceiling (ppm)	15 ppm
Alberta	OEL TWA (mg/m³)	14 mg/m³
Alberta	OEL TWA (ppm)	10 ppm
British Columbia	OEL Ceiling (ppm)	10 ppm
Manitoba	OEL STEL (ppm)	5 ppm
Manitoba	OEL TWA (ppm)	1 ppm
New Brunswick	OEL STEL (mg/m³)	21 mg/m³
New Brunswick	OEL STEL (ppm)	15 ppm
New Brunswick	OEL TWA (mg/m³)	14 mg/m³
New Brunswick	OEL TWA (ppm)	10 ppm
New Foundland & Labrador	OEL STEL (ppm)	5 ppm
New Foundland & Labrador	OEL TWA (ppm)	1 ppm
Nova Scotia	OEL STEL (ppm)	5 ppm
Nova Scotia	OEL TWA (ppm)	1 ppm
Nunavut	OEL Ceiling (mg/m³)	28 mg/m³
Nunavut	OEL Ceiling (ppm)	20 ppm
Nunavut	OEL STEL (mg/m³)	21 mg/m³
Nunavut	OEL STEL (ppm)	15 ppm
Nunavut	OEL TWA (mg/m³)	14 mg/m³
Nunavut	OEL TWA (ppm)	10 ppm
Northwest Territories	OEL STEL (ppm)	15 ppm

Hydrogen sulfide (7783-06-4)		
Northwest Territories	OEL TWA (ppm)	10 ppm
Ontario	OEL STEL (ppm)	15 ppm
Ontario	OEL TWA (ppm)	10 ppm
Prince Edward Island	OEL STEL (ppm)	5 ppm
Prince Edward Island	OEL TWA (ppm)	1 ppm
Québec	VECD (mg/m³)	21 mg/m³
Québec	VECD (ppm)	15 ppm
Québec	VEMP (mg/m³)	14 mg/m³
Québec	VEMP (ppm)	10 ppm
Saskatchewan	OEL STEL (ppm)	15 ppm
Saskatchewan	OEL TWA (ppm)	10 ppm
Yukon	OEL STEL (mg/m³)	27 mg/m³
Yukon	OEL STEL (ppm)	15 ppm
Yukon	OEL TWA (mg/m³)	15 mg/m³
Yukon	OEL TWA (ppm)	10 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Use corrosion-resistant equipment. Use an explosion-proof local exhaust system. Local exhaust and general ventilation must be adequate to meet exposure standards. MECHANICAL (GENERAL): **Inadequate - Use only in a closed system.** Use explosion proof equipment and lighting.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment : Safety glasses. Face shield. Gloves.

Hand protection : Wear work gloves when handling containers. Wear heavy rubber gloves where contact with product may occur.

Eye protection : Wear goggles and a face shield when transfilling or breaking transfer connections. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

Respiratory protection : **Respiratory protection:** Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections. Standard EN 511 - Cold insulating gloves.

Other information : **Other protection** : Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. For working with flammable and oxidizing materials, consider the use of flame resistant anti-static safety clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Appearance : Colorless gas. Colorless liquid at low temperature or under high pressure.

Molecular mass : 34 g/mol

Colour : Colourless.

Odour : Odour can persist. Poor warning properties at low concentrations. Rotten eggs.

Odour threshold : Odour threshold is subjective and inadequate to warn of overexposure.

pH	:	Not applicable.
pH solution	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	Not applicable.
Melting point	:	-86 °C
Freezing point	:	-82.9 °C
Boiling point	:	-60.3 °C
Flash point	:	Not applicable.
Critical temperature	:	100.4 °C
Auto-ignition temperature	:	260 °C
Decomposition temperature	:	No data available
Vapour pressure	:	1880 kPa
Vapour pressure at 50 °C	:	No data available
Critical pressure	:	8940 kPa
Relative vapour density at 20 °C	:	>=
Relative density	:	No data available
Relative density of saturated gas/air mixture	:	No data available
Density	:	No data available
Relative gas density	:	1.2
Solubility	:	Water: 3980 mg/l
Log Pow	:	Not applicable.
Log Kow	:	Not applicable.
Viscosity, kinematic	:	Not applicable.
Viscosity, dynamic	:	Not applicable.
Viscosity, kinematic (calculated value) (40 °C)	:	No data available
Explosive properties	:	Not applicable.
Oxidizing properties	:	None.
Flammability (solid, gas)	:	4.3 - 46 vol %

9.2. Other information

Gas group	:	Liquefied gas
Additional information	:	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	:	No reactivity hazard other than the effects described in sub-sections below.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	May react violently with oxidants. Can form explosive mixture with air.
Conditions to avoid	:	Avoid moisture in installation systems. Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Incompatible materials	:	Ammonia. Bases. Bromine pentafluoride. Chlorine trifluoride. chromium trioxide. (and heat). Copper. (powdered). Fluorine. Lead. Lead oxide. Mercury. Nitric acid. Nitrogen trifluoride. nitrogen sulfide. Organic compounds. Oxidizing agents. Oxygen difluoride. Rubber. Sodium. (and moisture). Water.
Hazardous decomposition products	:	Thermal decomposition may produce : Sulfur. Hydrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified

Acute toxicity (inhalation) : Inhalation:gas: FATAL IF INHALED.

Hydrogen sulfide (\f)7783-06-4	
LC50 inhalation rat (mg/l)	0.99 mg/l (Exposure time: 1 h)
LC50 inhalation rat (ppm)	356 ppm/4h
ATE CA (gases)	356.00000000 ppmv/4h
ATE CA (vapours)	0.99000000 mg/l/4h
ATE CA (dust,mist)	0.99000000 mg/l/4h

Skin corrosion/irritation : Not classified
pH: Not applicable.

Serious eye damage/irritation : Not classified
pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : MAY CAUSE RESPIRATORY IRRITATION.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : VERY TOXIC TO AQUATIC LIFE.

Hydrogen sulfide (7783-06-4)	
LC50 fish 1	0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
LC50 fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

12.2. Persistence and degradability

Hydrogen sulfide (7783-06-4)	
Persistence and degradability	Not applicable for inorganic gases.

12.3. Bioaccumulative potential

Hydrogen sulfide (7783-06-4)	
BCF fish 1	(no bioaccumulation expected)
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No data available.

12.4. Mobility in soil

Hydrogen sulfide (7783-06-4)	
Mobility in soil	No data available.
Log Pow	Not applicable.
Log Kow	Not applicable.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Other adverse effects : May cause pH changes in aqueous ecological systems.

Effect on the ozone layer : None

Effect on global warming : No known effects from this product

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Do not attempt to dispose of residual or unused quantities. Return container to supplier.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG

UN-No. (TDG)	: UN1053
TDG Primary Hazard Classes	: 2.3 - Class 2.3 - Toxic Gas.
TDG Subsidiary Classes	: 2.1
Proper shipping name	: HYDROGEN SULPHIDE
ERAP Index	: 500
Explosive Limit and Limited Quantity Index	: 0
Passenger Carrying Ship Index	: Forbidden
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: Forbidden

14.3. Air and sea transport

IMDG

UN-No. (IMDG)	: 1053
Proper Shipping Name (IMDG)	: HYDROGEN SULPHIDE
Class (IMDG)	: 2 - Gases
MFAG-No	: 117

IATA

UN-No. (IATA)	: 1053
Proper Shipping Name (IATA)	: Hydrogen sulphide
Class (IATA)	: 2

SECTION 15: Regulatory information

15.1. National regulations

Hydrogen sulfide (7783-06-4)
Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

Hydrogen sulfide (7783-06-4)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on INSQ (Mexican national Inventory of Chemical Substances)

SECTION 16: Other information

Date of issue	: 15/10/1979
Revision date	: 10/08/2016
Supersedes	: 15/10/2013

Indication of changes:
Training advice : Users of breathing apparatus must be trained. Ensure operators understand the toxicity hazard. Ensure operators understand the flammability hazard.

PRAXAIR

Hydrogen sulfide

Safety Data Sheet E-4611

according to the Hazardous Products Regulation (February 11, 2015)

Date of issue: 10-15-1979 Revision date: 08-10-2016 Supersedes: 10-15-2013

Other information	: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair Canada Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair Canada Inc, it is the user's obligation to determine the conditions of safe use of the product. Praxair Canada Inc, SDSs are furnished on sale or delivery by Praxair Canada Inc, or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.ca. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write Praxair Canada Inc, (Phone: 1-888-257-5149; Address: Praxair Canada Inc, 1 City Centre Drive, Suite 1200, Mississauga, Ontario, L5B 1M2).

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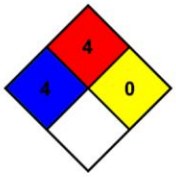
NFPA health hazard	: 4 - Very short exposure could cause death or serious residual injury even though prompt medical attention was given.
NFPA fire hazard	: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)
Physical	: 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

SDS Canada (GHS) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Appendix B
SO_2 SDS

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Safety Data Sheet

Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
SULFUR DIOXIDE
Synonyms
MTG MSDS 80; SULFUROUS ACID ANHYDRIDE; SULFUROUS OXIDE; SULPHUR DIOXIDE; SULFUROUS ANHYDRIDE; FERMENTICIDE LIQUID; SULFUR DIOXIDE(SO2); SULFUR OXIDE; SULFUR OXIDE(SO2)
Chemical Family
inorganic, gas
Product Description
Classification determined in accordance with Compressed Gas Association standards.
Product Use
Industrial and Specialty Gas Applications.
Restrictions on Use
None known.
Details of the supplier of the safety data sheet
MATHESON TRI-GAS, INC.
3 Mountainview Road
Warren, NJ 07059
General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Gases Under Pressure - Liquefied gas
Acute Toxicity - Inhalation - Gas - Category 3
Skin Corrosion/Irritation - Category 1B
Serious Eye Damage/Eye Irritation - Category 1
Simple Asphyxiant
GHS Label Elements
Symbol(s)

Signal Word
Danger
Hazard Statement(s)
Contains gas under pressure; may explode if heated.
Toxic if inhaled.
Causes severe skin burns and eye damage.
May displace oxygen and cause rapid suffocation.
Precautionary Statement(s)
Prevention
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

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Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

Wash thoroughly after handling.
Do not breathe dusts or mists.

Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Immediately call a POISON CENTER or doctor.
Specific treatment (see label).

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards

Contact with liquified gas may cause frostbite.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7446-09-5	Sulfur dioxide	100.0

Section 4 - FIRST AID MEASURES

Inhalation

IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical attention.

Skin

IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). If warm water is not available, gently wrap affected parts in blankets. DO NOT induce vomiting. Get immediate medical attention.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Ingestion

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get immediate medical attention.

Most Important Symptoms/Effects

Acute

Toxic if inhaled, frostbite, suffocation, respiratory tract burns, skin burns, eye burns

Delayed

No information on significant adverse effects.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Note to Physicians

For inhalation, consider oxygen.

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Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

carbon dioxide, regular dry chemical, Large fires: Use regular foam or flood with fine water spray.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Negligible fire hazard.

Hazardous Combustion Products

sulfur oxides

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet. Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Do not get in eyes, on skin, or on clothing. Do not breathe gas, fumes, vapor, or spray. Wash hands thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Keep only in original container. Avoid release to the environment.

Conditions for Safe Storage, Including any Incompatibilities

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Protect from sunlight.

Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Keep separated from incompatible substances.

Incompatible Materials

bases, combustible materials, halogens, metal carbide, metal oxides, metals, oxidizing materials, peroxides, reducing agents

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Sulfur dioxide	**7446-09-5**
ACGIH:	0.25 ppm STEL

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Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

NIOSH:	2 ppm TWA ; 5 mg/m3 TWA
	5 ppm STEL ; 13 mg/m3 STEL
	100 ppm IDLH
OSHA (US):	5 ppm TWA ; 13 mg/m3 TWA
Mexico:	0.25 ppm STEL [PPT-CT]

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)
There are no biological limit values for any of this product's components.
Engineering Controls
Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.
Individual Protection Measures, such as Personal Protective Equipment
Eye/face protection
Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin Protection
Wear appropriate chemical resistant clothing. Wear chemical resistant clothing to prevent skin contact.
Respiratory Protection
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Glove Recommendations
Wear appropriate chemical resistant gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	**Physical State**	gas
Odor	irritating odor	**Color**	colorless
Odor Threshold	3 - 5 ppm	**pH**	(Acidic in solution)
Melting Point	-73 °C (-99 °F)	**Boiling Point**	-10 °C (14 °F)
Boiling Point Range	Not available	**Freezing point**	Not available
Evaporation Rate	>1 (Butyl acetate = 1)	**Flammability (solid, gas)**	Not available
Autoignition Temperature	Not available	**Flash Point**	(Not flammable)
Lower Explosive Limit	Not available	**Decomposition temperature**	Not available
Upper Explosive Limit	Not available	**Vapor Pressure**	2432 mmHg @ 20 °C
Vapor Density (air=1)	2.26	**Specific Gravity (water=1)**	1.462 at -10 °C

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Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

Water Solubility	22.8 % (@ 0 °C)	**Partition coefficient: n-octanol/water**	Not available
Viscosity	Not available	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Density**	Not available
Physical Form	liquified gas	**Molecular Formula**	S-O2
Molecular Weight	64.06		

Solvent Solubility
Soluble
alcohol, acetic acid, sulfuric acid, ether, chloroform, Benzene, sulfuryl chloride, nitrobenzenes, Toluene, acetone

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.
Chemical Stability
Stable at normal temperatures and pressure.
Possibility of Hazardous Reactions
Will not polymerize.
Conditions to Avoid
Minimize contact with material. Containers may rupture or explode if exposed to heat.
Incompatible Materials
bases, combustible materials, halogens, metal carbide, metal oxides, metals, oxidizing materials, peroxides, reducing agents
Hazardous decomposition products
oxides of sulfur

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Inhalation
Toxic if inhaled. Causes damage to respiratory system, burns, difficulty breathing
Skin Contact
skin burns
Eye Contact
eye burns
Ingestion
burns, nausea, vomiting, diarrhea, stomach pain
Acute and Chronic Toxicity
Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Sulfur dioxide (7446-09-5)
Inhalation LC50 Rat 965 - 1168 ppm 4 h
Product Toxicity Data
Acute Toxicity Estimate
No data available.
Immediate Effects

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Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

Toxic if inhaled, frostbite, suffocation, respiratory tract burns, skin burns, eye burns

Delayed Effects
No information on significant adverse effects.

Irritation/Corrosivity Data
respiratory tract burns, skin burns, eye burns

Respiratory Sensitization
No data available.

Dermal Sensitization
No data available.

Component Carcinogenicity

Sulfur dioxide	**7446-09-5**
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 54 [1992] (Group 3 (not classifiable))

Germ Cell Mutagenicity
No data available.

Tumorigenic Data
No data available

Reproductive Toxicity
No data available.

Specific Target Organ Toxicity - Single Exposure
No target organs identified.

Specific Target Organ Toxicity - Repeated Exposure
No target organs identified.

Aspiration hazard
Not applicable.

Medical Conditions Aggravated by Exposure
respiratory disorders

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components.

Persistence and Degradability
No data available.

Bioaccumulative Potential
No data available.

Mobility
No data available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: SULFUR DIOXIDE

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Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

Hazard Class: 2.3
UN/NA #: UN1079
Required Label(s): 2.3

IMDG Information:
Shipping Name: SULPHUR DIOXIDE
Hazard Class: 2.3
UN#: UN1079
Required Label(s): 2.3

TDG Information:
Shipping Name: SULFUR DIOXIDE
Hazard Class: 2.3
UN#: UN1079
Required Label(s): 2.3

International Bulk Chemical Code
This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Sulfur dioxide	**7446-09-5**
SARA 302:	500 lb TPQ
OSHA (safety):	1000 lb TQ (Liquid)
SARA 304:	500 lb EPCRA RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories
Gas Under Pressure; Acute toxicity; Skin Corrosion/Irritation; Serious Eye Damage/Eye Irritation; Simple Asphyxiant

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Sulfur dioxide	**7446-09-5**	Yes	Yes	Yes	Yes	Yes

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

WARNING

This product can expose you to chemicals including Sulfur dioxide , which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

MATHESON
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Safety Data Sheet

Material Name: SULFUR DIOXIDE **SDS ID: MAT22290**

Sulfur dioxide	**7446-09-5**
Repro/Dev. Tox	developmental toxicity , 7/29/2011

Component Analysis - Inventory
Sulfur dioxide (7446-09-5)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings
Health: 3 Fire: 0 Instability: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
SDS update: 02/10/2016

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit;

PERMIAN RESOURCES

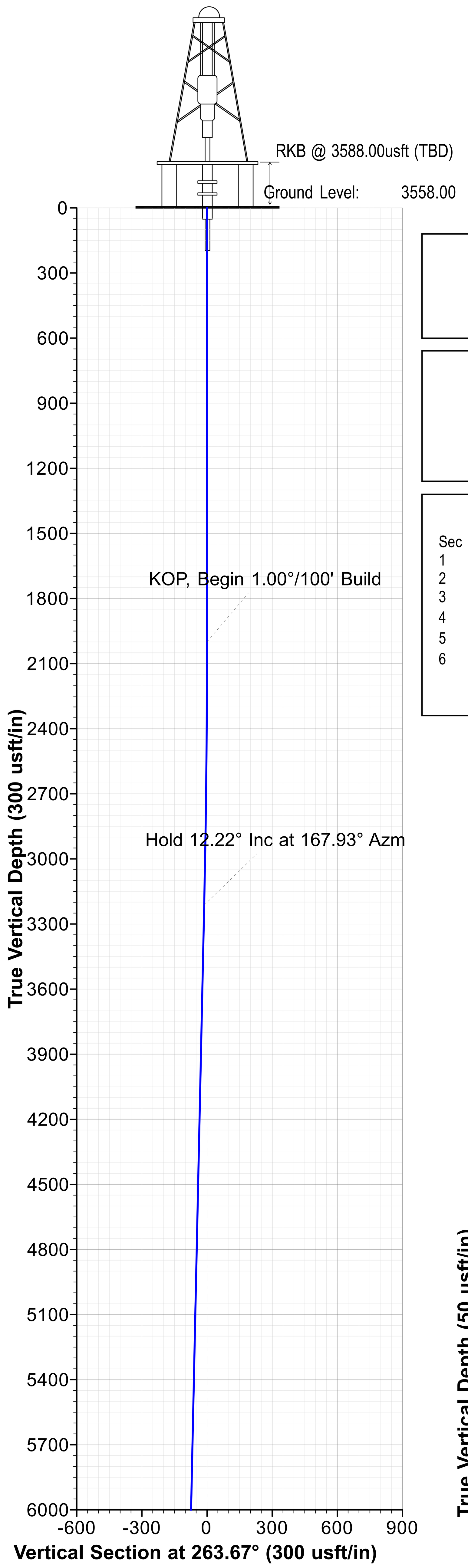
Project: Eddy County, NM (NAD83 - NME)
Site: Jakku
Well: Jakku 36 Fed State Com 112H
Wellbore: OH
Design: Plan 1 04-17-23
Rig: TBD

PHOENIX TECHNOLOGY SERVICES

T G M

Azimuths to Grid North
True North: -0.22°
Magnetic North: 6.67°

Magnetic Field
Strength: 47735.8nT
Dip Angle: 60.43°
Date: 6/18/2023
Model: MVHD



WELL DETAILS

Ground Level: 3558.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	622047.06	669111.45	32° 42' 33.697981 N	103° 55' 4.493500 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - Jakku 36 Fed State Com 112H	7818.00	-1135.16	-10230.88	620911.90	658880.57	32° 42' 22.846242 N	103° 57' 4.284421 W
FTP - Jakku 36 Fed State Com 112H	7818.00	-1102.63	214.82	620944.43	669326.27	32° 42' 22.779036 N	103° 55' 2.029908 W
LTP - Jakku 36 Fed State Com 112H	7818.00	-1134.83	-10140.88	620912.23	658970.57	32° 42' 22.846297 N	103° 57' 3.231073 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00		
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.000	0.00		KOP, Begin 1.00°/100' Build
3	3222.38	12.22	167.93	3213.13	-127.03	27.17	1.00	167.926	-13.00		Hold 12.22° Inc at 167.93° Azm
4	7435.30	12.22	167.93	7330.53	-999.30	213.76	0.00	0.000	-102.25		Begin 12.00°/100' Build & Turn
5	8206.14	90.00	269.82	7818.00	-1104.12	-262.93	12.00	101.633	383.08		LP, Hold 90.00° Inc at 269.82° Azm
6	18174.14	90.00	269.82	7818.00	-1135.16	-10230.88	0.00	0.000	10293.66	BHL - Jakku 36 Fed State Com 112H	TD at 18174.14

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

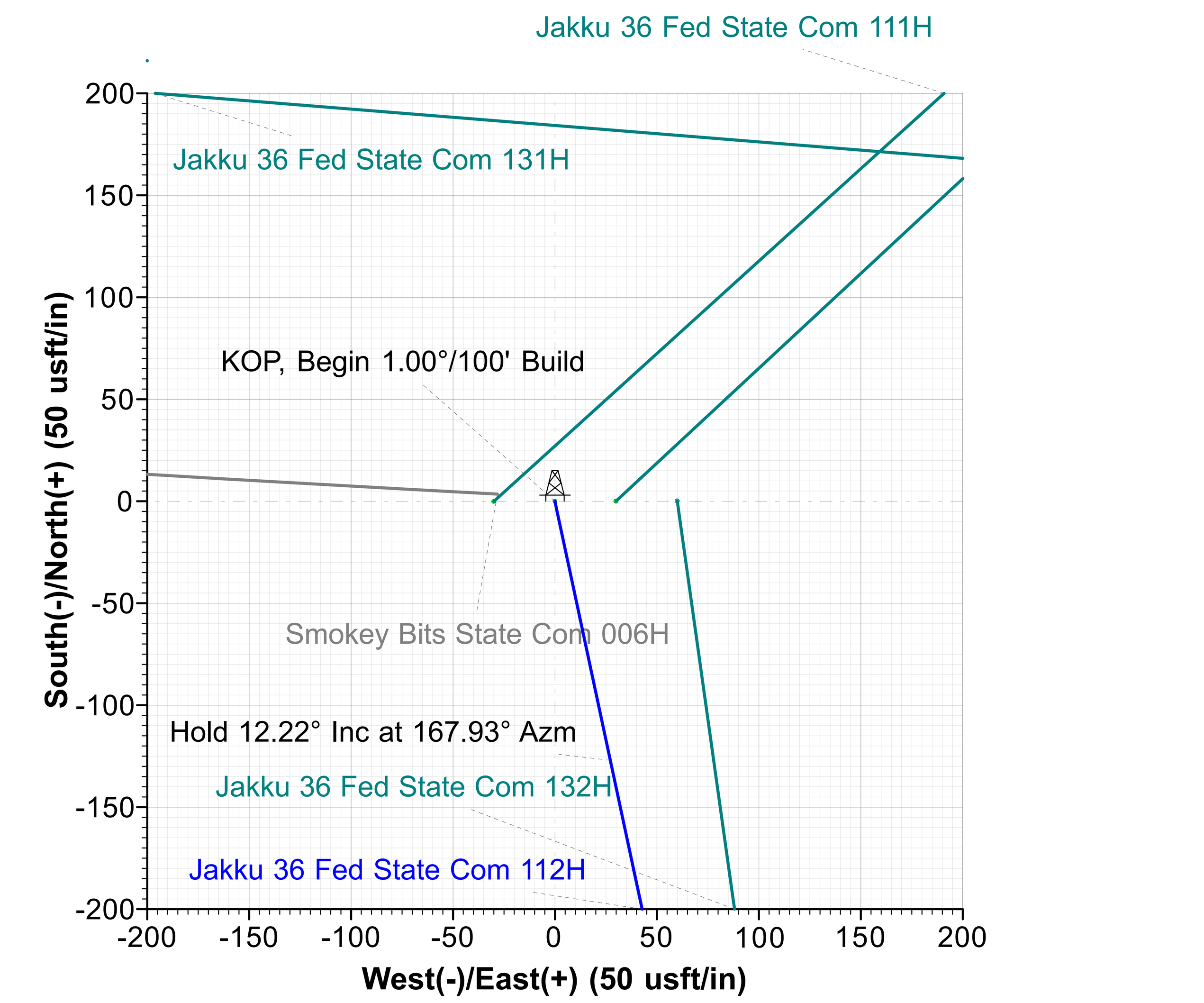
Local Origin: Well Jakku 36 Fed State Com 112H, Grid North

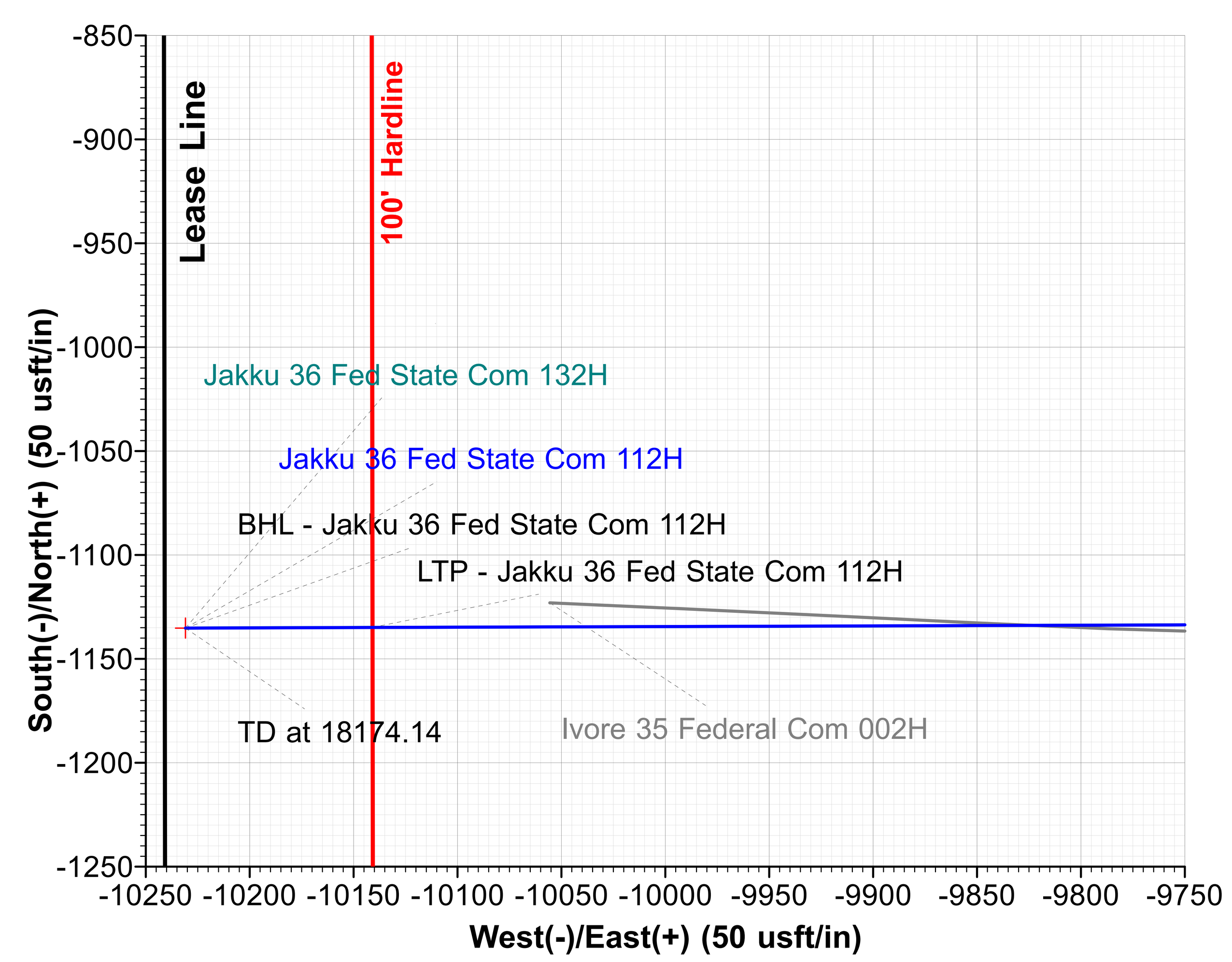
Latitude: 32° 42' 33.697981 N
Longitude: 103° 55' 4.493500 W

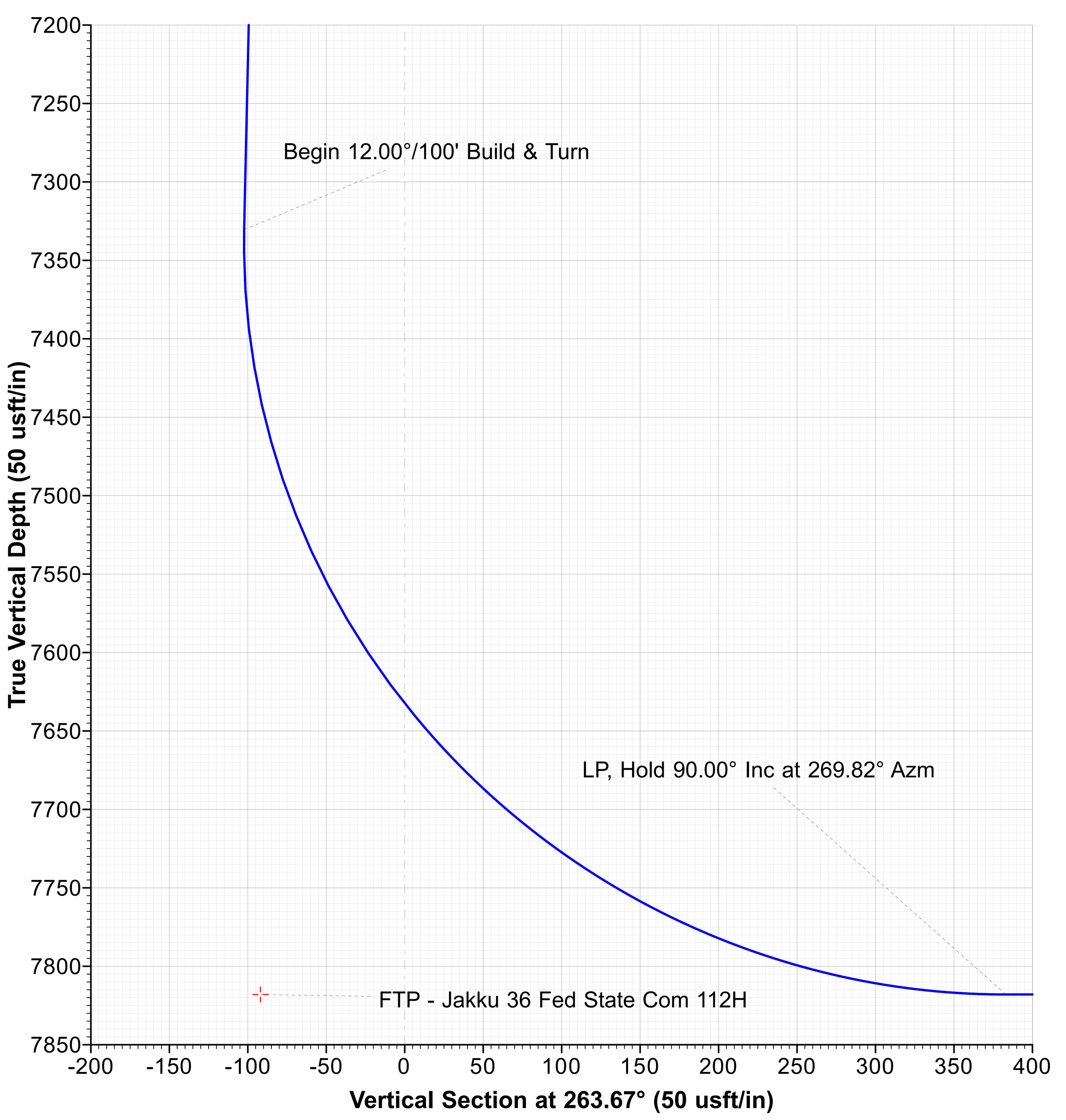
Grid East: 669111.45
Grid North: 622047.06
Scale Factor: 1.000

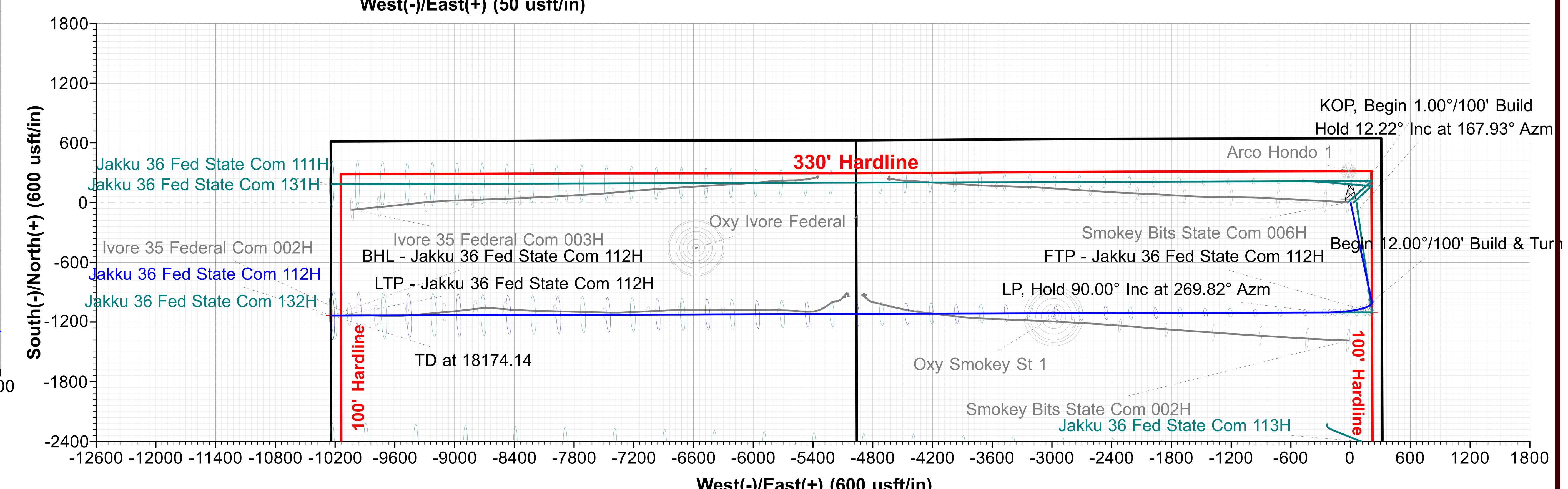
Geomagnetic Model: MVHD
Sample Date: 18-Jun-23
Magnetic Declination: 6.894°
Dip Angle from Horizontal: 60.433°
Magnetic Field Strength: 47735.76840037nT

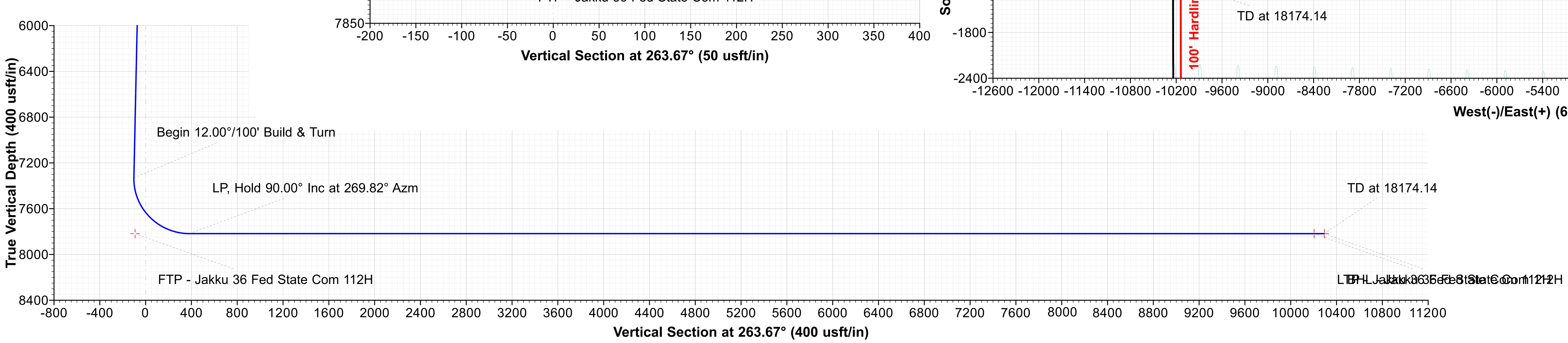
To convert a Magnetic Direction to a Grid Direction, Add 6.670°
To convert a Magnetic Direction to a True Direction, Add 6.894° East
To convert a True Direction to a Grid Direction, Subtract 0.225°











Date: 13:03, April 17 2023

PERMIAN RESOURCES

Permian Resources

Eddy County, NM (NAD83 - NME)
Jakku
Jakku 36 Fed State Com 112H

OH

Plan: Plan 1 04-17-23

Standard Planning Report

17 April, 2023

PHOENIX TECHNOLOGY SERVICES

PERMIAN RESOURCES

Phoenix Technology Services
Planning Report

PHOENIX TECHNOLOGY SERVICES

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Company:	Permian Resources	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Project:	Eddy County, NM (NAD83 - NME)	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site:	Jakku	**North Reference:**	Grid
Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-17-23		

Project Eddy County, NM (NAD83 - NME)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Jakku

Site Position:		**Northing:**	622,046.97 usft	**Latitude:**	32° 42' 33.698253 N
From:	Map	**Easting:**	669,081.46 usft	**Longitude:**	103° 55' 4.844568 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.224 °

Well Jakku 36 Fed State Com 112H

Well Position	**+N/-S**	0.09 usft	**Northing:**	622,047.06 usft	**Latitude:**	32° 42' 33.697981 N
	+E/-W	30.00 usft	**Easting:**	669,111.45 usft	**Longitude:**	103° 55' 4.493500 W
Position Uncertainty		1.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,558.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	6/18/2023	6.894	60.433	47,735.76840037

Design Plan 1 04-17-23

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	263.67

Plan Survey Tool Program **Date** 4/17/2023

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,174.14	Plan 1 04-17-23 (OH)	MWD+HRGM	
				OWSG MWD + HRGM	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.000	
3,222.38	12.22	167.93	3,213.13	-127.03	27.17	1.00	1.00	0.00	167.926	
7,435.30	12.22	167.93	7,330.53	-999.30	213.76	0.00	0.00	0.00	0.000	
8,206.14	90.00	269.82	7,818.00	-1,104.12	-262.93	12.00	10.09	13.22	101.633	
18,174.14	90.00	269.82	7,818.00	-1,135.16	-10,230.88	0.00	0.00	0.00	0.000	BHL - Jakku 36 Fec

PERMIAN RESOURCES

Phoenix Technology Services
Planning Report

PHOENIX TECHNOLOGY SERVICES

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Company:	Permian Resources	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Project:	Eddy County, NM (NAD83 - NME)	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site:	Jakku	**North Reference:**	Grid
Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-17-23		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 1.00°/100' Build									
2,100.00	1.00	167.93	2,099.99	-0.85	0.18	-0.09	1.00	1.00	0.00
2,200.00	2.00	167.93	2,199.96	-3.41	0.73	-0.35	1.00	1.00	0.00
2,300.00	3.00	167.93	2,299.86	-7.68	1.64	-0.79	1.00	1.00	0.00
2,400.00	4.00	167.93	2,399.68	-13.65	2.92	-1.40	1.00	1.00	0.00
2,500.00	5.00	167.93	2,499.37	-21.32	4.56	-2.18	1.00	1.00	0.00
2,600.00	6.00	167.93	2,598.90	-30.69	6.57	-3.14	1.00	1.00	0.00
2,700.00	7.00	167.93	2,698.26	-41.76	8.93	-4.27	1.00	1.00	0.00
2,800.00	8.00	167.93	2,797.40	-54.53	11.66	-5.58	1.00	1.00	0.00
2,900.00	9.00	167.93	2,896.30	-68.98	14.76	-7.06	1.00	1.00	0.00
3,000.00	10.00	167.93	2,994.93	-85.12	18.21	-8.71	1.00	1.00	0.00
3,100.00	11.00	167.93	3,093.26	-102.94	22.02	-10.53	1.00	1.00	0.00
3,200.00	12.00	167.93	3,191.25	-122.44	26.19	-12.53	1.00	1.00	0.00
3,222.38	12.22	167.93	3,213.13	-127.03	27.17	-13.00	1.00	1.00	0.00
Hold 12.22° Inc at 167.93° Azm									
3,300.00	12.22	167.93	3,288.99	-143.10	30.61	-14.64	0.00	0.00	0.00
3,400.00	12.22	167.93	3,386.72	-163.80	35.04	-16.76	0.00	0.00	0.00
3,500.00	12.22	167.93	3,484.45	-184.51	39.47	-18.88	0.00	0.00	0.00
3,600.00	12.22	167.93	3,582.19	-205.21	43.90	-21.00	0.00	0.00	0.00
3,700.00	12.22	167.93	3,679.92	-225.92	48.33	-23.12	0.00	0.00	0.00
3,800.00	12.22	167.93	3,777.65	-246.62	52.75	-25.24	0.00	0.00	0.00
3,900.00	12.22	167.93	3,875.39	-267.33	57.18	-27.35	0.00	0.00	0.00
4,000.00	12.22	167.93	3,973.12	-288.03	61.61	-29.47	0.00	0.00	0.00
4,100.00	12.22	167.93	4,070.85	-308.74	66.04	-31.59	0.00	0.00	0.00
4,200.00	12.22	167.93	4,168.58	-329.44	70.47	-33.71	0.00	0.00	0.00
4,300.00	12.22	167.93	4,266.32	-350.14	74.90	-35.83	0.00	0.00	0.00
4,400.00	12.22	167.93	4,364.05	-370.85	79.33	-37.95	0.00	0.00	0.00
4,500.00	12.22	167.93	4,461.78	-391.55	83.76	-40.07	0.00	0.00	0.00
4,600.00	12.22	167.93	4,559.51	-412.26	88.19	-42.18	0.00	0.00	0.00
4,700.00	12.22	167.93	4,657.25	-432.96	92.61	-44.30	0.00	0.00	0.00
4,800.00	12.22	167.93	4,754.98	-453.67	97.04	-46.42	0.00	0.00	0.00
4,900.00	12.22	167.93	4,852.71	-474.37	101.47	-48.54	0.00	0.00	0.00
5,000.00	12.22	167.93	4,950.45	-495.08	105.90	-50.66	0.00	0.00	0.00
5,100.00	12.22	167.93	5,048.18	-515.78	110.33	-52.78	0.00	0.00	0.00
5,200.00	12.22	167.93	5,145.91	-536.49	114.76	-54.90	0.00	0.00	0.00
5,300.00	12.22	167.93	5,243.64	-557.19	119.19	-57.01	0.00	0.00	0.00
5,400.00	12.22	167.93	5,341.38	-577.90	123.62	-59.13	0.00	0.00	0.00
5,500.00	12.22	167.93	5,439.11	-598.60	128.05	-61.25	0.00	0.00	0.00
5,600.00	12.22	167.93	5,536.84	-619.31	132.47	-63.37	0.00	0.00	0.00
5,700.00	12.22	167.93	5,634.58	-640.01	136.90	-65.49	0.00	0.00	0.00
5,800.00	12.22	167.93	5,732.31	-660.72	141.33	-67.61	0.00	0.00	0.00
5,900.00	12.22	167.93	5,830.04	-681.42	145.76	-69.73	0.00	0.00	0.00
6,000.00	12.22	167.93	5,927.77	-702.12	150.19	-71.85	0.00	0.00	0.00
6,100.00	12.22	167.93	6,025.51	-722.83	154.62	-73.96	0.00	0.00	0.00
6,200.00	12.22	167.93	6,123.24	-743.53	159.05	-76.08	0.00	0.00	0.00
6,300.00	12.22	167.93	6,220.97	-764.24	163.48	-78.20	0.00	0.00	0.00
6,400.00	12.22	167.93	6,318.71	-784.94	167.91	-80.32	0.00	0.00	0.00
6,500.00	12.22	167.93	6,416.44	-805.65	172.33	-82.44	0.00	0.00	0.00
6,600.00	12.22	167.93	6,514.17	-826.35	176.76	-84.56	0.00	0.00	0.00
6,700.00	12.22	167.93	6,611.90	-847.06	181.19	-86.68	0.00	0.00	0.00
6,800.00	12.22	167.93	6,709.64	-867.76	185.62	-88.79	0.00	0.00	0.00

