

<b>Well Name:</b> CORRAL GORGE 12-13 FEDERAL COM	<b>Well Location:</b> T25S / R29E / SEC 12 / NENW / 32.150497 / -103.94007	<b>County or Parish/State:</b> EDDY / NM
<b>Well Number:</b> 72H	<b>Type of Well:</b> OIL WELL	<b>Allottee or Tribe Name:</b>
<b>Lease Number:</b> NMNM15303	<b>Unit or CA Name:</b>	<b>Unit or CA Number:</b>
<b>US Well Number:</b> 3001547187	<b>Well Status:</b> Unapproved Application for Permit to Drill	<b>Operator:</b> OXY USA INCORPORATED

Notice of Intent

**Sundry ID:** 2765073

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 12/07/2023

**Time Sundry Submitted:** 02:13

**Date proposed operation will begin:** 08/08/2024

**Procedure Description:** PLEASE SEE ATTACHED OXY APD CHANGE SUNDRY LIST THAT HIGHLIGHTS CHANGES AND ATTACHMENTS. GENERAL CHANGE DOCUMENTS ARE COMBINED INTO 1 PDF FILE AND WELL SPECIFIC DOCUMENTS ARE INDIVIDUAL ATTACHMENTS. SHL moving by 109' to the south 54' to the west and there is no additional surface disturbance related to this sundry.

NOI Attachments

Procedure Description

- OXY\_APD\_CHANGE\_SUNDRY\_LIST\_72H\_20231211072825.pdf
- I10818WEL01NM\_CORRAL\_GORGE\_12\_13\_FED\_COM\_72H\_SITE\_PLAN\_20231207141259.pdf
- GENERAL\_ATTACHEMENTS\_20231207141254.pdf
- I10818WEL00NM\_CORRAL\_GORGE\_12\_13\_FED\_COM\_72H\_C\_102\_20231207141253.pdf
- CorralGorge12\_13FedCom72H\_DirectPlan\_20231207141252.pdf
- CorralGorge12\_13FedCom72H\_DrillPlan\_20231207141252.pdf
- CorralGorge12\_13FedCom72H\_TNSWedge461\_5.500in\_20.00ppf\_P110CY\_20231207141252.pdf
- CorralGorge12\_13FedCom72H\_TNSWedge463\_7.827in\_39.30ppf\_P110S\_20231207141252.pdf

Received by OCD: 3/7/2024 6:53:52 AM

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Well Name: CORRAL GORGE 12-13 FEDERAL COM	Well Location: T25S / R29E / SEC 12 / NENW / 32.150497 / -103.94007	County or Parish/State: EDDY / NM
Well Number: 72H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM15303	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001547187	Well Status: Unapproved Application for Permit to Drill	Operator: OXY USA INCORPORATED

Conditions of Approval

Authorized

FALCON\_DESIGN\_\_CORRAL\_GORGE\_12\_13\_FED\_COM\_72H\_\_SUNDRY\_COA\_20240306135617.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: LESLIE REEVES

Signed on: FEB 27, 2024 08:16 AM

Name: OXY USA INCORPORATED

Title: Advisor Regulatory

Street Address: 5 GREENWAY PLAZA, SUITE 110

City: HOUSTONState: TX

Phone: (713) 497-2492

Email address: LESLIE\_REEVES@OXY.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: KEITH P IMMATTY

BLM POC Title: ENGINEER

BLM POC Phone: 5759884722

BLM POC Email Address: KIMMATTY@BLM.GOV

Disposition: Approved

Disposition Date: 03/06/2024

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.**

5. Lease Serial No.	
6. If Indian, Allottee or Tribe Name	
7. If Unit of CA/Agreement, Name and/or No.	
8. Well Name and No.	
9. API Well No.	
10. Field and Pool or Exploratory Area	
11. Country or Parish, State	

**SUBMIT IN TRIPLICATE** - Other instructions on page 2

1. Type of Well		
<input type="checkbox"/> Oil Well	<input type="checkbox"/> Gas Well	<input type="checkbox"/> Other
2. Name of Operator		
3a. Address	3b. Phone No. (include area code)	
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		

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

TYPE OF SUBMISSION	TYPE OF ACTION				
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> 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 recompleate 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 recompleation 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 OFFICE 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 of this form to U.S. Department of the Interior, Bureau of Land 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 / 540 FNL / 2022 FWL / TWSP: 25S / RANGE: 29E / SECTION: 12 / LAT: 32.150497 / LONG: -103.94007 ( TVD: 0 feet, MD: 0 feet )

PPP: NENW / 3 FNL / 2249 FWL / TWSP: 25S / RANGE: 29E / SECTION: 13 / LAT: 32.137388 / LONG: -103.939282 ( TVD: 9497 feet, MD: 15152 feet )

PPP: NENW / 100 FNL / 2260 FWL / TWSP: 25S / RANGE: 29E / SECTION: 12 / LAT: 32.151711 / LONG: -103.939308 ( TVD: 9508 feet, MD: 9943 feet )

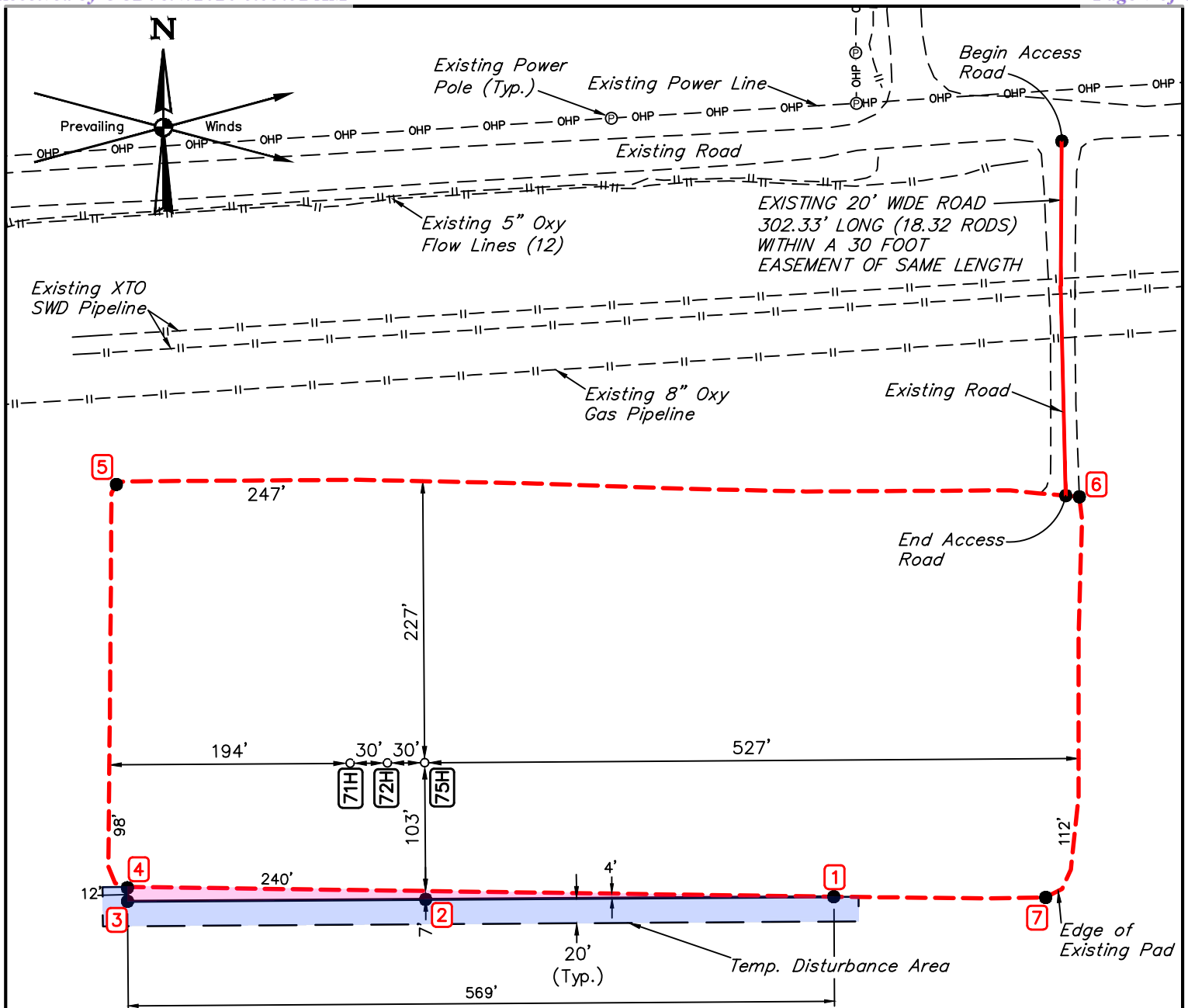
BHL: SESW / 20 FSL / 2260 FWL / TWSP: 25S / RANGE: 29E / SECTION: 13 / LAT: 32.122832 / LONG: -103.939256 ( TVD: 9485 feet, MD: 20450 feet )

**OXY APD CHANGE SUNDRY LIST**

<b>DATE</b>	12/7/2023
<b>WELL NAME</b>	CORRAL GORGE 12_13 FED COM 72H
<b>API NUMBER</b>	30-015-47187
<b>SPUD DATE</b>	8/8/2024

ITEM	PREVIOUS	UPDATE
NAME	NA	
NSL	NA	
SHL	540 FNL, 2022 FWL	649 FNL, 1968 FWL
PAD	NA	
BHL	20 FSL, 2260 FWL	20 FSL, 1862 FWL
HSU SIZE, ACRES	640	320
POOL	NA	
TARGET FORMATION	NA	
TVD	9943'	9504'
SURFACE CASING	40.5#	45.5#
INTERMEDIATE CASING	7.625" 26.4# L-80 HC, BTC	7.875" 39.3# P110S, WEDGE 463
INTERMEDIATE 2 CASING	NA	
PRODUCTION CASING	CASING TO SURFACE, DQX	PRODUCTION LINER 8629' MD TO TD, WEDGE 461
LINER OR TIE BACK	NA	NEW
CEMENT	NA	
FACILITIES	NA	
OTHER	NA	

<b>OTHER COMMENTS</b>
THE SHL, BHL, HSU, TVD, SURF CSG, INT CSG, AND PRODUCTION CSG ARE CHANGING. A PRODUCTION LINER WILL BE INSTALLED INSTEAD OF A FULL PRODUCTION CASING STRING TO SURFACE.
<b>ATTACHEMENTS</b>
The C-102, SITE PLAN, DRILL PLAN, CASING CONNECTIONS, DIRECTIONAL PLAN AND A CONTINGENCY TIE BACK ARE ATTACHED. GENERAL ATTACHEMENTS SUCH AS THE UPDATED VARIANCE REQUESTS FOR BOP BREAK TESTING, BRADENHEAD CBL, AND OFFLINE CEMENT ARE ATTACHED.



CORRAL GORGE 12-13 FED COM 71H  
649' FNL 1938' FWL

CORRAL GORGE 12-13 FED COM 72H  
649' FNL 1968' FWL

CORRAL GORGE 12-13 FED COM 75H  
649' FNL 1998' FWL

Temporary Disturbance

Pad Expansion



Sheet 1 of 2

FAA PERMIT: NO

REV: 1 09-26-23 D.J.S. (CORRECT WELL NAME)

**NOTES:**

- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

**OXY USA INC.**

**CEDCAN 25S29E 1206**  
**NE 1/4 NW 1/4, SECTION 12, T25S, R29E, N.M.P.M.**  
**EDDY COUNTY, NEW MEXICO**

SURVEYED BY	C.T., K.H.	08-10-23	SCALE
DRAWN BY	T.J.S.	09-06-23	1" = 120'
<b>SITE PLAN</b>			



**UELS, LLC**  
Corporate Office \* 85 South 200 East  
Vernal, UT 84078 \* (435) 789-1017

<b>71H - EL: 3122.4'</b>	<b>72H - EL: 3122.4'</b>	<b>75H - EL: 3122.5'</b>
<b>NAD 83 (SURFACE HOLE LOCATION)</b>	<b>NAD 83 (SURFACE HOLE LOCATION)</b>	<b>NAD 83 (SURFACE HOLE LOCATION)</b>
LATITUDE = 32°09'00.70" (32.150196°)	LATITUDE = 32°09'00.71" (32.150196°)	LATITUDE = 32°09'00.71" (32.150197°)
LONGITUDE = -103°56'25.23" (-103.940341°)	LONGITUDE = -103°56'24.88" (-103.940244°)	LONGITUDE = -103°56'24.53" (-103.940147°)
<b>NAD 27 (SURFACE HOLE LOCATION)</b>	<b>NAD 27 (SURFACE HOLE LOCATION)</b>	<b>NAD 27 (SURFACE HOLE LOCATION)</b>
LATITUDE = 32°09'00.26" (32.150072°)	LATITUDE = 32°09'00.26" (32.150072°)	LATITUDE = 32°09'00.26" (32.150073°)
LONGITUDE = -103°56'23.48" (-103.939856°)	LONGITUDE = -103°56'23.13" (-103.939759°)	LONGITUDE = -103°56'22.78" (-103.939662°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 418598.50' E: 662961.90'	N: 418598.83' E: 662991.89'	N: 418599.15' E: 663021.88'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 418540.12' E: 621777.23'	N: 418540.45' E: 621807.22'	N: 418540.77' E: 621837.21'

