

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit one copy to appropriate District Office

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address Colgate Operating, LLC 300 N Marienfeld Street, Suite 1000 Midland, Tx 79701				² OGRID Number 371449			
				³ Reason for Filing Code/ Effective Date NW			
⁴ API Number 30 – 015 – 48116		⁵ Pool Name SCANLON DRAW; BONE SPRING				⁶ Pool Code 55510	
⁷ Property Code 330327		⁸ Property Name ATLAS 18 STATE FED COM				⁹ Well Number 131H	

II. ¹⁰ Surface Location

UL or lot no. C	Section 18	Township 19S	Range 29E	Lot Idn	Feet from the 1027	North/South Line North	Feet from the 2197	East/West line West	County Eddy
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¹¹ Bottom Hole Location

UL or lot no. D	Section 13	Township 19S	Range 28E	Lot Idn	Feet from the 692	North/South line North	Feet from the 42	East/West line West	County Eddy
¹² Lse Code F	¹³ Producing Method Code		¹⁴ Gas Connection Date 12/01/2021		¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date

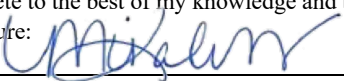
III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
329097	LM TOUCHDOWN, LLC	O
329097	LM TOUCHDOWN, LLC	G

IV. Well Completion Data

²¹ Spud Date 07/09/2021	²² Ready Date 12/01/2021	²³ TD 15,975 MD 8,730 TVD	²⁴ PBTD 15,863 MD 8,624 TVD	²⁵ Perforations 9,157 – 15,743	²⁶ DHC, MC
²⁷ Hole Size		²⁸ Casing & Tubing Size		²⁹ Depth Set	³⁰ Sacks Cement
17.5		13.375		464	535
12.25		9.625		3,058	520 Lead 210 Tail
8.75		5.5		15,955	650 Lead 1,190 Tail

V. Well Test Data

³¹ Date New Oil 12/22/2021	³² Gas Delivery Date 12/19/2021	³³ Test Date 01/07/2022	³⁴ Test Length 24 hours	³⁵ Tbg. Pressure 1,340	³⁶ Csg. Pressure 375
³⁷ Choke Size 56/64	³⁸ Oil 1,455	³⁹ Water 1,568	⁴⁰ Gas 2,117		⁴¹ Test Method P
⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: 			OIL CONSERVATION DIVISION		
Printed name: Mikah Thomas			Approved by: PATRICIA MARTINEZ		
Title: Operations Tech			Title: PETROLEUM SPECIALIST		
E-mail Address: mthomas@colgateenergy.com			Approval Date: 4/1/2022		
Date: 01/20/2022		Phone: 432-695-4272			

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

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, N.M. 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

AS-DRILLED

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

¹ API Number 30-015-48116	² Pool Code 55510	³ Pool Name Scanlon Draw; Bone Spring
⁴ Property Code 330327	⁵ Property Name Atlas 18 State Fed Com	⁶ Well Number 131H
⁷ OGRID No. 371449	⁸ Operator Name Colgate Operating, LLC	⁹ Elevation 3382

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
C	18	19 S	29 E		1027	North	2197	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
D	13	19 S	28 E		692	North	42	West	Eddy

¹² Dedicated Acres 232.7	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

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Legend:

- = Surface Location
- = Bottom Hole Location
- △ = First Take Point (FTP)
- = Last Take Point (LTP)
- ⊙ = Found 1941 USGLO Brass Cap
- ⊗ = Found Monument

NOTE:
DOWNHOLE INFORMATION
PROVIDED BY COLGATE ENERGY

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.

Mikah Thomas 01.25.2022
Signature Date

Mikah Thomas
Printed Name

mthomas@colgateenergy.com
E-mail Address

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.

8/30/21
Date of Survey
Plat Revised: 1/06/22
Signature and Seal of Professional Surveyor

17078
Certificate Number



Colgate Energy

Eddy County, NM (N83-NME)

Atlas 18 State Com

Atlas 18 State Fed Com #131H

30-015-48116

131H

Design: DRL

Standard Survey Report

27 July, 2021



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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	Atlas 18 State Com		
Site Position:		Northing:	605,867.37 usft
From:	Map	Easting:	608,589.94 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.66538511
		Longitude:	-104.11478887

Well	Atlas 18 State Fed Com #131H		
Well Position	+N/-S	0.00 usft	Northing: 605,867.37 usft
	+E/-W	0.00 usft	Easting: 608,589.94 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
Grid Convergence:	0.12 °	Ground Level:	3,382.00 usft

Wellbore	131H		
Magnetics	Model Name	Sample Date	Declination (°)
	IFR	7/5/2021	7.18
			Dip Angle (°)
			60.45
			Field Strength (nT)
			47,790.10000000

Design	DRL		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			269.75

Survey Program	Date	7/27/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
28.00	15,916.00	Survey #1 -FDIR Through TD (131H)	MWD+IFR1+SAG+FDIR (SQ OWSG MWD + IFR1 + Sag + FDIR Correction	
15,930.75	15,975.00	Survey #2 - PTB (131H)	BLIND	BLIND

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	
28.00	0.08	289.10	28.00	0.01	-0.02	0.02	0.29	0.29	0.00	
42.00	0.12	289.03	42.00	0.01	-0.04	0.04	0.29	0.29	-0.50	
56.00	0.16	288.97	56.00	0.03	-0.07	0.07	0.29	0.29	-0.43	
70.00	0.19	288.91	70.00	0.04	-0.11	0.11	0.21	0.21	-0.43	
84.00	0.23	288.85	84.00	0.06	-0.16	0.16	0.29	0.29	-0.43	
98.00	0.27	288.78	98.00	0.08	-0.22	0.22	0.29	0.29	-0.50	
112.00	0.31	288.72	112.00	0.10	-0.29	0.29	0.29	0.29	-0.43	
126.00	0.35	288.66	126.00	0.12	-0.36	0.36	0.29	0.29	-0.43	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
140.00	0.39	288.60	140.00	0.15	-0.45	0.45	0.29	0.29	-0.43
154.00	0.43	288.54	154.00	0.19	-0.54	0.54	0.29	0.29	-0.43
168.00	0.47	288.47	168.00	0.22	-0.65	0.65	0.29	0.29	-0.50
182.00	0.50	288.41	182.00	0.26	-0.76	0.76	0.21	0.21	-0.43
196.00	0.54	288.35	196.00	0.30	-0.88	0.88	0.29	0.29	-0.43
210.00	0.55	282.31	210.00	0.33	-1.01	1.01	0.42	0.07	-43.14
224.00	0.57	276.56	224.00	0.35	-1.15	1.14	0.43	0.14	-41.07
238.00	0.59	271.20	238.00	0.36	-1.29	1.28	0.41	0.14	-38.29
252.00	0.62	266.26	251.99	0.36	-1.43	1.43	0.43	0.21	-35.29
266.00	0.65	261.76	265.99	0.34	-1.59	1.59	0.42	0.21	-32.14
280.00	0.69	257.69	279.99	0.32	-1.75	1.75	0.44	0.29	-29.07
294.00	0.73	254.03	293.99	0.27	-1.92	1.92	0.43	0.29	-26.14
308.00	0.77	250.74	307.99	0.22	-2.09	2.09	0.42	0.29	-23.50
322.00	0.81	247.79	321.99	0.15	-2.27	2.27	0.41	0.29	-21.07
334.67	0.74	247.82	334.66	0.08	-2.43	2.43	0.55	-0.55	0.24
347.33	0.67	247.85	347.32	0.03	-2.58	2.58	0.55	-0.55	0.24
360.00	0.60	247.87	359.99	-0.03	-2.71	2.71	0.55	-0.55	0.16
372.67	0.52	247.90	372.66	-0.07	-2.82	2.82	0.63	-0.63	0.24
385.33	0.45	247.93	385.31	-0.11	-2.92	2.92	0.55	-0.55	0.24
398.00	0.38	247.96	397.98	-0.15	-3.00	3.01	0.55	-0.55	0.24
411.38	0.25	281.99	411.36	-0.16	-3.07	3.07	1.66	-0.97	254.33
424.75	0.28	332.20	424.73	-0.12	-3.12	3.12	1.69	0.22	375.54
438.13	0.44	357.72	438.11	-0.04	-3.14	3.14	1.67	1.20	190.73
451.50	0.64	8.48	451.48	0.08	-3.13	3.13	1.67	1.50	80.48
452.02	0.65	8.76	452.00	0.09	-3.13	3.12	1.66	1.54	54.15
Rustler									
464.88	0.85	14.01	464.86	0.25	-3.09	3.09	1.66	1.57	40.82
468.02	0.90	14.93	468.00	0.30	-3.08	3.08	1.70	1.64	29.37
Top of Salt									
478.25	1.07	17.32	478.23	0.47	-3.03	3.03	1.70	1.65	23.34
491.63	1.29	19.51	491.61	0.73	-2.94	2.94	1.68	1.64	16.37
505.00	1.51	21.06	504.97	1.03	-2.83	2.82	1.67	1.65	11.59
518.82	1.55	22.56	518.79	1.38	-2.69	2.69	0.41	0.29	10.85
532.64	1.60	24.17	532.60	1.72	-2.54	2.53	0.48	0.36	11.65
546.45	1.65	25.81	546.41	2.08	-2.38	2.37	0.49	0.36	11.88
560.27	1.71	27.42	560.22	2.44	-2.19	2.18	0.55	0.43	11.65
574.09	1.77	28.97	574.04	2.81	-2.00	1.98	0.55	0.43	11.22
587.91	1.84	30.45	587.85	3.19	-1.78	1.77	0.61	0.51	10.71
601.73	1.90	31.85	601.66	3.58	-1.55	1.53	0.55	0.43	10.13
615.55	1.97	33.17	615.47	3.97	-1.30	1.28	0.60	0.51	9.55
629.36	2.03	34.44	629.28	4.37	-1.03	1.01	0.54	0.43	9.20
643.18	2.10	35.67	643.09	4.78	-0.74	0.72	0.60	0.51	8.90
657.00	2.17	36.89	656.90	5.19	-0.44	0.41	0.60	0.51	8.83



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
671.33	2.23	38.70	671.22	5.63	-0.10	0.07	0.64	0.42	12.63
685.67	2.29	40.43	685.54	6.06	0.26	-0.29	0.63	0.42	12.06
700.00	2.35	41.96	699.86	6.50	0.64	-0.67	0.60	0.42	10.68
714.33	2.40	43.21	714.18	6.94	1.04	-1.08	0.50	0.35	8.72
722.16	2.43	43.66	722.00	7.18	1.27	-1.30	0.42	0.35	5.70
Base of Salt									
728.67	2.45	44.02	728.51	7.38	1.46	-1.50	0.42	0.35	5.58
743.00	2.49	44.22	742.82	7.82	1.89	-1.93	0.29	0.28	1.40
757.00	2.52	43.55	756.81	8.26	2.32	-2.35	0.30	0.21	-4.79
771.00	2.55	42.34	770.80	8.71	2.74	-2.78	0.44	0.21	-8.64
785.00	2.57	40.81	784.78	9.18	3.15	-3.19	0.51	0.14	-10.93
799.00	2.59	39.14	798.77	9.66	3.56	-3.60	0.56	0.14	-11.93
813.00	2.61	37.47	812.75	10.16	3.95	-4.00	0.56	0.14	-11.93
827.00	2.63	35.94	826.74	10.67	4.33	-4.38	0.52	0.14	-10.93
841.00	2.63	34.70	840.73	11.20	4.71	-4.76	0.41	0.00	-8.86
854.57	2.63	34.06	854.28	11.71	5.06	-5.11	0.22	0.00	-4.72
868.14	2.61	33.76	867.84	12.23	5.40	-5.46	0.18	-0.15	-2.21
881.71	2.60	33.67	881.39	12.74	5.75	-5.80	0.08	-0.07	-0.66
895.29	2.58	33.70	894.96	13.25	6.09	-6.14	0.15	-0.15	0.22
908.86	2.56	33.80	908.52	13.76	6.42	-6.48	0.15	-0.15	0.74
922.43	2.53	33.90	922.07	14.26	6.76	-6.82	0.22	-0.22	0.74
936.00	2.51	33.97	935.63	14.75	7.09	-7.16	0.15	-0.15	0.52
949.43	2.49	33.94	949.05	15.24	7.42	-7.49	0.15	-0.15	-0.22
962.86	2.46	33.76	962.46	15.72	7.74	-7.81	0.23	-0.22	-1.34
967.40	2.45	33.63	967.00	15.88	7.85	-7.92	0.32	-0.30	-2.82
Yates									
976.29	2.42	33.38	975.88	16.20	8.06	-8.13	0.32	-0.30	-2.84
989.71	2.36	32.66	989.29	16.67	8.36	-8.44	0.50	-0.45	-5.37
1,003.14	2.27	31.41	1,002.71	17.13	8.65	-8.73	0.77	-0.67	-9.31
1,016.57	2.15	29.26	1,016.13	17.57	8.91	-8.99	1.09	-0.89	-16.01
1,030.00	1.98	25.50	1,029.55	18.00	9.14	-9.22	1.62	-1.27	-28.00
1,043.57	1.71	19.25	1,043.11	18.40	9.31	-9.39	2.48	-1.99	-46.06
1,057.14	1.42	8.85	1,056.68	18.76	9.40	-9.48	2.98	-2.14	-76.64
1,070.71	1.19	352.55	1,070.24	19.07	9.41	-9.49	3.20	-1.69	-120.12
1,084.29	1.18	338.14	1,083.82	19.34	9.34	-9.42	2.19	-0.07	-106.11
1,097.86	1.18	316.72	1,097.39	19.57	9.19	-9.27	3.23	0.00	-157.85
1,111.43	1.33	299.21	1,110.96	19.75	8.95	-9.04	3.02	1.11	-129.03
1,125.00	1.53	287.83	1,124.52	19.88	8.64	-8.73	2.55	1.47	-83.86
1,138.43	1.34	282.46	1,137.95	19.97	8.32	-8.41	1.73	-1.41	-39.99
1,151.86	1.20	278.26	1,151.37	20.02	8.03	-8.11	1.25	-1.04	-31.27
1,165.29	1.22	277.14	1,164.80	20.06	7.75	-7.83	0.23	0.15	-8.34
1,178.71	1.30	278.01	1,178.22	20.10	7.45	-7.54	0.61	0.60	6.48
1,192.14	1.38	278.77	1,191.64	20.15	7.14	-7.23	0.61	0.60	5.66
1,205.57	1.47	279.44	1,205.07	20.20	6.81	-6.90	0.68	0.67	4.99



