

Santa Fe Main Office
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General Information
Phone: (505) 629-6116

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

Online Phone Directory Visit:
<https://www.emnrd.nm.gov/ocd/contact-us/>

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		WELL API NO. 30-015-57331
2. Name of Operator 3R Operating, LLC		5. Indicate Type of Lease STATE ☒ FEE ☐ State Oil & Gas Lease No.
3. Address of Operator 20405 State Hwy 249 STE 820 Houston, TX 770770		7. Lease Name or Unit Agreement Name Forehand Ranch 22 27 State Com
4. Well Location Unit Letter K : 2349 feet from the S line and 1766 feet from the W line Section 22 Township 23S Range 27E NMPM County Eddy		8. Well Number 551H
11. Elevation (Show whether DR, RKB, RT, GR, etc.)		9. OGRID Number 331569
10. Pool name or Wildcat Forehand Ranch: Bone Spring		

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☒	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

SUNDRY TO REVISE: SHL Change from 2369' FSL & 1746' FWL to 2349' FSL & 1766' FWL of section 22 23S 27E.

Updated C-102, Casing Program, and Directional plan attached.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Austin Tramell TITLE Director Environmental & Regulatory DATE 11/10/2025

Type or print name Austin Tramell E-mail address: atramell@3roperating.com PHONE: 832-810-8043

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____

Conditions of Approval (if any):

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

WELL LOCATION INFORMATION

API Number 30-015-57331	Pool Code 24660	Pool Name FOREHAND RANCH; BONE SPRING
Property Code 337811	Property Name FOREHAND RANCH 22 27 STATE COM	Well Number 551H
OGRID No. 331569	Operator Name 3R OPERATING, LLC	Ground Level Elevation 3,155'
Surface Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal

Surface Location

UL K	Section 22	Township 23S	Range 27E	Lot	Ft. from N/S 2,349' FSL	Ft. from E/W 1,766' FWL	Latitude 32.289506°	Longitude -104.180597°	County EDDY
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Bottom Hole Location

UL M	Section 27	Township 23S	Range 27E	Lot	Ft. from N/S 100' FSL	Ft. from E/W 660' FWL	Latitude 32.268631°	Longitude -104.184270°	County EDDY
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Dedicated Acres 480	Infill or Defining Well infill	Defining Well API 30-015-57330	Overlapping Spacing Unit (Y/N) N	Consolidation Code C
Order Numbers. pending			Well setbacks are under Common Ownership: ☒ Yes ☐ No	

Kick Off Point (KOP)

UL K	Section 22	Township 23S	Range 27E	Lot	Ft. from N/S 2,349' FSL	Ft. from E/W 1,766' FWL	Latitude 32.289506°	Longitude -104.180597°	County EDDY
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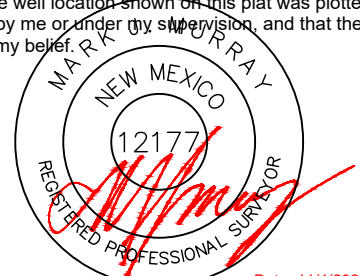
First Take Point (FTP)

UL L	Section 22	Township 23S	Range 27E	Lot	Ft. from N/S 2,589' FSL	Ft. from E/W 660' FWL	Latitude 32.290052°	Longitude -104.184187°	County EDDY
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Last Take Point (LTP)

UL M	Section 27	Township 23S	Range 27E	Lot	Ft. from N/S 100' FSL	Ft. from E/W 660' FWL	Latitude 32.268631°	Longitude -104.184270°	County EDDY
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Unit Area or Area of Uniform Interest Comm	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:
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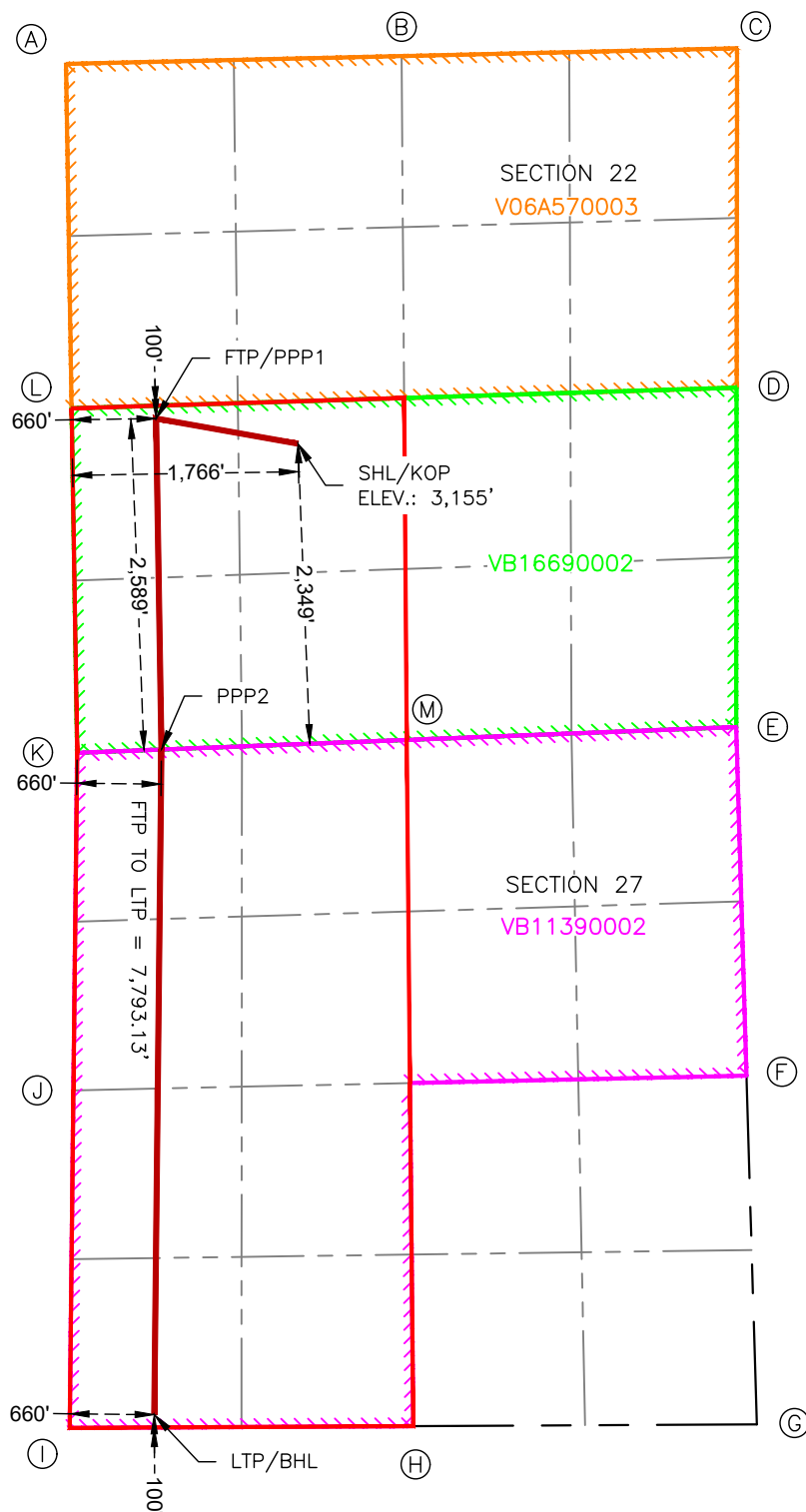
OPERATOR CERTIFICATIONS I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division. <i>Austin Tramell</i> 11/10/2025 Signature Date Austin Tramell Printed Name atramell@3roperating.com Email Address		SURVEYOR CERTIFICATIONS I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  Date: 11/4/2025 Signature and Seal of Professional Surveyor Certificate Number Date of Survey Revision Number 12177 11/4/2025 3	
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Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

