



**CHISHOLM
ENERGY**

HOBBS OCD
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Chisholm Energy

Lea Co, NM

Outland 14-23 State

2BS #3H

#3H

Design: #3H

Standard Survey Report

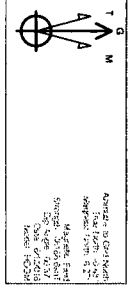
01 October, 2018

gyro/data

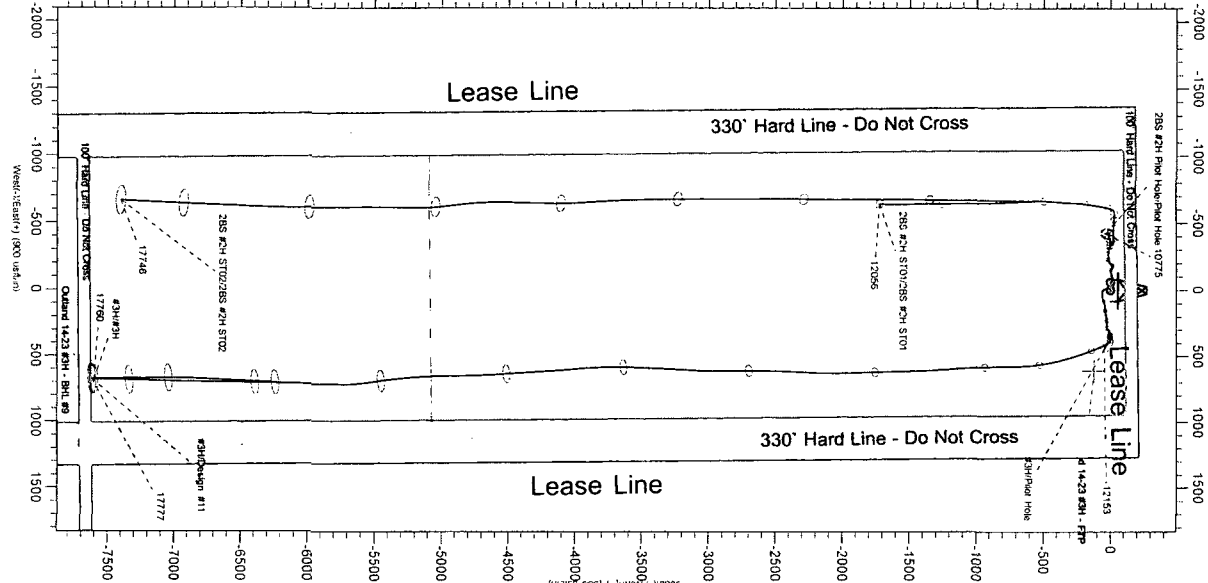
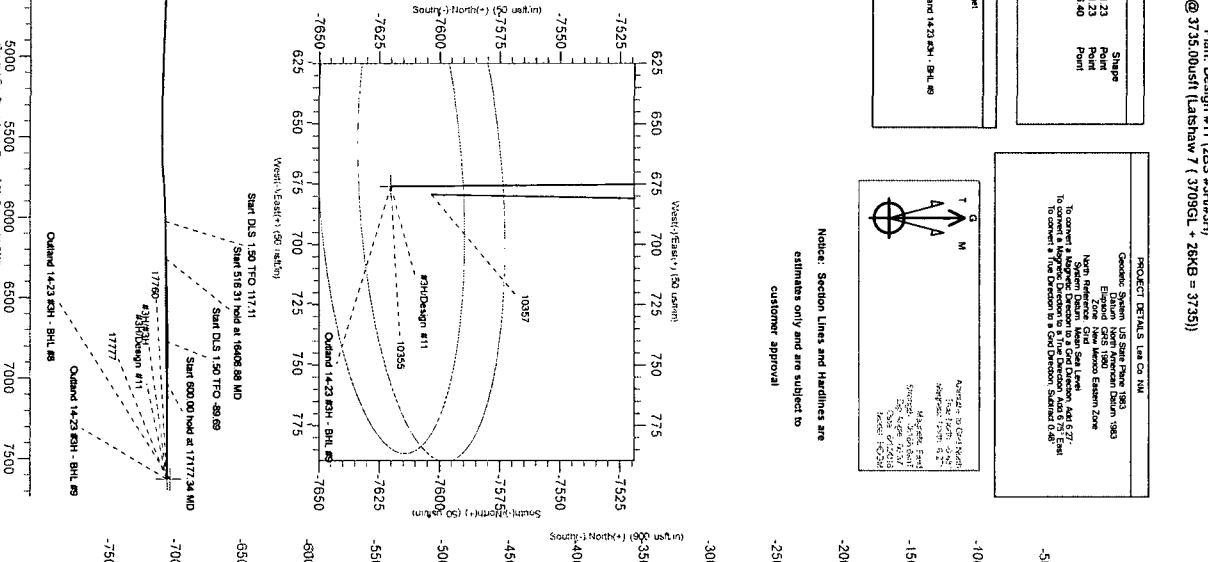
