

Santa Fe Main Office
Phone: (505) 476-3441
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. 30-025-55268
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 Gramma 27 U State
4. Well Location Unit Letter A : 417 feet from the N line and 322 feet from the E line Section 27 Township 21S Range 23E NMPM County Lea		8. Well Number 401H
11. Elevation (Show whether DR, RKB, RT, GR, etc.)		9. OGRID Number 331569
10. Pool name or Wildcat Grama Ridge; Bone Spring, NE		

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: Lateral shift to the East on U Turn well for L1 and L2, change NPZ to 330' off of lease line
 SHL Change from 417' FNL & 322' FEL to 356' FNL & 311' FEL of Section 27 21S 34E
 Updated C-102, casing sheet, 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 11/03/2025

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 PAGE 1 OF 2
	Submittal Type: ☒ Initial Submittal ☐ Amended Report ☐ As Drilled	

WELL LOCATION INFORMATION

API Number 30-025-55268	Pool Code 28435	Pool Name GRAMA RIDGE; BONE SPRING, NE
Property Code 337767	Property Name GRAMMA 27 U STATE	Well Number 401H
OGRID No. 331569	Operator Name 3R OPERATING, LLC	Ground Level Elevation 3688'±
Surface Owner: ☐ State ☒ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal

Surface Location

UL A	Section 27	Township 21S	Range 34E	Lot	Ft. from N/S 356' FNL	Ft. from E/W 311' FEL	Latitude (NAD83) 32.45622352	Longitude (NAD83) -103.45020280	County LEA
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Bottom Hole Location

UL B	Section 27	Township 21S	Range 34E	Lot	Ft. from N/S 100' FNL	Ft. from E/W 1980' FEL	Latitude (NAD83) 32.45691786	Longitude (NAD83) -103.45561539	County LEA
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Dedicated Acres 320.00	Infill or Defining Well Defining Well	Defining Well API 30-025-55268	Overlapping Spacing Unit (Y/N) Y	Consolidation Code N/A
Order Numbers: None			Well setbacks are under Common Ownership: ☒ Yes ☐ No	

Kick Off Point (KOP)

UL A	Section 27	Township 21S	Range 34E	Lot	Ft. from N/S 100' FNL	Ft. from E/W 660' FEL	Latitude (NAD83) 32.45692600	Longitude (NAD83) -103.45133617	County LEA
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First Take Point (FTP)

UL A	Section 27	Township 21S	Range 34E	Lot	Ft. from N/S 100' FNL	Ft. from E/W 660' FEL	Latitude (NAD83) 32.45692600	Longitude (NAD83) -103.45133617	County LEA
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Last Take Point (LTP)

UL B	Section 27	Township 21S	Range 34E	Lot	Ft. from N/S 100' FNL	Ft. from E/W 1980' FEL	Latitude (NAD83) 32.45691786	Longitude (NAD83) -103.45561539	County LEA
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Unitized Area or Area of Uniform Interest lease	Spacing Unit Type: ☒ Horizontal ☐ Vertical	Ground Floor Elevation 3688'±
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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.

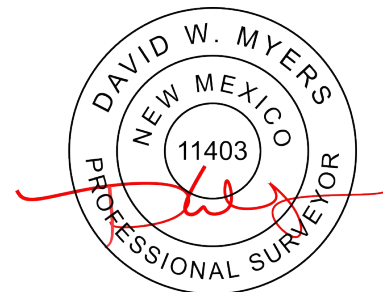
Austin Tramell 11/03/2025
Signature Date

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.



Signature and Seal of Professional Surveyor

Certificate Number

11403

Date of Survey

NOVEMBER 03, 2025

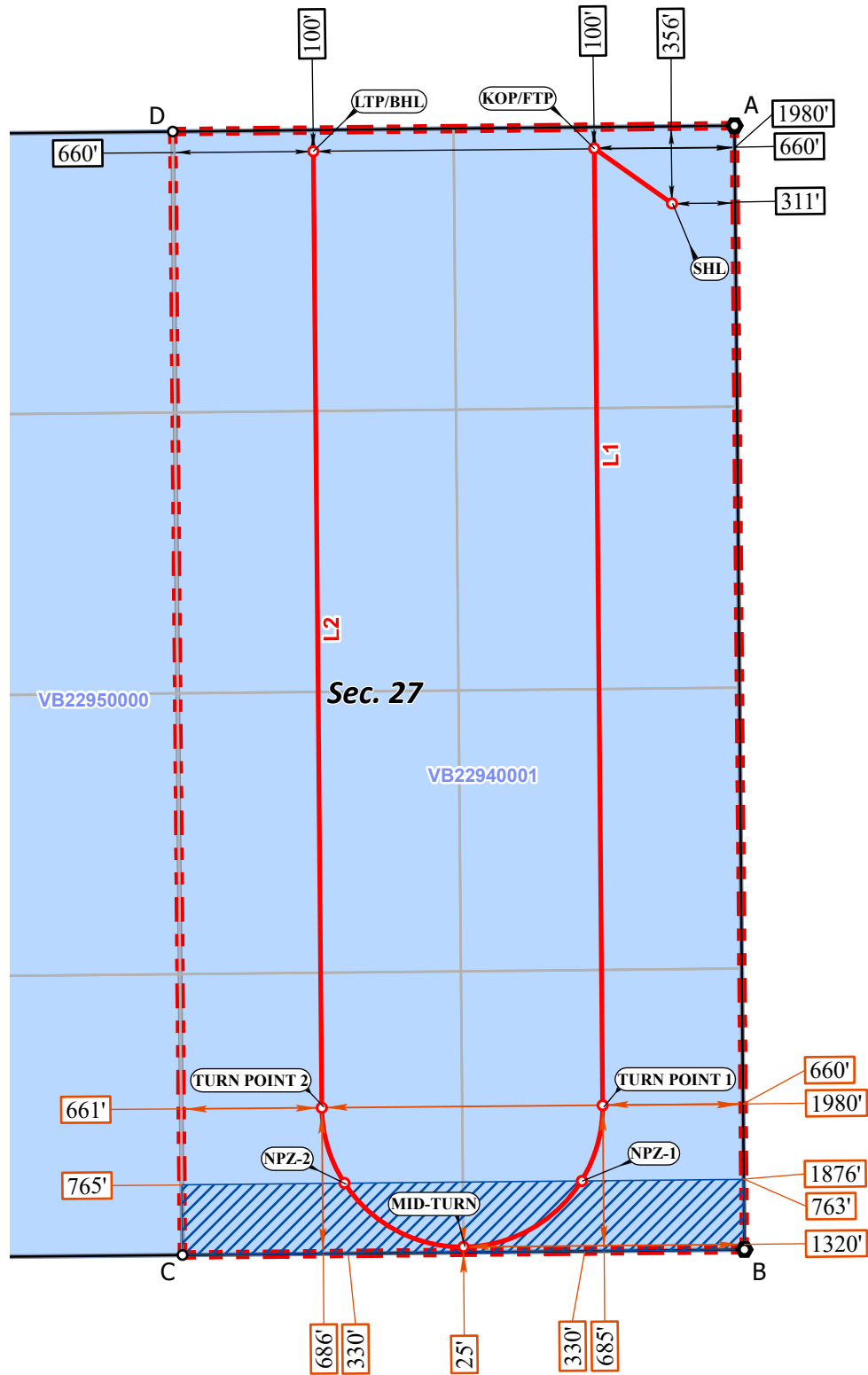
Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

