

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 272614

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 30-015-46298
5. Property Name LADY FRANKLIN 25 STATE		6. Well No. 121H

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		1000	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
A	25	19S	28E	A	770	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 12486	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	12486	2313	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

[illegible]

Intent **YES** As Drilled ☐

API #

Operator Name: COLGATE OPERATING, LLC	Property Name: LADY FRANKLIN 25 STATE	Well Number 121H
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Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude			NAD	

First Take Point (FTP)

UL D	Section 25	Township 19S	Range 28E	Lot	Feet 770	From N/S NORTH	Feet 100	From E/W WEST	County EDDY
Latitude 32.6370013					Longitude 104.1385949			NAD 83	

Last Take Point (LTP)

UL A	Section 25	Township 19S	Range 28E	Lot	Feet 770	From N/S NORTH	Feet 10	From E/W EAST	County EDDY
Latitude 32.6371196					Longitude 104.1219841			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? **YES**

Is this well an infill well? **NO**

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number
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KZ 06/29/2018

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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 #121H	30-015-46298	D-25-19S-28E	1000N 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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Energy, Minerals and Natural Resources

Oil Conservation Division

1220 S. St Francis Dr.

Santa Fe, NM 87505

Form APD Comments

Permit 272614

PERMIT COMMENTS

Operator Name and Address: COLGATE OPERATING, LLC [371449] 306 W Wall Street Midland, TX 79701		API Number: 30-015-46298
		Well: LADY FRANKLIN 25 STATE #121H
Created By	Comment	Comment Date
rpodany	Inaccurate submittal. Under completion - 2 different locations given. BHL=BHL	9/25/2019

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Form APD Conditions

Permit 272614

PERMIT CONDITIONS OF APPROVAL

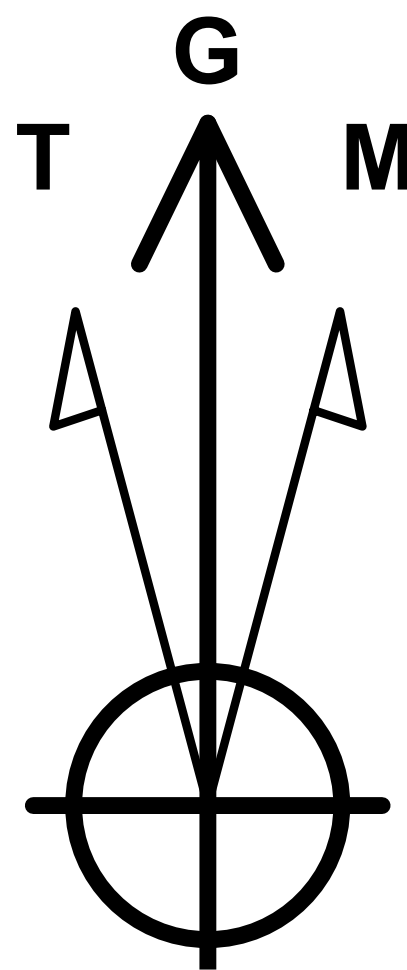
Operator Name and Address:		API Number:
COLGATE OPERATING, LLC [371449]		30-015-46298
306 W Wall Street		Well:
Midland, TX 79701		LADY FRANKLIN 25 STATE #121H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	



Colgate Energy
Project: Eddy County, NM (N83-NME)
Site: Lady Franklin 25
Well: Lady Franklin 25 State 121H
Wellbore: Permit
Plan: Plan #1

WELL DETAILS: Lady Franklin 25 State 121H

Northing	Easting	Latitude	Longitude	Slot
595298.65	601448.73	32.63637309	-104.13805807	N01



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

Magnetic Field
Strength: 47896.2snT
Dip Angle: 60.32°
Date: 8/27/2019
Model: IGRF2015

