

<b>Well Name:</b> OXBOW CC 17-8 FEDERAL COM	<b>Well Location:</b> T24S / R29E / SEC 17 / SESE / 32.2119356 / -104.001852	<b>County or Parish/State:</b> EDDY / NM
<b>Well Number:</b> 36H	<b>Type of Well:</b> OIL WELL	<b>Allottee or Tribe Name:</b>
<b>Lease Number:</b> NMNM094651, NMNM94651	<b>Unit or CA Name:</b>	<b>Unit or CA Number:</b>
<b>US Well Number:</b> 3001545088	<b>Well Status:</b> Producing Oil Well	<b>Operator:</b> OXY USA INCORPORATED

Notice of Intent

**Sundry ID:** 2629851

<b>Type of Submission:</b> Notice of Intent	<b>Type of Action:</b> Other
<b>Date Sundry Submitted:</b>	<b>Time Sundry Submitted:</b>
<b>Date proposed operation will begin:</b> 03/01/2022	

**Procedure Description:** OXY USA Inc. respectfully requests approval for the attached SL2 (multilateral) program. Please find the attached cover letter explaining the request, planned procedure and all supporting drilling documents.

Surface Disturbance

**Is any additional surface disturbance proposed?:** No

NOI Attachments

Procedure Description

- Oxbow\_CC\_17\_08\_Fed\_Com\_36H\_\_14H\_Proposed\_Schematic\_20220104103258.pdf
- Oxbow\_CC\_17\_08\_Fed\_Com\_36H\_Current\_Schematic\_20220104103232.pdf
- 7.625in\_x\_4.5in\_LSRT\_and\_STIM\_HOOK\_Hanger\_Installation\_Procedure\_OXY\_2021\_rev3\_20220104103214.pdf
- 16\_OxbowCC17\_8FdCom36H\_NGMP\_20210819160945.pdf
- 14\_OxbowCC17\_8FdCom36H\_DrillPlan\_20210819160605.pdf
- 12\_13\_OxbowCC17\_8FdCom36H\_DirectPlan\_Plot\_20210819160550.pdf
- 9\_10\_11\_OxbowCC17\_8FdCom36H\_H2S\_20210819160336.pdf
- 8\_OxbowCC17\_8FdCom36H\_Specs\_20210819160319.pdf

Received by OCD: 4/18/2022 7:08:17 PM

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US Well Number: 3001545088	Well Status: Producing Oil Well	Operator: OXY USA INCORPORATED

- 7\_OxbowCC17\_8FdCom36H\_CsgCriteria\_20210819160300.pdf
- 6\_OxbowCC17\_8FdCom36H\_FlexHoseCert\_20210819160243.pdf
- 5\_OxbowCC17\_8FdCom36H\_BOP\_WH\_20210819160230.pdf
- 4\_OxbowCC17\_8FdCom36H\_Chk\_20210819160215.pdf
- 3\_\_OxbowCC17\_8FdCom36H\_C102\_PPP\_20210819160200.pdf
- 1\_2\_SL2\_Sundry\_Cover\_Letter\_and\_Overview\_Oxbow\_36H\_20210819160149.pdf

Conditions of Approval

Additional Reviews

Oxbow\_CC\_17\_8\_Federal\_Com\_36H\_DrillingCOA\_20220316084840.pdf

Operator Certification

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 submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: LESLIE REEVES

Signed on: MAR 07, 2022 02:38 PM

Name: OXY USA INCORPORATED

Title: Advisor Regulatory

Street Address: 5 GREENWAY PLAZA, SUITE 110

City: HOUSTON                      State: TX

Phone: (713) 497-2492

Email address: LESLIE\_REEVES@OXY.COM

Field Representative

Representative Name:

Street Address:

City:                                      State:                                      Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 04/08/2022

Signature: Chris Walls

## Oxy Multilateral Sundry Cover Letter for:

- **Oxbow CC 17-8 Federal Com #36H** (API 30-015-45088-00S1) – the existing wellbore (parent wellbore)
- **Oxbow CC 17-8 Federal Com #36H** (API 30-015-45088-01S1) – multilateral completion (child wellbore)

### Project Overview

Oxy has developed a project to drill multi-lateral (also known as SL2) wellbores in Oxbow CC 17-8. Originally conceived in 2016, this project enables Oxy to develop additional resources without adding additional surface hole locations.

The parent wellbore is Oxbow CC 17-8 Federal Com #36H (API 30-015-45088). This well is currently active and produces from the Wolfcamp XY. The new lateral, (child wellbore) will be completed in the First Bone Spring.

Parent Wellbore	Child Wellbore
Oxbow CC 17-8 Federal Com #36H 00S1 (Wolfcamp XY)	01S1 (1 <sup>st</sup> Bone Spring)

### Procedure


The proposed operations are:


1. Workover- Pull production equipment and tie-back string from parent wellbore. Set RBP below First Bone Spring kickoff point.
2. Drilling- Set whipstock. Mill window. Drill new child lateral in the First Bone Spring. Retrieve whipstock. Run casing with tieback. Cement child wellbore.
3. Completions- Shoot perforations. Stimulate with hydraulic fractures and cleanout with coiled tubing.
4. Production- Flowback child wellbore.
5. Commingle- Once bottomhole pressure has fallen, pull RBP and install lift equipment. Produce from both parent and child wellbore.

Sundry Attachment List

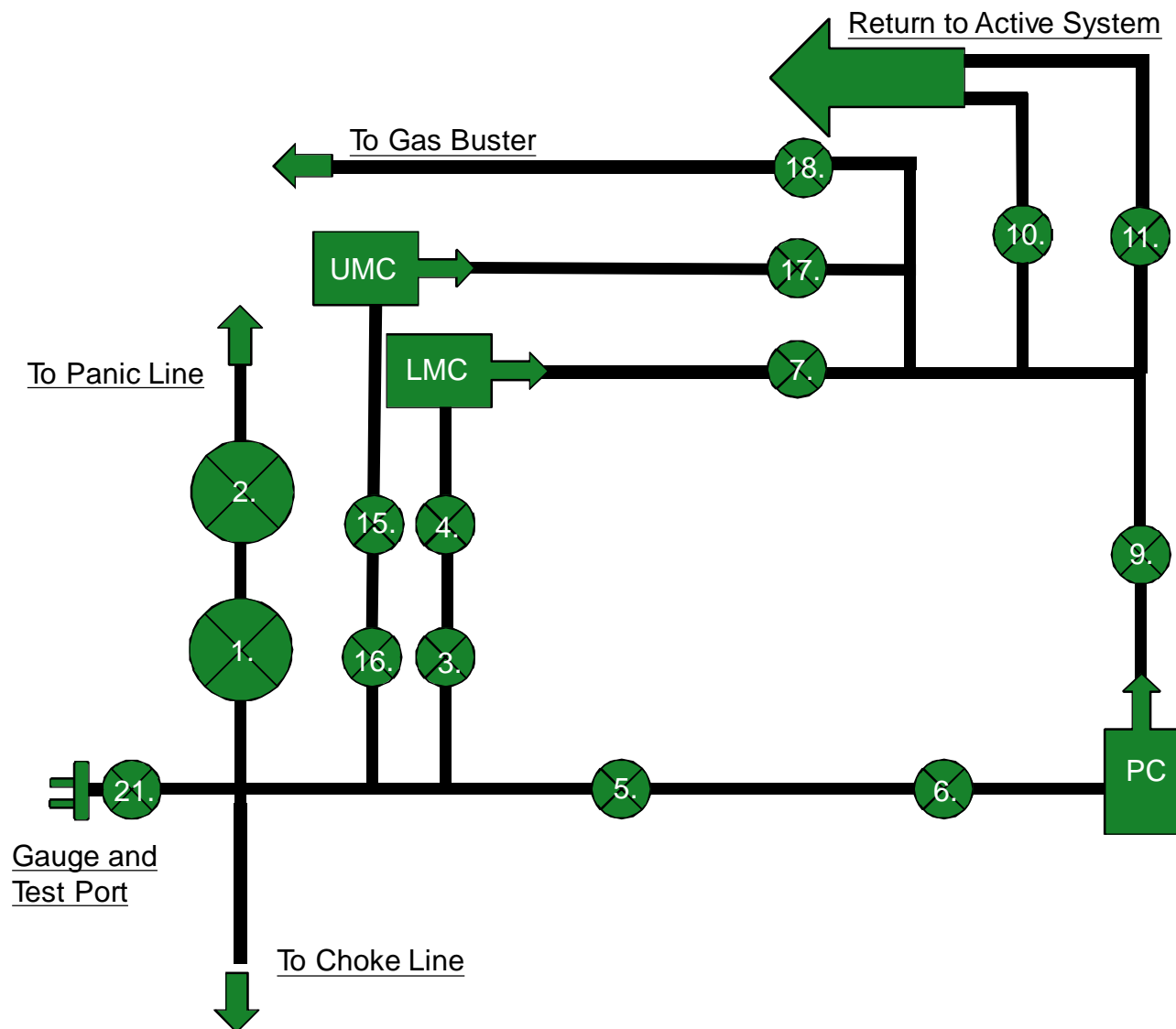
The Sundry will include the following items. They are listed in order as seen in an APD submission:

<b>Sundry Attachment List</b>	
<b>#</b>	<b>Attachment</b>
<b>General</b>	
1, 2	Cover Letter, Procedure
3	C-102, Pre-Plat with Proposed Penetration Point(s)
<b>Drilling</b>	
4	Choke Diagram
5	BOP Attachments, Wellhead
6	Flex Hose Certification
7	Casing Design Criteria Stress Check
8	Special Casing Specification Sheet(s)
9, 10, 11	H2S Plan
12, 13	Directional Plan, Diagram
14	Drilling Plan
15	Offline Cement Detail
<b>SUPO</b>	
16	Natural Gas Management Plan

 <b>Oxbow CC 17-8 Fed Com 14H SL2 (with 36H SL1)</b> <span style="float: right;">26.5' RKB</span>							
DEPTH MD	DEPTH TVD	HOLE SIZE	MUD WEIGHT (ppg)	FLUID TYPE	FORMATION TOPS	Wellhead: 13-5/8" 5K MNDS Cellar-Tech	ADDITIONAL INFO
GROUND LEVEL							
120	120	20"					20" Conductor Pre-installed
		17-1/2"					13-3/8" Surface Casing - 54.5#/ft J55 BTC ID/Drift: 12.615" / 12.459" Conn OD: 14.375" Burst: 2730 psi Collapse: 1130 psi Axial Body: 853 klbs
286	286				Rustler		
452	452	17-1/2" 9-7/8"					TD Criteria: Into Rustler/Above Salt (Deep as Possible)
604	604				Top Salt (Salado)		7-5/8" Intermediate Casing - 26.4#/ft HCL-80 BTC From Surface To 6502' ID/Drift: 6.969" / 6.844" Conn OD: 8.5" Burst: 6020 psi Collapse: 4320 psi Axial Body: 602 klbs
1,253	1,253				Castile		
2,807	2,807				Delaware		7-5/8" Intermediate Casing - 29.7#/ft HCL-80 BTC From 6502' To ICP
2,874	2,874				Bell Canyon		ID/Drift: 6.875" / 6.75" Conn OD: 8.5" Burst: 6880 psi Collapse: 6220 psi Axial Body: 683 klbs
3,738	3,738				Cherry Canyon		
5,000	4,989				Brushy		
6,617	6,583				Bone Spring		LSRT: 66' Length, 3.830" ID, 3.795" Drift
6,482	6,452	6-3/4"	8.0-9.6	OBM	Sidetrack 10"/100		Top of SL2 Liner @ 6577' Junction Drift to Lower Lateral = 5.25"
7,738	7,528				1st Bone Spring Sand		4-1/2" Production Liner - 13.5# P-110CY ID/Drift: 3.920" / 3.795" Conn OD: 5"
8,242	7,726				Landing Point		TD Criteria: 1BS
18,301	7,805	6-3/4"					
Oxbow CC 17 - 8 Fed Com 36H SL1							Composite Bridge Plug + Cement 'False Bottom' To be milled out before multi-lateral commingling
9,347	9,276	9-7/8" 6-3/4"					Top of Production Liner @ 9151' TD Criteria: 100' above KOP
20,546	10,137	6-3/4"					5-1/2" Production Liner - 20# P-110 DQX ID/Drift: 4.778" / 4.653" Conn OD: 6.05" Burst: 12,640 psi Collapse: 11,110 psi Axial Body/Cxn: 641 klbs
							TD Criteria: WCA