ACREAGE DEDICATION PLATS

GRAMMA 27 U STATE 401H

PAGE 2 OF 2

SHL FNL 356' FEL 311', SECTION 27 NAD 83, SPCS NM EAST X:813737.82' / Y:530831.74' LAT:32.45622352 / LON:-103.45020280 NAD 27, SPCS NM EAST X:772555.13' / Y:530770.37' LAT:32.45609948 / LON:-103.44972122
KOP/FTP FNL 100' FEL 660', SECTION 27 NAD 83, SPCS NM EAST X:813386.11' / Y:531084.42' LAT:32.45692600 / LON:-103.45133617 NAD 27, SPCS NM EAST X:772203.43' / Y:531023.04' LAT:32.45680196 / LON:-103.45085451
TURN POINT 1 FSL 685' FEL 660', SECTION 27 NAD 83, SPCS NM EAST X:813425.77' / Y:526587.14' LAT:32.44456441 / LON:-103.45132803 NAD 27, SPCS NM EAST X:772243.00' / Y:526525.89' LAT:32.44444034 / LON:-103.45084673
NPZ-1 FSL 330' FEL 763', SECTION 27 NAD 83, SPCS NM EAST X:813325.45' / Y:526231.48' LAT:32.44358916 / LON:-103.45166271 NAD 27, SPCS NM EAST X:772142.68' / Y:526170.25' LAT:32.44346509 / LON:-103.45118142
MID TURN FSL 25' FEL 1320', SECTION 27 NAD 83, SPCS NM EAST X:812771.61' / Y:525921.35' LAT:32.44274933 / LON:-103.45346613 NAD 27, SPCS NM EAST X:771588.85' / Y:525860.13' LAT:32.44262527 / LON:-103.45298477
NPZ-2 FSL 330' FEL 1876', SECTION 27 NAD 83, SPCS NM EAST X:812213.02' / Y:526220.70' LAT:32.44358472 / LON:-103.45526867 NAD 27, SPCS NM EAST X:771030.28' / Y:526159.47' LAT:32.44346068 / LON:-103.45478719
TURN POINT 2 FSL 686' FEL 1980', SECTION 27 NAD 83, SPCS NM EAST X:812105.82' / Y:526575.50' LAT:32.44456231 / LON:-103.45560668 NAD 27, SPCS NM EAST X:770923.09' / Y:526514.26' LAT:32.44443827 / LON:-103.45512515
LTP/BHL FNL 100' FEL 1980', SECTION 27 NAD 83, SPCS NM EAST X:812066.18' / Y:531070.58' LAT:32.45691786 / LON:-103.45561539 NAD 27, SPCS NM EAST X:770883.54' / Y:531009.21' LAT:32.45679385 / LON:-103.45513351



CORNER COORDINATES NAD 83, SPCS NM EAST	
A - X: 814045.20' / Y:531191.33'	
B - X: 814091.77' / Y:525908.89'	
C - X: 811451.05' / Y:525883.30'	
D - X: 811405.38' / Y:531163.66'	

CORNER COORDINATES NAD 27, SPCS NM EAST	
A - X: 772862.51' / Y:531129.95'	
B - X: 772908.97' / Y:525847.66'	
C - X: 770268.33' / Y:525822.08'	
D - X: 770222.76' / Y:531102.29'	

*FTP TO LTP LINE BEARINGS

LINE	BEARING
L1	S 00°30'19" E ~ 4497.45'
L2	N 00°30'19" W ~ 4495.25'

ARC DIMENSIONS	
ARC LENGTH	2,073.45'
RADIUS	660.00'
DELTA ANGLE	180°00'00"
CHORD ANGLE	S 89°09'41" W
CHORD LENGTH	1,320.00'



○ Drill Line Events ● Section Corners — Drill Line ↔ Dimension Lines ▨ Federal Leases ■ NMSLO ■ HSU ● HSU Corners
All bearings and coordinates refer to New Mexico State Plane Coordinate System, East Zone, U.S. Survey Feet.

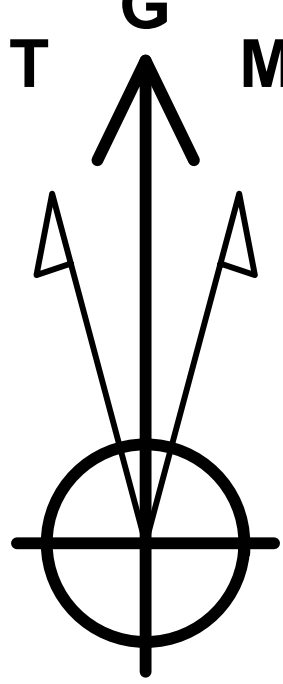
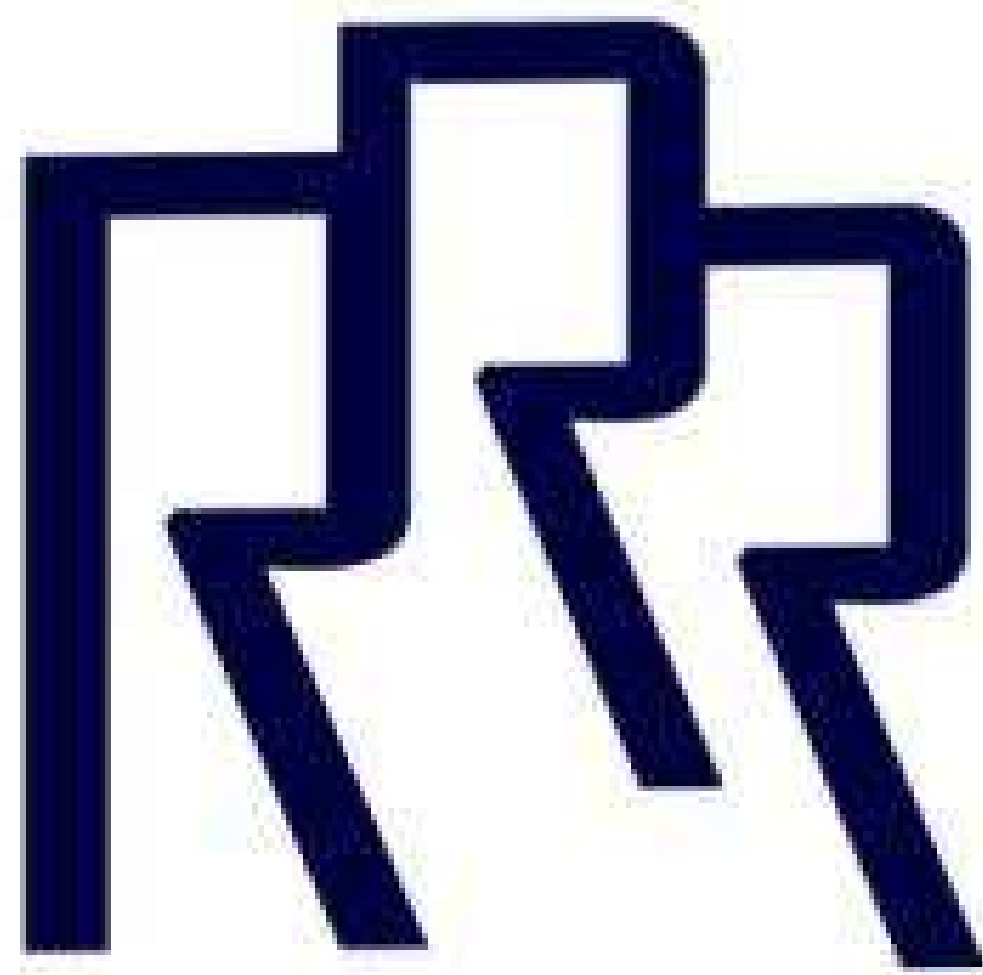
JOB No. 20251226
REV 6 ANC 11/3/2025

Distances/areas relative to NAD 83 grid measurements. Combined Scale Factor: 0.99981911 and a Convergence Angle: 0.47141389°

3R Operating, LLC

Company: 3R Operating, LLC
Field: Lea County, NM (NAD 83)
Location: Gramma 27 U State
Well: Gramma 27 U State 401H
OH
Plan: Plan 4
GL 3688 + 27' KB @ 3715.00usft

RIG: TBD



Azimuths to Grid North
True North: -0.47°
Magnetic North: 5.72°

Magnetic Field
Strength: 47152.4nT
Dip Angle: 59.98°
Date: 8/13/2025
Model: IGRF2025



