



END OF WELL REPORT

Prepared For:

**Extraction Oil & Gas
B Reniman 8
Patterson 346
Weld County, CO**

Prepared By:

***Seth Burstad
Rockies Region Well Planner
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Project: Weld County, CO NAD 83
 Site: Breniman
 Well: Breniman 8
 Wellbore: OH
 Design: OH

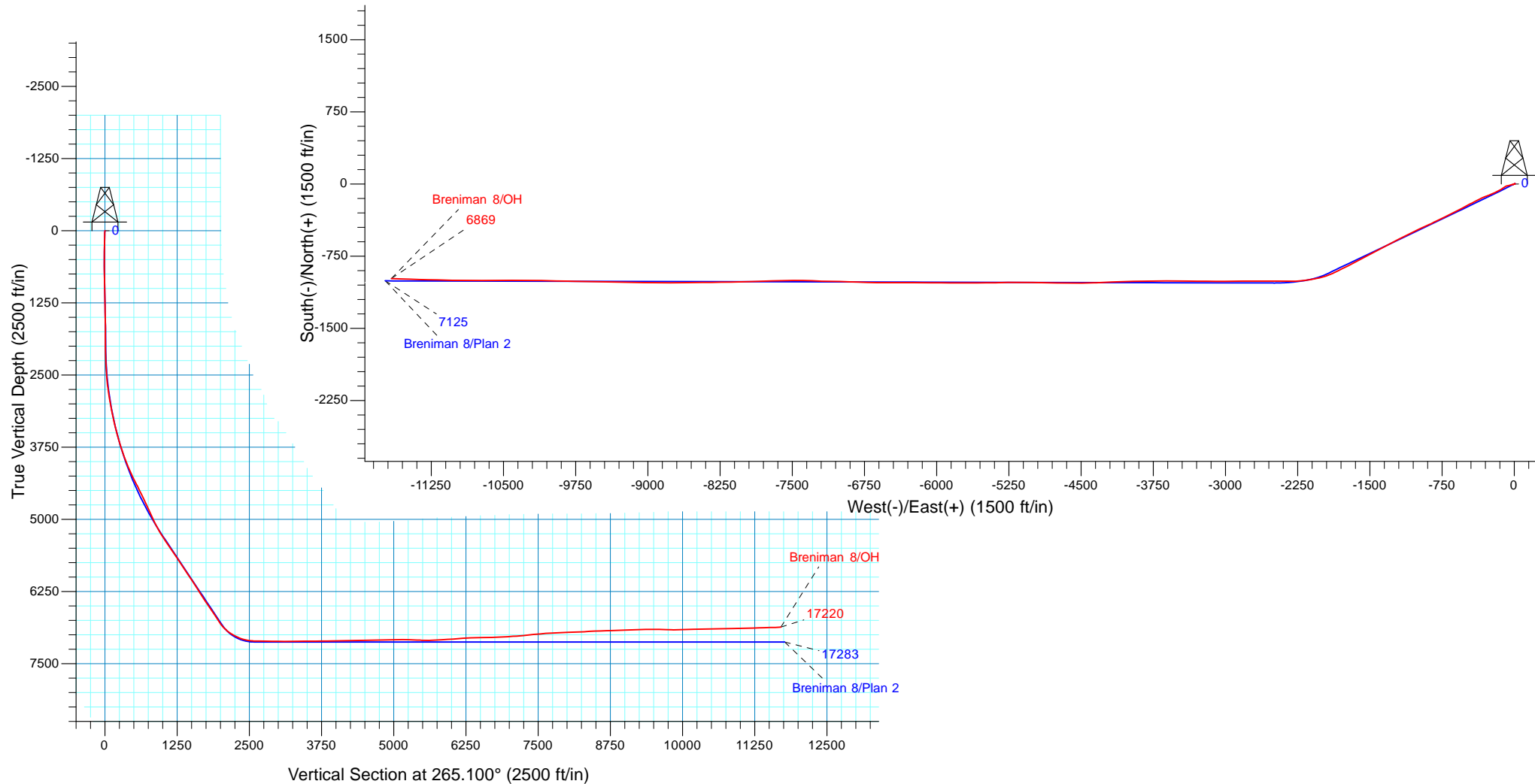


WELL DETAILS: Breniman 8			
GL 4796' & KB 25' @ 4821.00ft (Patterson 346)	4796.00		
Northing	Easting	Latitude	Longitude
1422781.00	3166790.71	40° 29' 32.593 N	104° 54' 1.120 W

PROJECT DETAILS: Weld County, CO NAD 83	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	Colorado Northern Zone
System Datum:	Mean Sea Level
Local North:	True

Design: OH (Breniman 8/OH)
Created By: Seth Burstad Date: 7-27-2016

ANNOTATIONS						
TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
76.99	77.00	1.70	79.700	0.20	1.12	First Helmer MWD Survey
1501.66	1502.00	1.60	260.400	-1.91	-6.65	Last Helmer MWD Survey
1501.66	1502.00	1.60	260.400	-1.91	-6.65	TIP
1590.62	1591.00	2.11	261.650	-2.36	-9.50	First SDI MWD Survey
6872.56	17124.00	91.95	272.200	-985.78	-11567.72	Last SDI MWD Survey
6869.30	17220.00	91.95	272.200	-982.09	-11663.59	Projection to TD





Extraction Oil & Gas

Weld County, CO NAD 83

Breniman

Breniman 8

OH

Design: OH

Standard Survey Report

27 July, 2016



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Breniman, Site Center : Breniman 2				
Site Position:		Northing:	1,422,925.49 usft	Latitude:	40° 29' 34.015 N
From:	Lat/Long	Easting:	3,166,875.93 usft	Longitude:	104° 54' 0.004 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	Breniman 8, 632' FNL 2042' FWL Sec 16 T6N R67W					
Well Position	+N/-S	0.00 ft	Northing:	1,422,781.01 usft	Latitude:	40° 29' 32.593 N
	+E/-W	0.00 ft	Easting:	3,166,790.71 usft	Longitude:	104° 54' 1.120 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,796.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	6/22/2016	8.54	66.95	52,533

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	265.100	

Survey Program	Date	7/27/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
77.00	1,502.00	Survey #1 - Surface (OH)	MWD	MWD - Standard	
1,591.00	17,220.00	Survey #2 - Production (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,502.00	1.60	260.400	1,501.66	-1.91	-6.65	6.79	1.09	0.95	29.37	
Last Helmer MWD Survey - TIP										
1,591.00	2.11	261.650	1,590.62	-2.36	-9.50	9.66	0.57	0.57	1.40	
First SDI MWD Survey										
1,686.00	0.88	225.350	1,685.58	-3.12	-11.75	11.97	1.57	-1.29	-38.21	
1,877.00	0.62	73.300	1,876.58	-3.86	-11.80	12.09	0.76	-0.14	-79.61	
1,972.00	0.26	90.530	1,971.58	-3.71	-11.09	11.37	0.40	-0.38	18.14	
2,046.00	0.09	64.570	2,045.57	-3.69	-10.87	11.15	0.25	-0.23	-35.08	
2,142.00	1.64	264.120	2,141.56	-3.80	-12.17	12.45	1.80	1.61	-167.14	

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Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
2,237.00	1.56	275.450	2,236.53	-3.81	-14.81	15.08	0.34	-0.08	11.93	
2,333.00	3.55	257.120	2,332.43	-4.35	-19.01	19.31	2.22	2.07	-19.09	
2,427.00	3.63	255.200	2,426.24	-5.76	-24.72	25.12	0.15	0.09	-2.04	
2,618.00	5.54	251.840	2,616.62	-10.18	-39.33	40.06	1.01	1.00	-1.76	
2,713.00	8.24	256.340	2,710.93	-13.22	-50.30	51.25	2.90	2.84	4.74	
2,808.00	8.11	258.860	2,804.96	-16.12	-63.49	64.64	0.40	-0.14	2.65	
2,903.00	10.22	253.290	2,898.75	-19.84	-78.14	79.55	2.41	2.22	-5.86	
2,999.00	10.69	237.250	2,993.17	-27.10	-93.79	95.76	3.06	0.49	-16.71	
3,094.00	12.24	233.940	3,086.28	-37.80	-109.34	112.17	1.77	1.63	-3.48	
3,190.00	12.72	238.590	3,180.01	-49.30	-126.59	130.34	1.16	0.50	4.84	
3,285.00	13.65	241.110	3,272.50	-60.16	-145.33	149.94	1.15	0.98	2.65	
3,380.00	14.88	241.250	3,364.57	-71.45	-165.84	171.34	1.30	1.29	0.15	
3,475.00	15.60	242.400	3,456.23	-83.23	-187.86	194.28	0.82	0.76	1.21	
3,570.00	16.13	249.670	3,547.62	-93.74	-211.55	218.79	2.16	0.56	7.65	
3,665.00	18.36	246.280	3,638.35	-104.34	-237.63	245.67	2.57	2.35	-3.57	
3,761.00	18.31	245.570	3,729.48	-116.66	-265.20	274.20	0.24	-0.05	-0.74	
3,856.00	20.11	250.490	3,819.19	-128.29	-294.19	304.07	2.55	1.89	5.18	
3,951.00	20.82	247.290	3,908.19	-140.26	-325.16	335.95	1.39	0.75	-3.37	
4,046.00	21.23	244.390	3,996.87	-154.21	-356.24	368.11	1.18	0.43	-3.05	
4,141.00	21.68	241.290	4,085.29	-170.08	-387.14	400.26	1.28	0.47	-3.26	
4,237.00	25.49	242.710	4,173.26	-188.08	-421.07	435.59	4.01	3.97	1.48	
4,332.00	28.81	244.100	4,257.78	-207.45	-459.84	475.87	3.56	3.49	1.46	
4,427.00	30.89	241.550	4,340.17	-229.07	-501.87	519.61	2.56	2.19	-2.68	
4,523.00	28.07	241.010	4,423.74	-251.76	-543.31	562.82	2.95	-2.94	-0.56	
4,618.00	28.01	242.210	4,507.59	-273.00	-582.59	603.78	0.60	-0.06	1.26	
4,713.00	28.44	244.310	4,591.29	-293.20	-622.71	645.48	1.14	0.45	2.21	
4,809.00	27.28	244.280	4,676.16	-312.66	-663.13	687.42	1.21	-1.21	-0.03	
4,904.00	25.41	243.520	4,761.29	-331.20	-701.00	726.72	2.00	-1.97	-0.80	
4,999.00	25.95	242.140	4,846.91	-350.00	-737.62	764.82	0.85	0.57	-1.45	
5,094.00	26.61	244.950	4,932.09	-368.72	-775.27	803.93	1.48	0.69	2.96	
5,190.00	27.13	245.450	5,017.73	-386.92	-814.66	844.73	0.59	0.54	0.52	
5,285.00	27.96	242.080	5,101.96	-406.35	-854.04	885.63	1.86	0.87	-3.55	
5,381.00	32.36	244.550	5,184.95	-427.94	-897.15	930.42	4.76	4.58	2.57	
5,476.00	33.02	246.100	5,264.91	-449.35	-943.77	978.70	1.12	0.69	1.63	
5,572.00	34.18	247.140	5,344.86	-470.43	-992.53	1,029.09	1.35	1.21	1.08	
5,667.00	37.98	243.670	5,421.64	-493.77	-1,043.35	1,081.71	4.54	4.00	-3.65	
5,763.00	35.50	243.280	5,498.56	-519.41	-1,094.72	1,135.09	2.59	-2.58	-0.41	
5,858.00	36.06	242.340	5,575.63	-544.79	-1,144.13	1,186.48	0.83	0.59	-0.99	
5,954.00	36.01	242.290	5,653.26	-571.03	-1,194.14	1,238.55	0.06	-0.05	-0.05	
6,049.00	34.82	242.490	5,730.69	-596.54	-1,242.92	1,289.33	1.26	-1.25	0.21	
6,144.00	35.66	242.790	5,808.28	-621.73	-1,291.60	1,339.99	0.90	0.88	0.32	
6,240.00	35.82	244.640	5,886.20	-646.56	-1,341.87	1,392.20	1.14	0.17	1.93	
6,335.00	36.03	242.060	5,963.13	-671.56	-1,391.68	1,443.96	1.61	0.22	-2.72	

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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Survey										
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6,430.00	36.18	240.820	6,039.89	-698.32	-1,440.85	1,495.23	0.79	0.16	-1.31	
6,525.00	35.33	241.570	6,116.98	-725.07	-1,489.48	1,545.97	1.01	-0.89	0.79	
6,620.00	35.03	241.690	6,194.63	-751.08	-1,537.64	1,596.18	0.32	-0.32	0.13	
6,716.00	34.96	241.900	6,273.27	-777.10	-1,586.16	1,646.74	0.15	-0.07	0.22	
6,811.00	34.70	242.230	6,351.25	-802.52	-1,634.10	1,696.68	0.34	-0.27	0.35	
6,906.00	35.02	242.260	6,429.21	-827.81	-1,682.15	1,746.71	0.34	0.34	0.03	
7,002.00	36.81	244.450	6,506.96	-853.03	-1,732.49	1,799.02	2.29	1.86	2.28	
7,097.00	37.07	243.160	6,582.89	-878.24	-1,783.71	1,852.21	0.86	0.27	-1.36	
7,192.00	34.24	245.180	6,660.07	-902.39	-1,833.53	1,903.91	3.23	-2.98	2.13	
7,288.00	34.85	243.340	6,739.15	-926.03	-1,882.56	1,954.77	1.26	0.64	-1.92	
7,383.00	36.35	249.280	6,816.41	-948.18	-1,933.16	2,007.09	3.97	1.58	6.25	
7,478.00	45.91	255.180	6,887.91	-966.92	-1,992.64	2,067.95	10.85	10.06	6.21	
7,573.00	52.69	259.190	6,949.84	-982.75	-2,062.83	2,139.23	7.82	7.14	4.22	
7,669.00	61.86	261.580	7,001.69	-996.14	-2,142.38	2,219.64	9.78	9.55	2.49	
7,764.00	64.26	264.780	7,044.74	-1,006.17	-2,226.45	2,304.26	3.92	2.53	3.37	
7,859.00	73.92	270.220	7,078.62	-1,009.90	-2,314.97	2,392.77	11.49	10.17	5.73	
7,955.00	80.51	271.800	7,099.86	-1,008.24	-2,408.52	2,485.84	7.05	6.86	1.65	
8,050.00	89.80	269.210	7,107.87	-1,007.42	-2,503.06	2,579.97	10.15	9.78	-2.73	
8,145.00	88.79	269.950	7,109.04	-1,008.11	-2,598.05	2,674.67	1.32	-1.06	0.78	
8,266.00	88.63	270.260	7,111.77	-1,007.89	-2,719.02	2,795.18	0.29	-0.13	0.26	
8,362.00	89.23	268.880	7,113.56	-1,008.61	-2,815.00	2,890.86	1.57	0.63	-1.44	
8,457.00	89.43	269.560	7,114.67	-1,009.90	-2,909.98	2,985.61	0.75	0.21	0.72	
8,552.00	89.56	269.530	7,115.51	-1,010.66	-3,004.98	3,080.32	0.14	0.14	-0.03	
8,648.00	90.30	270.790	7,115.63	-1,010.39	-3,100.97	3,175.95	1.52	0.77	1.31	
8,743.00	90.81	270.390	7,114.71	-1,009.41	-3,195.96	3,270.50	0.68	0.54	-0.42	
8,838.00	90.70	270.240	7,113.45	-1,008.89	-3,290.95	3,365.10	0.20	-0.12	-0.16	
8,934.00	90.54	270.070	7,112.41	-1,008.63	-3,386.95	3,460.72	0.24	-0.17	-0.18	
9,125.00	90.57	270.490	7,110.56	-1,007.70	-3,577.94	3,650.93	0.22	0.02	0.22	
9,220.00	91.44	271.030	7,108.90	-1,006.44	-3,672.91	3,745.46	1.08	0.92	0.57	
9,315.00	90.17	268.550	7,107.56	-1,006.79	-3,767.89	3,840.12	2.93	-1.34	-2.61	
9,411.00	90.77	268.400	7,106.78	-1,009.34	-3,863.86	3,935.95	0.64	0.63	-0.16	
9,506.00	91.41	268.810	7,104.97	-1,011.65	-3,958.81	4,030.75	0.80	0.67	0.43	
9,602.00	90.74	268.970	7,103.17	-1,013.51	-4,054.77	4,126.53	0.72	-0.70	0.17	
9,697.00	90.44	267.300	7,102.19	-1,016.60	-4,149.71	4,221.38	1.79	-0.32	-1.76	
9,793.00	90.91	267.880	7,101.06	-1,020.64	-4,245.62	4,317.29	0.78	0.49	0.60	
9,888.00	90.54	266.370	7,099.86	-1,025.41	-4,340.49	4,412.22	1.64	-0.39	-1.59	
9,983.00	90.81	269.750	7,098.74	-1,028.62	-4,435.42	4,507.07	3.57	0.28	3.56	
10,079.00	90.94	269.820	7,097.27	-1,028.98	-4,531.41	4,602.74	0.15	0.14	0.07	
10,175.00	92.08	270.660	7,094.74	-1,028.58	-4,627.37	4,698.32	1.47	1.19	0.88	
10,270.00	91.31	270.730	7,091.93	-1,027.43	-4,722.32	4,792.82	0.81	-0.81	0.07	
10,365.00	91.98	271.400	7,089.20	-1,025.66	-4,817.26	4,887.27	1.00	0.71	0.71	
10,461.00	91.81	271.430	7,086.03	-1,023.29	-4,913.18	4,982.63	0.18	-0.18	0.03	
10,556.00	90.97	270.260	7,083.72	-1,021.89	-5,008.14	5,077.12	1.52	-0.88	-1.23	
10,651.00	88.46	269.410	7,084.20	-1,022.17	-5,103.13	5,171.79	2.79	-2.64	-0.89	

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,746.00	87.72	269.240	7,087.36	-1,023.28	-5,198.07	5,266.48	0.80	-0.78	-0.18
10,841.00	88.19	269.240	7,090.75	-1,024.54	-5,293.00	5,361.17	0.49	0.49	0.00
10,937.00	86.94	269.360	7,094.83	-1,025.72	-5,388.91	5,456.82	1.31	-1.30	0.13
11,032.00	89.16	269.610	7,098.06	-1,026.57	-5,483.84	5,551.49	2.35	2.34	0.26
11,127.00	92.66	269.930	7,096.56	-1,026.95	-5,578.81	5,646.14	3.70	3.68	0.34
11,223.00	92.21	269.570	7,092.48	-1,027.37	-5,674.73	5,741.74	0.60	-0.47	-0.38
11,318.00	93.53	270.160	7,087.72	-1,027.59	-5,769.60	5,836.29	1.52	1.39	0.62
11,413.00	93.19	270.550	7,082.15	-1,027.00	-5,864.44	5,930.73	0.54	-0.36	0.41
11,508.00	93.59	270.410	7,076.54	-1,026.21	-5,959.27	6,025.14	0.45	0.42	-0.15
11,604.00	94.67	270.670	7,069.62	-1,025.31	-6,055.01	6,120.46	1.16	1.13	0.27
11,795.00	93.90	269.770	7,055.35	-1,024.58	-6,245.47	6,310.17	0.62	-0.40	-0.47
11,890.00	91.14	269.750	7,051.17	-1,024.98	-6,340.37	6,404.75	2.91	-2.91	-0.02
11,986.00	91.11	270.010	7,049.29	-1,025.18	-6,436.35	6,500.40	0.27	-0.03	0.27
12,081.00	90.44	270.340	7,048.00	-1,024.89	-6,531.34	6,595.02	0.79	-0.71	0.35
12,176.00	90.24	270.810	7,047.44	-1,023.93	-6,626.34	6,689.58	0.54	-0.21	0.49
12,272.00	93.43	271.740	7,044.37	-1,021.80	-6,722.25	6,784.96	3.46	3.32	0.97
12,367.00	93.46	272.030	7,038.66	-1,018.68	-6,817.03	6,879.13	0.31	0.03	0.31
12,462.00	93.79	272.140	7,032.65	-1,015.23	-6,911.77	6,973.23	0.37	0.35	0.12
12,557.00	93.42	270.730	7,026.68	-1,012.86	-7,006.55	7,067.46	1.53	-0.39	-1.48
12,652.00	94.13	271.060	7,020.42	-1,011.38	-7,101.34	7,161.77	0.82	0.75	0.35
12,748.00	95.18	272.020	7,012.63	-1,008.80	-7,196.98	7,256.85	1.48	1.09	1.00
12,843.00	95.79	272.420	7,003.55	-1,005.14	-7,291.48	7,350.68	0.77	0.64	0.42
12,938.00	95.68	270.990	6,994.06	-1,002.33	-7,385.96	7,444.58	1.50	-0.12	-1.51
13,033.00	94.37	269.230	6,985.74	-1,002.15	-7,480.58	7,538.85	2.30	-1.38	-1.85
13,129.00	95.51	269.590	6,977.47	-1,003.13	-7,576.22	7,634.22	1.24	1.19	0.38
13,224.00	93.33	267.950	6,970.15	-1,005.17	-7,670.91	7,728.73	2.87	-2.29	-1.73
13,319.00	91.78	267.920	6,965.91	-1,008.59	-7,765.75	7,823.52	1.63	-1.63	-0.03
13,414.00	91.31	267.710	6,963.35	-1,012.21	-7,860.64	7,918.38	0.54	-0.49	-0.22
13,509.00	92.79	269.690	6,959.95	-1,014.36	-7,955.55	8,013.12	2.60	1.56	2.08
13,604.00	92.38	269.270	6,955.67	-1,015.23	-8,050.45	8,107.75	0.62	-0.43	-0.44
13,700.00	91.78	268.420	6,952.18	-1,017.16	-8,146.37	8,203.48	1.08	-0.63	-0.89
13,795.00	93.84	268.910	6,947.53	-1,019.37	-8,241.22	8,298.17	2.23	2.17	0.52
13,890.00	92.42	269.240	6,942.34	-1,020.90	-8,336.07	8,392.80	1.53	-1.49	0.35
13,985.00	93.73	269.310	6,937.24	-1,022.10	-8,430.92	8,487.41	1.38	1.38	0.07
14,080.00	91.71	269.080	6,932.74	-1,023.44	-8,525.80	8,582.06	2.14	-2.13	-0.24
14,175.00	90.94	269.270	6,930.54	-1,024.80	-8,620.76	8,676.79	0.83	-0.81	0.20
14,270.00	91.95	269.440	6,928.14	-1,025.87	-8,715.72	8,771.50	1.08	1.06	0.18
14,365.00	93.23	269.370	6,923.85	-1,026.86	-8,810.62	8,866.13	1.35	1.35	-0.07
14,460.00	91.85	270.740	6,919.64	-1,026.77	-8,905.52	8,960.68	2.05	-1.45	1.44
14,555.00	90.97	271.650	6,917.30	-1,024.78	-9,000.47	9,055.11	1.33	-0.93	0.96
14,650.00	91.11	271.060	6,915.58	-1,022.54	-9,095.43	9,149.53	0.64	0.15	-0.62
14,745.00	91.85	271.280	6,913.13	-1,020.60	-9,190.38	9,243.96	0.81	0.78	0.23
14,841.00	90.50	270.620	6,911.16	-1,019.01	-9,286.34	9,339.44	1.57	-1.41	-0.69