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
1,219.00	1.55	280.04	1,218.50	20.26	6.46	-6.55	0.61	0.60	4.47	
1,232.57	1.55	280.70	1,232.06	20.32	6.10	-6.19	0.13	0.00	4.86	
1,246.14	1.57	281.83	1,245.63	20.40	5.74	-5.83	0.27	0.15	8.33	
1,259.71	1.59	283.23	1,259.19	20.48	5.38	-5.47	0.32	0.15	10.32	
1,273.29	1.63	284.74	1,272.76	20.57	5.01	-5.10	0.43	0.29	11.12	
1,286.86	1.67	286.25	1,286.33	20.67	4.63	-4.72	0.44	0.29	11.13	
1,300.43	1.70	287.70	1,299.89	20.79	4.25	-4.34	0.38	0.22	10.69	
1,314.00	1.73	289.06	1,313.46	20.92	3.86	-3.95	0.37	0.22	10.02	
1,327.43	1.72	290.29	1,326.88	21.05	3.48	-3.57	0.29	-0.07	9.16	
1,340.86	1.70	291.32	1,340.31	21.20	3.11	-3.20	0.27	-0.15	7.67	
1,354.29	1.67	292.24	1,353.73	21.34	2.74	-2.83	0.30	-0.22	6.85	
1,367.71	1.64	293.09	1,367.14	21.49	2.38	-2.48	0.29	-0.22	6.33	
1,381.14	1.62	293.89	1,380.57	21.65	2.03	-2.13	0.23	-0.15	5.96	
1,394.57	1.61	294.64	1,393.99	21.80	1.69	-1.78	0.17	-0.07	5.58	
1,408.00	1.61	295.31	1,407.42	21.96	1.35	-1.44	0.14	0.00	4.99	
1,421.43	1.64	295.94	1,420.84	22.12	1.00	-1.10	0.26	0.22	4.69	
1,434.86	1.68	296.52	1,434.27	22.30	0.65	-0.75	0.32	0.30	4.32	
1,448.29	1.72	297.05	1,447.69	22.48	0.30	-0.40	0.32	0.30	3.95	
1,461.71	1.77	297.53	1,461.10	22.66	-0.07	-0.03	0.39	0.37	3.58	
1,475.14	1.82	297.97	1,474.53	22.86	-0.44	0.34	0.39	0.37	3.28	
1,488.57	1.86	298.39	1,487.95	23.06	-0.82	0.72	0.31	0.30	3.13	
1,502.00	1.88	298.80	1,501.37	23.27	-1.20	1.10	0.18	0.15	3.05	
1,515.57	1.88	299.27	1,514.94	23.49	-1.59	1.49	0.11	0.00	3.46	
1,529.14	1.87	299.72	1,528.50	23.71	-1.98	1.88	0.13	-0.07	3.32	
1,542.71	1.84	300.15	1,542.06	23.93	-2.36	2.25	0.24	-0.22	3.17	
1,556.29	1.82	300.51	1,555.64	24.15	-2.73	2.63	0.17	-0.15	2.65	
1,569.86	1.79	300.78	1,569.20	24.36	-3.10	2.99	0.23	-0.22	1.99	
1,583.43	1.78	300.88	1,582.76	24.58	-3.46	3.36	0.08	-0.07	0.74	
1,597.00	1.78	300.75	1,596.33	24.80	-3.83	3.72	0.03	0.00	-0.96	
1,610.43	1.81	300.29	1,609.75	25.01	-4.19	4.08	0.25	0.22	-3.43	
1,623.86	1.85	299.64	1,623.17	25.22	-4.56	4.45	0.34	0.30	-4.84	
1,637.29	1.90	298.87	1,636.59	25.44	-4.94	4.83	0.42	0.37	-5.73	
1,650.71	1.95	298.03	1,650.01	25.65	-5.34	5.23	0.43	0.37	-6.26	
1,664.14	1.99	297.14	1,663.43	25.87	-5.75	5.64	0.37	0.30	-6.63	
1,677.57	2.01	296.19	1,676.85	26.08	-6.17	6.05	0.29	0.15	-7.07	
1,691.00	2.01	295.15	1,690.27	26.28	-6.59	6.48	0.27	0.00	-7.74	
1,704.57	1.96	294.11	1,703.83	26.48	-7.02	6.90	0.45	-0.37	-7.66	
1,718.14	1.88	292.96	1,717.40	26.66	-7.44	7.32	0.65	-0.59	-8.47	
1,731.71	1.79	291.61	1,730.96	26.82	-7.84	7.72	0.74	-0.66	-9.95	
1,745.29	1.67	289.92	1,744.53	26.97	-8.22	8.10	0.96	-0.88	-12.44	
1,758.86	1.55	287.69	1,758.10	27.09	-8.58	8.46	1.00	-0.88	-16.43	
1,772.43	1.41	284.58	1,771.66	27.19	-8.92	8.80	1.19	-1.03	-22.92	
1,786.00	1.27	280.02	1,785.23	27.26	-9.23	9.11	1.30	-1.03	-33.60	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
1,799.43	1.10	274.67	1,798.66	27.30	-9.50	9.38	1.51	-1.27	-39.84
1,812.86	0.93	266.60	1,812.09	27.30	-9.74	9.62	1.65	-1.27	-60.09
1,826.29	0.78	254.74	1,825.51	27.27	-9.94	9.82	1.72	-1.12	-88.31
1,839.71	0.68	238.41	1,838.93	27.20	-10.09	9.98	1.71	-0.75	-121.68
1,853.14	0.64	219.32	1,852.36	27.10	-10.21	10.09	1.66	-0.30	-142.14
1,866.57	0.68	201.80	1,865.79	26.97	-10.29	10.17	1.53	0.30	-130.45
1,880.00	0.87	178.80	1,879.22	26.80	-10.31	10.20	2.69	1.41	-171.26
1,893.43	0.83	178.68	1,892.65	26.60	-10.31	10.19	0.30	-0.30	-0.89
1,906.86	0.78	178.55	1,906.08	26.41	-10.30	10.19	0.37	-0.37	-0.97
1,920.29	0.74	178.40	1,919.51	26.23	-10.30	10.19	0.30	-0.30	-1.12
1,933.71	0.70	178.23	1,932.92	26.06	-10.30	10.18	0.30	-0.30	-1.27
1,947.14	0.65	178.04	1,946.35	25.90	-10.29	10.18	0.37	-0.37	-1.41
1,960.57	0.61	177.82	1,959.78	25.75	-10.28	10.17	0.30	-0.30	-1.64
1,974.00	0.56	177.56	1,973.21	25.62	-10.28	10.17	0.37	-0.37	-1.94
1,987.57	0.55	181.77	1,986.78	25.49	-10.28	10.17	0.31	-0.07	31.02
2,001.14	0.54	186.13	2,000.35	25.36	-10.29	10.18	0.31	-0.07	32.13
2,014.71	0.54	190.59	2,013.92	25.23	-10.31	10.20	0.31	0.00	32.87
2,028.29	0.54	195.08	2,027.50	25.11	-10.33	10.22	0.31	0.00	33.06
2,041.86	0.54	199.57	2,041.07	24.98	-10.37	10.26	0.31	0.00	33.09
2,055.43	0.55	203.98	2,054.64	24.86	-10.42	10.31	0.32	0.07	32.50
2,069.00	0.56	208.27	2,068.21	24.75	-10.48	10.37	0.31	0.07	31.61
2,082.43	0.58	209.77	2,081.64	24.63	-10.54	10.44	0.19	0.15	11.17
2,095.86	0.60	211.15	2,095.07	24.51	-10.61	10.51	0.18	0.15	10.28
2,109.29	0.63	212.42	2,108.50	24.39	-10.69	10.58	0.25	0.22	9.46
2,122.71	0.65	213.59	2,121.91	24.26	-10.77	10.66	0.18	0.15	8.72
2,136.14	0.67	214.67	2,135.34	24.13	-10.86	10.75	0.18	0.15	8.04
2,149.57	0.70	215.67	2,148.77	24.00	-10.95	10.85	0.24	0.22	7.45
2,163.00	0.72	216.60	2,162.20	23.87	-11.05	10.94	0.17	0.15	6.92
2,176.43	0.69	216.35	2,175.63	23.74	-11.15	11.04	0.22	-0.22	-1.86
2,189.86	0.66	216.09	2,189.06	23.61	-11.24	11.14	0.22	-0.22	-1.94
2,203.29	0.63	215.79	2,202.49	23.49	-11.33	11.23	0.22	-0.22	-2.23
2,216.71	0.60	215.45	2,215.91	23.37	-11.41	11.31	0.23	-0.22	-2.53
2,230.14	0.57	215.07	2,229.34	23.26	-11.49	11.39	0.23	-0.22	-2.83
2,243.57	0.54	214.64	2,242.77	23.15	-11.57	11.46	0.23	-0.22	-3.20
2,257.00	0.51	214.15	2,256.20	23.05	-11.64	11.53	0.23	-0.22	-3.65
2,270.57	0.54	216.98	2,269.77	22.95	-11.71	11.61	0.29	0.22	20.85
2,284.14	0.58	219.45	2,283.34	22.84	-11.79	11.69	0.34	0.29	18.20
2,297.71	0.62	221.63	2,296.90	22.74	-11.88	11.78	0.34	0.29	16.06
2,311.29	0.65	223.56	2,310.48	22.63	-11.98	11.89	0.27	0.22	14.21
2,324.86	0.69	225.27	2,324.05	22.51	-12.10	12.00	0.33	0.29	12.60
2,338.43	0.73	226.80	2,337.62	22.40	-12.22	12.12	0.33	0.29	11.27
2,352.00	0.77	228.17	2,351.19	22.28	-12.35	12.25	0.32	0.29	10.10
2,365.43	0.75	226.22	2,364.62	22.15	-12.48	12.38	0.24	-0.15	-14.52
2,378.86	0.73	224.16	2,378.05	22.03	-12.60	12.50	0.25	-0.15	-15.34



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
2,392.29	0.71	221.97	2,391.48	21.91	-12.72	12.62	0.25	-0.15	-16.31
2,405.71	0.69	219.66	2,404.90	21.78	-12.82	12.73	0.26	-0.15	-17.21
2,419.14	0.67	217.22	2,418.33	21.66	-12.92	12.83	0.26	-0.15	-18.17
2,432.57	0.66	214.65	2,431.75	21.53	-13.01	12.92	0.23	-0.07	-19.14
2,446.00	0.64	211.96	2,445.18	21.41	-13.10	13.00	0.27	-0.15	-20.03
2,459.43	0.66	216.21	2,458.61	21.28	-13.18	13.09	0.39	0.15	31.65
2,472.86	0.68	220.22	2,472.04	21.16	-13.28	13.19	0.38	0.15	29.86
2,486.29	0.70	223.98	2,485.47	21.04	-13.39	13.30	0.37	0.15	28.00
2,499.71	0.73	227.47	2,498.89	20.92	-13.51	13.42	0.39	0.22	26.01
2,513.14	0.76	230.71	2,512.32	20.81	-13.64	13.55	0.39	0.22	24.13
2,526.57	0.79	233.69	2,525.75	20.70	-13.78	13.69	0.37	0.22	22.19
2,540.00	0.82	236.43	2,539.18	20.59	-13.94	13.85	0.36	0.22	20.40
2,553.57	0.82	232.82	2,552.74	20.47	-14.10	14.01	0.38	0.00	-26.60
2,567.14	0.82	229.18	2,566.31	20.35	-14.25	14.16	0.38	0.00	-26.82
2,580.71	0.82	225.54	2,579.88	20.22	-14.39	14.30	0.38	0.00	-26.82
2,594.29	0.82	221.92	2,593.46	20.08	-14.53	14.44	0.38	0.00	-26.66
2,607.86	0.83	218.36	2,607.03	19.93	-14.65	14.56	0.38	0.07	-26.23
2,621.43	0.85	214.88	2,620.60	19.77	-14.77	14.68	0.40	0.15	-25.64
2,635.00	0.86	211.50	2,634.17	19.60	-14.88	14.79	0.38	0.07	-24.91
2,648.57	0.88	214.52	2,647.73	19.43	-14.99	14.91	0.37	0.15	22.25
2,662.14	0.90	217.40	2,661.30	19.26	-15.12	15.03	0.36	0.15	21.22
2,675.71	0.93	220.13	2,674.87	19.09	-15.25	15.17	0.39	0.22	20.12
2,689.29	0.95	222.71	2,688.45	18.92	-15.40	15.32	0.34	0.15	19.00
2,702.86	0.98	225.14	2,702.02	18.76	-15.56	15.48	0.37	0.22	17.91
2,716.43	1.01	227.43	2,715.59	18.60	-15.73	15.65	0.37	0.22	16.88
2,730.00	1.04	229.58	2,729.15	18.44	-15.91	15.83	0.36	0.22	15.84
2,743.43	1.03	227.92	2,742.58	18.28	-16.09	16.01	0.24	-0.07	-12.36
2,756.86	1.02	226.03	2,756.01	18.11	-16.27	16.19	0.26	-0.07	-14.07
2,770.29	1.01	224.14	2,769.44	17.94	-16.44	16.36	0.26	-0.07	-14.07
2,783.71	1.01	222.48	2,782.85	17.77	-16.60	16.52	0.22	0.00	-12.37
2,797.14	1.02	218.23	2,796.28	17.59	-16.75	16.68	0.57	0.07	-31.65
2,810.57	1.04	214.37	2,809.71	17.40	-16.90	16.82	0.54	0.15	-28.74
2,824.00	1.06	210.65	2,823.14	17.19	-17.03	16.95	0.53	0.15	-27.70
2,837.57	1.07	210.66	2,836.71	16.97	-17.16	17.08	0.07	0.07	0.07
2,851.14	1.08	210.86	2,850.27	16.75	-17.29	17.21	0.08	0.07	1.47
2,864.71	1.10	211.22	2,863.84	16.53	-17.42	17.35	0.16	0.15	2.65
2,878.29	1.11	211.72	2,877.42	16.31	-17.56	17.49	0.10	0.07	3.68
2,891.86	1.12	212.37	2,890.99	16.08	-17.70	17.63	0.12	0.07	4.79
2,905.43	1.13	213.22	2,904.55	15.86	-17.84	17.77	0.14	0.07	6.26
2,919.00	1.18	213.32	2,918.12	15.63	-17.99	17.92	0.37	0.37	0.74
2,933.20	1.16	214.71	2,932.32	15.39	-18.15	18.09	0.24	-0.14	9.79
2,947.40	1.14	216.33	2,946.51	15.16	-18.32	18.25	0.27	-0.14	11.41
2,961.60	1.11	218.11	2,960.71	14.94	-18.49	18.42	0.32	-0.21	12.54



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
2,975.80	1.09	219.90	2,974.91	14.73	-18.66	18.59	0.28	-0.14	12.61
2,990.00	1.07	221.52	2,989.11	14.52	-18.83	18.77	0.26	-0.14	11.41
3,003.73	1.06	222.56	3,002.83	14.33	-19.00	18.94	0.16	-0.07	7.57
3,017.45	1.06	223.38	3,016.55	14.15	-19.18	19.12	0.11	0.00	5.98
3,031.18	1.06	224.12	3,030.28	13.96	-19.35	19.29	0.10	0.00	5.39
3,044.91	1.06	224.85	3,044.01	13.78	-19.53	19.47	0.10	0.00	5.32
3,058.64	1.11	224.05	3,057.73	13.60	-19.71	19.65	0.38	0.36	-5.83
3,072.36	1.16	223.10	3,071.45	13.40	-19.90	19.84	0.39	0.36	-6.92
3,086.09	1.21	222.23	3,085.18	13.19	-20.09	20.03	0.39	0.36	-6.34
3,099.82	1.27	221.43	3,098.91	12.97	-20.29	20.23	0.45	0.44	-5.83
3,113.55	1.32	220.69	3,112.63	12.74	-20.49	20.44	0.38	0.36	-5.39
3,127.27	1.37	220.00	3,126.35	12.49	-20.70	20.65	0.38	0.36	-5.03
3,141.00	1.43	219.37	3,140.07	12.23	-20.92	20.86	0.45	0.44	-4.59
3,149.93	1.44	219.96	3,149.00	12.06	-21.06	21.01	0.18	0.07	6.63
DLWR Mnt. Group									
3,154.57	1.44	220.26	3,153.64	11.97	-21.13	21.08	0.18	0.07	6.43
3,168.14	1.47	221.19	3,167.21	11.71	-21.36	21.31	0.28	0.22	6.85
3,181.71	1.49	222.21	3,180.77	11.45	-21.59	21.54	0.24	0.15	7.52
3,195.29	1.49	223.42	3,194.35	11.19	-21.83	21.78	0.23	0.00	8.91
3,208.86	1.48	224.99	3,207.91	10.94	-22.08	22.03	0.31	-0.07	11.57
3,222.43	1.44	227.19	3,221.48	10.70	-22.33	22.28	0.51	-0.29	16.21
3,236.00	1.35	230.60	3,235.04	10.48	-22.58	22.53	0.90	-0.66	25.13
3,249.43	1.17	235.24	3,248.47	10.30	-22.81	22.77	1.54	-1.34	34.55
3,262.86	0.95	242.85	3,261.90	10.17	-23.02	22.98	1.94	-1.64	56.66
3,276.29	0.74	255.95	3,275.33	10.10	-23.21	23.16	2.12	-1.56	97.54
3,289.71	0.58	278.43	3,288.75	10.09	-23.36	23.31	2.25	-1.19	167.51
3,303.14	0.55	308.60	3,302.18	10.14	-23.47	23.43	2.20	-0.22	224.65
3,316.57	0.66	333.11	3,315.60	10.25	-23.56	23.51	2.07	0.82	182.50
3,330.00	0.81	347.17	3,329.03	10.41	-23.62	23.57	1.74	1.12	104.69
3,343.43	1.18	359.50	3,342.46	10.64	-23.64	23.59	3.17	2.76	91.81
3,356.86	1.58	5.81	3,355.89	10.96	-23.62	23.57	3.18	2.98	46.98
3,370.29	1.99	9.56	3,369.31	11.38	-23.56	23.51	3.17	3.05	27.92
3,383.71	2.40	12.02	3,382.72	11.88	-23.47	23.41	3.13	3.06	18.33
3,397.14	2.82	13.76	3,396.14	12.48	-23.33	23.27	3.18	3.13	12.96
3,410.57	3.24	15.05	3,409.55	13.17	-23.15	23.09	3.17	3.13	9.61
3,424.00	3.66	16.05	3,422.95	13.94	-22.93	22.87	3.16	3.13	7.45
3,437.57	3.66	14.64	3,436.50	14.78	-22.70	22.64	0.66	0.00	-10.39
3,451.14	3.68	12.89	3,450.04	15.62	-22.50	22.43	0.84	0.15	-12.90
3,464.71	3.71	11.01	3,463.58	16.48	-22.32	22.25	0.92	0.22	-13.85
3,478.29	3.76	9.20	3,477.13	17.35	-22.16	22.09	0.94	0.37	-13.33
3,491.86	3.81	7.64	3,490.67	18.24	-22.03	21.95	0.84	0.37	-11.50
3,505.43	3.86	6.53	3,504.21	19.14	-21.92	21.84	0.66	0.37	-8.18
3,519.00	3.91	6.11	3,517.75	20.05	-21.82	21.73	0.42	0.37	-3.10
3,533.54	3.96	6.64	3,532.26	21.04	-21.71	21.62	0.43	0.34	3.65



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
3,538.30	3.98	7.05	3,537.00	21.37	-21.67	21.57	0.76	0.48	8.63
Lower Brushy Canoyon									
3,548.08	4.03	7.88	3,546.76	22.05	-21.58	21.48	0.76	0.48	8.48
3,562.62	4.10	9.54	3,561.26	23.07	-21.42	21.32	0.94	0.48	11.42
3,577.15	4.18	11.44	3,575.76	24.10	-21.23	21.13	1.09	0.55	13.08
3,591.69	4.28	13.43	3,590.26	25.14	-21.00	20.89	1.22	0.69	13.69
3,606.23	4.38	15.45	3,604.76	26.21	-20.73	20.61	1.25	0.69	13.89
3,620.77	4.49	17.41	3,619.25	27.28	-20.41	20.29	1.29	0.76	13.48
3,630.55	4.56	18.68	3,629.00	28.02	-20.17	20.05	1.27	0.75	13.03
Bone Spring Lime									
3,635.31	4.60	19.29	3,633.75	28.38	-20.05	19.92	1.27	0.77	12.72
3,649.85	4.72	21.03	3,648.24	29.49	-19.64	19.51	1.28	0.83	11.97
3,664.38	4.83	22.61	3,662.72	30.61	-19.19	19.05	1.18	0.76	10.87
3,678.92	4.94	23.98	3,677.20	31.75	-18.70	18.56	1.10	0.76	9.42
3,693.46	5.03	25.08	3,691.69	32.90	-18.17	18.03	0.90	0.62	7.57
3,708.00	5.09	25.81	3,706.17	34.05	-17.62	17.47	0.61	0.41	5.02
3,721.57	5.10	26.01	3,719.69	35.14	-17.10	16.94	0.15	0.07	1.47
3,735.14	5.09	25.84	3,733.21	36.22	-16.57	16.41	0.13	-0.07	-1.25
3,748.71	5.08	25.45	3,746.72	37.31	-16.05	15.89	0.27	-0.07	-2.87
3,762.29	5.06	24.94	3,760.25	38.39	-15.54	15.37	0.36	-0.15	-3.76
3,775.86	5.04	24.44	3,773.77	39.48	-15.04	14.87	0.36	-0.15	-3.68
3,789.43	5.03	24.05	3,787.28	40.56	-14.55	14.37	0.26	-0.07	-2.87
3,803.00	5.02	23.88	3,800.80	41.65	-14.07	13.89	0.13	-0.07	-1.25
3,816.43	5.02	24.13	3,814.18	42.72	-13.59	13.40	0.16	0.00	1.86
3,829.86	5.04	24.66	3,827.56	43.80	-13.10	12.91	0.38	0.15	3.95
3,843.29	5.06	25.44	3,840.94	44.87	-12.60	12.41	0.53	0.15	5.81
3,856.71	5.09	26.46	3,854.30	45.93	-12.08	11.88	0.71	0.22	7.60
3,870.14	5.13	27.75	3,867.68	47.00	-11.54	11.33	0.91	0.30	9.61
3,883.57	5.19	29.37	3,881.06	48.06	-10.96	10.75	1.17	0.45	12.06
3,897.00	5.27	31.45	3,894.43	49.11	-10.34	10.13	1.53	0.60	15.49
3,910.71	5.36	34.40	3,908.08	50.18	-9.65	9.43	2.10	0.66	21.52
3,924.43	5.47	37.67	3,921.74	51.23	-8.89	8.67	2.39	0.80	23.83
3,938.14	5.60	40.99	3,935.39	52.25	-8.05	7.82	2.52	0.95	24.22
3,951.86	5.75	44.14	3,949.04	53.25	-7.13	6.90	2.52	1.09	22.96
3,965.57	5.90	46.98	3,962.68	54.22	-6.14	5.90	2.37	1.09	20.71
3,979.29	6.02	49.35	3,976.32	55.17	-5.08	4.84	2.00	0.87	17.27
3,993.00	6.11	51.07	3,989.96	56.10	-3.97	3.72	1.48	0.66	12.55
4,006.29	6.09	51.81	4,003.17	56.98	-2.86	2.61	0.61	-0.15	5.57
4,019.57	6.04	51.88	4,016.38	57.84	-1.76	1.51	0.38	-0.38	0.53
4,032.86	5.97	51.51	4,029.60	58.71	-0.67	0.41	0.60	-0.53	-2.78
4,046.14	5.89	50.83	4,042.80	59.57	0.40	-0.66	0.80	-0.60	-5.12
4,059.43	5.81	49.97	4,056.02	60.43	1.45	-1.71	0.89	-0.60	-6.47
4,072.71	5.72	49.04	4,069.24	61.30	2.46	-2.73	0.98	-0.68	-7.00



