



Colgate Energy

Eddy County, NM (N83-NME)

Crazy Horse 32 State Fed Com

Crazy Horse 32 State Fed Com 133H

Permit

Plan: ADP-Rev2

Standard Planning Report

06 October, 2020



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Company:	Colgate Energy	TVD Reference:	3264+25 @ 3289.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3264+25 @ 3289.00usft
Site:	Crazy Horse 32 State Fed Com	North Reference:	Grid
Well:	Crazy Horse 32 State Fed Com 133H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	ADP-Rev2		

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	Crazy Horse 32 State Fed Com				
Site Position:		Northing:	586,991.40 usft	Latitude:	32.61325351
From:	Map	Easting:	643,359.01 usft	Longitude:	-104.00199549
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.18

Well	Crazy Horse 32 State Fed Com 133H					
Well Position	+N/-S	-0.10 usft	Northing:	586,991.30 usft	Latitude:	32.61325362
	+E/-W	-44.84 usft	Easting:	643,314.17 usft	Longitude:	-104.00214112
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,264.00 usft

Wellbore	Permit				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/27/2020	6.86	60.21	47,755.13615062

Design	ADP-Rev2				
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	89.94	

Plan Survey Tool Program	Date	10/6/2020			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	19,720.85 ADP-Rev2 (Permit)	OWSG MWD Rev 4		
			OWSG MWD - Standard		



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Wellbore:	Permit		
Design:	ADP-Rev2		

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	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,480.35	8.71	348.17	2,478.12	43.07	-9.02	1.50	1.50	0.00	348.17	
6,470.07	8.71	348.17	6,421.88	634.09	-132.82	0.00	0.00	0.00	0.00	
7,050.42	0.00	0.00	7,000.00	677.16	-141.84	1.50	-1.50	0.00	180.00	00-EON-CH133H
8,874.92	0.00	0.00	8,824.50	677.16	-141.84	0.00	0.00	0.00	0.00	
9,763.45	88.85	89.94	9,397.34	677.76	419.64	10.00	10.00	10.12	89.94	
11,843.51	88.85	89.94	9,439.00	679.96	2,499.29	0.00	0.00	0.00	0.00	02-V-2500-133H
11,872.41	89.43	89.94	9,439.43	679.99	2,528.18	2.00	2.00	-0.01	-0.18	
14,343.64	89.43	89.94	9,464.00	682.69	4,999.29	0.00	0.00	0.00	0.00	03-V-5000-133H
14,378.42	88.73	89.94	9,464.56	682.73	5,034.06	2.00	-2.00	0.00	-179.98	
16,844.25	88.73	89.94	9,519.00	685.43	7,499.29	0.00	0.00	0.00	0.00	04-V-7500-133H
16,850.22	88.85	89.94	9,519.13	685.44	7,505.26	2.00	2.00	0.00	0.11	
19,344.74	88.85	89.94	9,569.00	688.16	9,999.28	0.00	0.00	0.00	0.00	05-V-10000-133H
19,630.84	88.85	89.94	9,574.72	688.47	10,285.32	0.00	0.00	0.00	0.00	06-LTP(CH32-133H)
19,720.85	88.85	89.94	9,576.52	688.57	10,375.32	0.00	0.00	0.00	0.00	07-PBHL(CH32-133H)



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Well:	Crazy Horse 32 State Fed Com 133H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	ADP-Rev2		