PERMIAN RESOURCES

Phoenix Technology Services
Planning Report

PHOENIX TECHNOLOGY SERVICES

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Company:	Permian Resources	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Project:	Eddy County, NM (NAD83 - NME)	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site:	Jakku	**North Reference:**	Grid
Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-17-23		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,900.00	12.22	167.93	6,807.37	-888.47	190.05	-90.91	0.00	0.00	0.00
7,000.00	12.22	167.93	6,905.10	-909.17	194.48	-93.03	0.00	0.00	0.00
7,100.00	12.22	167.93	7,002.84	-929.88	198.91	-95.15	0.00	0.00	0.00
7,200.00	12.22	167.93	7,100.57	-950.58	203.34	-97.27	0.00	0.00	0.00
7,300.00	12.22	167.93	7,198.30	-971.29	207.77	-99.39	0.00	0.00	0.00
7,400.00	12.22	167.93	7,296.03	-991.99	212.19	-101.51	0.00	0.00	0.00
7,435.30	12.22	167.93	7,330.53	-999.30	213.76	-102.25	0.00	0.00	0.00
Begin 12.00°/100' Build & Turn									
7,500.00	13.06	203.77	7,393.76	-1,012.71	212.24	-99.27	12.00	1.29	55.40
7,600.00	20.90	236.10	7,489.53	-1,033.07	192.81	-77.71	12.00	7.84	32.33
7,700.00	31.41	249.51	7,579.24	-1,052.21	153.45	-36.47	12.00	10.51	13.41
7,800.00	42.66	256.52	7,658.97	-1,069.29	95.87	22.63	12.00	11.25	7.01
7,900.00	54.19	261.02	7,725.23	-1,083.57	22.60	97.03	12.00	11.52	4.50
8,000.00	65.84	264.36	7,775.14	-1,094.41	-63.16	183.46	12.00	11.65	3.34
8,100.00	77.54	267.14	7,806.51	-1,101.36	-157.67	278.16	12.00	11.71	2.77
8,200.00	89.28	269.67	7,817.96	-1,104.09	-256.79	376.98	12.00	11.73	2.53
8,206.14	90.00	269.82	7,818.00	-1,104.12	-262.93	383.08	12.00	11.74	2.49
LP, Hold 90.00° Inc at 269.82° Azm									
8,300.00	90.00	269.82	7,818.00	-1,104.41	-356.79	476.40	0.00	0.00	0.00
8,400.00	90.00	269.82	7,818.00	-1,104.73	-456.79	575.83	0.00	0.00	0.00
8,500.00	90.00	269.82	7,818.00	-1,105.04	-556.79	675.25	0.00	0.00	0.00
8,600.00	90.00	269.82	7,818.00	-1,105.35	-656.78	774.67	0.00	0.00	0.00
8,700.00	90.00	269.82	7,818.00	-1,105.66	-756.78	874.10	0.00	0.00	0.00
8,800.00	90.00	269.82	7,818.00	-1,105.97	-856.78	973.52	0.00	0.00	0.00
8,900.00	90.00	269.82	7,818.00	-1,106.28	-956.78	1,072.95	0.00	0.00	0.00
9,000.00	90.00	269.82	7,818.00	-1,106.59	-1,056.78	1,172.37	0.00	0.00	0.00
9,100.00	90.00	269.82	7,818.00	-1,106.90	-1,156.78	1,271.79	0.00	0.00	0.00
9,200.00	90.00	269.82	7,818.00	-1,107.22	-1,256.78	1,371.22	0.00	0.00	0.00
9,300.00	90.00	269.82	7,818.00	-1,107.53	-1,356.78	1,470.64	0.00	0.00	0.00
9,400.00	90.00	269.82	7,818.00	-1,107.84	-1,456.78	1,570.07	0.00	0.00	0.00
9,500.00	90.00	269.82	7,818.00	-1,108.15	-1,556.78	1,669.49	0.00	0.00	0.00
9,600.00	90.00	269.82	7,818.00	-1,108.46	-1,656.78	1,768.91	0.00	0.00	0.00
9,700.00	90.00	269.82	7,818.00	-1,108.77	-1,756.78	1,868.34	0.00	0.00	0.00
9,800.00	90.00	269.82	7,818.00	-1,109.08	-1,856.78	1,967.76	0.00	0.00	0.00
9,900.00	90.00	269.82	7,818.00	-1,109.40	-1,956.78	2,067.19	0.00	0.00	0.00
10,000.00	90.00	269.82	7,818.00	-1,109.71	-2,056.78	2,166.61	0.00	0.00	0.00
10,100.00	90.00	269.82	7,818.00	-1,110.02	-2,156.78	2,266.03	0.00	0.00	0.00
10,200.00	90.00	269.82	7,818.00	-1,110.33	-2,256.78	2,365.46	0.00	0.00	0.00
10,300.00	90.00	269.82	7,818.00	-1,110.64	-2,356.78	2,464.88	0.00	0.00	0.00
10,400.00	90.00	269.82	7,818.00	-1,110.95	-2,456.78	2,564.30	0.00	0.00	0.00
10,500.00	90.00	269.82	7,818.00	-1,111.26	-2,556.78	2,663.73	0.00	0.00	0.00
10,600.00	90.00	269.82	7,818.00	-1,111.58	-2,656.77	2,763.15	0.00	0.00	0.00
10,700.00	90.00	269.82	7,818.00	-1,111.89	-2,756.77	2,862.58	0.00	0.00	0.00
10,800.00	90.00	269.82	7,818.00	-1,112.20	-2,856.77	2,962.00	0.00	0.00	0.00
10,900.00	90.00	269.82	7,818.00	-1,112.51	-2,956.77	3,061.42	0.00	0.00	0.00
11,000.00	90.00	269.82	7,818.00	-1,112.82	-3,056.77	3,160.85	0.00	0.00	0.00
11,100.00	90.00	269.82	7,818.00	-1,113.13	-3,156.77	3,260.27	0.00	0.00	0.00
11,200.00	90.00	269.82	7,818.00	-1,113.44	-3,256.77	3,359.70	0.00	0.00	0.00
11,300.00	90.00	269.82	7,818.00	-1,113.76	-3,356.77	3,459.12	0.00	0.00	0.00
11,400.00	90.00	269.82	7,818.00	-1,114.07	-3,456.77	3,558.54	0.00	0.00	0.00
11,500.00	90.00	269.82	7,818.00	-1,114.38	-3,556.77	3,657.97	0.00	0.00	0.00
11,600.00	90.00	269.82	7,818.00	-1,114.69	-3,656.77	3,757.39	0.00	0.00	0.00
11,700.00	90.00	269.82	7,818.00	-1,115.00	-3,756.77	3,856.82	0.00	0.00	0.00
11,800.00	90.00	269.82	7,818.00	-1,115.31	-3,856.77	3,956.24	0.00	0.00	0.00

PERMIAN RESOURCES

Phoenix Technology Services
Planning Report

PHOENIX TECHNOLOGY SERVICES

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Company:	Permian Resources	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Project:	Eddy County, NM (NAD83 - NME)	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site:	Jakku	**North Reference:**	Grid
Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-17-23		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,900.00	90.00	269.82	7,818.00	-1,115.62	-3,956.77	4,055.66	0.00	0.00	0.00
12,000.00	90.00	269.82	7,818.00	-1,115.93	-4,056.77	4,155.09	0.00	0.00	0.00
12,100.00	90.00	269.82	7,818.00	-1,116.25	-4,156.77	4,254.51	0.00	0.00	0.00
12,200.00	90.00	269.82	7,818.00	-1,116.56	-4,256.77	4,353.94	0.00	0.00	0.00
12,300.00	90.00	269.82	7,818.00	-1,116.87	-4,356.77	4,453.36	0.00	0.00	0.00
12,400.00	90.00	269.82	7,818.00	-1,117.18	-4,456.77	4,552.78	0.00	0.00	0.00
12,500.00	90.00	269.82	7,818.00	-1,117.49	-4,556.77	4,652.21	0.00	0.00	0.00
12,600.00	90.00	269.82	7,818.00	-1,117.80	-4,656.77	4,751.63	0.00	0.00	0.00
12,700.00	90.00	269.82	7,818.00	-1,118.11	-4,756.76	4,851.06	0.00	0.00	0.00
12,800.00	90.00	269.82	7,818.00	-1,118.43	-4,856.76	4,950.48	0.00	0.00	0.00
12,900.00	90.00	269.82	7,818.00	-1,118.74	-4,956.76	5,049.90	0.00	0.00	0.00
13,000.00	90.00	269.82	7,818.00	-1,119.05	-5,056.76	5,149.33	0.00	0.00	0.00
13,100.00	90.00	269.82	7,818.00	-1,119.36	-5,156.76	5,248.75	0.00	0.00	0.00
13,200.00	90.00	269.82	7,818.00	-1,119.67	-5,256.76	5,348.18	0.00	0.00	0.00
13,300.00	90.00	269.82	7,818.00	-1,119.98	-5,356.76	5,447.60	0.00	0.00	0.00
13,400.00	90.00	269.82	7,818.00	-1,120.29	-5,456.76	5,547.02	0.00	0.00	0.00
13,500.00	90.00	269.82	7,818.00	-1,120.61	-5,556.76	5,646.45	0.00	0.00	0.00
13,600.00	90.00	269.82	7,818.00	-1,120.92	-5,656.76	5,745.87	0.00	0.00	0.00
13,700.00	90.00	269.82	7,818.00	-1,121.23	-5,756.76	5,845.29	0.00	0.00	0.00
13,800.00	90.00	269.82	7,818.00	-1,121.54	-5,856.76	5,944.72	0.00	0.00	0.00
13,900.00	90.00	269.82	7,818.00	-1,121.85	-5,956.76	6,044.14	0.00	0.00	0.00
14,000.00	90.00	269.82	7,818.00	-1,122.16	-6,056.76	6,143.57	0.00	0.00	0.00
14,100.00	90.00	269.82	7,818.00	-1,122.47	-6,156.76	6,242.99	0.00	0.00	0.00
14,200.00	90.00	269.82	7,818.00	-1,122.79	-6,256.76	6,342.41	0.00	0.00	0.00
14,300.00	90.00	269.82	7,818.00	-1,123.10	-6,356.76	6,441.84	0.00	0.00	0.00
14,400.00	90.00	269.82	7,818.00	-1,123.41	-6,456.76	6,541.26	0.00	0.00	0.00
14,500.00	90.00	269.82	7,818.00	-1,123.72	-6,556.76	6,640.69	0.00	0.00	0.00
14,600.00	90.00	269.82	7,818.00	-1,124.03	-6,656.76	6,740.11	0.00	0.00	0.00
14,700.00	90.00	269.82	7,818.00	-1,124.34	-6,756.76	6,839.53	0.00	0.00	0.00
14,800.00	90.00	269.82	7,818.00	-1,124.65	-6,856.75	6,938.96	0.00	0.00	0.00
14,900.00	90.00	269.82	7,818.00	-1,124.96	-6,956.75	7,038.38	0.00	0.00	0.00
15,000.00	90.00	269.82	7,818.00	-1,125.28	-7,056.75	7,137.81	0.00	0.00	0.00
15,100.00	90.00	269.82	7,818.00	-1,125.59	-7,156.75	7,237.23	0.00	0.00	0.00
15,200.00	90.00	269.82	7,818.00	-1,125.90	-7,256.75	7,336.65	0.00	0.00	0.00
15,300.00	90.00	269.82	7,818.00	-1,126.21	-7,356.75	7,436.08	0.00	0.00	0.00
15,400.00	90.00	269.82	7,818.00	-1,126.52	-7,456.75	7,535.50	0.00	0.00	0.00
15,500.00	90.00	269.82	7,818.00	-1,126.83	-7,556.75	7,634.93	0.00	0.00	0.00
15,600.00	90.00	269.82	7,818.00	-1,127.14	-7,656.75	7,734.35	0.00	0.00	0.00
15,700.00	90.00	269.82	7,818.00	-1,127.46	-7,756.75	7,833.77	0.00	0.00	0.00
15,800.00	90.00	269.82	7,818.00	-1,127.77	-7,856.75	7,933.20	0.00	0.00	0.00
15,900.00	90.00	269.82	7,818.00	-1,128.08	-7,956.75	8,032.62	0.00	0.00	0.00
16,000.00	90.00	269.82	7,818.00	-1,128.39	-8,056.75	8,132.05	0.00	0.00	0.00
16,100.00	90.00	269.82	7,818.00	-1,128.70	-8,156.75	8,231.47	0.00	0.00	0.00
16,200.00	90.00	269.82	7,818.00	-1,129.01	-8,256.75	8,330.89	0.00	0.00	0.00
16,300.00	90.00	269.82	7,818.00	-1,129.32	-8,356.75	8,430.32	0.00	0.00	0.00
16,400.00	90.00	269.82	7,818.00	-1,129.64	-8,456.75	8,529.74	0.00	0.00	0.00
16,500.00	90.00	269.82	7,818.00	-1,129.95	-8,556.75	8,629.17	0.00	0.00	0.00
16,600.00	90.00	269.82	7,818.00	-1,130.26	-8,656.75	8,728.59	0.00	0.00	0.00
16,700.00	90.00	269.82	7,818.00	-1,130.57	-8,756.75	8,828.01	0.00	0.00	0.00
16,800.00	90.00	269.82	7,818.00	-1,130.88	-8,856.75	8,927.44	0.00	0.00	0.00
16,900.00	90.00	269.82	7,818.00	-1,131.19	-8,956.74	9,026.86	0.00	0.00	0.00
17,000.00	90.00	269.82	7,818.00	-1,131.50	-9,056.74	9,126.28	0.00	0.00	0.00
17,100.00	90.00	269.82	7,818.00	-1,131.82	-9,156.74	9,225.71	0.00	0.00	0.00
17,200.00	90.00	269.82	7,818.00	-1,132.13	-9,256.74	9,325.13	0.00	0.00	0.00

PERMIAN RESOURCES

Phoenix Technology Services
Planning Report

PHOENIX TECHNOLOGY SERVICES

Database:	USAEDMDB	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Company:	Permian Resources	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Project:	Eddy County, NM (NAD83 - NME)	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site:	Jakku	**North Reference:**	Grid
Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 04-17-23		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,300.00	90.00	269.82	7,818.00	-1,132.44	-9,356.74	9,424.56	0.00	0.00	0.00
17,400.00	90.00	269.82	7,818.00	-1,132.75	-9,456.74	9,523.98	0.00	0.00	0.00
17,500.00	90.00	269.82	7,818.00	-1,133.06	-9,556.74	9,623.40	0.00	0.00	0.00
17,600.00	90.00	269.82	7,818.00	-1,133.37	-9,656.74	9,722.83	0.00	0.00	0.00
17,700.00	90.00	269.82	7,818.00	-1,133.68	-9,756.74	9,822.25	0.00	0.00	0.00
17,800.00	90.00	269.82	7,818.00	-1,134.00	-9,856.74	9,921.68	0.00	0.00	0.00
17,900.00	90.00	269.82	7,818.00	-1,134.31	-9,956.74	10,021.10	0.00	0.00	0.00
18,000.00	90.00	269.82	7,818.00	-1,134.62	-10,056.74	10,120.52	0.00	0.00	0.00
18,100.00	90.00	269.82	7,818.00	-1,134.93	-10,156.74	10,219.95	0.00	0.00	0.00
18,174.14	90.00	269.82	7,818.00	-1,135.16	-10,230.88	10,293.66	0.00	0.00	0.00
TD at 18174.14									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - Jakku 36 Fed S - plan misses target center by 198.20usft at 7823.08usft MD (7675.57 TVD, -1072.86 N, 80.25 E) - Point	0.00	0.00	7,818.00	-1,102.63	214.82	620,944.43	669,326.27	32° 42' 22.779036 N	103° 55' 2.029908 W
BHL - Jakku 36 Fed S - plan hits target center - Point	0.00	0.00	7,818.00	-1,135.16	-10,230.88	620,911.90	658,880.57	32° 42' 22.846242 N	103° 57' 4.284421 W
LTP - Jakku 36 Fed St - plan misses target center by 0.05usft at 18084.14usft MD (7818.00 TVD, -1134.88 N, -10140.88 E) - Point	0.00	0.00	7,818.00	-1,134.83	-10,140.88	620,912.23	658,970.57	32° 42' 22.846297 N	103° 57' 3.231073 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,000.00	2,000.00	0.00	0.00	KOP, Begin 1.00°/100' Build
3,222.38	3,213.13	-127.03	27.17	Hold 12.22° Inc at 167.93° Azm
7,435.30	7,330.53	-999.30	213.76	Begin 12.00°/100' Build & Turn
8,206.14	7,818.00	-1,104.12	-262.93	LP, Hold 90.00° Inc at 269.82° Azm
18,174.14	7,818.00	-1,135.16	-10,230.88	TD at 18174.14

PERMIAN RESOURCES

Permian Resources

Eddy County, NM (NAD83 - NME)
Jakku
Jakku 36 Fed State Com 112H

OH
Plan 1 04-17-23

Anticollision Report

17 April, 2023

PHOENIX TECHNOLOGY SERVICES

PERMIAN RESOURCES

Phoenix Technology Services
Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Reference Plan 1 04-17-23

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Max. Cent. Dist. of 1,000.00usft or Max. SF of 4	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 4/17/2023

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,174.14	Plan 1 04-17-23 (OH)	MWD+HRGM	OWSG MWD + HRGM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Jakku						
Jakku 36 Fed State Com 111H - OH - Plan 1 04-17-23	2,247.91	2,247.52	28.54	16.60	2.390	CC, ES, SF
Jakku 36 Fed State Com 113H - OH - Plan 1 04-17-23	18,174.14	18,039.47	1,313.43	833.52	2.737	CC, ES, SF
Jakku 36 Fed State Com 131H - OH - Plan 1 04-17-23	1,916.33	1,917.33	30.00	18.96	2.717	CC
Jakku 36 Fed State Com 131H - OH - Plan 1 04-17-23	2,000.00	2,001.00	30.00	18.70	2.655	ES
Jakku 36 Fed State Com 131H - OH - Plan 1 04-17-23	2,100.00	2,100.59	30.51	18.93	2.636	SF
Jakku 36 Fed State Com 132H - OH - Plan 1 04-17-23	4,164.96	4,163.89	41.02	21.81	2.135	CC
Jakku 36 Fed State Com 132H - OH - Plan 1 04-17-23	4,700.00	4,698.67	44.33	19.15	1.761	ES
Jakku 36 Fed State Com 132H - OH - Plan 1 04-17-23	5,200.00	5,198.42	52.34	21.18	1.680	SF
Jakku Offsets (NAD27)						
Ivore 35 Federal Com 002H - OH - Surveys	13,027.96	7,673.23	174.25	37.94	1.278	Level 3 , CC, ES, SF
Ivore 35 Federal Com 003H - OH - Surveys						Out of range
Misty 35 Federal Com 004H - OH - Surveys						Out of range
Smokey Bits State Com 002H - OH - Surveys	12,824.62	7,697.14	181.27	51.42	1.396	Level 3 , CC, ES, SF
Smokey Bits State Com 006H - OH - Surveys						Out of range
Jakku Offsets (NAD83)						
Arco Hondo 1 - OH - Surveys	1,941.13	2,008.42	317.46	269.08	6.562	CC
Arco Hondo 1 - OH - Surveys	2,100.00	2,168.32	318.52	266.52	6.125	ES
Arco Hondo 1 - OH - Surveys	2,700.00	2,766.71	359.96	294.24	5.477	SF
Culwin 35 Federal 2 - OH - Surveys						Out of range
Oxy Ivore Federal 1 - OH - Surveys	14,515.96	7,654.92	670.12	328.22	1.960	CC, ES, SF
Oxy Smokey St 1 - OH - Surveys	10,926.47	7,775.65	28.64	-245.73	0.104	Level 1 , CC, ES, SF

Offset Design Jakku 36 Fed State Com 111H - OH - Plan 1 04-17-23 — Offset Site Error: 0.00 usft

Survey Program: 0-MWD+HRGM — Offset Well Error: 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	1.00	1.00	-90.17	-0.09	-30.00	30.02				
100.00	100.00	99.00	99.00	1.28	1.27	-90.17	-0.09	-30.00	30.00	27.45	2.55	11.781	
200.00	200.00	199.00	199.00	1.76	1.76	-90.17	-0.09	-30.00	30.00	26.48	3.52	8.531	
300.00	300.00	299.00	299.00	2.14	2.14	-90.17	-0.09	-30.00	30.00	25.72	4.28	7.009	
400.00	400.00	399.00	399.00	2.47	2.46	-90.17	-0.09	-30.00	30.00	25.07	4.93	6.083	
500.00	500.00	499.00	499.00	2.76	2.75	-90.17	-0.09	-30.00	30.00	24.49	5.51	5.443	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 111H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
600.00	600.00	599.00	599.00	3.02	3.02	-90.17	-0.09	-30.00	30.00	23.96	6.04	4.966	
700.00	700.00	699.00	699.00	3.27	3.26	-90.17	-0.09	-30.00	30.00	23.47	6.53	4.594	
800.00	800.00	799.00	799.00	3.50	3.49	-90.17	-0.09	-30.00	30.00	23.01	6.99	4.292	
900.00	900.00	899.00	899.00	3.71	3.71	-90.17	-0.09	-30.00	30.00	22.57	7.43	4.040	
1,000.00	1,000.00	999.00	999.00	3.92	3.92	-90.17	-0.09	-30.00	30.00	22.16	7.84	3.827	
1,100.00	1,100.00	1,099.00	1,099.00	4.12	4.12	-90.17	-0.09	-30.00	30.00	21.76	8.24	3.642	
1,200.00	1,200.00	1,199.00	1,199.00	4.31	4.31	-90.17	-0.09	-30.00	30.00	21.38	8.62	3.481	
1,300.00	1,300.00	1,299.00	1,299.00	4.49	4.49	-90.17	-0.09	-30.00	30.00	21.01	8.99	3.339	
1,400.00	1,400.00	1,399.00	1,399.00	4.67	4.67	-90.17	-0.09	-30.00	30.00	20.66	9.34	3.211	
1,500.00	1,500.00	1,499.00	1,499.00	4.85	4.84	-90.17	-0.09	-30.00	30.00	20.31	9.69	3.096	
1,600.00	1,600.00	1,599.00	1,599.00	5.01	5.01	-90.17	-0.09	-30.00	30.00	19.97	10.03	2.992	
1,700.00	1,700.00	1,699.00	1,699.00	5.18	5.18	-90.17	-0.09	-30.00	30.00	19.65	10.35	2.897	
1,800.00	1,800.00	1,799.00	1,799.00	5.34	5.34	-90.17	-0.09	-30.00	30.00	19.33	10.67	2.810	
1,900.00	1,900.00	1,899.00	1,899.00	5.50	5.49	-90.17	-0.09	-30.00	30.00	19.01	10.99	2.730	
2,000.00	2,000.00	1,999.00	1,999.00	5.65	5.65	-90.17	-0.09	-30.00	30.00	18.70	11.30	2.656	
2,100.00	2,099.99	2,099.36	2,099.36	5.78	5.80	104.68	0.49	-29.36	29.58	18.01	11.57	2.556	
2,200.00	2,199.96	2,199.59	2,199.55	5.89	5.95	113.46	2.24	-27.42	28.72	16.90	11.82	2.430	
2,247.91	2,247.83	2,247.52	2,247.45	5.96	6.03	119.94	3.50	-26.04	28.54	16.60	11.94	2.390	CC, ES, SF
2,300.00	2,299.86	2,299.55	2,299.41	6.03	6.12	128.51	5.17	-24.20	28.86	16.79	12.08	2.390	
2,400.00	2,399.68	2,399.10	2,398.77	6.18	6.30	147.35	9.24	-19.70	32.18	19.82	12.36	2.603	
2,500.00	2,499.37	2,498.10	2,497.47	6.35	6.50	164.60	14.44	-13.97	40.29	27.58	12.70	3.172	
2,600.00	2,598.90	2,596.42	2,595.35	6.55	6.72	177.25	20.74	-7.02	53.25	40.17	13.08	4.071	
2,700.00	2,698.26	2,693.95	2,692.26	6.77	6.96	-174.23	28.10	1.10	70.47	56.98	13.49	5.224	
2,800.00	2,797.40	2,790.56	2,788.05	7.01	7.21	-168.50	36.48	10.35	91.39	77.47	13.93	6.562	
2,900.00	2,896.30	2,886.13	2,882.60	7.27	7.48	-164.53	45.83	20.67	115.67	101.28	14.39	8.038	
3,000.00	2,994.93	2,980.55	2,975.77	7.55	7.77	-161.68	56.12	32.02	143.07	128.19	14.88	9.617	
3,100.00	3,093.26	3,075.43	3,069.22	7.86	8.06	-159.64	67.16	44.20	173.08	157.68	15.40	11.236	
3,200.00	3,191.25	3,170.20	3,162.54	8.18	8.37	-158.33	78.21	56.40	204.79	188.83	15.96	12.831	
3,222.38	3,213.13	3,191.34	3,183.36	8.24	8.44	-158.11	80.67	59.12	212.10	196.03	16.08	13.194	
3,300.00	3,288.99	3,264.61	3,255.52	8.49	8.69	-157.55	89.22	68.55	237.62	221.11	16.51	14.389	
3,400.00	3,386.72	3,359.02	3,348.49	8.84	9.02	-156.99	100.23	80.69	270.52	253.41	17.11	15.809	
3,500.00	3,484.45	3,453.42	3,441.46	9.21	9.35	-156.54	111.24	92.84	303.44	285.71	17.73	17.117	
3,600.00	3,582.19	3,547.82	3,534.43	9.58	9.70	-156.19	122.24	104.99	336.37	318.01	18.36	18.321	
3,700.00	3,679.92	3,642.23	3,627.40	9.96	10.05	-155.89	133.25	117.13	369.31	350.30	19.01	19.430	
3,800.00	3,777.65	3,736.63	3,720.37	10.35	10.40	-155.65	144.26	129.28	402.26	382.59	19.67	20.453	
3,900.00	3,875.39	3,831.03	3,813.34	10.75	10.75	-155.44	155.27	141.43	435.21	414.88	20.33	21.409	
4,000.00	3,973.12	3,929.91	3,910.78	11.15	11.11	-155.29	166.53	153.86	467.87	446.85	21.02	22.260	
4,100.00	4,070.85	4,031.83	4,011.49	11.56	11.50	-155.27	177.02	165.43	499.24	477.48	21.76	22.943	
4,200.00	4,168.58	4,134.69	4,113.40	11.97	11.89	-155.37	186.38	175.76	529.24	506.74	22.50	23.519	
4,300.00	4,266.32	4,238.44	4,216.43	12.39	12.28	-155.59	194.58	184.80	557.85	534.60	23.24	24.001	
4,400.00	4,364.05	4,343.03	4,320.50	12.81	12.66	-155.89	201.57	192.52	585.06	561.08	23.98	24.402	
4,500.00	4,461.78	4,448.39	4,425.51	13.24	13.03	-156.28	207.33	198.87	610.86	586.16	24.70	24.731	
4,600.00	4,559.51	4,554.47	4,531.38	13.67	13.39	-156.75	211.81	203.82	635.27	609.86	25.41	25.001	
4,700.00	4,657.25	4,661.19	4,637.99	14.10	13.73	-157.29	214.99	207.33	658.28	632.18	26.10	25.221	
4,800.00	4,754.98	4,768.49	4,745.25	14.54	14.03	-157.90	216.84	209.37	679.91	653.15	26.76	25.407	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 111H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,852.71	4,874.95	4,851.71	14.97	14.20	-158.57	217.36	209.94	700.18	672.86	27.32	25.631	
5,000.00	4,950.45	4,972.68	4,949.45	15.42	14.26	-159.18	217.36	209.94	719.99	692.20	27.79	25.906	
5,100.00	5,048.18	5,070.42	5,047.18	15.86	14.33	-159.77	217.36	209.94	739.88	711.59	28.28	26.160	
5,200.00	5,145.91	5,168.15	5,144.91	16.30	14.39	-160.32	217.36	209.94	759.83	731.05	28.78	26.405	
5,300.00	5,243.64	5,265.88	5,242.64	16.75	14.46	-160.84	217.36	209.94	779.85	750.57	29.27	26.640	
5,400.00	5,341.38	5,363.61	5,340.38	17.20	14.53	-161.34	217.36	209.94	799.92	770.15	29.77	26.866	
5,500.00	5,439.11	5,461.35	5,438.11	17.65	14.60	-161.81	217.36	209.94	820.06	789.78	30.28	27.084	
5,600.00	5,536.84	5,559.08	5,535.84	18.10	14.67	-162.26	217.36	209.94	840.24	809.46	30.79	27.293	
5,700.00	5,634.58	5,656.81	5,633.58	18.55	14.74	-162.69	217.36	209.94	860.47	829.18	31.30	27.495	
5,800.00	5,732.31	5,754.55	5,731.31	19.00	14.81	-163.10	217.36	209.94	880.75	848.94	31.81	27.689	
5,900.00	5,830.04	5,852.28	5,829.04	19.46	14.88	-163.49	217.36	209.94	901.07	868.74	32.32	27.876	
6,000.00	5,927.77	5,950.01	5,926.77	19.92	14.95	-163.86	217.36	209.94	921.42	888.58	32.84	28.057	
6,100.00	6,025.51	6,047.74	6,024.51	20.37	15.01	-164.22	217.36	209.94	941.81	908.45	33.36	28.231	
6,200.00	6,123.24	6,145.48	6,122.24	20.83	15.08	-164.56	217.36	209.94	962.24	928.36	33.88	28.399	
6,300.00	6,220.97	6,243.21	6,219.97	21.29	15.15	-164.89	217.36	209.94	982.69	948.29	34.41	28.562	
14,900.00	7,818.00	14,786.15	7,797.00	166.25	164.59	89.13	195.03	-6,960.86	1,320.15	989.61	330.54	3.994	
14,929.37	7,818.00	14,815.52	7,797.00	166.92	165.27	89.13	194.94	-6,990.23	1,320.15	988.25	331.90	3.978	
15,000.00	7,818.00	14,886.15	7,797.00	168.54	166.91	89.13	194.72	-7,060.86	1,320.15	984.99	335.16	3.939	
15,029.37	7,818.00	14,915.52	7,797.00	169.21	167.59	89.13	194.63	-7,090.23	1,320.15	983.64	336.51	3.923	
15,100.00	7,818.00	14,986.15	7,797.00	170.83	169.22	89.13	194.41	-7,160.86	1,320.15	980.38	339.77	3.885	
15,129.37	7,818.00	15,015.52	7,797.00	171.51	169.90	89.13	194.31	-7,190.23	1,320.15	979.03	341.12	3.870	
15,200.00	7,818.00	15,086.15	7,797.00	173.13	171.54	89.13	194.09	-7,260.86	1,320.15	975.77	344.38	3.833	
15,229.37	7,818.00	15,115.52	7,797.00	173.80	172.22	89.13	194.00	-7,290.23	1,320.15	974.41	345.74	3.818	
15,300.00	7,818.00	15,186.15	7,797.00	175.42	173.86	89.13	193.78	-7,360.86	1,320.15	971.15	349.00	3.783	
15,329.37	7,818.00	15,215.52	7,797.00	176.10	174.54	89.13	193.69	-7,390.23	1,320.15	969.80	350.35	3.768	
15,400.00	7,818.00	15,286.15	7,797.00	177.72	176.18	89.13	193.47	-7,460.86	1,320.15	966.54	353.61	3.733	
15,429.37	7,818.00	15,315.52	7,797.00	178.39	176.86	89.13	193.38	-7,490.23	1,320.15	965.18	354.97	3.719	
15,500.00	7,818.00	15,386.15	7,797.00	180.01	178.49	89.13	193.16	-7,560.86	1,320.15	961.92	358.23	3.685	
15,529.37	7,818.00	15,415.52	7,797.00	180.69	179.18	89.13	193.07	-7,590.23	1,320.15	960.57	359.58	3.671	
15,600.00	7,818.00	15,486.15	7,797.00	182.31	180.81	89.13	192.85	-7,660.86	1,320.15	957.31	362.84	3.638	
15,629.37	7,818.00	15,515.52	7,797.00	182.99	181.49	89.13	192.76	-7,690.23	1,320.15	955.95	364.20	3.625	
15,700.00	7,818.00	15,586.15	7,797.00	184.61	183.13	89.13	192.54	-7,760.86	1,320.15	952.69	367.46	3.593	
15,729.37	7,818.00	15,615.52	7,797.00	185.28	183.81	89.13	192.45	-7,790.23	1,320.15	951.33	368.82	3.579	
15,800.00	7,818.00	15,686.15	7,797.00	186.91	185.45	89.13	192.23	-7,860.86	1,320.15	948.07	372.08	3.548	
15,829.37	7,818.00	15,715.52	7,797.00	187.58	186.13	89.13	192.13	-7,890.23	1,320.15	946.71	373.44	3.535	
15,900.00	7,818.00	15,786.15	7,797.00	189.21	187.77	89.13	191.91	-7,960.86	1,320.15	943.45	376.70	3.505	
15,929.37	7,818.00	15,815.52	7,797.00	189.88	188.45	89.13	191.82	-7,990.23	1,320.15	942.09	378.06	3.492	
16,000.00	7,818.00	15,886.15	7,797.00	191.51	190.09	89.13	191.60	-8,060.86	1,320.15	938.83	381.32	3.462	
16,029.37	7,818.00	15,915.52	7,797.00	192.18	190.77	89.13	191.51	-8,090.23	1,320.15	937.47	382.68	3.450	
16,100.00	7,818.00	15,986.15	7,797.00	193.81	192.41	89.13	191.29	-8,160.86	1,320.15	934.21	385.94	3.421	
16,129.37	7,818.00	16,015.52	7,797.00	194.48	193.09	89.13	191.20	-8,190.23	1,320.15	932.85	387.30	3.409	
16,200.00	7,818.00	16,086.15	7,797.00	196.11	194.73	89.13	190.98	-8,260.86	1,320.15	929.59	390.56	3.380	
16,229.37	7,818.00	16,115.52	7,797.00	196.78	195.41	89.13	190.89	-8,290.23	1,320.15	928.23	391.92	3.368	
16,300.00	7,818.00	16,186.15	7,797.00	198.41	197.04	89.13	190.67	-8,360.86	1,320.15	924.96	395.19	3.341	
16,329.37	7,818.00	16,215.52	7,797.00	199.09	197.73	89.13	190.58	-8,390.23	1,320.15	923.61	396.54	3.329	
16,400.00	7,818.00	16,286.15	7,797.00	200.71	199.36	89.13	190.36	-8,460.86	1,320.15	920.34	399.81	3.302	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 111H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,429.37	7,818.00	16,315.52	7,797.00	201.39	200.05	89.13	190.27	-8,490.22	1,320.15	918.98	401.17	3.291	
16,500.00	7,818.00	16,386.15	7,797.00	203.01	201.68	89.13	190.05	-8,560.86	1,320.15	915.72	404.43	3.264	
16,529.37	7,818.00	16,415.52	7,797.00	203.69	202.37	89.13	189.95	-8,590.22	1,320.15	914.36	405.79	3.253	
16,600.00	7,818.00	16,486.15	7,797.00	205.32	204.00	89.13	189.73	-8,660.86	1,320.15	911.09	409.06	3.227	
16,629.37	7,818.00	16,515.52	7,797.00	205.99	204.69	89.13	189.64	-8,690.22	1,320.15	909.73	410.42	3.217	
16,700.00	7,818.00	16,586.15	7,797.00	207.62	206.32	89.13	189.42	-8,760.86	1,320.15	906.47	413.68	3.191	
16,729.37	7,818.00	16,615.52	7,797.00	208.30	207.01	89.13	189.33	-8,790.22	1,320.15	905.11	415.04	3.181	
16,800.00	7,818.00	16,686.15	7,797.00	209.92	208.64	89.13	189.11	-8,860.86	1,320.15	901.84	418.31	3.156	
16,829.37	7,818.00	16,715.52	7,797.00	210.60	209.33	89.13	189.02	-8,890.22	1,320.15	900.48	419.67	3.146	
16,900.00	7,818.00	16,786.15	7,797.00	212.23	210.96	89.13	188.80	-8,960.85	1,320.15	897.22	422.93	3.121	
16,929.37	7,818.00	16,815.52	7,797.00	212.91	211.65	89.13	188.71	-8,990.22	1,320.15	895.86	424.29	3.111	
17,000.00	7,818.00	16,886.15	7,797.00	214.53	213.28	89.13	188.49	-9,060.85	1,320.15	892.59	427.56	3.088	
17,029.37	7,818.00	16,915.52	7,797.00	215.21	213.97	89.13	188.40	-9,090.22	1,320.15	891.23	428.92	3.078	
17,100.00	7,818.00	16,986.15	7,797.00	216.84	215.60	89.13	188.18	-9,160.85	1,320.15	887.96	432.19	3.055	
17,129.37	7,818.00	17,015.52	7,797.00	217.52	216.29	89.13	188.09	-9,190.22	1,320.15	886.60	433.55	3.045	
17,200.00	7,818.00	17,086.15	7,797.00	219.15	217.93	89.13	187.87	-9,260.85	1,320.15	883.33	436.82	3.022	
17,229.37	7,818.00	17,115.52	7,797.00	219.82	218.61	89.13	187.77	-9,290.22	1,320.15	881.98	438.18	3.013	
17,300.00	7,818.00	17,186.15	7,797.00	221.45	220.25	89.13	187.55	-9,360.85	1,320.15	878.71	441.44	2.991	
17,329.37	7,818.00	17,215.52	7,797.00	222.13	220.93	89.13	187.46	-9,390.22	1,320.15	877.35	442.80	2.981	
17,400.00	7,818.00	17,286.15	7,797.00	223.76	222.57	89.13	187.24	-9,460.85	1,320.15	874.08	446.07	2.959	
17,429.37	7,818.00	17,315.52	7,797.00	224.44	223.25	89.13	187.15	-9,490.22	1,320.15	872.72	447.43	2.951	
17,500.00	7,818.00	17,386.15	7,797.00	226.07	224.89	89.13	186.93	-9,560.85	1,320.15	869.45	450.70	2.929	
17,529.37	7,818.00	17,415.52	7,797.00	226.74	225.57	89.13	186.84	-9,590.22	1,320.15	868.09	452.06	2.920	
17,600.00	7,818.00	17,486.15	7,797.00	228.37	227.21	89.13	186.62	-9,660.85	1,320.15	864.82	455.33	2.899	
17,629.37	7,818.00	17,515.52	7,797.00	229.05	227.89	89.13	186.53	-9,690.22	1,320.15	863.46	456.69	2.891	
17,700.00	7,818.00	17,586.15	7,797.00	230.68	229.53	89.13	186.31	-9,760.85	1,320.15	860.19	459.96	2.870	
17,729.37	7,818.00	17,615.52	7,797.00	231.36	230.21	89.13	186.22	-9,790.22	1,320.15	858.83	461.32	2.862	
17,800.00	7,818.00	17,686.15	7,797.00	232.99	231.85	89.13	186.00	-9,860.85	1,320.15	855.56	464.59	2.842	
17,829.37	7,818.00	17,715.52	7,797.00	233.67	232.53	89.13	185.91	-9,890.22	1,320.15	854.20	465.95	2.833	
17,900.00	7,818.00	17,786.15	7,797.00	235.30	234.17	89.13	185.69	-9,960.85	1,320.15	850.93	469.22	2.813	
17,929.37	7,818.00	17,815.52	7,797.00	235.98	234.85	89.13	185.59	-9,990.22	1,320.15	849.57	470.58	2.805	
18,000.00	7,818.00	17,886.15	7,797.00	237.61	236.49	89.13	185.37	-10,060.85	1,320.15	846.30	473.85	2.786	
18,029.37	7,818.00	17,915.52	7,797.00	238.29	237.17	89.13	185.28	-10,090.22	1,320.15	844.94	475.21	2.778	
18,100.00	7,818.00	17,986.15	7,797.00	239.92	238.81	89.13	185.06	-10,160.85	1,320.15	841.67	478.49	2.759	
18,129.37	7,818.00	18,015.52	7,797.00	240.59	239.50	89.13	184.97	-10,190.22	1,320.15	840.31	479.85	2.751	
18,168.87	7,818.00	18,055.02	7,797.00	241.51	240.41	89.13	184.85	-10,229.72	1,320.15	838.48	481.67	2.741	
18,174.14	7,818.00	18,057.89	7,797.00	241.63	240.48	89.13	184.84	-10,232.59	1,320.15	838.30	481.85	2.740	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 113H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,922.70	7,818.00	14,788.03	7,826.00	166.77	163.13	-90.65	-2,440.34	-6,976.16	1,315.39	985.81	329.58	3.991	
15,000.00	7,818.00	14,865.33	7,826.00	168.54	164.92	-90.65	-2,440.53	-7,053.45	1,315.35	982.20	333.14	3.948	
15,022.70	7,818.00	14,888.03	7,826.00	169.06	165.44	-90.65	-2,440.59	-7,076.16	1,315.33	981.14	334.19	3.936	
15,100.00	7,818.00	14,965.33	7,826.00	170.83	167.24	-90.65	-2,440.78	-7,153.45	1,315.29	977.53	337.76	3.894	
15,122.70	7,818.00	14,988.03	7,826.00	171.35	167.76	-90.65	-2,440.84	-7,176.16	1,315.27	976.47	338.80	3.882	
15,200.00	7,818.00	15,065.33	7,826.00	173.13	169.55	-90.65	-2,441.03	-7,253.45	1,315.23	972.86	342.37	3.842	
15,222.70	7,818.00	15,088.03	7,826.00	173.65	170.08	-90.65	-2,441.09	-7,276.16	1,315.21	971.79	343.42	3.830	
15,300.00	7,818.00	15,165.33	7,826.00	175.42	171.87	-90.65	-2,441.29	-7,353.45	1,315.16	968.18	346.98	3.790	
15,322.70	7,818.00	15,188.03	7,826.00	175.94	172.40	-90.65	-2,441.34	-7,376.16	1,315.15	967.12	348.03	3.779	
15,400.00	7,818.00	15,265.33	7,826.00	177.72	174.19	-90.65	-2,441.54	-7,453.45	1,315.10	963.51	351.60	3.740	
15,422.70	7,818.00	15,288.03	7,826.00	178.24	174.71	-90.65	-2,441.59	-7,476.16	1,315.09	962.44	352.65	3.729	
15,500.00	7,818.00	15,365.33	7,826.00	180.01	176.51	-90.65	-2,441.79	-7,553.45	1,315.04	958.83	356.22	3.692	
15,522.70	7,818.00	15,388.03	7,826.00	180.54	177.03	-90.65	-2,441.84	-7,576.15	1,315.03	957.77	357.26	3.681	
15,600.00	7,818.00	15,465.33	7,826.00	182.31	178.82	-90.65	-2,442.04	-7,653.45	1,314.98	954.15	360.83	3.644	
15,622.70	7,818.00	15,488.03	7,826.00	182.83	179.35	-90.65	-2,442.10	-7,676.15	1,314.97	953.09	361.88	3.634	
15,700.00	7,818.00	15,565.33	7,826.00	184.61	181.14	-90.65	-2,442.29	-7,753.45	1,314.92	949.47	365.45	3.598	
15,722.70	7,818.00	15,588.03	7,826.00	185.13	181.67	-90.65	-2,442.35	-7,776.15	1,314.91	948.41	366.50	3.588	
15,800.00	7,818.00	15,665.33	7,826.00	186.91	183.46	-90.65	-2,442.54	-7,853.45	1,314.86	944.79	370.07	3.553	
15,822.70	7,818.00	15,688.03	7,826.00	187.43	183.99	-90.65	-2,442.60	-7,876.15	1,314.85	943.73	371.12	3.543	
15,900.00	7,818.00	15,765.33	7,826.00	189.21	185.78	-90.65	-2,442.79	-7,953.45	1,314.80	940.11	374.69	3.509	
15,922.70	7,818.00	15,788.03	7,826.00	189.73	186.30	-90.65	-2,442.85	-7,976.15	1,314.79	939.05	375.74	3.499	
16,000.00	7,818.00	15,865.33	7,826.00	191.51	188.10	-90.65	-2,443.04	-8,053.45	1,314.74	935.43	379.31	3.466	
16,022.70	7,818.00	15,888.03	7,826.00	192.03	188.62	-90.65	-2,443.10	-8,076.15	1,314.73	934.37	380.36	3.457	
16,100.00	7,818.00	15,965.33	7,826.00	193.81	190.42	-90.65	-2,443.29	-8,153.45	1,314.68	930.75	383.93	3.424	
16,122.70	7,818.00	15,988.03	7,826.00	194.33	190.94	-90.65	-2,443.35	-8,176.15	1,314.67	929.69	384.98	3.415	
16,200.00	7,818.00	16,065.33	7,826.00	196.11	192.73	-90.65	-2,443.54	-8,253.45	1,314.62	926.07	388.55	3.383	
16,222.70	7,818.00	16,088.03	7,826.00	196.63	193.26	-90.65	-2,443.60	-8,276.15	1,314.61	925.01	389.60	3.374	
16,300.00	7,818.00	16,165.33	7,826.00	198.41	195.05	-90.65	-2,443.80	-8,353.45	1,314.56	921.39	393.17	3.343	
16,322.70	7,818.00	16,188.03	7,826.00	198.93	195.58	-90.65	-2,443.85	-8,376.15	1,314.55	920.32	394.22	3.335	
16,400.00	7,818.00	16,265.33	7,826.00	200.71	197.37	-90.65	-2,444.05	-8,453.45	1,314.50	916.70	397.80	3.304	
16,422.70	7,818.00	16,288.03	7,826.00	201.23	197.90	-90.65	-2,444.10	-8,476.15	1,314.49	915.64	398.85	3.296	
16,500.00	7,818.00	16,365.33	7,826.00	203.01	199.69	-90.65	-2,444.30	-8,553.45	1,314.44	912.02	402.42	3.266	
16,522.70	7,818.00	16,388.03	7,826.00	203.54	200.22	-90.65	-2,444.35	-8,576.15	1,314.43	910.96	403.47	3.258	
16,600.00	7,818.00	16,465.33	7,826.00	205.32	202.01	-90.65	-2,444.55	-8,653.45	1,314.38	907.33	407.04	3.229	
16,622.70	7,818.00	16,488.03	7,826.00	205.84	202.54	-90.65	-2,444.60	-8,676.15	1,314.37	906.27	408.09	3.221	
16,700.00	7,818.00	16,565.33	7,826.00	207.62	204.33	-90.65	-2,444.80	-8,753.45	1,314.32	902.65	411.67	3.193	
16,722.70	7,818.00	16,588.03	7,826.00	208.14	204.86	-90.65	-2,444.86	-8,776.15	1,314.31	901.59	412.72	3.184	
16,800.00	7,818.00	16,665.33	7,826.00	209.92	206.65	-90.65	-2,445.05	-8,853.45	1,314.26	897.96	416.30	3.157	
16,822.70	7,818.00	16,688.03	7,826.00	210.45	207.18	-90.65	-2,445.11	-8,876.15	1,314.24	896.90	417.35	3.149	
16,900.00	7,818.00	16,765.33	7,826.00	212.23	208.97	-90.65	-2,445.30	-8,953.45	1,314.20	893.28	420.92	3.122	
16,922.70	7,818.00	16,788.03	7,826.00	212.75	209.50	-90.65	-2,445.36	-8,976.15	1,314.18	892.21	421.97	3.114	
17,000.00	7,818.00	16,865.33	7,826.00	214.53	211.29	-90.65	-2,445.55	-9,053.45	1,314.14	888.59	425.55	3.088	
17,022.70	7,818.00	16,888.03	7,826.00	215.06	211.82	-90.65	-2,445.61	-9,076.15	1,314.12	887.53	426.60	3.080	
17,100.00	7,818.00	16,965.33	7,826.00	216.84	213.61	-90.65	-2,445.80	-9,153.45	1,314.08	883.90	430.17	3.055	
17,122.70	7,818.00	16,988.03	7,826.00	217.36	214.14	-90.65	-2,445.86	-9,176.15	1,314.06	882.84	431.23	3.047	
17,200.00	7,818.00	17,065.33	7,826.00	219.15	215.93	-90.65	-2,446.05	-9,253.45	1,314.02	879.21	434.80	3.022	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 113H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,222.70	7,818.00	17,088.03	7,826.00	219.67	216.46	-90.65	-2,446.11	-9,276.15	1,314.00	878.15	435.85	3.015	
17,300.00	7,818.00	17,165.33	7,826.00	221.45	218.25	-90.65	-2,446.30	-9,353.45	1,313.96	874.53	439.43	2.990	
17,322.70	7,818.00	17,188.03	7,826.00	221.98	218.78	-90.65	-2,446.36	-9,376.15	1,313.94	873.46	440.48	2.983	
17,400.00	7,818.00	17,265.33	7,826.00	223.76	220.57	-90.65	-2,446.56	-9,453.44	1,313.90	869.84	444.06	2.959	
17,422.70	7,818.00	17,288.03	7,826.00	224.28	221.10	-90.65	-2,446.61	-9,476.15	1,313.88	868.77	445.11	2.952	
17,500.00	7,818.00	17,365.33	7,826.00	226.07	222.89	-90.65	-2,446.81	-9,553.44	1,313.84	865.15	448.69	2.928	
17,522.70	7,818.00	17,388.03	7,826.00	226.59	223.42	-90.65	-2,446.86	-9,576.15	1,313.82	864.08	449.74	2.921	
17,600.00	7,818.00	17,465.33	7,826.00	228.37	225.21	-90.65	-2,447.06	-9,653.44	1,313.78	860.46	453.32	2.898	
17,622.70	7,818.00	17,488.03	7,826.00	228.90	225.74	-90.65	-2,447.11	-9,676.15	1,313.76	859.39	454.37	2.891	
17,700.00	7,818.00	17,565.33	7,826.00	230.68	227.53	-90.65	-2,447.31	-9,753.44	1,313.71	855.77	457.95	2.869	
17,722.70	7,818.00	17,588.03	7,826.00	231.21	228.06	-90.65	-2,447.37	-9,776.15	1,313.70	854.70	459.00	2.862	
17,800.00	7,818.00	17,665.33	7,826.00	232.99	229.86	-90.65	-2,447.56	-9,853.44	1,313.65	851.08	462.58	2.840	
17,822.70	7,818.00	17,688.03	7,826.00	233.51	230.38	-90.65	-2,447.62	-9,876.15	1,313.64	850.01	463.63	2.833	
17,900.00	7,818.00	17,765.33	7,826.00	235.30	232.18	-90.65	-2,447.81	-9,953.44	1,313.59	846.39	467.21	2.812	
17,922.70	7,818.00	17,788.03	7,826.00	235.82	232.70	-90.65	-2,447.87	-9,976.15	1,313.58	845.32	468.26	2.805	
18,000.00	7,818.00	17,865.33	7,826.00	237.61	234.50	-90.65	-2,448.06	-10,053.44	1,313.53	841.69	471.84	2.784	
18,022.70	7,818.00	17,888.03	7,826.00	238.13	235.02	-90.65	-2,448.12	-10,076.14	1,313.52	840.63	472.89	2.778	
18,100.00	7,818.00	17,965.33	7,826.00	239.92	236.82	-90.65	-2,448.31	-10,153.44	1,313.47	837.00	476.47	2.757	
18,116.83	7,818.00	17,982.16	7,826.00	240.31	237.21	-90.65	-2,448.35	-10,170.27	1,313.46	836.21	477.25	2.752	
18,174.14	7,818.00	18,039.47	7,826.00	241.63	238.54	-90.65	-2,448.50	-10,227.58	1,313.43	833.52	479.90	2.737	CC, ES, SF

