

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

Form C-101
August 1, 2011
Permit 272694

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

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address COLGATE OPERATING, LLC 306 W Wall Street Midland, TX 79701		2. OGRID Number 371449
4. Property Code 326127		3. API Number 30-015-46300
5. Property Name LADY FRANKLIN 25 STATE		6. Well No. 132H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
D	25	19S	28E		1135	N	265	W	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
H	25	19S	28E	H	2296	N	10	E	Eddy

9. Pool Information

WINCHESTER;BONE SPRING	65010
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3358
16. Multiple N	17. Proposed Depth 13734	18. Formation Bone Spring	19. Contractor	20. Spud Date 11/1/2019
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	950	733	0
Int1	12.25	9.625	36	3050	985	0
Prod	8.5	5.5	20	13734	2588	2050

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	3000	Shaffer
Double Ram	5000	5000	Shaffer

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable. Signature:	OIL CONSERVATION DIVISION
Printed Name: Electronically filed by Mikah Thomas	Approved By: Raymond Podany
Title: Operations Tech	Title: Geologist
Email Address: mthomas@colgateenergy.com	Approved Date: 9/26/2019 Expiration Date: 9/26/2021
Date: 9/25/2019 Phone: 432-695-4272	Conditions of Approval Attached

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-	² Pool Code 65010	³ Pool Name WINCHESTER; BONE SPRING
⁴ Property Code	⁵ Property Name COLGATE OPERATING, LLC	⁶ Well Number 132H
⁷ OGRID No. 371449	⁸ Operator Name COLGATE ENERGY LLC	⁹ Elevation 3358.4

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	25	19 S	28 E		1135	NORTH	265	WEST	EDDY

¹¹ 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
H	25	19 S	28 E		2296	NORTH	10	EAST	EDDY

¹² Dedicated Acres 160.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

N89°25'05"E 2611.74 FT NW CORNER SEC. 25 LAT. = 32.6391151°N LONG. = 104.1389225°W NMSP EAST (FT) N = 596295.72 E = 601180.81 N89°23'56"E 2612.13 FT NE CORNER SEC. 25 LAT. = 32.6392359°N LONG. = 104.1219567°W NMSP EAST (FT) N = 596349.64 E = 606403.13		¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Brian Wood</i> 9-24-19 Signature BRIAN WOOD Date Printed Name brian@permitswest.com E-mail Address 505 466-8120	
1135' SHL 265' FTP LADY FRANKLIN 25 STATE 132H ELEV. = 3358.4' LAT. = 32.6360020°N (NAD83) LONG. = 104.1380576°W NMSP EAST (FT) N = 595163.65 E = 601449.14 GRID BNG. = N89°24'30"E HORIZ. DIST = 5116.27 FT 2296' BOTTOM OF HOLE & LAST TAKE POINT LAT. = 32.6329260°N LONG. = 104.1219740°W NMSP EAST (FT) N = 594054.07 E = 606402.35 BOTTOM OF HOLE & LTP 10'		¹⁸ 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. SEPTEMBER 5, 2019 Date of Survey Signature and Seal of Professional Surveyor: Certificate Number: 12797 PROFESSIONAL SURVEYOR	
W/4 CORNER SEC. 25 LAT. = 32.6318567°N LONG. = 104.1389127°W NMSP EAST (FT) N = 593655.08 E = 601188.65 FIRST TAKE POINT 2296' FNL, 100' FWL LAT. = 32.6328077°N LONG. = 104.1385891°W NMSP EAST (FT) N = 594001.24 E = 601287.65 NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88. S/4 CORNER SEC. 25 LAT. = 32.6246368°N LONG. = 104.1304029°W NMSP EAST (FT) N = 591033.35 E = 603813.37 SE CORNER SEC. 25 LAT. = 32.6246728°N LONG. = 104.1219115°W NMSP EAST (FT) N = 591051.52 E = 606427.58 S89°35'18"W 2614.97 FT S89°36'06"W 2614.91 FT		E/4 CORNER SEC. 25 LAT. = 32.6319766°N LONG. = 104.1219393°W NMSP EAST (FT) N = 593708.69 E = 606413.74 S00°13'49"E 2641.62 FT S00°17'54"E 2657.86 FT	

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Energy, Minerals and Natural Resources
Oil Conservation Division
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Santa Fe, NM 87505

GAS CAPTURE PLAN

Date: 9/26/2019

☒ Original

Operator & OGRID No.: [371449] COLGATE OPERATING, LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
LADY FRANKLIN 25 STATE #132H	30-015-46300	D-25-19S-28E	1135N 0265W	250	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LM Touchdown LLC and will be connected to LM Touchdown LLC Low Pressure gathering system located in Eddy County, New Mexico. It will require 5000' of pipeline to connect the facility to Low Pressure gathering system. COLGATE OPERATING, LLC provides (periodically) to LM Touchdown LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COLGATE OPERATING, LLC and LM Touchdown LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LM Touchdown LLC Processing Plant located in Sec. 25, Twn. 19S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

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

Form APD Comments

Permit 272694

PERMIT COMMENTS

Operator Name and Address: COLGATE OPERATING, LLC [371449] 306 W Wall Street Midland, TX 79701		API Number: 30-015-46300
		Well: LADY FRANKLIN 25 STATE #132H

Created By	Comment	Comment Date
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Form APD Conditions