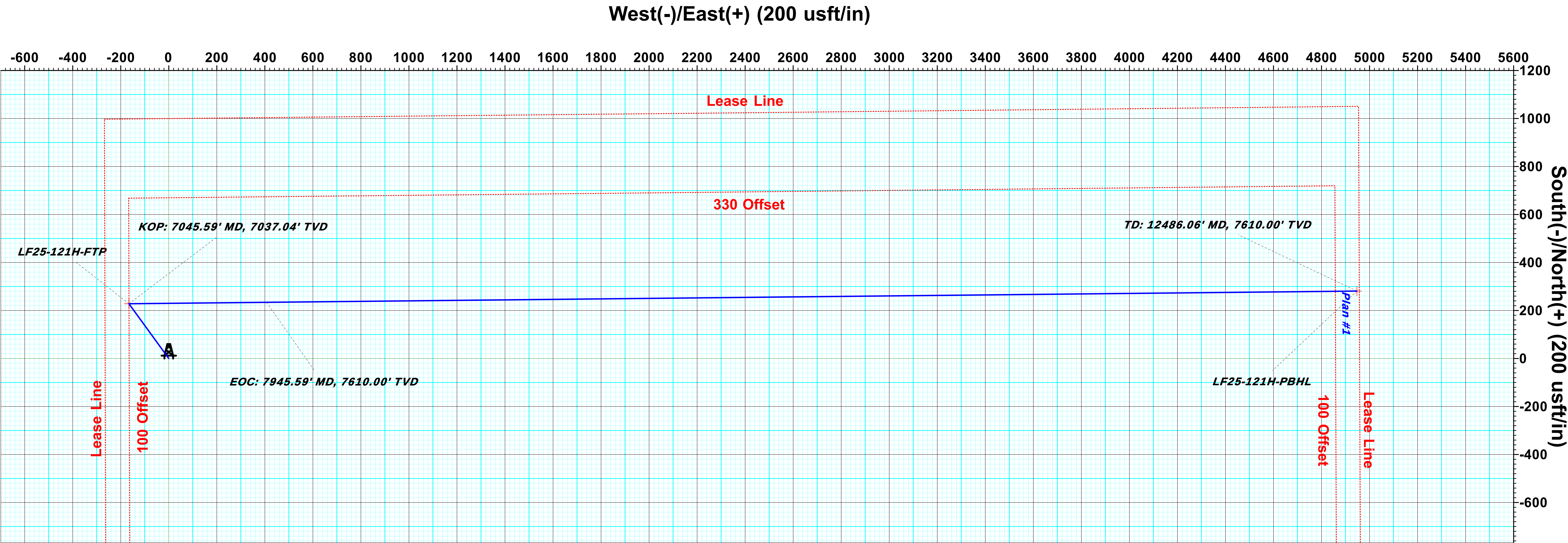
PROJECT DETAILS: Eddy County, NM (N83-NME)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid
KB Elevation: 3358.6+26 @ 3384.60usft (Permit)
Elevation: 3358.60

FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
704.60	704.60	Top of Salt
1003.60	1003.60	Base of Salt
2105.60	2107.03	Yates
2701.60	2704.16	Capitan
2941.60	2944.62	Cherry Canyon
3214.60	3218.14	Brushy Canyon
4224.60	4230.07	Bone Spring LM
6605.60	6614.15	1st Bone Spring Sd
7454.60	7513.44	2nd Bone Spring Sd

