

Well Name: HEADS CC 9-4 FEDERAL COM	Well Location: T24S / R29E / SEC 16 / NWNE / 32.222244 / -103.986462	County or Parish/State: EDDY / NM
Well Number: 312H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM099034, NMNM99034	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001547340	Well Status: Drilling Well	Operator: OXY USA INCORPORATED

Notice of Intent

Sundry ID: 2673531

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 05/25/2022	Time Sundry Submitted: 02:07
Date proposed operation will begin: 06/17/2022	

Procedure Description: 6/8/22 Drill Plan Change- An 8-3/4" hole size will be drilled from the ICP to the landing point to resolve the 0.422" clearance concern. OXY USA Inc. respectfully requests approval to amend the subject well APD with the following changes: 1280 acre horizontal spacing unit, pool change to Purple Sage Wolfcamp, casing, cement, mud, BOP, wellhead, and directional plan. The following documents are attached: Amended C-102, directional survey, directional plot, wellhead diagram, drill plan, and casing data sheets.

NOI Attachments

Procedure Description

- HeadsCC9_4FederalCom312H_TNSWedge461_7.000in_32.00__P110CY_20220525140254.pdf
- HeadsCC9_4FederalCom312H_TNSWedge461_5.500in_20.00__P110CY_20220525140254.pdf
- HeadsCC9_4FederalCom312H_TMKUPTORQDQW_5.500in_20.00__P110CY_20220525140253.pdf
- HeadsCC9_4FederalCom312H_TNSWedge441_5.500in_20.00__P110CY_20220525140254.pdf
- HeadsCC9_4FederalCom312H_TNSWedge425_5.500in_20.00__P110CY_20220525140253.pdf
- HeadsCC9_4FederalCom312H_DirectPlan_20220525140251.pdf
- HeadsCC9_4FederalCom312H_DrillPlan_20220525140251.pdf
- HeadsCC9_4FederalCom312H_DirectPlot_20220525140251.pdf

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Well Number: 312H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM099034, NMNM99034	Unit or CA Name:	Unit or CA Number:
US Well Number: 3001547340	Well Status: Drilling Well	Operator: OXY USA INCORPORATED

HeadsCC9_4FederalCom312H_TMKUPDQX_5.500in_20.00__P110_20220525140251.pdf

HeadsCC9_4FederalCom312H_10K_3_String_Adapt_20220525140251.pdf

22_23_HEADS_CC_9_4_FED_COM_312H_C102_FLAT_20220525140251.pdf

Conditions of Approval

Additional

Heads_CC_9_4_Federal_Com_312H_DrillingCOA_Sundry_2673531_20220609120722.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: STEPHEN JANACEK	Signed on: JUN 08, 2022 09:26 AM
Name: OXY USA INCORPORATED	
Title: Regulatory Engineer	
Street Address: 5 Greenway Plaza, Suite 110	
City: Houston	State: TX
Phone: (713) 497-2417	
Email address: stephen_janacek@oxy.com	

Field

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: NDUNGU KAMAU	BLM POC Title: Petroleum Engineering Technician
BLM POC Phone: 5752345938	BLM POC Email Address: nkamau@blm.gov
Disposition: Approved	Disposition Date: 06/30/2022
Signature: Chris Walls	

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

ALL PREVIOUS COAs STILL APPLY.

OPERATOR'S NAME:	OXY USA Inc.
LEASE NO.:	NMNM099034
LOCATION:	Section 9, T.24 S., R.29 E., NMP
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	HEADS CC 9-4 FEDERAL COM 312H
SURFACE HOLE FOOTAGE:	957'N & 1715'E
BOTTOM HOLE FOOTAGE:	20'N & 1790'E

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 checked="" 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

A. CASING

Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **551** 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.

Intermediate casing must be kept 1/3 fluid filled to meet BLM minimum collapse requirement.

2. The 9-5/8 inch intermediate casing shall be set at approximately 9366 feet. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Option 1 (Single Stage):

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

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 to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

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

Operator has proposed to pump down 13-3/8" X 9-5/8" annulus. Operator must run a CBL or Echo-meter from TD of the 9-5/8" casing to surface. Submit results to BLM.

3. The minimum required fill of cement behind the 7 x 5-1/2 inch production casing and a 8-3/4 x 8-1/2 inch production hole 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.

Operator has proposed to pump down 9-5/8" X 7 x 5-1/2" annulus. Operator must run a CBL or Echo-meter from TD of the 7 x 5-1/2" casing to surface. Submit results to BLM.

B. SPECIAL REQUIREMENT (S)**BOPE Break Testing Variance (Note: For 5M BOPE or less)**

- BOPE Break Testing is ONLY permitted for 5M BOPE or less.
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required.

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) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 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 30-015-47340	Pool Code 98220	Pool Name PURPLE SAGE WOLFCAMP (GAS)
Property Code 328290	Property Name HEADS CC 9_4 FEDERAL COM	Well Number 312H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 2926.8'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	16	24-S	29-E		957	NORTH	1715	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
2	4	24-S	29-E		20	NORTH	2320	EAST	EDDY
Dedicated Acres 1280	Joint or Infill Y	Consolidation Code	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

PROPOSED BOTTOM HOLE LOCATION NAD 83
Y=456302.0 N
X=647942.8 E
LAT.=32.253979° N
LONG.=103.988479° W

LTP NAD 83
100' FNL & 2320' FEL
Y=456222.0 N
X=647943.2 E
LAT.=32.253759° N
LONG.=103.988478° W

POINT LEGEND NAD 83

1	Y=456311.0 N
2	X=644969.9 E
3	Y=453660.3 N
4	X=644983.6 E
5	Y=451006.8 N
6	X=644997.4 E
7	Y=448351.8 N
8	X=645008.9 E
9	Y=445695.4 N
10	X=645021.1 E
11	Y=445710.8 N
12	X=647666.6 E
13	Y=445726.2 N
14	X=650312.0 E
15	Y=448382.0 N
16	X=650298.1 E
17	Y=451034.0 N
18	X=650284.7 E
19	Y=453688.3 N
20	X=650273.5 E
21	Y=456330.3 N
22	X=650262.8 E
23	Y=456320.9 N
24	X=647615.9 E
25	Y=451020.7 N
26	X=647641.0 E

FTP NAD 83
100' FSL & 2320' FEL
Y=445812.7 N
X=647991.6 E
LAT.=32.225145° N
LONG.=103.988430° W

KOP NAD 83
50' FSL & 2320' FEL
Y=445762.7 N
X=647991.6 E
LAT.=32.225007° N
LONG.=103.988430° W

SURFACE LOCATION NAD 83
Y=444759.2 N
X=648603.4 E
LAT.=32.222244° N
LONG.=103.986463° W

PROPOSED BOTTOM HOLE LOCATION NAD 27
Y=456242.9 N
X=606759.3 E
LAT.=32.253857° N
LONG.=103.987989° W

LTP NAD 27
100' FNL & 2320' FEL
Y=456162.9 N
X=606759.6 E
LAT.=32.253637° N
LONG.=103.987988° W

POINT LEGEND NAD 27

1	Y=456251.8 N
2	X=603786.3 E
3	Y=453601.2 N
4	X=603800.0 E
5	Y=450947.8 N
6	X=603813.7 E
7	Y=448292.8 N
8	X=603825.1 E
9	Y=445636.4 N
10	X=603837.3 E
11	Y=445651.8 N
12	X=606482.7 E
13	Y=445667.2 N
14	X=609128.2 E
15	Y=448323.0 N
16	X=609114.4 E
17	Y=450974.9 N
18	X=609101.0 E
19	Y=453629.2 N
20	X=609089.8 E
21	Y=456271.1 N
22	X=609079.2 E
23	Y=456261.7 N
24	X=606432.3 E
25	Y=450961.7 N
26	X=606457.3 E