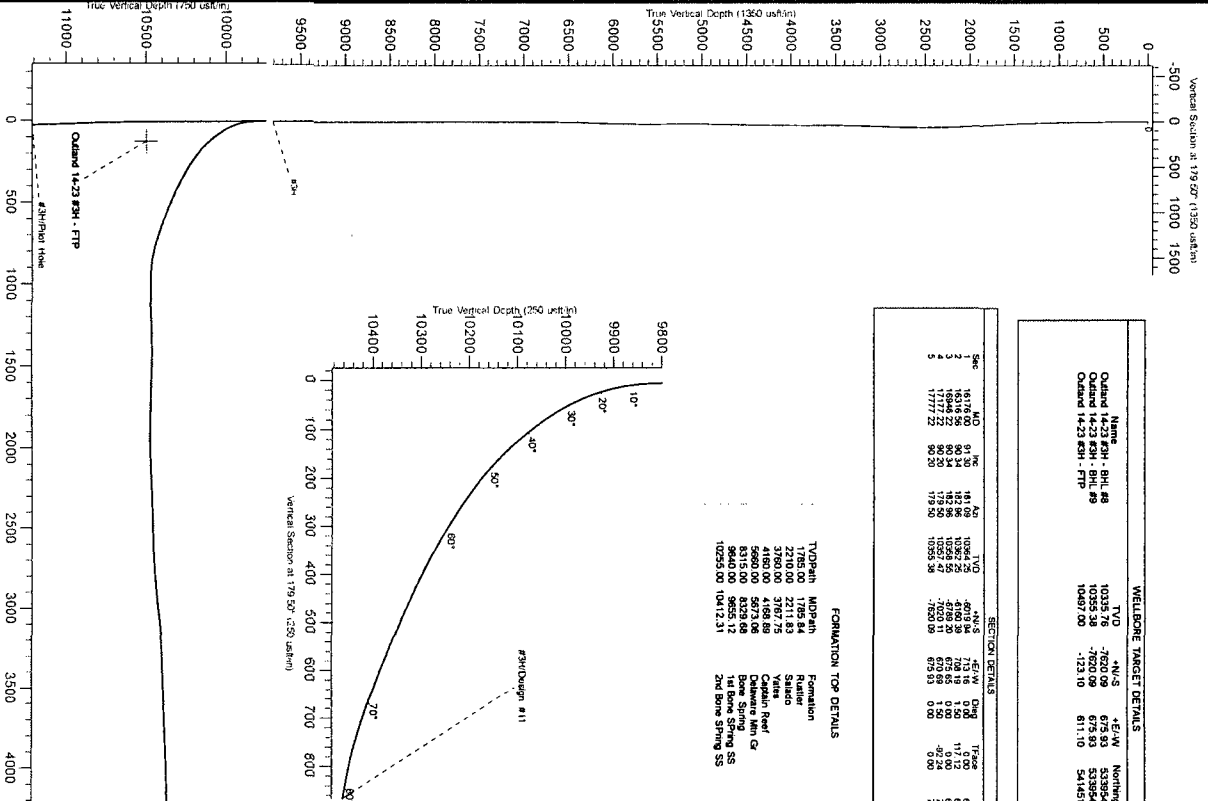
WELDBORE TARGET DETAILS									
Name	TVD	AN/S	AE/AV	Northing	Easting	Shape			
Outland 14.23 #3H - BHL #8	10335.76	-7620.09	675.93	533954.31	815001.23	Point			
Outland 14.23 #3H - BHL #9	10355.38	-7620.09	675.93	533954.31	815001.23	Point			
Outland 14.23 #3H - FTP	10487.00	-723.10	671.10	54451.30	815005.40	Point			