CASING DETAILS

TVD	MD	NAME
400.00	400.00	SCP
3200.00	3203.51	ICP

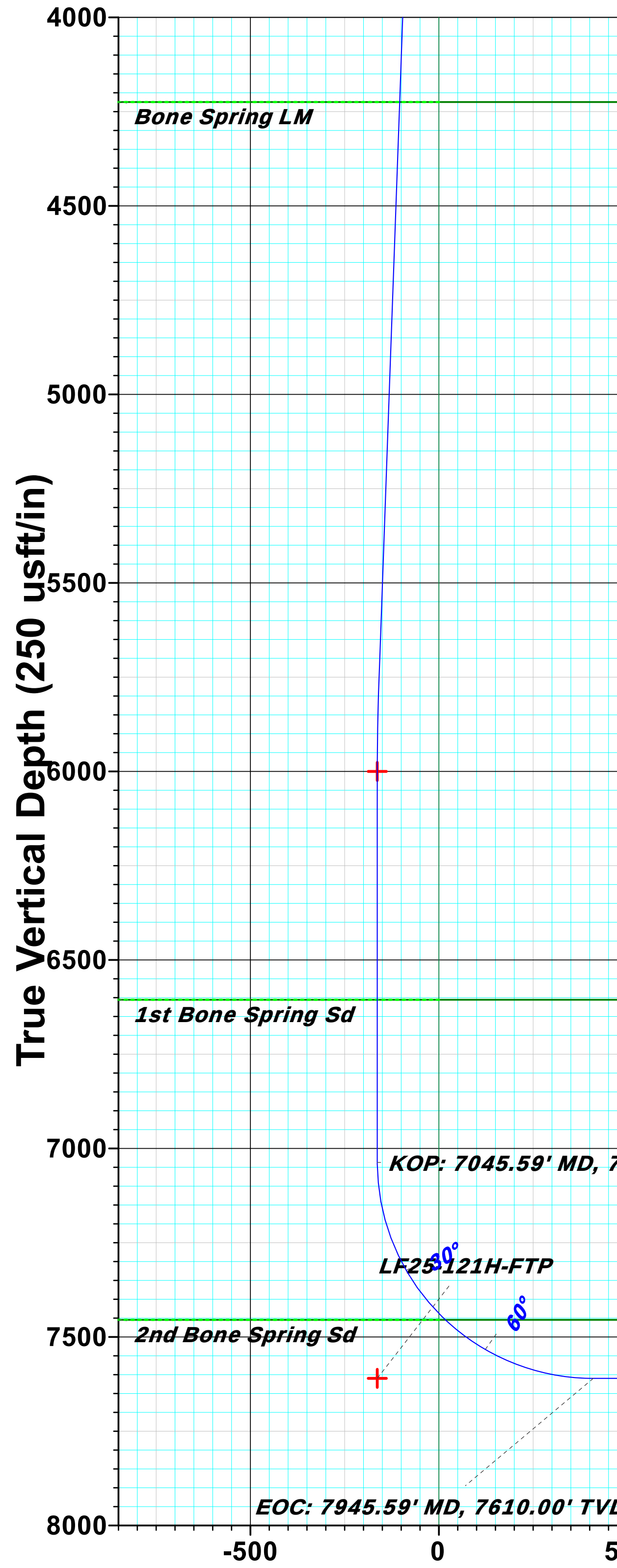


Section Details

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	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00
3	1435.71	3.54	324.03	1435.56	5.88	-4.27	1.50	324.03	-4.21
4	5772.84	3.54	324.03	5764.44	222.35	-161.39	0.00	0.00	-159.09
5	6008.55	0.00	0.00	6000.00	228.23	-165.66	1.50	180.00	-163.30
6	7045.59	0.00	0.00	7037.04	228.23	-165.66	0.00	0.00	-163.30
7	7945.59	90.00	89.41	7610.00	234.15	407.27	10.00	89.41	409.66
8	12486.06	90.00	89.41	7610.00	281.06	4947.49	0.00	0.00	4950.12