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
139.00	0.00	0.00	139.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
379.00	0.00	0.00	379.00	0.00	0.00	0.00	0.00	0.00	0.00
Top 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
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
1,294.00	0.00	0.00	1,294.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
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
1,464.00	0.00	0.00	1,464.00	0.00	0.00	0.00	0.00	0.00	0.00
Yates									
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	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50									
2,000.00	1.50	348.17	1,999.99	1.28	-0.27	-0.27	1.50	1.50	0.00
2,100.00	3.00	348.17	2,099.91	5.12	-1.07	-1.07	1.50	1.50	0.00
2,200.00	4.50	348.17	2,199.69	11.52	-2.41	-2.40	1.50	1.50	0.00
2,300.00	6.00	348.17	2,299.27	20.48	-4.29	-4.27	1.50	1.50	0.00
2,400.00	7.50	348.17	2,398.57	31.98	-6.70	-6.67	1.50	1.50	0.00
2,480.35	8.71	348.17	2,478.12	43.07	-9.02	-8.98	1.50	1.50	0.00
Start 3989.72 hold at 2480.35 MD									
2,500.00	8.71	348.17	2,497.54	45.98	-9.63	-9.58	0.00	0.00	0.00
2,600.00	8.71	348.17	2,596.39	60.79	-12.73	-12.67	0.00	0.00	0.00
2,700.00	8.71	348.17	2,695.24	75.61	-15.84	-15.76	0.00	0.00	0.00
2,800.00	8.71	348.17	2,794.09	90.42	-18.94	-18.84	0.00	0.00	0.00
2,900.00	8.71	348.17	2,892.94	105.23	-22.04	-21.93	0.00	0.00	0.00
3,000.00	8.71	348.17	2,991.78	120.05	-25.15	-25.02	0.00	0.00	0.00
3,100.00	8.71	348.17	3,090.63	134.86	-28.25	-28.11	0.00	0.00	0.00
3,200.00	8.71	348.17	3,189.48	149.67	-31.35	-31.19	0.00	0.00	0.00
3,300.00	8.71	348.17	3,288.33	164.49	-34.45	-34.28	0.00	0.00	0.00
3,300.68	8.71	348.17	3,289.00	164.59	-34.48	-34.30	0.00	0.00	0.00
Capitan									
3,400.00	8.71	348.17	3,387.18	179.30	-37.56	-37.37	0.00	0.00	0.00
3,401.85	8.71	348.17	3,389.00	179.58	-37.61	-37.43	0.00	0.00	0.00
DLWR Mnt. Group									
3,500.00	8.71	348.17	3,486.02	194.12	-40.66	-40.46	0.00	0.00	0.00
3,600.00	8.71	348.17	3,584.87	208.93	-43.76	-43.54	0.00	0.00	0.00
3,700.00	8.71	348.17	3,683.72	223.74	-46.87	-46.63	0.00	0.00	0.00