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
4,086.00	5.64	48.13	4,082.46	62.17	3.45	-3.72	0.91	-0.60	-6.85	
4,099.57	5.54	47.60	4,095.97	63.05	4.43	-4.70	0.83	-0.74	-3.91	
4,113.14	5.46	47.19	4,109.48	63.93	5.38	-5.66	0.66	-0.59	-3.02	
4,126.71	5.38	46.85	4,122.98	64.81	6.32	-6.60	0.64	-0.59	-2.51	
4,140.29	5.30	46.54	4,136.51	65.67	7.24	-7.53	0.63	-0.59	-2.28	
4,153.86	5.23	46.24	4,150.02	66.53	8.14	-8.43	0.55	-0.52	-2.21	
4,167.43	5.17	45.95	4,163.53	67.39	9.03	-9.32	0.48	-0.44	-2.14	
4,181.00	5.12	45.66	4,177.05	68.23	9.90	-10.20	0.42	-0.37	-2.14	
4,194.43	5.08	45.38	4,190.42	69.07	10.75	-11.06	0.35	-0.30	-2.08	
4,207.86	5.05	45.10	4,203.80	69.90	11.60	-11.90	0.29	-0.22	-2.08	
4,221.29	5.03	44.80	4,217.18	70.74	12.43	-12.74	0.25	-0.15	-2.23	
4,234.71	5.02	44.49	4,230.55	71.58	13.26	-13.57	0.22	-0.07	-2.31	
4,248.14	5.01	44.17	4,243.93	72.42	14.08	-14.39	0.22	-0.07	-2.38	
4,261.57	5.00	43.85	4,257.31	73.26	14.89	-15.21	0.22	-0.07	-2.38	
4,275.00	5.00	43.52	4,270.69	74.11	15.70	-16.02	0.21	0.00	-2.46	
4,288.57	5.00	43.20	4,284.20	74.97	16.51	-16.84	0.21	0.00	-2.36	
4,302.14	5.00	42.89	4,297.72	75.83	17.32	-17.65	0.20	0.00	-2.28	
4,315.71	5.00	42.58	4,311.24	76.70	18.12	-18.45	0.20	0.00	-2.28	
4,329.29	5.01	42.28	4,324.77	77.57	18.92	-19.26	0.21	0.07	-2.21	
4,342.86	5.01	42.00	4,338.29	78.45	19.71	-20.06	0.18	0.00	-2.06	
4,356.43	5.01	41.73	4,351.80	79.33	20.51	-20.85	0.17	0.00	-1.99	
4,370.00	5.01	41.50	4,365.32	80.22	21.29	-21.64	0.15	0.00	-1.69	
4,383.43	4.99	41.34	4,378.70	81.10	22.07	-22.42	0.18	-0.15	-1.19	
4,396.86	4.97	41.22	4,392.08	81.97	22.84	-23.19	0.17	-0.15	-0.89	
4,410.29	4.95	41.12	4,405.46	82.85	23.60	-23.96	0.16	-0.15	-0.74	
4,423.71	4.93	41.03	4,418.83	83.72	24.36	-24.72	0.16	-0.15	-0.67	
4,437.14	4.90	40.94	4,432.21	84.59	25.11	-25.48	0.23	-0.22	-0.67	
4,450.57	4.87	40.85	4,445.59	85.45	25.86	-26.24	0.23	-0.22	-0.67	
4,464.00	4.85	40.75	4,458.97	86.31	26.61	-26.98	0.16	-0.15	-0.74	
4,477.43	4.82	40.64	4,472.36	87.17	27.34	-27.72	0.23	-0.22	-0.82	
4,490.86	4.80	40.51	4,485.74	88.03	28.08	-28.46	0.17	-0.15	-0.97	
4,504.29	4.77	40.37	4,499.12	88.88	28.80	-29.19	0.24	-0.22	-1.04	
4,517.71	4.75	40.21	4,512.50	89.73	29.52	-29.92	0.18	-0.15	-1.19	
4,531.14	4.72	40.04	4,525.88	90.58	30.24	-30.63	0.25	-0.22	-1.27	
4,544.57	4.70	39.84	4,539.27	91.42	30.95	-31.35	0.19	-0.15	-1.49	
4,558.00	4.67	39.62	4,552.65	92.27	31.65	-32.05	0.26	-0.22	-1.64	
4,571.43	4.65	39.37	4,566.04	93.11	32.34	-32.75	0.21	-0.15	-1.86	
4,584.86	4.63	39.09	4,579.42	93.95	33.03	-33.44	0.22	-0.15	-2.08	
4,598.29	4.61	38.79	4,592.81	94.79	33.71	-34.12	0.23	-0.15	-2.23	
4,611.71	4.60	38.47	4,606.18	95.63	34.38	-34.80	0.21	-0.07	-2.38	
4,625.14	4.58	38.13	4,619.57	96.48	35.05	-35.47	0.25	-0.15	-2.53	
4,638.57	4.57	37.78	4,632.96	97.32	35.71	-36.13	0.22	-0.07	-2.61	
4,652.00	4.56	37.42	4,646.35	98.17	36.36	-36.79	0.23	-0.07	-2.68	
4,665.57	4.55	37.03	4,659.87	99.03	37.01	-37.44	0.24	-0.07	-2.87	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
4,679.14	4.54	36.64	4,673.40	99.89	37.65	-38.09	0.24	-0.07	-2.87
4,692.71	4.54	36.23	4,686.93	100.75	38.29	-38.73	0.24	0.00	-3.02
4,706.29	4.54	35.82	4,700.47	101.62	38.92	-39.37	0.24	0.00	-3.02
4,719.86	4.55	35.39	4,713.99	102.49	39.55	-40.00	0.26	0.07	-3.17
4,733.43	4.56	34.96	4,727.52	103.37	40.17	-40.62	0.26	0.07	-3.17
4,747.00	4.57	34.52	4,741.05	104.26	40.79	-41.24	0.27	0.07	-3.24
4,760.43	4.59	34.05	4,754.43	105.15	41.39	-41.85	0.32	0.15	-3.50
4,773.86	4.61	33.58	4,767.82	106.04	41.99	-42.45	0.32	0.15	-3.50
4,787.29	4.63	33.11	4,781.21	106.95	42.59	-43.05	0.32	0.15	-3.50
4,800.71	4.65	32.64	4,794.58	107.86	43.17	-43.64	0.32	0.15	-3.50
4,814.14	4.68	32.19	4,807.97	108.78	43.76	-44.23	0.35	0.22	-3.35
4,827.57	4.70	31.75	4,821.35	109.71	44.34	-44.82	0.31	0.15	-3.28
4,841.00	4.72	31.32	4,834.74	110.65	44.92	-45.40	0.30	0.15	-3.20
4,854.57	4.72	30.92	4,848.26	111.61	45.50	-45.98	0.24	0.00	-2.95
4,868.14	4.73	30.53	4,861.79	112.57	46.07	-46.56	0.25	0.07	-2.87
4,881.71	4.73	30.17	4,875.31	113.53	46.63	-47.13	0.22	0.00	-2.65
4,895.29	4.73	29.84	4,888.84	114.50	47.19	-47.69	0.20	0.00	-2.43
4,908.86	4.73	29.55	4,902.37	115.48	47.75	-48.25	0.18	0.00	-2.14
4,922.43	4.73	29.30	4,915.89	116.45	48.30	-48.80	0.15	0.00	-1.84
4,936.00	4.73	29.12	4,929.42	117.43	48.84	-49.35	0.11	0.00	-1.33
4,950.00	4.74	29.04	4,943.37	118.44	49.40	-49.92	0.09	0.07	-0.57
4,964.00	4.75	29.03	4,957.32	119.45	49.97	-50.49	0.07	0.07	-0.07
4,978.00	4.76	29.06	4,971.27	120.46	50.53	-51.05	0.07	0.07	0.21
4,992.00	4.78	29.12	4,985.22	121.48	51.10	-51.62	0.15	0.14	0.43
5,006.00	4.79	29.19	4,999.17	122.50	51.66	-52.20	0.08	0.07	0.50
5,020.00	4.80	29.27	5,013.13	123.52	52.24	-52.77	0.09	0.07	0.57
5,034.00	4.81	29.35	5,027.08	124.55	52.81	-53.35	0.09	0.07	0.57
5,048.00	4.82	29.42	5,041.03	125.57	53.39	-53.93	0.08	0.07	0.50
5,062.00	4.82	29.45	5,054.98	126.59	53.96	-54.52	0.02	0.00	0.21
5,075.43	4.81	29.44	5,068.36	127.58	54.52	-55.07	0.07	-0.07	-0.07
5,088.86	4.80	29.40	5,081.74	128.56	55.07	-55.63	0.08	-0.07	-0.30
5,102.29	4.78	29.33	5,095.13	129.53	55.62	-56.19	0.16	-0.15	-0.52
5,115.71	4.76	29.25	5,108.50	130.51	56.17	-56.74	0.16	-0.15	-0.60
5,129.14	4.75	29.17	5,121.88	131.48	56.71	-57.28	0.09	-0.07	-0.60
5,142.57	4.74	29.07	5,135.27	132.45	57.25	-57.83	0.10	-0.07	-0.74
5,156.00	4.73	28.96	5,148.65	133.42	57.79	-58.37	0.10	-0.07	-0.82
5,169.57	4.73	28.84	5,162.17	134.40	58.33	-58.92	0.07	0.00	-0.88
5,183.14	4.74	28.71	5,175.70	135.38	58.87	-59.46	0.11	0.07	-0.96
5,196.71	4.75	28.58	5,189.22	136.36	59.41	-60.00	0.11	0.07	-0.96
5,210.29	4.76	28.45	5,202.76	137.35	59.94	-60.54	0.11	0.07	-0.96
5,223.86	4.76	28.32	5,216.28	138.34	60.48	-61.08	0.08	0.00	-0.96
5,237.43	4.76	28.19	5,229.80	139.34	61.01	-61.62	0.08	0.00	-0.96
5,251.00	4.76	28.07	5,243.32	140.33	61.54	-62.16	0.07	0.00	-0.88



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
5,264.43	4.74	27.95	5,256.71	141.31	62.07	-62.68	0.17	-0.15	-0.89	
5,277.86	4.71	27.84	5,270.09	142.29	62.58	-63.20	0.23	-0.22	-0.82	
5,291.29	4.67	27.71	5,283.48	143.26	63.10	-63.72	0.31	-0.30	-0.97	
5,304.71	4.64	27.58	5,296.85	144.23	63.60	-64.23	0.24	-0.22	-0.97	
5,318.14	4.60	27.42	5,310.24	145.19	64.10	-64.73	0.31	-0.30	-1.19	
5,331.57	4.56	27.22	5,323.63	146.14	64.59	-65.23	0.32	-0.30	-1.49	
5,345.00	4.53	26.98	5,337.02	147.09	65.08	-65.72	0.26	-0.22	-1.79	
5,358.57	4.50	26.64	5,350.54	148.04	65.56	-66.20	0.30	-0.22	-2.51	
5,372.14	4.47	26.24	5,364.07	148.99	66.03	-66.68	0.32	-0.22	-2.95	
5,385.71	4.45	25.79	5,377.60	149.94	66.49	-67.15	0.30	-0.15	-3.32	
5,399.29	4.43	25.28	5,391.14	150.89	66.95	-67.61	0.33	-0.15	-3.76	
5,412.86	4.42	24.71	5,404.67	151.83	67.39	-68.05	0.33	-0.07	-4.20	
5,426.43	4.41	24.05	5,418.20	152.79	67.82	-68.49	0.38	-0.07	-4.86	
5,440.00	4.42	23.28	5,431.73	153.74	68.24	-68.91	0.44	0.07	-5.67	
5,453.43	4.44	22.33	5,445.12	154.70	68.64	-69.32	0.57	0.15	-7.07	
5,466.86	4.47	21.32	5,458.51	155.67	69.03	-69.71	0.63	0.22	-7.52	
5,480.29	4.51	20.35	5,471.90	156.65	69.40	-70.09	0.64	0.30	-7.22	
5,493.71	4.54	19.52	5,485.27	157.65	69.76	-70.45	0.54	0.22	-6.18	
5,507.14	4.56	18.92	5,498.66	158.65	70.12	-70.81	0.38	0.15	-4.47	
5,520.57	4.57	18.69	5,512.05	159.66	70.46	-71.16	0.16	0.07	-1.71	
5,534.00	4.55	19.01	5,525.44	160.67	70.81	-71.51	0.24	-0.15	2.38	
5,547.43	4.49	20.30	5,538.83	161.67	71.16	-71.87	0.88	-0.45	9.61	
5,560.86	4.41	22.22	5,552.22	162.64	71.54	-72.25	1.26	-0.60	14.30	
5,574.29	4.32	24.57	5,565.61	163.58	71.94	-72.66	1.49	-0.67	17.50	
5,587.71	4.24	27.19	5,578.99	164.48	72.38	-73.10	1.57	-0.60	19.52	
5,601.14	4.16	29.94	5,592.38	165.34	72.85	-73.57	1.61	-0.60	20.48	
5,614.57	4.08	32.61	5,605.78	166.17	73.35	-74.08	1.55	-0.60	19.88	
5,628.00	4.13	39.39	5,619.17	166.94	73.92	-74.64	3.63	0.37	50.48	
5,641.57	4.38	50.02	5,632.71	167.66	74.62	-75.35	6.09	1.84	78.33	
5,655.14	4.41	54.56	5,646.24	168.29	75.45	-76.18	2.57	0.22	33.46	
5,668.71	4.29	55.73	5,659.77	168.88	76.29	-77.03	1.10	-0.88	8.62	
5,682.29	4.18	56.83	5,673.31	169.44	77.12	-77.86	1.01	-0.81	8.10	
5,695.86	4.06	57.83	5,686.85	169.96	77.94	-78.69	1.03	-0.88	7.37	
5,709.43	3.94	58.65	5,700.38	170.46	78.75	-79.49	0.98	-0.88	6.04	
5,723.00	3.83	59.18	5,713.92	170.94	79.54	-80.28	0.85	-0.81	3.91	
5,736.43	3.72	59.22	5,727.32	171.39	80.30	-81.04	0.82	-0.82	0.30	
5,749.86	3.61	58.90	5,740.72	171.83	81.03	-81.78	0.83	-0.82	-2.38	
5,763.29	3.50	58.31	5,754.13	172.26	81.74	-82.49	0.86	-0.82	-4.39	
5,776.71	3.40	57.48	5,767.52	172.69	82.43	-83.18	0.83	-0.75	-6.18	
5,790.14	3.31	56.46	5,780.93	173.12	83.09	-83.84	0.80	-0.67	-7.59	
5,803.57	3.22	55.27	5,794.34	173.55	83.72	-84.48	0.84	-0.67	-8.86	
5,817.00	3.15	53.95	5,807.75	173.98	84.33	-85.09	0.75	-0.52	-9.83	
5,830.57	3.08	52.71	5,821.30	174.42	84.92	-85.68	0.72	-0.52	-9.14	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
5,844.14	3.01	51.36	5,834.85	174.87	85.49	-86.25	0.74	-0.52	-9.95	
5,857.71	2.96	49.90	5,848.40	175.31	86.03	-86.80	0.67	-0.37	-10.76	
5,871.29	2.91	48.33	5,861.96	175.77	86.56	-87.33	0.70	-0.37	-11.56	
5,884.86	2.86	46.63	5,875.52	176.23	87.06	-87.83	0.73	-0.37	-12.53	
5,898.43	2.80	44.77	5,889.07	176.70	87.54	-88.31	0.81	-0.44	-13.71	
5,912.00	2.74	42.70	5,902.62	177.17	88.00	-88.77	0.86	-0.44	-15.25	
5,925.57	2.64	40.58	5,916.18	177.65	88.42	-89.19	1.04	-0.74	-15.62	
5,939.14	2.54	38.25	5,929.73	178.12	88.81	-89.58	1.07	-0.74	-17.17	
5,952.71	2.45	35.75	5,943.29	178.59	89.16	-89.94	1.04	-0.66	-18.42	
5,966.29	2.36	33.17	5,956.86	179.06	89.49	-90.27	1.04	-0.66	-19.00	
5,979.86	2.28	30.67	5,970.42	179.53	89.78	-90.56	0.95	-0.59	-18.42	
5,993.43	2.24	28.49	5,983.98	179.99	90.04	-90.83	0.70	-0.29	-16.06	
6,007.00	2.22	26.99	5,997.54	180.46	90.29	-91.07	0.45	-0.15	-11.05	
6,020.43	2.25	26.50	6,010.96	180.93	90.52	-91.31	0.26	0.22	-3.65	
6,033.86	2.32	26.53	6,024.38	181.41	90.76	-91.55	0.52	0.52	0.22	
6,047.29	2.40	26.83	6,037.80	181.90	91.01	-91.80	0.60	0.60	2.23	
6,060.71	2.50	27.27	6,051.20	182.41	91.27	-92.07	0.76	0.75	3.28	
6,074.14	2.59	27.72	6,064.62	182.94	91.55	-92.34	0.69	0.67	3.35	
6,087.57	2.67	28.12	6,078.04	183.49	91.84	-92.63	0.61	0.60	2.98	
6,101.00	2.92	30.26	6,091.45	184.06	92.15	-92.96	2.02	1.86	15.93	
6,114.43	3.65	35.23	6,104.86	184.70	92.57	-93.38	5.83	5.44	37.01	
6,127.86	3.79	35.91	6,118.26	185.41	93.08	-93.89	1.09	1.04	5.06	
6,141.29	3.77	35.88	6,131.66	186.13	93.60	-94.41	0.15	-0.15	-0.22	
6,154.71	3.73	35.77	6,145.05	186.84	94.11	-94.93	0.30	-0.30	-0.82	
6,168.14	3.67	35.58	6,158.45	187.54	94.62	-95.44	0.46	-0.45	-1.41	
6,181.57	3.61	35.29	6,171.86	188.24	95.11	-95.93	0.47	-0.45	-2.16	
6,195.00	3.54	34.85	6,185.26	188.92	95.59	-96.42	0.56	-0.52	-3.28	
6,208.57	3.45	34.23	6,198.81	189.60	96.06	-96.89	0.72	-0.66	-4.57	
6,222.14	3.36	33.44	6,212.35	190.27	96.51	-97.34	0.75	-0.66	-5.82	
6,235.71	3.26	32.53	6,225.90	190.93	96.94	-97.77	0.83	-0.74	-6.71	
6,249.29	3.16	31.52	6,239.46	191.58	97.34	-98.18	0.85	-0.74	-7.44	
6,262.86	3.07	30.43	6,253.01	192.21	97.72	-98.56	0.79	-0.66	-8.03	
6,276.43	2.98	29.29	6,266.56	192.83	98.08	-98.92	0.80	-0.66	-8.40	
6,290.00	2.90	28.12	6,280.11	193.44	98.41	-99.26	0.74	-0.59	-8.62	
6,303.57	2.82	27.09	6,293.66	194.04	98.73	-99.57	0.70	-0.59	-7.59	
6,317.14	2.76	26.12	6,307.22	194.63	99.02	-99.87	0.56	-0.44	-7.15	
6,330.71	2.71	25.26	6,320.77	195.21	99.30	-100.15	0.48	-0.37	-6.34	
6,344.29	2.66	24.62	6,334.34	195.79	99.57	-100.43	0.43	-0.37	-4.71	
6,357.86	2.63	24.30	6,347.89	196.36	99.83	-100.69	0.25	-0.22	-2.36	
6,371.43	2.61	24.49	6,361.45	196.93	100.09	-100.95	0.16	-0.15	1.40	
6,385.00	2.61	25.43	6,375.00	197.49	100.35	-101.21	0.32	0.00	6.93	
6,398.43	2.65	27.48	6,388.42	198.04	100.62	-101.49	0.76	0.30	15.26	
6,411.86	2.72	30.10	6,401.84	198.59	100.93	-101.79	1.05	0.52	19.51	
6,425.29	2.79	32.94	6,415.25	199.14	101.26	-102.13	1.14	0.52	21.15	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
6,438.71	2.87	35.81	6,428.65	199.68	101.64	-102.51	1.21	0.60	21.39
6,452.14	2.95	38.59	6,442.07	200.23	102.05	-102.92	1.21	0.60	20.70
6,465.57	3.01	41.22	6,455.48	200.76	102.50	-103.37	1.11	0.45	19.58
6,479.00	3.26	45.09	6,468.89	201.30	103.00	-103.88	2.44	1.86	28.82
6,492.57	3.95	50.20	6,482.43	201.87	103.63	-104.51	5.60	5.08	37.66
6,506.14	4.21	53.56	6,495.97	202.46	104.39	-105.27	2.60	1.92	24.76
6,519.71	3.99	54.78	6,509.50	203.03	105.18	-106.06	1.74	-1.62	8.99
6,533.29	3.75	55.99	6,523.05	203.55	105.93	-106.82	1.87	-1.77	8.91
6,546.86	3.49	57.12	6,536.59	204.03	106.65	-107.54	1.99	-1.92	8.33
6,560.43	3.26	58.01	6,550.14	204.45	107.32	-108.21	1.74	-1.69	6.56
6,574.00	3.06	58.35	6,563.69	204.85	107.96	-108.85	1.48	-1.47	2.51
6,587.43	2.94	57.53	6,577.10	205.22	108.55	-109.45	0.95	-0.89	-6.11
6,600.86	2.87	56.00	6,590.51	205.59	109.12	-110.02	0.78	-0.52	-11.39
6,614.29	2.84	54.05	6,603.93	205.98	109.67	-110.57	0.76	-0.22	-14.52
6,627.71	2.82	51.90	6,617.33	206.38	110.20	-111.10	0.80	-0.15	-16.02
6,641.14	2.83	49.76	6,630.75	206.80	110.71	-111.61	0.79	0.07	-15.93
6,654.57	2.83	47.80	6,644.16	207.23	111.21	-112.11	0.72	0.00	-14.59
6,668.00	2.84	46.22	6,657.57	207.68	111.70	-112.60	0.59	0.07	-11.76
6,681.57	2.80	45.45	6,671.13	208.15	112.18	-113.08	0.41	-0.29	-5.67
6,695.14	2.77	45.12	6,684.68	208.61	112.64	-113.55	0.25	-0.22	-2.43
6,708.71	2.73	45.07	6,698.23	209.07	113.11	-114.02	0.30	-0.29	-0.37
6,722.29	2.68	45.14	6,711.80	209.53	113.56	-114.47	0.37	-0.37	0.52
6,735.86	2.63	45.20	6,725.35	209.97	114.01	-114.92	0.37	-0.37	0.44
6,749.43	2.58	45.12	6,738.91	210.40	114.44	-115.36	0.37	-0.37	-0.59
6,763.00	2.52	44.70	6,752.47	210.83	114.87	-115.79	0.46	-0.44	-3.10
6,776.43	2.45	43.53	6,765.88	211.25	115.27	-116.20	0.64	-0.52	-8.71
6,789.86	2.38	41.96	6,779.30	211.66	115.66	-116.58	0.72	-0.52	-11.69
6,797.56	2.34	40.95	6,787.00	211.90	115.87	-116.79	0.75	-0.52	-13.16
1st Bone Spring SD									
6,803.29	2.31	40.17	6,792.72	212.08	116.02	-116.94	0.75	-0.52	-13.56
6,816.71	2.26	38.36	6,806.13	212.49	116.36	-117.28	0.65	-0.37	-13.49
6,830.14	2.21	36.80	6,819.55	212.91	116.68	-117.61	0.59	-0.37	-11.62
6,843.57	2.19	35.80	6,832.97	213.32	116.98	-117.91	0.32	-0.15	-7.45
6,857.00	2.19	35.81	6,846.39	213.74	117.28	-118.21	0.00	0.00	0.07
6,862.61	2.21	36.40	6,852.00	213.91	117.41	-118.34	0.60	0.44	10.48
2nd Bone Spring LM									
6,870.57	2.25	37.21	6,859.95	214.16	117.60	-118.53	0.60	0.44	10.20
6,884.14	2.34	39.31	6,873.51	214.59	117.93	-118.87	0.91	0.66	15.48
6,897.71	2.45	41.67	6,887.07	215.02	118.30	-119.24	1.09	0.81	17.39
6,911.29	2.58	44.00	6,900.63	215.46	118.71	-119.65	1.22	0.96	17.16
6,924.86	2.71	46.17	6,914.19	215.90	119.15	-120.09	1.21	0.96	15.99
6,938.43	2.82	48.09	6,927.74	216.34	119.63	-120.57	1.06	0.81	14.15
6,952.00	3.22	48.41	6,941.30	216.82	120.16	-121.11	2.95	2.95	2.36