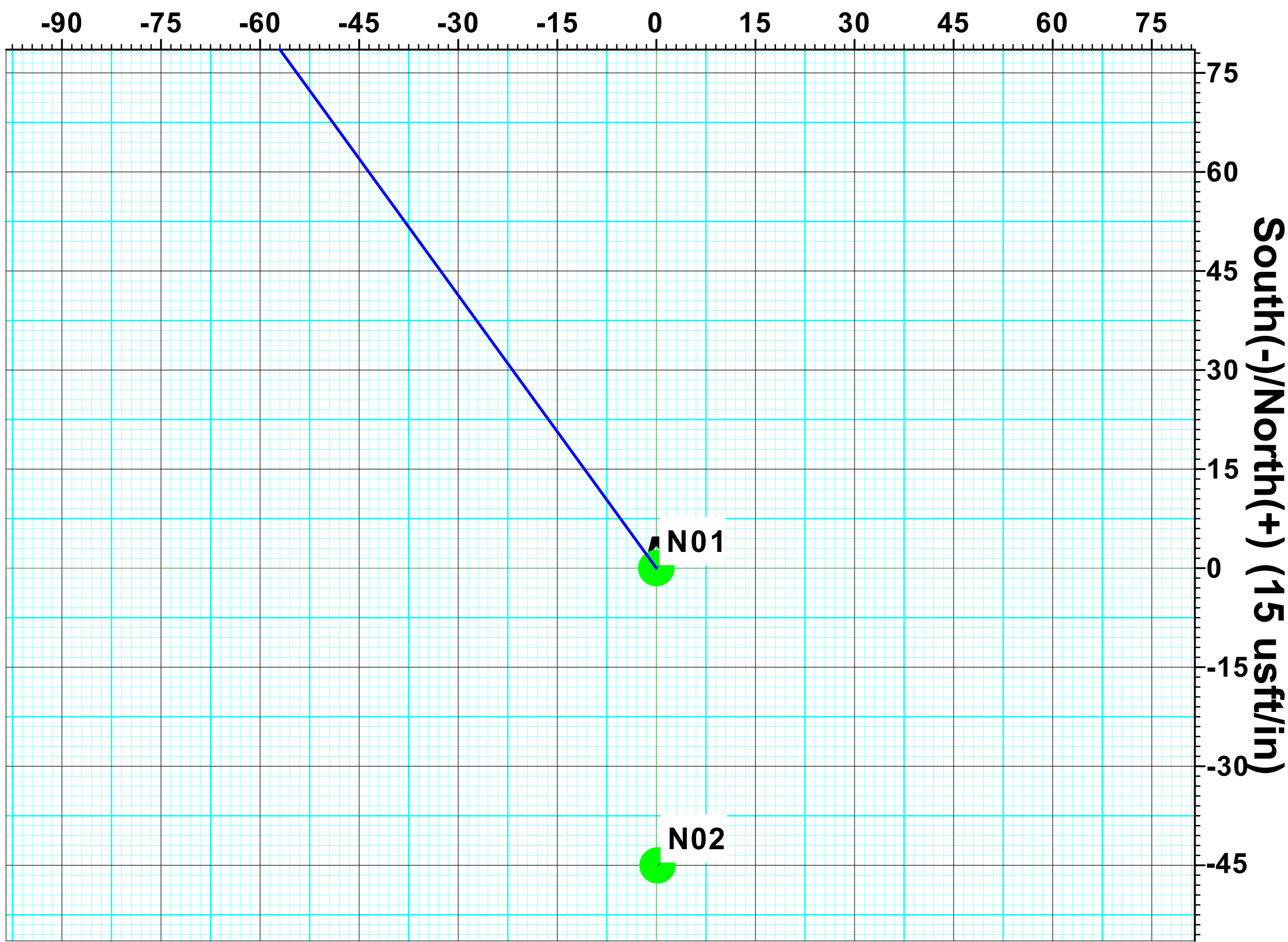
DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting
LF25-121H-EON	228.23	-165.66	595526.88	601283.07
LF25-121H-FTP	228.24	-165.67	595526.89	601283.06
LF25-121H-PBHL	281.06	4947.49	595579.71	606396.22



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 121H - Slot N01
Company:	Colgate Energy	TVD Reference:	3358.6+26 @ 3384.60usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.6+26 @ 3384.60usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 121H	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 121H - Slot N01					
Well Position	+N/-S	-997.07 usft	Northing:	595,298.65 usft	Latitude:	32.63637308
	+E/-W	267.92 usft	Easting:	601,448.73 usft	Longitude:	-104.13805808
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,358.60 usft

Wellbore	Permit				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/27/2019	7.01	60.32	47,896.17557806

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	12,486.06	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	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,435.71	3.54	324.03	1,435.56	5.88	-4.27	1.50	1.50	0.00	324.03	
5,772.84	3.54	324.03	5,764.44	222.35	-161.39	0.00	0.00	0.00	0.00	
6,008.55	0.00	0.00	6,000.00	228.23	-165.66	1.50	-1.50	0.00	180.00	LF25-121H-EON
7,045.59	0.00	0.00	7,037.04	228.23	-165.66	0.00	0.00	0.00	0.00	
7,945.59	90.00	89.41	7,610.00	234.15	407.27	10.00	10.00	9.93	89.41	
12,486.06	90.00	89.41	7,610.00	281.06	4,947.49	0.00	0.00	0.00	0.00	LF25-121H-PBHL