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,936.00	92.12	271.110	6,908.98	-1,017.57	-9,381.30	9,433.93	1.78	1.71	0.52
15,031.00	90.91	269.760	6,906.47	-1,016.85	-9,476.26	9,528.48	1.91	-1.27	-1.42
15,126.00	88.36	271.380	6,907.08	-1,015.91	-9,571.24	9,623.04	3.18	-2.68	1.71
15,221.00	87.11	272.090	6,910.83	-1,013.04	-9,666.12	9,717.33	1.51	-1.32	0.75
15,316.00	87.95	271.200	6,914.93	-1,010.31	-9,760.99	9,811.62	1.29	0.88	-0.94
15,411.00	90.67	270.930	6,916.07	-1,008.55	-9,855.96	9,906.09	2.88	2.86	-0.28
15,506.00	91.81	271.280	6,914.02	-1,006.71	-9,950.92	10,000.54	1.26	1.20	0.37
15,601.00	93.13	271.420	6,909.92	-1,004.48	-10,045.80	10,094.89	1.40	1.39	0.15
15,697.00	91.81	271.360	6,905.78	-1,002.15	-10,141.68	10,190.22	1.38	-1.38	-0.06
15,792.00	93.09	271.550	6,901.72	-999.74	-10,236.56	10,284.55	1.36	1.35	0.20
15,887.00	90.74	269.160	6,898.55	-999.16	-10,331.50	10,379.08	3.53	-2.47	-2.52
15,983.00	90.44	268.940	6,897.56	-1,000.75	-10,427.48	10,474.85	0.39	-0.31	-0.23
16,078.00	89.60	269.380	6,897.53	-1,002.14	-10,522.47	10,569.61	1.00	-0.88	0.46
16,173.00	89.63	269.100	6,898.16	-1,003.40	-10,617.46	10,664.36	0.30	0.03	-0.29
16,269.00	91.38	270.560	6,897.32	-1,003.68	-10,713.44	10,760.02	2.37	1.82	1.52
16,364.00	92.05	270.780	6,894.48	-1,002.57	-10,808.39	10,854.53	0.74	0.71	0.23
16,459.00	92.55	271.110	6,890.66	-1,001.01	-10,903.31	10,948.96	0.63	0.53	0.35
16,554.00	93.73	271.680	6,885.46	-998.70	-10,998.13	11,043.24	1.38	1.24	0.60
16,649.00	89.83	270.370	6,882.51	-997.00	-11,093.05	11,137.67	4.33	-4.11	-1.38
16,744.00	89.80	270.470	6,882.82	-996.31	-11,188.05	11,232.26	0.11	-0.03	0.11
16,839.00	91.65	271.590	6,881.61	-994.60	-11,283.02	11,326.74	2.28	1.95	1.18
16,934.00	93.02	271.730	6,877.74	-991.85	-11,377.90	11,421.04	1.45	1.44	0.15
17,029.00	90.64	271.700	6,874.71	-989.01	-11,472.80	11,515.35	2.51	-2.51	-0.03
17,124.00	91.95	272.200	6,872.56	-985.78	-11,567.72	11,609.64	1.48	1.38	0.53
Last SDI MWD Survey									
17,220.00	91.95	272.200	6,869.30	-982.09	-11,663.59	11,704.85	0.00	0.00	0.00
Projection to TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
77.00	76.99	0.20	1.12	First Helmer MWD Survey
1,502.00	1,501.66	-1.91	-6.65	Last Helmer MWD Survey
1,502.00	1,501.66	-1.91	-6.65	TIP
1,591.00	1,590.62	-2.36	-9.50	First SDI MWD Survey
17,124.00	6,872.56	-985.78	-11,567.72	Last SDI MWD Survey
17,220.00	6,869.30	-982.09	-11,663.59	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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Extraction Oil & Gas

Weld County, CO NAD 83

Breniman

Breniman 8

OH

Design: OH

Survey Report - Geographic

27 July, 2016



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Breniman, Site Center : Breniman 2			
Site Position:		Northing:	1,422,925.49 usft	Latitude:	40° 29' 34.015 N
From:	Lat/Long	Easting:	3,166,875.93 usft	Longitude:	104° 54' 0.004 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	Breniman 8, 632' FNL 2042' FWL Sec 16 T6N R67W					
Well Position	+N/-S	0.00 ft	Northing:	1,422,781.01 usft	Latitude:	40° 29' 32.593 N
	+E/-W	0.00 ft	Easting:	3,166,790.71 usft	Longitude:	104° 54' 1.120 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,796.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	6/22/2016	8.54	66.95	52,533

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00		265.100

Survey Program	Date	7/27/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
77.00	1,502.00	Survey #1 - Surface (OH)	MWD	MWD - Standard	
1,591.00	17,220.00	Survey #2 - Production (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	1,422,781.01	3,166,790.71	40° 29' 32.593 N	104° 54' 1.120 W
77.00	1.70	79.700	76.99	0.20	1.12	1,422,781.22	3,166,791.84	40° 29' 32.595 N	104° 54' 1.105 W
First Helmer MWD Survey									
172.00	1.80	78.900	171.94	0.74	3.97	1,422,781.78	3,166,794.68	40° 29' 32.600 N	104° 54' 1.068 W
267.00	1.90	74.800	266.89	1.44	6.96	1,422,782.50	3,166,797.66	40° 29' 32.607 N	104° 54' 1.030 W
362.00	1.40	53.500	361.86	2.55	9.41	1,422,783.62	3,166,800.11	40° 29' 32.618 N	104° 54' 0.998 W
457.00	0.20	33.400	456.85	3.38	10.44	1,422,784.45	3,166,801.13	40° 29' 32.626 N	104° 54' 0.985 W
552.00	0.90	294.100	551.84	3.82	9.85	1,422,784.89	3,166,800.53	40° 29' 32.631 N	104° 54' 0.992 W
647.00	1.00	288.900	646.83	4.39	8.38	1,422,785.46	3,166,799.06	40° 29' 32.636 N	104° 54' 1.011 W
742.00	1.10	234.500	741.81	4.13	6.85	1,422,785.18	3,166,797.54	40° 29' 32.634 N	104° 54' 1.031 W
837.00	1.20	235.400	836.80	3.04	5.29	1,422,784.08	3,166,795.99	40° 29' 32.623 N	104° 54' 1.051 W

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
932.00	1.20	244.400	931.77	2.04	3.58	1,422,783.07	3,166,794.28	40° 29' 32.613 N	104° 54' 1.073 W	
1,027.00	1.10	238.800	1,026.76	1.14	1.90	1,422,782.16	3,166,792.61	40° 29' 32.604 N	104° 54' 1.095 W	
1,122.00	1.20	250.700	1,121.74	0.34	0.18	1,422,781.35	3,166,790.89	40° 29' 32.596 N	104° 54' 1.117 W	
1,217.00	1.40	259.200	1,216.71	-0.21	-1.90	1,422,780.79	3,166,788.82	40° 29' 32.591 N	104° 54' 1.144 W	
1,312.00	0.90	248.000	1,311.69	-0.70	-3.73	1,422,780.28	3,166,786.99	40° 29' 32.586 N	104° 54' 1.168 W	
1,407.00	0.70	232.500	1,406.68	-1.34	-4.88	1,422,779.64	3,166,785.84	40° 29' 32.580 N	104° 54' 1.183 W	
1,502.00	1.60	260.400	1,501.66	-1.91	-6.65	1,422,779.05	3,166,784.08	40° 29' 32.574 N	104° 54' 1.206 W	
Last Helmer MWD Survey - TIP										
1,591.00	2.11	261.650	1,590.62	-2.36	-9.50	1,422,778.59	3,166,781.23	40° 29' 32.570 N	104° 54' 1.243 W	
First SDI MWD Survey										
1,686.00	0.88	225.350	1,685.58	-3.12	-11.75	1,422,777.80	3,166,778.99	40° 29' 32.562 N	104° 54' 1.272 W	
1,877.00	0.62	73.300	1,876.58	-3.86	-11.80	1,422,777.07	3,166,778.94	40° 29' 32.555 N	104° 54' 1.272 W	
1,972.00	0.26	90.530	1,971.58	-3.71	-11.09	1,422,777.22	3,166,779.65	40° 29' 32.556 N	104° 54' 1.263 W	
2,046.00	0.09	64.570	2,045.57	-3.69	-10.87	1,422,777.25	3,166,779.87	40° 29' 32.556 N	104° 54' 1.260 W	
2,142.00	1.64	264.120	2,141.56	-3.80	-12.17	1,422,777.13	3,166,778.57	40° 29' 32.555 N	104° 54' 1.277 W	
2,237.00	1.56	275.450	2,236.53	-3.81	-14.81	1,422,777.09	3,166,775.93	40° 29' 32.555 N	104° 54' 1.311 W	
2,333.00	3.55	257.120	2,332.43	-4.35	-19.01	1,422,776.53	3,166,771.74	40° 29' 32.550 N	104° 54' 1.366 W	
2,427.00	3.63	255.200	2,426.24	-5.76	-24.72	1,422,775.08	3,166,766.03	40° 29' 32.536 N	104° 54' 1.440 W	
2,618.00	5.54	251.840	2,616.62	-10.18	-39.33	1,422,770.56	3,166,751.45	40° 29' 32.492 N	104° 54' 1.629 W	
2,713.00	8.24	256.340	2,710.93	-13.22	-50.30	1,422,767.45	3,166,740.50	40° 29' 32.462 N	104° 54' 1.771 W	
2,808.00	8.11	258.860	2,804.96	-16.12	-63.49	1,422,764.46	3,166,727.33	40° 29' 32.434 N	104° 54' 1.941 W	
2,903.00	10.22	253.290	2,898.75	-19.84	-78.14	1,422,760.64	3,166,712.71	40° 29' 32.397 N	104° 54' 2.131 W	
2,999.00	10.69	237.250	2,993.17	-27.10	-93.79	1,422,753.27	3,166,697.11	40° 29' 32.325 N	104° 54' 2.334 W	
3,094.00	12.24	233.940	3,086.28	-37.80	-109.34	1,422,742.47	3,166,681.63	40° 29' 32.219 N	104° 54' 2.535 W	
3,190.00	12.72	238.590	3,180.01	-49.30	-126.59	1,422,730.85	3,166,664.46	40° 29' 32.106 N	104° 54' 2.758 W	
3,285.00	13.65	241.110	3,272.50	-60.16	-145.33	1,422,719.86	3,166,645.79	40° 29' 31.998 N	104° 54' 3.001 W	
3,380.00	14.88	241.250	3,364.57	-71.45	-165.84	1,422,708.44	3,166,625.36	40° 29' 31.887 N	104° 54' 3.266 W	
3,475.00	15.60	242.400	3,456.23	-83.23	-187.86	1,422,696.51	3,166,603.42	40° 29' 31.770 N	104° 54' 3.551 W	
3,570.00	16.13	249.670	3,547.62	-93.74	-211.55	1,422,685.84	3,166,579.80	40° 29' 31.667 N	104° 54' 3.858 W	
3,665.00	18.36	246.280	3,638.35	-104.34	-237.63	1,422,675.06	3,166,553.80	40° 29' 31.562 N	104° 54' 4.195 W	
3,761.00	18.31	245.570	3,729.48	-116.66	-265.20	1,422,662.56	3,166,526.31	40° 29' 31.440 N	104° 54' 4.552 W	
3,856.00	20.11	250.490	3,819.19	-128.29	-294.19	1,422,650.73	3,166,497.40	40° 29' 31.325 N	104° 54' 4.927 W	
3,951.00	20.82	247.290	3,908.19	-140.26	-325.16	1,422,638.55	3,166,466.52	40° 29' 31.207 N	104° 54' 5.328 W	
4,046.00	21.23	244.390	3,996.87	-154.21	-356.24	1,422,624.39	3,166,435.52	40° 29' 31.069 N	104° 54' 5.731 W	
4,141.00	21.68	241.290	4,085.29	-170.08	-387.14	1,422,608.31	3,166,404.73	40° 29' 30.912 N	104° 54' 6.131 W	
4,237.00	25.49	242.710	4,173.26	-188.08	-421.07	1,422,590.09	3,166,370.93	40° 29' 30.734 N	104° 54' 6.570 W	
4,332.00	28.81	244.100	4,257.78	-207.45	-459.84	1,422,570.45	3,166,332.29	40° 29' 30.543 N	104° 54' 7.071 W	
4,427.00	30.89	241.550	4,340.17	-229.07	-501.87	1,422,548.55	3,166,290.40	40° 29' 30.329 N	104° 54' 7.616 W	
4,523.00	28.07	241.010	4,423.74	-251.76	-543.31	1,422,525.58	3,166,249.12	40° 29' 30.105 N	104° 54' 8.152 W	
4,618.00	28.01	242.210	4,507.59	-273.00	-582.59	1,422,504.08	3,166,209.98	40° 29' 29.895 N	104° 54' 8.660 W	
4,713.00	28.44	244.310	4,591.29	-293.20	-622.71	1,422,483.60	3,166,170.00	40° 29' 29.695 N	104° 54' 9.180 W	
4,809.00	27.28	244.280	4,676.16	-312.66	-663.13	1,422,463.87	3,166,129.71	40° 29' 29.503 N	104° 54' 9.703 W	
4,904.00	25.41	243.520	4,761.29	-331.20	-701.00	1,422,445.08	3,166,091.98	40° 29' 29.320 N	104° 54' 10.193 W	
4,999.00	25.95	242.140	4,846.91	-350.00	-737.62	1,422,426.03	3,166,055.48	40° 29' 29.134 N	104° 54' 10.667 W	
5,094.00	26.61	244.950	4,932.09	-368.72	-775.27	1,422,407.05	3,166,017.96	40° 29' 28.949 N	104° 54' 11.154 W	
5,190.00	27.13	245.450	5,017.73	-386.92	-814.66	1,422,388.59	3,165,978.70	40° 29' 28.769 N	104° 54' 11.664 W	
5,285.00	27.96	242.080	5,101.96	-406.35	-854.04	1,422,368.89	3,165,939.44	40° 29' 28.577 N	104° 54' 12.174 W	
5,381.00	32.36	244.550	5,184.95	-427.94	-897.15	1,422,347.01	3,165,896.48	40° 29' 28.364 N	104° 54' 12.732 W	
5,476.00	33.02	246.100	5,264.91	-449.35	-943.77	1,422,325.28	3,165,850.01	40° 29' 28.152 N	104° 54' 13.335 W	
5,572.00	34.18	247.140	5,344.86	-470.43	-992.53	1,422,303.88	3,165,801.39	40° 29' 27.944 N	104° 54' 13.966 W	
5,667.00	37.98	243.670	5,421.64	-493.77	-1,043.35	1,422,280.20	3,165,750.73	40° 29' 27.713 N	104° 54' 14.624 W	
5,763.00	35.50	243.280	5,498.56	-519.41	-1,094.72	1,422,254.21	3,165,699.53	40° 29' 27.460 N	104° 54' 15.289 W	
5,858.00	36.06	242.340	5,575.63	-544.79	-1,144.13	1,422,228.49	3,165,650.30	40° 29' 27.209 N	104° 54' 15.928 W	
5,954.00	36.01	242.290	5,653.26	-571.03	-1,194.14	1,422,201.92	3,165,600.47	40° 29' 26.950 N	104° 54' 16.576 W	
6,049.00	34.82	242.490	5,730.69	-596.54	-1,242.92	1,422,176.07	3,165,551.86	40° 29' 26.698 N	104° 54' 17.207 W	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,144.00	35.66	242.790	5,808.28	-621.73	-1,291.60	1,422,150.56	3,165,503.35	40° 29' 26.449 N	104° 54' 17.837 W
6,240.00	35.82	244.640	5,886.20	-646.56	-1,341.87	1,422,125.39	3,165,453.25	40° 29' 26.203 N	104° 54' 18.488 W
6,335.00	36.03	242.060	5,963.13	-671.56	-1,391.68	1,422,100.05	3,165,403.61	40° 29' 25.956 N	104° 54' 19.132 W
6,430.00	36.18	240.820	6,039.89	-698.32	-1,440.85	1,422,072.96	3,165,354.63	40° 29' 25.692 N	104° 54' 19.769 W
6,525.00	35.33	241.570	6,116.98	-725.07	-1,489.48	1,422,045.88	3,165,306.17	40° 29' 25.427 N	104° 54' 20.398 W
6,620.00	35.03	241.690	6,194.63	-751.08	-1,537.64	1,422,019.55	3,165,258.19	40° 29' 25.170 N	104° 54' 21.022 W
6,716.00	34.96	241.900	6,273.27	-777.10	-1,586.16	1,421,993.20	3,165,209.85	40° 29' 24.913 N	104° 54' 21.650 W
6,811.00	34.70	242.230	6,351.25	-802.52	-1,634.10	1,421,967.46	3,165,162.08	40° 29' 24.662 N	104° 54' 22.270 W
6,906.00	35.02	242.260	6,429.21	-827.81	-1,682.15	1,421,941.85	3,165,114.20	40° 29' 24.412 N	104° 54' 22.892 W
7,002.00	36.81	244.450	6,506.96	-853.03	-1,732.49	1,421,916.28	3,165,064.04	40° 29' 24.163 N	104° 54' 23.543 W
7,097.00	37.07	243.160	6,582.89	-878.24	-1,783.71	1,421,890.73	3,165,012.99	40° 29' 23.914 N	104° 54' 24.206 W
7,192.00	34.24	245.180	6,660.07	-902.39	-1,833.53	1,421,866.24	3,164,963.33	40° 29' 23.675 N	104° 54' 24.851 W
7,288.00	34.85	243.340	6,739.15	-926.03	-1,882.56	1,421,842.26	3,164,914.47	40° 29' 23.441 N	104° 54' 25.486 W
7,383.00	36.35	249.280	6,816.41	-948.18	-1,933.16	1,421,819.78	3,164,864.01	40° 29' 23.222 N	104° 54' 26.141 W
7,478.00	45.91	255.180	6,887.91	-966.92	-1,992.64	1,421,800.64	3,164,804.66	40° 29' 23.037 N	104° 54' 26.910 W
7,573.00	52.69	259.190	6,949.84	-982.75	-2,062.83	1,421,784.33	3,164,734.58	40° 29' 22.881 N	104° 54' 27.819 W
7,669.00	61.86	261.580	7,001.69	-996.14	-2,142.38	1,421,770.40	3,164,655.13	40° 29' 22.748 N	104° 54' 28.848 W
7,764.00	64.26	264.780	7,044.74	-1,006.17	-2,226.45	1,421,759.80	3,164,571.12	40° 29' 22.649 N	104° 54' 29.937 W
7,859.00	73.92	270.220	7,078.62	-1,009.90	-2,314.97	1,421,755.48	3,164,482.63	40° 29' 22.612 N	104° 54' 31.082 W
7,955.00	80.51	271.800	7,099.86	-1,008.24	-2,408.52	1,421,756.51	3,164,389.07	40° 29' 22.629 N	104° 54' 32.293 W
8,050.00	89.80	269.210	7,107.87	-1,007.42	-2,503.06	1,421,756.69	3,164,294.52	40° 29' 22.637 N	104° 54' 33.517 W
8,145.00	88.79	269.950	7,109.04	-1,008.11	-2,598.05	1,421,755.35	3,164,199.54	40° 29' 22.630 N	104° 54' 34.746 W
8,266.00	88.63	270.260	7,111.77	-1,007.89	-2,719.02	1,421,754.75	3,164,078.58	40° 29' 22.632 N	104° 54' 36.312 W
8,362.00	89.23	268.880	7,113.56	-1,008.61	-2,815.00	1,421,753.38	3,163,982.61	40° 29' 22.624 N	104° 54' 37.554 W
8,457.00	89.43	269.560	7,114.67	-1,009.90	-2,909.98	1,421,751.45	3,163,887.63	40° 29' 22.612 N	104° 54' 38.784 W
8,552.00	89.56	269.530	7,115.51	-1,010.66	-3,004.98	1,421,750.05	3,163,792.65	40° 29' 22.604 N	104° 54' 40.013 W
8,648.00	90.30	270.790	7,115.63	-1,010.39	-3,100.97	1,421,749.67	3,163,696.65	40° 29' 22.606 N	104° 54' 41.255 W
8,743.00	90.81	270.390	7,114.71	-1,009.41	-3,195.96	1,421,750.01	3,163,601.66	40° 29' 22.616 N	104° 54' 42.485 W
8,838.00	90.70	270.240	7,113.45	-1,008.89	-3,290.95	1,421,749.89	3,163,506.66	40° 29' 22.621 N	104° 54' 43.714 W
8,934.00	90.54	270.070	7,112.41	-1,008.63	-3,386.95	1,421,749.50	3,163,410.67	40° 29' 22.624 N	104° 54' 44.957 W
9,125.00	90.57	270.490	7,110.56	-1,007.70	-3,577.94	1,421,749.14	3,163,219.68	40° 29' 22.632 N	104° 54' 47.429 W
9,220.00	91.44	271.030	7,108.90	-1,006.44	-3,672.91	1,421,749.76	3,163,124.70	40° 29' 22.645 N	104° 54' 48.658 W
9,315.00	90.17	268.550	7,107.56	-1,006.79	-3,767.89	1,421,748.77	3,163,029.72	40° 29' 22.641 N	104° 54' 49.887 W
9,411.00	90.77	268.400	7,106.78	-1,009.34	-3,863.86	1,421,745.56	3,162,933.78	40° 29' 22.616 N	104° 54' 51.129 W
9,506.00	91.41	268.810	7,104.97	-1,011.65	-3,958.81	1,421,742.61	3,162,838.85	40° 29' 22.593 N	104° 54' 52.358 W
9,602.00	90.74	268.970	7,103.17	-1,013.51	-4,054.77	1,421,740.10	3,162,742.90	40° 29' 22.574 N	104° 54' 53.601 W
9,697.00	90.44	267.300	7,102.19	-1,016.60	-4,149.71	1,421,736.37	3,162,647.98	40° 29' 22.544 N	104° 54' 54.829 W
9,793.00	90.91	267.880	7,101.06	-1,020.64	-4,245.62	1,421,731.68	3,162,552.10	40° 29' 22.504 N	104° 54' 56.071 W
9,888.00	90.54	266.370	7,099.86	-1,025.41	-4,340.49	1,421,726.27	3,162,457.26	40° 29' 22.456 N	104° 54' 57.299 W
9,983.00	90.81	269.750	7,098.74	-1,028.62	-4,435.42	1,421,722.42	3,162,362.36	40° 29' 22.424 N	104° 54' 58.527 W
10,079.00	90.94	269.820	7,097.27	-1,028.98	-4,531.41	1,421,721.41	3,162,266.38	40° 29' 22.421 N	104° 54' 59.770 W
10,175.00	92.08	270.660	7,094.74	-1,028.58	-4,627.37	1,421,721.16	3,162,170.42	40° 29' 22.424 N	104° 55' 1.012 W
10,270.00	91.31	270.730	7,091.93	-1,027.43	-4,722.32	1,421,721.67	3,162,075.46	40° 29' 22.436 N	104° 55' 2.241 W
10,365.00	91.98	271.400	7,089.20	-1,025.66	-4,817.26	1,421,722.79	3,161,980.51	40° 29' 22.453 N	104° 55' 3.469 W
10,461.00	91.81	271.430	7,086.03	-1,023.29	-4,913.18	1,421,724.51	3,161,884.58	40° 29' 22.476 N	104° 55' 4.711 W
10,556.00	90.97	270.260	7,083.72	-1,021.89	-5,008.14	1,421,725.27	3,161,789.61	40° 29' 22.490 N	104° 55' 5.940 W
10,651.00	88.46	269.410	7,084.20	-1,022.17	-5,103.13	1,421,724.36	3,161,694.62	40° 29' 22.487 N	104° 55' 7.169 W
10,746.00	87.72	269.240	7,087.36	-1,023.28	-5,198.07	1,421,722.60	3,161,599.69	40° 29' 22.476 N	104° 55' 8.398 W
10,841.00	88.19	269.240	7,090.75	-1,024.54	-5,293.00	1,421,720.69	3,161,504.77	40° 29' 22.463 N	104° 55' 9.627 W
10,937.00	86.94	269.360	7,094.83	-1,025.72	-5,388.91	1,421,718.87	3,161,408.88	40° 29' 22.451 N	104° 55' 10.868 W
11,032.00	89.16	269.610	7,098.06	-1,026.57	-5,483.84	1,421,717.38	3,161,313.95	40° 29' 22.443 N	104° 55' 12.097 W
11,127.00	92.66	269.930	7,096.56	-1,026.95	-5,578.81	1,421,716.35	3,161,218.98	40° 29' 22.439 N	104° 55' 13.326 W
11,223.00	92.21	269.570	7,092.48	-1,027.37	-5,674.73	1,421,715.29	3,161,123.08	40° 29' 22.434 N	104° 55' 14.567 W
11,318.00	93.53	270.160	7,087.72	-1,027.59	-5,769.60	1,421,714.42	3,161,028.20	40° 29' 22.432 N	104° 55' 15.795 W
11,413.00	93.19	270.550	7,082.15	-1,027.00	-5,864.44	1,421,714.37	3,160,933.37	40° 29' 22.437 N	104° 55' 17.023 W