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Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,800.00	8.71	348.17	3,782.57	238.56	-49.97	-49.72	0.00	0.00	0.00
3,900.00	8.71	348.17	3,881.42	253.37	-53.07	-52.81	0.00	0.00	0.00
4,000.00	8.71	348.17	3,980.26	268.18	-56.17	-55.89	0.00	0.00	0.00
4,100.00	8.71	348.17	4,079.11	283.00	-59.28	-58.98	0.00	0.00	0.00
4,200.00	8.71	348.17	4,177.96	297.81	-62.38	-62.07	0.00	0.00	0.00
4,300.00	8.71	348.17	4,276.81	312.62	-65.48	-65.16	0.00	0.00	0.00
4,400.00	8.71	348.17	4,375.66	327.44	-68.59	-68.24	0.00	0.00	0.00
4,500.00	8.71	348.17	4,474.50	342.25	-71.69	-71.33	0.00	0.00	0.00
4,600.00	8.71	348.17	4,573.35	357.07	-74.79	-74.42	0.00	0.00	0.00
4,700.00	8.71	348.17	4,672.20	371.88	-77.90	-77.51	0.00	0.00	0.00
4,800.00	8.71	348.17	4,771.05	386.69	-81.00	-80.59	0.00	0.00	0.00
4,900.00	8.71	348.17	4,869.90	401.51	-84.10	-83.68	0.00	0.00	0.00
5,000.00	8.71	348.17	4,968.74	416.32	-87.20	-86.77	0.00	0.00	0.00
5,100.00	8.71	348.17	5,067.59	431.13	-90.31	-89.86	0.00	0.00	0.00
5,200.00	8.71	348.17	5,166.44	445.95	-93.41	-92.94	0.00	0.00	0.00
5,300.00	8.71	348.17	5,265.29	460.76	-96.51	-96.03	0.00	0.00	0.00
5,400.00	8.71	348.17	5,364.14	475.57	-99.62	-99.12	0.00	0.00	0.00
5,500.00	8.71	348.17	5,462.98	490.39	-102.72	-102.20	0.00	0.00	0.00
5,600.00	8.71	348.17	5,561.83	505.20	-105.82	-105.29	0.00	0.00	0.00
5,700.00	8.71	348.17	5,660.68	520.02	-108.92	-108.38	0.00	0.00	0.00
5,800.00	8.71	348.17	5,759.53	534.83	-112.03	-111.47	0.00	0.00	0.00
5,900.00	8.71	348.17	5,858.38	549.64	-115.13	-114.55	0.00	0.00	0.00
5,905.69	8.71	348.17	5,864.00	550.49	-115.31	-114.73	0.00	0.00	0.00
Lower Brushy Canyon									
6,000.00	8.71	348.17	5,957.22	564.46	-118.23	-117.64	0.00	0.00	0.00
6,100.00	8.71	348.17	6,056.07	579.27	-121.34	-120.73	0.00	0.00	0.00
6,194.01	8.71	348.17	6,149.00	593.20	-124.25	-123.63	0.00	0.00	0.00
Bone Spring Lime									
6,200.00	8.71	348.17	6,154.92	594.08	-124.44	-123.82	0.00	0.00	0.00
6,300.00	8.71	348.17	6,253.77	608.90	-127.54	-126.90	0.00	0.00	0.00
6,400.00	8.71	348.17	6,352.62	623.71	-130.64	-129.99	0.00	0.00	0.00
6,470.07	8.71	348.17	6,421.88	634.09	-132.82	-132.15	0.00	0.00	0.00
Start Drop -1.50									
6,500.00	8.26	348.17	6,451.48	638.41	-133.72	-133.06	1.50	-1.50	0.00
6,600.00	6.76	348.17	6,550.62	651.20	-136.40	-135.72	1.50	-1.50	0.00
6,700.00	5.26	348.17	6,650.07	661.44	-138.55	-137.85	1.50	-1.50	0.00
6,800.00	3.76	348.17	6,749.76	669.13	-140.16	-139.46	1.50	-1.50	0.00
6,900.00	2.26	348.17	6,849.62	674.26	-141.23	-140.53	1.50	-1.50	0.00
7,000.00	0.76	348.17	6,949.58	676.83	-141.77	-141.06	1.50	-1.50	0.00
7,050.42	0.00	0.00	7,000.00	677.16	-141.84	-141.13	1.50	-1.50	0.00
Start 1824.50 hold at 7050.42 MD - 00-EON-CH133H									
7,100.00	0.00	0.00	7,049.58	677.16	-141.84	-141.13	0.00	0.00	0.00
7,200.00	0.00	0.00	7,149.58	677.16	-141.84	-141.13	0.00	0.00	0.00
7,300.00	0.00	0.00	7,249.58	677.16	-141.84	-141.13	0.00	0.00	0.00
7,400.00	0.00	0.00	7,349.58	677.16	-141.84	-141.13	0.00	0.00	0.00
7,500.00	0.00	0.00	7,449.58	677.16	-141.84	-141.13	0.00	0.00	0.00
7,524.42	0.00	0.00	7,474.00	677.16	-141.84	-141.13	0.00	0.00	0.00
1st Bone Spring SD									
7,600.00	0.00	0.00	7,549.58	677.16	-141.84	-141.13	0.00	0.00	0.00
7,684.42	0.00	0.00	7,634.00	677.16	-141.84	-141.13	0.00	0.00	0.00
2nd Bone Spring LM									
7,700.00	0.00	0.00	7,649.58	677.16	-141.84	-141.13	0.00	0.00	0.00
7,800.00	0.00	0.00	7,749.58	677.16	-141.84	-141.13	0.00	0.00	0.00