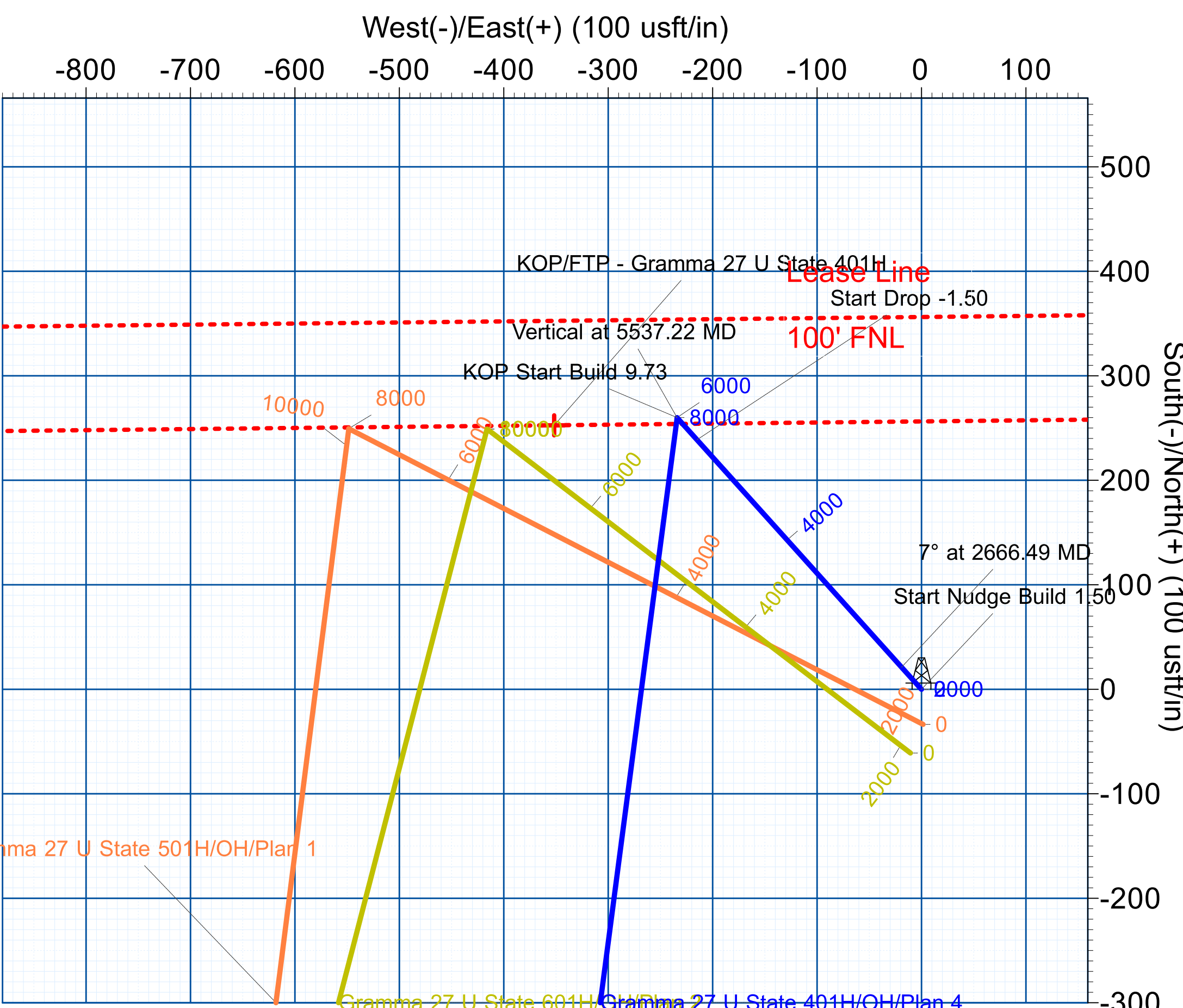
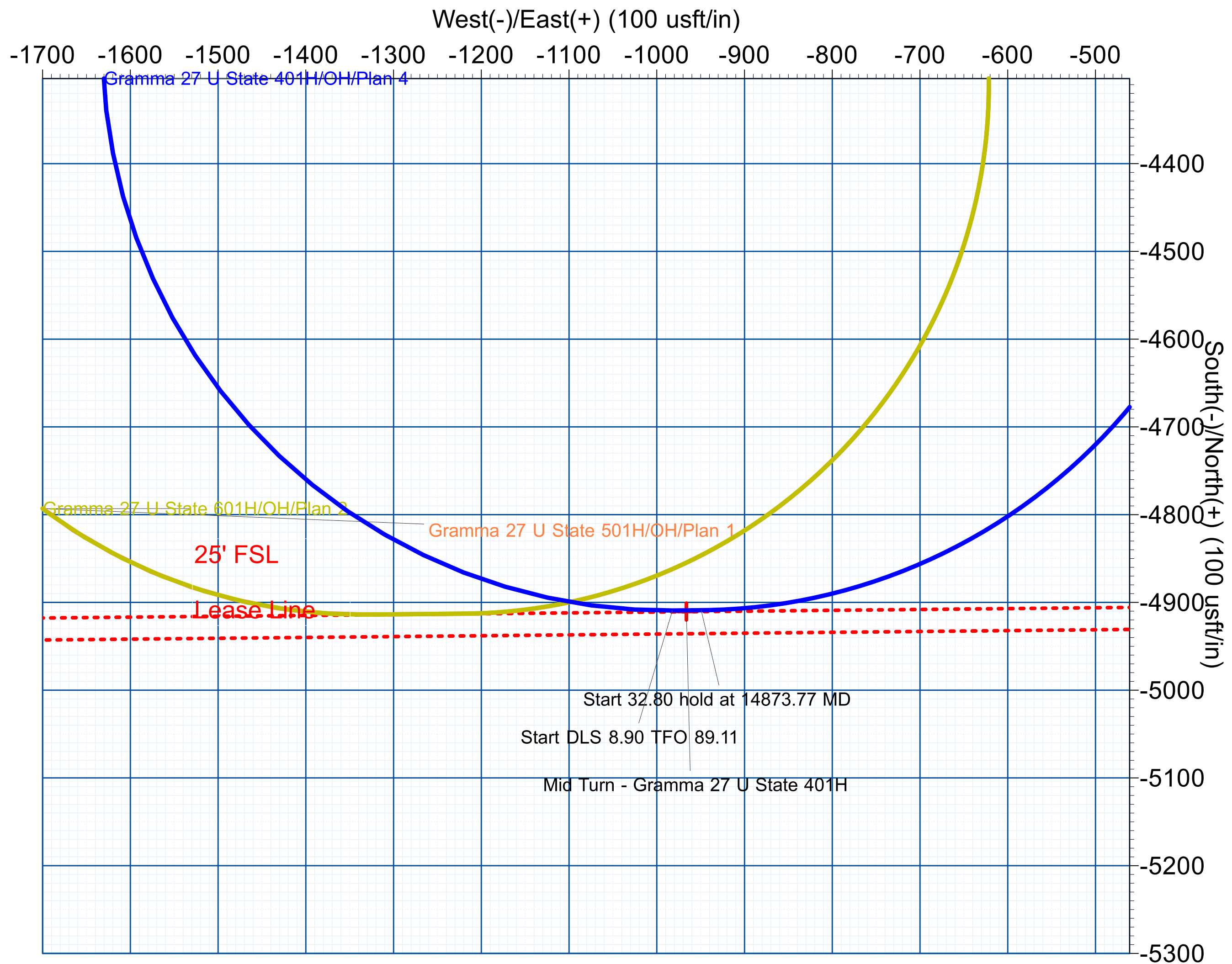
PROJECT DETAILS: Lea County, NM (NAD 83)

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: Gramma 27 U State 401H

		GL 3688 + 27' KB @ 3715.00usft	3688.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	530831.74	813737.82	32.456224	-103.450203
					Slot