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,508.00	93.59	270.410	7,076.54	-1,026.21	-5,959.27	1,421,714.52	3,160,838.53	40° 29' 22.445 N	104° 55' 18.250 W
11,604.00	94.67	270.670	7,069.62	-1,025.31	-6,055.01	1,421,714.78	3,160,742.79	40° 29' 22.454 N	104° 55' 19.490 W
11,795.00	93.90	269.770	7,055.35	-1,024.58	-6,245.47	1,421,714.22	3,160,552.32	40° 29' 22.460 N	104° 55' 21.955 W
11,890.00	91.14	269.750	7,051.17	-1,024.98	-6,340.37	1,421,713.18	3,160,457.43	40° 29' 22.456 N	104° 55' 23.183 W
11,986.00	91.11	270.010	7,049.29	-1,025.18	-6,436.35	1,421,712.33	3,160,361.45	40° 29' 22.454 N	104° 55' 24.425 W
12,081.00	90.44	270.340	7,048.00	-1,024.89	-6,531.34	1,421,711.98	3,160,266.46	40° 29' 22.457 N	104° 55' 25.655 W
12,176.00	90.24	270.810	7,047.44	-1,023.93	-6,626.34	1,421,712.29	3,160,171.47	40° 29' 22.466 N	104° 55' 26.884 W
12,272.00	93.43	271.740	7,044.37	-1,021.80	-6,722.25	1,421,713.77	3,160,075.54	40° 29' 22.487 N	104° 55' 28.126 W
12,367.00	93.46	272.030	7,038.66	-1,018.68	-6,817.03	1,421,716.25	3,159,980.75	40° 29' 22.517 N	104° 55' 29.352 W
12,462.00	93.79	272.140	7,032.65	-1,015.23	-6,911.77	1,421,719.06	3,159,885.98	40° 29' 22.551 N	104° 55' 30.579 W
12,557.00	93.42	270.730	7,026.68	-1,012.86	-7,006.55	1,421,720.79	3,159,791.18	40° 29' 22.574 N	104° 55' 31.805 W
12,652.00	94.13	271.060	7,020.42	-1,011.38	-7,101.34	1,421,721.63	3,159,696.39	40° 29' 22.589 N	104° 55' 33.032 W
12,748.00	95.18	272.020	7,012.63	-1,008.80	-7,196.98	1,421,723.56	3,159,600.73	40° 29' 22.614 N	104° 55' 34.270 W
12,843.00	95.79	272.420	7,003.55	-1,005.14	-7,291.48	1,421,726.58	3,159,506.22	40° 29' 22.650 N	104° 55' 35.493 W
12,938.00	95.68	270.990	6,994.06	-1,002.33	-7,385.96	1,421,728.75	3,159,411.72	40° 29' 22.677 N	104° 55' 36.716 W
13,033.00	94.37	269.230	6,985.74	-1,002.15	-7,480.58	1,421,728.29	3,159,317.09	40° 29' 22.679 N	104° 55' 37.941 W
13,129.00	95.51	269.590	6,977.47	-1,003.13	-7,576.22	1,421,726.66	3,159,221.47	40° 29' 22.669 N	104° 55' 39.179 W
13,224.00	93.33	267.950	6,970.15	-1,005.17	-7,670.91	1,421,723.99	3,159,126.79	40° 29' 22.648 N	104° 55' 40.404 W
13,319.00	91.78	267.920	6,965.91	-1,008.59	-7,765.75	1,421,719.93	3,159,031.98	40° 29' 22.614 N	104° 55' 41.632 W
13,414.00	91.31	267.710	6,963.35	-1,012.21	-7,860.64	1,421,715.66	3,158,937.11	40° 29' 22.578 N	104° 55' 42.860 W
13,509.00	92.79	269.690	6,959.95	-1,014.36	-7,955.55	1,421,712.87	3,158,842.22	40° 29' 22.556 N	104° 55' 44.088 W
13,604.00	92.38	269.270	6,955.67	-1,015.23	-8,050.45	1,421,711.36	3,158,747.33	40° 29' 22.548 N	104° 55' 45.317 W
13,700.00	91.78	268.420	6,952.18	-1,017.16	-8,146.37	1,421,708.78	3,158,651.43	40° 29' 22.528 N	104° 55' 46.558 W
13,795.00	93.84	268.910	6,947.53	-1,019.37	-8,241.22	1,421,705.93	3,158,556.59	40° 29' 22.506 N	104° 55' 47.786 W
13,890.00	92.42	269.240	6,942.34	-1,020.90	-8,336.07	1,421,703.76	3,158,461.76	40° 29' 22.491 N	104° 55' 49.013 W
13,985.00	93.73	269.310	6,937.24	-1,022.10	-8,430.92	1,421,701.92	3,158,366.92	40° 29' 22.478 N	104° 55' 50.241 W
14,080.00	91.71	269.080	6,932.74	-1,023.44	-8,525.80	1,421,699.94	3,158,272.05	40° 29' 22.465 N	104° 55' 51.469 W
14,175.00	90.94	269.270	6,930.54	-1,024.80	-8,620.76	1,421,697.93	3,158,177.10	40° 29' 22.451 N	104° 55' 52.698 W
14,270.00	91.95	269.440	6,928.14	-1,025.87	-8,715.72	1,421,696.22	3,158,082.14	40° 29' 22.440 N	104° 55' 53.927 W
14,365.00	93.23	269.370	6,923.85	-1,026.86	-8,810.62	1,421,694.59	3,157,987.26	40° 29' 22.430 N	104° 55' 55.155 W
14,460.00	91.85	270.740	6,919.64	-1,026.77	-8,905.52	1,421,694.04	3,157,892.36	40° 29' 22.431 N	104° 55' 56.384 W
14,555.00	90.97	271.650	6,917.30	-1,024.78	-9,000.47	1,421,695.38	3,157,797.40	40° 29' 22.450 N	104° 55' 57.613 W
14,650.00	91.11	271.060	6,915.58	-1,022.54	-9,095.43	1,421,696.98	3,157,702.43	40° 29' 22.472 N	104° 55' 58.842 W
14,745.00	91.85	271.280	6,913.13	-1,020.60	-9,190.38	1,421,698.28	3,157,607.47	40° 29' 22.491 N	104° 55' 60.071 W
14,841.00	90.50	270.620	6,911.16	-1,019.01	-9,286.34	1,421,699.22	3,157,511.50	40° 29' 22.506 N	104° 55' 61.303 W
14,936.00	92.12	271.110	6,908.98	-1,017.57	-9,381.30	1,421,700.01	3,157,416.53	40° 29' 22.520 N	104° 55' 62.532 W
15,031.00	90.91	269.760	6,906.47	-1,016.85	-9,476.26	1,421,700.09	3,157,321.57	40° 29' 22.527 N	104° 55' 63.761 W
15,126.00	88.36	271.380	6,907.08	-1,015.91	-9,571.24	1,421,700.40	3,157,226.58	40° 29' 22.536 N	104° 55' 65.000 W
15,221.00	87.11	272.090	6,910.83	-1,013.04	-9,666.12	1,421,702.63	3,157,131.68	40° 29' 22.564 N	104° 55' 66.228 W
15,316.00	87.95	271.200	6,914.93	-1,010.31	-9,760.99	1,421,704.71	3,157,036.80	40° 29' 22.590 N	104° 55' 67.456 W
15,411.00	90.67	270.930	6,916.07	-1,008.55	-9,855.96	1,421,705.83	3,156,941.82	40° 29' 22.607 N	104° 55' 68.685 W
15,506.00	91.81	271.280	6,914.02	-1,006.71	-9,950.92	1,421,707.02	3,156,846.85	40° 29' 22.625 N	104° 55' 69.914 W
15,601.00	93.13	271.420	6,909.92	-1,004.48	-10,045.80	1,421,708.62	3,156,751.95	40° 29' 22.647 N	104° 55' 71.142 W
15,697.00	91.81	271.360	6,905.78	-1,002.15	-10,141.68	1,421,710.30	3,156,656.06	40° 29' 22.669 N	104° 55' 72.370 W
15,792.00	93.09	271.550	6,901.72	-999.74	-10,236.56	1,421,712.06	3,156,561.17	40° 29' 22.693 N	104° 55' 73.598 W
15,887.00	90.74	269.160	6,898.55	-999.16	-10,331.50	1,421,712.01	3,156,466.23	40° 29' 22.698 N	104° 55' 74.826 W
15,983.00	90.44	268.940	6,897.56	-1,000.75	-10,427.48	1,421,709.77	3,156,370.26	40° 29' 22.682 N	104° 55' 76.054 W
16,078.00	89.60	269.380	6,897.53	-1,002.14	-10,522.47	1,421,707.73	3,156,275.29	40° 29' 22.668 N	104° 55' 77.282 W
16,173.00	89.63	269.100	6,898.16	-1,003.40	-10,617.46	1,421,705.83	3,156,180.31	40° 29' 22.655 N	104° 55' 78.510 W
16,269.00	91.38	270.560	6,897.32	-1,003.68	-10,713.44	1,421,704.90	3,156,084.32	40° 29' 22.652 N	104° 55' 79.738 W
16,364.00	92.05	270.780	6,894.48	-1,002.57	-10,808.39	1,421,705.36	3,155,989.37	40° 29' 22.662 N	104° 55' 80.966 W
16,459.00	92.55	271.110	6,890.66	-1,001.01	-10,903.31	1,421,706.29	3,155,894.45	40° 29' 22.677 N	104° 55' 82.194 W
16,554.00	93.73	271.680	6,885.46	-998.70	-10,998.13	1,421,707.96	3,155,799.61	40° 29' 22.700 N	104° 55' 83.422 W
16,649.00	89.83	270.370	6,882.51	-997.00	-11,093.05	1,421,709.01	3,155,704.68	40° 29' 22.716 N	104° 55' 84.650 W
16,744.00	89.80	270.470	6,882.82	-996.31	-11,188.05	1,421,709.06	3,155,609.68	40° 29' 22.723 N	104° 55' 85.878 W

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Breniman 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Site:	Breniman	MD Reference:	GL 4796' & KB 25' @ 4821.00ft (Patterson 346)
Well:	Breniman 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,839.00	91.65	271.590	6,881.61	-994.60	-11,283.02	1,421,710.13	3,155,514.70	40° 29' 22.739 N	104° 56' 27.156 W
16,934.00	93.02	271.730	6,877.74	-991.85	-11,377.90	1,421,712.24	3,155,419.81	40° 29' 22.766 N	104° 56' 28.384 W
17,029.00	90.64	271.700	6,874.71	-989.01	-11,472.80	1,421,714.44	3,155,324.89	40° 29' 22.793 N	104° 56' 29.612 W
17,124.00	91.95	272.200	6,872.56	-985.78	-11,567.72	1,421,717.03	3,155,229.95	40° 29' 22.825 N	104° 56' 30.841 W
Last SDI MWD Survey									
17,220.00	91.95	272.200	6,869.30	-982.09	-11,663.59	1,421,720.06	3,155,134.05	40° 29' 22.861 N	104° 56' 32.082 W
Projection to TD									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
77.00	76.99	0.20	1.12	First Helmer MWD Survey
1,502.00	1,501.66	-1.91	-6.65	Last Helmer MWD Survey
1,502.00	1,501.66	-1.91	-6.65	TIP
1,591.00	1,590.62	-2.36	-9.50	First SDI MWD Survey
17,124.00	6,872.56	-985.78	-11,567.72	Last SDI MWD Survey
17,220.00	6,869.30	-982.09	-11,663.59	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



JOB NO.: 374173
Company: Extraction Oil & Gas
LOCATION: Breniman Pad
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Breniman 8
Lead Directional : Scott Sanford

Report Time: 2400 **1 of 5**
API JOB # 05-123-40421
WORK ORDER#
FIELD: Wattenberg
Township: 6N
Range/Section 67W 16
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

From Friday, July 22, 2016 at 0000 to Friday, July 22, 2016 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	0.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	0.00										
Below Rot Hrs.	0.00										
Total Drilled:	0.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 0			
Avg. Total ROP:	NA										
Slide Footage:	0.00	WOB:	0	Weight:	0	Bit No:					
Slide Hours	0.00	Rot Wt:	0	Visc:	0	Model					
Avg. Slide ROP:	NA	Pick UP:	0	Chlorides:	0	SN.:					
Rotate Footage:	0.00	Slack Off:	0	YP:	0	MFG.					
Rotary Hours	0.00	SPP:	0	PV:	0	Type					
Avg. Rot ROP:	NA	Flow:	0 - 0	PH:	0	IADC					
Circ Hours	0.00	SPM:	0	GAS:	0	JETS					
Ream Hours	0.00	Rot. RPM	-	SAND:	0	TFA:					
Rotary Hrs%:	NA	Mot RPM:	-	WL:	0	Hole ID: N/A					
Slide Hrs%:	NA	Incl. In:	1.6	SOLID:	0	Bit Hrs:					
Rotary Ftg%:	NA	Azm. In:	260.4	BHT°:	0	Bit Ftg:					
Slide Ftg%:	NA	Incl. Out:	0	Flow T°:	0	PUMPS					
Casing		Azm. Out:	0	Oil %:	0	Liner	0	0			
Size Lb/Ft MD	COST BREAKDOWN					Stroke	0	0			
						Effic.	95.00%	95.00%			
						Gal/Stk	0.00	0.00			
						BBL/Stk	0.000	0.000			

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	20:40	20.67	1553	1553	0	.00	Standby	



DAILY TOTALS			ASSEMBLY TOTALS									
Start Depth	1553.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP	
End Depth	7065.00	1	XXXX	2,170.00	16.00	13,497.00	31.17	2.78	49.95	15,667.00	316.29	
Below Rot Hrs.	24.00											
Total Drilled:	5512.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 1				
Avg. Total ROP:	391.85	WOB: 30		Weight: 8.6		Bit No: 1		PDC				
Slide Footage:	983.00	Rot Wt: 0		Visc: 43		Model PDC		2.0 FBH				
Slide Hours	4.98	Pick UP: 0		Chlorides: 0		SN.: XXX		Pony Non Mag DC				
Avg. Slide ROP:	197.26	Slack Off: 0		YP: 7		MFG. OTHER		Pony Non Mag DC				
Rotate Footage:	4529.00	SPP: 3450		PV: 9		Type PDC		Non Mag DC				
Rotary Hours	9.08	Flow: 0 - 700		PH: 0		IADC		Hang Off Sub				
Avg. Rot ROP:	498.61	SPM: 240		GAS: 0		JETS 7-12		Gap Sub				
Circ Hours	1.00	Rot. RPM 50 - 65		SAND: 0		TFA: 0.773		Non Mag DC				
Ream Hours	0.42	Mot RPM: 50 - 65		WL: 9.2		Hole ID:		Filter Sub				
Rotary Hrs%:	64.57	Incl. In: 0		SOLID: 0		Bit Hrs: 47.17		3 Stands H.W.D.P.				
Slide Hrs%:	35.43	Az. In: 0		BHT°: 0		Bit Ftg: 15667.00						
Rotary Ftg%:	82.17	Incl. Out: 0		Flow T°: 119		PUMPS						
Slide Ftg%:	17.83	Az. Out: 0		Oil %: 0		Liner 0 0						
Casing		COST BREAKDOWN				Stroke 0 0						
Size	Lb/Ft	MD					Effic. 95.00% 95.00%					
							Gal/Stk 0.00 0.00					
							BBL/Stk 0.000 0.000					

