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

Sundry Print Report

11/22/2024

Well Name: ENGLISH BUFFALO 26 35 FED COM

Well Location: T18S / R33E / SEC 26 / NENW / 32.7246964 / -103.6377496

County or Parish/State: LEA / NM

Well Number: 122H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM128363

Unit or CA Name:

Unit or CA Number:

US Well Number:

Operator: EARTHSTONE OPERATING LLC

Notice of Intent

Sundry ID: 2822708

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 11/14/2024

Time Sundry Submitted: 03:37

Date proposed operation will begin: 11/20/2024

Procedure Description: English Buffalo 26 35 Fed Com 122H: 30-025-53834 Surface casing dimension incorrect on updated COAs for sundry (in the top part of the coa's attached below). Submitting sundry to correct the record. Sundry also filed to revise Intermediate Casing Depth - confirmed with Geologist From: 5450' (as stated in COA's per geology) To: 3672' (Shown on attached Drilling Plan)

NOI Attachments

Procedure Description

English_Buffalo_122H_BLM_Attachments_2_20241114153555.pdf

Conditions of Approval

Additional

Sec_26_18S_33E_NMP_Sundry_2822708_English_Buffalo_26_35_Fed_Com_122H_COAs_20241122122141.pdf

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Allottee or Tribe Name:

Lease Number: NMNM128363

Unit or CA Name:

Unit or CA Number:

US Well Number:

Operator: EARTHSTONE OPERATING LLC

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: JENNIFER ELROD

Signed on: NOV 14, 2024 03:36 PM

Name: EARTHSTONE OPERATING LLC

Title: Senior Regulatory Analyst

Street Address: 300 N MARIENFIELD STREET SUITE 1000

City: MIDLAND **State:** TX

Phone: (940) 452-6214

Email address: JENNIFER.ELROD@PERMIANRES.COM

Field

Representative Name:

Street Address:

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

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 11/22/2024

Signature: Chris Walls

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: NENW / 427 FNL / 1411 FWL / TWSP: 18S / RANGE: 33E / SECTION: 26 / LAT: 32.7246964 / LONG: -103.6377496 (TVD: 0 feet, MD: 0 feet)

PPP: NWNW / 100 FNL / 2315 FWL / TWSP: 18S / RANGE: 33E / SECTION: 26 / LAT: 32.725604 / LONG: -103.634814 (TVD: 8848 feet, MD: 9266 feet)

BHL: SWSW / 100 FSL / 2315 FWL / TWSP: 18S / RANGE: 33E / SECTION: 35 / LAT: 32.697134 / LONG: -103.634747 (TVD: 9087 feet, MD: 19188 feet)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Earthstone Operating LLC
WELL NAME & NO.:	English Buffalo 26 35 Fed Com 122H
LOCATION:	Sec 26-18S-22E-NMP
COUNTY:	Lea County, New Mexico

*Previously known as **English Buffalo 26 35 Fed Com 111H**. Changes approved through engineering via **Sundry 2821935 & Sundry 2822708** on 11/22/2024. Any previous COAs not addressed within the updated COAs still apply.*

BLM Geologist was conferred with and operator can go with original proposed intermediate set depth at ~3670' rather than the adjusted set depth the 5450' on the previous set of COAs.

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

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Bone Springs** formation. As a result, the Hydrogen Sulfide area must meet all requirements from 43 CFR 3176, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1670** feet (a minimum of 25 feet (Lea 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.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing 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 **200 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.

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

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 Lea County Petroleum Engineering Inspection Staff:
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 689-5981

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.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Earthstone Operating LLC
WELL NAME & NO.:	English Buffalo 26 35 Fed Com 122H
LOCATION:	Sec 26-18S-22E-NMP
COUNTY:	Lea County, New Mexico

*Previously known as **English Buffalo 26 35 Fed Com 111H**. Changes approved through engineering via **Sundry 2821935** on 11/12/2024. Any previous COAs not addressed within the updated COAs still apply.*

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

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Bone Springs** formation. As a result, the Hydrogen Sulfide area must meet all requirements from 43 CFR 3176, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1670** feet (a minimum of 25 feet (Lea 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.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing **(set at 5450 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 **200 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)

Permian Resources - English Buffalo 26 35 Fed Com 122H

1. Geologic Formations

Formation	Elevation	TVD	Lithology	Target
Rustler	-2338	1527	Sandstone	No
Top of Salt	-2053	1812	Salt	No
Tansill	NP	NP	Anhydrite/Shale	No
Yates	-553	3312	Anhydrite/Shale	No
Seven Rivers	-26	3839	Limestone	No
Queen	376	4241	Limestone	No
Grayburg	NP	NP	Limestone	No
San Andres	NP	NP	Limestone	No
Cherry Canyon	-143	3722	Sandstone	No
Brushy Canyon	2363	6228	Sandstone	No
Bone Spring Lime	3810	7675	Limestone/Shale	No
1st Bone Spring Sand	5115	8980	Sandstone/Limestone/Shale	No
2nd Bone Spring Sand	5639	9504	Sandstone/Limestone/Shale	Yes

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

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

Choke Diagram Attachemnt: 5 M Choe Manifold

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	1577	0	1577	1577	J55	54.5	BTC	1.45	2.94	Dry	4.89	Dry	4.59
Intermediate	12.25	9.625	0	3672	0	3672	3672	J55	36	BTC	2.34	1.48	Dry	2.75	Dry	2.43
Production	8.75	5.5	0	10139	0	9768	10139	P110RY	20	GeoConn	1.47	1.54	Dry	1.85	Dry	1.85
Production	8.5	5.5	10139	20069	9768	9768	9930	P110RY	20	GeoConn	1.47	1.54	Dry	1.85	Dry	1.85
								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	1577	1240	1.34	14.8	1650	50%	Class C	Accelerator
Intermediate	Lead	0	2930	590	2.08	12.7	1210	50%	Class C	Salt, Extender, and LCM
Intermediate	Tail	2930	3672	270	1.34	14.8	350	50%	Class C	Accelerator
Production	Lead	3172	9389	900	2.41	11.5	2160	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	9389	20069	1790	1.73	12.5	3090	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

Cuttings Volume: 10970 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	1577	Spud Mud	8.6	9.5
1577	3672	Salt Saturated	10	10
3672	10139	Water Based Mud	9	10
10139	20069	OBM	9	10

6. Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:
Will utilize MWD/LWD from intermediate hole to TD of the well.
List of open and cased hole logs run in the well:
DIRECTIONAL SURVEY
Coring operation description for the well:

7. Pressure

Anticipated Bottom Hole Pressure	5080	psi
Anticipated Surface Pressure	2930.4	psi
Anticipated Bottom Hole Temperature	153	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

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.

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

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

Well Name: ENGLISH BUFFALO 26 35 FED COM

Well Location: T18S / R33E / SEC 26 / NENW / 32.7246964 / -103.6377496

County or Parish/State: LEA / NM

Well Number: 111H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM128363

Unit or CA Name:

Unit or CA Number:

US Well Number:

Operator: EARTHSTONE OPERATING LLC

Notice of Intent

Sundry ID: 2821935

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 11/11/2024

Time Sundry Submitted: 03:51

Date proposed operation will begin: 11/19/2024

Procedure Description: API: PENDING APD ID: 10400094259 Sundry to REVISE WELL NAME/NUMBER, FTP, LTP, BHL, DRILLING PLAN/CASING DESIGN, VARIANCE REQUEST NO NEW SURFACE DISTURBANCE Well Name/Number From: English Buffalo 26 35 Fed Com 111H To: English Buffalo 26 35 Fed Com 122H First Take Point Location FROM: D-26-18S-33E; 100 FNL, 345 FWL TO: C-26-18S-33E; 100 FNL, 2315 FWL Last Take Point Location FROM: M-35-18S-33E; 100 FSL, 345 FWL TO: N-35-18S-33E; 100 FSL, 2315 FWL Bottom Hole Location FROM: M-35-18S-33E; 50 FSL, 345 FWL TO: N-35-18S-33E; 100 FSL, 2315 FWL Casing/Cement design per the attached drilling program. Permian Resources also requests the following variances: BOP Break Batch/Spud OLCV FH Attachments: C102 Directional Plan Drilling Program 5M BOP 5M CM Batch/Spud BOP Break Test Procedure FH Multibowl Diagram OLCV Prod Casing Spec Sheet

NOI Attachments

Procedure Description

English_Buffalo_26_35_Fed_Com_122H_BLM_ATTACHEMENTS_20241111154955.pdf

Well Name: ENGLISH BUFFALO 26 35 FED COM	**Well Location:** T18S / R33E / SEC 26 / NENW / 32.7246964 / -103.6377496	**County or Parish/State:** LEA / NM
Well Number: 111H	**Type of Well:** OIL WELL	**Allottee or Tribe Name:**
Lease Number: NMNM128363	**Unit or CA Name:**	**Unit or CA Number:**
US Well Number:	**Operator:** EARTHSTONE OPERATING LLC	

Conditions of Approval

Additional

Sec_26_18S_33E_NMP_Sundry_2821935_English_Buffalo_26_35_Fed_Com_122H_COAs_20241112150531.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: JENNIFER ELROD

Signed on: NOV 11, 2024 03:51 PM

Name: EARTHSTONE OPERATING LLC

Title: Senior Regulatory Analyst

Street Address: 300 N MARIENFIELD STREET SUITE 1000

City: MIDLAND **State:** TX

Phone: (940) 452-6214

Email address: JENNIFER.ELROD@PERMIANRES.COM

Field

Representative Name:

Street Address:

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

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 11/12/2024

Signature: Chris Walls

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No. NMNM128363

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
ENGLISH BUFFALO 26 35 FED COM/111H

2. Name of Operator EARTHSTONE OPERATING LLC

9. API Well No.

3a. Address 300 N MARIENFIELD STREET SUITE 1000, MID

3b. Phone No. *(include area code)* (432) 695-4222

10. Field and Pool or Exploratory Area
CORBIN/BONE SPRING, SOUTH

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
SEC 26/T18S/R33E/NMP

11. Country or Parish, State
LEA/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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

API: PENDING
APD ID: 10400094259

Sundry to REVISE WELL NAME/NUMBER, FTP, LTP, BHL, DRILLING PLAN/CASING DESIGN, VARIANCE REQUEST

NO NEW SURFACE DISTURBANCE

Well Name/Number
From: English Buffalo 26 35 Fed Com 111H
To: English Buffalo 26 35 Fed Com 122H

First Take Point Location
Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
JENNIFER ELROD / Ph: (940) 452-6214

Title Senior Regulatory Analyst

Signature (Electronic Submission)

Date 11/11/2024

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by
CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved

Title Petroleum Engineer

Date 11/12/2024

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office CARLSBAD

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Additional Remarks

FROM: D-26-18S-33E; 100 FNL, 345 FWL

TO: C-26-18S-33E; 100 FNL, 2315 FWL

Last Take Point Location

FROM: M-35-18S-33E; 100 FSL, 345 FWL

TO: N-35-18S-33E; 100 FSL, 2315 FWL

Bottom Hole Location

FROM: M-35-18S-33E; 50 FSL, 345 FWL

TO: N-35-18S-33E; 100 FSL, 2315 FWL

Casing/Cement design per the attached drilling program.

Permian Resources also requests the following variances:

BOP Break

Batch/Spud

OLCV

FH

Attachments:

C102

Directional Plan

Drilling Program

5M BOP

5M CM

Batch/Spud

BOP Break Test Procedure

FH

Multibowl Diagram

OLCV

Prod Casing Spec Sheet

Location of Well

0. SHL: NENW / 427 FNL / 1411 FWL / TWSP: 18S / RANGE: 33E / SECTION: 26 / LAT: 32.7246964 / LONG: -103.6377496 (TVD: 0 feet, MD: 0 feet)

PPP: NWNW / 100 FNL / 345 FWL / TWSP: 18S / RANGE: 33E / SECTION: 26 / LAT: 32.7246964 / LONG: -103.6377496 (TVD: 8848 feet, MD: 9266 feet)

BHL: SWSW / 50 FSL / 345 FWL / TWSP: 18S / RANGE: 33E / SECTION: 35 / LAT: 32.6969757 / LONG: -103.6411506 (TVD: 9087 feet, MD: 19188 feet)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Earthstone Operating LLC
WELL NAME & NO.:	English Buffalo 26 35 Fed Com 122H
LOCATION:	Sec 26-18S-22E-NMP
COUNTY:	Lea County, New Mexico

*Previously known as **English Buffalo 26 35 Fed Com 111H**. Changes approved through engineering via **Sundry 2821935** on 11/12/2024. Any previous COAs not addressed within the updated COAs still apply.*

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

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Bone Springs** formation. As a result, the Hydrogen Sulfide area must meet all requirements from 43 CFR 3176, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **1670** feet (a minimum of 25 feet (Lea 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.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing **(set at 5450 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 **200 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.

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

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 Lea County Petroleum Engineering Inspection Staff:
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 689-5981

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.