 <b>Oxbow CC 17-8 Fed Com 36H</b>							
GL = 2,927.1', Rig RKB = 2,953.6'							
DEPTH MD	DEPTH TVD	HOLE SIZE	MUD WEIGHT (ppg)	FLUID TYPE	FORMATION TOPS	Wellhead: 13-5/8" SK MNDS Cellar-Tech	ADDITIONAL INFO
GROUND LEVEL							
120	120	20"					20" Conductor Pre-installed
		17-1/2"					13-3/8" Surface Casing - 54.5#/ft J55 BTC ID/Drift: 12.615" / 12.459" Conn OD: 14.375" Burst: 2730 psi Collapse: 1130 psi Axial Body: 853 klbs
286	286				Rustler		Cement to Surface
452	452	17-1/2" 9-7/8"	9.0 - 9.4	OBM			TD Criteria: Into Rustler/Above Salt (Deep as Possible)
604	604				Top Salt (Salado)		7-5/8" Intermediate Casing - 26.4#/ft HCL-80 BTC From Surface To 6502' ID/Drift: 6.969" / 6.844" Conn OD: 8.5" Burst: 6020 psi Collapse: 4320 psi Axial Body: 602 klbs
1,253	1,253				Castile		
2,807	2,807				Delaware		7-5/8" Intermediate Casing - 29.7#/ft HCL-80 BTC From 6502' To ICP ID/Drift: 6.875" / 6.75" Conn OD: 8.5" Burst: 6880 psi Collapse: 6220 psi Axial Body: 683 klbs
2,874	2,874				Bell Canyon		
3,738	3,738				Cherry Canyon		
5,000	4,989				Brushy		
6,617	6,583				Bone Spring		
7,572	7,528				1st Bone Spring Sand		
7,860	7,813				2nd Bone Spring Sand		
8,798	8,735				3rd Bone Spring Sand		
9,347	9,276	9-7/8" 6-3/4"	9.0 - 9.4 12.0-13.5	OBM OBM			Top of Production Liner @ 9151' TD Criteria: 100' above KOP
9,892	9,778				Wolfcamp		5-1/2" Production Liner - 20# P-110 DQX ID/Drift: 4.778" / 4.653" Conn OD: 6.05" Burst: 12,640 psi Collapse: 11,110 psi Axial Body/Cxn: 641 klbs
							5-1/2" Production Tieback - 20# P-110 DQX ID/Drift: 4.778" / 4.653" Conn OD: 6.05" Burst: 12,640 psi Collapse: 11,110 psi Axial Body/Cxn: 641 klbs
20,546	10,137	6-3/4"	12.0-13.5	OBM			TD Criteria: WC A

# 10M Choke Panel

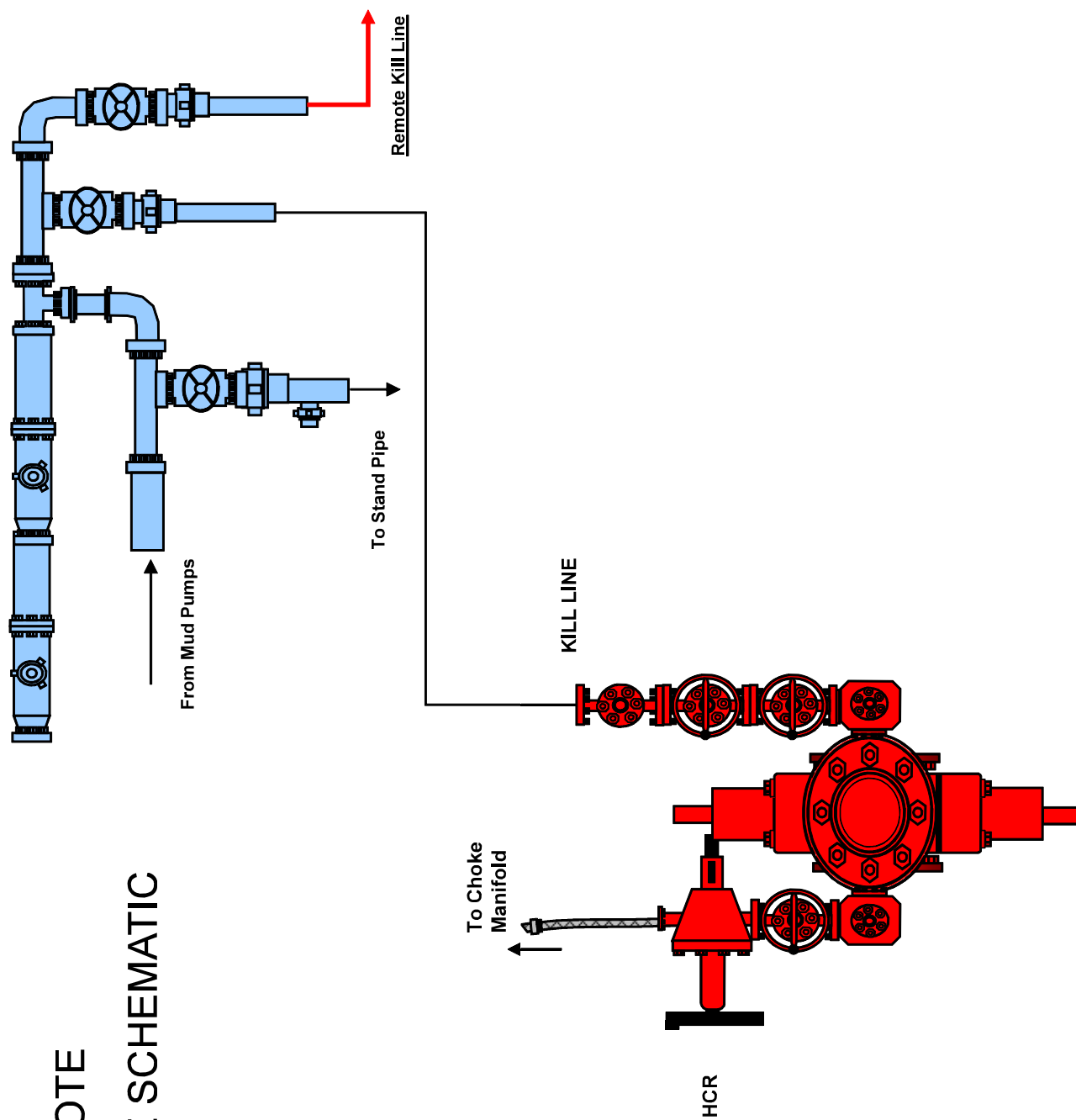


1. Choke Manifold Valve
2. Choke Manifold Valve
3. Choke Manifold Valve
4. Choke Manifold Valve
5. Choke Manifold Valve
6. Choke Manifold Valve
7. Choke Manifold Valve
8. PC – Power Choke
9. Choke Manifold Valve
10. Choke Manifold Valve
11. Choke Manifold Valve
12. LMC – Lower Manual Choke
13. UMC – Upper manual choke
15. Choke Manifold Valve
16. Choke Manifold Valve
17. Choke Manifold Valve
18. Choke Manifold Valve

21. Vertical Choke Manifold Valve

**\*All Valves 3" minimum**

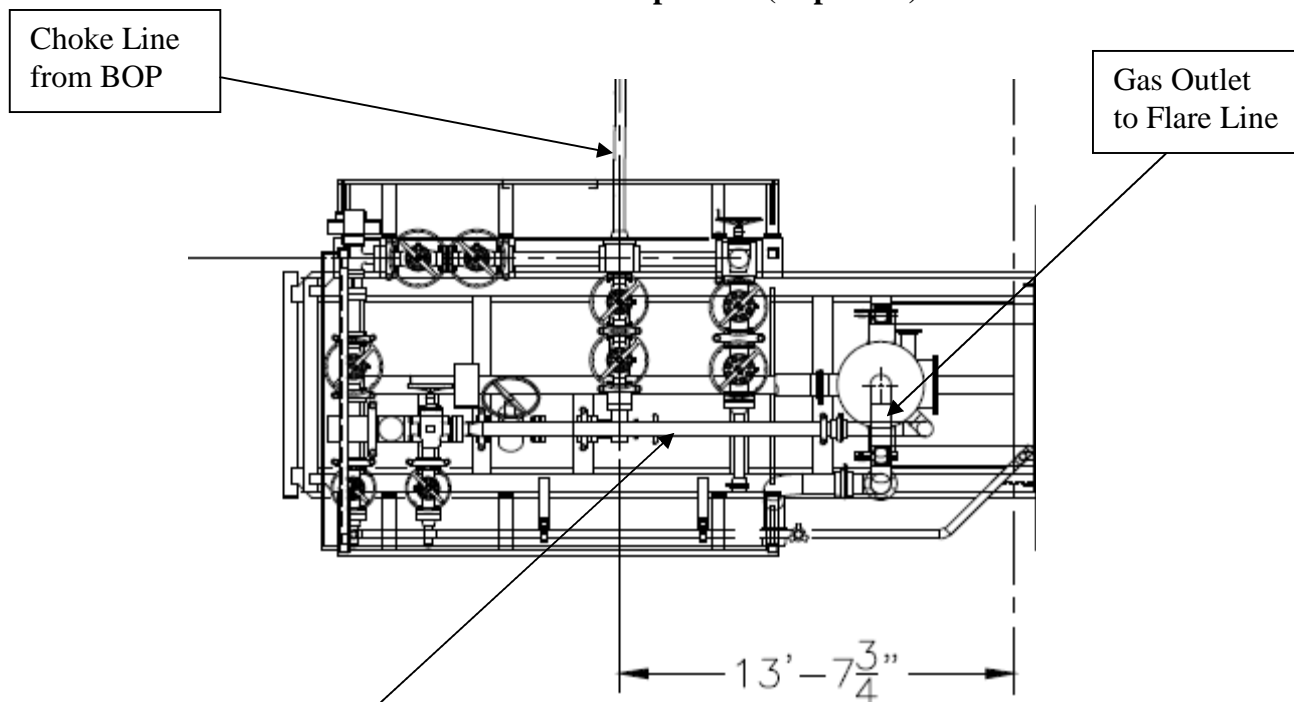
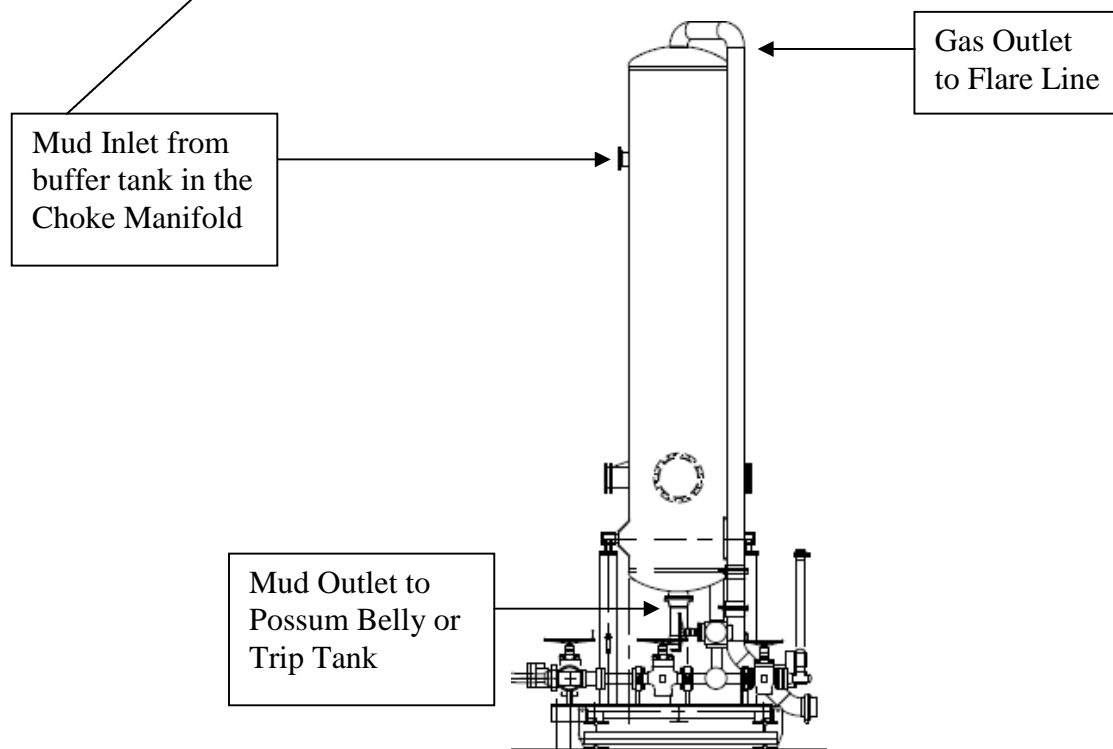
# 10M REMOTE KILL LINE SCHEMATIC