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 131H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	1.00	1.00	1.00	1.00	89.83	0.09	30.00	30.00				
100.00	100.00	101.00	101.00	1.28	1.28	89.83	0.09	30.00	30.00	27.44	2.56	11.740	
200.00	200.00	201.00	201.00	1.76	1.76	89.83	0.09	30.00	30.00	26.47	3.53	8.509	
300.00	300.00	301.00	301.00	2.14	2.15	89.83	0.09	30.00	30.00	25.71	4.29	6.997	
400.00	400.00	401.00	401.00	2.47	2.47	89.83	0.09	30.00	30.00	25.06	4.94	6.075	
500.00	500.00	501.00	501.00	2.76	2.76	89.83	0.09	30.00	30.00	24.48	5.52	5.437	
600.00	600.00	601.00	601.00	3.02	3.02	89.83	0.09	30.00	30.00	23.95	6.05	4.962	
700.00	700.00	701.00	701.00	3.27	3.27	89.83	0.09	30.00	30.00	23.46	6.54	4.590	
800.00	800.00	801.00	801.00	3.50	3.50	89.83	0.09	30.00	30.00	23.01	7.00	4.289	
900.00	900.00	901.00	901.00	3.71	3.72	89.83	0.09	30.00	30.00	22.57	7.43	4.038	
1,000.00	1,000.00	1,001.00	1,001.00	3.92	3.92	89.83	0.09	30.00	30.00	22.16	7.84	3.825	
1,100.00	1,100.00	1,101.00	1,101.00	4.12	4.12	89.83	0.09	30.00	30.00	21.76	8.24	3.641	
1,200.00	1,200.00	1,201.00	1,201.00	4.31	4.31	89.83	0.09	30.00	30.00	21.38	8.62	3.480	
1,300.00	1,300.00	1,301.00	1,301.00	4.49	4.50	89.83	0.09	30.00	30.00	21.01	8.99	3.337	
1,400.00	1,400.00	1,401.00	1,401.00	4.67	4.67	89.83	0.09	30.00	30.00	20.65	9.35	3.210	
1,500.00	1,500.00	1,501.00	1,501.00	4.85	4.85	89.83	0.09	30.00	30.00	20.31	9.69	3.095	
1,600.00	1,600.00	1,601.00	1,601.00	5.01	5.02	89.83	0.09	30.00	30.00	19.97	10.03	2.991	
1,700.00	1,700.00	1,701.00	1,701.00	5.18	5.18	89.83	0.09	30.00	30.00	19.64	10.36	2.897	
1,800.00	1,800.00	1,801.00	1,801.00	5.34	5.34	89.83	0.09	30.00	30.00	19.32	10.68	2.810	
1,900.00	1,900.00	1,901.00	1,901.00	5.50	5.50	89.83	0.09	30.00	30.00	19.01	10.99	2.729	
1,916.33	1,916.33	1,917.33	1,917.33	5.52	5.52	89.83	0.09	30.00	30.00	18.96	11.04	2.717	CC
2,000.00	2,000.00	2,001.00	2,001.00	5.65	5.65	89.83	0.09	30.00	30.00	18.70	11.30	2.655	ES
2,100.00	2,099.99	2,100.59	2,100.58	5.78	5.80	-80.82	0.69	30.65	30.51	18.93	11.57	2.636	SF
2,200.00	2,199.96	2,200.00	2,199.96	5.89	5.95	-88.33	2.47	32.56	32.38	20.56	11.82	2.739	
2,300.00	2,299.86	2,299.23	2,299.09	6.03	6.12	-98.78	5.41	35.72	36.55	24.46	12.08	3.025	
2,400.00	2,399.68	2,398.00	2,397.68	6.18	6.30	-109.51	9.50	40.12	43.92	31.54	12.37	3.549	
2,500.00	2,499.37	2,496.24	2,495.62	6.35	6.50	-118.65	14.71	45.73	54.92	42.22	12.70	4.324	
2,600.00	2,598.90	2,593.80	2,592.74	6.55	6.72	-125.65	21.02	52.52	69.55	56.49	13.06	5.325	
2,700.00	2,698.26	2,690.58	2,688.91	6.77	6.95	-130.79	28.39	60.44	87.65	74.19	13.46	6.513	
2,800.00	2,797.40	2,786.44	2,783.97	7.01	7.20	-134.55	36.78	69.47	109.03	95.14	13.88	7.853	
2,900.00	2,896.30	2,881.27	2,877.80	7.27	7.47	-137.30	46.14	79.54	133.53	119.20	14.34	9.313	
3,000.00	2,994.93	2,974.96	2,970.26	7.55	7.75	-139.35	56.43	90.61	161.05	146.23	14.82	10.867	
3,100.00	3,093.26	3,069.50	3,063.38	7.86	8.05	-140.98	67.57	102.59	191.10	175.75	15.35	12.449	
3,200.00	3,191.25	3,164.23	3,156.67	8.18	8.35	-142.40	78.77	114.64	222.65	206.74	15.92	13.989	
3,222.38	3,213.13	3,185.36	3,177.48	8.24	8.42	-142.69	81.27	117.33	229.91	213.88	16.03	14.341	
3,300.00	3,288.99	3,258.61	3,249.61	8.49	8.67	-143.75	89.93	126.64	255.25	238.78	16.48	15.492	
3,400.00	3,386.72	3,352.97	3,342.54	8.84	9.00	-144.83	101.09	138.65	288.00	270.91	17.08	16.859	
3,500.00	3,484.45	3,449.19	3,437.32	9.21	9.34	-145.72	112.38	150.80	320.71	302.99	17.72	18.099	
3,600.00	3,582.19	3,549.22	3,536.07	9.58	9.70	-146.57	123.19	162.42	352.30	333.89	18.41	19.136	
3,700.00	3,679.92	3,650.18	3,636.03	9.96	10.06	-147.41	132.91	172.88	382.47	363.37	19.10	20.024	
3,800.00	3,777.65	3,752.04	3,737.10	10.35	10.43	-148.26	141.49	182.11	411.21	391.41	19.80	20.772	
3,900.00	3,875.39	3,854.74	3,839.22	10.75	10.78	-149.11	148.91	190.09	438.51	418.02	20.49	21.397	
4,000.00	3,973.12	3,958.22	3,942.30	11.15	11.14	-149.98	155.12	196.77	464.39	443.20	21.19	21.916	
4,100.00	4,070.85	4,062.43	4,046.24	11.56	11.48	-150.87	160.09	202.12	488.85	466.97	21.88	22.344	
4,200.00	4,168.58	4,167.29	4,150.97	11.97	11.81	-151.80	163.80	206.11	511.88	489.33	22.56	22.694	
4,300.00	4,266.32	4,272.76	4,256.37	12.39	12.12	-152.75	166.20	208.70	533.51	510.30	23.21	22.983	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 131H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,400.00	4,364.05	4,378.75	4,362.35	12.81	12.37	-153.75	167.29	209.87	553.76	529.92	23.83	23.236	
4,500.00	4,461.78	4,479.18	4,462.78	13.24	12.49	-154.70	167.36	209.94	572.98	548.64	24.34	23.536	
4,600.00	4,559.51	4,576.92	4,560.51	13.67	12.57	-155.57	167.36	209.94	592.27	567.44	24.83	23.854	
4,700.00	4,657.25	4,674.65	4,658.25	14.10	12.65	-156.39	167.36	209.94	611.68	586.36	25.32	24.162	
4,800.00	4,754.98	4,772.38	4,755.98	14.54	12.72	-157.16	167.36	209.94	631.21	605.40	25.81	24.457	
4,900.00	4,852.71	4,870.11	4,853.71	14.97	12.80	-157.88	167.36	209.94	650.84	624.53	26.31	24.741	
5,000.00	4,950.45	4,967.85	4,951.45	15.42	12.88	-158.56	167.36	209.94	670.56	643.75	26.81	25.014	
5,100.00	5,048.18	5,065.58	5,049.18	15.86	12.95	-159.20	167.36	209.94	690.37	663.05	27.31	25.277	
5,200.00	5,145.91	5,163.31	5,146.91	16.30	13.03	-159.80	167.36	209.94	710.25	682.43	27.82	25.529	
5,300.00	5,243.64	5,261.05	5,244.64	16.75	13.11	-160.37	167.36	209.94	730.21	701.88	28.33	25.772	
5,400.00	5,341.38	5,358.78	5,342.38	17.20	13.18	-160.92	167.36	209.94	750.24	721.39	28.85	26.005	
5,500.00	5,439.11	5,456.51	5,440.11	17.65	13.26	-161.43	167.36	209.94	770.33	740.96	29.37	26.230	
5,600.00	5,536.84	5,554.24	5,537.84	18.10	13.34	-161.92	167.36	209.94	790.47	760.58	29.89	26.447	
5,700.00	5,634.58	5,651.98	5,635.58	18.55	13.41	-162.38	167.36	209.94	810.67	780.25	30.41	26.656	
5,800.00	5,732.31	5,749.71	5,733.31	19.00	13.49	-162.82	167.36	209.94	830.91	799.97	30.94	26.857	
5,900.00	5,830.04	5,847.44	5,831.04	19.46	13.57	-163.24	167.36	209.94	851.20	819.74	31.47	27.052	
6,000.00	5,927.77	5,945.18	5,928.77	19.92	13.64	-163.64	167.36	209.94	871.54	839.54	32.00	27.239	
6,100.00	6,025.51	6,042.91	6,026.51	20.37	13.72	-164.03	167.36	209.94	891.91	859.38	32.53	27.421	
6,200.00	6,123.24	6,140.64	6,124.24	20.83	13.80	-164.39	167.36	209.94	912.31	879.25	33.06	27.596	
6,300.00	6,220.97	6,238.37	6,221.97	21.29	13.87	-164.74	167.36	209.94	932.76	899.16	33.59	27.765	
6,400.00	6,318.71	6,336.11	6,319.71	21.75	13.95	-165.07	167.36	209.94	953.23	919.10	34.13	27.929	
6,500.00	6,416.44	6,433.84	6,417.44	22.21	14.03	-165.40	167.36	209.94	973.73	939.07	34.67	28.087	
6,600.00	6,514.17	6,531.57	6,515.17	22.67	14.10	-165.70	167.36	209.94	994.27	959.06	35.21	28.240	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 132H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	1.00	1.00	1.00	1.00	89.83	0.18	60.00	60.00				
100.00	100.00	101.00	101.00	1.28	1.28	89.83	0.18	60.00	60.00	57.44	2.56	23.479	
200.00	200.00	201.00	201.00	1.76	1.76	89.83	0.18	60.00	60.00	56.47	3.53	17.017	
300.00	300.00	301.00	301.00	2.14	2.15	89.83	0.18	60.00	60.00	55.71	4.29	13.994	
400.00	400.00	401.00	401.00	2.47	2.47	89.83	0.18	60.00	60.00	55.06	4.94	12.150	
500.00	500.00	501.00	501.00	2.76	2.76	89.83	0.18	60.00	60.00	54.48	5.52	10.875	
600.00	600.00	601.00	601.00	3.02	3.02	89.83	0.18	60.00	60.00	53.95	6.05	9.924	
700.00	700.00	701.00	701.00	3.27	3.27	89.83	0.18	60.00	60.00	53.46	6.54	9.180	
800.00	800.00	801.00	801.00	3.50	3.50	89.83	0.18	60.00	60.00	53.01	7.00	8.578	
900.00	900.00	901.00	901.00	3.71	3.72	89.83	0.18	60.00	60.00	52.57	7.43	8.076	
1,000.00	1,000.00	1,001.00	1,001.00	3.92	3.92	89.83	0.18	60.00	60.00	52.16	7.84	7.650	
1,100.00	1,100.00	1,101.00	1,101.00	4.12	4.12	89.83	0.18	60.00	60.00	51.76	8.24	7.282	
1,200.00	1,200.00	1,201.00	1,201.00	4.31	4.31	89.83	0.18	60.00	60.00	51.38	8.62	6.960	
1,300.00	1,300.00	1,301.00	1,301.00	4.49	4.50	89.83	0.18	60.00	60.00	51.01	8.99	6.675	
1,400.00	1,400.00	1,401.00	1,401.00	4.67	4.67	89.83	0.18	60.00	60.00	50.65	9.35	6.420	
1,500.00	1,500.00	1,501.00	1,501.00	4.85	4.85	89.83	0.18	60.00	60.00	50.31	9.69	6.191	
1,600.00	1,600.00	1,601.00	1,601.00	5.01	5.02	89.83	0.18	60.00	60.00	49.97	10.03	5.983	
1,700.00	1,700.00	1,701.00	1,701.00	5.18	5.18	89.83	0.18	60.00	60.00	49.64	10.36	5.793	
1,800.00	1,800.00	1,801.00	1,801.00	5.34	5.34	89.83	0.18	60.00	60.00	49.32	10.68	5.619	
1,900.00	1,900.00	1,901.00	1,901.00	5.50	5.50	89.83	0.18	60.00	60.00	49.01	10.99	5.459	
2,000.00	2,000.00	2,001.00	2,001.00	5.65	5.65	89.83	0.18	60.00	60.00	48.70	11.30	5.310	
2,016.73	2,016.73	2,017.70	2,017.70	5.67	5.67	-78.09	0.15	60.00	60.00	48.66	11.34	5.290	
2,100.00	2,099.99	2,100.86	2,100.85	5.78	5.78	-78.07	-0.70	60.12	59.94	48.39	11.55	5.188	
2,200.00	2,199.96	2,200.71	2,200.67	5.89	5.90	-78.03	-3.30	60.49	59.76	48.00	11.76	5.082	
2,300.00	2,299.86	2,300.57	2,300.43	6.03	6.03	-77.97	-7.63	61.10	59.45	47.49	11.97	4.969	
2,400.00	2,399.68	2,400.43	2,400.10	6.18	6.18	-77.89	-13.67	61.94	59.03	46.85	12.17	4.849	
2,500.00	2,499.37	2,500.28	2,499.64	6.35	6.35	-77.80	-21.44	63.03	58.48	46.09	12.39	4.721	
2,600.00	2,598.90	2,600.13	2,599.04	6.55	6.55	-77.68	-30.92	64.37	57.81	45.20	12.60	4.586	
2,700.00	2,698.26	2,700.00	2,698.26	6.77	6.77	-77.54	-42.11	65.94	57.01	44.18	12.83	4.443	
2,800.00	2,797.40	2,799.83	2,797.24	7.01	7.01	-77.38	-55.02	67.75	56.10	43.02	13.08	4.290	
2,900.00	2,896.30	2,899.68	2,895.99	7.27	7.27	-77.20	-69.63	69.80	55.06	41.73	13.34	4.129	
3,000.00	2,994.93	2,999.53	2,994.47	7.55	7.55	-76.98	-85.94	72.09	53.91	40.29	13.62	3.959	
3,100.00	3,093.26	3,099.43	3,092.72	7.86	7.80	-76.87	-103.84	74.60	52.61	38.75	13.86	3.795	
3,200.00	3,191.25	3,199.41	3,190.99	8.18	8.12	-78.29	-122.07	77.16	50.99	36.82	14.17	3.598	
3,222.38	3,213.13	3,221.78	3,212.97	8.24	8.20	-78.89	-126.15	77.74	50.58	36.36	14.22	3.557	
3,300.00	3,288.99	3,299.36	3,289.23	8.49	8.45	-81.19	-140.31	79.72	49.20	34.75	14.45	3.405	
3,400.00	3,386.72	3,399.31	3,387.47	8.84	8.80	-84.35	-158.54	82.28	47.54	32.76	14.78	3.217	
3,500.00	3,484.45	3,499.26	3,485.71	9.21	9.15	-87.72	-176.77	84.84	46.03	30.89	15.13	3.041	
3,600.00	3,582.19	3,599.21	3,583.95	9.58	9.52	-91.31	-195.01	87.40	44.69	29.16	15.53	2.877	
3,700.00	3,679.92	3,699.16	3,682.19	9.96	9.89	-95.10	-213.24	89.96	43.54	27.56	15.99	2.724	
3,800.00	3,777.65	3,799.11	3,780.43	10.35	10.27	-99.08	-231.47	92.52	42.59	26.08	16.51	2.580	
3,900.00	3,875.39	3,899.06	3,878.67	10.75	10.65	-103.23	-249.71	95.08	41.86	24.74	17.12	2.445	
4,000.00	3,973.12	3,999.01	3,976.91	11.15	11.04	-107.49	-267.94	97.64	41.35	23.52	17.82	2.320	
4,100.00	4,070.85	4,098.96	4,075.15	11.56	11.44	-111.84	-286.17	100.20	41.07	22.44	18.63	2.204	
4,164.96	4,134.34	4,163.89	4,138.97	11.83	11.70	-114.69	-298.02	101.86	41.02	21.81	19.22	2.135	CC
4,200.00	4,168.58	4,198.92	4,173.39	11.97	11.84	-116.22	-304.40	102.76	41.04	21.49	19.54	2.100	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 132H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,203.22	4,171.73	4,202.13	4,176.55	11.99	11.86	-116.36	-304.99	102.84	41.04	21.46	19.58	2.096	
4,300.00	4,266.32	4,298.87	4,271.63	12.39	12.25	-120.59	-322.64	105.32	41.24	20.69	20.55	2.007	
4,400.00	4,364.05	4,398.82	4,369.87	12.81	12.66	-124.88	-340.87	107.88	41.68	20.05	21.63	1.927	
4,500.00	4,461.78	4,498.77	4,468.11	13.24	13.07	-129.06	-359.10	110.44	42.35	19.57	22.78	1.859	
4,600.00	4,559.51	4,598.72	4,566.35	13.67	13.49	-133.10	-377.34	113.00	43.24	19.27	23.96	1.804	
4,700.00	4,657.25	4,698.67	4,664.59	14.10	13.91	-136.95	-395.57	115.56	44.33	19.15	25.18	1.761	ES
4,800.00	4,754.98	4,798.62	4,762.83	14.54	14.33	-140.60	-413.80	118.12	45.61	19.22	26.40	1.728	
4,900.00	4,852.71	4,898.57	4,861.07	14.97	14.75	-144.04	-432.04	120.68	47.07	19.46	27.61	1.705	
5,000.00	4,950.45	4,998.52	4,959.31	15.42	15.18	-147.26	-450.27	123.24	48.69	19.87	28.81	1.690	
5,100.00	5,048.18	5,098.47	5,057.55	15.86	15.61	-150.27	-468.50	125.80	50.45	20.45	30.00	1.682	
5,200.00	5,145.91	5,198.42	5,155.79	16.30	16.04	-153.06	-486.73	128.36	52.34	21.18	31.16	1.680	SF
5,300.00	5,243.64	5,298.37	5,254.03	16.75	16.47	-155.66	-504.97	130.92	54.34	22.04	32.30	1.682	
5,400.00	5,341.38	5,398.32	5,352.27	17.20	16.91	-158.07	-523.20	133.48	56.45	23.04	33.41	1.690	
5,500.00	5,439.11	5,498.27	5,450.51	17.65	17.34	-160.30	-541.43	136.04	58.65	24.15	34.50	1.700	
5,600.00	5,536.84	5,598.22	5,548.75	18.10	17.78	-162.36	-559.67	138.60	60.94	25.36	35.57	1.713	
5,700.00	5,634.58	5,698.18	5,646.99	18.55	18.22	-164.27	-577.90	141.15	63.29	26.67	36.62	1.728	
5,800.00	5,732.31	5,798.13	5,745.23	19.00	18.66	-166.05	-596.13	143.71	65.72	28.07	37.65	1.745	
5,900.00	5,830.04	5,898.08	5,843.47	19.46	19.10	-167.70	-614.37	146.27	68.20	29.53	38.67	1.764	
6,000.00	5,927.77	5,998.03	5,941.71	19.92	19.54	-169.23	-632.60	148.83	70.73	31.07	39.67	1.783	
6,100.00	6,025.51	6,097.98	6,039.95	20.37	19.98	-170.65	-650.83	151.39	73.31	32.66	40.65	1.803	
6,200.00	6,123.24	6,197.93	6,138.19	20.83	20.43	-171.98	-669.06	153.95	75.94	34.31	41.63	1.824	
6,300.00	6,220.97	6,297.88	6,236.43	21.29	20.87	-173.21	-687.30	156.51	78.60	36.01	42.59	1.845	
6,400.00	6,318.71	6,397.83	6,334.67	21.75	21.32	-174.37	-705.53	159.07	81.29	37.75	43.55	1.867	
6,500.00	6,416.44	6,497.78	6,432.91	22.21	21.76	-175.45	-723.76	161.63	84.02	39.53	44.49	1.888	
6,600.00	6,514.17	6,597.73	6,531.15	22.67	22.21	-176.46	-742.00	164.19	86.77	41.34	45.43	1.910	
6,700.00	6,611.90	6,697.68	6,629.39	23.13	22.66	-177.41	-760.23	166.75	89.55	43.19	46.37	1.931	
6,800.00	6,709.64	6,797.63	6,727.64	23.60	23.11	-178.31	-778.46	169.31	92.35	45.06	47.30	1.953	
6,900.00	6,807.37	6,897.58	6,825.88	24.06	23.55	-179.15	-796.70	171.87	95.18	46.96	48.22	1.974	
7,000.00	6,905.10	6,997.53	6,924.12	24.52	24.00	-179.94	-814.93	174.43	98.02	48.88	49.14	1.995	
7,100.00	7,002.84	7,097.49	7,022.36	24.99	24.45	179.32	-833.16	176.99	100.88	50.83	50.05	2.015	
7,200.00	7,100.57	7,197.44	7,120.60	25.45	24.90	178.61	-851.39	179.55	103.76	52.79	50.97	2.036	
7,300.00	7,198.30	7,297.39	7,218.84	25.92	25.36	177.94	-869.63	182.11	106.65	54.77	51.88	2.056	
7,400.00	7,296.03	7,397.34	7,317.08	26.39	25.81	177.31	-887.86	184.67	109.56	56.77	52.78	2.076	
7,435.30	7,330.53	7,432.62	7,351.75	26.55	25.97	177.10	-894.30	185.57	110.58	57.49	53.10	2.083	
7,450.00	7,344.91	7,447.31	7,366.20	26.61	26.03	168.92	-896.98	185.95	110.96	57.73	53.23	2.084	
7,475.00	7,369.36	7,472.29	7,390.74	26.72	26.15	155.41	-901.53	186.59	111.33	57.86	53.48	2.082	
7,500.00	7,393.76	7,497.17	7,415.20	26.82	26.26	143.75	-906.07	187.23	111.42	57.69	53.73	2.074	
7,525.00	7,418.04	7,521.91	7,439.51	26.90	26.37	134.87	-910.58	187.86	111.30	57.33	53.97	2.062	
7,550.00	7,442.14	7,546.42	7,463.61	26.98	26.48	128.85	-915.06	188.49	111.10	56.93	54.17	2.051	
7,575.00	7,465.99	7,570.64	7,487.42	27.04	26.59	125.31	-919.47	189.11	110.98	56.70	54.28	2.045	
7,575.63	7,466.58	7,571.25	7,488.01	27.04	26.59	125.25	-919.58	189.12	110.98	56.70	54.28	2.045	
7,600.00	7,489.53	7,594.52	7,510.88	27.10	26.70	123.77	-923.83	189.72	111.16	56.92	54.24	2.049	
7,625.00	7,512.68	7,617.97	7,533.93	27.14	26.80	123.77	-928.11	190.32	111.88	57.88	54.00	2.072	
7,650.00	7,535.39	7,640.94	7,556.51	27.18	26.91	124.91	-932.30	190.91	113.41	59.91	53.50	2.120	
7,675.00	7,557.60	7,663.36	7,578.55	27.21	27.01	126.84	-936.39	191.48	116.02	63.31	52.71	2.201	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Jakku 36 Fed State Com 132H - OH - Plan 1 04-17-23 — **Offset Site Error:** 0.00 usft

Survey Program: 0-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,700.00	7,579.24	7,685.17	7,599.99	27.24	27.11	129.25	-940.37	192.04	119.95	68.32	51.63	2.323	
7,725.00	7,600.25	7,706.32	7,620.77	27.27	27.20	131.88	-944.22	192.58	125.41	75.10	50.31	2.493	
7,750.00	7,620.58	7,726.74	7,640.84	27.29	27.30	134.51	-947.95	193.10	132.52	83.69	48.83	2.714	
7,775.00	7,640.17	7,746.38	7,660.14	27.31	27.39	137.01	-951.53	193.61	141.34	94.05	47.29	2.989	
7,800.00	7,658.97	7,765.18	7,678.63	27.34	27.47	139.25	-954.96	194.09	151.88	106.09	45.79	3.317	
7,825.00	7,676.92	7,783.10	7,696.23	27.37	27.55	141.18	-958.23	194.55	164.05	119.67	44.39	3.696	
7,850.00	7,693.98	7,800.08	7,712.92	27.40	27.63	142.75	-961.33	194.98	177.79	134.65	43.14	4.121	
7,875.00	7,710.10	7,816.07	7,728.65	27.43	27.70	143.94	-964.25	195.39	192.97	150.91	42.06	4.588	
7,900.00	7,725.23	7,831.04	7,743.36	27.47	27.77	144.73	-966.98	195.78	209.47	168.32	41.15	5.091	
7,925.00	7,739.34	7,844.94	7,757.02	27.52	27.83	145.11	-969.51	196.13	227.17	186.78	40.39	5.625	
7,950.00	7,752.39	7,857.74	7,769.60	27.57	27.89	145.05	-971.85	196.46	245.95	206.19	39.76	6.185	
7,975.00	7,764.33	7,869.39	7,781.06	27.64	27.94	144.52	-973.97	196.76	265.70	226.45	39.25	6.769	
8,000.00	7,775.14	7,879.88	7,791.36	27.72	27.99	143.45	-975.89	197.03	286.32	247.48	38.84	7.373	
8,025.00	7,784.79	7,889.16	7,800.48	27.80	28.03	141.77	-977.58	197.26	307.69	269.20	38.50	7.993	
8,050.00	7,793.25	7,897.21	7,808.40	27.90	28.07	139.35	-979.05	197.47	329.73	291.51	38.22	8.628	
8,075.00	7,800.49	7,904.02	7,815.09	28.02	28.10	136.02	-980.29	197.64	352.33	314.34	37.99	9.275	
8,100.00	7,806.51	7,909.55	7,820.53	28.14	28.13	131.56	-981.30	197.79	375.41	337.61	37.80	9.933	
8,125.00	7,811.27	7,913.81	7,824.71	28.28	28.15	125.70	-982.07	197.90	398.88	361.24	37.63	10.599	
8,150.00	7,814.77	7,916.77	7,827.62	28.43	28.16	118.17	-982.61	197.97	422.65	385.15	37.50	11.271	
8,175.00	7,817.01	7,918.42	7,829.25	28.60	28.17	108.81	-982.92	198.01	446.64	409.27	37.38	11.949	
8,200.00	7,817.96	7,918.77	7,829.59	28.78	28.17	97.86	-982.98	198.02	470.78	433.51	37.27	12.631	
8,206.14	7,818.00	7,918.66	7,829.48	28.82	28.17	95.00	-982.96	198.02	476.72	439.47	37.25	12.798	
8,300.00	7,818.00	7,916.31	7,827.17	29.60	28.16	93.89	-982.53	197.96	568.04	531.05	36.98	15.359	
8,400.00	7,818.00	7,913.80	7,824.71	30.57	28.15	92.71	-982.07	197.90	666.10	629.26	36.84	18.082	
8,500.00	7,818.00	7,911.30	7,822.24	31.67	28.13	91.54	-981.62	197.83	764.65	727.89	36.76	20.800	
8,600.00	7,818.00	7,908.80	7,819.78	32.89	28.12	90.37	-981.16	197.77	863.53	826.80	36.72	23.514	
8,700.00	7,818.00	7,906.29	7,817.32	34.22	28.11	89.21	-980.70	197.70	962.63	925.92	36.71	26.223	

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

PERMIAN RESOURCES

Phoenix Technology Services
Anticollision Report

PHOENIX TECHNOLOGY SERVICES

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Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Ivore 35 Federal Com 002H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 18-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,100.00	7,818.00	7,663.08	7,661.34	102.68	13.95	86.56	-944.90	-5,085.13	944.10	897.95	46.15	20.457	
12,200.00	7,818.00	7,663.91	7,662.17	104.92	13.95	86.84	-944.90	-5,085.14	846.03	797.73	48.30	17.518	
12,300.00	7,818.00	7,664.80	7,663.06	107.16	13.95	87.13	-944.90	-5,085.15	748.46	697.41	51.06	14.660	
12,400.00	7,818.00	7,665.74	7,664.00	109.41	13.95	87.44	-944.90	-5,085.16	651.63	596.93	54.70	11.912	
12,500.00	7,818.00	7,666.74	7,665.00	111.65	13.95	87.76	-944.89	-5,085.17	555.92	496.24	59.68	9.315	
12,600.00	7,818.00	7,667.80	7,666.06	113.91	13.95	88.11	-944.89	-5,085.19	462.04	395.31	66.72	6.925	
12,700.00	7,818.00	7,668.93	7,667.19	116.16	13.96	88.48	-944.89	-5,085.20	371.35	294.25	77.10	4.817	
12,800.00	7,818.00	7,670.14	7,668.40	118.42	13.96	88.88	-944.89	-5,085.22	286.91	194.06	92.85	3.090	
12,900.00	7,818.00	7,671.43	7,669.69	120.68	13.96	89.31	-944.89	-5,085.24	216.18	100.66	115.52	1.871	
13,000.00	7,818.00	7,672.82	7,671.08	122.94	13.96	89.76	-944.88	-5,085.26	176.48	41.09	135.39	1.303	Level 3
13,027.96	7,818.00	7,673.23	7,671.49	123.57	13.96	89.90	-944.88	-5,085.26	174.25	37.94	136.31	1.278	Level 3 , CC, E
13,100.00	7,818.00	7,674.32	7,672.58	125.20	13.96	90.26	-944.88	-5,085.28	188.56	62.58	125.98	1.497	Level 3
13,200.00	7,818.00	7,675.94	7,674.19	127.47	13.96	90.79	-944.88	-5,085.30	244.86	144.99	99.87	2.452	
13,300.00	7,818.00	7,677.68	7,675.94	129.74	13.97	91.36	-944.88	-5,085.33	323.04	243.62	79.42	4.067	
13,400.00	7,818.00	7,679.58	7,677.84	132.01	13.97	91.99	-944.87	-5,085.36	410.79	344.61	66.17	6.208	
13,500.00	7,818.00	7,681.65	7,679.91	134.28	13.97	92.66	-944.87	-5,085.40	503.12	445.56	57.56	8.740	
13,600.00	7,818.00	7,724.87	7,723.00	136.55	14.13	106.43	-945.49	-5,088.01	597.38	545.10	52.29	11.425	
13,700.00	7,818.00	7,832.77	7,829.12	138.83	14.62	133.84	-955.34	-5,102.84	692.73	643.63	49.10	14.108	
13,800.00	7,818.00	7,866.27	7,861.31	141.11	14.69	140.33	-962.06	-5,109.24	787.49	741.49	46.00	17.120	
13,900.00	7,818.00	9,111.88	8,519.97	143.39	23.65	176.93	-1,076.40	-5,956.97	849.39	775.74	73.65	11.533	
13,921.15	7,818.00	9,133.15	8,519.96	143.87	24.02	176.92	-1,076.27	-5,978.24	849.38	775.50	73.89	11.496	
14,000.00	7,818.00	9,211.80	8,519.93	145.67	25.44	176.91	-1,076.34	-6,056.89	849.37	774.59	74.78	11.358	
14,021.04	7,818.00	9,232.76	8,519.94	146.15	25.82	176.91	-1,076.43	-6,077.85	849.37	774.35	75.02	11.322	
14,100.00	7,818.00	9,312.44	8,519.95	147.95	27.31	176.93	-1,076.99	-6,157.53	849.37	773.45	75.92	11.188	
14,200.00	7,818.00	9,414.70	8,519.77	150.23	29.28	176.96	-1,077.82	-6,259.78	849.17	772.10	77.07	11.018	
14,300.00	7,818.00	9,514.27	8,519.38	152.52	31.26	176.96	-1,078.15	-6,359.35	848.77	770.51	78.27	10.844	
14,400.00	7,818.00	9,615.84	8,519.18	154.80	33.31	176.97	-1,078.57	-6,460.92	848.57	769.08	79.49	10.676	
14,500.00	7,818.00	9,719.35	8,518.33	157.09	35.46	176.95	-1,078.67	-6,564.43	847.77	767.00	80.76	10.497	
14,600.00	7,818.00	9,817.15	8,517.49	159.38	37.50	176.92	-1,078.57	-6,662.22	846.92	764.90	82.03	10.325	
14,700.00	7,818.00	9,918.90	8,516.80	161.67	39.65	177.02	-1,080.32	-6,763.96	846.18	762.94	83.24	10.166	
14,800.00	7,818.00	10,014.35	8,516.39	163.96	41.69	177.24	-1,084.01	-6,859.33	845.57	761.25	84.32	10.028	
14,900.00	7,818.00	10,117.08	8,516.05	166.25	43.90	177.51	-1,088.32	-6,961.96	845.06	759.62	85.44	9.890	
15,000.00	7,818.00	10,214.44	8,515.76	168.54	46.01	177.76	-1,092.26	-7,059.25	844.60	758.03	86.57	9.756	
15,100.00	7,818.00	10,314.09	8,515.65	170.83	48.21	178.05	-1,096.83	-7,158.79	844.35	756.60	87.75	9.622	
15,200.00	7,818.00	10,413.23	8,515.60	173.13	50.40	178.35	-1,101.55	-7,257.82	844.15	755.23	88.92	9.493	
15,300.00	7,818.00	10,516.39	8,515.56	175.42	52.68	178.61	-1,105.71	-7,360.89	844.02	753.89	90.12	9.365	
15,400.00	7,818.00	10,610.41	8,515.33	177.72	54.77	178.55	-1,105.15	-7,454.90	843.80	752.31	91.49	9.223	
15,400.33	7,818.00	10,610.71	8,515.33	177.73	54.77	178.55	-1,105.15	-7,455.20	843.80	752.31	91.49	9.223	
15,500.00	7,818.00	10,712.03	8,515.64	180.01	57.03	178.35	-1,102.45	-7,556.49	844.19	751.19	93.01	9.077	
15,600.00	7,818.00	10,823.66	8,514.89	182.31	59.53	178.10	-1,099.27	-7,668.06	843.63	749.00	94.63	8.915	
15,700.00	7,818.00	10,935.21	8,512.44	184.61	62.03	177.89	-1,096.55	-7,779.55	841.52	745.28	96.24	8.744	
15,800.00	7,818.00	11,042.40	8,508.99	186.91	64.45	177.71	-1,094.41	-7,886.67	838.39	740.58	97.81	8.571	
15,900.00	7,818.00	11,143.79	8,505.07	189.21	66.73	177.54	-1,092.31	-7,987.95	834.62	735.25	99.37	8.399	
16,000.00	7,818.00	11,235.92	8,501.94	191.51	68.81	177.34	-1,089.86	-8,080.00	831.36	730.42	100.94	8.236	
16,100.00	7,818.00	11,324.92	8,499.84	193.81	70.82	177.12	-1,087.10	-8,168.93	829.17	726.65	102.53	8.087	
16,200.00	7,818.00	11,412.38	8,499.09	196.11	72.81	176.91	-1,084.38	-8,256.35	828.49	724.40	104.10	7.959	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Ivore 35 Federal Com 002H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 18-MWD+HRGM — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,200.09	7,818.00	11,412.46	8,499.09	196.11	72.81	176.91	-1,084.38	-8,256.42	828.49	724.40	104.10	7.959	
16,300.00	7,818.00	11,501.04	8,499.54	198.41	74.83	176.65	-1,080.80	-8,344.93	829.25	723.52	105.73	7.843	
16,300.01	7,818.00	11,501.05	8,499.54	198.41	74.83	176.65	-1,080.80	-8,344.94	829.25	723.52	105.73	7.843	
16,400.00	7,818.00	11,584.00	8,501.21	200.71	76.71	176.31	-1,076.13	-8,427.74	831.64	724.28	107.37	7.746	
16,500.00	7,818.00	11,728.29	8,503.39	203.01	79.98	175.44	-1,063.68	-8,571.45	834.35	724.12	110.23	7.569	
16,600.00	7,818.00	11,882.00	8,493.26	205.32	83.50	175.17	-1,061.10	-8,724.60	827.15	714.96	112.19	7.373	
16,700.00	7,818.00	11,948.00	8,490.80	207.62	84.98	175.62	-1,067.99	-8,790.17	822.07	708.95	113.12	7.267	
16,800.00	7,818.00	12,028.98	8,490.56	209.92	86.79	176.27	-1,077.56	-8,870.58	820.61	706.86	113.75	7.214	
16,900.00	7,818.00	12,108.15	8,489.98	212.23	88.57	176.88	-1,086.59	-8,949.23	819.43	705.00	114.43	7.161	
17,000.00	7,818.00	12,240.34	8,491.52	214.53	91.56	177.73	-1,099.05	-9,080.80	820.72	705.41	115.31	7.118	
17,100.00	7,818.00	12,321.88	8,489.53	216.84	93.40	178.17	-1,105.78	-9,162.03	818.16	701.77	116.39	7.029	
17,200.00	7,818.00	12,391.91	8,490.71	219.15	94.99	178.63	-1,112.42	-9,231.73	819.53	702.17	117.36	6.983	
17,300.00	7,818.00	12,558.50	8,489.16	221.45	98.76	179.69	-1,128.11	-9,397.49	818.39	699.83	118.56	6.903	
17,400.00	7,818.00	12,665.23	8,480.55	223.76	101.18	-179.81	-1,135.65	-9,503.59	810.11	690.27	119.84	6.760	
17,500.00	7,818.00	12,714.44	8,479.50	226.07	102.30	-179.63	-1,138.25	-9,552.70	807.73	686.56	121.17	6.666	
17,500.09	7,818.00	12,714.50	8,479.50	226.07	102.30	-179.63	-1,138.25	-9,552.76	807.73	686.56	121.17	6.666	
17,600.00	7,818.00	12,790.53	8,481.26	228.37	104.04	-179.59	-1,139.07	-9,628.76	809.97	687.51	122.45	6.615	
17,600.01	7,818.00	12,790.54	8,481.26	228.37	104.04	-179.59	-1,139.07	-9,628.77	809.97	687.51	122.45	6.615	
17,700.00	7,818.00	12,897.33	8,484.69	230.68	106.49	-179.75	-1,137.14	-9,735.48	813.18	689.12	124.06	6.555	
17,700.41	7,818.00	12,897.63	8,484.70	230.69	106.50	-179.75	-1,137.14	-9,735.78	813.19	689.13	124.06	6.555	
17,800.00	7,818.00	12,970.82	8,487.82	232.99	108.18	-179.95	-1,134.55	-9,808.86	817.42	692.11	125.31	6.523	
17,803.64	7,818.00	12,973.51	8,487.98	233.07	108.24	-179.96	-1,134.44	-9,811.53	817.64	692.28	125.36	6.522	
17,900.00	7,818.00	13,094.55	8,494.97	235.30	111.02	179.61	-1,128.66	-9,932.23	823.55	696.27	127.28	6.470	
17,920.00	7,818.00	13,133.16	8,495.66	235.76	111.90	179.48	-1,126.82	-9,970.79	823.92	696.10	127.82	6.446	
18,000.00	7,818.00	13,218.00	8,495.22	237.61	113.85	179.19	-1,123.03	-10,055.54	823.51	694.29	129.21	6.373	
18,000.01	7,818.00	13,218.00	8,495.22	237.61	113.85	179.19	-1,123.03	-10,055.54	823.51	694.29	129.21	6.373	
18,100.00	7,818.00	13,218.00	8,495.22	239.92	113.85	179.19	-1,123.03	-10,055.54	829.70	700.48	129.22	6.421	
18,102.20	7,818.00	13,218.00	8,495.22	239.97	113.85	179.19	-1,123.03	-10,055.54	829.98	700.77	129.21	6.424	
18,174.14	7,818.00	13,218.00	8,495.22	241.63	113.85	179.19	-1,123.03	-10,055.54	841.97	713.78	128.20	6.568	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Smokey Bits State Com 002H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 103-GYRO-NS, 495-MWD — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,075.00	7,800.49	12,940.25	8,623.55	28.02	115.12	-163.06	-1,379.85	-157.86	997.72	934.53	63.19	15.789	
8,100.00	7,806.51	12,916.87	8,623.25	28.14	114.55	-163.31	-1,378.87	-181.22	990.98	928.02	62.96	15.740	
8,125.00	7,811.27	12,893.18	8,622.97	28.28	113.97	-163.52	-1,377.85	-204.89	985.53	922.81	62.72	15.712	
8,150.00	7,814.77	12,869.24	8,622.70	28.43	113.38	-163.69	-1,376.81	-228.80	981.38	918.89	62.48	15.706	
8,155.96	7,815.42	12,863.50	8,622.64	28.47	113.24	-163.73	-1,376.56	-234.54	980.58	918.16	62.42	15.708	
8,175.00	7,817.01	12,843.89	8,622.45	28.60	112.76	-163.83	-1,375.69	-254.13	978.53	916.30	62.23	15.725	
8,180.62	7,817.33	12,837.31	8,622.37	28.64	112.60	-163.86	-1,375.39	-260.70	978.06	915.90	62.16	15.734	
8,200.00	7,817.96	12,814.59	8,622.08	28.78	112.04	-163.94	-1,374.32	-283.39	976.91	914.97	61.94	15.773	
8,206.14	7,818.00	12,807.38	8,621.97	28.82	111.86	-163.96	-1,373.98	-290.59	976.70	914.83	61.86	15.788	
8,206.34	7,818.00	12,807.15	8,621.97	28.82	111.86	-163.96	-1,373.96	-290.82	976.69	914.83	61.86	15.788	
8,300.00	7,818.00	12,703.08	8,619.77	29.60	109.30	-164.26	-1,368.42	-394.72	973.33	912.51	60.82	16.004	
8,400.00	7,818.00	12,601.61	8,617.11	30.57	106.81	-164.56	-1,362.66	-496.00	969.19	909.33	59.86	16.191	
8,500.00	7,818.00	12,502.28	8,614.59	31.67	104.38	-164.87	-1,356.86	-595.12	965.11	906.11	58.99	16.360	
8,600.00	7,818.00	12,401.27	8,612.08	32.89	101.90	-165.21	-1,350.61	-695.91	961.03	902.85	58.17	16.520	
8,700.00	7,818.00	12,299.61	8,609.39	34.22	99.41	-165.56	-1,344.21	-797.33	956.79	899.38	57.42	16.663	
8,800.00	7,818.00	12,200.13	8,606.60	35.64	96.97	-165.89	-1,338.17	-896.58	952.49	895.73	56.76	16.781	
8,900.00	7,818.00	12,098.28	8,603.68	37.15	94.48	-166.23	-1,331.93	-998.20	948.16	892.02	56.14	16.889	
9,000.00	7,818.00	12,003.05	8,601.12	38.73	92.15	-166.57	-1,325.84	-1,093.20	943.95	888.34	55.62	16.972	
9,100.00	7,818.00	11,890.34	8,597.50	40.38	89.39	-166.99	-1,318.20	-1,205.59	939.18	884.19	54.99	17.078	
9,200.00	7,818.00	11,794.83	8,594.20	42.10	87.05	-167.36	-1,311.46	-1,300.81	934.17	879.62	54.55	17.126	
9,300.00	7,818.00	11,697.62	8,591.24	43.86	84.67	-167.76	-1,304.46	-1,397.72	929.56	875.44	54.13	17.174	
9,400.00	7,818.00	11,598.15	8,588.32	45.68	82.24	-168.17	-1,297.44	-1,496.90	925.15	871.41	53.73	17.218	
9,500.00	7,818.00	11,499.19	8,585.35	47.54	79.82	-168.57	-1,290.60	-1,595.58	920.75	867.36	53.39	17.246	
9,600.00	7,818.00	11,402.07	8,582.75	49.43	77.45	-168.97	-1,283.88	-1,692.43	916.70	863.60	53.09	17.266	
9,700.00	7,818.00	11,301.14	8,580.05	51.36	74.99	-169.38	-1,276.95	-1,793.08	912.71	859.91	52.81	17.284	
9,800.00	7,818.00	11,201.28	8,577.28	53.32	72.56	-169.80	-1,269.96	-1,892.66	908.65	856.09	52.56	17.287	
9,900.00	7,818.00	11,109.26	8,574.99	55.31	70.32	-170.20	-1,263.47	-1,984.42	904.93	852.52	52.40	17.268	
10,000.00	7,818.00	11,016.77	8,574.02	57.33	68.06	-170.68	-1,255.95	-2,076.60	902.47	850.22	52.25	17.273	
10,100.00	7,818.00	10,915.86	8,573.07	59.36	65.61	-171.22	-1,247.43	-2,177.15	900.15	848.08	52.07	17.287	
10,200.00	7,818.00	10,814.94	8,572.02	61.42	63.16	-171.76	-1,239.05	-2,277.71	897.84	845.90	51.94	17.286	
10,300.00	7,818.00	10,713.28	8,570.63	63.49	60.69	-172.26	-1,231.28	-2,379.07	895.38	843.52	51.86	17.267	
10,400.00	7,818.00	10,609.22	8,568.83	65.59	58.17	-172.74	-1,223.86	-2,482.85	892.68	840.88	51.80	17.232	
10,500.00	7,818.00	10,510.64	8,566.75	67.69	55.79	-173.16	-1,217.33	-2,581.18	889.73	837.91	51.82	17.171	
10,600.00	7,818.00	10,414.66	8,564.99	69.81	53.48	-173.53	-1,211.62	-2,676.98	887.18	835.30	51.88	17.101	
10,700.00	7,818.00	10,313.73	8,563.29	71.95	51.06	-173.89	-1,206.13	-2,777.75	884.87	832.92	51.95	17.033	
10,800.00	7,818.00	10,211.48	8,561.30	74.09	48.61	-174.25	-1,200.61	-2,879.82	882.35	830.30	52.04	16.954	
10,900.00	7,818.00	10,107.22	8,558.87	76.24	46.12	-174.62	-1,195.06	-2,983.91	879.47	827.31	52.16	16.861	
11,000.00	7,818.00	10,003.95	8,555.91	78.41	43.66	-174.97	-1,189.71	-3,087.00	876.12	823.80	52.31	16.748	
11,100.00	7,818.00	9,906.71	8,553.11	80.58	41.36	-175.28	-1,184.98	-3,184.08	872.80	820.28	52.51	16.620	
11,200.00	7,818.00	9,808.35	8,550.50	82.76	39.05	-175.56	-1,180.84	-3,282.32	869.80	817.06	52.74	16.493	
11,300.00	7,818.00	9,707.99	8,547.77	84.95	36.70	-175.84	-1,176.74	-3,382.56	866.74	813.76	52.98	16.359	
11,400.00	7,818.00	9,611.56	8,545.35	87.15	34.47	-176.08	-1,173.22	-3,478.90	863.96	810.70	53.26	16.221	
11,500.00	7,818.00	9,516.68	8,543.35	89.35	32.29	-176.32	-1,169.77	-3,573.70	861.60	808.03	53.57	16.083	
11,600.00	7,818.00	9,409.46	8,541.65	91.56	29.85	-176.59	-1,165.93	-3,680.83	859.82	805.94	53.88	15.957	
11,700.00	7,818.00	9,294.41	8,537.33	93.78	27.26	-177.06	-1,159.00	-3,795.58	855.64	801.40	54.24	15.774	
11,800.00	7,818.00	9,190.36	8,532.78	96.00	24.96	-177.59	-1,151.12	-3,899.23	850.89	796.19	54.70	15.555	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Smokey Bits State Com 002H - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 103-GYRO-NS, 495-MWD — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,900.00	7,818.00	9,089.24	8,528.09	98.22	22.76	-178.39	-1,139.53	-3,999.57	845.81	790.52	55.29	15.298	
12,000.00	7,818.00	8,033.83	8,018.13	100.45	11.11	159.63	-994.11	-4,816.23	838.73	791.99	46.75	17.942	
12,100.00	7,818.00	7,717.52	7,716.19	102.68	11.16	100.26	-939.06	-4,881.40	746.69	698.14	48.55	15.381	
12,200.00	7,818.00	7,714.64	7,713.33	104.92	11.16	99.36	-938.86	-4,881.48	650.17	597.95	52.22	12.451	
12,300.00	7,818.00	7,711.79	7,710.49	107.16	11.16	98.47	-938.66	-4,881.56	554.87	497.65	57.22	9.697	
12,400.00	7,818.00	7,708.97	7,707.67	109.41	11.16	97.58	-938.46	-4,881.63	461.55	397.27	64.27	7.181	
12,500.00	7,818.00	7,706.17	7,704.88	111.65	11.17	96.70	-938.26	-4,881.71	371.70	297.09	74.61	4.982	
12,600.00	7,818.00	7,703.40	7,702.12	113.91	11.17	95.83	-938.07	-4,881.78	288.57	198.49	90.09	3.203	
12,700.00	7,818.00	7,700.69	7,699.42	116.16	11.17	94.97	-937.89	-4,881.85	219.95	108.25	111.69	1.969	
12,800.00	7,818.00	7,697.84	7,696.57	118.42	11.17	94.07	-937.69	-4,881.93	182.93	53.65	129.29	1.415	Level 3
12,824.62	7,818.00	7,697.14	7,695.88	118.97	11.17	93.85	-937.64	-4,881.95	181.27	51.42	129.85	1.396	Level 3 , CC, E
12,900.00	7,818.00	7,695.04	7,693.78	120.68	11.17	93.19	-937.50	-4,882.00	196.31	76.64	119.67	1.640	
13,000.00	7,818.00	7,692.29	7,691.04	122.94	11.17	92.32	-937.32	-4,882.07	252.18	156.96	95.22	2.648	
13,100.00	7,818.00	7,689.61	7,688.36	125.20	11.17	91.47	-937.15	-4,882.14	329.61	253.84	75.76	4.350	
13,200.00	7,818.00	7,686.97	7,685.73	127.47	11.17	90.64	-936.98	-4,882.21	416.74	353.78	62.96	6.619	
13,300.00	7,818.00	7,684.39	7,683.16	129.74	11.17	89.83	-936.82	-4,882.27	508.62	454.05	54.56	9.321	
13,400.00	7,818.00	7,681.86	7,680.63	132.01	11.17	89.03	-936.67	-4,882.33	603.07	554.19	48.89	12.336	
13,500.00	7,818.00	7,679.37	7,678.15	134.28	11.17	88.25	-936.52	-4,882.39	699.06	654.14	44.92	15.561	
13,600.00	7,818.00	7,676.94	7,675.72	136.55	11.17	87.49	-936.38	-4,882.45	796.03	753.95	42.08	18.916	
13,700.00	7,818.00	7,674.55	7,673.33	138.83	11.17	86.74	-936.24	-4,882.51	893.67	853.66	40.00	22.340	
13,800.00	7,818.00	7,672.20	7,670.99	141.11	11.17	86.01	-936.11	-4,882.57	991.77	953.31	38.45	25.792	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Arco Hondo 1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 100-INC-ONLY — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	67.00	67.00	1.00	1.77	-3.69	316.81	-20.42	317.46				
100.00	100.00	168.00	168.00	1.28	3.77	-3.69	317.00	-20.42	317.65	312.61	5.05	62.936	
141.13	141.13	208.15	208.13	1.46	4.60	-3.69	316.81	-20.42	317.46	311.40	6.06	52.380	
200.00	200.00	268.02	268.00	1.76	5.85	-3.69	317.00	-20.42	317.65	310.04	7.61	41.722	
241.13	241.13	308.16	308.13	1.91	6.70	-3.69	316.81	-20.42	317.46	308.85	8.61	36.869	
300.00	300.00	368.04	368.00	2.14	7.96	-3.69	317.00	-20.42	317.65	307.55	10.10	31.449	
341.13	341.13	408.18	408.13	2.27	8.81	-3.69	316.81	-20.42	317.46	306.38	11.08	28.648	
400.00	400.00	468.05	468.00	2.47	10.07	-3.69	317.00	-20.42	317.65	305.11	12.54	25.328	
441.13	441.13	508.20	508.13	2.59	10.92	-3.69	316.81	-20.42	317.46	303.95	13.51	23.497	
500.00	500.00	568.07	568.00	2.76	12.19	-3.69	317.00	-20.42	317.65	302.70	14.95	21.245	
541.13	541.13	608.21	608.13	2.87	13.05	-3.69	316.81	-20.42	317.46	301.55	15.91	19.952	
600.00	600.00	668.09	668.00	3.02	14.32	-3.69	317.00	-20.42	317.65	300.32	17.34	18.321	
641.13	641.13	708.23	708.13	3.12	15.17	-3.69	316.81	-20.42	317.46	299.17	18.29	17.356	
700.00	700.00	768.10	768.00	3.27	16.44	-3.69	317.00	-20.42	317.65	297.95	19.71	16.118	
741.13	741.13	808.24	808.13	3.36	17.29	-3.69	316.81	-20.42	317.46	296.81	20.66	15.370	
800.00	800.00	868.12	868.00	3.50	18.57	-3.69	317.00	-20.42	317.65	295.59	22.06	14.398	
841.13	841.13	908.26	908.13	3.59	19.42	-3.69	316.81	-20.42	317.46	294.46	23.01	13.800	
900.00	900.00	968.13	968.00	3.71	20.69	-3.69	317.00	-20.42	317.65	293.25	24.41	13.015	
941.13	941.13	1,008.27	1,008.13	3.80	21.55	-3.69	316.81	-20.42	317.46	292.12	25.34	12.526	
1,000.00	1,000.00	1,068.15	1,068.00	3.92	22.82	-3.69	317.00	-20.42	317.65	290.91	26.74	11.880	
1,041.13	1,041.13	1,108.29	1,108.13	4.00	23.67	-3.69	316.81	-20.42	317.46	289.79	27.67	11.471	
1,100.00	1,100.00	1,168.17	1,168.01	4.12	24.95	-3.69	317.00	-20.42	317.65	288.59	29.06	10.929	
1,141.13	1,141.13	1,208.30	1,208.13	4.20	25.80	-3.69	316.81	-20.42	317.46	287.47	30.00	10.583	
1,200.00	1,200.00	1,268.18	1,268.01	4.31	27.07	-3.69	317.00	-20.42	317.65	286.27	31.38	10.122	
1,241.13	1,241.13	1,308.32	1,308.13	4.39	27.93	-3.69	316.81	-20.42	317.46	285.15	32.31	9.825	
1,300.00	1,300.00	1,368.20	1,368.01	4.49	29.20	-3.69	317.00	-20.42	317.65	283.96	33.69	9.428	
1,341.13	1,341.13	1,408.33	1,408.13	4.57	30.05	-3.69	316.81	-20.42	317.46	282.84	34.62	9.170	
1,400.00	1,400.00	1,468.21	1,468.01	4.67	31.33	-3.69	317.00	-20.42	317.65	281.65	36.00	8.824	
1,441.13	1,441.13	1,508.35	1,508.13	4.74	32.18	-3.69	316.81	-20.42	317.46	280.54	36.92	8.598	
1,500.00	1,500.00	1,568.23	1,568.01	4.85	33.46	-3.69	317.00	-20.42	317.65	279.35	38.30	8.294	
1,541.13	1,541.13	1,608.36	1,608.13	4.91	34.31	-3.69	316.81	-20.42	317.46	278.24	39.22	8.094	
1,600.00	1,600.00	1,668.25	1,668.01	5.01	35.58	-3.69	317.00	-20.42	317.65	277.06	40.60	7.825	
1,641.13	1,641.13	1,708.38	1,708.13	5.08	36.44	-3.69	316.81	-20.42	317.46	275.95	41.52	7.646	
1,700.00	1,700.00	1,768.26	1,768.01	5.18	37.71	-3.69	317.00	-20.42	317.65	274.77	42.89	7.406	
1,741.13	1,741.13	1,808.39	1,808.13	5.24	38.56	-3.69	316.81	-20.42	317.46	273.66	43.81	7.247	
1,800.00	1,800.00	1,868.28	1,868.01	5.34	39.84	-3.69	317.00	-20.42	317.65	272.48	45.18	7.031	
1,841.13	1,841.13	1,908.41	1,908.13	5.40	40.69	-3.69	316.81	-20.42	317.46	271.37	46.10	6.887	
1,900.00	1,900.00	1,968.29	1,968.01	5.50	41.97	-3.69	316.99	-20.42	317.65	270.19	47.46	6.693	
1,941.13	1,941.13	2,008.42	2,008.13	5.56	42.82	-3.69	316.81	-20.42	317.46	269.08	48.38	6.562	CC
2,000.00	2,000.00	2,068.31	2,068.01	5.65	44.10	-3.69	316.99	-20.42	317.65	267.91	49.74	6.386	
2,032.61	2,032.61	2,102.84	2,102.54	5.69	44.83	-171.62	316.78	-20.42	317.54	267.02	50.52	6.286	
2,100.00	2,099.99	2,168.32	2,168.01	5.78	46.22	-171.63	316.99	-20.42	318.52	266.52	52.00	6.125	ES
2,200.00	2,199.96	2,268.31	2,267.98	5.89	48.35	-171.70	316.99	-20.42	321.11	266.86	54.24	5.920	
2,300.00	2,299.86	2,368.24	2,367.90	6.03	50.48	-171.80	317.00	-20.42	325.42	268.92	56.50	5.759	
2,400.00	2,399.68	2,468.08	2,467.72	6.18	52.60	-171.95	317.00	-20.42	331.47	272.69	58.78	5.639	
2,500.00	2,499.37	2,567.79	2,567.42	6.35	54.72	-172.12	317.00	-20.42	339.24	278.17	61.07	5.555	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Arco Hondo 1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 100-INC-ONLY — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,600.00	2,598.90	2,667.35	2,666.96	6.55	56.84	-172.33	317.00	-20.42	348.74	285.35	63.39	5.502	
2,700.00	2,698.26	2,766.71	2,766.31	6.77	58.96	-172.55	317.00	-20.42	359.96	294.24	65.72	5.477	SF
2,800.00	2,797.40	2,865.85	2,865.43	7.01	61.07	-172.80	317.00	-20.42	372.91	304.85	68.07	5.479	
2,900.00	2,896.30	2,964.73	2,964.30	7.27	63.17	-173.05	317.01	-20.42	387.59	317.15	70.43	5.503	
3,000.00	2,994.93	3,063.31	3,062.87	7.55	65.27	-173.32	317.01	-20.42	403.98	331.17	72.81	5.548	
3,100.00	3,093.26	3,161.57	3,161.10	7.86	67.36	-173.58	317.01	-20.42	422.09	346.88	75.21	5.612	
3,200.00	3,191.25	3,259.45	3,258.97	8.18	69.44	-173.85	317.02	-20.42	441.92	364.30	77.61	5.694	
3,222.38	3,213.13	3,283.18	3,282.70	8.24	69.95	-173.92	316.93	-20.42	446.51	368.33	78.18	5.711	
3,300.00	3,288.99	3,357.05	3,356.55	8.49	71.52	-174.12	317.02	-20.42	462.94	382.94	80.00	5.787	
3,400.00	3,386.72	3,424.00	3,423.49	8.84	72.94	-174.31	316.81	-20.42	484.74	403.15	81.60	5.941	
3,500.00	3,484.45	3,424.00	3,423.49	9.21	72.94	-174.31	316.81	-20.42	520.84	441.23	79.62	6.542	
3,600.00	3,582.19	3,424.00	3,423.49	9.58	72.94	-174.31	316.81	-20.42	572.35	496.42	75.93	7.538	
3,700.00	3,679.92	3,424.00	3,423.49	9.96	72.94	-174.31	316.81	-20.42	635.52	563.89	71.63	8.873	
3,800.00	3,777.65	3,424.00	3,423.49	10.35	72.94	-174.31	316.81	-20.42	707.24	639.87	67.37	10.498	
3,900.00	3,875.39	3,424.00	3,423.49	10.75	72.94	-174.31	316.81	-20.42	785.17	721.70	63.47	12.371	
4,000.00	3,973.12	3,424.00	3,423.49	11.15	72.94	-174.31	316.81	-20.42	867.63	807.61	60.02	14.455	
4,100.00	4,070.85	3,424.00	3,423.49	11.56	72.94	-174.31	316.81	-20.42	953.46	896.43	57.03	16.719	