FTP NAD 27
100' FSL & 2320' FEL
Y=445753.7 N
X=606807.7 E
LAT.=32.225022° N
LONG.=103.987941° W

KOP NAD 27
50' FSL & 2320' FEL
Y=445703.7 N
X=606807.9 E
LAT.=32.224885° N
LONG.=103.987941° W

SURFACE LOCATION NAD 27
Y=444700.3 N
X=607419.5 E
LAT.=32.222121° N
LONG.=103.985974° W

OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Stephen Janacek 5/23/22

Signature _____ Date _____

STEPHEN JANACEK

Printed Name _____

STEPHEN_JANACEK@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.

JANUARY 2, 2020

Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW

NEW MEXICO

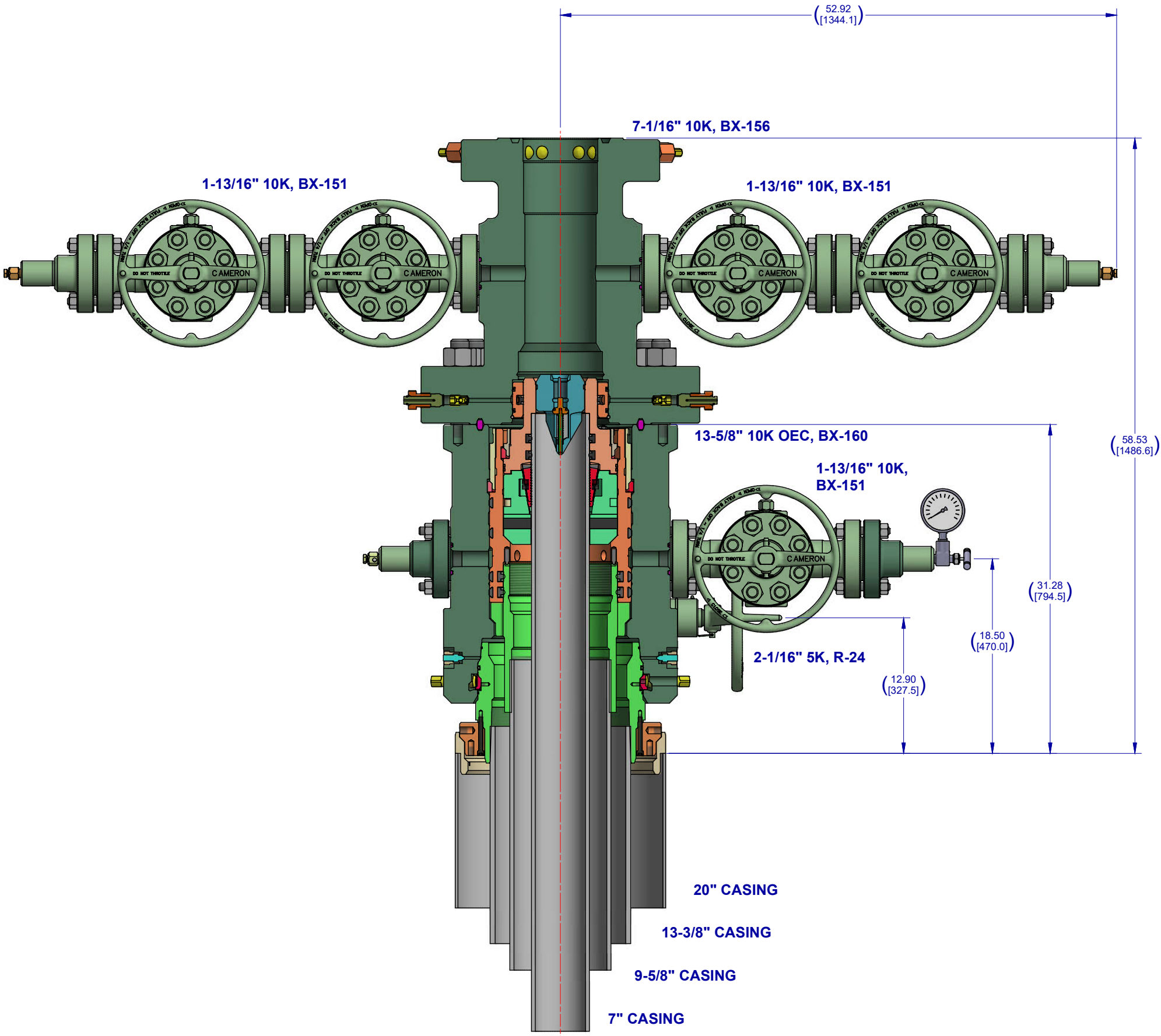
17777

LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 1/20/22

Certificate No. **CHAD HARCROW 17777**


W.O. #22-23 DRAWN BY: AH



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	SURFACE SYSTEMS		
MATERIAL & HEAT TREAT	DRAWN BY:	DATE	OXY 13-5/8" 10K ADAPT 20" X 13-3/8" X 9-5/8" X 7"			
	D. GOTTUNG	18 Feb 22				
	CHECKED BY:	DATE				
	D. GOTTUNG	18 Feb 22				
ESTIMATED WEIGHT:	D. GOTTUNG	DATE	SD-053434-94-12			REV: 01
	6115.068 LBS 2773.748 KG	18 Feb 22				
INITIAL USE B/M:		SHEET	INVENTOR: D			
		1 of 1				

OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)

Heads CC 9_4

Heads CC 9_4 Federal Com 312H

Wellbore #1

Plan: Permitting Plan

Standard Planning Report

19 May, 2022

OXY

Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Heads CC 9_4 Federal Com 312H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB @ 2953.30ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB @ 2953.30ft
Site:	Heads CC 9_4	North Reference:	Grid
Well:	Heads CC 9_4 Federal Com 312H	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		Heads CC 9_4				
Site Position:		Northing:	446,198.60 usft	Latitude:	32.226200	
From:	Map	Easting:	648,677.50 usft	Longitude:	-103.986208	
Position Uncertainty:		2.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.19 °

Well		Heads CC 9_4 Federal Com 312H				
Well Position	+N/-S	-1,439.51 ft	Northing:	444,759.20 usft	Latitude:	32.222244
	+E/-W	-74.11 ft	Easting:	648,603.40 usft	Longitude:	-103.986463
Position Uncertainty		1.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	2,926.80 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	8/1/2019	6.95	59.93	47,885.80000000
		2/11/2021	6.77	59.88	47,734.00000000