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7,900.00	0.00	0.00	7,849.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,000.00	0.00	0.00	7,949.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,100.00	0.00	0.00	8,049.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,200.00	0.00	0.00	8,149.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,254.42	0.00	0.00	8,204.00	677.16	-141.84	-141.13	0.00	0.00	0.00
2nd Bone Spring SD									
8,300.00	0.00	0.00	8,249.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,400.00	0.00	0.00	8,349.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,500.00	0.00	0.00	8,449.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,589.42	0.00	0.00	8,539.00	677.16	-141.84	-141.13	0.00	0.00	0.00
3rd Bone Spring LM									
8,600.00	0.00	0.00	8,549.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,700.00	0.00	0.00	8,649.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,800.00	0.00	0.00	8,749.58	677.16	-141.84	-141.13	0.00	0.00	0.00
8,874.92	0.00	0.00	8,824.50	677.16	-141.84	-141.13	0.00	0.00	0.00
KOP: 8874.92' MD, -141.13' VS, 8824.50' TVD									
8,900.00	2.51	89.94	8,849.57	677.16	-141.29	-140.58	10.00	10.00	0.00
8,950.00	7.51	89.94	8,899.36	677.17	-136.93	-136.22	10.00	10.00	0.00
9,000.00	12.51	89.94	8,948.59	677.17	-128.24	-127.53	10.00	10.00	0.00
9,050.00	17.51	89.94	8,996.87	677.19	-115.30	-114.59	10.00	10.00	0.00
9,100.00	22.51	89.94	9,043.83	677.21	-98.20	-97.49	10.00	10.00	0.00
9,150.00	27.51	89.94	9,089.13	677.23	-77.07	-76.36	10.00	10.00	0.00
9,190.08	31.52	89.94	9,124.00	677.25	-57.33	-56.62	10.00	10.00	0.00
3rd Bone Spring SD									
9,200.00	32.51	89.94	9,132.42	677.26	-52.07	-51.36	10.00	10.00	0.00
9,250.00	37.51	89.94	9,173.36	677.29	-23.39	-22.68	10.00	10.00	0.00
9,300.00	42.51	89.94	9,211.64	677.32	8.74	9.45	10.00	10.00	0.00
9,350.00	47.51	89.94	9,246.98	677.36	44.09	44.80	10.00	10.00	0.00
01-FTP (CH32-133H)									
9,400.00	52.51	89.94	9,279.11	677.40	82.38	83.09	10.00	10.00	0.00
9,450.00	57.51	89.94	9,307.77	677.44	123.33	124.04	10.00	10.00	0.00
9,500.00	62.51	89.94	9,332.76	677.49	166.62	167.33	10.00	10.00	0.00
9,550.00	67.51	89.94	9,353.87	677.54	211.93	212.64	10.00	10.00	0.00
9,600.00	72.51	89.94	9,370.96	677.58	258.90	259.61	10.00	10.00	0.00
9,650.00	77.51	89.94	9,383.89	677.64	307.18	307.89	10.00	10.00	0.00
9,700.00	82.51	89.94	9,392.57	677.69	356.41	357.12	10.00	10.00	0.00
9,750.00	87.51	89.94	9,396.92	677.74	406.20	406.91	10.00	10.00	0.00
9,763.45	88.85	89.94	9,397.34	677.76	419.64	420.35	10.00	10.00	0.00
EOC: 9763.45' MD, 420.36' VS, 9397.34' TVD									
9,800.00	88.85	89.94	9,398.08	677.79	456.19	456.90	0.00	0.00	0.00
9,900.00	88.85	89.94	9,400.08	677.90	556.17	556.88	0.00	0.00	0.00
10,000.00	88.85	89.94	9,402.08	678.01	656.15	656.86	0.00	0.00	0.00
10,100.00	88.85	89.94	9,404.08	678.11	756.13	756.84	0.00	0.00	0.00
10,200.00	88.85	89.94	9,406.09	678.22	856.11	856.82	0.00	0.00	0.00
10,300.00	88.85	89.94	9,408.09	678.32	956.09	956.80	0.00	0.00	0.00
10,400.00	88.85	89.94	9,410.09	678.43	1,056.07	1,056.78	0.00	0.00	0.00
10,500.00	88.85	89.94	9,412.09	678.54	1,156.05	1,156.76	0.00	0.00	0.00
10,600.00	88.85	89.94	9,414.10	678.64	1,256.03	1,256.74	0.00	0.00	0.00
10,700.00	88.85	89.94	9,416.10	678.75	1,356.01	1,356.72	0.00	0.00	0.00
10,800.00	88.85	89.94	9,418.10	678.85	1,455.99	1,456.70	0.00	0.00	0.00
10,900.00	88.85	89.94	9,420.10	678.96	1,555.97	1,556.68	0.00	0.00	0.00
11,000.00	88.85	89.94	9,422.11	679.07	1,655.95	1,656.66	0.00	0.00	0.00
11,100.00	88.85	89.94	9,424.11	679.17	1,755.93	1,756.64	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Company:	Colgate Energy	TVD Reference:	3264+25 @ 3289.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3264+25 @ 3289.00usft
Site:	Crazy Horse 32 State Fed Com	North Reference:	Grid
Well:	Crazy Horse 32 State Fed Com 133H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	ADP-Rev2		

