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Chisholm Energy Holdings, LLC

Eddy County, NM (NAD83)

Sec 21-T26S-R26E

Cottonwood 28-33 Fed 2BS 5H

Wellbore #2

Design: Wellbore #2

Standard Survey Report

14 March, 2018



INTEGRITY
DIRECTIONAL

Survey Report



Company: Chisholm Energy Holdings, LLC
 Project: Eddy County, NM (NAD83)
 Site: Sec 21-T26S-R26E
 Well: Cottonwood 28-33 Fed 2BS 5H
 Wellbore: Wellbore #2
 Design: Wellbore #2

Local Co-ordinate Reference: Well Cottonwood 28-33 Fed 2BS 5H
 TVD Reference: KB=22 @ 3406.00ft (Nabors M55)
 MD Reference: KB=22 @ 3406.00ft (Nabors M55)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1

Project	Eddy County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 21-T26S-R26E				
Site Position:		Northing:	371,391.69 usft	Latitude:	32.021029
From:	Map	Easting:	553,962.20 usft	Longitude:	-104.292598
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.02 °

Well	Cottonwood 28-33 Fed 2BS 5H, WA					
Well Position	+N/-S	0.00 ft	Northing:	371,292.90 usft	Latitude:	32.020758
	+E/-W	0.00 ft	Easting:	553,926.80 usft	Longitude:	-104.292712
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	3,384.00 ft

Wellbore	Wellbore #2				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	HDGM	2/25/2018	(°)	(°)	(nT)
			7.42	59.63	47,845

Design	Wellbore #2				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	6,606.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	180.00	

Survey Program	Date 3/14/2018			
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
84.00	6,606.00	IDS MWD Surveys (Wellbore #1)	MWD	MWD - Standard
6,637.00	14,657.00	IDS MWD Surveys (Wellbore #2)	MWD	MWD - Standard

Survey										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
84.00	0.60	114.30	84.00	-0.18	0.40	0.18	0.71	0.71	0.00	
161.00	0.70	224.40	161.00	-0.68	0.44	0.68	1.39	0.13	142.99	
221.00	0.60	224.10	220.99	-1.17	-0.04	1.17	0.17	-0.17	-0.50	
280.00	0.80	207.10	279.99	-1.76	-0.44	1.76	0.49	0.34	-28.81	
372.00	0.90	224.90	371.98	-2.84	-1.24	2.84	0.31	0.11	19.35	
431.00	1.10	209.60	430.97	-3.66	-1.85	3.66	0.56	0.34	-25.93	
505.00	1.10	221.90	504.96	-4.81	-2.67	4.81	0.32	0.00	16.62	
567.00	1.40	222.30	566.94	-5.81	-3.58	5.81	0.48	0.48	0.65	
629.00	1.60	216.90	628.92	-7.06	-4.61	7.06	0.39	0.32	-8.71	