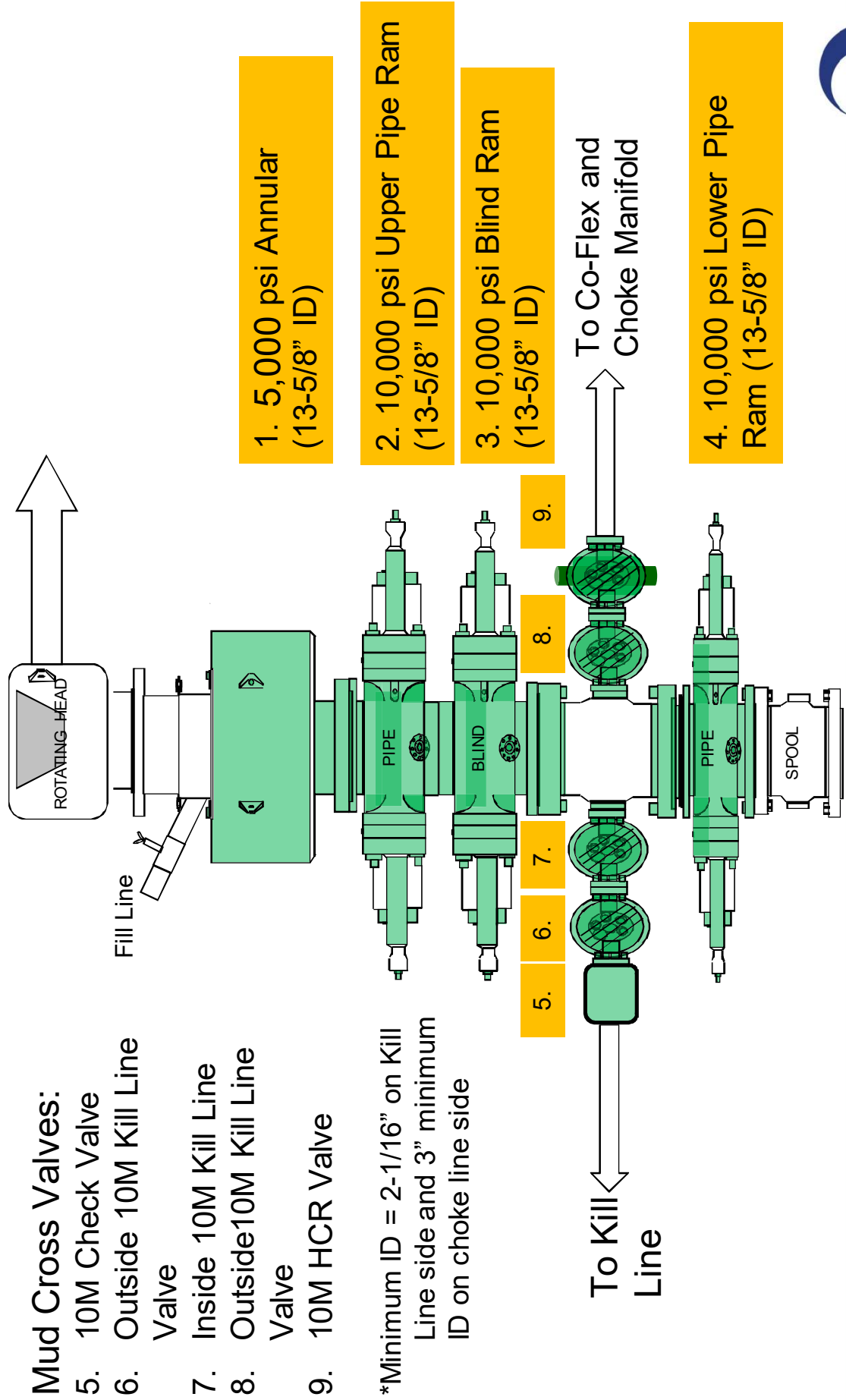


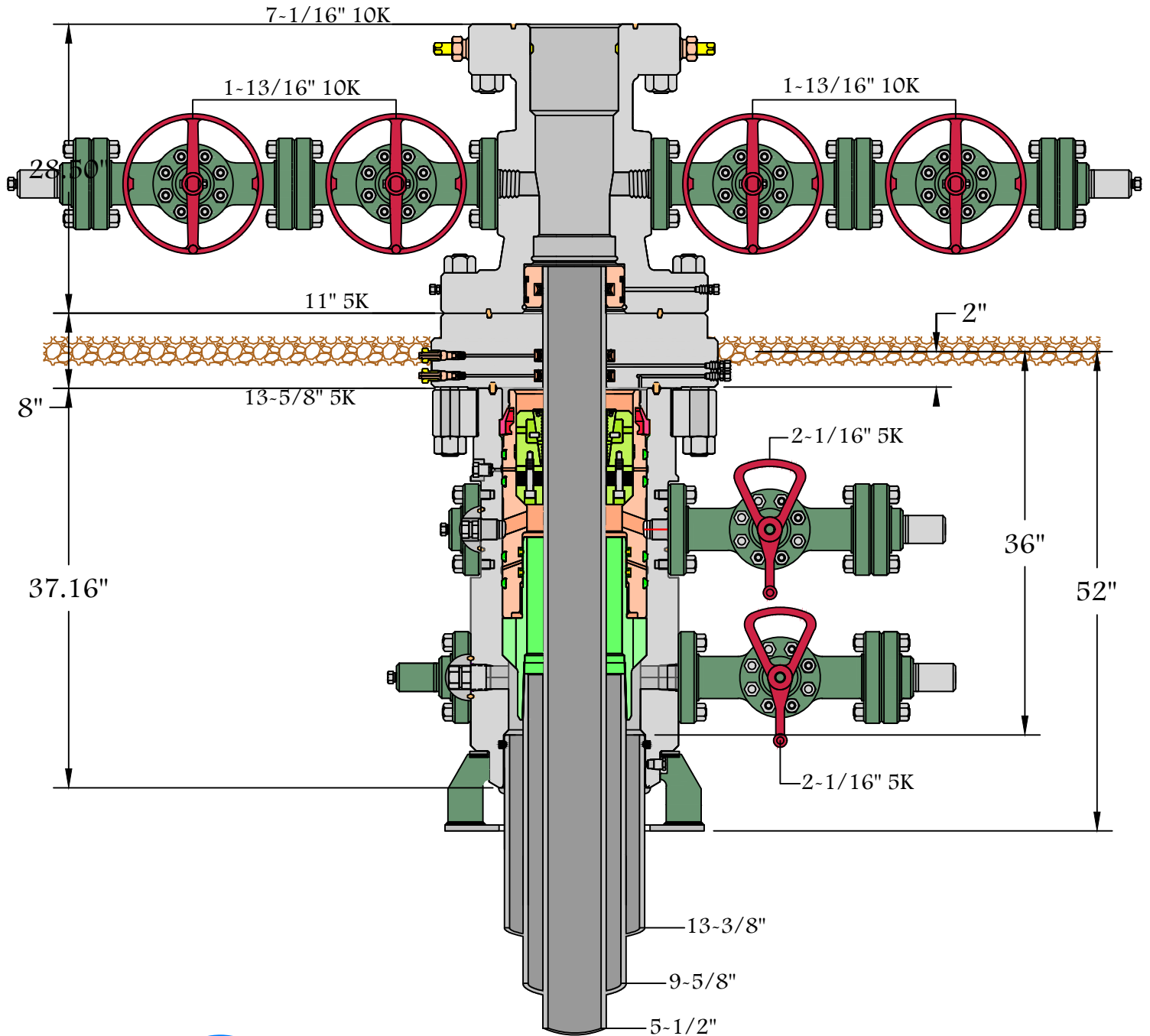
## Gas Separator Routing Flex III Rigs



**Choke Manifold – Gas Separator (Top View)****Choke Manifold – Gas Separator (Side View)**

# 5/10M BOP Stack





13-5/8" 5K MN-DS



## 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 Onshore Oil and Gas Order No. 2 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 Onshore Oil and Gas Order No. 2 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 Onshore Oil and Gas Order No. 2 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  $0.02 \times MD$  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.

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

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

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description

Effective May 25, 2021

**I. Operator:** OXY USA Inc. **OGRID:** 16696 **Date:** 0 6/ 1 0/ 2 0

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
OXBOW CC 17_08 FED COM 35H	30-015-45087	P-17-T24S-R29E	601 FSL 1236 FEL	1500	8800	4900
OXBOW CC 17_08 FED COM 36H	30-015-45088	P-17-T24S-R29E	601 FSL 1201 FEL	1500	8800	4900

**IV. Central Delivery Point Name:** Salt Flat 20 CTB [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
OXBOW CC 17_08 FED COM 35H	30-015-45087	2022	TBD	TBD	TBD	TBD
OXBOW CC 17_08 FED COM 36H	30-015-45088	2022	TBD	TBD	TBD	TBD

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

## **Section 2 – Enhanced Plan**

### **EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

#### **IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

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

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

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

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.



### **Section 3 - Certifications**

**Effective May 25, 2021**

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

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

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

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

### **Section 4 - Notices**

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

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

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

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

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

Signature:
Printed Name: <b>LESLIE REEVES</b>
Title: <b>REGULATORY ADVISOR</b>
E-mail Address: <b>LESLIE_REEVES@OXY.COM</b>
Date: <b>08/19/2021</b>
Phone: <b>713-407-2492</b>
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
Approved By:
Title:
Approval Date:
Conditions of Approval:

**Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, where a gas transporter system is in place. The gas produced from production facility is dedicated to Enterprise Field Services, LLC ("Enterprise") and is connected to Enterprise low/high pressure gathering system located in Eddy County, New Mexico. OXY USA INC. ("OXY") provides (periodically) to Enterprise a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, OXY and Enterprise have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at OXY USA WTP LP Processing Plant located in Sec. 23, Twn. 21S, Rng. 23E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

**Flowback Strategy**

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Enterprise system at that time. Based on current information, it is OXY's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

**Alternatives to Reduce Flaring**

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease  
Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease  
Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease  
Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

# Oxy USA Inc. - Oxbow CC 17\_8 Federal Com 14H

## Drill Plan

### 1. Geologic Formations

TVD of Target (ft):	7806	Pilot Hole Depth (ft):	
Total Measured Depth (ft):	18302	Deepest Expected Fresh Water (ft):	286

### Delaware Basin

Formation	MD-RKB (ft)	TVD-RKB (ft)	Expected Fluids
Rustler	286	286	
Salado	604	604	Salt
Castile	1253	1253	Salt
Delaware	2807	2807	Oil/Gas/Brine
Bell Canyon	2874	2874	Oil/Gas/Brine
Cherry Canyon	3738	3738	Oil/Gas/Brine
Brushy Canyon	5000	4989	Losses
Bone Spring	6617	6583	Oil/Gas
Bone Spring 1st	7738	7528	Oil/Gas
Bone Spring 2nd			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

		MD		TVD					
Section	Hole Size (in)	From (ft)	To (ft)	From (ft)	To (ft)	Csg. OD (in)	Csg Wt. (ppf)	Grade	Conn.
Production	6.75	6482	18302	6452	7806	4.5	13.5	P-110	DQX

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

\*Oxy requests the option to run the 7.625” Intermediate II as a contingency string to be run only if severe hole conditions dictate an additional casing string necessary.

\*Oxy requests the option to run production casing with DQX, TORQ DQW and/or TORQ SFW connections to accommodate hole conditions or drilling operations.

All Casing SF Values will meet or exceed those below			
SF Collapse	SF Burst	Body SF Tension	Joint SF Tension
1.125	1.2	1.4	1.4

Annular Clearance Variance Request

As per the agreement reached in the Oxy/BLM face-to-face meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422” annular clearance requirement from Onshore Order #2 under the following conditions:

1. Annular clearance to meet or exceed 0.422” between intermediate casing ID and production casing coupling only on the first 500’ overlap between both casings.
2. Annular clearance less than 0.422” is acceptable for the curve and lateral portions of the production open hole section.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	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:	Capacities	ft^3/ft	Excess:	From	To	Sacks	Volume (ft^3)	Placement
Prod.	1	Production - Tail	OH x Csg	0.1381	5%	18,302	6,482	1242	1713	Circulate

Description	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)	500psi Time (hh:mm)	Cmt. Class	Accelerator	Retarder	Dispersant	Salt
Production - Tail	13.2	1.38	6.686	3:39	H		x	x	x

Occidental - Permian New Mexico

Oxbow CC 17\_8 Federal Com 14H

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:
6.75" Hole	13-5/8"	3M	Annular		✓	70% of working pressure	7806
		3M	Blind Ram		✓	250 psi / 3000 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 Onshore Order 2 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



	Formation integrity test will be performed per Onshore Order #2.	
	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 Onshore Oil and Gas Order #2 III.B.1.i.	
	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?
	<p>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 Onshore Order #2 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.</p> <p>See attached schematics.</p>	

**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. A separate sundry will be sent prior to spud that reflects the pad based break testing plan.

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.

5. Mud Program

Section	Depth - MD		Depth - TVD		Type	Weight (ppg)	Viscosity	Water Loss
	From (ft)	To (ft)	From (ft)	To (ft)				
Production	6482	18302	6452	7806	Water-Based or Oil-Based Mud	8.0 - 9.6	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
---	--------------------------------

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	
No	CBL	
Yes	Mud log	Bone Spring – TD
No	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	3897 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	143°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

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 Onshore Oil and Gas Order #6. 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.	No

<b>Total Estimated Cuttings Volume:</b> 523.17 bbls
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- Attachments
- ☒ Directional Plan
  - ☒ H2S Contingency Plan
  - ☒ Flex III Attachments
  - ☒ Spudder Rig Attachment

9. Company Personnel

<u>Name</u>	<u>Title</u>	<u>Office Phone</u>	<u>Mobile Phone</u>
Garrett Granier	Drilling Engineer	713-513-6633	832-265-0581
William Turner	Drilling Engineer Supervisor	713-350-4951	661-817-4586
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
Diego Tellez	Drilling Manager	713-350-4602	713-303-4932

**OXY**

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

**Oxbow CC 17-08 Federal Com**

**Oxbow CC 17\_8 Federal Com 14H SL2**

**ST**

**Plan: Permitting Plan**

## **Standard Planning Report**

**08 April, 2021**

## Oxy Inc.

### Planning Report

<b>Database:</b>	HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Oxbow CC 17_8 Federal Com 14H SL2
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Site:</b>	Oxbow CC 17-08 Federal Com	<b>North Reference:</b>	Grid
<b>Well:</b>	Oxbow CC 17_8 Federal Com 14H SL2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST		
<b>Design:</b>	Permitting Plan		

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

<b>Site</b>	Oxbow CC 17-08 Federal Com		
<b>Site Position:</b>		<b>Northing:</b>	440,994.67 usft
<b>From:</b>	Map	<b>Easting:</b>	643,785.93 usft
<b>Position Uncertainty:</b>	50.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	32° 12' 42.973882 N
		<b>Longitude:</b>	104° 0' 7.482139 W
		<b>Grid Convergence:</b>	0.18 °

