



END OF WELL REPORT

Prepared For:

**Anadarko Petroleum Corporation
Hilgers 8N2-34HZ
Xtreme 24
Weld County, CO**

Prepared By:

***Seth Burstad
Rockies Region Well Planner
Scientific Drilling***

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WELL DETAILS: Hilgers 8N2-34HZ

GL 5001' & KB 17' @ 5018.00ft (Xtreme 24) 5001.00
 Northing 14601968.54 Easting 1645369.77 Latitude 40.2066050 Longitude -104.9822600

Design: OH (Hilgers 8N2-34HZ/OH)

Created By: Seth Burstad Date: 6-26-2017

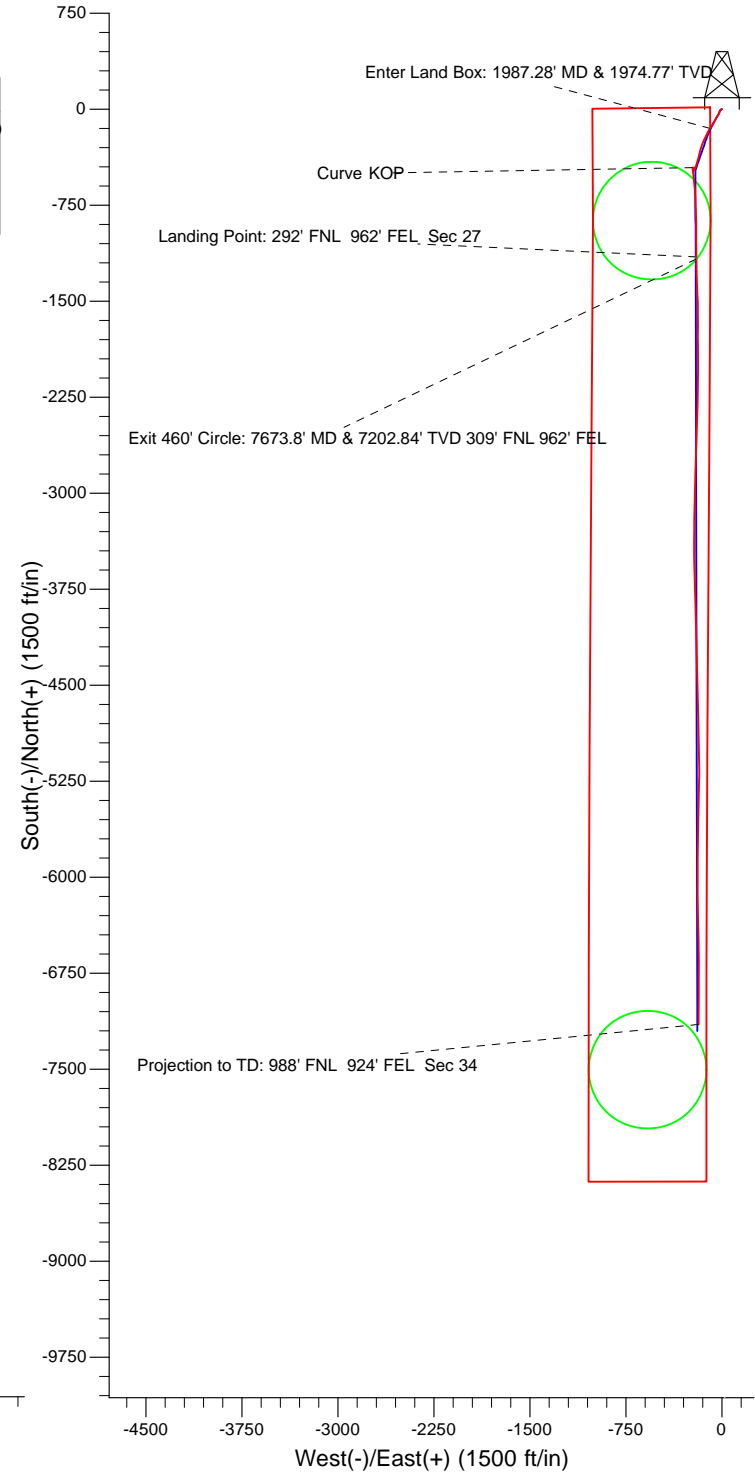
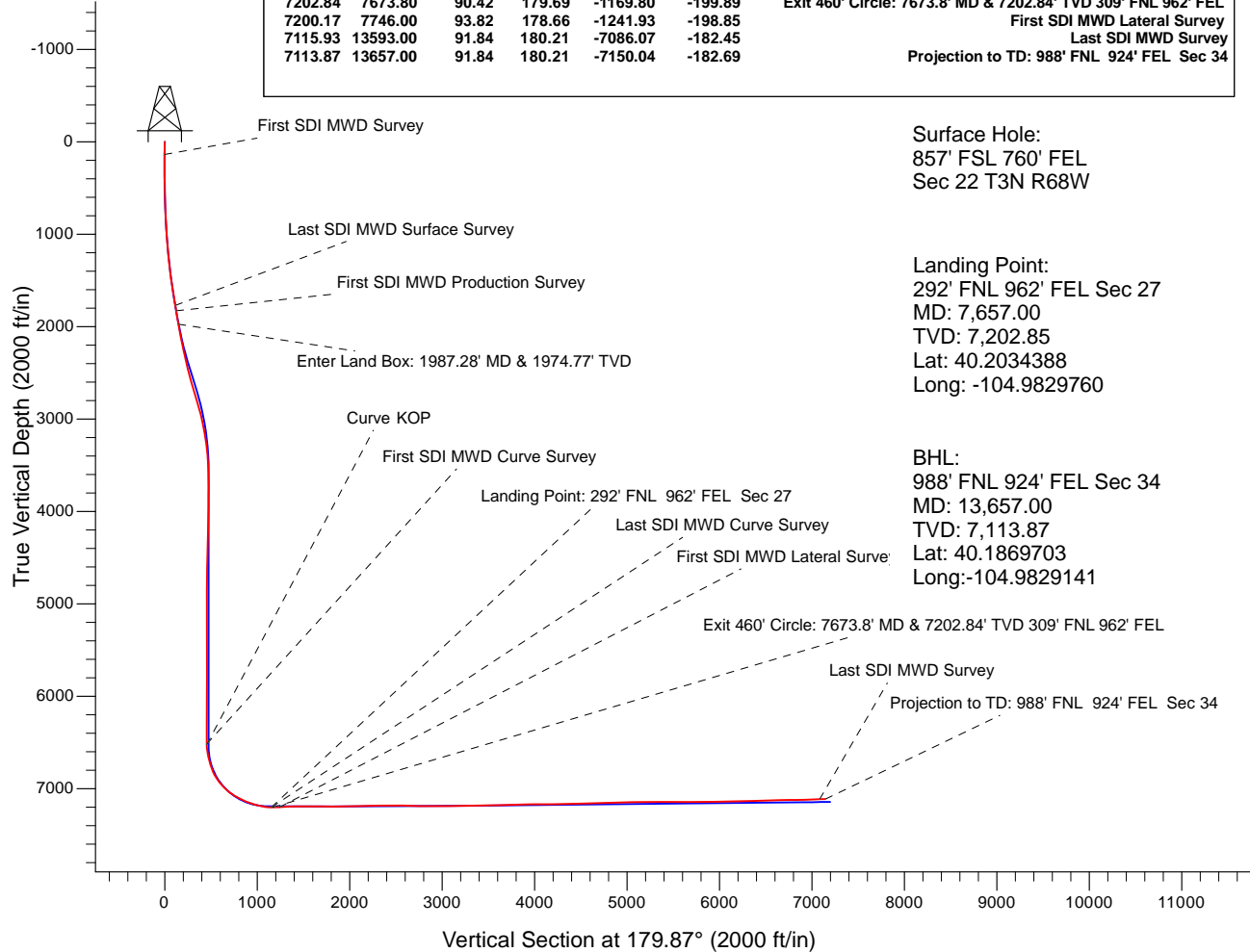
PROJECT DETAILS: US Rockies Wattenberg Planning UTM83

