

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

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

Form C-101

August 1, 2011

Permit 290848

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

1. Operator Name and Address COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701		2. OGRID Number 371449
		3. API Number 30-015-48051
4. Property Code 330179	5. Property Name MADERA 9 STATE COM	6. Well No. 122H

7. Surface Location

UL - Lot H	Section 9	Township 19S	Range 28E	Lot Idn H	Feet From 1669	N/S Line N	Feet From 180	E/W Line E	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot E	Section 8	Township 19S	Range 28E	Lot Idn E	Feet From 1793	N/S Line N	Feet From 10	E/W Line W	County Eddy
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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 3540
16. Multiple N	17. Proposed Depth 7200	18. Formation 2nd Bone Spring Sand	19. Contractor	20. Spud Date 4/1/2021
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	180	166	0
Int1	12.25	9.625	36	2760	643	0
Prod	8.75	5.5	20	17363	2775	2050

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	10000	5000	Cameron

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.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Mikah Thomas	Approved By: Kurt Simmons	
Title: Operations Tech	Title: Petroleum Specialist - A	
Email Address: mthomas@colgateenergy.com	Approved Date: 2/11/2021	Expiration Date: 2/11/2023
Date: 2/10/2021	Phone: 432-695-4272	Conditions of Approval Attached

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GAS CAPTURE PLAN

Date: 2/11/2021

☒ 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
MADERA 9 STATE COM #122H	30-015-48051	H-9-19S-28E	1669N 0180E	500	None	

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 High/Low Pressure gathering system located in Eddy County, New Mexico. It will require 1800' of pipeline to connect the facility to High/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. 09, 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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Form APD Comments

Permit 290848

PERMIT COMMENTS

Operator Name and Address: COLGATE OPERATING, LLC [371449] 300 North Marienfeld Street Midland, TX 79701		API Number: 30-015-48051
		Well: MADERA 9 STATE COM #122H
Created By	Comment	Comment Date

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Form APD Conditions

Permit 290848

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: COLGATE OPERATING, LLC [371449] 300 North Marienfeld Street Midland, TX 79701	API Number: 30-015-48051
	Well: MADERA 9 STATE COM #122H

OCD Reviewer	Condition
ksimmons	Notify OCD 24 hours prior to casing & cement
ksimmons	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ksimmons	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Surface casing must be set 25' below top of Rustler Anhydrite or salt in order to seal off protectable water
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
kpickford	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system



WELL DETAILS: Madera 9 State Com 122H

Northing 610358.23
Easting 590622.34
Latitude 32.67781723
Longitude -104.17315438

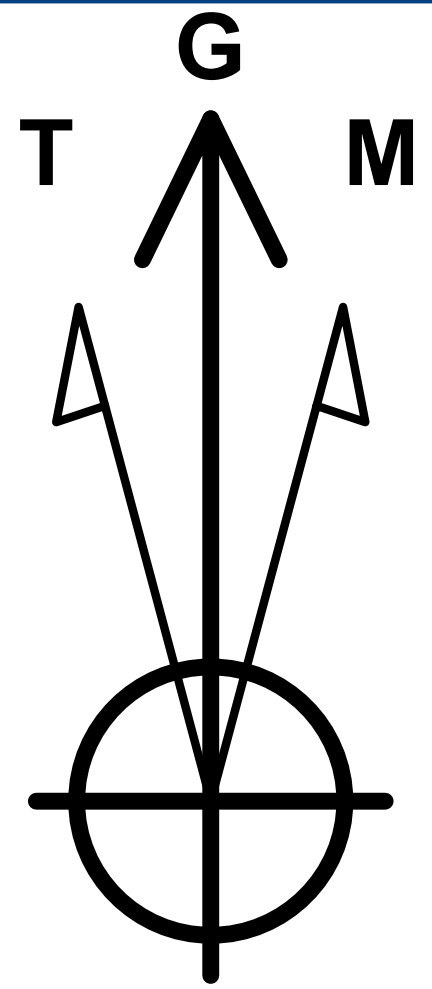
Section Details

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	1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00
3	1950.01	2.25	133.19	1949.97	-2.02	2.15	1.50	133.19	-2.12
4	6353.47	2.25	133.19	6350.03	-120.33	128.20	0.00	0.00	-126.70
5	6503.47	0.00	0.00	6500.00	-122.35	130.35	1.50	180.00	-128.82
6	6707.72	0.00	0.00	6704.25	-122.35	130.35	0.00	0.00	-128.82
7	7623.72	91.60	269.29	7276.98	-129.67	-458.56	10.00	269.29	460.13
8	9664.39	91.60	269.29	7220.00	-155.01	-2498.27	0.00	0.00	2500.00
9	9699.15	92.30	269.29	7218.82	-155.44	-2533.01	2.00	0.37	2534.74
10	12166.39	92.30	269.29	7120.00	-185.87	-4998.08	0.00	0.00	5000.00
11	17273.71	92.30	269.29	6915.44	-248.87	-10100.92	0.00	0.00	10103.23
12	17363.80	92.30	269.29	6911.83	-249.98	-10190.93	0.00	0.00	10193.25