<b>1 - EL: 3125.0'</b>	<b>2 - EL: 3123.3'</b>	<b>3 - EL: 3120.3'</b>	<b>4 - EL: 3122.7'</b>
NAD 83	NAD 83	NAD 83	NAD 83
LATITUDE = 32°08'59.64" (32.149901°)	LATITUDE = 32°08'59.62" (32.149894°)	LATITUDE = 32°08'59.60" (32.149890°)	LATITUDE = 32°08'59.72" (32.149922°)
LONGITUDE = -103°56'20.70" (-103.939082°)	LONGITUDE = -103°56'24.52" (-103.940144°)	LONGITUDE = -103°56'27.31" (-103.940920°)	LONGITUDE = -103°56'27.31" (-103.940920°)
NAD 27	NAD 27	NAD 27	NAD 27
LATITUDE = 32°08'59.20" (32.149777°)	LATITUDE = 32°08'59.17" (32.149771°)	LATITUDE = 32°08'59.16" (32.149766°)	LATITUDE = 32°08'59.27" (32.149798°)
LONGITUDE = -103°56'18.95" (-103.938598°)	LONGITUDE = -103°56'22.77" (-103.939659°)	LONGITUDE = -103°56'25.57" (-103.940435°)	LONGITUDE = -103°56'25.57" (-103.940435°)
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 418492.71' E: 663351.73'	N: 418489.18' E: 663023.14'	N: 418486.60' E: 662783.13'	N: 418498.27' E: 662783.00'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 418434.34' E: 622167.06'	N: 418430.80' E: 621838.47'	N: 418428.22' E: 621598.46'	N: 418439.89' E: 621598.33'
<b>5 - EL: 3123.3'</b>	<b>6 - EL: 3130.2'</b>	<b>7 - EL: 3134.6'</b>	
NAD 83	NAD 83	NAD 83	
LATITUDE = 32°09'02.93" (32.150813°)	LATITUDE = 32°09'02.83" (32.150786°)	LATITUDE = 32°08'59.64" (32.149899°)	
LONGITUDE = -103°56'27.42" (-103.940949°)	LONGITUDE = -103°56'18.40" (-103.938444°)	LONGITUDE = -103°56'18.71" (-103.938531°)	
NAD 27	NAD 27	NAD 27	
LATITUDE = 32°09'02.48" (32.150689°)	LATITUDE = 32°09'02.39" (32.150663°)	LATITUDE = 32°08'59.19" (32.149776°)	
LONGITUDE = -103°56'25.67" (-103.940464°)	LONGITUDE = -103°56'16.65" (-103.937959°)	LONGITUDE = -103°56'16.97" (-103.938046°)	
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>	
N: 418822.29' E: 662772.75'	N: 418815.56' E: 663548.09'	N: 418492.83' E: 663522.33'	
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>	
N: 418763.90' E: 621588.09'	N: 418757.18' E: 622363.42'	N: 418434.45' E: 622337.66'	
<b>BEGIN ACCESS ROAD - EL: 3124.5'</b>	<b>END ACCESS ROAD - EL: 3129.8'</b>		
NAD 83	NAD 83		
LATITUDE = 32°09'05.66" (32.151573°)	LATITUDE = 32°09'02.84" (32.150789°)		
LONGITUDE = -103°56'18.56" (-103.938490°)	LONGITUDE = -103°56'18.53" (-103.938480°)		
NAD 27	NAD 27		
LATITUDE = 32°09'05.22" (32.151450°)	LATITUDE = 32°09'02.39" (32.150665°)		
LONGITUDE = -103°56'16.82" (-103.938005°)	LONGITUDE = -103°56'16.78" (-103.937995°)		
<b>STATE PLANE NAD 83 (N.M. EAST)</b>	<b>STATE PLANE NAD 83 (N.M. EAST)</b>		
N: 419101.84' E: 663532.81'	N: 418816.42' E: 663537.14'		
<b>STATE PLANE NAD 27 (N.M. EAST)</b>	<b>STATE PLANE NAD 27 (N.M. EAST)</b>		
N: 419043.45' E: 622348.16'	N: 418758.04' E: 622352.47'		



Sheet 2 of 2

**NOTES:**

- Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)

**OXY USA INC.**

**CEDCAN 25S29E 1206**  
**NE 1/4 NW 1/4, SECTION 12, T25S, R29E, N.M.P.M.**  
**EDDY COUNTY, NEW MEXICO**



**UELS, LLC**  
 Corporate Office \* 85 South 200 East  
 Vernal, UT 84078 \* (435) 789-1017

<b>SURVEYED BY</b>	C.T., K.H.	08-10-23	<b>SCALE</b>
<b>DRAWN BY</b>	T.J.S.	09-06-23	1" = 120'
<b>SITE PLAN</b>			

## OXY's Minimum Design Criteria

Burst, Collapse, and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

### 1) Casing Design Assumptions

#### a) Burst Loads

##### CSG Test (Surface)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both 43 CFR part 3170 Subpart 3172 and 19.15.16 of the OCD Rules.
- External: Pore pressure in open hole.

##### CSG Test (Intermediate)

- Internal: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both 43 CFR part 3170 Subpart 3172 and 19.15.16 of the OCD Rules.
- External: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

##### CSG Test (Production)

- Internal:
  - For Drilling: Displacement fluid + pressure required to comply with regulatory casing test pressures. This will comply with both 43 CFR part 3170 Subpart 3172 and 19.15.16 of the OCD Rules.
  - For Production: The design pressure test should be the greater of (1) the planned test pressure prior to stimulation down the casing. (2) the regulatory test pressure, and (3) the expected gas lift system pressure. The design test fluid should be the fluid associated with pressure test having the greatest pressure.
- External:
  - For Drilling: Mud Weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.
  - For Production: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

##### Gas Column (Surface)

- Internal: Assumes a full column of gas in the casing with a Gas/Oil Gradient of 0.1 psi/ft in the absence of better information. It is limited to the controlling pressure based on the fracture pressure at the shoe or the maximum expected pore pressure within the next drilling interval, whichever results in a lower surface pressure.
- External: Fluid gradient below TOC, pore pressure from the TOC to the Intermediate CSG shoe (if applicable), and MW of the drilling mud that was in the hole when the CSG was run from Intermediate CSG shoe to surface.

##### Bullheading (Surface / Intermediate)

- Internal: The string must be designed to withstand a pressure profile based on the fracture pressure at the casing shoe with a column of water above the shoe plus an additional surface pressure (in psi) of  $0.02 \times \text{MD of the shoe}$  to account for pumping friction pressure.
- External: Mud weight to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

**Gas Kick (Intermediate)**

- The string must be designed to at least a gas kick load case unless the rig is unable to detect a kick. For the gas kick load case, the internal pressure profile must be based on a minimum volume of 50 bbl or the minimum kick detection capability of the rig, whichever is greater, and a kick intensity of 2.0 ppg for Class 1, 1.0 ppg of Class 2, and 0.5 ppg for Class 3 and 4 wells.
- Internal: Influx depth of the maximum pore pressure of 0.55 "gas kick gravity" of gas to surface while drilling the next hole section.
- External: Mud weight to the TOC, cement mix water gradient below TOC, and pore pressure in open hole.

**Tubing Leak Near Surface While Producing (Production)**

- Internal: SITP plus a packer fluid gradient to the shoe or top of packer.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

**Tubing Leak Near Surface While Stimulating (Production)**

- Internal: Surface pressure or pressure-relief system pressure, whichever is lower plus packer fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

**Injection / Stimulation Down Casing (Production)**

- Internal: Surface pressure plus injection fluid gradient.
- External: Mud base-fluid density to TOC, cement mix water gradient (8.4 ppg) below TOC, and pore pressure in open hole.

**b) Collapse Loads****Lost Circulation (Surface / Intermediate)**

- Internal: Lost circulation at the TD of the next hole section, and the fluid level falls to a depth where the hydrostatic of the mud equals pore pressure at the depth of the lost circulation zone.
- External: MW of the drilling mud that was in the hole when the casing was run. Cementing (Surface / Intermediate / Production)

- Internal: Displacement fluid density.
- External: Mud weight from TOC to surface and cement slurry weight from TOC to casing shoe.

**Full Evacuation (Production)**

- Internal: Full void pipe.
- External: MW of drilling mud in the hole when the casing was run.

**c) Tension Loads****Running Casing (Surface / Intermediate / Production)**

- Axial: Buoyant weight of the string plus the lesser of 100,000 lb or the string weight in air.

**Green Cement (Surface / Intermediate / Production)**

- Axial: Buoyant weight of the string plus cement plug bump pressure load.



## **Falcon SL1 Production Casing Annular Clearance Variance Request**

If Production Casing Connection OD does not meet 0.422" annular clearance inside casing:

- Cement excess will be circulated from Top of Liner to surface (Cement Confirmation)
- Liner Top will be tested to confirm seal.
- If ICP in Bone Spring Pool and lateral landed in Wolfcamp Pool, a CBL will be ran.

## Offline Cementing Variance Request

Oxy requests a variance to cement the 9.625" and/or 7.625" intermediate casing strings offline in accordance to the approved variance, EC Tran 461365.

### 1. Cement Program

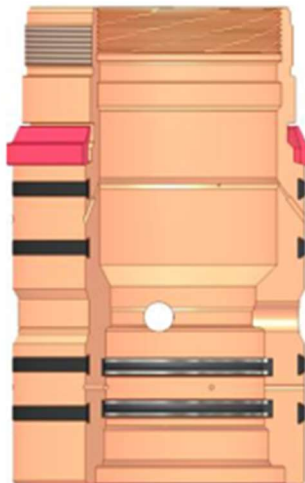
No changes to the cement program will take place for offline cementing.

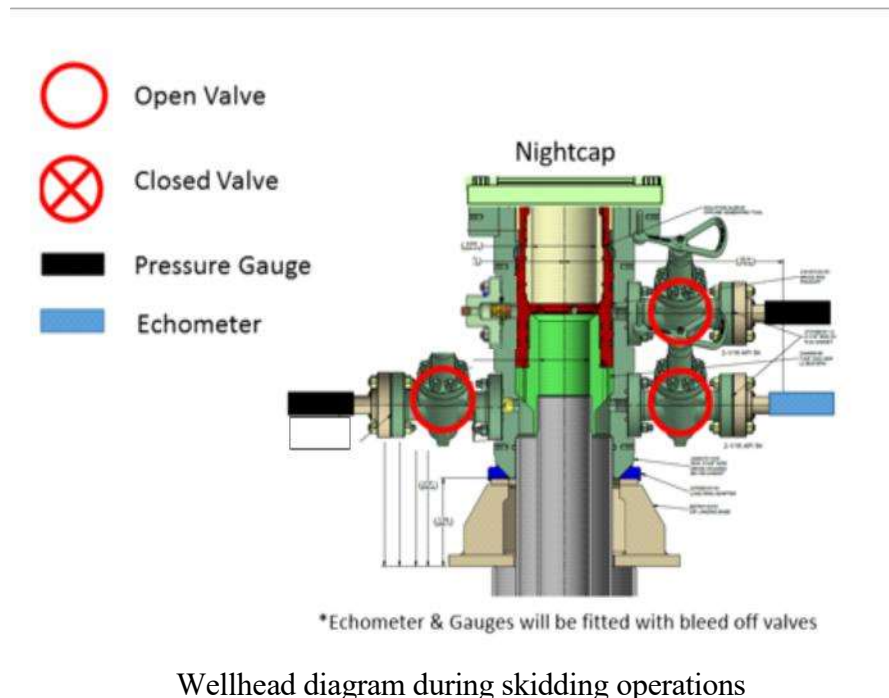
### 2. Offline Cementing Procedure

The operational sequence will be as follows:

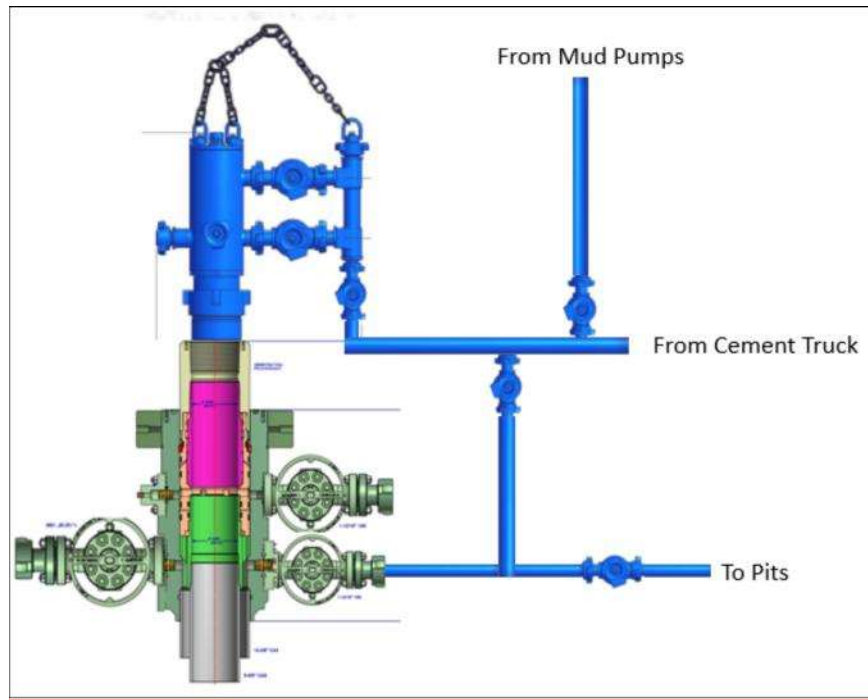
1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe)
2. Land casing with mandrel
3. Fill pipe with kill weight fluid, do not circulate through floats and confirm well is static
4. Set annular packoff shown below and pressure test to confirm integrity of the seal.  
Pressure ratings of wellhead components and valves is 5,000 psi

Annular packoff with both external and internal seals





5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange.
  - a. If any barrier fails to test, the BOP stack will not be nipped down until after the cement job is completed with cement 500ft above the highest formation capable of flow with kill weight mud above or after it has achieved 50 psi compressive strength if cannot be verified.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange, flange will not be removed and offline cementing operations will not commence until well is under control. If well is not static, casing outlet valves will provide access to both the casing ID and annulus. Rig or third party pump truck will kill well prior to cementing or nipping up for further remediation.
  - a. Well Control Plan
    - i. The Drillers Method will be the primary well control method to regain control of the wellbore prior to cementing, if wellbore conditions do not permit the drillers method other methods of well control may be used
    - ii. Rig pumps or a 3<sup>rd</sup> party pump will be tied into the upper casing valve to pump down the casing ID
    - iii. A high pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    - iv. Once influx is circulated out of the hole, kill weight mud will be circulated
    - v. Well will be confirmed static
    - vi. Once confirmed static, cap flange will be removed to allow for offline cementing operations to commence
8. Install offline cement tool
9. Rig up cement equipment