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:20	0.33	1553	1553	0	.00	Other	P/U BHA 1
00:20	01:05	0.75	1553	1553	0	.00	TIH	TIH
01:05	01:35	0.50	1553	1553	0	.00	Circulating	Displace with OBM and test casing
01:35	02:00	0.42	1553	1553	0	.00	Reaming	Drill out float equip
02:00	02:09	0.15	1553	1633	80	533.33	Drilling	Circulating
02:09	02:22	0.22	1633	1633	0	.00	Survey & Conn.	Survey & Conn. @1591' Inc 2.11° Azm 261.65°
02:22	02:25	0.05	1633	1640	7	140.00	Sliding	Circulating
02:25	02:34	0.15	1640	1728	88	586.67	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
02:34	02:45	0.18	1728	1728	0	.00	Survey & Conn.	Survey & Conn. @1686' Inc 0.88° Azm 225.35°
02:45	02:51	0.10	1728	1823	95	950.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
02:51	03:02	0.18	1823	1823	0	.00	Survey & Conn.	Survey & Conn. @1686' Inc 0.88° Azm 225.35°
03:02	03:06	0.07	1823	1827	4	60.00	Sliding	Sliding - (WOB:20;GPM :560;TFO:100M))
03:06	03:13	0.12	1827	1919	92	788.57	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
03:13	03:24	0.18	1919	1919	0	.00	Survey & Conn.	Survey & Conn. @1877' Inc 0.62° Azm 73.3°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
03:24	03:29	0.08	1919	2014	95	1140.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
03:29	03:40	0.18	2014	2014	0	.00	Survey & Conn.	Survey & Conn.@1972' Inc 0.26° Azm 90.53°
03:40	03:46	0.10	2014	2109	95	950.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
03:46	03:51	0.08	2109	2109	0	.00	Circulating	Circulating
03:51	05:00	1.15	2109	2109	0	.00	POOH	POOH
05:00	05:35	0.58	2109	2109	0	.00	Other	Change out MWD's
05:35	06:45	1.17	2109	2109	0	.00	TIH	TIH
06:45	06:50	0.08	2109	2109	0	.00	Survey & Conn.	Survey & Conn.@2046' Inc 0.09° Azm 64.57°
06:50	06:55	0.08	2109	2121	12	144.00	Sliding	Sliding - (WOB:20;GPM :560;TFO:70M)
06:55	07:12	0.28	2121	2205	84	296.47	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
07:12	07:19	0.12	2205	2205	0	.00	Survey & Conn.	Survey & Conn.@2142' Inc 1.64° Azm 264.12°
07:19	07:25	0.10	2205	2300	95	950.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
07:25	07:38	0.22	2300	2300	0	.00	Survey & Conn.	Survey & Conn.@2237' Inc 1.56° Azm 275.45°
07:38	07:47	0.15	2300	2315	15	100.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0))
07:47	07:52	0.08	2315	2396	81	972.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
07:52	07:58	0.10	2396	2396	0	.00	Survey & Conn.	Survey & Conn.@2333' Inc 3.55° Azm 257.12°
07:58	08:03	0.08	2396	2490	94	1128.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
08:03	08:10	0.12	2490	2490	0	.00	Survey & Conn.	Survey & Conn.@2427' Inc 3.63° Azm 255.2°
08:10	08:16	0.10	2490	2507	17	170.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M)
08:16	08:19	0.05	2507	2586	79	1580.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
08:19	08:21	0.03	2586	2586	0	.00	Survey & Conn.	Survey & Conn.@2427' Inc 3.63° Azm 255.2°
08:21	08:25	0.07	2586	2681	95	1425.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
08:25	08:31	0.10	2681	2681	0	.00	Survey & Conn.	Survey & Conn.@2618' Inc 5.54° Azm 251.84°
08:31	08:40	0.15	2681	2696	15	100.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M)
08:40	09:02	0.37	2696	2776	80	218.18	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
09:02	09:06	0.07	2776	2776	0	.00	Survey & Conn.	Survey & Conn.@2713' Inc 8.24° Azm 256.34°
09:06	11:30	2.40	2776	3443	667	277.92	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
11:30	11:34	0.07	3443	3443	0	.00	Survey & Conn.	Survey & Conn.@3380' Inc 14.88° Azm 241.25°
11:34	11:38	0.07	3443	3458	15	225.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M)
11:38	11:45	0.12	3458	3538	80	685.71	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
11:45	11:50	0.08	3538	3538	0	.00	Survey & Conn.	Survey & Conn.@3475' Inc 15.6° Azm 242.4°
11:50	11:51	0.02	3538	3548	10	600.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M)
11:51	11:57	0.10	3548	3633	85	850.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
11:57	12:01	0.07	3633	3633	0	.00	Survey & Conn.	Survey & Conn.@3570' Inc 16.13° Azm 249.67°
12:01	12:05	0.07	3633	3649	16	240.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M)
12:05	12:29	0.40	3649	3728	79	197.50	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
12:29	12:34	0.08	3728	3728	0	.00	Survey & Conn.	Survey & Conn.@3665' Inc 18.36° Azm 246.28°
12:34	12:35	0.02	3728	3744	16	960.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M)
12:35	12:38	0.05	3744	3919	175	3500.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
12:38	12:42	0.07	3919	3919	0	.00	Survey & Conn.	Survey & Conn.@3856' Inc 20.11° Azm 250.49°
12:42	12:46	0.07	3919	3936	17	255.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
12:46	12:51	0.08	3936	4014	78	936.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
12:51	13:00	0.15	4014	4014	0	.00	Survey & Conn.	Survey & Conn.@3951' Inc 20.82° Azm 247.29°
13:00	13:03	0.05	4014	4032	18	360.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
13:03	13:08	0.08	4032	4109	77	924.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
13:08	13:15	0.12	4109	4109	0	.00	Survey & Conn.	Survey & Conn.@4046' Inc 21.23° Azm 244.39°
13:15	13:18	0.05	4109	4129	20	400.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
13:18	13:24	0.10	4129	4204	75	750.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
13:24	13:29	0.08	4204	4204	0	.00	Survey & Conn.	Survey & Conn.@4141' Inc 21.68° Azm 241.29°
13:29	13:34	0.08	4204	4244	40	480.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
13:34	13:39	0.08	4244	4300	56	672.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
13:39	13:42	0.05	4300	4300	0	.00	Survey & Conn.	Survey & Conn.@4237' Inc 25.49° Azm 242.71°
13:42	13:49	0.12	4300	4325	25	214.29	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
13:49	13:57	0.13	4325	4395	70	525.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
13:57	14:00	0.05	4395	4395	0	.00	Survey & Conn.	Survey & Conn.@4332' Inc 28.81° Azm 244.1°
14:00	14:05	0.08	4395	4410	15	180.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
14:05	14:12	0.12	4410	4490	80	685.71	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
14:12	14:20	0.13	4490	4490	0	.00	Survey & Conn.	Survey & Conn.@4427' Inc 30.89° Azm 241.55°
14:20	14:25	0.08	4490	4586	96	1152.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
14:25	14:36	0.18	4586	4586	0	.00	Survey & Conn.	Survey & Conn.@4523' Inc 28.07° Azm 241.01°
14:36	14:42	0.10	4586	4596	10	100.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
14:42	15:02	0.33	4596	4681	85	255.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
15:02	15:06	0.07	4681	4681	0	.00	Survey & Conn.	Survey & Conn.@4618' Inc 28.01° Azm 242.21°
15:06	15:16	0.17	4681	4691	10	60.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M))
15:16	16:00	0.73	4691	4776	85	115.91	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
16:00	16:05	0.08	4776	4776	0	.00	Survey & Conn.	Survey & Conn.@4713' Inc 28.44° Azm 244.31°
16:05	16:18	0.22	4776	4872	96	443.08	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
16:18	16:24	0.10	4872	4872	0	.00	Survey & Conn.	Survey & Conn.@4809' Inc 27.28° Azm 244.28°
16:24	16:37	0.22	4872	4967	95	438.46	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
16:37	16:48	0.18	4967	4967	0	.00	Survey & Conn.	Survey & Conn.@4904' Inc 25.41° Azm 243.52°
16:48	16:54	0.10	4967	4985	18	180.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:230M)
16:54	17:01	0.12	4985	5062	77	660.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
17:01	17:05	0.07	5062	5062	0	.00	Survey & Conn.	Survey & Conn.@4999' Inc 25.95° Azm 242.14°
17:05	17:11	0.10	5062	5088	26	260.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
17:11	17:16	0.08	5088	5157	69	828.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
17:16	17:21	0.08	5157	5157	0	.00	Survey & Conn.	Survey & Conn.@5094' Inc 26.61° Azm 244.95°
17:21	17:31	0.17	5157	5182	25	150.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
17:31	17:36	0.08	5182	5253	71	852.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
17:36	17:43	0.12	5253	5253	0	.00	Survey & Conn.	Survey & Conn.@5190' Inc 27.13° Azm 245.45°
17:43	17:54	0.18	5253	5283	30	163.64	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
17:54	17:58	0.07	5283	5330	47	705.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
17:58	18:03	0.08	5330	5348	18	216.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
18:03	18:07	0.07	5348	5348	0	.00	Survey & Conn.	Survey & Conn.@5285' Inc 27.96° Azm 242.08°
18:07	18:15	0.13	5348	5380	32	240.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G))
18:15	18:24	0.15	5380	5444	64	426.67	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
18:24	18:28	0.07	5444	5444	0	.00	Survey & Conn.	Survey & Conn.@5381' Inc 32.36° Azm 244.55°
18:28	18:36	0.13	5444	5476	32	240.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
18:36	18:42	0.10	5476	5539	63	630.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
18:42	18:46	0.07	5539	5539	0	.00	Survey & Conn.	Survey & Conn.@5476' Inc 33.02° Azm 246.1°
18:46	18:59	0.22	5539	5583	44	203.08	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G))
18:59	19:04	0.08	5583	5635	52	624.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
23:27	23:38	0.18	6874	6914	40	218.18	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
23:38	23:43	0.08	6914	6969	55	660.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
23:43	23:47	0.07	6969	6969	0	.00	Survey & Conn.	Survey & Conn.@6906' Inc 35.02° Azm 242.26°
23:47	23:55	0.13	6969	7009	40	300.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
23:55	24:00	0.08	7009	7065	56	672.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
19:04	19:09	0.08	5635	5635	0	.00	Survey & Conn.	Survey & Conn.@5572' Inc 34.18° Azm 247.14°
19:09	19:20	0.18	5635	5675	40	218.18	Sliding	Sliding - (WOB:25;GPM :700;TFO:20L))
19:20	19:25	0.08	5675	5730	55	660.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
19:25	19:29	0.07	5730	5730	0	.00	Survey & Conn.	Survey & Conn.@5667' Inc 37.98° Azm 243.67°
19:29	19:37	0.13	5730	5826	96	720.00	Drilling	Drilling - (WOB:25;GPM :700;RPM:65)
19:37	19:41	0.07	5826	5826	0	.00	Survey & Conn.	Survey & Conn.@5763' Inc 35.5° Azm 243.28°
19:41	19:46	0.08	5826	5851	25	300.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:10L))
19:46	19:53	0.12	5851	5921	70	600.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
19:53	19:57	0.07	5921	5921	0	.00	Survey & Conn.	Survey & Conn.@5858' Inc 36.06° Azm 242.34°
19:57	20:08	0.18	5921	5943	22	120.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:10L)
20:08	20:14	0.10	5943	6017	74	740.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
20:14	20:18	0.07	6017	6017	0	.00	Survey & Conn.	Survey & Conn.@5954' Inc 36.01° Azm 242.29°
20:18	20:27	0.15	6017	6039	22	146.67	Sliding	Sliding - (WOB:25;GPM :700;TFO:10L))
20:27	20:34	0.12	6039	6112	73	625.71	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
20:34	20:40	0.10	6112	6112	0	.00	Survey & Conn.	Survey & Conn.@6049' Inc 34.82° Azm 242.49°
20:40	20:58	0.30	6112	6137	25	83.33	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
20:58	21:03	0.08	6137	6207	70	840.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
21:03	21:07	0.07	6207	6207	0	.00	Survey & Conn.	Survey & Conn.@6144' Inc 35.66° Azm 242.79°
21:07	21:15	0.13	6207	6231	24	180.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G))
21:15	21:21	0.10	6231	6303	72	720.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
21:21	21:25	0.07	6303	6303	0	.00	Survey & Conn.	Survey & Conn.@6240' Inc 35.82° Azm 244.64°
21:25	21:44	0.32	6303	6327	24	75.79	Sliding	Sliding - (WOB:25;GPM :700;TFO:10R)
21:44	21:49	0.08	6327	6398	71	852.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
21:49	21:54	0.08	6398	6398	0	.00	Survey & Conn.	Survey & Conn.@6335' Inc 36.03° Azm 242.06°
21:54	22:00	0.10	6398	6422	24	240.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:10R)
22:00	22:07	0.12	6422	6493	71	608.57	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
22:07	22:11	0.07	6493	6493	0	.00	Survey & Conn.	Survey & Conn.@6430' Inc 36.18° Azm 240.82°
22:11	22:18	0.12	6493	6517	24	205.71	Sliding	Sliding - (WOB:25;GPM :700;TFO:10R))
22:18	22:25	0.12	6517	6588	71	608.57	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
22:25	22:29	0.07	6588	6588	0	.00	Survey & Conn.	Survey & Conn.@6525' Inc 35.33° Azm 241.57°
22:29	22:35	0.10	6588	6614	26	260.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
22:35	22:42	0.12	6614	6683	69	591.43	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
22:42	22:47	0.08	6683	6683	0	.00	Survey & Conn.	Survey & Conn.@6620' Inc 35.03° Azm 241.69°
22:47	22:56	0.15	6683	6713	30	200.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
22:56	23:02	0.10	6713	6779	66	660.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
23:02	23:09	0.12	6779	6779	0	.00	Survey & Conn.	Survey & Conn.@6716' Inc 34.96° Azm 241.9°
23:09	23:18	0.15	6779	6814	35	233.33	Sliding	Sliding - (WOB:25;GPM :700;TFO:30R)
23:18	23:23	0.08	6814	6874	60	720.00	Drilling	Drilling - (WOB:30;GPM :700;RPM:50)
23:23	23:27	0.07	6874	6874	0	.00	Survey & Conn.	Survey & Conn.@6811' Inc 34.7° Azm 242.23°



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Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
01:31	01:34	0.05	7541	7566	25	500.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:50)
01:34	01:46	0.20	7566	7619	53	265.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:45R))
01:46	01:51	0.08	7619	7636	17	204.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
01:51	01:55	0.07	7636	7636	0	.00	Survey & Conn.	Survey & Conn.@7573' Inc 52.69° Azm 259.19°
01:55	01:57	0.03	7636	7646	10	300.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
01:57	02:10	0.22	7646	7700	54	249.23	Sliding	Sliding - (WOB:25;GPM :700;TFO:10R)
02:10	02:15	0.08	7700	7732	32	384.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
02:15	02:19	0.07	7732	7732	0	.00	Survey & Conn.	Survey & Conn.@7669' Inc 61.86° Azm 261.58°
02:19	02:23	0.07	7732	7765	33	495.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
02:23	02:36	0.22	7765	7815	50	230.77	Sliding	Sliding - (WOB:25;GPM :700;TFO:10R)
02:36	02:39	0.05	7815	7827	12	240.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
02:39	02:43	0.07	7827	7827	0	.00	Survey & Conn.	Survey & Conn.@7764' Inc 64.26° Azm 264.78°
02:43	02:57	0.23	7827	7902	75	321.43	Sliding	Sliding - (WOB:25;GPM :700;TFO:10R))
02:57	03:02	0.08	7902	7922	20	240.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
03:02	03:06	0.07	7922	7922	0	.00	Survey & Conn.	Survey & Conn.@7859' Inc 73.92° Azm 270.22°
03:06	03:09	0.05	7922	7945	23	460.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
10:20	10:24	0.07	8711	8711	0	.00	Survey & Conn.	Survey & Conn.@8648' Inc 90.3° Azm 270.79°
10:24	10:35	0.18	8711	8723	12	65.45	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
10:35	10:44	0.15	8723	8806	83	553.33	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
10:44	10:48	0.07	8806	8806	0	.00	Survey & Conn.	Survey & Conn.@8743' Inc 90.81° Azm 270.39°
10:48	10:51	0.05	8806	8812	6	120.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
10:51	11:44	0.88	8812	9283	471	533.21	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
11:44	11:58	0.23	9283	9283	0	.00	Survey & Conn.	Survey & Conn.@9220' Inc 91.44° Azm 271.03°
11:58	12:03	0.08	9283	9295	12	144.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
12:03	12:46	0.72	9295	9596	301	420.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
12:46	12:54	0.13	9596	9596	0	.00	Survey & Conn.	Survey & Conn.@9506' Inc 91.41° Azm 268.81°
12:54	12:59	0.08	9596	9605	9	108.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
12:59	13:28	0.48	9605	9782	177	366.21	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
13:28	13:37	0.15	9782	9782	0	.00	Survey & Conn.	Survey & Conn.@9697' Inc 90.44° Azm 267.3°
13:37	13:44	0.12	9782	9797	15	128.57	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
13:44	14:00	0.27	9797	9951	154	577.50	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
03:09	03:27	0.30	7945	8018	73	243.33	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
03:27	03:31	0.07	8018	8018	0	.00	Survey & Conn.	Survey & Conn.@7955' Inc 80.51° Azm 271.8°
03:31	03:45	0.23	8018	8113	95	407.14	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
03:45	03:49	0.07	8113	8113	0	.00	Survey & Conn.	Survey & Conn.@8050' Inc 89.8° Azm 269.21°
03:49	04:02	0.22	8113	8208	95	438.46	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
04:02	04:14	0.20	8208	8208	0	.00	Circulating	Circulate and pump slug
04:14	06:00	1.77	8208	8208	0	.00	Short Trip	Short Trip
06:00	07:04	1.07	8208	8208	0	.00	Rig Service-Inhole	Rig Service-Inhole
07:04	08:57	1.88	8208	8208	0	.00	Short Trip	Short Trip p/u agitator
08:57	09:02	0.08	8208	8234	26	312.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
09:02	09:06	0.07	8234	8234	0	.00	Survey & Conn.	Survey & Conn.@8145' Inc 88.79° Azm 269.95°
09:06	09:16	0.17	8234	8329	95	570.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
09:16	09:20	0.07	8329	8329	0	.00	Survey & Conn.	Survey & Conn.@8266' Inc 88.63° Azm 270.26°
09:20	09:28	0.13	8329	8341	12	90.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:70L))
09:28	09:40	0.20	8341	8429	88	440.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
09:40	09:46	0.10	8429	8429	0	.00	Survey & Conn.	Survey & Conn.@8362' Inc 89.23° Azm 268.88°
09:46	09:53	0.12	8429	8520	91	780.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
09:53	09:57	0.07	8520	8520	0	.00	Survey & Conn.	Survey & Conn.@8457' Inc 89.43° Azm 269.56°
09:57	10:06	0.15	8520	8615	95	633.33	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
10:06	10:12	0.10	8615	8615	0	.00	Survey & Conn.	Survey & Conn.@8552' Inc 89.56° Azm 269.53°
10:12	10:20	0.13	8615	8711	96	720.00	Drilling	Drilling - (WOB:35;GPM :700;RPM:20)
21:00	21:04	0.07	11858	11858	0	.00	Survey & Conn.	Survey & Conn.@11795' Inc 93.9° Azm 269.77°
21:04	21:19	0.25	11858	11883	25	100.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
21:19	21:29	0.17	11883	11953	70	420.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
14:00	14:09	0.15	9951	9951	0	.00	Survey & Conn.	Survey & Conn.@9888' Inc 90.54° Azm 266.37°
14:09	14:17	0.13	9951	9969	18	135.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
14:17	14:27	0.17	9969	10046	77	462.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
14:27	14:31	0.07	10046	10046	0	.00	Survey & Conn.	Survey & Conn.@9983' Inc 90.81° Azm 269.75°
14:31	14:55	0.40	10046	10268	222	555.00	Drilling	0268Drilling - (WOB:45;GPM :700;RPM:70)
14:55	15:03	0.13	10268	10268	0	.00	Survey & Conn.	Survey & Conn.@10175' Inc 92.08° Azm 270.66°
15:03	15:09	0.10	10268	10278	10	100.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
15:09	15:31	0.37	10278	10428	150	409.09	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
15:31	15:35	0.07	10428	10428	0	.00	Survey & Conn.	Survey & Conn.@10365' Inc 91.98° Azm 271.4°
15:35	15:47	0.20	10428	10442	14	70.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
15:47	15:57	0.17	10442	10524	82	492.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
15:57	16:00	0.05	10524	10524	0	.00	Survey & Conn.	Survey & Conn.@10461' Inc 91.81° Azm 271.43°
16:00	16:14	0.23	10524	10552	28	120.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
16:14	16:25	0.18	10552	10619	67	365.45	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
16:25	16:30	0.08	10619	10619	0	.00	Survey & Conn.	Survey & Conn.@10556' Inc 90.97° Azm 270.26°
16:30	16:44	0.23	10619	10649	30	128.57	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
16:44	16:54	0.17	10649	10714	65	390.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
16:54	16:56	0.03	10714	10714	0	.00	Survey & Conn.	Survey & Conn.@10651' Inc 88.46° Azm 269.41°
16:56	17:07	0.18	10714	10809	95	518.18	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
17:07	17:13	0.10	10809	10809	0	.00	Survey & Conn.	Survey & Conn.@10746' Inc 87.72° Azm 269.24°
17:13	17:21	0.13	10809	10904	95	712.50	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
17:21	17:25	0.07	10904	10904	0	.00	Survey & Conn.	Survey & Conn.@10841' Inc 88.19° Azm 269.24°
17:25	17:38	0.22	10904	11000	96	443.08	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
17:38	17:43	0.08	11000	11000	0	.00	Survey & Conn.	Survey & Conn.@10937' Inc 86.94° Azm 269.36°
17:43	17:55	0.20	11000	11025	25	125.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L)
17:55	18:04	0.15	11025	11095	70	466.67	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
18:04	18:09	0.08	11095	11095	0	.00	Survey & Conn.	Survey & Conn.@11032' Inc 89.16° Azm 269.61°
18:09	18:24	0.25	11095	11120	25	100.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:135L))
18:24	18:34	0.17	11120	11190	70	420.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:60)
18:34	18:38	0.07	11190	11190	0	.00	Survey & Conn.	Survey & Conn.@11127' Inc 92.66° Azm 269.93°
18:38	18:52	0.23	11190	11286	96	411.43	Drilling	Drilling - (WOB:45;GPM :700;RPM:60)
18:52	18:56	0.07	11286	11286	0	.00	Survey & Conn.	Survey & Conn.@11223' Inc 92.21° Azm 269.57°
18:56	19:07	0.18	11286	11299	13	70.91	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
19:07	19:19	0.20	11299	11381	82	410.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:60)
19:19	19:23	0.07	11381	11381	0	.00	Survey & Conn.	Survey & Conn.@11318' Inc 93.53° Azm 270.16°
19:23	19:34	0.18	11381	11476	95	518.18	Drilling	Drilling - (WOB:45;GPM :700;RPM:60)
19:34	19:38	0.07	11476	11476	0	.00	Survey & Conn.	Survey & Conn.@11413' Inc 93.19° Azm 270.55°
19:38	19:50	0.20	11476	11571	95	475.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
19:50	19:58	0.13	11571	11571	0	.00	Survey & Conn.	Survey & Conn.@11508' Inc 93.59° Azm 270.41°
19:58	20:09	0.18	11571	11667	96	523.64	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
20:09	20:18	0.15	11667	11667	0	.00	Survey & Conn.	Survey & Conn.@11604' Inc 94.67° Azm 270.67°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
20:18	20:33	0.25	11667	11687	20	80.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G)
20:33	20:47	0.23	11687	11762	75	321.43	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
20:47	20:51	0.07	11762	11762	0	.00	Survey & Conn.	Survey & Conn.@11604' Inc 94.67° Azm 270.67°
20:51	21:00	0.15	11762	11858	96	640.00	Drilling	Drilling - (WOB:45;GPM :700;RPM:70)
21:29	21:33	0.07	11953	11953	0	.00	Survey & Conn.	Survey & Conn.@11890' Inc 91.14° Azm 269.75°
21:33	21:42	0.15	11953	12049	96	640.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
21:42	21:46	0.07	12049	12049	0	.00	Survey & Conn.	Survey & Conn.@11986' Inc 91.11° Azm 270.01°
21:46	21:54	0.13	12049	12144	95	712.50	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
21:54	21:58	0.07	12144	12144	0	.00	Survey & Conn.	Survey & Conn.@12081' Inc 90.44° Azm 270.34°
21:58	22:07	0.15	12144	12239	95	633.33	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
22:07	22:11	0.07	12239	12239	0	.00	Survey & Conn.	Survey & Conn.@12176' Inc 90.24° Azm 270.81°
22:11	22:19	0.13	12239	12256	17	127.50	Sliding	Sliding - (WOB:25;GPM :700;TFO:0G))
22:19	22:27	0.13	12256	12335	79	592.50	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
22:27	22:31	0.07	12335	12335	0	.00	Survey & Conn.	Survey & Conn.@12272' Inc 93.43° Azm 271.74°
22:31	22:39	0.13	12335	12430	95	712.50	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
22:39	22:43	0.07	12430	12430	0	.00	Survey & Conn.	Survey & Conn.@12367' Inc 93.46° Azm 272.03°
22:43	22:52	0.15	12430	12525	95	633.33	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
22:52	22:56	0.07	12525	12525	0	.00	Survey & Conn.	Survey & Conn.@12462' Inc 93.79° Azm 272.14°
22:56	23:05	0.15	12525	12620	95	633.33	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
23:05	23:09	0.07	12620	12620	0	.00	Survey & Conn.	Survey & Conn.@12557' Inc 93.42° Azm 270.73°
23:09	23:21	0.20	12620	12715	95	475.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
23:21	23:25	0.07	12715	12715	0	.00	Survey & Conn.	Survey & Conn.@12652' Inc 94.13° Azm 271.06°
23:25	23:36	0.18	12715	12811	96	523.64	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
23:36	23:40	0.07	12811	12811	0	.00	Survey & Conn.	Survey & Conn.@12748' Inc 95.18° Azm 272.02°
23:40	23:50	0.17	12811	12906	95	570.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
23:50	23:54	0.07	12906	12906	0	.00	Survey & Conn.	Survey & Conn.@12843' Inc 95.79° Azm 272.42°
23:54	24:00	0.10	12906	12914	8	80.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:20L))