Permit 272694

PERMIT CONDITIONS OF APPROVAL

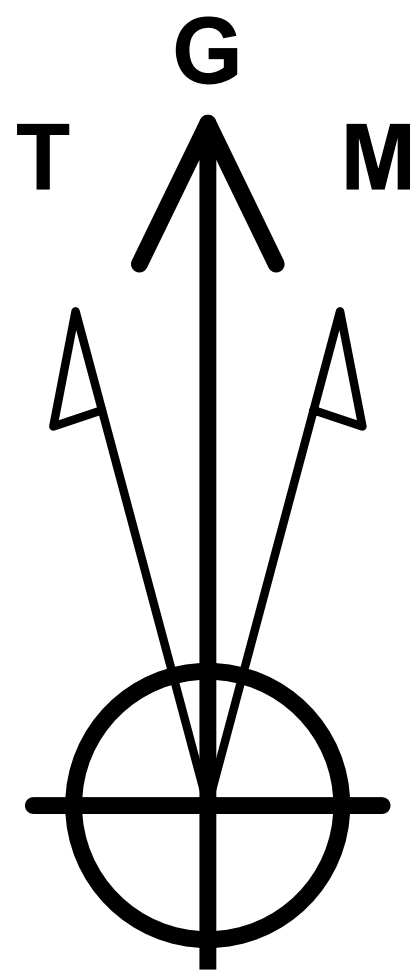
Operator Name and Address: COLGATE OPERATING, LLC [371449] 306 W Wall Street Midland, TX 79701		API Number: 30-015-46300
		Well: LADY FRANKLIN 25 STATE #132H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	



Colgate Energy
Project: Eddy County, NM (N83-NME)
Site: Lady Franklin 25
Well: Lady Franklin 25 State 132H
Wellbore: Permit
Plan: Plan #1

WELL DETAILS: Lady Franklin 25 State 132H

Northing	Easting	Latitude	Longitude	Slot
595163.65	601449.14	32.63600201	-104.13805755	N04



Azimuths to Grid North
True North: -0.10°
Magnetic North: 6.91°

Magnetic Field
Strength: 47896.0snT
Dip Angle: 60.32°
Date: 8/27/2019
Model: IGRF2015

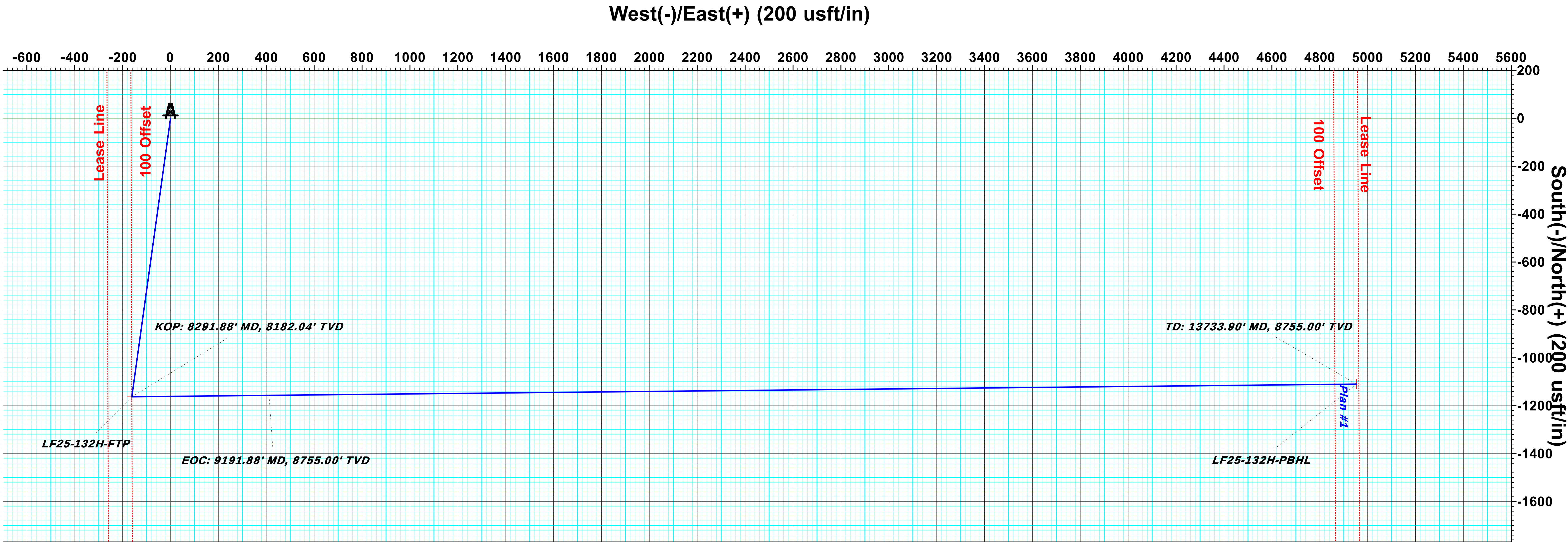
PROJECT DETAILS: Eddy County, NM (N83-NME)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid
KB Elevation: 3358.4+26 @ 3384.40usft (Permit)
Elevation: 3358.40

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
704.40	704.40	Top of Salt
1003.40	1003.40	Base of Salt
2105.40	2117.14	Yates
2701.40	2724.60	Capitan
2941.40	2969.22	Cherry Canyon
3214.40	3247.47	Brushy Canyon
4224.40	4276.90	Bone Spring LM
6605.40	6703.71	1st Bone Spring Sd
7454.40	7564.07	2nd Bone Spring Sd
8504.40	8634.26	3rd Bone Spring Sd