ACREAGE DEDICATION PLATS

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

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



FOREHAND RANCH 22 27 STATE COM 551H

CORNER COORDINATES NEW MEXICO EAST - NAD 83	
POINT	NORTHING/EASTING
A	N:472,059.75' E:586,719.92'
B	N:472,120.67' E:589,344.46'
C	N:472,181.60' E:591,969.00'
D	N:469,527.00' E:591,965.50'
E	N:466,872.40' E:591,962.00'
F	N:464,145.20' E:592,042.51'
G	N:461,417.99' E:592,123.02'
H	N:461,403.78' E:589,435.92'
I	N:461,389.58' E:586,748.83'
J	N:464,029.99' E:586,778.02'
K	N:466,670.40' E:586,807.20'
L	N:469,365.07' E:586,763.56'
M	N:466,771.40' E:589,384.60'

**SURFACE HOLE LOCATION
& KICK-OFF POINT**
2,349' FSL & 1,766' FWL
ELEV: 3,155'

NAD 83 X = 588,534.65'
NAD 83 Y = 469,088.58'
NAD 83 LAT = 32.289506°
NAD 83 LONG = -104.180597°
NAD 27 X = 547,352.31'
NAD 27 Y = 469,029.83'
NAD 27 LAT = 32.289387°
NAD 27 LONG = -104.180098°

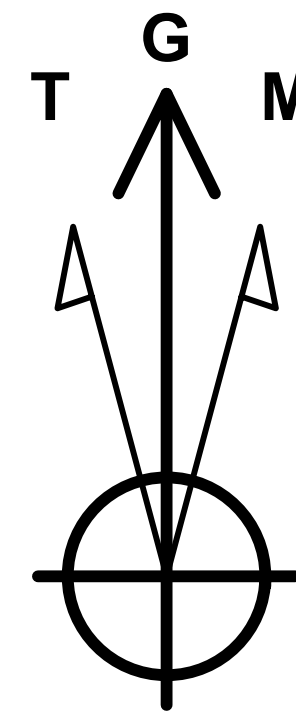
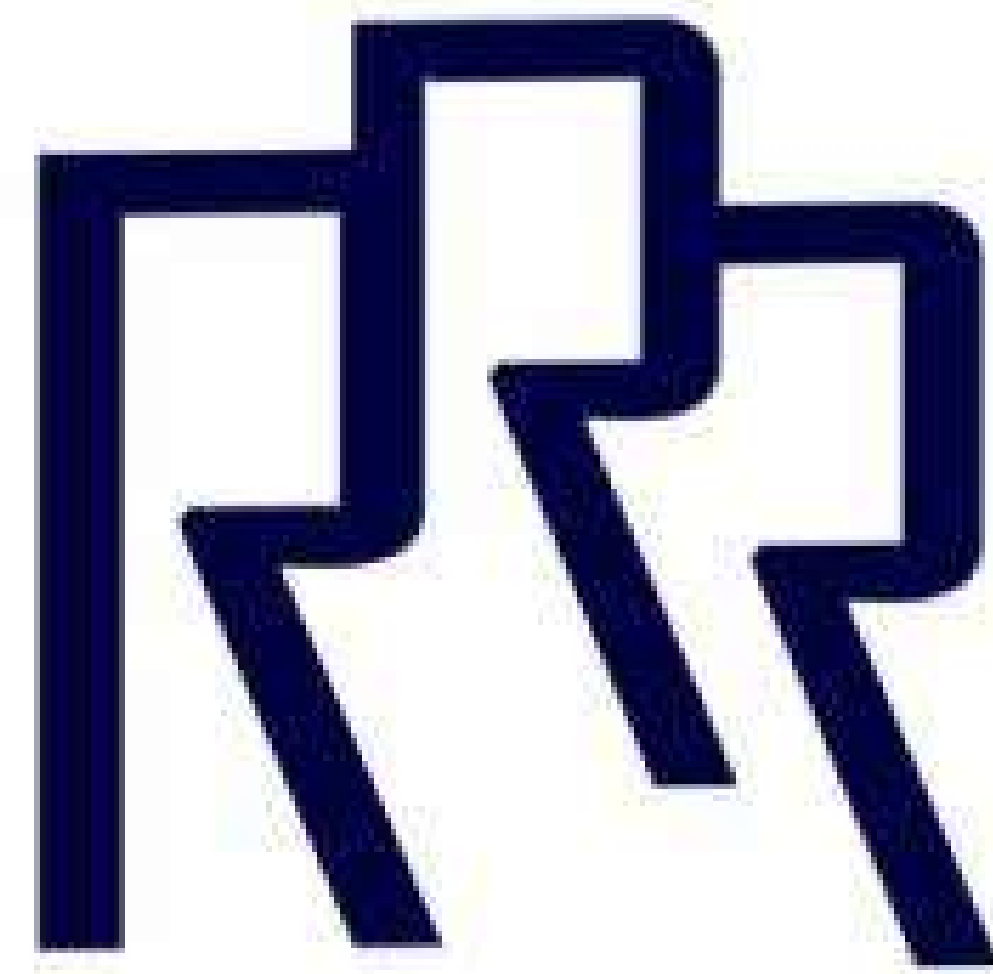
**FIRST TAKE POINT &
PENETRATION POINT 1**
2,589' FSL & 660' FWL
NAD 83 X = 587,424.93'
NAD 83 Y = 469,285.61'
NAD 83 LAT = 32.290052°
NAD 83 LONG = -104.184187°
NAD 27 X = 546,242.61'
NAD 27 Y = 469,226.86'
NAD 27 LAT = 32.289933°
NAD 27 LONG = -104.183688°

PENETRATION POINT 2
0' FSL & 660' FWL
NAD 83 X = 587,466.69'
NAD 83 Y = 466,696.24'
NAD 83 LAT = 32.282934°
NAD 83 LONG = -104.184064°
NAD 27 X = 546,284.32'
NAD 27 Y = 466,637.56'
NAD 27 LAT = 32.282815°
NAD 27 LONG = -104.183565°

**LAST TAKE POINT &
BOTTOM HOLE LOCATION**
100' FSL & 660' FWL
NAD 83 X = 587,410.02'
NAD 83 Y = 461,493.07'
NAD 83 LAT = 32.268631°
NAD 83 LONG = -104.184270°
NAD 27 X = 546,227.53'
NAD 27 Y = 461,434.53'
NAD 27 LAT = 32.268512°
NAD 27 LONG = -104.183772°

3R Operating, LLC

Company: 3R Operating, LLC
Field: Eddy County, NM (NAD83)
Location: Forehand Ranch 22-27
Well: Forehand Ranch 22-27 State Com 551H
OH
Plan: Plan 2
GL 3155 + 26.5' KB @ 3181.50usft