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

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name	
	13160	CORBIN; BONE SPRING, SOUTH	
Property Code	Property Name		Well Number
	ENGLISH BUFFALO 26 35 FED COM		122H
OGRID No.	Operator Name		Ground Level Elevation
331165	EARTHSTONE OPERATING, LLC		3,835.00'
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
C	26	18S	33E		427' FNL	1,411' FWL	32.724696	-103.637750	LEA

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
N	35	18S	33E		100' FSL	2,315' FWL	32.697134	-103.634747	LEA

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
640	INFILL	PENDING	N	
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
C	26	18S	33E		427' FNL	1,411' FWL	32.724696	-103.637750	LEA

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
C	26	18S	33E		100' FNL	2,315' FWL	32.725604	-103.634814	LEA

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
N	35	18S	33E		100' FSL	2,315' FWL	32.697134	-103.634747	LEA

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 9/30/2024

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 belief.

MARK J. MURRAY NEW MEXICO 12177 REGISTERED PROFESSIONAL SURVEYOR

Date: 9/18/2024

Signature and Seal of Professional Surveyor

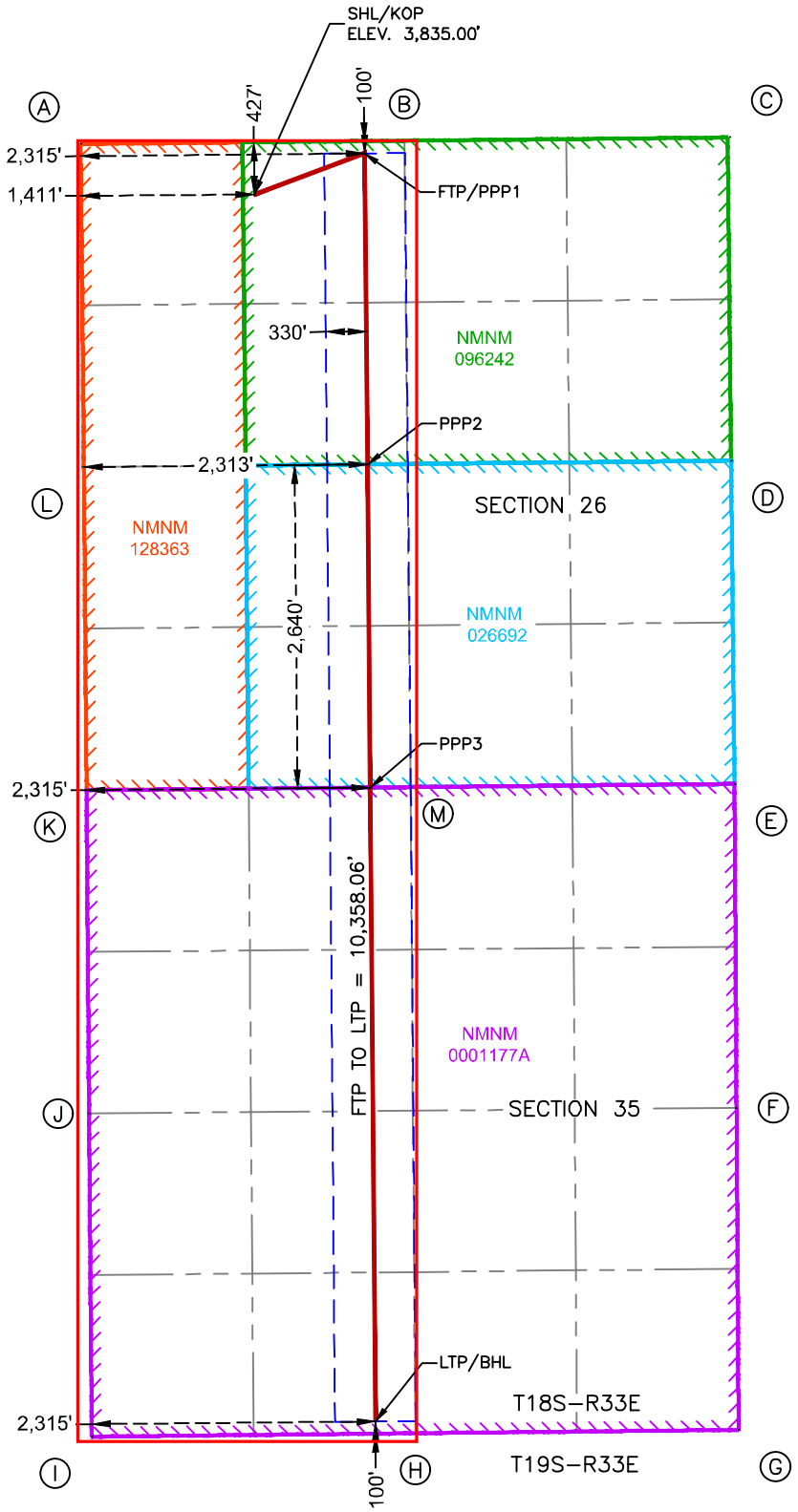
Certificate Number	Date of Survey
12177	9/18/2024

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

ACREAGE DEDICATION PLATS

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

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



SURFACE HOLE LOCATION
& KICK-OFF POINT
427' FNL & 1,411' FWL
ELEV. = 3,835.00'

NAD 83 X = 755,249.15'
NAD 83 Y = 628,078.05'
NAD 83 LAT = 32.724696°
NAD 83 LONG = -103.637750°

FIRST TAKE POINT &
PENETRATION POINT 1
100' FNL & 2,315' FWL

NAD 83 X = 756,149.83'
NAD 83 Y = 628,414.11'
NAD 83 LAT = 32.725604°
NAD 83 LONG = -103.634814°

PENETRATION POINT 2
2,640' FSL & 2,313' FWL

NAD 83 X = 756,173.03'
NAD 83 Y = 625,874.57'
NAD 83 LAT = 32.718623°
NAD 83 LONG = -103.634793°

PENETRATION POINT 3
0' FSL & 2,315' FWL

NAD 83 X = 756,197.15'
NAD 83 Y = 623,235.04'
NAD 83 LAT = 32.711368°
NAD 83 LONG = -103.634771°

LAST TAKE POINT &
BOTTOM HOLE LOCATION
100' FSL & 2,315' FWL

NAD 83 X = 756,238.55'
NAD 83 Y = 618,056.44'
NAD 83 LAT = 32.697134°
NAD 83 LONG = -103.634747°

CORNER COORDINATES NEW MEXICO EAST - NAD 83	
A	IRON PIPE W/BRASS CAP N:628,490.86' E:753,833.94'
B	CALCULATED CORNER N:628,517.37' E:756,473.13'
C	IRON PIPE W/BRASS CAP N:628,546.48' E:759,127.86'
D	CALCULATED CORNER N:625,903.86' E:759,140.19'
E	IRON PIPE W/BRASS CAP N:623,263.84' E:759,168.08'
F	CALCULATED CORNER N:620,617.71' E:759,181.95'
G	IRON PIPE W/BRASS CAP N:617,987.59' E:759,201.89'
H	CALCULATED CORNER N:617,959.93' E:756,563.06'
I	IRON PIPE W/BRASS CAP N:617,932.13' E:753,924.04'
J	CALCULATED CORNER N:620,571.98' E:753,902.64'
K	IRON PIPE W/BRASS CAP N:623,212.70' E:753,882.51'
L	IRON PIPE W/BRASS CAP N:625,851.72' E:753,860.28'
M	CALCULATED CORNER N:623,238.22' E:756,525.17'

NEW MEXICO

(SP) EDDY
ENGLISH BUFFALO / MERCURY PROJECT
ENGLISH BUFFALO 26 35 FED COM 122H

OWB

Plan: PWP0

Standard Planning Report - Geographic

01 October, 2024

Planning Report - Geographic

Database:	Compass_17	**Local Co-ordinate Reference:**	Well ENGLISH BUFFALO 26 35 FED COM 122H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3865.0usft
Project:	(SP) EDDY	**MD Reference:**	KB @ 3865.0usft
Site:	ENGLISH BUFFALO / MERCURY PROJECT	**North Reference:**	Grid
Well:	ENGLISH BUFFALO 26 35 FED COM 122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project (SP) EDDY

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

Site ENGLISH BUFFALO / MERCURY PROJECT

Site Position:		**Northing:**	628,234.38 usft	**Latitude:**	32° 43' 30.290 N
From:	Map	**Easting:**	757,750.47 usft	**Longitude:**	103° 37' 46.608 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well ENGLISH BUFFALO 26 35 FED COM 122H

Well Position	**+N/-S**	0.0 usft	**Northing:**	628,078.05 usft	**Latitude:**	32° 43' 28.907 N
	+E/-W	0.0 usft	**Easting:**	755,249.15 usft	**Longitude:**	103° 38' 15.899 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,835.0 usft
Grid Convergence:		0.38 °				

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	7.82	60.69	49,084.84556995

Design PWP0

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	174.36

Plan Survey Tool Program **Date** 10/1/2024

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	20,069.7	PWP0 (OWB)	MWD OWSG_Rev2_ MWD - Star	

Planning Report - Geographic

Database:	Compass_17	**Local Co-ordinate Reference:**	Well ENGLISH BUFFALO 26 35 FED COM 122H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3865.0usft
Project:	(SP) EDDY	**MD Reference:**	KB @ 3865.0usft
Site:	ENGLISH BUFFALO / MERCURY PROJECT	**North Reference:**	Grid
Well:	ENGLISH BUFFALO 26 35 FED COM 122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	12.00	66.80	1,595.6	24.7	57.5	2.00	2.00	0.00	66.80	
5,711.1	12.00	66.80	5,616.9	361.4	843.1	0.00	0.00	0.00	0.00	
6,311.1	0.00	0.00	6,212.5	386.1	900.7	2.00	-2.00	0.00	180.00	
9,389.1	0.00	0.00	9,290.5	386.1	900.7	0.00	0.00	0.00	0.00	
10,139.1	90.00	179.51	9,768.0	-91.3	904.7	12.00	12.00	23.93	179.51	
20,069.7	90.00	179.51	9,768.0	-10,021.6	989.4	0.00	0.00	0.00	0.00	BHL-ENG BUFF 12