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
6,965.43	3.94	49.09	6,954.70	217.37	120.79	-121.74	5.37	5.36	5.06	
6,978.86	4.74	52.79	6,968.09	218.01	121.58	-122.53	6.31	5.96	27.55	
6,992.29	4.73	53.79	6,981.47	218.67	122.47	-123.43	0.62	-0.07	7.45	
7,005.71	4.70	54.77	6,994.85	219.32	123.37	-124.32	0.64	-0.22	7.30	
7,019.14	4.66	55.67	7,008.23	219.94	124.27	-125.23	0.62	-0.30	6.70	
7,032.57	4.61	56.42	7,021.62	220.55	125.17	-126.13	0.59	-0.37	5.58	
7,046.00	4.53	56.91	7,035.01	221.14	126.06	-127.03	0.66	-0.60	3.65	
7,059.57	4.43	56.84	7,048.54	221.71	126.95	-127.92	0.74	-0.74	-0.52	
7,073.14	4.30	56.44	7,062.07	222.28	127.81	-128.78	0.98	-0.96	-2.95	
7,086.71	4.17	55.77	7,075.60	222.84	128.65	-129.62	1.03	-0.96	-4.94	
7,100.29	4.04	54.90	7,089.15	223.39	129.44	-130.42	1.06	-0.96	-6.41	
7,113.86	3.91	53.87	7,102.68	223.94	130.21	-131.19	1.09	-0.96	-7.59	
7,127.43	3.79	52.73	7,116.22	224.49	130.94	-131.92	1.05	-0.88	-8.40	
7,141.00	3.68	51.53	7,129.76	225.03	131.64	-132.62	0.99	-0.81	-8.84	
7,154.43	3.60	50.57	7,143.17	225.56	132.30	-133.28	0.75	-0.60	-7.15	
7,167.86	3.53	49.65	7,156.57	226.10	132.94	-133.93	0.67	-0.52	-6.85	
7,181.29	3.48	48.86	7,169.97	226.64	133.56	-134.55	0.52	-0.37	-5.88	
7,194.71	3.44	48.31	7,183.37	227.17	134.17	-135.16	0.39	-0.30	-4.10	
7,208.14	3.41	48.15	7,196.78	227.71	134.77	-135.76	0.23	-0.22	-1.19	
7,221.57	3.39	48.62	7,210.18	228.24	135.37	-136.36	0.26	-0.15	3.50	
7,235.00	3.38	50.02	7,223.59	228.75	135.97	-136.96	0.62	-0.07	10.42	
7,248.43	3.41	52.93	7,237.00	229.25	136.59	-137.59	1.30	0.22	21.67	
7,261.86	4.24	51.55	7,250.40	229.80	137.30	-138.30	6.22	6.18	-10.28	
7,275.29	5.06	54.12	7,263.78	230.45	138.16	-139.17	6.30	6.11	19.14	
7,288.71	5.34	57.15	7,277.15	231.14	139.17	-140.18	2.92	2.09	22.58	
7,302.14	5.43	60.53	7,290.52	231.79	140.25	-141.26	2.45	0.67	25.17	
7,315.57	5.54	63.74	7,303.89	232.39	141.38	-142.39	2.43	0.82	23.90	
7,329.00	5.61	66.39	7,317.25	232.94	142.56	-143.58	1.99	0.52	19.73	
7,342.57	5.55	67.89	7,330.76	233.45	143.78	-144.80	1.16	-0.44	11.05	
7,356.14	5.46	68.59	7,344.27	233.93	144.99	-146.01	0.83	-0.66	5.16	
7,369.71	5.34	68.74	7,357.78	234.40	146.18	-147.20	0.89	-0.88	1.11	
7,383.29	5.21	68.48	7,371.30	234.85	147.34	-148.36	0.97	-0.96	-1.91	
7,396.86	5.09	67.93	7,384.81	235.31	148.47	-149.50	0.96	-0.88	-4.05	
7,410.43	4.98	67.17	7,398.33	235.76	149.57	-150.60	0.95	-0.81	-5.60	
7,424.00	4.90	66.29	7,411.85	236.22	150.65	-151.68	0.81	-0.59	-6.48	
7,437.43	4.85	65.49	7,425.23	236.69	151.69	-152.72	0.63	-0.37	-5.96	
7,450.86	4.83	64.63	7,438.61	237.17	152.72	-153.75	0.56	-0.15	-6.40	
7,464.29	4.82	63.71	7,452.00	237.66	153.73	-154.77	0.58	-0.07	-6.85	
7,477.71	4.83	62.74	7,465.37	238.17	154.74	-155.78	0.61	0.07	-7.23	
7,491.14	4.84	61.74	7,478.75	238.69	155.74	-156.78	0.63	0.07	-7.45	
7,504.57	4.84	60.69	7,492.13	239.24	156.73	-157.78	0.66	0.00	-7.82	
7,514.47	4.98	57.80	7,502.00	239.67	157.46	-158.51	2.86	1.39	-29.18	
2nd Bpne Spring SD										
7,518.00	5.03	56.81	7,505.51	239.84	157.72	-158.77	2.86	1.48	-28.07	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
7,531.43	5.53	50.08	7,518.89	240.58	158.71	-159.76	5.92	3.72	-50.11	
7,544.86	5.55	48.23	7,532.25	241.43	159.69	-160.74	1.34	0.15	-13.78	
7,558.29	5.48	46.98	7,545.62	242.30	160.64	-161.70	1.04	-0.52	-9.31	
7,571.71	5.40	45.63	7,558.98	243.17	161.56	-162.62	1.12	-0.60	-10.06	
7,585.14	5.32	44.24	7,572.35	244.06	162.45	-163.51	1.14	-0.60	-10.35	
7,598.57	5.25	42.87	7,585.72	244.96	163.30	-164.37	1.07	-0.52	-10.20	
7,612.00	5.19	41.61	7,599.10	245.86	164.12	-165.20	0.96	-0.45	-9.38	
7,625.57	5.12	40.65	7,612.61	246.78	164.93	-166.00	0.82	-0.52	-7.07	
7,639.14	5.07	39.83	7,626.13	247.70	165.70	-166.78	0.65	-0.37	-6.04	
7,652.71	5.03	39.06	7,639.65	248.62	166.46	-167.55	0.58	-0.29	-5.67	
7,666.29	4.99	38.31	7,653.18	249.55	167.20	-168.29	0.57	-0.29	-5.52	
7,679.86	4.97	37.51	7,666.69	250.48	167.93	-169.02	0.53	-0.15	-5.90	
7,693.43	4.96	36.61	7,680.21	251.42	168.64	-169.73	0.58	-0.07	-6.63	
7,707.00	5.28	30.67	7,693.73	252.42	169.30	-170.40	4.56	2.36	-43.77	
7,720.43	5.44	27.78	7,707.10	253.52	169.92	-171.02	2.34	1.19	-21.52	
7,733.86	5.49	26.39	7,720.47	254.66	170.50	-171.61	1.05	0.37	-10.35	
7,747.29	5.55	24.94	7,733.84	255.82	171.06	-172.17	1.13	0.45	-10.80	
7,760.71	5.60	23.52	7,747.19	257.01	171.59	-172.71	1.09	0.37	-10.58	
7,774.14	5.65	22.21	7,760.56	258.22	172.10	-173.23	1.03	0.37	-9.75	
7,787.57	5.68	21.08	7,773.92	259.46	172.59	-173.72	0.86	0.22	-8.41	
7,801.00	5.78	18.82	7,787.29	260.72	173.05	-174.19	1.84	0.74	-16.83	
7,814.57	6.14	13.30	7,800.78	262.07	173.44	-174.58	4.98	2.65	-40.68	
7,828.14	6.19	10.62	7,814.28	263.49	173.74	-174.89	2.15	0.37	-19.75	
7,841.71	6.01	11.19	7,827.77	264.91	174.01	-175.17	1.40	-1.33	4.20	
7,855.29	5.80	12.01	7,841.28	266.28	174.29	-175.45	1.67	-1.55	6.04	
7,868.86	5.59	12.94	7,854.78	267.59	174.58	-175.75	1.69	-1.55	6.85	
7,881.14	5.40	13.71	7,867.00	268.74	174.85	-176.03	1.66	-1.55	6.24	
3rd Bone Spring LM										
7,882.43	5.38	13.79	7,868.29	268.86	174.88	-176.06	1.66	-1.54	6.48	
7,896.00	5.21	14.34	7,881.80	270.07	175.19	-176.36	1.31	-1.25	4.05	
7,909.43	5.10	13.98	7,895.18	271.24	175.48	-176.67	0.85	-0.82	-2.68	
7,922.86	5.02	13.22	7,908.55	272.39	175.76	-176.95	0.78	-0.60	-5.66	
7,936.29	4.97	12.19	7,921.93	273.53	176.02	-177.21	0.76	-0.37	-7.67	
7,949.71	4.94	10.98	7,935.30	274.67	176.25	-177.45	0.81	-0.22	-9.02	
7,963.14	4.92	9.69	7,948.68	275.80	176.46	-177.66	0.84	-0.15	-9.61	
7,976.57	4.90	8.37	7,962.06	276.94	176.64	-177.85	0.85	-0.15	-9.83	
7,990.00	4.94	4.02	7,975.44	278.08	176.76	-177.98	2.79	0.30	-32.39	
8,001.00	5.09	357.41	7,986.40	279.04	176.77	-177.99	5.42	1.36	-60.09	
8,012.00	5.11	355.58	7,997.36	280.02	176.71	-177.93	1.49	0.18	-16.64	
8,026.58	5.03	353.21	8,011.88	281.30	176.59	-177.81	1.54	-0.55	-16.26	
8,041.17	4.95	349.84	8,026.42	282.55	176.40	-177.63	2.08	-0.55	-23.10	
8,055.75	4.88	345.81	8,040.94	283.78	176.14	-177.38	2.42	-0.48	-27.64	
8,070.33	4.84	341.39	8,055.47	284.96	175.79	-177.03	2.58	-0.27	-30.32	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
8,084.92	4.82	336.84	8,070.01	286.11	175.35	-176.60	2.63	-0.14	-31.19
8,099.50	4.82	332.41	8,084.54	287.21	174.83	-176.08	2.55	0.00	-30.38
8,114.08	4.85	328.37	8,099.06	288.28	174.22	-175.48	2.34	0.21	-27.71
8,128.00	4.89	325.14	8,112.93	289.27	173.57	-174.84	1.99	0.27	-23.18
KOP: 8128.00' MD, -174.81' VS, 8112.94' TVD									
8,128.67	4.89	324.99	8,113.60	289.31	173.54	-174.80	1.99	0.33	-22.97
8,143.25	6.39	314.31	8,128.11	290.39	172.60	-173.87	12.51	10.29	-73.25
8,157.83	8.29	309.18	8,142.57	291.62	171.21	-172.48	13.77	13.03	-35.19
8,172.42	10.11	304.25	8,156.97	293.01	169.34	-170.61	13.58	12.47	-33.79
8,187.00	11.96	298.92	8,171.28	294.46	166.95	-168.24	14.48	12.69	-36.56
8,200.57	13.85	295.27	8,184.51	295.83	164.26	-165.54	15.16	13.93	-26.90
8,214.14	15.88	293.56	8,197.63	297.27	161.08	-162.38	15.30	14.96	-12.60
8,227.71	17.94	292.75	8,210.61	298.82	157.45	-158.76	15.28	15.18	-5.97
8,241.29	20.02	292.55	8,223.45	300.52	153.38	-154.69	15.32	15.32	-1.47
8,254.86	20.82	289.84	8,236.17	302.23	148.96	-150.28	9.13	5.90	-19.97
8,268.43	21.37	285.62	8,248.83	303.71	144.31	-145.64	11.90	4.05	-31.10
8,282.00	22.25	281.44	8,261.43	304.89	139.42	-140.74	13.15	6.48	-30.80
8,295.43	23.56	278.39	8,273.80	305.78	134.27	-135.60	13.16	9.75	-22.71
8,308.86	25.34	277.65	8,286.02	306.56	128.76	-130.10	13.45	13.25	-5.51
8,322.29	27.05	275.73	8,298.07	307.24	122.88	-124.22	14.21	12.73	-14.30
8,335.71	28.75	276.53	8,309.93	307.92	116.63	-117.98	12.97	12.67	5.96
8,349.14	30.24	275.90	8,321.62	308.63	110.06	-111.41	11.33	11.09	-4.69
8,362.57	31.82	275.07	8,333.13	309.29	103.17	-104.52	12.19	11.76	-6.18
8,366.00	32.27	274.94	8,336.04	309.45	101.36	-102.70	13.26	13.10	-3.86
100' FEL: 8366.00' MD, -102.68' VS, 8336.04' TVD									
8,376.00	33.58	274.57	8,344.43	309.90	95.94	-97.29	13.26	13.11	-3.68
8,389.57	35.30	274.06	8,355.62	310.48	88.29	-89.64	12.85	12.68	-3.76
8,403.14	37.03	274.42	8,366.58	311.07	80.30	-81.66	12.84	12.75	2.65
8,416.71	38.66	273.53	8,377.29	311.65	72.00	-73.36	12.67	12.01	-6.56
8,430.29	40.37	273.64	8,387.77	312.19	63.37	-64.73	12.60	12.59	0.81
8,443.86	41.09	272.44	8,398.05	312.65	54.53	-55.89	7.84	5.31	-8.84
8,457.43	42.03	270.81	8,408.21	312.91	45.53	-46.90	10.56	6.93	-12.01
8,471.00	43.15	269.03	8,418.20	312.89	36.35	-37.72	12.12	8.25	-13.12
8,484.43	43.76	268.33	8,427.95	312.68	27.12	-28.48	5.79	4.54	-5.21
8,497.86	43.91	268.78	8,437.63	312.45	17.82	-19.18	2.58	1.12	3.35
8,511.29	44.07	269.24	8,447.30	312.29	8.49	-9.85	2.66	1.19	3.43
8,524.71	44.22	269.69	8,456.93	312.20	-0.85	-0.51	2.59	1.12	3.35
8,538.14	45.11	270.21	8,466.48	312.19	-10.30	8.93	7.16	6.63	3.87
8,551.57	46.62	270.54	8,475.83	312.25	-19.93	18.57	11.38	11.24	2.46
8,565.00	48.18	270.63	8,484.92	312.36	-29.82	28.46	11.63	11.62	0.67
8,578.43	49.32	270.85	8,493.77	312.49	-39.91	38.55	8.58	8.49	1.64
8,591.86	49.28	270.98	8,502.53	312.65	-50.10	48.73	0.79	-0.30	0.97
8,605.29	49.22	271.12	8,511.30	312.83	-60.27	58.90	0.91	-0.45	1.04
8,618.71	49.14	271.29	8,520.07	313.05	-70.42	69.05	1.13	-0.60	1.27