Azimuths to Grid North
True North: -0.08°
Magnetic North: 6.42°

Magnetic Field
Strength: 46955.6nT
Dip Angle: 59.72°
Date: 11/7/2025
Model: IGRF2025

To convert a Magnetic Direction to a Grid Direction, Add 6.42°



PROJECT DETAILS: Eddy County, NM (NAD83)

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

RIG: TBD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
597.00	597.00	Castille
2187.00	2190.76	Delaware
2187.00	2190.76	Lamar
5587.00	5670.51	Bone Spring
6657.00	6765.76	1st Bone Spring Sand
6872.00	6984.91	2nd Bone Spring Carb
7222.00	7336.79	2nd Bone Spring Sand
7382.00	7496.81	3rd Bone Spring Carb
8097.00	8538.85	Target CL

WELL DETAILS: Forehand Ranch 22-27 State Com 551H

GL 3155 + 26.5' KB @ 3181.50usft		3155.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	469088.58	588534.65	32.289506	-104.180597

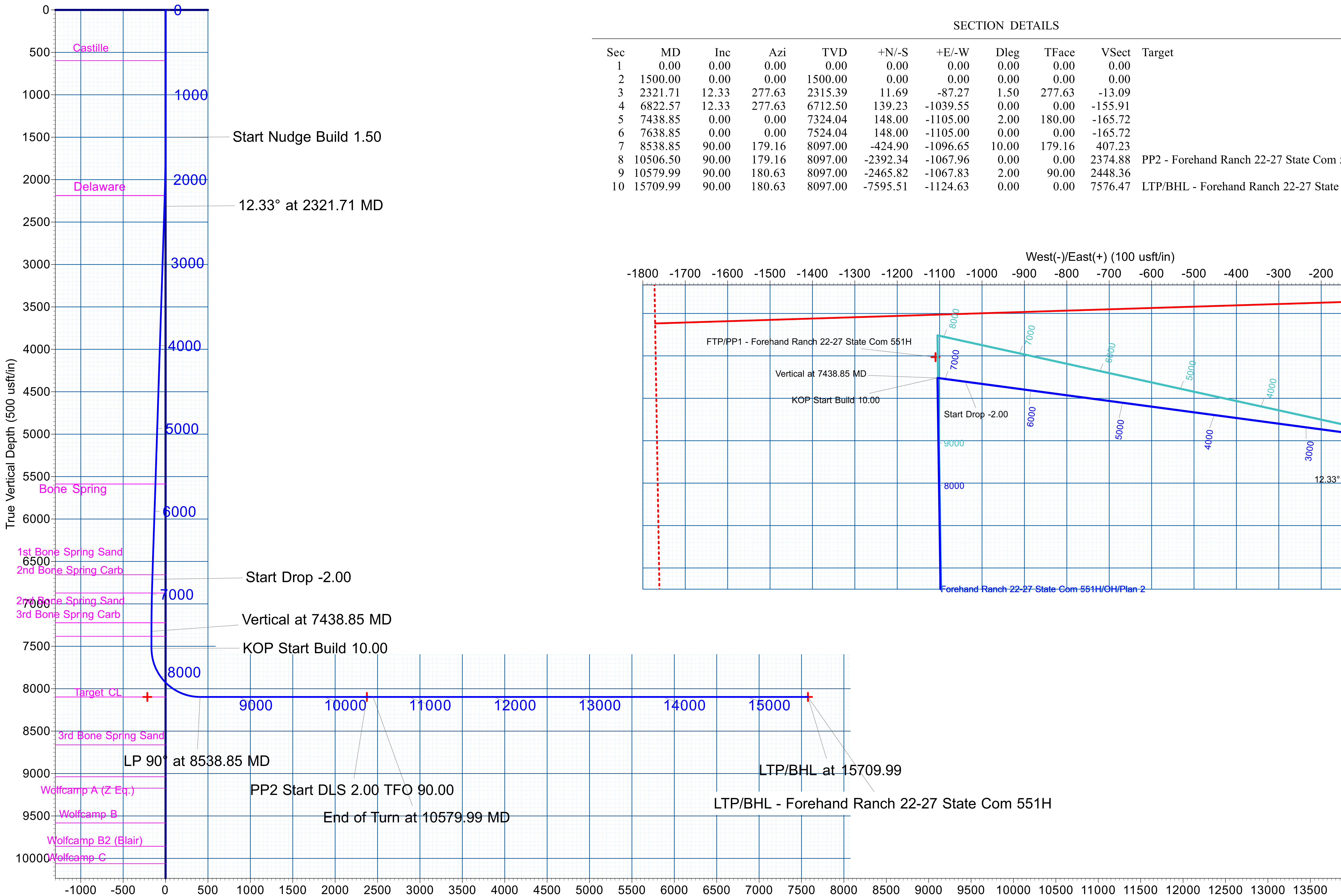
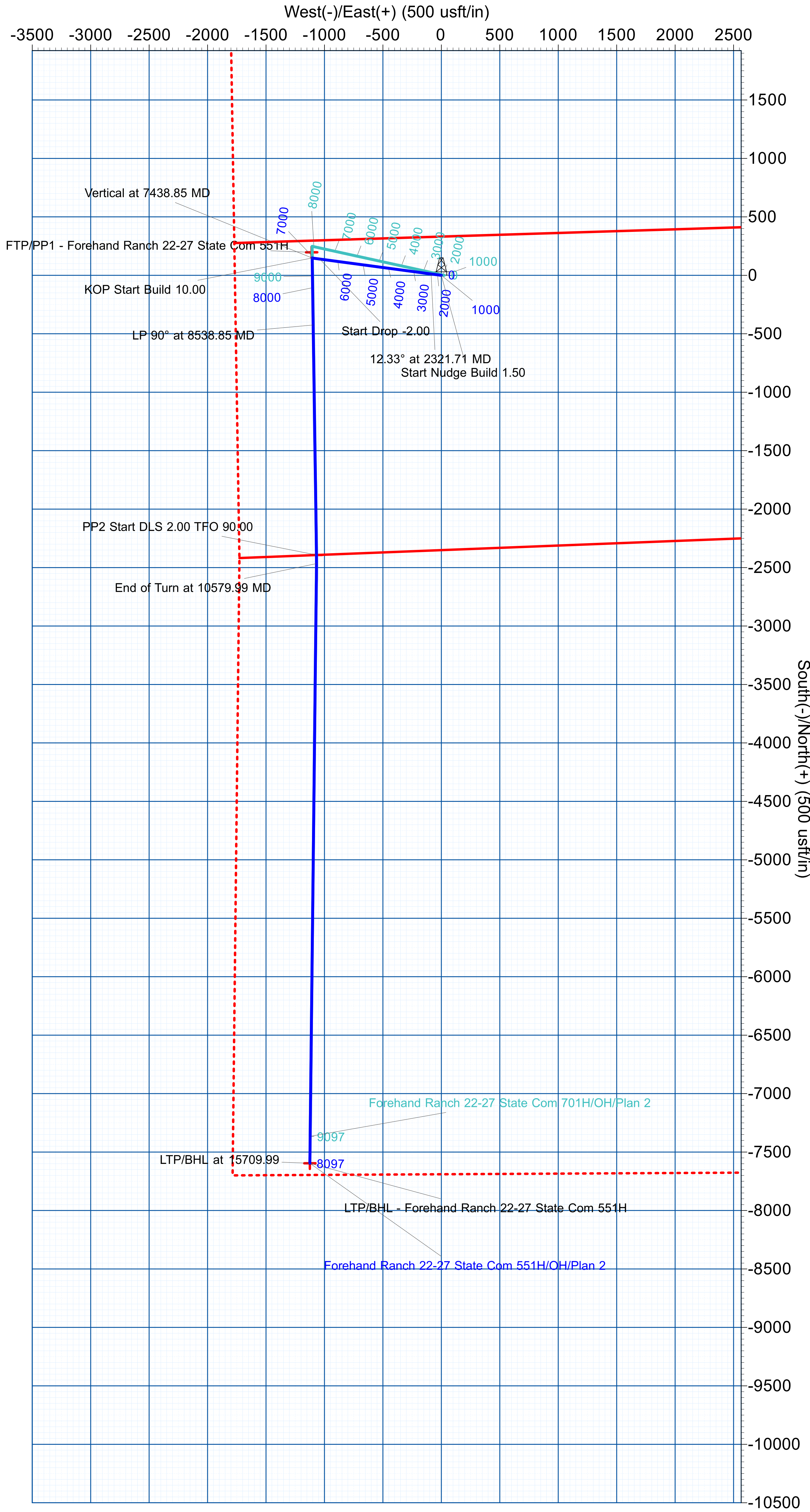
Slot