<b>Well</b>	Oxbow CC 17_8 Federal Com 14H SL2		
<b>Well Position</b>	<b>+N/-S</b>	-0.37 ft	<b>Northing:</b>
	<b>+E/-W</b>	70.01 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		1.00 ft	<b>Wellhead Elevation:</b>
			<b>Ground Level:</b>
			2,927.10 ft

<b>Wellbore</b>	ST				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM_FILE	4/1/2021	6.77	59.88	47,715.60000000

<b>Design</b>	Permitting Plan			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	6,482.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	3.39

<b>Plan Survey Tool Program</b>	<b>Date</b>	4/8/2021		
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	6,482.00	18,301.64	Permitting Plan (ST)	A010Mb_MWD+IFR1+SAG OWSG MWD + IFR1 + Sag +

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
6,482.00	8.89	130.17	6,452.35	-288.48	236.38	0.00	0.00	0.00	0.00	
6,894.65	48.77	160.52	6,807.68	-462.96	315.96	10.00	9.66	7.36	35.18	
8,242.64	89.55	359.65	7,726.60	-62.14	653.04	10.00	3.03	-11.93	-152.47	
18,301.64	89.55	359.65	7,805.60	9,996.36	591.60	0.00	0.00	0.00	0.00	PBHL (Oxbow 14H)

# Oxy Inc.

## Planning Report

<b>Database:</b>	HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Oxbow CC 17_8 Federal Com 14H SL2
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Site:</b>	Oxbow CC 17-08 Federal Com	<b>North Reference:</b>	Grid
<b>Well:</b>	Oxbow CC 17_8 Federal Com 14H SL2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST		
<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)
6,482.00	8.89	130.17	6,452.35	-288.48	236.38	-274.01	0.00	0.00	0.00
6,500.00	10.42	135.91	6,470.10	-290.54	238.58	-275.94	10.00	8.46	31.93
6,600.00	19.74	150.59	6,566.58	-311.80	253.20	-296.30	10.00	9.32	14.68
6,700.00	29.50	155.93	6,657.39	-349.09	271.58	-332.44	10.00	9.76	5.34
6,800.00	39.38	158.76	6,739.76	-401.28	293.17	-383.25	10.00	9.88	2.84
6,894.65	48.77	160.52	6,807.68	-462.96	315.96	-443.48	10.00	9.92	1.86
6,900.00	48.30	160.19	6,811.23	-466.74	317.31	-447.17	10.00	-8.86	-6.19
7,000.00	39.65	152.91	6,883.17	-530.42	344.56	-509.14	10.00	-8.65	-7.28
7,100.00	31.66	142.52	6,964.44	-579.78	375.13	-556.61	10.00	-7.99	-10.39
7,200.00	24.96	126.70	7,052.55	-613.30	408.10	-588.12	10.00	-6.69	-15.82
7,300.00	20.87	103.03	7,144.83	-629.97	442.47	-602.73	10.00	-4.09	-23.68
7,400.00	20.97	74.76	7,238.47	-629.28	477.18	-599.99	10.00	0.10	-28.26
7,500.00	25.21	51.43	7,330.63	-611.25	511.19	-579.99	10.00	4.24	-23.33
7,600.00	31.98	35.90	7,418.50	-576.43	543.45	-543.32	10.00	6.77	-15.53
7,700.00	40.01	25.69	7,499.41	-525.88	572.99	-491.11	10.00	8.03	-10.21
7,800.00	48.68	18.51	7,570.90	-461.14	598.92	-424.95	10.00	8.67	-7.18
7,900.00	57.69	13.05	7,630.80	-384.17	620.43	-346.84	10.00	9.01	-5.46
8,000.00	66.88	8.59	7,677.27	-297.31	636.88	-259.17	10.00	9.20	-4.46
8,100.00	76.19	4.71	7,708.92	-203.21	647.76	-164.59	10.00	9.31	-3.88
8,200.00	85.55	1.14	7,724.78	-104.73	652.75	-65.99	10.00	9.36	-3.58
8,242.64	89.55	359.65	7,726.60	-62.14	653.04	-23.45	10.00	9.38	-3.49
8,300.00	89.55	359.65	7,727.05	-4.78	652.69	33.78	0.00	0.00	0.00
8,400.00	89.55	359.65	7,727.83	95.21	652.08	133.57	0.00	0.00	0.00
8,500.00	89.55	359.65	7,728.62	195.21	651.47	233.35	0.00	0.00	0.00
8,600.00	89.55	359.65	7,729.40	295.20	650.86	333.14	0.00	0.00	0.00
8,700.00	89.55	359.65	7,730.19	395.20	650.25	432.92	0.00	0.00	0.00
8,800.00	89.55	359.65	7,730.98	495.19	649.64	532.71	0.00	0.00	0.00
8,900.00	89.55	359.65	7,731.76	595.19	649.03	632.49	0.00	0.00	0.00
9,000.00	89.55	359.65	7,732.55	695.18	648.42	732.27	0.00	0.00	0.00
9,100.00	89.55	359.65	7,733.33	795.18	647.81	832.06	0.00	0.00	0.00
9,200.00	89.55	359.65	7,734.12	895.17	647.19	931.84	0.00	0.00	0.00
9,300.00	89.55	359.65	7,734.90	995.17	646.58	1,031.63	0.00	0.00	0.00
9,400.00	89.55	359.65	7,735.69	1,095.16	645.97	1,131.41	0.00	0.00	0.00
9,500.00	89.55	359.65	7,736.47	1,195.16	645.36	1,231.20	0.00	0.00	0.00
9,600.00	89.55	359.65	7,737.26	1,295.15	644.75	1,330.98	0.00	0.00	0.00
9,700.00	89.55	359.65	7,738.04	1,395.15	644.14	1,430.76	0.00	0.00	0.00
9,800.00	89.55	359.65	7,738.83	1,495.14	643.53	1,530.55	0.00	0.00	0.00
9,900.00	89.55	359.65	7,739.61	1,595.14	642.92	1,630.33	0.00	0.00	0.00
10,000.00	89.55	359.65	7,740.40	1,695.13	642.31	1,730.12	0.00	0.00	0.00
10,100.00	89.55	359.65	7,741.19	1,795.13	641.70	1,829.90	0.00	0.00	0.00
10,200.00	89.55	359.65	7,741.97	1,895.12	641.09	1,929.69	0.00	0.00	0.00
10,300.00	89.55	359.65	7,742.76	1,995.12	640.48	2,029.47	0.00	0.00	0.00
10,400.00	89.55	359.65	7,743.54	2,095.11	639.86	2,129.25	0.00	0.00	0.00
10,500.00	89.55	359.65	7,744.33	2,195.11	639.25	2,229.04	0.00	0.00	0.00
10,600.00	89.55	359.65	7,745.11	2,295.10	638.64	2,328.82	0.00	0.00	0.00
10,700.00	89.55	359.65	7,745.90	2,395.10	638.03	2,428.61	0.00	0.00	0.00
10,800.00	89.55	359.65	7,746.68	2,495.09	637.42	2,528.39	0.00	0.00	0.00
10,900.00	89.55	359.65	7,747.47	2,595.09	636.81	2,628.18	0.00	0.00	0.00
11,000.00	89.55	359.65	7,748.25	2,695.08	636.20	2,727.96	0.00	0.00	0.00
11,100.00	89.55	359.65	7,749.04	2,795.08	635.59	2,827.74	0.00	0.00	0.00
11,200.00	89.55	359.65	7,749.82	2,895.07	634.98	2,927.53	0.00	0.00	0.00
11,300.00	89.55	359.65	7,750.61	2,995.07	634.37	3,027.31	0.00	0.00	0.00
11,400.00	89.55	359.65	7,751.40	3,095.06	633.76	3,127.10	0.00	0.00	0.00
11,500.00	89.55	359.65	7,752.18	3,195.06	633.15	3,226.88	0.00	0.00	0.00



# Oxy Inc.

## Planning Report

<b>Database:</b>	HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Oxbow CC 17_8 Federal Com 14H SL2
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Site:</b>	Oxbow CC 17-08 Federal Com	<b>North Reference:</b>	Grid
<b>Well:</b>	Oxbow CC 17_8 Federal Com 14H SL2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST		
<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)
11,600.00	89.55	359.65	7,752.97	3,295.05	632.53	3,326.67	0.00	0.00	0.00
11,700.00	89.55	359.65	7,753.75	3,395.05	631.92	3,426.45	0.00	0.00	0.00
11,800.00	89.55	359.65	7,754.54	3,495.04	631.31	3,526.23	0.00	0.00	0.00
11,900.00	89.55	359.65	7,755.32	3,595.04	630.70	3,626.02	0.00	0.00	0.00
12,000.00	89.55	359.65	7,756.11	3,695.03	630.09	3,725.80	0.00	0.00	0.00
12,100.00	89.55	359.65	7,756.89	3,795.03	629.48	3,825.59	0.00	0.00	0.00
12,200.00	89.55	359.65	7,757.68	3,895.02	628.87	3,925.37	0.00	0.00	0.00
12,300.00	89.55	359.65	7,758.46	3,995.02	628.26	4,025.16	0.00	0.00	0.00
12,400.00	89.55	359.65	7,759.25	4,095.01	627.65	4,124.94	0.00	0.00	0.00
12,500.00	89.55	359.65	7,760.03	4,195.01	627.04	4,224.73	0.00	0.00	0.00
12,600.00	89.55	359.65	7,760.82	4,295.00	626.43	4,324.51	0.00	0.00	0.00
12,700.00	89.55	359.65	7,761.61	4,395.00	625.82	4,424.29	0.00	0.00	0.00
12,800.00	89.55	359.65	7,762.39	4,494.99	625.20	4,524.08	0.00	0.00	0.00
12,900.00	89.55	359.65	7,763.18	4,594.99	624.59	4,623.86	0.00	0.00	0.00
13,000.00	89.55	359.65	7,763.96	4,694.98	623.98	4,723.65	0.00	0.00	0.00
13,100.00	89.55	359.65	7,764.75	4,794.98	623.37	4,823.43	0.00	0.00	0.00
13,200.00	89.55	359.65	7,765.53	4,894.97	622.76	4,923.22	0.00	0.00	0.00
13,300.00	89.55	359.65	7,766.32	4,994.97	622.15	5,023.00	0.00	0.00	0.00
13,400.00	89.55	359.65	7,767.10	5,094.96	621.54	5,122.78	0.00	0.00	0.00
13,500.00	89.55	359.65	7,767.89	5,194.96	620.93	5,222.57	0.00	0.00	0.00
13,600.00	89.55	359.65	7,768.67	5,294.95	620.32	5,322.35	0.00	0.00	0.00
13,700.00	89.55	359.65	7,769.46	5,394.95	619.71	5,422.14	0.00	0.00	0.00
13,800.00	89.55	359.65	7,770.24	5,494.94	619.10	5,521.92	0.00	0.00	0.00
13,900.00	89.55	359.65	7,771.03	5,594.94	618.48	5,621.71	0.00	0.00	0.00
14,000.00	89.55	359.65	7,771.82	5,694.93	617.87	5,721.49	0.00	0.00	0.00
14,100.00	89.55	359.65	7,772.60	5,794.93	617.26	5,821.27	0.00	0.00	0.00
14,200.00	89.55	359.65	7,773.39	5,894.92	616.65	5,921.06	0.00	0.00	0.00
14,300.00	89.55	359.65	7,774.17	5,994.92	616.04	6,020.84	0.00	0.00	0.00
14,400.00	89.55	359.65	7,774.96	6,094.91	615.43	6,120.63	0.00	0.00	0.00
14,500.00	89.55	359.65	7,775.74	6,194.91	614.82	6,220.41	0.00	0.00	0.00
14,600.00	89.55	359.65	7,776.53	6,294.90	614.21	6,320.20	0.00	0.00	0.00
14,700.00	89.55	359.65	7,777.31	6,394.90	613.60	6,419.98	0.00	0.00	0.00
14,800.00	89.55	359.65	7,778.10	6,494.89	612.99	6,519.76	0.00	0.00	0.00
14,900.00	89.55	359.65	7,778.88	6,594.89	612.38	6,619.55	0.00	0.00	0.00
15,000.00	89.55	359.65	7,779.67	6,694.88	611.77	6,719.33	0.00	0.00	0.00
15,100.00	89.55	359.65	7,780.45	6,794.88	611.15	6,819.12	0.00	0.00	0.00
15,200.00	89.55	359.65	7,781.24	6,894.87	610.54	6,918.90	0.00	0.00	0.00
15,300.00	89.55	359.65	7,782.03	6,994.87	609.93	7,018.69	0.00	0.00	0.00
15,400.00	89.55	359.65	7,782.81	7,094.86	609.32	7,118.47	0.00	0.00	0.00
15,500.00	89.55	359.65	7,783.60	7,194.86	608.71	7,218.25	0.00	0.00	0.00
15,600.00	89.55	359.65	7,784.38	7,294.85	608.10	7,318.04	0.00	0.00	0.00
15,700.00	89.55	359.65	7,785.17	7,394.85	607.49	7,417.82	0.00	0.00	0.00
15,800.00	89.55	359.65	7,785.95	7,494.84	606.88	7,517.61	0.00	0.00	0.00
15,900.00	89.55	359.65	7,786.74	7,594.84	606.27	7,617.39	0.00	0.00	0.00
16,000.00	89.55	359.65	7,787.52	7,694.84	605.66	7,717.18	0.00	0.00	0.00
16,100.00	89.55	359.65	7,788.31	7,794.83	605.05	7,816.96	0.00	0.00	0.00
16,200.00	89.55	359.65	7,789.09	7,894.83	604.44	7,916.74	0.00	0.00	0.00
16,300.00	89.55	359.65	7,789.88	7,994.82	603.82	8,016.53	0.00	0.00	0.00
16,400.00	89.55	359.65	7,790.66	8,094.82	603.21	8,116.31	0.00	0.00	0.00
16,500.00	89.55	359.65	7,791.45	8,194.81	602.60	8,216.10	0.00	0.00	0.00
16,600.00	89.55	359.65	7,792.24	8,294.81	601.99	8,315.88	0.00	0.00	0.00
16,700.00	89.55	359.65	7,793.02	8,394.80	601.38	8,415.67	0.00	0.00	0.00
16,800.00	89.55	359.65	7,793.81	8,494.80	600.77	8,515.45	0.00	0.00	0.00
16,900.00	89.55	359.65	7,794.59	8,594.79	600.16	8,615.23	0.00	0.00	0.00