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
8,632.14	49.91	271.22	8,528.79	313.27	-80.63	79.27	5.75	5.73	-0.52	
01-FTP(A-18-131H)										
8,637.15	50.43	271.03	8,532.00	313.35	-84.48	83.12	10.73	10.35	-3.69	
3rd Bone Spring SD										
8,645.57	51.30	270.73	8,537.31	313.45	-91.01	89.64	10.73	10.35	-3.62	
8,659.00	52.47	270.18	8,545.60	313.53	-101.58	100.21	9.29	8.71	-4.10	
8,672.57	52.29	270.94	8,553.89	313.64	-112.32	110.96	4.63	-1.33	5.60	
8,686.14	52.10	271.81	8,562.20	313.89	-123.04	121.67	5.26	-1.40	6.41	
8,699.71	51.91	272.71	8,570.56	314.32	-133.73	132.36	5.41	-1.40	6.63	
8,713.29	51.74	273.57	8,578.95	314.90	-144.39	143.01	5.13	-1.25	6.33	
8,726.86	52.62	273.94	8,587.27	315.60	-155.08	153.71	6.83	6.48	2.73	
8,740.43	53.93	274.19	8,595.39	316.37	-165.93	164.55	9.77	9.65	1.84	
8,754.00	55.24	274.34	8,603.25	317.20	-176.96	175.58	9.70	9.65	1.11	
8,767.57	56.55	274.15	8,610.86	318.03	-188.17	186.78	9.72	9.65	-1.40	
8,781.14	58.07	274.01	8,618.19	318.84	-199.56	198.17	11.23	11.20	-1.03	
8,794.71	59.62	273.90	8,625.21	319.64	-211.14	209.75	11.44	11.42	-0.81	
8,808.29	60.15	274.24	8,632.02	320.47	-222.86	221.46	4.46	3.90	2.50	
8,821.86	60.66	273.82	8,638.72	321.30	-234.63	233.23	4.62	3.76	-3.10	
8,835.43	61.64	272.77	8,645.27	321.99	-246.50	245.09	9.90	7.22	-7.74	
8,849.00	62.87	272.09	8,651.59	322.50	-258.50	257.09	10.09	9.06	-5.01	
8,863.88	63.94	272.54	8,658.25	323.03	-271.79	270.38	7.68	7.19	3.02	
8,878.75	64.05	273.32	8,664.77	323.72	-285.14	283.72	4.77	0.74	5.25	
8,893.63	65.37	273.37	8,671.13	324.50	-298.57	297.15	8.88	8.87	0.34	
8,908.50	66.04	273.77	8,677.24	325.35	-312.09	310.67	5.13	4.51	2.69	
8,923.38	67.08	273.85	8,683.16	326.25	-325.72	324.29	7.01	6.99	0.54	
8,938.25	68.07	274.02	8,688.84	327.20	-339.43	338.00	6.74	6.66	1.14	
8,953.13	69.19	274.23	8,694.26	328.19	-353.25	351.81	7.64	7.53	1.41	
8,968.00	70.75	274.08	8,699.35	329.20	-367.18	365.74	10.53	10.49	-1.01	
8,981.43	72.16	273.93	8,703.62	330.09	-379.88	378.44	10.55	10.50	-1.12	
8,994.86	73.60	274.07	8,707.57	330.99	-392.69	391.24	10.77	10.72	1.04	
9,008.29	75.02	274.32	8,711.21	331.94	-405.58	404.13	10.72	10.57	1.86	
9,021.71	76.44	274.57	8,714.51	332.94	-418.55	417.09	10.73	10.58	1.86	
9,035.14	77.44	274.87	8,717.55	334.02	-431.59	430.12	7.76	7.45	2.23	
9,041.57	77.96	274.87	8,718.92	334.55	-437.85	436.39	8.12	8.12	-0.07	
02-LP(A-18-131H)										
9,048.57	78.53	274.86	8,720.34	335.13	-444.67	443.21	8.12	8.12	-0.07	
9,062.00	79.89	274.72	8,722.86	336.24	-457.82	456.35	10.18	10.13	-1.04	
9,075.57	81.21	274.83	8,725.09	337.35	-471.16	469.68	9.76	9.73	0.81	
9,089.14	82.51	275.09	8,727.01	338.51	-484.54	483.06	9.77	9.58	1.92	
9,102.71	83.89	274.75	8,728.61	339.67	-497.97	496.48	10.47	10.17	-2.51	
9,116.29	85.29	274.54	8,729.90	340.76	-511.44	509.95	10.42	10.31	-1.55	
9,129.86	85.95	273.43	8,730.93	341.70	-524.94	523.44	9.50	4.86	-8.18	
9,143.43	86.85	272.65	8,731.78	342.42	-538.46	536.96	8.77	6.63	-5.75	
9,157.00	88.12	272.52	8,732.38	343.03	-552.01	550.50	9.41	9.36	-0.96	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
9,161.00	88.29	272.54	8,732.50	343.21	-556.00	554.50	4.36	4.32	0.60
EOC: 9161.00' MD, 554.50' VS, 8732.50' TVD									
9,170.43	88.70	272.60	8,732.75	343.63	-565.42	563.91	4.36	4.32	0.60
9,183.86	88.86	272.68	8,733.04	344.25	-578.83	577.32	1.33	1.19	0.60
9,197.29	89.04	272.75	8,733.28	344.89	-592.24	590.73	1.44	1.34	0.52
9,210.71	89.22	272.81	8,733.49	345.54	-605.65	604.13	1.41	1.34	0.45
9,224.14	89.74	272.38	8,733.61	346.14	-619.06	617.54	5.02	3.87	-3.20
9,237.57	90.64	271.25	8,733.57	346.57	-632.48	630.97	10.76	6.70	-8.41
9,251.00	91.15	270.34	8,733.36	346.76	-645.91	644.39	7.77	3.80	-6.78
9,264.57	91.30	270.35	8,733.07	346.84	-659.48	657.96	1.11	1.11	0.07
9,278.14	91.45	270.35	8,732.74	346.92	-673.04	671.52	1.11	1.11	0.00
9,291.71	91.59	270.32	8,732.38	347.00	-686.61	685.09	1.06	1.03	-0.22
9,305.29	91.73	270.29	8,731.99	347.07	-700.18	698.66	1.05	1.03	-0.22
9,318.86	91.86	270.23	8,731.56	347.13	-713.75	712.22	1.06	0.96	-0.44
9,332.43	91.98	270.15	8,731.11	347.18	-727.31	725.79	1.06	0.88	-0.59
9,346.00	92.08	270.04	8,730.63	347.20	-740.87	739.35	1.10	0.74	-0.81
9,359.43	92.16	269.89	8,730.13	347.19	-754.29	752.77	1.27	0.60	-1.12
9,372.86	92.22	269.71	8,729.62	347.15	-767.71	766.19	1.41	0.45	-1.34
9,386.29	92.27	269.52	8,729.09	347.06	-781.13	779.61	1.46	0.37	-1.41
9,399.71	92.31	269.35	8,728.55	346.92	-794.54	793.02	1.30	0.30	-1.27
9,413.14	92.07	269.03	8,728.04	346.73	-807.96	806.44	2.98	-1.79	-2.38
9,426.57	90.80	268.19	8,727.70	346.41	-821.38	819.86	11.34	-9.46	-6.25
9,440.00	89.48	267.56	8,727.67	345.91	-834.80	833.28	10.89	-9.83	-4.69
9,453.57	89.44	267.48	8,727.80	345.32	-848.36	846.84	0.66	-0.29	-0.59
9,467.14	89.39	267.40	8,727.94	344.72	-861.91	860.40	0.70	-0.37	-0.59
9,480.71	89.33	267.32	8,728.09	344.09	-875.47	873.96	0.74	-0.44	-0.59
9,494.29	89.28	267.26	8,728.25	343.45	-889.03	887.52	0.58	-0.37	-0.44
9,507.86	89.23	267.20	8,728.43	342.79	-902.58	901.08	0.58	-0.37	-0.44
9,521.43	89.19	267.15	8,728.62	342.13	-916.14	914.63	0.47	-0.29	-0.37
9,535.00	89.19	267.12	8,728.81	341.45	-929.69	928.19	0.22	0.00	-0.22
9,548.43	89.24	267.12	8,728.99	340.77	-943.10	941.60	0.37	0.37	0.00
9,561.86	89.32	267.13	8,729.16	340.10	-956.51	955.02	0.60	0.60	0.07
9,575.29	89.42	267.15	8,729.31	339.43	-969.92	968.43	0.76	0.74	0.15
9,588.71	89.53	267.17	8,729.43	338.76	-983.33	981.84	0.83	0.82	0.15
9,602.14	89.64	267.20	8,729.53	338.10	-996.74	995.25	0.85	0.82	0.22
9,615.57	89.75	267.21	8,729.60	337.45	-1,010.15	1,008.67	0.82	0.82	0.07
9,629.00	89.86	267.22	8,729.65	336.80	-1,023.57	1,022.09	0.82	0.82	0.07
9,642.57	89.95	267.20	8,729.67	336.14	-1,037.12	1,035.64	0.68	0.66	-0.15
9,656.14	90.03	267.16	8,729.67	335.47	-1,050.67	1,049.20	0.66	0.59	-0.29
9,669.71	90.10	267.12	8,729.66	334.79	-1,064.23	1,062.76	0.59	0.52	-0.29
9,683.29	90.17	267.08	8,729.62	334.10	-1,077.79	1,076.32	0.59	0.52	-0.29
9,696.86	90.24	267.03	8,729.58	333.41	-1,091.34	1,089.88	0.63	0.52	-0.37
9,710.43	90.31	266.99	8,729.51	332.70	-1,104.89	1,103.43	0.59	0.52	-0.29



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
9,724.00	90.38	266.96	8,729.43	331.98	-1,118.44	1,116.99	0.56	0.52	-0.22	
9,737.43	90.45	266.95	8,729.33	331.27	-1,131.86	1,130.40	0.53	0.52	-0.07	
9,750.86	90.52	266.94	8,729.22	330.55	-1,145.27	1,143.81	0.53	0.52	-0.07	
9,764.29	90.60	266.94	8,729.09	329.84	-1,158.68	1,157.23	0.60	0.60	0.00	
9,777.71	90.66	266.94	8,728.94	329.12	-1,172.08	1,170.63	0.45	0.45	0.00	
9,791.14	90.72	266.95	8,728.78	328.41	-1,185.49	1,184.04	0.45	0.45	0.07	
9,804.57	90.77	266.95	8,728.60	327.69	-1,198.90	1,197.45	0.37	0.37	0.00	
9,818.00	90.80	266.96	8,728.42	326.98	-1,212.31	1,210.87	0.24	0.22	0.07	
9,831.57	90.81	266.95	8,728.23	326.26	-1,225.86	1,224.42	0.10	0.07	-0.07	
9,845.14	90.80	266.95	8,728.04	325.54	-1,239.40	1,237.97	0.07	-0.07	0.00	
9,858.71	90.78	266.94	8,727.85	324.81	-1,252.95	1,251.52	0.16	-0.15	-0.07	
9,872.29	90.76	266.93	8,727.67	324.09	-1,266.51	1,265.09	0.16	-0.15	-0.07	
9,885.86	90.74	266.92	8,727.49	323.36	-1,280.06	1,278.64	0.16	-0.15	-0.07	
9,899.43	90.30	267.88	8,727.37	322.74	-1,293.62	1,292.20	7.78	-3.24	7.07	
9,913.00	89.42	269.24	8,727.40	322.40	-1,307.18	1,305.76	11.94	-6.48	10.02	
9,926.43	88.92	269.83	8,727.60	322.29	-1,320.61	1,319.19	5.76	-3.72	4.39	
9,939.86	88.92	269.80	8,727.85	322.25	-1,334.04	1,332.62	0.22	0.00	-0.22	
9,953.29	88.93	269.76	8,728.10	322.20	-1,347.47	1,346.05	0.31	0.07	-0.30	
9,966.71	88.96	269.73	8,728.35	322.14	-1,360.88	1,359.47	0.32	0.22	-0.22	
9,980.14	89.01	269.70	8,728.59	322.07	-1,374.31	1,372.89	0.43	0.37	-0.22	
9,993.57	89.10	269.69	8,728.81	322.00	-1,387.74	1,386.32	0.67	0.67	-0.07	
10,007.00	89.25	269.70	8,729.00	321.93	-1,401.17	1,399.75	1.12	1.12	0.07	
10,020.57	89.51	269.76	8,729.15	321.86	-1,414.74	1,413.32	1.97	1.92	0.44	
10,034.14	89.82	269.84	8,729.23	321.82	-1,428.31	1,426.89	2.36	2.28	0.59	
10,047.71	90.16	269.93	8,729.23	321.79	-1,441.88	1,440.46	2.59	2.51	0.66	
10,061.29	90.51	270.02	8,729.15	321.78	-1,455.46	1,454.04	2.66	2.58	0.66	
10,074.86	90.83	270.11	8,728.99	321.80	-1,469.03	1,467.61	2.45	2.36	0.66	
10,088.43	91.61	270.08	8,728.70	321.82	-1,482.59	1,481.17	5.75	5.75	-0.22	
10,102.00	92.32	270.03	8,728.24	321.83	-1,496.15	1,494.74	5.25	5.23	-0.37	
10,115.43	92.45	270.06	8,727.68	321.85	-1,509.57	1,508.15	0.99	0.97	0.22	
10,128.86	92.53	270.07	8,727.09	321.86	-1,522.99	1,521.57	0.60	0.60	0.07	
10,142.29	92.58	270.07	8,726.50	321.88	-1,536.41	1,534.99	0.37	0.37	0.00	
10,155.71	92.62	270.06	8,725.89	321.89	-1,549.81	1,548.39	0.31	0.30	-0.07	
10,169.14	92.67	270.04	8,725.27	321.90	-1,563.23	1,561.81	0.40	0.37	-0.15	
10,182.57	92.73	270.01	8,724.63	321.91	-1,576.64	1,575.22	0.50	0.45	-0.22	
10,196.00	92.84	269.96	8,723.98	321.91	-1,590.06	1,588.64	0.90	0.82	-0.37	
10,209.43	93.02	269.90	8,723.30	321.89	-1,603.47	1,602.05	1.41	1.34	-0.45	
10,222.86	93.24	269.83	8,722.56	321.86	-1,616.88	1,615.46	1.72	1.64	-0.52	
10,236.29	93.48	269.75	8,721.77	321.81	-1,630.29	1,628.87	1.88	1.79	-0.60	
10,249.71	93.72	269.65	8,720.93	321.74	-1,643.68	1,642.26	1.94	1.79	-0.75	
10,263.14	93.70	269.46	8,720.06	321.63	-1,657.08	1,655.66	1.42	-0.15	-1.41	
10,276.57	93.18	269.12	8,719.26	321.47	-1,670.49	1,669.07	4.62	-3.87	-2.53	
10,290.00	93.34	268.97	8,718.49	321.24	-1,683.89	1,682.47	1.63	1.19	-1.12	
10,303.57	93.43	268.80	8,717.69	320.98	-1,697.44	1,696.02	1.42	0.66	-1.25	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
10,317.14	93.47	268.60	8,716.88	320.67	-1,710.98	1,709.56	1.50	0.29	-1.47
10,330.71	93.49	268.40	8,716.05	320.32	-1,724.52	1,723.10	1.48	0.15	-1.47
10,344.29	93.50	268.21	8,715.22	319.92	-1,738.07	1,736.65	1.40	0.07	-1.40
10,357.86	93.51	268.03	8,714.39	319.47	-1,751.60	1,750.19	1.33	0.07	-1.33
10,371.43	92.34	268.01	8,713.70	319.01	-1,765.15	1,763.74	8.62	-8.62	-0.15
10,385.00	90.79	268.11	8,713.33	318.55	-1,778.71	1,777.30	11.45	-11.42	0.74
10,398.43	89.25	268.24	8,713.33	318.12	-1,792.13	1,790.72	11.51	-11.47	0.97
10,411.86	89.31	268.15	8,713.50	317.70	-1,805.55	1,804.15	0.81	0.45	-0.67
10,425.29	89.37	268.07	8,713.65	317.25	-1,818.97	1,817.57	0.74	0.45	-0.60
10,438.71	89.43	268.00	8,713.79	316.79	-1,832.38	1,830.98	0.69	0.45	-0.52
10,452.14	89.49	267.95	8,713.92	316.32	-1,845.80	1,844.41	0.58	0.45	-0.37
10,465.57	89.09	268.69	8,714.08	315.92	-1,859.23	1,857.83	6.26	-2.98	5.51
10,479.00	88.50	269.70	8,714.37	315.74	-1,872.65	1,871.26	8.71	-4.39	7.52
10,492.57	88.56	269.73	8,714.71	315.67	-1,886.22	1,884.82	0.49	0.44	0.22
10,506.14	88.62	269.77	8,715.05	315.61	-1,899.78	1,898.39	0.53	0.44	0.29
10,519.71	88.69	269.82	8,715.37	315.56	-1,913.35	1,911.96	0.63	0.52	0.37
10,533.29	88.75	269.87	8,715.67	315.52	-1,926.93	1,925.53	0.58	0.44	0.37
10,546.86	88.82	269.92	8,715.96	315.50	-1,940.49	1,939.10	0.63	0.52	0.37
10,560.43	88.89	269.95	8,716.23	315.48	-1,954.06	1,952.67	0.56	0.52	0.22
10,574.00	88.97	269.96	8,716.48	315.47	-1,967.63	1,966.23	0.59	0.59	0.07
10,587.43	89.06	269.92	8,716.71	315.46	-1,981.06	1,979.66	0.73	0.67	-0.30
10,600.86	89.15	269.86	8,716.92	315.43	-1,994.49	1,993.09	0.81	0.67	-0.45
10,614.29	89.25	269.78	8,717.11	315.39	-2,007.91	2,006.52	0.95	0.74	-0.60
10,627.71	89.34	269.70	8,717.28	315.33	-2,021.33	2,019.94	0.90	0.67	-0.60
10,641.14	89.43	269.63	8,717.42	315.25	-2,034.76	2,033.37	0.85	0.67	-0.52
10,654.57	88.71	269.65	8,717.64	315.17	-2,048.19	2,046.79	5.36	-5.36	0.15
10,668.00	88.09	269.67	8,718.01	315.09	-2,061.61	2,060.22	4.62	-4.62	0.15
10,681.57	88.12	269.64	8,718.46	315.01	-2,075.18	2,073.78	0.31	0.22	-0.22
10,695.14	88.13	269.63	8,718.91	314.92	-2,088.74	2,087.34	0.10	0.07	-0.07
10,708.71	88.14	269.62	8,719.35	314.83	-2,102.30	2,100.91	0.10	0.07	-0.07
10,722.29	88.14	269.61	8,719.79	314.74	-2,115.87	2,114.48	0.07	0.00	-0.07
10,735.86	88.14	269.61	8,720.23	314.65	-2,129.44	2,128.04	0.00	0.00	0.00
10,749.43	88.14	269.60	8,720.67	314.55	-2,143.00	2,141.61	0.07	0.00	-0.07
10,763.00	88.15	269.58	8,721.11	314.46	-2,156.56	2,155.17	0.16	0.07	-0.15
10,776.43	88.17	269.54	8,721.54	314.35	-2,169.98	2,168.59	0.33	0.15	-0.30
10,789.86	88.20	269.49	8,721.96	314.24	-2,183.41	2,182.02	0.43	0.22	-0.37
10,803.29	88.24	269.44	8,722.38	314.11	-2,196.83	2,195.44	0.48	0.30	-0.37
10,816.71	88.28	269.38	8,722.79	313.98	-2,210.24	2,208.85	0.54	0.30	-0.45
10,830.14	88.32	269.33	8,723.19	313.83	-2,223.67	2,222.28	0.48	0.30	-0.37
10,843.57	88.36	269.28	8,723.58	313.66	-2,237.09	2,235.70	0.48	0.30	-0.37
10,857.00	88.41	269.24	8,723.96	313.49	-2,250.51	2,249.12	0.48	0.37	-0.30
10,870.57	88.45	269.21	8,724.33	313.31	-2,264.08	2,262.69	0.37	0.29	-0.22
10,884.14	88.50	269.20	8,724.69	313.12	-2,277.64	2,276.25	0.38	0.37	-0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
10,897.71	88.54	269.19	8,725.04	312.93	-2,291.20	2,289.82	0.30	0.29	-0.07
10,911.29	88.59	269.18	8,725.38	312.73	-2,304.78	2,303.39	0.38	0.37	-0.07
10,924.86	88.65	269.18	8,725.71	312.54	-2,318.34	2,316.96	0.44	0.44	0.00
10,938.43	88.72	269.19	8,726.02	312.35	-2,331.91	2,330.52	0.52	0.52	0.07
10,952.00	88.80	269.20	8,726.31	312.16	-2,345.47	2,344.09	0.59	0.59	0.07
10,965.43	88.90	269.22	8,726.58	311.97	-2,358.90	2,357.52	0.76	0.74	0.15
10,978.86	89.01	269.24	8,726.82	311.79	-2,372.33	2,370.94	0.83	0.82	0.15
10,992.29	89.14	269.27	8,727.04	311.62	-2,385.75	2,384.37	0.99	0.97	0.22
11,005.71	89.27	269.30	8,727.23	311.45	-2,399.17	2,397.79	0.99	0.97	0.22
11,019.14	89.40	269.33	8,727.38	311.29	-2,412.60	2,411.22	0.99	0.97	0.22
11,032.57	89.54	269.37	8,727.51	311.14	-2,426.03	2,424.65	1.08	1.04	0.30
11,046.00	89.69	269.41	8,727.60	310.99	-2,439.46	2,438.08	1.16	1.12	0.30
11,059.43	89.84	269.45	8,727.65	310.86	-2,452.89	2,451.51	1.16	1.12	0.30
11,072.86	89.99	269.50	8,727.67	310.74	-2,466.32	2,464.94	1.18	1.12	0.37
11,086.29	90.13	269.54	8,727.66	310.62	-2,479.75	2,478.37	1.08	1.04	0.30
11,099.71	90.28	269.57	8,727.61	310.52	-2,493.17	2,491.79	1.14	1.12	0.22
11,107.99	90.36	269.58	8,727.57	310.46	-2,501.45	2,500.07	0.98	0.97	0.15
03-2500(A-18-131H)									
11,113.14	90.41	269.59	8,727.53	310.42	-2,506.59	2,505.22	0.98	0.97	0.15
11,126.57	90.53	269.58	8,727.42	310.32	-2,520.02	2,518.65	0.90	0.89	-0.07
11,140.00	90.63	269.54	8,727.28	310.22	-2,533.45	2,532.07	0.80	0.74	-0.30
11,153.57	90.69	269.44	8,727.13	310.10	-2,547.02	2,545.64	0.86	0.44	-0.74
11,167.14	90.73	269.31	8,726.96	309.95	-2,560.59	2,559.21	1.00	0.29	-0.96
11,180.71	90.76	269.15	8,726.78	309.77	-2,574.16	2,572.78	1.20	0.22	-1.18
11,194.29	90.78	269.00	8,726.60	309.55	-2,587.73	2,586.36	1.11	0.15	-1.10
11,207.86	90.80	268.85	8,726.41	309.30	-2,601.30	2,599.93	1.12	0.15	-1.11
11,221.43	89.90	268.84	8,726.33	309.02	-2,614.87	2,613.49	6.63	-6.63	-0.07
11,235.00	89.35	268.81	8,726.42	308.74	-2,628.43	2,627.06	4.06	-4.05	-0.22
11,248.57	89.36	268.74	8,726.57	308.45	-2,642.00	2,640.63	0.52	0.07	-0.52
11,262.14	89.37	268.69	8,726.72	308.15	-2,655.57	2,654.20	0.38	0.07	-0.37
11,275.71	89.39	268.66	8,726.87	307.84	-2,669.13	2,667.76	0.27	0.15	-0.22
11,289.29	89.42	268.63	8,727.01	307.51	-2,682.71	2,681.34	0.31	0.22	-0.22
11,302.86	89.47	268.61	8,727.14	307.19	-2,696.27	2,694.91	0.40	0.37	-0.15
11,316.43	89.55	268.59	8,727.26	306.86	-2,709.84	2,708.47	0.61	0.59	-0.15
11,330.00	89.66	268.58	8,727.35	306.52	-2,723.40	2,722.04	0.81	0.81	-0.07
11,343.43	89.84	268.56	8,727.41	306.19	-2,736.83	2,735.47	1.35	1.34	-0.15
11,356.86	90.07	268.55	8,727.42	305.85	-2,750.25	2,748.89	1.71	1.71	-0.07
11,370.29	90.31	268.53	8,727.38	305.51	-2,763.68	2,762.32	1.79	1.79	-0.15
11,383.71	90.56	268.51	8,727.27	305.16	-2,777.10	2,775.74	1.87	1.86	-0.15
11,397.14	90.82	268.48	8,727.11	304.81	-2,790.52	2,789.16	1.95	1.94	-0.22
11,410.57	91.06	268.45	8,726.89	304.45	-2,803.94	2,802.59	1.80	1.79	-0.22
11,424.00	91.28	268.41	8,726.62	304.08	-2,817.37	2,816.01	1.66	1.64	-0.30
11,437.57	91.45	268.36	8,726.29	303.70	-2,830.93	2,829.57	1.31	1.25	-0.37