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Oxy Ivore Federal 1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 289-INC-ONLY — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,700.00	7,818.00	7,654.87	7,652.75	138.83	184.55	90.66	-453.70	-6,574.86	1,055.91	776.23	279.67	3.775	
13,800.00	7,818.00	7,654.88	7,652.76	141.11	184.55	90.66	-453.70	-6,574.86	980.68	693.24	287.44	3.412	
13,900.00	7,818.00	7,654.88	7,652.77	143.39	184.55	90.66	-453.70	-6,574.86	910.24	614.28	295.96	3.076	
14,000.00	7,818.00	7,654.89	7,652.77	145.67	184.55	90.66	-453.70	-6,574.86	845.77	540.67	305.10	2.772	
14,100.00	7,818.00	7,654.90	7,652.78	147.95	184.55	90.67	-453.70	-6,574.86	788.75	474.19	314.56	2.507	
14,200.00	7,818.00	7,654.90	7,652.78	150.23	184.55	90.67	-453.70	-6,574.86	740.90	417.09	323.81	2.288	
14,300.00	7,818.00	7,654.91	7,652.79	152.52	184.55	90.67	-453.70	-6,574.86	704.08	372.03	332.05	2.120	
14,400.00	7,818.00	7,654.91	7,652.80	154.80	184.55	90.67	-453.70	-6,574.86	680.09	341.79	338.30	2.010	
14,500.00	7,818.00	7,654.92	7,652.80	157.09	184.55	90.67	-453.70	-6,574.86	670.31	328.64	341.67	1.962	
14,515.96	7,818.00	7,654.92	7,652.80	157.46	184.55	90.67	-453.70	-6,574.86	670.12	328.22	341.90	1.960	CC, ES, SF
14,600.00	7,818.00	7,654.93	7,652.81	159.38	184.55	90.67	-453.70	-6,574.86	675.36	333.68	341.68	1.977	
14,700.00	7,818.00	7,654.93	7,652.81	161.67	184.55	90.67	-453.70	-6,574.86	694.92	356.45	338.47	2.053	
14,800.00	7,818.00	7,654.94	7,652.82	163.96	184.55	90.67	-453.70	-6,574.86	727.81	395.08	332.73	2.187	
14,900.00	7,818.00	7,654.94	7,652.83	166.25	184.55	90.67	-453.70	-6,574.86	772.34	446.95	325.39	2.374	
15,000.00	7,818.00	7,654.95	7,652.83	168.54	184.55	90.67	-453.70	-6,574.86	826.62	509.31	317.31	2.605	
15,100.00	7,818.00	7,654.95	7,652.84	170.83	184.55	90.67	-453.70	-6,574.86	888.88	579.72	309.15	2.875	
15,200.00	7,818.00	7,654.96	7,652.84	173.13	184.55	90.67	-453.70	-6,574.86	957.55	656.23	301.32	3.178	
15,300.00	7,818.00	7,654.97	7,652.85	175.42	184.55	90.67	-453.70	-6,574.86	1,031.36	737.33	294.03	3.508	
15,400.00	7,818.00	7,654.97	7,652.86	177.72	184.55	90.67	-453.70	-6,574.86	1,109.28	821.91	287.36	3.860	

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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Offset Design Oxy Smokey St 1 - OH - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 200-INC-ONLY — **Offset Well Error:** 1.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Center +N/-S (usft)	Offset Wellbore Center +E/-W (usft)	Distance Between Centers (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.00	7,818.00	7,775.65	7,772.98	57.33	197.92	-89.96	-1,141.23	-2,983.15	926.91	709.84	217.06	4.270	
10,100.00	7,818.00	7,775.65	7,772.98	59.36	197.92	-89.96	-1,141.23	-2,983.15	826.96	609.95	217.01	3.811	
10,200.00	7,818.00	7,775.65	7,772.98	61.42	197.92	-89.96	-1,141.23	-2,983.15	727.03	510.09	216.94	3.351	
10,300.00	7,818.00	7,775.65	7,772.98	63.49	197.92	-89.96	-1,141.23	-2,983.15	627.12	410.27	216.85	2.892	
10,400.00	7,818.00	7,775.65	7,772.98	65.59	197.92	-89.96	-1,141.23	-2,983.15	527.24	310.51	216.73	2.433	
10,500.00	7,818.00	7,775.65	7,772.98	67.69	197.92	-89.96	-1,141.23	-2,983.15	427.42	210.85	216.58	1.974	
10,600.00	7,818.00	7,775.65	7,772.98	69.81	197.92	-89.96	-1,141.23	-2,983.15	327.72	111.31	216.41	1.514	
10,700.00	7,818.00	7,775.65	7,772.98	71.95	197.92	-89.96	-1,141.23	-2,983.15	228.27	11.86	216.41	1.055	Level 2
10,800.00	7,818.00	7,775.65	7,772.98	74.09	197.92	-89.96	-1,141.23	-2,983.15	129.67	-88.54	218.21	0.594	Level 1
10,900.00	7,818.00	7,775.65	7,772.98	76.24	197.92	-89.96	-1,141.23	-2,983.15	38.99	-211.20	250.19	0.156	Level 1
10,926.47	7,818.00	7,775.65	7,772.98	76.82	197.92	-89.96	-1,141.23	-2,983.15	28.64	-245.73	274.37	0.104	Level 1 , CC, E
11,000.00	7,818.00	7,775.65	7,772.98	78.41	197.92	-89.96	-1,141.23	-2,983.15	78.92	-158.27	237.19	0.333	Level 1
11,100.00	7,818.00	7,775.65	7,772.98	80.58	197.92	-89.96	-1,141.23	-2,983.15	175.88	-49.52	225.40	0.780	Level 1
11,200.00	7,818.00	7,775.65	7,772.98	82.76	197.92	-89.96	-1,141.23	-2,983.15	275.03	52.57	222.46	1.236	Level 2
11,300.00	7,818.00	7,775.65	7,772.98	84.95	197.92	-89.96	-1,141.23	-2,983.15	374.63	153.40	221.23	1.693	
11,400.00	7,818.00	7,775.65	7,772.98	87.15	197.92	-89.96	-1,141.23	-2,983.15	474.40	253.81	220.59	2.151	
11,500.00	7,818.00	7,775.65	7,772.98	89.35	197.92	-89.96	-1,141.23	-2,983.15	574.25	354.04	220.21	2.608	
11,600.00	7,818.00	7,775.65	7,772.98	91.56	197.92	-89.96	-1,141.23	-2,983.15	674.14	454.18	219.97	3.065	
11,700.00	7,818.00	7,775.65	7,772.98	93.78	197.92	-89.96	-1,141.23	-2,983.15	774.07	554.26	219.81	3.522	
11,800.00	7,818.00	7,775.65	7,772.98	96.00	197.92	-89.96	-1,141.23	-2,983.15	874.01	654.31	219.70	3.978	
11,900.00	7,818.00	7,775.65	7,772.98	98.22	197.92	-89.96	-1,141.23	-2,983.15	973.96	754.33	219.63	4.435	

PERMIAN RESOURCES

Phoenix Technology Services

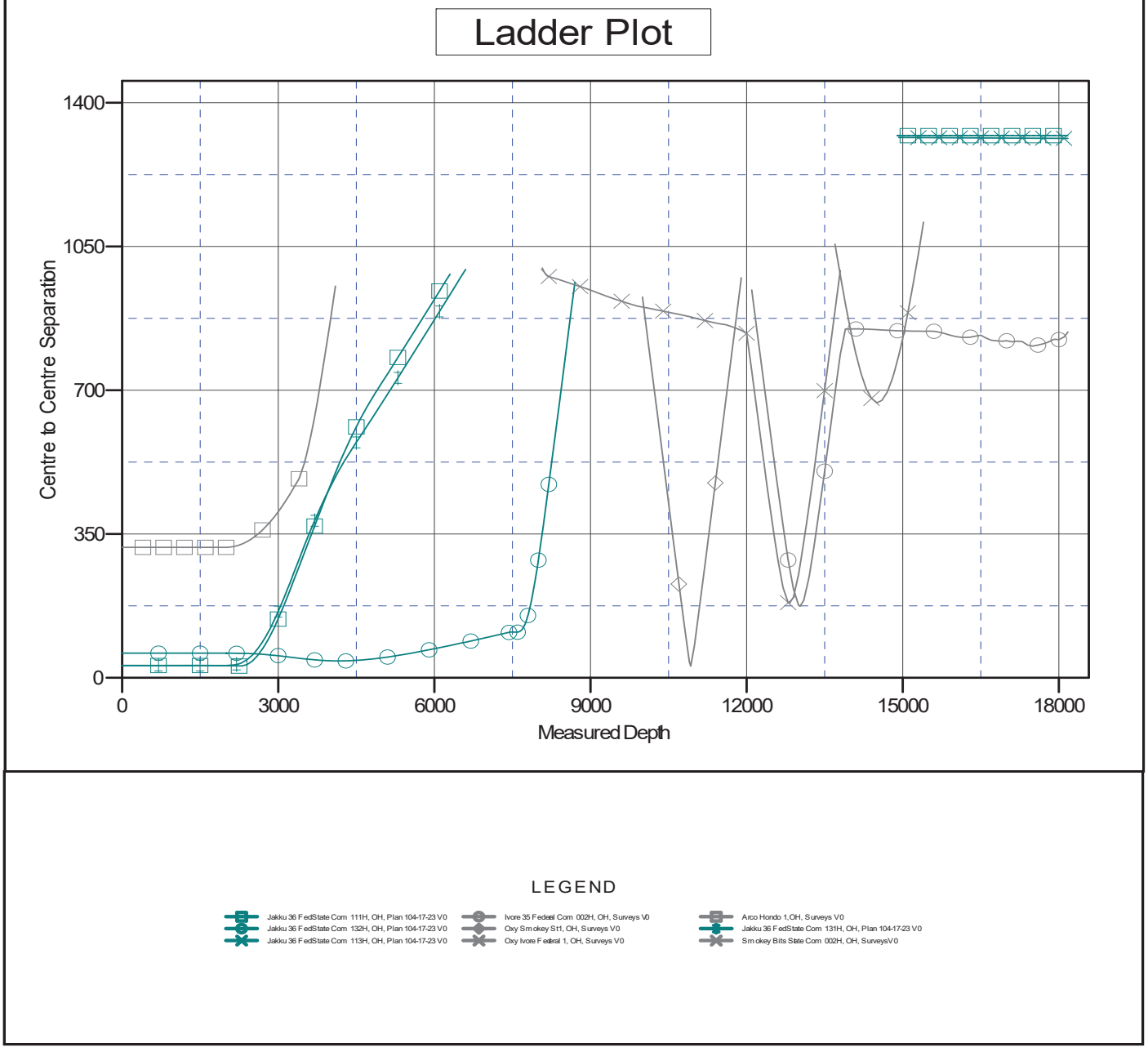
Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
Project:	Eddy County, NM (NAD83 - NME)	**TVD Reference:**	RKB @ 3588.00usft (TBD)
Reference Site:	Jakku	**MD Reference:**	RKB @ 3588.00usft (TBD)
Site Error:	0.00	**North Reference:**	Grid
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3588.00usft (TBD)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.000000 W °

Coordinates are relative to: Jakku 36 Fed State Com 112H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.225°



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

PERMIAN RESOURCES

Phoenix Technology Services

Anticollision Report

PHOENIX TECHNOLOGY SERVICES

Company:	Permian Resources	**Local Co-ordinate Reference:**	Well Jakku 36 Fed State Com 112H
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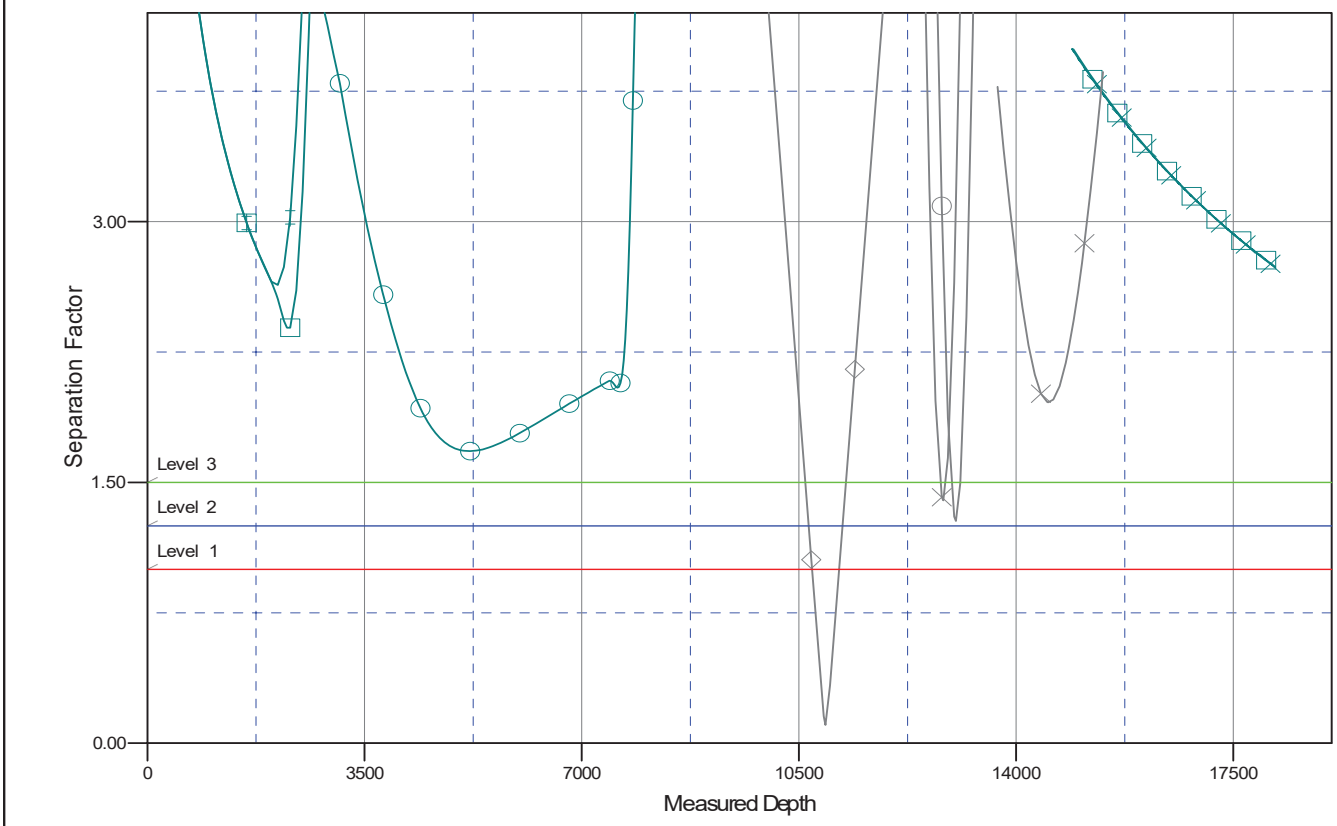
Reference Well:	Jakku 36 Fed State Com 112H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	1.00	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USAEDMDB
Reference Design:	Plan 1 04-17-23	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB @ 3588.00usft (TBD)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.000000 W °

Coordinates are relative to: Jakku 36 Fed State Com 112H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.225°

Separation Factor Plot



LEGEND

Jakku 36 FedState Com 111H, OH, Plan 104-17-23 V0
Jakku 36 FedState Com 132H, OH, Plan 104-17-23 V0
Jakku 36 FedState Com 113H, OH, Plan 104-17-23 V0
Ivore 35 Federal Com 002H, OH, Surveys V0
Oxy Smokey St1, OH, Surveys V0
Oxy Ivore Federal 1, OH, Surveys V0
Arco Hondo 1,OH, Surveys V0
Jakku 36 FedState Com 131H, OH, Plan 104-17-23 V0
Smokey Bits State Com 002H, OH, SurveysV0

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

Permian Resources - Jakku 36 Fed Com 112H

1. Geologic Formations

Formation	Elevation	TVD	Target
Rustler	3053	535	No
Top of Salt	2721	867	No
Capitan	NP	NP	No
Tansill	1603	1985	No
Yates	1463	2125	No
Seven Rivers	1098	2490	No
Queen	473	3115	No
Grayburg	NP	NP	No
San Andres	NP	NP	No
Delaware Sands	-377	3965	No
Bone Spring Lime	-2507	6095	No
1st Bone Spring Sand	-4047	7635	Yes
2nd Bone Spring Sand	-4967	8555	No
3rd Bone Spring Sand	-5767	9355	No
Wolfcamp	-6182	9770	No

2. Blowout Prevention

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

Equipment: BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing;

Requesting Variance? YES
Variance request: Flex hose and offline cement variances, see attachments in section 8.
Testing Procedure: The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Choke Diagram Attachemnt: 5 M Choe Manifold
BOP Diagram Attachment: BOP Schematic

3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	560	0	560	560	J55	54.5	BTC	4.08	2.19	Dry	6.96	Dry	6.54
Intermediate	12.25	9.625	0	3915	0	3915	3915	J55	36	BTC	2.92	1.66	Dry	2.65	Dry	2.34
Production	8.75	5.5	0	8206	0	7818	8206	P110RY	17	GeoConn	1.84	1.92	Dry	2.34	Dry	2.34
Production	7.875	5.5	8206	18174	7818	7818	9968	P110RY	17	GeoConn	1.84	1.92	Dry	2.34	Dry	2.34
								BLM Min Safety Factor			1.125	1		1.6		1.6

Non API casing spec sheets and casing design assumptions attached.

4. Cement

String	Lead/Tail	Top MD	Bottom MD	Quanity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	560	450	1.34	14.8	590	50%	Class C	Accelerator
Intermediate	Lead	0	3130	690	2.08	12.7	1420	50%	Class C	Salt, Extender, and LCM
Intermediate	Tail	3130	3915	280	1.34	14.8	370	50%	Class C	Accelerator
Production	Lead	3415	7435	580	2.41	11.5	1380	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	7435	18174	1400	1.73	12.5	2410	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

5. Circulating Medium

Mud System Type: Closed
Will an air or gas system be used: No
Describe what will be on location to control well or mitigate oter conditions: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

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

Cuttings Volume: 8850 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	560	Water Based Mud	8.6	9.5
560	3915	Salt Saturated	10	10
3915	8206	Brine	9	10
8206	18174	OBM	9	10

6. Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:
Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.
List of open and cased hole logs run in the well:
DIRECTIONAL SURVEY,GAMMA RAY LOG,
Coring operation description for the well:
N/A

7. Pressure

Anticipated Bottom Hole Pressure	4070	psi
Anticipated Surface Pressure	2345.4	psi
Anticipated Bottom Hole Temperature	136	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

8. Other Information

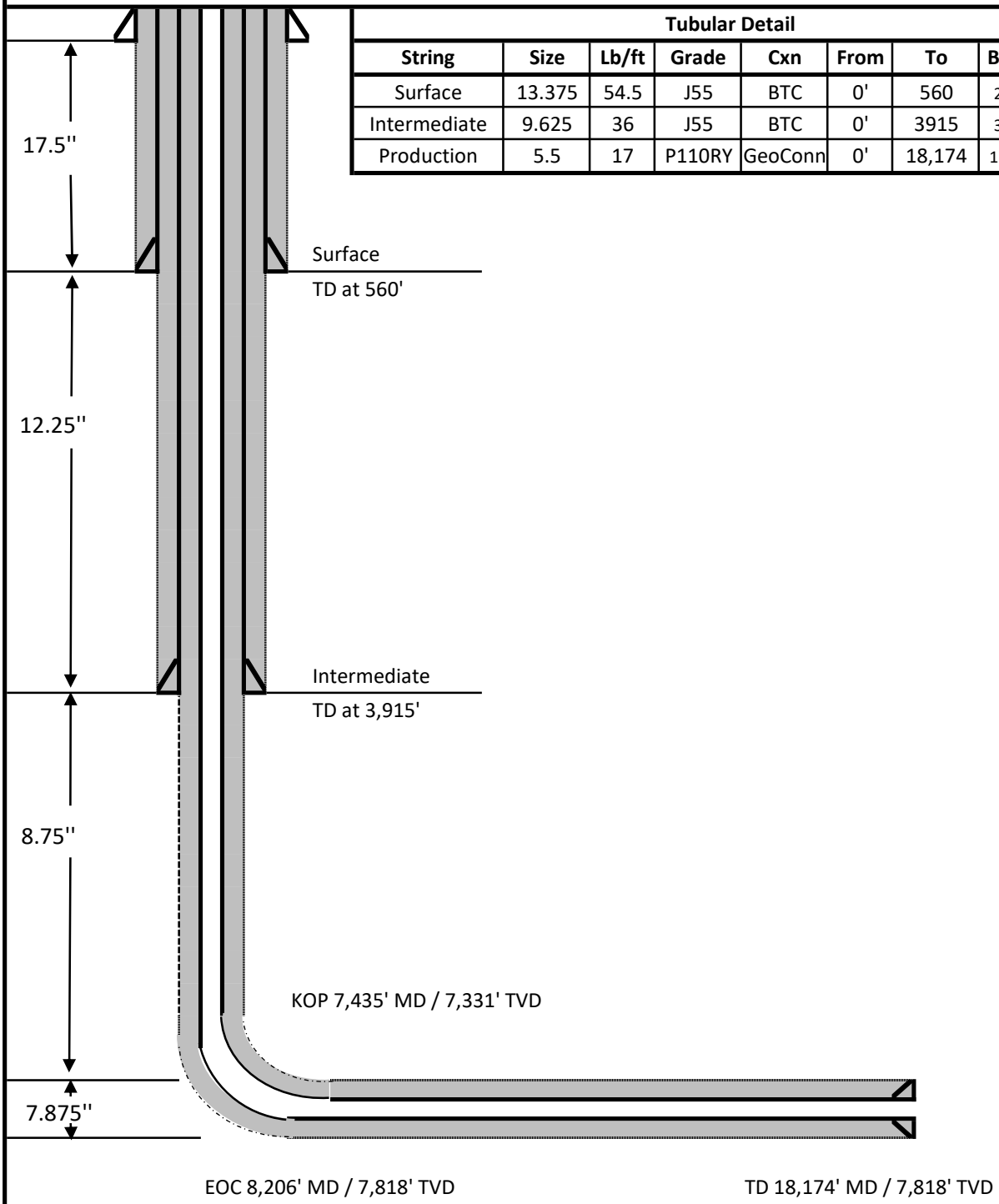
Well Plan and AC Report: attached
Batching Drilling Procedure: attached
WBD: attached
Flex Hose Specs: attached
Offline Cementing Procedure Attached:

Permian Resources

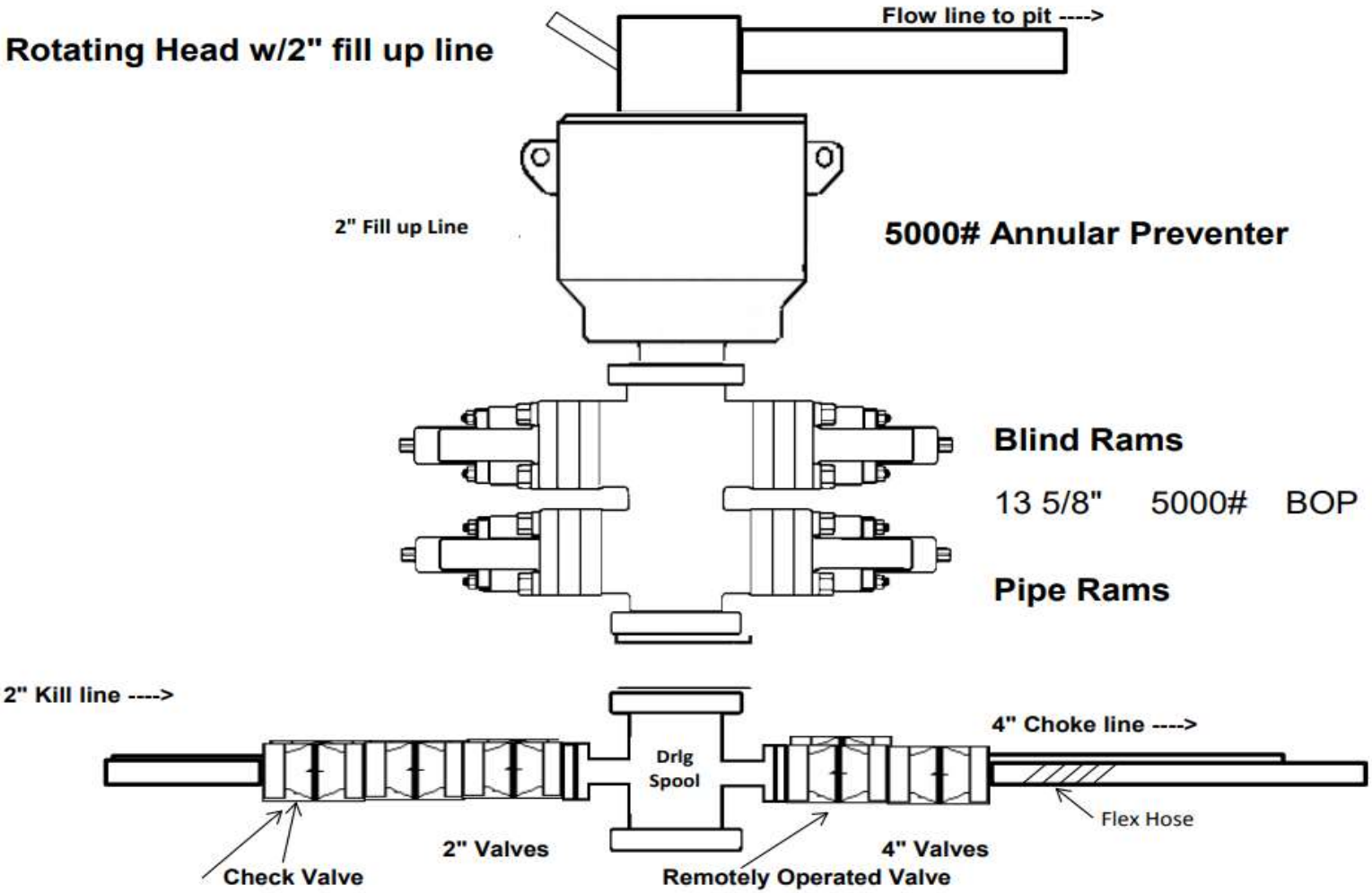
Well: Jakku 36 Fed Com 112H
State New Mexico **County:** Eddy
FM Target: 1st Bone Spring Sand
Location: Lot A, Section 36, T18S, R30E, 647' FNL, 311' FEL
BHL: Lot E, Section 35, T18S, R30E, 1750' FNL, 10' FWL
KB Elev: 3588 **KB:** 30 **GL Elev:** 3558

Tubular Detail

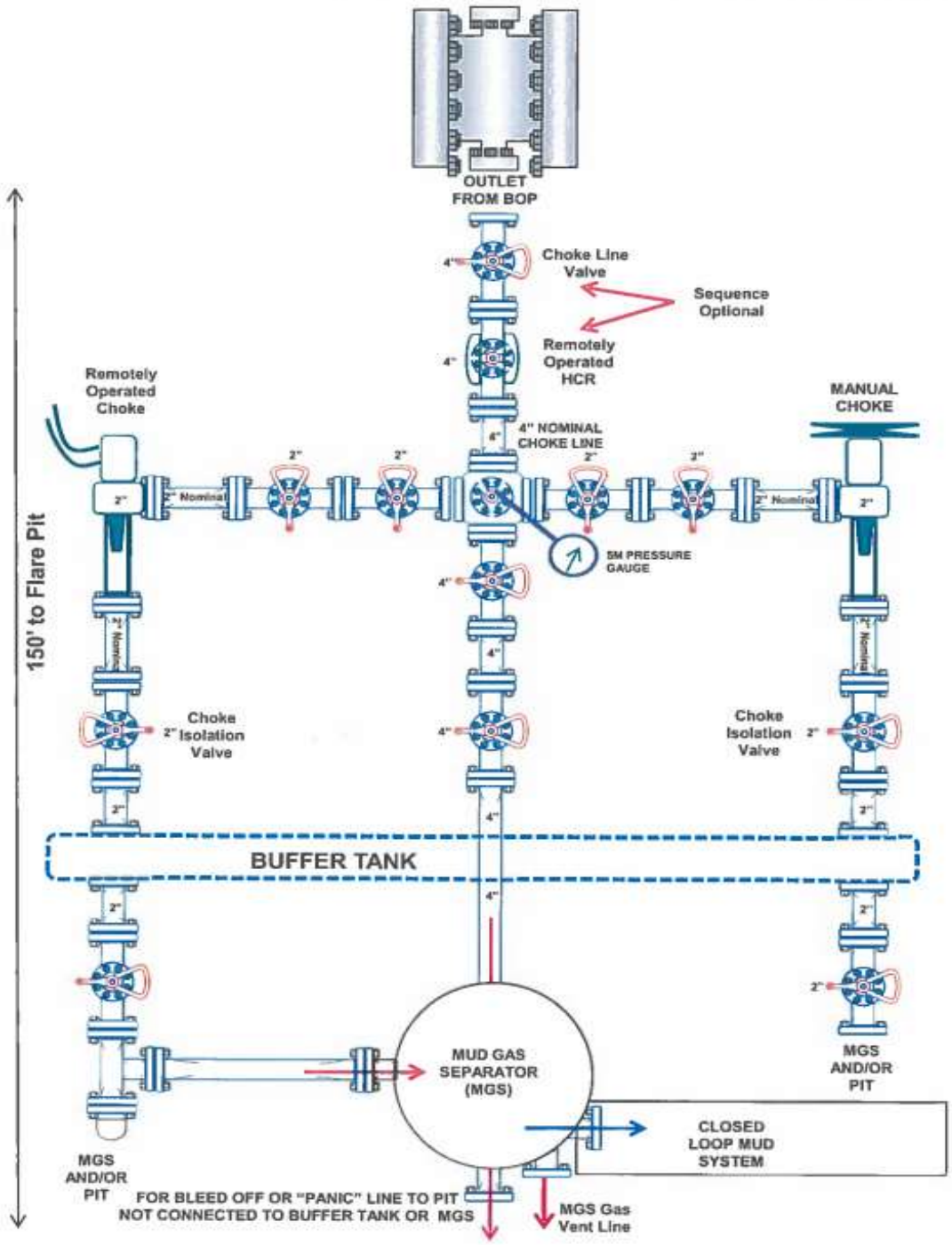
String	Size	Lb/ft	Grade	Cxn	From	To	Burst	Cllps
Surface	13.375	54.5	J55	BTC	0'	560	2740	1,130
Intermediate	9.625	36	J55	BTC	0'	3915	3520	2,020
Production	5.5	17	P110RY	GeoConn	0'	18,174	11550	7,480



5,000 psi BOP Schematic



5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



Continental ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 9 / 113

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE			CERT. N°:	504	
PURCHASER:	ContiTech Oil & Marine Corp.		P.O. N°:	4500409659	
CONTITECH RUBBER order N°: 538236		HOSE TYPE: 3" ID	Choke and Kill Hose		
HOSE SERIAL N°: 67255		NOMINAL / ACTUAL LENGTH:	10,67 m / 10,77 m		
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi	Duration: 60 min.		

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.
→ 10 mm = 20 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	9251	9254	AISI 4130	A0579N
4 1/16" 10K API b.w. Flange end			AISI 4130	035608

Not Designed For Well Testing

API Spec 16 C

Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

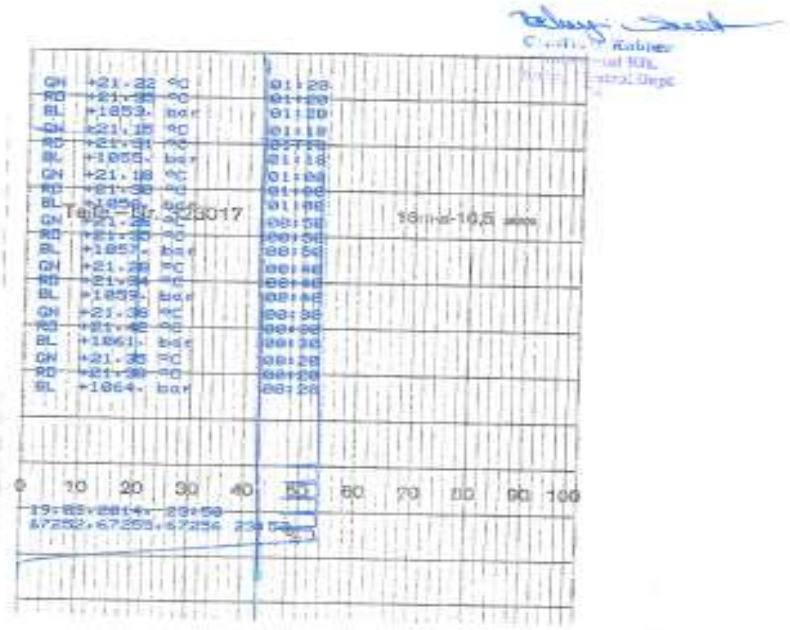
COUNTRY OF ORIGIN HUNGARY/EU

Date:	Inspector	Quality Control
20. March 2014.		