Site: Madera 9 State Com
Well: Madera 9 State Com 122H
Wellbore: Permit
Plan: APD-Rev0

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
68.00	68.00	Rustler
225.00	225.00	Top of Salt
388.00	388.00	Base of Salt
696.00	696.00	Yates
2840.00	2840.73	DLWR Mnt. Group
3070.00	3070.90	Lower Brushy Canyon
3360.00	3361.13	Bone Spring Lime
6070.00	6073.22	1st Bone Spring SD
6105.00	6108.24	2nd Bone Spring LM
7120.00	7172.93	2nd Bone Spring SD



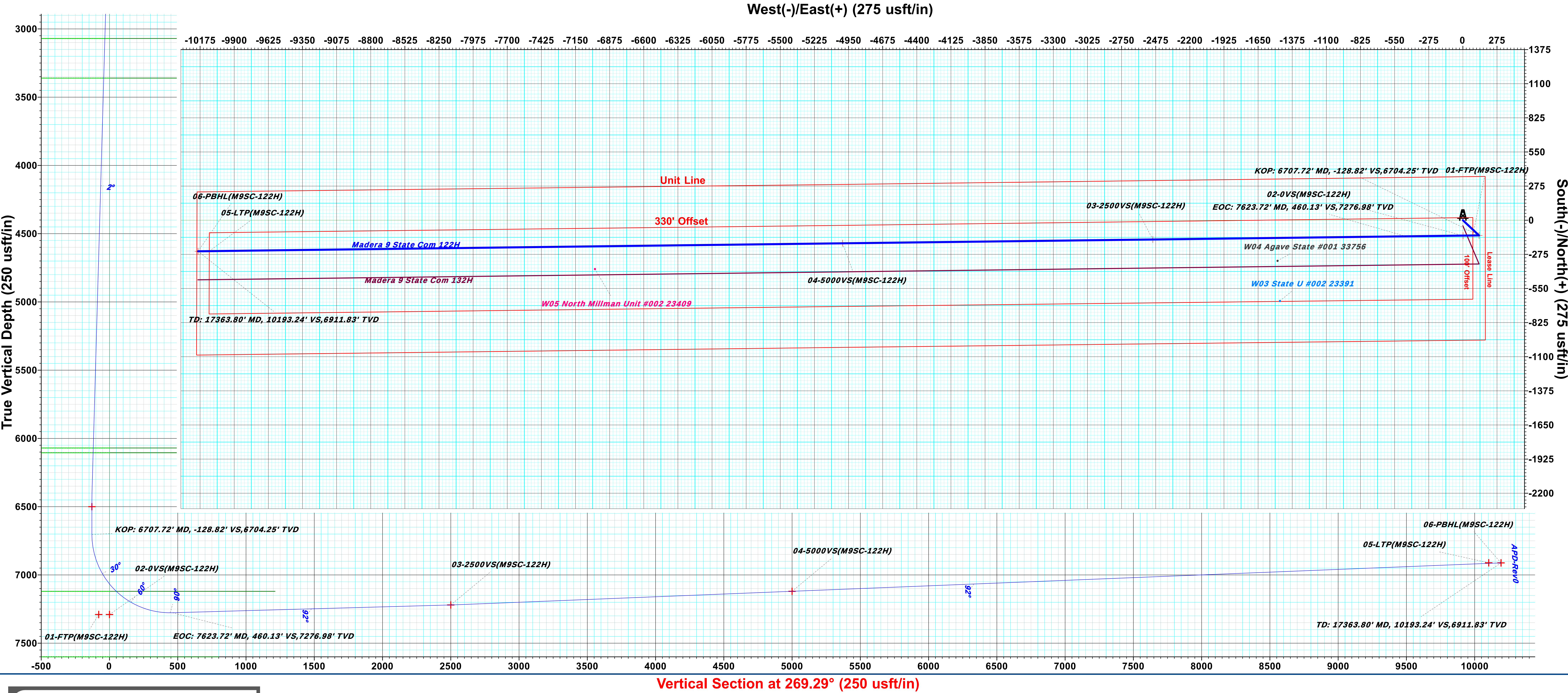
Azimuths to Grid North
True North: -0.09°
Magnetic North: 6.84°

Magnetic Field
Strength: 47754.6snT
Dip Angle: 60.24°
Date: 11/30/2020
Model: IGRF2020

PROJECT DETAILS: Eddy County, NM (N83-NME)
Well Name: Madera 9 State Com 122H
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: 3540+30 @ 3570.00usft
Elevation: 3540.00