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 (°)
	0.10	0.00	0.00	356.72

Plan Survey Tool Program	Date	5/19/2022		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,929.22	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	
4,920.00	0.00	0.00	4,920.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,919.92	10.00	311.64	5,914.85	57.83	-65.04	1.00	1.00	0.00	311.64	
9,603.86	10.00	311.64	9,542.83	482.86	-543.07	0.00	0.00	0.00	0.00	
10,439.21	90.20	359.73	10,045.00	1,053.58	-611.85	10.00	9.60	5.76	48.50	FTP (Heads CC 9_4
20,929.52	90.20	359.73	10,009.00	11,543.72	-660.65	0.00	0.00	0.00	0.00	PBHL (Heads CC

OXY

Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Heads CC 9_4 Federal Com 312H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB @ 2953.30ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB @ 2953.30ft
Site:	Heads CC 9_4	North Reference:	Grid
Well:	Heads CC 9_4 Federal Com 312H	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)
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
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,920.00	0.00	0.00	4,920.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.80	311.64	5,000.00	0.37	-0.42	0.39	1.00	1.00	0.00
5,100.00	1.80	311.64	5,099.97	1.88	-2.11	2.00	1.00	1.00	0.00
5,200.00	2.80	311.64	5,199.89	4.55	-5.11	4.83	1.00	1.00	0.00
5,300.00	3.80	311.64	5,299.72	8.37	-9.41	8.89	1.00	1.00	0.00

OXY

Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Heads CC 9_4 Federal Com 312H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB @ 2953.30ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB @ 2953.30ft
Site:	Heads CC 9_4	North Reference:	Grid
Well:	Heads CC 9_4 Federal Com 312H	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)
5,400.00	4.80	311.64	5,399.44	13.35	-15.02	14.19	1.00	1.00	0.00
5,500.00	5.80	311.64	5,499.01	19.49	-21.92	20.71	1.00	1.00	0.00
5,600.00	6.80	311.64	5,598.40	26.78	-30.12	28.46	1.00	1.00	0.00
5,700.00	7.80	311.64	5,697.59	35.22	-39.62	37.43	1.00	1.00	0.00
5,800.00	8.80	311.64	5,796.54	44.82	-50.40	47.62	1.00	1.00	0.00
5,900.00	9.80	311.64	5,895.23	55.55	-62.48	59.03	1.00	1.00	0.00
5,919.92	10.00	311.64	5,914.85	57.83	-65.04	61.45	1.00	1.00	0.00
6,000.00	10.00	311.64	5,993.72	67.07	-75.43	71.27	0.00	0.00	0.00
6,100.00	10.00	311.64	6,092.20	78.61	-88.41	83.53	0.00	0.00	0.00
6,200.00	10.00	311.64	6,190.68	90.14	-101.38	95.79	0.00	0.00	0.00
6,300.00	10.00	311.64	6,289.16	101.68	-114.36	108.05	0.00	0.00	0.00
6,400.00	10.00	311.64	6,387.64	113.22	-127.34	120.31	0.00	0.00	0.00
6,500.00	10.00	311.64	6,486.12	124.75	-140.31	132.57	0.00	0.00	0.00
6,600.00	10.00	311.64	6,584.60	136.29	-153.29	144.83	0.00	0.00	0.00
6,700.00	10.00	311.64	6,683.08	147.83	-166.26	157.09	0.00	0.00	0.00
6,800.00	10.00	311.64	6,781.56	159.37	-179.24	169.35	0.00	0.00	0.00
6,900.00	10.00	311.64	6,880.04	170.90	-192.22	181.61	0.00	0.00	0.00
7,000.00	10.00	311.64	6,978.53	182.44	-205.19	193.87	0.00	0.00	0.00
7,100.00	10.00	311.64	7,077.01	193.98	-218.17	206.13	0.00	0.00	0.00
7,200.00	10.00	311.64	7,175.49	205.52	-231.14	218.39	0.00	0.00	0.00
7,300.00	10.00	311.64	7,273.97	217.05	-244.12	230.65	0.00	0.00	0.00
7,400.00	10.00	311.64	7,372.45	228.59	-257.10	242.91	0.00	0.00	0.00
7,500.00	10.00	311.64	7,470.93	240.13	-270.07	255.17	0.00	0.00	0.00
7,600.00	10.00	311.64	7,569.41	251.67	-283.05	267.43	0.00	0.00	0.00
7,700.00	10.00	311.64	7,667.89	263.20	-296.02	279.69	0.00	0.00	0.00
7,800.00	10.00	311.64	7,766.37	274.74	-309.00	291.95	0.00	0.00	0.00
7,900.00	10.00	311.64	7,864.86	286.28	-321.98	304.21	0.00	0.00	0.00
8,000.00	10.00	311.64	7,963.34	297.81	-334.95	316.47	0.00	0.00	0.00
8,100.00	10.00	311.64	8,061.82	309.35	-347.93	328.73	0.00	0.00	0.00
8,200.00	10.00	311.64	8,160.30	320.89	-360.90	340.99	0.00	0.00	0.00
8,300.00	10.00	311.64	8,258.78	332.43	-373.88	353.25	0.00	0.00	0.00
8,400.00	10.00	311.64	8,357.26	343.96	-386.86	365.51	0.00	0.00	0.00
8,500.00	10.00	311.64	8,455.74	355.50	-399.83	377.77	0.00	0.00	0.00
8,600.00	10.00	311.64	8,554.22	367.04	-412.81	390.03	0.00	0.00	0.00
8,700.00	10.00	311.64	8,652.70	378.58	-425.79	402.29	0.00	0.00	0.00
8,800.00	10.00	311.64	8,751.18	390.11	-438.76	414.55	0.00	0.00	0.00
8,900.00	10.00	311.64	8,849.67	401.65	-451.74	426.81	0.00	0.00	0.00
9,000.00	10.00	311.64	8,948.15	413.19	-464.71	439.07	0.00	0.00	0.00
9,100.00	10.00	311.64	9,046.63	424.73	-477.69	451.33	0.00	0.00	0.00
9,200.00	10.00	311.64	9,145.11	436.26	-490.67	463.59	0.00	0.00	0.00
9,300.00	10.00	311.64	9,243.59	447.80	-503.64	475.85	0.00	0.00	0.00
9,400.00	10.00	311.64	9,342.07	459.34	-516.62	488.10	0.00	0.00	0.00
9,500.00	10.00	311.64	9,440.55	470.87	-529.59	500.36	0.00	0.00	0.00
9,600.00	10.00	311.64	9,539.03	482.41	-542.57	512.62	0.00	0.00	0.00
9,603.86	10.00	311.64	9,542.83	482.86	-543.07	513.10	0.00	0.00	0.00
9,700.00	17.87	335.70	9,636.14	501.89	-555.41	532.81	10.00	8.19	25.02
9,800.00	27.25	344.95	9,728.42	538.07	-567.69	569.63	10.00	9.38	9.25
9,900.00	36.94	349.66	9,813.05	589.87	-579.06	621.99	10.00	9.69	4.71
10,000.00	46.74	352.62	9,887.47	655.70	-589.16	688.30	10.00	9.81	2.96
10,100.00	56.60	354.75	9,949.42	733.58	-597.68	766.53	10.00	9.86	2.13
10,200.00	66.49	356.44	9,997.00	821.13	-604.37	854.32	10.00	9.89	1.69
10,300.00	76.40	357.89	10,028.79	915.70	-609.02	949.00	10.00	9.91	1.45
10,400.00	86.31	359.22	10,043.81	1,014.41	-611.49	1,047.69	10.00	9.91	1.33
10,439.21	90.20	359.73	10,045.00	1,053.58	-611.85	1,086.82	10.00	9.91	1.30
10,500.00	90.20	359.73	10,044.79	1,114.38	-612.13	1,147.53	0.00	0.00	0.00