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
692.00	0.60	195.60	691.91	-8.09	-5.23	8.09	1.69	-1.59	-33.81
756.00	0.60	168.10	755.90	-8.74	-5.25	8.74	0.45	0.00	-42.97
850.00	0.40	149.30	849.90	-9.50	-4.98	9.50	0.27	-0.21	-20.00
945.00	0.60	181.90	944.90	-10.28	-4.83	10.28	0.36	0.21	34.32
1,039.00	0.60	199.40	1,038.89	-11.24	-5.01	11.24	0.19	0.00	18.62
1,134.00	0.40	191.30	1,133.89	-12.03	-5.24	12.03	0.22	-0.21	-8.53
1,229.00	1.10	129.20	1,228.88	-12.93	-4.59	12.93	1.03	0.74	-65.37
1,324.00	1.00	116.10	1,323.86	-13.88	-3.14	13.88	0.27	-0.11	-13.79
1,418.00	2.40	98.80	1,417.82	-14.54	-0.46	14.54	1.57	1.49	-18.40
1,513.00	3.30	95.00	1,512.70	-15.08	4.23	15.08	0.97	0.95	-4.00
1,607.00	2.90	102.60	1,606.57	-15.83	9.24	15.83	0.61	-0.43	8.09
1,634.00	2.80	106.80	1,633.53	-16.17	10.54	16.17	0.86	-0.37	15.56
1,695.00	2.60	108.10	1,694.46	-17.03	13.28	17.03	0.34	-0.33	2.13
1,791.00	1.10	47.00	1,790.42	-17.08	16.03	17.08	2.38	-1.56	-63.65
1,887.00	1.20	45.40	1,886.40	-15.75	17.42	15.75	0.11	0.10	-1.67
1,981.00	1.50	322.50	1,980.38	-14.08	17.37	14.08	1.92	0.32	-88.19
2,077.00	1.20	285.70	2,076.36	-12.81	15.64	12.81	0.94	-0.31	-38.33
2,172.00	1.20	281.10	2,171.33	-12.35	13.70	12.35	0.10	0.00	-4.84
2,268.00	0.80	263.70	2,267.32	-12.23	12.05	12.23	0.52	-0.42	-18.13
2,362.00	0.50	264.10	2,361.31	-12.35	10.99	12.35	0.32	-0.32	0.43
2,458.00	0.60	226.70	2,457.31	-12.73	10.21	12.73	0.38	0.10	-38.96
2,554.00	0.60	245.70	2,553.30	-13.29	9.38	13.29	0.21	0.00	19.79
2,647.00	0.80	236.50	2,646.30	-13.84	8.40	13.84	0.25	0.22	-9.89
2,742.00	0.90	239.00	2,741.29	-14.59	7.21	14.59	0.11	0.11	2.63
2,836.00	0.90	225.60	2,835.28	-15.49	6.05	15.49	0.22	0.00	-14.26
2,932.00	0.90	227.20	2,931.26	-16.53	4.95	16.53	0.03	0.00	1.67
3,023.00	0.40	68.70	3,022.26	-16.90	4.73	16.90	1.41	-0.55	-174.18
3,121.00	0.50	69.80	3,120.26	-16.63	5.45	16.63	0.10	0.10	1.12
3,217.00	0.30	28.00	3,216.26	-16.26	5.96	16.26	0.36	-0.21	-43.54
3,312.00	1.10	348.20	3,311.25	-15.15	5.89	15.15	0.94	0.84	-41.89
3,407.00	0.80	339.40	3,406.24	-13.64	5.47	13.64	0.35	-0.32	-9.26
3,503.00	0.80	347.70	3,502.23	-12.35	5.09	12.35	0.12	0.00	8.65
3,598.00	0.60	350.70	3,597.22	-11.22	4.87	11.22	0.21	-0.21	3.16
3,690.00	0.50	353.70	3,689.21	-10.34	4.74	10.34	0.11	-0.11	3.26
3,785.00	0.80	348.10	3,784.21	-9.28	4.56	9.28	0.32	0.32	-5.89
3,878.00	0.50	343.70	3,877.20	-8.26	4.31	8.26	0.33	-0.32	-4.73
3,972.00	1.00	314.90	3,971.19	-7.28	3.62	7.28	0.65	0.53	-30.64
4,068.00	1.30	307.20	4,067.17	-6.03	2.16	6.03	0.35	0.31	-8.02
4,163.00	1.10	278.60	4,162.15	-5.25	0.40	5.25	0.66	-0.21	-30.11
4,258.00	0.80	280.80	4,257.14	-4.99	-1.16	4.99	0.32	-0.32	2.32
4,353.00	0.90	273.60	4,352.13	-4.81	-2.55	4.81	0.15	0.11	-7.58
4,449.00	0.80	240.90	4,448.12	-5.09	-3.89	5.09	0.51	-0.10	-34.06
4,543.00	0.40	291.30	4,542.12	-5.29	-4.77	5.29	0.67	-0.43	53.62