To convert a Magnetic Direction to a Grid Direction, Add 5.72°

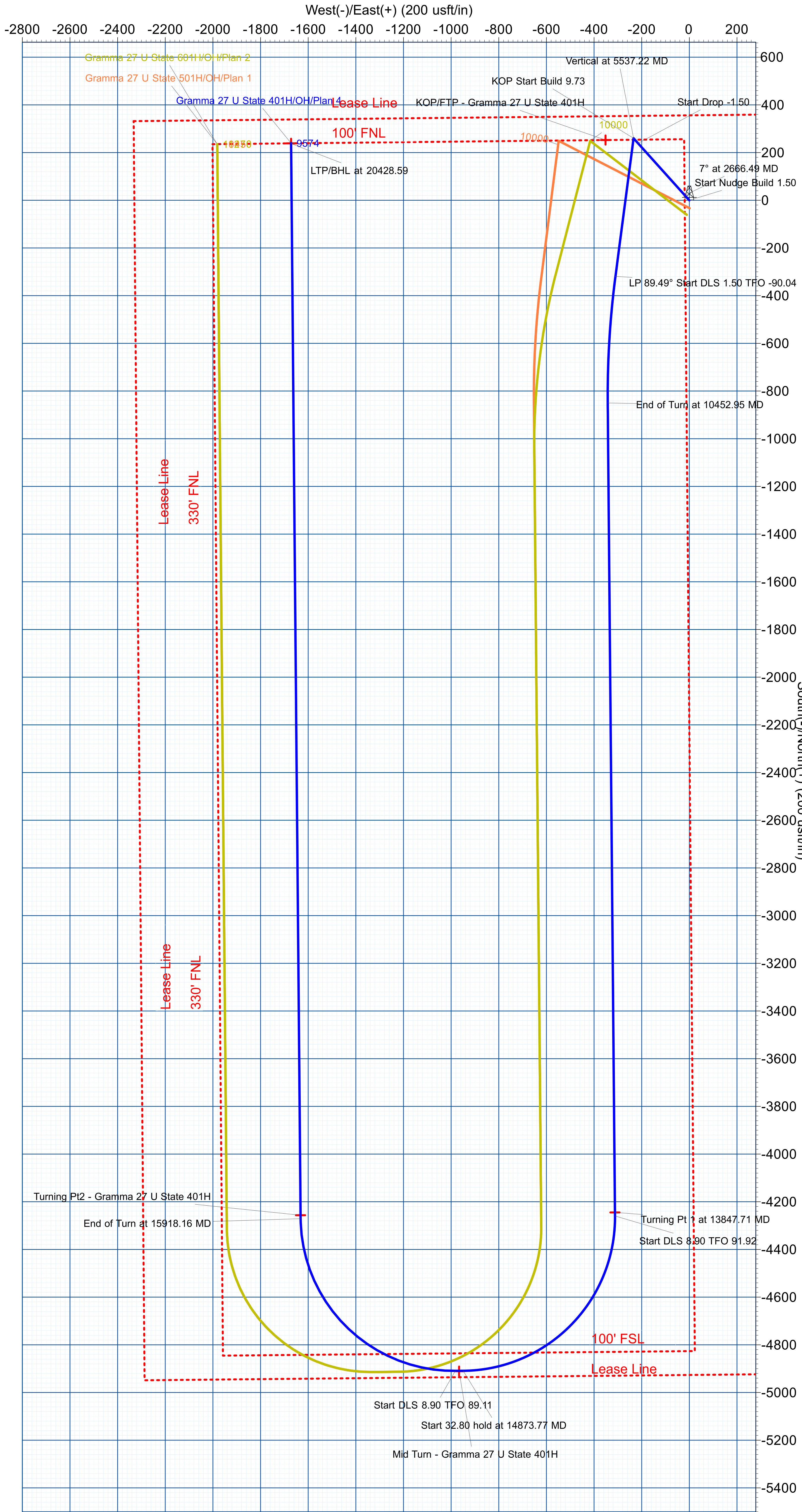
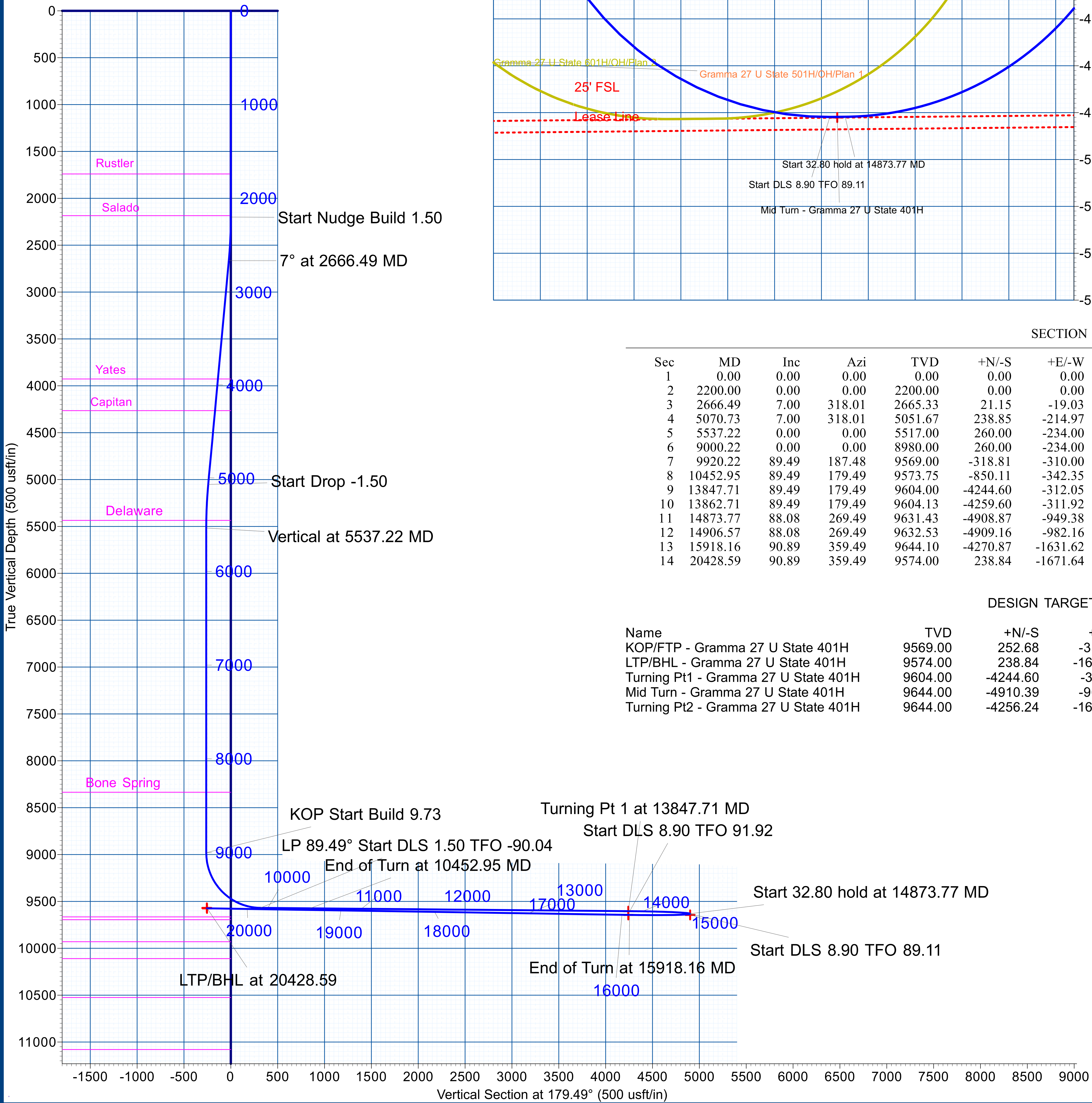


SECTION DETAILS

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	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2666.49	7.00	318.01	2665.33	21.15	-19.03	1.50	318.01	-21.32	
4	5070.73	7.00	318.01	5051.67	238.85	-214.97	0.00	0.00	-240.76	
5	5537.22	0.00	0.00	5517.00	260.00	-234.00	1.50	180.00	-262.07	
6	9000.22	0.00	0.00	8980.00	260.00	-234.00	0.00	0.00	-262.07	
7	9920.22	89.49	187.48	9569.00	-318.81	-310.00	9.73	187.48	316.04	
8	10452.95	89.49	179.49	9573.75	-850.11	-342.35	1.50	-90.04	847.03	
9	13847.71	89.49	179.49	9604.00	-4244.60	-312.05	0.00	0.00	4241.65	Turning Pt1 - Gramma 27 U State 401H
10	13862.71	89.49	179.49	9604.13	-4259.60	-311.92	0.00	0.00	4256.65	
11	14873.77	88.08	269.49	9631.43	-4908.87	-949.38	8.90	91.92	4900.22	
12	14906.57	88.08	269.49	9632.53	-4909.16	-982.16	0.00	0.00	4900.22	
13	15918.16	90.89	359.49	9644.10	-4270.87	-1631.62	8.90	89.11	4256.18	
14	20428.59	90.89	359.49	9574.00	238.84	-1671.64	0.00	0.00	-253.71	LTP/BHL - Gramma 27 U State 401H

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
KOP/FTP - Gramma 27 U State 401H	9569.00	252.68	-351.71	531084.42	813386.11	32.456926	-103.451336
LTP/BHL - Gramma 27 U State 401H	9574.00	238.84	-1671.64	531070.58	812066.18	32.456918	-103.455615
Turning Pt1 - Gramma 27 U State 401H	9604.00	-4244.60	-312.05	526587.14	813425.77	32.444564	-103.451328
Mid Turn - Gramma 27 U State 401H	9644.00	-4910.39	-966.21	525921.35	812771.61	32.442749	-103.453466
Turning Pt2 - Gramma 27 U State 401H	9644.00	-4256.24	-1632.00	526575.50	812105.82	32.444562	-103.455607





3R Operating, LLC

Lea County, NM (NAD 83)

Gamma 27 U State

Gamma 27 U State 401H

OH

Plan: Plan 4

Standard Planning Report

03 November, 2025



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Gramma 27 U State 401H
Company:	3R Operating, LLC	TVD Reference:	GL 3688 + 27' KB @ 3715.00usft
Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

Project	Lea County, NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Gramma 27 U State			
Site Position:		Northing:	530,770.80 usft	Latitude:	32.456056
From:	Map	Easting:	813,727.24 usft	Longitude:	-103.450239
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "		

Well	Gramma 27 U State 401H					
Well Position	+N/-S	0.00 usft	Northing:	530,831.74 usft	Latitude:	32.456224
	+E/-W	0.00 usft	Easting:	813,737.82 usft	Longitude:	-103.450203
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,688.00 usft
Grid Convergence:		0.47 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2025	8/13/2025	6.20	59.98	47,152.37238533