# Oxy Inc.

## Planning Report

<b>Database:</b>	HOPSP	<b>Local Co-ordinate Reference:</b>	Well Oxbow CC 17_8 Federal Com 14H SL2
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Site:</b>	Oxbow CC 17-08 Federal Com	<b>North Reference:</b>	Grid
<b>Well:</b>	Oxbow CC 17_8 Federal Com 14H SL2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST		
<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)	
17,000.00	89.55	359.65	7,795.38	8,694.79	599.55	8,715.02	0.00	0.00	0.00	
17,100.00	89.55	359.65	7,796.16	8,794.78	598.94	8,814.80	0.00	0.00	0.00	
17,200.00	89.55	359.65	7,796.95	8,894.78	598.33	8,914.59	0.00	0.00	0.00	
17,300.00	89.55	359.65	7,797.73	8,994.77	597.72	9,014.37	0.00	0.00	0.00	
17,400.00	89.55	359.65	7,798.52	9,094.77	597.11	9,114.16	0.00	0.00	0.00	
17,500.00	89.55	359.65	7,799.30	9,194.76	596.49	9,213.94	0.00	0.00	0.00	
17,600.00	89.55	359.65	7,800.09	9,294.76	595.88	9,313.72	0.00	0.00	0.00	
17,700.00	89.55	359.65	7,800.87	9,394.75	595.27	9,413.51	0.00	0.00	0.00	
17,800.00	89.55	359.65	7,801.66	9,494.75	594.66	9,513.29	0.00	0.00	0.00	
17,900.00	89.55	359.65	7,802.45	9,594.74	594.05	9,613.08	0.00	0.00	0.00	
18,000.00	89.55	359.65	7,803.23	9,694.74	593.44	9,712.86	0.00	0.00	0.00	
18,100.00	89.55	359.65	7,804.02	9,794.73	592.83	9,812.65	0.00	0.00	0.00	
18,200.00	89.55	359.65	7,804.80	9,894.73	592.22	9,912.43	0.00	0.00	0.00	
18,300.00	89.55	359.65	7,805.59	9,994.72	591.61	10,012.22	0.00	0.00	0.00	
18,301.64	89.55	359.65	7,805.60	9,996.36	591.60	10,013.85	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FTP (Oxbow 14H SL2)	0.00	0.00	7,726.60	-505.08	654.86	440,489.26	644,510.74	32° 12' 37.950203 N	103° 59' 59.063603	
- hit/miss target										
- plan misses target center by 153.74ft at 7871.65ft MD (7615.10 TVD, -407.10 N, 614.82 E)										
- Point										
PBHL (Oxbow 14H)	0.00	0.00	7,805.60	9,996.36	591.60	450,989.85	644,447.48	32° 14' 21.864886 N	103° 59' 59.420573	
- plan hits target center										
- Point										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
285.61	285.60	RUSTLER				
603.63	603.60	SALADO				
1,252.63	1,252.60	CASTILE				
2,806.63	2,806.60	LAMAR				
2,873.63	2,873.60	BELL CANYON				
3,737.63	3,737.60	CHERRY CANYON				
5,000.38	4,988.60	BRUSHY CANYON				
6,617.11	6,582.60	BONE SPRING				
7,737.71	7,527.60	BONE SPRING 1ST				



# Oxy Inc.

## Planning Report

<b>Database:</b>	HOPSPP	<b>Local Co-ordinate Reference:</b>	Well Oxbow CC 17_8 Federal Com 14H SL2
<b>Company:</b>	ENGINEERING DESIGNS	<b>TVD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Project:</b>	PRD NM DIRECTIONAL PLANS (NAD 1983)	<b>MD Reference:</b>	RKB=26.5' @ 2953.60ft
<b>Site:</b>	Oxbow CC 17-08 Federal Com	<b>North Reference:</b>	Grid
<b>Well:</b>	Oxbow CC 17_8 Federal Com 14H SL2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ST		
<b>Design:</b>	Permitting Plan		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,482.00	6,452.35	-288.48	236.38	Tie in, ST 10°/100'
6,894.65	6,807.68	-462.96	315.96	Continue Build & Turn 10°/100'
8,242.64	7,726.60	-62.14	653.04	Landing Point
18,301.64	7,805.60	9,996.36	591.60	TD at 18301.64' MD



Project: PRD NM DIRECTIONAL PLANS (NAD 1983)  
 Site: Oxbow CC 17-08 Federal Com  
 Well: Oxbow CC 17\_8 Federal Com 14H  
 Wellbore: ST  
 Design: Permitting Plan

## PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

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

System Datum: Mean Sea Level

WELL DETAILS: Oxbow CC 17\_8 Federal Com 14H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	440994.30	2927.10 643855.93	32° 12' 42.968085 N	104° 0' 6.667351 W

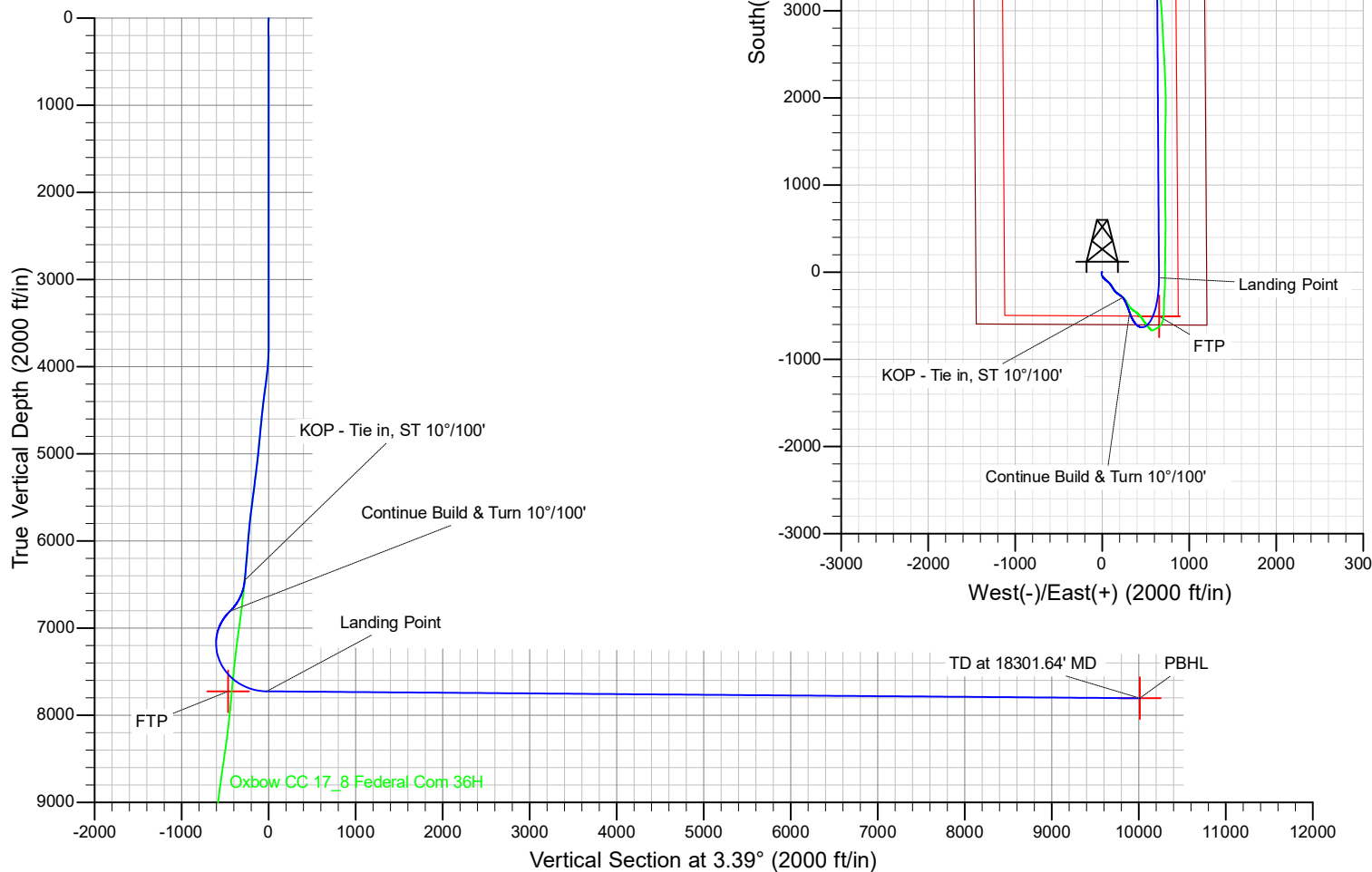
## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
6482.00	8.89	130.17	6452.35	-288.48	236.38	0.00	0.00	-274.01	KOP - Tie in, ST 10°/100'
6894.65	48.77	160.52	6807.68	-462.96	315.96	10.00	35.18	-443.48	Continue Build & Turn 10°/100'
8242.64	89.55	359.65	7726.60	-62.14	653.04	10.00	-152.47	-23.45	Landing Point
18301.64	89.55	359.65	7805.60	9996.36	591.60	0.00	0.00	10013.85	TD at 18301.64' MD



Azimuths to Grid North  
 True North: -0.18°  
 Magnetic North: 6.59°

Magnetic Field  
 Strength: 47715.6nT  
 Dip Angle: 59.88°  
 Date: 4/1/2021  
 Model: HDGM\_FILE



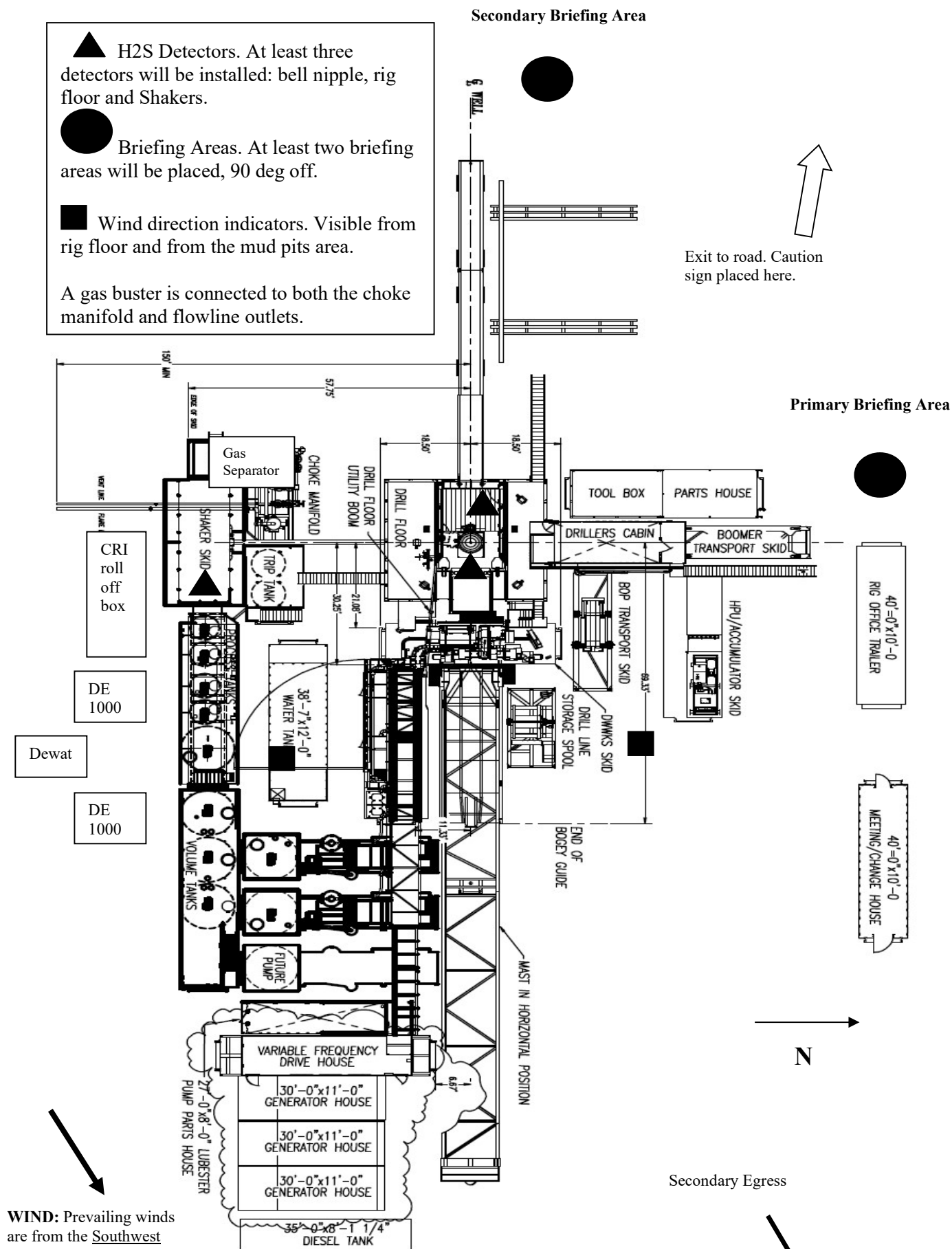


## **Permian Drilling Hydrogen Sulfide Drilling Operations Plan Oxbow CC 17\_8 Federal Com 14H**

Open drill site. No homes or buildings are near the proposed location.