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP/PP1 - Forehand Ranch 22-27 State Com 551H	8097.00	197.03	-1109.72	469285.61	587424.93	32.290052	-104.184187
LTP/BHL - Forehand Ranch 22-27 State Com 551H	8097.00	-7595.51	-1124.63	461493.07	587410.02	32.268631	-104.184270
PP2 - Forehand Ranch 22-27 State Com 551H	8097.00	-2392.34	-1067.96	466696.24	587466.69	32.282934	-104.184064

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	
3	2321.71	12.33	277.63	2315.39	11.69	-87.27	1.50	277.63	-13.09	
4	6822.57	12.33	277.63	6712.50	139.23	-1039.55	0.00	0.00	-155.91	
5	7438.85	0.00	0.00	7324.04	148.00	-1105.00	2.00	180.00	-165.72	
6	7638.85	0.00	0.00	7524.04	148.00	-1105.00	0.00	0.00	-165.72	
7	8538.85	90.00	179.16	8097.00	-424.90	-1096.65	10.00	179.16	407.23	
8	10506.50	90.00	179.16	8097.00	-2392.34	-1067.96	0.00	0.00	2374.88	PP2 - Forehand Ranch 22-27 State Com 551H
9	10579.99	90.00	180.63	8097.00	-2465.82	-1067.83	2.00	90.00	2448.36	
10	15709.99	90.00	180.63	8097.00	-7595.51	-1124.63	0.00	0.00	7576.47	LTP/BHL - Forehand Ranch 22-27 State Com 551H





3R Operating, LLC

Eddy County, NM (NAD83)

Forehand Ranch 22-27

Forehand Ranch 22-27 State Com 551H

OH

Plan: Plan 2

Standard Planning Report

07 November, 2025



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Forehand Ranch 22-27 State Com 551H
Company:	3R Operating, LLC	TVD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Site:	Forehand Ranch 22-27	North Reference:	Grid
Well:	Forehand Ranch 22-27 State Com 551H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Project	Eddy County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Forehand Ranch 22-27			
Site Position:		Northing:	469,059.33 usft	Latitude:	32.289425
From:	Map	Easting:	588,591.01 usft	Longitude:	-104.180415
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well	Forehand Ranch 22-27 State Com 551H					
Well Position	+N/-S	0.00 usft	Northing:	469,088.58 usft	Latitude:	32.289506
	+E/-W	0.00 usft	Easting:	588,534.65 usft	Longitude:	-104.180597
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,155.00 usft
Grid Convergence:		0.08 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2025	11/7/2025	6.50	59.72	46,955.63651247

Design	Plan 2				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.08	

Plan Survey Tool Program	Date	11/7/2025			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	15,709.99 Plan 2 (OH)	MWD		
			OWSG MWD - Standard		



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Forehand Ranch 22-27 State Com 551H
Company:	3R Operating, LLC	TVD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Site:	Forehand Ranch 22-27	North Reference:	Grid
Well:	Forehand Ranch 22-27 State Com 551H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,321.71	12.33	277.63	2,315.39	11.69	-87.27	1.50	1.50	0.00	277.63	
6,822.57	12.33	277.63	6,712.50	139.23	-1,039.55	0.00	0.00	0.00	0.00	
7,438.85	0.00	0.00	7,324.04	148.00	-1,105.00	2.00	-2.00	0.00	180.00	
7,638.85	0.00	0.00	7,524.04	148.00	-1,105.00	0.00	0.00	0.00	0.00	
8,538.85	90.00	179.16	8,097.00	-424.90	-1,096.65	10.00	10.00	0.00	179.16	
10,506.51	90.00	179.16	8,097.00	-2,392.34	-1,067.96	0.00	0.00	0.00	0.00	PP2 - Forehand Ranc
10,579.99	90.00	180.63	8,097.00	-2,465.82	-1,067.83	2.00	0.00	2.00	90.00	
15,709.99	90.00	180.63	8,097.00	-7,595.51	-1,124.63	0.00	0.00	0.00	0.00	LTP/BHL - Forehand I