ContiTech Rubber Industrial Kft. [illegible] Hungary
Phone: [illegible]
The Court of [illegible]
[illegible]

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 501, 504, 505

Page: 1 / 1



Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

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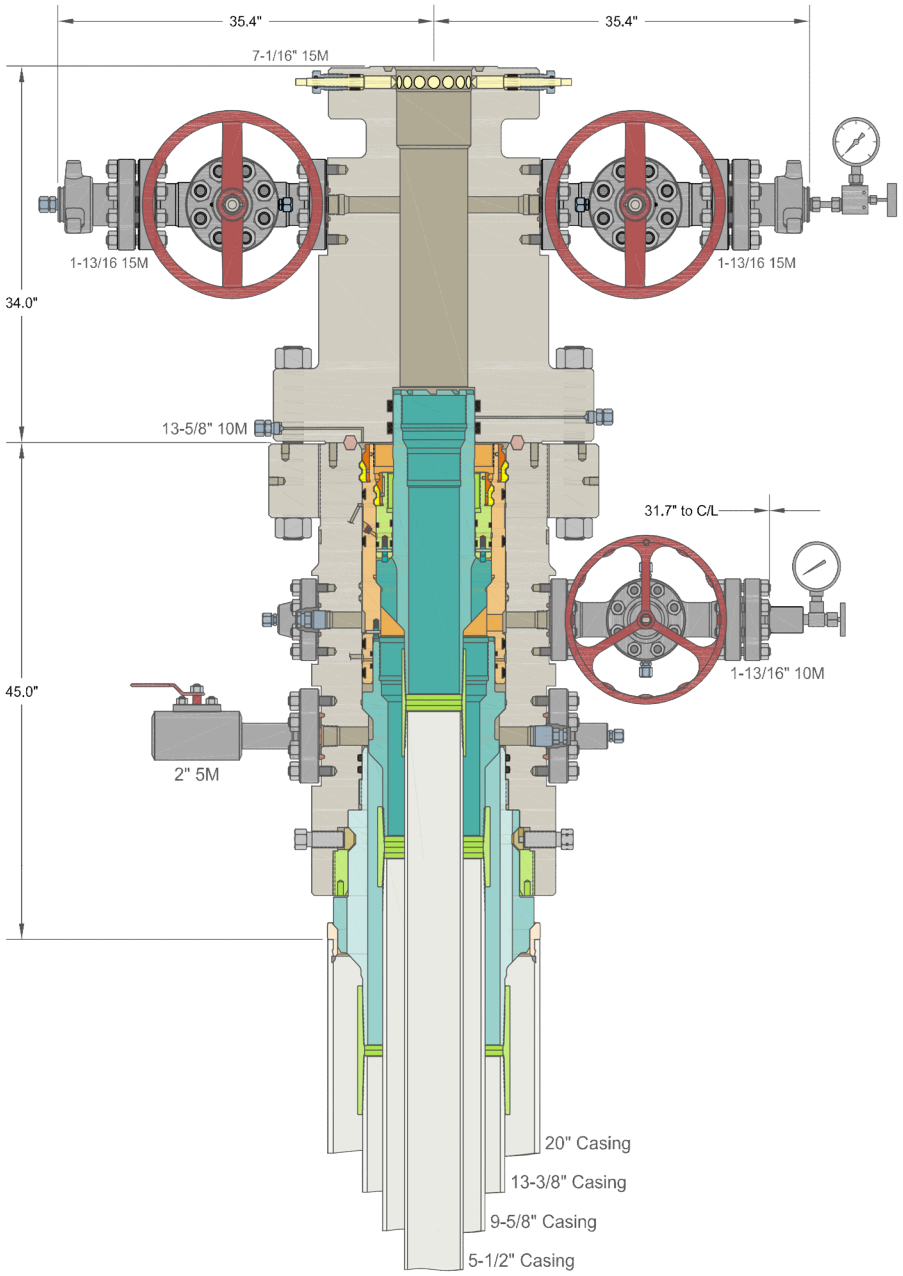


ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	CENTENNIAL RESOURCE DEVELOPMENT LEE CO, NM		
20" x 13-3/8" x 9-5/8" x 5-1/2" 10M MBU-3T-CFL-R-DBLO System With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head, 20" Landing Ring & Pin Down Mandrel Casing Hangers	DRAWN	DLE	10JUN20
	APPRV		
	DRAWING NO.	HBE0000338	

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources
Multi-Well Pad Batch Drilling Procedure

Surface Casing - PR intends to Batch set all 13-3/8" casing to a depth approved in the APD. 17-1/2" Surface Holes will be batch drilled by a rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill 17-1/2" Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land 13-3/8" 54.5# J55 BTC casing see Illustration 1-1 Below to depth approved in APD.
3. Set packoff and test to 5k psi
4. Offline Cement
5. Install wellhead with pressure gauge and nightcap. Nightcap is shown on final wellhead Stack up Illustration #2-2.
6. Skid Rig to adjacent well to drill Surface hole.
7. Surface casing test will be performed by the rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is

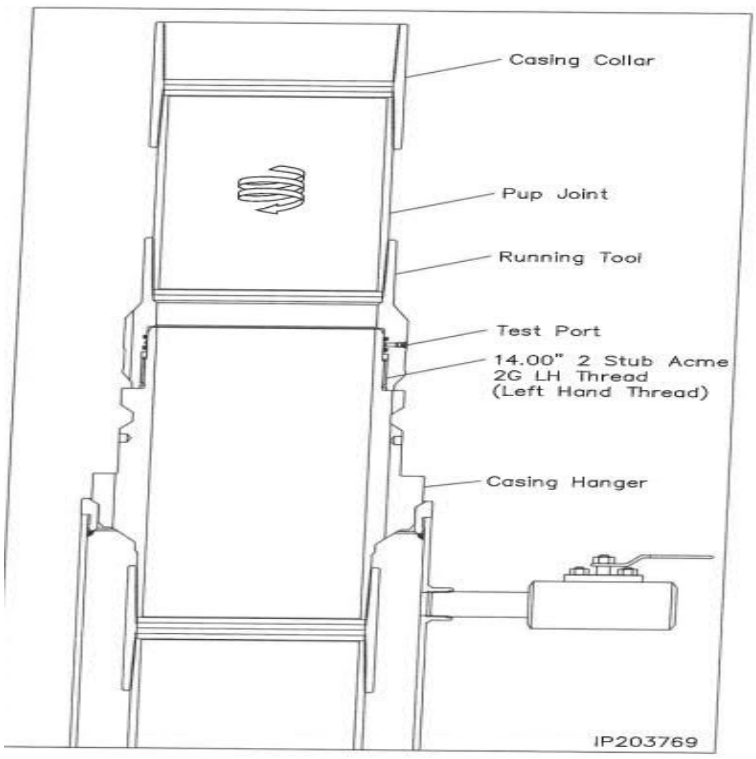


Illustration 1-1

Intermediate Casing – PR intends to Batch set all intermediate casing strings to a depth approved in the APD, typically set into Lamar. 12-1/4" Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out 13-3/8" shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 5,000 psi for 15 minutes. Nightcap shown on final wellhead stack up illustration 2-2 on page 3.
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

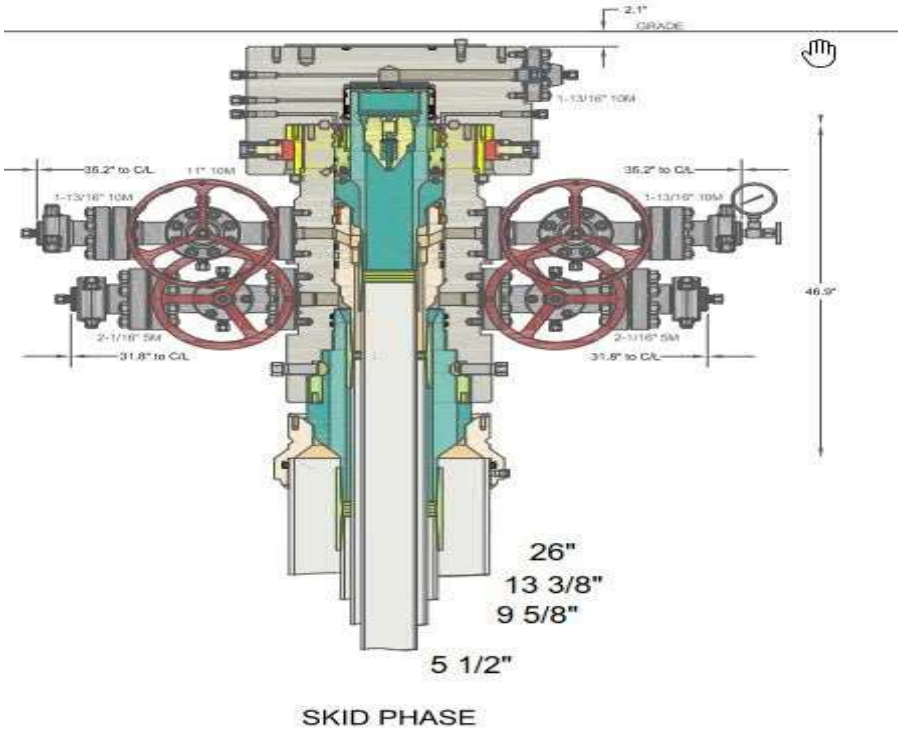


Illustration 2-2

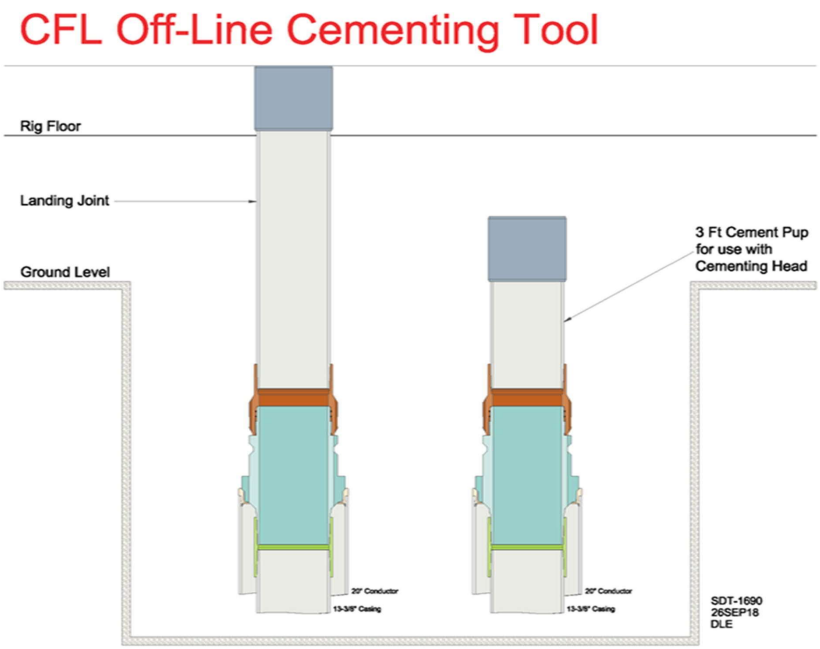
Production Casing – PR intends to Batch set all Production casings with Rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Big Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run 51/2" Production Casing.
6. Remove wear bushing then run 5-1/2" production casing to TD landing casing mandrel in wellhead.
7. Cement 5-1/2" Production string with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 5,000psi for 15 minutes.
9. Install BPV in 5-1/2" mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.

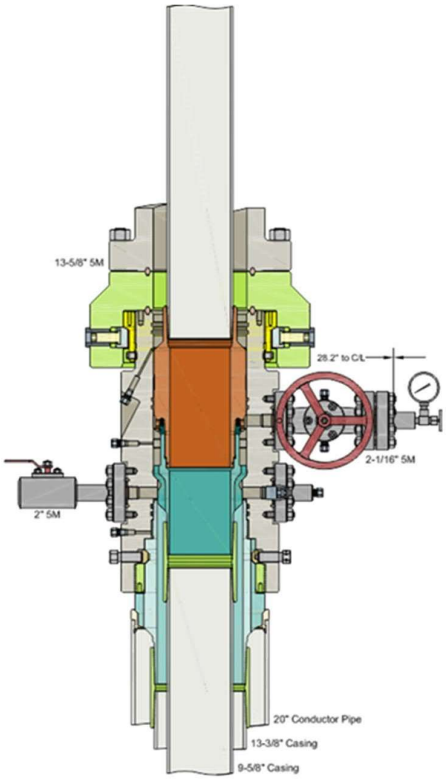
Permian Resources Offline Cementing Procedure
13-3/8" & 9-5/8" Casing

1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
    a) If well is not static use the casing outlet valves to kill well
    b) Drillers method will be used in well control event
    c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    d) Kill mud will be circulated once influx is circulated out of hole
    e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.

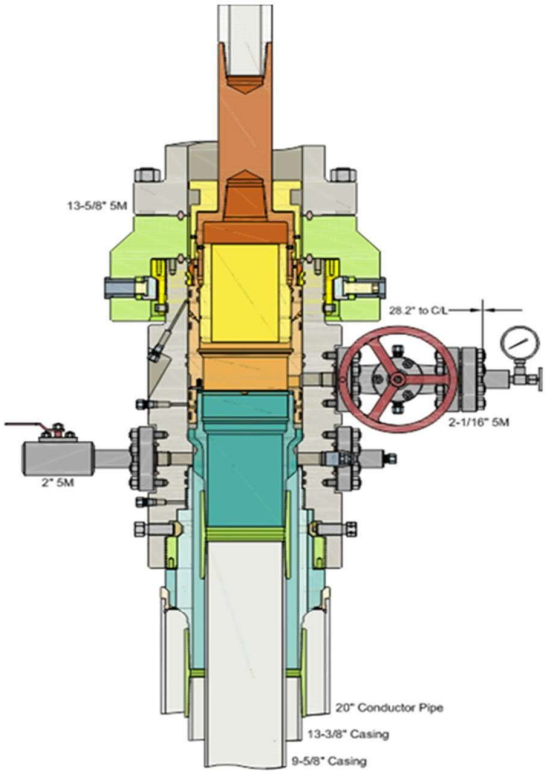
13 3/8" Surface



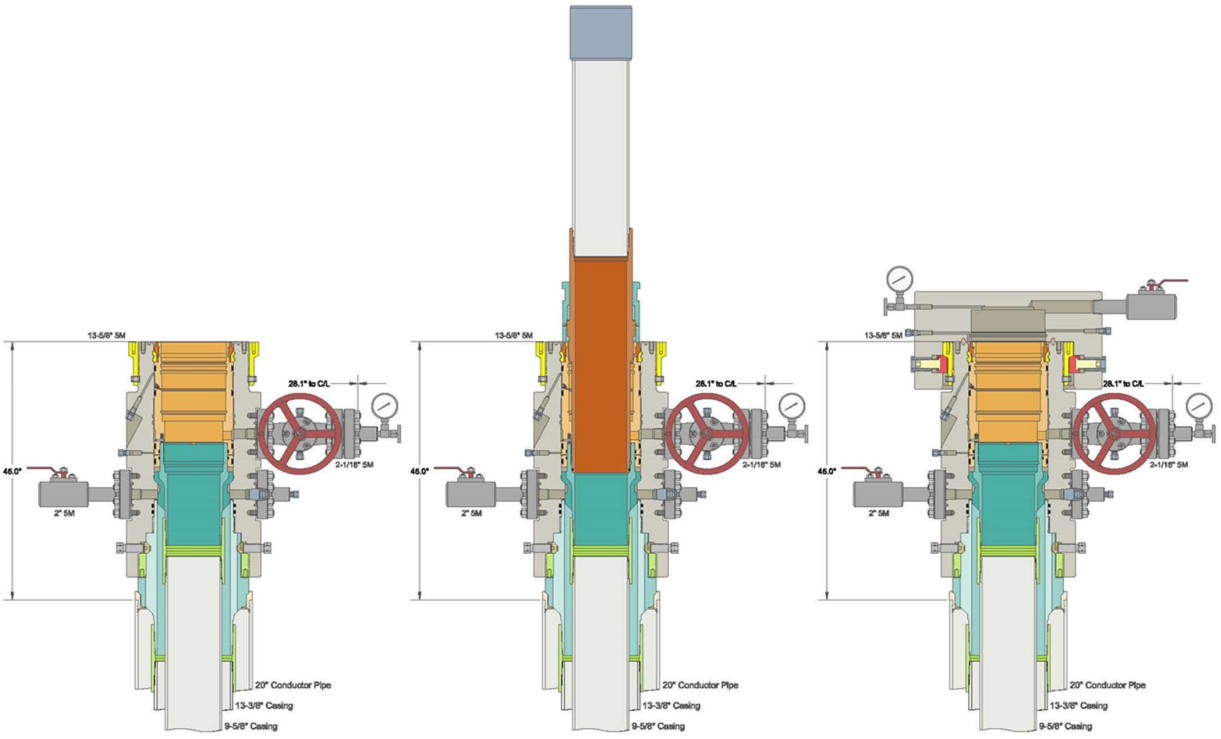
9 5/8" Intermediate



Run 9-5/8" Casing
Land Casing on 9-5/8" Mandrel Hanger
Cement 9-5/8" Casing
Retrieve Running Tool



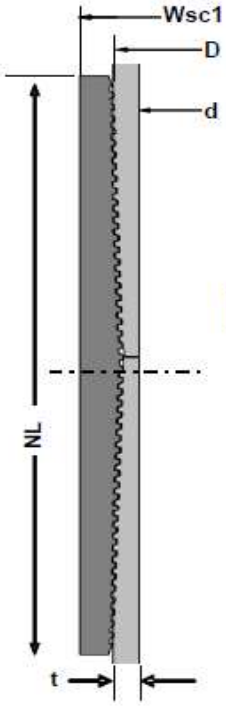
Run 13-5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



Metal One Corp.	GEOCONN-SC Pipe: SeAH P110RY 95%PBW (SMYS110ksi) *1 Coupling: P110RY (SMYS110ksi) Connection Data Sheet	Page	MAI GC 5.5 17 SeAH P110RY 95%RBW+SC-Cplg6.050 P110RY
Metal One		Date	3-Feb-21
		Rev.	0

Geometry

GEOCONN-SC



Pipe Body

		Imperial		S.I.	
Grade *1	P110RY	-	P110RY	-
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	17.00	lb/ft	25.33	kg/m
Wall Thickness (t)	0.304	in	7.72	mm
Pipe ID (d)	4.892	in	124.26	mm
Drift Dia.	4.767	in	121.08	mm

Connection

Coupling SMYS	110	ksi	110	ksi
SC-Coupling OD (Wsc1)	6.050	in	153.67	mm
Coupling Length (NL)	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	4.96	in^2	3,202	mm^2
Box Critical Area	6.10	in^2	3,937	mm^2
Thread Taper	1 / 16 (3/4" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

	Imperial		S.I.	
S.M.Y.S. *1	546	kips	2,428	kN
M.I.Y.P. *1	11,550	psi	79.66	MPa
Collapse Strength *1	7,480	psi	51.59	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1: SeAH P110RY 95%RBW: SMYS110ksi, MIYP11,550psi

Performance Properties for Connection

Min. Connection Joint Strength	100% of S.M.Y.S.
Min. Compression Yield	100% of S.M.Y.S.
Internal Pressure	100% of M.I.Y.P.
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	>90

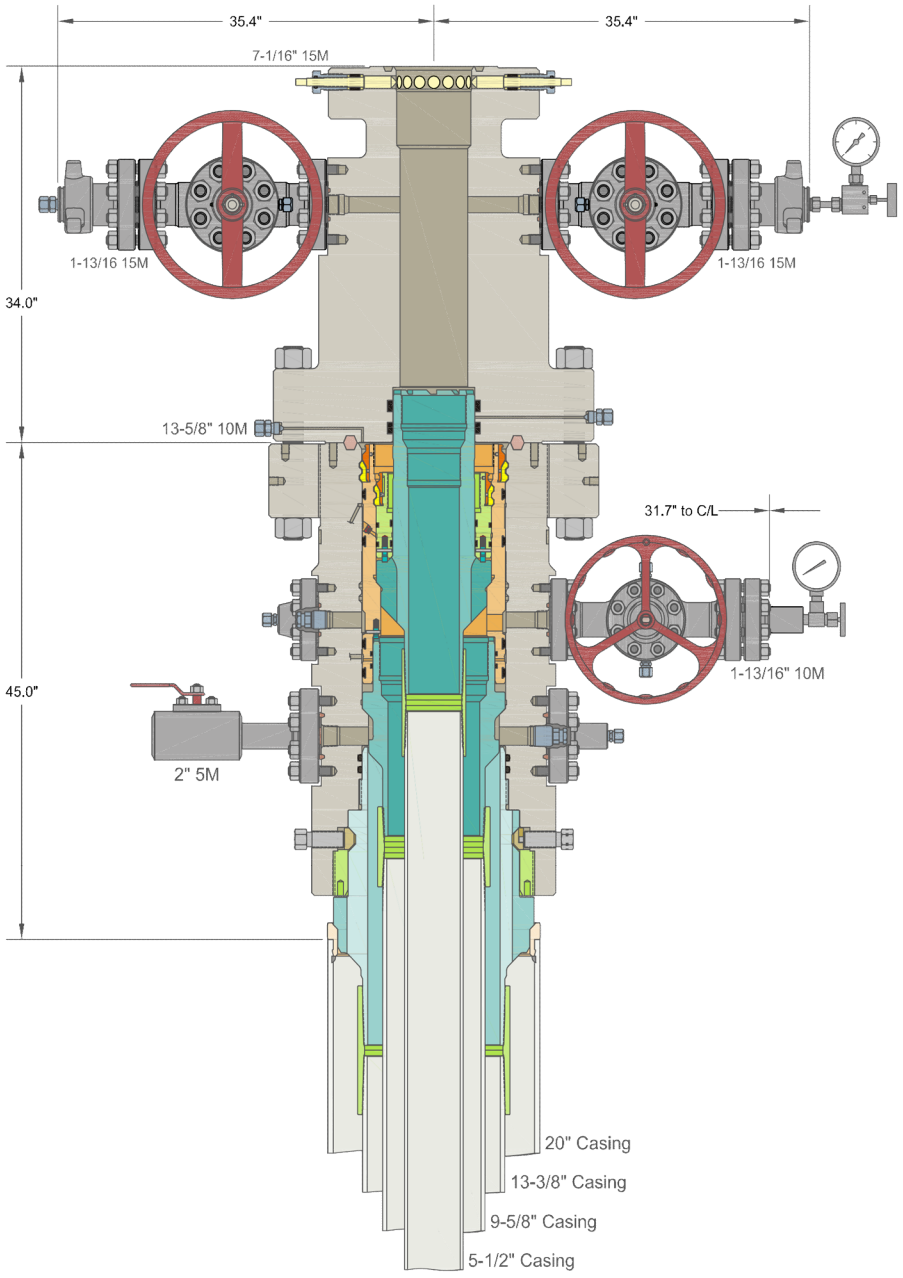
Recommended Torque

Min.	10,800	ft-lb	14,600	N-m
Opti.	12,000	ft-lb	16,200	N-m
Max.	13,200	ft-lb	17,800	N-m
Operational Max.	15,600	ft-lb	21,100	N-m

Note : Operational Max. torque can be applied for high torque application

Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	CENTENNIAL RESOURCE DEVELOPMENT LEE CO, NM		
20" x 13-3/8" x 9-5/8" x 5-1/2" 10M MBU-3T-CFL-R-DBLO System With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head, 20" Landing Ring & Pin Down Mandrel Casing Hangers	DRAWN	DLE	10JUN20
	APPRV		
	DRAWING NO.	HBE0000338	

Permian Resources
Multi-Well Pad Batch Drilling Procedure

Surface Casing - PR intends to Batch set all 13-3/8" casing to a depth approved in the APD. 17-1/2" Surface Holes will be batch drilled by a rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill 17-1/2" Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land 13-3/8" 54.5# J55 BTC casing see Illustration 1-1 Below to depth approved in APD.
3. Set packoff and test to 5k psi
4. Offline Cement
5. Install wellhead with pressure gauge and nightcap. Nightcap is shown on final wellhead Stack up Illustration #2-2.
6. Skid Rig to adjacent well to drill Surface hole.
7. Surface casing test will be performed by the rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is

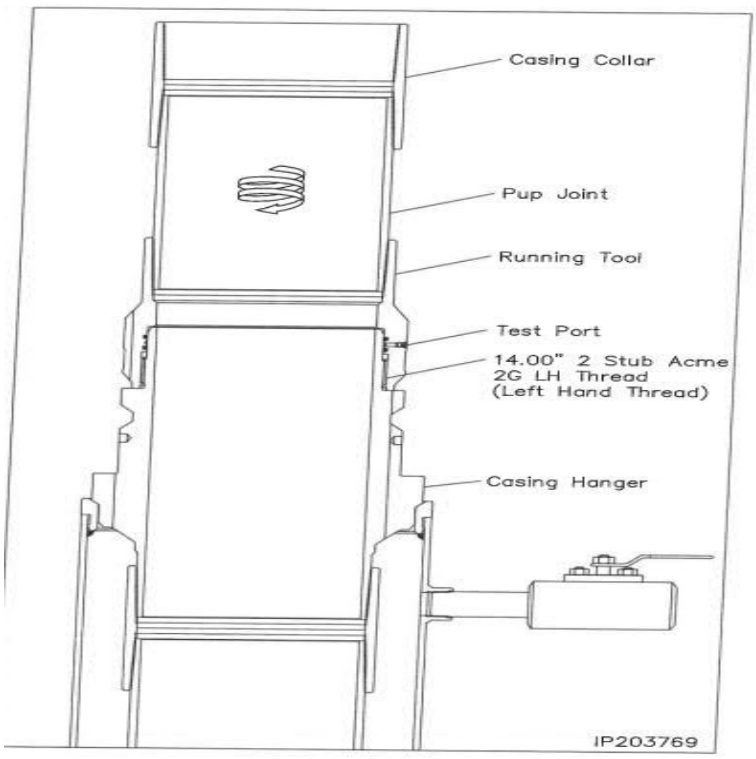


Illustration 1-1

Intermediate Casing – PR intends to Batch set all intermediate casing strings to a depth approved in the APD, typically set into Lamar. 12-1/4" Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out 13-3/8" shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 5,000 psi for 15 minutes. Nightcap shown on final wellhead stack up illustration 2-2 on page 3.
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

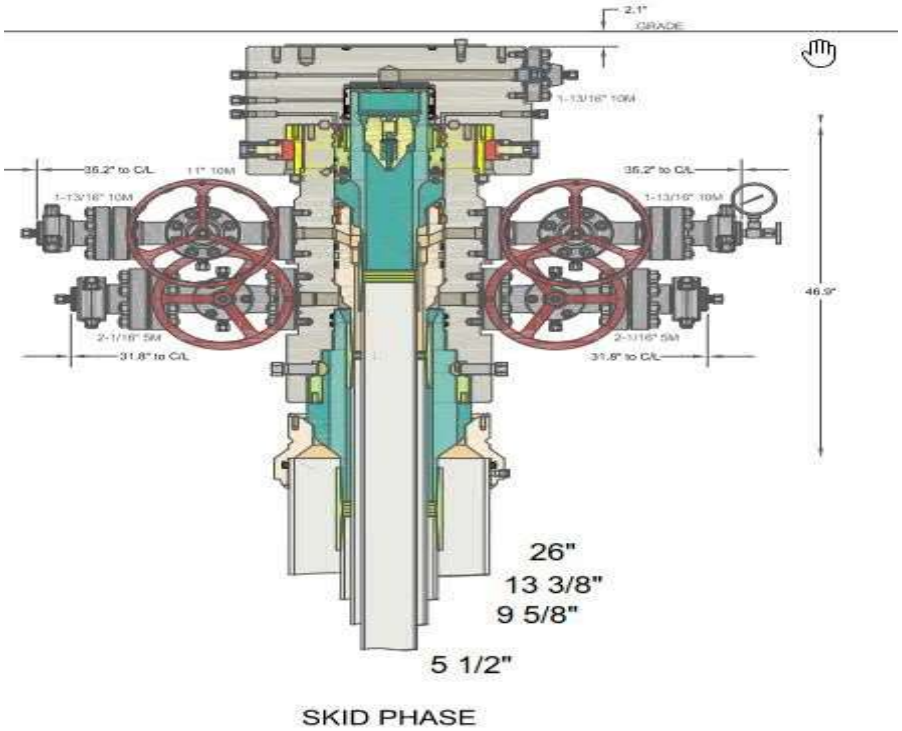


Illustration 2-2

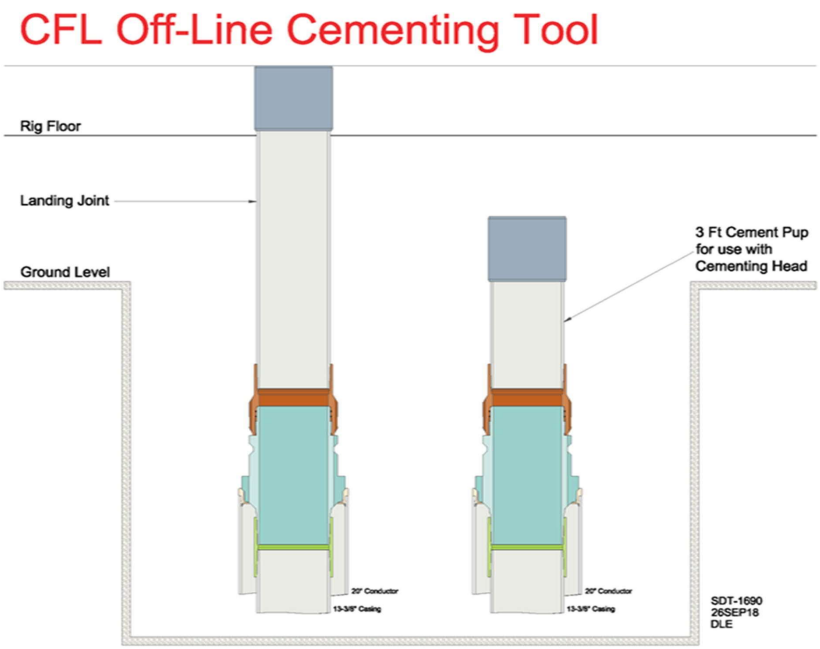
Production Casing – PR intends to Batch set all Production casings with Rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Big Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run 51/2" Production Casing.
6. Remove wear bushing then run 5-1/2" production casing to TD landing casing mandrel in wellhead.
7. Cement 5-1/2" Production string with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 5,000psi for 15 minutes.
9. Install BPV in 5-1/2" mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.

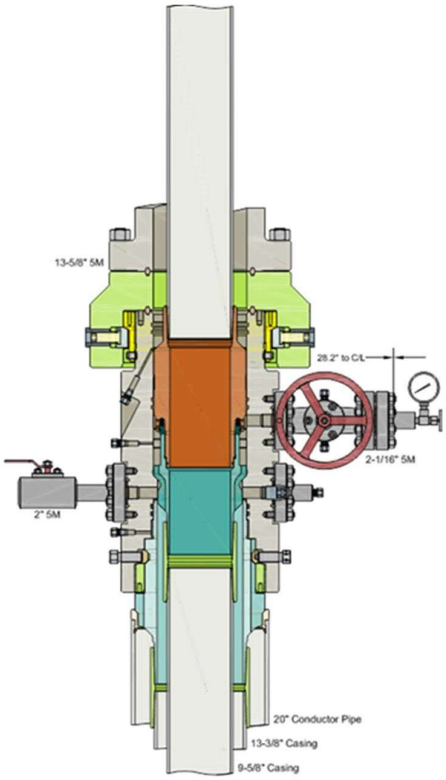
Permian Resources Offline Cementing Procedure
13-3/8" & 9-5/8" Casing

1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
    a) If well is not static use the casing outlet valves to kill well
    b) Drillers method will be used in well control event
    c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    d) Kill mud will be circulated once influx is circulated out of hole
    e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.

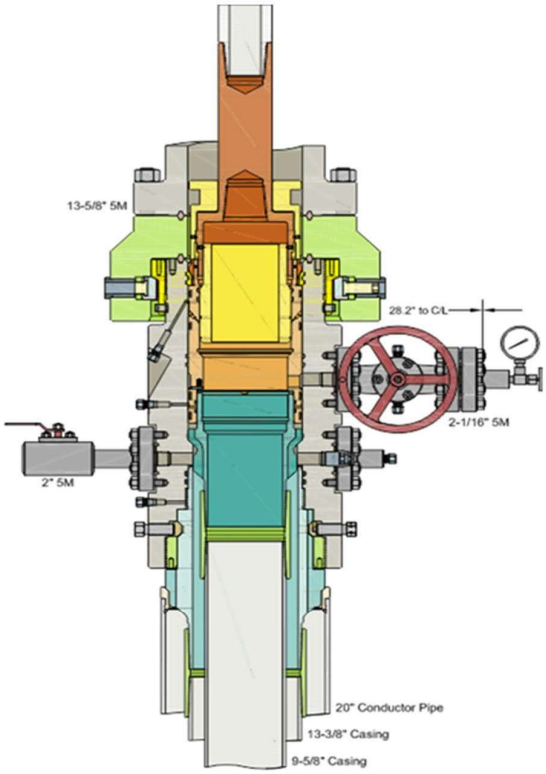
13 3/8" Surface



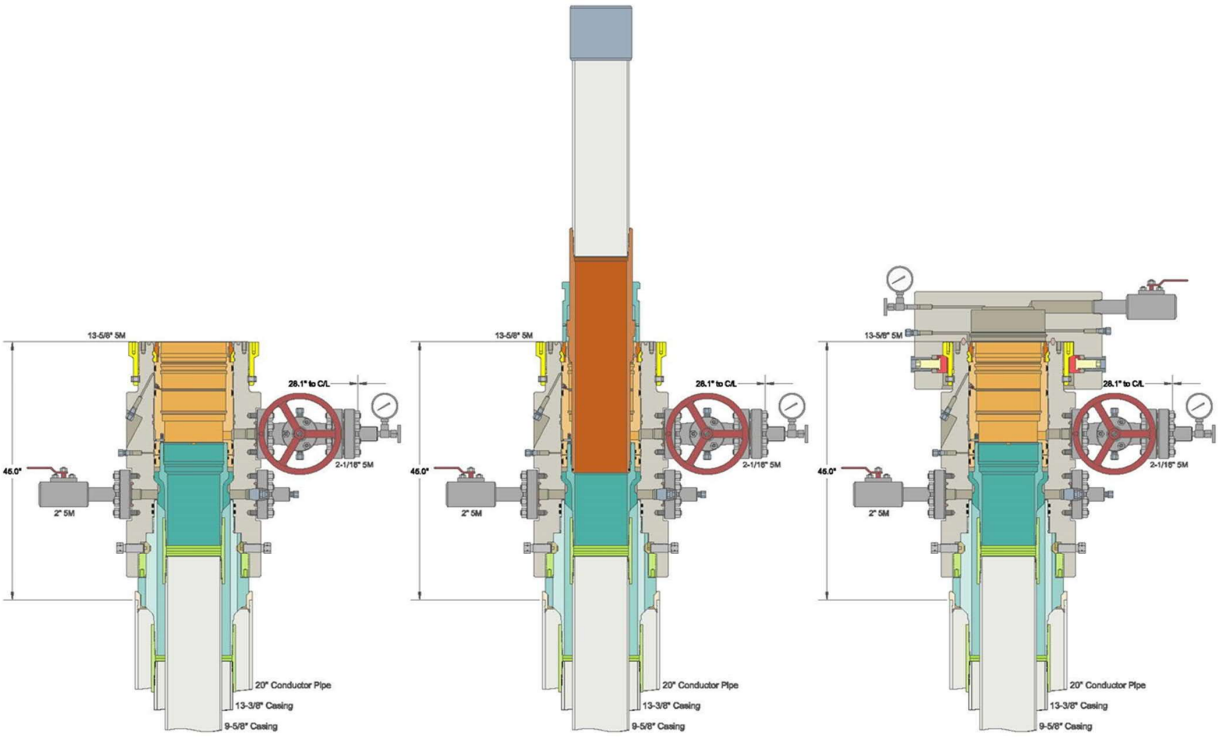
9 5/8" Intermediate



Run 9-5/8" Casing
Land Casing on 9-5/8" Mandrel Hanger
Cement 9-5/8" Casing
Retrieve Running Tool



Run 13-5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



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

SUPO Data Report
12/20/2024

APD ID: 10400092206 **Submission Date:** 05/10/2023

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

1_Jakku_Existing_Roads_Map_20230508111750.pdf

Existing Road Purpose: ACCESS **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: Numerous existing two-track roads that have been used informally for pipeline and power line maintenance will be decommissioned and NOT A ROAD sign will be placed at various entry/exit points along these roads to discourage further use of these roads. All traffic will be diverted to use the new road to be built by Permian Resources. See attached new road map for details on where signage will be placed.

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

2_Jakku_Proposed_Roads_Map_Plats_20230508122917.pdf

New road type: COLLECTOR

Length: 1059 Feet **Width (ft.):** 30

Max slope (%): 2 **Max grade (%):** 3

Army Corp of Engineers (ACOE) permit required? N

ACOE Permit Number(s):

New road travel width: 24

New road access erosion control: Drainage and erosion will be constantly monitored to prevent compromising the well site integrity, and to protect the surrounding native topography.
New road access plan or profile prepared? N

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

New road access plan

Access road engineering design? N

Access road engineering design

Turnout? N

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Top ~"6 of soil and brush will be stockpiled south of the well pads and south of the CTB. CTB topsoil pile will be no higher than 36 and will be seeded in place.

Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: Will be monitored and repaired as necessary.

Road Drainage Control Structures (DCS) description: Drainage and erosion will be constantly monitored to prevent compromising the well site integrity, and to protect the surrounding native topography.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

3_Jakku_Existing_Wells_Map_20230508113154.pdf

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: The previously proposed 390' x 390' Arrakis-Jakku CTB will also service the North and South Jakku pads. Flare and/or CBU will be in the northeast corner of the CTB. Process equipment (e. g., separators, heater-treaters, meters, compressor) will be on the south side of the CTB. Tanks will be on the other sides of the CTB. Eight ~4" O. D. flowlines (one per well) will run for 5,243.22' between

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

the CTB and the two Jakku well pads. Pipes will run parallel to roads. Pipelines will be buried.

Production Facilities map:

4_Jakku_Production_Faciltities_20230508114552.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: OTHER

Describe type: FRESH WATER SOURCE

Water source use type: STIMULATION

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Water source transport method: TRUCKING

Source land ownership: PRIVATE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 450000 **Source volume (acre-feet):** 58.00189335

Source volume (gal): 18900000

Water source and transportation

5_Jakku_Water_Source_Map_20230508114929.pdf

Water source comments: Water will be trucked 3 miles from an existing water station (NMNM-0560433) in NENE 29-18s-31e on County Road 222.
New water well? N

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: NM One Call (811) will be notified before construction starts. Top 6" of soil and brush will be stockpiled south of the well pads and south of the CTB. CTB topsoil pile will be no higher than 36" and will be seeded in place. V-doors will face east. Closed loop mud system will be used. Caliche will be hauled from the existing Caviness caliche pit on State land (C0-0408-0002) in SENE 16-18S-31E.

Construction Materials source location

6_Jakku_Caliche_Source_Map_20230508115257.pdf

Section 7 - Methods for Handling

Waste type: DRILLING

Waste content description: Fresh water-based drilling fluid.

Amount of waste: 1500 barrels

Waste disposal frequency : Weekly

Safe containment description: Steel tanks with plastic-lined containment berms.

Safe containmant attachment:

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

Disposal type description:

Disposal location description: All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360s state approved (NM-01-0006) disposal site at Halfway. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

Waste type: DRILLING

Waste content description: Brine water based drilling fluid.

Amount of waste: 1500 barrels

Waste disposal frequency : Monthly

Safe containment description: Steel tanks with plastic-lined containment berms.

Safe containmant attachment:

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

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

Disposal location description: All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360s state approved (NM-01-0006) disposal site at Halfway. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

Waste type: SEWAGE

Waste content description: Grey Water/Human waste.

Amount of waste: 5000 gallons

Waste disposal frequency : Weekly

Safe containment description: Approved waste storage tanks with containment.

Safe containmant attachment:

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

Disposal location description: All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360s state approved (NM-01-0006) disposal site at Halfway. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

Waste type: GARBAGE

Waste content description: General trash and garbage.

Amount of waste: 5000 pounds

Waste disposal frequency : Weekly

Safe containment description: Enclosed trash trailer.

Safe containmant attachment:

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

Disposal location description: All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360s state approved (NM-01-0006) disposal site at Halfway. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

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

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? Y

Description of cuttings location 8850 cu ft of waste, stored in steel tanks. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360s state approved (NM-01-0006) disposal site at Halfway.

Cuttings area length (ft.) **Cuttings area width (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:

9_Jakku_NORTH_Well_Site_Layout_20230508121155.pdf

Comments: Also see Rig Layout diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** JAKKU 36 NENE

Multiple Well Pad Number: 1

Recontouring

10a_Jakku_NORTH_Interim_Reclamation_20230508121303.pdf

Drainage/Erosion control construction: Drainage and erosion will be constantly monitored to prevent compromising the well site integrity, and to protect the surrounding native topography.

Drainage/Erosion control reclamation: Drainage and erosion will be constantly monitored to prevent compromising the well site integrity, and to protect the surrounding native topography.

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Well pad proposed disturbance (acres): 6.04 **Well pad interim reclamation (acres):** 1.54 **Well pad long term disturbance (acres):** 4.5
Road proposed disturbance (acres): 0.73 **Road interim reclamation (acres):** 0 **Road long term disturbance (acres):** 0.73
Powerline proposed disturbance (acres): 0 **Powerline interim reclamation (acres):** 0 **Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 3.6 **Pipeline interim reclamation (acres):** 3.6 **Pipeline long term disturbance (acres):** 0
Other proposed disturbance (acres): 0 **Other interim reclamation (acres):** 0 **Other long term disturbance (acres):** 0

Total proposed disturbance: 10.37 **Total interim reclamation:** 5.140000000000001 **Total long term disturbance:** 5.23

Disturbance Comments:

Reconstruction method: Will come back in with heavy equipment, remove caliche in the reclamation area, replace with native topsoil.
Topsoil redistribution: Surface disturbance will be limited to well site surveyed dimensions. Topsoil will be stored along the South side of the pad.
Soil treatment: Native soils will be used in the initial construction of the well pad. Pad will be compacted using fresh water, dust control measures will be implemented as needed.
Existing Vegetation at the well pad: Surface disturbance will be limited to well site surveyed and extending south to borrow deficit quantities. Topsoil will be stored along the south edge of borrow area.
Existing Vegetation at the well pad

Existing Vegetation Community at the road: Will be windrowed to the edge of the disturbance and be utilized as a barrier from water run-off.
Existing Vegetation Community at the road

Existing Vegetation Community at the pipeline: Will be windrowed to the edge of the disturbance and be utilized as a barrier from water run-off.
Existing Vegetation Community at the pipeline

Existing Vegetation Community at other disturbances: Will be windrowed to the edge of the disturbance and be utilized as a barrier from water run-off.
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:

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Seed

Seed Table

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation

Operator Contact/Responsible Official

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep: Prepare a 3-5-inch-deep seedbed, with the top 3-4 inches consisting of topsoil.

Seed BMP: Seeding will be done in the proper season and monitored for the re-establishment of native vegetation.

Seed method: Broadcast.

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment

Weed treatment plan description: Spray for noxious weeds and bare ground as needed.

Weed treatment plan

Monitoring plan description: All disturbed areas will be closely monitored for any primary or secondary noxious weeds.

Monitoring plan

Success standards: No primary or secondary noxious weed will be allowed. Vegetation will be returned to its native standard.

Pit closure description: No open pits will be constructed.

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NEW MEXICO STATE LAND OFFICE

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT,STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NEW MEXICO STATE LAND OFFICE

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NEW MEXICO STATE LAND OFFICE

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other

Right of Way needed? Y **Use APD as ROW?** N

ROW Type(s):

ROW

SUPO Additional Information:

Use a previously conducted onsite? Y

Previous Onsite information: Lone Mountain Archaeological conducted a block inspection and filed report NMCRIS-150188 on May 31, 2022. Due to these wells being state/state/fed, no BLM onsite inspection was performed.