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Zone 13N (108 W to 102 W)

System Datum: Mean Sea Level
 Local North: True

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
138.00	138.00	0.57	284.20	0.17	-0.67	First SDI MWD Survey
1771.26	1780.00	11.05	207.57	-115.79	-70.40	Last SDI MWD Surface Survey
1829.21	1839.00	10.58	210.88	-125.45	-75.80	First SDI MWD Production Survey
1974.77	1987.28	11.68	214.42	-148.63	-91.92	Enter Land Box: 1987.28' MD & 1974.77' TVD
6517.56	6573.00	0.70	233.15	-455.16	-228.66	First SDI MWD Curve Survey
6525.56	6581.00	1.40	201.56	-455.28	-228.74	Curve KOP
7202.85	7657.00	89.63	179.93	-1153.00	-199.94	Landing Point: 292' FNL 962' FEL Sec 27
7202.85	7657.00	89.63	179.93	-1153.00	-199.94	Last SDI MWD Curve Survey
7202.84	7673.80	90.42	179.69	-1169.80	-199.89	Exit 460' Circle: 7673.8' MD & 7202.84' TVD 309' FNL 962' FEL
7200.17	7746.00	93.82	178.66	-1241.93	-198.85	First SDI MWD Lateral Survey
7115.93	13593.00	91.84	180.21	-7086.07	-182.45	Last SDI MWD Survey
7113.87	13657.00	91.84	180.21	-7150.04	-182.69	Projection to TD: 988' FNL 924' FEL Sec 34





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Hilgers 16-22 Pad

Hilgers 8N2-34HZ

OH

Design: OH

Standard Survey Report

26 June, 2017



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Project	US Rockies Wattenberg Planning UTM83		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site						Hilgers 16-22 Pad, Site Center : Hilgers 7N-34HZ											
Site Position:			Northing:			14,601,968.89 usft			Latitude:			40.2066060					
From:			Lat/Long			Easting:			1,645,309.73 usft			Longitude:			-104.9824750		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			0.01 °		

Well	Hilgers 8N2-34HZ, 857' FSL 760' FEL Sec 22 T3N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,601,968.54 usft	Latitude:	40.2066050
	+E/-W	0.00 ft	Easting:	1,645,369.76 usft	Longitude:	-104.9822600
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,001.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	5/4/2017	8.49	66.69	52,274