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4,638.00	0.40	301.50	4,637.11	-5.00	-5.36	5.00	0.07	0.00	10.74
4,734.00	0.20	359.30	4,733.11	-4.66	-5.65	4.66	0.35	-0.21	60.21
4,829.00	0.10	359.70	4,828.11	-4.41	-5.65	4.41	0.11	-0.11	0.42
4,922.00	0.30	156.90	4,921.11	-4.55	-5.56	4.55	0.42	0.22	169.03
5,017.00	0.20	135.60	5,016.11	-4.90	-5.34	4.90	0.14	-0.11	-22.42
5,112.00	0.40	201.10	5,111.11	-5.33	-5.35	5.33	0.38	0.21	68.95
5,207.00	0.50	208.10	5,206.11	-6.00	-5.66	6.00	0.12	0.11	7.37
5,302.00	0.70	208.90	5,301.10	-6.87	-6.14	6.87	0.21	0.21	0.84
5,397.00	0.10	224.90	5,396.10	-7.44	-6.47	7.44	0.64	-0.63	16.84
5,492.00	0.10	269.50	5,491.10	-7.50	-6.62	7.50	0.08	0.00	46.95
5,587.00	0.30	261.00	5,586.10	-7.54	-6.94	7.54	0.21	0.21	-8.95
5,682.00	0.40	226.70	5,681.10	-7.81	-7.43	7.81	0.24	0.11	-36.11
5,777.00	0.50	319.00	5,776.09	-7.72	-7.94	7.72	0.69	0.11	97.16
5,869.00	0.70	291.10	5,868.09	-7.22	-8.73	7.22	0.38	0.22	-30.33
5,965.00	0.50	327.50	5,964.08	-6.65	-9.50	6.65	0.44	-0.21	37.92
6,059.00	0.30	24.50	6,058.08	-6.08	-9.62	6.08	0.45	-0.21	60.64
6,149.00	0.40	13.00	6,148.08	-5.56	-9.45	5.56	0.14	0.11	-12.78
6,165.00	0.50	16.80	6,164.08	-5.44	-9.42	5.44	0.65	0.63	23.75
6,195.00	0.70	275.30	6,194.08	-5.30	-9.57	5.30	3.13	0.67	-338.33
6,227.00	3.50	253.50	6,226.06	-5.56	-10.70	5.56	8.94	8.75	-68.13
6,259.00	7.00	250.70	6,257.92	-6.48	-13.48	6.48	10.96	10.94	-8.75
6,290.00	10.40	253.50	6,288.56	-7.90	-17.94	7.90	11.05	10.97	9.03
6,322.00	13.70	256.40	6,319.85	-9.61	-24.40	9.61	10.48	10.31	9.06
6,353.00	17.00	255.50	6,349.74	-11.61	-32.35	11.61	10.67	10.65	-2.90
6,385.00	20.10	254.70	6,380.07	-14.23	-42.19	14.23	9.72	9.69	-2.50
6,417.00	22.90	254.30	6,409.84	-17.37	-53.49	17.37	8.76	8.75	-1.25
6,448.00	25.50	255.00	6,438.11	-20.73	-65.74	20.73	8.44	8.39	2.26
6,480.00	28.00	254.10	6,466.69	-24.57	-79.62	24.57	7.91	7.81	-2.81
6,511.00	30.70	254.30	6,493.71	-28.70	-94.24	28.70	8.72	8.71	0.65
6,543.00	33.10	255.00	6,520.87	-33.18	-110.55	33.18	7.59	7.50	2.19
6,575.00	34.50	257.40	6,547.46	-37.42	-127.83	37.42	6.04	4.38	7.50
6,606.00	35.20	257.80	6,572.90	-41.22	-145.14	41.22	2.38	2.26	1.29
6,637.00	33.60	252.00	6,598.49	-45.76	-162.03	45.76	11.76	-5.16	-18.71
6,668.00	36.00	246.90	6,623.95	-51.99	-178.58	51.99	12.16	7.74	-16.45
6,700.00	39.30	242.30	6,649.28	-60.39	-196.21	60.39	13.54	10.31	-14.38
6,731.00	40.40	242.50	6,673.08	-69.59	-213.81	69.59	3.57	3.55	0.65
6,761.00	38.40	248.50	6,696.27	-77.50	-231.11	77.50	14.33	-6.67	20.00
6,794.00	38.90	254.60	6,722.05	-84.01	-250.64	84.01	11.64	1.52	18.48
6,825.00	40.40	260.70	6,745.93	-88.22	-269.95	88.22	13.45	4.84	19.68
6,857.00	42.60	265.60	6,769.90	-90.73	-290.99	90.73	12.25	6.88	15.31
6,889.00	44.70	269.60	6,793.06	-91.64	-313.05	91.64	10.84	6.56	12.50
6,920.00	46.70	271.10	6,814.71	-91.50	-335.23	91.50	7.32	6.45	4.84
6,952.00	49.80	270.30	6,836.02	-91.21	-359.10	91.21	9.87	9.69	-2.50