Planning Report - Geographic

Database:	Compass_17	**Local Co-ordinate Reference:**	Well ENGLISH BUFFALO 26 35 FED COM 122H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3865.0usft
Project:	(SP) EDDY	**MD Reference:**	KB @ 3865.0usft
Site:	ENGLISH BUFFALO / MERCURY PROJECT	**North Reference:**	Grid
Well:	ENGLISH BUFFALO 26 35 FED COM 122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
100.0	0.00	0.00	100.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
200.0	0.00	0.00	200.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
300.0	0.00	0.00	300.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
400.0	0.00	0.00	400.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
500.0	0.00	0.00	500.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
600.0	0.00	0.00	600.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
700.0	0.00	0.00	700.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
800.0	0.00	0.00	800.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
900.0	0.00	0.00	900.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	628,078.05	755,249.15	32° 43' 28.907 N	103° 38' 15.899 W
1,100.0	2.00	66.80	1,100.0	0.7	1.6	628,078.74	755,250.75	32° 43' 28.914 N	103° 38' 15.880 W
1,200.0	4.00	66.80	1,199.8	2.7	6.4	628,080.80	755,255.56	32° 43' 28.934 N	103° 38' 15.824 W
1,300.0	6.00	66.80	1,299.5	6.2	14.4	628,084.24	755,263.57	32° 43' 28.967 N	103° 38' 15.730 W
1,400.0	8.00	66.80	1,398.7	11.0	25.6	628,089.04	755,274.77	32° 43' 29.014 N	103° 38' 15.598 W
1,500.0	10.00	66.80	1,497.5	17.1	40.0	628,095.20	755,289.15	32° 43' 29.074 N	103° 38' 15.429 W
1,600.0	12.00	66.80	1,595.6	24.7	57.5	628,102.72	755,306.69	32° 43' 29.147 N	103° 38' 15.223 W
1,700.0	12.00	66.80	1,693.4	32.9	76.6	628,110.91	755,325.79	32° 43' 29.227 N	103° 38' 14.999 W
1,800.0	12.00	66.80	1,791.3	41.0	95.8	628,119.10	755,344.90	32° 43' 29.307 N	103° 38' 14.775 W
1,900.0	12.00	66.80	1,889.1	49.2	114.9	628,127.29	755,364.01	32° 43' 29.387 N	103° 38' 14.550 W
2,000.0	12.00	66.80	1,986.9	57.4	134.0	628,135.49	755,383.12	32° 43' 29.467 N	103° 38' 14.326 W
2,100.0	12.00	66.80	2,084.7	65.6	153.1	628,143.68	755,402.23	32° 43' 29.546 N	103° 38' 14.102 W
2,200.0	12.00	66.80	2,182.5	73.8	172.2	628,151.87	755,421.34	32° 43' 29.626 N	103° 38' 13.878 W
2,300.0	12.00	66.80	2,280.3	82.0	191.3	628,160.06	755,440.45	32° 43' 29.706 N	103° 38' 13.653 W
2,400.0	12.00	66.80	2,378.1	90.2	210.4	628,168.25	755,459.56	32° 43' 29.786 N	103° 38' 13.429 W
2,500.0	12.00	66.80	2,476.0	98.4	229.5	628,176.45	755,478.67	32° 43' 29.866 N	103° 38' 13.205 W
2,600.0	12.00	66.80	2,573.8	106.6	248.6	628,184.64	755,497.78	32° 43' 29.945 N	103° 38' 12.980 W
2,700.0	12.00	66.80	2,671.6	114.8	267.7	628,192.83	755,516.89	32° 43' 30.025 N	103° 38' 12.756 W
2,800.0	12.00	66.80	2,769.4	123.0	286.9	628,201.02	755,536.00	32° 43' 30.105 N	103° 38' 12.532 W
2,900.0	12.00	66.80	2,867.2	131.2	306.0	628,209.21	755,555.11	32° 43' 30.185 N	103° 38' 12.307 W
3,000.0	12.00	66.80	2,965.0	139.3	325.1	628,217.40	755,574.22	32° 43' 30.265 N	103° 38' 12.083 W
3,100.0	12.00	66.80	3,062.8	147.5	344.2	628,225.60	755,593.33	32° 43' 30.344 N	103° 38' 11.859 W
3,200.0	12.00	66.80	3,160.7	155.7	363.3	628,233.79	755,612.44	32° 43' 30.424 N	103° 38' 11.634 W
3,300.0	12.00	66.80	3,258.5	163.9	382.4	628,241.98	755,631.54	32° 43' 30.504 N	103° 38' 11.410 W
3,400.0	12.00	66.80	3,356.3	172.1	401.5	628,250.17	755,650.65	32° 43' 30.584 N	103° 38' 11.186 W
3,500.0	12.00	66.80	3,454.1	180.3	420.6	628,258.36	755,669.76	32° 43' 30.664 N	103° 38' 10.961 W
3,600.0	12.00	66.80	3,551.9	188.5	439.7	628,266.55	755,688.87	32° 43' 30.744 N	103° 38' 10.737 W
3,700.0	12.00	66.80	3,649.7	196.7	458.8	628,274.75	755,707.98	32° 43' 30.823 N	103° 38' 10.513 W
3,800.0	12.00	66.80	3,747.5	204.9	477.9	628,282.94	755,727.09	32° 43' 30.903 N	103° 38' 10.288 W
3,900.0	12.00	66.80	3,845.4	213.1	497.1	628,291.13	755,746.20	32° 43' 30.983 N	103° 38' 10.064 W
4,000.0	12.00	66.80	3,943.2	221.3	516.2	628,299.32	755,765.31	32° 43' 31.063 N	103° 38' 9.840 W
4,100.0	12.00	66.80	4,041.0	229.5	535.3	628,307.51	755,784.42	32° 43' 31.143 N	103° 38' 9.616 W
4,200.0	12.00	66.80	4,138.8	237.7	554.4	628,315.70	755,803.53	32° 43' 31.222 N	103° 38' 9.391 W
4,300.0	12.00	66.80	4,236.6	245.8	573.5	628,323.90	755,822.64	32° 43' 31.302 N	103° 38' 9.167 W
4,400.0	12.00	66.80	4,334.4	254.0	592.6	628,332.09	755,841.75	32° 43' 31.382 N	103° 38' 8.943 W
4,500.0	12.00	66.80	4,432.3	262.2	611.7	628,340.28	755,860.86	32° 43' 31.462 N	103° 38' 8.718 W
4,600.0	12.00	66.80	4,530.1	270.4	630.8	628,348.47	755,879.97	32° 43' 31.542 N	103° 38' 8.494 W
4,700.0	12.00	66.80	4,627.9	278.6	649.9	628,356.66	755,899.08	32° 43' 31.621 N	103° 38' 8.270 W
4,800.0	12.00	66.80	4,725.7	286.8	669.0	628,364.85	755,918.19	32° 43' 31.701 N	103° 38' 8.045 W
4,900.0	12.00	66.80	4,823.5	295.0	688.1	628,373.05	755,937.29	32° 43' 31.781 N	103° 38' 7.821 W
5,000.0	12.00	66.80	4,921.3	303.2	707.3	628,381.24	755,956.40	32° 43' 31.861 N	103° 38' 7.597 W
5,100.0	12.00	66.80	5,019.1	311.4	726.4	628,389.43	755,975.51	32° 43' 31.941 N	103° 38' 7.372 W
5,200.0	12.00	66.80	5,117.0	319.6	745.5	628,397.62	755,994.62	32° 43' 32.020 N	103° 38' 7.148 W
5,300.0	12.00	66.80	5,214.8	327.8	764.6	628,405.81	756,013.73	32° 43' 32.100 N	103° 38' 6.924 W

Planning Report - Geographic

Database:	Compass_17	**Local Co-ordinate Reference:**	Well ENGLISH BUFFALO 26 35 FED COM 122H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3865.0usft
Project:	(SP) EDDY	**MD Reference:**	KB @ 3865.0usft
Site:	ENGLISH BUFFALO / MERCURY PROJECT	**North Reference:**	Grid
Well:	ENGLISH BUFFALO 26 35 FED COM 122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.0	12.00	66.80	5,312.6	336.0	783.7	628,414.01	756,032.84	32° 43' 32.180 N	103° 38' 6.699 W
5,500.0	12.00	66.80	5,410.4	344.1	802.8	628,422.20	756,051.95	32° 43' 32.260 N	103° 38' 6.475 W
5,600.0	12.00	66.80	5,508.2	352.3	821.9	628,430.39	756,071.06	32° 43' 32.340 N	103° 38' 6.251 W
5,700.0	12.00	66.80	5,606.0	360.5	841.0	628,438.58	756,090.17	32° 43' 32.420 N	103° 38' 6.026 W
5,711.1	12.00	66.80	5,616.9	361.4	843.1	628,439.49	756,092.29	32° 43' 32.428 N	103° 38' 6.002 W
5,800.0	10.22	66.80	5,704.1	368.2	858.9	628,446.24	756,108.04	32° 43' 32.494 N	103° 38' 5.817 W
5,900.0	8.22	66.80	5,802.8	374.5	873.6	628,452.55	756,122.76	32° 43' 32.556 N	103° 38' 5.644 W
6,000.0	6.22	66.80	5,902.0	379.5	885.2	628,457.51	756,134.32	32° 43' 32.604 N	103° 38' 5.508 W
6,100.0	4.22	66.80	6,001.6	383.0	893.5	628,461.09	756,142.68	32° 43' 32.639 N	103° 38' 5.410 W
6,200.0	2.22	66.80	6,101.4	385.3	898.7	628,463.31	756,147.85	32° 43' 32.660 N	103° 38' 5.349 W
6,300.0	0.22	66.80	6,201.4	386.1	900.7	628,464.15	756,149.81	32° 43' 32.669 N	103° 38' 5.326 W
6,311.1	0.00	0.00	6,212.5	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
6,400.0	0.00	0.00	6,301.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
6,500.0	0.00	0.00	6,401.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
6,600.0	0.00	0.00	6,501.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
6,700.0	0.00	0.00	6,601.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
6,800.0	0.00	0.00	6,701.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
6,900.0	0.00	0.00	6,801.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,000.0	0.00	0.00	6,901.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,100.0	0.00	0.00	7,001.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,200.0	0.00	0.00	7,101.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,300.0	0.00	0.00	7,201.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,400.0	0.00	0.00	7,301.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,500.0	0.00	0.00	7,401.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,600.0	0.00	0.00	7,501.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,700.0	0.00	0.00	7,601.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,800.0	0.00	0.00	7,701.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
7,900.0	0.00	0.00	7,801.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,000.0	0.00	0.00	7,901.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,100.0	0.00	0.00	8,001.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,200.0	0.00	0.00	8,101.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,300.0	0.00	0.00	8,201.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,400.0	0.00	0.00	8,301.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,500.0	0.00	0.00	8,401.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,600.0	0.00	0.00	8,501.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,700.0	0.00	0.00	8,601.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,800.0	0.00	0.00	8,701.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
8,900.0	0.00	0.00	8,801.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
9,000.0	0.00	0.00	8,901.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
9,100.0	0.00	0.00	9,001.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
9,200.0	0.00	0.00	9,101.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
9,300.0	0.00	0.00	9,201.4	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
9,389.1	0.00	0.00	9,290.5	386.1	900.7	628,464.15	756,149.83	32° 43' 32.669 N	103° 38' 5.326 W
9,400.0	1.31	179.51	9,301.4	386.0	900.7	628,464.03	756,149.83	32° 43' 32.667 N	103° 38' 5.326 W
9,425.0	4.31	179.51	9,326.4	384.8	900.7	628,462.80	756,149.84	32° 43' 32.655 N	103° 38' 5.326 W
9,450.0	7.31	179.51	9,351.2	382.2	900.7	628,460.27	756,149.86	32° 43' 32.630 N	103° 38' 5.326 W
9,475.0	10.31	179.51	9,375.9	378.4	900.7	628,456.45	756,149.89	32° 43' 32.592 N	103° 38' 5.326 W
9,500.0	13.31	179.51	9,400.4	373.3	900.8	628,451.33	756,149.94	32° 43' 32.542 N	103° 38' 5.326 W
9,525.0	16.31	179.51	9,424.6	366.9	900.8	628,444.94	756,149.99	32° 43' 32.479 N	103° 38' 5.326 W
9,550.0	19.31	179.51	9,448.4	359.2	900.9	628,437.30	756,150.06	32° 43' 32.403 N	103° 38' 5.326 W
9,575.0	22.31	179.51	9,471.7	350.4	901.0	628,428.42	756,150.13	32° 43' 32.315 N	103° 38' 5.325 W
9,600.0	25.31	179.51	9,494.6	340.3	901.1	628,418.33	756,150.22	32° 43' 32.215 N	103° 38' 5.325 W
9,625.0	28.31	179.51	9,516.9	329.0	901.2	628,407.05	756,150.31	32° 43' 32.104 N	103° 38' 5.325 W
9,650.0	31.31	179.51	9,538.6	316.6	901.3	628,394.63	756,150.42	32° 43' 31.981 N	103° 38' 5.325 W