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)	
11,200.00	88.85	89.94	9,426.11	679.28	1,855.91	1,856.62	0.00	0.00	0.00	
11,300.00	88.85	89.94	9,428.12	679.38	1,955.89	1,956.60	0.00	0.00	0.00	
11,400.00	88.85	89.94	9,430.12	679.49	2,055.87	2,056.58	0.00	0.00	0.00	
11,500.00	88.85	89.94	9,432.12	679.60	2,155.85	2,156.56	0.00	0.00	0.00	
11,600.00	88.85	89.94	9,434.12	679.70	2,255.83	2,256.54	0.00	0.00	0.00	
11,700.00	88.85	89.94	9,436.13	679.81	2,355.81	2,356.52	0.00	0.00	0.00	
11,800.00	88.85	89.94	9,438.13	679.91	2,455.79	2,456.50	0.00	0.00	0.00	
11,843.51	88.85	89.94	9,439.00	679.96	2,499.29	2,500.00	0.00	0.00	0.00	
Start DLS 2.00 TFO -0.18 - 02-V-2500-133H										
11,872.41	89.43	89.94	9,439.43	679.99	2,528.18	2,528.89	2.00	2.00	-0.01	
Start 2471.23 hold at 11872.41 MD										
11,900.00	89.43	89.94	9,439.71	680.02	2,555.77	2,556.48	0.00	0.00	0.00	
12,000.00	89.43	89.94	9,440.70	680.13	2,655.77	2,656.48	0.00	0.00	0.00	
12,100.00	89.43	89.94	9,441.70	680.24	2,755.76	2,756.47	0.00	0.00	0.00	
12,200.00	89.43	89.94	9,442.69	680.35	2,855.76	2,856.47	0.00	0.00	0.00	
12,300.00	89.43	89.94	9,443.68	680.46	2,955.75	2,956.46	0.00	0.00	0.00	
12,400.00	89.43	89.94	9,444.68	680.57	3,055.75	3,056.46	0.00	0.00	0.00	
12,500.00	89.43	89.94	9,445.67	680.68	3,155.74	3,156.45	0.00	0.00	0.00	
12,600.00	89.43	89.94	9,446.67	680.79	3,255.74	3,256.45	0.00	0.00	0.00	
12,700.00	89.43	89.94	9,447.66	680.89	3,355.73	3,356.44	0.00	0.00	0.00	
12,800.00	89.43	89.94	9,448.65	681.00	3,455.73	3,456.44	0.00	0.00	0.00	
12,900.00	89.43	89.94	9,449.65	681.11	3,555.72	3,556.43	0.00	0.00	0.00	
13,000.00	89.43	89.94	9,450.64	681.22	3,655.72	3,656.43	0.00	0.00	0.00	
13,100.00	89.43	89.94	9,451.64	681.33	3,755.71	3,756.42	0.00	0.00	0.00	
13,200.00	89.43	89.94	9,452.63	681.44	3,855.71	3,856.42	0.00	0.00	0.00	
13,300.00	89.43	89.94	9,453.63	681.55	3,955.70	3,956.41	0.00	0.00	0.00	
13,400.00	89.43	89.94	9,454.62	681.66	4,055.70	4,056.41	0.00	0.00	0.00	
13,500.00	89.43	89.94	9,455.61	681.77	4,155.69	4,156.40	0.00	0.00	0.00	
13,600.00	89.43	89.94	9,456.61	681.88	4,255.69	4,256.40	0.00	0.00	0.00	
13,700.00	89.43	89.94	9,457.60	681.99	4,355.68	4,356.40	0.00	0.00	0.00	
13,800.00	89.43	89.94	9,458.60	682.10	4,455.68	4,456.39	0.00	0.00	0.00	
13,900.00	89.43	89.94	9,459.59	682.21	4,555.67	4,556.39	0.00	0.00	0.00	
14,000.00	89.43	89.94	9,460.58	682.31	4,655.67	4,656.38	0.00	0.00	0.00	
14,100.00	89.43	89.94	9,461.58	682.42	4,755.66	4,756.38	0.00	0.00	0.00	
14,200.00	89.43	89.94	9,462.57	682.53	4,855.66	4,856.37	0.00	0.00	0.00	
14,300.00	89.43	89.94	9,463.57	682.64	4,955.65	4,956.37	0.00	0.00	0.00	
14,343.64	89.43	89.94	9,464.00	682.69	4,999.29	5,000.00	0.00	0.00	0.00	
Start DLS 2.00 TFO -179.98 - 03-V-5000-133H										
14,378.42	88.73	89.94	9,464.56	682.73	5,034.06	5,034.77	2.00	-2.00	0.00	
Start 2465.83 hold at 14378.42 MD										
14,400.00	88.73	89.94	9,465.03	682.75	5,055.64	5,056.35	0.00	0.00	0.00	
14,442.26	88.73	89.94	9,465.97	682.80	5,097.89	5,098.60	0.00	0.00	0.00	
Sec 32.61508567, -103.98557757 - Sec: 14442.26' MD, 9465.97' TVD										
14,500.00	88.73	89.94	9,467.24	682.86	5,155.62	5,156.33	0.00	0.00	0.00	
14,600.00	88.73	89.94	9,469.45	682.97	5,255.59	5,256.30	0.00	0.00	0.00	
14,700.00	88.73	89.94	9,471.66	683.08	5,355.57	5,356.28	0.00	0.00	0.00	
14,800.00	88.73	89.94	9,473.87	683.19	5,455.54	5,456.26	0.00	0.00	0.00	
14,900.00	88.73	89.94	9,476.07	683.30	5,555.52	5,556.23	0.00	0.00	0.00	
15,000.00	88.73	89.94	9,478.28	683.41	5,655.49	5,656.21	0.00	0.00	0.00	
15,100.00	88.73	89.94	9,480.49	683.52	5,755.47	5,756.18	0.00	0.00	0.00	
15,200.00	88.73	89.94	9,482.70	683.63	5,855.45	5,856.16	0.00	0.00	0.00	
15,300.00	88.73	89.94	9,484.90	683.74	5,955.42	5,956.13	0.00	0.00	0.00	
15,400.00	88.73	89.94	9,487.11	683.85	6,055.40	6,056.11	0.00	0.00	0.00	