Other SUPO

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

12_Jakku_North_SUPO_20230508122638.pdf

Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Access Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Existing Access
- State Trust Lands
- BLM Lands
- Private Lands

1:60,000

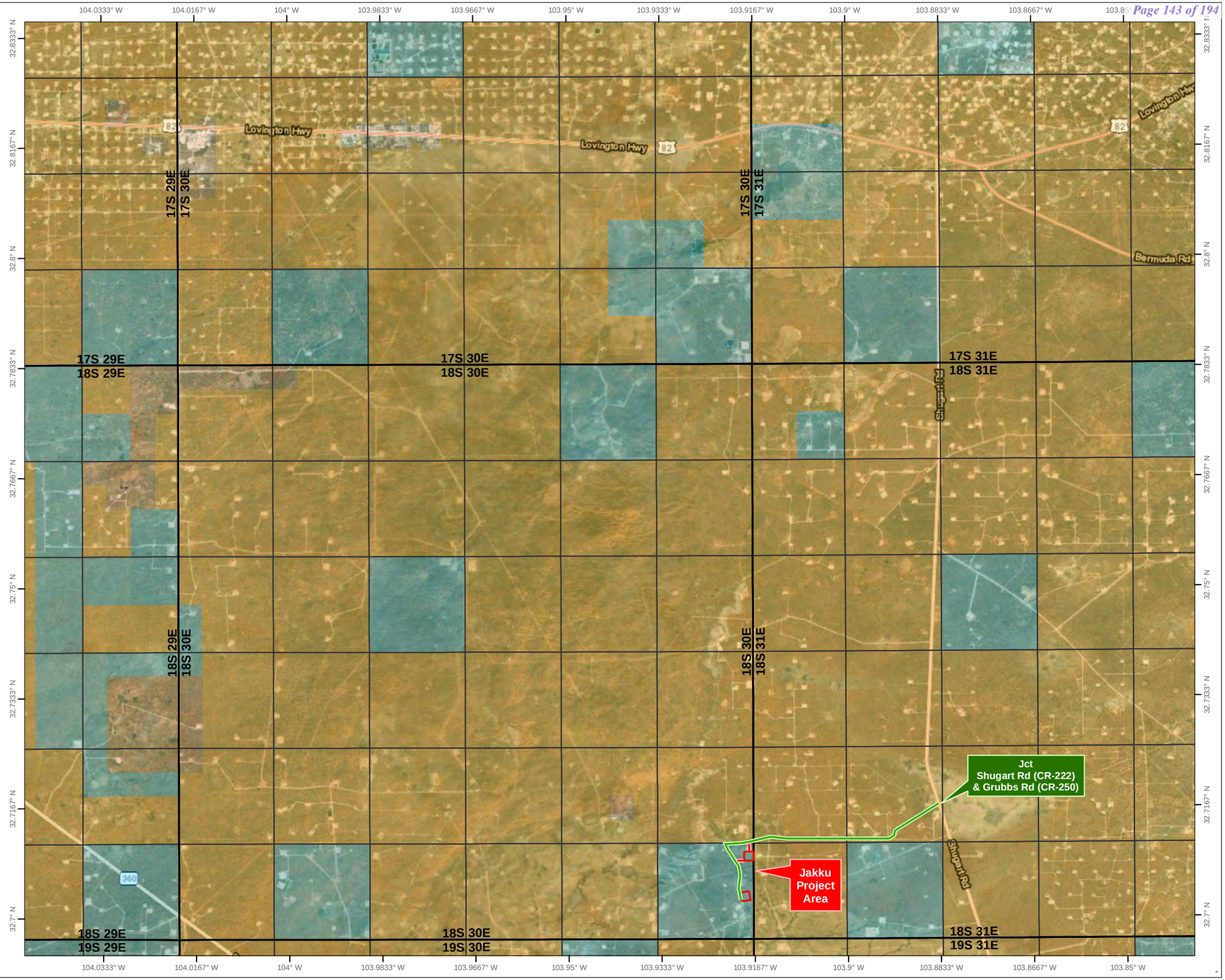
0 3,750 7,500
Feet

N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC



Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Plan of Development Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Proposed Flowline
- Previously Proposed CTB
- Proposed Well Pad
- State Trust Lands
- BLM Lands
- Private Lands

1:8,000

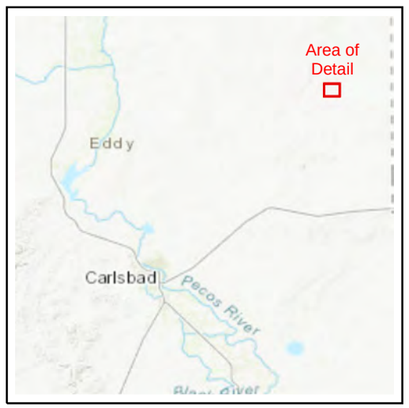
0 500 1,000
Feet

N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC



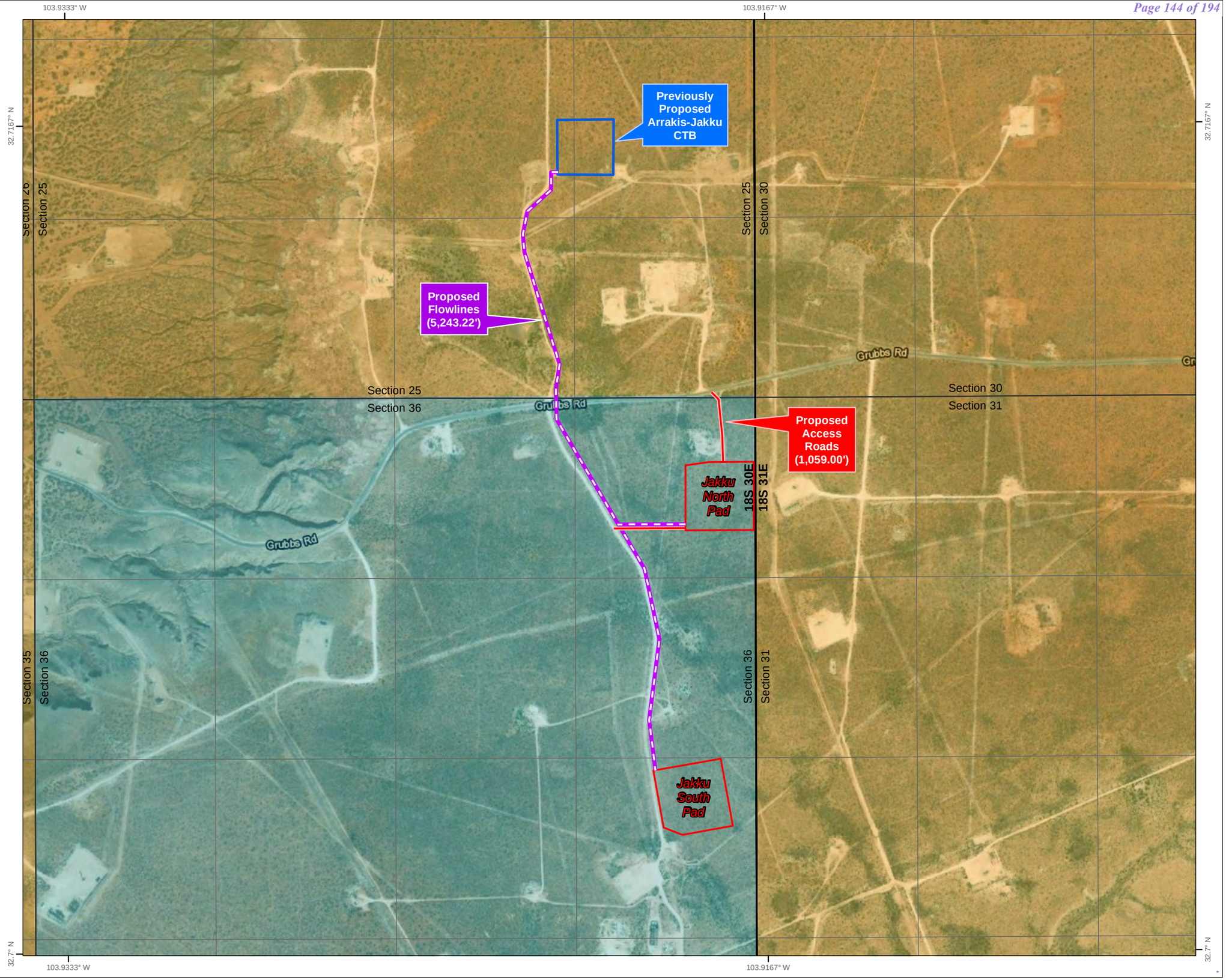
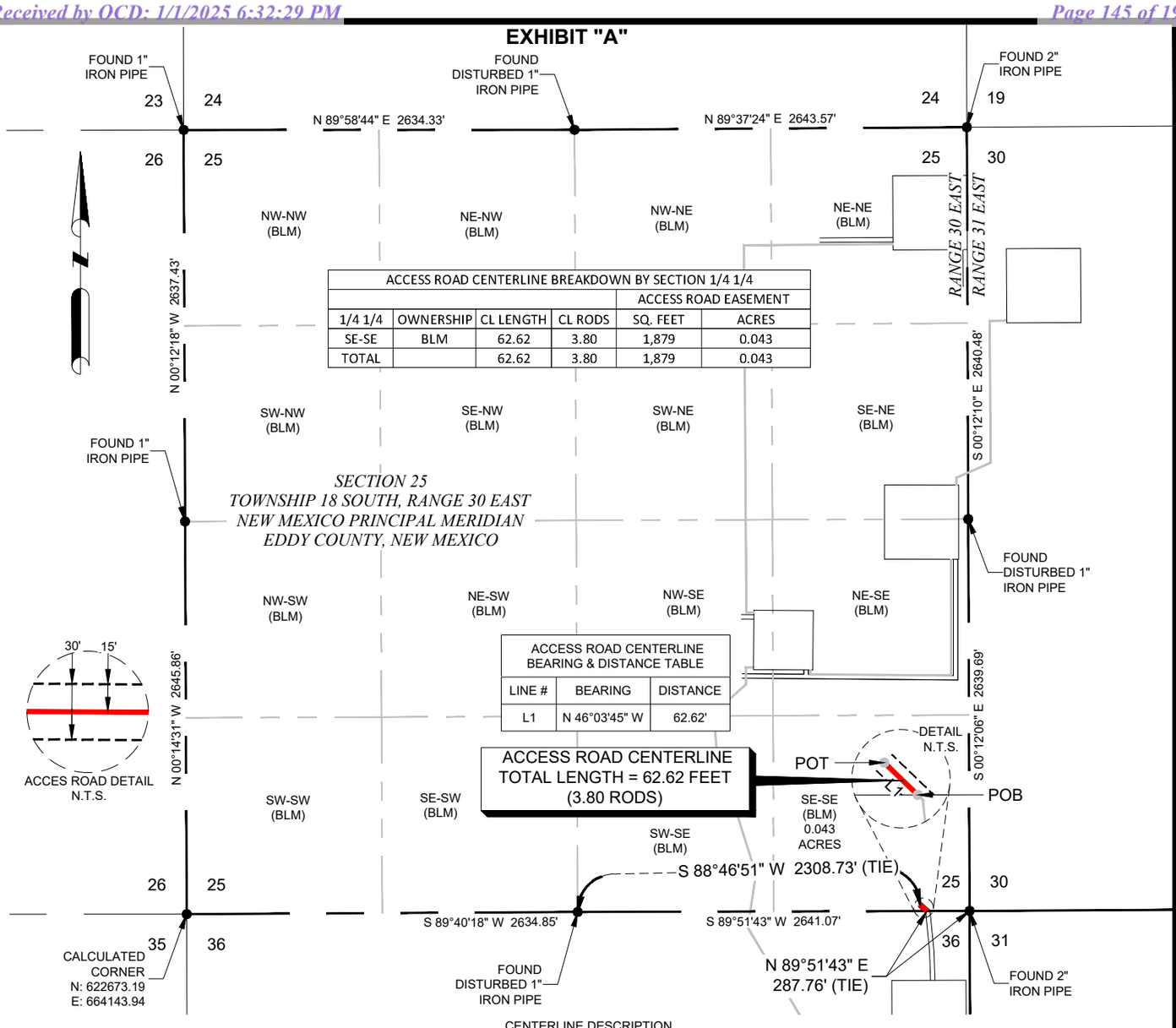


EXHIBIT "A"



ACCESS ROAD CENTERLINE BREAKDOWN BY SECTION 1/4 1/4					
				ACCESS ROAD EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
SE-SE	BLM	62.62	3.80	1,879	0.043
TOTAL		62.62	3.80	1,879	0.043

ACCESS ROAD CENTERLINE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	N 46°03'45" W	62.62'

CENTERLINE DESCRIPTION

BEING THE CENTERLINE OF A PROPOSED ACCESS ROAD EASEMENT, SITUATED IN SECTION 25, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT IN SAID SECTION 25, FROM WHICH A 2" IRON PIPE FOUND FOR THE SOUTHEAST CORNER OF SAID SECTION 25 BEARS N 89°51'43" E, A DISTANCE OF 287.76 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622693.96, E:669132.04 FEET FOR REFERENCE;

THENCE N 46°03'45" W, A DISTANCE OF 62.62 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 25, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE SOUTH QUARTER CORNER OF SAID SECTION 25 BEARS S 88°46'51" W, A DISTANCE OF 2308.73 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622737.41, E:669086.95 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 62.62 FEET OR 3.80 RODS IN SAID SECTION 25.

LEGEND

- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- ACCESS ROAD CENTERLINE
- EDGE OF ROAD
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'

Scale: 1" = 1000'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/26/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

BUREAU OF LAND MANAGEMENT

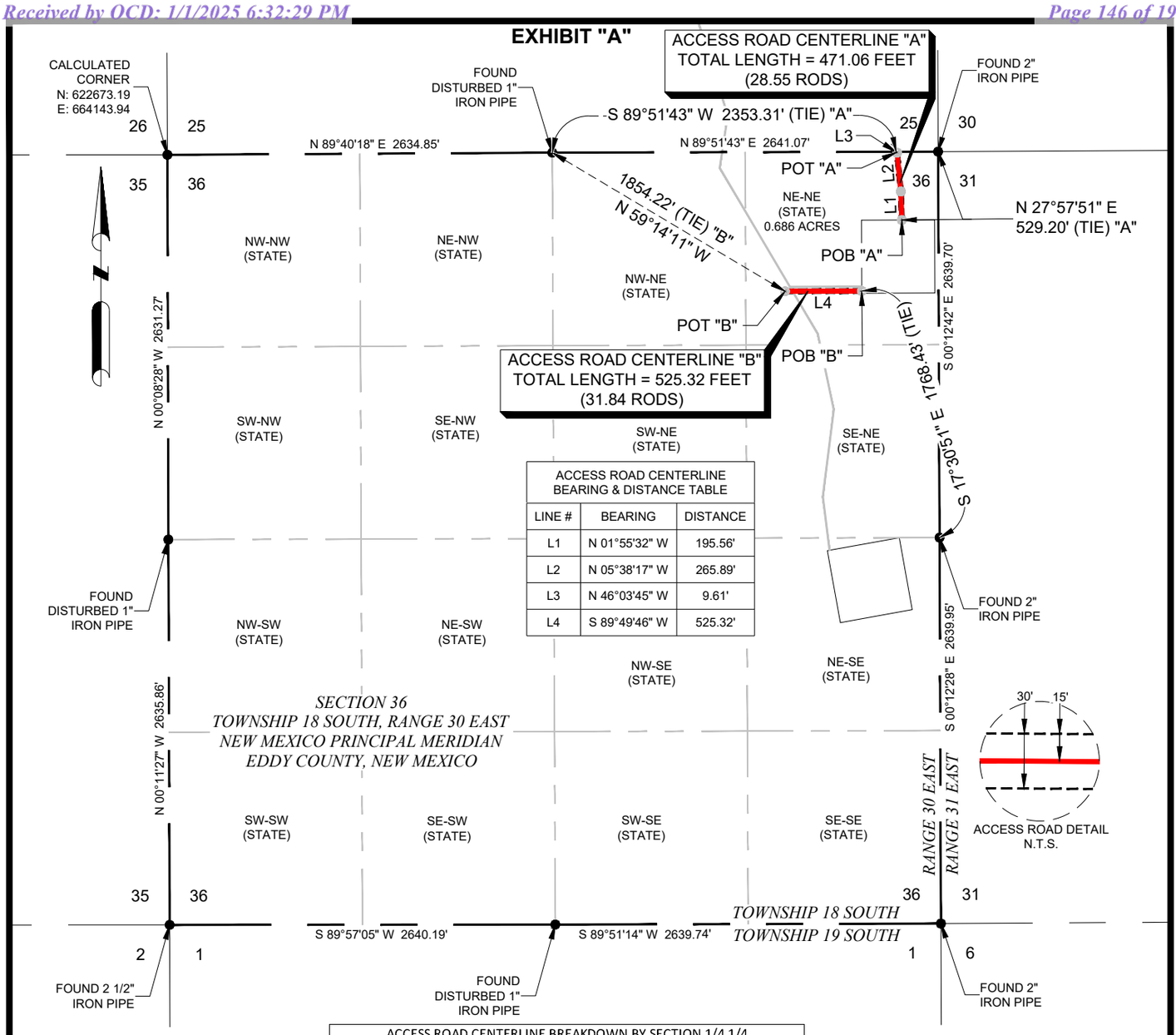
PROPOSED ACCESS ROAD CENTERLINE

SITUATED IN
SECTION 25
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU NORTH PAD (25-18S-30E) ACCESS ROAD	REV. 0
CHECKED BY: MJM	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 1		

EXHIBIT "A"



ACCESS ROAD CENTERLINE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	N 01°55'32" W	195.56'
L2	N 05°38'17" W	265.89'
L3	N 46°03'45" W	9.61'
L4	S 89°49'46" W	525.32'

ACCESS ROAD CENTERLINE BREAKDOWN BY SECTION 1/4 1/4					
				ACCESS ROAD EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NE-NE	STATE	996.38	60.39	29,891	0.686
TOTAL		996.38	60.39	29,891	0.686

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- ACCESS ROAD CENTERLINE
- EDGE OF ROAD
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'
Scale: 1" = 1000'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

10/26/2022

CHARLES JURICA NEW MEXICO PS #25490 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
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#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED ACCESS ROAD CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU NORTH PAD (36-18S-30E) ACCESS ROAD	REV. 0
CHECKED BY: MJM	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

CENTERLINE DESCRIPTION

ACCESS ROAD "A"

BEING THE CENTERLINE OF A PROPOSED ACCESS ROAD EASEMENT, SITUATED IN SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN SAID SECTION 36, FROM WHICH A 2" IRON PIPE FOUND FOR THE NORTHEAST CORNER OF SAID SECTION 36 BEARS N 27°57'51" E, A DISTANCE OF 529.20 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622227.24, E:669171.65 FEET FOR REFERENCE;

THENCE N 01°55'32" W, A DISTANCE OF 195.56 FEET TO A POINT;
THENCE N 05°38'17" W, A DISTANCE OF 265.89 FEET TO A POINT;

THENCE N 46°03'45" W, A DISTANCE OF 9.61 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 36, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE NORTH QUARTER CORNER OF SAID SECTION 36 BEARS S 89°51'43" W, A DISTANCE OF 2353.31 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622693.96, E:669132.04 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 471.06 FEET OR 28.55 RODS IN SAID SECTION 36.

ACCESS ROAD "B"

BEING THE CENTERLINE OF A PROPOSED ACCESS ROAD EASEMENT, SITUATED IN SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN SAID SECTION 36, FROM WHICH A 2" IRON PIPE FOUND FOR THE EAST QUARTER CORNER OF SAID SECTION 36 BEARS S 17°30'51" E, A DISTANCE OF 1768.43 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:621741.42, E:668897.36 FEET FOR REFERENCE;

THENCE S 89°49'46" W, A DISTANCE OF 525.32 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 36, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE NORTH QUARTER CORNER OF SAID SECTION 36 BEARS N 59°14'11" W, A DISTANCE OF 1854.22 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:621739.86, E:668372.05 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 525.32 FEET OR 31.84 RODS IN SAID SECTION 36.

CHARLES L. JURICA
NEW MEXICO
25490
PROFESSIONAL SURVEYOR

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
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#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED ACCESS ROAD CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO.	REV.
CHECKED BY: MJM	DATE: 05/09/22	10637 JAKKU NORTH PAD (36-18S-30E) ACCESS ROAD	0
SCALE: 1"=1000'	PAGE 2 OF 2		

Colgate Operating, LLC

Jakku 36 Fed State Com
Well Vicinity & Lease Map

Section 36, Township 18S, Range 30E
Eddy County, New Mexico

- Oil - Active
- Oil - New
- Oil - TA
- Oil - P&A
- Gas - Active
- Gas - New
- Gas - P&A
- SWD - Active
- Wellbores
- BLM Surface
- State Surface
- Private Surface
- State OG Leases
- Federal OG Leases

N

1:22,000

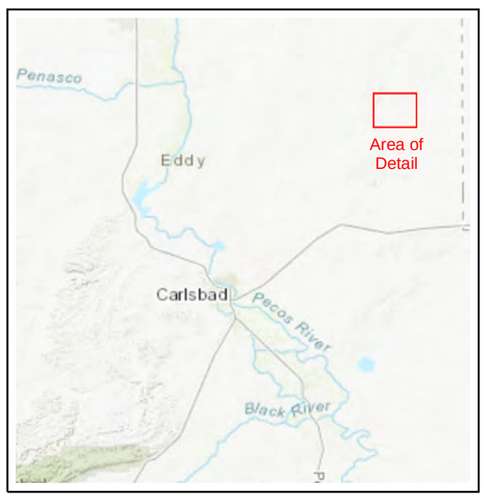
0 550 1,100 2,200

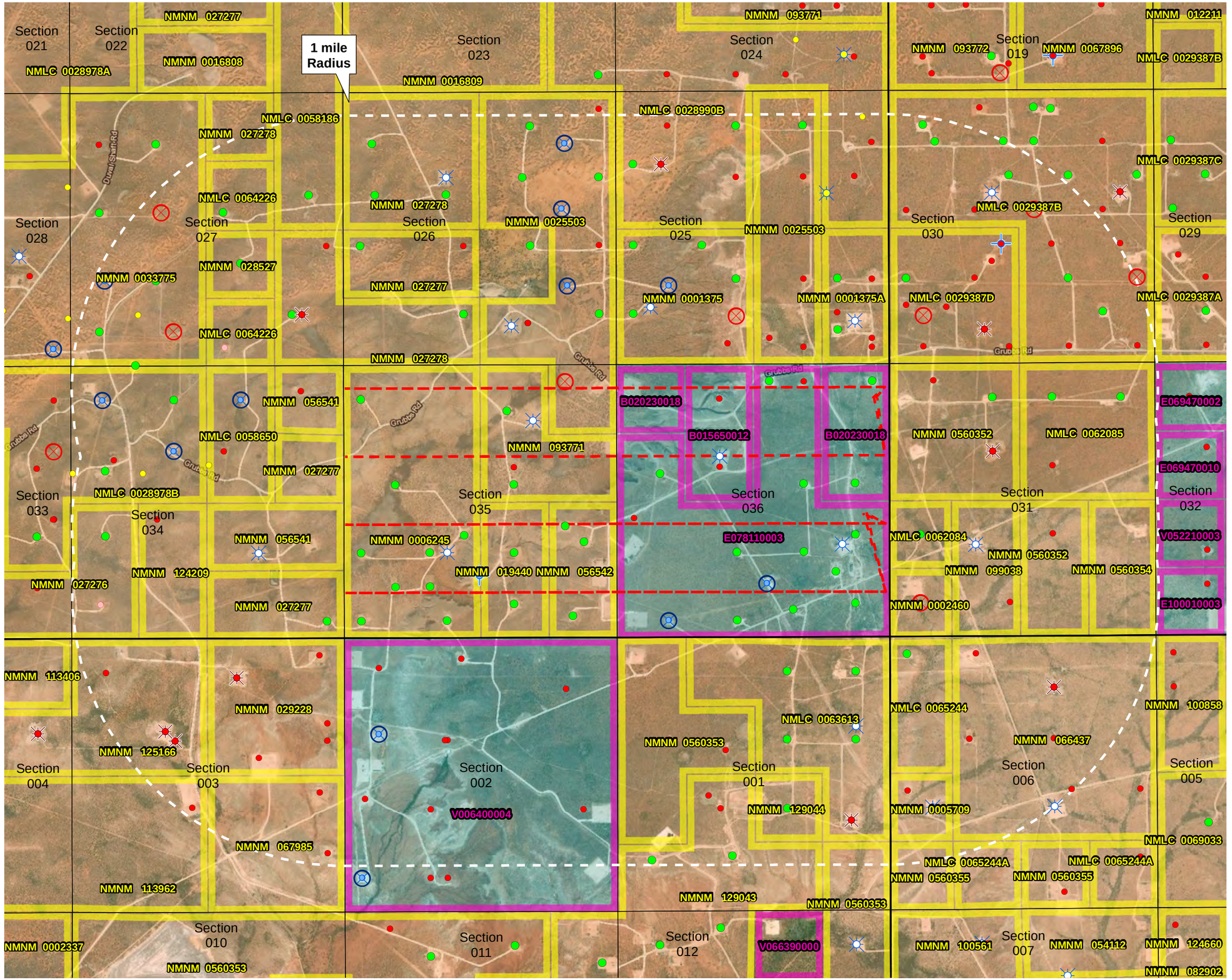
Feet

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC





Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Plan of Development Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Proposed Flowline
- Previously Proposed CTB
- Proposed Well Pad
- State Trust Lands
- BLM Lands
- Private Lands

1:8,000

0 500 1,000
Feet

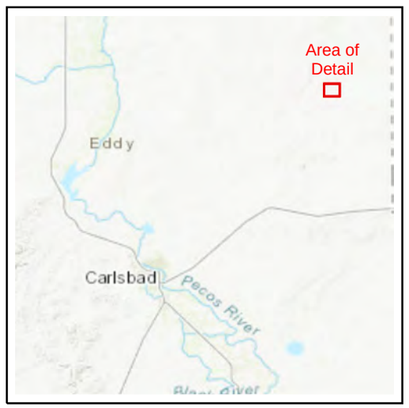
N

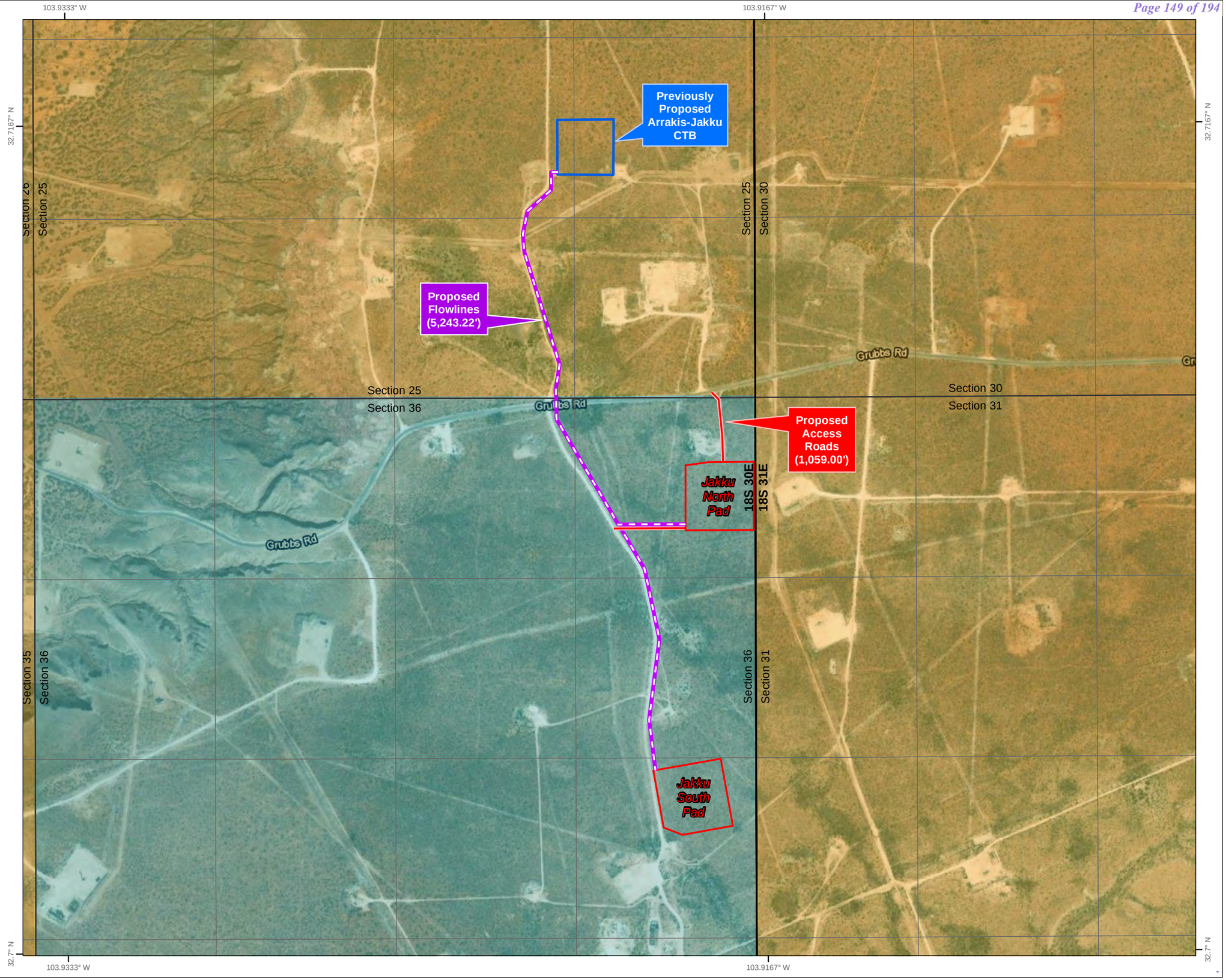
25.69' power line

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

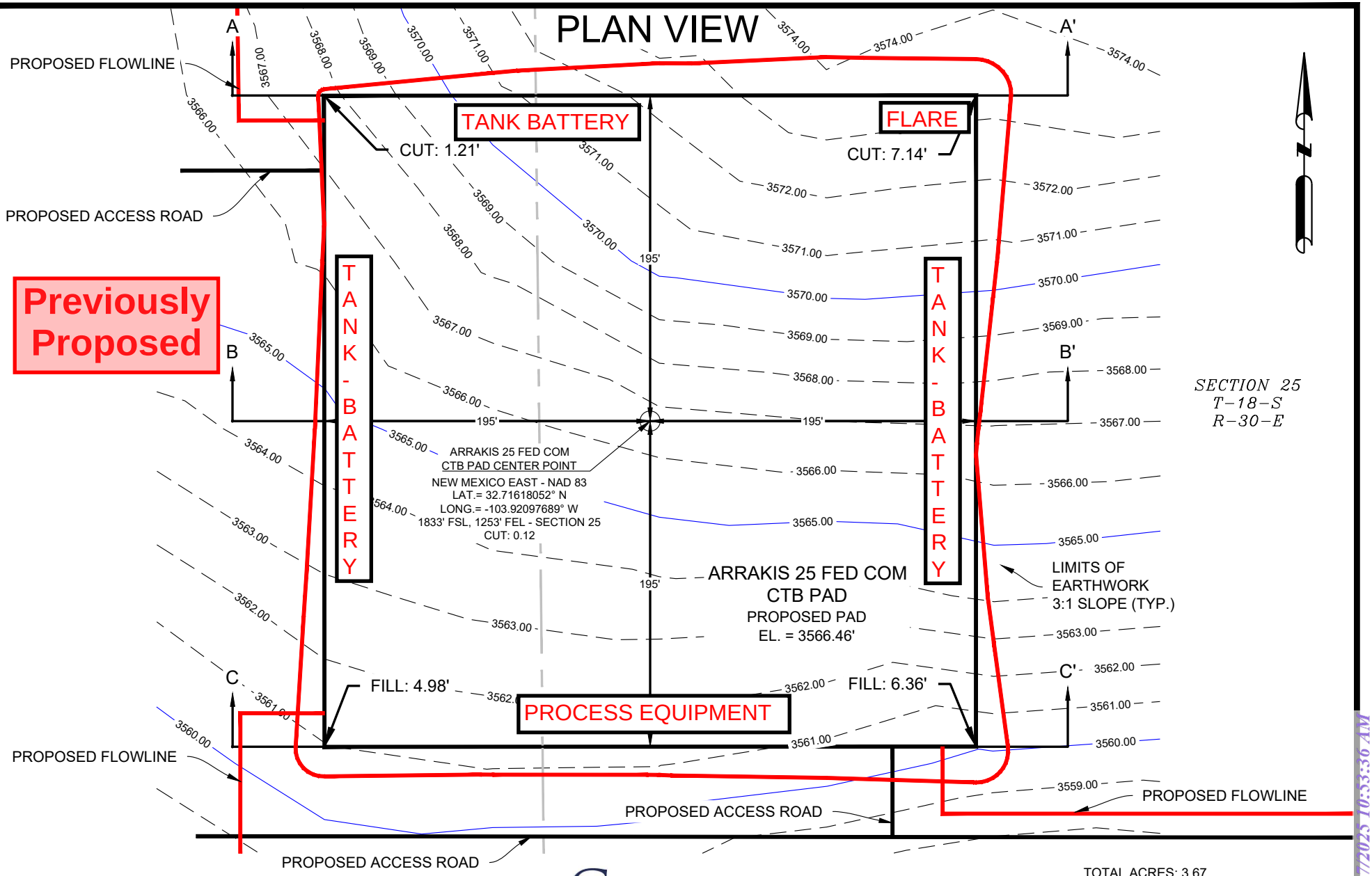
PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC





PLAN VIEW



SECTION 25
T-18-S
R-30-E

TOTAL ACRES: 3.67

80' 0' 80'

Scale: 1" = 80'

CUT	FILL	NET
9,072.16 CU. YD	9,072.16 CU. YD	0.00 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

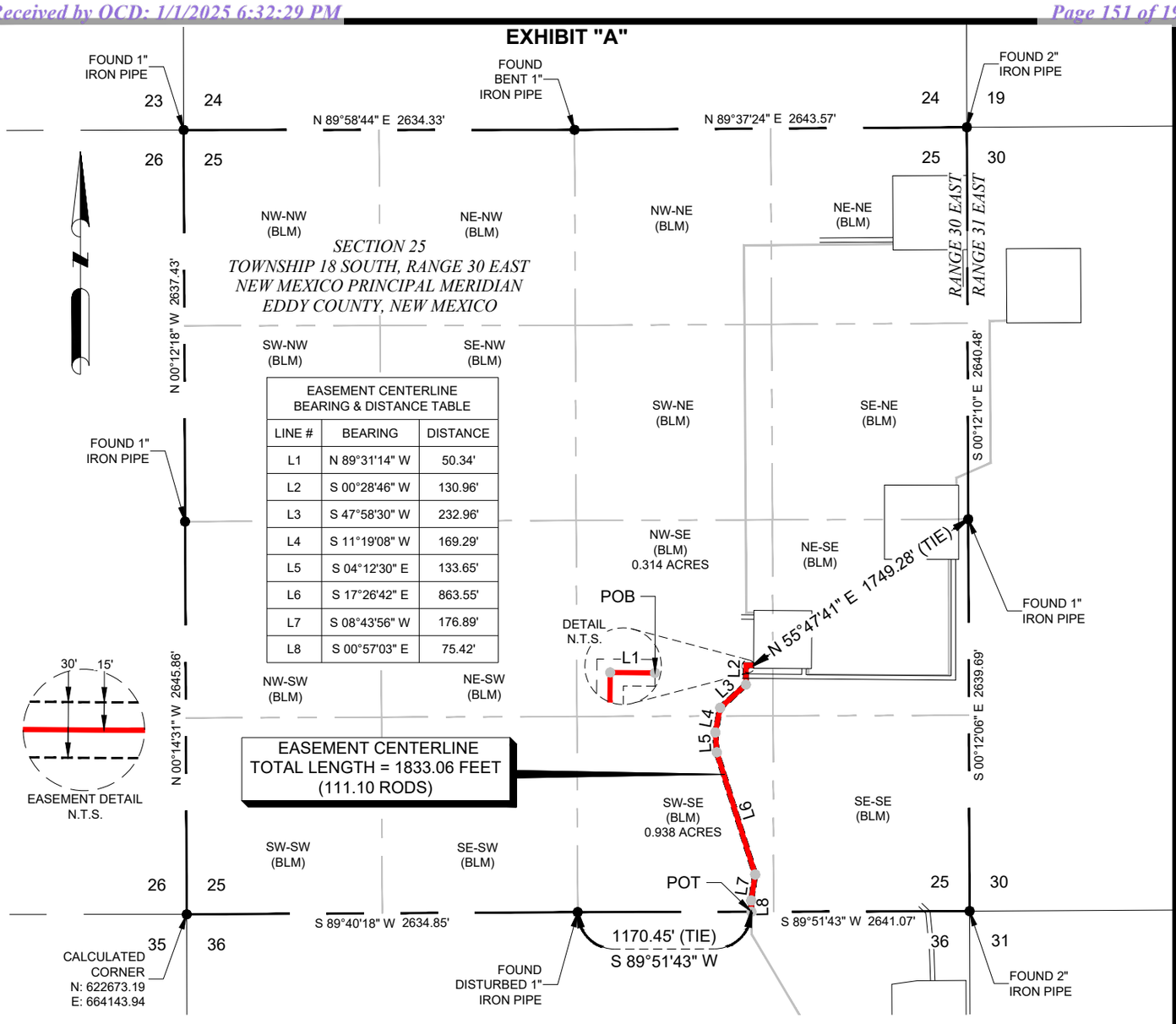
ARRAKIS-JAKKU 25 FED COM CTB PAD

PAD GRADING AND CROSS SECTIONS

SITUATED IN
SECTION 25, TOWNSHIP 18 SOUTH, RANGE 30 EAST
N.M.P.M.
EDDY COUNTY, NEW MEXICO

PROJECT NO. 10645	DATE: 7/11/2022	SHEET 1-2

EXHIBIT "A"



EASEMENT CENTERLINE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	N 89°31'14" W	50.34'
L2	S 00°28'46" W	130.96'
L3	S 47°58'30" W	232.96'
L4	S 11°19'08" W	169.29'
L5	S 04°12'30" E	133.65'
L6	S 17°26'42" E	863.55'
L7	S 08°43'56" W	176.89'
L8	S 00°57'03" E	75.42'

EASEMENT CENTERLINE BREAKDOWN BY SECTION 1/4 1/4					
				PIPELINE EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NW-SE	BLM	471.04	28.55	14,130	0.324
SW-SE	BLM	1,362.02	82.55	40,860	0.938
TOTAL		1,833.06	111.10	54,990	1.262

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- EASEMENT CENTERLINE
- PERMANENT EASEMENT
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

1000' 0' 1000'
Scale: 1" = 1000'

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/17/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK
1	10/14/22	WAS	UPDATED TABLE	CJ

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

BUREAU OF LAND MANAGEMENT

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 25
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (25-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

CENTERLINE DESCRIPTION

BEING THE CENTERLINE OF A PROPOSED PIPELINE EASEMENT, SITUATED IN SECTION 25, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN SAID SECTION 25, FROM WHICH A 1" IRON PIPE FOUND FOR THE EAST QUARTER CORNER OF SAID SECTION 25 BEARS N 55°47'41" E, A DISTANCE OF 1749.28 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:624350.96, E:667963.82 FEET FOR REFERENCE;

THENCE N 89°31'14" W, A DISTANCE OF 50.34 FEET TO A POINT;
THENCE S 00°28'46" W, A DISTANCE OF 130.96 FEET TO A POINT;
THENCE S 47°58'30" W, A DISTANCE OF 232.96 FEET TO A POINT;
THENCE S 11°19'08" W, A DISTANCE OF 169.29 FEET TO A POINT;
THENCE S 04°12'30" E, A DISTANCE OF 133.65 FEET TO A POINT;
THENCE S 17°26'42" E, A DISTANCE OF 863.55 FEET TO A POINT;
THENCE S 08°43'56" W, A DISTANCE OF 176.89 FEET TO A POINT;

THENCE S 00°57'03" E, A DISTANCE OF 75.42 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN THE SOUTH BOUNDARY LINE OF SAID SECTION 25, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE SOUTH QUARTER CORNER OF SAID SECTION 25 BEARS S 89°51'43" W, A DISTANCE OF 1170.45 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622691.11, E:667949.20 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 1833.06 FEET OR 111.10 RODS IN SAID SECTION 25.

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

1	10/14/22	WAS	UPDATED TABLE	CJ
#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

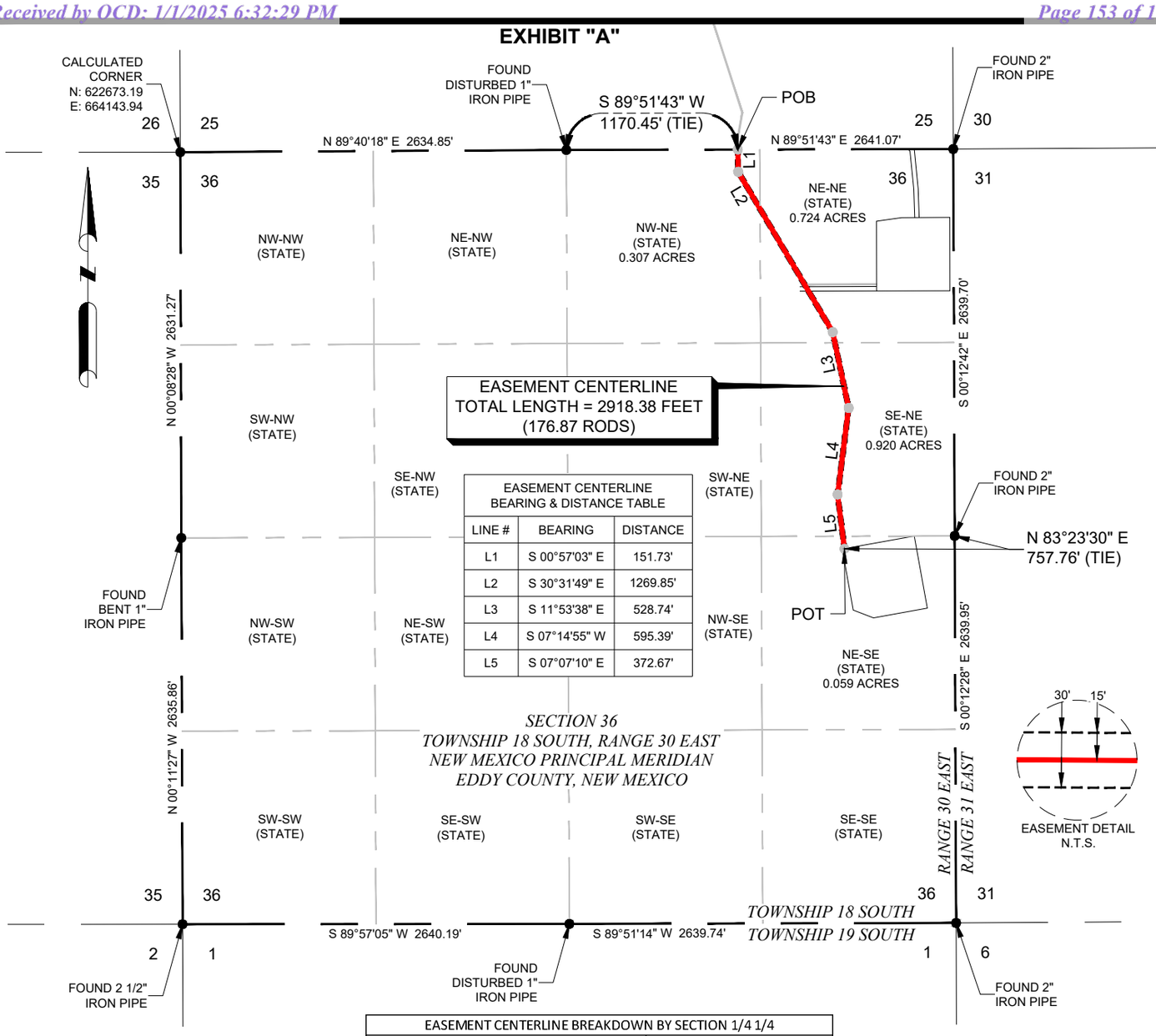
BUREAU OF LAND MANAGEMENT

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 25
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (25-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 2 OF 2		

EXHIBIT "A"



EASEMENT CENTERLINE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	S 00°57'03" E	151.73'
L2	S 30°31'49" E	1269.85'
L3	S 11°53'38" E	528.74'
L4	S 07°14'55" W	595.39'
L5	S 07°07'10" E	372.67'

EASEMENT CENTERLINE BREAKDOWN BY SECTION 1/4 1/4					
				PIPELINE EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NW-NE	STATE	445.38	26.99	13,361	0.307
NE-NE	STATE	1,050.59	63.67	31,518	0.724
SE-NE	STATE	1,336.44	81.00	40,093	0.920
NE-SE	STATE	85.97	5.21	2,579	0.059
TOTAL		2,918.38	176.87	87,551	2.010

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- EASEMENT CENTERLINE
- PERMANENT EASEMENT
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'

Scale: 1" = 1000'

CHARLES L. JURICA
NEW MEXICO
25490
PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/17/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
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#	DATE	BY:	DESCRIPTION	CHK
1	10/14/22	WAS	UPDATE ROUTE	CJ

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (36-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

CENTERLINE DESCRIPTION

BEING THE CENTERLINE OF A PROPOSED PIPELINE EASEMENT, SITUATED IN SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN THE NORTH BOUNDARY LINE OF SAID SECTION 36, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE NORTH QUARTER CORNER OF SAID SECTION 36 BEARS S 89°51'43" W, A DISTANCE OF 1170.45 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622688.29, E:666778.74 FEET FOR REFERENCE;

THENCE S 00°57'03" W, A DISTANCE OF 151.73 FEET TO A POINT;
THENCE S 30°31'49" E, A DISTANCE OF 1269.85 FEET TO A POINT;
THENCE S 11°53'38" E, A DISTANCE OF 528.74 FEET TO A POINT;
THENCE S 07°14'55" W, A DISTANCE OF 595.39 FEET TO A POINT;

THENCE S 07°07'10" E, A DISTANCE OF 372.67 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 36, FROM WHICH A 2" IRON PIPE FOUND FOR THE EAST QUARTER CORNER OF SAID SECTION 36 BEARS N 83°23'30" E, A DISTANCE OF 757.76 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:619967.77, E:668676.83 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 2918.38 FEET OR 176.87 RODS IN SAID SECTION 36.