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	179.87	

Survey Program	Date	6/26/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
138.00	1,780.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,839.00	13,657.00	Survey #2 - Production (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
138.00	0.57	284.20	138.00	0.17	-0.67	-0.17	0.41	0.41	0.00	
First SDI MWD Survey										
199.00	0.84	275.52	198.99	0.29	-1.40	-0.29	0.47	0.44	-14.23	
285.00	0.59	261.35	284.99	0.28	-2.47	-0.29	0.35	-0.29	-16.48	
372.00	0.83	270.68	371.98	0.22	-3.54	-0.23	0.31	0.28	10.72	
461.00	1.61	233.02	460.96	-0.52	-5.19	0.51	1.21	0.88	-42.31	
550.00	1.84	234.03	549.92	-2.12	-7.34	2.10	0.26	0.26	1.13	
638.00	2.58	217.32	637.85	-4.52	-9.69	4.50	1.11	0.84	-18.99	
727.00	2.93	225.04	726.75	-7.72	-12.51	7.69	0.57	0.39	8.67	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

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)
816.00	3.06	210.47	815.63	-11.38	-15.32	11.34	0.87	0.15	-16.37
904.00	3.39	199.45	903.49	-15.85	-17.38	15.81	0.80	0.38	-12.52
991.00	3.86	199.83	990.32	-21.03	-19.23	20.99	0.54	0.54	0.44
1,078.00	4.60	199.96	1,077.08	-27.07	-21.42	27.02	0.85	0.85	0.15
1,164.00	5.38	207.04	1,162.76	-33.90	-24.43	33.84	1.15	0.91	8.23
1,253.00	6.42	208.02	1,251.28	-42.01	-28.66	41.94	1.17	1.17	1.10
1,342.00	7.68	211.74	1,339.61	-51.46	-34.13	51.38	1.51	1.42	4.18
1,430.00	8.53	213.52	1,426.73	-61.90	-40.82	61.81	1.01	0.97	2.02
1,519.00	9.67	208.88	1,514.61	-73.95	-48.08	73.84	1.52	1.28	-5.21
1,606.00	10.38	206.80	1,600.28	-87.34	-55.14	87.22	0.92	0.82	-2.39
1,692.00	10.67	209.23	1,684.83	-101.21	-62.52	101.07	0.62	0.34	2.83
1,780.00	11.05	207.57	1,771.26	-115.79	-70.40	115.63	0.56	0.43	-1.89
Last SDI MWD Surface Survey									
1,839.00	10.58	210.88	1,829.21	-125.45	-75.80	125.28	1.32	-0.80	5.61
First SDI MWD Production Survey									
1,927.00	10.95	217.24	1,915.66	-139.04	-85.01	138.85	1.41	0.42	7.23
1,987.28	11.68	214.42	1,974.77	-148.63	-91.92	148.43	1.52	1.21	-4.69
Enter Land Box: 1987.28' MD & 1974.77' TVD									
2,016.00	12.04	213.19	2,002.88	-153.54	-95.20	153.32	1.52	1.25	-4.27
2,105.00	11.88	208.63	2,089.95	-169.35	-104.67	169.11	1.08	-0.18	-5.12
2,193.00	13.89	208.12	2,175.73	-186.62	-113.99	186.36	2.29	2.28	-0.58
2,282.00	13.04	204.56	2,262.28	-205.17	-123.20	204.89	1.33	-0.96	-4.00
2,371.00	14.27	203.08	2,348.77	-224.40	-131.68	224.10	1.44	1.38	-1.66
2,460.00	16.15	206.23	2,434.65	-245.59	-141.45	245.27	2.31	2.11	3.54
2,549.00	15.39	204.28	2,520.30	-267.46	-151.77	267.12	1.04	-0.85	-2.19
2,637.00	16.60	200.12	2,604.89	-289.91	-160.90	289.54	1.89	1.38	-4.73
2,726.00	16.42	192.68	2,690.23	-314.12	-168.04	313.74	2.38	-0.20	-8.36
2,815.00	18.13	194.34	2,775.21	-339.81	-174.23	339.42	2.00	1.92	1.87
2,904.00	16.67	193.42	2,860.14	-365.65	-180.62	365.24	1.67	-1.64	-1.03
2,993.00	15.18	194.15	2,945.72	-389.36	-186.43	388.94	1.69	-1.67	0.82
3,082.00	12.05	199.47	3,032.21	-409.43	-192.38	408.99	3.78	-3.52	5.98
3,171.00	10.77	198.47	3,119.45	-426.07	-198.11	425.62	1.46	-1.44	-1.12
3,260.00	9.70	196.88	3,207.03	-441.14	-202.92	440.67	1.24	-1.20	-1.79
3,349.00	7.31	201.44	3,295.05	-453.58	-207.17	453.11	2.79	-2.69	5.12
3,437.00	5.92	203.43	3,382.46	-462.96	-211.02	462.48	1.60	-1.58	2.26
3,526.00	3.34	202.78	3,471.16	-469.56	-213.85	469.07	2.90	-2.90	-0.73
3,615.00	2.49	206.69	3,560.05	-473.68	-215.72	473.19	0.98	-0.96	4.39
3,704.00	1.58	212.97	3,648.99	-476.44	-217.26	475.94	1.05	-1.02	7.06
3,792.00	0.55	337.06	3,736.98	-477.06	-218.08	476.57	2.21	-1.17	141.01
3,881.00	0.56	301.52	3,825.98	-476.44	-218.62	475.95	0.38	0.01	-39.93
4,000.00	0.98	272.13	3,944.97	-476.10	-220.13	475.60	0.47	0.35	-24.70
4,088.00	0.77	296.30	4,032.96	-475.81	-221.41	475.31	0.48	-0.24	27.47
4,177.00	2.29	7.86	4,121.93	-473.79	-221.71	473.28	2.44	1.71	80.40
4,265.00	2.13	355.87	4,209.86	-470.41	-221.58	469.91	0.55	-0.18	-13.63