JOB NO.: 374173
Company: Extraction Oil & Gas
LOCATION: Breniman Pad
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Weld
WELL NAME: Breniman 8
Lead Directional : Scott Sanford

Report Time: 2400 **4 of 5**
API JOB # 05-123-40421
WORK ORDER#
FIELD: Wattenberg
Township: 6N
Range/Section 67W 16
Company Man Hugh McGraw
2nd Dir Hand : Colby Hansen

From Monday, July 25, 2016 at 0000 to Monday, July 25, 2016 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	12914.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP
End Depth	16427.00	1	XXXX	2,170.00	16.00	13,497.00	31.17	2.78	49.95	15,667.00	316.29
Below Rot Hrs.	24.00										
Total Drilled:	3513.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 1			
Avg. Total ROP:	250.93	WOB: 45		Weight: 8.6		Bit No: 1		PDC 2.0 FBH Pony Non Mag DC Pony Non Mag DC Non Mag DC Hang Off Sub Gap Sub Non Mag DC Filter Sub 3 Stands H.W.D.P.			
Slide Footage:	281.00	Rot Wt: 0		Visc: 43		Model PDC					
Slide Hours	5.17	Pick UP: 0		Chlorides: 0		SN.: XXX					
Avg. Slide ROP:	54.39	Slack Off: 0		YP: 7		MFG. OTHER					
Rotate Footage:	3232.00	SPP: 5550		PV: 9		Type PDC					
Rotary Hours	8.83	Flow: 665 - 700		PH: 0		IADC					
Avg. Rot ROP:	365.89	SPM: 230		SAND: 0		JETS 7-12					
Circ Hours	0.52	Rot. RPM 70 - 70		WL: 9.2		TFA: 0.773					
Ream Hours	0.00	Mot RPM: 70 - 70		SOLID: 0		Hole ID:					
Rotary Hrs%:	63.10	Incl. In: 0		BHT°: 0		Bit Hrs: 47.17					
Slide Hrs%:	36.90	Incl. Out: 0		Flow T°: 119		Bit Ftg: 15667.00					
Rotary Ftg%:	92.00	Azm. In: 0		Oil %: 0		PUMPS					
Slide Ftg%:	8.00	Azm. Out: 0				Liner 0 0					
Casing											
Size	Lb/Ft	MD	COST BREAKDOWN								
			Effic.		95.00%	95.00%					
			Gal/Stk		0.00	0.00					
			BBL/Stk		0.000	0.000					

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
02:02	02:14	0.20	13382	13477	95	475.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
02:14	02:18	0.07	13477	13477	0	.00	Survey & Conn.	Survey & Conn.@13414' Inc 91.31° Azm 267.71°
02:18	02:29	0.18	13477	13572	95	518.18	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
02:29	02:33	0.07	13572	13572	0	.00	Survey & Conn.	Survey & Conn.@13509' Inc 92.79° Azm 269.69°
02:33	02:50	0.28	13572	13667	95	335.29	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
02:50	02:54	0.07	13667	13667	0	.00	Survey & Conn.	Survey & Conn.@13604' Inc 92.38° Azm 269.27°
02:54	03:07	0.22	13667	13763	96	443.08	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
03:07	03:11	0.07	13763	13763	0	.00	Survey & Conn.	Survey & Conn.@13700' Inc 91.78° Azm 268.42°
03:11	03:24	0.22	13763	13771	8	36.92	Sliding	Sliding - (WOB:25;GPM :700;TFO:170R)
03:24	03:36	0.20	13771	13858	87	435.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
03:36	03:40	0.07	13858	13858	0	.00	Survey & Conn.	Survey & Conn.@13795' Inc 93.84° Azm 268.91°
03:40	03:56	0.27	13858	13868	10	37.50	Sliding	Sliding - (WOB:25;GPM :700;TFO:170R))
03:56	04:08	0.20	13868	13953	85	425.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
04:08	04:12	0.07	13953	13953	0	.00	Survey & Conn.	Survey & Conn.@13890' Inc 92.42° Azm 269.24°
04:12	04:24	0.20	13953	14048	95	475.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
04:24	04:34	0.17	14048	14048	0	.00	Survey & Conn.	Survey & Conn.@13985' Inc 93.73° Azm 269.31°
04:34	04:50	0.27	14048	14065	17	63.75	Sliding	Sliding - (WOB:25;GPM :700;TFO:150R))
04:50	05:01	0.18	14065	14143	78	425.45	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
05:01	05:05	0.07	14143	14143	0	.00	Survey & Conn.	Survey & Conn.@14080' Inc 91.71° Azm 269.08°
05:05	05:14	0.15	14143	14150	7	46.67	Sliding	Sliding - (WOB:25;GPM :700;TFO:160R)
05:14	05:28	0.23	14150	14238	88	377.14	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
05:28	05:38	0.17	14238	14238	0	.00	Survey & Conn.	Survey & Conn.@14175' Inc 90.94° Azm 269.27°
05:38	06:10	0.53	14238	14333	95	178.13	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
06:10	06:19	0.15	14333	14333	0	.00	Survey & Conn.	Survey & Conn.@14270' Inc 91.95° Azm 269.44°
06:19	06:43	0.40	14333	14353	20	50.00	Sliding	Sliding - (WOB:25;GPM :700;TFO:160R)
06:43	07:00	0.28	14353	14523	170	600.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
07:00	07:07	0.12	14523	14523	0	.00	Survey & Conn.	Survey & Conn.@14460' Inc 91.85° Azm 270.74°
07:07	07:28	0.35	14523	14538	15	42.86	Sliding	Sliding - (WOB:25;GPM :700;TFO:160R)
07:28	08:01	0.55	14538	14713	175	318.18	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
08:01	08:06	0.08	14713	14713	0	.00	Survey & Conn.	Survey & Conn.@14650' Inc 91.11° Azm 271.06°
08:06	08:21	0.25	14713	14808	95	380.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
08:21	08:26	0.08	14808	14808	0	.00	Survey & Conn.	Survey & Conn.@14745' Inc 91.85° Azm 271.28°
08:26	08:45	0.32	14808	14828	20	63.16	Sliding	Sliding - (WOB:25;GPM :700;TFO:160R)
08:45	09:03	0.30	14828	14904	76	253.33	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
09:03	09:08	0.08	14904	14904	0	.00	Survey & Conn.	Survey & Conn.@14841' Inc 90.5° Azm 270.62°
09:08	09:20	0.20	14904	14999	95	475.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
09:20	09:25	0.08	14999	14999	0	.00	Survey & Conn.	Survey & Conn.@14936' Inc 92.12° Azm 271.11°
09:25	09:51	0.43	14999	15029	30	69.23	Sliding	Sliding - (WOB:25;GPM :700;TFO:160R)
09:51	10:07	0.27	15029	15094	65	243.75	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
10:07	10:12	0.08	15094	15094	0	.00	Survey & Conn.	Survey & Conn.@15031' Inc 90.91° Azm 269.76°
10:12	10:34	0.37	15094	15114	20	54.55	Sliding	Sliding - (WOB:25;GPM :700;TFO:160R)
10:34	10:53	0.32	15114	15189	75	236.84	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
10:53	10:58	0.08	15189	15189	0	.00	Survey & Conn.	Survey & Conn.@15126' Inc 88.36° Azm 271.38°
10:58	11:16	0.30	15189	15284	95	316.67	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
11:16	11:19	0.05	15284	15284	0	.00	Survey & Conn.	Survey & Conn.@15221' Inc 87.11° Azm 272.09°
11:19	11:43	0.40	15284	15296	12	30.00	Sliding	Drilling - (WOB:50;GPM :700;RPM:70)
11:43	12:02	0.32	15296	15379	83	262.11	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
12:02	12:08	0.10	15379	15379	0	.00	Survey & Conn.	Survey & Conn.@15316' Inc 87.95° Azm 271.2°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
12:08	12:30	0.37	15379	15395	16	43.64	Sliding	Sliding - (WOB:50;GPM :700;TFO:40L))
12:30	12:53	0.38	15395	15474	79	206.09	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
12:53	19:10	6.28	15474	15474	0	.00	Rig repair	Swivel pack, IBOP
19:10	19:15	0.08	15474	15474	0	.00	Survey & Conn.	Survey & Conn.@15411' Inc 90.67° Azm 270.93°
19:15	19:46	0.52	15474	15474	0	.00	Circulating	Circulating
19:46	19:56	0.17	15474	15569	95	570.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
19:56	20:00	0.07	15569	15569	0	.00	Survey & Conn.	Survey & Conn.@15506' Inc 91.81° Azm 271.28°
20:00	20:17	0.28	15569	15664	95	335.29	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
20:17	20:21	0.07	15664	15664	0	.00	Survey & Conn.	Survey & Conn.@15601' Inc 93.13° Azm 271.42°
20:21	20:49	0.47	15664	15686	22	47.14	Sliding	Sliding - (WOB:50;GPM :700;TFO:160L))
20:49	21:05	0.27	15686	15760	74	277.50	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
21:05	21:09	0.07	15760	15760	0	.00	Survey & Conn.	Survey & Conn.@15697' Inc 91.81° Azm 271.36°
21:09	21:26	0.28	15760	15855	95	335.29	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
21:26	21:30	0.07	15855	15855	0	.00	Survey & Conn.	Survey & Conn.@15792' Inc 93.09° Azm 271.55°
21:30	21:56	0.43	15855	15880	25	57.69	Sliding	Sliding - (WOB:50;GPM :700;TFO:150L))
21:56	22:08	0.20	15880	15950	70	350.00	Drilling	Drilling - (WOB:50;GPM :700;RPM:70)
22:08	22:23	0.25	15950	15950	0	.00	Survey & Conn.	Survey & Conn.@15887' Inc 90.74° Azm 269.16°
22:23	22:35	0.20	15950	16046	96	480.00	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
22:35	22:44	0.15	16046	16046	0	.00	Survey & Conn.	Survey & Conn.@15983' Inc 90.44° Azm 268.94°
22:44	22:57	0.22	16046	16141	95	438.46	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
22:57	23:01	0.07	16141	16141	0	.00	Survey & Conn.	Survey & Conn.@16078' Inc 89.6° Azm 269.38°
23:01	23:16	0.25	16141	16236	95	380.00	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
23:16	23:20	0.07	16236	16236	0	.00	Survey & Conn.	Survey & Conn.@16173' Inc 89.63° Azm 269.1°
23:20	23:36	0.27	16236	16332	96	360.00	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
23:36	23:45	0.15	16332	16332	0	.00	Survey & Conn.	Survey & Conn.@16269' Inc 91.38° Azm 270.56°
23:45	24:00	0.25	16332	16427	95	380.00	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)

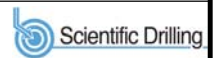


DAILY TOTALS		ASSEMBLY TOTALS										
Start Depth	12914.00	BHA #	Motor SN / R.S. SN	Slide Ftg	Slide Hrs	Rotate Ftg	Rotate Hrs	Circ Hrs	D & C Hrs	BHA Ftg	Avg ROP	
End Depth	16427.00	1	XXXX	2,170.00	16.00	13,497.00	31.17	2.78	49.95	15,667.00	316.29	
Below Rot Hrs.	24.00											
Total Drilled:	3513.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 1				
Avg. Total ROP:	250.93	WOB: 45		Weight: 8.6		Bit No: 1		PDC				
Slide Footage:	281.00	Rot Wt: 0		Visc: 43		Model PDC		2.0 FBH				
Slide Hours	5.17	Pick UP: 0		Chlorides: 0		SN.: XXX		Pony Non Mag DC				
Avg. Slide ROP:	54.39	Slack Off: 0		YP: 7		MFG. OTHER		Pony Non Mag DC				
Rotate Footage:	3232.00	SPP: 5550		PV: 9		Type PDC		Non Mag DC				
Rotary Hours	8.83	Flow: 665 - 700		PH: 0		IADC		Hang Off Sub				
Avg. Rot ROP:	365.89	SPM: 230		GAS: 0		JETS 7-12		Gap Sub				
Circ Hours	0.52	Rot. RPM 70 - 70		SAND: 0		TFA: 0.773		Non Mag DC				
Ream Hours	0.00	Mot RPM: 70 - 70		WL: 9.2		Hole ID:		Filter Sub				
Rotary Hrs%:	63.10	Incl. In: 0		SOLID: 0		Bit Hrs: 47.17		3 Stands H.W.D.P.				
Slide Hrs%:	36.90	Az. In: 0		BHT°: 0		Bit Ftg: 15667.00						
Rotary Ftg%:	92.00	Incl. Out: 0		Flow T°: 119		PUMPS						
Slide Ftg%:	8.00	Az. Out: 0		Oil %: 0		Liner 0 0						
CASING		COST BREAKDOWN				Stroke 0 0						
Size	Lb/Ft	MD					Effic. 95.00% 95.00%					
							Gal/Stk 0.00 0.00					
							BBL/Stk 0.000 0.000					

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:07	0.12	16427	16427	0	.00	Survey & Conn.	Survey & Conn.@16364' Inc 92.05° Azm 270.78°
00:07	00:22	0.25	16427	16522	95	380.00	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
00:22	00:31	0.15	16522	16522	0	.00	Survey & Conn.	Survey & Conn.@16459' Inc 92.55° Azm 271.11°
00:31	00:46	0.25	16522	16617	95	380.00	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
00:46	00:55	0.15	16617	16617	0	.00	Survey & Conn.	Survey & Conn.@16554' Inc 93.73° Azm 271.68°
00:55	01:34	0.65	16617	16647	30	46.15	Sliding	Sliding - (WOB:50;GPM :700;TFO:150L)
01:34	01:44	0.17	16647	16712	65	390.00	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
01:44	01:57	0.22	16712	16712	0	.00	Survey & Conn.	Survey & Conn.@16649' Inc 89.83° Azm 270.37°
01:57	02:13	0.27	16712	16807	95	356.25	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
02:13	02:22	0.15	16807	16807	0	.00	Survey & Conn.	Survey & Conn.@16744' Inc 89.8° Azm 270.47°
02:22	03:03	0.68	16807	16902	95	139.02	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
03:03	03:08	0.08	16902	16902	0	.00	Survey & Conn.	Survey & Conn.@16839' Inc 91.65° Azm 271.59°
03:08	03:29	0.35	16902	16997	95	271.43	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
03:29	03:34	0.08	16997	16997	0	.00	Survey & Conn.	Survey & Conn.@16934' Inc 93.02° Azm 271.73°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
03:34	04:10	0.60	16997	17017	20	33.33	Sliding	Sliding - (WOB:50;GPM :700;TFO:150L)
04:10	04:31	0.35	17017	17092	75	214.29	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
04:31	04:35	0.07	17092	17092	0	.00	Survey & Conn.	Survey & Conn.@17029' Inc 90.64° Azm 271.7°
04:35	05:03	0.47	17092	17187	95	203.57	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
05:03	05:08	0.08	17187	17187	0	.00	Survey & Conn.	Survey & Conn.@17124' Inc 91.95° Azm 272.2°
05:08	05:21	0.22	17187	17220	33	152.31	Drilling	Drilling - (WOB:45;GPM :665;RPM:70)
05:21	06:25	1.07	17220	17220	0	.00	Circulating	Circulating
06:25	14:30	8.08	17220	17220	0	.00	POOH	POOH
14:30	15:00	0.50	17220	17220	0	.00	Change BHA	L/D Directional Tools
15:00	24:00	9.00	17220	17220	0	.00	Standby	Run Casing

BHA # 1

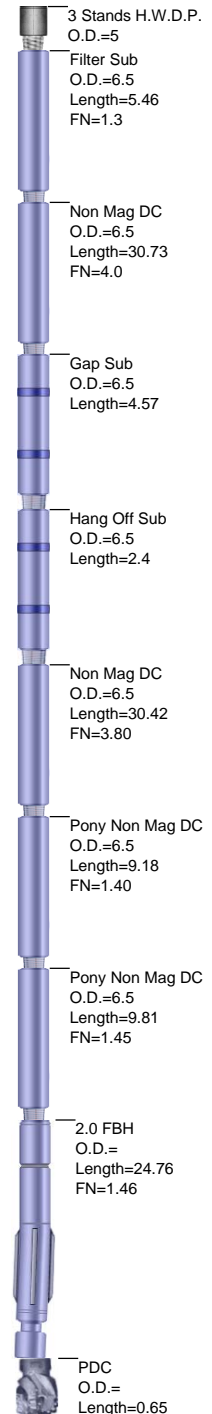


JOB NO.: 374173 Work Order: FIELD: Wattenberg
 Company: Extraction Oil & Gas Township: 6N
 LOCATION: Breniman Pad SECT. RANGE: 16 67W
 RIG NAME: Patterson 346 Lead DD: Scott Sanford
 STATE: Colorado Co. Man: Hugh McGraw
 COUNTY: Weld BHA TYPE: Steerable Assembly
 WELL NAME: Breniman 8 BHA WT: 13736 Wt @ Jars: N/A