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Forehand Ranch 22-27 State Com 551H
Company:	3R Operating, LLC	TVD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Site:	Forehand Ranch 22-27	North Reference:	Grid
Well:	Forehand Ranch 22-27 State Com 551H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
597.00	0.00	0.00	597.00	0.00	0.00	0.00	0.00	0.00	0.00
Castille									
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
Start Nudge Build 1.50									
1,600.00	1.50	277.63	1,599.99	0.17	-1.30	-0.19	1.50	1.50	0.00
1,700.00	3.00	277.63	1,699.91	0.69	-5.19	-0.78	1.50	1.50	0.00
1,800.00	4.50	277.63	1,799.69	1.56	-11.67	-1.75	1.50	1.50	0.00
1,900.00	6.00	277.63	1,899.27	2.78	-20.74	-3.11	1.50	1.50	0.00
2,000.00	7.50	277.63	1,998.57	4.34	-32.39	-4.86	1.50	1.50	0.00
2,100.00	9.00	277.63	2,097.54	6.24	-46.61	-6.99	1.50	1.50	0.00
2,190.76	10.36	277.63	2,187.00	8.27	-61.74	-9.26	1.50	1.50	0.00
Lamar - Delaware									
2,200.00	10.50	277.63	2,196.09	8.49	-63.40	-9.51	1.50	1.50	0.00
2,300.00	12.00	277.63	2,294.16	11.08	-82.73	-12.41	1.50	1.50	0.00
2,321.71	12.33	277.63	2,315.39	11.69	-87.27	-13.09	1.50	1.50	0.00
12.33° at 2321.71 MD									
2,400.00	12.33	277.63	2,391.87	13.91	-103.83	-15.57	0.00	0.00	0.00
2,500.00	12.33	277.63	2,489.57	16.74	-124.99	-18.75	0.00	0.00	0.00
2,600.00	12.33	277.63	2,587.26	19.57	-146.15	-21.92	0.00	0.00	0.00
2,700.00	12.33	277.63	2,684.96	22.41	-167.30	-25.09	0.00	0.00	0.00
2,800.00	12.33	277.63	2,782.65	25.24	-188.46	-28.26	0.00	0.00	0.00
2,900.00	12.33	277.63	2,880.35	28.08	-209.62	-31.44	0.00	0.00	0.00
3,000.00	12.33	277.63	2,978.04	30.91	-230.78	-34.61	0.00	0.00	0.00
3,100.00	12.33	277.63	3,075.74	33.74	-251.93	-37.78	0.00	0.00	0.00
3,200.00	12.33	277.63	3,173.43	36.58	-273.09	-40.96	0.00	0.00	0.00
3,300.00	12.33	277.63	3,271.13	39.41	-294.25	-44.13	0.00	0.00	0.00
3,400.00	12.33	277.63	3,368.82	42.24	-315.41	-47.30	0.00	0.00	0.00
3,500.00	12.33	277.63	3,466.52	45.08	-336.57	-50.48	0.00	0.00	0.00
3,600.00	12.33	277.63	3,564.21	47.91	-357.72	-53.65	0.00	0.00	0.00
3,700.00	12.33	277.63	3,661.91	50.75	-378.88	-56.82	0.00	0.00	0.00
3,800.00	12.33	277.63	3,759.60	53.58	-400.04	-60.00	0.00	0.00	0.00
3,900.00	12.33	277.63	3,857.30	56.41	-421.20	-63.17	0.00	0.00	0.00
4,000.00	12.33	277.63	3,954.99	59.25	-442.36	-66.34	0.00	0.00	0.00
4,100.00	12.33	277.63	4,052.69	62.08	-463.51	-69.52	0.00	0.00	0.00
4,200.00	12.33	277.63	4,150.38	64.92	-484.67	-72.69	0.00	0.00	0.00
4,300.00	12.33	277.63	4,248.08	67.75	-505.83	-75.86	0.00	0.00	0.00
4,400.00	12.33	277.63	4,345.77	70.58	-526.99	-79.04	0.00	0.00	0.00
4,500.00	12.33	277.63	4,443.47	73.42	-548.15	-82.21	0.00	0.00	0.00
4,600.00	12.33	277.63	4,541.16	76.25	-569.30	-85.38	0.00	0.00	0.00



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Forehand Ranch 22-27 State Com 551H
Company:	3R Operating, LLC	TVD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Site:	Forehand Ranch 22-27	North Reference:	Grid
Well:	Forehand Ranch 22-27 State Com 551H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	12.33	277.63	4,638.86	79.08	-590.46	-88.55	0.00	0.00	0.00
4,800.00	12.33	277.63	4,736.55	81.92	-611.62	-91.73	0.00	0.00	0.00
4,900.00	12.33	277.63	4,834.25	84.75	-632.78	-94.90	0.00	0.00	0.00
5,000.00	12.33	277.63	4,931.94	87.59	-653.93	-98.07	0.00	0.00	0.00
5,100.00	12.33	277.63	5,029.64	90.42	-675.09	-101.25	0.00	0.00	0.00
5,200.00	12.33	277.63	5,127.33	93.25	-696.25	-104.42	0.00	0.00	0.00
5,300.00	12.33	277.63	5,225.03	96.09	-717.41	-107.59	0.00	0.00	0.00
5,400.00	12.33	277.63	5,322.72	98.92	-738.57	-110.77	0.00	0.00	0.00
5,500.00	12.33	277.63	5,420.42	101.75	-759.72	-113.94	0.00	0.00	0.00
5,600.00	12.33	277.63	5,518.11	104.59	-780.88	-117.11	0.00	0.00	0.00
5,670.51	12.33	277.63	5,587.00	106.59	-795.80	-119.35	0.00	0.00	0.00
Bone Spring									
5,700.00	12.33	277.63	5,615.81	107.42	-802.04	-120.29	0.00	0.00	0.00
5,800.00	12.33	277.63	5,713.50	110.26	-823.20	-123.46	0.00	0.00	0.00
5,900.00	12.33	277.63	5,811.20	113.09	-844.36	-126.63	0.00	0.00	0.00
6,000.00	12.33	277.63	5,908.89	115.92	-865.51	-129.81	0.00	0.00	0.00
6,100.00	12.33	277.63	6,006.59	118.76	-886.67	-132.98	0.00	0.00	0.00
6,200.00	12.33	277.63	6,104.28	121.59	-907.83	-136.15	0.00	0.00	0.00
6,300.00	12.33	277.63	6,201.98	124.43	-928.99	-139.33	0.00	0.00	0.00
6,400.00	12.33	277.63	6,299.67	127.26	-950.14	-142.50	0.00	0.00	0.00
6,500.00	12.33	277.63	6,397.37	130.09	-971.30	-145.67	0.00	0.00	0.00
6,600.00	12.33	277.63	6,495.06	132.93	-992.46	-148.85	0.00	0.00	0.00
6,700.00	12.33	277.63	6,592.76	135.76	-1,013.62	-152.02	0.00	0.00	0.00
6,765.76	12.33	277.63	6,657.00	137.62	-1,027.53	-154.10	0.00	0.00	0.00
1st Bone Spring Sand									
6,800.00	12.33	277.63	6,690.45	138.59	-1,034.78	-155.19	0.00	0.00	0.00
6,822.57	12.33	277.63	6,712.50	139.23	-1,039.55	-155.91	0.00	0.00	0.00
Start Drop -2.00									
6,900.00	10.78	277.63	6,788.36	141.29	-1,054.92	-158.21	2.00	-2.00	0.00
6,984.91	9.08	277.63	6,872.00	143.24	-1,069.43	-160.39	2.00	-2.00	0.00
2nd Bone Spring Carb									
7,000.00	8.78	277.63	6,886.90	143.55	-1,071.75	-160.74	2.00	-2.00	0.00
7,100.00	6.78	277.63	6,985.98	145.34	-1,085.16	-162.75	2.00	-2.00	0.00
7,200.00	4.78	277.63	7,085.47	146.68	-1,095.14	-164.24	2.00	-2.00	0.00
7,300.00	2.78	277.63	7,185.24	147.55	-1,101.67	-165.22	2.00	-2.00	0.00
7,336.79	2.04	277.63	7,222.00	147.76	-1,103.20	-165.45	2.00	-2.00	0.00
2nd Bone Spring Sand									
7,400.00	0.78	277.63	7,285.19	147.97	-1,104.74	-165.68	2.00	-2.00	0.00
7,438.85	0.00	0.00	7,324.04	148.00	-1,105.00	-165.72	2.00	-2.00	0.00
Vertical at 7438.85 MD									
7,496.81	0.00	0.00	7,382.00	148.00	-1,105.00	-165.72	0.00	0.00	0.00
3rd Bone Spring Carb									
7,500.00	0.00	0.00	7,385.19	148.00	-1,105.00	-165.72	0.00	0.00	0.00
7,600.00	0.00	0.00	7,485.19	148.00	-1,105.00	-165.72	0.00	0.00	0.00
7,638.85	0.00	0.00	7,524.04	148.00	-1,105.00	-165.72	0.00	0.00	0.00
KOP Start Build 10.00									
7,650.00	1.11	179.16	7,535.19	147.89	-1,105.00	-165.61	10.00	10.00	0.00
7,700.00	6.11	179.16	7,585.07	144.74	-1,104.95	-162.46	10.00	10.00	0.00
7,750.00	11.11	179.16	7,634.49	137.25	-1,104.84	-154.98	10.00	10.00	0.00
7,800.00	16.11	179.16	7,683.07	125.49	-1,104.67	-143.21	10.00	10.00	0.00
7,850.00	21.11	179.16	7,730.44	109.54	-1,104.44	-127.26	10.00	10.00	0.00
7,900.00	26.11	179.16	7,776.24	89.52	-1,104.15	-107.23	10.00	10.00	0.00
7,950.00	31.11	179.16	7,820.12	65.58	-1,103.80	-83.29	10.00	10.00	0.00