CASING DETAILS

TVD	MD	Name
400.00	400.00	SCP
8000.00	8109.84	ICP

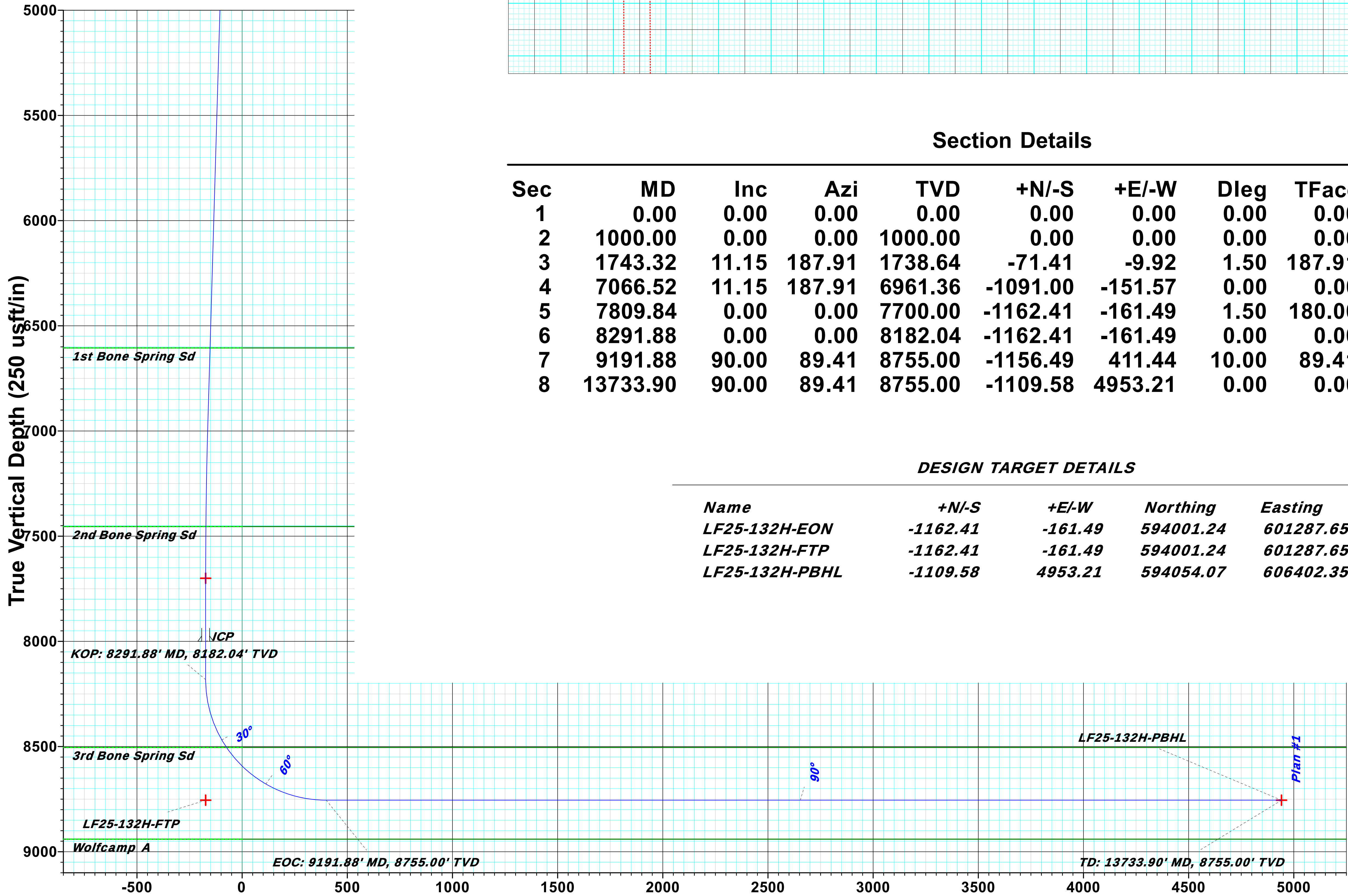


Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00
3	1743.32	11.15	187.91	1738.64	-71.41	-9.92	1.50	187.91	-10.66
4	7066.52	11.15	187.91	6961.36	-1091.00	-151.57	0.00	0.00	-162.80
5	7809.84	0.00	0.00	7700.00	-1162.41	-161.49	1.50	180.00	-173.45
6	8291.88	0.00	0.00	8182.04	-1162.41	-161.49	0.00	0.00	-173.45
7	9191.88	90.00	89.41	8755.00	-1156.49	411.44	10.00	89.41	399.51
8	13733.90	90.00	89.41	8755.00	-1109.58	4953.21	0.00	0.00	4941.52