OXY Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Heads CC 9_4 Federal Com 312H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB @ 2953.30ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB @ 2953.30ft
Site:	Heads CC 9_4	North Reference:	Grid
Well:	Heads CC 9_4 Federal Com 312H	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)
10,600.00	90.20	359.73	10,044.45	1,214.38	-612.60	1,247.39	0.00	0.00	0.00
10,700.00	90.20	359.73	10,044.11	1,314.37	-613.06	1,347.26	0.00	0.00	0.00
10,800.00	90.20	359.73	10,043.76	1,414.37	-613.53	1,447.12	0.00	0.00	0.00
10,900.00	90.20	359.73	10,043.42	1,514.37	-613.99	1,546.98	0.00	0.00	0.00
11,000.00	90.20	359.73	10,043.08	1,614.37	-614.46	1,646.84	0.00	0.00	0.00
11,100.00	90.20	359.73	10,042.73	1,714.37	-614.92	1,746.70	0.00	0.00	0.00
11,200.00	90.20	359.73	10,042.39	1,814.37	-615.39	1,846.56	0.00	0.00	0.00
11,300.00	90.20	359.73	10,042.05	1,914.36	-615.85	1,946.42	0.00	0.00	0.00
11,400.00	90.20	359.73	10,041.70	2,014.36	-616.32	2,046.29	0.00	0.00	0.00
11,500.00	90.20	359.73	10,041.36	2,114.36	-616.78	2,146.15	0.00	0.00	0.00
11,600.00	90.20	359.73	10,041.02	2,214.36	-617.25	2,246.01	0.00	0.00	0.00
11,700.00	90.20	359.73	10,040.67	2,314.36	-617.71	2,345.87	0.00	0.00	0.00
11,800.00	90.20	359.73	10,040.33	2,414.36	-618.18	2,445.73	0.00	0.00	0.00
11,900.00	90.20	359.73	10,039.99	2,514.35	-618.64	2,545.59	0.00	0.00	0.00
12,000.00	90.20	359.73	10,039.64	2,614.35	-619.11	2,645.46	0.00	0.00	0.00
12,100.00	90.20	359.73	10,039.30	2,714.35	-619.58	2,745.32	0.00	0.00	0.00
12,200.00	90.20	359.73	10,038.96	2,814.35	-620.04	2,845.18	0.00	0.00	0.00
12,300.00	90.20	359.73	10,038.61	2,914.35	-620.51	2,945.04	0.00	0.00	0.00
12,400.00	90.20	359.73	10,038.27	3,014.35	-620.97	3,044.90	0.00	0.00	0.00
12,500.00	90.20	359.73	10,037.93	3,114.34	-621.44	3,144.76	0.00	0.00	0.00
12,600.00	90.20	359.73	10,037.58	3,214.34	-621.90	3,244.62	0.00	0.00	0.00
12,700.00	90.20	359.73	10,037.24	3,314.34	-622.37	3,344.49	0.00	0.00	0.00
12,800.00	90.20	359.73	10,036.90	3,414.34	-622.83	3,444.35	0.00	0.00	0.00
12,900.00	90.20	359.73	10,036.56	3,514.34	-623.30	3,544.21	0.00	0.00	0.00
13,000.00	90.20	359.73	10,036.21	3,614.34	-623.76	3,644.07	0.00	0.00	0.00
13,100.00	90.20	359.73	10,035.87	3,714.33	-624.23	3,743.93	0.00	0.00	0.00
13,200.00	90.20	359.73	10,035.53	3,814.33	-624.69	3,843.79	0.00	0.00	0.00
13,300.00	90.20	359.73	10,035.18	3,914.33	-625.16	3,943.66	0.00	0.00	0.00
13,400.00	90.20	359.73	10,034.84	4,014.33	-625.62	4,043.52	0.00	0.00	0.00
13,500.00	90.20	359.73	10,034.50	4,114.33	-626.09	4,143.38	0.00	0.00	0.00
13,600.00	90.20	359.73	10,034.15	4,214.33	-626.55	4,243.24	0.00	0.00	0.00
13,700.00	90.20	359.73	10,033.81	4,314.32	-627.02	4,343.10	0.00	0.00	0.00
13,800.00	90.20	359.73	10,033.47	4,414.32	-627.48	4,442.96	0.00	0.00	0.00
13,900.00	90.20	359.73	10,033.12	4,514.32	-627.95	4,542.82	0.00	0.00	0.00
14,000.00	90.20	359.73	10,032.78	4,614.32	-628.41	4,642.69	0.00	0.00	0.00
14,100.00	90.20	359.73	10,032.44	4,714.32	-628.88	4,742.55	0.00	0.00	0.00
14,200.00	90.20	359.73	10,032.09	4,814.32	-629.35	4,842.41	0.00	0.00	0.00
14,300.00	90.20	359.73	10,031.75	4,914.31	-629.81	4,942.27	0.00	0.00	0.00
14,400.00	90.20	359.73	10,031.41	5,014.31	-630.28	5,042.13	0.00	0.00	0.00
14,500.00	90.20	359.73	10,031.06	5,114.31	-630.74	5,141.99	0.00	0.00	0.00
14,600.00	90.20	359.73	10,030.72	5,214.31	-631.21	5,241.86	0.00	0.00	0.00
14,700.00	90.20	359.73	10,030.38	5,314.31	-631.67	5,341.72	0.00	0.00	0.00
14,800.00	90.20	359.73	10,030.04	5,414.31	-632.14	5,441.58	0.00	0.00	0.00
14,900.00	90.20	359.73	10,029.69	5,514.30	-632.60	5,541.44	0.00	0.00	0.00
15,000.00	90.20	359.73	10,029.35	5,614.30	-633.07	5,641.30	0.00	0.00	0.00
15,100.00	90.20	359.73	10,029.01	5,714.30	-633.53	5,741.16	0.00	0.00	0.00
15,200.00	90.20	359.73	10,028.66	5,814.30	-634.00	5,841.02	0.00	0.00	0.00
15,300.00	90.20	359.73	10,028.32	5,914.30	-634.46	5,940.89	0.00	0.00	0.00
15,400.00	90.20	359.73	10,027.98	6,014.30	-634.93	6,040.75	0.00	0.00	0.00
15,500.00	90.20	359.73	10,027.63	6,114.29	-635.39	6,140.61	0.00	0.00	0.00
15,600.00	90.20	359.73	10,027.29	6,214.29	-635.86	6,240.47	0.00	0.00	0.00
15,700.00	90.20	359.73	10,026.95	6,314.29	-636.32	6,340.33	0.00	0.00	0.00
15,800.00	90.20	359.73	10,026.60	6,414.29	-636.79	6,440.19	0.00	0.00	0.00
15,900.00	90.20	359.73	10,026.26	6,514.29	-637.25	6,540.06	0.00	0.00	0.00
16,000.00	90.20	359.73	10,025.92	6,614.29	-637.72	6,639.92	0.00	0.00	0.00