SECTION DETAILS									
Seq	MD	NE	Ap	TVD	AN/S	AE/AV	Thick	Used	Target
1	8176.00	50.30	18.00	10362.22	-4079.34	712.16	0.00	6725.54	Outland 14.23 #3H - BHL #8
2	8176.00	50.30	18.00	10362.22	-4079.34	712.16	0.00	6725.54	
3	8176.00	50.30	18.00	10362.22	-4079.34	712.16	0.00	6725.54	
4	8176.00	50.30	18.00	10362.22	-4079.34	712.16	0.00	6725.54	
5	8176.00	50.30	18.00	10362.22	-4079.34	712.16	0.00	6725.54	

FORMATION TOP DETAILS									
TVD-pth	MD-pth	Formation							
1785.00	1785.84	Shale							
2210.00	2211.63	Shale							
2210.00	2211.63	Shale							
4180.00	4186.69	Shale							
5660.00	5673.06	Shale							
8315.00	8329.66	Shale							
8315.00	8329.66	Shale							
10255.00	10412.31	2nd Bone Spring SS							



PROJECT DETAILS: Lea Co, NM
Customer: Shisholm US State Farm 1800
Easting: 815001.23
Zone: State Farm Eastern Zone
Name: Outland 14.23 #3H - BHL #8
To convert a North Arrow to a True Direction Add 5.70° East
To convert a True Direction to a North Arrow Subtract 5.70° East



Company:	Chisholm Energy	Local Co-ordinate Reference:	Well 2BS #3H
Project:	Lea Co, NM	TVD Reference:	Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
Site:	Outland 14-23 State	MD Reference:	Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
Well:	2BS #3H	North Reference:	Grid
Wellbore:	#3H	Survey Calculation Method:	Minimum Curvature
Design:	#3H	Database:	Gyrodata NWDB

Project	Lea Co, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Outland 14-23 State				
Site Position:		Northing:	541,574.20 usft	Latitude:	32.485714
From:	Map	Easting:	815,265.70 usft	Longitude:	103.444960°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.48 °

Well	2BS #3H					
Well Position	+N/-S	0.00 usft	Northing:	541,574.40 usft	Latitude:	32.485713
	+E/-W	0.00 usft	Easting:	815,325.30 usft	Longitude:	103.444767°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,709.00 usft

Wellbore	#3H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/1/2018	6.75	60.37	48,188.60000000

Design	#3H				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.50	

Survey Program		Date	10/1/2018	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
323.00	4,648.00	Survey #1 (#3H)	MWD+HRGM+AX	OWSG MWD + HRGM + Axial Correction
4,743.00	5,680.00	Survey #2 (#3H)	GYD_GC+DROP+OH	Gyrodata Stationary Tool drop on BHA on open hole
5,776.00	9,736.00	Survey #3 (#3H)	MWD+HRGM+AX	OWSG MWD + HRGM + Axial Correction
9,772.00	10,059.00	Survey #4 (#3H)	GYD_GWD70	Gyrodata Stationary Tool GWD70 run in open hole up
10,139.00	17,760.00	Survey #5 (#3H)	MWD+HRGM+AX	OWSG MWD + HRGM + Axial Correction

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
323.00	1.02	238.15	322.98	-1.52	-2.44	1.50	0.32	0.32	0.00
412.00	1.30	216.91	411.97	-2.74	-3.72	2.71	0.57	0.31	-23.87
501.00	1.73	227.23	500.93	-4.46	-5.31	4.42	0.57	0.48	11.60
595.00	0.97	211.83	594.91	-6.10	-6.78	6.04	0.89	-0.81	-16.38