### **1. Escape**

Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.





## **Permian Drilling Hydrogen Sulfide Drilling Operations Plan New Mexico**

### **Scope**

This contingency plan establishes guidelines for the public, all company employees, and contract employees who's work activities may involve exposure to hydrogen sulfide (H<sub>2</sub>S) gas.

While drilling this well, it is possible to encounter H<sub>2</sub>S bearing formations. At all times, the first barrier to control H<sub>2</sub>S emissions will be the drilling fluid, which will have a density high enough to control influx.

### **Objective**

1. Provide an immediate and predetermined response plan to any condition when H<sub>2</sub>S is detected. All H<sub>2</sub>S detections in excess of 10 parts per million (ppm) concentration are considered an Emergency.
2. Prevent any and all accidents, and prevent the uncontrolled release of hydrogen sulfide into the atmosphere.
3. Provide proper evacuation procedures to cope with emergencies.
4. Provide immediate and adequate medical attention should an injury occur.

## **Discussion**

Implementation:	This plan with all details is to be fully implemented before drilling to <u>commence</u> .
Emergency response Procedure:	This section outlines the conditions and denotes steps to be taken in the event of an emergency.
Emergency equipment Procedure:	This section outlines the safety and emergency equipment that will be required for the drilling of this well.
Training provisions:	This section outlines the training provisions that must be adhered to prior to drilling.
Drilling emergency call lists:	Included are the telephone numbers of all persons to be contacted should an emergency exist.
Briefing:	This section deals with the briefing of all people involved in the drilling operation.
Public safety:	Public safety personnel will be made aware of any potential evacuation and any additional support needed.
Check lists:	Status check lists and procedural check lists have been included to insure adherence to the plan.
General information:	A general information section has been included to supply support information.

### **Hydrogen Sulfide Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on the well:

1. The hazards and characteristics of H<sub>2</sub>S.
2. Proper use and maintenance of personal protective equipment and life support systems.
3. H<sub>2</sub>S detection.
4. Proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
5. Proper techniques for first aid and rescue procedures.
6. Physical effects of hydrogen sulfide on the human body.
7. Toxicity of hydrogen sulfide and sulfur dioxide.
8. Use of SCBA and supplied air equipment.
9. First aid and artificial respiration.
10. Emergency rescue.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S on metal components. If high tensile strength tubular is to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling a well, blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan.

H<sub>2</sub>S training refresher must have been taken within one year prior to drilling the well. Specifics on the well to be drilled will be discussed during the pre-spud meeting. H<sub>2</sub>S and well control (choke) drills will be performed while drilling the well, at least on a weekly basis. This plan shall be available in the well site. All personnel will be required to carry the documentation proving that the H<sub>2</sub>S training has been taken.

#### **Service company and visiting personnel**

- A. Each service company that will be on this well will be notified if the zone contains H<sub>2</sub>S.
- B. Each service company must provide for the training and equipment of their employees before they arrive at the well site.
- C. Each service company will be expected to attend a well site briefing

### **Emergency Equipment Requirements**

#### 1. Well control equipment

The well shall have hydraulic BOP equipment for the anticipated pressures. Equipment is to be tested on installation and follow Oxy Well Control standard, as well as BLM Onshore Order #2.

*Special control equipment:*

- A. Hydraulic BOP equipment with remote control on ground. Remotely operated choke.
- B. Rotating head
- C. Gas buster equipment shall be installed before drilling out of surface pipe.

#### 2. Protective equipment for personnel

- A. Four (4) 30-minute positive pressure air packs (2 at each briefing area) on location.
- B. Adequate fire extinguishers shall be located at strategic locations.
- C. Radio / cell telephone communication will be available at the rig.
  - Rig floor and trailers.
  - Vehicle.

#### 3. Hydrogen sulfide sensors and alarms

- A. H<sub>2</sub>S sensor with alarms will be located on the rig floor, at the bell nipple, and at the flow line. These monitors will be set to alarm at 10 ppm with strobe light, and audible alarm.
- B. Hand operated detectors with tubes.
- C. H<sub>2</sub>S monitor tester (to be provided by contract Safety Company.)
- D. There shall be one combustible gas detector on location at all times.

#### 4. Visual Warning Systems

- A. One sign located at each location entrance with the following language:

**Caution – potential poison gas  
Hydrogen sulfide  
No admittance without authorization**



*Wind sock – wind streamers:*

- A. One 36" (in length) wind sock located at protection center, at height visible from rig floor.
- B. One 36" (in length) wind sock located at height visible from pit areas.

*Condition flags*

- A. One each condition flag to be displayed to denote conditions.

**green – normal conditions**  
**yellow – potential danger**  
**red – danger, H2S present**

- B. Condition flag shall be posted at each location sign entrance.

5. Mud Program

The mud program is designed to minimize the risk of having H2S and other formation fluids at surface. Proper mud weight and safe drilling practices will be applied. H2S scavengers will be used to minimize the hazards while drilling. Below is a summary of the drilling program.

*Mud inspection devices:*

Garrett gas train or hatch tester for inspection of sulfide concentration in mud system.

6. Metallurgy

- A. Drill string, casing, tubing, wellhead, blowout preventers, drilling spools or adapters, kill lines, choke manifold, lines and valves shall be suitable for the H2S service.
- B. All the elastomers, packing, seals and ring gaskets shall be suitable for H2S service.

7. Well Testing

No drill stem test will be performed on this well.

8. Evacuation plan

Evacuation routes should be established prior to well spud for each well and discussed with all rig personnel.

9. Designated area

- A. Parking and visitor area: all vehicles are to be parked at a predetermined safe distance from the wellhead.
- B. There will be a designated smoking area.
- C. Two briefing areas on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds perpendicularly, or at a 45-degree angle if wind direction tends to shift in the area.

**Emergency procedures**

- A. In the event of any evidence of H<sub>2</sub>S level above 10 ppm, take the following steps:
  - 1. The Driller will pick up off bottom, shut down the pumps, slow down the pipe rotation.
  - 2. Secure and don escape breathing equipment, report to the upwind designated safe briefing / muster area.
  - 3. All personnel on location will be accounted for and emergency search should begin for any missing, the Buddy System will be implemented.
  - 4. Order non-essential personnel to leave the well site, order all essential personnel out of the danger zone and upwind to the nearest designated safe briefing / muster area.
  - 5. Entrance to the location will be secured to a higher level than our usual "Meet and Greet" requirement, and the proper condition flag will be displayed at the entrance to the location.
  - 6. Take steps to determine if the H<sub>2</sub>S level can be corrected or suppressed and, if so, proceed as required.
- B. If uncontrollable conditions occur:
  - 1. Take steps to protect and/or remove any public in the down-wind area from the rig – partial evacuation and isolation. Notify necessary public safety personnel and appropriate regulatory entities (i.e. BLM) of the situation.

2. Remove all personnel to the nearest upwind designated safe briefing / muster area or off location.
3. Notify public safety personnel of safe briefing / muster area.
4. An assigned crew member will blockade the entrance to the location. No unauthorized personnel will be allowed entry to the location.
5. Proceed with best plan (at the time) to regain control of the well. Maintain tight security and safety procedures.

C. Responsibility:

1. Designated personnel.
  - a. Shall be responsible for the total implementation of this plan.
  - b. Shall be in complete command during any emergency.
  - c. Shall designate a back-up.

- |                     |  |
|---------------------|--|
| All personnel:      | <ol style="list-style-type: none"> <li>1. On alarm, don escape unit and report to the nearest upwind designated safe briefing / muster area upw</li> <li>2. Check status of personnel (buddy system).</li> <li>3. Secure breathing equipment.</li> <li>4. Await orders from supervisor.</li> </ol>   |
| Drill site manager: | <ol style="list-style-type: none"> <li>1. Don escape unit if necessary and report to nearest upwind designated safe briefing / muster area.</li> <li>2. Coordinate preparations of individuals to return to point of release with tool pusher and driller (using the buddy system).</li> <li>3. Determine H2S concentrations.</li> <li>4. Assess situation and take control measures.</li> </ol> |
| Tool pusher:        | <ol style="list-style-type: none"> <li>1. Don escape unit Report to up nearest upwind designated safe briefing / muster area.</li> <li>2. Coordinate preparation of individuals to return to point of release with tool pusher drill site manager (using the buddy system).</li> <li>3. Determine H2S concentration.</li> <li>4. Assess situation and take control measures.</li> </ol>          |
| Driller:            | <ol style="list-style-type: none"> <li>1. Don escape unit, shut down pumps, continue</li> </ol>  |

- rotating DP.
  - 2. Check monitor for point of release.
  - 3. Report to nearest upwind designated safe briefing / muster area.
  - 4. Check status of personnel (in an attempt to rescue, use the buddy system).
  - 5. Assigns least essential person to notify Drill Site Manager and tool pusher by quickest means in case of their absence.
  - 6. Assumes the responsibilities of the Drill Site Manager and tool pusher until they arrive should they be absent.
- Derrick man
- Floor man #1
- Floor man #2
1. Will remain in briefing / muster area until instructed by supervisor.
- Mud engineer:
1. Report to nearest upwind designated safe briefing / muster area.
2. When instructed, begin check of mud for ph and H2S level. (Garett gas train.)
- Safety personnel:
1. Mask up and check status of all personnel and secure operations as instructed by drill site manager.

### **Taking a kick**

When taking a kick during an H2S emergency, all personnel will follow standard Well control procedures after reporting to briefing area and masking up.

### **Open-hole logging**

All unnecessary personnel off floor. Drill Site Manager and safety personnel should monitor condition, advise status and determine need for use of air equipment.

### **Running casing or plugging**

Following the same “tripping” procedure as above. Drill Site Manager and safety personnel should determine if all personnel have access to protective equipment.

### **Ignition procedures**

The decision to ignite the well is the responsibility of the operator (Oxy Drilling Management). The decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope controlling the blowout under the prevailing conditions at the well.

### **Instructions for igniting the well**

1. Two people are required for the actual igniting operation. They must wear self-contained breathing units and have a safety rope attached. One man (tool pusher or safety engineer) will check the atmosphere for explosive gases with the gas monitor. The other man is responsible for igniting the well.
2. Primary method to ignite: 25 mm flare gun with range of approximately 500 feet.
3. Ignite upwind and do not approach any closer than is warranted.
4. Select the ignition site best for protection, and which offers an easy escape route.
5. Before firing, check for presence of combustible gas.
6. After lighting, continue emergency action and procedure as before.
7. All unassigned personnel will remain in briefing area until instructed by supervisor or directed by the Drill Site Manager.

**Remember:** After well is ignited, burning hydrogen sulfide will convert to sulfur dioxide, which is also highly toxic. **Do not assume the area is safe after the well is ignited.**

**Status check list**

Note: All items on this list must be completed before drilling to production casing point.

1. H2S sign at location entrance.
2. Two (2) wind socks located as required.
3. Four (4) 30-minute positive pressure air packs (2 at each Briefing area) on location for all rig personnel and mud loggers.
4. Air packs inspected and ready for use.
5. Cascade system and hose line hook-up as needed.
6. Cascade system for refilling air bottles as needed.
7. Condition flag on location and ready for use.
8. H2S detection system hooked up and tested.
9. H2S alarm system hooked up and tested.
10. Hand operated H2S detector with tubes on location.
11. 1 – 100' length of nylon rope on location.
12. All rig crew and supervisors trained as required.
13. All outside service contractors advised of potential H2S hazard on well.
14. No smoking sign posted and a designated smoking area identified.
15. Calibration of all H2S equipment shall be noted on the IADC report.

Checked by:\_\_\_\_\_ Date:\_\_\_\_\_

**Procedural check list during H2S events**

**Perform each tour:**

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to ensure that it is in proper working order.
3. Make sure all the H2S detection system is operative.

**Perform each week:**

1. Check each piece of breathing equipment to make sure that demand or forced air regulator is working. This requires that the bottle be opened and the mask assembly be put on tight enough so that when you inhale, you receive air or feel air flow.
2. BOP skills (well control drills).
3. Check supply pressure on BOP accumulator stand by source.
4. Check breathing equipment mask assembly to see that straps are loosened and turned back, ready to put on.
5. Check pressure on breathing equipment air bottles to make sure they are charged to full volume. ( Air quality checked for proper air grade "D" before bringing to location)
6. Confirm pressure on all supply air bottles.
7. Perform breathing equipment drills with on-site personnel.
8. Check the following supplies for availability.
  - A. Emergency telephone list.
  - B. Hand operated H2S detectors and tubes.