Planning Report

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Company:	Colgate Energy	TVD Reference:	3264+25 @ 3289.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3264+25 @ 3289.00usft
Site:	Crazy Horse 32 State Fed Com	North Reference:	Grid
Well:	Crazy Horse 32 State Fed Com 133H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	ADP-Rev2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,500.00	88.73	89.94	9,489.32	683.96	6,155.37	6,156.09	0.00	0.00	0.00	
15,600.00	88.73	89.94	9,491.53	684.07	6,255.35	6,256.06	0.00	0.00	0.00	
15,700.00	88.73	89.94	9,493.74	684.18	6,355.32	6,356.04	0.00	0.00	0.00	
15,800.00	88.73	89.94	9,495.94	684.29	6,455.30	6,456.01	0.00	0.00	0.00	
15,900.00	88.73	89.94	9,498.15	684.40	6,555.27	6,555.99	0.00	0.00	0.00	
16,000.00	88.73	89.94	9,500.36	684.50	6,655.25	6,655.96	0.00	0.00	0.00	
16,100.00	88.73	89.94	9,502.57	684.61	6,755.23	6,755.94	0.00	0.00	0.00	
16,200.00	88.73	89.94	9,504.78	684.72	6,855.20	6,855.91	0.00	0.00	0.00	
16,300.00	88.73	89.94	9,506.98	684.83	6,955.18	6,955.89	0.00	0.00	0.00	
16,400.00	88.73	89.94	9,509.19	684.94	7,055.15	7,055.87	0.00	0.00	0.00	
16,500.00	88.73	89.94	9,511.40	685.05	7,155.13	7,155.84	0.00	0.00	0.00	
16,600.00	88.73	89.94	9,513.61	685.16	7,255.10	7,255.82	0.00	0.00	0.00	
16,700.00	88.73	89.94	9,515.82	685.27	7,355.08	7,355.79	0.00	0.00	0.00	
16,800.00	88.73	89.94	9,518.02	685.38	7,455.05	7,455.77	0.00	0.00	0.00	
16,844.25	88.73	89.94	9,519.00	685.43	7,499.29	7,500.00	0.00	0.00	0.00	
Start DLS 2.00 TFO 0.11 - 04-V-7500-133H										
16,850.22	88.85	89.94	9,519.13	685.44	7,505.26	7,505.98	2.00	2.00	0.00	
Start 2494.52 hold at 16850.22 MD										
16,900.00	88.85	89.94	9,520.12	685.49	7,555.03	7,555.75	0.00	0.00	0.00	
17,000.00	88.85	89.94	9,522.12	685.60	7,655.01	7,655.73	0.00	0.00	0.00	
17,100.00	88.85	89.94	9,524.12	685.71	7,754.99	7,755.71	0.00	0.00	0.00	
17,200.00	88.85	89.94	9,526.12	685.82	7,854.97	7,855.69	0.00	0.00	0.00	
17,300.00	88.85	89.94	9,528.12	685.93	7,954.95	7,955.67	0.00	0.00	0.00	
17,400.00	88.85	89.94	9,530.12	686.04	8,054.93	8,055.65	0.00	0.00	0.00	
17,500.00	88.85	89.94	9,532.12	686.15	8,154.91	8,155.63	0.00	0.00	0.00	
17,600.00	88.85	89.94	9,534.12	686.26	8,254.89	8,255.61	0.00	0.00	0.00	
17,700.00	88.85	89.94	9,536.12	686.36	8,354.87	8,355.59	0.00	0.00	0.00	