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Well:	2BS #3H	North Reference:	Grid
Wellbore:	#3H	Survey Calculation Method:	Minimum Curvature
Design:	#3H	Database:	Gyrodata NWDB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
689.00	0.60	193.31	688.90	-7.26	-7.31	7.19	0.47	-0.39	-19.70
783.00	0.81	241.50	782.89	-8.05	-8.01	7.98	0.65	0.22	51.27
878.00	0.78	252.23	877.88	-8.57	-9.21	8.49	0.16	-0.03	11.29
973.00	1.05	245.24	972.87	-9.13	-10.62	9.04	0.31	0.28	-7.36
1,067.00	1.36	238.70	1,066.85	-10.07	-12.35	9.96	0.36	0.33	-6.96
1,161.00	1.59	187.89	1,160.82	-11.94	-13.48	11.83	1.36	0.24	-54.05
1,255.00	1.92	190.42	1,254.78	-14.78	-13.95	14.66	0.36	0.35	2.69
1,350.00	1.80	184.40	1,349.73	-17.84	-14.35	17.71	0.24	-0.13	-6.34
1,444.00	2.14	170.24	1,443.67	-21.04	-14.17	20.91	0.63	0.36	-15.06
1,538.00	3.23	165.09	1,537.57	-25.33	-13.19	25.21	1.19	1.16	-5.48
1,633.00	2.77	166.73	1,632.44	-30.15	-11.97	30.04	0.49	-0.48	1.73
1,728.00	3.67	163.20	1,727.29	-35.29	-10.57	35.20	0.97	0.95	-3.72
1,805.00	3.87	162.85	1,804.12	-40.14	-9.09	40.05	0.26	0.26	-0.45
1,915.00	4.01	162.22	1,913.86	-47.34	-6.82	47.28	0.13	0.13	-0.57
2,010.00	3.73	147.12	2,008.65	-53.10	-4.13	53.06	1.11	-0.29	-15.89
2,104.00	4.02	132.09	2,102.43	-57.88	-0.02	57.88	1.12	0.31	-15.99
2,199.00	3.99	115.87	2,197.21	-61.55	5.42	61.60	1.19	-0.03	-17.07
2,293.00	4.61	96.97	2,290.94	-63.44	12.12	63.54	1.64	0.66	-20.11
2,388.00	5.01	94.80	2,385.61	-64.25	20.04	64.42	0.46	0.42	-2.28
2,482.00	5.23	88.81	2,479.24	-64.50	28.41	64.75	0.61	0.23	-6.37
2,576.00	6.16	88.55	2,572.77	-64.29	37.74	64.61	0.99	0.99	-0.28
2,670.00	5.79	83.54	2,666.26	-63.63	47.49	64.04	0.68	-0.39	-5.33
2,764.00	4.70	71.93	2,759.87	-61.90	55.86	62.38	1.61	-1.16	-12.35
2,859.00	4.45	64.04	2,854.57	-59.08	62.88	59.62	0.71	-0.26	-8.31
2,952.00	5.84	69.52	2,947.19	-55.84	70.55	56.46	1.58	1.49	5.89
3,046.00	6.91	68.62	3,040.61	-52.11	80.30	52.81	1.14	1.14	-0.96
3,141.00	6.33	71.74	3,134.97	-48.38	90.60	49.17	0.72	-0.61	3.28
3,235.00	4.33	72.90	3,228.56	-45.72	98.91	46.58	2.13	-2.13	1.23
3,328.00	4.22	73.03	3,321.30	-43.69	105.54	44.60	0.12	-0.12	0.14
3,423.00	3.37	81.40	3,416.10	-42.25	111.64	43.22	1.07	-0.89	8.81
3,516.00	3.29	88.53	3,508.94	-41.77	117.01	42.79	0.45	-0.09	7.67
3,610.00	4.10	86.79	3,602.74	-41.51	123.06	42.59	0.87	0.86	-1.85
3,704.00	4.89	93.32	3,696.45	-41.56	130.42	42.69	1.00	0.84	6.95
3,799.00	4.05	91.93	3,791.16	-41.90	137.81	43.11	0.89	-0.88	-1.46
3,892.00	3.70	87.08	3,883.95	-41.86	144.09	43.12	0.52	-0.38	-5.22
3,985.00	4.18	83.51	3,976.73	-41.33	150.46	42.64	0.58	0.52	-3.84
4,080.00	5.10	87.27	4,071.42	-40.73	158.12	42.11	1.02	0.97	3.96
4,175.00	4.48	78.65	4,166.09	-39.80	165.97	41.25	1.00	-0.65	-9.07
4,270.00	4.56	77.44	4,260.79	-38.25	173.29	39.76	0.13	0.08	-1.27
4,363.00	4.93	82.61	4,353.47	-36.93	180.87	38.51	0.61	0.40	5.56
4,458.00	4.05	79.09	4,448.18	-35.77	188.21	37.41	0.97	-0.93	-3.71
4,554.00	4.35	76.15	4,543.92	-34.26	195.07	35.96	0.38	0.31	-3.06

