



Laramie Energy, LLC

Mesa County, CO

Bruton 30-03 Pad

Bruton 30-06E

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

07 October, 2017





Survey Report - Geographic



Company:	Laramie Energy, LLC	Local Co-ordinate Reference:	Well Bruton 30-06E
Project:	Mesa County, CO	TVD Reference:	well @ 7542.0usft (H&P #522)
Site:	Bruton 30-03 Pad	MD Reference:	well @ 7542.0usft (H&P #522)
Well:	Bruton 30-06E	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Mesa County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Bruton 30-03 Pad						
Site Position:		Northing:	1,525,281.27	usft	Latitude:	39.252711		
From:	Lat/Long	Easting:	2,344,720.08	usft	Longitude:	-107.814289		
Position Uncertainty:	0.0	usft	Slot Radius:	13-3/16	"	Grid Convergence:	-1.46	°

Well	Bruton 30-06E					
Well Position	+N/-S	0.0 usft	Northing:	1,525,249.84 usft	Latitude:	39.252625
	+E/-W	0.0 usft	Easting:	2,344,721.52 usft	Longitude:	-107.814281
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	7,512.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/25/2017	9.56	65.42	51,378.13780802

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	101.30	

Survey Program	Date	10/7/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
215.0	8,201.0	MWD Surveys (Wellbore #1)	MWD default	MWD - Standard	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,525,249.84	2,344,721.52	39.252625	-107.814281
215.0	1.30	129.70	215.0	-1.6	1.9	1,525,248.24	2,344,723.35	39.252621	-107.814275
First MWD Survey @ 215.0' MD / 215.0' TVD									
306.0	2.60	114.00	305.9	-3.1	4.6	1,525,246.67	2,344,725.99	39.252617	-107.814265
398.0	3.30	112.70	397.8	-4.9	8.9	1,525,244.69	2,344,730.29	39.252612	-107.814250
489.0	4.00	110.20	488.6	-7.0	14.3	1,525,242.44	2,344,735.63	39.252606	-107.814231
581.0	4.00	119.20	580.4	-9.7	20.1	1,525,239.62	2,344,741.38	39.252598	-107.814210
673.0	4.20	123.00	672.2	-13.1	25.7	1,525,236.08	2,344,746.91	39.252589	-107.814190
765.0	5.70	102.50	763.8	-15.9	33.0	1,525,233.07	2,344,754.13	39.252581	-107.814165
856.0	8.50	95.00	854.1	-17.5	44.1	1,525,231.23	2,344,765.20	39.252577	-107.814125
947.0	11.30	97.40	943.8	-19.2	59.7	1,525,229.09	2,344,780.69	39.252572	-107.814071
1,041.0	14.70	98.00	1,035.3	-22.1	80.6	1,525,225.72	2,344,801.56	39.252564	-107.813997