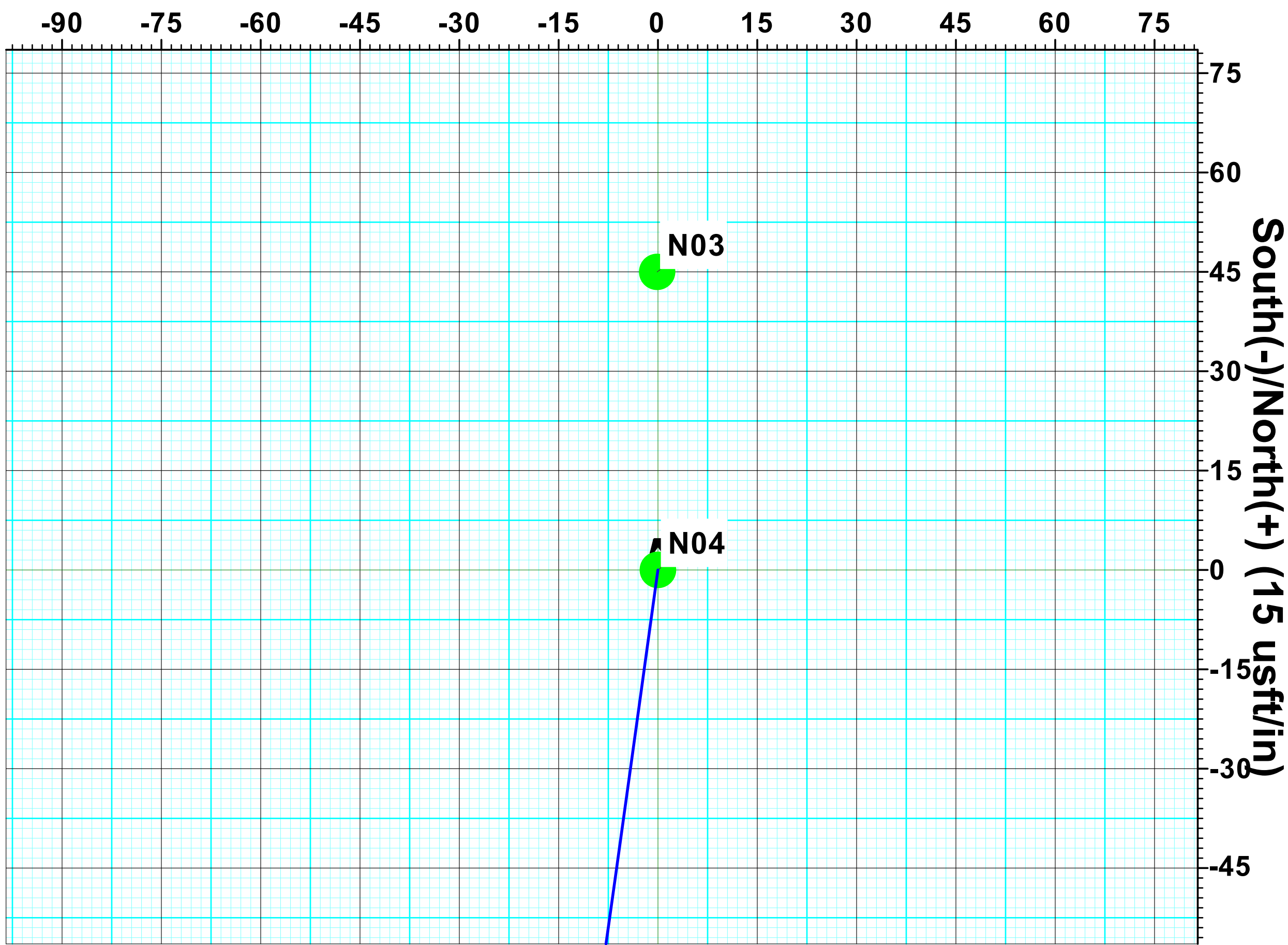
DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting
LF25-132H-EON	-1162.41	-161.49	594001.24	601287.65
LF25-132H-FTP	-1162.41	-161.49	594001.24	601287.65
LF25-132H-PBHL	-1109.58	4953.21	594054.07	606402.35



Vertical Section at 89.41° (250 usft/in)

West(-)/East(+) (15 usft/in)



Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 132H - Slot N04
Company:	Colgate Energy	TVD Reference:	3358.4+26 @ 3384.40usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.4+26 @ 3384.40usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Project	Eddy County, NM (N83-NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Lady Franklin 25			
Site Position:		Northing:	596,295.72 usft	Latitude:	32.63911509
From:	Map	Easting:	601,180.81 usft	Longitude:	-104.13892250
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well	Lady Franklin 25 State 132H - Slot N04					
Well Position	+N/-S	-1,132.07 usft	Northing:	595,163.65 usft	Latitude:	32.63600201
	+E/-W	268.33 usft	Easting:	601,449.14 usft	Longitude:	-104.13805755
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,358.40 usft

Wellbore	Permit				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/27/2019	7.01	60.32	47,895.95881403

Design	Plan #1			
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	89.41

Plan Survey Tool Program	Date	9/16/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,733.90	Plan #1 (Permit)	MWD
			MWD - Standard	

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,743.32	11.15	187.91	1,738.64	-71.41	-9.92	1.50	1.50	0.00	187.91	
7,066.52	11.15	187.91	6,961.36	-1,091.00	-151.57	0.00	0.00	0.00	0.00	
7,809.84	0.00	0.00	7,700.00	-1,162.41	-161.49	1.50	-1.50	0.00	180.00	LF25-132H-EON
8,291.88	0.00	0.00	8,182.04	-1,162.41	-161.49	0.00	0.00	0.00	0.00	
9,191.88	90.00	89.41	8,755.00	-1,156.49	411.44	10.00	10.00	9.93	89.41	
13,733.90	90.00	89.41	8,755.00	-1,109.58	4,953.21	0.00	0.00	0.00	0.00	LF25-132H-PBHL