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Survey									
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4,648.00	4.40	78.27	4,637.65	-32.67	202.06	34.44	0.18	0.05	2.26
4,743.00	4.91	70.49	4,732.34	-30.57	209.46	32.40	0.85	0.54	-8.19
4,839.00	4.67	77.01	4,828.00	-28.32	217.15	30.22	0.62	-0.25	6.79
4,933.00	4.85	83.60	4,921.68	-27.02	224.82	28.98	0.61	0.19	7.01
5,028.00	4.56	86.70	5,016.36	-26.36	232.58	28.38	0.41	-0.31	3.26
5,122.00	4.25	88.80	5,110.08	-26.07	239.80	28.16	0.37	-0.33	2.23
5,216.00	4.57	89.16	5,203.80	-25.94	247.02	28.09	0.34	0.34	0.38
5,311.00	3.73	91.87	5,298.55	-25.99	253.90	28.20	0.91	-0.88	2.85
5,406.00	3.41	93.31	5,393.37	-26.25	259.81	28.52	0.35	-0.34	1.52
5,501.00	3.51	93.26	5,488.20	-26.58	265.53	28.89	0.11	0.11	-0.05
5,596.00	3.09	91.44	5,583.04	-26.81	270.99	29.17	0.46	-0.44	-1.92
5,680.00	2.79	93.35	5,666.93	-26.98	275.30	29.39	0.38	-0.36	2.27
5,776.00	1.95	104.17	5,762.84	-27.52	279.21	29.96	0.99	-0.87	11.27
5,870.00	3.66	60.53	5,856.74	-26.44	283.38	28.91	2.79	1.82	-46.43
5,965.00	3.63	54.74	5,951.55	-23.21	288.47	25.72	0.39	-0.03	-6.09
6,060.00	3.71	52.90	6,046.35	-19.62	293.38	22.18	0.15	0.08	-1.94
6,154.00	3.72	52.39	6,140.15	-15.92	298.22	18.52	0.04	0.01	-0.54
6,248.00	3.19	61.11	6,233.98	-12.80	302.93	15.44	0.79	-0.56	9.28
6,343.00	3.39	60.81	6,328.83	-10.15	307.69	12.84	0.21	0.21	-0.32
6,437.00	3.04	61.04	6,422.68	-7.59	312.30	10.31	0.37	-0.37	0.24
6,531.00	1.05	45.22	6,516.61	-5.77	315.09	8.52	2.18	-2.12	-16.83
6,625.00	1.03	50.34	6,610.60	-4.63	316.35	7.39	0.10	-0.02	5.45
6,720.00	0.77	41.81	6,705.59	-3.61	317.44	6.38	0.31	-0.27	-8.98
6,815.00	1.42	77.13	6,800.57	-2.87	319.01	5.65	0.96	0.68	37.18
6,909.00	1.53	78.88	6,894.54	-2.37	321.38	5.17	0.13	0.12	1.86
7,003.00	1.52	85.15	6,988.51	-2.02	323.85	4.85	0.18	-0.01	6.67
7,098.00	1.35	98.21	7,083.48	-2.07	326.21	4.92	0.39	-0.18	13.75
7,193.00	0.83	92.09	7,178.46	-2.26	328.01	5.12	0.56	-0.55	-6.44
7,287.00	0.86	95.19	7,272.45	-2.35	329.39	5.22	0.06	0.03	3.30
7,382.00	1.04	95.91	7,367.44	-2.50	330.96	5.39	0.19	0.19	0.76
7,476.00	1.05	108.90	7,461.42	-2.87	332.62	5.77	0.25	0.01	13.82
7,571.00	0.71	92.79	7,556.41	-3.18	334.03	6.09	0.44	-0.36	-16.96
7,666.00	0.94	84.97	7,651.40	-3.14	335.40	6.07	0.27	0.24	-8.23
7,760.00	0.87	82.40	7,745.39	-2.98	336.87	5.92	0.09	-0.07	-2.73
7,854.00	0.94	100.00	7,839.38	-3.02	338.34	5.97	0.30	0.07	18.72
7,949.00	0.97	87.71	7,934.36	-3.12	339.91	6.09	0.22	0.03	-12.94
8,043.00	0.74	109.49	8,028.35	-3.29	341.28	6.27	0.42	-0.24	23.17
8,137.00	0.55	100.40	8,122.35	-3.57	342.29	6.56	0.23	-0.20	-9.67
8,231.00	1.12	73.11	8,216.34	-3.39	343.62	6.39	0.72	0.61	-29.03
8,325.00	0.91	97.23	8,310.32	-3.22	345.24	6.23	0.50	-0.22	25.66
8,420.00	0.87	98.42	8,405.31	-3.42	346.70	6.44	0.05	-0.04	1.25
8,514.00	0.99	86.62	8,499.30	-3.47	348.21	6.51	0.24	0.13	-12.55