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Project:	Mesa County, CO	TVD Reference:	well @ 7542.0usft (H&P #522)
Site:	Bruton 30-03 Pad	MD Reference:	well @ 7542.0usft (H&P #522)
Well:	Bruton 30-06E	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,135.0	17.60	101.10	1,125.6	-26.5	106.4	1,525,220.66	2,344,827.20	39.252552	-107.813906
1,230.0	20.70	102.40	1,215.3	-32.8	136.9	1,525,213.52	2,344,857.53	39.252535	-107.813798
1,324.0	24.00	102.70	1,302.3	-40.6	171.8	1,525,204.86	2,344,892.21	39.252514	-107.813675
1,418.0	26.50	101.60	1,387.3	-49.0	211.0	1,525,195.44	2,344,931.18	39.252490	-107.813536
1,504.0	26.20	102.30	1,464.4	-56.9	248.3	1,525,186.59	2,344,968.31	39.252469	-107.813404
1,589.0	25.80	100.60	1,540.7	-64.3	284.8	1,525,178.26	2,345,004.62	39.252448	-107.813275
1,683.0	27.90	102.30	1,624.6	-72.8	326.4	1,525,168.76	2,345,045.99	39.252425	-107.813129
1,777.0	27.60	97.10	1,707.8	-80.2	369.5	1,525,160.28	2,345,088.89	39.252405	-107.812976
1,871.0	26.40	96.50	1,791.6	-85.2	411.9	1,525,154.15	2,345,131.13	39.252391	-107.812827
1,965.0	27.40	99.20	1,875.4	-91.1	454.0	1,525,147.25	2,345,173.08	39.252375	-107.812678
2,060.0	26.50	98.70	1,960.1	-97.8	496.6	1,525,139.47	2,345,215.43	39.252357	-107.812528
2,154.0	27.30	98.70	2,043.9	-104.2	538.6	1,525,131.97	2,345,257.29	39.252339	-107.812379
2,248.0	26.20	98.20	2,127.8	-110.4	580.4	1,525,124.69	2,345,298.96	39.252322	-107.812232
2,342.0	26.60	101.80	2,212.0	-117.7	621.6	1,525,116.38	2,345,339.91	39.252302	-107.812086
2,437.0	27.40	103.10	2,296.7	-127.0	663.7	1,525,106.00	2,345,381.77	39.252276	-107.811938
2,531.0	26.00	102.20	2,380.7	-136.2	704.9	1,525,095.70	2,345,422.72	39.252251	-107.811792
2,625.0	27.90	101.80	2,464.5	-145.1	746.6	1,525,085.79	2,345,464.16	39.252227	-107.811645
2,719.0	28.00	101.80	2,547.5	-154.1	789.7	1,525,075.68	2,345,507.04	39.252202	-107.811493
2,813.0	25.80	101.00	2,631.3	-162.5	831.4	1,525,066.21	2,345,548.50	39.252179	-107.811345
2,907.0	24.30	100.40	2,716.5	-169.9	870.5	1,525,057.82	2,345,587.40	39.252159	-107.811207
3,002.0	26.90	102.60	2,802.1	-178.1	910.7	1,525,048.58	2,345,627.38	39.252136	-107.811065
3,096.0	29.00	103.80	2,885.2	-188.2	953.6	1,525,037.41	2,345,670.00	39.252108	-107.810914
3,190.0	28.10	104.00	2,967.7	-199.0	997.2	1,525,025.52	2,345,713.32	39.252079	-107.810760
3,284.0	27.30	104.20	3,051.0	-209.6	1,039.6	1,525,013.80	2,345,755.41	39.252049	-107.810610
3,378.0	25.90	104.00	3,135.0	-219.9	1,080.4	1,525,002.51	2,345,795.96	39.252021	-107.810466
3,473.0	27.60	102.30	3,219.8	-229.6	1,122.0	1,524,991.74	2,345,837.33	39.251995	-107.810319
3,567.0	26.90	102.50	3,303.4	-238.8	1,164.1	1,524,981.43	2,345,879.12	39.251969	-107.810171
3,661.0	25.40	102.00	3,387.8	-247.6	1,204.5	1,524,971.61	2,345,919.37	39.251945	-107.810028
3,756.0	26.80	100.70	3,473.1	-255.8	1,245.5	1,524,962.35	2,345,960.12	39.251923	-107.809883
3,850.0	25.90	101.10	3,557.3	-263.7	1,286.5	1,524,953.43	2,346,000.88	39.251901	-107.809738
3,944.0	27.70	100.40	3,641.2	-271.6	1,328.1	1,524,944.47	2,346,042.30	39.251879	-107.809591
4,038.0	26.40	100.80	3,725.0	-279.5	1,370.2	1,524,935.54	2,346,084.10	39.251858	-107.809443
4,132.0	28.50	100.30	3,808.4	-287.4	1,412.7	1,524,926.53	2,346,126.48	39.251836	-107.809292
4,227.0	27.20	101.20	3,892.4	-295.7	1,456.3	1,524,917.16	2,346,169.86	39.251813	-107.809138
4,321.0	26.40	101.40	3,976.3	-304.0	1,497.9	1,524,907.80	2,346,211.20	39.251790	-107.808992
4,415.0	26.70	97.30	4,060.4	-310.8	1,539.3	1,524,899.93	2,346,252.45	39.251772	-107.808845
4,509.0	25.50	98.20	4,144.8	-316.4	1,580.3	1,524,893.32	2,346,293.27	39.251756	-107.808701
4,604.0	27.60	101.60	4,229.7	-323.7	1,622.1	1,524,884.91	2,346,334.87	39.251736	-107.808553
4,698.0	26.60	102.40	4,313.4	-332.6	1,664.0	1,524,874.95	2,346,376.51	39.251712	-107.808405
4,792.0	24.70	103.00	4,398.2	-341.6	1,703.7	1,524,865.00	2,346,415.97	39.251687	-107.808265
4,886.0	23.00	103.60	4,484.1	-350.3	1,740.7	1,524,855.33	2,346,452.72	39.251663	-107.808134
4,980.0	24.10	100.20	4,570.3	-358.0	1,777.4	1,524,846.68	2,346,489.25	39.251642	-107.808005
5,074.0	23.40	95.80	4,656.4	-363.3	1,814.9	1,524,840.44	2,346,526.57	39.251627	-107.807872
5,169.0	21.70	94.50	4,744.1	-366.6	1,851.2	1,524,836.23	2,346,562.75	39.251618	-107.807744
5,263.0	19.30	95.30	4,832.1	-369.4	1,884.0	1,524,832.60	2,346,595.47	39.251611	-107.807628
5,357.0	18.50	89.10	4,921.1	-370.6	1,914.4	1,524,830.62	2,346,625.81	39.251607	-107.807521
5,451.0	17.30	88.70	5,010.5	-370.0	1,943.2	1,524,830.44	2,346,654.70	39.251609	-107.807419
5,545.0	15.30	88.80	5,100.7	-369.4	1,969.6	1,524,830.34	2,346,681.08	39.251610	-107.807326
5,640.0	13.70	90.00	5,192.7	-369.2	1,993.4	1,524,830.00	2,346,704.86	39.251611	-107.807242
5,734.0	12.90	90.20	5,284.2	-369.2	2,015.0	1,524,829.41	2,346,726.48	39.251611	-107.807166
5,826.0	11.70	90.50	5,374.1	-369.3	2,034.6	1,524,828.80	2,346,746.07	39.251611	-107.807096
5,922.0	8.30	95.30	5,468.6	-370.1	2,051.3	1,524,827.65	2,346,762.68	39.251609	-107.807038
6,016.0	7.40	97.20	5,561.7	-371.4	2,064.0	1,524,825.94	2,346,775.41	39.251605	-107.806993
6,111.0	6.00	101.40	5,656.1	-373.2	2,075.0	1,524,823.91	2,346,786.29	39.251600	-107.806954
6,205.0	5.20	103.40	5,749.6	-375.2	2,083.9	1,524,821.73	2,346,795.20	39.251595	-107.806922