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
01-EON(M9SC-122H)	6500.00	-122.35	130.35	610235.88	590752.69	32.67748039	-104.17273133
01-FTP(M9SC-122H)	7290.00	-123.17	80.31	610235.06	590702.65	32.67747834	-104.17289397
02-0VS(M9SC-122H)	7290.00	-124.14	1.54	610234.09	590623.88	32.67747599	-104.17314998
03-2500VS(M9SC-122H)	7220.00	-155.01	-2498.27	610203.22	588124.07	32.67740127	-104.18127462
04-5000VS(M9SC-122H)	7120.00	-185.87	-4998.08	610172.36	585624.26	32.67732602	-104.18939924
05-LTP(M9SC-122H)	6911.44	-248.97	-10100.92	610109.26	580521.42	32.67717050	-104.20598392
06-PBHL(M9SC-122H)	6911.83	-249.98	-10190.93	610108.25	580431.41	32.67716802	-104.20627646





Colgate Energy

Eddy County, NM (N83-NME)

Madera 9 State Com

Madera 9 State Com 122H

Permit

Plan: APD-Rev0

Standard Planning Report

10 December, 2020



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Madera 9 State Com 122H
Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

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	Madera 9 State Com				
Site Position:		Northing:	610,448.18 usft	Latitude:	32.67806447
From:	Map	Easting:	590,622.34 usft	Longitude:	-104.17315394
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09

Well	Madera 9 State Com 122H					
Well Position	+N/-S	-89.95 usft	Northing:	610,358.23 usft	Latitude:	32.67781723
	+E/-W	0.00 usft	Easting:	590,622.34 usft	Longitude:	-104.17315438
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,540.00 usft

Wellbore	Permit				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	11/30/2020	6.92	60.24	47,754.64277130

Design	APD-Rev0				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	269.29	

Plan Survey Tool Program	Date	12/10/2020			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	17,363.80	APD-Rev0 (Permit)	MWD+IFR1+SAG+FDIR (SQC	
				OWSG MWD + IFR1 + Sag + F	



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Madera 9 State Com 122H
Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

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	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,950.01	2.25	133.19	1,949.97	-2.02	2.15	1.50	1.50	0.00	133.19	
6,353.47	2.25	133.19	6,350.03	-120.33	128.20	0.00	0.00	0.00	0.00	
6,503.47	0.00	0.00	6,500.00	-122.35	130.35	1.50	-1.50	0.00	180.00	01-EON(M9SC-122H)
6,707.72	0.00	0.00	6,704.25	-122.35	130.35	0.00	0.00	0.00	0.00	
7,623.72	91.60	269.29	7,276.98	-129.67	-458.56	10.00	10.00	-9.90	269.29	
9,664.39	91.60	269.29	7,220.00	-155.01	-2,498.27	0.00	0.00	0.00	0.00	03-2500VS(M9SC-12
9,699.15	92.30	269.29	7,218.82	-155.44	-2,533.01	2.00	2.00	0.01	0.37	
12,166.39	92.30	269.29	7,120.00	-185.87	-4,998.08	0.00	0.00	0.00	0.00	04-5000VS(M9SC-12
17,273.71	92.30	269.29	6,915.44	-248.87	-10,100.92	0.00	0.00	0.00	0.00	05-LTP(M9SC-122H)
17,363.80	92.30	269.29	6,911.83	-249.98	-10,190.93	0.00	0.00	0.00	0.00	06-PBHL(M9SC-122H)



Planning Report

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Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

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
68.00	0.00	0.00	68.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
388.00	0.00	0.00	388.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
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
696.00	0.00	0.00	696.00	0.00	0.00	0.00	0.00	0.00	0.00
Yates									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	1.50	133.19	1,899.99	-0.90	0.95	-0.94	1.50	1.50	0.00
1,950.01	2.25	133.19	1,949.97	-2.02	2.15	-2.12	1.50	1.50	0.00
2,000.00	2.25	133.19	1,999.92	-3.36	3.58	-3.54	0.00	0.00	0.00
2,100.00	2.25	133.19	2,099.85	-6.05	6.44	-6.37	0.00	0.00	0.00
2,200.00	2.25	133.19	2,199.77	-8.73	9.30	-9.19	0.00	0.00	0.00
2,300.00	2.25	133.19	2,299.69	-11.42	12.17	-12.02	0.00	0.00	0.00
2,400.00	2.25	133.19	2,399.61	-14.11	15.03	-14.85	0.00	0.00	0.00
2,500.00	2.25	133.19	2,499.54	-16.79	17.89	-17.68	0.00	0.00	0.00
2,600.00	2.25	133.19	2,599.46	-19.48	20.75	-20.51	0.00	0.00	0.00
2,700.00	2.25	133.19	2,699.38	-22.17	23.62	-23.34	0.00	0.00	0.00
2,800.00	2.25	133.19	2,799.31	-24.85	26.48	-26.17	0.00	0.00	0.00
2,840.73	2.25	133.19	2,840.00	-25.95	27.65	-27.32	0.00	0.00	0.00
DLWR Mnt. Group									
2,900.00	2.25	133.19	2,899.23	-27.54	29.34	-29.00	0.00	0.00	0.00
3,000.00	2.25	133.19	2,999.15	-30.23	32.20	-31.83	0.00	0.00	0.00
3,070.90	2.25	133.19	3,070.00	-32.13	34.23	-33.83	0.00	0.00	0.00
Lower Brushy Canyon									
3,100.00	2.25	133.19	3,099.07	-32.92	35.07	-34.66	0.00	0.00	0.00
3,200.00	2.25	133.19	3,199.00	-35.60	37.93	-37.49	0.00	0.00	0.00
3,300.00	2.25	133.19	3,298.92	-38.29	40.79	-40.32	0.00	0.00	0.00
3,361.13	2.25	133.19	3,360.00	-39.93	42.54	-42.04	0.00	0.00	0.00
Bone Spring Lime									
3,400.00	2.25	133.19	3,398.84	-40.98	43.66	-43.14	0.00	0.00	0.00
3,500.00	2.25	133.19	3,498.77	-43.66	46.52	-45.97	0.00	0.00	0.00
3,600.00	2.25	133.19	3,598.69	-46.35	49.38	-48.80	0.00	0.00	0.00
3,700.00	2.25	133.19	3,698.61	-49.04	52.24	-51.63	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Madera 9 State Com 122H
Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