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 132H - Slot N04
Company:	Colgate Energy	TVD Reference:	3358.4+26 @ 3384.40usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.4+26 @ 3384.40usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

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
SCP									
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
704.40	0.00	0.00	704.40	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
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
1,003.40	0.05	187.91	1,003.40	0.00	0.00	0.00	1.50	1.50	0.00
Base of Salt									
1,100.00	1.50	187.91	1,099.99	-1.30	-0.18	-0.19	1.50	1.50	0.00
1,200.00	3.00	187.91	1,199.91	-5.18	-0.72	-0.77	1.50	1.50	0.00
1,300.00	4.50	187.91	1,299.69	-11.66	-1.62	-1.74	1.50	1.50	0.00
1,400.00	6.00	187.91	1,399.27	-20.73	-2.88	-3.09	1.50	1.50	0.00
1,500.00	7.50	187.91	1,498.57	-32.37	-4.50	-4.83	1.50	1.50	0.00
1,600.00	9.00	187.91	1,597.54	-46.58	-6.47	-6.95	1.50	1.50	0.00
1,700.00	10.50	187.91	1,696.09	-63.35	-8.80	-9.45	1.50	1.50	0.00
1,743.32	11.15	187.91	1,738.64	-71.41	-9.92	-10.66	1.50	1.50	0.00
1,800.00	11.15	187.91	1,794.25	-82.27	-11.43	-12.28	0.00	0.00	0.00
1,900.00	11.15	187.91	1,892.36	-101.42	-14.09	-15.13	0.00	0.00	0.00
2,000.00	11.15	187.91	1,990.47	-120.58	-16.75	-17.99	0.00	0.00	0.00
2,100.00	11.15	187.91	2,088.58	-139.73	-19.41	-20.85	0.00	0.00	0.00
2,117.14	11.15	187.91	2,105.40	-143.01	-19.87	-21.34	0.00	0.00	0.00
Yates									
2,200.00	11.15	187.91	2,186.70	-158.88	-22.07	-23.71	0.00	0.00	0.00
2,300.00	11.15	187.91	2,284.81	-178.04	-24.73	-26.57	0.00	0.00	0.00
2,400.00	11.15	187.91	2,382.92	-197.19	-27.39	-29.42	0.00	0.00	0.00
2,500.00	11.15	187.91	2,481.03	-216.34	-30.06	-32.28	0.00	0.00	0.00
2,600.00	11.15	187.91	2,579.15	-235.50	-32.72	-35.14	0.00	0.00	0.00
2,700.00	11.15	187.91	2,677.26	-254.65	-35.38	-38.00	0.00	0.00	0.00
2,724.60	11.15	187.91	2,701.40	-259.36	-36.03	-38.70	0.00	0.00	0.00
Capitan									
2,800.00	11.15	187.91	2,775.37	-273.80	-38.04	-40.86	0.00	0.00	0.00
2,900.00	11.15	187.91	2,873.48	-292.96	-40.70	-43.71	0.00	0.00	0.00
2,969.22	11.15	187.91	2,941.40	-306.22	-42.54	-45.69	0.00	0.00	0.00
Cherry Canyon									
3,000.00	11.15	187.91	2,971.60	-312.11	-43.36	-46.57	0.00	0.00	0.00
3,100.00	11.15	187.91	3,069.71	-331.27	-46.02	-49.43	0.00	0.00	0.00
3,200.00	11.15	187.91	3,167.82	-350.42	-48.68	-52.29	0.00	0.00	0.00
3,247.47	11.15	187.91	3,214.40	-359.51	-49.95	-53.65	0.00	0.00	0.00
Brushy Canyon									
3,300.00	11.15	187.91	3,265.93	-369.57	-51.34	-55.15	0.00	0.00	0.00
3,400.00	11.15	187.91	3,364.05	-388.73	-54.00	-58.00	0.00	0.00	0.00
3,500.00	11.15	187.91	3,462.16	-407.88	-56.67	-60.86	0.00	0.00	0.00
3,600.00	11.15	187.91	3,560.27	-427.03	-59.33	-63.72	0.00	0.00	0.00
3,700.00	11.15	187.91	3,658.38	-446.19	-61.99	-66.58	0.00	0.00	0.00
3,800.00	11.15	187.91	3,756.50	-465.34	-64.65	-69.44	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 132H - Slot N04
Company:	Colgate Energy	TVD Reference:	3358.4+26 @ 3384.40usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.4+26 @ 3384.40usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