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Site:	Bruton 30-03 Pad	MD Reference:	well @ 7542.0usft (H&P #522)
Well:	Bruton 30-06E	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,304.0	3.40	117.10	5,848.3	-377.5	2,090.9	1,524,819.17	2,346,802.12	39.251588	-107.806898
6,398.0	2.90	120.20	5,942.2	-380.0	2,095.4	1,524,816.59	2,346,806.59	39.251581	-107.806882
6,492.0	2.90	80.50	6,036.1	-380.8	2,099.8	1,524,815.68	2,346,810.97	39.251579	-107.806866
6,586.0	1.20	67.00	6,130.0	-380.0	2,103.1	1,524,816.37	2,346,814.24	39.251581	-107.806855
6,681.0	0.20	99.60	6,225.0	-379.7	2,104.2	1,524,816.70	2,346,815.33	39.251582	-107.806851
6,775.0	0.20	353.60	6,319.0	-379.5	2,104.3	1,524,816.83	2,346,815.47	39.251583	-107.806850
6,869.0	0.10	228.40	6,413.0	-379.4	2,104.2	1,524,816.95	2,346,815.40	39.251583	-107.806851
6,963.0	0.70	218.40	6,507.0	-379.9	2,103.8	1,524,816.45	2,346,814.97	39.251582	-107.806852
7,058.0	1.30	218.30	6,602.0	-381.2	2,102.8	1,524,815.18	2,346,813.90	39.251578	-107.806856
7,152.0	1.20	212.60	6,696.0	-382.9	2,101.6	1,524,813.54	2,346,812.67	39.251574	-107.806860
7,246.0	1.30	232.30	6,789.9	-384.4	2,100.2	1,524,812.10	2,346,811.26	39.251569	-107.806865
7,341.0	1.80	227.40	6,884.9	-386.0	2,098.3	1,524,810.48	2,346,809.27	39.251565	-107.806872
7,435.0	2.10	231.80	6,978.9	-388.1	2,095.8	1,524,808.48	2,346,806.78	39.251559	-107.806880
7,529.0	3.00	239.50	7,072.8	-390.4	2,092.4	1,524,806.25	2,346,803.24	39.251553	-107.806893
7,624.0	3.10	248.10	7,167.6	-392.6	2,087.8	1,524,804.15	2,346,798.66	39.251547	-107.806908
7,718.0	3.70	259.50	7,261.5	-394.1	2,082.5	1,524,802.78	2,346,793.29	39.251543	-107.806927
7,813.0	3.70	250.20	7,356.3	-395.7	2,076.6	1,524,801.34	2,346,787.35	39.251538	-107.806948
7,907.0	4.00	248.70	7,450.1	-398.0	2,070.7	1,524,799.27	2,346,781.39	39.251532	-107.806969
8,001.0	3.90	248.80	7,543.8	-400.3	2,064.6	1,524,797.08	2,346,775.29	39.251526	-107.806990
8,095.0	4.00	248.90	7,637.6	-402.6	2,058.6	1,524,794.90	2,346,769.20	39.251519	-107.807012
8,201.0	4.00	248.90	7,743.4	-405.3	2,051.7	1,524,792.41	2,346,762.23	39.251512	-107.807036
TD @ 8201.0' MD / 7743.4' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
215.0	215.0	-1.6	1.9	First MWD Survey @ 215.0' MD / 215.0' TVD
8,201.0	7,743.4	-405.3	2,051.7	TD @ 8201.0' MD / 7743.4' TVD