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 121H - Slot N01
Company:	Colgate Energy	TVD Reference:	3358.6+26 @ 3384.60usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.6+26 @ 3384.60usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 121H	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
704.60	0.00	0.00	704.60	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
1,003.60	0.00	0.00	1,003.60	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
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	1.50	324.03	1,299.99	1.06	-0.77	-0.76	1.50	1.50	0.00
1,400.00	3.00	324.03	1,399.91	4.24	-3.08	-3.03	1.50	1.50	0.00
1,435.71	3.54	324.03	1,435.56	5.88	-4.27	-4.21	1.50	1.50	0.00
1,500.00	3.54	324.03	1,499.73	9.09	-6.60	-6.51	0.00	0.00	0.00
1,600.00	3.54	324.03	1,599.54	14.08	-10.22	-10.08	0.00	0.00	0.00
1,700.00	3.54	324.03	1,699.35	19.07	-13.84	-13.65	0.00	0.00	0.00
1,800.00	3.54	324.03	1,799.16	24.07	-17.47	-17.22	0.00	0.00	0.00
1,900.00	3.54	324.03	1,898.97	29.06	-21.09	-20.79	0.00	0.00	0.00
2,000.00	3.54	324.03	1,998.78	34.05	-24.71	-24.36	0.00	0.00	0.00
2,100.00	3.54	324.03	2,098.59	39.04	-28.34	-27.93	0.00	0.00	0.00
2,107.03	3.54	324.03	2,105.60	39.39	-28.59	-28.18	0.00	0.00	0.00
Yates									
2,200.00	3.54	324.03	2,198.40	44.03	-31.96	-31.50	0.00	0.00	0.00
2,300.00	3.54	324.03	2,298.21	49.02	-35.58	-35.07	0.00	0.00	0.00
2,400.00	3.54	324.03	2,398.02	54.01	-39.20	-38.65	0.00	0.00	0.00
2,500.00	3.54	324.03	2,497.82	59.00	-42.83	-42.22	0.00	0.00	0.00
2,600.00	3.54	324.03	2,597.63	63.99	-46.45	-45.79	0.00	0.00	0.00
2,700.00	3.54	324.03	2,697.44	68.98	-50.07	-49.36	0.00	0.00	0.00
2,704.16	3.54	324.03	2,701.60	69.19	-50.22	-49.51	0.00	0.00	0.00
Capitan									
2,800.00	3.54	324.03	2,797.25	73.97	-53.69	-52.93	0.00	0.00	0.00
2,900.00	3.54	324.03	2,897.06	78.97	-57.32	-56.50	0.00	0.00	0.00
2,944.62	3.54	324.03	2,941.60	81.19	-58.93	-58.09	0.00	0.00	0.00
Cherry Canyon									
3,000.00	3.54	324.03	2,996.87	83.96	-60.94	-60.07	0.00	0.00	0.00
3,100.00	3.54	324.03	3,096.68	88.95	-64.56	-63.64	0.00	0.00	0.00
3,200.00	3.54	324.03	3,196.49	93.94	-68.18	-67.21	0.00	0.00	0.00
3,203.51	3.54	324.03	3,200.00	94.11	-68.31	-67.34	0.00	0.00	0.00
ICP									
3,218.14	3.54	324.03	3,214.60	94.84	-68.84	-67.86	0.00	0.00	0.00
Brushy Canyon									
3,300.00	3.54	324.03	3,296.30	98.93	-71.81	-70.78	0.00	0.00	0.00
3,400.00	3.54	324.03	3,396.11	103.92	-75.43	-74.36	0.00	0.00	0.00
3,500.00	3.54	324.03	3,495.92	108.91	-79.05	-77.93	0.00	0.00	0.00
3,600.00	3.54	324.03	3,595.73	113.90	-82.68	-81.50	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 121H - Slot N01
Company:	Colgate Energy	TVD Reference:	3358.6+26 @ 3384.60usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.6+26 @ 3384.60usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 121H	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)
3,700.00	3.54	324.03	3,695.54	118.89	-86.30	-85.07	0.00	0.00	0.00
3,800.00	3.54	324.03	3,795.35	123.88	-89.92	-88.64	0.00	0.00	0.00
3,900.00	3.54	324.03	3,895.16	128.87	-93.54	-92.21	0.00	0.00	0.00
4,000.00	3.54	324.03	3,994.97	133.87	-97.17	-95.78	0.00	0.00	0.00
4,100.00	3.54	324.03	4,094.78	138.86	-100.79	-99.35	0.00	0.00	0.00
4,200.00	3.54	324.03	4,194.59	143.85	-104.41	-102.92	0.00	0.00	0.00
4,230.07	3.54	324.03	4,224.60	145.35	-105.50	-104.00	0.00	0.00	0.00
Bone Spring LM									
4,300.00	3.54	324.03	4,294.40	148.84	-108.03	-106.50	0.00	0.00	0.00
4,400.00	3.54	324.03	4,394.21	153.83	-111.66	-110.07	0.00	0.00	0.00