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)	
3,800.00	2.25	133.19	3,798.54	-51.72	55.11	-54.46	0.00	0.00	0.00	
3,900.00	2.25	133.19	3,898.46	-54.41	57.97	-57.29	0.00	0.00	0.00	
4,000.00	2.25	133.19	3,998.38	-57.10	60.83	-60.12	0.00	0.00	0.00	
4,100.00	2.25	133.19	4,098.30	-59.78	63.69	-62.95	0.00	0.00	0.00	
4,200.00	2.25	133.19	4,198.23	-62.47	66.56	-65.78	0.00	0.00	0.00	
4,300.00	2.25	133.19	4,298.15	-65.16	69.42	-68.61	0.00	0.00	0.00	
4,400.00	2.25	133.19	4,398.07	-67.85	72.28	-71.44	0.00	0.00	0.00	
4,500.00	2.25	133.19	4,498.00	-70.53	75.14	-74.26	0.00	0.00	0.00	
4,600.00	2.25	133.19	4,597.92	-73.22	78.01	-77.09	0.00	0.00	0.00	
4,700.00	2.25	133.19	4,697.84	-75.91	80.87	-79.92	0.00	0.00	0.00	
4,800.00	2.25	133.19	4,797.76	-78.59	83.73	-82.75	0.00	0.00	0.00	
4,900.00	2.25	133.19	4,897.69	-81.28	86.60	-85.58	0.00	0.00	0.00	
5,000.00	2.25	133.19	4,997.61	-83.97	89.46	-88.41	0.00	0.00	0.00	
5,100.00	2.25	133.19	5,097.53	-86.65	92.32	-91.24	0.00	0.00	0.00	
5,200.00	2.25	133.19	5,197.46	-89.34	95.18	-94.07	0.00	0.00	0.00	
5,300.00	2.25	133.19	5,297.38	-92.03	98.05	-96.90	0.00	0.00	0.00	
5,400.00	2.25	133.19	5,397.30	-94.72	100.91	-99.73	0.00	0.00	0.00	
5,500.00	2.25	133.19	5,497.22	-97.40	103.77	-102.56	0.00	0.00	0.00	
5,600.00	2.25	133.19	5,597.15	-100.09	106.63	-105.39	0.00	0.00	0.00	
5,700.00	2.25	133.19	5,697.07	-102.78	109.50	-108.21	0.00	0.00	0.00	
5,800.00	2.25	133.19	5,796.99	-105.46	112.36	-111.04	0.00	0.00	0.00	
5,900.00	2.25	133.19	5,896.92	-108.15	115.22	-113.87	0.00	0.00	0.00	
6,000.00	2.25	133.19	5,996.84	-110.84	118.08	-116.70	0.00	0.00	0.00	
6,073.22	2.25	133.19	6,070.00	-112.80	120.18	-118.77	0.00	0.00	0.00	
1st Bone Spring SD										
6,100.00	2.25	133.19	6,096.76	-113.52	120.95	-119.53	0.00	0.00	0.00	
6,108.24	2.25	133.19	6,105.00	-113.75	121.18	-119.76	0.00	0.00	0.00	
2nd Bone Spring LM										
6,200.00	2.25	133.19	6,196.68	-116.21	123.81	-122.36	0.00	0.00	0.00	
6,300.00	2.25	133.19	6,296.61	-118.90	126.67	-125.19	0.00	0.00	0.00	
6,353.47	2.25	133.19	6,350.03	-120.33	128.20	-126.70	0.00	0.00	0.00	
6,400.00	1.55	133.19	6,396.54	-121.39	129.33	-127.81	1.50	-1.50	0.00	
6,503.47	0.00	0.00	6,500.00	-122.35	130.35	-128.82	1.50	-1.50	0.00	
01-EON(M9SC-122H)										
6,600.00	0.00	0.00	6,596.53	-122.35	130.35	-128.82	0.00	0.00	0.00	
6,707.72	0.00	0.00	6,704.25	-122.35	130.35	-128.82	0.00	0.00	0.00	
KOP: 6707.72' MD, -128.82' VS, 6704.25' TVD										
6,750.00	4.23	269.29	6,746.49	-122.37	128.79	-127.26	10.00	10.00	0.00	
6,800.00	9.23	269.29	6,796.13	-122.44	122.94	-121.41	10.00	10.00	0.00	
6,850.00	14.23	269.29	6,845.07	-122.57	112.78	-111.25	10.00	10.00	0.00	
6,900.00	19.23	269.29	6,892.94	-122.75	98.39	-96.86	10.00	10.00	0.00	
6,950.00	24.23	269.29	6,939.37	-122.98	79.89	-78.36	10.00	10.00	0.00	
7,000.00	29.23	269.29	6,984.02	-123.26	57.41	-55.88	10.00	10.00	0.00	
7,050.00	34.23	269.29	7,026.53	-123.58	31.13	-29.59	10.00	10.00	0.00	
7,100.00	39.23	269.29	7,066.59	-123.95	1.24	0.30	10.00	10.00	0.00	
7,150.00	44.23	269.29	7,103.90	-124.37	-32.03	33.57	10.00	10.00	0.00	
7,172.93	46.52	269.29	7,120.00	-124.57	-48.34	49.88	10.00	10.00	0.00	
2nd Bone Spring SD										
7,191.53	48.38	269.29	7,132.58	-124.74	-62.05	63.59	10.00	10.00	0.00	
01-FTP(M9SC-122H)										
7,200.00	49.23	269.29	7,138.16	-124.82	-68.42	69.96	10.00	10.00	0.00	
7,239.14	53.14	269.29	7,162.69	-125.20	-98.91	100.45	10.00	10.00	0.00	
02-OVS(M9SC-122H)										