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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,608.00	1.31	100.41	8,593.28	-3.62	350.08	6.67	0.45	0.34	14.67
8,702.00	1.29	95.35	8,687.26	-3.91	352.19	6.99	0.12	-0.02	-5.38
8,796.00	1.48	91.71	8,781.23	-4.05	354.46	7.14	0.22	0.20	-3.87
8,891.00	1.86	88.06	8,876.19	-4.03	357.23	7.15	0.42	0.40	-3.84
8,985.00	1.88	81.52	8,970.14	-3.75	360.28	6.90	0.23	0.02	-6.96
9,079.00	2.16	82.80	9,064.08	-3.30	363.56	6.48	0.30	0.30	1.36
9,172.00	1.75	85.90	9,157.02	-2.98	366.71	6.18	0.46	-0.44	3.33
9,266.00	1.66	86.39	9,250.98	-2.79	369.50	6.02	0.10	-0.10	0.52
9,361.00	1.59	64.98	9,345.95	-2.15	372.07	5.40	0.64	-0.07	-22.54
9,455.00	1.03	60.09	9,439.92	-1.18	373.99	4.44	0.61	-0.60	-5.20
9,548.00	1.12	73.72	9,532.90	-0.51	375.58	3.78	0.29	0.10	14.66
9,642.00	1.33	107.20	9,626.88	-0.57	377.51	3.86	0.78	0.22	35.62
9,736.00	1.56	110.03	9,720.85	-1.33	379.75	4.64	0.26	0.24	3.01
9,772.00	1.59	112.43	9,756.84	-1.69	380.67	5.01	0.20	0.08	6.67
9,824.00	4.67	110.51	9,808.76	-2.71	383.32	6.05	5.93	5.92	-3.69
9,871.00	9.36	129.62	9,855.40	-5.82	388.06	9.20	11.01	9.98	40.66
9,918.00	16.06	141.51	9,901.23	-13.35	395.06	16.80	15.23	14.26	25.30
9,965.00	22.97	147.84	9,945.51	-26.22	404.00	29.75	15.35	14.70	13.47
10,012.00	29.19	152.18	9,987.70	-44.14	414.24	47.75	13.83	13.23	9.23
10,059.00	34.96	155.96	10,027.52	-66.60	425.09	70.30	12.99	12.28	8.04
10,139.00	41.46	157.32	10,090.34	-112.01	444.66	115.89	8.19	8.12	1.70
10,186.00	45.25	159.05	10,124.51	-141.97	456.63	145.95	8.45	8.06	3.68
10,233.00	49.94	159.89	10,156.20	-174.46	468.79	178.55	10.07	9.98	1.79
10,280.00	55.17	160.09	10,184.77	-209.51	481.55	213.71	11.13	11.13	0.43
10,327.00	57.32	160.56	10,210.88	-246.31	494.70	250.61	4.65	4.57	1.00
10,374.00	58.88	162.11	10,235.72	-284.11	507.47	288.53	4.34	3.32	3.30
10,397.63	59.98	163.01	10,247.74	-303.52	513.57	307.99	5.71	4.67	3.83
Outland 14-23 #3H - FTP									
10,421.00	61.08	163.89	10,259.23	-323.02	519.36	327.54	5.71	4.69	3.74
10,468.00	62.87	165.73	10,281.31	-363.06	530.22	367.67	5.14	3.81	3.91
10,516.00	64.40	166.90	10,302.63	-404.84	540.39	409.54	3.86	3.19	2.44
10,563.00	65.90	168.04	10,322.38	-446.47	549.64	451.25	3.88	3.19	2.43
10,609.00	67.41	169.50	10,340.61	-487.90	557.87	492.75	4.39	3.28	3.17
10,656.00	67.74	171.12	10,358.54	-530.72	565.18	535.63	3.26	0.70	3.45
10,702.00	68.37	172.91	10,375.73	-572.97	571.10	577.94	3.86	1.37	3.89
10,749.00	69.15	175.25	10,392.76	-616.54	575.62	621.54	4.93	1.66	4.98
10,797.00	70.00	177.46	10,409.51	-661.43	578.47	666.45	4.66	1.77	4.60
10,844.00	71.64	179.28	10,424.96	-705.80	579.73	710.83	5.05	3.49	3.87
10,892.00	74.45	179.64	10,438.95	-751.71	580.17	756.74	5.90	5.85	0.75
10,939.00	78.09	179.12	10,450.11	-797.35	580.66	802.39	7.82	7.74	-1.11
10,986.00	80.25	179.20	10,458.94	-843.51	581.34	848.55	4.60	4.60	0.17
11,018.00	82.46	178.71	10,463.75	-875.14	581.91	880.18	7.07	6.91	-1.53



Company: Chisholm Energy
Project: Lea Co, NM
Site: Outland 14-23 State
Well: 2BS #3H
Wellbore: #3H
Design: #3H