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6,984.00	52.50	267.50	6,856.09	-91.70	-384.01	91.70	10.84	8.44	-8.75
7,015.00	54.90	265.20	6,874.44	-93.30	-408.94	93.30	9.78	7.74	-7.42
7,046.00	56.70	268.00	6,891.87	-94.81	-434.53	94.81	9.46	5.81	9.03
7,078.00	57.50	273.30	6,909.26	-94.50	-461.38	94.50	14.13	2.50	16.56
7,110.00	60.10	274.80	6,925.84	-92.56	-488.68	92.56	9.06	8.13	4.69
7,141.00	63.20	273.30	6,940.55	-90.64	-515.89	90.64	10.87	10.00	-4.84
7,173.00	66.80	271.40	6,954.08	-89.46	-544.86	89.46	12.47	11.25	-5.94
7,204.00	70.90	271.40	6,965.26	-88.75	-573.76	88.75	13.23	13.23	0.00
7,235.00	73.80	272.60	6,974.66	-87.72	-603.28	87.72	10.06	9.35	3.87
7,266.00	74.60	272.80	6,983.10	-86.32	-633.07	86.32	2.65	2.58	0.65
7,298.00	74.80	272.80	6,991.54	-84.81	-663.90	84.81	0.63	0.63	0.00
7,330.00	74.80	272.50	6,999.93	-83.38	-694.75	83.38	0.90	0.00	-0.94
7,361.00	74.50	272.20	7,008.14	-82.15	-724.62	82.15	1.34	-0.97	-0.97
7,394.00	74.20	271.70	7,017.04	-81.07	-756.37	81.07	1.72	-0.91	-1.52
7,424.00	74.20	271.50	7,025.21	-80.27	-785.23	80.27	0.64	0.00	-0.67
7,456.00	74.40	271.40	7,033.87	-79.49	-816.03	79.49	0.69	0.63	-0.31
7,487.00	74.60	269.80	7,042.15	-79.18	-845.90	79.18	5.02	0.65	-5.16
7,519.00	75.50	266.20	7,050.41	-80.26	-876.79	80.26	11.23	2.81	-11.25
7,551.00	75.70	261.90	7,058.37	-83.47	-907.61	83.47	13.03	0.63	-13.44
7,582.00	76.10	257.70	7,065.93	-88.79	-937.19	88.79	13.20	1.29	-13.55
7,614.00	75.90	256.00	7,073.67	-95.86	-967.42	95.86	5.19	-0.63	-5.31
7,645.00	76.20	254.10	7,081.14	-103.62	-996.49	103.62	6.03	0.97	-6.13
7,677.00	76.20	251.20	7,088.78	-112.88	-1,026.15	112.88	8.80	0.00	-9.06
7,708.00	76.10	247.40	7,096.20	-123.52	-1,054.30	123.52	11.91	-0.32	-12.26
7,740.00	76.70	243.50	7,103.73	-136.44	-1,082.58	136.44	11.99	1.88	-12.19
7,772.00	77.00	239.20	7,111.01	-151.38	-1,109.92	151.38	13.12	0.94	-13.44
7,803.00	77.70	235.40	7,117.80	-167.72	-1,135.37	167.72	12.17	2.26	-12.26
7,835.00	79.40	231.80	7,124.16	-186.33	-1,160.61	186.33	12.24	5.31	-11.25
7,866.00	80.50	230.30	7,129.57	-205.52	-1,184.34	205.52	5.94	3.55	-4.84
7,898.00	80.90	229.90	7,134.74	-225.77	-1,208.57	225.77	1.76	1.25	-1.25
7,929.00	81.10	229.60	7,139.59	-245.56	-1,231.94	245.56	1.15	0.65	-0.97
7,960.00	81.70	227.80	7,144.23	-265.78	-1,254.96	265.78	6.06	1.94	-5.81
7,992.00	81.40	224.10	7,148.93	-287.79	-1,277.71	287.79	11.48	-0.94	-11.56
8,023.00	81.90	220.20	7,153.43	-310.52	-1,298.29	310.52	12.55	1.61	-12.58
8,055.00	82.50	216.00	7,157.78	-335.47	-1,317.85	335.47	13.14	1.88	-13.13
8,087.00	82.20	212.10	7,162.04	-361.74	-1,335.60	361.74	12.12	-0.94	-12.19
8,118.00	82.50	208.70	7,166.17	-388.23	-1,351.14	388.23	10.91	0.97	-10.97
8,149.00	82.20	204.90	7,170.30	-415.65	-1,365.00	415.65	12.19	-0.97	-12.26
8,181.00	81.80	201.40	7,174.75	-444.79	-1,377.45	444.79	10.90	-1.25	-10.94
8,213.00	84.40	199.00	7,178.59	-474.60	-1,388.42	474.60	11.02	8.13	-7.50
8,244.00	87.30	196.40	7,180.84	-504.05	-1,397.81	504.05	12.55	9.35	-8.39
8,276.00	89.60	193.20	7,181.70	-534.97	-1,405.98	534.97	12.31	7.19	-10.00
8,307.00	90.10	189.40	7,181.79	-565.36	-1,412.06	565.36	12.36	1.61	-12.26
8,406.00	92.70	182.50	7,179.36	-663.73	-1,422.31	663.73	7.45	2.63	-6.97