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Forehand Ranch 22-27 State Com 551H
Company:	3R Operating, LLC	TVD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Site:	Forehand Ranch 22-27	North Reference:	Grid
Well:	Forehand Ranch 22-27 State Com 551H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,000.00	36.11	179.16	7,861.75	37.91	-1,103.39	-55.62	10.00	10.00	0.00
8,050.00	41.11	179.16	7,900.80	6.72	-1,102.94	-24.43	10.00	10.00	0.00
8,100.00	46.11	179.16	7,936.99	-27.76	-1,102.44	10.05	10.00	10.00	0.00
8,150.00	51.11	179.16	7,970.04	-65.25	-1,101.89	47.55	10.00	10.00	0.00
8,200.00	56.11	179.16	7,999.69	-105.49	-1,101.30	87.79	10.00	10.00	0.00
8,250.00	61.11	179.16	8,025.72	-148.15	-1,100.68	130.46	10.00	10.00	0.00
8,300.00	66.11	179.16	8,047.93	-192.93	-1,100.03	175.24	10.00	10.00	0.00
8,350.00	71.11	179.16	8,066.16	-239.47	-1,099.35	221.78	10.00	10.00	0.00
8,400.00	76.11	179.16	8,080.26	-287.41	-1,098.65	269.74	10.00	10.00	0.00
8,450.00	81.11	179.16	8,090.12	-336.41	-1,097.94	318.74	10.00	10.00	0.00
8,500.00	86.11	179.16	8,095.68	-386.08	-1,097.21	368.41	10.00	10.00	0.00
8,538.85	90.00	179.16	8,097.00	-424.90	-1,096.65	407.23	10.00	10.00	0.00
LP 90° at 8538.85 MD - Target CL									
8,600.00	90.00	179.16	8,097.00	-486.04	-1,095.76	468.38	0.00	0.00	0.00
8,700.00	90.00	179.16	8,097.00	-586.03	-1,094.30	568.38	0.00	0.00	0.00
8,800.00	90.00	179.16	8,097.00	-686.02	-1,092.84	668.38	0.00	0.00	0.00
8,900.00	90.00	179.16	8,097.00	-786.01	-1,091.38	768.38	0.00	0.00	0.00
9,000.00	90.00	179.16	8,097.00	-886.00	-1,089.92	868.38	0.00	0.00	0.00
9,100.00	90.00	179.16	8,097.00	-985.98	-1,088.47	968.38	0.00	0.00	0.00
9,200.00	90.00	179.16	8,097.00	-1,085.97	-1,087.01	1,068.38	0.00	0.00	0.00
9,300.00	90.00	179.16	8,097.00	-1,185.96	-1,085.55	1,168.38	0.00	0.00	0.00
9,400.00	90.00	179.16	8,097.00	-1,285.95	-1,084.09	1,268.38	0.00	0.00	0.00
9,500.00	90.00	179.16	8,097.00	-1,385.94	-1,082.63	1,368.38	0.00	0.00	0.00
9,600.00	90.00	179.16	8,097.00	-1,485.93	-1,081.18	1,468.38	0.00	0.00	0.00
9,700.00	90.00	179.16	8,097.00	-1,585.92	-1,079.72	1,568.38	0.00	0.00	0.00
9,800.00	90.00	179.16	8,097.00	-1,685.91	-1,078.26	1,668.38	0.00	0.00	0.00
9,900.00	90.00	179.16	8,097.00	-1,785.90	-1,076.80	1,768.38	0.00	0.00	0.00
10,000.00	90.00	179.16	8,097.00	-1,885.89	-1,075.34	1,868.38	0.00	0.00	0.00
10,100.00	90.00	179.16	8,097.00	-1,985.88	-1,073.89	1,968.38	0.00	0.00	0.00
10,200.00	90.00	179.16	8,097.00	-2,085.87	-1,072.43	2,068.38	0.00	0.00	0.00
10,300.00	90.00	179.16	8,097.00	-2,185.86	-1,070.97	2,168.38	0.00	0.00	0.00
10,400.00	90.00	179.16	8,097.00	-2,285.85	-1,069.51	2,268.38	0.00	0.00	0.00
10,506.51	90.00	179.16	8,097.00	-2,392.34	-1,067.96	2,374.88	0.00	0.00	0.00
PP2 Start DLS 2.00 TFO 90.00									
10,579.99	90.00	180.63	8,097.00	-2,465.82	-1,067.83	2,448.36	2.00	0.00	2.00
End of Turn at 10579.99 MD									
10,600.00	90.00	180.63	8,097.00	-2,485.83	-1,068.05	2,468.36	0.00	0.00	0.00
10,700.00	90.00	180.63	8,097.00	-2,585.83	-1,069.16	2,568.33	0.00	0.00	0.00
10,800.00	90.00	180.63	8,097.00	-2,685.82	-1,070.27	2,668.29	0.00	0.00	0.00
10,900.00	90.00	180.63	8,097.00	-2,785.81	-1,071.37	2,768.25	0.00	0.00	0.00
11,000.00	90.00	180.63	8,097.00	-2,885.81	-1,072.48	2,868.22	0.00	0.00	0.00
11,100.00	90.00	180.63	8,097.00	-2,985.80	-1,073.59	2,968.18	0.00	0.00	0.00
11,200.00	90.00	180.63	8,097.00	-3,085.80	-1,074.70	3,068.14	0.00	0.00	0.00
11,300.00	90.00	180.63	8,097.00	-3,185.79	-1,075.80	3,168.10	0.00	0.00	0.00
11,400.00	90.00	180.63	8,097.00	-3,285.78	-1,076.91	3,268.07	0.00	0.00	0.00
11,500.00	90.00	180.63	8,097.00	-3,385.78	-1,078.02	3,368.03	0.00	0.00	0.00
11,600.00	90.00	180.63	8,097.00	-3,485.77	-1,079.12	3,467.99	0.00	0.00	0.00
11,700.00	90.00	180.63	8,097.00	-3,585.76	-1,080.23	3,567.96	0.00	0.00	0.00
11,800.00	90.00	180.63	8,097.00	-3,685.76	-1,081.34	3,667.92	0.00	0.00	0.00
11,900.00	90.00	180.63	8,097.00	-3,785.75	-1,082.45	3,767.88	0.00	0.00	0.00
12,000.00	90.00	180.63	8,097.00	-3,885.75	-1,083.55	3,867.85	0.00	0.00	0.00
12,100.00	90.00	180.63	8,097.00	-3,985.74	-1,084.66	3,967.81	0.00	0.00	0.00
12,200.00	90.00	180.63	8,097.00	-4,085.73	-1,085.77	4,067.77	0.00	0.00	0.00