Local Co-ordinate Reference:
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MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well 2BS #3H
Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
Grid
Minimum Curvature
Gyrodata NWDB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,049.00	84.60	177.86	10,467.24	-905.92	582.84	910.98	7.42	6.90	-2.74
11,081.00	87.97	177.29	10,469.31	-937.82	584.19	942.89	10.68	10.53	-1.78
11,113.00	89.41	176.85	10,470.04	-969.77	585.82	974.85	4.71	4.50	-1.37
11,176.00	90.55	176.72	10,470.07	-1,032.67	589.36	1,037.78	1.82	1.81	-0.21
11,242.00	92.10	176.45	10,468.54	-1,098.54	593.29	1,103.67	2.38	2.35	-0.41
11,337.00	92.42	176.04	10,464.79	-1,193.26	599.50	1,198.44	0.55	0.34	-0.43
11,432.00	92.63	175.86	10,460.61	-1,287.93	606.21	1,293.17	0.29	0.22	-0.19
11,526.00	90.11	177.34	10,458.36	-1,381.73	611.78	1,387.01	3.11	-2.68	1.57
11,621.00	88.11	178.75	10,459.84	-1,476.65	615.02	1,481.96	2.58	-2.11	1.48
11,714.00	88.22	178.64	10,462.81	-1,569.58	617.14	1,574.91	0.17	0.12	-0.12
11,808.00	88.18	178.39	10,465.77	-1,663.50	619.57	1,668.85	0.27	-0.04	-0.27
11,902.00	88.33	177.89	10,468.63	-1,757.41	622.62	1,762.78	0.56	0.16	-0.53
11,995.00	88.31	177.62	10,471.36	-1,850.30	626.26	1,855.69	0.29	-0.02	-0.29
12,089.00	91.06	178.58	10,471.87	-1,944.23	629.38	1,949.65	3.10	2.93	1.02
12,183.00	92.09	179.81	10,469.29	-2,038.19	630.70	2,043.61	1.71	1.10	1.31
12,277.00	92.07	181.07	10,465.88	-2,132.12	629.98	2,137.54	1.34	-0.02	1.34
12,371.00	92.28	182.42	10,462.31	-2,226.01	627.12	2,231.39	1.45	0.22	1.44
12,467.00	92.24	183.38	10,458.52	-2,321.81	622.26	2,327.15	1.00	-0.04	1.00
12,562.00	91.25	182.85	10,455.63	-2,416.62	617.10	2,421.91	1.18	-1.04	-0.56
12,656.00	91.23	181.26	10,453.60	-2,510.54	613.73	2,515.80	1.69	-0.02	-1.69
12,751.00	91.44	180.37	10,451.38	-2,605.50	612.38	2,610.74	0.96	0.22	-0.94
12,846.00	94.16	179.61	10,446.74	-2,700.38	612.40	2,705.62	2.97	2.86	-0.80
12,938.00	94.08	179.36	10,440.13	-2,792.14	613.22	2,797.38	0.28	-0.09	-0.27
13,033.00	95.17	179.47	10,432.47	-2,886.82	614.19	2,892.07	1.15	1.15	0.12
13,127.00	96.58	180.50	10,422.85	-2,980.32	614.22	2,985.57	1.85	1.50	1.10
13,221.00	96.30	182.36	10,412.31	-3,073.70	611.89	3,078.92	1.99	-0.30	1.98
13,315.00	94.87	183.45	10,403.16	-3,167.13	607.14	3,172.30	1.91	-1.52	1.16
13,410.00	92.32	183.38	10,397.20	-3,261.76	601.50	3,266.89	2.69	-2.68	-0.07
13,505.00	92.13	182.91	10,393.51	-3,356.55	596.29	3,361.62	0.53	-0.20	-0.49
13,599.00	92.09	182.67	10,390.05	-3,450.37	591.72	3,455.40	0.26	-0.04	-0.26
13,693.00	92.13	182.26	10,386.59	-3,544.22	587.68	3,549.21	0.44	0.04	-0.44
13,787.00	92.14	181.74	10,383.09	-3,638.10	584.40	3,643.06	0.55	0.01	-0.55
13,882.00	92.14	179.16	10,379.54	-3,733.02	583.65	3,737.97	2.71	0.00	-2.72
13,976.00	92.21	177.34	10,375.97	-3,826.91	586.52	3,831.88	1.94	0.07	-1.94
14,069.00	92.13	175.04	10,372.45	-3,919.63	592.69	3,924.65	2.47	-0.09	-2.47
14,164.00	91.75	175.15	10,369.24	-4,014.23	600.81	4,019.32	0.42	-0.40	0.12
14,258.00	91.08	175.80	10,366.92	-4,107.90	608.23	4,113.05	0.99	-0.71	0.69
14,353.00	91.06	175.93	10,365.14	-4,202.64	615.08	4,207.85	0.14	-0.02	0.14
14,447.00	91.12	176.60	10,363.35	-4,296.42	621.20	4,301.68	0.72	0.06	0.71
14,542.00	90.32	176.68	10,362.16	-4,391.25	626.76	4,396.55	0.85	-0.84	0.08
14,636.00	90.00	176.15	10,361.90	-4,485.07	632.64	4,490.42	0.66	-0.34	-0.56
14,665.00	89.17	176.07	10,362.11	-4,514.00	634.61	4,519.36	2.88	-2.86	-0.28



Company: Chisholm Energy
Project: Lea Co, NM
Site: Outland 14-23 State
Well: 2BS #3H
Wellbore: #3H
Design: #3H