Time and Depths		MOTOR DATA		Drilling Parameters	
Date In:	23-Jul-16 @ 00:00	2.0 FBH		SO/PU:	0 - 0 / 0-0
Date Out:	26-Jul-16 @ 15:00	MFG.: Motor		Rot Strg Wt:	0-0
Hrs In Hole:	87.00	Pad OD:		WOB:	0 - 50
Start Depth:	1553.00	NB Stab:	0	TORQ:	4500 - 265000
End Depth:	17220.00	Bit to Bend:	3	SPP:	0 - 5550
Total Drilled:	15667.00	Bent Hsg/Sub°:	2 /	Motor RPM:	No Rev/Gal Input
Avg. Total ROP:	332.16	Lobe/Stage:	/	Rotary RPM:	20 - 70
Circ Hrs: Tot/Only	51.02 / 3.85	Rev/GAL:	0	Flow Rate:	0 - 700
Percent Slide:	13.85	Rotor Jet:	0	Avg Diff:	1000
Percent Hrs:	33.92	Prop BUR:		Stall Pres.:	
Slide Hours:	16.00	Act BUR:		Off Bot Pres.:	
Total Sliding:	2170.00	Mud Data		Bit Record	
Avg. Slide ROP:	135.63	Type		OTHER / PDC	
Percent Rotary:	86.15	WT:	8.6	Run #:	1
Percent Hrs:	66.08	Vis:	43	Type Bit:	PDC
Rotary Hours:	31.17	WL:	9.2	IADC#:	TFA: 0.773
Total Rotary:	13497.00	SOL:	0	JETS:	7-12
Avg. Rotary ROP:	433.06	Oil %:	0	Bit Drop:	650 PSI @ 700 GPM
Reason POOH:		Chlor:	0	Cond.:	
MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 0	Last Casing	O.D.
	GYRO: 0	DNSC: 0	Sonic: 0	Shoe @:	Hanger @:
INC IN:	.0	INC OUT:	.0	AZM IN:	.00
				AZM OUT:	.00

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
PDC	XXX			0.65	0.65	4 1/2 REGP	OTHER
2.0 FBH	XXXX			24.76	25.41	4 1/2 IFB	OTHER
Pony Non Mag DC	125-297	3.25	6.5	9.81	35.22	4 1/2 IFB	SDI
Pony Non Mag DC	125-438	3.25	6.5	9.18	44.40	4 1/2 IFB	SDI
Non Mag DC	189-009	3.25	6.5	30.42	74.82	4 1/2 IFB	SDI
Hang Off Sub	8-1048	3.75	6.5	2.40	77.22	4 1/2 IFB	SDI
Gap Sub	SDi 69-759	3.25	6.5	4.57	81.79	4 1/2 IFB	SDI
Non Mag DC	189-012	3.25	6.5	30.73	112.52	4 1/2 IFB	SDI
Filter Sub	SD116074	3.25	6.5	5.46	117.98	4 1/2 IFB	SDI
3 Stands H.W.D.P.	N/A	3.76	5	275.51	393.49	4 1/2 IFB	Other





JOB NO.: 374173
Company: Extraction Oil & Gas
LOCATION: Breniman Pad
RIG NAME: Patterson 346
STATE: Colorado
COUNTY: Country
WELL NAME: Breniman 8

FIELD: Wattenberg
Township: 6N
Range 67W

MOTOR INFORMATION

Desc: 2.0 FBH
Bent Hsg/Sub: 2 / 0 **Bit to Bend:** 3
Pad OD: **NB Stab:**

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	23-Jul	Drilling	02:00	02:09	0.15	1553	1633	80	20	533.3	50	6000	560	1550		2.11	261.65	0.00	
1	23-Jul	Sliding	02:22	02:25	0.05	1633	1640	7	20	140.0	50	6000	560	1550	100M	2.11	261.65	0.00	
1	23-Jul	Drilling	02:25	02:34	0.15	1640	1728	88	25	586.7	65	4500	700	2550		0.88	225.35	0.00	
1	23-Jul	Drilling	02:45	02:51	0.10	1728	1823	95	25	950.0	65	4500	700	2550		0.88	225.35	0.00	
1	23-Jul	Sliding	03:02	03:06	0.07	1823	1827	4	20	60.0	65	4500	560	2550	70M	0.88	225.35	0.00	
1	23-Jul	Drilling	03:06	03:13	0.12	1827	1919	92	25	788.6	65	4500	700	2550		0.62	73.30	0.00	
1	23-Jul	Drilling	03:24	03:29	0.08	1919	2014	95	25	1140.0	65	4500	700	2550		0.26	90.53	0.00	
1	23-Jul	Drilling	03:40	03:46	0.10	2014	2109	95	25	950.0	65	4500	700	2550		0.09	64.57	0.00	
1	23-Jul	Sliding	06:50	06:55	0.08	2109	2121	12	25	144.0	65	4500	700	2550		0.09	64.57	0.00	
1	23-Jul	Drilling	06:55	07:12	0.28	2121	2205	84	25	296.5	65	4500	700	2550		1.64	264.12	0.00	
1	23-Jul	Drilling	07:19	07:25	0.10	2205	2300	95	25	950.0	65	4500	700	2550		1.56	275.45	0.00	
1	23-Jul	Sliding	07:38	07:47	0.15	2300	2315	15	25	100.0	65	4500	700	2550	230M	1.56	275.45	0.00	
1	23-Jul	Drilling	07:47	07:52	0.08	2315	2396	81	25	972.0	65	4500	700	2550		3.55	257.12	0.00	
1	23-Jul	Drilling	07:58	08:03	0.08	2396	2490	94	25	1128.0	65	4500	700	2550		3.63	255.20	0.00	
1	23-Jul	Sliding	08:10	08:16	0.10	2490	2507	17	25	170.0	65	4500	700	2550	230M	3.63	255.20	0.00	
1	23-Jul	Drilling	08:16	08:19	0.05	2507	2586	79	25	1580.0	65	4500	700	2550		3.63	255.20	0.00	
1	23-Jul	Drilling	08:21	08:25	0.07	2586	2681	95	25	1425.0	65	4500	700	2550		5.54	251.84	0.00	
1	23-Jul	Sliding	08:31	08:40	0.15	2681	2696	15	25	100.0	65	4500	700	2550	230M	5.54	251.84	0.00	
1	23-Jul	Drilling	08:40	09:02	0.37	2696	2776	80	25	218.2	65	4500	700	2550		8.24	256.34	0.00	
1	23-Jul	Drilling	09:06	11:30	2.40	2776	3443	667	25	277.9	65	4500	700	2550		14.88	241.25	0.00	
1	23-Jul	Sliding	11:34	11:38	0.07	3443	3458	15	25	225.0	65	4500	700	2550	230M	14.88	241.25	0.00	
1	23-Jul	Drilling	11:38	11:45	0.12	3458	3538	80	25	685.7	65	4500	700	2550		15.60	242.40	0.00	
1	23-Jul	Sliding	11:50	11:51	0.02	3538	3548	10	25	600.0	65	4500	700	2550	230M	15.60	242.40	0.00	
1	23-Jul	Drilling	11:51	11:57	0.10	3548	3633	85	25	850.0	65	4500	700	2550		16.13	249.67	0.00	
1	23-Jul	Sliding	12:01	12:05	0.07	3633	3649	16	25	240.0	65	4500	700	2550	230M	16.13	249.67	0.00	
1	23-Jul	Drilling	12:05	12:29	0.40	3649	3728	79	25	197.5	65	4500	700	2550		18.36	246.28	0.00	

Slide Report for BHA # 1

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#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	23-Jul	Sliding	12:34	12:35	0.02	3728	3744	16	25	960.0	65	4500	700	2550	230M	18.36	246.28	0.00	
1	23-Jul	Drilling	12:35	12:38	0.05	3744	3919	175	25	3500.0	65	4500	700	2550		20.11	250.49	0.00	
1	23-Jul	Sliding	12:42	12:46	0.07	3919	3936	17	25	255.0	65	4500	700	2550	0G	20.11	250.49	0.00	
1	23-Jul	Drilling	12:46	12:51	0.08	3936	4014	78	25	936.0	65	4500	700	2550		20.82	247.29	0.00	
1	23-Jul	Sliding	13:00	13:03	0.05	4014	4032	18	25	360.0	65	4500	700	2550	0G	20.82	247.29	0.00	
1	23-Jul	Drilling	13:03	13:08	0.08	4032	4109	77	25	924.0	65	4500	700	2550		21.23	244.39	0.00	
1	23-Jul	Sliding	13:15	13:18	0.05	4109	4129	20	25	400.0	65	4500	700	2550	0G	21.23	244.39	0.00	
1	23-Jul	Sliding	13:18	13:24	0.10	4129	4204	75	25	750.0	65	4500	700	2550	0G	21.68	241.29	0.00	
1	23-Jul	Sliding	13:29	13:34	0.08	4204	4244	40	25	480.0	65	4500	700	2550	0G	25.49	242.71	0.00	
1	23-Jul	Drilling	13:34	13:39	0.08	4244	4300	56	25	672.0	65	4500	700	2550		25.49	242.71	0.00	
1	23-Jul	Sliding	13:42	13:49	0.12	4300	4325	25	25	214.3	65	4500	700	2550	0G	25.49	242.71	0.00	
1	23-Jul	Drilling	13:49	13:57	0.13	4325	4395	70	25	525.0	65	4500	700	2550		28.81	244.10	0.00	
1	23-Jul	Sliding	14:00	14:05	0.08	4395	4410	15	25	180.0	65	4500	700	2550	0G	28.81	244.10	0.00	
1	23-Jul	Drilling	14:05	14:12	0.12	4410	4490	80	25	685.7	65	4500	700	2550		30.89	241.55	0.00	
1	23-Jul	Drilling	14:20	14:25	0.08	4490	4586	96	25	1152.0	65	4500	700	2550		28.07	241.01	0.00	
1	23-Jul	Sliding	14:36	14:42	0.10	4586	4596	10	25	100.0	65	4500	700	2550	0G	28.07	241.01	0.00	
1	23-Jul	Drilling	14:42	15:02	0.33	4596	4681	85	25	255.0	65	4500	700	2550		28.01	242.21	0.00	
1	23-Jul	Sliding	15:06	15:16	0.17	4681	4691	10	25	60.0	65	4500	700	2550	0G	28.01	242.21	0.00	
1	23-Jul	Drilling	15:16	16:00	0.73	4691	4776	85	25	115.9	65	4500	700	2550		28.44	244.31	0.00	
1	23-Jul	Drilling	16:05	16:18	0.22	4776	4872	96	25	443.1	65	4500	700	2550		27.28	244.28	0.00	
1	23-Jul	Drilling	16:24	16:37	0.22	4872	4967	95	25	438.5	65	4500	700	2550		25.41	243.52	0.00	
1	23-Jul	Sliding	16:48	16:54	0.10	4967	4985	18	25	180.0	65	4500	700	2550	0G	25.41	243.52	0.00	
1	23-Jul	Drilling	16:54	17:01	0.12	4985	5062	77	25	660.0	65	4500	700	2550		25.95	242.14	0.00	
1	23-Jul	Sliding	17:05	17:11	0.10	5062	5088	26	25	260.0	65	4500	700	2550	0G	25.95	242.14	0.00	
1	23-Jul	Drilling	17:11	17:16	0.08	5088	5157	69	25	828.0	65	4500	700	2550		26.61	244.95	0.00	
1	23-Jul	Sliding	17:21	17:31	0.17	5157	5182	25	25	150.0	65	4500	700	2550	0G	26.61	244.95	0.00	
1	23-Jul	Drilling	17:31	17:36	0.08	5182	5253	71	25	852.0	65	4500	700	2550		27.13	245.45	0.00	
1	23-Jul	Sliding	17:43	17:54	0.18	5253	5283	30	25	163.6	65	4500	700	2550	0G	27.13	245.45	0.00	
1	23-Jul	Drilling	17:54	17:58	0.07	5283	5330	47	25	705.0	65	4500	700	2550		27.96	242.08	0.00	
1	23-Jul	Sliding	17:58	18:03	0.08	5330	5348	18	25	216.0	65	4500	700	2550	0G	27.96	242.08	0.00	
1	23-Jul	Sliding	18:07	18:15	0.13	5348	5380	32	25	240.0	65	4500	700	2550	0G	27.96	242.08	0.00	
1	23-Jul	Drilling	18:15	18:24	0.15	5380	5444	64	25	426.7	65	4500	700	2550		32.36	244.55	0.00	
1	23-Jul	Sliding	18:28	18:36	0.13	5444	5476	32	25	240.0	65	4500	700	2550	0G	32.36	244.55	0.00	
1	23-Jul	Drilling	18:36	18:42	0.10	5476	5539	63	25	630.0	65	4500	700	2550		33.02	246.10	0.00	
1	23-Jul	Sliding	18:46	18:59	0.22	5539	5583	44	25	203.1	65	4500	700	2550	20L	34.18	247.14	0.00	

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#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	23-Jul	Drilling	18:59	19:04	0.08	5583	5635	52	25	624.0	65	4500	700	2550		34.18	247.14	0.00	
1	23-Jul	Sliding	19:09	19:20	0.18	5635	5675	40	25	218.2	65	4500	700	2550	30L	37.98	243.67	0.00	
1	23-Jul	Drilling	19:20	19:25	0.08	5675	5730	55	25	660.0	65	4500	700	2550		37.98	243.67	0.00	
1	23-Jul	Drilling	19:29	19:37	0.13	5730	5826	96	25	720.0	65	4500	700	2550		35.50	243.28	0.00	
1	23-Jul	Sliding	19:41	19:46	0.08	5826	5851	25	25	300.0	65	4500	700	2550	10L	35.50	243.28	0.00	
1	23-Jul	Drilling	19:46	19:53	0.12	5851	5921	70	30	600.0	50	11500	700	3400		36.06	242.34	0.00	
1	23-Jul	Sliding	19:57	20:08	0.18	5921	5943	22	25	120.0	50	11500	700	3400	10L	36.06	242.34	0.00	
1	23-Jul	Drilling	20:08	20:14	0.10	5943	6017	74	30	740.0	50	11500	700	3400		36.01	242.29	0.00	
1	23-Jul	Sliding	20:18	20:27	0.15	6017	6039	22	25	146.7	50	11500	700	3400	0G	36.01	242.29	0.00	
1	23-Jul	Drilling	20:27	20:34	0.12	6039	6112	73	30	625.7	50	11500	700	3400		34.82	242.49	0.00	
1	23-Jul	Sliding	20:40	20:58	0.30	6112	6137	25	25	83.3	50	11500	700	3400	0G	34.82	242.49	0.00	
1	23-Jul	Drilling	20:58	21:03	0.08	6137	6207	70	30	840.0	50	11500	700	3400		35.66	242.79	0.00	
1	23-Jul	Sliding	21:07	21:15	0.13	6207	6231	24	25	180.0	50	11500	700	3400	10R	35.66	242.79	0.00	
1	23-Jul	Drilling	21:15	21:21	0.10	6231	6303	72	30	720.0	50	11500	700	3450		35.82	244.64	0.00	
1	23-Jul	Sliding	21:25	21:44	0.32	6303	6327	24	25	75.8	50	11500	700	3450	10R	35.82	244.64	0.00	
1	23-Jul	Drilling	21:44	21:49	0.08	6327	6398	71	30	852.0	50	11500	700	3450		36.03	242.06	0.00	
1	23-Jul	Sliding	21:54	22:00	0.10	6398	6422	24	25	240.0	50	11500	700	3450	10R	36.03	242.06	0.00	
1	23-Jul	Drilling	22:00	22:07	0.12	6422	6493	71	30	608.6	50	11500	700	3450		36.18	240.82	0.00	
1	23-Jul	Sliding	22:11	22:18	0.12	6493	6517	24	25	205.7	50	11500	700	3450	30R	36.18	240.82	0.00	
1	23-Jul	Drilling	22:18	22:25	0.12	6517	6588	71	30	608.6	50	11500	700	3450		35.33	241.57	0.00	
1	23-Jul	Sliding	22:29	22:35	0.10	6588	6614	26	25	260.0	50	11500	700	3450	30R	35.33	241.57	0.00	
1	23-Jul	Drilling	22:35	22:42	0.12	6614	6683	69	30	591.4	50	11500	700	3450		35.03	241.69	0.00	
1	23-Jul	Sliding	22:47	22:56	0.15	6683	6713	30	25	200.0	50	11500	700	3450	30R	35.03	241.69	0.00	
1	23-Jul	Drilling	22:56	23:02	0.10	6713	6779	66	30	660.0	50	11500	700	3450		34.96	241.90	0.00	
1	23-Jul	Sliding	23:09	23:18	0.15	6779	6814	35	25	233.3	50	11500	700	3450	30R	34.70	242.23	0.00	
1	23-Jul	Drilling	23:18	23:23	0.08	6814	6874	60	30	720.0	50	11500	700	3450		34.70	242.23	0.00	
1	23-Jul	Sliding	23:27	23:38	0.18	6874	6914	40	25	218.2	50	11500	700	3450	30R	35.02	242.26	0.00	
1	23-Jul	Drilling	23:38	23:43	0.08	6914	6969	55	30	660.0	50	11500	700	3450		35.02	242.26	0.00	
1	23-Jul	Sliding	23:47	23:55	0.13	6969	7009	40	25	300.0	50	11500	700	3450	30R	36.81	244.45	0.00	
1	23-Jul	Drilling	23:55	24:00	0.08	7009	7065	56	30	672.0	50	11500	700	3450		36.81	244.45	0.00	
1	24-Jul	Sliding	00:04	00:09	0.08	7065	7087	22	25	264.0	50	11500	700	3450	0G	36.81	244.45	0.00	
1	24-Jul	Drilling	00:09	00:16	0.12	7087	7160	73	30	625.7	50	11500	700	3450		37.07	243.16	0.00	
1	24-Jul	Sliding	00:22	00:27	0.08	7160	7185	25	25	300.0	50	11500	700	3450	40R	37.07	243.16	0.00	
1	24-Jul	Drilling	00:27	00:33	0.10	7185	7255	70	30	700.0	50	11500	700	3450		34.24	245.18	0.00	
1	24-Jul	Sliding	00:37	00:45	0.13	7255	7290	35	25	262.5	50	11500	700	3450	20R	34.85	243.34	0.00	

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#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	24-Jul	Drilling	00:45	00:50	0.08	7290	7351	61	30	732.0	50	11500	700	3450		34.85	243.34	0.00	
1	24-Jul	Sliding	00:55	01:08	0.22	7351	7446	95	25	438.5	50	11500	700	3450	45R	36.35	249.28	0.00	
1	24-Jul	Sliding	01:12	01:27	0.25	7446	7541	95	25	380.0	50	11500	700	3450	45R	45.91	255.18	0.00	
1	24-Jul	Drilling	01:31	01:34	0.05	7541	7566	25	35	500.0	20	11500	700	3450		45.91	255.18	0.00	
1	24-Jul	Sliding	01:34	01:46	0.20	7566	7619	53	25	265.0	20	11500	700	3450	10R	52.69	259.19	0.00	
1	24-Jul	Drilling	01:46	01:51	0.08	7619	7636	17	35	204.0	20	11500	700	3450		52.69	259.19	0.00	
1	24-Jul	Drilling	01:55	01:57	0.03	7636	7646	10	35	300.0	20	11500	700	3450		52.69	259.19	0.00	
1	24-Jul	Sliding	01:57	02:10	0.22	7646	7700	54	25	249.2	20	11500	700	3450	10R	61.86	261.58	0.00	
1	24-Jul	Drilling	02:10	02:15	0.08	7700	7732	32	35	384.0	20	11500	700	3450		61.86	261.58	0.00	
1	24-Jul	Drilling	02:19	02:23	0.07	7732	7765	33	35	495.0	20	11500	700	3450		64.26	264.78	0.00	
1	24-Jul	Sliding	02:23	02:36	0.22	7765	7815	50	25	230.8	20	11500	700	3450	10R	64.26	264.78	0.00	
1	24-Jul	Drilling	02:36	02:39	0.05	7815	7827	12	35	240.0	20	11500	700	3450		64.26	264.78	0.00	
1	24-Jul	Sliding	02:43	02:57	0.23	7827	7902	75	25	321.4	20	11500	700	3450	0G	73.92	270.22	0.00	
1	24-Jul	Drilling	02:57	03:02	0.08	7902	7922	20	35	240.0	20	11500	700	3450		73.92	270.22	0.00	
1	24-Jul	Drilling	03:06	03:09	0.05	7922	7945	23	35	460.0	20	11500	700	3450		73.92	270.22	0.00	
1	24-Jul	Sliding	03:09	03:27	0.30	7945	8018	73	25	243.3	20	11500	700	3450	0G	80.51	271.80	0.00	
1	24-Jul	Drilling	03:31	03:45	0.23	8018	8113	95	35	407.1	20	11500	700	3450		89.80	269.21	0.00	
1	24-Jul	Drilling	03:49	04:02	0.22	8113	8208	95	35	438.5	20	11500	700	3450		88.79	269.95	0.00	
1	24-Jul	Drilling	08:57	09:02	0.08	8208	8234	26	35	312.0	20	11500	700	3450		88.79	269.95	0.00	
1	24-Jul	Drilling	09:06	09:16	0.17	8234	8329	95	35	570.0	20	11500	700	3450		88.63	270.26	0.00	
1	24-Jul	Sliding	09:20	09:28	0.13	8329	8341	12	25	90.0	0	11500	700	3450	70L	88.63	270.26	0.00	
1	24-Jul	Drilling	09:28	09:40	0.20	8341	8429	88	35	440.0	20	11500	700	3450		89.23	268.88	0.00	
1	24-Jul	Drilling	09:46	09:53	0.12	8429	8520	91	35	780.0	20	11500	700	3450		89.43	269.56	0.00	
1	24-Jul	Drilling	09:57	10:06	0.15	8520	8615	95	35	633.3	20	11500	700	3450		89.56	269.53	0.00	
1	24-Jul	Drilling	10:12	10:20	0.13	8615	8711	96	35	720.0	20	11500	700	3450		90.30	270.79	0.00	
1	24-Jul	Sliding	10:24	10:35	0.18	8711	8723	12	25	65.5	20	11500	700	3450	135L	90.30	270.79	0.00	
1	24-Jul	Drilling	10:35	10:44	0.15	8723	8806	83	35	553.3	20	11500	700	3450		90.81	270.39	0.00	
1	24-Jul	Drilling	10:48	10:51	0.05	8806	8812	6	35	120.0	20	11500	700	3450		90.81	270.39	0.00	
1	24-Jul	Drilling	10:51	11:44	0.88	8812	9283	471	35	533.2	20	11500	700	3450		91.44	271.03	0.00	
1	24-Jul	Sliding	11:58	12:03	0.08	9283	9295	12	25	144.0	20	11500	700	3450	135L	91.44	271.03	0.00	
1	24-Jul	Drilling	12:03	12:46	0.72	9295	9596	301	35	420.0	20	11500	700	3450		91.41	268.81	0.00	
1	24-Jul	Sliding	12:54	12:59	0.08	9596	9605	9	25	108.0	20	11500	700	3450	135L	90.74	268.97	0.00	
1	24-Jul	Drilling	12:59	13:28	0.48	9605	9782	177	45	366.2	70	16000	700	5000		90.44	267.30	0.00	
1	24-Jul	Sliding	13:37	13:44	0.12	9782	9797	15	25	128.6	70	16000	700	5000	135L	90.91	267.88	0.00	
1	24-Jul	Drilling	13:44	14:00	0.27	9797	9951	154	45	577.5	70	16000	700	5000		90.54	266.37	0.00	