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Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,300.00	90.00	180.63	8,097.00	-4,185.73	-1,086.87	4,167.74	0.00	0.00	0.00
12,400.00	90.00	180.63	8,097.00	-4,285.72	-1,087.98	4,267.70	0.00	0.00	0.00
12,500.00	90.00	180.63	8,097.00	-4,385.72	-1,089.09	4,367.66	0.00	0.00	0.00
12,600.00	90.00	180.63	8,097.00	-4,485.71	-1,090.20	4,467.63	0.00	0.00	0.00
12,700.00	90.00	180.63	8,097.00	-4,585.70	-1,091.30	4,567.59	0.00	0.00	0.00
12,800.00	90.00	180.63	8,097.00	-4,685.70	-1,092.41	4,667.55	0.00	0.00	0.00
12,900.00	90.00	180.63	8,097.00	-4,785.69	-1,093.52	4,767.52	0.00	0.00	0.00
13,000.00	90.00	180.63	8,097.00	-4,885.68	-1,094.63	4,867.48	0.00	0.00	0.00
13,100.00	90.00	180.63	8,097.00	-4,985.68	-1,095.73	4,967.44	0.00	0.00	0.00
13,200.00	90.00	180.63	8,097.00	-5,085.67	-1,096.84	5,067.41	0.00	0.00	0.00
13,300.00	90.00	180.63	8,097.00	-5,185.67	-1,097.95	5,167.37	0.00	0.00	0.00
13,400.00	90.00	180.63	8,097.00	-5,285.66	-1,099.05	5,267.33	0.00	0.00	0.00
13,500.00	90.00	180.63	8,097.00	-5,385.65	-1,100.16	5,367.30	0.00	0.00	0.00
13,600.00	90.00	180.63	8,097.00	-5,485.65	-1,101.27	5,467.26	0.00	0.00	0.00
13,700.00	90.00	180.63	8,097.00	-5,585.64	-1,102.38	5,567.22	0.00	0.00	0.00
13,800.00	90.00	180.63	8,097.00	-5,685.64	-1,103.48	5,667.18	0.00	0.00	0.00
13,900.00	90.00	180.63	8,097.00	-5,785.63	-1,104.59	5,767.15	0.00	0.00	0.00
14,000.00	90.00	180.63	8,097.00	-5,885.62	-1,105.70	5,867.11	0.00	0.00	0.00
14,100.00	90.00	180.63	8,097.00	-5,985.62	-1,106.80	5,967.07	0.00	0.00	0.00
14,200.00	90.00	180.63	8,097.00	-6,085.61	-1,107.91	6,067.04	0.00	0.00	0.00
14,300.00	90.00	180.63	8,097.00	-6,185.61	-1,109.02	6,167.00	0.00	0.00	0.00
14,400.00	90.00	180.63	8,097.00	-6,285.60	-1,110.13	6,266.96	0.00	0.00	0.00
14,500.00	90.00	180.63	8,097.00	-6,385.59	-1,111.23	6,366.93	0.00	0.00	0.00
14,600.00	90.00	180.63	8,097.00	-6,485.59	-1,112.34	6,466.89	0.00	0.00	0.00
14,700.00	90.00	180.63	8,097.00	-6,585.58	-1,113.45	6,566.85	0.00	0.00	0.00
14,800.00	90.00	180.63	8,097.00	-6,685.57	-1,114.55	6,666.82	0.00	0.00	0.00
14,900.00	90.00	180.63	8,097.00	-6,785.57	-1,115.66	6,766.78	0.00	0.00	0.00
15,000.00	90.00	180.63	8,097.00	-6,885.56	-1,116.77	6,866.74	0.00	0.00	0.00
15,100.00	90.00	180.63	8,097.00	-6,985.56	-1,117.88	6,966.71	0.00	0.00	0.00
15,200.00	90.00	180.63	8,097.00	-7,085.55	-1,118.98	7,066.67	0.00	0.00	0.00
15,300.00	90.00	180.63	8,097.00	-7,185.54	-1,120.09	7,166.63	0.00	0.00	0.00
15,400.00	90.00	180.63	8,097.00	-7,285.54	-1,121.20	7,266.60	0.00	0.00	0.00
15,500.00	90.00	180.63	8,097.00	-7,385.53	-1,122.31	7,366.56	0.00	0.00	0.00
15,600.00	90.00	180.63	8,097.00	-7,485.53	-1,123.41	7,466.52	0.00	0.00	0.00
15,709.99	90.00	180.63	8,097.00	-7,595.51	-1,124.63	7,576.47	0.00	0.00	0.00
LTP/BHL at 15709.99									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PP2 - Forehand Ranch 2 - plan hits target center - Point	0.00	0.00	8,097.00	-2,392.34	-1,067.96	466,696.24	587,466.69	32.282934	-104.184064
LTP/BHL - Forehand Ranch 22-27 - plan hits target center - Point	0.00	0.00	8,097.00	-7,595.51	-1,124.63	461,493.07	587,410.02	32.268631	-104.184271
FTP/PP1 - Forehand Ranch 22-27 - plan misses target center by 272.84usft at 8060.72usft MD (7908.81 TVD, -0.40 N, -1102.84 E) - Point	0.00	0.00	8,097.00	197.03	-1,109.72	469,285.61	587,424.93	32.290052	-104.184187



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Forehand Ranch 22-27 State Com 551H
Company:	3R Operating, LLC	TVD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Project:	Eddy County, NM (NAD83)	MD Reference:	GL 3155 + 26.5' KB @ 3181.50usft
Site:	Forehand Ranch 22-27	North Reference:	Grid
Well:	Forehand Ranch 22-27 State Com 551H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
597.00	597.00	Castille				
2,190.76	2,187.00	Lamar				
2,190.76	2,187.00	Delaware				
5,670.51	5,587.00	Bone Spring				
6,765.76	6,657.00	1st Bone Spring Sand				
6,984.91	6,872.00	2nd Bone Spring Carb				
7,336.79	7,222.00	2nd Bone Spring Sand				
7,496.81	7,382.00	3rd Bone Spring Carb				
8,538.85	8,097.00	Target CL				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,500.00	1,500.00	0.00	0.00	Start Nudge Build 1.50	
2,321.71	2,315.39	11.69	-87.27	12.33° at 2321.71 MD	
6,822.57	6,712.50	139.23	-1,039.55	Start Drop -2.00	
7,438.85	7,324.04	148.00	-1,105.00	Vertical at 7438.85 MD	
7,638.85	7,524.04	148.00	-1,105.00	KOP Start Build 10.00	
8,538.85	8,097.00	-424.90	-1,096.65	LP 90° at 8538.85 MD	
10,506.51	8,097.00	-2,392.34	-1,067.96	PP2 Start DLS 2.00 TFO 90.00	
10,579.99	8,097.00	-2,465.82	-1,067.83	End of Turn at 10579.99 MD	
15,709.99	8,097.00	-7,595.51	-1,124.63	LTP/BHL at 15709.99	

Casing Program: RRR - 13/8" x 9 5/8" x 5 1/2"