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
11,451.14	91.60	268.29	8,725.93	303.30	-2,844.49	2,843.13	1.22	1.11	-0.52	
11,464.71	91.73	268.22	8,725.54	302.89	-2,858.04	2,856.69	1.09	0.96	-0.52	
11,478.29	91.86	268.16	8,725.11	302.46	-2,871.61	2,870.26	1.05	0.96	-0.44	
11,491.86	91.99	268.10	8,724.66	302.02	-2,885.16	2,883.82	1.06	0.96	-0.44	
11,505.43	92.13	268.05	8,724.17	301.56	-2,898.72	2,897.38	1.10	1.03	-0.37	
11,519.00	92.30	268.02	8,723.65	301.09	-2,912.27	2,910.93	1.27	1.25	-0.22	
11,532.43	92.51	268.02	8,723.08	300.63	-2,925.68	2,924.34	1.56	1.56	0.00	
11,545.86	92.74	268.04	8,722.47	300.17	-2,939.09	2,937.75	1.72	1.71	0.15	
11,559.29	92.97	268.07	8,721.80	299.71	-2,952.49	2,951.16	1.73	1.71	0.22	
11,572.71	93.20	268.10	8,721.08	299.27	-2,965.89	2,964.55	1.73	1.71	0.22	
11,586.14	93.39	268.13	8,720.30	298.83	-2,979.29	2,977.96	1.43	1.41	0.22	
11,599.57	93.15	268.43	8,719.54	298.42	-2,992.69	2,991.36	2.86	-1.79	2.23	
11,613.00	93.23	268.43	8,718.79	298.06	-3,006.09	3,004.76	0.60	0.60	0.00	
11,626.57	93.19	268.39	8,718.03	297.68	-3,019.64	3,018.31	0.42	-0.29	-0.29	
11,640.14	93.08	268.34	8,717.29	297.29	-3,033.18	3,031.86	0.89	-0.81	-0.37	
11,653.71	92.94	268.29	8,716.58	296.89	-3,046.73	3,045.40	1.10	-1.03	-0.37	
11,667.29	92.81	268.23	8,715.90	296.48	-3,060.28	3,058.96	1.05	-0.96	-0.44	
11,680.86	92.70	268.19	8,715.24	296.06	-3,073.83	3,072.51	0.86	-0.81	-0.29	
11,694.43	92.16	269.28	8,714.67	295.76	-3,087.39	3,086.07	8.96	-3.98	8.03	
11,708.00	91.62	270.61	8,714.22	295.75	-3,100.95	3,099.63	10.57	-3.98	9.80	
11,721.43	91.60	270.85	8,713.84	295.92	-3,114.37	3,113.05	1.79	-0.15	1.79	
11,734.86	91.73	270.93	8,713.45	296.13	-3,127.79	3,126.47	1.14	0.97	0.60	
11,748.29	91.89	271.02	8,713.03	296.36	-3,141.22	3,139.89	1.37	1.19	0.67	
11,761.71	92.07	271.11	8,712.56	296.60	-3,154.63	3,153.30	1.50	1.34	0.67	
11,775.14	92.27	271.20	8,712.06	296.88	-3,168.04	3,166.72	1.63	1.49	0.67	
11,788.57	92.48	271.27	8,711.50	297.16	-3,181.46	3,180.13	1.65	1.56	0.52	
11,802.00	92.71	271.32	8,710.89	297.47	-3,194.87	3,193.54	1.75	1.71	0.37	
11,815.57	92.96	271.32	8,710.22	297.78	-3,208.42	3,207.09	1.84	1.84	0.00	
11,829.14	93.22	271.29	8,709.49	298.09	-3,221.97	3,220.64	1.93	1.92	-0.22	
11,842.71	93.48	271.24	8,708.70	298.39	-3,235.51	3,234.18	1.95	1.92	-0.37	
11,856.29	93.75	271.18	8,707.84	298.67	-3,249.06	3,247.73	2.04	1.99	-0.44	
11,869.86	94.00	271.10	8,706.92	298.94	-3,262.60	3,261.26	1.93	1.84	-0.59	
11,883.43	94.25	271.02	8,705.95	299.19	-3,276.13	3,274.79	1.93	1.84	-0.59	
11,897.00	94.47	270.92	8,704.91	299.42	-3,289.66	3,288.32	1.78	1.62	-0.74	
11,910.57	94.65	270.80	8,703.84	299.63	-3,303.18	3,301.85	1.59	1.33	-0.88	
11,924.14	94.81	270.67	8,702.72	299.80	-3,316.71	3,315.37	1.52	1.18	-0.96	
11,937.71	94.95	270.55	8,701.56	299.94	-3,330.23	3,328.89	1.36	1.03	-0.88	
11,951.29	95.10	270.43	8,700.37	300.06	-3,343.75	3,342.41	1.41	1.10	-0.88	
11,964.86	95.26	270.34	8,699.15	300.15	-3,357.27	3,355.93	1.35	1.18	-0.66	
11,978.43	94.10	270.46	8,698.04	300.24	-3,370.79	3,369.45	8.59	-8.55	0.88	
11,992.00	92.59	270.65	8,697.25	300.38	-3,384.34	3,383.00	11.21	-11.13	1.40	
12,005.43	91.47	270.79	8,696.77	300.54	-3,397.76	3,396.41	8.40	-8.34	1.04	
12,018.86	91.75	270.83	8,696.40	300.73	-3,411.18	3,409.84	2.11	2.08	0.30	
12,032.29	92.06	270.89	8,695.95	300.94	-3,424.60	3,423.26	2.35	2.31	0.45	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
12,045.71	92.39	270.96	8,695.43	301.15	-3,438.01	3,436.66	2.51	2.46	0.52	
12,059.14	92.72	271.01	8,694.83	301.38	-3,451.43	3,450.08	2.49	2.46	0.37	
12,072.57	93.05	271.04	8,694.15	301.62	-3,464.84	3,463.49	2.47	2.46	0.22	
12,086.00	93.36	271.04	8,693.40	301.87	-3,478.24	3,476.89	2.31	2.31	0.00	
12,099.57	93.64	270.95	8,692.57	302.10	-3,491.79	3,490.43	2.17	2.06	-0.66	
12,113.14	93.91	270.83	8,691.68	302.31	-3,505.32	3,503.97	2.18	1.99	-0.88	
12,126.71	94.15	270.68	8,690.73	302.49	-3,518.86	3,517.51	2.08	1.77	-1.11	
12,140.29	94.38	270.53	8,689.72	302.63	-3,532.40	3,531.05	2.02	1.69	-1.10	
12,153.86	94.57	270.38	8,688.66	302.74	-3,545.93	3,544.58	1.78	1.40	-1.11	
12,167.43	93.89	270.30	8,687.66	302.82	-3,559.46	3,558.11	5.05	-5.01	-0.59	
12,181.00	92.34	270.27	8,686.92	302.89	-3,573.01	3,571.66	11.42	-11.42	-0.22	
12,194.43	92.43	270.19	8,686.36	302.94	-3,586.43	3,585.07	0.90	0.67	-0.60	
12,207.86	92.49	270.13	8,685.79	302.98	-3,599.85	3,598.49	0.63	0.45	-0.45	
12,221.29	92.53	270.08	8,685.20	303.00	-3,613.26	3,611.91	0.48	0.30	-0.37	
12,234.71	92.56	270.02	8,684.60	303.02	-3,626.67	3,625.32	0.50	0.22	-0.45	
12,248.14	92.59	269.97	8,684.00	303.01	-3,640.09	3,638.73	0.43	0.22	-0.37	
12,261.57	92.62	269.92	8,683.39	303.00	-3,653.50	3,652.15	0.43	0.22	-0.37	
12,275.00	92.65	269.85	8,682.77	302.97	-3,666.92	3,665.56	0.57	0.22	-0.52	
12,288.57	91.90	269.84	8,682.23	302.94	-3,680.48	3,679.12	5.53	-5.53	-0.07	
12,302.14	90.59	269.78	8,681.94	302.89	-3,694.05	3,692.69	9.66	-9.65	-0.44	
12,315.71	90.63	269.69	8,681.79	302.83	-3,707.61	3,706.26	0.73	0.29	-0.66	
12,329.29	90.68	269.59	8,681.64	302.74	-3,721.19	3,719.84	0.82	0.37	-0.74	
12,342.86	90.72	269.49	8,681.47	302.64	-3,734.76	3,733.41	0.79	0.29	-0.74	
12,356.43	90.75	269.40	8,681.30	302.50	-3,748.33	3,746.97	0.70	0.22	-0.66	
12,370.00	90.78	269.32	8,681.12	302.35	-3,761.90	3,760.54	0.63	0.22	-0.59	
12,383.43	90.81	269.27	8,680.93	302.19	-3,775.33	3,773.97	0.43	0.22	-0.37	
12,396.86	90.83	269.23	8,680.74	302.01	-3,788.75	3,787.40	0.33	0.15	-0.30	
12,410.29	90.86	269.21	8,680.54	301.83	-3,802.18	3,800.83	0.27	0.22	-0.15	
12,423.71	90.89	269.19	8,680.33	301.64	-3,815.60	3,814.25	0.27	0.22	-0.15	
12,437.14	90.92	269.17	8,680.12	301.45	-3,829.02	3,827.67	0.27	0.22	-0.15	
12,450.57	90.97	269.16	8,679.90	301.25	-3,842.45	3,841.10	0.38	0.37	-0.07	
12,464.00	90.61	269.32	8,679.72	301.08	-3,855.88	3,854.53	2.93	-2.68	1.19	
12,477.57	89.63	269.76	8,679.69	300.97	-3,869.45	3,868.10	7.92	-7.22	3.24	
12,491.14	89.73	269.75	8,679.76	300.91	-3,883.02	3,881.67	0.74	0.74	-0.07	
12,504.71	89.84	269.74	8,679.81	300.85	-3,896.59	3,895.24	0.81	0.81	-0.07	
12,518.29	89.98	269.73	8,679.84	300.79	-3,910.17	3,908.82	1.03	1.03	-0.07	
12,531.86	90.14	269.72	8,679.82	300.72	-3,923.74	3,922.39	1.18	1.18	-0.07	
12,545.43	90.34	269.72	8,679.76	300.65	-3,937.31	3,935.96	1.47	1.47	0.00	
12,559.00	90.59	269.71	8,679.65	300.59	-3,950.88	3,949.53	1.84	1.84	-0.07	
12,572.43	90.93	269.71	8,679.48	300.52	-3,964.31	3,962.96	2.53	2.53	0.00	
12,585.86	91.32	269.71	8,679.21	300.45	-3,977.73	3,976.38	2.90	2.90	0.00	
12,599.29	91.73	269.70	8,678.85	300.38	-3,991.16	3,989.81	3.05	3.05	-0.07	
12,612.71	92.15	269.69	8,678.40	300.31	-4,004.57	4,003.22	3.13	3.13	-0.07	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
12,626.14	92.55	269.66	8,677.85	300.23	-4,017.99	4,016.64	2.99	2.98	-0.22	
12,639.57	92.92	269.61	8,677.21	300.15	-4,031.40	4,030.05	2.78	2.76	-0.37	
12,653.00	93.23	269.52	8,676.49	300.05	-4,044.81	4,043.47	2.40	2.31	-0.67	
12,666.43	93.44	269.38	8,675.71	299.92	-4,058.22	4,056.87	1.88	1.56	-1.04	
12,679.86	93.58	269.21	8,674.88	299.75	-4,071.62	4,070.28	1.64	1.04	-1.27	
12,693.29	93.68	269.03	8,674.03	299.55	-4,085.02	4,083.68	1.53	0.74	-1.34	
12,706.71	93.76	268.85	8,673.16	299.30	-4,098.41	4,097.07	1.47	0.60	-1.34	
12,720.14	93.82	268.69	8,672.28	299.01	-4,111.81	4,110.47	1.27	0.45	-1.19	
12,733.57	92.45	269.25	8,671.54	298.77	-4,125.22	4,123.88	11.02	-10.20	4.17	
12,747.00	90.92	269.69	8,671.15	298.65	-4,138.64	4,137.30	11.85	-11.39	3.28	
12,760.57	89.42	270.21	8,671.11	298.63	-4,152.21	4,150.87	11.70	-11.05	3.83	
12,774.14	89.44	270.12	8,671.24	298.67	-4,165.78	4,164.44	0.68	0.15	-0.66	
12,787.71	89.44	270.03	8,671.37	298.69	-4,179.35	4,178.01	0.66	0.00	-0.66	
12,801.29	89.45	269.95	8,671.51	298.69	-4,192.93	4,191.59	0.59	0.07	-0.59	
12,814.86	89.45	269.88	8,671.64	298.67	-4,206.50	4,205.16	0.52	0.00	-0.52	
12,828.43	89.36	269.88	8,671.78	298.64	-4,220.07	4,218.72	0.66	-0.66	0.00	
12,842.00	88.47	270.36	8,672.03	298.67	-4,233.64	4,232.29	7.45	-6.56	3.54	
12,855.43	88.52	270.36	8,672.39	298.75	-4,247.06	4,245.72	0.37	0.37	0.00	
12,868.86	88.60	270.38	8,672.72	298.84	-4,260.49	4,259.14	0.61	0.60	0.15	
12,882.29	88.68	270.41	8,673.04	298.93	-4,273.91	4,272.57	0.64	0.60	0.22	
12,895.71	88.78	270.45	8,673.34	299.03	-4,287.33	4,285.98	0.80	0.75	0.30	
12,909.14	88.89	270.49	8,673.61	299.14	-4,300.76	4,299.41	0.87	0.82	0.30	
12,922.57	89.01	270.52	8,673.86	299.26	-4,314.18	4,312.84	0.92	0.89	0.22	
12,936.00	89.15	270.56	8,674.08	299.39	-4,327.61	4,326.26	1.08	1.04	0.30	
12,949.57	89.32	270.58	8,674.26	299.52	-4,341.18	4,339.83	1.26	1.25	0.15	
12,963.14	89.51	270.60	8,674.39	299.66	-4,354.75	4,353.40	1.41	1.40	0.15	
12,976.71	89.71	270.63	8,674.49	299.81	-4,368.32	4,366.97	1.49	1.47	0.22	
12,990.29	89.92	270.67	8,674.53	299.96	-4,381.89	4,380.54	1.57	1.55	0.29	
13,003.86	90.13	270.74	8,674.53	300.13	-4,395.46	4,394.11	1.63	1.55	0.52	
13,017.43	90.35	270.85	8,674.47	300.32	-4,409.03	4,407.68	1.81	1.62	0.81	
13,031.00	90.57	271.03	8,674.36	300.54	-4,422.60	4,421.25	2.09	1.62	1.33	
13,044.57	90.79	271.31	8,674.20	300.82	-4,436.17	4,434.81	2.62	1.62	2.06	
13,058.14	91.01	271.65	8,673.99	301.17	-4,449.73	4,448.37	2.98	1.62	2.51	
13,071.71	91.22	272.01	8,673.72	301.60	-4,463.29	4,461.93	3.07	1.55	2.65	
13,085.29	91.42	272.39	8,673.41	302.12	-4,476.86	4,475.50	3.16	1.47	2.80	
13,098.86	91.61	272.75	8,673.05	302.73	-4,490.41	4,489.04	3.00	1.40	2.65	
13,112.43	91.78	273.07	8,672.65	303.42	-4,503.95	4,502.59	2.67	1.25	2.36	
13,126.00	91.92	273.32	8,672.21	304.18	-4,517.50	4,516.13	2.11	1.03	1.84	
13,139.57	91.90	273.45	8,671.76	304.98	-4,531.04	4,529.66	0.97	-0.15	0.96	
13,153.14	90.53	273.78	8,671.47	305.83	-4,544.58	4,543.20	10.38	-10.10	2.43	
13,166.71	89.12	273.95	8,671.51	306.75	-4,558.11	4,556.73	10.47	-10.39	1.25	
13,180.29	88.45	273.86	8,671.80	307.67	-4,571.66	4,570.27	4.98	-4.93	-0.66	
13,193.86	88.44	273.78	8,672.17	308.57	-4,585.19	4,583.80	0.59	-0.07	-0.59	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
13,207.43	88.42	273.68	8,672.54	309.46	-4,598.73	4,597.34	0.75	-0.15	-0.74
13,221.00	88.38	273.59	8,672.92	310.32	-4,612.27	4,610.87	0.73	-0.29	-0.66
13,234.43	88.35	273.52	8,673.30	311.15	-4,625.67	4,624.26	0.57	-0.22	-0.52
13,247.86	88.32	273.47	8,673.69	311.97	-4,639.07	4,637.66	0.43	-0.22	-0.37
13,261.29	88.28	273.43	8,674.09	312.78	-4,652.47	4,651.06	0.42	-0.30	-0.30
13,274.71	88.25	273.40	8,674.50	313.57	-4,665.86	4,664.44	0.32	-0.22	-0.22
13,288.14	88.23	273.37	8,674.91	314.37	-4,679.26	4,677.84	0.27	-0.15	-0.22
13,301.57	88.22	273.33	8,675.32	315.15	-4,692.66	4,691.24	0.31	-0.07	-0.30
13,315.00	88.23	273.30	8,675.74	315.93	-4,706.06	4,704.63	0.24	0.07	-0.22
13,328.57	88.27	273.26	8,676.16	316.70	-4,719.60	4,718.17	0.42	0.29	-0.29
13,342.14	88.32	273.22	8,676.56	317.47	-4,733.14	4,731.71	0.47	0.37	-0.29
13,355.71	88.39	273.18	8,676.95	318.23	-4,746.68	4,745.25	0.59	0.52	-0.29
13,369.29	88.46	273.13	8,677.32	318.97	-4,760.24	4,758.80	0.63	0.52	-0.37
13,382.86	88.52	273.07	8,677.68	319.71	-4,773.78	4,772.34	0.63	0.44	-0.44
13,396.43	88.57	273.01	8,678.02	320.43	-4,787.33	4,785.89	0.58	0.37	-0.44
13,410.00	88.60	272.94	8,678.36	321.13	-4,800.88	4,799.43	0.56	0.22	-0.52
13,423.43	88.58	272.85	8,678.69	321.81	-4,814.29	4,812.84	0.69	-0.15	-0.67
13,436.86	88.54	272.76	8,679.03	322.47	-4,827.70	4,826.24	0.73	-0.30	-0.67
13,450.29	88.49	272.66	8,679.38	323.10	-4,841.11	4,839.65	0.83	-0.37	-0.74
13,463.71	88.41	272.56	8,679.74	323.71	-4,854.51	4,853.05	0.95	-0.60	-0.75
13,477.14	88.32	272.46	8,680.12	324.30	-4,867.92	4,866.46	1.00	-0.67	-0.74
13,490.57	88.21	272.36	8,680.53	324.86	-4,881.33	4,879.87	1.11	-0.82	-0.74
13,504.00	88.08	272.27	8,680.96	325.41	-4,894.74	4,893.28	1.18	-0.97	-0.67
13,517.43	87.91	272.19	8,681.43	325.93	-4,908.16	4,906.69	1.40	-1.27	-0.60
13,530.86	87.73	272.12	8,681.94	326.43	-4,921.57	4,920.10	1.44	-1.34	-0.52
13,544.29	87.56	272.05	8,682.50	326.92	-4,934.98	4,933.50	1.37	-1.27	-0.52
13,557.71	87.42	271.99	8,683.08	327.39	-4,948.37	4,946.90	1.13	-1.04	-0.45
13,571.14	87.33	271.94	8,683.70	327.85	-4,961.78	4,960.31	0.77	-0.67	-0.37
13,584.57	87.31	271.90	8,684.33	328.30	-4,975.19	4,973.71	0.33	-0.15	-0.30
13,598.00	87.43	271.87	8,684.94	328.75	-4,988.60	4,987.12	0.92	0.89	-0.22
13,609.52	87.69	271.86	8,685.43	329.12	-5,000.10	4,998.62	2.29	2.28	-0.07
04-5000(A-18-131H)									
13,611.57	87.74	271.86	8,685.51	329.19	-5,002.15	5,000.67	2.29	2.28	-0.07
13,625.14	88.18	271.87	8,686.00	329.63	-5,015.70	5,014.22	3.24	3.24	0.07
13,638.71	88.69	271.89	8,686.37	330.07	-5,029.26	5,027.77	3.76	3.76	0.15
13,652.29	89.23	271.91	8,686.61	330.52	-5,042.83	5,041.34	3.98	3.98	0.15
13,665.86	89.78	271.93	8,686.73	330.98	-5,056.39	5,054.90	4.06	4.05	0.15
13,679.43	90.30	271.95	8,686.72	331.44	-5,069.96	5,068.46	3.83	3.83	0.15
13,693.00	90.76	271.97	8,686.60	331.90	-5,083.52	5,082.02	3.39	3.39	0.15
13,706.43	90.81	271.21	8,686.41	332.27	-5,096.94	5,095.44	5.67	0.37	-5.66
13,719.86	90.83	271.05	8,686.22	332.54	-5,110.37	5,108.87	1.20	0.15	-1.19
13,733.29	90.77	270.87	8,686.03	332.76	-5,123.79	5,122.29	1.41	-0.45	-1.34
13,746.71	90.66	270.69	8,685.87	332.95	-5,137.21	5,135.71	1.57	-0.82	-1.34
13,760.14	90.53	270.51	8,685.73	333.09	-5,150.64	5,149.14	1.65	-0.97	-1.34