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Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

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)
4,354.00	2.22	344.19	4,298.80	-467.10	-222.17	466.60	0.51	0.10	-13.12
4,443.00	1.98	339.35	4,387.74	-464.01	-223.19	463.50	0.34	-0.27	-5.44
4,532.00	1.52	323.85	4,476.70	-461.62	-224.42	461.10	0.74	-0.52	-17.42
4,620.00	1.29	296.89	4,564.67	-460.22	-226.00	459.71	0.79	-0.26	-30.64
4,709.00	0.44	345.67	4,653.66	-459.44	-226.97	458.92	1.18	-0.96	54.81
4,798.00	1.08	79.70	4,742.66	-458.96	-226.23	458.45	1.34	0.72	105.65
4,886.00	0.96	83.46	4,830.64	-458.73	-224.69	458.22	0.16	-0.14	4.27
4,975.00	0.78	77.30	4,919.63	-458.51	-223.35	458.00	0.23	-0.20	-6.92
5,063.00	0.51	73.56	5,007.63	-458.27	-222.39	457.76	0.31	-0.31	-4.25
5,152.00	0.35	69.29	5,096.62	-458.06	-221.76	457.55	0.18	-0.18	-4.80
5,241.00	0.05	51.67	5,185.62	-457.94	-221.47	457.43	0.34	-0.34	-19.80
5,330.00	0.11	225.39	5,274.62	-457.97	-221.51	457.47	0.18	0.07	195.19
5,419.00	0.20	210.54	5,363.62	-458.17	-221.64	457.66	0.11	0.10	-16.69
5,507.00	0.24	224.76	5,451.62	-458.43	-221.85	457.93	0.08	0.05	16.16
5,596.00	0.50	171.01	5,540.62	-458.95	-221.92	458.44	0.46	0.29	-60.39
5,685.00	0.29	40.77	5,629.62	-459.16	-221.72	458.66	0.81	-0.24	-146.34
5,774.00	0.35	15.39	5,718.62	-458.73	-221.50	458.22	0.17	0.07	-28.52
5,863.00	0.38	340.29	5,807.62	-458.19	-221.52	457.68	0.25	0.03	-39.44
5,952.00	0.49	340.05	5,896.61	-457.55	-221.75	457.05	0.12	0.12	-0.27
6,040.00	0.69	316.26	5,984.61	-456.82	-222.25	456.31	0.35	0.23	-27.03
6,129.00	0.57	300.08	6,073.60	-456.21	-223.00	455.70	0.24	-0.13	-18.18
6,218.00	0.75	283.43	6,162.60	-455.85	-223.95	455.34	0.29	0.20	-18.71
6,307.00	0.67	288.63	6,251.59	-455.55	-225.01	455.04	0.12	-0.09	5.84
6,396.00	0.87	278.90	6,340.58	-455.28	-226.17	454.76	0.27	0.22	-10.93
6,484.00	0.93	283.70	6,428.57	-455.00	-227.53	454.49	0.11	0.07	5.45
6,573.00	0.70	233.15	6,517.56	-455.16	-228.66	454.64	0.82	-0.26	-56.80
First SDI MWD Curve Survey									
6,581.00	1.40	201.56	6,525.56	-455.28	-228.74	454.76	11.07	8.78	-394.93
Curve KOP									
6,662.00	10.26	180.31	6,606.07	-463.43	-229.14	462.91	11.07	10.94	-26.23
6,750.00	14.50	174.69	6,692.00	-482.25	-228.16	481.73	5.00	4.82	-6.39
6,839.00	19.22	170.22	6,777.16	-507.79	-224.64	507.28	5.50	5.30	-5.02
6,928.00	29.24	172.23	6,858.22	-543.86	-219.20	543.36	11.29	11.26	2.26
7,016.00	38.75	175.82	6,931.10	-592.74	-214.28	592.25	11.04	10.81	4.08
7,106.00	45.48	176.35	6,997.82	-652.92	-210.18	652.44	7.49	7.48	0.59
7,198.00	56.14	178.25	7,055.88	-724.04	-206.91	723.57	11.70	11.59	2.07
7,291.00	62.54	177.96	7,103.28	-803.96	-204.26	803.49	6.89	6.88	-0.31
7,383.00	67.38	177.99	7,142.20	-887.23	-201.32	886.77	5.26	5.26	0.03
7,476.00	74.82	180.13	7,172.31	-975.14	-199.91	974.68	8.29	8.00	2.30
7,568.00	78.42	179.99	7,193.60	-1,064.63	-200.00	1,064.17	3.92	3.91	-0.15
7,657.00	89.63	179.93	7,202.85	-1,153.00	-199.94	1,152.55	12.60	12.60	-0.07
Landing Point: 292' FNL 962' FEL Sec 27 - Last SDI MWD Curve Survey									
7,673.80	90.42	179.69	7,202.84	-1,169.80	-199.89	1,169.35	4.92	4.71	-1.43
Exit 460' Circle: 7673.8' MD & 7202.84' TVD 309' FNL 962' FEL									