Planning Report - Geographic

Database:	Compass_17	**Local Co-ordinate Reference:**	Well ENGLISH BUFFALO 26 35 FED COM 122H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3865.0usft
Project:	(SP) EDDY	**MD Reference:**	KB @ 3865.0usft
Site:	ENGLISH BUFFALO / MERCURY PROJECT	**North Reference:**	Grid
Well:	ENGLISH BUFFALO 26 35 FED COM 122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,675.0	34.31	179.51	9,559.6	303.0	901.4	628,381.08	756,150.54	32° 43' 31.847 N	103° 38' 5.324 W
9,700.0	37.31	179.51	9,579.9	288.4	901.5	628,366.46	756,150.66	32° 43' 31.702 N	103° 38' 5.324 W
9,725.0	40.31	179.51	9,599.4	272.7	901.6	628,350.79	756,150.79	32° 43' 31.547 N	103° 38' 5.324 W
9,750.0	43.31	179.51	9,618.0	256.1	901.8	628,334.13	756,150.94	32° 43' 31.382 N	103° 38' 5.323 W
9,775.0	46.31	179.51	9,635.7	238.5	901.9	628,316.51	756,151.09	32° 43' 31.208 N	103° 38' 5.323 W
9,800.0	49.31	179.51	9,652.5	219.9	902.1	628,297.99	756,151.24	32° 43' 31.024 N	103° 38' 5.322 W
9,825.0	52.31	179.51	9,668.3	200.6	902.3	628,278.62	756,151.41	32° 43' 30.833 N	103° 38' 5.322 W
9,850.0	55.31	179.51	9,683.1	180.4	902.4	628,258.45	756,151.58	32° 43' 30.633 N	103° 38' 5.321 W
9,875.0	58.31	179.51	9,696.8	159.5	902.6	628,237.53	756,151.76	32° 43' 30.426 N	103° 38' 5.321 W
9,900.0	61.31	179.51	9,709.3	137.9	902.8	628,215.92	756,151.94	32° 43' 30.212 N	103° 38' 5.321 W
9,925.0	64.31	179.51	9,720.8	115.6	903.0	628,193.69	756,152.13	32° 43' 29.992 N	103° 38' 5.320 W
9,950.0	67.31	179.51	9,731.0	92.8	903.2	628,170.89	756,152.33	32° 43' 29.767 N	103° 38' 5.320 W
9,975.0	70.31	179.51	9,740.0	69.5	903.4	628,147.58	756,152.53	32° 43' 29.536 N	103° 38' 5.319 W
10,000.0	73.31	179.51	9,747.8	45.8	903.6	628,123.83	756,152.73	32° 43' 29.301 N	103° 38' 5.318 W
10,025.0	76.31	179.51	9,754.4	21.7	903.8	628,099.71	756,152.93	32° 43' 29.062 N	103° 38' 5.318 W
10,050.0	79.31	179.51	9,759.7	-2.8	904.0	628,075.28	756,153.14	32° 43' 28.821 N	103° 38' 5.317 W
10,075.0	82.31	179.51	9,763.7	-27.5	904.2	628,050.60	756,153.35	32° 43' 28.577 N	103° 38' 5.317 W
10,100.0	85.31	179.51	9,766.4	-52.3	904.4	628,025.75	756,153.56	32° 43' 28.331 N	103° 38' 5.316 W
10,125.0	88.31	179.51	9,767.8	-77.3	904.6	628,000.79	756,153.78	32° 43' 28.084 N	103° 38' 5.316 W
10,139.1	90.00	179.51	9,768.0	-91.3	904.7	627,986.71	756,153.90	32° 43' 27.944 N	103° 38' 5.315 W
10,200.0	90.00	179.51	9,768.0	-152.3	905.3	627,925.80	756,154.42	32° 43' 27.342 N	103° 38' 5.314 W
10,300.0	90.00	179.51	9,768.0	-252.3	906.1	627,825.80	756,155.27	32° 43' 26.352 N	103° 38' 5.312 W
10,400.0	90.00	179.51	9,768.0	-352.2	907.0	627,725.81	756,156.12	32° 43' 25.363 N	103° 38' 5.309 W
10,500.0	90.00	179.51	9,768.0	-452.2	907.8	627,625.81	756,156.97	32° 43' 24.373 N	103° 38' 5.307 W
10,600.0	90.00	179.51	9,768.0	-552.2	908.7	627,525.81	756,157.83	32° 43' 23.384 N	103° 38' 5.305 W
10,700.0	90.00	179.51	9,768.0	-652.2	909.5	627,425.82	756,158.68	32° 43' 22.394 N	103° 38' 5.303 W
10,800.0	90.00	179.51	9,768.0	-752.2	910.4	627,325.82	756,159.53	32° 43' 21.405 N	103° 38' 5.300 W
10,900.0	90.00	179.51	9,768.0	-852.2	911.2	627,225.83	756,160.38	32° 43' 20.415 N	103° 38' 5.298 W
11,000.0	90.00	179.51	9,768.0	-952.2	912.1	627,125.83	756,161.24	32° 43' 19.426 N	103° 38' 5.296 W
11,100.0	90.00	179.51	9,768.0	-1,052.2	912.9	627,025.83	756,162.09	32° 43' 18.436 N	103° 38' 5.294 W
11,200.0	90.00	179.51	9,768.0	-1,152.2	913.8	626,925.84	756,162.94	32° 43' 17.447 N	103° 38' 5.291 W
11,300.0	90.00	179.51	9,768.0	-1,252.2	914.6	626,825.84	756,163.79	32° 43' 16.457 N	103° 38' 5.289 W
11,400.0	90.00	179.51	9,768.0	-1,352.2	915.5	626,725.84	756,164.65	32° 43' 15.468 N	103° 38' 5.287 W
11,500.0	90.00	179.51	9,768.0	-1,452.2	916.4	626,625.85	756,165.50	32° 43' 14.478 N	103° 38' 5.285 W
11,600.0	90.00	179.51	9,768.0	-1,552.2	917.2	626,525.85	756,166.35	32° 43' 13.489 N	103° 38' 5.282 W
11,700.0	90.00	179.51	9,768.0	-1,652.2	918.1	626,425.85	756,167.20	32° 43' 12.499 N	103° 38' 5.280 W
11,800.0	90.00	179.51	9,768.0	-1,752.2	918.9	626,325.86	756,168.05	32° 43' 11.510 N	103° 38' 5.278 W
11,900.0	90.00	179.51	9,768.0	-1,852.2	919.8	626,225.86	756,168.91	32° 43' 10.521 N	103° 38' 5.275 W
12,000.0	90.00	179.51	9,768.0	-1,952.2	920.6	626,125.86	756,169.76	32° 43' 9.531 N	103° 38' 5.273 W
12,100.0	90.00	179.51	9,768.0	-2,052.2	921.5	626,025.87	756,170.61	32° 43' 8.542 N	103° 38' 5.271 W
12,200.0	90.00	179.51	9,768.0	-2,152.2	922.3	625,925.87	756,171.46	32° 43' 7.552 N	103° 38' 5.269 W
12,300.0	90.00	179.51	9,768.0	-2,252.2	923.2	625,825.88	756,172.32	32° 43' 6.563 N	103° 38' 5.266 W
12,400.0	90.00	179.51	9,768.0	-2,352.2	924.0	625,725.88	756,173.17	32° 43' 5.573 N	103° 38' 5.264 W
12,500.0	90.00	179.51	9,768.0	-2,452.2	924.9	625,625.88	756,174.02	32° 43' 4.584 N	103° 38' 5.262 W
12,600.0	90.00	179.51	9,768.0	-2,552.2	925.7	625,525.89	756,174.87	32° 43' 3.594 N	103° 38' 5.260 W
12,700.0	90.00	179.51	9,768.0	-2,652.2	926.6	625,425.89	756,175.73	32° 43' 2.605 N	103° 38' 5.257 W
12,800.0	90.00	179.51	9,768.0	-2,752.2	927.4	625,325.89	756,176.58	32° 43' 1.615 N	103° 38' 5.255 W
12,900.0	90.00	179.51	9,768.0	-2,852.2	928.3	625,225.90	756,177.43	32° 43' 0.626 N	103° 38' 5.253 W
13,000.0	90.00	179.51	9,768.0	-2,952.2	929.1	625,125.90	756,178.28	32° 42' 59.636 N	103° 38' 5.251 W
13,100.0	90.00	179.51	9,768.0	-3,052.1	930.0	625,025.90	756,179.14	32° 42' 58.647 N	103° 38' 5.248 W
13,200.0	90.00	179.51	9,768.0	-3,152.1	930.8	624,925.91	756,179.99	32° 42' 57.657 N	103° 38' 5.246 W
13,300.0	90.00	179.51	9,768.0	-3,252.1	931.7	624,825.91	756,180.84	32° 42' 56.668 N	103° 38' 5.244 W
13,400.0	90.00	179.51	9,768.0	-3,352.1	932.5	624,725.92	756,181.69	32° 42' 55.678 N	103° 38' 5.242 W
13,500.0	90.00	179.51	9,768.0	-3,452.1	933.4	624,625.92	756,182.55	32° 42' 54.689 N	103° 38' 5.239 W

Planning Report - Geographic

Database:	Compass_17	**Local Co-ordinate Reference:**	Well ENGLISH BUFFALO 26 35 FED COM 122H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3865.0usft
Project:	(SP) EDDY	**MD Reference:**	KB @ 3865.0usft
Site:	ENGLISH BUFFALO / MERCURY PROJECT	**North Reference:**	Grid
Well:	ENGLISH BUFFALO 26 35 FED COM 122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,600.0	90.00	179.51	9,768.0	-3,552.1	934.3	624,525.92	756,183.40	32° 42' 53.699 N	103° 38' 5.237 W
13,700.0	90.00	179.51	9,768.0	-3,652.1	935.1	624,425.93	756,184.25	32° 42' 52.710 N	103° 38' 5.235 W
13,800.0	90.00	179.51	9,768.0	-3,752.1	936.0	624,325.93	756,185.10	32° 42' 51.721 N	103° 38' 5.232 W
13,900.0	90.00	179.51	9,768.0	-3,852.1	936.8	624,225.93	756,185.96	32° 42' 50.731 N	103° 38' 5.230 W
14,000.0	90.00	179.51	9,768.0	-3,952.1	937.7	624,125.94	756,186.81	32° 42' 49.742 N	103° 38' 5.228 W
14,100.0	90.00	179.51	9,768.0	-4,052.1	938.5	624,025.94	756,187.66	32° 42' 48.752 N	103° 38' 5.226 W
14,200.0	90.00	179.51	9,768.0	-4,152.1	939.4	623,925.94	756,188.51	32° 42' 47.763 N	103° 38' 5.223 W
14,300.0	90.00	179.51	9,768.0	-4,252.1	940.2	623,825.95	756,189.37	32° 42' 46.773 N	103° 38' 5.221 W
14,400.0	90.00	179.51	9,768.0	-4,352.1	941.1	623,725.95	756,190.22	32° 42' 45.784 N	103° 38' 5.219 W
14,500.0	90.00	179.51	9,768.0	-4,452.1	941.9	623,625.96	756,191.07	32° 42' 44.794 N	103° 38' 5.217 W
14,600.0	90.00	179.51	9,768.0	-4,552.1	942.8	623,525.96	756,191.92	32° 42' 43.805 N	103° 38' 5.214 W
14,700.0	90.00	179.51	9,768.0	-4,652.1	943.6	623,425.96	756,192.77	32° 42' 42.815 N	103° 38' 5.212 W
14,800.0	90.00	179.51	9,768.0	-4,752.1	944.5	623,325.97	756,193.63	32° 42' 41.826 N	103° 38' 5.210 W
14,900.0	90.00	179.51	9,768.0	-4,852.1	945.3	623,225.97	756,194.48	32° 42' 40.836 N	103° 38' 5.208 W
15,000.0	90.00	179.51	9,768.0	-4,952.1	946.2	623,125.97	756,195.33	32° 42' 39.847 N	103° 38' 5.205 W
15,100.0	90.00	179.51	9,768.0	-5,052.1	947.0	623,025.98	756,196.18	32° 42' 38.857 N	103° 38' 5.203 W
15,200.0	90.00	179.51	9,768.0	-5,152.1	947.9	622,925.98	756,197.04	32° 42' 37.868 N	103° 38' 5.201 W
15,300.0	90.00	179.51	9,768.0	-5,252.1	948.7	622,825.98	756,197.89	32° 42' 36.878 N	103° 38' 5.198 W
15,400.0	90.00	179.51	9,768.0	-5,352.1	949.6	622,725.99	756,198.74	32° 42' 35.889 N	103° 38' 5.196 W
15,500.0	90.00	179.51	9,768.0	-5,452.1	950.4	622,625.99	756,199.59	32° 42' 34.899 N	103° 38' 5.194 W
15,600.0	90.00	179.51	9,768.0	-5,552.1	951.3	622,526.00	756,200.45	32° 42' 33.910 N	103° 38' 5.192 W
15,700.0	90.00	179.51	9,768.0	-5,652.1	952.2	622,426.00	756,201.30	32° 42' 32.920 N	103° 38' 5.189 W
15,800.0	90.00	179.51	9,768.0	-5,752.1	953.0	622,326.00	756,202.15	32° 42' 31.931 N	103° 38' 5.187 W
15,900.0	90.00	179.51	9,768.0	-5,852.0	953.9	622,226.01	756,203.00	32° 42' 30.942 N	103° 38' 5.185 W
16,000.0	90.00	179.51	9,768.0	-5,952.0	954.7	622,126.01	756,203.86	32° 42' 29.952 N	103° 38' 5.183 W
16,100.0	90.00	179.51	9,768.0	-6,052.0	955.6	622,026.01	756,204.71	32° 42' 28.963 N	103° 38' 5.180 W
16,200.0	90.00	179.51	9,768.0	-6,152.0	956.4	621,926.02	756,205.56	32° 42' 27.973 N	103° 38' 5.178 W
16,300.0	90.00	179.51	9,768.0	-6,252.0	957.3	621,826.02	756,206.41	32° 42' 26.984 N	103° 38' 5.176 W
16,400.0	90.00	179.51	9,768.0	-6,352.0	958.1	621,726.02	756,207.27	32° 42' 25.994 N	103° 38' 5.174 W
16,500.0	90.00	179.51	9,768.0	-6,452.0	959.0	621,626.03	756,208.12	32° 42' 25.005 N	103° 38' 5.171 W
16,600.0	90.00	179.51	9,768.0	-6,552.0	959.8	621,526.03	756,208.97	32° 42' 24.015 N	103° 38' 5.169 W
16,700.0	90.00	179.51	9,768.0	-6,652.0	960.7	621,426.04	756,209.82	32° 42' 23.026 N	103° 38' 5.167 W
16,800.0	90.00	179.51	9,768.0	-6,752.0	961.5	621,326.04	756,210.68	32° 42' 22.036 N	103° 38' 5.165 W
16,900.0	90.00	179.51	9,768.0	-6,852.0	962.4	621,226.04	756,211.53	32° 42' 21.047 N	103° 38' 5.162 W
17,000.0	90.00	179.51	9,768.0	-6,952.0	963.2	621,126.05	756,212.38	32° 42' 20.057 N	103° 38' 5.160 W
17,100.0	90.00	179.51	9,768.0	-7,052.0	964.1	621,026.05	756,213.23	32° 42' 19.068 N	103° 38' 5.158 W
17,200.0	90.00	179.51	9,768.0	-7,152.0	964.9	620,926.05	756,214.09	32° 42' 18.078 N	103° 38' 5.155 W
17,300.0	90.00	179.51	9,768.0	-7,252.0	965.8	620,826.06	756,214.94	32° 42' 17.089 N	103° 38' 5.153 W
17,400.0	90.00	179.51	9,768.0	-7,352.0	966.6	620,726.06	756,215.79	32° 42' 16.099 N	103° 38' 5.151 W
17,500.0	90.00	179.51	9,768.0	-7,452.0	967.5	620,626.06	756,216.64	32° 42' 15.110 N	103° 38' 5.149 W
17,600.0	90.00	179.51	9,768.0	-7,552.0	968.3	620,526.07	756,217.49	32° 42' 14.120 N	103° 38' 5.146 W
17,700.0	90.00	179.51	9,768.0	-7,652.0	969.2	620,426.07	756,218.35	32° 42' 13.131 N	103° 38' 5.144 W
17,800.0	90.00	179.51	9,768.0	-7,752.0	970.1	620,326.08	756,219.20	32° 42' 12.141 N	103° 38' 5.142 W
17,900.0	90.00	179.51	9,768.0	-7,852.0	970.9	620,226.08	756,220.05	32° 42' 11.152 N	103° 38' 5.140 W
18,000.0	90.00	179.51	9,768.0	-7,952.0	971.8	620,126.08	756,220.90	32° 42' 10.163 N	103° 38' 5.137 W
18,100.0	90.00	179.51	9,768.0	-8,052.0	972.6	620,026.09	756,221.76	32° 42' 9.173 N	103° 38' 5.135 W
18,200.0	90.00	179.51	9,768.0	-8,152.0	973.5	619,926.09	756,222.61	32° 42' 8.184 N	103° 38' 5.133 W
18,300.0	90.00	179.51	9,768.0	-8,252.0	974.3	619,826.09	756,223.46	32° 42' 7.194 N	103° 38' 5.131 W
18,400.0	90.00	179.51	9,768.0	-8,352.0	975.2	619,726.10	756,224.31	32° 42' 6.205 N	103° 38' 5.128 W
18,500.0	90.00	179.51	9,768.0	-8,452.0	976.0	619,626.10	756,225.17	32° 42' 5.215 N	103° 38' 5.126 W
18,600.0	90.00	179.51	9,768.0	-8,551.9	976.9	619,526.10	756,226.02	32° 42' 4.226 N	103° 38' 5.124 W
18,700.0	90.00	179.51	9,768.0	-8,651.9	977.7	619,426.11	756,226.87	32° 42' 3.236 N	103° 38' 5.121 W
18,800.0	90.00	179.51	9,768.0	-8,751.9	978.6	619,326.11	756,227.72	32° 42' 2.247 N	103° 38' 5.119 W
18,900.0	90.00	179.51	9,768.0	-8,851.9	979.4	619,226.12	756,228.58	32° 42' 1.257 N	103° 38' 5.117 W