17,800.00	88.85	89.94	9,538.12	686.47	8,454.85	8,455.57	0.00	0.00	0.00	
17,900.00	88.85	89.94	9,540.11	686.58	8,554.83	8,555.55	0.00	0.00	0.00	
18,000.00	88.85	89.94	9,542.11	686.69	8,654.81	8,655.53	0.00	0.00	0.00	
18,100.00	88.85	89.94	9,544.11	686.80	8,754.79	8,755.51	0.00	0.00	0.00	
18,200.00	88.85	89.94	9,546.11	686.91	8,854.77	8,855.49	0.00	0.00	0.00	
18,300.00	88.85	89.94	9,548.11	687.02	8,954.75	8,955.47	0.00	0.00	0.00	
18,400.00	88.85	89.94	9,550.11	687.13	9,054.73	9,055.45	0.00	0.00	0.00	
18,500.00	88.85	89.94	9,552.11	687.24	9,154.71	9,155.43	0.00	0.00	0.00	
18,600.00	88.85	89.94	9,554.11	687.35	9,254.69	9,255.41	0.00	0.00	0.00	
18,700.00	88.85	89.94	9,556.11	687.46	9,354.67	9,355.39	0.00	0.00	0.00	
18,800.00	88.85	89.94	9,558.11	687.57	9,454.65	9,455.37	0.00	0.00	0.00	
18,900.00	88.85	89.94	9,560.11	687.67	9,554.63	9,555.35	0.00	0.00	0.00	
19,000.00	88.85	89.94	9,562.11	687.78	9,654.61	9,655.33	0.00	0.00	0.00	
19,100.00	88.85	89.94	9,564.11	687.89	9,754.59	9,755.31	0.00	0.00	0.00	
19,200.00	88.85	89.94	9,566.11	688.00	9,854.57	9,855.29	0.00	0.00	0.00	
19,300.00	88.85	89.94	9,568.11	688.11	9,954.55	9,955.27	0.00	0.00	0.00	
19,344.74	88.85	89.94	9,569.00	688.16	9,999.28	10,000.00	0.00	0.00	0.00	
Start 286.10 hold at 19344.74 MD - 05-V-10000-133H										
19,400.00	88.85	89.94	9,570.11	688.22	10,054.53	10,055.25	0.00	0.00	0.00	
19,500.00	88.85	89.94	9,572.10	688.33	10,154.51	10,155.23	0.00	0.00	0.00	
19,600.00	88.85	89.94	9,574.10	688.44	10,254.49	10,255.21	0.00	0.00	0.00	
19,630.84	88.85	89.94	9,574.72	688.47	10,285.32	10,286.04	0.00	0.00	0.00	
Start 90.02 hold at 19630.84 MD - 06-LTP(CH32-133H)										
19,700.00	88.85	89.94	9,576.10	688.55	10,354.47	10,355.19	0.00	0.00	0.00	
19,720.85	88.85	89.94	9,576.52	688.57	10,375.32	10,376.04	0.00	0.00	0.00	
TD: 19720.85' MD, 10376.03' VS, 9576.52' TVD - 07-PBHL(CH32-133H)										



Planning Report

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Company:	Colgate Energy	TVD Reference:	3264+25 @ 3289.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3264+25 @ 3289.00usft
Site:	Crazy Horse 32 State Fed Com	North Reference:	Grid
Well:	Crazy Horse 32 State Fed Com 133H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	ADP-Rev2		