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
13,773.57	90.41	270.34	8,685.62	333.19	-5,164.07	5,162.57	1.55	-0.89	-1.27	
13,787.00	90.54	269.59	8,685.50	333.18	-5,177.50	5,176.00	5.67	0.97	-5.58	
13,800.57	90.83	268.14	8,685.34	332.91	-5,191.06	5,189.56	10.90	2.14	-10.69	
13,814.14	90.84	268.12	8,685.14	332.47	-5,204.63	5,203.13	0.16	0.07	-0.15	
13,827.71	90.88	268.12	8,684.94	332.02	-5,218.19	5,216.69	0.29	0.29	0.00	
13,841.29	90.94	268.15	8,684.72	331.58	-5,231.76	5,230.26	0.49	0.44	0.22	
13,854.86	90.99	268.18	8,684.50	331.15	-5,245.32	5,243.82	0.43	0.37	0.22	
13,868.43	91.06	268.21	8,684.25	330.72	-5,258.88	5,257.39	0.56	0.52	0.22	
13,882.00	91.12	268.23	8,684.00	330.30	-5,272.44	5,270.95	0.47	0.44	0.15	
13,895.43	91.22	268.09	8,683.72	329.87	-5,285.86	5,284.37	1.28	0.74	-1.04	
13,908.86	91.31	268.07	8,683.42	329.42	-5,299.28	5,297.79	0.69	0.67	-0.15	
13,922.29	91.40	268.04	8,683.11	328.96	-5,312.70	5,311.21	0.71	0.67	-0.22	
13,935.71	91.50	268.01	8,682.77	328.50	-5,326.11	5,324.62	0.78	0.75	-0.22	
13,949.14	91.59	267.98	8,682.41	328.03	-5,339.52	5,338.04	0.71	0.67	-0.22	
13,962.57	91.68	267.95	8,682.02	327.55	-5,352.94	5,351.46	0.71	0.67	-0.22	
13,976.00	91.76	267.92	8,681.62	327.07	-5,366.36	5,364.88	0.64	0.60	-0.22	
13,989.57	91.79	267.68	8,681.20	326.55	-5,379.91	5,378.43	1.78	0.22	-1.77	
14,003.14	91.82	267.64	8,680.77	325.99	-5,393.46	5,391.99	0.37	0.22	-0.29	
14,016.71	91.83	267.59	8,680.34	325.43	-5,407.01	5,405.54	0.38	0.07	-0.37	
14,030.29	91.84	267.55	8,679.90	324.85	-5,420.57	5,419.10	0.30	0.07	-0.29	
14,043.86	91.85	267.51	8,679.47	324.27	-5,434.12	5,432.66	0.30	0.07	-0.29	
14,057.43	91.86	267.47	8,679.03	323.67	-5,447.67	5,446.21	0.30	0.07	-0.29	
14,071.00	91.86	267.44	8,678.59	323.07	-5,461.22	5,459.76	0.22	0.00	-0.22	
14,084.43	91.89	267.64	8,678.15	322.50	-5,474.63	5,473.17	1.51	0.22	1.49	
14,097.86	91.93	267.62	8,677.70	321.94	-5,488.04	5,486.59	0.33	0.30	-0.15	
14,111.29	91.96	267.60	8,677.24	321.38	-5,501.45	5,500.00	0.27	0.22	-0.15	
14,124.71	92.00	267.59	8,676.78	320.82	-5,514.85	5,513.40	0.31	0.30	-0.07	
14,138.14	92.04	267.57	8,676.31	320.25	-5,528.26	5,526.81	0.33	0.30	-0.15	
14,151.57	92.08	267.56	8,675.83	319.68	-5,541.67	5,540.23	0.31	0.30	-0.07	
14,165.00	92.12	267.54	8,675.33	319.11	-5,555.08	5,553.64	0.33	0.30	-0.15	
14,178.43	92.11	267.36	8,674.84	318.51	-5,568.49	5,567.05	1.34	-0.07	-1.34	
14,191.86	92.12	267.26	8,674.34	317.88	-5,581.90	5,580.46	0.75	0.07	-0.74	
14,205.29	92.11	267.15	8,673.85	317.23	-5,595.30	5,593.86	0.82	-0.07	-0.82	
14,218.71	92.11	267.03	8,673.35	316.55	-5,608.69	5,607.26	0.89	0.00	-0.89	
14,232.14	92.10	266.91	8,672.86	315.84	-5,622.10	5,620.67	0.90	-0.07	-0.89	
14,245.57	92.10	266.80	8,672.37	315.10	-5,635.50	5,634.07	0.82	0.00	-0.82	
14,259.00	92.10	266.70	8,671.87	314.34	-5,648.90	5,647.47	0.74	0.00	-0.74	
14,272.57	91.97	266.71	8,671.39	313.56	-5,662.44	5,661.01	0.96	-0.96	0.07	
14,286.14	91.87	266.64	8,670.94	312.77	-5,675.98	5,674.56	0.90	-0.74	-0.52	
14,299.71	91.76	266.58	8,670.51	311.97	-5,689.51	5,688.10	0.92	-0.81	-0.44	
14,313.29	91.64	266.53	8,670.11	311.16	-5,703.06	5,701.65	0.96	-0.88	-0.37	
14,326.86	91.54	266.48	8,669.73	310.33	-5,716.60	5,715.20	0.82	-0.74	-0.37	
14,340.43	91.53	267.31	8,669.37	309.59	-5,730.15	5,728.74	6.11	-0.07	6.12	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)	
14,354.00	91.47	268.54	8,669.01	309.10	-5,743.71	5,742.30	9.07	-0.44	9.06	
14,367.43	91.32	268.45	8,668.68	308.75	-5,757.13	5,755.72	1.30	-1.12	-0.67	
14,380.86	91.19	268.39	8,668.39	308.38	-5,770.55	5,769.15	1.07	-0.97	-0.45	
14,394.29	91.05	268.33	8,668.13	308.00	-5,783.97	5,782.57	1.13	-1.04	-0.45	
14,407.71	90.92	268.27	8,667.90	307.60	-5,797.38	5,795.99	1.07	-0.97	-0.45	
14,421.14	90.79	268.21	8,667.70	307.19	-5,810.80	5,809.41	1.07	-0.97	-0.45	
14,434.57	90.67	268.16	8,667.52	306.76	-5,824.23	5,822.83	0.97	-0.89	-0.37	
14,448.00	90.57	268.11	8,667.38	306.32	-5,837.65	5,836.26	0.83	-0.74	-0.37	
14,461.57	90.46	268.05	8,667.26	305.87	-5,851.21	5,849.82	0.92	-0.81	-0.44	
14,475.14	90.37	267.94	8,667.16	305.39	-5,864.77	5,863.38	1.05	-0.66	-0.81	
14,488.71	90.29	267.84	8,667.08	304.89	-5,878.33	5,876.95	0.94	-0.59	-0.74	
14,502.29	90.22	267.74	8,667.02	304.37	-5,891.90	5,890.52	0.90	-0.52	-0.74	
14,515.86	90.15	267.64	8,666.98	303.82	-5,905.46	5,904.08	0.90	-0.52	-0.74	
14,529.43	90.83	267.77	8,666.86	303.28	-5,919.02	5,917.64	5.10	5.01	0.96	
14,543.00	92.08	268.07	8,666.52	302.79	-5,932.58	5,931.20	9.47	9.21	2.21	
14,556.57	92.00	268.09	8,666.03	302.33	-5,946.13	5,944.75	0.61	-0.59	0.15	
14,570.14	91.92	268.09	8,665.57	301.88	-5,959.68	5,958.31	0.59	-0.59	0.00	
14,583.71	91.85	268.11	8,665.12	301.43	-5,973.24	5,971.87	0.54	-0.52	0.15	
14,597.29	91.78	268.13	8,664.69	300.99	-5,986.81	5,985.44	0.54	-0.52	0.15	
14,610.86	91.71	268.15	8,664.28	300.55	-6,000.36	5,998.99	0.54	-0.52	0.15	
14,624.43	91.94	268.41	8,663.85	300.14	-6,013.92	6,012.55	2.56	1.69	1.92	
14,638.00	92.87	269.34	8,663.28	299.87	-6,027.47	6,026.11	9.69	6.85	6.85	
14,651.43	93.23	270.19	8,662.56	299.82	-6,040.88	6,039.52	6.87	2.68	6.33	
14,664.86	93.14	270.12	8,661.82	299.85	-6,054.29	6,052.93	0.85	-0.67	-0.52	
14,678.29	93.05	270.02	8,661.09	299.87	-6,067.70	6,066.34	1.00	-0.67	-0.74	
14,691.71	92.95	269.92	8,660.39	299.86	-6,081.11	6,079.74	1.05	-0.75	-0.75	
14,705.14	92.85	269.82	8,659.71	299.83	-6,094.52	6,093.15	1.05	-0.74	-0.74	
14,718.57	92.76	269.72	8,659.05	299.78	-6,107.93	6,106.57	1.00	-0.67	-0.74	
14,732.00	92.68	269.64	8,658.41	299.70	-6,121.35	6,119.98	0.84	-0.60	-0.60	
14,745.57	92.86	269.61	8,657.76	299.62	-6,134.90	6,133.54	1.34	1.33	-0.22	
14,759.14	93.03	269.65	8,657.06	299.53	-6,148.45	6,147.09	1.29	1.25	0.29	
14,772.71	93.23	269.70	8,656.32	299.45	-6,162.00	6,160.64	1.52	1.47	0.37	
14,786.29	93.46	269.77	8,655.53	299.39	-6,175.56	6,174.19	1.77	1.69	0.52	
14,799.86	93.69	269.83	8,654.68	299.34	-6,189.10	6,187.74	1.75	1.69	0.44	
14,813.43	93.90	269.90	8,653.78	299.31	-6,202.64	6,201.28	1.63	1.55	0.52	
14,827.00	94.09	269.96	8,652.84	299.29	-6,216.18	6,214.81	1.47	1.40	0.44	
14,840.43	94.05	270.06	8,651.89	299.29	-6,229.58	6,228.21	0.80	-0.30	0.74	
14,853.86	93.74	270.20	8,650.97	299.33	-6,242.98	6,241.61	2.53	-2.31	1.04	
14,867.29	92.75	270.55	8,650.21	299.41	-6,256.38	6,255.02	7.82	-7.37	2.61	
14,880.71	92.48	270.67	8,649.60	299.56	-6,269.79	6,268.42	2.20	-2.01	0.89	
14,894.14	92.35	270.73	8,649.03	299.72	-6,283.21	6,281.84	1.07	-0.97	0.45	
14,907.57	92.21	270.80	8,648.50	299.90	-6,296.62	6,295.26	1.17	-1.04	0.52	
14,921.00	92.09	270.85	8,648.00	300.09	-6,310.04	6,308.67	0.97	-0.89	0.37	
14,934.57	92.18	270.86	8,647.49	300.29	-6,323.60	6,322.23	0.67	0.66	0.07	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
14,948.14	92.27	270.87	8,646.96	300.50	-6,337.16	6,335.79	0.67	0.66	0.07
14,961.71	92.41	270.87	8,646.41	300.70	-6,350.72	6,349.34	1.03	1.03	0.00
14,975.29	92.56	270.86	8,645.82	300.91	-6,364.28	6,362.91	1.11	1.10	-0.07
14,988.86	92.72	270.85	8,645.20	301.11	-6,377.84	6,376.46	1.18	1.18	-0.07
15,002.43	92.88	270.84	8,644.53	301.31	-6,391.39	6,390.01	1.18	1.18	-0.07
15,016.00	93.01	270.83	8,643.84	301.51	-6,404.94	6,403.56	0.96	0.96	-0.07
15,029.43	93.15	270.95	8,643.11	301.72	-6,418.35	6,416.97	1.37	1.04	0.89
15,042.86	93.26	270.99	8,642.36	301.94	-6,431.76	6,430.38	0.87	0.82	0.30
15,056.29	93.36	271.04	8,641.59	302.18	-6,445.16	6,443.78	0.83	0.74	0.37
15,069.71	93.45	271.09	8,640.79	302.43	-6,458.56	6,457.17	0.77	0.67	0.37
15,083.14	93.53	271.14	8,639.97	302.69	-6,471.96	6,470.58	0.70	0.60	0.37
15,096.57	93.61	271.19	8,639.14	302.96	-6,485.36	6,483.98	0.70	0.60	0.37
15,110.00	93.67	271.23	8,638.29	303.25	-6,498.76	6,497.37	0.54	0.45	0.30
15,123.43	93.72	271.29	8,637.42	303.54	-6,512.16	6,510.77	0.58	0.37	0.45
15,136.86	93.76	271.30	8,636.54	303.85	-6,525.56	6,524.17	0.31	0.30	0.07
15,150.29	93.79	271.31	8,635.66	304.15	-6,538.95	6,537.56	0.24	0.22	0.07
15,163.71	93.82	271.31	8,634.77	304.46	-6,552.34	6,550.95	0.22	0.22	0.00
15,177.14	93.85	271.31	8,633.87	304.76	-6,565.74	6,564.34	0.22	0.22	0.00
15,190.57	93.88	271.30	8,632.97	305.07	-6,579.13	6,577.74	0.24	0.22	-0.07
15,204.00	93.90	271.30	8,632.05	305.37	-6,592.53	6,591.13	0.15	0.15	0.00
15,217.57	93.94	271.28	8,631.13	305.68	-6,606.06	6,604.67	0.33	0.29	-0.15
15,231.14	93.98	271.26	8,630.19	305.98	-6,619.60	6,618.20	0.33	0.29	-0.15
15,244.71	94.03	271.25	8,629.24	306.27	-6,633.13	6,631.73	0.38	0.37	-0.07
15,258.29	94.07	271.23	8,628.28	306.57	-6,646.67	6,645.27	0.33	0.29	-0.15
15,271.86	94.11	271.21	8,627.31	306.85	-6,660.21	6,658.80	0.33	0.29	-0.15
15,285.43	94.15	271.20	8,626.34	307.14	-6,673.74	6,672.33	0.30	0.29	-0.07
15,299.00	94.19	271.18	8,625.35	307.42	-6,687.27	6,685.86	0.33	0.29	-0.15
15,312.43	94.12	271.18	8,624.38	307.70	-6,700.66	6,699.25	0.52	-0.52	0.00
15,325.86	94.06	271.17	8,623.42	307.97	-6,714.05	6,712.65	0.45	-0.45	-0.07
15,339.29	93.99	271.16	8,622.48	308.24	-6,727.45	6,726.04	0.53	-0.52	-0.07
15,352.71	93.92	271.15	8,621.55	308.51	-6,740.83	6,739.42	0.53	-0.52	-0.07
15,366.14	93.85	271.15	8,620.64	308.78	-6,754.23	6,752.82	0.52	-0.52	0.00
15,379.57	93.07	270.86	8,619.83	309.02	-6,767.63	6,766.22	6.19	-5.81	-2.16
15,393.00	91.80	270.22	8,619.26	309.14	-6,781.05	6,779.64	10.59	-9.46	-4.77
15,406.43	91.03	269.66	8,618.93	309.13	-6,794.48	6,793.06	7.09	-5.73	-4.17
15,419.86	91.18	269.69	8,618.67	309.05	-6,807.90	6,806.49	1.14	1.12	0.22
15,433.29	91.37	269.72	8,618.37	308.98	-6,821.33	6,819.92	1.43	1.41	0.22
15,446.71	91.57	269.76	8,618.03	308.92	-6,834.74	6,833.33	1.52	1.49	0.30
15,460.14	91.78	269.79	8,617.63	308.87	-6,848.17	6,846.76	1.58	1.56	0.22
15,473.57	91.97	269.83	8,617.19	308.83	-6,861.59	6,860.18	1.45	1.41	0.30
15,487.00	92.15	269.86	8,616.71	308.79	-6,875.01	6,873.60	1.36	1.34	0.22
15,500.57	92.21	269.82	8,616.20	308.75	-6,888.57	6,887.16	0.53	0.44	-0.29
15,514.14	92.26	269.77	8,615.67	308.70	-6,902.13	6,900.72	0.52	0.37	-0.37