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Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

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)
7,746.00	93.82	178.66	7,200.17	-1,241.93	-198.85	1,241.48	4.92	4.71	-1.43
First SDI MWD Lateral Survey									
7,835.00	92.58	177.41	7,195.20	-1,330.74	-195.80	1,330.29	1.98	-1.39	-1.40
7,924.00	90.67	177.55	7,192.68	-1,419.61	-191.89	1,419.17	2.15	-2.15	0.16
8,013.00	89.90	179.24	7,192.23	-1,508.57	-189.40	1,508.14	2.09	-0.87	1.90
8,101.00	89.23	179.53	7,192.90	-1,596.57	-188.45	1,596.13	0.83	-0.76	0.33
8,190.00	90.34	179.87	7,193.24	-1,685.56	-187.99	1,685.13	1.30	1.25	0.38
8,279.00	89.93	180.83	7,193.03	-1,774.56	-188.53	1,774.13	1.17	-0.46	1.08
8,368.00	89.46	179.63	7,193.50	-1,863.55	-188.89	1,863.12	1.45	-0.53	-1.35
8,457.00	88.93	178.75	7,194.75	-1,952.54	-187.63	1,952.11	1.15	-0.60	-0.99
8,546.00	92.11	179.89	7,193.94	-2,041.51	-186.57	2,041.08	3.80	3.57	1.28
8,634.00	93.15	180.53	7,189.90	-2,129.42	-186.89	2,128.99	1.39	1.18	0.73
8,723.00	91.91	181.01	7,185.98	-2,218.32	-188.09	2,217.89	1.49	-1.39	0.54
8,812.00	91.04	181.30	7,183.68	-2,307.27	-189.88	2,306.84	1.03	-0.98	0.33
8,901.00	89.33	182.36	7,183.40	-2,396.22	-192.73	2,395.78	2.26	-1.92	1.19
8,990.00	89.46	181.68	7,184.34	-2,485.16	-195.86	2,484.71	0.78	0.15	-0.76
9,079.00	88.99	181.39	7,185.54	-2,574.12	-198.25	2,573.66	0.62	-0.53	-0.33
9,168.00	89.26	181.67	7,186.90	-2,663.08	-200.62	2,662.62	0.44	0.30	0.31
9,257.00	88.22	181.88	7,188.86	-2,752.01	-203.38	2,751.54	1.19	-1.17	0.24
9,346.00	89.80	182.22	7,190.39	-2,840.94	-206.56	2,840.46	1.82	1.78	0.38
9,434.00	90.77	182.40	7,189.96	-2,928.87	-210.11	2,928.38	1.12	1.10	0.20
9,523.00	90.50	181.14	7,188.97	-3,017.82	-212.86	3,017.33	1.45	-0.30	-1.42
9,612.00	90.60	180.67	7,188.12	-3,106.80	-214.26	3,106.31	0.54	0.11	-0.53
9,701.00	91.14	180.80	7,186.77	-3,195.78	-215.40	3,195.29	0.62	0.61	0.15
9,790.00	91.17	180.45	7,184.97	-3,284.76	-216.37	3,284.26	0.39	0.03	-0.39
9,878.00	90.90	180.26	7,183.38	-3,372.74	-216.92	3,372.24	0.38	-0.31	-0.22
9,967.00	90.47	179.95	7,182.32	-3,461.74	-217.08	3,461.24	0.60	-0.48	-0.35
10,056.00	91.41	178.94	7,180.86	-3,550.72	-216.22	3,550.22	1.55	1.06	-1.13
10,145.00	91.44	178.31	7,178.64	-3,639.66	-214.09	3,639.17	0.71	0.03	-0.71
10,234.00	91.78	177.94	7,176.14	-3,728.58	-211.18	3,728.09	0.56	0.38	-0.42
10,323.00	92.01	177.59	7,173.20	-3,817.47	-207.71	3,816.98	0.47	0.26	-0.39
10,412.00	90.80	179.07	7,171.02	-3,906.40	-205.11	3,905.92	2.15	-1.36	1.66
10,502.00	90.84	178.86	7,169.73	-3,996.37	-203.49	3,995.90	0.24	0.04	-0.23
10,591.00	90.30	178.15	7,168.84	-4,085.34	-201.17	4,084.87	1.00	-0.61	-0.80
10,679.00	90.57	177.87	7,168.18	-4,173.28	-198.11	4,172.82	0.44	0.31	-0.32
10,768.00	91.48	179.45	7,166.58	-4,262.24	-196.03	4,261.78	2.05	1.02	1.78
10,857.00	91.44	179.36	7,164.32	-4,351.21	-195.11	4,350.75	0.11	-0.04	-0.10
10,946.00	91.37	178.85	7,162.13	-4,440.17	-193.72	4,439.72	0.58	-0.08	-0.57
11,035.00	90.67	178.16	7,160.55	-4,529.12	-191.39	4,528.68	1.10	-0.79	-0.78
11,124.00	90.47	177.71	7,159.66	-4,618.06	-188.19	4,617.62	0.55	-0.22	-0.51
11,213.00	92.18	179.12	7,157.61	-4,707.00	-185.73	4,706.56	2.49	1.92	1.58
11,302.00	91.95	178.51	7,154.40	-4,795.92	-183.89	4,795.49	0.73	-0.26	-0.69
11,391.00	92.25	177.79	7,151.14	-4,884.81	-181.02	4,884.39	0.88	0.34	-0.81