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)
3,900.00	11.15	187.91	3,854.61	-484.49	-67.31	-72.29	0.00	0.00	0.00
4,000.00	11.15	187.91	3,952.72	-503.65	-69.97	-75.15	0.00	0.00	0.00
4,100.00	11.15	187.91	4,050.83	-522.80	-72.63	-78.01	0.00	0.00	0.00
4,200.00	11.15	187.91	4,148.95	-541.96	-75.29	-80.87	0.00	0.00	0.00
4,276.90	11.15	187.91	4,224.40	-556.69	-77.34	-83.07	0.00	0.00	0.00
Bone Spring LM									
4,300.00	11.15	187.91	4,247.06	-561.11	-77.95	-83.73	0.00	0.00	0.00
4,400.00	11.15	187.91	4,345.17	-580.26	-80.61	-86.58	0.00	0.00	0.00
4,500.00	11.15	187.91	4,443.28	-599.42	-83.28	-89.44	0.00	0.00	0.00
4,600.00	11.15	187.91	4,541.40	-618.57	-85.94	-92.30	0.00	0.00	0.00
4,700.00	11.15	187.91	4,639.51	-637.72	-88.60	-95.16	0.00	0.00	0.00
4,800.00	11.15	187.91	4,737.62	-656.88	-91.26	-98.02	0.00	0.00	0.00
4,900.00	11.15	187.91	4,835.73	-676.03	-93.92	-100.88	0.00	0.00	0.00
5,000.00	11.15	187.91	4,933.85	-695.18	-96.58	-103.73	0.00	0.00	0.00
5,100.00	11.15	187.91	5,031.96	-714.34	-99.24	-106.59	0.00	0.00	0.00
5,200.00	11.15	187.91	5,130.07	-733.49	-101.90	-109.45	0.00	0.00	0.00
5,300.00	11.15	187.91	5,228.18	-752.65	-104.56	-112.31	0.00	0.00	0.00
5,400.00	11.15	187.91	5,326.30	-771.80	-107.22	-115.17	0.00	0.00	0.00
5,500.00	11.15	187.91	5,424.41	-790.95	-109.88	-118.02	0.00	0.00	0.00
5,600.00	11.15	187.91	5,522.52	-810.11	-112.55	-120.88	0.00	0.00	0.00
5,700.00	11.15	187.91	5,620.63	-829.26	-115.21	-123.74	0.00	0.00	0.00
5,800.00	11.15	187.91	5,718.75	-848.41	-117.87	-126.60	0.00	0.00	0.00
5,900.00	11.15	187.91	5,816.86	-867.57	-120.53	-129.46	0.00	0.00	0.00
6,000.00	11.15	187.91	5,914.97	-886.72	-123.19	-132.31	0.00	0.00	0.00
6,100.00	11.15	187.91	6,013.08	-905.87	-125.85	-135.17	0.00	0.00	0.00
6,200.00	11.15	187.91	6,111.20	-925.03	-128.51	-138.03	0.00	0.00	0.00
6,300.00	11.15	187.91	6,209.31	-944.18	-131.17	-140.89	0.00	0.00	0.00
6,400.00	11.15	187.91	6,307.42	-963.34	-133.83	-143.75	0.00	0.00	0.00
6,500.00	11.15	187.91	6,405.53	-982.49	-136.49	-146.60	0.00	0.00	0.00
6,600.00	11.15	187.91	6,503.65	-1,001.64	-139.16	-149.46	0.00	0.00	0.00
6,700.00	11.15	187.91	6,601.76	-1,020.80	-141.82	-152.32	0.00	0.00	0.00
6,703.71	11.15	187.91	6,605.40	-1,021.51	-141.91	-152.43	0.00	0.00	0.00
1st Bone Spring Sd									
6,800.00	11.15	187.91	6,699.87	-1,039.95	-144.48	-155.18	0.00	0.00	0.00
6,900.00	11.15	187.91	6,797.98	-1,059.10	-147.14	-158.04	0.00	0.00	0.00
7,000.00	11.15	187.91	6,896.10	-1,078.26	-149.80	-160.89	0.00	0.00	0.00
7,066.52	11.15	187.91	6,961.36	-1,091.00	-151.57	-162.80	0.00	0.00	0.00
7,100.00	10.65	187.91	6,994.24	-1,097.27	-152.44	-163.73	1.50	-1.50	0.00
7,200.00	9.15	187.91	7,092.75	-1,114.29	-154.81	-166.27	1.50	-1.50	0.00
7,300.00	7.65	187.91	7,191.67	-1,128.76	-156.81	-168.43	1.50	-1.50	0.00
7,400.00	6.15	187.91	7,290.94	-1,140.65	-158.47	-170.20	1.50	-1.50	0.00
7,500.00	4.65	187.91	7,390.50	-1,149.97	-159.76	-171.59	1.50	-1.50	0.00
7,564.07	3.69	187.91	7,454.40	-1,154.58	-160.40	-172.28	1.50	-1.50	0.00
2nd Bone Spring Sd									
7,600.00	3.15	187.91	7,490.26	-1,156.70	-160.70	-172.60	1.50	-1.50	0.00
7,700.00	1.65	187.91	7,590.17	-1,160.85	-161.27	-173.22	1.50	-1.50	0.00
7,809.84	0.00	0.00	7,700.00	-1,162.41	-161.49	-173.45	1.50	-1.50	0.00
LF25-132H-EON									
7,900.00	0.00	0.00	7,790.16	-1,162.41	-161.49	-173.45	0.00	0.00	0.00
8,000.00	0.00	0.00	7,890.16	-1,162.41	-161.49	-173.45	0.00	0.00	0.00
8,100.00	0.00	0.00	7,990.16	-1,162.41	-161.49	-173.45	0.00	0.00	0.00
8,109.84	0.00	0.00	8,000.00	-1,162.41	-161.49	-173.45	0.00	0.00	0.00
ICP									
8,200.00	0.00	0.00	8,090.16	-1,162.41	-161.49	-173.45	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 132H - Slot N04
Company:	Colgate Energy	TVD Reference:	3358.4+26 @ 3384.40usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.4+26 @ 3384.40usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