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

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)
15,527.71	92.28	269.72	8,615.13	308.64	-6,915.69	6,914.28	0.40	0.15	-0.37
15,541.29	92.29	269.66	8,614.59	308.57	-6,929.26	6,927.85	0.45	0.07	-0.44
15,554.86	92.28	269.59	8,614.05	308.48	-6,942.82	6,941.41	0.52	-0.07	-0.52
15,568.43	92.28	269.53	8,613.51	308.38	-6,956.38	6,954.97	0.44	0.00	-0.44
15,582.00	92.27	269.48	8,612.97	308.26	-6,969.94	6,968.53	0.38	-0.07	-0.37
15,595.43	92.30	269.43	8,612.43	308.13	-6,983.36	6,981.95	0.43	0.22	-0.37
15,608.86	92.33	269.39	8,611.89	307.99	-6,996.77	6,995.36	0.37	0.22	-0.30
15,622.29	92.37	269.36	8,611.34	307.85	-7,010.19	7,008.78	0.37	0.30	-0.22
15,635.71	92.41	269.33	8,610.78	307.69	-7,023.60	7,022.19	0.37	0.30	-0.22
15,649.14	92.45	269.31	8,610.21	307.53	-7,037.02	7,035.61	0.33	0.30	-0.15
15,662.57	92.49	269.29	8,609.63	307.37	-7,050.43	7,049.03	0.33	0.30	-0.15
15,676.00	92.52	269.27	8,609.04	307.20	-7,063.85	7,062.44	0.27	0.22	-0.15
15,689.57	92.51	269.23	8,608.45	307.02	-7,077.41	7,076.00	0.30	-0.07	-0.29
15,703.14	92.50	269.21	8,607.86	306.84	-7,090.96	7,089.55	0.16	-0.07	-0.15
15,716.71	92.48	269.19	8,607.27	306.65	-7,104.52	7,103.11	0.21	-0.15	-0.15
15,730.29	92.46	269.17	8,606.68	306.46	-7,118.08	7,116.68	0.21	-0.15	-0.15
15,743.86	92.44	269.15	8,606.10	306.26	-7,131.64	7,130.23	0.21	-0.15	-0.15
15,757.43	92.42	269.13	8,605.53	306.05	-7,145.20	7,143.79	0.21	-0.15	-0.15
15,771.00	92.40	269.11	8,604.96	305.85	-7,158.75	7,157.35	0.21	-0.15	-0.15
15,784.43	92.11	269.07	8,604.43	305.63	-7,172.17	7,170.77	2.18	-2.16	-0.30
15,797.86	91.84	269.00	8,603.96	305.41	-7,185.59	7,184.19	2.08	-2.01	-0.52
15,811.29	91.54	268.93	8,603.57	305.16	-7,199.01	7,197.61	2.29	-2.23	-0.52
15,824.71	91.23	268.86	8,603.24	304.91	-7,212.43	7,211.03	2.37	-2.31	-0.52
15,838.14	90.92	268.79	8,602.99	304.63	-7,225.85	7,224.45	2.37	-2.31	-0.52
15,851.57	90.62	268.73	8,602.81	304.34	-7,239.28	7,237.88	2.28	-2.23	-0.45
15,865.00	90.37	268.67	8,602.69	304.04	-7,252.70	7,251.31	1.91	-1.86	-0.45
15,877.75	90.38	268.70	8,602.61	303.74	-7,265.45	7,264.05	0.25	0.08	0.24
15,890.50	90.39	268.70	8,602.53	303.45	-7,278.19	7,276.80	0.08	0.08	0.00
15,903.25	90.43	268.71	8,602.43	303.17	-7,290.94	7,289.55	0.32	0.31	0.08
15,916.00	90.47	268.72	8,602.33	302.88	-7,303.69	7,302.30	0.32	0.31	0.08
Final MWD Survey: 15916.00' MD, 90.46°INC, 268.70°AZ									
15,916.50	90.47	268.72	8,602.33	302.87	-7,304.19	7,302.80	0.00	0.00	0.00
100FWL: 15916.50' MD, 7302.80' VS, 8602.33' TVD - 05-LTP(A-18-131H)									
15,975.00	90.47	268.72	8,601.85	301.56	-7,362.67	7,361.28	0.00	0.00	0.00
PTB: 15975.00' MD, 90.47°INC, 268.77°AZ - 07-7500(A-18-131H) - 06-PBHL(A-18-131H)									



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Atlas 18 State Fed Com #131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3382+30 @ 3412.00usft
Site:	Atlas 18 State Com	MD Reference:	3382+30 @ 3412.00usft
Well:	Atlas 18 State Fed Com #131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
452.02	452.00	Rustler				
468.02	468.00	Top of Salt				
722.16	722.00	Base of Salt				
967.40	967.00	Yates				
3,149.93	3,149.00	DLWR Mnt. Group				
3,538.30	3,537.00	Lower Brushy Canoyon				
3,630.55	3,629.00	Bone Spring Lime				
6,797.56	6,787.00	1st Bone Spring SD				
6,862.61	6,852.00	2nd Bone Spring LM				
7,514.47	7,502.00	2nd Bpne Spring SD				
7,881.14	7,867.00	3rd Bone Spring LM				
8,637.15	8,532.00	3rd Bone Spring SD				

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
8,128.00	8,112.93	289.27	173.57	KOP: 8128.00' MD, -174.81' VS, 8112.94' TVD	
8,366.00	8,336.04	309.45	101.36	100'FEL: 8366.00' MD, -102.68' VS, 8336.04' TVD	
9,161.00	8,732.50	343.21	-556.00	EOC: 9161.00' MD, 554.50' VS, 8732.50' TVD	
15,916.00	8,602.33	302.88	-7,303.69	Final MWD Survey: 15916.00' MD, 90.46°INC, 268.70°AZ	
15,916.50	8,602.33	302.87	-7,304.19	100FWL: 15916.50' MD, 7302.80' VS, 8602.33' TVD	
15,975.00	8,601.85	301.56	-7,362.67	PTB: 15975.00' MD, 90.47°INC, 268.77°AZ	

Checked By: _____	Approved By: _____	Date: _____
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Office
 District I – (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II – (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III – (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV – (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM
 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

WELL API NO. 30-015-48116
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Atlas 18 State Fed Com
8. Well Number 131H
9. OGRID Number 371449
10. Pool name or Wildcat Scanlon Draw; Bone Spring

SUNDRY NOTICES AND REPORTS ON WELLS
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator
 Colgate Operating, LLC

3. Address of Operator
 300 North Marienfeld, Suite 1,000 – Midland, Tx 79701

4. Well Location

Unit Letter: C 1027 feet from the North line and 2197 feet from the West line

Section: 18 Township: 19S Range: 29E NMPM County: Eddy

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
 3382 GL

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
 TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
 PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
 DOWNHOLE COMMINGLE ☐
 CLOSED-LOOP SYSTEM ☐
 OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
 COMMENCE DRILLING OPNS. ☐ P AND A ☐
 CASING/CEMENT JOB ☐
 OTHER: New Well Completion ☒

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

11/06/2021- Pressured up casing to 7,600 psi with a 15 minute test and 8,300 psi with a 15 minute test

11/25/2021- Perf and frac stages 1-38.

Perfs 9,157 – 15,743

Frac with 297,531bbl liquid and 15,224,635 lbs of proppant

12/1/2021- Drilled out plugs

Turn over to production. Tubing 2.875 @ 8,435

TD 15,975 - PBTD 15,863

Spud Date: 07/09/2021

Rig Release Date: 07/27/2021

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE: Mikah Thomas

TITLE: Operations Tech

DATE: 01/20/2022

Type or print name Mikah Thomas

E-mail address: mtthomas@colgateenergy.com

PHONE: 432-695-4272

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____

Conditions of Approval (if any):

Submit To Appropriate District Office Two Copies <u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 811 S. First St., Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Rd., Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505		State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505			Form C-105 Revised April 3, 2017					
WELL COMPLETION OR RECOMPLETION REPORT AND LOG								1. WELL API NO. 30-015-48116		
4. Reason for filing: ☒ COMPLETION REPORT (Fill in boxes #1 through #31 for State and Fee wells only) ☐ C-144 CLOSURE ATTACHMENT (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)								2. Type of Lease ☐ STATE ☐ FEE ☒ FED/INDIAN		
								3. State Oil & Gas Lease No.		
5. Lease Name or Unit Agreement Name Atlas 18 State Fed Com										
6. Well Number: 131H										
7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER										
8. Name of Operator Colgate Operating, LLC						9. OGRID 371449				
10. Address of Operator 300 North Marcienfeld, Suite 1,000 Midland, Texas 79705						11. Pool name or Wildcat Scanlon Draw; Bone Spring				
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	C	18	19S	29E		1027	North	2197	West	Eddy
BH:	D	13	19S	28E		692	North	42	West	Eddy
13. Date Spudded 07/09/2021		14. Date T.D. Reached 07/25/2021		15. Date Rig Released 07/27/2021		16. Date Completed (Ready to Produce) 12/01/2021		17. Elevations (DF and RKB, RT, GR, etc.) 3382		
18. Total Measured Depth of Well 15,975			19. Plug Back Measured Depth 15,863			20. Was Directional Survey Made? Yes		21. Type Electric and Other Logs Run Gamma Ray		
22. Producing Interval(s), of this completion - Top, Bottom, Name 9,157 – 15,743 Scanlon Draw; Bone Spring										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
13.375		54.5		464		17.5		Prem Plus 535 sx 1.34		
9.625		36		3,058		12.25		Prem Plus 520 sx 2.07, 210 sx 1.34		
5.5		17		15,955		8.75		Prem 650 sx 2.58, 1,190 sx 1.86		
24. LINER RECORD										
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	25. TUBING RECORD					
					SIZE	DEPTH SET	PACKER SET			
26. Perforation record (interval, size, and number) 9,157 – 15,743 0.37 1,248 holes					27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.					
					DEPTH INTERVAL		AMOUNT AND KIND MATERIAL USED			
					9,157 – 15,743		Total Proppant 15,224,635 – Total Fluid 297,531			
28. PRODUCTION										
Date First Production 12/19/2021		Production Method (<i>Flowing, gas lift, pumping - Size and type pump</i>) Gas Lift				Well Status (<i>Prod. or Shut-in</i>) Producing				
Date of Test 01/07/2022	Hours Tested 24	Choke Size 56/64	Prod'n For Test Period	Oil – Bbl 1,455	Gas – MCF 2,117	Water - Bbl. 1,568	Gas - Oil Ratio			
Flow Tubing Press. 1,340	Casing Pressure 375	Calculated 24- Hour Rate	Oil - Bbl. 1,455	Gas - MCF 2,117	Water - Bbl. 1,568	Oil Gravity - API - (<i>Corr.</i>) 42.8				
29. Disposition of Gas (<i>Sold, used for fuel, vented, etc.</i>) Sold							30. Test Witnessed By Colgate Operating, LLC			
31. List Attachments C-102, C-103, C-104, Directionnel Survey										
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.							33. Rig Release Date:			
34. If an on-site burial was used at the well, report the exact location of the on-site burial:										
Latitude				Longitude				NAD83		

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature 

Printed

Name: Mikah Thomas

Title: Operations Tech

Date: 01/20/2022

E-mail Address: mthomas@colgateenergy.com

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Rustler- 452	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt- 468	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt- 722	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates- 967	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. DLWR Mnt. Group- 3,149	T. Devonian	T. Cliff House	T. Leadville
T. L Brushy Canyon- 3,538	T. Silurian	T. Menefee	T. Madison
T. BS Lime- 3,631	T. Montoya	T. Point Lookout	T. Elbert
T. 1 st Bone Spring SD- 6,798	T. Simpson	T. Mancos	T. McCracken
T. 2 nd Bone Spring LM- 6,863	T. McKee	T. Gallup	T. Ignacio Otzte
T. 2 nd Bone Spring SD- 7,514	T. Ellenburger	Base Greenhorn	T. Granite
T. 3 rd Bone Spring LM- 7,881	T. Gr. Wash	T. Dakota	
T. 3 rd Bone Spring SD-8,637	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T. Todilto	
T. Abo	T.	T. Entrada	
T. Wolfcamp	T.	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to.....

No. 3, from.....to.....

No. 2, from.....to.....

No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology	From	To	Thickness In Feet	Lithology
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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

ACKNOWLEDGMENTS

Action 93052

ACKNOWLEDGMENTS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 93052
	Action Type: [C-104] Completion Packet (C-104C)

ACKNOWLEDGMENTS

☒	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☒	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

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CONDITIONS

Action 93052

CONDITIONS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 93052
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	File 3160-4 Completion Report and 3160-5 Completion Sundry within 10 days to NMOCD after BLM approval.	4/1/2022