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

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)
11,480.00	91.01	179.04	7,148.61	-4,973.74	-178.56	4,973.32	1.98	-1.39	1.40
11,569.00	91.24	179.69	7,146.86	-5,062.72	-177.57	5,062.30	0.77	0.26	0.73
11,658.00	91.71	179.59	7,144.57	-5,151.68	-177.01	5,151.27	0.54	0.53	-0.11
11,747.00	89.43	181.18	7,143.68	-5,240.67	-177.61	5,240.25	3.12	-2.56	1.79
11,836.00	89.66	181.57	7,144.39	-5,329.64	-179.74	5,329.22	0.51	0.26	0.44
11,925.00	89.87	181.28	7,144.75	-5,418.61	-181.96	5,418.18	0.40	0.24	-0.33
12,014.00	89.50	180.97	7,145.24	-5,507.59	-183.70	5,507.16	0.54	-0.42	-0.35
12,102.00	89.16	181.04	7,146.27	-5,595.57	-185.25	5,595.14	0.39	-0.39	0.08
12,191.00	90.77	181.11	7,146.33	-5,684.55	-186.92	5,684.12	1.81	1.81	0.08
12,280.00	91.01	180.85	7,144.95	-5,773.53	-188.44	5,773.09	0.40	0.27	-0.29
12,369.00	91.14	180.89	7,143.28	-5,862.50	-189.79	5,862.06	0.15	0.15	0.04
12,458.00	91.31	180.23	7,141.37	-5,951.48	-190.66	5,951.03	0.77	0.19	-0.74
12,547.00	90.60	179.73	7,139.89	-6,040.47	-190.63	6,040.02	0.98	-0.80	-0.56
12,636.00	90.67	179.24	7,138.90	-6,129.46	-189.83	6,129.01	0.56	0.08	-0.55
12,725.00	91.01	179.36	7,137.60	-6,218.44	-188.74	6,218.00	0.41	0.38	0.13
12,813.00	91.34	178.92	7,135.79	-6,306.41	-187.42	6,305.97	0.62	0.38	-0.50
12,902.00	91.71	178.63	7,133.43	-6,395.36	-185.52	6,394.92	0.53	0.42	-0.33
12,991.00	91.98	178.28	7,130.56	-6,484.28	-183.12	6,483.85	0.50	0.30	-0.39
13,080.00	91.31	179.68	7,128.00	-6,573.23	-181.54	6,572.80	1.74	-0.75	1.57
13,169.00	91.88	179.58	7,125.53	-6,662.19	-180.96	6,661.76	0.65	0.64	-0.11
13,258.00	90.67	180.28	7,123.55	-6,751.17	-180.85	6,750.74	1.57	-1.36	0.79
13,346.00	91.27	180.33	7,122.06	-6,839.15	-181.32	6,838.72	0.68	0.68	0.06
13,435.00	91.21	180.27	7,120.13	-6,928.13	-181.79	6,927.70	0.10	-0.07	-0.07
13,593.00	91.84	180.21	7,115.93	-7,086.07	-182.45	7,085.64	0.40	0.40	-0.04
Last SDI MWD Survey									
13,657.00	91.84	180.21	7,113.87	-7,150.04	-182.69	7,149.61	0.00	0.00	0.00
Projection to TD: 988' FNL 924' FEL Sec 34									

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
138.00	138.00	0.17	-0.67	First SDI MWD Survey
1,780.00	1,771.26	-115.79	-70.40	Last SDI MWD Surface Survey
1,839.00	1,829.21	-125.45	-75.80	First SDI MWD Production Survey
1,987.28	1,974.77	-148.63	-91.92	Enter Land Box: 1987.28' MD & 1974.77' TVD
6,573.00	6,517.56	-455.16	-228.66	First SDI MWD Curve Survey
6,581.00	6,525.56	-455.28	-228.74	Curve KOP
7,657.00	7,202.85	-1,153.00	-199.94	Landing Point: 292' FNL 962' FEL Sec 27
7,657.00	7,202.85	-1,153.00	-199.94	Last SDI MWD Curve Survey
7,673.80	7,202.84	-1,169.80	-199.89	Exit 460' Circle: 7673.8' MD & 7202.84' TVD 309' FNL 962' FEL
7,746.00	7,200.17	-1,241.93	-198.85	First SDI MWD Lateral Survey
13,593.00	7,115.93	-7,086.07	-182.45	Last SDI MWD Survey
13,657.00	7,113.87	-7,150.04	-182.69	Projection to TD: 988' FNL 924' FEL Sec 34

Checked By: _____	Approved By: _____	Date: _____
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US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Hilgers 16-22 Pad

Hilgers 8N2-34HZ

OH

Design: OH

Survey Report - Geographic

26 June, 2017



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Project	US Rockies Wattenberg Planning UTM83		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site						Hilgers 16-22 Pad, Site Center : Hilgers 7N-34HZ											
Site Position:			Northing:			14,601,968.89 usft			Latitude:			40.2066060					
From:			Lat/Long			Easting:			1,645,309.73 usft			Longitude:			-104.9824750		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			0.01 °		