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)
8,291.88	0.00	0.00	8,182.04	-1,162.41	-161.49	-173.45	0.00	0.00	0.00
KOP: 8291.88' MD, 8182.04' TVD									
8,300.00	0.81	89.41	8,190.16	-1,162.41	-161.43	-173.39	10.00	10.00	0.00
8,350.00	5.81	89.41	8,240.06	-1,162.38	-158.55	-170.51	10.00	10.00	0.00
8,400.00	10.81	89.41	8,289.52	-1,162.30	-151.32	-163.28	10.00	10.00	0.00
8,450.00	15.81	89.41	8,338.16	-1,162.19	-139.81	-151.77	10.00	10.00	0.00
8,500.00	20.81	89.41	8,385.61	-1,162.02	-124.11	-136.07	10.00	10.00	0.00
8,550.00	25.81	89.41	8,431.52	-1,161.82	-104.33	-116.29	10.00	10.00	0.00
8,600.00	30.81	89.41	8,475.52	-1,161.57	-80.62	-92.58	10.00	10.00	0.00
8,634.26	34.24	89.41	8,504.40	-1,161.38	-62.21	-74.16	10.00	10.00	0.00
3rd Bone Spring Sd									
8,650.00	35.81	89.41	8,517.29	-1,161.29	-53.17	-65.13	10.00	10.00	0.00
8,700.00	40.81	89.41	8,556.51	-1,160.97	-22.19	-34.14	10.00	10.00	0.00
8,748.88	45.70	89.41	8,592.10	-1,160.63	11.30	-0.66	10.00	10.00	0.00
LF25-132H-FTP									
8,750.00	45.81	89.41	8,592.88	-1,160.62	12.10	0.15	10.00	10.00	0.00
8,800.00	50.81	89.41	8,626.13	-1,160.23	49.42	37.47	10.00	10.00	0.00
8,850.00	55.81	89.41	8,655.99	-1,159.82	89.50	77.55	10.00	10.00	0.00
8,900.00	60.81	89.41	8,682.25	-1,159.38	132.03	120.09	10.00	10.00	0.00
8,950.00	65.81	89.41	8,704.69	-1,158.92	176.69	164.75	10.00	10.00	0.00
9,000.00	70.81	89.41	8,723.17	-1,158.44	223.13	211.19	10.00	10.00	0.00
9,050.00	75.81	89.41	8,737.52	-1,157.94	271.01	259.07	10.00	10.00	0.00
9,100.00	80.81	89.41	8,747.65	-1,157.44	319.95	308.02	10.00	10.00	0.00
9,150.00	85.81	89.41	8,753.47	-1,156.92	369.59	357.66	10.00	10.00	0.00
9,191.88	90.00	89.41	8,755.00	-1,156.49	411.44	399.50	10.00	10.00	0.00
EOC: 9191.88' MD, 8755.00' TVD									
9,200.00	90.00	89.41	8,755.00	-1,156.41	419.55	407.62	0.00	0.00	0.00
9,300.00	90.00	89.41	8,755.00	-1,155.38	519.55	507.62	0.00	0.00	0.00
9,400.00	90.00	89.41	8,755.00	-1,154.34	619.54	607.62	0.00	0.00	0.00
9,500.00	90.00	89.41	8,755.00	-1,153.31	719.54	707.62	0.00	0.00	0.00
9,600.00	90.00	89.41	8,755.00	-1,152.28	819.53	807.62	0.00	0.00	0.00
9,700.00	90.00	89.41	8,755.00	-1,151.24	919.53	907.62	0.00	0.00	0.00
9,800.00	90.00	89.41	8,755.00	-1,150.21	1,019.52	1,007.62	0.00	0.00	0.00
9,900.00	90.00	89.41	8,755.00	-1,149.18	1,119.52	1,107.62	0.00	0.00	0.00
10,000.00	90.00	89.41	8,755.00	-1,148.15	1,219.51	1,207.62	0.00	0.00	0.00
10,100.00	90.00	89.41	8,755.00	-1,147.11	1,319.51	1,307.62	0.00	0.00	0.00
10,200.00	90.00	89.41	8,755.00	-1,146.08	1,419.50	1,407.62	0.00	0.00	0.00
10,300.00	90.00	89.41	8,755.00	-1,145.05	1,519.50	1,507.62	0.00	0.00	0.00
10,400.00	90.00	89.41	8,755.00	-1,144.01	1,619.49	1,607.62	0.00	0.00	0.00
10,500.00	90.00	89.41	8,755.00	-1,142.98	1,719.49	1,707.62	0.00	0.00	0.00
10,600.00	90.00	89.41	8,755.00	-1,141.95	1,819.48	1,807.62	0.00	0.00	0.00
10,700.00	90.00	89.41	8,755.00	-1,140.92	1,919.47	1,907.62	0.00	0.00	0.00
10,800.00	90.00	89.41	8,755.00	-1,139.88	2,019.47	2,007.62	0.00	0.00	0.00
10,900.00	90.00	89.41	8,755.00	-1,138.85	2,119.46	2,107.62	0.00	0.00	0.00
11,000.00	90.00	89.41	8,755.00	-1,137.82	2,219.46	2,207.62	0.00	0.00	0.00
11,100.00	90.00	89.41	8,755.00	-1,136.78	2,319.45	2,307.62	0.00	0.00	0.00
11,200.00	90.00	89.41	8,755.00	-1,135.75	2,419.45	2,407.62	0.00	0.00	0.00
11,300.00	90.00	89.41	8,755.00	-1,134.72	2,519.44	2,507.62	0.00	0.00	0.00
11,400.00	90.00	89.41	8,755.00	-1,133.69	2,619.44	2,607.62	0.00	0.00	0.00
11,500.00	90.00	89.41	8,755.00	-1,132.65	2,719.43	2,707.62	0.00	0.00	0.00
11,600.00	90.00	89.41	8,755.00	-1,131.62	2,819.43	2,807.62	0.00	0.00	0.00
11,700.00	90.00	89.41	8,755.00	-1,130.59	2,919.42	2,907.62	0.00	0.00	0.00
11,800.00	90.00	89.41	8,755.00	-1,129.55	3,019.42	3,007.62	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 132H - Slot N04
Company:	Colgate Energy	TVD Reference:	3358.4+26 @ 3384.40usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.4+26 @ 3384.40usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