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Madera 9 State Com 122H
Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

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)	
7,250.00	54.23	269.29	7,169.12	-125.31	-107.66	109.20	10.00	10.00	0.00	
7,300.00	59.23	269.29	7,196.54	-125.83	-149.45	150.99	10.00	10.00	0.00	
7,350.00	64.23	269.29	7,220.22	-126.37	-193.46	195.01	10.00	10.00	0.00	
7,400.00	69.23	269.29	7,239.96	-126.94	-239.38	240.93	10.00	10.00	0.00	
7,450.00	74.23	269.29	7,255.64	-127.53	-286.84	288.40	10.00	10.00	0.00	
7,500.00	79.23	269.29	7,267.11	-128.14	-335.48	337.05	10.00	10.00	0.00	
7,550.00	84.23	269.29	7,274.30	-128.75	-384.94	386.51	10.00	10.00	0.00	
7,600.00	89.23	269.29	7,277.16	-129.37	-434.84	436.41	10.00	10.00	0.00	
7,623.72	91.60	269.29	7,276.98	-129.67	-458.56	460.13	10.00	10.00	0.00	
EOC: 7623.72' MD, 460.13' VS, 7276.98' TVD										
7,700.00	91.60	269.29	7,274.85	-130.61	-534.80	536.38	0.00	0.00	0.00	
7,800.00	91.60	269.29	7,272.06	-131.85	-634.76	636.34	0.00	0.00	0.00	
7,900.00	91.60	269.29	7,269.27	-133.10	-734.71	736.30	0.00	0.00	0.00	
8,000.00	91.60	269.29	7,266.48	-134.34	-834.66	836.26	0.00	0.00	0.00	
8,100.00	91.60	269.29	7,263.68	-135.58	-934.62	936.22	0.00	0.00	0.00	
8,200.00	91.60	269.29	7,260.89	-136.82	-1,034.57	1,036.18	0.00	0.00	0.00	
8,300.00	91.60	269.29	7,258.10	-138.06	-1,134.52	1,136.15	0.00	0.00	0.00	
8,400.00	91.60	269.29	7,255.31	-139.31	-1,234.48	1,236.11	0.00	0.00	0.00	
8,500.00	91.60	269.29	7,252.52	-140.55	-1,334.43	1,336.07	0.00	0.00	0.00	
8,600.00	91.60	269.29	7,249.72	-141.79	-1,434.38	1,436.03	0.00	0.00	0.00	
8,700.00	91.60	269.29	7,246.93	-143.03	-1,534.34	1,535.99	0.00	0.00	0.00	
8,800.00	91.60	269.29	7,244.14	-144.27	-1,634.29	1,635.95	0.00	0.00	0.00	
8,900.00	91.60	269.29	7,241.35	-145.51	-1,734.24	1,735.91	0.00	0.00	0.00	
9,000.00	91.60	269.29	7,238.55	-146.76	-1,834.20	1,835.87	0.00	0.00	0.00	
9,100.00	91.60	269.29	7,235.76	-148.00	-1,934.15	1,935.83	0.00	0.00	0.00	
9,200.00	91.60	269.29	7,232.97	-149.24	-2,034.10	2,035.79	0.00	0.00	0.00	
9,300.00	91.60	269.29	7,230.18	-150.48	-2,134.06	2,135.76	0.00	0.00	0.00	