Well	Hilgers 8N2-34HZ, 857' FSL 760' FEL Sec 22 T3N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,601,968.54 usft	Latitude:	40.2066050
	+E/-W	0.00 ft	Easting:	1,645,369.76 usft	Longitude:	-104.9822600
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,001.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	5/4/2017	8.49	66.69	52,274

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	179.87	

Survey Program	Date	6/26/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
138.00	1,780.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,839.00	13,657.00	Survey #2 - Production (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

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	0.00	0.00	0.00	0.00	14,601,968.54	1,645,369.76	40.2066050	-104.9822600
138.00	0.57	284.20	138.00	0.17	-0.67	14,601,968.71	1,645,369.10	40.2066055	-104.9822624
First SDI MWD Survey									
199.00	0.84	275.52	198.99	0.29	-1.40	14,601,968.83	1,645,368.36	40.2066058	-104.9822650
285.00	0.59	261.35	284.99	0.28	-2.47	14,601,968.82	1,645,367.29	40.2066058	-104.9822688
372.00	0.83	270.68	371.98	0.22	-3.54	14,601,968.76	1,645,366.22	40.2066056	-104.9822727
461.00	1.61	233.02	460.96	-0.52	-5.19	14,601,968.02	1,645,364.58	40.2066036	-104.9822785
550.00	1.84	234.03	549.92	-2.12	-7.34	14,601,966.42	1,645,362.42	40.2065992	-104.9822863
638.00	2.58	217.32	637.85	-4.52	-9.69	14,601,964.02	1,645,360.08	40.2065926	-104.9822947
727.00	2.93	225.04	726.75	-7.72	-12.51	14,601,960.82	1,645,357.25	40.2065838	-104.9823048
816.00	3.06	210.47	815.63	-11.38	-15.32	14,601,957.16	1,645,354.44	40.2065738	-104.9823149