Design	Plan 4				
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	179.49	

Plan Survey Tool Program	Date	11/3/2025			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	20,428.31 Plan 4 (OH)	MWD		
			OWSG MWD - Standard		



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Gramma 27 U State 401H
Company:	3R Operating, LLC	TVD Reference:	GL 3688 + 27' KB @ 3715.00usft
Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

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	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,666.49	7.00	318.01	2,665.33	21.15	-19.03	1.50	1.50	0.00	318.01	
5,070.73	7.00	318.01	5,051.67	238.85	-214.97	0.00	0.00	0.00	0.00	
5,537.23	0.00	0.00	5,517.00	260.00	-234.00	1.50	-1.50	0.00	180.00	
9,000.23	0.00	0.00	8,980.00	260.00	-234.00	0.00	0.00	0.00	0.00	
9,920.22	89.49	187.48	9,569.00	-318.81	-310.00	9.73	9.73	0.00	187.48	
10,452.95	89.49	179.49	9,573.75	-850.11	-342.35	1.50	0.00	-1.50	-90.04	
13,847.71	89.49	179.49	9,604.00	-4,244.60	-312.05	0.00	0.00	0.00	0.00	Turning Pt1 - Gramma
13,862.71	89.49	179.49	9,604.13	-4,259.60	-311.92	0.00	0.00	0.00	0.00	
14,873.77	88.08	269.49	9,631.43	-4,908.87	-949.38	8.90	-0.14	8.90	91.92	
14,906.57	88.08	269.49	9,632.53	-4,909.16	-982.16	0.00	0.00	0.00	0.00	
15,918.16	90.89	359.49	9,644.10	-4,270.87	-1,631.62	8.90	0.28	8.90	89.11	
20,428.59	90.89	359.49	9,574.00	238.84	-1,671.64	0.00	0.00	0.00	0.00	LTP/BHL - Gramma 2



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Gramma 27 U State 401H
Company:	3R Operating, LLC	TVD Reference:	GL 3688 + 27' KB @ 3715.00usft
Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

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
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
1,740.00	0.00	0.00	1,740.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
2,185.00	0.00	0.00	2,185.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Nudge Build 1.50									
2,300.00	1.50	318.01	2,299.99	0.97	-0.88	-0.98	1.50	1.50	0.00
2,400.00	3.00	318.01	2,399.91	3.89	-3.50	-3.92	1.50	1.50	0.00
2,500.00	4.50	318.01	2,499.69	8.75	-7.88	-8.82	1.50	1.50	0.00
2,600.00	6.00	318.01	2,599.27	15.55	-14.00	-15.68	1.50	1.50	0.00
2,666.49	7.00	318.01	2,665.33	21.15	-19.03	-21.32	1.50	1.50	0.00
7° at 2666.49 MD									
2,700.00	7.00	318.01	2,698.59	24.18	-21.76	-24.37	0.00	0.00	0.00
2,800.00	7.00	318.01	2,797.85	33.24	-29.91	-33.50	0.00	0.00	0.00
2,900.00	7.00	318.01	2,897.10	42.29	-38.06	-42.63	0.00	0.00	0.00
3,000.00	7.00	318.01	2,996.36	51.35	-46.21	-51.76	0.00	0.00	0.00
3,100.00	7.00	318.01	3,095.61	60.40	-54.36	-60.88	0.00	0.00	0.00
3,200.00	7.00	318.01	3,194.87	69.46	-62.51	-70.01	0.00	0.00	0.00
3,300.00	7.00	318.01	3,294.12	78.51	-70.66	-79.14	0.00	0.00	0.00
3,400.00	7.00	318.01	3,393.38	87.57	-78.81	-88.26	0.00	0.00	0.00
3,500.00	7.00	318.01	3,492.63	96.62	-86.96	-97.39	0.00	0.00	0.00
3,600.00	7.00	318.01	3,591.89	105.68	-95.11	-106.52	0.00	0.00	0.00
3,700.00	7.00	318.01	3,691.14	114.73	-103.26	-115.65	0.00	0.00	0.00
3,800.00	7.00	318.01	3,790.40	123.79	-111.41	-124.77	0.00	0.00	0.00
3,900.00	7.00	318.01	3,889.65	132.84	-119.56	-133.90	0.00	0.00	0.00
3,937.63	7.00	318.01	3,927.00	136.25	-122.62	-137.34	0.00	0.00	0.00
Yates									
4,000.00	7.00	318.01	3,988.91	141.90	-127.71	-143.03	0.00	0.00	0.00
4,100.00	7.00	318.01	4,088.16	150.95	-135.86	-152.16	0.00	0.00	0.00
4,200.00	7.00	318.01	4,187.42	160.01	-144.01	-161.28	0.00	0.00	0.00
4,278.16	7.00	318.01	4,265.00	167.09	-150.38	-168.42	0.00	0.00	0.00



Legacy Directional Drilling

Planning Report

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Company:	3R Operating, LLC	TVD Reference:	GL 3688 + 27' KB @ 3715.00usft
Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

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)
Capitan									
4,300.00	7.00	318.01	4,286.67	169.06	-152.16	-170.41	0.00	0.00	0.00
4,400.00	7.00	318.01	4,385.93	178.12	-160.31	-179.54	0.00	0.00	0.00
4,500.00	7.00	318.01	4,485.18	187.17	-168.46	-188.66	0.00	0.00	0.00
4,600.00	7.00	318.01	4,584.44	196.23	-176.60	-197.79	0.00	0.00	0.00
4,700.00	7.00	318.01	4,683.70	205.28	-184.75	-206.92	0.00	0.00	0.00
4,800.00	7.00	318.01	4,782.95	214.34	-192.90	-216.05	0.00	0.00	0.00
4,900.00	7.00	318.01	4,882.21	223.39	-201.05	-225.17	0.00	0.00	0.00
5,000.00	7.00	318.01	4,981.46	232.45	-209.20	-234.30	0.00	0.00	0.00
5,070.73	7.00	318.01	5,051.67	238.85	-214.97	-240.76	0.00	0.00	0.00
Start Drop -1.50									
5,100.00	6.56	318.01	5,080.73	241.42	-217.28	-243.34	1.50	-1.50	0.00
5,200.00	5.06	318.01	5,180.21	248.94	-224.05	-250.93	1.50	-1.50	0.00
5,300.00	3.56	318.01	5,279.93	254.53	-229.07	-256.56	1.50	-1.50	0.00
5,400.00	2.06	318.01	5,379.80	258.17	-232.35	-260.23	1.50	-1.50	0.00
5,455.22	1.23	318.01	5,435.00	259.35	-233.41	-261.41	1.50	-1.50	0.00
Delaware									
5,500.00	0.56	318.01	5,479.78	259.87	-233.88	-261.94	1.50	-1.50	0.00
5,537.23	0.00	0.00	5,517.00	260.00	-234.00	-262.07	1.50	-1.50	0.00
Vertical at 5537.22 MD									
5,600.00	0.00	0.00	5,579.78	260.00	-234.00	-262.07	0.00	0.00	0.00
5,700.00	0.00	0.00	5,679.78	260.00	-234.00	-262.07	0.00	0.00	0.00
5,800.00	0.00	0.00	5,779.78	260.00	-234.00	-262.07	0.00	0.00	0.00
5,900.00	0.00	0.00	5,879.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,000.00	0.00	0.00	5,979.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,100.00	0.00	0.00	6,079.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,200.00	0.00	0.00	6,179.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,300.00	0.00	0.00	6,279.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,400.00	0.00	0.00	6,379.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,500.00	0.00	0.00	6,479.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,600.00	0.00	0.00	6,579.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,700.00	0.00	0.00	6,679.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,800.00	0.00	0.00	6,779.78	260.00	-234.00	-262.07	0.00	0.00	0.00
6,900.00	0.00	0.00	6,879.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,000.00	0.00	0.00	6,979.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,100.00	0.00	0.00	7,079.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,200.00	0.00	0.00	7,179.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,300.00	0.00	0.00	7,279.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,400.00	0.00	0.00	7,379.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,500.00	0.00	0.00	7,479.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,600.00	0.00	0.00	7,579.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,700.00	0.00	0.00	7,679.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,800.00	0.00	0.00	7,779.78	260.00	-234.00	-262.07	0.00	0.00	0.00
7,900.00	0.00	0.00	7,879.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,000.00	0.00	0.00	7,979.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,100.00	0.00	0.00	8,079.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,200.00	0.00	0.00	8,179.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,300.00	0.00	0.00	8,279.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,355.23	0.00	0.00	8,335.00	260.00	-234.00	-262.07	0.00	0.00	0.00
Bone Spring									
8,400.00	0.00	0.00	8,379.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,500.00	0.00	0.00	8,479.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,600.00	0.00	0.00	8,579.78	260.00	-234.00	-262.07	0.00	0.00	0.00