### **General evacuation plan**

1. When the company approved supervisor (Drill Site Manager, consultant, rig pusher, or driller) determines the H2S gas cannot be limited to the well location and the public will be involved, he will activate the evacuation plan.
2. Drill Site Manager or designee will notify local government agency that a hazardous condition exists and evacuation needs to be implemented.
3. Company or contractor safety personnel that have been trained in the use of H2S detection equipment and self-contained breathing equipment will monitor H2S concentrations, wind directions, and area of exposure. They will delineate the outer perimeter of the hazardous gas area. Extension to the evacuation area will be determined from information gathered.
4. Law enforcement personnel (state police, police dept., fire dept., and sheriff's dept.) Will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.
5. After the discharge of gas has been controlled, company safety personnel will determine when the area is safe for re-entry.

**Important: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.**



### **Emergency actions**

#### **Well blowout – if emergency**

1. Evacuate all personnel to “Safe Briefing / Muster Areas” or off location if needed.
2. If sour gas – evacuate rig personnel.
3. If sour gas – evacuate public within 3000 ft radius of exposure.
4. Don SCBA and shut well in if possible using the buddy system.
5. Notify Drilling Superintendent and call 911 for emergency help (fire dept and ambulance) if needed.
6. Implement the Blowout Contingency Plan, and Drilling Emergency Action Plan.
6. Give first aid as needed.

#### **Person down location/facility**

1. If immediately possible, contact 911. Give location and wait for confirmation.
2. Don SCBA and perform rescue operation using buddy system.

### **Toxic effects of hydrogen sulfide**

Hydrogen sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 ppm, which is .001% by volume. Hydrogen sulfide is heavier than air (specific gravity – 1.192) and colorless. It forms an explosive mixture with air between 4.3 and 46.0 percent by volume. Hydrogen sulfide is almost as toxic as hydrogen cyanide and is between five and six times more toxic than carbon monoxide. Toxicity data for hydrogen sulfide and various other gases are compared in table i. Physical effects at various hydrogen sulfide exposure levels are shown in table ii.

Table i  
Toxicity of various gases

Common name	Chemical formula	Specific gravity (sc=1)	Threshold limit (1)	Hazardous limit (2)	Lethal concentration (3)
Hydrogen Cyanide	Hcn	0.94	10 ppm	150 ppm/hr	300 ppm
Hydrogen Sulfide	H2S	1.18	10 ppm	250 ppm/hr	600 ppm
Sulfur Dioxide	So2	2.21	5 ppm	-	1000 ppm
Chlorine	Cl2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	Co	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	Co2	1.52	5000 ppm	5%	10%
Methane	Ch4	0.55	90,000 ppm	Combustible above 5% in air	

- 1) threshold limit – concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects.
- 2) hazardous limit – concentration that will cause death with short-term exposure.
- 3) lethal concentration – concentration that will cause death with short-term exposure.

### **Toxic effects of hydrogen sulfide**

Table ii  
Physical effects of hydrogen sulfide

<u>Percent (%)</u>	<u>Ppm</u>	<u>Concentration</u> Grains <u>100 std. Ft3*</u>	<u>Physical effects</u>
0.001	<10	00.65	Obvious and unpleasant odor.

0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; stings eyes and throat.
0.050	500	32.96	Dizziness; breathing ceases in a few minutes; needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; followed by death within minutes.

\*at 15.00 psia and 60'f.

**Use of self-contained breathing equipment (SCBA)**

1. Written procedures shall be prepared covering safe use of SCBA's in dangerous atmosphere, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available SCBA.
2. SCBA's shall be inspected frequently at random to insure that they are properly used, cleaned, and maintained.
3. Anyone who may use the SCBA's shall be trained in how to insure proper face-piece to face seal. They shall wear SCBA's in normal air and then wear them in a test atmosphere. (note: such items as facial hair {beard or sideburns} and eyeglasses will not allow proper seal.) Anyone that may be reasonably expected to wear SCBA's should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses or contact lenses.
4. Maintenance and care of SCBA's:
  - a. A program for maintenance and care of SCBA's shall include the following:
    1. Inspection for defects, including leak checks.
    2. Cleaning and disinfecting.
    3. Repair.
    4. Storage.
  - b. Inspection, self-contained breathing apparatus for emergency use shall be inspected monthly.
    1. Fully charged cylinders.
    2. Regulator and warning device operation.
    3. Condition of face piece and connections.
    4. Rubber parts shall be maintained to keep them pliable and prevent deterioration.
  - c. Routinely used SCBA's shall be collected, cleaned and disinfected as frequently as necessary to insure proper protection is provided.
5. Persons assigned tasks that requires use of self-contained breathing equipment shall be certified physically fit (medically cleared) for breathing equipment usage at least annually.
6. SCBA's should be worn when:
  - A. Any employee works near the top or on top of any tank unless test reveals less than 10 ppm of H<sub>2</sub>S.

- B. When breaking out any line where H<sub>2</sub>S can reasonably be expected.
- C. When sampling air in areas to determine if toxic concentrations of H<sub>2</sub>S exists.
- D. When working in areas where over 10 ppm H<sub>2</sub>S has been detected.
- E. At any time there is a doubt as to the H<sub>2</sub>S level in the area to be entered.

**Rescue**  
**First aid for H<sub>2</sub>S poisoning**

Do not panic!

Remain calm – think!

1. Don SCBA breathing equipment.
2. Remove victim(s) utilizing buddy system to fresh air as quickly as possible. (go up-wind from source or at right angle to the wind. Not down wind.)
3. Briefly apply chest pressure – arm lift method of artificial respiration to clean the victim's lungs and to avoid inhaling any toxic gas directly from the victim's lungs.
4. Provide for prompt transportation to the hospital, and continue giving artificial respiration if needed.
5. Hospital(s) or medical facilities need to be informed, before-hand, of the possibility of H<sub>2</sub>S gas poisoning – no matter how remote the possibility is.
6. Notify emergency room personnel that the victim(s) has been exposed to H<sub>2</sub>S gas.

Besides basic first aid, everyone on location should have a good working knowledge of artificial respiration.

Revised CM 6/27/2012

# PERFORMANCE DATA

## TMK UP ULTRA™ DQX Technical Data Sheet

4.500 in

13.50 lbs/ft

P-110

### Tubular Parameters

Size	4.500	in	Minimum Yield	110,000	psi
Nominal Weight	13.50	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	422,000	lbs
PE Weight	13.04	lbs/ft	Tensile Load	479,000	lbs
Wall Thickness	0.290	in	Min. Internal Yield Pressure	12,400	psi
Nominal ID	3.920	in	Collapse Pressure	10,700	psi
Drift Diameter	3.795	in			
Nom. Pipe Body Area	3.836	in <sup>2</sup>			

### Connection Parameters

Connection OD	5.000	in
Connection ID	3.920	in
Make-Up Loss	3.772	in
Critical Section Area	3.836	in <sup>2</sup>
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	422,000	lbs
Min. Internal Yield Pressure	12,400	psi
Collapse Pressure	10,700	psi
Uniaxial Bending	112	°/ 100 ft

### Make-Up Torques

Min. Make-Up Torque	6,000	ft-lbs
Opt. Make-Up Torque	6,700	ft-lbs
Max. Make-Up Torque	7,300	ft-lbs
Yield Torque	10,800	ft-lbs



Printed on: October-22-2014

#### NOTE:

The content of this Technical Data Sheet is for general information only and does not guarantee performance or imply fitness for a particular purpose, which only a competent drilling professional can determine considering the specific installation and operation parameters. Information that is printed or downloaded is no longer controlled by TMK IPSCO and might not be the latest information. Anyone using the information herein does so at their own risk. To verify that you have the latest TMK IPSCO technical information, please contact TMK IPSCO Technical Sales toll-free at 1-888-258-2000.

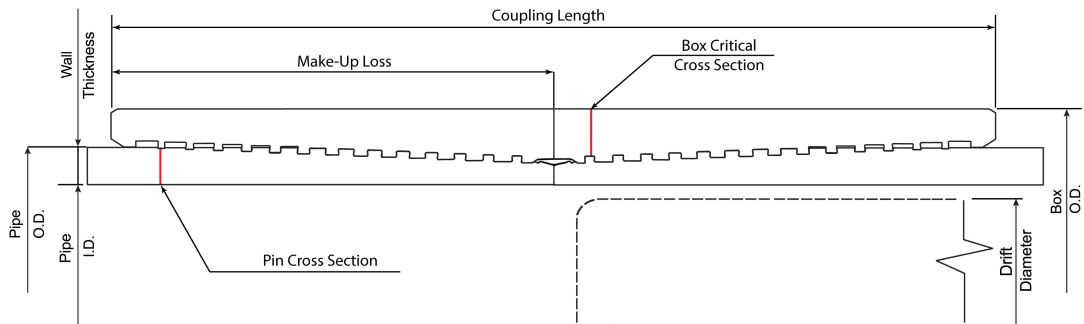
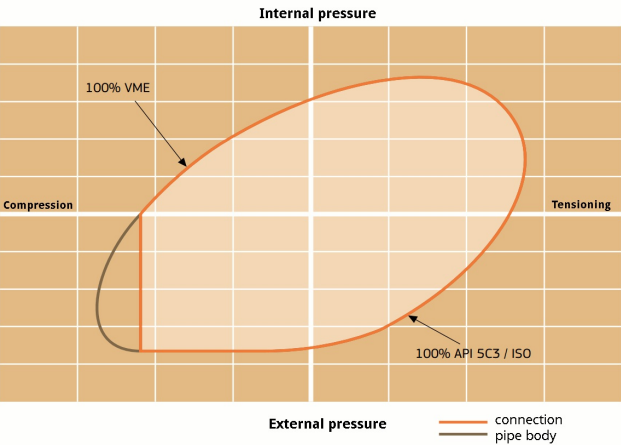


TUBULAR PARAMETERS	
Nominal OD, (inch)	4.500
Wall Thickness, (inch)	0.290
Pipe Grade	P110 CY
Coupling	Regular
Coupling Grade	P110 CY
Drift	Standard

CONNECTION PARAMETERS	
Connection OD (inch)	5.250
Connection ID, (inch)	3.920
Make-Up Loss, (inch)	3.846
Connection Critical Area, (sq inch)	3.836
Yield Strength in Tension, (klbs)	422
Yeld Strength in Compression, (klbs)	422
Tension Efficiency	100%
Compression Efficiency	100%
Min. Internal Yield Pressure, (psi)	12 410
Collapse Pressure, (psi)	10 690
Uniaxial Bending (deg/100ft)	112.1

MAKE-UP TORQUES	
Minimum Make-Up Torque, (ft-lb)	12 000
Optimum Make-Up Torque, (ft-lb)	13 000
Maximum Make-Up Torque, (ft-lb)	14 000
Operating Torque, (ft-lb)	19 200
Yield Torque, (ft-lb)	24 000

PIPE BODY PROPERTIES	
PE Weight, (lbs/ft)	13.05
Nominal Weight, (lbs/ft)	13.50
Nominal ID, (inch)	3.920
Drift Diameter, (inch)	3.795
Nominal Pipe Body Area, (sq inch)	3.836
Yield Strength in Tension, (klbs)	422
Min. Internal Yield Pressure, (psi)	12 410
Collapse Pressure, (psi)	10 690
Minimum Yield Strength, (psi)	110 000
Minimum Tensile Strength, (psi)	125 000



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Print date: 09/17/2019 17:26



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Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-45088	Pool Code 96473	Pool Name PIERCE CROSSING; BONE SPRING, EAST
Property Code 321633	Property Name OXBOW CC "17_8" FEDERAL COM	Well Number 36H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 2927.1'

Surface Location

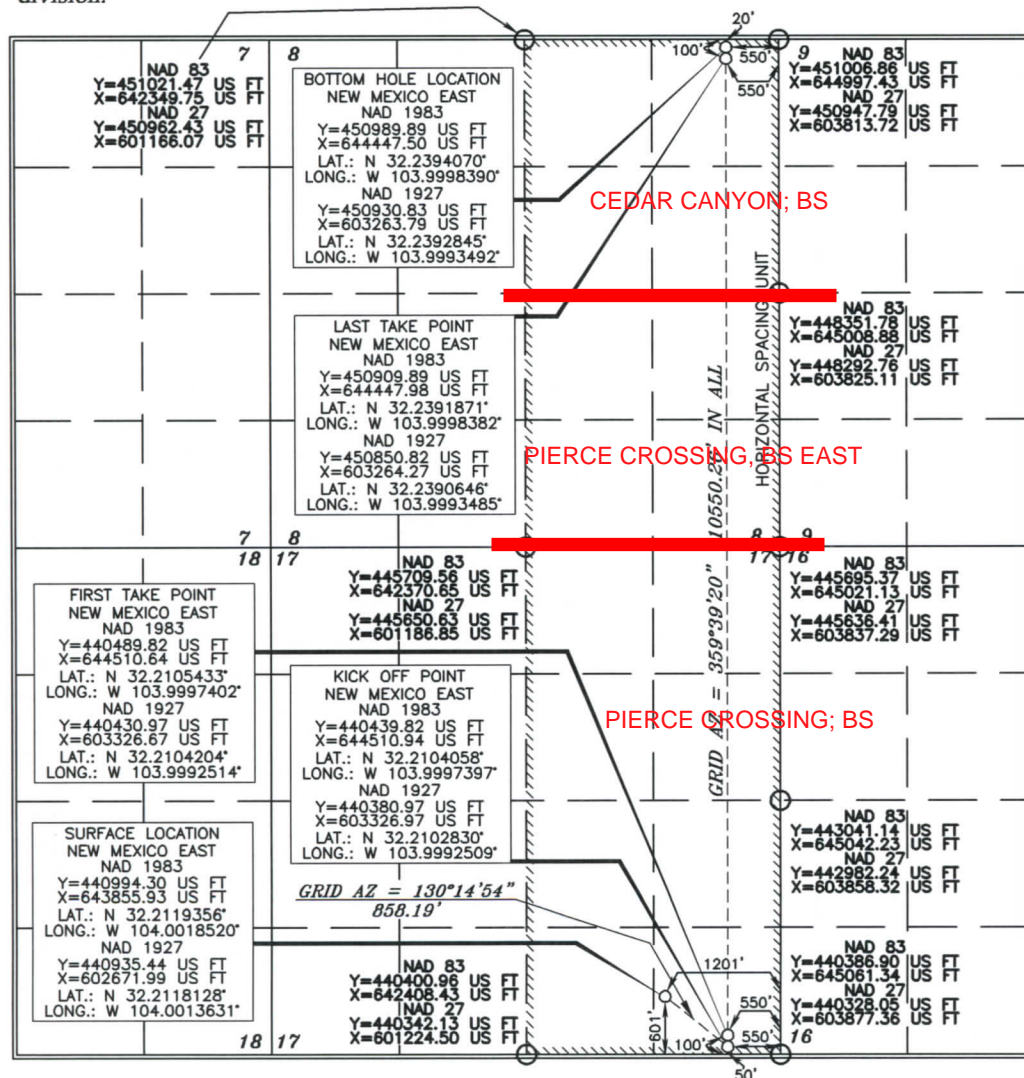
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	17	24 SOUTH	29 EAST, N.M.P.M.		601'	SOUTH	1201'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	8	24 SOUTH	29 EAST, N.M.P.M.		20'	NORTH	550'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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.