OXY Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Heads CC 9_4 Federal Com 312H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB @ 2953.30ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB @ 2953.30ft
Site:	Heads CC 9_4	North Reference:	Grid
Well:	Heads CC 9_4 Federal Com 312H	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	90.20	359.73	10,025.57	6,714.28	-638.18	6,739.78	0.00	0.00	0.00
16,200.00	90.20	359.73	10,025.23	6,814.28	-638.65	6,839.64	0.00	0.00	0.00
16,300.00	90.20	359.73	10,024.89	6,914.28	-639.11	6,939.50	0.00	0.00	0.00
16,400.00	90.20	359.73	10,024.54	7,014.28	-639.58	7,039.36	0.00	0.00	0.00
16,500.00	90.20	359.73	10,024.20	7,114.28	-640.05	7,139.23	0.00	0.00	0.00
16,600.00	90.20	359.73	10,023.86	7,214.28	-640.51	7,239.09	0.00	0.00	0.00
16,700.00	90.20	359.73	10,023.51	7,314.27	-640.98	7,338.95	0.00	0.00	0.00
16,800.00	90.20	359.73	10,023.17	7,414.27	-641.44	7,438.81	0.00	0.00	0.00
16,900.00	90.20	359.73	10,022.83	7,514.27	-641.91	7,538.67	0.00	0.00	0.00
17,000.00	90.20	359.73	10,022.49	7,614.27	-642.37	7,638.53	0.00	0.00	0.00
17,100.00	90.20	359.73	10,022.14	7,714.27	-642.84	7,738.39	0.00	0.00	0.00
17,200.00	90.20	359.73	10,021.80	7,814.27	-643.30	7,838.26	0.00	0.00	0.00
17,300.00	90.20	359.73	10,021.46	7,914.26	-643.77	7,938.12	0.00	0.00	0.00
17,400.00	90.20	359.73	10,021.11	8,014.26	-644.23	8,037.98	0.00	0.00	0.00
17,500.00	90.20	359.73	10,020.77	8,114.26	-644.70	8,137.84	0.00	0.00	0.00
17,600.00	90.20	359.73	10,020.43	8,214.26	-645.16	8,237.70	0.00	0.00	0.00
17,700.00	90.20	359.73	10,020.08	8,314.26	-645.63	8,337.56	0.00	0.00	0.00
17,800.00	90.20	359.73	10,019.74	8,414.26	-646.09	8,437.43	0.00	0.00	0.00
17,900.00	90.20	359.73	10,019.40	8,514.25	-646.56	8,537.29	0.00	0.00	0.00
18,000.00	90.20	359.73	10,019.05	8,614.25	-647.02	8,637.15	0.00	0.00	0.00
18,100.00	90.20	359.73	10,018.71	8,714.25	-647.49	8,737.01	0.00	0.00	0.00
18,200.00	90.20	359.73	10,018.37	8,814.25	-647.95	8,836.87	0.00	0.00	0.00
18,300.00	90.20	359.73	10,018.02	8,914.25	-648.42	8,936.73	0.00	0.00	0.00
18,400.00	90.20	359.73	10,017.68	9,014.25	-648.88	9,036.59	0.00	0.00	0.00
18,500.00	90.20	359.73	10,017.34	9,114.24	-649.35	9,136.46	0.00	0.00	0.00
18,600.00	90.20	359.73	10,016.99	9,214.24	-649.82	9,236.32	0.00	0.00	0.00
18,700.00	90.20	359.73	10,016.65	9,314.24	-650.28	9,336.18	0.00	0.00	0.00
18,800.00	90.20	359.73	10,016.31	9,414.24	-650.75	9,436.04	0.00	0.00	0.00
18,900.00	90.20	359.73	10,015.96	9,514.24	-651.21	9,535.90	0.00	0.00	0.00
19,000.00	90.20	359.73	10,015.62	9,614.24	-651.68	9,635.76	0.00	0.00	0.00
19,100.00	90.20	359.73	10,015.28	9,714.23	-652.14	9,735.63	0.00	0.00	0.00
19,200.00	90.20	359.73	10,014.94	9,814.23	-652.61	9,835.49	0.00	0.00	0.00
19,300.00	90.20	359.73	10,014.59	9,914.23	-653.07	9,935.35	0.00	0.00	0.00
19,400.00	90.20	359.73	10,014.25	10,014.23	-653.54	10,035.21	0.00	0.00	0.00
19,500.00	90.20	359.73	10,013.91	10,114.23	-654.00	10,135.07	0.00	0.00	0.00
19,600.00	90.20	359.73	10,013.56	10,214.23	-654.47	10,234.93	0.00	0.00	0.00
19,700.00	90.20	359.73	10,013.22	10,314.22	-654.93	10,334.79	0.00	0.00	0.00
19,800.00	90.20	359.73	10,012.88	10,414.22	-655.40	10,434.66	0.00	0.00	0.00
19,900.00	90.20	359.73	10,012.53	10,514.22	-655.86	10,534.52	0.00	0.00	0.00
20,000.00	90.20	359.73	10,012.19	10,614.22	-656.33	10,634.38	0.00	0.00	0.00
20,100.00	90.20	359.73	10,011.85	10,714.22	-656.79	10,734.24	0.00	0.00	0.00
20,200.00	90.20	359.73	10,011.50	10,814.22	-657.26	10,834.10	0.00	0.00	0.00
20,300.00	90.20	359.73	10,011.16	10,914.21	-657.72	10,933.96	0.00	0.00	0.00
20,400.00	90.20	359.73	10,010.82	11,014.21	-658.19	11,033.83	0.00	0.00	0.00
20,500.00	90.20	359.73	10,010.47	11,114.21	-658.65	11,133.69	0.00	0.00	0.00
20,600.00	90.20	359.73	10,010.13	11,214.21	-659.12	11,233.55	0.00	0.00	0.00
20,700.00	90.20	359.73	10,009.79	11,314.21	-659.58	11,333.41	0.00	0.00	0.00
20,800.00	90.20	359.73	10,009.44	11,414.21	-660.05	11,433.27	0.00	0.00	0.00
20,900.00	90.20	359.73	10,009.10	11,514.20	-660.52	11,533.13	0.00	0.00	0.00
20,929.52	90.20	359.73	10,009.00	11,543.72	-660.65	11,562.61	0.00	0.00	0.00

OXY

Planning Report

Database:	HOPSPP	Local Co-ordinate Reference:	Well Heads CC 9_4 Federal Com 312H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB @ 2953.30ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB @ 2953.30ft
Site:	Heads CC 9_4	North Reference:	Grid
Well:	Heads CC 9_4 Federal Com 312H	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
PBHL (Heads CC 9_4 - plan hits target center - Point	0.00	0.00	10,009.00	11,543.72	-660.65	456,302.00	647,942.80	32.253979	-103.988479
FTP (Heads CC 9_4 - plan hits target center - Point	0.00	0.01	10,045.00	1,053.58	-611.85	445,812.70	647,991.60	32.225145	-103.988430