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK
1	10/14/22	WAS	UPDATE ROUTE	CJ

PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

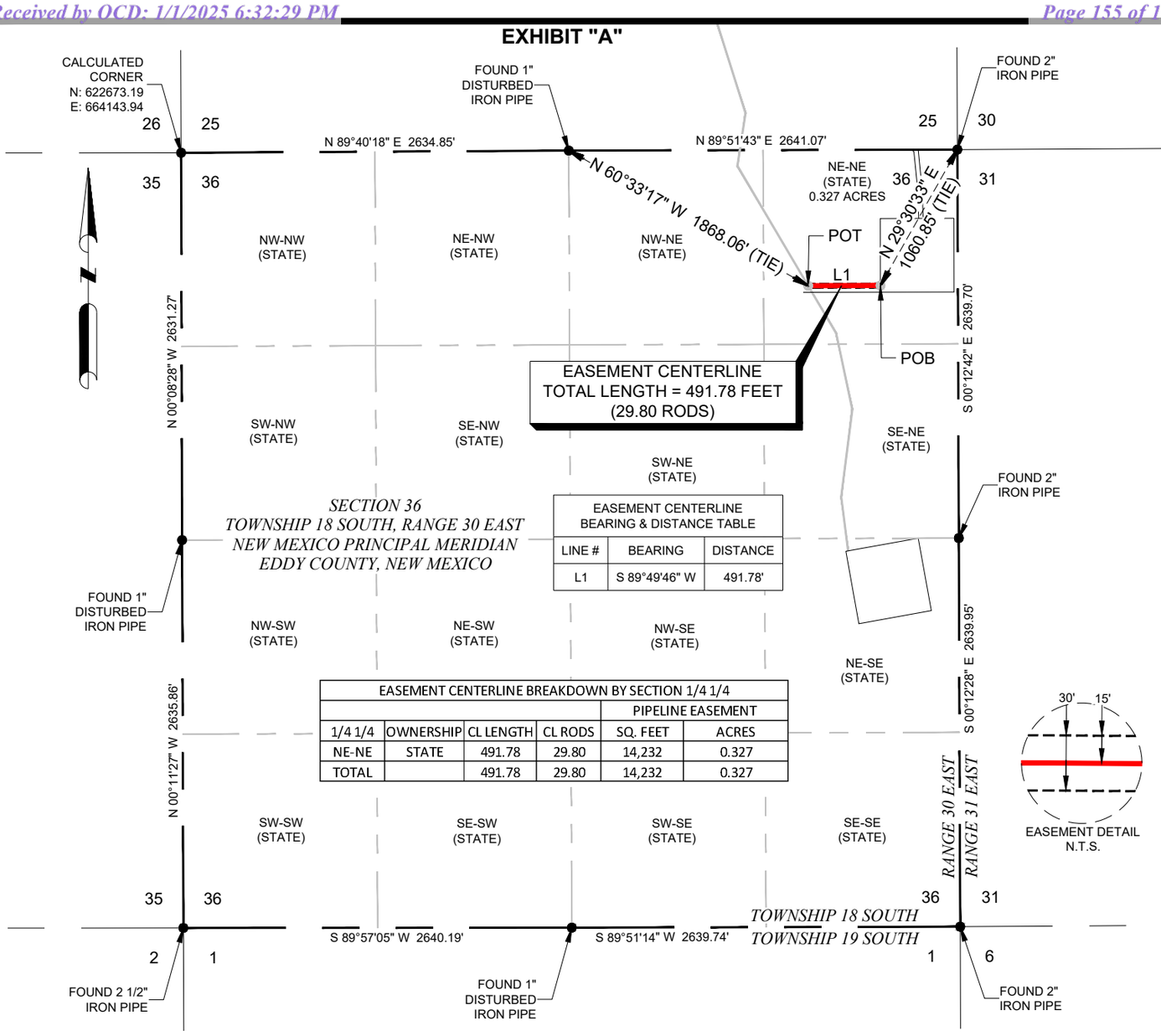
STATE OF NEW MEXICO

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (36-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 2 OF 2		

EXHIBIT "A"



EASEMENT CENTERLINE BEARING & DISTANCE TABLE

LINE #	BEARING	DISTANCE
L1	S 89°49'46" W	491.78'

EASEMENT CENTERLINE BREAKDOWN BY SECTION 1/4 1/4

				PIPELINE EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NE-NE	STATE	491.78	29.80	14,232	0.327
TOTAL		491.78	29.80	14,232	0.327

LEGEND

- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- EASEMENT CENTERLINE
- PERMANENT EASEMENT
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'

Scale: 1" = 1000'

I, CHARLES JURICA A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

10/26/2022

CHARLES JURICA NEW MEXICO PS #25490 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740 / 19148
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU NORTH PAD FLOWLINE (36-18S-30E)	REV. 0
CHECKED BY: MJM	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Water Source Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

Proposed Access Road
Existing Access
State Trust Lands
BLM Lands
Private Lands

1:24,000

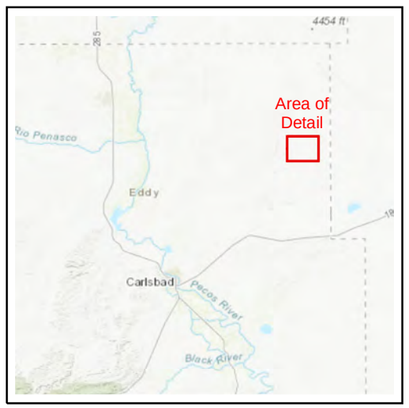
0 1,500 3,000
Feet

N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC



Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Water Source Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

Proposed Access Road
Existing Access
State Trust Lands
BLM Lands
Private Lands

1:24,000

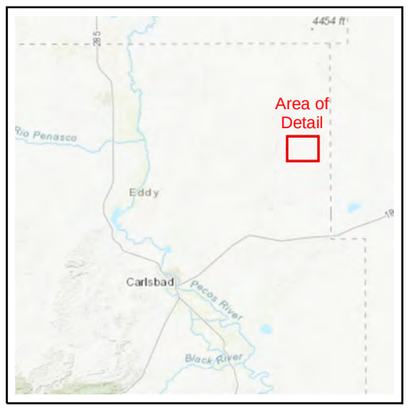
0 1,500 3,000
Feet

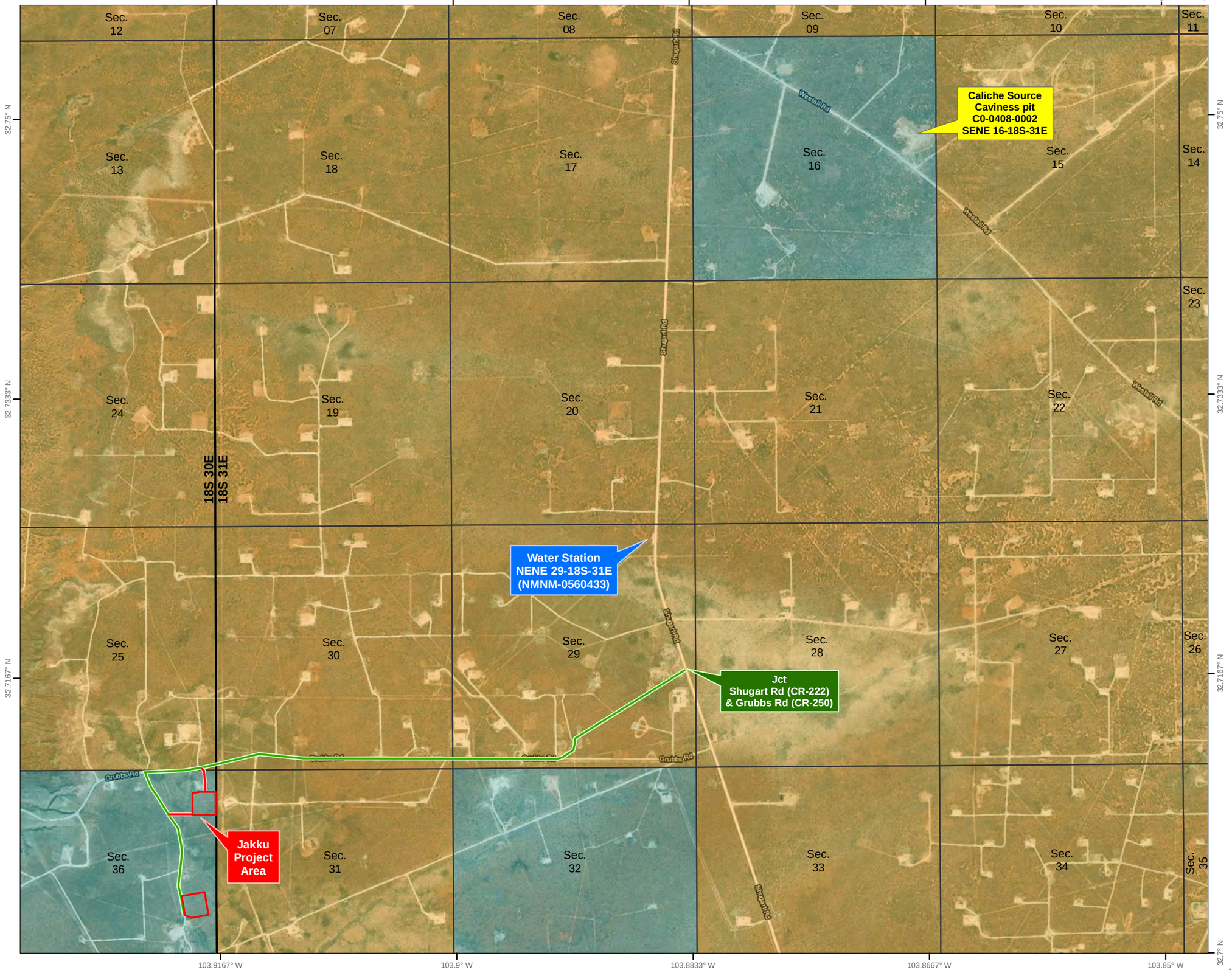
N

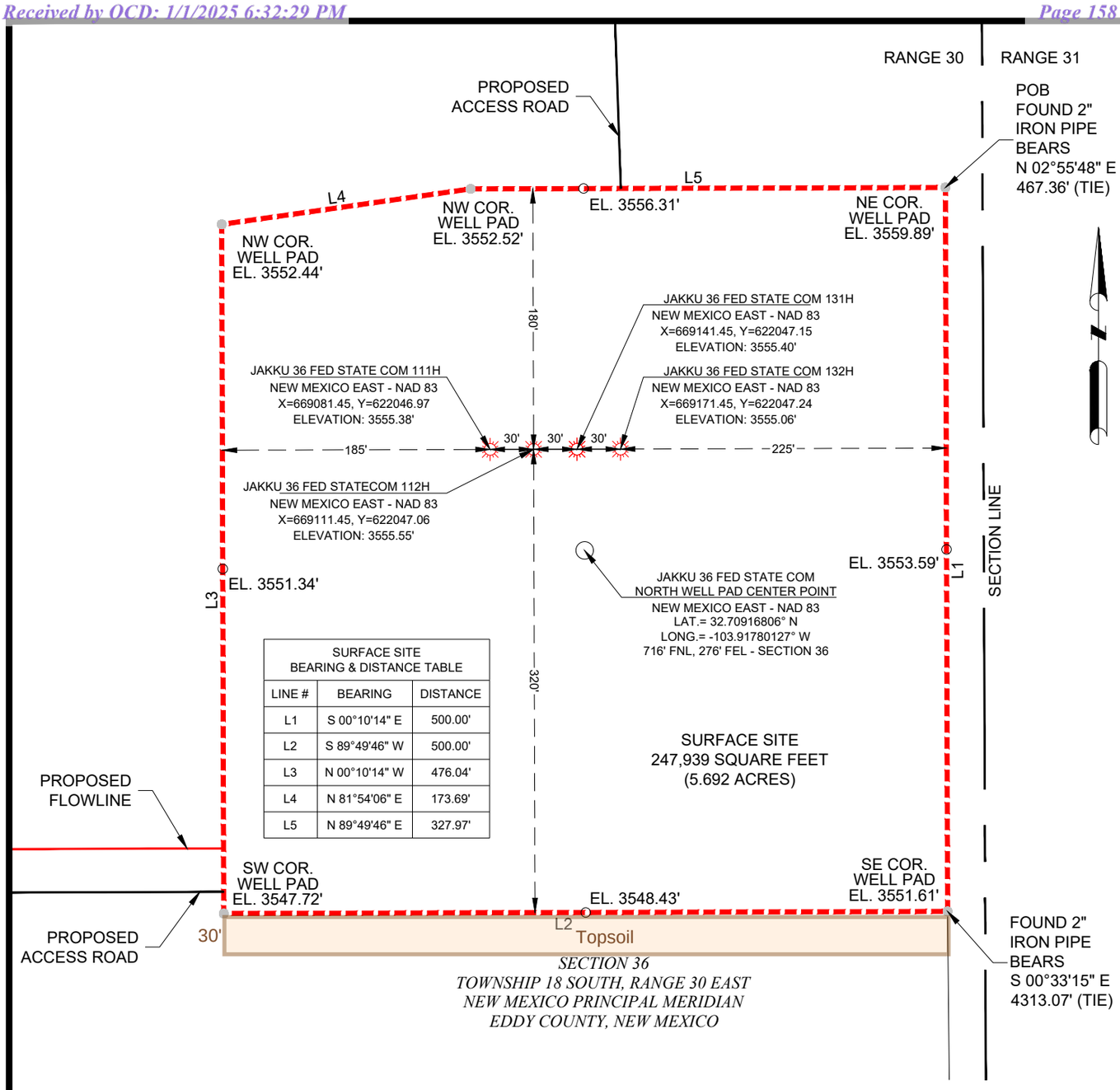
NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC







SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

SURFACE SITE BEARING & DISTANCE TABLE

LINE #	BEARING	DISTANCE
L1	S 00°10'14" E	500.00'
L2	S 89°49'46" W	500.00'
L3	N 00°10'14" W	476.04'
L4	N 81°54'06" E	173.69'
L5	N 89°49'46" E	327.97'

SURFACE SITE BREAKDOWN BY SECTION 1/4 1/4

		AREA	
1/4 1/4	OWNERSHIP	SQ. FEET	ACRES
NE-NE	STATE	247,939	5.692
TOTAL		247,939	5.692

LEGEND

- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- PROPOSED SURFACE SITE
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE
- EXISTING WELL LOCATION

100' 0' 100'

Scale: 1" = 100'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/18/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS AFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM NORTH WELL PAD

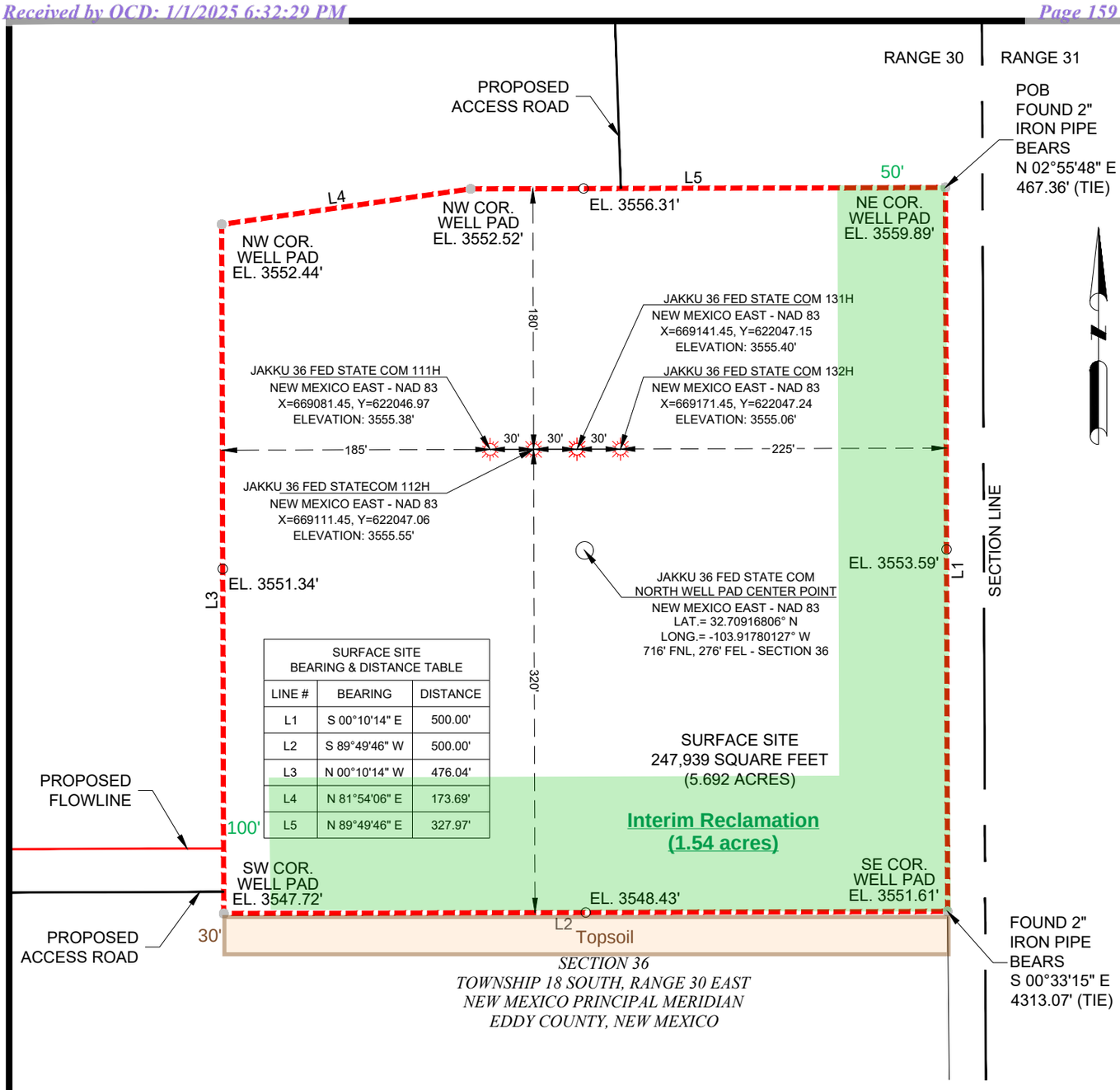
STATE OF NEW MEXICO

PROPOSED WELL PAD

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: WAS	DATE: 09/14/22	DWG. NO. 10637 JAKKU 36 FED STATE COM NORTH WELL PAD (36-18S-30E) SURFACE SITE	REV. 0
CHECKED BY: CJ	DATE: 09/14/22		
SCALE: 1"=100'	PAGE 1 OF 2		



SURFACE SITE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	S 00°10'14" E	500.00'
L2	S 89°49'46" W	500.00'
L3	N 00°10'14" W	476.04'
L4	N 81°54'06" E	173.69'
L5	N 89°49'46" E	327.97'

SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

SURFACE SITE BREAKDOWN BY SECTION 1/4 1/4			
		AREA	
1/4 1/4	OWNERSHIP	SQ. FEET	ACRES
NE-NE	STATE	247,939	5.692
TOTAL		247,939	5.692

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- PROPOSED SURFACE SITE
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE
- EXISTING WELL LOCATION

100' 0' 100'
Scale: 1" = 100'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/18/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
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#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM NORTH WELL PAD
STATE OF NEW MEXICO
PROPOSED WELL PAD

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: WAS	DATE: 09/14/22	DWG. NO. 10637 JAKKU 36 FED STATE COM NORTH WELL PAD (36-18S-30E) SURFACE SITE	REV. 0
CHECKED BY: CJ	DATE: 09/14/22		
SCALE: 1"=100'	PAGE 1 OF 2		

Colgate Operating, LLC **SURFACE PLAN PAGE 1**
Jakku 36 Fed State Com
Section 36-18S-30E
Eddy County, NM

Surface Use Plan of Operations

North Pad	South Pad
Jakku 36 Fed State Com 111H	Jakku 36 Fed State Com 113H
Jakku 36 Fed State Com 112H	Jakku 36 Fed State Com 114H
Jakku 36 Fed State Com 131H	Jakku 36 Fed State Com 133H
Jakku 36 Fed State Com 132H	Jakku 36 Fed State Com 134H

1. ROAD DIRECTIONS & DESCRIPTIONS

From the Loco Hill, NM Post Office...
Go East 5-1/2 miles on paved US 82
Then turn right and go South 6-3/4 miles on paved County Road 222
Then turn right and go SW and W 2.1 miles on curvy paved County Road 250
Then turn left and go South about 500' on the proposed road to the North well pad.

Non-state and non-county roads will be maintained as needed to Gold Book standards. This includes pulling ditches, preserving the crown, and cleaning culverts. This will be done at least once a year, and more often as needed.

2. ROAD TO BE BUILT OR UPGRADED

The **1,059.00'** of new resource roads will be crowned, ditched, have a ≤24' wide driving surface, and be surfaced with caliche. Pipelines that are crossed will be padded. Maximum disturbed width = 30'. Maximum grade = 3%. Maximum cut or fill = 3'. A cattleguard will be installed on the SW access road to the north well pad. No culvert or vehicle turn out is needed.

3. EXISTING WELLS

Existing oil, gas, injection, water, disposal and P & A wells are within a mile radius.

4. PROPOSED PRODUCTION FACILITIES

The previously proposed 390' x 390' Arrakis-Jakku CTB will also service the North and South Jakku pads. Flare and/or CBU will be in the northeast corner of the CTB. Process

equipment (e. g., separators, heater-treaters, meters, compressor) will be on the south side of the CTB. Tanks will be on the other sides of the CTB.

Eight ≈4" O. D. flowlines (one per well) will run for 5,243.22' between the CTB and the two Jakku well pads. Pipes will run parallel to roads. Pipelines will be buried.

5. WATER SUPPLY

Water will be trucked 3 miles from an existing water station (NMNM-0560433) in NENE 29-18s-31e on County Road 222.

6. CONSTRUCTION MATERIALS & METHODS

NM One Call (811) will be notified before construction starts. Top ≈6" of soil and brush will be stockpiled south of the well pads and south of the CTB. CTB topsoil pile will be no higher than 36" and will be seeded in place. V-doors will face east. Closed loop mud system will be used. Caliche will be hauled from the existing Caviness caliche pit on State land (C0-0408-0002) in SENE 16-18s-31e.

7. WASTE DISPOSAL

All trash will be placed in a portable trash cage. It will be hauled to the Eddy County landfill. There will be no trash burning. Contents (drill cuttings, mud, salts, and other chemicals) of the mud tanks will be hauled to R360's state approved (NM-01-0006) disposal site at Halfway. Human waste will be disposed of in chemical toilets and hauled to the Carlsbad wastewater treatment plant.

8. ANCILLARY FACILITIES

There will be no airstrip or camp. Camper trailers will be on location for the company man, tool pusher, and mud logger.

9. WELL SITE LAYOUT

Also see Rig Layout diagram for depictions of the well pad, trash cage, access onto the location, parking, living facilities, and rig orientation.

Colgate Operating, LLC **SURFACE PLAN PAGE 3**
Jakku 36 Fed State Com
Section 36-18S-30E
Eddy County, NM

10. RECLAMATION

A 100’ wide swath on the south and 50’ wide swath on the west sides of the well pads will be interim reclaimed. Once the last well is plugged on each pad, then the remainder of the pad and new road to the pads will be reclaimed within 6 months of plugging. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with BLM requirements. Roads will be blocked. Noxious weeds will be controlled. CTB will be similarly reclaimed once its last well is plugged. (It will serve Colgate’s Arrakis wells too.)

See table below for a breakdown of short-term and long-term disturbance acreages by facility type. Note that the CTB is not included in this table because it was previously proposed in the Arrakis APD submissions.

New Disturbance (acres)			
Facility	**Short-term**	**Interim Reclamation**	**Long-term**
Jakku North Well Pad (5.692 ac) + Topsoil (500'x30')	6.04	1.54	4.50
Jakku South Well Pad (5.627 ac) + Topsoil (373'x30')	5.88	1.49	4.39
Access Roads (1,059.00'x30')	0.73	0.00	0.73
Flowlines (5,243.22'x30')	3.60	3.60	0.00
Total	16.25	6.63	9.62

11. SURFACE OWNER

Flowlines, existing access, and new access roads will be on BLM and State Trust Lands. All well pads will be constructed on State Trust Lands. BLM office is the Carlsbad Field Office, 620 E. Greene, Carlsbad NM 88220. Phone is 575 234-5972. State Land Office, 310 Old Santa Fe Trail, Santa Fe, NM 87501. Phone is 505-827-5760.

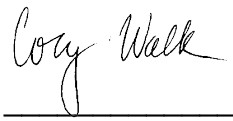
12. OTHER INFORMATION

Lone Mountain Archaeological conducted a block inspection and filed report NMCRIS-150188 on May 31, 2022. Due to these wells being state/state/fed, no BLM onsite inspection was performed.

Colgate Operating, LLC **SURFACE PLAN PAGE 4**
Jakku 36 Fed State Com
Section 36-18S-30E
Eddy County, NM

CERTIFICATION

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. Executed this 3rd day of November 2022.



Cory Walk, Consultant
Permits West, Inc.
37 Verano Loop, Santa Fe, NM 87508
(505) 466-8120

Field representative will be:
Matt Jordan, Surface Land Lead
Colgate Operating, LLC
300 N. Marienfeld St., Suite 1000, Midland TX 79701
Office: (432) 400-3111

Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Access Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Existing Access
- State Trust Lands
- BLM Lands
- Private Lands

1:60,000

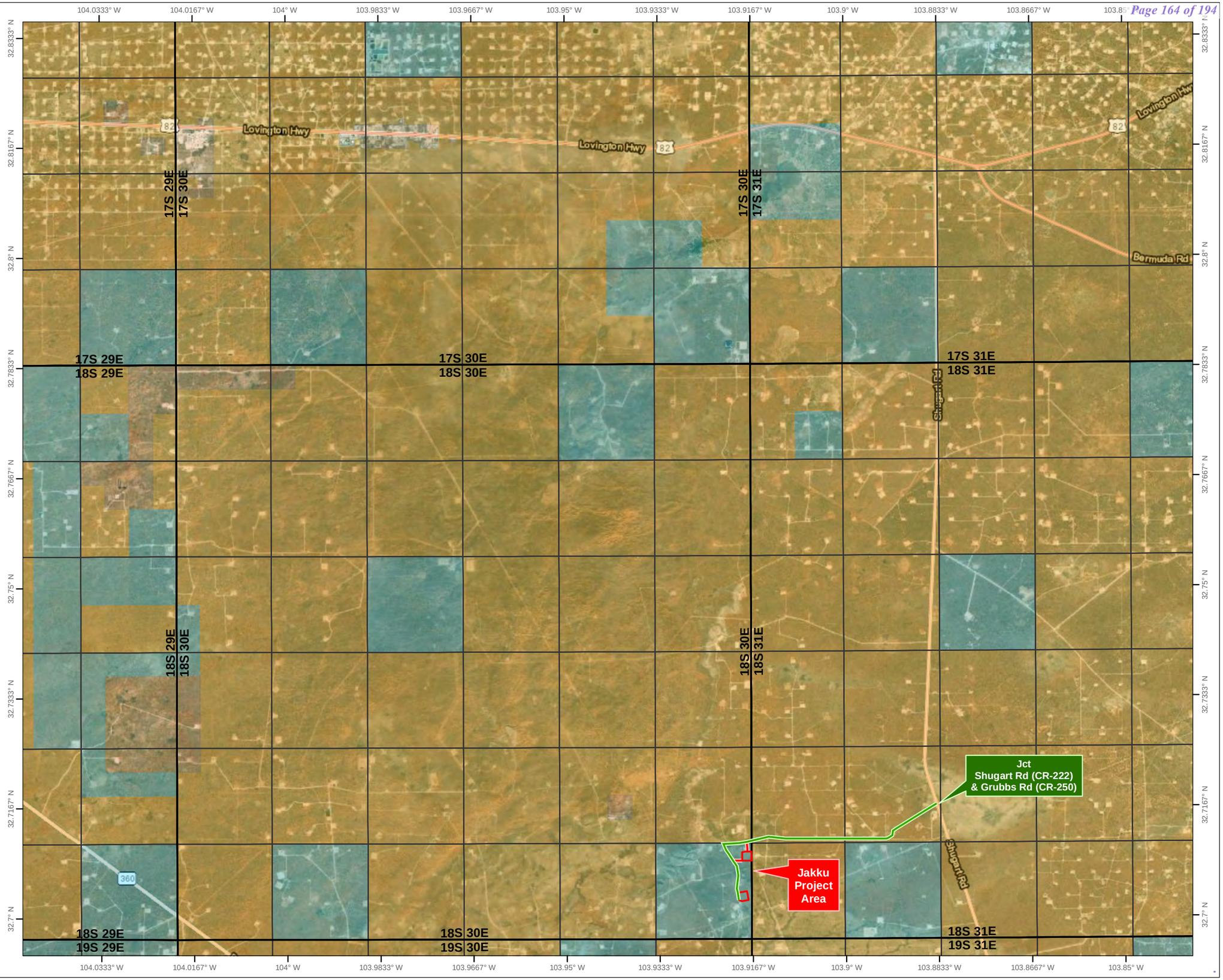
0 3,750 7,500
Feet

N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC



Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Plan of Development Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Proposed Flowline
- Previously Proposed CTB
- Proposed Well Pad
- State Trust Lands
- BLM Lands
- Private Lands

1:8,000

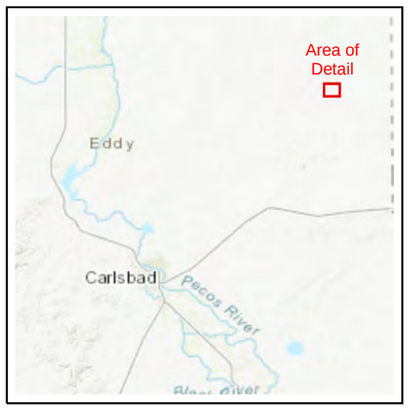
0 500 1,000
Feet

N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC



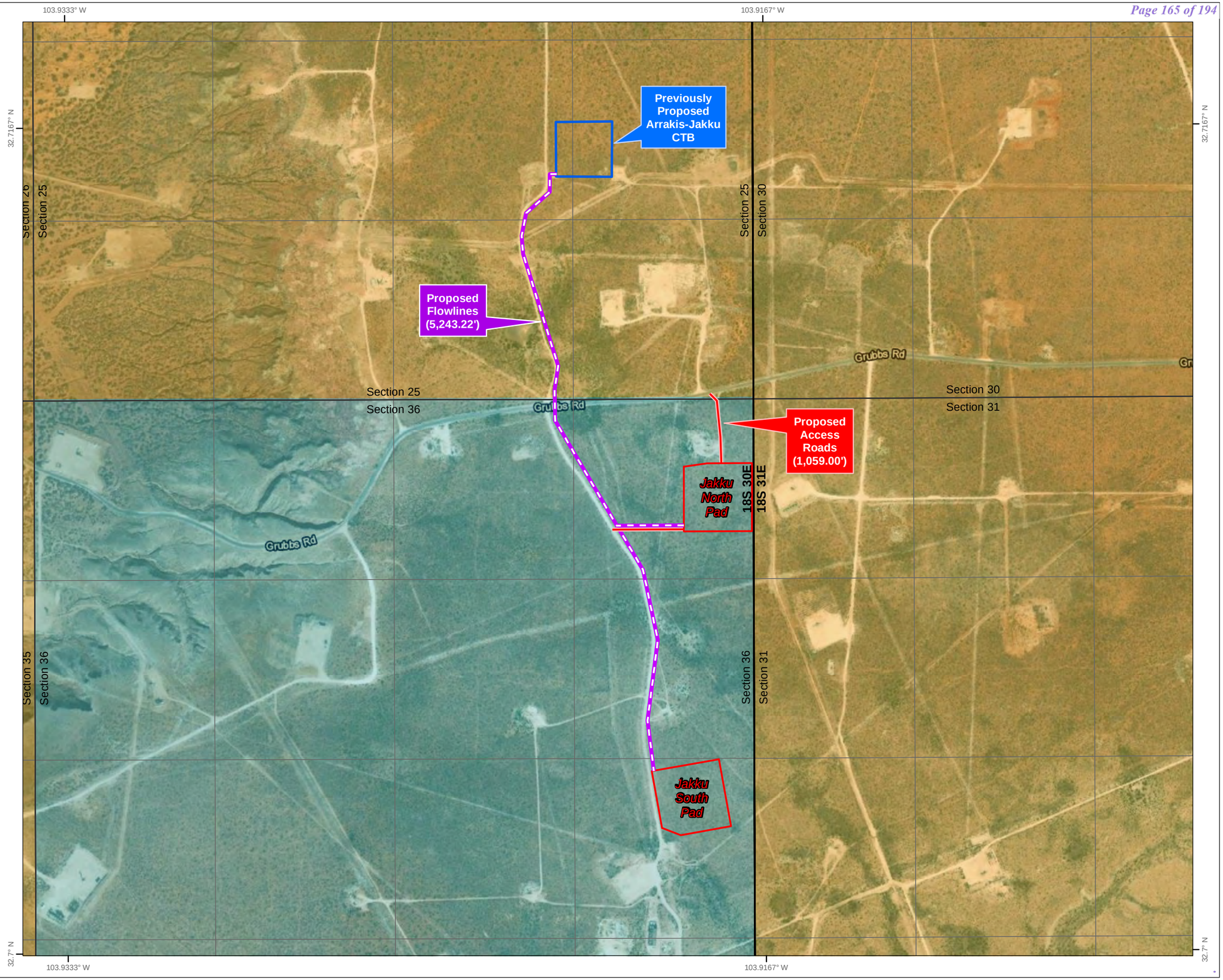
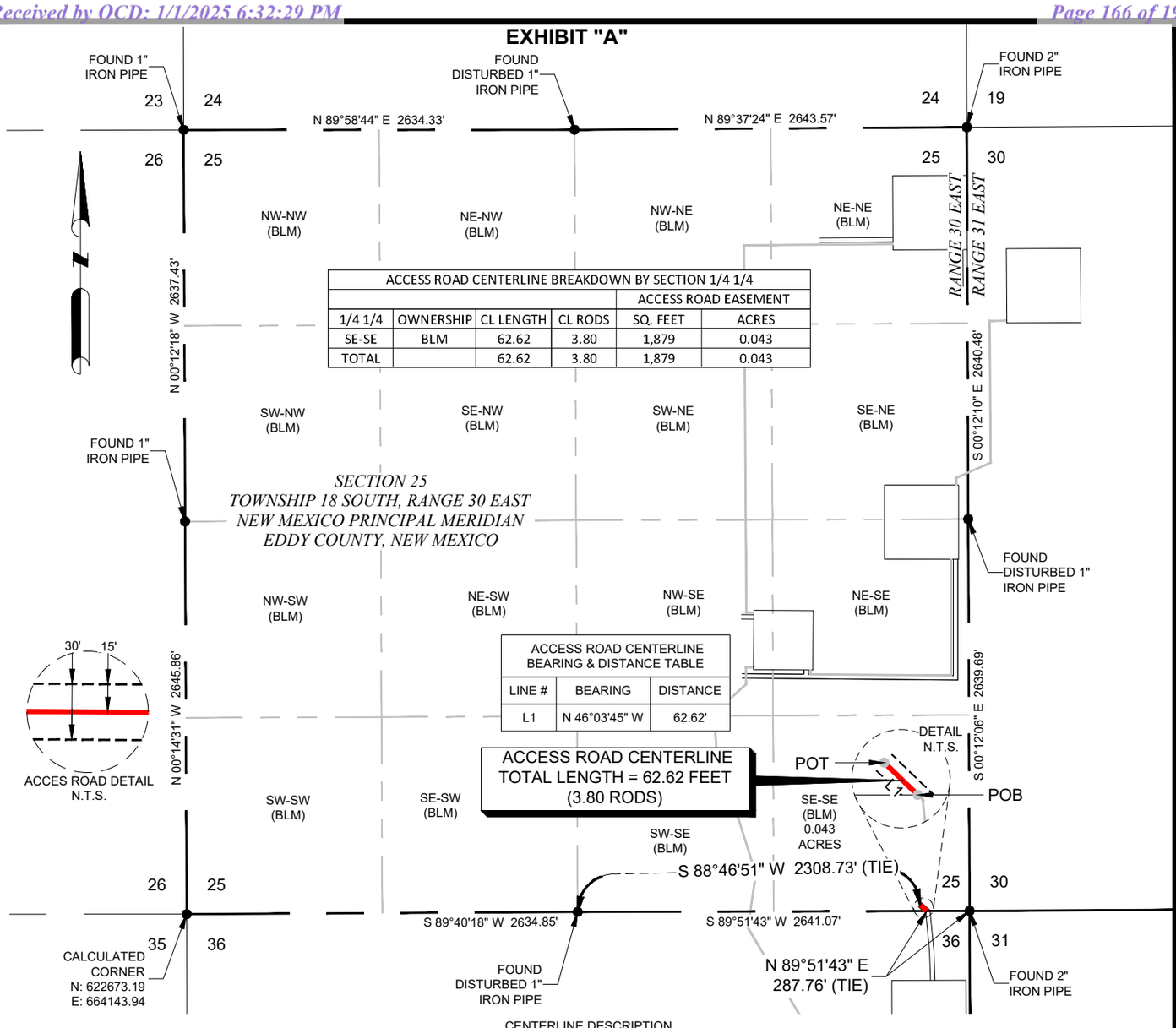


EXHIBIT "A"



ACCESS ROAD CENTERLINE BREAKDOWN BY SECTION 1/4 1/4					
				ACCESS ROAD EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
SE-SE	BLM	62.62	3.80	1,879	0.043
TOTAL		62.62	3.80	1,879	0.043

ACCESS ROAD CENTERLINE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	N 46°03'45" W	62.62'

CENTERLINE DESCRIPTION

BEING THE CENTERLINE OF A PROPOSED ACCESS ROAD EASEMENT, SITUATED IN SECTION 25, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT IN SAID SECTION 25, FROM WHICH A 2" IRON PIPE FOUND FOR THE SOUTHEAST CORNER OF SAID SECTION 25 BEARS N 89°51'43" E, A DISTANCE OF 287.76 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622693.96, E:669132.04 FEET FOR REFERENCE;

THENCE N 46°03'45" W, A DISTANCE OF 62.62 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 25, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE SOUTH QUARTER CORNER OF SAID SECTION 25 BEARS S 88°46'51" W, A DISTANCE OF 2308.73 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622737.41, E:669086.95 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 62.62 FEET OR 3.80 RODS IN SAID SECTION 25.

LEGEND

- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- ACCESS ROAD CENTERLINE
- EDGE OF ROAD
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'

Scale: 1" = 1000'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/26/2022 DATE

NOTES:

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#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

BUREAU OF LAND MANAGEMENT

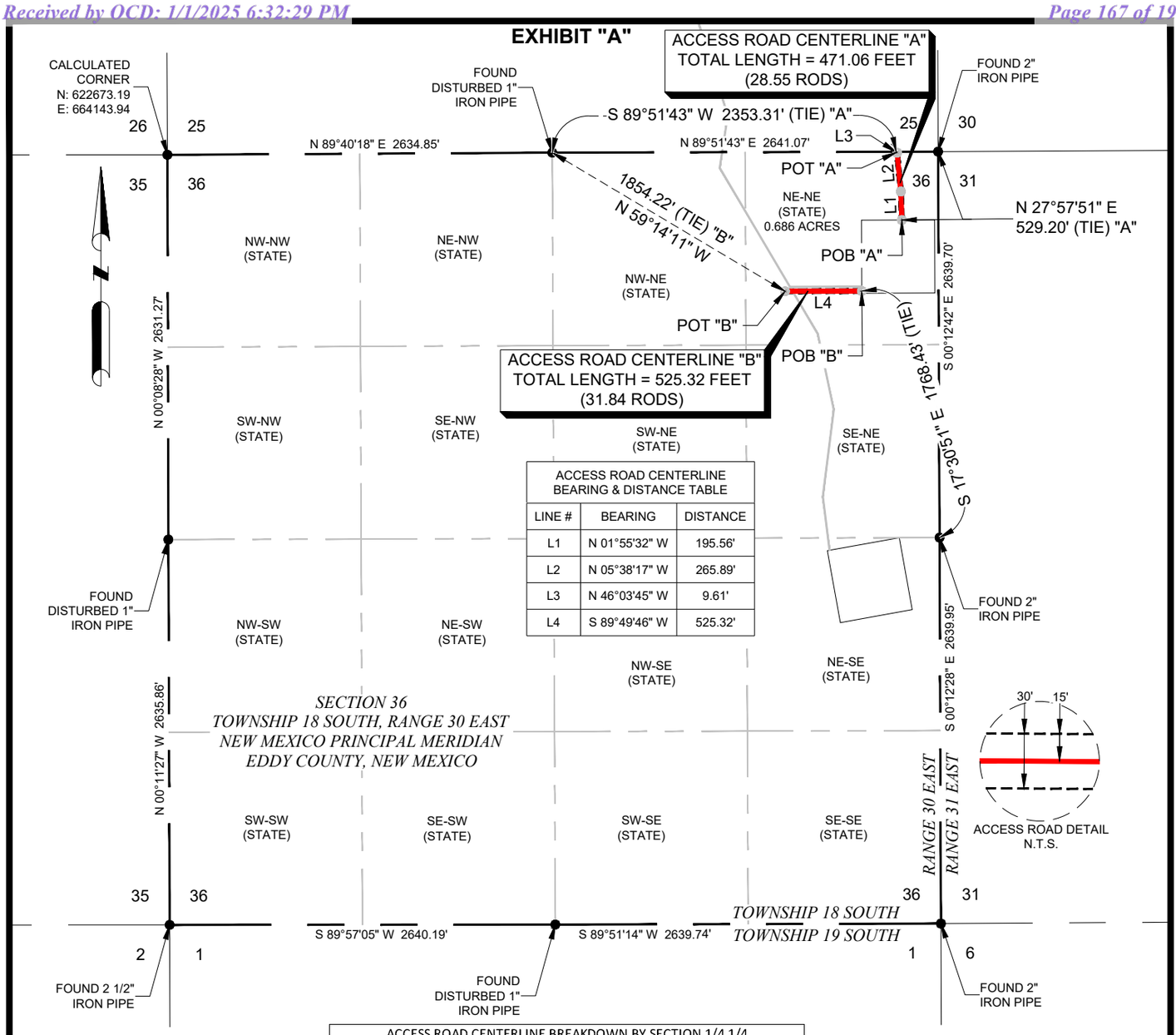
PROPOSED ACCESS ROAD CENTERLINE

SITUATED IN
SECTION 25
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU NORTH PAD (25-18S-30E) ACCESS ROAD	REV. 0
CHECKED BY: MJM	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 1		

EXHIBIT "A"



ACCESS ROAD CENTERLINE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	N 01°55'32" W	195.56'
L2	N 05°38'17" W	265.89'
L3	N 46°03'45" W	9.61'
L4	S 89°49'46" W	525.32'

ACCESS ROAD CENTERLINE BREAKDOWN BY SECTION 1/4 1/4					
				ACCESS ROAD EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NE-NE	STATE	996.38	60.39	29,891	0.686
TOTAL		996.38	60.39	29,891	0.686

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- ACCESS ROAD CENTERLINE
- EDGE OF ROAD
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'

Scale: 1" = 1000'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

10/26/2022

CHARLES JURICA NEW MEXICO PS #25490 DATE

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#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED ACCESS ROAD CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU NORTH PAD (36-18S-30E) ACCESS ROAD	REV. 0
CHECKED BY: MJM	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

CENTERLINE DESCRIPTION

ACCESS ROAD "A"

BEING THE CENTERLINE OF A PROPOSED ACCESS ROAD EASEMENT, SITUATED IN SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN SAID SECTION 36, FROM WHICH A 2" IRON PIPE FOUND FOR THE NORTHEAST CORNER OF SAID SECTION 36 BEARS N 27°57'51" E, A DISTANCE OF 529.20 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622227.24, E:669171.65 FEET FOR REFERENCE;

THENCE N 01°55'32" W, A DISTANCE OF 195.56 FEET TO A POINT;
THENCE N 05°38'17" W, A DISTANCE OF 265.89 FEET TO A POINT;

THENCE N 46°03'45" W, A DISTANCE OF 9.61 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 36, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE NORTH QUARTER CORNER OF SAID SECTION 36 BEARS S 89°51'43" W, A DISTANCE OF 2353.31 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622693.96, E:669132.04 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 471.06 FEET OR 28.55 RODS IN SAID SECTION 36.

ACCESS ROAD "B"

BEING THE CENTERLINE OF A PROPOSED ACCESS ROAD EASEMENT, SITUATED IN SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN SAID SECTION 36, FROM WHICH A 2" IRON PIPE FOUND FOR THE EAST QUARTER CORNER OF SAID SECTION 36 BEARS S 17°30'51" E, A DISTANCE OF 1768.43 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:621741.42, E:668897.36 FEET FOR REFERENCE;

THENCE S 89°49'46" W, A DISTANCE OF 525.32 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 36, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE NORTH QUARTER CORNER OF SAID SECTION 36 BEARS N 59°14'11" W, A DISTANCE OF 1854.22 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:621739.86, E:668372.05 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 525.32 FEET OR 31.84 RODS IN SAID SECTION 36.

CHARLES L. JURICA
NEW MEXICO
25490
PROFESSIONAL SURVEYOR

NOTES:

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PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED ACCESS ROAD CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO.	REV.
CHECKED BY: MJM	DATE: 05/09/22	10637 JAKKU NORTH PAD (36-18S-30E) ACCESS ROAD	0
SCALE: 1"=1000'	PAGE 2 OF 2		

Colgate Operating, LLC

Jakku 36 Fed State Com
Well Vicinity & Lease Map

Section 36, Township 18S, Range 30E
Eddy County, New Mexico

- Oil - Active
- Oil - New
- Oil - TA
- Oil - P&A
- Gas - Active
- Gas - New
- Gas - P&A
- SWD - Active
- Wellbores
- BLM Surface
- State Surface
- Private Surface
- State OG Leases
- Federal OG Leases

N

1:22,000

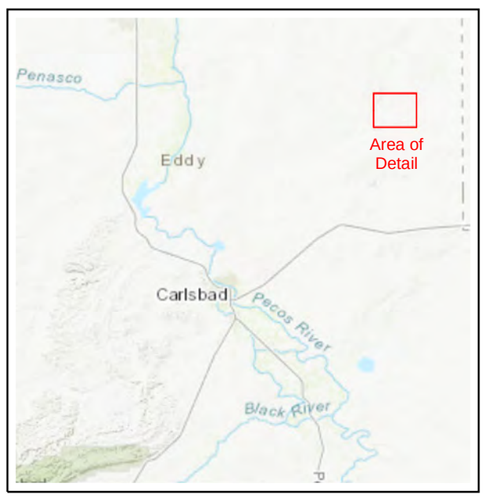
0 550 1,100 2,200

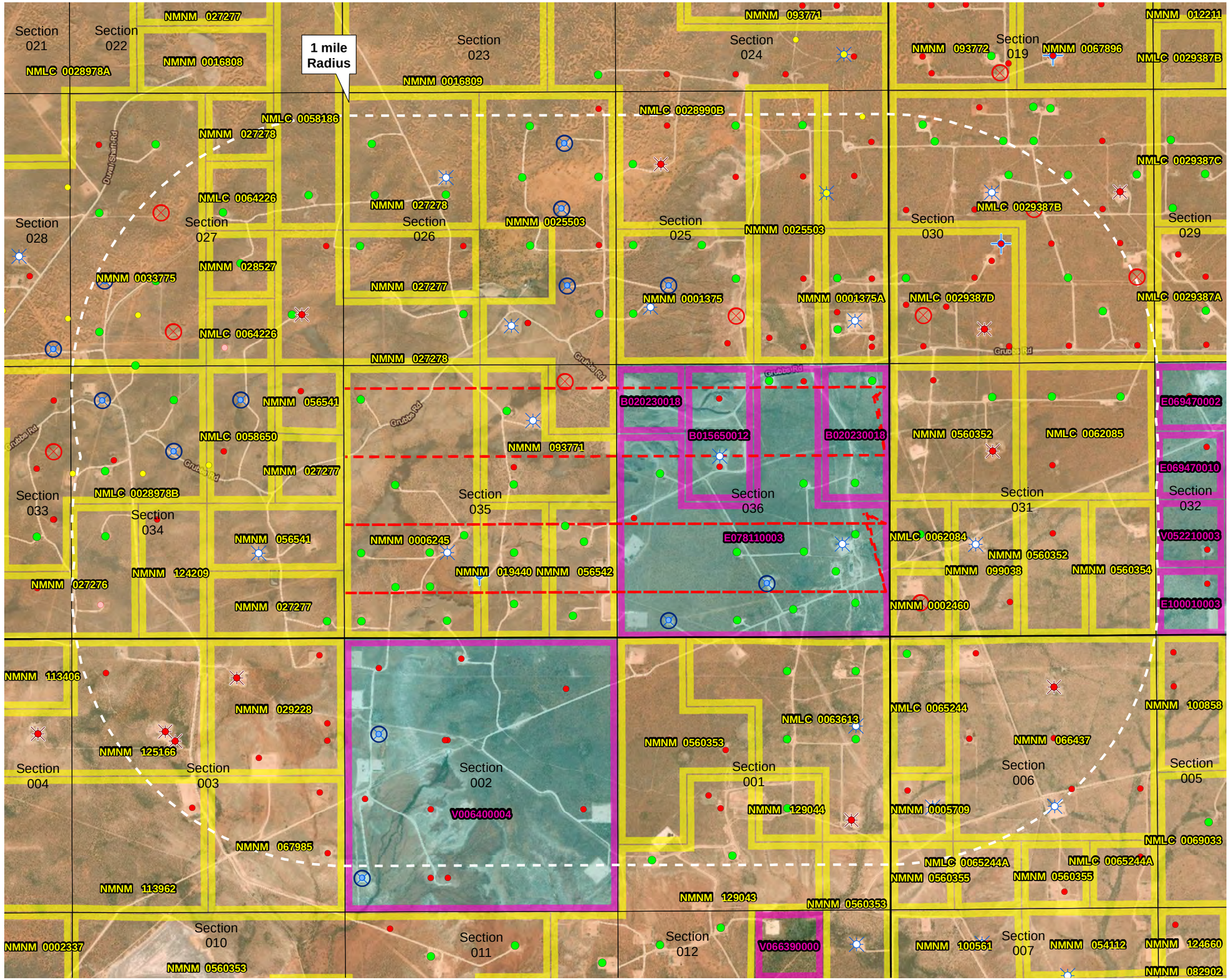
Feet

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC





Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Plan of Development Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Proposed Flowline
- Previously Proposed CTB
- Proposed Well Pad
- State Trust Lands
- BLM Lands
- Private Lands