Wellhead diagram during offline cementing operations

10. Circulate bottoms up with cement truck
  - a. If gas is present on bottoms up, well will be shut in and returns rerouted through gas buster to handle entrained gas
  - b. Max anticipated time before circulating with cement truck is 6 hrs
11. Perform cement job taking returns from the annulus wellhead valve
12. Confirm well is static and floats are holding after cement job
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

**OXY USA Inc**  
**APD ATTACHMENT: SPUDDER RIG DATA**

**OPERATOR NAME / NUMBER:** OXY USA Inc

**1. SUMMARY OF REQUEST:**

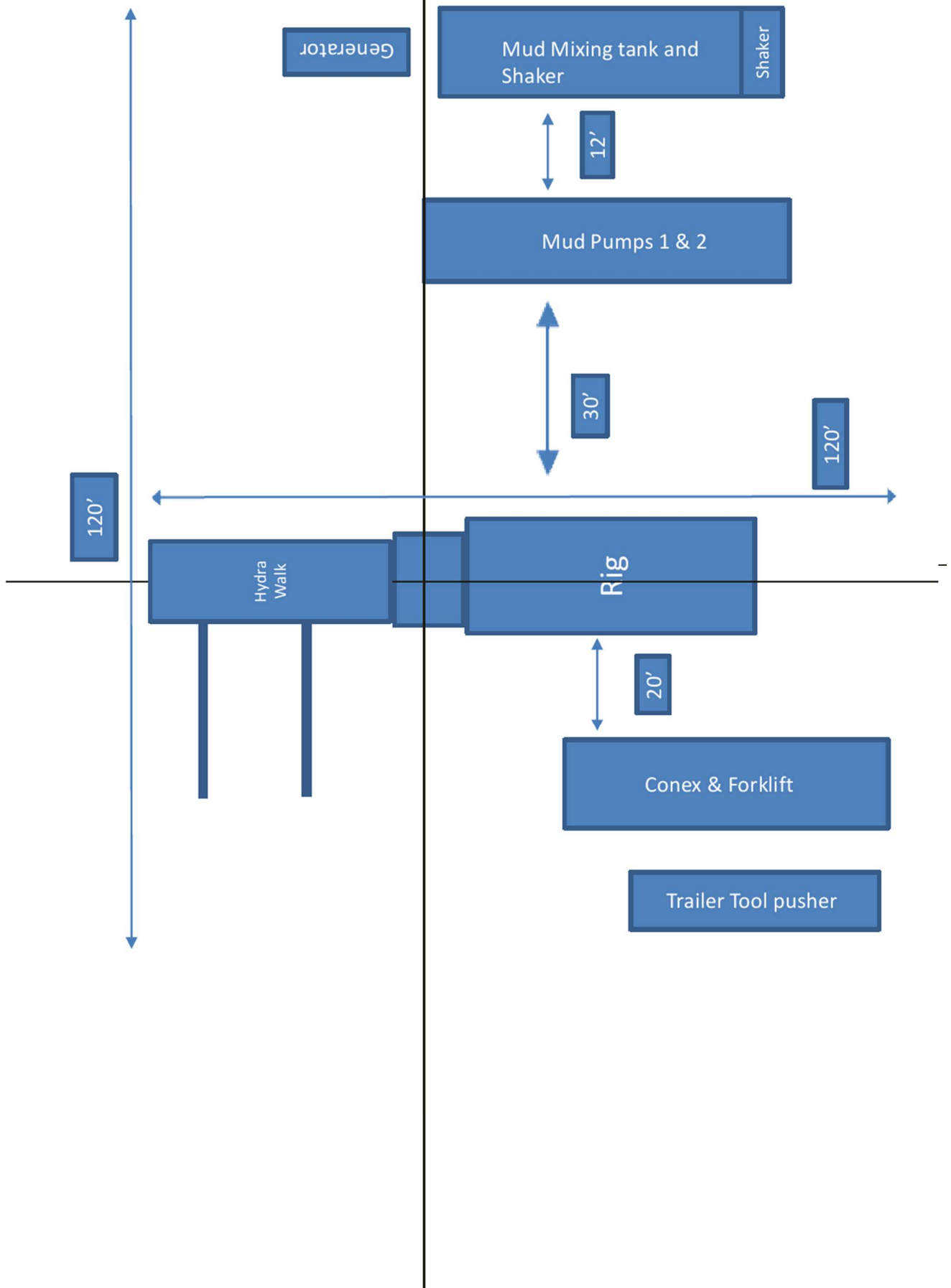
Oxy USA respectfully requests approval for the following operations for the surface hole in the drill plan:

1. Utilize a spudder rig to pre-set surface casing for time and cost savings.

**2. Description of Operations**

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
  - a. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (43 CFR part 3170 Subpart 3172, all COAs and NMOCD regulations).
  - b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and tested as soon as the surface casing is cut off and the WOC time has been reached.
3. A blind flange at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
  - a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nipped up and tested on the wellhead before drilling operations resume on each well.
  - a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
  - b. The BLM will be contacted / notified 24 hours before the larger rig moves back on the pre-set locations.
7. Oxy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, Oxy will secure the wellhead area by placing a guard rail around the cellar area.

# Spudder Rig Layout





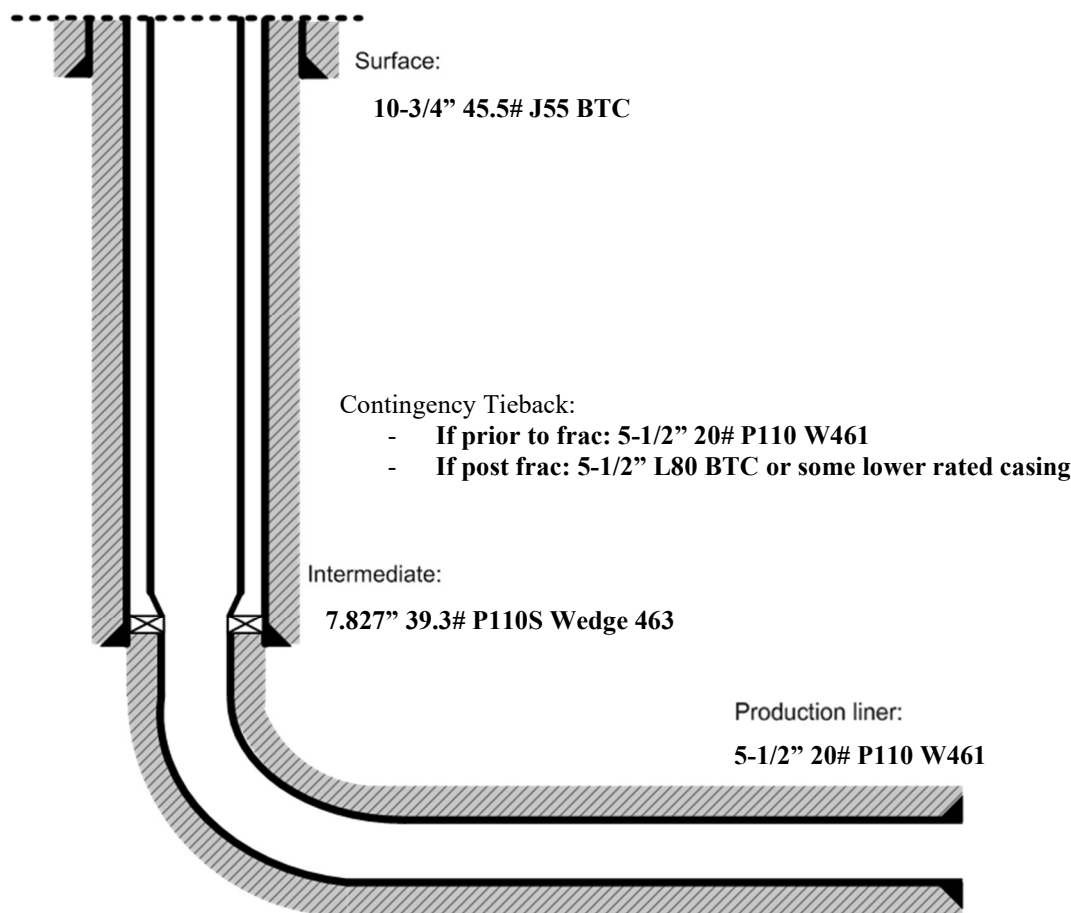
## OXY USA WTP LP

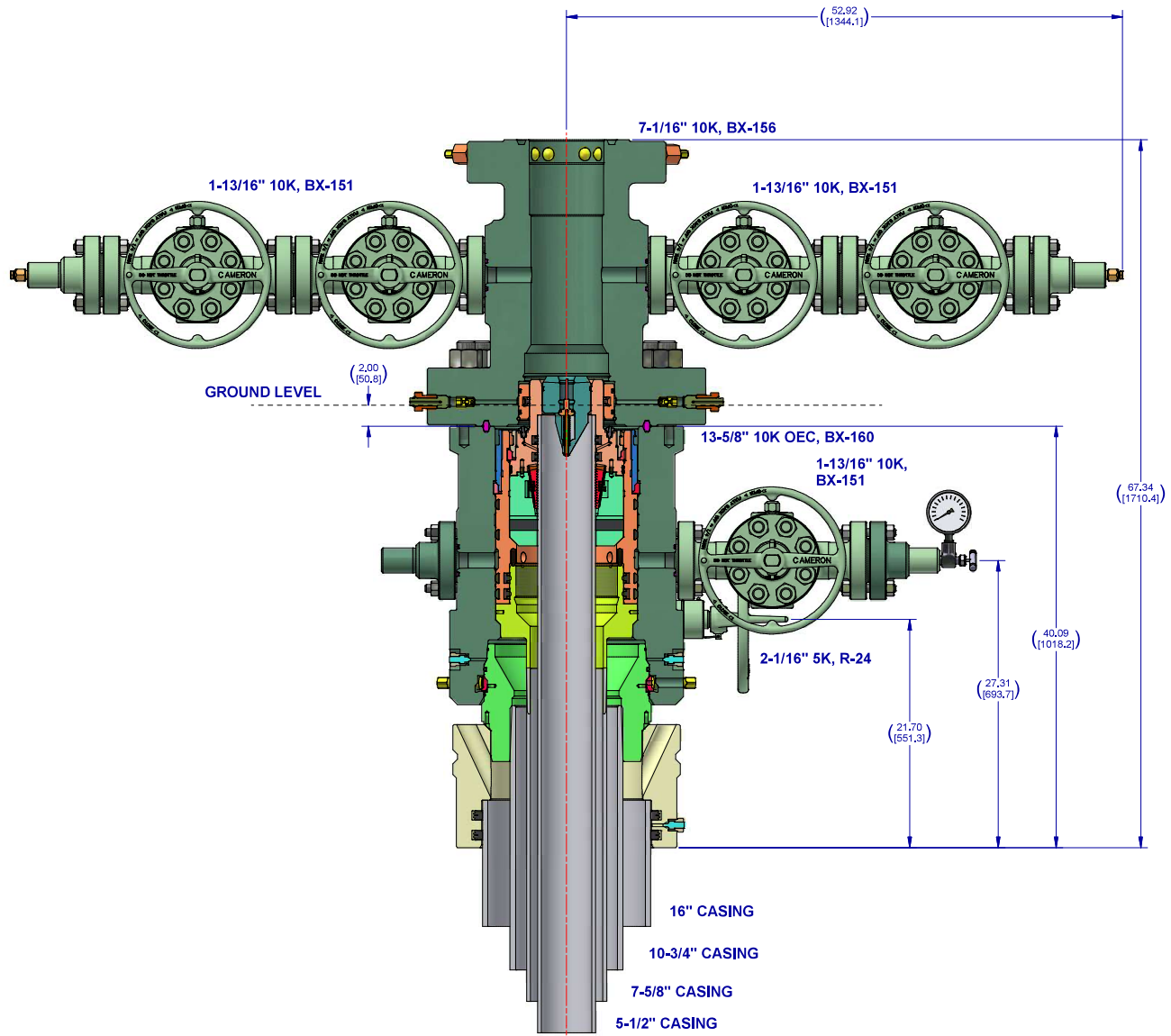
### Falcon SL1 Contingency Tieback Details

Below is a summary that describes the general operational steps to drill and complete the well.

- Drill 14-3/4" hole x 10-3/4" casing for surface section. Cement to surface.
- Drill 9-7/8" hole x 7.827" casing for intermediate section. Cement to surface.
- Drill 6-3/4" hole x 5-1/2" liner for production section. Cement to top of liner, 100' inside 7.827" shoe.
- Release drilling rig from location.
- If contingency tieback required pre-frac:
  - Move in workover rig and run a 5-1/2" 20# P110 Wedge 461 tie-back frac string and seal assembly. Tie into liner hanger Polished Bore Receptacle (PBR) with seal assembly.
  - Pump hydraulic fracture job.
  - Flowback and produce well.
- If contingency tieback required post-frac:
  - Move in workover rig and run a 5-1/2" L80 BTC or lesser rated tie-back string and seal assembly. Tie into liner hanger Polished Bore Receptacle (PBR) with seal assembly.
  - Return well to production.