9,400.00	91.60	269.29	7,227.38	-151.72	-2,234.01	2,235.72	0.00	0.00	0.00	
9,500.00	91.60	269.29	7,224.59	-152.96	-2,333.96	2,335.68	0.00	0.00	0.00	
9,600.00	91.60	269.29	7,221.80	-154.21	-2,433.91	2,435.64	0.00	0.00	0.00	
9,664.39	91.60	269.29	7,220.00	-155.01	-2,498.27	2,500.00	0.00	0.00	0.00	
03-2500VS(M9SC-122H)										
9,699.15	92.30	269.29	7,218.82	-155.44	-2,533.01	2,534.74	2.00	2.00	0.01	
9,800.00	92.30	269.29	7,214.78	-156.68	-2,633.77	2,635.51	0.00	0.00	0.00	
9,900.00	92.30	269.29	7,210.77	-157.91	-2,733.69	2,735.43	0.00	0.00	0.00	
10,000.00	92.30	269.29	7,206.77	-159.15	-2,833.60	2,835.35	0.00	0.00	0.00	
10,100.00	92.30	269.29	7,202.76	-160.38	-2,933.51	2,935.27	0.00	0.00	0.00	
10,200.00	92.30	269.29	7,198.76	-161.61	-3,033.42	3,035.19	0.00	0.00	0.00	
10,300.00	92.30	269.29	7,194.75	-162.85	-3,133.33	3,135.11	0.00	0.00	0.00	
10,400.00	92.30	269.29	7,190.75	-164.08	-3,233.25	3,235.03	0.00	0.00	0.00	
10,500.00	92.30	269.29	7,186.74	-165.31	-3,333.16	3,334.95	0.00	0.00	0.00	
10,600.00	92.30	269.29	7,182.74	-166.55	-3,433.07	3,434.87	0.00	0.00	0.00	
10,700.00	92.30	269.29	7,178.73	-167.78	-3,532.98	3,534.79	0.00	0.00	0.00	
10,800.00	92.30	269.29	7,174.73	-169.01	-3,632.89	3,634.71	0.00	0.00	0.00	
10,900.00	92.30	269.29	7,170.72	-170.25	-3,732.81	3,734.63	0.00	0.00	0.00	
11,000.00	92.30	269.29	7,166.72	-171.48	-3,832.72	3,834.55	0.00	0.00	0.00	
11,100.00	92.30	269.29	7,162.71	-172.71	-3,932.63	3,934.47	0.00	0.00	0.00	
11,200.00	92.30	269.29	7,158.71	-173.95	-4,032.54	4,034.39	0.00	0.00	0.00	
11,300.00	92.30	269.29	7,154.70	-175.18	-4,132.46	4,134.31	0.00	0.00	0.00	
11,400.00	92.30	269.29	7,150.70	-176.42	-4,232.37	4,234.23	0.00	0.00	0.00	
11,500.00	92.30	269.29	7,146.69	-177.65	-4,332.28	4,334.15	0.00	0.00	0.00	
11,600.00	92.30	269.29	7,142.69	-178.88	-4,432.19	4,434.07	0.00	0.00	0.00	
11,700.00	92.30	269.29	7,138.68	-180.12	-4,532.10	4,533.99	0.00	0.00	0.00	
11,800.00	92.30	269.29	7,134.67	-181.35	-4,632.02	4,633.91	0.00	0.00	0.00	



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Madera 9 State Com 122H
Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