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)	
11,900.00	90.00	89.41	8,755.00	-1,128.52	3,119.41	3,107.62	0.00	0.00	0.00	
12,000.00	90.00	89.41	8,755.00	-1,127.49	3,219.41	3,207.62	0.00	0.00	0.00	
12,100.00	90.00	89.41	8,755.00	-1,126.46	3,319.40	3,307.62	0.00	0.00	0.00	
12,200.00	90.00	89.41	8,755.00	-1,125.42	3,419.39	3,407.62	0.00	0.00	0.00	
12,300.00	90.00	89.41	8,755.00	-1,124.39	3,519.39	3,507.62	0.00	0.00	0.00	
12,400.00	90.00	89.41	8,755.00	-1,123.36	3,619.38	3,607.62	0.00	0.00	0.00	
12,500.00	90.00	89.41	8,755.00	-1,122.32	3,719.38	3,707.62	0.00	0.00	0.00	
12,600.00	90.00	89.41	8,755.00	-1,121.29	3,819.37	3,807.62	0.00	0.00	0.00	
12,700.00	90.00	89.41	8,755.00	-1,120.26	3,919.37	3,907.62	0.00	0.00	0.00	
12,800.00	90.00	89.41	8,755.00	-1,119.23	4,019.36	4,007.62	0.00	0.00	0.00	
12,900.00	90.00	89.41	8,755.00	-1,118.19	4,119.36	4,107.62	0.00	0.00	0.00	
13,000.00	90.00	89.41	8,755.00	-1,117.16	4,219.35	4,207.62	0.00	0.00	0.00	
13,100.00	90.00	89.41	8,755.00	-1,116.13	4,319.35	4,307.62	0.00	0.00	0.00	
13,200.00	90.00	89.41	8,755.00	-1,115.09	4,419.34	4,407.62	0.00	0.00	0.00	
13,300.00	90.00	89.41	8,755.00	-1,114.06	4,519.34	4,507.62	0.00	0.00	0.00	
13,400.00	90.00	89.41	8,755.00	-1,113.03	4,619.33	4,607.62	0.00	0.00	0.00	
13,500.00	90.00	89.41	8,755.00	-1,112.00	4,719.33	4,707.62	0.00	0.00	0.00	
13,600.00	90.00	89.41	8,755.00	-1,110.96	4,819.32	4,807.62	0.00	0.00	0.00	
13,700.00	90.00	89.41	8,755.00	-1,109.93	4,919.31	4,907.62	0.00	0.00	0.00	
13,733.90	90.00	89.41	8,755.00	-1,109.58	4,953.21	4,941.52	0.00	0.00	0.00	
TD: 13733.90' MD, 8755.00' TVD - LF25-132H-PBHL										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LF25-132H-EON - hit/miss target - Shape - Point	0.00	0.00	7,700.00	-1,162.41	-161.49	594,001.24	601,287.65	32.63280769	-104.13858908
LF25-132H-PBHL - plan hits target center - Point	0.00	0.00	8,755.00	-1,109.58	4,953.21	594,054.07	606,402.35	32.63292604	-104.12197405
LF25-132H-FTP - plan misses target center by 237.47usft at 8748.88usft MD (8592.10 TVD, -1160.63 N, 11.30 E) - Point	0.00	0.00	8,755.00	-1,162.41	-161.49	594,001.24	601,287.65	32.63280769	-104.13858908

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
400.00	400.00	SCP	0	0	
8,109.84	8,000.00	ICP	0	0	

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 132H - Slot N04
Company:	Colgate Energy	TVD Reference:	3358.4+26 @ 3384.40usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.4+26 @ 3384.40usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
704.40	704.40	Top of Salt				
1,003.40	1,003.40	Base of Salt				
2,117.14	2,105.40	Yates				
2,724.60	2,701.40	Capitan				
2,969.22	2,941.40	Cherry Canyon				
3,247.47	3,214.40	Brushy Canyon				
4,276.90	4,224.40	Bone Spring LM				
6,703.71	6,605.40	1st Bone Spring Sd				
7,564.07	7,454.40	2nd Bone Spring Sd				
8,634.26	8,504.40	3rd Bone Spring Sd				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
8,291.88	8,182.04	-1,162.41	-161.49	KOP: 8291.88' MD, 8182.04' TVD	
9,191.88	8,755.00	-1,156.49	411.44	EOC: 9191.88' MD, 8755.00' TVD	
13,733.90	8,755.00	-1,109.58	4,953.21	TD: 13733.90' MD, 8755.00' TVD	