Planning Report - Geographic

Database:	Compass_17	**Local Co-ordinate Reference:**	Well ENGLISH BUFFALO 26 35 FED COM 122H
Company:	NEW MEXICO	**TVD Reference:**	KB @ 3865.0usft
Project:	(SP) EDDY	**MD Reference:**	KB @ 3865.0usft
Site:	ENGLISH BUFFALO / MERCURY PROJECT	**North Reference:**	Grid
Well:	ENGLISH BUFFALO 26 35 FED COM 122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,000.0	90.00	179.51	9,768.0	-8,951.9	980.3	619,126.12	756,229.43	32° 42' 0.268 N	103° 38' 5.115 W
19,100.0	90.00	179.51	9,768.0	-9,051.9	981.1	619,026.12	756,230.28	32° 41' 59.278 N	103° 38' 5.112 W
19,200.0	90.00	179.51	9,768.0	-9,151.9	982.0	618,926.13	756,231.13	32° 41' 58.289 N	103° 38' 5.110 W
19,300.0	90.00	179.51	9,768.0	-9,251.9	982.8	618,826.13	756,231.99	32° 41' 57.299 N	103° 38' 5.108 W
19,400.0	90.00	179.51	9,768.0	-9,351.9	983.7	618,726.13	756,232.84	32° 41' 56.310 N	103° 38' 5.106 W
19,500.0	90.00	179.51	9,768.0	-9,451.9	984.5	618,626.14	756,233.69	32° 41' 55.320 N	103° 38' 5.103 W
19,600.0	90.00	179.51	9,768.0	-9,551.9	985.4	618,526.14	756,234.54	32° 41' 54.331 N	103° 38' 5.101 W
19,700.0	90.00	179.51	9,768.0	-9,651.9	986.2	618,426.14	756,235.40	32° 41' 53.341 N	103° 38' 5.099 W
19,800.0	90.00	179.51	9,768.0	-9,751.9	987.1	618,326.15	756,236.25	32° 41' 52.352 N	103° 38' 5.097 W
19,900.0	90.00	179.51	9,768.0	-9,851.9	988.0	618,226.15	756,237.10	32° 41' 51.362 N	103° 38' 5.094 W
20,000.0	90.00	179.51	9,768.0	-9,951.9	988.8	618,126.16	756,237.95	32° 41' 50.373 N	103° 38' 5.092 W
20,069.7	90.00	179.51	9,768.0	-10,021.6	989.4	618,056.44	756,238.55	32° 41' 49.683 N	103° 38' 5.090 W

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-ENG BUFF 122H - plan misses target center by 163.4usft at 9791.5usft MD (9646.9 TVD, 226.3 N, 902.0 E) - Point	0.00	0.00	9,768.0	336.1	900.7	628,414.11	756,149.83	32° 43' 32.174 N	103° 38' 5.330 W
BHL-ENG BUFF 122H - plan hits target center - Point	0.00	0.00	9,768.0	-10,021.6	989.4	618,056.44	756,238.55	32° 41' 49.683 N	103° 38' 5.090 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,000.0	1,000.0	0.0	0.0	Start Build 2.00
1,600.0	1,595.6	24.7	57.5	Start 4111.1 hold at 1600.0 MD
5,711.1	5,616.9	361.4	843.1	Start Drop -2.00
6,311.1	6,212.5	386.1	900.7	Start 3078.0 hold at 6311.1 MD
9,389.1	9,290.5	386.1	900.7	Start DLS 12.00 TFO 179.51
10,139.1	9,768.0	-91.3	904.7	Start 9930.6 hold at 10139.1 MD
12,252.0	9,768.0	-2,204.2	922.8	NMNM 026692 Entry at 12252.0 MD
14,891.0	9,768.0	-4,843.1	945.3	NMNM 0001177A Entry at 14891.0 MD
20,069.7	9,768.0	-10,021.6	989.4	TD at 20069.7

Permian Resources - English Buffalo 26 35 Fed Com 122H

1. Geologic Formations

Formation	Elevation	TVD	Lithology	Target
Rustler	-2259	1606	Sandstone	No
Top of Salt	-1966	1899	Salt	No
Tansill	NP	NP	Anhydrite/Shale	No
Yates	-765	3100	Anhydrite/Shale	No
Seven Rivers	-26	3839	Limestone	No
Queen	376	4241	Limestone	No
Grayburg	NP	NP	Limestone	No
San Andres	NP	NP	Limestone	No
Cherry Canyon	1686	5551	Sandstone	No
Brushy Canyon	2201	6066	Sandstone	No
Bone Spring Lime	3592	7457	Limestone/Shale	No
1st Bone Spring Sand	4845	8710	Sandstone/Limestone/Shale	No
2nd Bone Spring Sand	5472	9337	Sandstone/Limestone/Shale	Yes
3rd Bone Spring Sand	NP	NP	Sandstone/Limestone/Shale	No
Wolfcamp	NP	NP	Shale	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 will meet all requirements for above listed system per 43 CFR 3172. BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The system may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all of the components installed will be functional, tested, and will meet all requirements per 43 CFR 3172. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing of the surface x intermedicate annulus without breaking the connection between the BOP & wellhead. A variance is requested to utilize a flexible choke line (flexhose) from the BOP to choke manifold.

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

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

3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	1631	0	1631	1631	J55	54.5	BTC	1.40	1.45	Dry	4.81	Dry	4.52
Intermediate	12.25	9.625	0	5501	0	5501	5501	J55	36	BTC	2.34	1.48	Dry	2.14	Dry	1.89
Production	8.75	5.5	0	10139	0	9768	10139	P110RY	20	GeoConn	1.47	1.54	Dry	1.85	Dry	1.85
Production	8.5	5.5	10139	20069	9768	9768	9930	P110RY	20	GeoConn	1.47	1.54	Dry	1.85	Dry	1.85
								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	1631	1270	1.34	14.8	1700	50%	Class C	Accelerator
Intermediate	Lead	0	4400	920	2.08	12.7	1900	50%	Class C	Salt, Extender, and LCM
Intermediate	Tail	4400	5501	390	1.34	14.8	520	50%	Class C	Accelerator
Production	Lead	5001	9389	630	2.41	11.5	1510	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	9389	20069	1790	1.73	12.5	3090	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

Cuttings Volume: 11750 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	1631	Spud Mud	8.6	9.5
1631	5501	Salt Saturated	10	10
5501	19038	Oil Based Mud	9	10

6. Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:
Will utilize MWD/LWD from intermediate hole to TD of the well.
List of open and cased hole logs run in the well:
DIRECTIONAL SURVEY
Coring operation description for the well:

7. Pressure

Anticipated Bottom Hole Pressure	5080	psi
Anticipated Surface Pressure	2930.4	psi
Anticipated Bottom Hole Temperature	153	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

Metal One Corp.

Metal One

GEOCONN-SC

Pipe Body: SeAH P110RY(SMYS110ksi) & 95%RBW *1

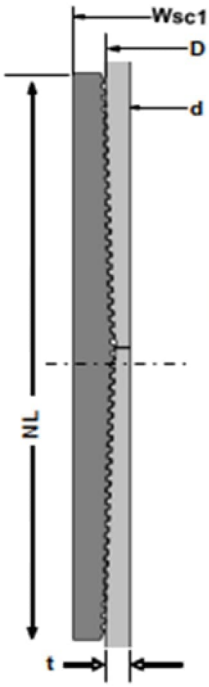
Coupling: P110CY (SMYS110ksi)

Connection Data Sheet

Page	MAI GC 5.5 20 SeAH PRY 95%RW
	SC-CplgOD 6.050 P110CY
Date	29-Sep-21
Rev.	0

Geometry

GEOCONN-SC



Pipe Body	Imperial		S.I.	
Grade *1	SeAH P110RY	-	SeAH P110RY	
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	20.00	lb/ft	29.80	kg/m
Wall Thickness (t)	0.361	in	9.17	mm
Pipe ID (d)	4.778	in	121.36	mm
Drift Dia.	4.653	in	118.19	mm

Connection				
Coupling SMYS	110	ksi	110	ksi
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	5.83	in^2	3,760	mm^2
Box Critical Area	6.00	in^2	3,874	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.	641	kips	2,852	kN
M.I.Y.P. *1	13,720	psi	94.62	MPa
Collapse Strength	11,100	psi	76.55	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body

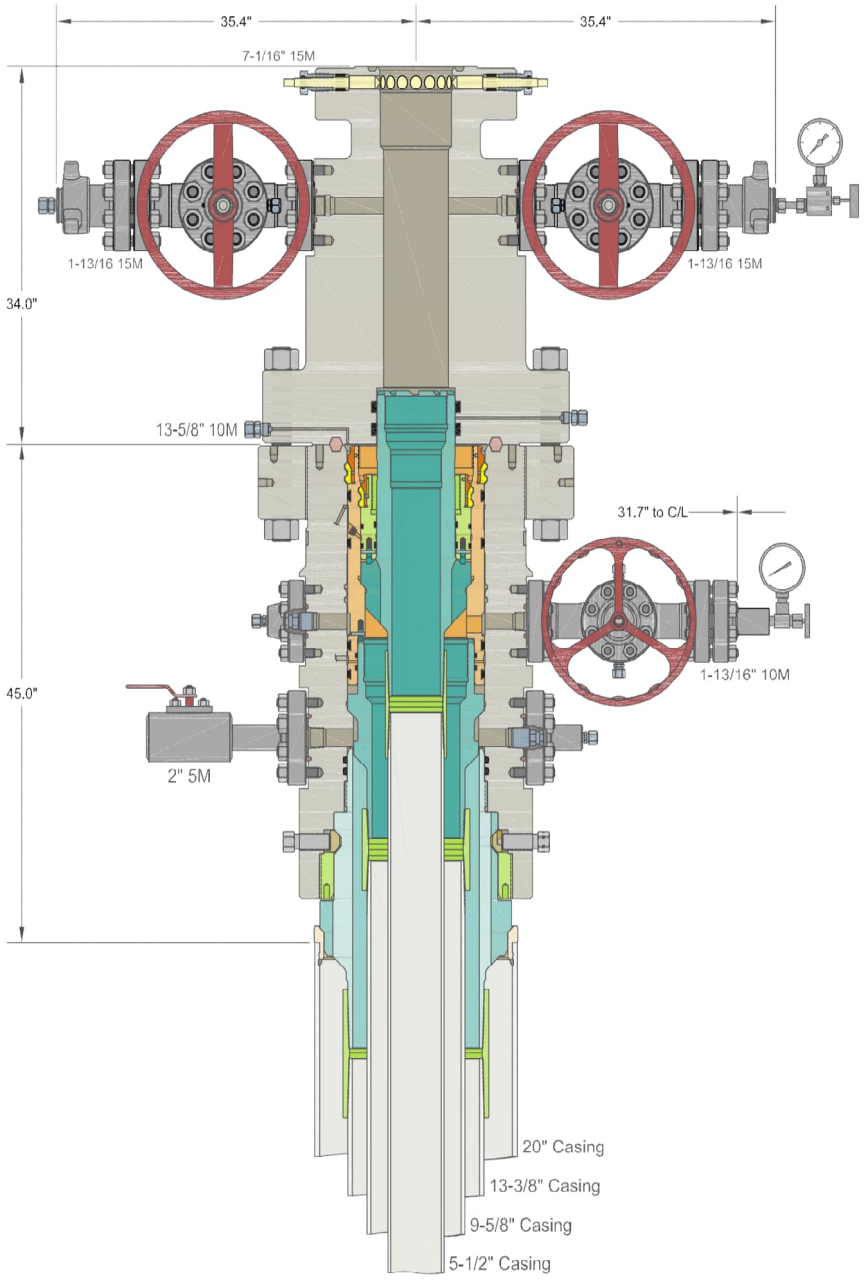
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1 Pipe: SeAH P110RY (SMYS110ksi), Min Wall Thickness of Pipe Body: 95% of Nom wall

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.	14,600	ft-lb	19,700	N-m
Opti.	16,200	ft-lb	21,900	N-m
Max.	17,800	ft-lb	24,100	N-m
Operational Max.	19,500	ft-lb	26,400	N-m

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



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	

BLACK GOLD®

GATES ENGINEERING & SERVICES NORTH AMERICA
7603 Prairie Oak Dr.
Houston, TX. 77086

PHONE: +1 (281) 602-4100
FAX: +1 (281) 602-4147
EMAIL: gesna.quality@gates.com
WEB: www.gates.com/oilandgas

CERTIFICATE OF CONFORMANCE

This is to verify that the items detailed below meet the requirements of the Customer's Purchase Order referenced herein, and are in Conformance with applicable specifications, and that Records of Required Tests are on file and subject to examination. The following items were inspected and hydrostatically tested at **Gates Engineering & Services North America** facilities in Houston, TX, USA.