General well schematic:





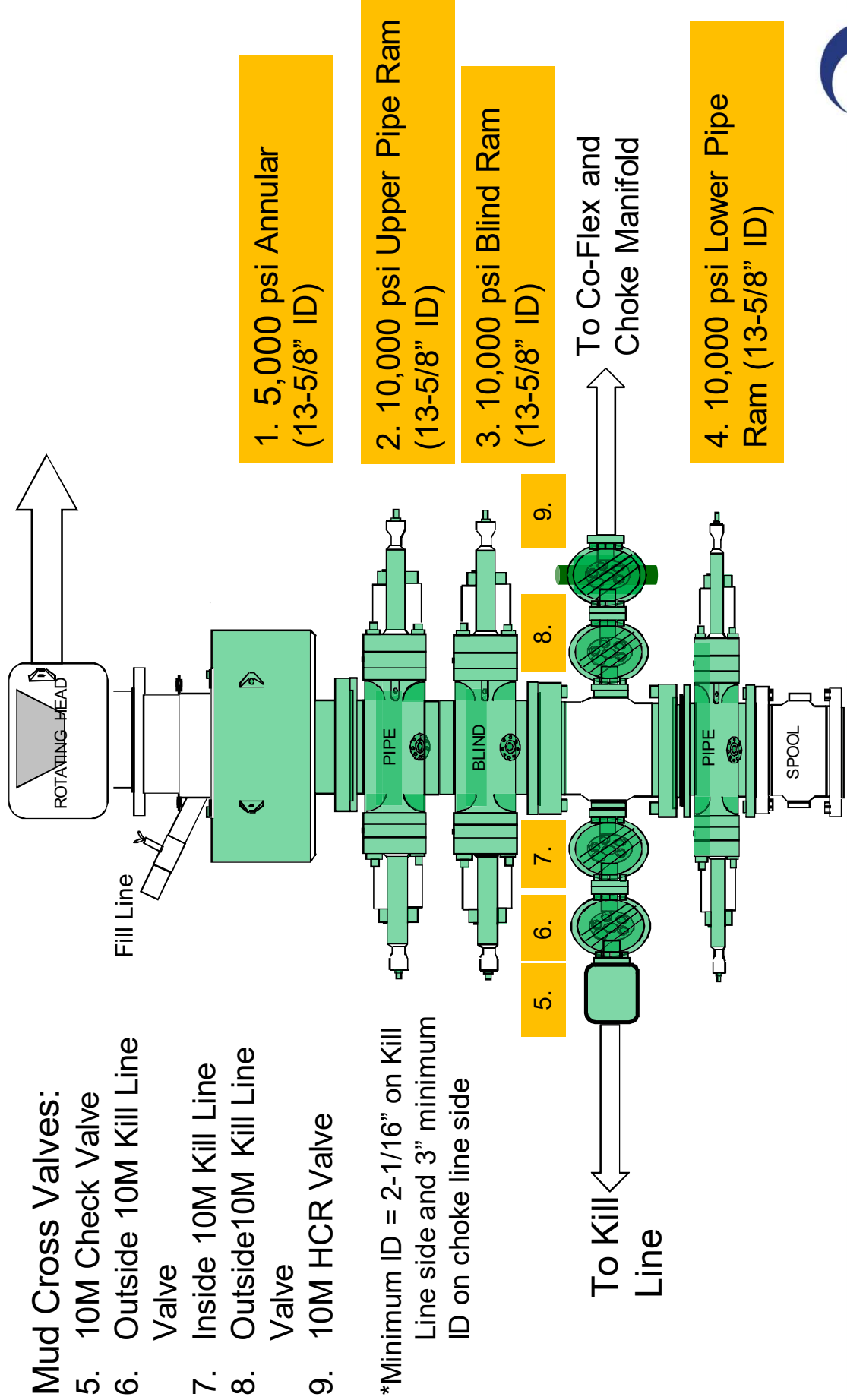
Notes:

1. THIS IS A PROPOSAL DRAWING AND DIMENSIONS SHOWN ARE SUBJECT TO CHANGE DURING THE FINAL DESIGN PROCESS.

2. DIGITALLY ENABLED SOLUTIONS, CHOKES AND ESD'S AVAILABLE ON REQUEST

CONFIDENTIAL					
SURFACE TREATMENT		DO NOT SCALE		CAMERON A Schlumberger Company	
DRAWN BY		DATE		SURFACE SYSTEMS	
D. GOTTUNG		2 Dec 21			
CHECKED BY		DATE			
D. GOTTUNG		2 Dec 21			
APPROVED BY		DATE			
D. GOTTUNG		2 Dec 21			
ESTIMATED WEIGHT		INTERNAL USE ONLY		SHEET	
6515.817 LBS 2955.434 KG				4 of 4	
				SD-053434-94-05	
				REV	
				01	

# 5/10M BOP Stack



## BOP Break Testing Request

Oxy requests permission to adjust the BOP break testing requirements as per the agreement reached in the OXY/BLM meeting on September 5, 2019.

BOP break test under the following conditions:

- After a full BOP test is conducted
- When skidding to drill an intermediate section where ICP is set into the third Bone Spring or shallower.
- When skidding to drill a production section that does not penetrate into the third Bone Spring or deeper.

If the kill line is broken prior to skid, two tests will be performed.

- 1) Wellhead flange, co-flex hose, kill line connections and upper pipe rams
- 2) Wellhead flange, HCR valve, check valve, upper pipe rams

If the kill line is not broken prior to skid, only one test will be performed.

- 1) Wellhead flange, co-flex hose, check valve, upper pipe rams

See supporting information below:

**Subject:** Request for a Variance Allowing Break Testing of a Blowout Preventer Stack

OXY USA Inc. (OXY) requests a variance to allow break testing of the Blowout Preventer (BOP) stack when skidding a drilling rig between wells on multi-well pads. This practice entails retesting only the connections of the **BOP** stack that have been disconnected during this operation and not a complete **BOP** test.

### Background

43 CFR part 3170 Subpart 3172 states that a **BOP** test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) is this requires a complete **BOP** test and not just a test of the affected component. 43 CFR part 3170 Subpart 3172, Section I.D.2. states, "Some situations may exist either on a well-by-well basis or field-wide basis whereby it is commonly accepted practice to vary a particular minimum standard(s) established in this Order. This situation can be resolved by requesting a variance...". OXY feels the practice of break testing the **BOP** stack is such a situation. Therefore, as per 43 CFR part 3170 Subpart 3172, Section IV., OXY submits this request for the variance.

### Supporting Rationale

43 CFR part 3170 Subpart 3172 became effective on December 19, 1988, and has remained the standard for regulating BLM onshore drilling operations for almost 30 years. During this time there have been significant changes in drilling technology. **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 part 3170 Subpart 3172 was originally released. The drilling rig fleet OXY utilizes in New Mexico was built with many modern upgrades. One of which allows the rigs to skid between wells on multi-well pads. A part of this rig package is a hydraulic winch system which safely installs and removes the BOP from the wellhead and carries it during skidding operations. This technology has made break testing a safe and reliable procedure.

American Petroleum Institute (API) standards, specifications and recommended practices are considered industry standards and are consistently utilized and referenced by the industry. 43 CFR part 3170 Subpart 3172 recognized API Recommended Practices (RP) 53 in its original development. API Standard 53,

*Blowout Prevention Equipment Systems for Drilling Wells* (Fourth Edition, November 2012, Addendum 1, July 2016) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 6.5.3.4.1.b states "Pressure tests on the well control equipment shall be conducted after the disconnection or repair of any pressure containment seal in the **BOP** stack, choke line, kill line, choke manifold, or wellhead assembly but limited to the affected component."

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specifications and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations. BSEE issued new offshore regulations under 30 CFR Part 250, *Oil and Gas and Sulphur Operations in the Outer Continental Shelf - Blowout Preventer Systems and Well Control*, which became effective on July 28, 2016. Section 250.737(d.1) states "Follow the testing requirements of API Standard 53". In addition, Section 250.737(d.8) has adopted language from **API** Standard 53 as it states "Pressure test affected **BOP** components following the disconnection or repair of any well-pressure containment seal in the wellhead or **BOP** stack assembly".

Break testing has been approved by the BLM in the past. See the Appendix for a Sundry Notice that was approved in 2015 by the Farmington Field Office. This approval granted permission for the operator to break test when skidding its Aztec 1000 rig on multi-well pads.

Oxy feels break testing and our current procedures meet the intent of 43 CFR part 3170 Subpart 3172 and often exceed it. We have not seen any evidence that break testing results in more components failing tests than seen on full BOP tests. As skidding operations take place within the 30-day full BOPE test window, the BOP shell and components such as the pipe rams and check valve get tested to the full rated working pressure more often. Therefore, there are more opportunities to ensure components are in good working order. Also, Oxy's standard requires complete BOP tests more often than that of 43 CFR part 3170 Subpart 3172. In addition to function testing the annular at least weekly and the pipe and blind rams on each trip, Oxy also performs a choke drill prior to drilling out every casing shoe. As a crew's training is a vital part of well control, this procedure to simulate step one of the Driller's Method exceeds the requirements of 43 CFR part 3170 Subpart 3172.

### Procedures

- 1) OXY to submit the break testing plan in the APD or Sundry Notice (SN) and receive approval prior to implementing (See Appendix for examples)
- 2) OXY would perform BOP break testing on multi-well pads where multiple intermediate sections can be drilled and cased within the 30-day BOP test window
- 3) After performing a complete BOP test on the first well and drilling and casing the hole section, three breaks would be made on the BOP.
  - Between the check valve and the kill line
  - Between the HCR valve and the co-flex hose or the co-flex hose and the manifold
  - Between the BOP flange and the wellhead
- 4) The BOP is then lifted and removed from the wellhead by the hydraulic winch system
- 5) After skidding to the next well, the BOP is moved to the wellhead by the hydraulic winch system and installed
- 6) The choke line and kill line are reconnected
- 7) A test plug is installed in the wellhead with a joint of drill pipe and the internal parts of the check valve are removed
- 8) A shell test is performed against the upper pipe rams testing all three breaks
- 9) The internal parts of the check valve are reinstalled and the HCR valve is closed. A second test is performed on them
- 10) These tests consist of a 250 psi low test and a high test to the value submitted in the APD or SN (e.g., 5000 psi)
- 11) Perform a function test of components not pressure tested to include the lower pipe rams, the blind rams and the annular
- 12) If this were a three well pad, the same three breaks on the BOP would be made and steps 4 through 11 would be repeated
- 13) A second break test would only be done if the third hole section could be completed within the 30-day BOP test window
- 14) If a second break test is performed, additional components that were not tested on the initial break test will be tested on this break test

### Notes:

- a. If any parts of the BOP are changed out or any additional breaks are made during the skidding operation, these affected components would also be tested as in step 10.
- b. As the choke manifold remains stationary during the skidding operation and the only break to the manifold is tested in step 8 above, no further testing of the manifold is done until the next full BOP test.

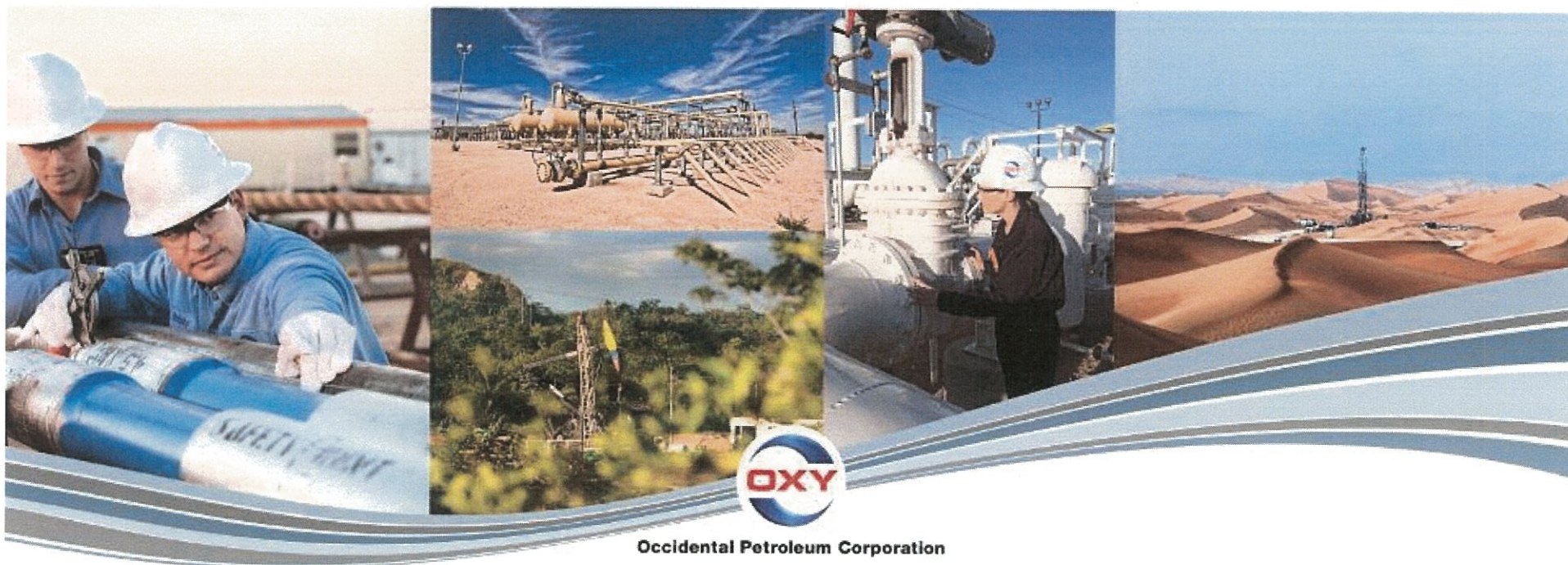


## **Summary**

OXY requests a variance to allow break testing of the BOP stack when skidding drilling rigs between wells on multi-well pads. API standards, specifications and recommended practices are considered industry standards and are consistently utilized and referenced by the industry and the BLM. API Standard 53 recognizes break testing as an acceptable practice and BSEE adopted language from this standard into its newly created 30 CFR Part 250 which also supports break testing. Due to this, OXY feels this request meets the intent of 43 CFR part 3170

# REQUEST FOR A VARIANCE TO BREAK TEST THE BOP

Permian Resources New Mexico



Occidental Petroleum Corporation

# Request for Variance

OXY USA Inc. (OXY) requests a variance to allow break testing of the Blowout Preventer (BOP) stack when skidding a drilling rig between wells on multi-well pads

- This practice entails retesting only the connections of the BOP stack that have been disconnected during this operation and not a complete BOP test.
- As the choke manifold remains stationary during the skidding operation and the only break to the manifold is tested, no further testing of the manifold is done until the next full BOP test.
- This request is being made as per Section IV of the *Onshore Oil and Gas Order (OOGO) No. 2*



# Rationale for Allowing BOP Break Testing

American Petroleum Institute (API) standards, specifications and recommended practices are considered industry standards and are consistently utilized and referenced by the industry

- API Standard 53, *Blowout Prevention Equipment Systems for Drilling Wells* (Fourth Edition, November 2012, Addendum 1, July 2016) recognizes break testing as an acceptable practice.
- Specifically, API Standard 53, Section 6.5.3.4.1.b states “Pressure tests on the well control equipment shall be conducted after the disconnection or repair of any pressure containment seal in the BOP stack, choke line, kill line, choke manifold, or wellhead assembly but limited to the affected component.”