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	24-Jul	Sliding	14:09	14:17	0.13	9951	9969	18	25	135.0	70	16000	700	5000	135L	90.54	266.37	0.00	
1	24-Jul	Drilling	14:17	14:27	0.17	9969	10046	77	45	462.0	70	16000	700	5000		90.81	269.75	0.00	
1	24-Jul	Drilling	14:31	14:55	0.40	10046	10268	222	45	555.0	70	16000	700	5000		92.08	270.66	0.00	
1	24-Jul	Sliding	15:03	15:09	0.10	10268	10278	10	25	100.0	70	16000	700	5000	135L	91.31	270.73	0.00	
1	24-Jul	Drilling	15:09	15:31	0.37	10278	10428	150	45	409.1	70	16000	700	5000		91.98	271.40	0.00	
1	24-Jul	Drilling	15:35	15:47	0.20	10428	10442	14	45	70.0	70	16000	700	5000		91.98	271.40	0.00	
1	24-Jul	Drilling	15:47	15:57	0.17	10442	10524	82	45	492.0	70	16000	700	5000		91.81	271.43	0.00	
1	24-Jul	Sliding	16:00	16:14	0.23	10524	10552	28	25	120.0	70	16000	700	5000	135L	91.81	271.43	0.00	
1	24-Jul	Drilling	16:14	16:25	0.18	10552	10619	67	45	365.5	70	16000	700	5000		90.97	270.26	0.00	
1	24-Jul	Sliding	16:30	16:44	0.23	10619	10649	30	25	128.6	70	16000	700	5000	135L	90.97	270.26	0.00	
1	24-Jul	Drilling	16:44	16:54	0.17	10649	10714	65	45	390.0	70	16000	700	5000		88.46	269.41	0.00	
1	24-Jul	Drilling	16:56	17:07	0.18	10714	10809	95	45	518.2	70	16000	700	5000		87.72	269.24	0.00	
1	24-Jul	Drilling	17:13	17:21	0.13	10809	10904	95	45	712.5	70	16000	700	5000		88.19	269.24	0.00	
1	24-Jul	Drilling	17:25	17:38	0.22	10904	11000	96	45	443.1	70	16000	700	5000		86.94	269.36	0.00	
1	24-Jul	Sliding	17:43	17:55	0.20	11000	11025	25	25	125.0	70	16000	700	5000	135L	86.94	269.36	0.00	
1	24-Jul	Drilling	17:55	18:04	0.15	11025	11095	70	45	466.7	70	16000	700	5000		89.16	269.61	0.00	
1	24-Jul	Sliding	18:09	18:24	0.25	11095	11120	25	25	100.0	70	16000	700	5000	0G	89.16	269.61	0.00	
1	24-Jul	Drilling	18:24	18:34	0.17	11120	11190	70	45	420.0	60	19000	700	5150		92.66	269.93	0.00	
1	24-Jul	Drilling	18:38	18:52	0.23	11190	11286	96	45	411.4	60	19000	700	5150		92.21	269.57	0.00	
1	24-Jul	Sliding	18:56	19:07	0.18	11286	11299	13	25	70.9	60	19000	700	5150	0G	92.21	269.57	0.00	
1	24-Jul	Drilling	19:07	19:19	0.20	11299	11381	82	45	410.0	60	19000	700	5150		93.53	270.16	0.00	
1	24-Jul	Drilling	19:23	19:34	0.18	11381	11476	95	45	518.2	60	19000	700	5150		93.19	270.55	0.00	
1	24-Jul	Drilling	19:38	19:50	0.20	11476	11571	95	45	475.0	70	18500	700	5200		93.59	270.41	0.00	
1	24-Jul	Drilling	19:58	20:09	0.18	11571	11667	96	45	523.6	70	18500	700	5200		94.67	270.67	0.00	
1	24-Jul	Sliding	20:18	20:33	0.25	11667	11687	20	25	80.0	70	18500	700	5200	0G	94.67	270.67	0.00	
1	24-Jul	Drilling	20:33	20:47	0.23	11687	11762	75	45	321.4	70	18500	700	5200		94.67	270.67	0.00	
1	24-Jul	Drilling	20:51	21:00	0.15	11762	11858	96	45	640.0	70	18500	700	5200		93.90	269.77	0.00	
1	24-Jul	Sliding	21:04	21:19	0.25	11858	11883	25	25	100.0	70	18500	700	5200	180	93.90	269.77	0.00	
1	24-Jul	Drilling	21:19	21:29	0.17	11883	11953	70	45	420.0	70	18500	700	5200		91.14	269.75	0.00	
1	24-Jul	Drilling	21:33	21:42	0.15	11953	12049	96	50	640.0	70	21500	700	5450		91.11	270.01	0.00	
1	24-Jul	Drilling	21:46	21:54	0.13	12049	12144	95	50	712.5	70	21500	700	5450		90.44	270.34	0.00	
1	24-Jul	Drilling	21:58	22:07	0.15	12144	12239	95	50	633.3	70	21500	700	5450		90.24	270.81	0.00	
1	24-Jul	Sliding	22:11	22:19	0.13	12239	12256	17	25	127.5	70	21500	700	5450	20L	90.24	270.81	0.00	
1	24-Jul	Drilling	22:19	22:27	0.13	12256	12335	79	50	592.5	70	21500	700	5450		93.43	271.74	0.00	
1	24-Jul	Drilling	22:31	22:39	0.13	12335	12430	95	50	712.5	70	21500	700	5450		93.46	272.03	0.00	

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	24-Jul	Drilling	22:43	22:52	0.15	12430	12525	95	50	633.3	70	21500	700	5450		93.79	272.14	0.00	
1	24-Jul	Drilling	22:56	23:05	0.15	12525	12620	95	50	633.3	70	21500	700	5450		93.42	270.73	0.00	
1	24-Jul	Drilling	23:09	23:21	0.20	12620	12715	95	50	475.0	70	21500	700	5450		94.13	271.06	0.00	
1	24-Jul	Drilling	23:25	23:36	0.18	12715	12811	96	50	523.6	70	21500	700	5450		95.18	272.02	0.00	
1	24-Jul	Drilling	23:40	23:50	0.17	12811	12906	95	50	570.0	70	21500	700	5450		95.79	272.42	0.00	
1	24-Jul	Sliding	23:54	24:00	0.10	12906	12914	8	25	80.0	70	21500	700	5450	120L	95.79	272.42	0.00	
1	25-Jul	Sliding	00:00	00:05	0.08	12914	12922	8	25	96.0	70	21500	700	5450	120L	95.79	272.42	0.00	
1	25-Jul	Drilling	00:05	00:17	0.20	12922	13001	79	50	395.0	70	21500	700	5450		95.68	270.99	0.00	
1	25-Jul	Sliding	00:25	00:36	0.18	13001	13019	18	25	98.2	70	21500	700	5450	135L	95.68	270.99	0.00	
1	25-Jul	Drilling	00:36	00:44	0.13	13019	13096	77	50	577.5	70	21500	700	5450		94.37	269.23	0.00	
1	25-Jul	Drilling	00:51	01:01	0.17	13096	13192	96	50	576.0	70	21500	700	5450		95.51	269.59	0.00	
1	25-Jul	Sliding	01:05	01:21	0.27	13192	13212	20	25	75.0	70	21500	700	5450	150L	95.51	269.59	0.00	
1	25-Jul	Drilling	01:21	01:31	0.17	13212	13287	75	50	450.0	70	21500	700	5450		93.33	267.95	0.00	
1	25-Jul	Sliding	01:35	01:47	0.20	13287	13300	13	25	65.0	70	21500	700	5450	170R	93.33	267.95	0.00	
1	25-Jul	Drilling	01:47	01:58	0.18	13300	13382	82	50	447.3	70	24500	700	5550		91.78	267.92	0.00	
1	25-Jul	Drilling	02:02	02:14	0.20	13382	13477	95	50	475.0	70	24500	700	5550		91.31	267.71	0.00	
1	25-Jul	Drilling	02:18	02:29	0.18	13477	13572	95	50	518.2	70	24500	700	5550		92.79	269.69	0.00	
1	25-Jul	Drilling	02:33	02:50	0.28	13572	13667	95	50	335.3	70	24500	700	5550		92.38	269.27	0.00	
1	25-Jul	Drilling	02:54	03:07	0.22	13667	13763	96	50	443.1	70	24500	700	5550		91.78	268.42	0.00	
1	25-Jul	Sliding	03:11	03:24	0.22	13763	13771	8	25	36.9	70	24500	700	5550	170R	91.78	268.42	0.00	
1	25-Jul	Drilling	03:24	03:36	0.20	13771	13858	87	50	435.0	70	24500	700	5550		93.84	268.91	0.00	
1	25-Jul	Sliding	03:40	03:56	0.27	13858	13868	10	25	37.5	70	24500	700	5550	150R	93.84	268.91	0.00	
1	25-Jul	Drilling	03:56	04:08	0.20	13868	13953	85	50	425.0	70	24500	700	5550		92.42	269.24	0.00	
1	25-Jul	Drilling	04:12	04:24	0.20	13953	14048	95	50	475.0	70	24500	700	5550		93.73	269.31	0.00	
1	25-Jul	Sliding	04:34	04:50	0.27	14048	14065	17	25	63.8	70	24500	700	5550	160R	93.73	269.31	0.00	
1	25-Jul	Drilling	04:50	05:01	0.18	14065	14143	78	50	425.5	70	24500	700	5550		91.71	269.08	0.00	
1	25-Jul	Sliding	05:05	05:14	0.15	14143	14150	7	25	46.7	70	24500	700	5550	160R	91.71	269.08	0.00	
1	25-Jul	Drilling	05:14	05:28	0.23	14150	14238	88	50	377.1	70	24500	700	5550		90.94	269.27	0.00	
1	25-Jul	Drilling	05:38	06:10	0.53	14238	14333	95	50	178.1	70	24500	700	5550		91.95	269.44	0.00	
1	25-Jul	Sliding	06:19	06:43	0.40	14333	14353	20	25	50.0	70	24500	700	5550	160R	91.95	269.44	0.00	
1	25-Jul	Drilling	06:43	07:00	0.28	14353	14523	170	50	600.0	70	24500	700	5550		91.85	270.74	0.00	
1	25-Jul	Sliding	07:07	07:28	0.35	14523	14538	15	25	42.9	70	24500	700	5550	160R	91.85	270.74	0.00	
1	25-Jul	Drilling	07:28	08:01	0.55	14538	14713	175	50	318.2	70	24500	700	5550		91.11	271.06	0.00	
1	25-Jul	Drilling	08:06	08:21	0.25	14713	14808	95	50	380.0	70	24500	700	5550		91.85	271.28	0.00	
1	25-Jul	Sliding	08:26	08:45	0.32	14808	14828	20	25	63.2	70	24500	700	5550	160R	91.85	271.28	0.00	

Slide Report for BHA # 1

Note: Surveys listed are interpolated from the actual surveys

#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
1	25-Jul	Drilling	08:45	09:03	0.30	14828	14904	76	50	253.3	70	24500	700	5550		90.50	270.62	0.00	
1	25-Jul	Drilling	09:08	09:20	0.20	14904	14999	95	50	475.0	70	24500	700	5550		92.12	271.11	0.00	
1	25-Jul	Sliding	09:25	09:51	0.43	14999	15029	30	25	69.2	70	24500	700	5550	160R	92.12	271.11	0.00	
1	25-Jul	Drilling	09:51	10:07	0.27	15029	15094	65	50	243.8	70	24500	700	5550		90.91	269.76	0.00	
1	25-Jul	Sliding	10:12	10:34	0.37	15094	15114	20	25	54.5	70	24500	700	5550	160R	90.91	269.76	0.00	
1	25-Jul	Drilling	10:34	10:53	0.32	15114	15189	75	50	236.8	70	24500	700	5550		88.36	271.38	0.00	
1	25-Jul	Drilling	10:58	11:16	0.30	15189	15284	95	50	316.7	70	24500	700	5550		87.11	272.09	0.00	
1	25-Jul	Sliding	11:19	11:43	0.40	15284	15296	12	50	30.0	70	24500	700	5550		87.11	272.09	0.00	
1	25-Jul	Drilling	11:43	12:02	0.32	15296	15379	83	50	262.1	70	24500	700	5550		87.95	271.20	0.00	
1	25-Jul	Sliding	12:08	12:30	0.37	15379	15395	16	50	43.6	70	24500	700	5550	40L	87.95	271.20	0.00	
1	25-Jul	Drilling	12:30	12:53	0.38	15395	15474	79	50	206.1	70	24500	700	5550		90.67	270.93	0.00	
1	25-Jul	Drilling	19:46	19:56	0.17	15474	15569	95	50	570.0	70	24500	700	5550		91.81	271.28	0.00	
1	25-Jul	Drilling	20:00	20:17	0.28	15569	15664	95	50	335.3	70	24500	700	5550		93.13	271.42	0.00	
1	25-Jul	Sliding	20:21	20:49	0.47	15664	15686	22	50	47.1	70	24500	700	5550	160L	93.13	271.42	0.00	
1	25-Jul	Drilling	20:49	21:05	0.27	15686	15760	74	50	277.5	70	24500	700	5550		91.81	271.36	0.00	
1	25-Jul	Drilling	21:09	21:26	0.28	15760	15855	95	50	335.3	70	24500	700	5550		93.09	271.55	0.00	
1	25-Jul	Sliding	21:30	21:56	0.43	15855	15880	25	50	57.7	70	24500	700	5550	150L	93.09	271.55	0.00	
1	25-Jul	Drilling	21:56	22:08	0.20	15880	15950	70	50	350.0	70	24500	700	5550		90.74	269.16	0.00	
1	25-Jul	Drilling	22:23	22:35	0.20	15950	16046	96	45	480.0	70	265000	665	5550		90.44	268.94	0.00	
1	25-Jul	Drilling	22:44	22:57	0.22	16046	16141	95	45	438.5	70	265000	665	5550		89.60	269.38	0.00	
1	25-Jul	Drilling	23:01	23:16	0.25	16141	16236	95	45	380.0	70	265000	665	5550		89.63	269.10	0.00	
1	25-Jul	Drilling	23:20	23:36	0.27	16236	16332	96	45	360.0	70	265000	665	5550		91.38	270.56	0.00	
1	25-Jul	Drilling	23:45	24:00	0.25	16332	16427	95	45	380.0	70	265000	665	5550		92.05	270.78	0.00	
1	26-Jul	Drilling	00:07	00:22	0.25	16427	16522	95	45	380.0	70	265000	665	5550		92.55	271.11	0.00	
1	26-Jul	Drilling	00:31	00:46	0.25	16522	16617	95	45	380.0	70	265000	665	5550		93.73	271.68	0.00	
1	26-Jul	Sliding	00:55	01:34	0.65	16617	16647	30	50	46.2	70	265000	700	5550	150L	93.73	271.68	0.00	
1	26-Jul	Drilling	01:34	01:44	0.17	16647	16712	65	45	390.0	70	265000	665	5550		89.83	270.37	0.00	
1	26-Jul	Drilling	01:57	02:13	0.27	16712	16807	95	45	356.3	70	265000	665	5550		89.80	270.47	0.00	
1	26-Jul	Drilling	02:22	03:03	0.68	16807	16902	95	45	139.0	70	265000	665	5550		91.65	271.59	0.00	
1	26-Jul	Drilling	03:08	03:29	0.35	16902	16997	95	45	271.4	70	265000	665	5550		93.02	271.73	0.00	
1	26-Jul	Sliding	03:34	04:10	0.60	16997	17017	20	50	33.3	70	265000	700	5550	180	93.02	271.73	0.00	
1	26-Jul	Drilling	04:10	04:31	0.35	17017	17092	75	45	214.3	70	265000	665	5550		90.64	271.70	0.00	
1	26-Jul	Drilling	04:35	05:03	0.47	17092	17187	95	45	203.6	70	265000	665	5550		91.95	272.20	0.00	
1	26-Jul	Drilling	05:08	05:21	0.22	17187	17220	33	45	152.3	70	265000	665	5550		91.95	272.20	0.00	

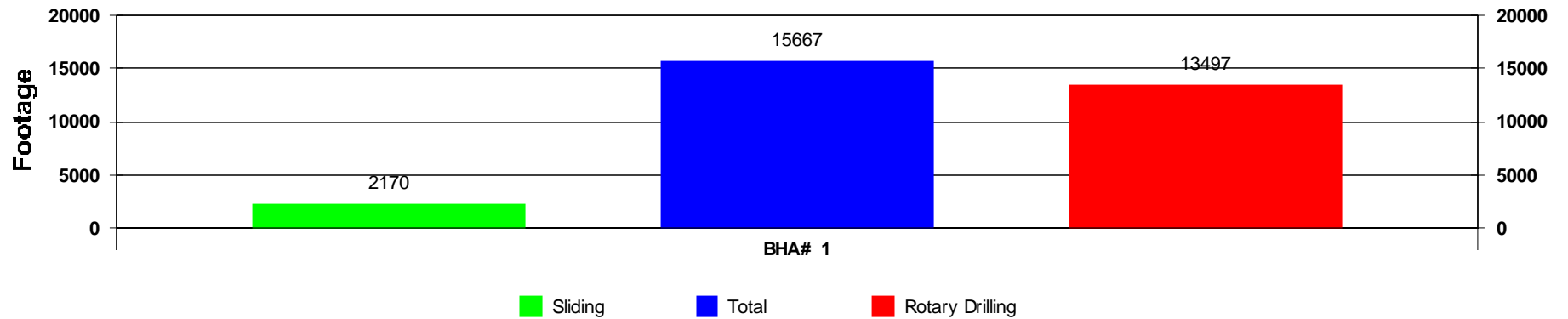
#	Date	Drill Mode	Start Time	End Time	Hours	Start MD	End MD	Depth Drilled	WOB	ROP	RPM	Surf. Torque	Flow Rate	SPP	TFO	INC	AZM	DLS	Note
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Total Drilled:		15667	Avg. Total ROP:		332.16	DEPTH% - TIME %													
Total Rotary Drilled:		13497	Avg. Rotary ROP:		433.06	Percent Rotary:		86.15 - 66.08											
Total Drilled Sliding:		2170	Avg. Slide ROP:		135.63	Percent Slide:		13.85 - 33.92											

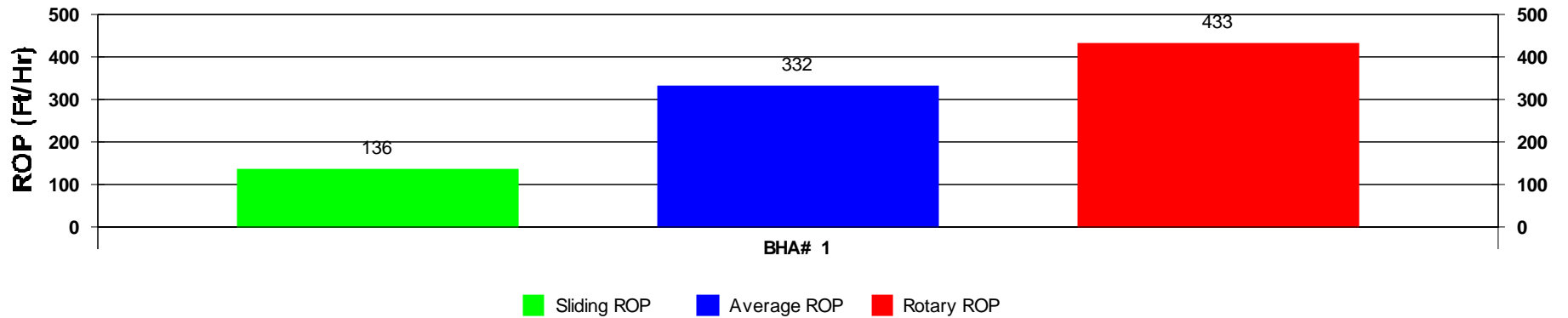


JOB NO.:	374173	FIELD:	Wattenberg
Company:	Extraction Oil & Gas	Township:	6N
LOCATION:	Breniman Pad	SECTRANGE:	16 67W
RIG NAME:	Patterson 346	COMMENT	
STATE:	Colorado		
COUNTY:	Weld		
WELL NAME:	Breniman 8		