CUSTOMER:	HELMERICH & PAYNE INTERNATIONAL DRILLING CO.
CUSTOMER P.O.#:	740414061 (SN: 62429 - 88061537)
CUSTOMER P/N:	SN: 62429 - 88061537
PART DESCRIPTION:	INSPECT AND RETEST CUSTOMER HOSE 3IN X 16FT CHOKE & KILL ASSEMBLY C/W 3-1/16 FLANGES BX154 SS INLAID RING GROOVE EACH END
SALES ORDER #:	525826
QUANTITY:	1
SERIAL #:	62429 H3-012523-17

SIGNATURE: F. Cisneros-

TITLE: QUALITY ASSURANCE

DATE: 1/26/2023

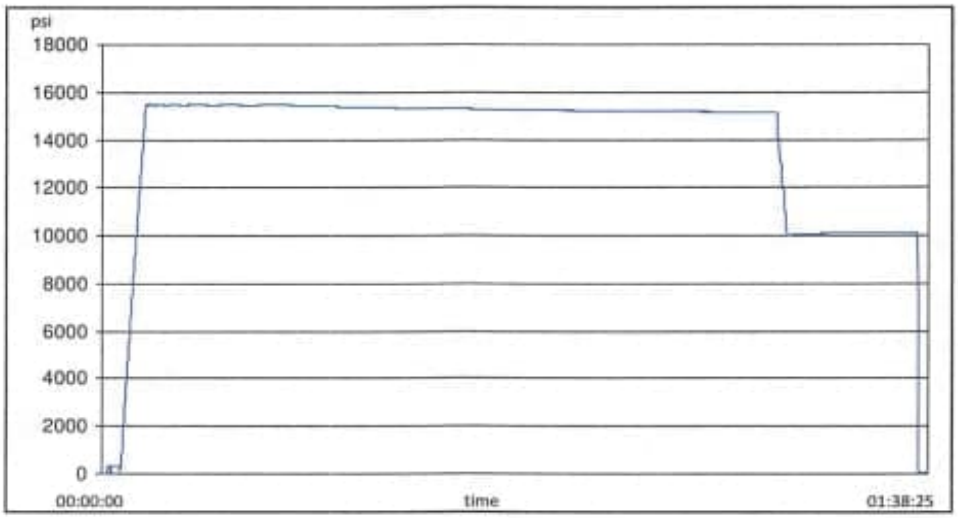
H3-12183

1/25/2023 2:59:32 PM

TEST REPORT

CUSTOMER		**TEST OBJECT**	
Company:	HELMERICH & PAYNE INTERNATIONAL DRILLING CO.	Serial number:	H3-012523-17
		Lot number:	
Production description:	SN62429	Description:	SN62429

Sales order #:	525826				
Customer reference:			Hose ID:	3.0 CK03 16C 10K	
			Part number:		
TEST INFORMATION					
Test procedure:	GTS-04-053		Fitting 1:	3.0 x 3-1/16 10K	
Test pressure:	15000.00	psi	Part number:		
Test pressure hold:	3600.00	sec	Description:		
Work pressure:	10000.00	psi			
Work pressure hold:	900.00	sec	Fitting 2:	3.0 x 3-1/16 10K	
Length difference:	0.00	%	Part number:		
Length difference:	0.00	inch	Description:		
Visual check:			Length:	16	feet
Pressure test result:	PASS				
Length measurement result:					
Test operator:	Martin				



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TEST REPORT

GAUGE TRACEABILITY

Description	Serial number	Calibration date	Calibration due date
S-25-A-W	110AQA1S	2022-03-09	2023-03-09
S-25-A-W	110CBWVV	2022-03-09	2023-03-09

Comment

Continental

ContiTech

CONTITECH RUBBER Industrial Kft.	No: QC-DB-062 / 2022
	Page: 16 / 131

TEST CERTIFICATE according to EN 10204 3.1 and Supplier's Declaration of Conformity acc. to ISO/IEC 17050-1				CERT. N°: 81142	
CUSTOMER:	ContiTech Oil & Marine Corp.			C.O. N°:	4501624407
Supplier's name:	Contitech Rubber Industrial Kft.		Supplier's address:	Budapesti út 10. H-6728 Szeged	
CONTITECH ORDER N°:	1386035	HOSE TYPE:	3" ID	Choke & Kill Hose	
HOSE SERIAL N°:	81142	NOMINAL / ACTUAL LENGTH:		7,92 m / 7,90 m	
W.P. 69,0 MPa	10000 psi	T.P. 103,5 MPa	15000 psi	Duration:	60 min.

Pressure test with water at ambient temperature

See attachment (1 page)

COUPLINGS Type	Serial N°	Quality	Heat N°
3" coupling with	4411	AISI 4130	68655
3 1/16" 10K API b.w. Flange end		AISI 4130	043795
3" coupling with	4428	AISI 4130	68626
3 1/16" 10K API Swivel Flange end		AISI 4130	041743
Hub		AISI 4130	54538

Not Designed For Well Testing **API Spec 16C 3rd Edition – FSL3**

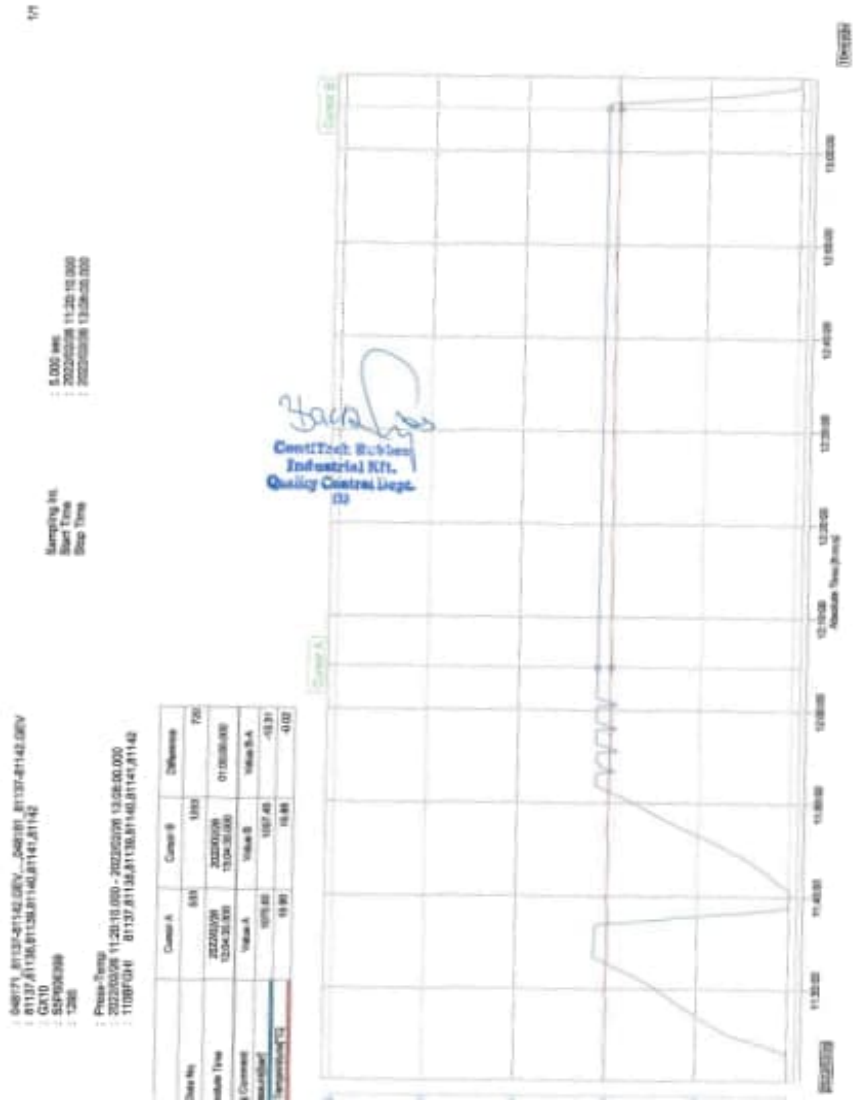
Fire Rated	Temperature rate: "B"
All metal parts are flawless	
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.	
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Customer Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, other technical standards and specifications and meet the relevant acceptance criteria and design requirements. This declaration of conformity is issued under the sole responsibility of the manufacturer.	
COUNTRY OF ORIGIN HUNGARY/EU	

Date:	Inspector	Quality Control
28. February 2022.		ContiTech Rubber Industrial Kft. Quality Control Dept. (1)
		István Farkas — Lajos Bacsa

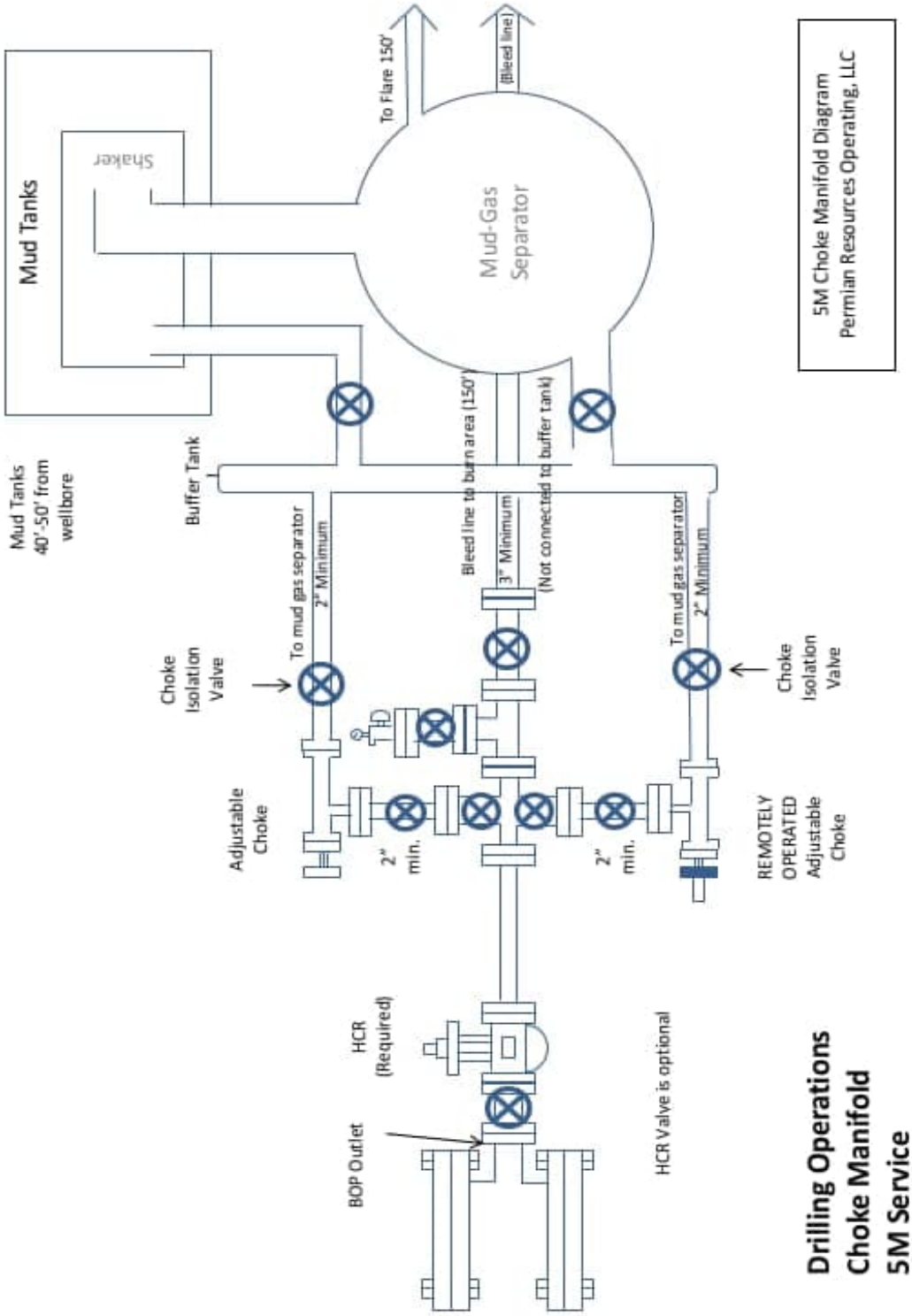
ContiTech Rubber Industrial Kft. | Budapest út 10. H-6728 Szeged | H-6701 P.O.Box 152 Szeged, Hungary
Phone: +36 (0) 552 2075 | e-mail: info@fluid.contitech.hu | Internet: www.contitech-rubber.hu; www.contitech-oil-gas.com
The Court of Csongrád County as Registry Court | Registry Court No: Cg.06-09-002502 | EU VAT No: HU11087205
Bank data Commerzbank Zrt., Budapest | 14201106-28833003