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	92.30	269.29	7,130.67	-182.58	-4,731.93	4,733.83	0.00	0.00	0.00
12,000.00	92.30	269.29	7,126.66	-183.82	-4,831.84	4,833.75	0.00	0.00	0.00
12,100.00	92.30	269.29	7,122.66	-185.05	-4,931.75	4,933.67	0.00	0.00	0.00
12,166.39	92.30	269.29	7,120.00	-185.87	-4,998.08	5,000.00	0.00	0.00	0.00
04-5000VS(M9SC-122H)									
12,200.00	92.30	269.29	7,118.65	-186.28	-5,031.66	5,033.59	0.00	0.00	0.00
12,300.00	92.30	269.29	7,114.65	-187.52	-5,131.58	5,133.51	0.00	0.00	0.00
12,400.00	92.30	269.29	7,110.64	-188.75	-5,231.49	5,233.43	0.00	0.00	0.00
12,500.00	92.30	269.29	7,106.64	-189.98	-5,331.40	5,333.35	0.00	0.00	0.00
12,600.00	92.30	269.29	7,102.63	-191.22	-5,431.31	5,433.27	0.00	0.00	0.00
12,700.00	92.30	269.29	7,098.63	-192.45	-5,531.23	5,533.19	0.00	0.00	0.00
12,800.00	92.30	269.29	7,094.62	-193.68	-5,631.14	5,633.11	0.00	0.00	0.00
12,900.00	92.30	269.29	7,090.62	-194.92	-5,731.05	5,733.03	0.00	0.00	0.00
13,000.00	92.30	269.29	7,086.61	-196.15	-5,830.96	5,832.94	0.00	0.00	0.00
13,100.00	92.30	269.29	7,082.61	-197.38	-5,930.87	5,932.86	0.00	0.00	0.00
13,200.00	92.30	269.29	7,078.60	-198.62	-6,030.79	6,032.78	0.00	0.00	0.00
13,300.00	92.30	269.29	7,074.60	-199.85	-6,130.70	6,132.70	0.00	0.00	0.00
13,400.00	92.30	269.29	7,070.59	-201.08	-6,230.61	6,232.62	0.00	0.00	0.00
13,500.00	92.30	269.29	7,066.59	-202.32	-6,330.52	6,332.54	0.00	0.00	0.00
13,600.00	92.30	269.29	7,062.58	-203.55	-6,430.43	6,432.46	0.00	0.00	0.00
13,700.00	92.30	269.29	7,058.58	-204.79	-6,530.35	6,532.38	0.00	0.00	0.00
13,800.00	92.30	269.29	7,054.57	-206.02	-6,630.26	6,632.30	0.00	0.00	0.00
13,900.00	92.30	269.29	7,050.56	-207.25	-6,730.17	6,732.22	0.00	0.00	0.00
14,000.00	92.30	269.29	7,046.56	-208.49	-6,830.08	6,832.14	0.00	0.00	0.00
14,100.00	92.30	269.29	7,042.55	-209.72	-6,930.00	6,932.06	0.00	0.00	0.00
14,200.00	92.30	269.29	7,038.55	-210.95	-7,029.91	7,031.98	0.00	0.00	0.00
14,300.00	92.30	269.29	7,034.54	-212.19	-7,129.82	7,131.90	0.00	0.00	0.00
14,400.00	92.30	269.29	7,030.54	-213.42	-7,229.73	7,231.82	0.00	0.00	0.00
14,500.00	92.30	269.29	7,026.53	-214.65	-7,329.64	7,331.74	0.00	0.00	0.00
14,600.00	92.30	269.29	7,022.53	-215.89	-7,429.56	7,431.66	0.00	0.00	0.00
14,700.00	92.30	269.29	7,018.52	-217.12	-7,529.47	7,531.58	0.00	0.00	0.00
14,800.00	92.30	269.29	7,014.52	-218.35	-7,629.38	7,631.50	0.00	0.00	0.00
14,900.00	92.30	269.29	7,010.51	-219.59	-7,729.29	7,731.42	0.00	0.00	0.00
15,000.00	92.30	269.29	7,006.51	-220.82	-7,829.20	7,831.34	0.00	0.00	0.00
15,100.00	92.30	269.29	7,002.50	-222.05	-7,929.12	7,931.26	0.00	0.00	0.00
15,200.00	92.30	269.29	6,998.50	-223.29	-8,029.03	8,031.18	0.00	0.00	0.00
15,300.00	92.30	269.29	6,994.49	-224.52	-8,128.94	8,131.10	0.00	0.00	0.00
15,400.00	92.30	269.29	6,990.49	-225.75	-8,228.85	8,231.02	0.00	0.00	0.00
15,500.00	92.30	269.29	6,986.48	-226.99	-8,328.77	8,330.94	0.00	0.00	0.00
15,600.00	92.30	269.29	6,982.48	-228.22	-8,428.68	8,430.86	0.00	0.00	0.00
15,700.00	92.30	269.29	6,978.47	-229.45	-8,528.59	8,530.78	0.00	0.00	0.00
15,800.00	92.30	269.29	6,974.47	-230.69	-8,628.50	8,630.70	0.00	0.00	0.00
15,900.00	92.30	269.29	6,970.46	-231.92	-8,728.41	8,730.62	0.00	0.00	0.00
16,000.00	92.30	269.29	6,966.46	-233.16	-8,828.33	8,830.54	0.00	0.00	0.00
16,100.00	92.30	269.29	6,962.45	-234.39	-8,928.24	8,930.46	0.00	0.00	0.00
16,200.00	92.30	269.29	6,958.44	-235.62	-9,028.15	9,030.38	0.00	0.00	0.00
16,300.00	92.30	269.29	6,954.44	-236.86	-9,128.06	9,130.30	0.00	0.00	0.00
16,400.00	92.30	269.29	6,950.43	-238.09	-9,227.98	9,230.22	0.00	0.00	0.00
16,500.00	92.30	269.29	6,946.43	-239.32	-9,327.89	9,330.14	0.00	0.00	0.00
16,600.00	92.30	269.29	6,942.42	-240.56	-9,427.80	9,430.06	0.00	0.00	0.00
16,700.00	92.30	269.29	6,938.42	-241.79	-9,527.71	9,529.98	0.00	0.00	0.00
16,800.00	92.30	269.29	6,934.41	-243.02	-9,627.62	9,629.90	0.00	0.00	0.00
16,900.00	92.30	269.29	6,930.41	-244.26	-9,727.54	9,729.82	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Madera 9 State Com 122H
Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