# Rationale for Allowing BOP Break Testing

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

- BSEE issued new offshore regulations in July 2016 under 30 CFR Part 250, *Oil and Gas and Sulphur Operations in the Outer Continental Shelf - Blowout Preventer Systems and Well Control*. Within these regulations is language adopted from API Standard 53 which also supports break testing.
- Specifically, Section 250.737(d.8) states “Pressure test affected BOP components following the disconnection or repair of any well-pressure containment seal in the wellhead or BOP stack assembly.”



# Rationale for Allowing BOP Break Testing

Break testing has been approved by the BLM in the past

- The Farmington Field Office approved a Sundry Notice (SN) to allow break testing in 2015
- This SN granted permission for the operator to break test when skidding its Aztec 1000 rig on multi-well pads

Oxy feels break testing and our current procedures meet or exceed the intent of OOGO No. 2

- As skidding operations take place within the 30-day full BOPE test window, the BOP shell and components such as the pipe rams and check valve get tested to the full rated working pressure more often
- Oxy's standard requires complete BOP tests more often than that of OOGO No. 2
- Oxy performs a choke drill prior to drilling out every casing shoe. As a crew's training is a vital part of well control, this procedure to simulate step one of the Driller's Method exceeds the requirements of OOGO No. 2





# Break Testing Procedures

- 1) OXY to submit the break testing plan in the APD or Sundry Notice (SN) and receive approval prior to implementing
- 2) OXY would perform BOP break testing on multi-well pads where multiple intermediate sections can be drilled and cased within the full BOP test window
- 3) After performing a complete BOP test on the first well and drilling and casing the hole section, three breaks would be made on the BOP.
  - Between the check valve and the kill line
  - Between the HCR valve and the co-flex hose or the co-flex hose and the manifold
  - Between the BOP flange and the wellhead
- 4) The BOP is then lifted and removed from the wellhead by the hydraulic winch system
- 5) After skidding to the next well, the BOP is moved to the wellhead by the hydraulic winch system and installed
- 6) The choke line and kill line are reconnected
- 7) A test plug is installed in the wellhead with a joint of drill pipe and the internal parts of the check valve are removed



## Break Testing Procedures

- 8) A shell test is performed against the upper pipe rams testing all three breaks
- 9) The internal parts of the check valve are reinstalled and the HCR valve is closed.  
A second test is performed on them
- 10) These tests consist of a 250 psi low test and a high test to the value submitted in the APD or SN (e.g., 5000 psi)
- 11) Perform a function test of components not pressure tested to include the lower pipe rams, the blind rams and the annular
- 12) If this were a three well pad, the same three breaks on the BOP would be made and steps 4 through 11 would be repeated
- 13) A second break test would only be done if the third hole section could be completed within the 30-day BOP test window
- 14) If a second break test is performed, additional components that were not tested on the first break test will be tested

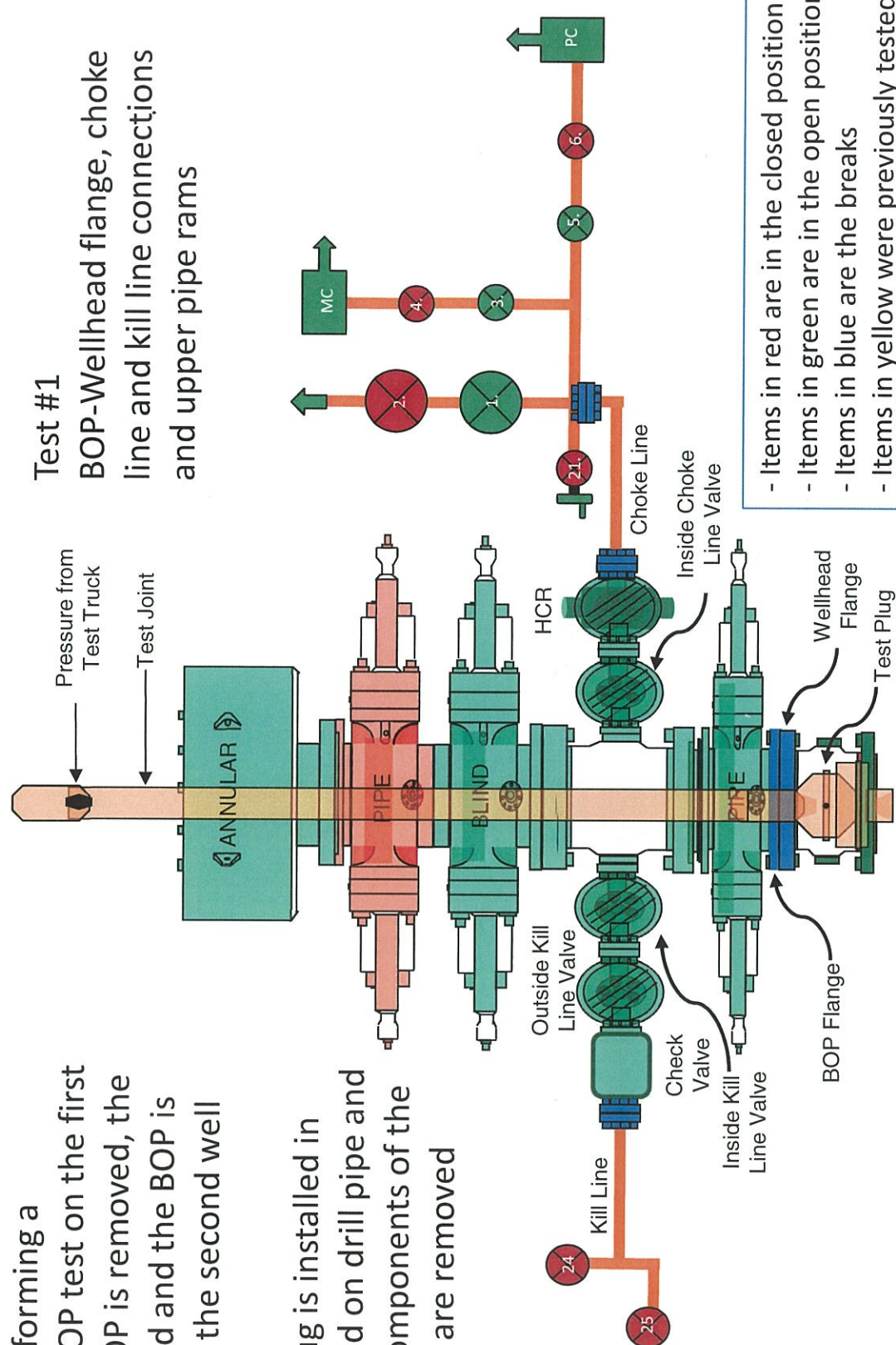




# Break Testing Procedures and Tests

1. After performing a complete BOP test on the first well, the BOP is removed, the rig is skidded and the BOP is installed on the second well

2. A test plug is installed in the wellhead on drill pipe and the inner components of the check valve are removed





# Break Testing Procedures and Tests

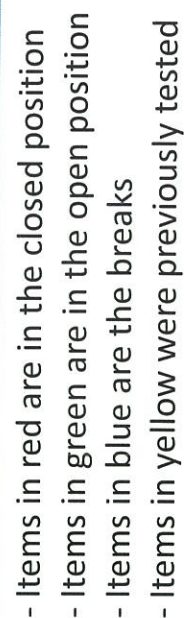
3. After Test #1, the inner components of the check valve are reinstalled and the HCR valve is closed





3. After Test #1, the inner components of the check valve are reinstalled and the inside choke line valve is closed

BOP-Wellhead flange, inside  
choke line valve, check valve  
and upper pipe rams





# BOP Handling System



Hydraulic winch system which moves the BOP from its carrier to the wellhead

BOP standing in its carrier







12

# BOP Handling System



Wellhead

Hydraulic winch  
system moving  
the BOP over to  
the wellhead



## Summary for Variance Request for Break Testing

- API standards, specifications and recommended practices are considered industry standards
  - OOGO No. 2 recognized API Recommended Practices (RP) 53 in its original development
  - API Standard 53 recognizes break testing as an acceptable practice
  - The Bureau of Safety and Environmental Enforcement has utilized API standards, specifications and best practices in the development of its offshore oil and gas regulations
  - API Standard 53 recognizes break testing as an acceptable practice
- OXY feels break testing meets the intent of OOGO No. 2 to protect public health and safety and the environment

## **Bradenhead Cement CBL Variance Request**

Oxy requests permission to adjust the CBL requirement after bradenhead cement jobs, on 7-5/8" intermediate casings, as per the agreement reached in the OXY/BLM meeting on September 5, 2019.

### **Three string wells:**

- CBL will be required on one well per pad
- If the pumped volume of cement is less than permitted in the APD, BLM will be notified and a CBL may be run
- Echometer will be used after bradenhead cement job to determine TOC before pumping top-out cement

### **Four string wells:**

- CBL is not required
- If the pumped volume of cement is less than permitted in the APD, BLM will be notified and a CBL may be run
- Echometer will be used after bradenhead cement job to determine TOC before pumping top-out cement

## WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015-47187		<sup>2</sup> Pool Code 96473	<sup>3</sup> Pool Name PIERCE CROSSING; BONE SPRING, EAST	
<sup>4</sup> Property Code	<sup>5</sup> Property Name CORRAL GORGE 12-13 FED COM		<sup>6</sup> Well Number 72H	
<sup>7</sup> OGRID No. 16696	<sup>8</sup> Operator Name OXY USA INC.		<sup>9</sup> Elevation 3122.4'	

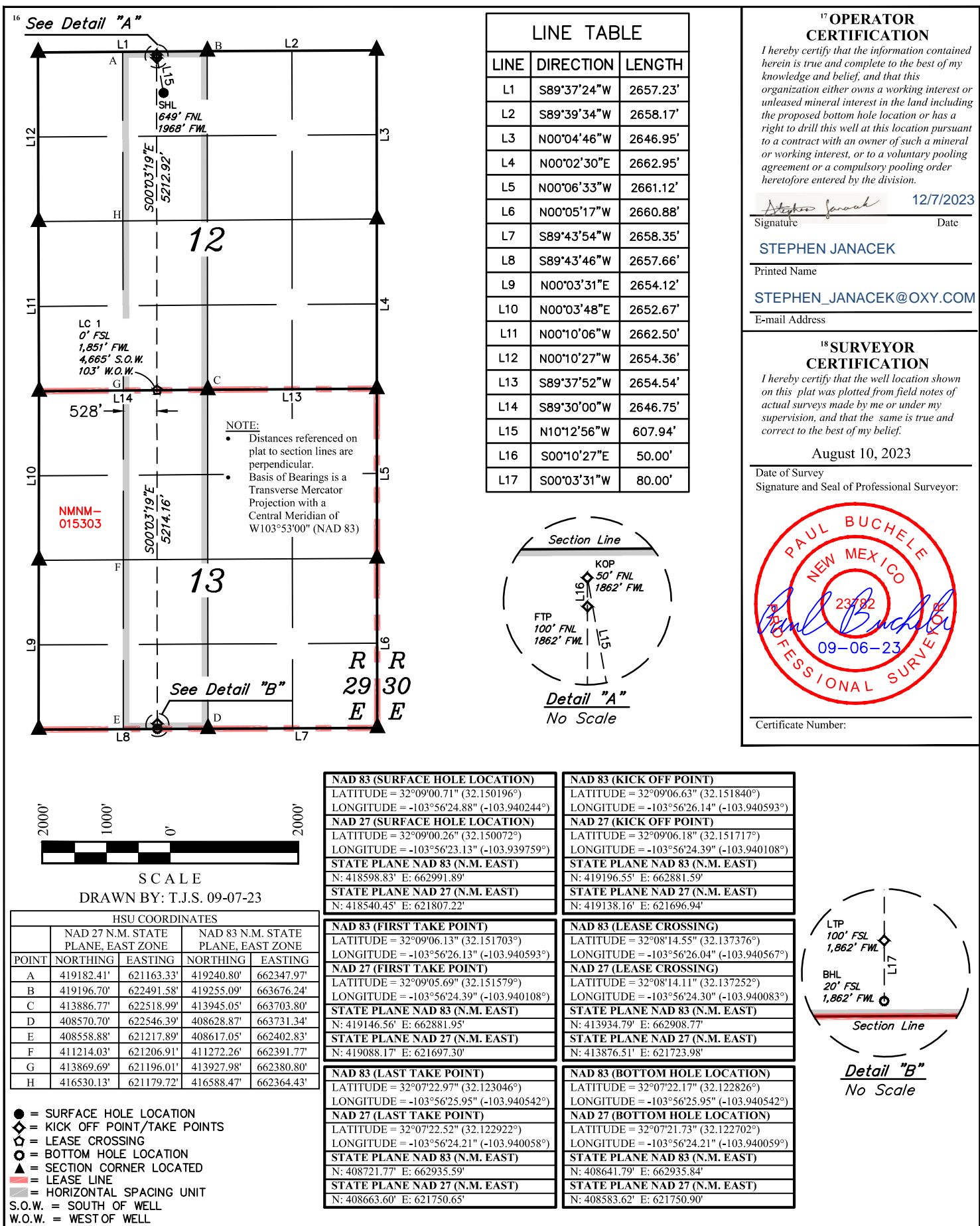
<sup>10</sup>Surface Location

UL or lot no. C	Section 12	Township 25S	Range 29E	Lot Idn	Feet from the 649	North/South line NORTH	Feet from the 1968	East/West line WEST	County EDDY
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no. N	Section 13	Township 25S	Range 29E	Lot Idn	Feet from the 20	North/South line SOUTH	Feet from the 1862	East/West line WEST	County EDDY
<sup>12</sup> Dedicated Acres 320		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