Survey Report



Company: Chisholm Energy Holdings, LLC
 Project: Eddy County, NM (NAD83)
 Site: Sec 21-T26S-R26E
 Well: Cottonwood 28-33 Fed 2BS 5H
 Wellbore: Wellbore #2
 Design: Wellbore #2

Local Co-ordinate Reference: Well Cottonwood 28-33 Fed 2BS 5H
 TVD Reference: KB=22 @ 3406.00ft (Nabors M55)
 MD Reference: KB=22 @ 3406.00ft (Nabors M55)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,500.00	91.00	183.40	7,176.33	-757.55	-1,427.15	757.55	2.05	-1.81	0.96
8,595.00	90.90	183.50	7,174.75	-852.37	-1,432.86	852.37	0.15	-0.11	0.11
8,689.00	91.00	183.80	7,173.20	-946.16	-1,438.85	946.16	0.34	0.11	0.32
8,784.00	90.80	183.80	7,171.70	-1,040.94	-1,445.14	1,040.94	0.21	-0.21	0.00
8,879.00	90.50	183.90	7,170.63	-1,135.72	-1,451.52	1,135.72	0.33	-0.32	0.11
8,973.00	90.30	183.60	7,169.97	-1,229.52	-1,457.67	1,229.52	0.38	-0.21	-0.32
9,068.00	90.30	181.90	7,169.47	-1,324.40	-1,462.23	1,324.40	1.79	0.00	-1.79
9,163.00	91.00	180.90	7,168.39	-1,419.37	-1,464.55	1,419.37	1.28	0.74	-1.05
9,258.00	91.70	179.40	7,166.16	-1,514.34	-1,464.80	1,514.34	1.74	0.74	-1.58
9,352.00	92.40	178.70	7,162.79	-1,608.26	-1,463.24	1,608.26	1.05	0.74	-0.74
9,447.00	92.70	179.10	7,158.57	-1,703.15	-1,461.42	1,703.15	0.53	0.32	0.42
9,543.00	94.10	178.70	7,152.87	-1,798.96	-1,459.58	1,798.96	1.52	1.46	-0.42
9,637.00	92.50	179.40	7,147.46	-1,892.79	-1,458.02	1,892.79	1.86	-1.70	0.74
9,732.00	92.60	179.20	7,143.24	-1,987.69	-1,456.86	1,987.69	0.24	0.11	-0.21
9,827.00	92.70	179.20	7,138.84	-2,082.58	-1,455.54	2,082.58	0.11	0.11	0.00
9,922.00	92.70	179.20	7,134.37	-2,177.46	-1,454.21	2,177.46	0.00	0.00	0.00
10,017.00	94.00	179.40	7,128.82	-2,272.29	-1,453.05	2,272.29	1.38	1.37	0.21
10,112.00	93.60	178.80	7,122.52	-2,367.07	-1,451.56	2,367.07	0.76	-0.42	-0.63
10,206.00	92.10	178.50	7,117.85	-2,460.92	-1,449.35	2,460.92	1.63	-1.60	-0.32
10,301.00	92.60	178.40	7,113.95	-2,555.81	-1,446.79	2,555.81	0.54	0.53	-0.11