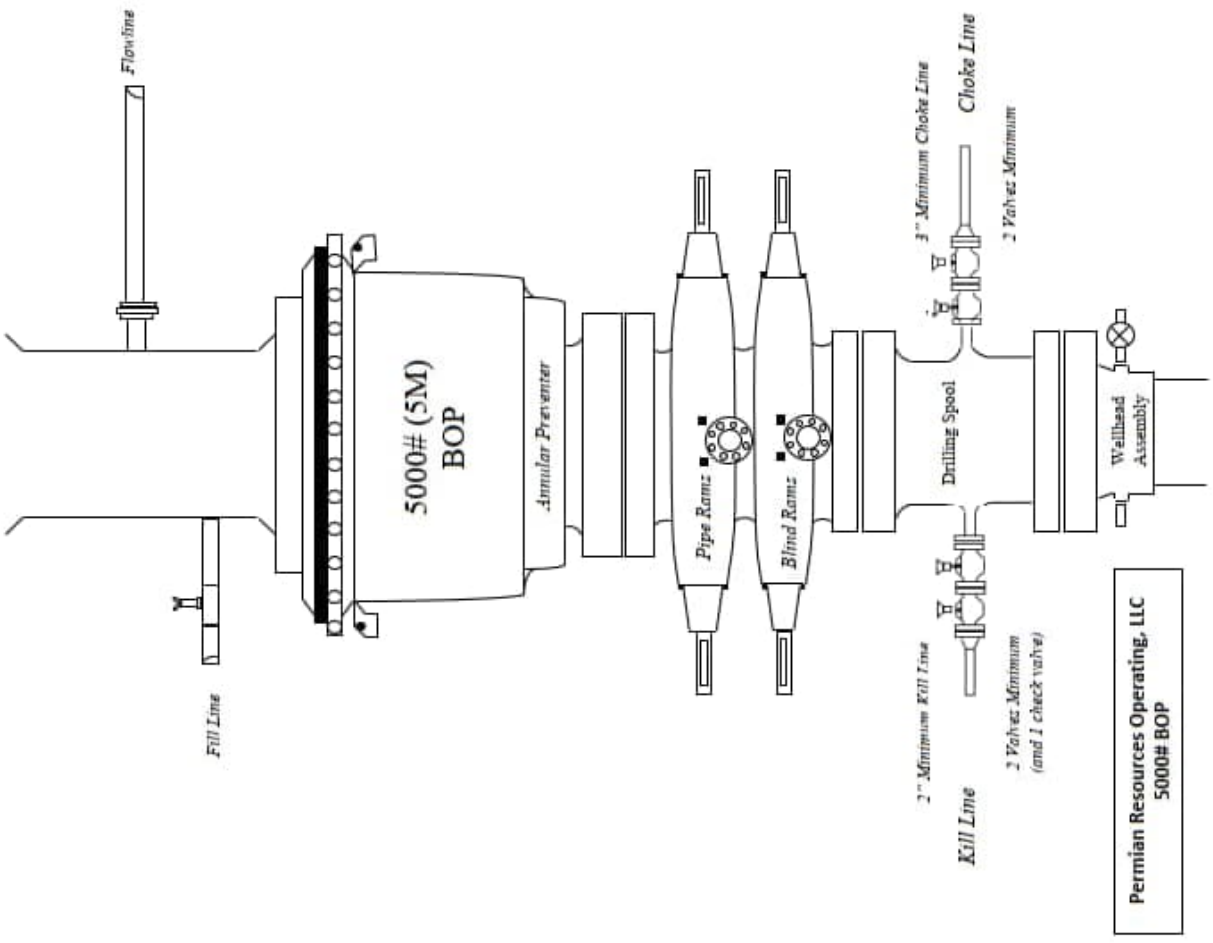
ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 81137, 81138, 81139, 81140, 81141, 81142

CONTITECH RUBBER Industrial Kft.	No: QC-DB-062 / 2022
	Page: 17 / 131




File Name
File Message
Device Type
Serial No.
Data Count
Print Group
Print Range
Comment


Mud Tanks
Shaker
Mud-Gas Separator
To Flare 150'
(Bleed line)
5M Choke Manifold Diagram
Permian Resources Operating, LLC
Mud Tanks 40'-50' from wellbore
Buffer Tank
To mud gas separator
2" Minimum
Bleed line to burn area (150')
3" Minimum
(Not connected to buffer tank)
To mud gas separator
2" Minimum
Choke Isolation Valve
Choke Isolation Valve
Adjustable Choke
2" min.
2" min.
REMOTELY OPERATED Adjustable Choke
HCR (Required)
BOP Outlet
HCR Valve is optional
Drilling Operations
Choke Manifold
5M Service


Flowline
Fill Line
5000# (5M)
BOP
Annular Preventer
Pipe Rams
Blind Rams
Drilling Spool
3" Minimum Choke Line
Choke Line
2 Valves Minimum
Wellhead
Assembly
3" Minimum Kill Line
Kill Line
2 Valves Minimum
(and 1 check valve)
Permian Resources Operating, LLC
5000# BOP

Permian Resources
BOP Break Testing Variance Procedure

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE). Permian Resources requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

Background

Title 43 CFR 3172, Drilling Operations, Sections 6.b.9.iv states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the
affected component. 43 CFR 3172.13, Variances from minimum standards states, "An operator may request the authorized officer to approve a variance from any of the minimum standards prescribed in §§ 3172.6 through 3172.12. All such requests shall be submitted in writing to the appropriate authorized officer and provide information as to the circumstances which warrant approval of the variance(s) requested and the proposed alternative methods by which the related minimum standard(s) are to be satisfied. The authorized officer, after considering all relevant factors, if appropriate, may approve the requested variance(s) if it is determined that the proposed alternative(s) meet or exceed the objectives of the applicable minimum standard(s).". Permian Resources feels the break testing the BOPE is such a situation. Therefore, as per 43 CFR 3172.13, Permian Resources submits this request for the variance.

Supporting Documentation

The language used in 43 CFR 3172 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time, there have been significant changes in drilling technology. The BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since 43 CFR 3172 was originally released. The Permian Resources drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

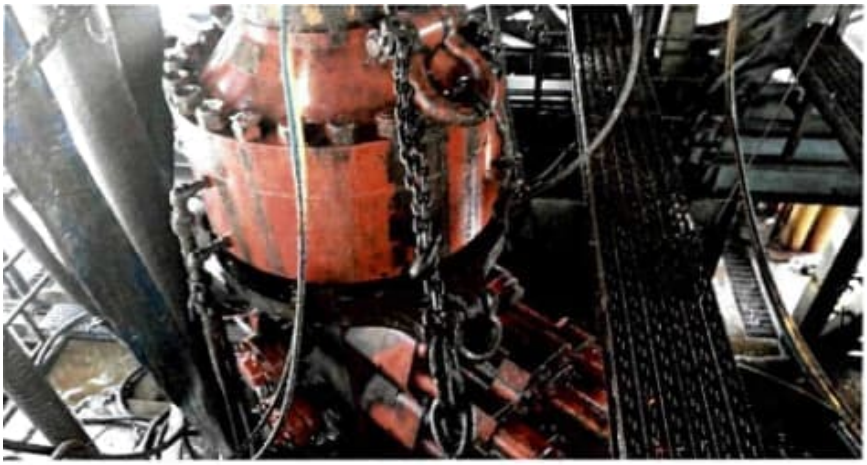


Figure 2: BOP Winch System

American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. 43 CFR 3172 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component." See Table C.4 below for reference.

62 API STANDARD 53

Table C.4—Initial Pressure Testing, Surface BOP Stacks

Component to be Pressure Tested	Pressure Test—Low Pressure[a,c] psig (MPa)	Pressure Test—High Pressure[a,c]	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer[b]	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers[a,c]	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes[e]	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes[e]	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	

[a] Pressure test evaluation periods shall be a minimum of five minutes.
No visible leaks.
The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure.

[b] Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

[c] For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

[d] For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually.

[e] Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

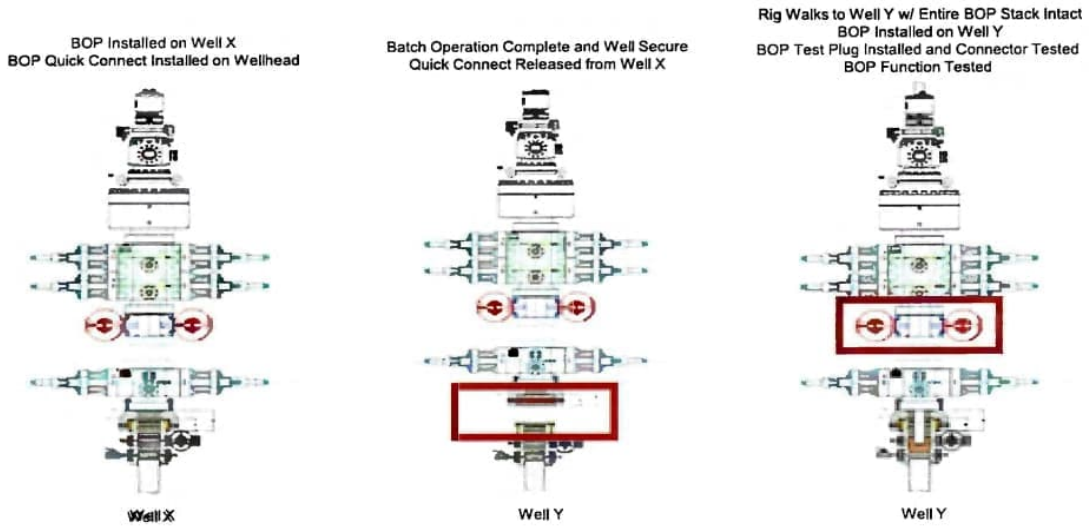
Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

Permian Resources feels break testing and our current procedures meet the intent of 43 CFR 3172 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. Permian Resources internal standards require complete BOPE tests more often than that of 43 CFR 3172 (every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, Permian Resources performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of 43 CFR 3172.

Procedures

1) Permian Resources will use this document for our break testing plan for New Mexico Delaware Basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
2) Permian Resources will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
   a)A full BOP test will be conducted on the first well on the pad.
   b)The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same formation depth or shallower.
   c) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
   d) A full BOP test will be required prior to drilling any production hole.
3) After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
   a) Between the HCV valve and choke line connection
   b)Between the BOP quick connect and the wellhead
4) The BOP is then lifted and removed from the wellhead by a hydraulic system.
5) After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
6) The connections mentioned in 3a and 3b will then be reconnected.
7) Install test plug into the wellhead using test joint or drill pipe.
8) A shell test is performed against the upper pipe rams testing the two breaks.
9) The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
10) Function tests will be performed on the following components: lower pipe rams, blind rams, and annular.
11) For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
12) A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

Note: Picture below highlights BOP components that will be tested during batch operations



Summary

A variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operations, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control
event occurs prior to the commencement of a BOPE Break Testing operation.