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





# **OXY**

**PRD NM DIRECTIONAL PLANS (NAD 1983)**

**Corral Gorge 12\_13**

**Corral Gorge 12\_13 Fed Com 72H**

**Wellbore #1**

**Plan: Permitting Plan**

## **Standard Planning Report**

**31 October, 2023**

OXY  
Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Corral Gorge 12_13 Fed Com 72H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB = 26' @ 3148.40ft (H&P 423)
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB = 26' @ 3148.40ft (H&P 423)
Site:	Corral Gorge 12_13	North Reference:	Grid
Well:	Corral Gorge 12_13 Fed Com 72H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Project	PRD NM DIRECTIONAL PLANS (NAD 1983)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	Corral Gorge 12_13		
Site Position:		Northing:	418,266.21 usft
From:	Map	Easting:	662,457.18 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	32.149287
		Longitude:	-103.941976

Well	Corral Gorge 12_13 Fed Com 72H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty		2.00 ft	Wellhead Elevation:
Grid Convergence:		0.21 °	
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	10/31/2023	6.43	59.68	47,407.90000000

Design	Permitting Plan			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	180.32

Plan Survey Tool Program	Date	10/31/2023		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,435.41	Permitting Plan (Wellbore #1)	B001Mb_MWD+HRGM
				OWSG MWD + HRGM

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,240.00	0.00	0.00	2,240.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,739.90	10.00	354.74	2,737.36	43.32	-3.99	2.00	2.00	0.00	354.74	
8,928.94	10.00	354.74	8,832.42	1,113.28	-102.57	0.00	0.00	0.00	0.00	
9,929.69	90.11	179.71	9,504.40	547.77	-109.95	10.00	8.01	-17.49	-174.95	FTP (Corral Gorge
20,435.42	90.11	179.71	9,483.40	-9,957.80	-56.05	0.00	0.00	0.00	0.00	PBHL (Corral Gorge

# OXY

## Planning Report

<b>Database:</b>	HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Corral Gorge 12_13 Fed Com 72H
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB = 26' @ 3148.40ft (H&P 423)
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB = 26' @ 3148.40ft (H&P 423)
<b>Site:</b>	Corral Gorge 12_13	<b>North Reference:</b>	Grid
<b>Well:</b>	Corral Gorge 12_13 Fed Com 72H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permitting Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,240.00	0.00	0.00	2,240.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	1.20	354.74	2,300.00	0.63	-0.06	-0.63	2.00	2.00	0.00
2,400.00	3.20	354.74	2,399.92	4.45	-0.41	-4.45	2.00	2.00	0.00
2,500.00	5.20	354.74	2,499.64	11.74	-1.08	-11.73	2.00	2.00	0.00
2,600.00	7.20	354.74	2,599.05	22.49	-2.07	-22.48	2.00	2.00	0.00
2,700.00	9.20	354.74	2,698.03	36.70	-3.38	-36.68	2.00	2.00	0.00
2,739.90	10.00	354.74	2,737.36	43.32	-3.99	-43.30	2.00	2.00	0.00
2,800.00	10.00	354.74	2,796.55	53.71	-4.95	-53.68	0.00	0.00	0.00
2,900.00	10.00	354.74	2,895.04	71.00	-6.54	-70.96	0.00	0.00	0.00
3,000.00	10.00	354.74	2,993.52	88.29	-8.13	-88.24	0.00	0.00	0.00
3,100.00	10.00	354.74	3,092.00	105.58	-9.73	-105.52	0.00	0.00	0.00
3,200.00	10.00	354.74	3,190.48	122.86	-11.32	-122.80	0.00	0.00	0.00
3,300.00	10.00	354.74	3,288.96	140.15	-12.91	-140.08	0.00	0.00	0.00
3,400.00	10.00	354.74	3,387.44	157.44	-14.50	-157.36	0.00	0.00	0.00
3,500.00	10.00	354.74	3,485.92	174.73	-16.10	-174.63	0.00	0.00	0.00
3,600.00	10.00	354.74	3,584.41	192.02	-17.69	-191.91	0.00	0.00	0.00
3,700.00	10.00	354.74	3,682.89	209.30	-19.28	-209.19	0.00	0.00	0.00
3,800.00	10.00	354.74	3,781.37	226.59	-20.88	-226.47	0.00	0.00	0.00
3,900.00	10.00	354.74	3,879.85	243.88	-22.47	-243.75	0.00	0.00	0.00
4,000.00	10.00	354.74	3,978.33	261.17	-24.06	-261.03	0.00	0.00	0.00
4,100.00	10.00	354.74	4,076.81	278.46	-25.65	-278.31	0.00	0.00	0.00
4,200.00	10.00	354.74	4,175.29	295.74	-27.25	-295.59	0.00	0.00	0.00
4,300.00	10.00	354.74	4,273.78	313.03	-28.84	-312.86	0.00	0.00	0.00
4,400.00	10.00	354.74	4,372.26	330.32	-30.43	-330.14	0.00	0.00	0.00
4,500.00	10.00	354.74	4,470.74	347.61	-32.02	-347.42	0.00	0.00	0.00
4,600.00	10.00	354.74	4,569.22	364.90	-33.62	-364.70	0.00	0.00	0.00
4,700.00	10.00	354.74	4,667.70	382.18	-35.21	-381.98	0.00	0.00	0.00
4,800.00	10.00	354.74	4,766.18	399.47	-36.80	-399.26	0.00	0.00	0.00
4,900.00	10.00	354.74	4,864.66	416.76	-38.40	-416.54	0.00	0.00	0.00
5,000.00	10.00	354.74	4,963.15	434.05	-39.99	-433.82	0.00	0.00	0.00
5,100.00	10.00	354.74	5,061.63	451.34	-41.58	-451.10	0.00	0.00	0.00
5,200.00	10.00	354.74	5,160.11	468.62	-43.17	-468.37	0.00	0.00	0.00

# OXY

## Planning Report

<b>Database:</b>	HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Corral Gorge 12_13 Fed Com 72H
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB = 26' @ 3148.40ft (H&P 423)
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB = 26' @ 3148.40ft (H&P 423)
<b>Site:</b>	Corral Gorge 12_13	<b>North Reference:</b>	Grid
<b>Well:</b>	Corral Gorge 12_13 Fed Com 72H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permitting Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	10.00	354.74	5,258.59	485.91	-44.77	-485.65	0.00	0.00	0.00
5,400.00	10.00	354.74	5,357.07	503.20	-46.36	-502.93	0.00	0.00	0.00
5,500.00	10.00	354.74	5,455.55	520.49	-47.95	-520.21	0.00	0.00	0.00
5,600.00	10.00	354.74	5,554.03	537.78	-49.54	-537.49	0.00	0.00	0.00
5,700.00	10.00	354.74	5,652.52	555.06	-51.14	-554.77	0.00	0.00	0.00
5,800.00	10.00	354.74	5,751.00	572.35	-52.73	-572.05	0.00	0.00	0.00
5,900.00	10.00	354.74	5,849.48	589.64	-54.32	-589.33	0.00	0.00	0.00
6,000.00	10.00	354.74	5,947.96	606.93	-55.92	-606.60	0.00	0.00	0.00
6,100.00	10.00	354.74	6,046.44	624.22	-57.51	-623.88	0.00	0.00	0.00
6,200.00	10.00	354.74	6,144.92	641.50	-59.10	-641.16	0.00	0.00	0.00
6,300.00	10.00	354.74	6,243.40	658.79	-60.69	-658.44	0.00	0.00	0.00
6,400.00	10.00	354.74	6,341.89	676.08	-62.29	-675.72	0.00	0.00	0.00
6,500.00	10.00	354.74	6,440.37	693.37	-63.88	-693.00	0.00	0.00	0.00
6,600.00	10.00	354.74	6,538.85	710.66	-65.47	-710.28	0.00	0.00	0.00
6,700.00	10.00	354.74	6,637.33	727.94	-67.06	-727.56	0.00	0.00	0.00
6,800.00	10.00	354.74	6,735.81	745.23	-68.66	-744.83	0.00	0.00	0.00
6,900.00	10.00	354.74	6,834.29	762.52	-70.25	-762.11	0.00	0.00	0.00
7,000.00	10.00	354.74	6,932.77	779.81	-71.84	-779.39	0.00	0.00	0.00
7,100.00	10.00	354.74	7,031.25	797.10	-73.44	-796.67	0.00	0.00	0.00
7,200.00	10.00	354.74	7,129.74	814.38	-75.03	-813.95	0.00	0.00	0.00
7,300.00	10.00	354.74	7,228.22	831.67	-76.62	-831.23	0.00	0.00	0.00
7,400.00	10.00	354.74	7,326.70	848.96	-78.21	-848.51	0.00	0.00	0.00
7,500.00	10.00	354.74	7,425.18	866.25	-79.81	-865.79	0.00	0.00	0.00
7,600.00	10.00	354.74	7,523.66	883.54	-81.40	-883.06	0.00	0.00	0.00
7,700.00	10.00	354.74	7,622.14	900.82	-82.99	-900.34	0.00	0.00	0.00
7,800.00	10.00	354.74	7,720.62	918.11	-84.58	-917.62	0.00	0.00	0.00
7,900.00	10.00	354.74	7,819.11	935.40	-86.18	-934.90	0.00	0.00	0.00
8,000.00	10.00	354.74	7,917.59	952.69	-87.77	-952.18	0.00	0.00	0.00
8,100.00	10.00	354.74	8,016.07	969.98	-89.36	-969.46	0.00	0.00	0.00
8,200.00	10.00	354.74	8,114.55	987.26	-90.96	-986.74	0.00	0.00	0.00
8,300.00	10.00	354.74	8,213.03	1,004.55	-92.55	-1,004.02	0.00	0.00	0.00
8,400.00	10.00	354.74	8,311.51	1,021.84	-94.14	-1,021.29	0.00	0.00	0.00
8,500.00	10.00	354.74	8,409.99	1,039.13	-95.73	-1,038.57	0.00	0.00	0.00
8,600.00	10.00	354.74	8,508.48	1,056.42	-97.33	-1,055.85	0.00	0.00	0.00
8,700.00	10.00	354.74	8,606.96	1,073.71	-98.92	-1,073.13	0.00	0.00	0.00
8,800.00	10.00	354.74	8,705.44	1,090.99	-100.51	-1,090.41	0.00	0.00	0.00
8,900.00	10.00	354.74	8,803.92	1,108.28	-102.10	-1,107.69	0.00	0.00	0.00
8,928.94	10.00	354.74	8,832.42	1,113.28	-102.57	-1,112.69	0.00	0.00	0.00
9,000.00	2.99	342.67	8,902.98	1,121.20	-103.68	-1,120.60	10.00	-9.87	-16.98
9,100.00	7.20	186.65	9,002.77	1,117.46	-105.19	-1,116.85	10.00	4.21	-156.02
9,200.00	17.17	182.54	9,100.40	1,096.44	-106.57	-1,095.82	10.00	9.97	-4.11
9,300.00	27.16	181.41	9,192.90	1,058.78	-107.80	-1,058.16	10.00	9.99	-1.13
9,400.00	37.15	180.86	9,277.45	1,005.63	-108.82	-1,005.01	10.00	10.00	-0.55
9,500.00	47.15	180.52	9,351.49	938.61	-109.61	-937.98	10.00	10.00	-0.34
9,600.00	57.15	180.27	9,412.77	859.75	-110.14	-859.12	10.00	10.00	-0.25
9,700.00	67.15	180.08	9,459.43	771.45	-110.40	-770.81	10.00	10.00	-0.20
9,800.00	77.15	179.91	9,490.04	676.38	-110.38	-675.75	10.00	10.00	-0.17
9,900.00	87.15	179.75	9,503.69	577.45	-110.09	-576.82	10.00	10.00	-0.16
9,929.69	90.11	179.71	9,504.40	547.77	-109.95	-547.14	10.00	10.00	-0.15
10,000.00	90.11	179.71	9,504.26	477.46	-109.59	-476.84	0.00	0.00	0.00
10,100.00	90.11	179.71	9,504.06	377.46	-109.07	-376.84	0.00	0.00	0.00
10,200.00	90.11	179.71	9,503.86	277.46	-108.56	-276.85	0.00	0.00	0.00
10,300.00	90.11	179.71	9,503.66	177.46	-108.05	-176.85	0.00	0.00	0.00
10,400.00	90.11	179.71	9,503.46	77.47	-107.54	-76.86	0.00	0.00	0.00
10,500.00	90.11	179.71	9,503.26	-22.53	-107.02	23.13	0.00	0.00	0.00