10,396.00	91.70	178.20	7,110.39	-2,650.70	-1,443.97	2,650.70	0.97	-0.95	-0.21
10,491.00	92.40	178.30	7,106.99	-2,745.59	-1,441.07	2,745.59	0.74	0.74	0.11
10,585.00	91.20	178.00	7,104.04	-2,839.50	-1,438.04	2,839.50	1.32	-1.28	-0.32
10,680.00	92.10	178.10	7,101.30	-2,934.40	-1,434.81	2,934.40	0.95	0.95	0.11
10,775.00	91.20	178.80	7,098.57	-3,029.33	-1,432.24	3,029.33	1.20	-0.95	0.74
10,869.00	91.70	180.30	7,096.19	-3,123.29	-1,431.50	3,123.29	1.68	0.53	1.60
10,964.00	92.20	179.40	7,092.95	-3,218.23	-1,431.25	3,218.23	1.08	0.53	-0.95
11,059.00	91.20	179.80	7,090.14	-3,313.19	-1,430.59	3,313.19	1.13	-1.05	0.42
11,154.00	91.30	180.00	7,088.06	-3,408.16	-1,430.42	3,408.16	0.24	0.11	0.21
11,249.00	91.60	180.20	7,085.66	-3,503.13	-1,430.59	3,503.13	0.38	0.32	0.21
11,343.00	91.50	180.40	7,083.12	-3,597.10	-1,431.08	3,597.10	0.24	-0.11	0.21
11,438.00	92.00	180.70	7,080.22	-3,692.05	-1,431.99	3,692.05	0.61	0.53	0.32
11,533.00	91.10	180.50	7,077.65	-3,787.01	-1,432.99	3,787.01	0.97	-0.95	-0.21
11,628.00	91.50	180.50	7,075.49	-3,881.98	-1,433.81	3,881.98	0.42	0.42	0.00
11,723.00	92.00	180.70	7,072.59	-3,976.93	-1,434.81	3,976.93	0.57	0.53	0.21
11,817.00	91.30	180.00	7,069.88	-4,070.89	-1,435.38	4,070.89	1.05	-0.74	-0.74
11,913.00	91.90	180.10	7,067.20	-4,166.85	-1,435.47	4,166.85	0.63	0.63	0.10
12,008.00	90.90	179.40	7,064.88	-4,261.82	-1,435.05	4,261.82	1.28	-1.05	-0.74
12,101.00	91.10	179.60	7,063.26	-4,354.80	-1,434.24	4,354.80	0.30	0.22	0.22
12,196.00	91.50	179.80	7,061.10	-4,449.78	-1,433.74	4,449.78	0.47	0.42	0.21
12,291.00	92.00	179.50	7,058.20	-4,544.73	-1,433.16	4,544.73	0.61	0.53	-0.32
12,385.00	92.40	178.80	7,054.59	-4,638.65	-1,431.77	4,638.65	0.86	0.43	-0.74
12,480.00	91.50	178.60	7,051.36	-4,733.57	-1,429.62	4,733.57	0.97	-0.95	-0.21

Survey Report



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 Wellbore: Wellbore #2
 Design: Wellbore #2