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
00-EON-CH133H - plan hits target center - Point	0.00	0.00	7,000.00	677.16	-141.84	587,668.46	643,172.33	32.61511613	-104.00259493
01-FTP (CH32-133H) - plan misses target center by 196.60usft at 9350.00usft MD (9246.98 TVD, 677.36 N, 44.09 E) - Point	0.00	89.94	9,389.00	677.13	-91.86	587,668.43	643,222.31	32.61511562	-104.00243260
02-V-2500-133H - plan hits target center - Point	0.00	0.00	9,439.00	679.96	2,499.29	587,671.26	645,813.46	32.61510095	-103.99401718
03-V-5000-133H - plan hits target center - Point	0.00	0.00	9,464.00	682.69	4,999.29	587,673.99	648,313.46	32.61508626	-103.98589780
04-V-7500-133H - plan hits target center - Point	0.00	0.00	9,519.00	685.43	7,499.29	587,676.73	650,813.46	32.61507107	-103.97777843
05-V-10000-133H - plan hits target center - Point	0.00	0.00	9,569.00	688.16	9,999.28	587,679.46	653,313.45	32.61505532	-103.96965910
06-LTP(CH32-133H) - plan misses target center by 0.09usft at 19630.84usft MD (9574.72 TVD, 688.47 N, 10285.32 E) - Point	0.00	0.00	9,574.72	688.38	10,285.32	587,679.68	653,599.49	32.61505323	-103.96873011
07-PBHL(CH32-133H) - plan hits target center - Point	0.00	0.00	9,576.52	688.57	10,375.32	587,679.87	653,689.49	32.61505291	-103.96843781

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
139.00	139.00	Rustler				
379.00	379.00	Top of Salt				
1,294.00	1,294.00	Base of Salt				
1,464.00	1,464.00	Yates				
3,300.68	3,289.00	Capitan				
3,401.85	3,389.00	DLWR Mnt. Group				
5,905.69	5,864.00	Lower Brushy Canyon				
6,194.01	6,149.00	Bone Spring Lime				
7,524.42	7,474.00	1st Bone Spring SD				
7,684.42	7,634.00	2nd Bone Spring LM				
8,254.42	8,204.00	2nd Bone Spring SD				
8,589.42	8,539.00	3rd Bone Spring LM				
9,190.08	9,124.00	3rd Bone Spring SD				



Planning Report

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Company:	Colgate Energy	TVD Reference:	3264+25 @ 3289.00usft
Project:	Eddy County, NM (N83-NME)	MD Reference:	3264+25 @ 3289.00usft
Site:	Crazy Horse 32 State Fed Com	North Reference:	Grid
Well:	Crazy Horse 32 State Fed Com 133H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	ADP-Rev2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,900.00	1,900.00	0.00	0.00	Start Build 1.50
2,480.35	2,478.12	43.07	-9.02	Start 3989.72 hold at 2480.35 MD
6,470.07	6,421.88	634.09	-132.82	Start Drop -1.50
7,050.42	7,000.00	677.16	-141.84	Start 1824.50 hold at 7050.42 MD
8,874.92	8,824.50	677.16	-141.84	KOP: 8874.92' MD, -141.13' VS, 8824.50' TVD
9,763.45	9,397.34	677.76	419.64	EOC: 9763.45' MD, 420.36' VS, 9397.34' TVD
11,843.51	9,439.00	679.96	2,499.29	Start DLS 2.00 TFO -0.18
11,872.41	9,439.43	679.99	2,528.18	Start 2471.23 hold at 11872.41 MD
14,343.64	9,464.00	682.69	4,999.29	Start DLS 2.00 TFO -179.98
14,378.42	9,464.56	682.73	5,034.06	Start 2465.83 hold at 14378.42 MD
14,442.26	9,465.97	682.80	5,097.89	Sec 32.61508567, -103.98557757
14,442.26	9,465.97	682.80	5,097.89	Sec: 14442.26' MD, 9465.97' TVD
16,844.25	9,519.00	685.43	7,499.29	Start DLS 2.00 TFO 0.11
16,850.22	9,519.13	685.44	7,505.26	Start 2494.52 hold at 16850.22 MD
19,344.74	9,569.00	688.16	9,999.28	Start 286.10 hold at 19344.74 MD
19,630.84	9,574.72	688.47	10,285.32	Start 90.02 hold at 19630.84 MD
19,720.85	9,576.52	688.57	10,375.32	TD: 19720.85' MD, 10376.03' VS, 9576.52' TVD

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1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 20402

CONDITIONS OF APPROVAL

Operator:	OGRID:	Action Number:	Action Type:
COLGATE OPERATING, LLC Suite 1000 Midland, TX79701	371449	20402	C-103A
300 North Marienfeld Street			
OCD Reviewer	Condition		
kpickford	None		