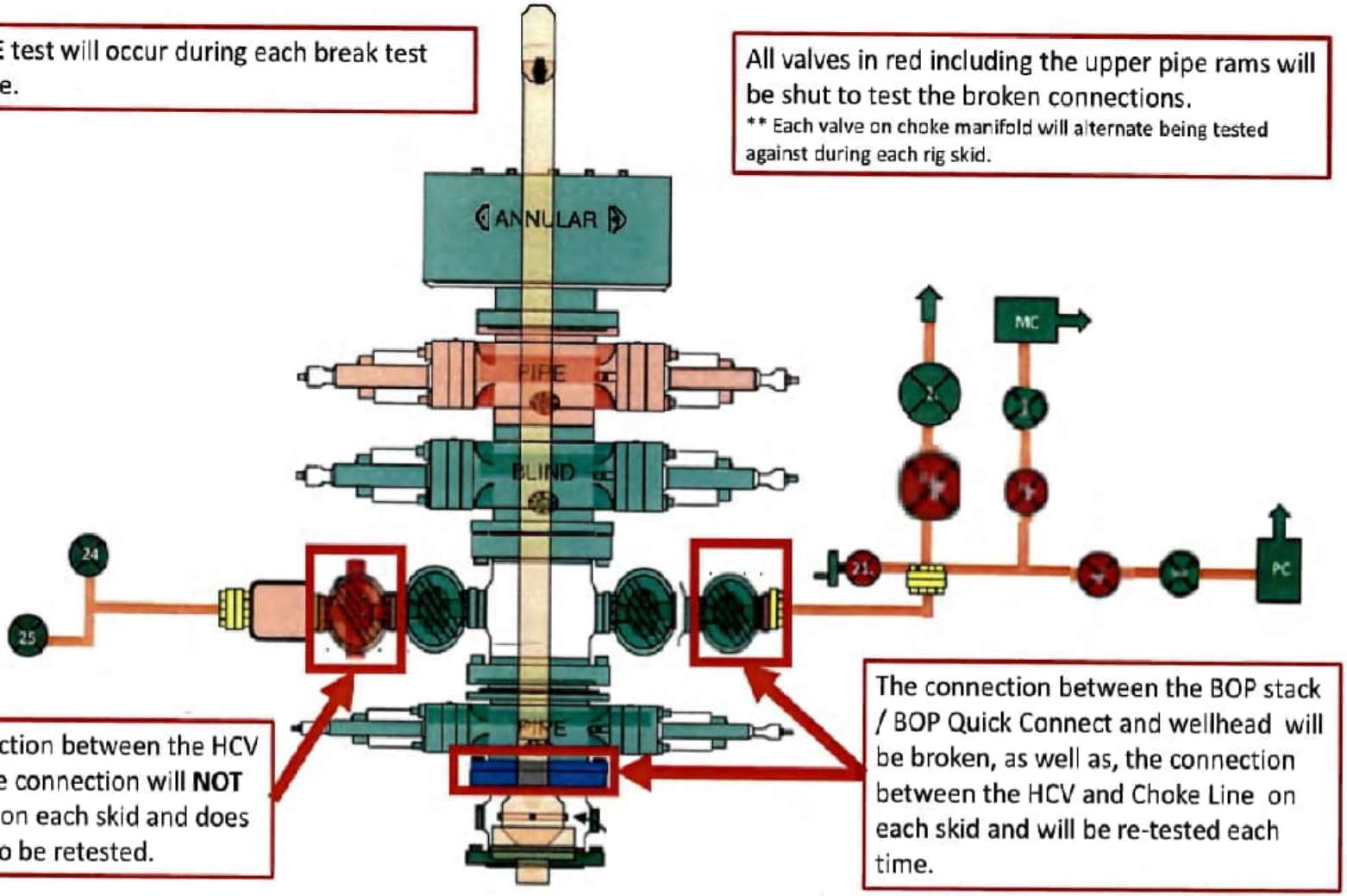
Based on public data and the supporting documentation submitted herein to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

1) After a full BOP test is conducted on the first well on the pad.
2) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same depth or shallower.
3) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
4) A full BOP test will be required prior to drilling the production hole.

Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.

** Each valve on choke manifold will alternate being tested against during each rig skid.



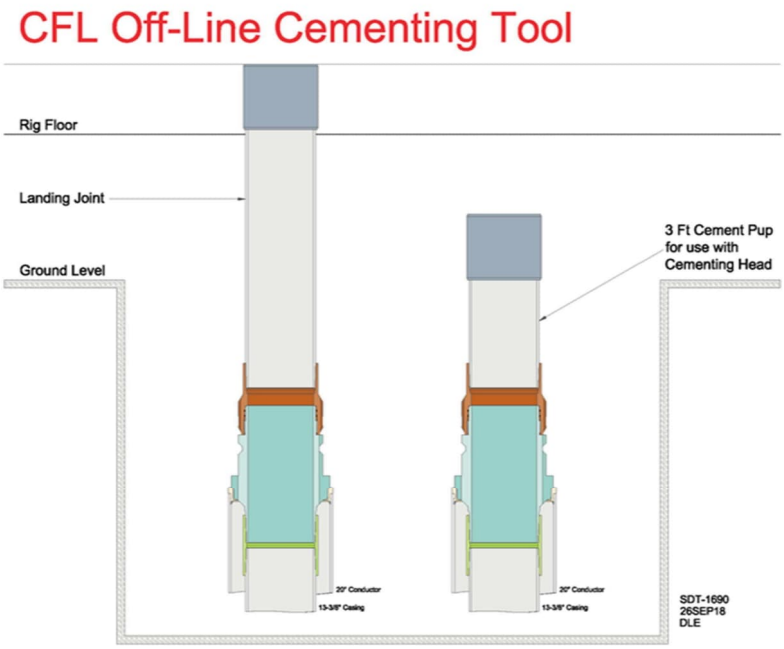
The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.

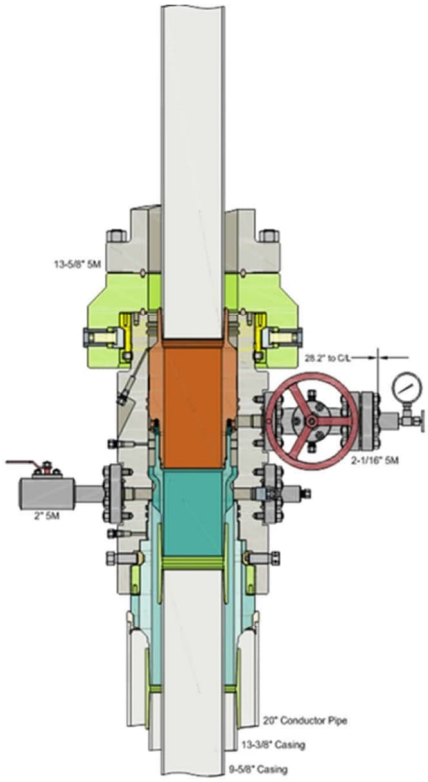
Permian Resources Offline Cementing Procedure
13-3/8" & 9-5/8" Casing

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.

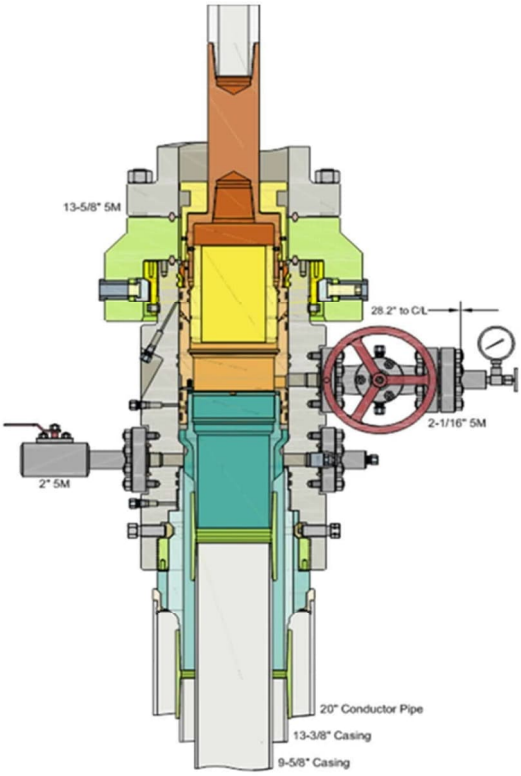
13 3/8" Surface



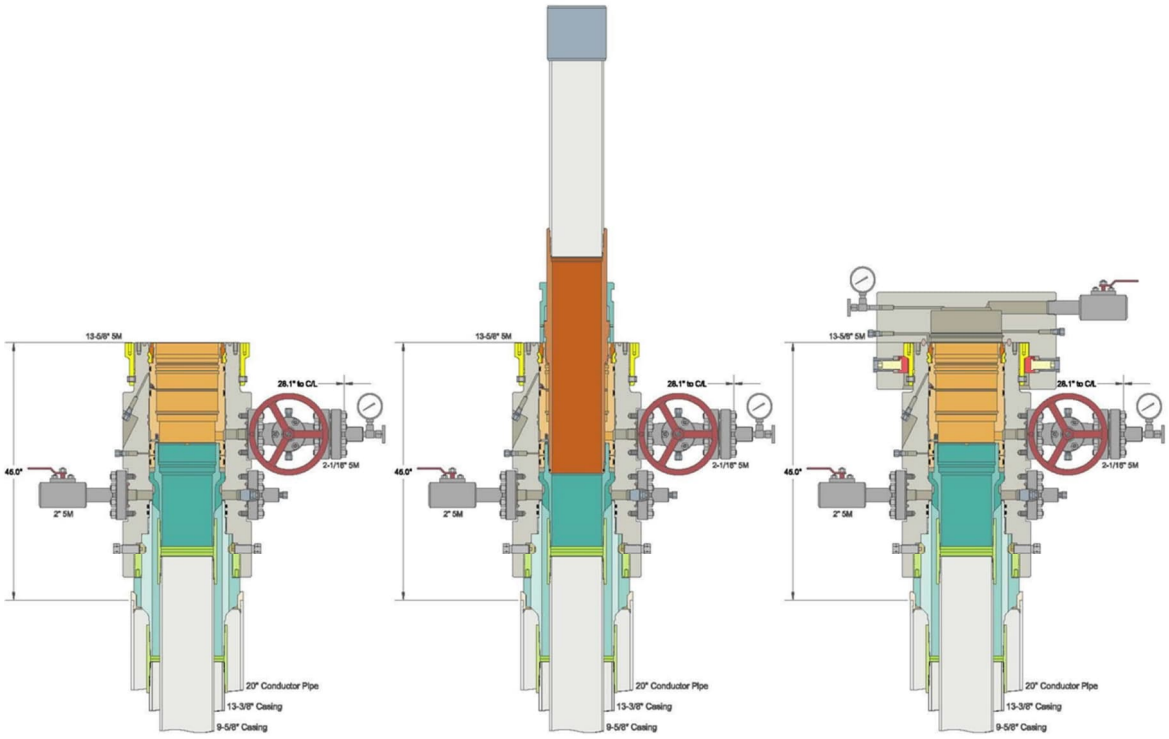
9 5/8" Intermediate



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



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

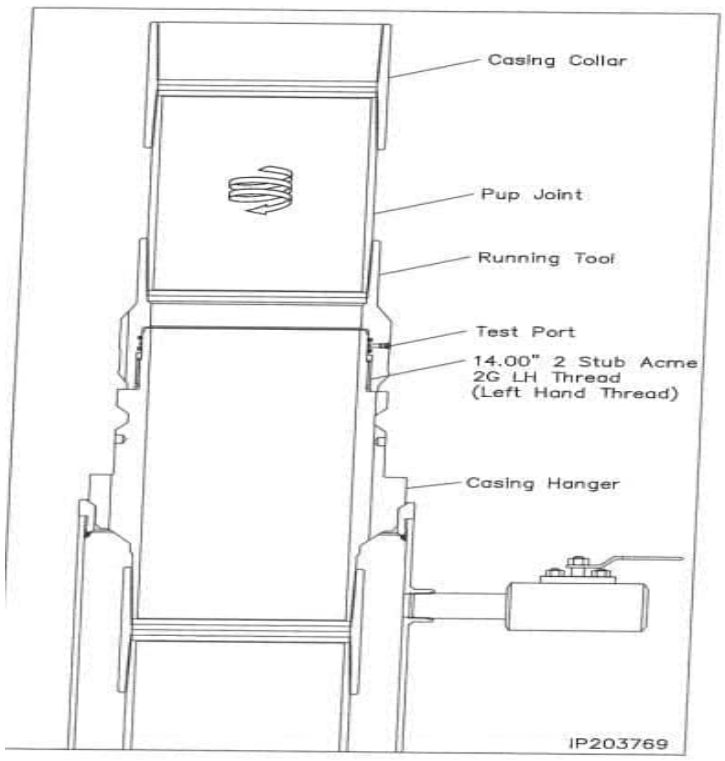


Illustration 1-1

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.

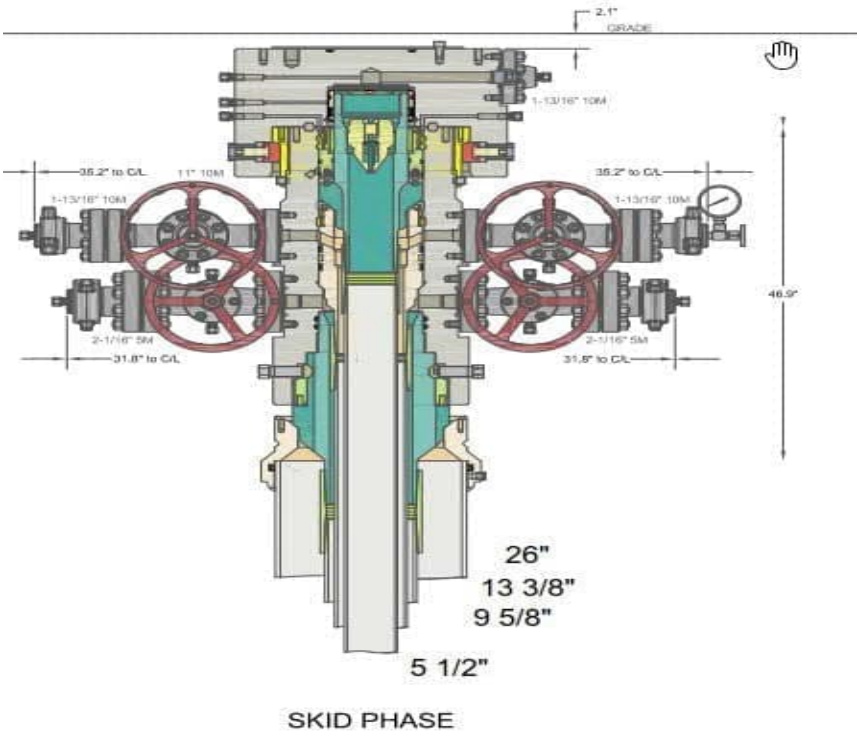


Illustration 2-2

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

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

Action 406313

CONDITIONS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 406313
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	If cement is not circulated to surface during cementing operations, a Cement Bond Log (CBL) is required.	1/15/2025
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing.	1/15/2025