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 TVD Reference: KB=22 @ 3406.00ft (Nabors M55)
 MD Reference: KB=22 @ 3406.00ft (Nabors M55)
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 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,575.00	92.10	178.40	7,048.38	-4,828.49	-1,427.13	4,828.49	0.67	0.63	-0.21
12,669.00	90.40	179.10	7,046.33	-4,922.44	-1,425.08	4,922.44	1.96	-1.81	0.74
12,764.00	89.50	178.80	7,046.41	-5,017.42	-1,423.34	5,017.42	1.00	-0.95	-0.32
12,859.00	89.80	179.10	7,046.99	-5,112.40	-1,421.60	5,112.40	0.45	0.32	0.32
12,953.00	89.10	178.40	7,047.89	-5,206.38	-1,419.55	5,206.38	1.05	-0.74	-0.74
13,048.00	89.50	178.30	7,049.05	-5,301.33	-1,416.81	5,301.33	0.43	0.42	-0.11
13,143.00	89.80	178.50	7,049.63	-5,396.29	-1,414.16	5,396.29	0.38	0.32	0.21
13,238.00	90.10	178.50	7,049.72	-5,491.26	-1,411.67	5,491.26	0.32	0.32	0.00
13,332.00	90.50	178.40	7,049.22	-5,585.22	-1,409.13	5,585.22	0.44	0.43	-0.11
13,427.00	90.50	178.50	7,048.40	-5,680.18	-1,406.56	5,680.18	0.11	0.00	0.11
13,522.00	90.80	178.60	7,047.32	-5,775.15	-1,404.16	5,775.15	0.33	0.32	0.11
13,616.00	89.90	179.20	7,046.74	-5,869.13	-1,402.35	5,869.13	1.15	-0.96	0.64
13,711.00	89.50	179.00	7,047.24	-5,964.11	-1,400.86	5,964.11	0.47	-0.42	-0.21
13,806.00	89.60	179.20	7,047.99	-6,059.10	-1,399.37	6,059.10	0.24	0.11	0.21
13,900.00	89.70	179.50	7,048.56	-6,153.09	-1,398.30	6,153.09	0.34	0.11	0.32
13,995.00	90.30	179.60	7,048.56	-6,248.09	-1,397.56	6,248.09	0.64	0.63	0.11
14,089.00	89.20	179.70	7,048.97	-6,342.08	-1,396.98	6,342.08	1.18	-1.17	0.11
14,184.00	89.50	179.80	7,050.05	-6,437.08	-1,396.57	6,437.08	0.33	0.32	0.11
14,254.00	90.00	180.10	7,050.35	-6,507.08	-1,396.51	6,507.08	0.83	0.71	0.43
14,349.00	89.20	180.00	7,051.02	-6,602.07	-1,396.59	6,602.07	0.85	-0.84	-0.11
14,443.00	88.00	179.40	7,053.31	-6,696.04	-1,396.10	6,696.04	1.43	-1.28	-0.64
14,538.00	87.00	179.70	7,057.46	-6,790.95	-1,395.35	6,790.95	1.10	-1.05	0.32
14,584.00	86.50	179.80	7,060.07	-6,836.87	-1,395.15	6,836.87	1.11	-1.09	0.22
Last IDS MWD Survey									
14,657.00	86.50	179.80	7,064.52	-6,909.73	-1,394.90	6,909.73	0.00	0.00	0.00
Projection to TD - 28-33 Fed 2BS 5H BHL									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
14,584.00	7,060.07	-6,836.87	-1,395.15	Last IDS MWD Survey
14,657.00	7,064.52	-6,909.73	-1,394.90	Projection to TD

Checked By: _____ Approved By: _____ Date: _____

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

RECEIVED
JUL 13 2018
AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

DISTRICT II-ARTESIA O.C.D.

¹ API Number 30-015-44648	² Pool Code 64010	³ Pool Name WELCH; BONE SPRING
⁴ Property Code 317877	⁵ Property Name COTTONWOOD 28-33 FED 2BS	
⁷ OGRID No. 372137	⁸ Operator Name CHISHOLM ENERGY OPERATING, LLC	⁹ Elevation 3384'

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
P	21	26 S	26 E		100	SOUTH	1065	EAST	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
LOT 2	33	26 S	26 E		613	SOUTH	2523	EAST	EDDY

¹² Dedicated Acres 223.21	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.

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.

Jennifer Elrod 7/6/18
Signature Date

JENNIFER ELROD
Printed Name

jelrod@chisholmenergy.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.

Date of Survey
Signature and Seal of Professional Surveyor:

Certificate Number