Local Co-ordinate Reference:
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MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well 2BS #3H
 Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
 Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
 Grid
 Minimum Curvature
 Gyrodata NWDB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,760.00	88.17	176.42	10,364.31	-4,608.77	640.83	4,614.18	1.12	-1.05	0.37
14,853.00	87.98	177.33	10,367.44	-4,701.57	645.90	4,707.03	1.00	-0.20	0.98
14,947.00	87.69	178.54	10,370.99	-4,795.44	649.28	4,800.93	1.32	-0.31	1.29
15,041.00	88.00	179.64	10,374.52	-4,889.36	650.77	4,894.86	1.21	0.33	1.17
15,135.00	87.47	178.96	10,378.24	-4,983.28	651.92	4,988.78	0.92	-0.56	-0.72
15,230.00	87.98	177.69	10,382.01	-5,078.17	654.70	5,083.69	1.44	0.54	-1.34
15,324.00	90.07	175.69	10,383.61	-5,171.99	660.12	5,177.55	3.08	2.22	-2.13
15,419.00	90.20	175.35	10,383.38	-5,266.69	667.54	5,272.32	0.38	0.14	-0.36
15,513.00	90.08	173.48	10,383.15	-5,360.24	676.69	5,365.95	1.99	-0.13	-1.99
15,607.00	89.24	171.75	10,383.71	-5,453.46	688.77	5,459.26	2.05	-0.89	-1.84
15,702.00	88.75	171.23	10,385.38	-5,547.40	702.83	5,553.32	0.75	-0.52	-0.55
15,796.00	92.41	175.38	10,384.43	-5,640.72	713.78	5,646.73	5.89	3.89	4.41
15,890.00	95.41	180.03	10,378.01	-5,734.38	717.54	5,740.43	5.88	3.19	4.95
15,984.00	93.22	181.86	10,370.94	-5,828.10	716.00	5,834.12	3.03	-2.33	1.95
16,078.00	91.76	180.23	10,366.86	-5,921.99	714.28	5,927.99	2.33	-1.55	-1.73
16,174.00	91.30	181.07	10,364.29	-6,017.94	713.20	6,023.94	1.00	-0.48	0.87
16,268.00	91.18	181.82	10,362.26	-6,111.89	710.83	6,117.86	0.81	-0.13	0.80
16,362.00	91.15	181.42	10,360.35	-6,205.83	708.17	6,211.78	0.43	-0.03	-0.43
16,457.00	91.09	181.04	10,358.49	-6,300.79	706.13	6,306.72	0.40	-0.06	-0.40
16,551.00	91.13	180.76	10,356.67	-6,394.76	704.65	6,400.67	0.30	0.04	-0.30
16,646.00	91.55	181.11	10,354.45	-6,489.73	703.10	6,495.61	0.58	0.44	0.37
16,740.00	91.62	181.52	10,351.85	-6,583.66	700.95	6,589.53	0.44	0.07	0.44
16,834.00	89.80	180.47	10,350.68	-6,677.64	699.32	6,683.49	2.24	-1.94	-1.12
16,929.00	89.80	180.51	10,351.02	-6,772.63	698.50	6,778.47	0.04	0.00	0.04
17,023.00	89.90	180.95	10,351.26	-6,866.63	697.31	6,872.45	0.48	0.11	0.47
17,117.00	89.54	181.79	10,351.72	-6,960.60	695.06	6,966.40	0.97	-0.38	0.89
17,211.00	89.52	181.53	10,352.49	-7,054.55	692.34	7,060.33	0.28	-0.02	-0.28
17,306.00	89.50	181.60	10,353.31	-7,149.52	689.74	7,155.26	0.08	-0.02	0.07
17,400.00	89.45	181.65	10,354.17	-7,243.47	687.08	7,249.19	0.08	-0.05	0.05
17,494.00	89.69	181.67	10,354.87	-7,337.43	684.35	7,343.12	0.26	0.26	0.02
17,546.23	89.47	181.18	10,355.26	-7,389.64	683.05	7,395.32	1.03	-0.43	-0.94
Outland 14-23 #3H - PBHL									
17,588.00	89.29	180.79	10,355.71	-7,431.40	682.33	7,437.08	1.03	-0.43	-0.94
17,662.00	89.83	181.05	10,356.28	-7,505.39	681.15	7,511.05	0.81	0.73	0.35
17,760.00	89.83	181.05	10,356.57	-7,603.38	679.35	7,609.01	0.00	0.00	0.00
Outland 14-23 #3H - BHL - Outland 14-23 #3H - BHL #9 - Outland 14-23 #3H - BHL #2 - Outland 14-23 #3H - BHL #5 - Outland 14-23 #3H - B									



Company:	Chisholm Energy	Local Co-ordinate Reference:	Well 2BS #3H
Project:	Lea Co, NM	TVD Reference:	Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
Site:	Outland 14-23 State	MD Reference:	Latshaw7 @ 3735.00usft (Latshaw 7 (3709GL + 26KB = 3735))
Well:	2BS #3H	North Reference:	Grid
Wellbore:	#3H	Survey Calculation Method:	Minimum Curvature
Design:	#3H	Database:	Gyrodata NWDB

Checked By: _____	Approved By: _____	Date: _____
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