OPERATOR CERTIFICATION

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

*Leslie T. Reeves* 4/18/22  
Signature Date

LESLIE REEVES  
Printed Name  
LESLIE\_REEVES@OXY.COM  
E-mail Address

SURVEYOR CERTIFICATION

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

*15079*  
MAY 15, 2019  
Date of Survey

Signature and Seal of  
Professional Surveyor

*15079*  
Certificate Number 15079

WO# 181211WL-b (Rev. D) (KA)



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☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-45088	Pool Code 50371	Pool Name PIERCE CROSSING; BONE SPRING, EAST
Property Code 321633	Property Name OXBOW CC "17_8" FEDERAL COM	Well Number 36H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 2927.1'

Surface Location

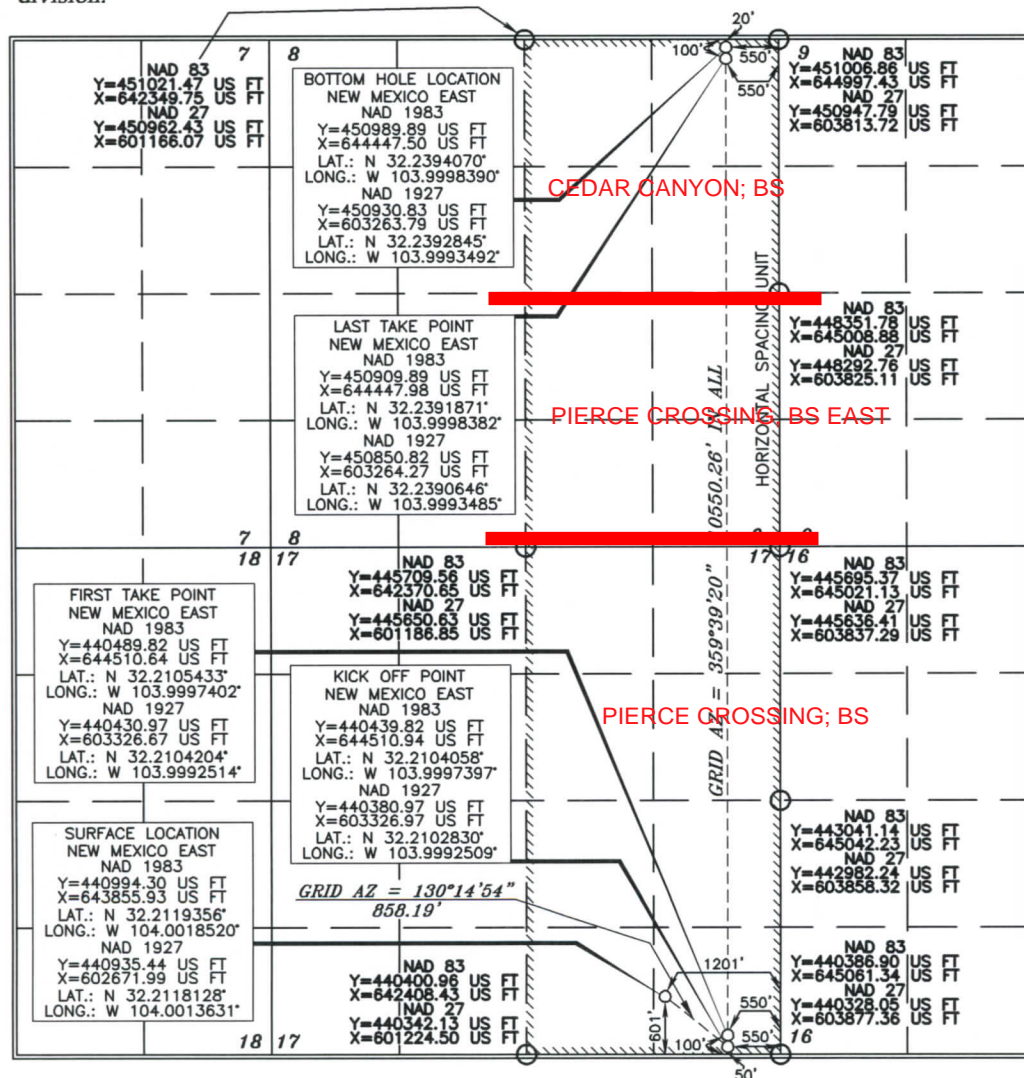
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	17	24 SOUTH	29 EAST, N.M.P.M.		601'	SOUTH	1201'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	8	24 SOUTH	29 EAST, N.M.P.M.		20'	NORTH	550'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

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.



OPERATOR CERTIFICATION

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

Leslie T. Reeves 4/18/22  
Signature Date

LESLIE REEVES  
Printed Name  
LESLIE\_REEVES@OXY.COM  
E-mail Address

SURVEYOR CERTIFICATION

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15079  
MAY 15, 2019  
Date of Survey

Signature and Seal of  
Professional Surveyor

15079  
Certificate Number

WO# 181211WL-b (Rev. D) (KA)

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☒ **AMENDED REPORT**

## WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code	Pool Name
30-015-45088		11520	CEDAR CANYON; BONE SPRING
Property Code	Property Name		Well Number
321633	OXBOW CC "17_8" FEDERAL COM		36H
OGRID No.	Operator Name		Elevation
16696	OXY USA INC.		2927.1'

### Surface Location

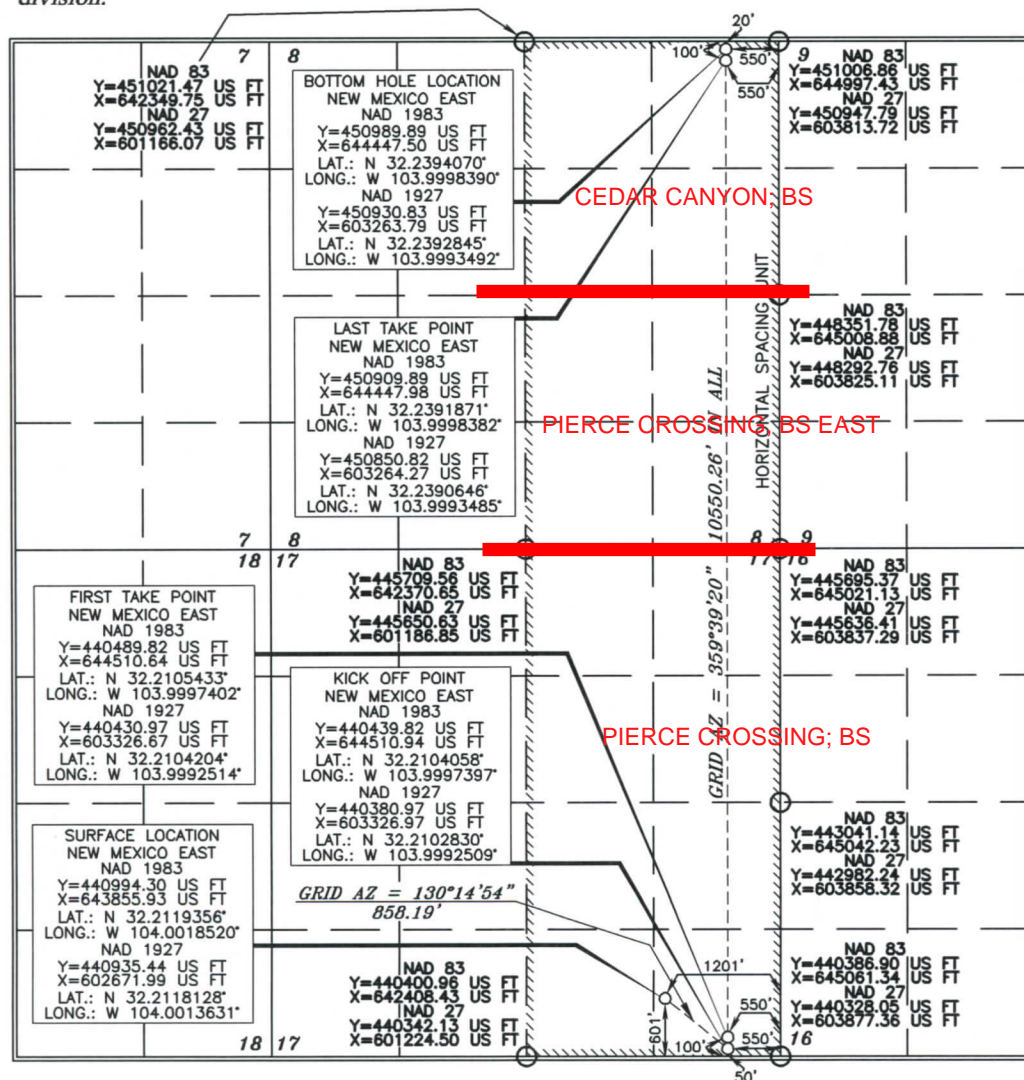
<i>UL or lot no.</i>	<i>Section</i>	<i>Township</i>	<i>Range</i>	<i>Lot Idn</i>	<i>Feet from the</i>	<i>North/South line</i>	<i>Feet from the</i>	<i>East/West line</i>	<i>County</i>
<i>P</i>	<i>17</i>	<i>24 SOUTH</i>	<i>29 EAST, N.M.P.M.</i>		<i>601'</i>	<i>SOUTH</i>	<i>1201'</i>	<i>EAST</i>	<i>EDDY</i>

### Bottom Hole Location If Different From Surface

<i>UL or lot no.</i>	<i>Section</i>	<i>Township</i>	<i>Range</i>	<i>Lot Idn</i>	<i>Feet from the</i>	<i>North/South line</i>	<i>Feet from the</i>	<i>East/West line</i>	<i>County</i>
<i>A</i>	<i>B</i>	<i>24 SOUTH</i>	<i>29 EAST, N.M.P.M.</i>		<i>20'</i>	<i>NORTH</i>	<i>550'</i>	<i>EAST</i>	<i>EDDY</i>

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

*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.*



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*Leslie T. Reeves* 4/18/22  
Signature Date

LESLIE REEVES  
Printed Name  
LESLIE\_REEVES@OXY.COM  
E-mail Address

### SURVEYOR CERTIFICATION

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MAY 15, 2019  
Date of Survey

Signature and Seal of Professional Surveyor

*Ferry Paul* 4/7/2000  
Certificate Number 15079

WO# 181211WL-b (Rev. D) (KA)



## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	OXY USA INCORPORATED
<b>LEASE NO.:</b>	NMMN-094651
<b>LOCATION:</b>	Section 17, T. 24 S., R 29 E., NMPM
<b>COUNTY:</b>	Eddy County, New Mexico

<b>WELL NAME &amp; NO.:</b>	Oxbow CC 17-8 Federal Com 36H
-----------------------------	-------------------------------

<b>WELL NAME &amp; NO.:</b>	Oxbow CC 17-8 Federal Com 36H
-----------------------------	-------------------------------

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" 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 type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input checked="" type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

**ALL PREVIOUS COAs STILL APPLY.**

### B. CASING

#### Casing Design

3. The minimum required fill of cement behind the **4-1/2** inch production casing is:

#### Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

#### Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
  - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

### C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

**NMK – 3-11-2022**

**District I**

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**District IV**

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

CONDITIONS

Action 99482

**CONDITIONS**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 99482
	Action Type: [C-103] NOI Change of Plans (C-103A)

**CONDITIONS**

Created By	Condition	Condition Date
kpickford	DHC required	4/21/2022
kpickford	Notify NMOCD 24 hours prior to beginning operations.	4/25/2022