4,500.00	3.54	324.03	4,494.02	158.82	-115.28	-113.64	0.00	0.00	0.00
4,600.00	3.54	324.03	4,593.83	163.81	-118.90	-117.21	0.00	0.00	0.00
4,700.00	3.54	324.03	4,693.64	168.80	-122.52	-120.78	0.00	0.00	0.00
4,800.00	3.54	324.03	4,793.45	173.79	-126.15	-124.35	0.00	0.00	0.00
4,900.00	3.54	324.03	4,893.26	178.78	-129.77	-127.92	0.00	0.00	0.00
5,000.00	3.54	324.03	4,993.07	183.77	-133.39	-131.49	0.00	0.00	0.00
5,100.00	3.54	324.03	5,092.88	188.77	-137.01	-135.06	0.00	0.00	0.00
5,200.00	3.54	324.03	5,192.69	193.76	-140.64	-138.63	0.00	0.00	0.00
5,300.00	3.54	324.03	5,292.50	198.75	-144.26	-142.21	0.00	0.00	0.00
5,400.00	3.54	324.03	5,392.30	203.74	-147.88	-145.78	0.00	0.00	0.00
5,500.00	3.54	324.03	5,492.11	208.73	-151.51	-149.35	0.00	0.00	0.00
5,600.00	3.54	324.03	5,591.92	213.72	-155.13	-152.92	0.00	0.00	0.00
5,700.00	3.54	324.03	5,691.73	218.71	-158.75	-156.49	0.00	0.00	0.00
5,772.84	3.54	324.03	5,764.44	222.35	-161.39	-159.09	0.00	0.00	0.00
5,800.00	3.13	324.03	5,791.55	223.62	-162.32	-160.01	1.50	-1.50	0.00
5,900.00	1.63	324.03	5,891.46	226.98	-164.75	-162.41	1.50	-1.50	0.00
6,008.55	0.00	0.00	6,000.00	228.23	-165.66	-163.30	1.50	-1.50	0.00
LF25-121H-EON									
6,100.00	0.00	0.00	6,091.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,200.00	0.00	0.00	6,191.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,300.00	0.00	0.00	6,291.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,400.00	0.00	0.00	6,391.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,500.00	0.00	0.00	6,491.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,600.00	0.00	0.00	6,591.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,614.15	0.00	0.00	6,605.60	228.23	-165.66	-163.30	0.00	0.00	0.00
1st Bone Spring Sd									
6,700.00	0.00	0.00	6,691.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,800.00	0.00	0.00	6,791.45	228.23	-165.66	-163.30	0.00	0.00	0.00
6,900.00	0.00	0.00	6,891.45	228.23	-165.66	-163.30	0.00	0.00	0.00
7,000.00	0.00	0.00	6,991.45	228.23	-165.66	-163.30	0.00	0.00	0.00
7,045.59	0.00	0.00	7,037.04	228.23	-165.66	-163.30	0.00	0.00	0.00
KOP: 7045.59' MD, 7037.04' TVD									
7,050.00	0.44	89.41	7,041.45	228.23	-165.64	-163.28	9.99	9.99	0.00
7,100.00	5.44	89.41	7,091.36	228.26	-163.08	-160.72	10.00	10.00	0.00
7,150.00	10.44	89.41	7,140.87	228.33	-156.17	-153.81	10.00	10.00	0.00
7,200.00	15.44	89.41	7,189.58	228.44	-144.98	-142.62	10.00	10.00	0.00
7,250.00	20.44	89.41	7,237.14	228.60	-129.59	-127.22	10.00	10.00	0.00
7,300.00	25.44	89.41	7,283.17	228.80	-110.10	-107.74	10.00	10.00	0.00
7,350.00	30.44	89.41	7,327.33	229.05	-86.69	-84.32	10.00	10.00	0.00
7,400.00	35.44	89.41	7,369.27	229.33	-59.51	-57.14	10.00	10.00	0.00
7,450.00	40.44	89.41	7,408.69	229.64	-28.78	-26.41	10.00	10.00	0.00
7,500.00	45.44	89.41	7,445.29	230.00	5.27	7.64	10.00	10.00	0.00
LF25-121H-FTP									
7,513.44	46.78	89.41	7,454.60	230.10	14.96	17.32	10.00	10.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 121H - Slot N01
Company:	Colgate Energy	TVD Reference:	3358.6+26 @ 3384.60usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.6+26 @ 3384.60usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 121H	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)	
2nd Bone Spring Sd										
7,550.00	50.44	89.41	7,478.77	230.38	42.38	44.75	10.00	10.00	0.00	
7,600.00	55.44	89.41	7,508.89	230.79	82.27	84.64	10.00	10.00	0.00	
7,650.00	60.44	89.41	7,535.42	231.23	124.63	127.00	10.00	10.00	0.00	