1:8,000

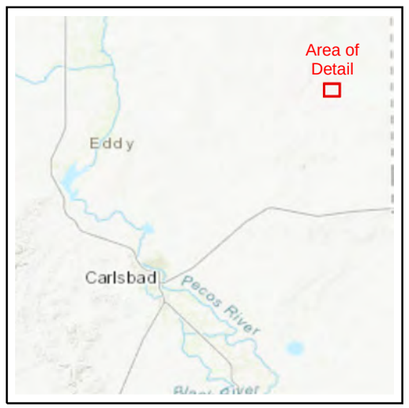
0 500 1,000
Feet

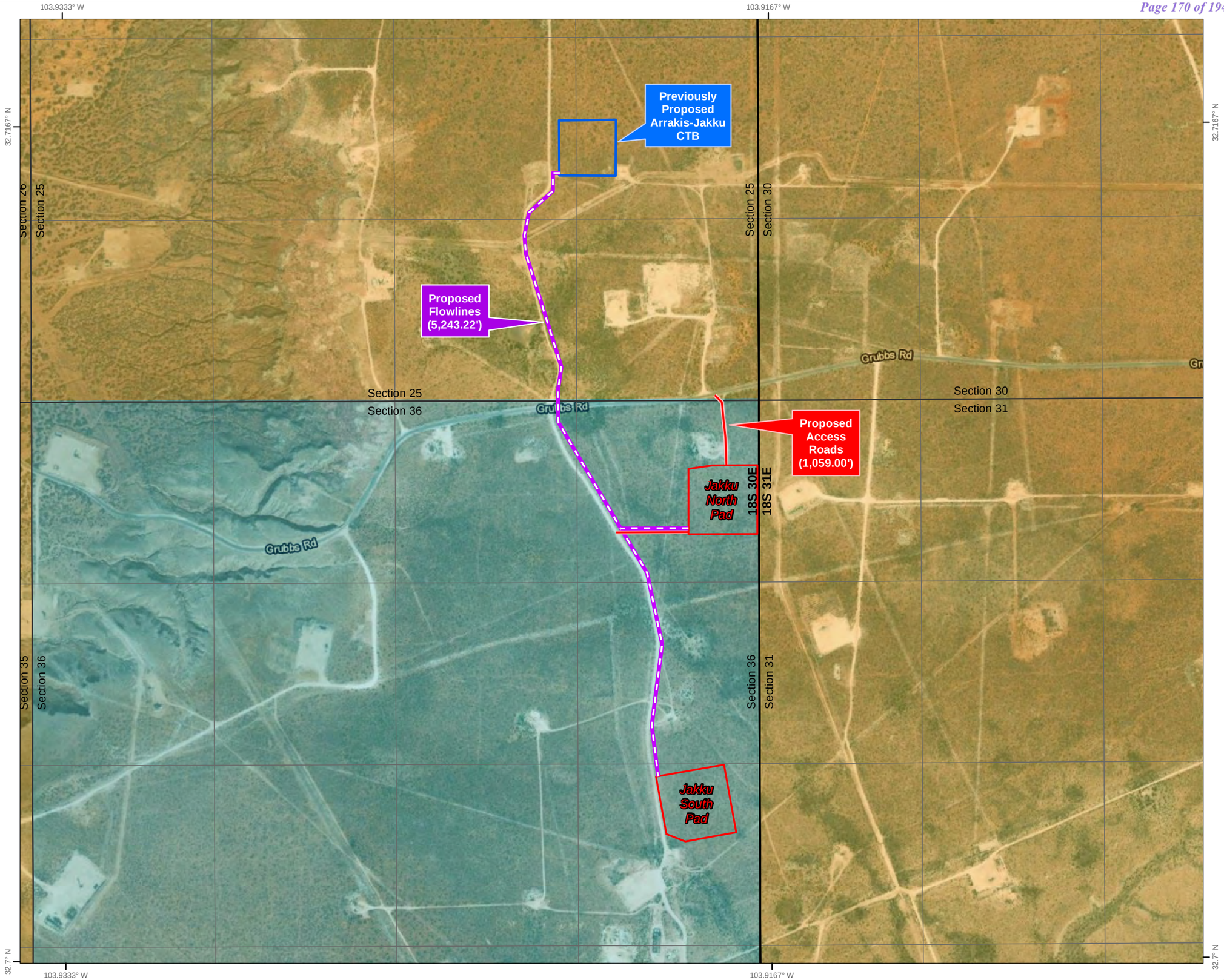
25.69' power line

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

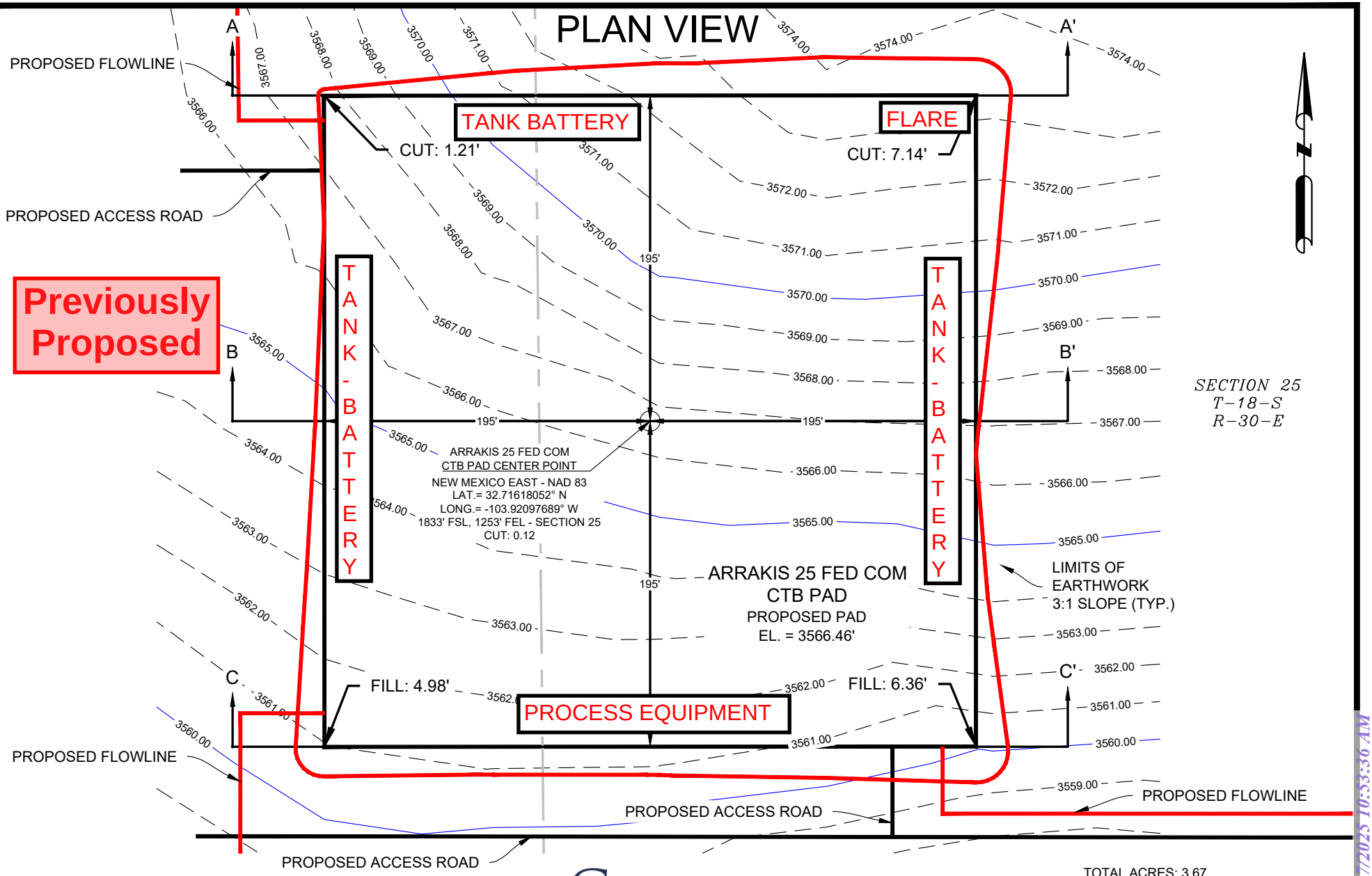
PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC





PLAN VIEW



SECTION 25
T-18-S
R-30-E

TOTAL ACRES: 3.67

80' 0' 80'

Scale: 1" = 80'

CUT	FILL	NET
9,072.16 CU. YD	9,072.16 CU. YD	0.00 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

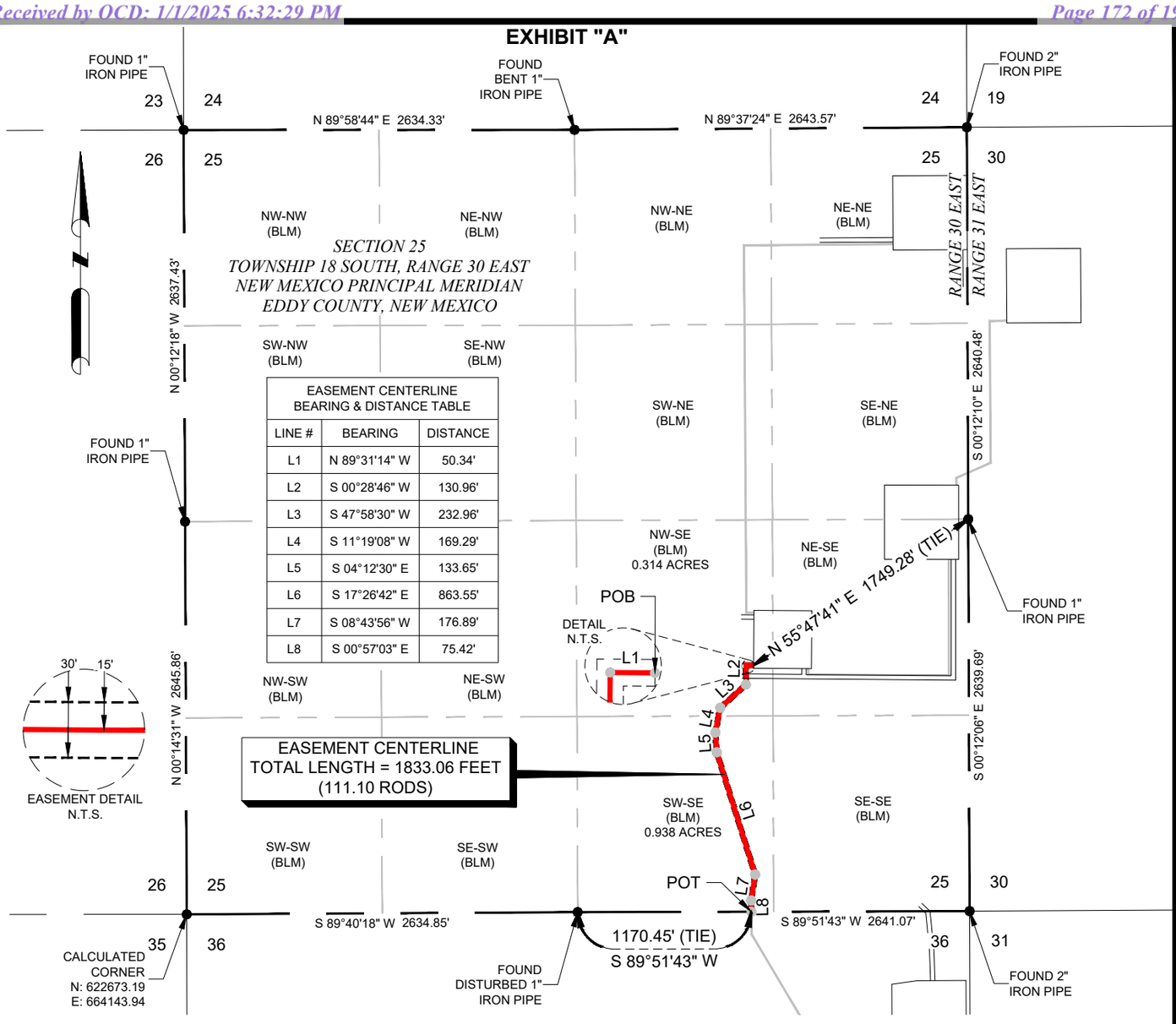
ARRAKIS-JAKKU 25 FED COM CTB PAD

PAD GRADING AND CROSS SECTIONS

SITUATED IN
SECTION 25, TOWNSHIP 18 SOUTH, RANGE 30 EAST
N.M.P.M.
EDDY COUNTY, NEW MEXICO

PROJECT NO. 10645	DATE: 7/11/2022	SHEET 1-2

EXHIBIT "A"



EASEMENT CENTERLINE BEARING & DISTANCE TABLE

LINE #	BEARING	DISTANCE
L1	N 89°31'14" W	50.34'
L2	S 00°28'46" W	130.96'
L3	S 47°58'30" W	232.96'
L4	S 11°19'08" W	169.29'
L5	S 04°12'30" E	133.65'
L6	S 17°26'42" E	863.55'
L7	S 08°43'56" W	176.89'
L8	S 00°57'03" E	75.42'

EASEMENT CENTERLINE BREAKDOWN BY SECTION 1/4 1/4

				PIPELINE EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NW-SE	BLM	471.04	28.55	14,130	0.324
SW-SE	BLM	1,362.02	82.55	40,860	0.938
TOTAL		1,833.06	111.10	54,990	1.262

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- EASEMENT CENTERLINE
- PERMANENT EASEMENT
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

1000' 0' 1000'
Scale: 1" = 1000'

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/17/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK
1	10/14/22	WAS	UPDATED TABLE	CJ

PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

BUREAU OF LAND MANAGEMENT

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 25
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (25-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

CENTERLINE DESCRIPTION

BEING THE CENTERLINE OF A PROPOSED PIPELINE EASEMENT, SITUATED IN SECTION 25, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN SAID SECTION 25, FROM WHICH A 1" IRON PIPE FOUND FOR THE EAST QUARTER CORNER OF SAID SECTION 25 BEARS N 55°47'41" E, A DISTANCE OF 1749.28 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:624350.96, E:667963.82 FEET FOR REFERENCE;

THENCE N 89°31'14" W, A DISTANCE OF 50.34 FEET TO A POINT;
THENCE S 00°28'46" W, A DISTANCE OF 130.96 FEET TO A POINT;
THENCE S 47°58'30" W, A DISTANCE OF 232.96 FEET TO A POINT;
THENCE S 11°19'08" W, A DISTANCE OF 169.29 FEET TO A POINT;
THENCE S 04°12'30" E, A DISTANCE OF 133.65 FEET TO A POINT;
THENCE S 17°26'42" E, A DISTANCE OF 863.55 FEET TO A POINT;
THENCE S 08°43'56" W, A DISTANCE OF 176.89 FEET TO A POINT;

THENCE S 00°57'03" E, A DISTANCE OF 75.42 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN THE SOUTH BOUNDARY LINE OF SAID SECTION 25, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE SOUTH QUARTER CORNER OF SAID SECTION 25 BEARS S 89°51'43" W, A DISTANCE OF 1170.45 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622691.11, E:667949.20 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 1833.06 FEET OR 111.10 RODS IN SAID SECTION 25.

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

1	10/14/22	WAS	UPDATED TABLE	CJ
#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

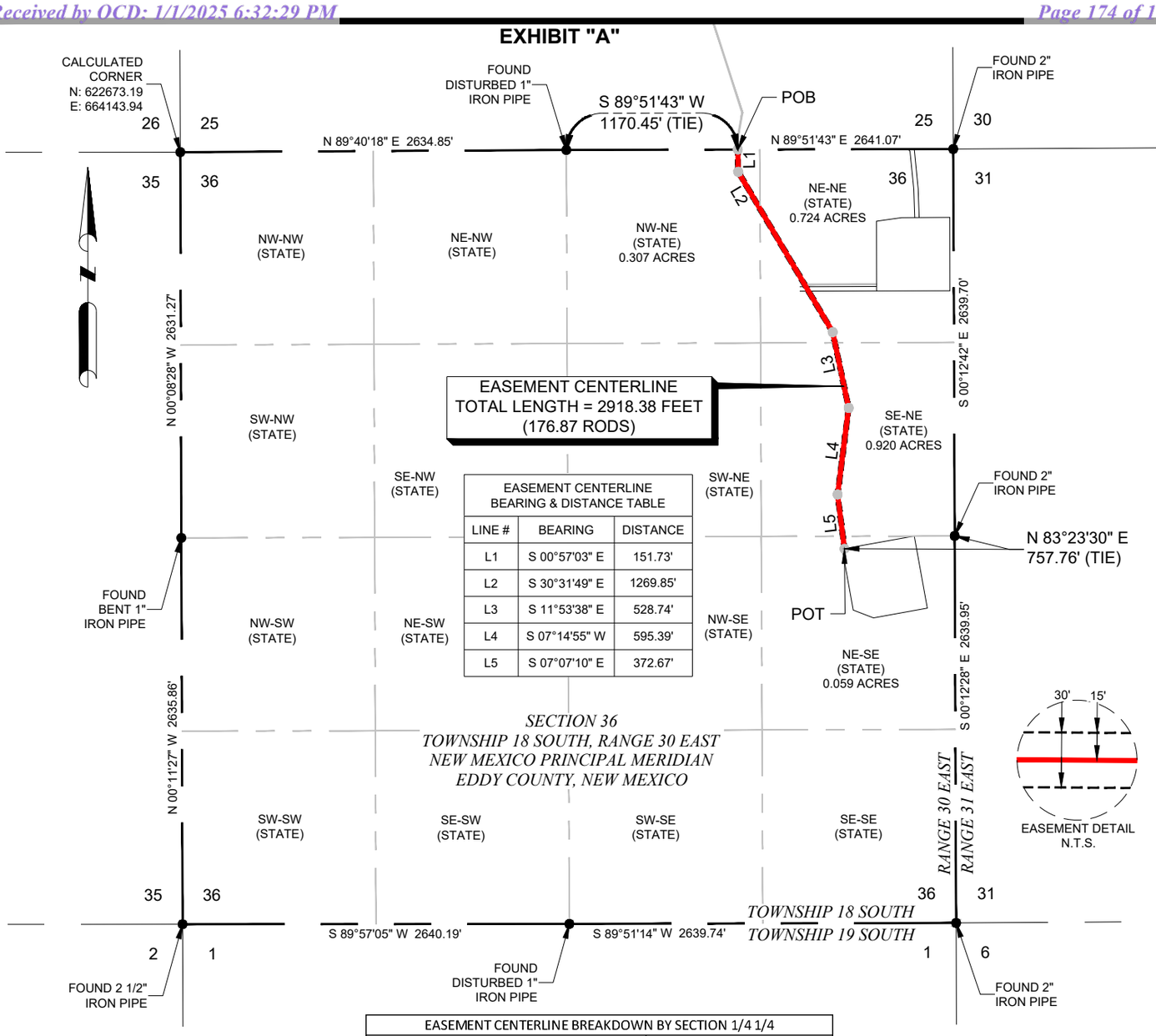
BUREAU OF LAND MANAGEMENT

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 25
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (25-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 2 OF 2		

EXHIBIT "A"



EASEMENT CENTERLINE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	S 00°57'03" E	151.73'
L2	S 30°31'49" E	1269.85'
L3	S 11°53'38" E	528.74'
L4	S 07°14'55" W	595.39'
L5	S 07°07'10" E	372.67'

EASEMENT CENTERLINE BREAKDOWN BY SECTION 1/4 1/4					
				PIPELINE EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NW-NE	STATE	445.38	26.99	13,361	0.307
NE-NE	STATE	1,050.59	63.67	31,518	0.724
SE-NE	STATE	1,336.44	81.00	40,093	0.920
NE-SE	STATE	85.97	5.21	2,579	0.059
TOTAL		2,918.38	176.87	87,551	2.010

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- EASEMENT CENTERLINE
- PERMANENT EASEMENT
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'
Scale: 1" = 1000'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/17/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
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#	DATE	BY:	DESCRIPTION	CHK
1	10/14/22	WAS	UPDATE ROUTE	CJ

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (36-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

CENTERLINE DESCRIPTION

BEING THE CENTERLINE OF A PROPOSED PIPELINE EASEMENT, SITUATED IN SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NEW MEXICO PRINCIPAL MERIDIAN, EDDY COUNTY, NEW MEXICO. SAID CENTERLINE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A POINT, IN THE NORTH BOUNDARY LINE OF SAID SECTION 36, FROM WHICH A DISTURBED 1" IRON PIPE FOUND FOR THE NORTH QUARTER CORNER OF SAID SECTION 36 BEARS S 89°51'43" W, A DISTANCE OF 1170.45 FEET (TIE). SAID POINT OF BEGINNING HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:622688.29, E:666778.74 FEET FOR REFERENCE;

THENCE S 00°57'03" W, A DISTANCE OF 151.73 FEET TO A POINT;
THENCE S 30°31'49" E, A DISTANCE OF 1269.85 FEET TO A POINT;
THENCE S 11°53'38" E, A DISTANCE OF 528.74 FEET TO A POINT;
THENCE S 07°14'55" W, A DISTANCE OF 595.39 FEET TO A POINT;

THENCE S 07°07'10" E, A DISTANCE OF 372.67 FEET TO THE POINT OF TERMINATION OF SAID CENTERLINE IN SAID SECTION 36, FROM WHICH A 2" IRON PIPE FOUND FOR THE EAST QUARTER CORNER OF SAID SECTION 36 BEARS N 83°23'30" E, A DISTANCE OF 757.76 FEET (TIE). SAID POINT OF TERMINATION HAVING A NEW MEXICO STATE PLANE COORDINATES OF 1983, EAST ZONE, VALUE OF N:619967.77, E:668676.83 FEET FOR REFERENCE.

SAID CENTERLINE CONTAINING A TOTAL OF 2918.38 FEET OR 176.87 RODS IN SAID SECTION 36.

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK
1	10/14/22	WAS	UPDATE ROUTE	CJ

PROJECT NO. 10637

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED STATE COM

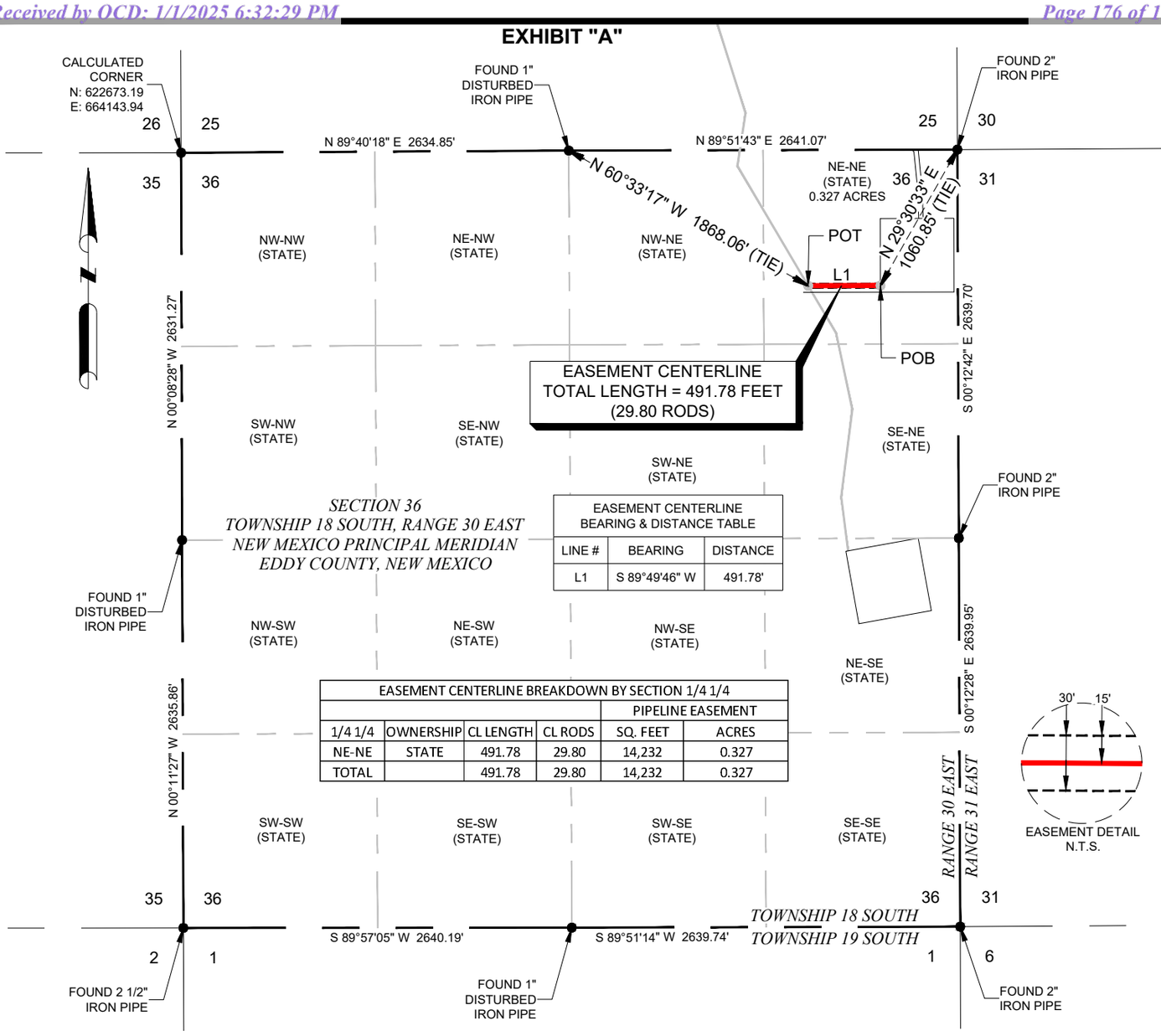
STATE OF NEW MEXICO

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU FLOWLINE (36-18S-30E)_REV1	REV. 1
CHECKED BY: CJ	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 2 OF 2		

EXHIBIT "A"



EASEMENT CENTERLINE BEARING & DISTANCE TABLE

LINE #	BEARING	DISTANCE
L1	S 89°49'46" W	491.78'

EASEMENT CENTERLINE BREAKDOWN BY SECTION 1/4 1/4

				PIPELINE EASEMENT	
1/4 1/4	OWNERSHIP	CL LENGTH	CL RODS	SQ. FEET	ACRES
NE-NE	STATE	491.78	29.80	14,232	0.327
TOTAL		491.78	29.80	14,232	0.327

LEGEND

- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- EASEMENT CENTERLINE
- PERMANENT EASEMENT
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE

1000' 0' 1000'

Scale: 1" = 1000'

I, CHARLES JURICA A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

10/26/2022

CHARLES JURICA NEW MEXICO PS #25490 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS EFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM

STATE OF NEW MEXICO

PROPOSED EASEMENT CENTERLINE

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10193740 / 19148
2129 S Great Southwest Parkway Suite 313
Grand Prairie, TX 75051
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: CAS	DATE: 05/09/22	DWG. NO. 10637 JAKKU NORTH PAD FLOWLINE (36-18S-30E)	REV. 0
CHECKED BY: MJM	DATE: 05/09/22		
SCALE: 1"=1000'	PAGE 1 OF 2		

Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Water Source Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Existing Access
- State Trust Lands
- BLM Lands
- Private Lands

1:24,000

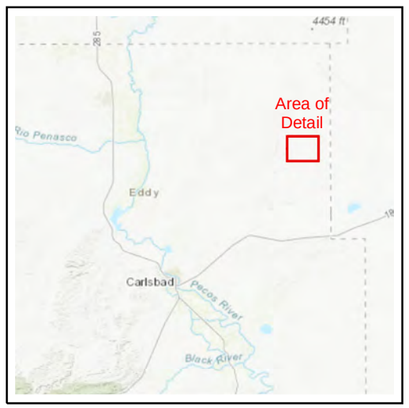
0 1,500 3,000
Feet

N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC



Colgate Operating, LLC

Proposed Jakku 36 Fed State Com
Water Source Map

T18S R30E
Hackberry Lake,
Eddy County, New Mexico

- Proposed Access Road
- Existing Access
- State Trust Lands
- BLM Lands
- Private Lands

1:24,000

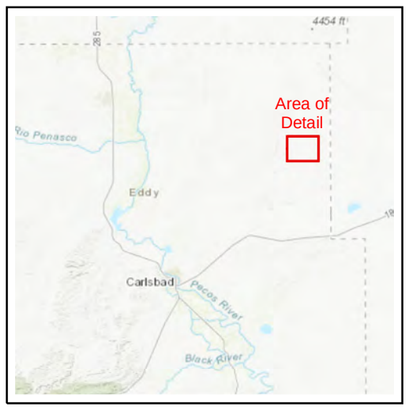
0 1,500 3,000
Feet

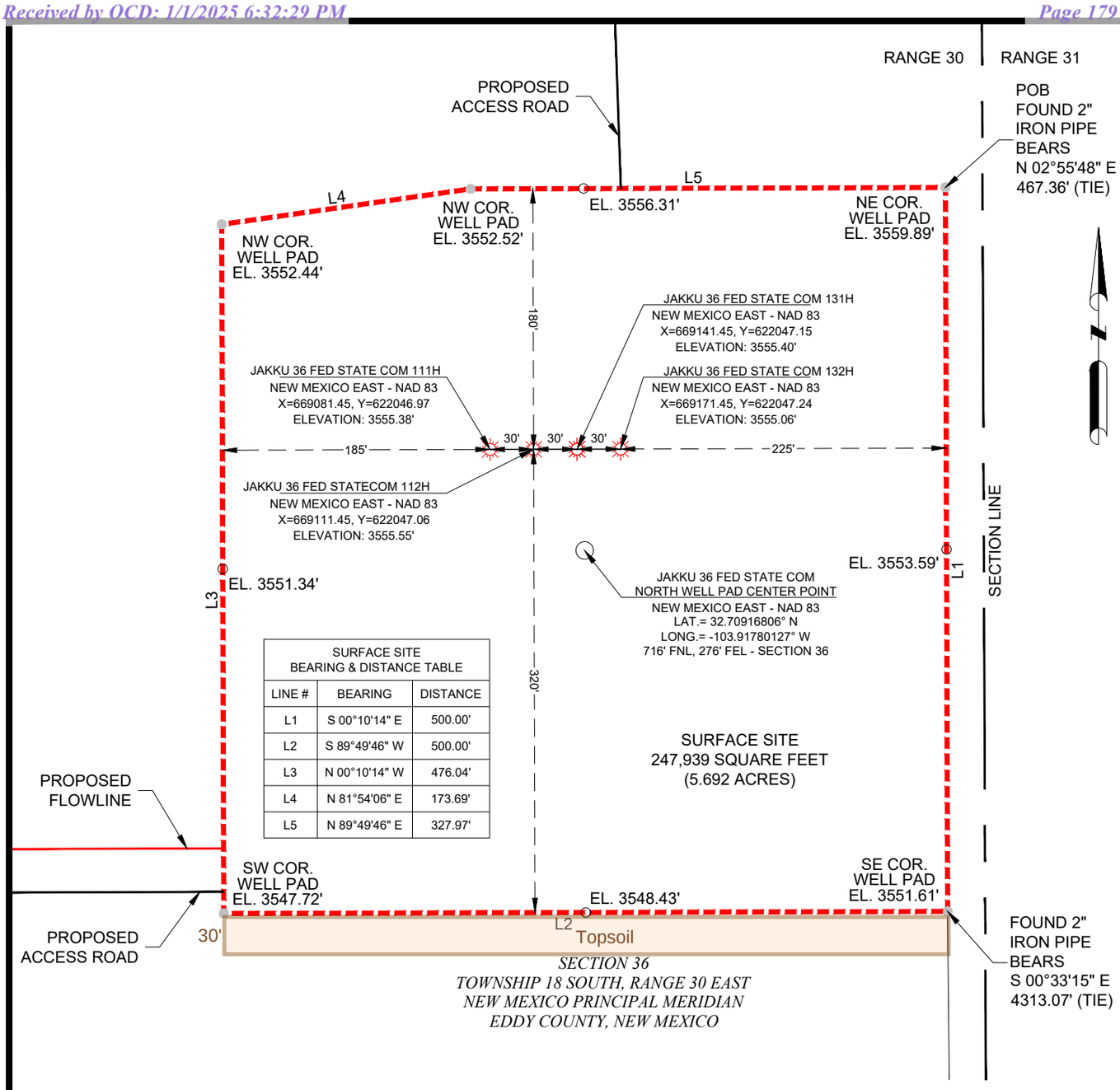
N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., October 26, 2022
for Colgate Operating, LLC





SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

SURFACE SITE BEARING & DISTANCE TABLE

LINE #	BEARING	DISTANCE
L1	S 00°10'14" E	500.00'
L2	S 89°49'46" W	500.00'
L3	N 00°10'14" W	476.04'
L4	N 81°54'06" E	173.69'
L5	N 89°49'46" E	327.97'

SURFACE SITE BREAKDOWN BY SECTION 1/4 1/4

		AREA	
1/4 1/4	OWNERSHIP	SQ. FEET	ACRES
NE-NE	STATE	247,939	5.692
TOTAL		247,939	5.692

LEGEND

- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- PROPOSED SURFACE SITE
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE
- EXISTING WELL LOCATION

100' 0' 100'

Scale: 1" = 100'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/18/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS AFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

JAKKU 36 FED STATE COM NORTH WELL PAD

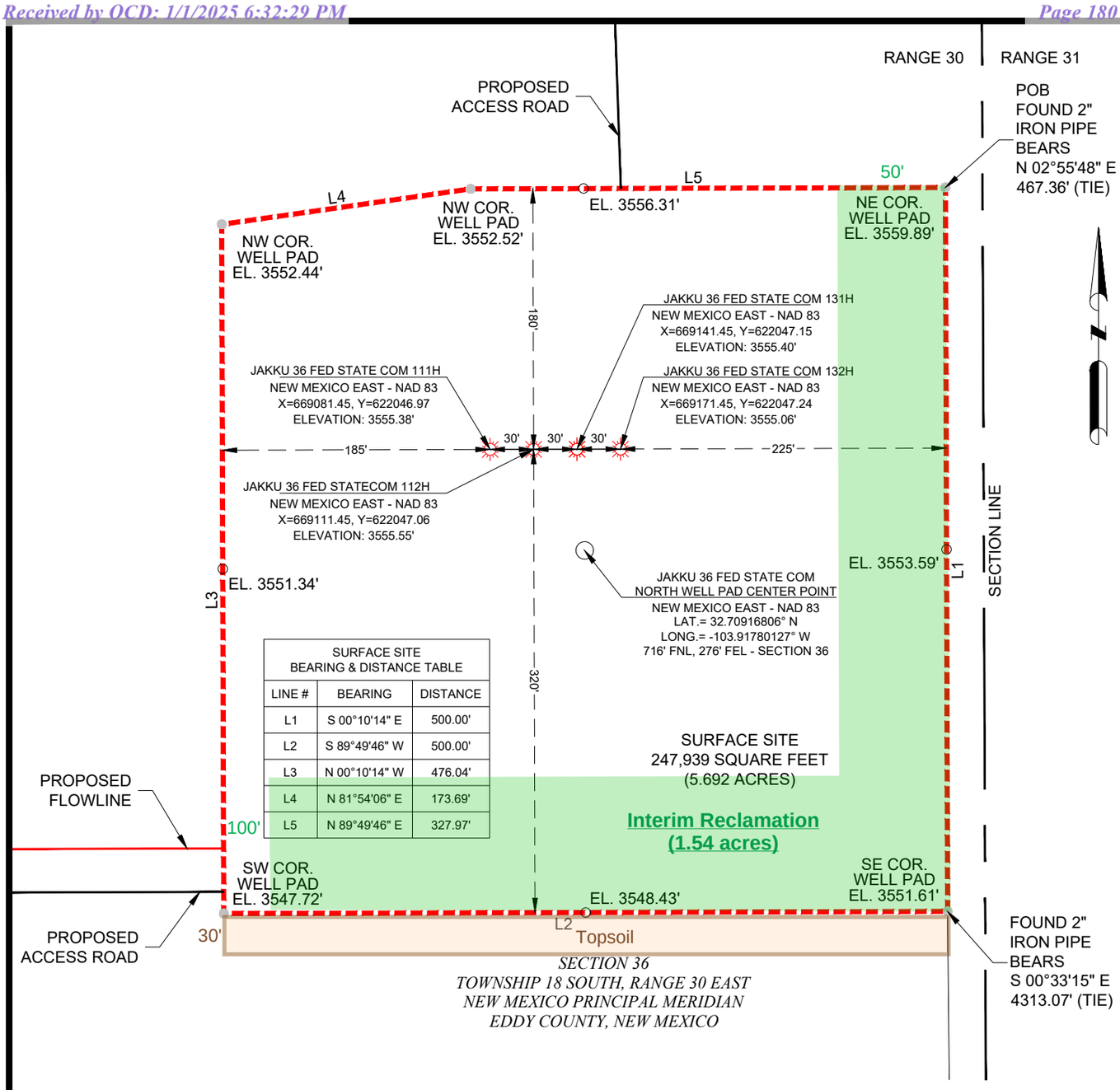
STATE OF NEW MEXICO

PROPOSED WELL PAD

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: WAS	DATE: 09/14/22	DWG. NO. 10637 JAKKU 36 FED STATE COM NORTH WELL PAD (36-18S-30E) SURFACE SITE	REV. 0
CHECKED BY: CJ	DATE: 09/14/22		
SCALE: 1"=100'	PAGE 1 OF 2		



SURFACE SITE BEARING & DISTANCE TABLE		
LINE #	BEARING	DISTANCE
L1	S 00°10'14" E	500.00'
L2	S 89°49'46" W	500.00'
L3	N 00°10'14" W	476.04'
L4	N 81°54'06" E	173.69'
L5	N 89°49'46" E	327.97'

SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

SURFACE SITE BREAKDOWN BY SECTION 1/4 1/4			
		AREA	
1/4 1/4	OWNERSHIP	SQ. FEET	ACRES
NE-NE	STATE	247,939	5.692
TOTAL		247,939	5.692

LEGEND
- SECTION LINE
- OHE — OVERHEAD ELECTRIC
- PROPOSED SURFACE SITE
- EXISTING PIPELINE
- X — FENCE LINE
- POWER POLE
- FOUND MONUMENT
- CALCULATED CORNER
- BEARING CHANGE
- EXISTING WELL LOCATION

100' 0' 100'
Scale: 1" = 100'

CHARLES L. JURICA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHARLES JURICA NEW MEXICO PS #25490 10/18/2022 DATE

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.
2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.
3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS AFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

#	DATE	BY:	DESCRIPTION	CHK

PROJECT NO. 10637

COLGATE ENERGY

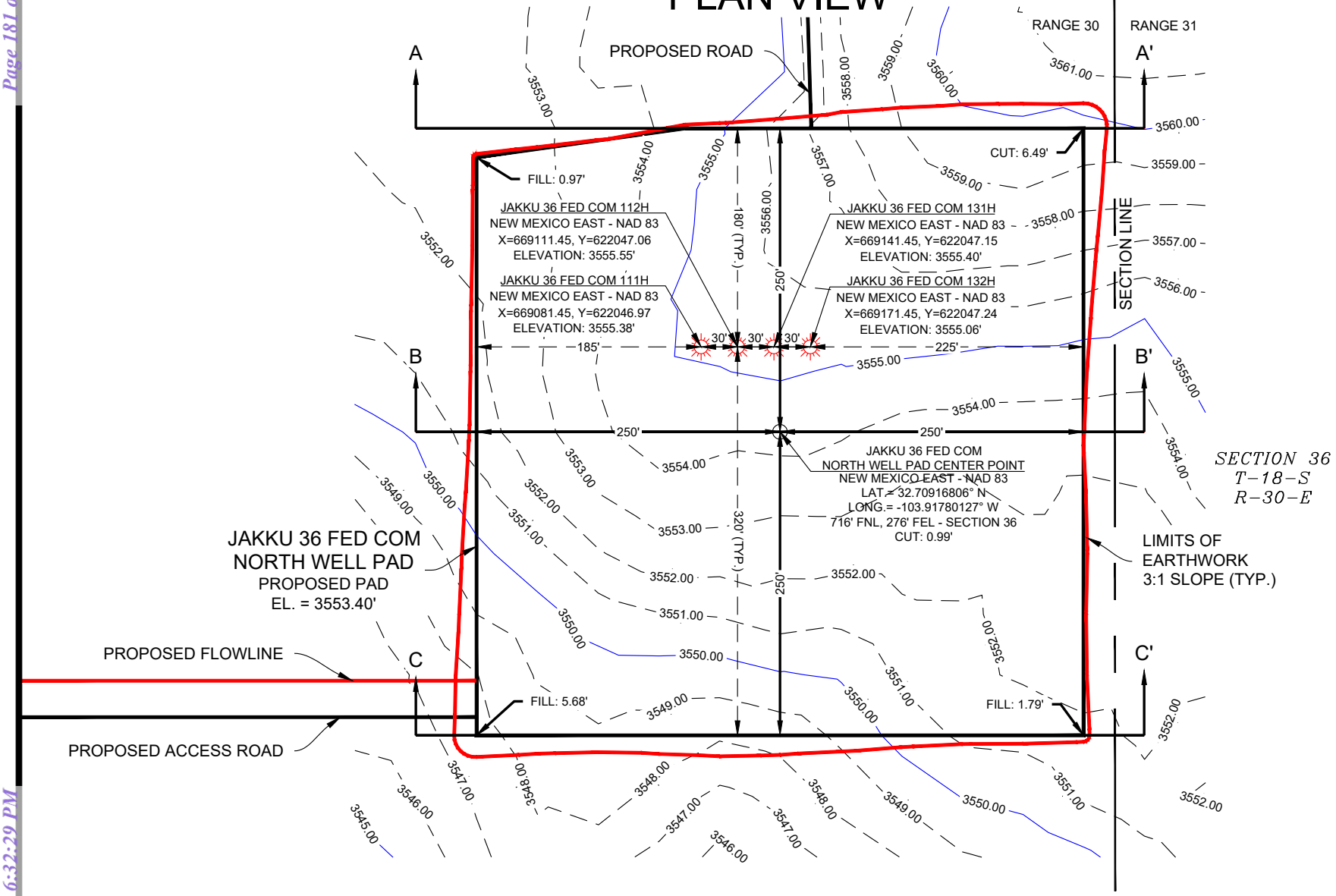
JAKKU 36 FED STATE COM NORTH WELL PAD
STATE OF NEW MEXICO
PROPOSED WELL PAD

SITUATED IN
SECTION 36
TOWNSHIP 18 SOUTH, RANGE 30 EAST
NEW MEXICO PRINCIPAL MERIDIAN
EDDY COUNTY, NEW MEXICO

TRANSGLOBAL SERVICES LLC
TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

DRAWN BY: WAS	DATE: 09/14/22	DWG. NO. 10637 JAKKU 36 FED STATE COM NORTH WELL PAD (36-18S-30E) SURFACE SITE	REV. 0
CHECKED BY: CJ	DATE: 09/14/22		
SCALE: 1"=100'	PAGE 1 OF 2		

PLAN VIEW



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COLGATE ENERGY

JAKKU 36 FED COM NORTH WELL PAD

PAD GRADING AND CROSS SECTIONS

SITUATED IN
SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST
N.M.P.M.
EDDY COUNTY, NEW MEXICO

TOTAL ACRES: 5.69

120' 0' 120'

Scale: 1" = 120'

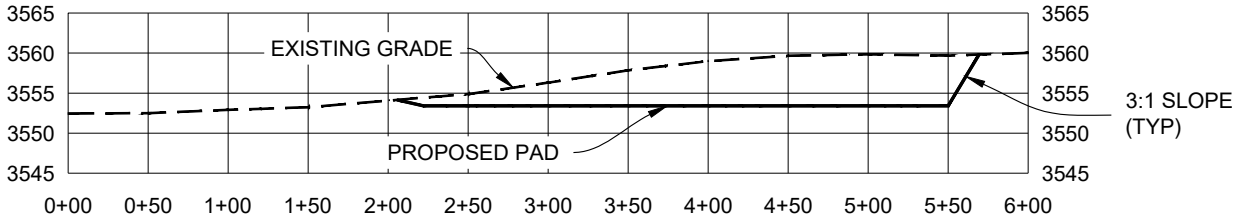
CUT	FILL	NET
9,837.00 CU. YD	9,837.01 CU. YD	0.00 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

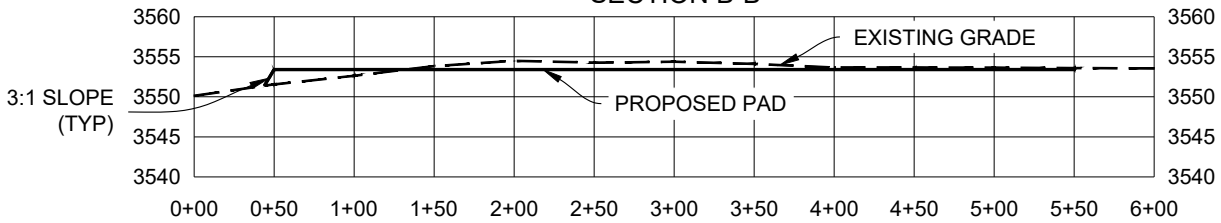
PROJECT NO. 10637	DATE: 5/2/2022	SHEET 1-2

CROSS-SECTIONS

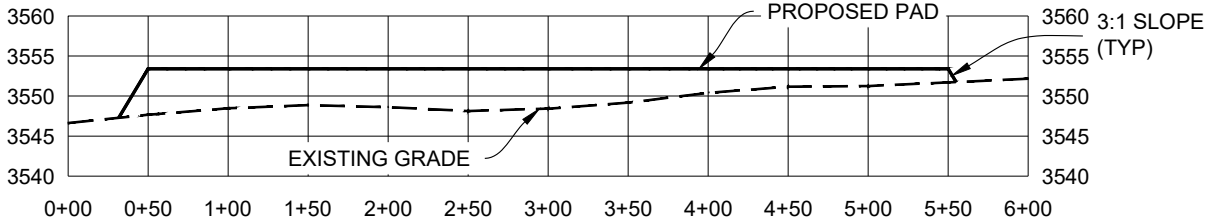
SECTION A-A'



SECTION B-B'



SECTION C-C'



TRANSGLOBAL SERVICES LLC
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201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

COLGATE ENERGY

JAKKU 36 FED COM NORTH WELL PAD

PAD GRADING AND CROSS SECTIONS

SITUATED IN
SECTION 36, TOWNSHIP 18 SOUTH, RANGE 30 EAST
N.M.P.M.
EDDY COUNTY, NEW MEXICO

TOTAL ACRES: 5.69

Horiz. Scale: 1" = 120' Vert. Scale: 1" = 20'

CUT	FILL	NET
9,837.00 CU. YD	9,837.01 CU. YD	0.00 CU. YD (CUT)

EARTHWORK QUANTITIES ARE ESTIMATED

PROJECT NO. 10637	DATE: 5/2/2022	SHEET 2-2

AFMSS

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

PWD Data Report

12/20/2024

APD ID: 10400092206 **Submission Date:** 05/10/2023

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Well Type: OIL WELL **Well Work Type:** Drill

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: **PWD disturbance (acres):**

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

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

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: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Is the reclamation bond a rider under the BLM bond?

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:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **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):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 -

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

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

Bond Info Data

12/20/2024

APD ID: 10400092206 **Submission Date:** 05/10/2023

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: JAKKU 36 FED COM **Well Number:** 112H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Permian Resources Operating, LLC **OGRID:** 372165 **Date:** 06/25/2024

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
JAKKU 36 FED COM 111H	TBD	A-36-18S-30E	647' FNL, 341' FEL	1100	2200	2800
JAKKU 36 FED COM 112H	TBD	A-36-18S-30E	647' FNL, 311' FEL	1100	2200	2800
JAKKU 36 FED COM 113H	TBD	I-36-18S-30E	2408' FSL, 555' FEL	1100	2200	2800
JAKKU 36 FED COM 114H	TBD	I-36-18S-30E	2413' FSL, 525' FEL	1100	2200	2800
JAKKU 36 FED COM 131H	TBD	A-36-18S-30E	647' FNL, 281' FEL	1100	2200	2800
JAKKU 36 FED COM 132H	TBD	A-36-18S-30E	647' FNL, 251' FEL	1100	2200	2800
JAKKU 36 FED COM 133H	TBD	I-36-18S-30E	2418' FSL, 495' FEL	1100	2200	2800
JAKKU 36 FED COM 134H	TBD	I-36-18S-30E	2424' FSL, 466' FEL	1100	2200	2800

IV. Central Delivery Point Name: ARRAKIS/JAKKU 25 FED COM CTB [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
JAKKU 36 FED COM 111H	TBD		**TBD**	**TBD**	**TBD**	**TBD**
JAKKU 36 FED COM 112H	TBD		**TBD**	**TBD**	**TBD**	**TBD**
JAKKU 36 FED COM 113H	TBD		**TBD**	**TBD**	**TBD**	**TBD**
JAKKU 36 FED COM 114H	TBD		**TBD**	**TBD**	**TBD**	**TBD**
JAKKU 36 FED COM 131H	TBD		**TBD**	**TBD**	**TBD**	**TBD**
JAKKU 36 FED COM 132H	TBD		**TBD**	**TBD**	**TBD**	**TBD**
JAKKU 36 FED COM 133H	TBD		**TBD**	**TBD**	**TBD**	**TBD**
JAKKU 36 FED COM 134H	TBD		**TBD**	**TBD**	**TBD**	**TBD**

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature:
Printed Name: Jennifer Elrod
Title: Sr. Regulatory Analyst
E-mail Address: jennifer.elrod@permianres.com
Date: 6/25/24
Phone: 940-452-6214

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

PERMIAN RESOURCES

NATURAL GAS MANAGEMENT PLAN DESCRIPTIONS

VI. Separation Equipment:

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

VII. Operational Practices:

Drilling

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

Flowback

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

Production

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

Performance Standards

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

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

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

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

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

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

- Closed loop systems
- Enclosed and properly sized tanks.

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

Measurement or Estimation

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

VIII. Best Management Practices:

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

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

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 416226
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
jelrod32	Cement is required to circulate on both surface and intermediate1 strings of casing.	1/1/2025
jelrod32	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	1/1/2025
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	1/27/2025
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	1/27/2025
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.	1/27/2025
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.	1/27/2025