Open Hole Size (Inches)	Casing Depth; From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	Anticipated Mud Weight (ppg)	Burst (psi)	Burst SF (1.125)	Collapse (psi)	Collapse SF (1.125)	Tension Joint (klbs)	Air Weight (lbs)	Tension Joint SF (1.8)	Tension Body (klbs)	Air Weight (lbs)	Tension Body SF (1.8)
Surface																			
17.5"	0'	450'	450'	13 3/8"	54.5	J-55	STC	New	8.6	2,730	13.57	1,130	5.62	514,000	24,525	20.96	853,000	24,525	34.78
Intermediate																			
12.25"	0'	2,000'	2,000'	9 5/8"	40	J-55	BTC	New	8.6	3,950	4.42	2,570	5.75	714,000	80,000	8.93	630,000	80,000	7.88
Production																			
8.75"	0'	15,709'	8,097'	5 1/2"	23	P110	Talon HTQ	New	9.6	14,520	3.59	14,520	3.59	724,000	186,231	3.89	729,000	186,231	3.91

Casing Design Criteria and Casing Loading Assumptions:	
<u>Surface</u>	
Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	8.6 ppg
Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	8.6 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	8.6 ppg
<u>Intermediate</u>	
Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	8.6 ppg
Collapse A 1.125 design factor with 1/2 TVD internal evacuation and collapse force equal to a mud gradient of:	8.6 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	8.6 ppg
<u>Production</u>	
Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	9.6 ppg
Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	9.6 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	9.6 ppg

KOP	7,639
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Surface Casing Specifications	
Grade	J-55
Weight/ft (lbs)	54.5
Thread	STC
Condition	New
Collapse Strength (psi)	1,130
Internal Yield Strength (psi)	2,730
Body Yield Strength (psi)	853,000
Joint Strength (psi)	514,000
String Weight (lb/ft)	54.5
OD of Pipe String (in)	13 3/8"
Hole Size (in)	17.5"
Top Setting of Casing (MD)	0'
Total Vertical Depth	450
Total Measured Depth	450

Mud Weight and Pressure Specifications	
Mud Weight Hole Control (lbs/gal)	8.60
Maximum Mud Weight (lbs/gal)	9.20
Mud Type	FW
Viscosity (cP)	32-36
Fluid Loss	NC
Pressure Gradient Variance (psi/ft)	0.00
Formation Fracture Gradient	0.75

Cement Specifications	
Lead	
Top of Cement (MD)	0
Bottom of Cement (MD)	180
Cement Type	Class C
Cement Additives	4% Gel + 5% Salt +0.2% SA-1 + 0.25pps Pol-E Flake + 0.005gps NoFoam V1A
Cement Density (lbs/gal)	13.50
Cement Yield (ft ³ /sk)	1.79
Excess (%)	100
Number of Sacks of Cement (Sks)	140
Volume	250

Tail	
Top of Cement (MD)	180
Bottom of Cement (MD)	450
Cement Type	Class C
Cement Additives	1% calcium chloride + 0.005gps NoFoam V1A
Cement Density (lbs/gal)	14.80
Cement Yield (ft ³ /sk)	1.33
Excess (%)	100
Number of Sacks of Cement (Sks)	282
Volume	375

Intermediate Casing Specifications	
Grade	J-55
Weight/ft (lbs)	40
Thread	BTC
Condition	New
Collapse Strength (psi)	2,570
Internal Yield Strength (psi)	3,950
Body Yield Strength (psi)	714,000
Joint Strength (psi)	630,000
String Weight (lb/ft)	40
OD of Pipe String (in)	9 5/8"
Hole Size (in)	12.25"
Top Setting of Casing (MD)	0'
Total Vertical Depth	2,000
Total Measured Depth	2,000

Mud Weight and Pressure Specifications	
Mud Weight Hole Control (lbs/gal)	8.60
Maximum Mud Weight (lbs/gal)	8.60
Mud Type	FW
Viscosity (cP)	28-30
Fluid Loss	NC
Pressure Gradient Variance (psi/ft)	0.00
Formation Fracture Gradient	0.75

Cement Specifications	
Lead	
Top of Cement (MD)	0
Bottom of Cement (MD)	1,500
Cement Type	40% Class C + 60% POZ
Cement Additives	5% Salt + 1% SMS + 2% CS-9 + 0.1% R-1300 + 0.25pps Pol-E Flake + 0.005gps NoFoam V1A
Cement Density (lbs/gal)	12.70
Cement Yield (ft ³ /sk)	1.53
Excess (%)	50
Number of Sacks of Cement (Sks)	433
Volume	663

Tail	
Top of Cement (MD)	1,500
Bottom of Cement (MD)	2,000
Cement Type	Class C
Cement Additives	1% calcium chloride + 0.005gps NoFoam V1A
Cement Density (lbs/gal)	14.80
Cement Yield (ft ³ /sk)	1.33
Excess (%)	50
Number of Sacks of Cement (Sks)	177
Volume	235

Production Casing Specifications	
Grade	P110
Weight/ft (lbs)	23
Thread	Talon HTQ
Condition	New
Collapse Strength (psi)	14,520
Internal Yield Strength (psi)	14,520
Body Yield Strength (psi)	729,000
Joint Strength (psi)	724,000
String Weight (lb/ft)	23
OD of Pipe String (in)	5 1/2"
Hole Size (in)	8.75"
Top Setting of Casing (MD)	0'
Total Vertical Depth	8,097
Total Measured Depth	15,709

Mud Weight and Pressure Specifications	
Mud Weight Hole Control (lbs/gal)	9.60
Maximum Mud Weight (lbs/gal)	9.60
Mud Type	OBM
Viscosity (cP)	50-70
Fluid Loss	8-10 cc
Pressure Gradient Variance (psi/ft)	0.22
Formation Fracture Gradient	0.75
Maximum Bottom Hole Pressure	6,800
Max Frac Fluid Weight (lbs/gal)	9.50
Max Frac Pump Pressure (psi)	12,500
BOP System Rating	10,000

Cement Specifications	
Lead	
Top of Cement (MD)	0'
Bottom of Cement (MD)	7,139
Cement Type	100% ProLite
Cement Additives	5pps Plexcrete STE + 2% SMS + 0.1% RCKAS-100 + .85% R-1300 + 0.2% FL-24 + .25pps Pol-E Flake + 0.005gps NoFoam V1A
Cement Density (lbs/gal)	10.70
Cement Yield (ft ³ /sk)	3.34
Excess (%)	15
Number of Sacks of Cement (Sks)	608
Volume	2,030

Tail	
Top of Cement (MD)	7,139
Bottom of Cement (MD)	15,709
Cement Type	50% Class H + 50% B POZ
Cement Additives	6% Gell + 5% Slat + .2% SMS + .55% FR-5 + .4% FL-24 + 0.005gps NoFoam V1A
Cement Density (lbs/gal)	13.50
Cement Yield (ft ³ /sk)	1.54
Excess (%)	15
Number of Sacks of Cement (Sks)	1,615
Volume	2,488

<< Max = 0.22 psi/ft >>

500' above KOP

500' above KOP
TD

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/oed/contact-us>

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

CONDITIONS

Action 524927

CONDITIONS

Operator: 3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID: 331569
	Action Number: 524927
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	12/1/2025