7,700.00	65.44	89.41	7,558.16	231.69	169.14	171.51	10.00	10.00	0.00	
7,750.00	70.44	89.41	7,576.94	232.17	215.46	217.84	10.00	10.00	0.00	
7,800.00	75.44	89.41	7,591.60	232.66	263.24	265.62	10.00	10.00	0.00	
7,850.00	80.44	89.41	7,602.04	233.17	312.12	314.50	10.00	10.00	0.00	
7,900.00	85.44	89.41	7,608.18	233.68	361.72	364.11	10.00	10.00	0.00	
7,945.59	90.00	89.41	7,610.00	234.15	407.26	409.65	10.00	10.00	0.00	
EOC: 7945.59' MD, 7610.00' TVD										
8,000.00	90.00	89.41	7,610.00	234.71	461.67	464.06	0.00	0.00	0.00	
8,100.00	90.00	89.41	7,610.00	235.74	561.66	564.06	0.00	0.00	0.00	
8,200.00	90.00	89.41	7,610.00	236.78	661.66	664.06	0.00	0.00	0.00	
8,300.00	90.00	89.41	7,610.00	237.81	761.65	764.06	0.00	0.00	0.00	
8,400.00	90.00	89.41	7,610.00	238.84	861.65	864.06	0.00	0.00	0.00	
8,500.00	90.00	89.41	7,610.00	239.88	961.64	964.06	0.00	0.00	0.00	
8,600.00	90.00	89.41	7,610.00	240.91	1,061.64	1,064.06	0.00	0.00	0.00	
8,700.00	90.00	89.41	7,610.00	241.94	1,161.63	1,164.06	0.00	0.00	0.00	
8,800.00	90.00	89.41	7,610.00	242.98	1,261.63	1,264.06	0.00	0.00	0.00	
8,900.00	90.00	89.41	7,610.00	244.01	1,361.62	1,364.06	0.00	0.00	0.00	
9,000.00	90.00	89.41	7,610.00	245.04	1,461.62	1,464.06	0.00	0.00	0.00	
9,100.00	90.00	89.41	7,610.00	246.07	1,561.61	1,564.06	0.00	0.00	0.00	
9,200.00	90.00	89.41	7,610.00	247.11	1,661.61	1,664.06	0.00	0.00	0.00	
9,300.00	90.00	89.41	7,610.00	248.14	1,761.60	1,764.06	0.00	0.00	0.00	
9,400.00	90.00	89.41	7,610.00	249.17	1,861.59	1,864.06	0.00	0.00	0.00	
9,500.00	90.00	89.41	7,610.00	250.21	1,961.59	1,964.06	0.00	0.00	0.00	
9,600.00	90.00	89.41	7,610.00	251.24	2,061.58	2,064.06	0.00	0.00	0.00	
9,700.00	90.00	89.41	7,610.00	252.27	2,161.58	2,164.06	0.00	0.00	0.00	
9,800.00	90.00	89.41	7,610.00	253.31	2,261.57	2,264.06	0.00	0.00	0.00	
9,900.00	90.00	89.41	7,610.00	254.34	2,361.57	2,364.06	0.00	0.00	0.00	
10,000.00	90.00	89.41	7,610.00	255.37	2,461.56	2,464.06	0.00	0.00	0.00	
10,100.00	90.00	89.41	7,610.00	256.41	2,561.56	2,564.06	0.00	0.00	0.00	
10,200.00	90.00	89.41	7,610.00	257.44	2,661.55	2,664.06	0.00	0.00	0.00	
10,300.00	90.00	89.41	7,610.00	258.47	2,761.55	2,764.06	0.00	0.00	0.00	
10,400.00	90.00	89.41	7,610.00	259.50	2,861.54	2,864.06	0.00	0.00	0.00	
10,500.00	90.00	89.41	7,610.00	260.54	2,961.54	2,964.06	0.00	0.00	0.00	
10,600.00	90.00	89.41	7,610.00	261.57	3,061.53	3,064.06	0.00	0.00	0.00	
10,700.00	90.00	89.41	7,610.00	262.60	3,161.53	3,164.06	0.00	0.00	0.00	
10,800.00	90.00	89.41	7,610.00	263.64	3,261.52	3,264.06	0.00	0.00	0.00	
10,900.00	90.00	89.41	7,610.00	264.67	3,361.51	3,364.06	0.00	0.00	0.00	
11,000.00	90.00	89.41	7,610.00	265.70	3,461.51	3,464.06	0.00	0.00	0.00	
11,100.00	90.00	89.41	7,610.00	266.74	3,561.50	3,564.06	0.00	0.00	0.00	
11,200.00	90.00	89.41	7,610.00	267.77	3,661.50	3,664.06	0.00	0.00	0.00	
11,300.00	90.00	89.41	7,610.00	268.80	3,761.49	3,764.06	0.00	0.00	0.00	
11,400.00	90.00	89.41	7,610.00	269.84	3,861.49	3,864.06	0.00	0.00	0.00	
11,500.00	90.00	89.41	7,610.00	270.87	3,961.48	3,964.06	0.00	0.00	0.00	
11,600.00	90.00	89.41	7,610.00	271.90	4,061.48	4,064.06	0.00	0.00	0.00	
11,700.00	90.00	89.41	7,610.00	272.93	4,161.47	4,164.06	0.00	0.00	0.00	
11,800.00	90.00	89.41	7,610.00	273.97	4,261.47	4,264.06	0.00	0.00	0.00	
11,900.00	90.00	89.41	7,610.00	275.00	4,361.46	4,364.06	0.00	0.00	0.00	
12,000.00	90.00	89.41	7,610.00	276.03	4,461.46	4,464.06	0.00	0.00	0.00	
12,100.00	90.00	89.41	7,610.00	277.07	4,561.45	4,564.06	0.00	0.00	0.00	