# OXY

## Planning Report

<b>Database:</b>	HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Corral Gorge 12_13 Fed Com 72H
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB = 26' @ 3148.40ft (H&P 423)
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB = 26' @ 3148.40ft (H&P 423)
<b>Site:</b>	Corral Gorge 12_13	<b>North Reference:</b>	Grid
<b>Well:</b>	Corral Gorge 12_13 Fed Com 72H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Permitting Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,600.00	90.11	179.71	9,503.06	-122.53	-106.51	123.13	0.00	0.00	0.00
10,700.00	90.11	179.71	9,502.86	-222.53	-106.00	223.12	0.00	0.00	0.00
10,800.00	90.11	179.71	9,502.66	-322.53	-105.48	323.12	0.00	0.00	0.00
10,900.00	90.11	179.71	9,502.46	-422.53	-104.97	423.11	0.00	0.00	0.00
11,000.00	90.11	179.71	9,502.26	-522.52	-104.46	523.10	0.00	0.00	0.00
11,100.00	90.11	179.71	9,502.06	-622.52	-103.94	623.10	0.00	0.00	0.00
11,200.00	90.11	179.71	9,501.86	-722.52	-103.43	723.09	0.00	0.00	0.00
11,300.00	90.11	179.71	9,501.66	-822.52	-102.92	823.09	0.00	0.00	0.00
11,400.00	90.11	179.71	9,501.46	-922.52	-102.41	923.08	0.00	0.00	0.00
11,500.00	90.11	179.71	9,501.26	-1,022.52	-101.89	1,023.07	0.00	0.00	0.00
11,600.00	90.11	179.71	9,501.06	-1,122.52	-101.38	1,123.07	0.00	0.00	0.00
11,700.00	90.11	179.71	9,500.86	-1,222.51	-100.87	1,223.06	0.00	0.00	0.00
11,800.00	90.11	179.71	9,500.66	-1,322.51	-100.35	1,323.06	0.00	0.00	0.00
11,900.00	90.11	179.71	9,500.46	-1,422.51	-99.84	1,423.05	0.00	0.00	0.00
12,000.00	90.11	179.71	9,500.26	-1,522.51	-99.33	1,523.04	0.00	0.00	0.00
12,100.00	90.11	179.71	9,500.06	-1,622.51	-98.81	1,623.04	0.00	0.00	0.00
12,200.00	90.11	179.71	9,499.86	-1,722.51	-98.30	1,723.03	0.00	0.00	0.00
12,300.00	90.11	179.71	9,499.66	-1,822.50	-97.79	1,823.03	0.00	0.00	0.00
12,400.00	90.11	179.71	9,499.46	-1,922.50	-97.28	1,923.02	0.00	0.00	0.00
12,500.00	90.11	179.71	9,499.26	-2,022.50	-96.76	2,023.01	0.00	0.00	0.00
12,600.00	90.11	179.71	9,499.06	-2,122.50	-96.25	2,123.01	0.00	0.00	0.00
12,700.00	90.11	179.71	9,498.86	-2,222.50	-95.74	2,223.00	0.00	0.00	0.00
12,800.00	90.11	179.71	9,498.66	-2,322.50	-95.22	2,323.00	0.00	0.00	0.00
12,900.00	90.11	179.71	9,498.46	-2,422.50	-94.71	2,422.99	0.00	0.00	0.00
13,000.00	90.11	179.71	9,498.26	-2,522.49	-94.20	2,522.98	0.00	0.00	0.00
13,100.00	90.11	179.71	9,498.06	-2,622.49	-93.68	2,622.98	0.00	0.00	0.00
13,200.00	90.11	179.71	9,497.86	-2,722.49	-93.17	2,722.97	0.00	0.00	0.00
13,300.00	90.11	179.71	9,497.66	-2,822.49	-92.66	2,822.97	0.00	0.00	0.00
13,400.00	90.11	179.71	9,497.46	-2,922.49	-92.15	2,922.96	0.00	0.00	0.00
13,500.00	90.11	179.71	9,497.26	-3,022.49	-91.63	3,022.95	0.00	0.00	0.00
13,600.00	90.11	179.71	9,497.06	-3,122.49	-91.12	3,122.95	0.00	0.00	0.00
13,700.00	90.11	179.71	9,496.86	-3,222.48	-90.61	3,222.94	0.00	0.00	0.00
13,800.00	90.11	179.71	9,496.66	-3,322.48	-90.09	3,322.94	0.00	0.00	0.00
13,900.00	90.11	179.71	9,496.46	-3,422.48	-89.58	3,422.93	0.00	0.00	0.00
14,000.00	90.11	179.71	9,496.26	-3,522.48	-89.07	3,522.92	0.00	0.00	0.00
14,100.00	90.11	179.71	9,496.06	-3,622.48	-88.55	3,622.92	0.00	0.00	0.00
14,200.00	90.11	179.71	9,495.86	-3,722.48	-88.04	3,722.91	0.00	0.00	0.00
14,300.00	90.11	179.71	9,495.66	-3,822.47	-87.53	3,822.91	0.00	0.00	0.00
14,400.00	90.11	179.71	9,495.46	-3,922.47	-87.02	3,922.90	0.00	0.00	0.00
14,500.00	90.11	179.71	9,495.26	-4,022.47	-86.50	4,022.89	0.00	0.00	0.00
14,600.00	90.11	179.71	9,495.06	-4,122.47	-85.99	4,122.89	0.00	0.00	0.00
14,700.00	90.11	179.71	9,494.86	-4,222.47	-85.48	4,222.88	0.00	0.00	0.00
14,800.00	90.11	179.71	9,494.66	-4,322.47	-84.96	4,322.88	0.00	0.00	0.00
14,900.00	90.11	179.71	9,494.47	-4,422.47	-84.45	4,422.87	0.00	0.00	0.00
15,000.00	90.11	179.71	9,494.27	-4,522.46	-83.94	4,522.86	0.00	0.00	0.00
15,100.00	90.11	179.71	9,494.07	-4,622.46	-83.42	4,622.86	0.00	0.00	0.00
15,200.00	90.11	179.71	9,493.87	-4,722.46	-82.91	4,722.85	0.00	0.00	0.00
15,300.00	90.11	179.71	9,493.67	-4,822.46	-82.40	4,822.85	0.00	0.00	0.00
15,400.00	90.11	179.71	9,493.47	-4,922.46	-81.89	4,922.84	0.00	0.00	0.00
15,500.00	90.11	179.71	9,493.27	-5,022.46	-81.37	5,022.83	0.00	0.00	0.00
15,600.00	90.11	179.71	9,493.07	-5,122.45	-80.86	5,122.83	0.00	0.00	0.00
15,700.00	90.11	179.71	9,492.87	-5,222.45	-80.35	5,222.82	0.00	0.00	0.00
15,800.00	90.11	179.71	9,492.67	-5,322.45	-79.83	5,322.82	0.00	0.00	0.00
15,900.00	90.11	179.71	9,492.47	-5,422.45	-79.32	5,422.81	0.00	0.00	0.00
16,000.00	90.11	179.71	9,492.27	-5,522.45	-78.81	5,522.81	0.00	0.00	0.00

OXY

Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Corral Gorge 12_13 Fed Com 72H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB = 26' @ 3148.40ft (H&P 423)
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB = 26' @ 3148.40ft (H&P 423)
Site:	Corral Gorge 12_13	North Reference:	Grid
Well:	Corral Gorge 12_13 Fed Com 72H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,100.00	90.11	179.71	9,492.07	-5,622.45	-78.29	5,622.80	0.00	0.00	0.00
16,200.00	90.11	179.71	9,491.87	-5,722.45	-77.78	5,722.79	0.00	0.00	0.00
16,300.00	90.11	179.71	9,491.67	-5,822.44	-77.27	5,822.79	0.00	0.00	0.00
16,400.00	90.11	179.71	9,491.47	-5,922.44	-76.76	5,922.78	0.00	0.00	0.00
16,500.00	90.11	179.71	9,491.27	-6,022.44	-76.24	6,022.78	0.00	0.00	0.00
16,600.00	90.11	179.71	9,491.07	-6,122.44	-75.73	6,122.77	0.00	0.00	0.00
16,700.00	90.11	179.71	9,490.87	-6,222.44	-75.22	6,222.76	0.00	0.00	0.00
16,800.00	90.11	179.71	9,490.67	-6,322.44	-74.70	6,322.76	0.00	0.00	0.00
16,900.00	90.11	179.71	9,490.47	-6,422.44	-74.19	6,422.75	0.00	0.00	0.00
17,000.00	90.11	179.71	9,490.27	-6,522.43	-73.68	6,522.75	0.00	0.00	0.00
17,100.00	90.11	179.71	9,490.07	-6,622.43	-73.16	6,622.74	0.00	0.00	0.00
17,200.00	90.11	179.71	9,489.87	-6,722.43	-72.65	6,722.73	0.00	0.00	0.00
17,300.00	90.11	179.71	9,489.67	-6,822.43	-72.14	6,822.73	0.00	0.00	0.00
17,400.00	90.11	179.71	9,489.47	-6,922.43	-71.63	6,922.72	0.00	0.00	0.00
17,500.00	90.11	179.71	9,489.27	-7,022.43	-71.11	7,022.72	0.00	0.00	0.00
17,600.00	90.11	179.71	9,489.07	-7,122.42	-70.60	7,122.71	0.00	0.00	0.00
17,700.00	90.11	179.71	9,488.87	-7,222.42	-70.09	7,222.70	0.00	0.00	0.00
17,800.00	90.11	179.71	9,488.67	-7,322.42	-69.57	7,322.70	0.00	0.00	0.00
17,900.00	90.11	179.71	9,488.47	-7,422.42	-69.06	7,422.69	0.00	0.00	0.00
18,000.00	90.11	179.71	9,488.27	-7,522.42	-68.55	7,522.69	0.00	0.00	0.00
18,100.00	90.11	179.71	9,488.07	-7,622.42	-68.03	7,622.68	0.00	0.00	0.00
18,200.00	90.11	179.71	9,487.87	-7,722.42	-67.52	7,722.67	0.00	0.00	0.00
18,300.00	90.11	179.71	9,487.67	-7,822.41	-67.01	7,822.67	0.00	0.00	0.00
18,400.00	90.11	179.71	9,487.47	-7,922.41	-66.50	7,922.66	0.00	0.00	0.00
18,500.00	90.11	179.71	9,487.27	-8,022.41	-65.98	8,022.66	0.00	0.00	0.00
18,600.00	90.11	179.71	9,487.07	-8,122.41	-65.47	8,122.65	0.00	0.00	0.00
18,700.00	90.11	179.71	9,486.87	-8,222.41	-64.96	8,222.64	0.00	0.00	0.00
18,800.00	90.11	179.71	9,486.67	-8,322.41	-64.44	8,322.64	0.00	0.00	0.00
18,900.00	90.11	179.71	9,486.47	-8,422.41	-63.93	8,422.63	0.00	0.00	0.00
19,000.00	90.11	179.71	9,486.27	-8,522.40	-63.42	8,522.63	0.00	0.00	0.00
19,100.00	90.11	179.71	9,486.07	-8,622.40	-62.90	8,622.62	0.00	0.00	0.00
19,200.00	90.11	179.71	9,485.87	-8,722.40	-62.39	8,722.61	0.00	0.00	0.00
19,300.00	90.11	179.71	9,485.67	-8,822.40	-61.88	8,822.61	0.00	0.00	0.00
19,400.00	90.11	179.71	9,485.47	-8,922.40	-61.37	8,922.60	0.00	0.00	0.00
19,500.00	90.11	179.71	9,485.27	-9,022.40	-60.85	9,022.60	0.00	0.00	0.00
19,600.00	90.11	179.71	9,485.07	-9,122.39	-60.34	9,122.59	0.00	0.00	0.00
19,700.00	90.11	179.71	9,484.87	-9,222.39	-59.83	9,222.58	0.00	0.00	0.00
19,800.00	90.11	179.71	9,484.67	-9,322.39	-59.31	9,322.58	0.00	0.00	0.00
19,900.00	90.11	179.71	9,484.47	-9,422.39	-58.80	9,422.57	0.00	0.00	0.00
20,000.00	90.11	179.71	9,484.27	-9,522.39	-58.29	9,522.57	0.00	0.00	0.00
20,100.00	90.11	179.71	9,484.07	-9,622.39	-57.77	9,622.56	0.00	0.00	0.00
20,200.00	90.11	179.71	9,483.87	-9,722.39	-57.26	9,722.55	0.00	0.00	0.00
20,300.00	90.11	179.71	9,483.67	-9,822.38	-56.75	9,822.55	0.00	0.00	0.00
20,400.00	90.11	179.71	9,483.47	-9,922.38	-56.24	9,922.54	0.00	0.00	0.00
20,435.42	90.11	179.71	9,483.40	-9,957.80	-56.05	9,957.95	0.00	0.00	0.00

OXY  
Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Corral Gorge 12_13 Fed Com 72H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB = 26' @ 3148.40ft (H&P 423)
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB = 26' @ 3148.40ft (H&P 423)
Site:	Corral Gorge 12_13	North Reference:	Grid
Well:	Corral Gorge 12_13 Fed Com 72H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permitting Plan		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP (Corral Gorge - plan misses target center by 607.86ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	597.77	-110.31	419,196.55	662,881.59	32.151840	-103.940594
PBHL (Corral Gorge - plan hits target center - Point	0.00	0.00	9,483.40	-9,957.80	-56.05	408,641.79	662,935.84	32.122826	-103.940543
FTP (Corral Gorge - plan hits target center - Point	0.00	0.00	9,504.40	547.77	-109.95	419,146.56	662,881.95	32.151703	-103.940593

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
394.40	394.40	RUSTLER			
800.40	800.40	SALADO			
1,776.40	1,776.40	CASTILE			
3,334.97	3,323.40	BELL CANYON			
3,342.08	3,330.40	DELAWARE			
4,256.97	4,231.40	CHERRY CANYON			
5,628.80	5,582.40	BRUSHY CANYON			
7,177.32	7,107.40	BONE SPRING			
8,127.75	8,043.40	BONE SPRING 1ST			
8,992.40	8,895.40	BONE SPRING 2ND			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,240.00	2,240.00	0.00	0.00	Build 2°/100'	
2,739.90	2,737.36	43.32	-3.99	Hold 10° Tangent	
8,928.94	8,832.42	1,113.28	-102.57	KOP, Build & Turn 10°/100'	
9,929.69	9,504.40	547.77	-109.95	Landing Point	
20,435.42	9,483.40	-9,957.80	-56.05	TD at 20435.41' MD	

# Oxy USA Inc. - Corral Gorge 12\_13 Fed Com 72H

## Drill Plan

### 1. Geologic Formations

TVD of Target (ft):	9504	Pilot Hole Depth (ft):	
Total Measured Depth (ft):	20435	Deepest Expected Fresh Water (ft):	394

### Delaware Basin

Formation	MD-RKB (ft)	TVD-RKB (ft)	Expected Fluids
Rustler	394	394	
Salado	800	800	Salt
Castile	1776	1776	Salt
Delaware	3342	3330	Oil/Gas/Brine
Bell Canyon	3335	3323	Oil/Gas/Brine
Cherry Canyon	4257	4231	Oil/Gas/Brine
Brushy Canyon	5629	5582	Losses
Bone Spring	7177	7107	Oil/Gas
Bone Spring 1st	8128	8043	Oil/Gas
Bone Spring 2nd	8992	8895	Oil/Gas
Bone Spring 3rd			Oil/Gas
Wolfcamp			Oil/Gas
Penn			Oil/Gas
Strawn			Oil/Gas

\*H2S, water flows, loss of circulation, abnormal pressures, etc.