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
138.00	138.00	RUSTLER				
658.00	658.00	SALADO				
1,332.00	1,332.00	CASTILE				
2,899.00	2,899.00	LAMAR				
2,952.00	2,952.00	BELL CANYON				
3,793.00	3,793.00	CHERRY CANYON				
5,041.01	5,041.00	BRUSHY CANYON				
6,651.18	6,635.00	BONE SPRING				
7,666.60	7,635.00	BONE SPRING 1ST				
8,493.16	8,449.00	BONE SPRING 2ND				
9,612.16	9,551.00	BONE SPRING 3RD				
10,074.64	9,935.00	WOLFCAMP				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
4,920.00	4,920.00	0.00	0.00	Build 1°/100'	
5,919.92	5,914.85	57.83	-65.04	Hold 10° Tangent	
9,603.86	9,542.83	482.86	-543.07	KOP, Build & Turn 10°/100'	
10,439.21	10,045.00	1,053.58	-611.85	Landing Point	
20,929.52	10,009.00	11,543.72	-660.65	TD at 20929.52' MD	



Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
 Site: Heads CC 9_4
 Well: Heads CC 9_4 Federal Com 312H
 Wellbore: Wellbore #1
 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: Heads CC 9_4 Federal Com 312H

+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude
0.00	0.00	444759.20	2926.80 648603.40	32.222244	-103.986463

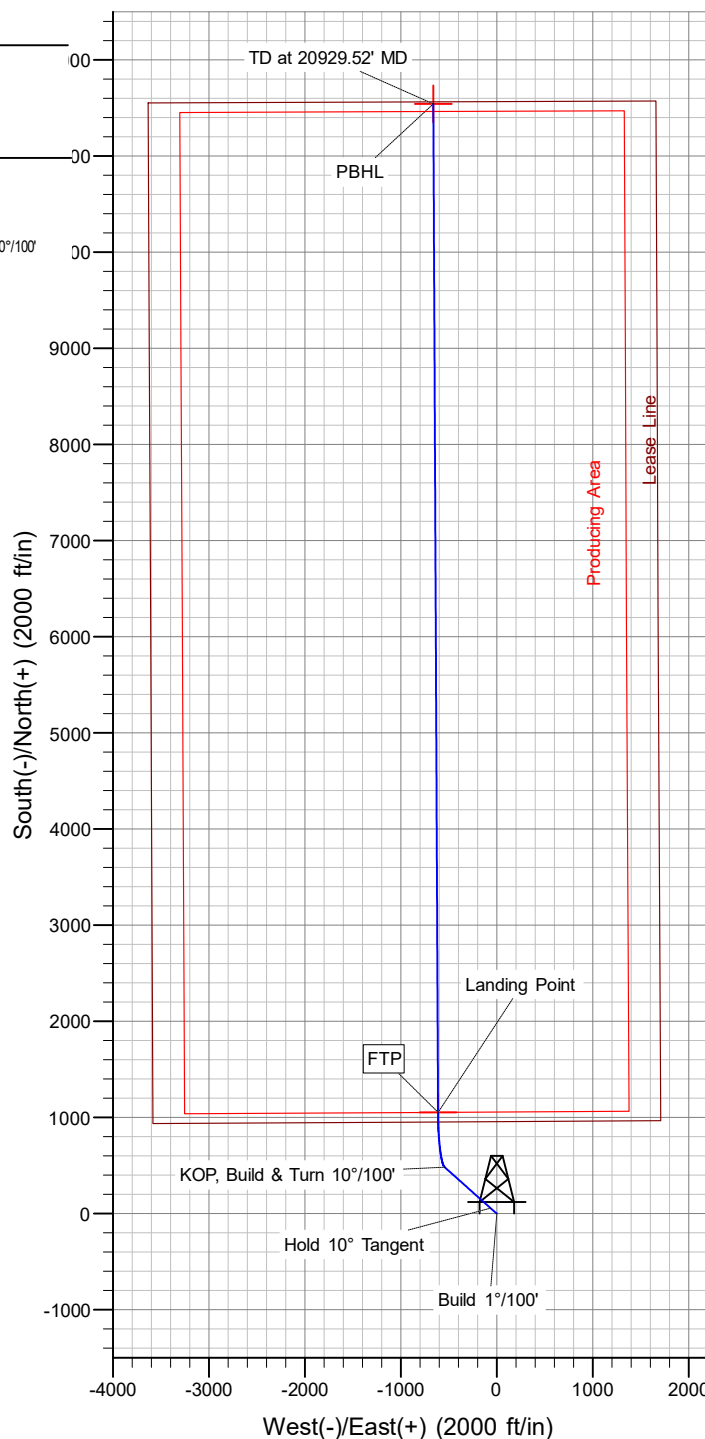
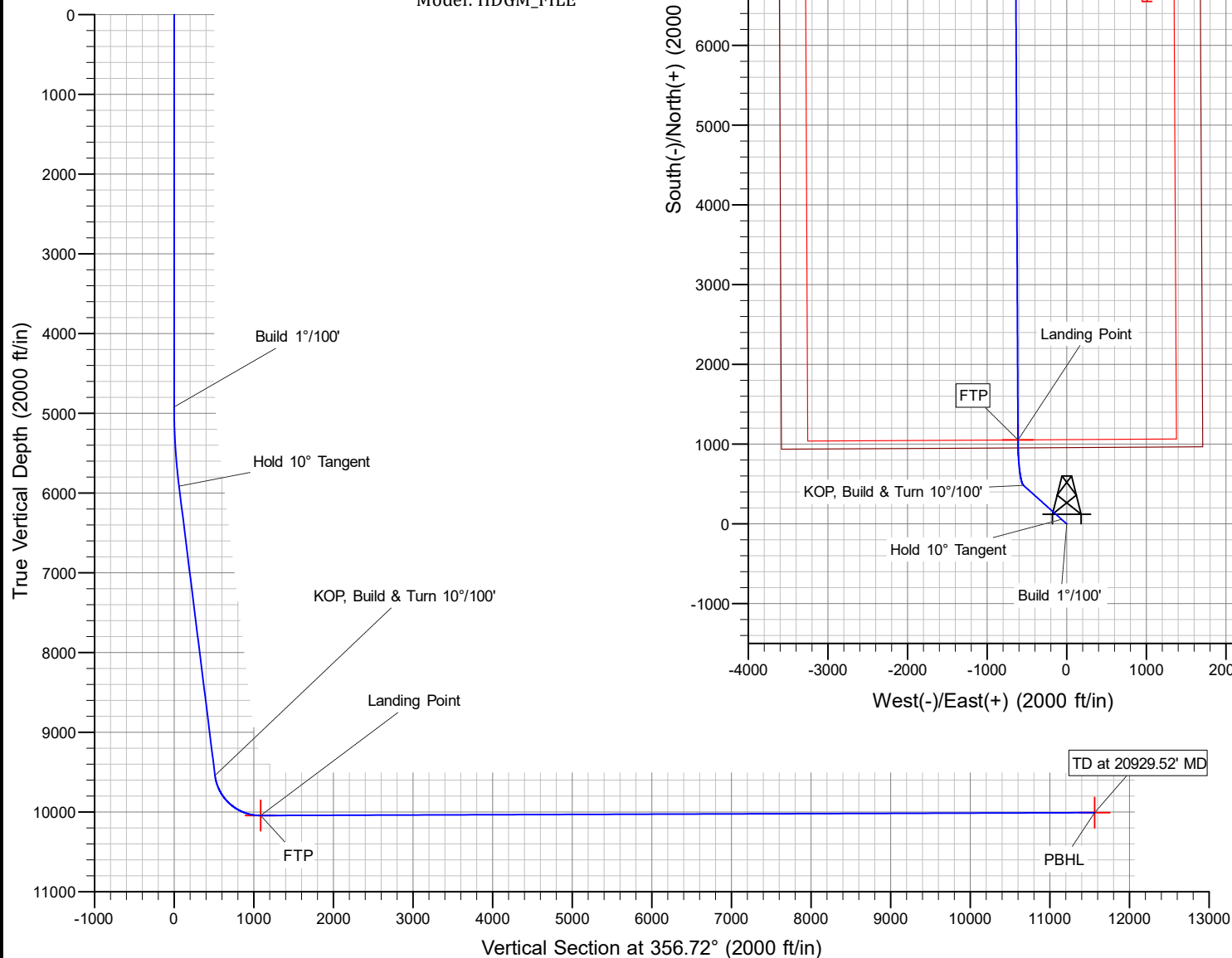
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4920.00	0.00	0.00	4920.00	0.00	0.00	0.00	0.00	0.00	Build 1°/100'
5919.92	10.00	311.64	5914.85	57.83	-65.04	1.00	311.64	61.45	Hold 10° Tangent
9603.86	10.00	311.64	9542.83	482.86	-543.07	0.00	0.00	513.10	KOP, Build & Turn 10°/100'
10439.21	90.20	359.73	10045.00	1053.58	-611.85	10.00	48.50	1086.82	Landing Point
20929.52	90.20	359.73	10009.00	11543.72	-660.65	0.00	0.00	11562.61	TD at 20929.52' MD