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 121H - Slot N01
Company:	Colgate Energy	TVD Reference:	3358.6+26 @ 3384.60usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.6+26 @ 3384.60usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 121H	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)
12,200.00	90.00	89.41	7,610.00	278.10	4,661.45	4,664.06	0.00	0.00	0.00
12,300.00	90.00	89.41	7,610.00	279.13	4,761.44	4,764.06	0.00	0.00	0.00
12,400.00	90.00	89.41	7,610.00	280.17	4,861.43	4,864.06	0.00	0.00	0.00
12,486.06	90.00	89.41	7,610.00	281.06	4,947.49	4,950.12	0.00	0.00	0.00
TD: 12486.06' MD, 7610.00' TVD - LF25-121H-PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LF25-121H-EON - hit/miss target - Shape - Point	0.00	0.00	6,000.00	228.23	-165.66	595,526.88	601,283.07	32.63700126	-104.13859487
LF25-121H-PBHL - plan hits target center - Point	0.00	0.00	7,610.00	281.06	4,947.49	595,579.71	606,396.22	32.63711960	-104.12198410
LF25-121H-FTP - plan misses target center by 237.39usft at 7500.00usft MD (7445.29 TVD, 230.00 N, 5.27 E) - Point	0.00	0.00	7,610.00	228.24	-165.67	595,526.90	601,283.06	32.63700130	-104.13859490

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
400.00	400.00	SCP	0	0	
3,203.51	3,200.00	ICP	0	0	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
704.60	704.60	Top of Salt				
1,003.60	1,003.60	Base of Salt				
2,107.03	2,105.60	Yates				
2,704.16	2,701.60	Capitan				
2,944.62	2,941.60	Cherry Canyon				
3,218.14	3,214.60	Brushy Canyon				
4,230.07	4,224.60	Bone Spring LM				
6,614.15	6,605.60	1st Bone Spring Sd				
7,513.44	7,454.60	2nd Bone Spring Sd				

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 121H - Slot N01
Company:	Colgate Energy	TVD Reference:	3358.6+26 @ 3384.60usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3358.6+26 @ 3384.60usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 121H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,045.59	7,037.04	228.23	-165.66	KOP: 7045.59' MD, 7037.04' TVD
7,945.59	7,610.00	234.15	407.26	EOC: 7945.59' MD, 7610.00' TVD
12,486.06	7,610.00	281.06	4,947.49	TD: 12486.06' MD, 7610.00' TVD