Legacy Directional Drilling

Planning Report

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Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

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)
8,700.00	0.00	0.00	8,679.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,800.00	0.00	0.00	8,779.78	260.00	-234.00	-262.07	0.00	0.00	0.00
8,900.00	0.00	0.00	8,879.78	260.00	-234.00	-262.07	0.00	0.00	0.00
9,000.23	0.00	0.00	8,980.00	260.00	-234.00	-262.07	0.00	0.00	0.00
KOP Start Build 9.73									
9,050.00	4.84	187.48	9,029.72	257.92	-234.27	-259.99	9.73	9.73	0.00
9,100.00	9.71	187.48	9,079.30	251.64	-235.10	-253.72	9.73	9.73	0.00
9,150.00	14.57	187.48	9,128.17	241.22	-236.47	-243.32	9.73	9.73	0.00
9,200.00	19.43	187.48	9,175.97	226.73	-238.37	-228.84	9.73	9.73	0.00
9,250.00	24.30	187.48	9,222.36	208.27	-240.79	-210.41	9.73	9.73	0.00
9,300.00	29.16	187.48	9,267.00	185.98	-243.72	-188.15	9.73	9.73	0.00
9,350.00	34.02	187.48	9,309.58	160.02	-247.13	-162.22	9.73	9.73	0.00
9,400.00	38.89	187.48	9,349.78	130.57	-250.99	-132.80	9.73	9.73	0.00
9,450.00	43.75	187.48	9,387.32	97.85	-255.29	-100.12	9.73	9.73	0.00
9,500.00	48.61	187.48	9,421.93	62.09	-259.98	-64.40	9.73	9.73	0.00
9,550.00	53.48	187.48	9,453.36	23.55	-265.04	-25.91	9.73	9.73	0.00
9,600.00	58.34	187.48	9,481.37	-17.49	-270.43	15.08	9.73	9.73	0.00
9,650.00	63.21	187.48	9,505.78	-60.74	-276.11	58.28	9.73	9.73	0.00
9,700.00	68.07	187.48	9,526.40	-105.89	-282.04	103.37	9.73	9.73	0.00
9,750.00	72.93	187.48	9,543.08	-152.60	-288.17	150.03	9.73	9.73	0.00
9,800.00	77.80	187.48	9,555.71	-200.56	-294.47	197.93	9.73	9.73	0.00
9,850.00	82.66	187.48	9,564.20	-249.40	-300.88	246.71	9.73	9.73	0.00
9,900.00	87.52	187.48	9,568.47	-298.77	-307.37	296.03	9.73	9.73	0.00
9,920.22	89.49	187.48	9,569.00	-318.81	-310.00	316.04	9.73	9.73	0.00
LP 89.49° Start DLS 1.50 TFO -90.04									
10,000.00	89.49	186.28	9,569.71	-398.02	-319.56	395.16	1.50	0.00	-1.50
10,100.00	89.49	184.78	9,570.60	-497.54	-329.20	494.59	1.50	0.00	-1.50
10,200.00	89.49	183.28	9,571.50	-597.29	-336.23	594.27	1.50	0.00	-1.50
10,300.00	89.49	181.78	9,572.39	-697.18	-340.65	694.12	1.50	0.00	-1.50
10,400.00	89.49	180.28	9,573.28	-797.16	-342.45	794.08	1.50	0.00	-1.50
10,452.95	89.49	179.49	9,573.75	-850.11	-342.35	847.03	1.50	0.00	-1.50
End of Turn at 10452.95 MD									
10,500.00	89.49	179.49	9,574.17	-897.15	-341.93	894.08	0.00	0.00	0.00
10,600.00	89.49	179.49	9,575.06	-997.15	-341.03	994.07	0.00	0.00	0.00
10,700.00	89.49	179.49	9,575.95	-1,097.14	-340.14	1,094.07	0.00	0.00	0.00
10,800.00	89.49	179.49	9,576.84	-1,197.13	-339.25	1,194.06	0.00	0.00	0.00
10,900.00	89.49	179.49	9,577.74	-1,297.12	-338.36	1,294.06	0.00	0.00	0.00
11,000.00	89.49	179.49	9,578.63	-1,397.11	-337.46	1,394.06	0.00	0.00	0.00
11,100.00	89.49	179.49	9,579.52	-1,497.11	-336.57	1,494.05	0.00	0.00	0.00
11,200.00	89.49	179.49	9,580.41	-1,597.10	-335.68	1,594.05	0.00	0.00	0.00
11,300.00	89.49	179.49	9,581.30	-1,697.09	-334.79	1,694.04	0.00	0.00	0.00
11,400.00	89.49	179.49	9,582.19	-1,797.08	-333.89	1,794.04	0.00	0.00	0.00
11,500.00	89.49	179.49	9,583.08	-1,897.07	-333.00	1,894.04	0.00	0.00	0.00
11,600.00	89.49	179.49	9,583.97	-1,997.07	-332.11	1,994.03	0.00	0.00	0.00
11,700.00	89.49	179.49	9,584.86	-2,097.06	-331.22	2,094.03	0.00	0.00	0.00
11,800.00	89.49	179.49	9,585.75	-2,197.05	-330.32	2,194.02	0.00	0.00	0.00
11,900.00	89.49	179.49	9,586.65	-2,297.04	-329.43	2,294.02	0.00	0.00	0.00
12,000.00	89.49	179.49	9,587.54	-2,397.04	-328.54	2,394.02	0.00	0.00	0.00
12,100.00	89.49	179.49	9,588.43	-2,497.03	-327.65	2,494.01	0.00	0.00	0.00
12,200.00	89.49	179.49	9,589.32	-2,597.02	-326.75	2,594.01	0.00	0.00	0.00
12,300.00	89.49	179.49	9,590.21	-2,697.01	-325.86	2,694.00	0.00	0.00	0.00
12,400.00	89.49	179.49	9,591.10	-2,797.00	-324.97	2,794.00	0.00	0.00	0.00
12,500.00	89.49	179.49	9,591.99	-2,897.00	-324.08	2,894.00	0.00	0.00	0.00