Azimuths to Grid North
 True North: -0.18°
 Magnetic North: 6.58°

Magnetic Field
 Strength: 47734.0nT
 Dip Angle: 59.88°
 Date: 2/11/2021
 Model: HDGM_FILE



Oxy USA Inc. - Heads CC 9_4 Federal Com 312H

Drill Plan

1. Geologic Formations

TVD of Target (ft):	9987	Pilot Hole Depth (ft):	
Total Measured Depth (ft):	20626	Deepest Expected Fresh Water (ft):	137

Delaware Basin

Formation	MD-RKB (ft)	TVD-RKB (ft)	Expected Fluids
Rustler	137	137	
Salado	656	656	Salt
Castile	1329	1329	Salt
Delaware	2897	2897	Oil/Gas/Brine
Bell Canyon	2951	2951	Oil/Gas/Brine
Cherry Canyon	3792	3792	Oil/Gas/Brine
Brushy Canyon	5043	5040	Losses
Bone Spring	6668	6632	Oil/Gas
Bone Spring 1st	7692	7633	Oil/Gas
Bone Spring 2nd	8525	8448	Oil/Gas
Bone Spring 3rd	9653	9551	Oil/Gas
Wolfcamp	10169	9934	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	17.5	0	197	0	197	13.375	54.5	J-55	BTC
Intermediate	12.25	0	9511	0	9411	9.625	40	L-80 HC	BTC
Production	8.5	0	10061	0	9749	7	32	P-110	DQX
Production	8.5	10061	20626	9749	9987	5.5	20	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 production casing with DQX, TORQ DQW, Wedge 425, Wedge 461, and/or Wedge 441 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 rd 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 nd 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
Surface	1	Surface - Tail	OH x Csg	0.6946	100%	197	-	206	274	Circulate
Int.	1	Intermediate 1S - Tail	OH x Csg	0.3132	5%	9,511	5,293	841	1387	Circulate
Int.	2	Intermediate 2S - Tail BH	OH x Csg	0.3132	25%	5,293	197	1039	1995	Bradenhead
Int.	2	Intermediate 2S - Tail BH	Csg x Csg	0.3627	0%	197	-	37	71	Bradenhead
Prod.	1	Production - Tail	OH x Csg2	0.2291	20%	20,626	10,061	2105	2904	Circulate
Prod.	1	Production - Tail	OH x Csg1	0.1268	20%	10,061	9,511	61	84	Circulate
Prod.	1	Production - Tail	Csg x Csg	0.1585	0%	9,511	9,011	57	79	Circulate

Description	Density (lb/gal)	Yield (ft ³ /sk)	Water (gal/sk)	500psi Time (hh:mm)	Cmt. Class	Accelerator	Retarder	Dispersant	Salt
Surface - Tail	14.8	1.33	6.365	5:26	C	x			
Intermediate 1S - Tail	13.2	1.65	8.64	11:54	H	x	x	x	x
Intermediate 2S - Tail BH	12.9	1.92	10.41	23:10	C	x			
Production - Tail	13.2	1.38	6.686	3:39	H		x	x	x

Offline Cementing

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.

The summarized operational sequence will be as follows:

Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe).

Land casing.

Fill pipe with kill weight fluid, and confirm well is static.

If well 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.

The summarized 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.
3. Fill pipe with kill weight fluid, and confirm well is static.
 - a. If well is not static notify BLM and kill well.
 - b. Once well is static notify BLM with intent to proceed with nipple down and offline cementing.
4. Set and pressure test annular packoff.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange. If any barrier fails to test, the BOP stack will not be nipped down until after the cement job is completed.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange.
8. If well is not static notify BLM and kill well prior to cementing or nipping up for further remediation.
9. Install offline cement tool.
10. Rig up cement equipment.
 - a. Notify BLM prior to cement job.
11. Perform cement job.
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

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

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:
12.25" Hole	13-5/8"	3M	Annular		✓	70% of working pressure	9411
		3M	Blind Ram		✓	250 psi / 3000 psi	
			Pipe Ram				
			Double Ram		✓		
			Other*				
8.5" Hole	13-5/8"	5M	Annular		✓	70% of working pressure	9987
		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 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?
	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.	
	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.

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.

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

5. Mud Program

Section	Depth - MD		Depth - TVD		Type	Weight (ppg)	Viscosity	Water Loss
	From (ft)	To (ft)	From (ft)	To (ft)				
Surface	0	197	0	197	Water-Based Mud	8.6 - 8.8	40-60	N/C
Intermediate	197	9511	197	9411	Saturated Brine-Based or Oil-Based Mud	8.0 - 10.0	35-45	N/C
Production	9511	20626	9411	9987	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
---	--------------------------------

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	6492 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	160°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

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 3 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

Total Estimated Cuttings Volume: 1433 bbls

Attachments

- ☒ Directional Plan
- ☒ H2S Contingency Plan
- ☒ Flex III Attachments
- ☒ Spudder Rig Attachment
- ☒ Premium Connection Specs

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Garrett Granier	Drilling Engineer	713-513-6633	832-265-0581
Filip Krneta	Drilling Engineer Supervisor	713-350-4751	832-244-4980
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
Diego Tellez	Drilling Manager	713-350-4602	713-303-4932



TenarisHydril Wedge 461®



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

Outside Diameter	7.000 in.	Wall Thickness	0.453 in.	Grade	P110-CY
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry		Performance	
Nominal OD	7.000 in.	Wall Thickness	0.453 in.
Nominal Weight	32 lb/ft	Plain End Weight	31.70 lb/ft
Drift	5.969 in.	OD Tolerance	API
Nominal ID	6.094 in.		
		Body Yield Strength	1025 x1000 lb
		Min. Internal Yield Pressure	12,460 psi
		SMYS	110,000 psi
		Collapse Pressure	10,780 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	7.750 in.	Tension Efficiency	100 %	Minimum	20,000 ft-lb
Coupling Length	8.914 in.	Joint Yield Strength	1025 x1000 lb	Optimum	21,000 ft-lb
Connection ID	6.094 in.	Internal Pressure Capacity	12,460 psi	Maximum	25,200 ft-lb
Make-up Loss	4.375 in.	Compression Efficiency	100 %		
Threads per inch	3.40	Compression Strength	1025 x1000 lb	Operation Limit Torques	
Connection OD Option	Regular	Max. Allowable Bending	72 °/100 ft	Operating Torque	61,000 ft-lb
		External Pressure Capacity	10,780 psi	Yield Torque	72,000 ft-lb
		Coupling Face Load	269,000 lb		
				Buck-On	
				Minimum	25,200 ft-lb
				Maximum	26,700 ft-lb

Notes

This connection is fully interchangeable with:

Wedge 461® - 7 in. - 0.317 / 0.362 / 0.408 in.

Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

In October 2019, TenarisHydril Wedge XP® 2.0 was renamed TenarisHydril Wedge 461™. Product dimensions and properties remain identical and both connections are fully interchangeable

For the latest performance data, always visit our website: www.tenaris.com

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TenarisHydril Wedge 425®



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

Outside Diameter	5.500 in.	Wall Thickness	0.361 in.	Grade	P110-CY
Min. Wall Thickness	87.50 %	Pipe Body Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	5.500 in.	Wall Thickness	0.361 in.	Body Yield Strength	641 x1000 lb
Nominal Weight	20 lb/ft	Plain End Weight	19.83 lb/ft	Min. Internal Yield Pressure	12,640 psi
Drift	4.653 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	4.778 in.			Collapse Pressure	11,100 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	5.777 in.	Tension Efficiency	90 %	Minimum	15,700 ft-lb
Connection ID	4.734 in.	Joint Yield Strength	577 x1000 lb	Optimum	19,600 ft-lb
Make-up Loss	5.823 in.	Internal Pressure Capacity	12,640 psi	Maximum	21,600 ft-lb
Threads per inch	3.77	Compression Efficiency	90 %	Operation Limit Torques	
Connection OD Option	Regular	Compression Strength	577 x1000 lb	Operating Torque	29,000 ft-lb
		Max. Allowable Bending	82 °/100 ft	Yield Torque	36,000 ft-lb
		External Pressure Capacity	11,100 psi		

Notes

This connection is fully interchangeable with:
TORQ® SFW™ - 5.5 in. - 0.361 in.
Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

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TenarisHydril Wedge 441®



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

Outside Diameter	5.500 in.	Wall Thickness	0.361 in.	Grade	P110-CY
Min. Wall Thickness	87.50 %	Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	5.500 in.	Wall Thickness	0.361 in.	Body Yield Strength	641 x1000 lb
Nominal Weight	20 lb/ft	Plain End Weight	19.83 lb/ft	Min. Internal Yield Pressure	12,640 psi
Drift	4.653 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	4.778 in.			Collapse Pressure	11,100 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	5.852 in.	Tension Efficiency	81.50 %	Minimum	15,000 ft-lb
Coupling Length	8.714 in.	Joint Yield Strength	522 x1000 lb	Optimum	16,000 ft-lb
Connection ID	4.778 in.	Internal Pressure Capacity	12,640 psi	Maximum	19,200 ft-lb
Make-up Loss	3.780 in.	Compression Efficiency	81.50 %	Operation Limit Torques	
Threads per inch	3.40	Compression Strength	522 x1000 lb	Operating Torque	32,000 ft-lb
Connection OD Option	Regular	Max. Allowable Bending	71 °/100 ft	Yield Torque	38,000 ft-lb
		External Pressure Capacity	11,100 psi	Buck-On	
				Minimum	19,200 ft-lb
				Maximum	20,700 ft-lb

Notes

This connection is fully interchangeable with:
Wedge 441® - 5.5 in. - 0.304 in.
Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

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TenarisHydril Wedge 461®



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

Outside Diameter	5.500 in.	Wall Thickness	0.361 in.	Grade	P110-CY
Min. Wall Thickness	87.50 %	Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	5.500 in.	Wall Thickness	0.361 in.	Body Yield Strength	641 x1000 lb
Nominal Weight	20 lb/ft	Plain End Weight	19.83 lb/ft	Min. Internal Yield Pressure	12,640 psi
Drift	4.653 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	4.778 in.			Collapse Pressure	11,100 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	6.300 in.	Tension Efficiency	100 %	Minimum	17,000 ft-lb
Coupling Length	7.714 in.	Joint Yield Strength	641 x1000 lb	Optimum	18,000 ft-lb
Connection ID	4.778 in.	Internal Pressure Capacity	12,640 psi	Maximum	21,600 ft-lb
Make-up Loss	3.775 in.	Compression Efficiency	100 %	Operation Limit Torques	
Threads per inch	3.40	Compression Strength	641 x1000 lb	Operating Torque	39,000 ft-lb
Connection OD Option	Regular	Max. Allowable Bending	92 °/100 ft	Yield Torque	46,000 ft-lb
		External Pressure Capacity	11,100 psi	Buck-On	
		Coupling Face Load	290,000 lb	Minimum	21,600 ft-lb
				Maximum	23,100 ft-lb

Notes

This connection is fully interchangeable with:
 Wedge 461® - 5.5 in. - 0.304 / 0.415 / 0.476 in.
 Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version
 In October 2019, TenarisHydril Wedge XP® 2.0 was renamed TenarisHydril Wedge 461™. Product dimensions and properties remain identical and both connections are fully interchangeable

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PERFORMANCE DATA

TMK UP TORQ™ DQW Technical Data Sheet

5.500 in

20.00 lbs/ft

P110 CY

Tubular Parameters

Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P110 CY		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,640	psi
Nominal ID	4.778	in	Collapse Pressure	11,110	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in ²			

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.324	in
Critical Section Area	5.828	in ²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,640	psi
Collapse Pressure	11,110	psi
Uniaxial Bending	92	° / 100 ft

Make-Up Torques

Min. Make-Up Torque	14,000	ft-lbs
Opt. Make-Up Torque	16,000	ft-lbs
Max. Make-Up Torque	18,000	ft-lbs
Operating Torque	36,800	ft-lbs
Yield Torque	46,000	ft-lbs



Printed on: March-05-2019

NOTE:

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PERFORMANCE DATA

TMK UP DQX Technical Data Sheet

5.500 in

20.00 lbs/ft

P-110

Tubular Parameters

Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	729,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,600	psi
Nominal ID	4.778	in	Collapse Pressure	11,100	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in ²			

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.122	in
Critical Section Area	5.828	in ²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,600	psi
Collapse Pressure	11,100	psi

Make-Up Torques

Min. Make-Up Torque	11,600	ft-lbs
Opt. Make-Up Torque	12,900	ft-lbs
Max. Make-Up Torque	14,100	ft-lbs
Yield Torque	20,600	ft-lbs

Printed on: July-29-2014

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State of New Mexico
Energy, Minerals and Natural Resources
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Santa Fe, NM 87505

COMMENTS

Action 122307

COMMENTS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 122307
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	Defining Well	7/1/2022

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Santa Fe, NM 87505

CONDITIONS

Action 122307

CONDITIONS

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 122307
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD Conditions of Approval	7/1/2022