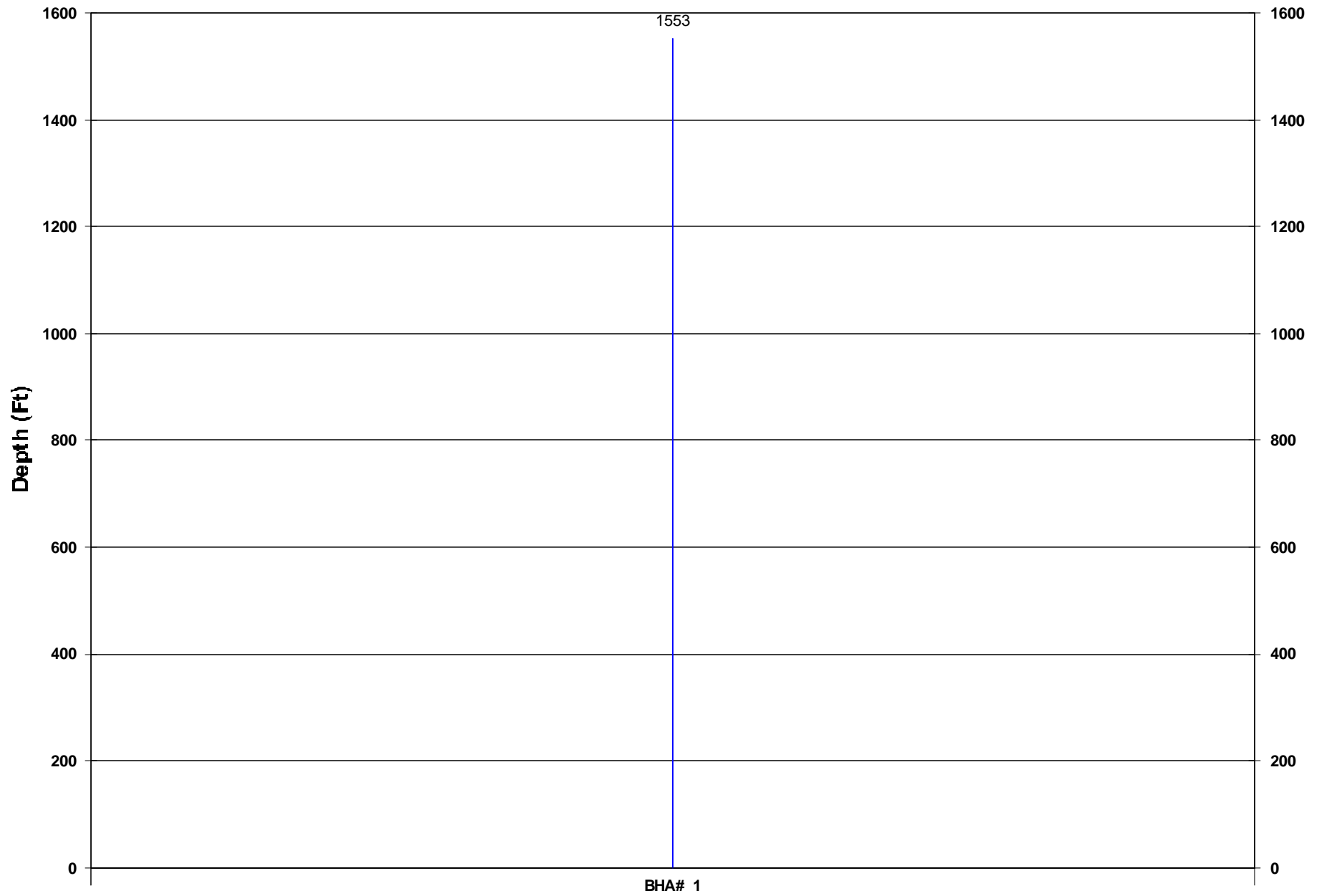
Footage Drilled with BHA



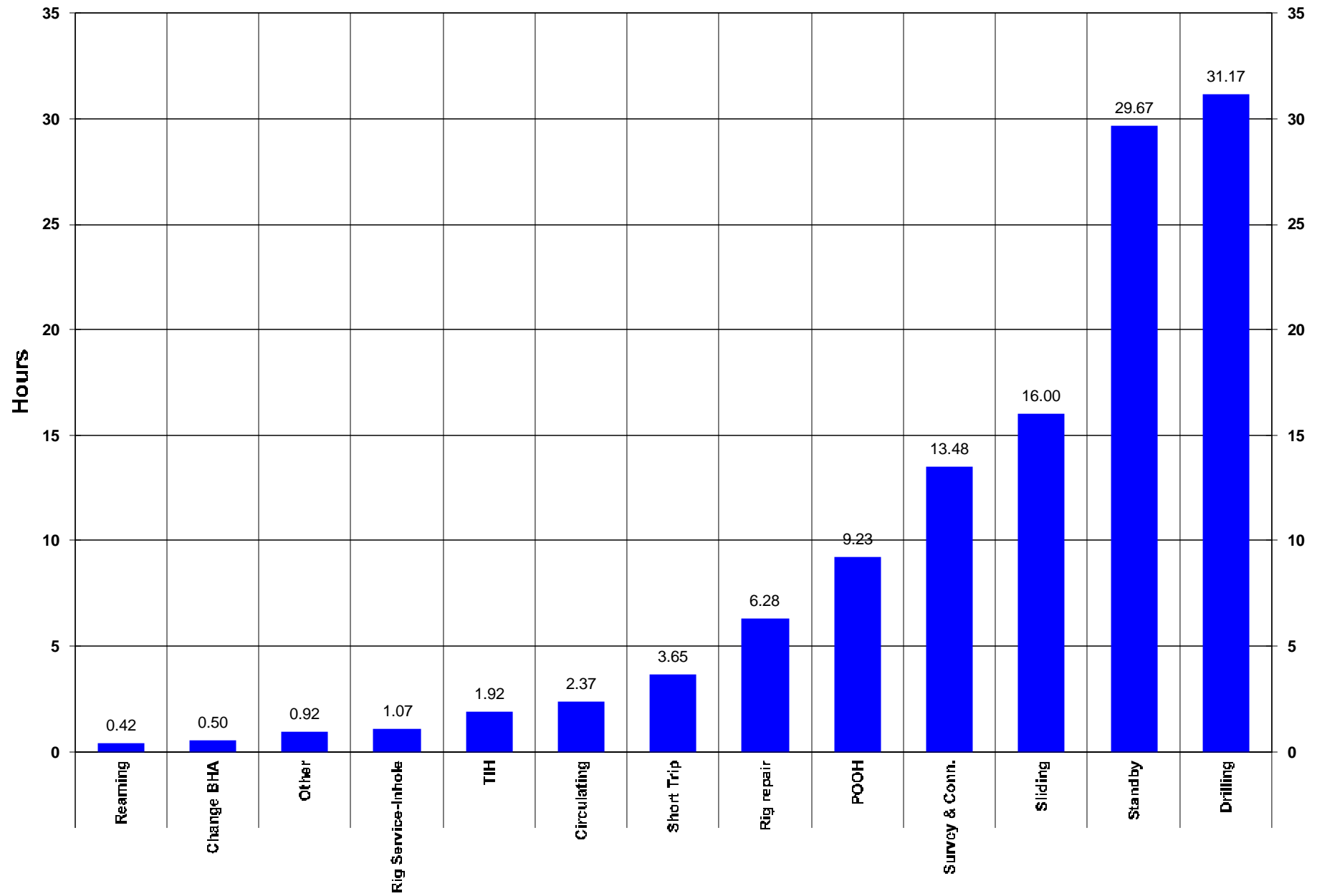
ROP vs BHA



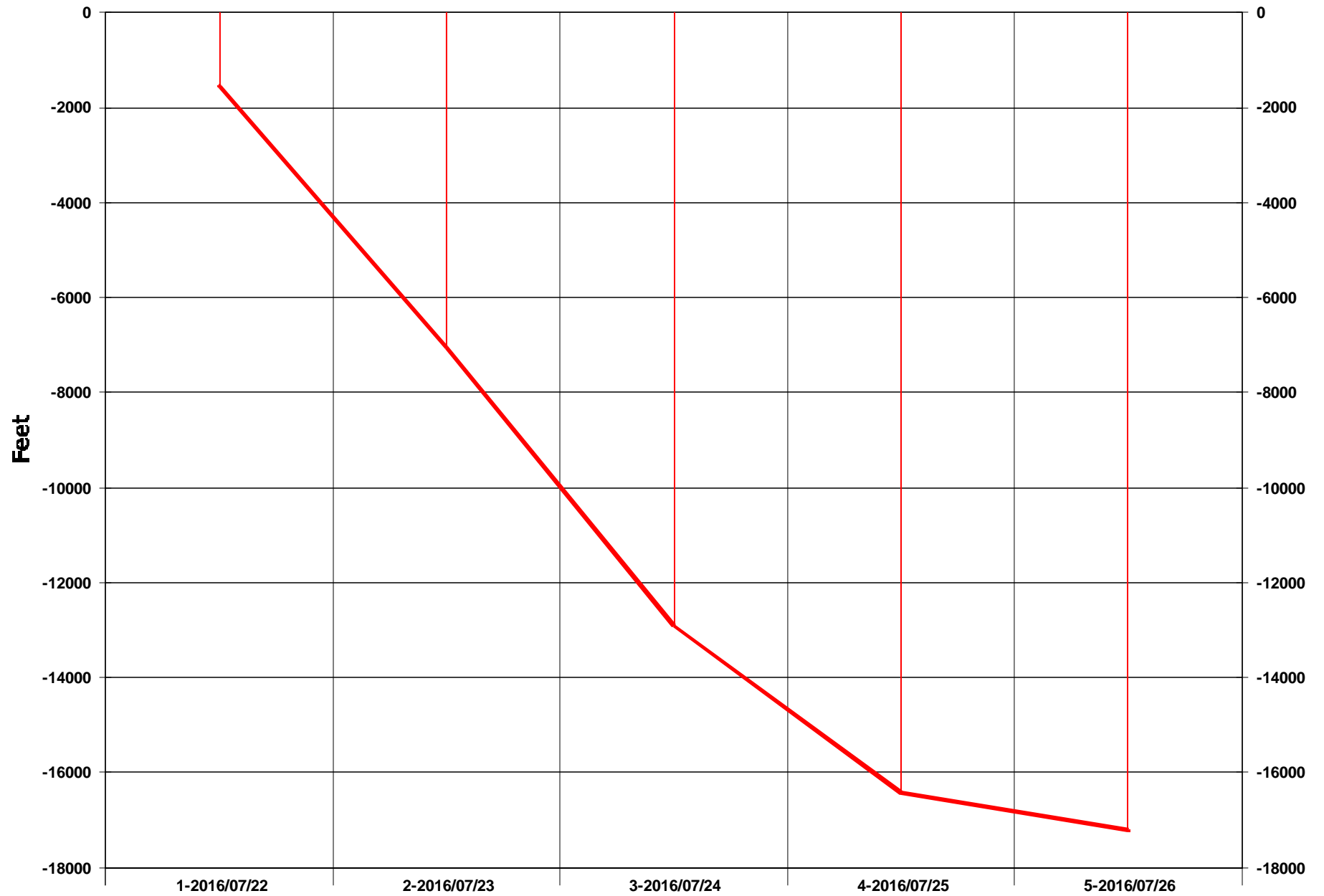
Depth vs BHA



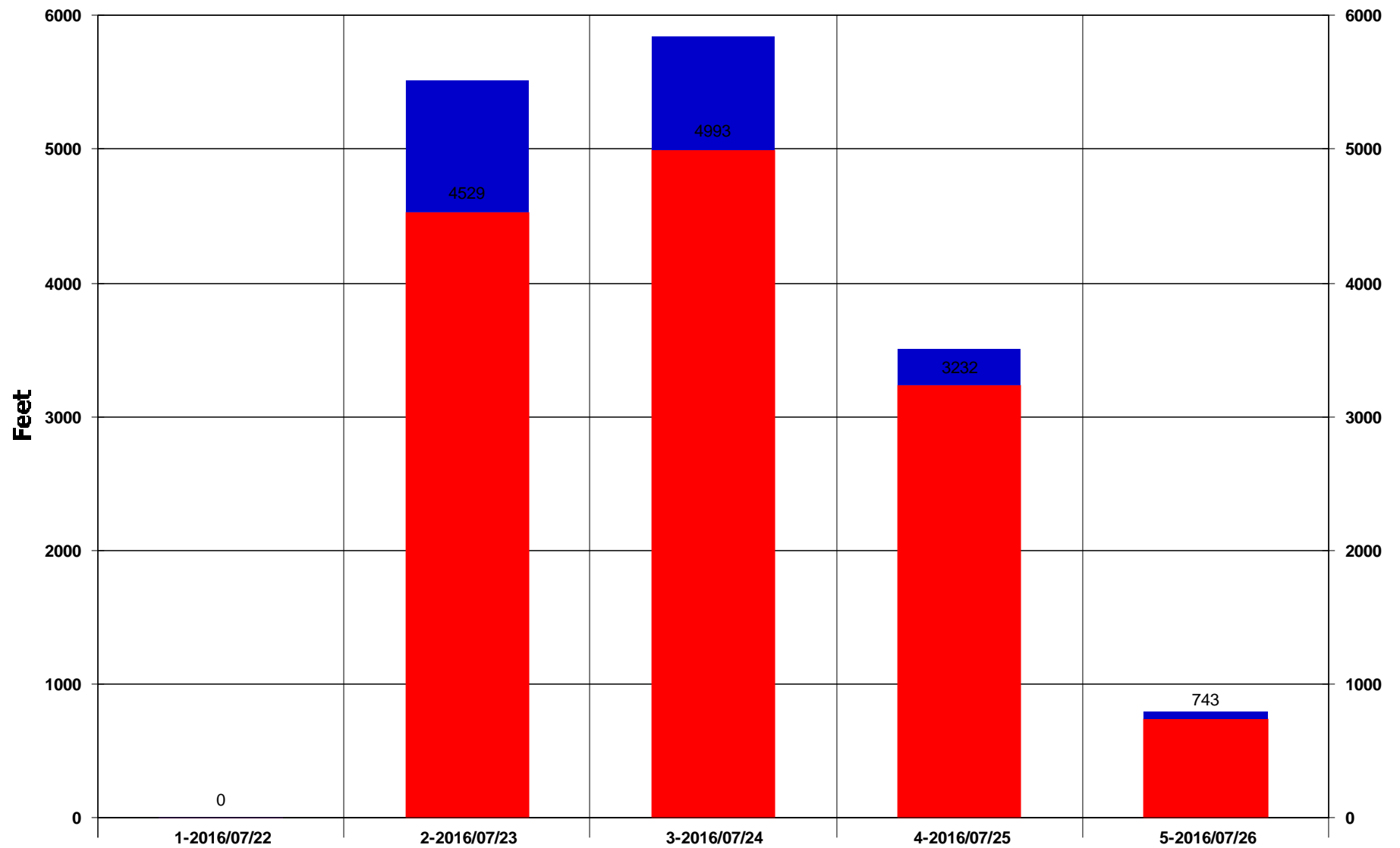
Activity Histogram



Measured Depth vs Days

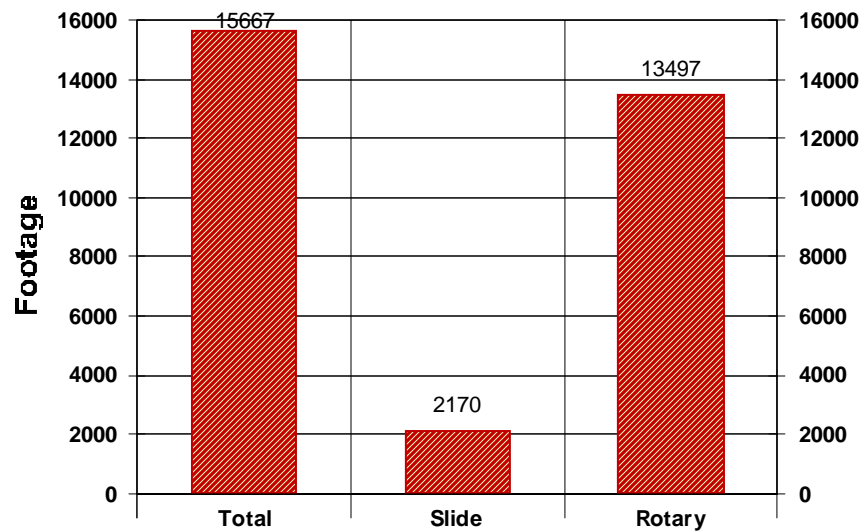


Daily Footage

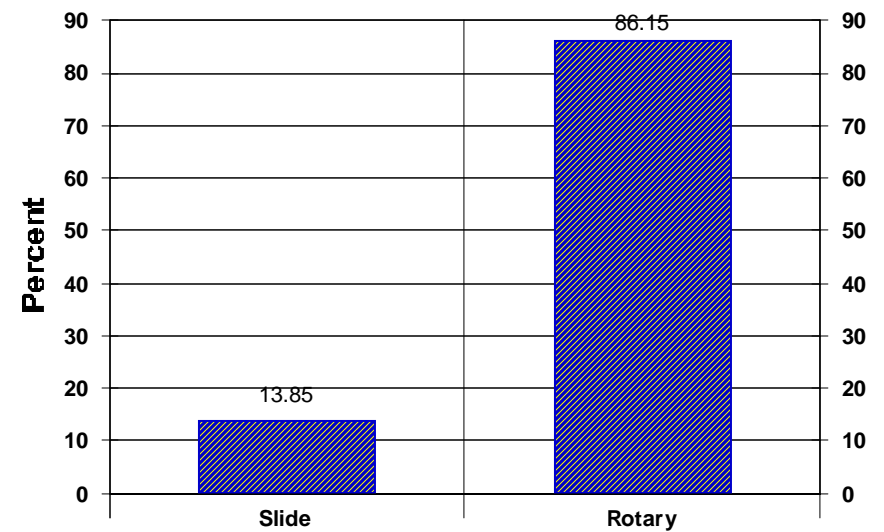


Rotary Drilling Sliding

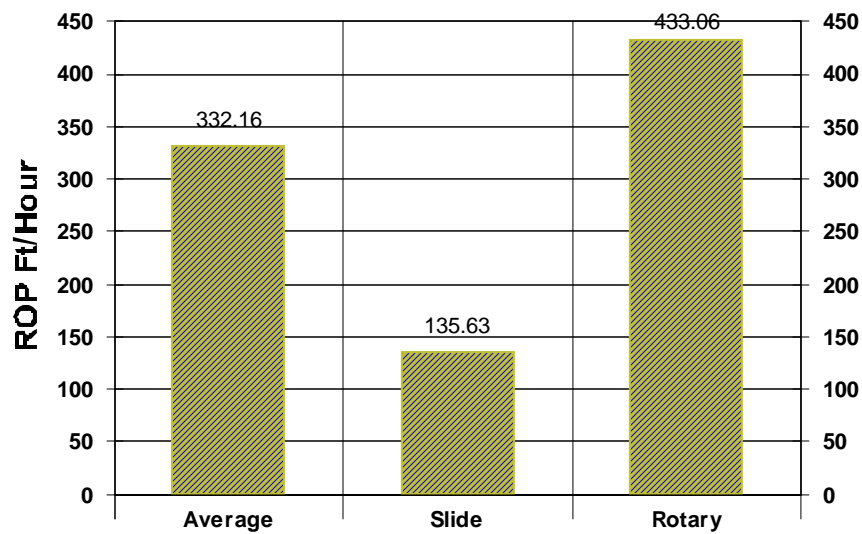
Footage Drilled Totals



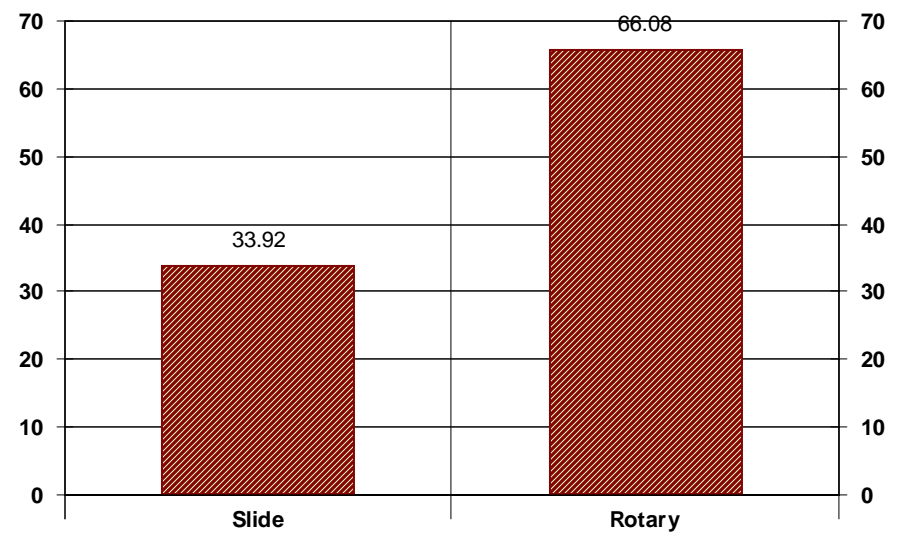
Footage Percent



Rate of Penetration Totals



Time Percent





SUPPORT STAFF

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