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12,600.00	89.49	179.49	9,592.88	-2,996.99	-323.19	2,993.99	0.00	0.00	0.00
12,700.00	89.49	179.49	9,593.77	-3,096.98	-322.29	3,093.99	0.00	0.00	0.00
12,800.00	89.49	179.49	9,594.66	-3,196.97	-321.40	3,193.98	0.00	0.00	0.00
12,900.00	89.49	179.49	9,595.56	-3,296.96	-320.51	3,293.98	0.00	0.00	0.00
13,000.00	89.49	179.49	9,596.45	-3,396.96	-319.62	3,393.98	0.00	0.00	0.00
13,100.00	89.49	179.49	9,597.34	-3,496.95	-318.72	3,493.97	0.00	0.00	0.00
13,200.00	89.49	179.49	9,598.23	-3,596.94	-317.83	3,593.97	0.00	0.00	0.00
13,300.00	89.49	179.49	9,599.12	-3,696.93	-316.94	3,693.96	0.00	0.00	0.00
13,400.00	89.49	179.49	9,600.01	-3,796.92	-316.05	3,793.96	0.00	0.00	0.00
13,500.00	89.49	179.49	9,600.90	-3,896.92	-315.15	3,893.96	0.00	0.00	0.00
13,600.00	89.49	179.49	9,601.79	-3,996.91	-314.26	3,993.95	0.00	0.00	0.00
13,700.00	89.49	179.49	9,602.68	-4,096.90	-313.37	4,093.95	0.00	0.00	0.00
13,800.00	89.49	179.49	9,603.58	-4,196.89	-312.48	4,193.94	0.00	0.00	0.00
13,847.71	89.49	179.49	9,604.00	-4,244.60	-312.05	4,241.65	0.00	0.00	0.00
Turning Pt 1 at 13847.71 MD									
13,862.71	89.49	179.49	9,604.13	-4,259.60	-311.92	4,256.65	0.00	0.00	0.00
Start DLS 8.90 TFO 91.92									
13,900.00	89.38	182.81	9,604.50	-4,296.87	-312.66	4,293.92	8.90	-0.30	8.90
13,950.00	89.23	187.25	9,605.11	-4,346.66	-317.04	4,343.67	8.90	-0.29	8.90
14,000.00	89.09	191.70	9,605.84	-4,395.96	-325.27	4,392.89	8.90	-0.28	8.90
14,050.00	88.96	196.15	9,606.69	-4,444.47	-337.30	4,441.30	8.90	-0.27	8.90
14,100.00	88.83	200.60	9,607.65	-4,491.90	-353.06	4,488.58	8.90	-0.26	8.90
14,150.00	88.71	205.05	9,608.72	-4,537.97	-372.44	4,534.47	8.90	-0.24	8.90
14,200.00	88.60	209.50	9,609.90	-4,582.39	-395.34	4,578.69	8.90	-0.23	8.90
14,250.00	88.49	213.95	9,611.17	-4,624.89	-421.62	4,620.95	8.90	-0.21	8.90
14,300.00	88.40	218.40	9,612.52	-4,665.23	-451.11	4,661.03	8.90	-0.19	8.90
14,350.00	88.31	222.85	9,613.96	-4,703.15	-483.65	4,698.66	8.90	-0.17	8.90
14,400.00	88.23	227.30	9,615.47	-4,738.43	-519.02	4,733.63	8.90	-0.15	8.90
14,450.00	88.17	231.75	9,617.04	-4,770.86	-557.03	4,765.72	8.90	-0.13	8.90
14,500.00	88.11	236.21	9,618.66	-4,800.25	-597.44	4,794.74	8.90	-0.11	8.90
14,550.00	88.07	240.66	9,620.33	-4,826.40	-640.01	4,820.51	8.90	-0.09	8.90
14,600.00	88.04	245.11	9,622.02	-4,849.17	-684.48	4,842.89	8.90	-0.06	8.90
14,650.00	88.02	249.56	9,623.74	-4,868.42	-730.58	4,861.73	8.90	-0.04	8.91
14,700.00	88.01	254.02	9,625.47	-4,884.03	-778.03	4,876.91	8.90	-0.02	8.91
14,750.00	88.02	258.47	9,627.20	-4,895.91	-826.55	4,888.36	8.90	0.01	8.91
14,800.00	88.03	262.92	9,628.93	-4,903.99	-875.86	4,896.00	8.90	0.03	8.91
14,850.00	88.06	267.37	9,630.63	-4,908.22	-925.63	4,899.79	8.90	0.06	8.90
14,873.77	88.08	269.49	9,631.43	-4,908.87	-949.38	4,900.22	8.90	0.07	8.90
Start 32.80 hold at 14873.77 MD									
14,906.57	88.08	269.49	9,632.53	-4,909.16	-982.16	4,900.22	0.00	0.00	0.00
Start DLS 8.90 TFO 89.11									
14,950.00	88.14	273.36	9,633.96	-4,908.08	-1,025.55	4,898.76	8.90	0.15	8.90
15,000.00	88.23	277.81	9,635.54	-4,903.22	-1,075.27	4,893.46	8.90	0.17	8.90
15,050.00	88.32	282.26	9,637.05	-4,894.52	-1,124.47	4,884.31	8.90	0.19	8.90
15,100.00	88.43	286.71	9,638.47	-4,882.02	-1,172.85	4,871.39	8.90	0.21	8.90
15,150.00	88.54	291.16	9,639.79	-4,865.80	-1,220.12	4,854.75	8.90	0.23	8.90
15,200.00	88.67	295.61	9,641.00	-4,845.97	-1,265.98	4,834.51	8.90	0.25	8.90
15,250.00	88.80	300.06	9,642.11	-4,822.64	-1,310.18	4,810.78	8.90	0.26	8.90
15,300.00	88.94	304.51	9,643.10	-4,795.94	-1,352.43	4,783.72	8.90	0.28	8.90
15,350.00	89.08	308.96	9,643.96	-4,766.05	-1,392.49	4,753.47	8.90	0.29	8.90
15,400.00	89.23	313.40	9,644.70	-4,733.14	-1,430.11	4,720.23	8.90	0.30	8.90
15,450.00	89.39	317.85	9,645.30	-4,697.41	-1,465.06	4,684.19	8.90	0.31	8.90
15,500.00	89.55	322.30	9,645.76	-4,659.08	-1,497.14	4,645.57	8.90	0.32	8.89



Legacy Directional Drilling

Planning Report

Database:	EDM_WA	Local Co-ordinate Reference:	Well Gramma 27 U State 401H
Company:	3R Operating, LLC	TVD Reference:	GL 3688 + 27' KB @ 3715.00usft
Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

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)
15,550.00	89.71	326.75	9,646.08	-4,618.38	-1,526.15	4,604.61	8.90	0.32	8.89
15,600.00	89.87	331.19	9,646.27	-4,575.54	-1,551.92	4,561.55	8.90	0.33	8.89
15,650.00	90.04	335.64	9,646.30	-4,530.84	-1,574.29	4,516.65	8.90	0.33	8.89
15,700.00	90.20	340.09	9,646.20	-4,484.54	-1,593.13	4,470.18	8.90	0.33	8.89
15,750.00	90.36	344.53	9,645.95	-4,436.91	-1,608.32	4,422.42	8.90	0.33	8.89
15,800.00	90.53	348.98	9,645.56	-4,388.26	-1,619.77	4,373.67	8.90	0.32	8.89
15,850.00	90.68	353.43	9,645.04	-4,338.86	-1,627.41	4,324.20	8.90	0.31	8.89
15,900.00	90.84	357.88	9,644.37	-4,289.02	-1,631.20	4,274.33	8.90	0.31	8.90
15,918.16	90.89	359.49	9,644.10	-4,270.87	-1,631.62	4,256.18	8.90	0.30	8.90
End of Turn at 15918.16 MD									
16,000.00	90.89	359.49	9,642.83	-4,189.04	-1,632.34	4,174.35	0.00	0.00	0.00
16,100.00	90.89	359.49	9,641.27	-4,089.06	-1,633.23	4,074.36	0.00	0.00	0.00
16,200.00	90.89	359.49	9,639.72	-3,989.07	-1,634.12	3,974.37	0.00	0.00	0.00
16,300.00	90.89	359.49	9,638.17	-3,889.09	-1,635.00	3,874.38	0.00	0.00	0.00
16,400.00	90.89	359.49	9,636.61	-3,789.11	-1,635.89	3,774.39	0.00	0.00	0.00
16,500.00	90.89	359.49	9,635.06	-3,689.12	-1,636.78	3,674.41	0.00	0.00	0.00
16,600.00	90.89	359.49	9,633.50	-3,589.14	-1,637.67	3,574.42	0.00	0.00	0.00
16,700.00	90.89	359.49	9,631.95	-3,489.15	-1,638.55	3,474.43	0.00	0.00	0.00
16,800.00	90.89	359.49	9,630.39	-3,389.17	-1,639.44	3,374.44	0.00	0.00	0.00
16,900.00	90.89	359.49	9,628.84	-3,289.19	-1,640.33	3,274.45	0.00	0.00	0.00
17,000.00	90.89	359.49	9,627.29	-3,189.20	-1,641.22	3,174.47	0.00	0.00	0.00
17,100.00	90.89	359.49	9,625.73	-3,089.22	-1,642.10	3,074.48	0.00	0.00	0.00
17,200.00	90.89	359.49	9,624.18	-2,989.23	-1,642.99	2,974.49	0.00	0.00	0.00
17,300.00	90.89	359.49	9,622.62	-2,889.25	-1,643.88	2,874.50	0.00	0.00	0.00
17,400.00	90.89	359.49	9,621.07	-2,789.27	-1,644.77	2,774.51	0.00	0.00	0.00
17,500.00	90.89	359.49	9,619.52	-2,689.28	-1,645.65	2,674.53	0.00	0.00	0.00
17,600.00	90.89	359.49	9,617.96	-2,589.30	-1,646.54	2,574.54	0.00	0.00	0.00
17,700.00	90.89	359.49	9,616.41	-2,489.31	-1,647.43	2,474.55	0.00	0.00	0.00
17,800.00	90.89	359.49	9,614.85	-2,389.33	-1,648.31	2,374.56	0.00	0.00	0.00
17,900.00	90.89	359.49	9,613.30	-2,289.35	-1,649.20	2,274.58	0.00	0.00	0.00
18,000.00	90.89	359.49	9,611.74	-2,189.36	-1,650.09	2,174.59	0.00	0.00	0.00
18,100.00	90.89	359.49	9,610.19	-2,089.38	-1,650.98	2,074.60	0.00	0.00	0.00
18,200.00	90.89	359.49	9,608.64	-1,989.39	-1,651.86	1,974.61	0.00	0.00	0.00
18,300.00	90.89	359.49	9,607.08	-1,889.41	-1,652.75	1,874.62	0.00	0.00	0.00
18,400.00	90.89	359.49	9,605.53	-1,789.43	-1,653.64	1,774.64	0.00	0.00	0.00
18,500.00	90.89	359.49	9,603.97	-1,689.44	-1,654.53	1,674.65	0.00	0.00	0.00
18,600.00	90.89	359.49	9,602.42	-1,589.46	-1,655.41	1,574.66	0.00	0.00	0.00
18,700.00	90.89	359.49	9,600.87	-1,489.47	-1,656.30	1,474.67	0.00	0.00	0.00
18,800.00	90.89	359.49	9,599.31	-1,389.49	-1,657.19	1,374.68	0.00	0.00	0.00
18,900.00	90.89	359.49	9,597.76	-1,289.51	-1,658.08	1,274.70	0.00	0.00	0.00
19,000.00	90.89	359.49	9,596.20	-1,189.52	-1,658.96	1,174.71	0.00	0.00	0.00
19,100.00	90.89	359.49	9,594.65	-1,089.54	-1,659.85	1,074.72	0.00	0.00	0.00
19,200.00	90.89	359.49	9,593.09	-989.55	-1,660.74	974.73	0.00	0.00	0.00
19,300.00	90.89	359.49	9,591.54	-889.57	-1,661.63	874.74	0.00	0.00	0.00
19,400.00	90.89	359.49	9,589.99	-789.59	-1,662.51	774.76	0.00	0.00	0.00
19,500.00	90.89	359.49	9,588.43	-689.60	-1,663.40	674.77	0.00	0.00	0.00
19,600.00	90.89	359.49	9,586.88	-589.62	-1,664.29	574.78	0.00	0.00	0.00
19,700.00	90.89	359.49	9,585.32	-489.63	-1,665.17	474.79	0.00	0.00	0.00
19,800.00	90.89	359.49	9,583.77	-389.65	-1,666.06	374.80	0.00	0.00	0.00
19,900.00	90.89	359.49	9,582.22	-289.67	-1,666.95	274.82	0.00	0.00	0.00
20,000.00	90.89	359.49	9,580.66	-189.68	-1,667.84	174.83	0.00	0.00	0.00
20,100.00	90.89	359.49	9,579.11	-89.70	-1,668.72	74.84	0.00	0.00	0.00
20,200.00	90.89	359.49	9,577.55	10.29	-1,669.61	-25.15	0.00	0.00	0.00
20,300.00	90.89	359.49	9,576.00	110.27	-1,670.50	-125.14	0.00	0.00	0.00