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)
17,000.00	92.30	269.29	6,926.40	-245.49	-9,827.45	9,829.74	0.00	0.00	0.00
17,100.00	92.30	269.29	6,922.40	-246.72	-9,927.36	9,929.66	0.00	0.00	0.00
17,200.00	92.30	269.29	6,918.39	-247.96	-10,027.27	10,029.57	0.00	0.00	0.00
17,273.71	92.30	269.29	6,915.44	-248.87	-10,100.92	10,103.23	0.00	0.00	0.00
17,273.87	92.30	269.29	6,915.43	-248.87	-10,101.08	10,103.39	0.00	0.00	0.00
05-LTP(M9SC-122H)									
17,300.00	92.30	269.29	6,914.39	-249.19	-10,127.18	10,129.49	0.00	0.00	0.00
17,363.80	92.30	269.29	6,911.83	-249.98	-10,190.93	10,193.24	0.00	0.00	0.00
TD: 17363.80' MD, 10193.24' VS, 6911.83' TVD - 06-PBHL(M9SC-122H)									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
01-EON(M9SC-122H) - plan hits target center - Point	0.00	0.00	6,500.00	-122.35	130.35	610,235.88	590,752.69	32.67748038	-104.17273134
05-LTP(M9SC-122H) - plan misses target center by 4.00usft at 17273.87usft MD (6915.43 TVD, -248.87 N, -10101.08 E) - Point	0.00	0.00	6,911.44	-248.97	-10,100.92	610,109.26	580,521.42	32.67717050	-104.20598392
06-PBHL(M9SC-122H) - plan hits target center - Point	0.00	0.00	6,911.83	-249.98	-10,190.93	610,108.25	580,431.41	32.67716802	-104.20627646
04-5000VS(M9SC-122H) - plan hits target center - Point	0.00	0.00	7,120.00	-185.87	-4,998.08	610,172.37	585,624.26	32.67732602	-104.18939924
03-2500VS(M9SC-122H) - plan hits target center - Point	0.00	0.00	7,220.00	-155.01	-2,498.27	610,203.23	588,124.07	32.67740127	-104.18127462
02-OVS(M9SC-122H) - plan misses target center by 162.17usft at 7239.14usft MD (7162.69 TVD, -125.20 N, -98.91 E) - Point	0.00	0.00	7,290.00	-124.14	1.54	610,234.09	590,623.88	32.67747599	-104.17314999
01-FTP(M9SC-122H) - plan misses target center by 212.25usft at 7191.53usft MD (7132.58 TVD, -124.74 N, -62.05 E) - Point	0.00	0.00	7,290.00	-123.17	80.31	610,235.06	590,702.65	32.67747834	-104.17289397



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Madera 9 State Com 122H
Company:	Colgate Energy	TVD Reference:	3540+30 @ 3570.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3540+30 @ 3570.00usft
Site:	Madera 9 State Com	North Reference:	Grid
Well:	Madera 9 State Com 122H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev0		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
68.00	68.00	Rustler				
225.00	225.00	Top of Salt				
388.00	388.00	Base of Salt				
696.00	696.00	Yates				
2,840.73	2,840.00	DLWR Mnt. Group				
3,070.90	3,070.00	Lower Brushy Canyon				
3,361.13	3,360.00	Bone Spring Lime				
6,073.22	6,070.00	1st Bone Spring SD				
6,108.24	6,105.00	2nd Bone Spring LM				
7,172.93	7,120.00	2nd Bone Spring SD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
6,707.72	6,704.25	-122.35	130.35	KOP: 6707.72' MD, -128.82' VS, 6704.25' TVD	
7,623.72	7,276.98	-129.67	-458.56	EOC: 7623.72' MD, 460.13' VS, 7276.98' TVD	
17,363.80	6,911.83	-249.98	-10,190.93	TD: 17363.80' MD, 10193.24' VS, 6911.83' TVD	