### 2. Casing Program

Section	Hole Size (in)	MD		TVD		Csg. OD (in)	Csg Wt. (ppf)	Grade	Conn.
		From (ft)	To (ft)	From (ft)	To (ft)				
Surface	14.75	0	740	0	740	10.75	45.5	J-55	BTC
Intermediate	9.875	0	8829	0	8732	7.827	39.3	P110S	Wedge 463
Production	6.75	8629	20435	8532	9504	5.5	20	P-110	Wedge 461

All casing strings will be tested in accordance with 43 CFR part 3170 Subpart 3172



All Casing SF Values will meet or exceed those below			
SF Collapse	SF Burst	Body SF Tension	Joint SF Tension
1.00	1.100	1.4	1.4

- \*If Production Casing Connection OD does not meet 0.422" annular clearance inside casing:
- Cement excess will be circulated from Top of Liner to surface (Cement Confirmation)
  - Liner Top will be tested to confirm seal
  - If ICP in Bone Spring Pool and lateral landed in Wolfcamp Pool, a CBL will be ran.

	Y or N
Is casing new? If used, attach certification as required in 43 CFR 3160	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

### 3. Cementing Program

Section	Stage	Slurry:	Sacks	Yield (ft <sup>3</sup> /ft)	Density (lb/gal)	Excess:	TOC	Placement	Description
Surface	1	Surface - Tail	619	1.33	14.8	100%	-	Circulate	Class C+Accel.
Int.	1	Intermediate 1S - Tail	371	1.65	13.2	5%	5,879	Circulate	Class H+Accel., Disper., Salt
Int.	2	Intermediate 2S - Tail BH	837	1.71	13.3	25%	-	Bradenhead	Class C+Accel.
Prod.	1	Production - Tail	891	1.38	13.2	25%	8,629	Circulate	Class H+Ret., Disper., Salt

#### Offline Cementing Request

Oxy requests a variance to cement the 9.625" and/or 7.625" intermediate casing strings offline in accordance to the approved variance, EC Tran 461365. Please see Offline Cementing Variance attachment for further details.

#### Bradenhead CBL Request

Oxy requests permission to adjust the CBL requirement after bradenhead cement jobs, on 7-5/8" intermediate casings, as per the agreement reached in the OXY/BLM meeting on September 5, 2019. Please see Bradenhead CBL Variance attachment for further details.

#### Cement Top and Liner Overlap

- Oxy is requesting permission to have minimum fill of cement behind the 5-1/2" production liner to be 200 ft into previous casing string  
The reason for this is so that we can come back and develop shallower benches from the same 7.625"/7.827" mainbore in the future
- Cement will be brought to the top of this liner hanger

**4. Pressure Control Equipment**

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type		✓	Tested to:	Deepest TVD Depth (ft) per Section:
9.875" Hole	13-5/8"	5M	Annular		✓	70% of working pressure	8732
		5M	Blind Ram		✓	250 psi / 5000 psi	
			Pipe Ram				
			Double Ram		✓		
			Other*				
6.75" Hole	13-5/8"	5M	Annular		✓	70% of working pressure	9504
		5M	Blind Ram		✓	250 psi / 5000 psi	
			Pipe Ram				
			Double Ram		✓		
			Other*				

\*Specify if additional ram is utilized

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR part 3170 Subpart 3172 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

	Formation integrity test will be performed per 43 CFR part 3170 Subpart 3172. On Exploratory wells or 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. Will be tested in accordance with 43 CFR part 3170 Subpart 3172.
	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
	A multibowl or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per 43 CFR part 3170 Subpart 3172 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015.  See attached schematics.

**BOP Break Testing Request**

Oxy requests permission to adjust the BOP break testing requirements as per the agreement reached in the OXY/BLM meeting on September 5, 2019. Please see BOP Break Testing Variance attachment for further details.

**Oxy will use Cameron ADAPT wellhead system that uses an OEC top flange connection. This connection has been fully vetted and verified by API to Spec 6A and carries an API monogram.**

**5. Mud Program**

Section	Depth - MD		Depth - TVD		Type	Weight (ppg)	Viscosity	Water Loss
	From (ft)	To (ft)	From (ft)	To (ft)				
Surface	0	740	0	740	Water-Based Mud	8.6 - 8.8	40-60	N/C
Intermediate	740	8829	740	8732	Saturated Brine-Based or Oil-Based Mud	8.0 - 10.0	35-45	N/C
Production	8829	20435	8732	9504	Water-Based or Oil-Based Mud	9.5 - 12.5	38-50	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Oxy will use a closed mud system.

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring
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**6. Logging and Testing Procedures**

Logging, Coring and Testing.		
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole).	
	Stated logs run will be in the Completion Report and submitted to the BLM.	
No	Logs are planned based on well control or offset log information.	
No	Drill stem test? If yes, explain	
No	Coring? If yes, explain	
Additional logs planned		Interval
No	Resistivity	
No	Density	
Yes	CBL	Production string
Yes	Mud log	Bone Spring – TD
No	PEX	

**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	6178 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	157°F

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of 43 CFR part 3170 Subpart 3172. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

N	H2S is present
Y	H2S Plan attached

**8. Other facets of operation**

	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe. We plan to drill the 2 well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe. Oxy requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that Oxy would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes
<b>Total Estimated Cuttings Volume: 1437 bbls</b>	



5.500" 20.00 lb/ft P110-CY

TenarisHydril Wedge 461™ Matched Strength



Special Data Sheet

TH DS-20.0359

12 August 2020

Rev 00

Nominal OD	5.500 in.	Wall Thickness	0.361 in.	Grade	P110-CY
Min Wall Thickness	87.5%	Type	CASING	Connection OD Option	MATCHED STRENGTH

Pipe Body Data

Geometry			Performance		
Nominal OD	5.500 in.	Nominal ID	4.778 in.	Body Yield Strength	641 x 1000 lbs
Nominal Weight	20.00 lbs/ft	Wall Thickness	0.361 in.	Internal Yield	12640 psi
Standard Drift Diameter	4.653 in.	Plain End Weight	19.83 lbs/ft	SMYS	110000 psi
Special Drift Diameter	N/A	OD Tolerance	API	Collapse Pressure	11110 psi

Connection Data

Geometry		Performance		Make-up Torques	
Matched Strength OD	6.050 in.	Tension Efficiency	100%	Minimum	17000 ft-lbs
Make-up Loss	3.775 in.	Joint Yield Strength	641 x 1000 lbs	Optimum	18000 ft-lbs
Threads per in.	3.40	Internal Yield	12640 psi	Maximum	21600 ft-lbs
Connection OD Option	MATCHED STRENGTH	Compression Efficiency	100%	Operational Limit Torques	
Coupling Length	7.714 in.	Compression Strength	641 x 1000 lbs	Operating Torque	32000 ft-lbs
		Bending	92 °/100 ft	Yield Torque	38000 ft-lbs
		Collapse	11110 psi	Buck-On Torques	
				Minimum	21600 ft-lbs
				Maximum	23100 ft-lbs

Notes

\*If you need to use torque values that are higher than the maximum indicated, please contact a local Tenaris technical sales representative



# TenarisHydril Wedge 463®



Coupling	Pipe Body
Grade: P110-S	Grade: P110-S
Body: White	1st Band: White
1st Band: Orange	2nd Band: Orange
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	7.827 in.	Wall Thickness	0.500 in.	Grade	P110-S
Min. Wall Thickness	87.50 %	Pipe Body Drift	Special Drift	Type	Casing
Connection OD Option	REGULAR				

### Pipe Body Data

Geometry				Performance	
Nominal OD	7.827 in.	Wall Thickness	0.500 in.	Body Yield Strength	1266 x1000 lb
Nominal Weight	39.30 lb/ft	Plain End Weight	39.16 lb/ft	Min. Internal Yield Pressure	12,300 psi
Drift	6.750 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	6.827 in.			Collapse Pressure	10,490 psi

### Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	8.500 in.	Tension Efficiency	100 %	Minimum	22,000 ft-lb
Coupling Length	10.950 in.	Joint Yield Strength	1266 x1000 lb	Optimum	23,000 ft-lb
Connection ID	6.814 in.	Internal Pressure Capacity	12,300 psi	Maximum	27,000 ft-lb
Make-up Loss	4.520 in.	Compression Efficiency	100 %	Operation Limit Torques	
Threads per inch	3.25	Compression Strength	1266 x1000 lb	Operating Torque	61,000 ft-lb
Connection OD Option	Regular	Max. Allowable Bending	64.42 °/100 ft	Yield Torque	70,000 ft-lb
		External Pressure Capacity	10,490 psi	Buck-On	
		Coupling Face Load	414,177 lb	Minimum	26,000 ft-lb
				Maximum	29,000 ft-lb

### Notes

For the latest performance data, always visit our website: [www.tenaris.com](http://www.tenaris.com)  
For further information on concepts indicated in this datasheet, download the Datasheet Manual from [www.tenaris.com](http://www.tenaris.com)

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P11/C11



## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INCORPORATED
WELL NAME & NO.:	CORRAL GORGE 12 13 FEDERAL COM / 72H
SURFACE HOLE FOOTAGE:	649'/N & 1968'/W
BOTTOM HOLE FOOTAGE:	20'/S & 1862'/W
LOCATION:	Section 12, T.25 S., R.29 E.
COUNTY:	Eddy County, New Mexico

**ALL PREVIOUS COAs STILL APPLY**

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Wellhead Variance	<input type="radio"/> Diverter		
Other	<input type="checkbox"/> 4 String	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Open Annulus
Cementing	<input type="checkbox"/> Contingency Cement Squeeze	<input type="checkbox"/> EchoMeter	<input checked="" type="checkbox"/> Primary Cement Squeeze
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input checked="" type="checkbox"/> Break Testing	<input checked="" type="checkbox"/> Offline Cementing	<input checked="" type="checkbox"/> Casing Clearance

COA

### A. CASING

#### COA for the proposed Falcon Design (2-string + production liner):

- Tie Back of the liner should be a minimum of 200' into the previous casing
- Surface and Intermediate cement to surface should be verified visually. If cement fallback is suspected, an Echo-meter can be run to verify cement top in the intermediate and a temp log may be run in the surface interval. CBL should be run if confidence is lacking in the surface or intermediate cement job. The proposed falcon design (2-string + production liner) is only approved when surface and intermediate sections are cemented to surface. Operator to revert to 3-string design when surface or intermediate cementing is of poor quality or not verified to surface
- Region 2 NACE certified intermediate casing must be used

- A third-party verification (such as thread rep or torque turn) must be conducted to ensure the connection makeups are to spec for the intermediate casing string exposed to frac pressures
- Corrosion inhibitors must be used in areas with corrosive production fluids
- Operator should actively monitor annulus during the completion phase. Wells should be monitored in a manner capable of identifying a casing leak or liner top packer leak, within an acceptable time frame while on production. Remedial work may be required to restore intermediate casing integrity or liner top packer integrity in a failure event
- BLM should be notified if cement is not verified to the liner top
- Surface location must NOT be located within SOPA, KPLA, Capitan Reef or High Cave Karst

#### **Alternate Casing Design:**

1. The **10-3/4** inch surface casing shall be set at approximately **740** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - 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 **7.827** inch intermediate casing shall be set at approximately **8829** feet The minimum required fill of cement behind the **7.827** inch intermediate casing is:

#### **Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

**Operator has proposed to pump down 7.827" X 10-3/4" annulus. Operator must top out cement after the bradenhead squeeze and verify cement to surface. Operator can also check TOC with Echo-meter. CBL must be run from TD of the 7.827" casing to surface if confidence is lacking on the quality of the bradenhead squeeze cement job. Submit results to BLM.**

3. The **5-1/2** inch production liner shall be set at approximately **20,435** feet. A **minimum 200' tie back of production liner into the intermediate casing is required. Successful liner top pressure test critical for zonal isolation check. If ICP in Bone Spring Pool and lateral landed in Wolfcamp Pool, a CBL will be ran.** The minimum required fill of cement behind the **5-1/2** inch production liner is:
- Cement should tie-back **200 feet** into the previous casing. Operator shall provide method of verification.
  - Operator has proposed 10% excess instead of 25% excess recommendation for the liner design and this is acceptable. Losses may need to be cured and pump rates may need to be modified to achieve cement tieback when losses occur or are anticipated in the production interval

## 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)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

☒ Lea County

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
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.

- BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 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. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

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, 2) until cement has been in place at least 24 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-P 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 Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
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:
  - 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. 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.
  - a. 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).
  - b. 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.)
  - c. 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 Onshore Order 2 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 water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - d. 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.
  - e. The results of the test shall be reported to the appropriate BLM office.

- f. 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.
- g. 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.
- h. 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 Onshore Order No. 2.

#### 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.

**KPI – 01/25/2024**

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 321025

CONDITIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 321025
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	3/12/2024