Legacy Directional Drilling

Planning Report

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Company:	3R Operating, LLC	TVD Reference:	GL 3688 + 27' KB @ 3715.00usft
Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

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)
20,400.00	90.89	359.49	9,574.44	210.25	-1,671.39	-225.12	0.00	0.00	0.00
20,428.59	90.89	359.49	9,574.00	238.84	-1,671.64	-253.71	0.00	0.00	0.00
LTP/BHL at 20428.59									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP/FTP - Gramma 27 - hit/miss target - Shape	0.00	0.00	9,569.00	252.68	-351.71	531,084.42	813,386.11	32.456926	-103.451336
- plan misses target center by 255.84usft at 9474.09usft MD (9404.38 TVD, 80.99 N, -257.50 E)									
- Point									
LTP/BHL - Gramma 27 L - plan hits target center - Point	0.00	0.00	9,574.00	238.84	-1,671.64	531,070.58	812,066.18	32.456918	-103.455616
Turning Pt1 - Gramma 2 - plan hits target center - Point	0.00	0.00	9,604.00	-4,244.60	-312.05	526,587.14	813,425.77	32.444564	-103.451328
Mid Turn - Gramma 27 L - plan misses target center by 12.08usft at 14891.02usft MD (9632.01 TVD, -4909.02 N, -966.62 E) - Point	0.00	0.00	9,644.00	-4,910.39	-966.21	525,921.35	812,771.61	32.442749	-103.453466
Turning Pt2 - Gramma 2 - plan misses target center by 0.28usft at 15932.79usft MD (9643.87 TVD, -4256.24 N, -1631.75 E) - Point	0.00	0.00	9,644.00	-4,256.24	-1,632.00	526,575.50	812,105.82	32.444562	-103.455607

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,740.00	1,740.00	Rustler				
2,185.00	2,185.00	Salado				
3,937.63	3,927.00	Yates				
4,278.16	4,265.00	Capitan				
5,455.22	5,435.00	Delaware				
8,355.23	8,335.00	Bone Spring				



Legacy Directional Drilling

Planning Report

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Company:	3R Operating, LLC	TVD Reference:	GL 3688 + 27' KB @ 3715.00usft
Project:	Lea County, NM (NAD 83)	MD Reference:	GL 3688 + 27' KB @ 3715.00usft
Site:	Gramma 27 U State	North Reference:	Grid
Well:	Gramma 27 U State 401H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 4		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,200.00	2,200.00	0.00	0.00	Start Nudge Build 1.50	
2,666.49	2,665.33	21.15	-19.03	7° at 2666.49 MD	
5,070.73	5,051.67	238.85	-214.97	Start Drop -1.50	
5,537.23	5,517.00	260.00	-234.00	Vertical at 5537.22 MD	
9,000.23	8,980.00	260.00	-234.00	KOP Start Build 9.73	
9,920.22	9,569.00	-318.81	-310.00	LP 89.49° Start DLS 1.50 TFO -90.04	
10,452.95	9,573.75	-850.11	-342.35	End of Turn at 10452.95 MD	
13,847.71	9,604.00	-4,244.60	-312.05	Turning Pt 1 at 13847.71 MD	
13,862.71	9,604.13	-4,259.60	-311.92	Start DLS 8.90 TFO 91.92	
14,873.77	9,631.43	-4,908.87	-949.38	Start 32.80 hold at 14873.77 MD	
14,906.57	9,632.53	-4,909.16	-982.16	Start DLS 8.90 TFO 89.11	
15,918.16	9,644.10	-4,270.87	-1,631.62	End of Turn at 15918.16 MD	
20,428.59	9,574.00	238.84	-1,671.64	LTP/BHL at 20428.59	

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'	1,800'	1,800'	13 3/8"	54.5	J-55	BTC	New	8.6	2,730	3.39	1,130	1.40	1,025,000	98,100	10.45	962,000	98,100	9.81
Intermediate																			
12.25"	0'	5,700'	5,700'	9 5/8"	40	J-55	BTC	New	8.6	3,950	1.55	2,570	2.02	714,000	228,000	3.13	630,000	228,000	2.76
Production																			
8.75"	0'	20,428'	9,644'	5 1/2"	20	P-110	BTC	New	9.6	12,640	2.63	11,080	2.30	667,000	192,880	3.46	641,000	192,880	3.32

Casing Design Criteria and Casing Loading Assumptions:

Surface

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

Intermediate

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

Production

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

KOP9,000



Surface Casing Specifications	
Grade	J-55
Weight/ft (lbs)	54.5
Thread	BTC
Condition	New
Collapse Strength (psi)	1,130
Internal Yield Strength (psi)	2,730
Body Yield Strength (psi)	962,000
Joint Strength (psi)	1,025,000
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	1,800
Total Measured Depth	1,800

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

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	5,700
Total Measured Depth	5,700

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)	5,200
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

Production Casing Specifications	
Grade	P-110
Weight/ft (lbs)	20
Thread	BTC
Condition	New
Collapse Strength (psi)	11,080
Internal Yield Strength (psi)	12,640
Body Yield Strength (psi)	641,000
Joint Strength (psi)	667,000
String Weight (lb/ft)	20
OD of Pipe String (in)	5 1/2"
Hole Size (in)	8.75"
Top Setting of Casing (MD)	0'
Total Vertical Depth	9,644
Total Measured Depth	20,428

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)	9,500
BOP System Rating	10,000

Cement Specifications	
Lead	
Top of Cement (MD)	0'

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)	1,800
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)	1,692
Volume	2250

Cement Yield (ft ³ /sk)	1.53
Excess (%)	50
Number of Sacks of Cement (Sks)	1,471
Volume	2,251

Tail	
Top of Cement (MD)	5,200
Bottom of Cement (MD)	5,700
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

Bottom of Cement (MD)	8,500
Cement Type	100% ProLite
Cement Additives	5pps Plexcrete STE + 2% SMS + 0.1% RCKCAS-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)	688
Volume	2,298
Tail	
Top of Cement (MD)	8,500
Bottom of Cement (MD)	20,428
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)	2,248
Volume	3,463

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Action 524705

CONDITIONS

Operator: 3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID: 331569
	Action Number: 524705
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
matthew.gomez	Prior to production of this well a change to the well name/number is required to comply with the OCD well naming convention.	11/12/2025
matthew.gomez	Surface casing shall be set a minimum of 25' into the Rustler Anhydrite, above the salt, and below usable fresh water and cemented to the surface. If salt is encountered set casing at least 25 ft. above the salt.	11/12/2025
matthew.gomez	Any previous COA's not addressed within the updated COA's still apply.	11/12/2025