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
904.00	3.39	199.45	903.49	-15.85	-17.38	14,601,952.68	1,645,352.38	40.2065615	-104.9823222
991.00	3.86	199.83	990.32	-21.03	-19.23	14,601,947.50	1,645,350.53	40.2065473	-104.9823289
1,078.00	4.60	199.96	1,077.08	-27.07	-21.42	14,601,941.47	1,645,348.35	40.2065307	-104.9823367
1,164.00	5.38	207.04	1,162.76	-33.90	-24.43	14,601,934.64	1,645,345.34	40.2065119	-104.9823475
1,253.00	6.42	208.02	1,251.28	-42.01	-28.66	14,601,926.53	1,645,341.11	40.2064897	-104.9823626
1,342.00	7.68	211.74	1,339.61	-51.46	-34.13	14,601,917.07	1,645,335.65	40.2064637	-104.9823822
1,430.00	8.53	213.52	1,426.73	-61.90	-40.82	14,601,906.63	1,645,328.95	40.2064350	-104.9824062
1,519.00	9.67	208.88	1,514.61	-73.95	-48.08	14,601,894.58	1,645,321.70	40.2064020	-104.9824322
1,606.00	10.38	206.80	1,600.28	-87.34	-55.14	14,601,881.19	1,645,314.64	40.2063652	-104.9824575
1,692.00	10.67	209.23	1,684.83	-101.21	-62.52	14,601,867.32	1,645,307.26	40.2063271	-104.9824839
1,780.00	11.05	207.57	1,771.26	-115.79	-70.40	14,601,852.73	1,645,299.38	40.2062871	-104.9825121
Last SDI MWD Surface Survey									
1,839.00	10.58	210.88	1,829.21	-125.45	-75.80	14,601,843.07	1,645,293.99	40.2062605	-104.9825315
First SDI MWD Production Survey									
1,927.00	10.95	217.24	1,915.66	-139.04	-85.01	14,601,829.48	1,645,284.78	40.2062232	-104.9825644
1,987.28	11.68	214.42	1,974.77	-148.63	-91.92	14,601,819.89	1,645,277.87	40.2061969	-104.9825892
Enter Land Box: 1987.28' MD & 1974.77' TVD									
2,016.00	12.04	213.19	2,002.88	-153.54	-95.20	14,601,814.98	1,645,274.59	40.2061834	-104.9826010
2,105.00	11.88	208.63	2,089.95	-169.35	-104.67	14,601,799.17	1,645,265.12	40.2061400	-104.9826349
2,193.00	13.89	208.12	2,175.73	-186.62	-113.99	14,601,781.90	1,645,255.81	40.2060926	-104.9826682
2,282.00	13.04	204.56	2,262.28	-205.17	-123.20	14,601,763.35	1,645,246.60	40.2060416	-104.9827012
2,371.00	14.27	203.08	2,348.77	-224.40	-131.68	14,601,744.12	1,645,238.13	40.2059888	-104.9827316
2,460.00	16.15	206.23	2,434.65	-245.59	-141.45	14,601,722.92	1,645,228.36	40.2059306	-104.9827666
2,549.00	15.39	204.28	2,520.30	-267.46	-151.77	14,601,701.05	1,645,218.04	40.2058706	-104.9828036
2,637.00	16.60	200.12	2,604.89	-289.91	-160.90	14,601,678.60	1,645,208.92	40.2058089	-104.9828362
2,726.00	16.42	192.68	2,690.23	-314.12	-168.04	14,601,654.39	1,645,201.79	40.2057424	-104.9828618
2,815.00	18.13	194.34	2,775.21	-339.81	-174.23	14,601,628.69	1,645,195.60	40.2056719	-104.9828840
2,904.00	16.67	193.42	2,860.14	-365.65	-180.62	14,601,602.86	1,645,189.22	40.2056009	-104.9829069
2,993.00	15.18	194.15	2,945.72	-389.36	-186.43	14,601,579.14	1,645,183.41	40.2055358	-104.9829277
3,082.00	12.05	199.47	3,032.21	-409.43	-192.38	14,601,559.08	1,645,177.47	40.2054807	-104.9829490
3,171.00	10.77	198.47	3,119.45	-426.07	-198.11	14,601,542.43	1,645,171.74	40.2054350	-104.9829695
3,260.00	9.70	196.88	3,207.03	-441.14	-202.92	14,601,527.37	1,645,166.93	40.2053936	-104.9829867
3,349.00	7.31	201.44	3,295.05	-453.58	-207.17	14,601,514.92	1,645,162.68	40.2053594	-104.9830020
3,437.00	5.92	203.43	3,382.46	-462.96	-211.02	14,601,505.54	1,645,158.83	40.2053337	-104.9830157
3,526.00	3.34	202.78	3,471.16	-469.56	-213.85	14,601,498.94	1,645,156.01	40.2053156	-104.9830259
3,615.00	2.49	206.69	3,560.05	-473.68	-215.72	14,601,494.82	1,645,154.14	40.2053043	-104.9830326
3,704.00	1.58	212.97	3,648.99	-476.44	-217.26	14,601,492.06	1,645,152.60	40.2052967	-104.9830381
3,792.00	0.55	337.06	3,736.98	-477.06	-218.08	14,601,491.43	1,645,151.78	40.2052950	-104.9830410
3,881.00	0.56	301.52	3,825.98	-476.44	-218.62	14,601,492.05	1,645,151.24	40.2052967	-104.9830430
4,000.00	0.98	272.13	3,944.97	-476.10	-220.13	14,601,492.40	1,645,149.72	40.2052976	-104.9830484
4,088.00	0.77	296.30	4,032.96	-475.81	-221.41	14,601,492.69	1,645,148.44	40.2052984	-104.9830530
4,177.00	2.29	7.86	4,121.93	-473.79	-221.71	14,601,494.71	1,645,148.15	40.2053040	-104.9830540
4,265.00	2.13	355.87	4,209.86	-470.41	-221.58	14,601,498.09	1,645,148.27	40.2053132	-104.9830536
4,354.00	2.22	344.19	4,298.80	-467.10	-222.17	14,601,501.39	1,645,147.68	40.2053223	-104.9830557
4,443.00	1.98	339.35	4,387.74	-464.01	-223.19	14,601,504.49	1,645,146.67	40.2053308	-104.9830593
4,532.00	1.52	323.85	4,476.70	-461.62	-224.42	14,601,506.88	1,645,145.43	40.2053374	-104.9830638
4,620.00	1.29	296.89	4,564.67	-460.22	-226.00	14,601,508.27	1,645,143.86	40.2053412	-104.9830694
4,709.00	0.44	345.67	4,653.66	-459.44	-226.97	14,601,509.06	1,645,142.88	40.2053434	-104.9830729
4,798.00	1.08	79.70	4,742.66	-458.96	-226.23	14,601,509.54	1,645,143.62	40.2053447	-104.9830702
4,886.00	0.96	83.46	4,830.64	-458.73	-224.69	14,601,509.77	1,645,145.17	40.2053453	-104.9830647
4,975.00	0.78	77.30	4,919.63	-458.51	-223.35	14,601,509.99	1,645,146.50	40.2053459	-104.9830599
5,063.00	0.51	73.56	5,007.63	-458.27	-222.39	14,601,510.23	1,645,147.46	40.2053466	-104.9830565
5,152.00	0.35	69.29	5,096.62	-458.06	-221.76	14,601,510.44	1,645,148.09	40.2053472	-104.9830542
5,241.00	0.05	51.67	5,185.62	-457.94	-221.47	14,601,510.56	1,645,148.38	40.2053475	-104.9830532
5,330.00	0.11	225.39	5,274.62	-457.97	-221.51	14,601,510.52	1,645,148.35	40.2053474	-104.9830533

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,419.00	0.20	210.54	5,363.62	-458.17	-221.64	14,601,510.33	1,645,148.21	40.2053469	-104.9830538
5,507.00	0.24	224.76	5,451.62	-458.43	-221.85	14,601,510.07	1,645,148.00	40.2053461	-104.9830545
5,596.00	0.50	171.01	5,540.62	-458.95	-221.92	14,601,509.55	1,645,147.93	40.2053447	-104.9830548
5,685.00	0.29	40.77	5,629.62	-459.16	-221.72	14,601,509.34	1,645,148.14	40.2053441	-104.9830541
5,774.00	0.35	15.39	5,718.62	-458.73	-221.50	14,601,509.77	1,645,148.36	40.2053453	-104.9830533
5,863.00	0.38	340.29	5,807.62	-458.19	-221.52	14,601,510.31	1,645,148.33	40.2053468	-104.9830534
5,952.00	0.49	340.05	5,896.61	-457.55	-221.75	14,601,510.95	1,645,148.10	40.2053485	-104.9830542
6,040.00	0.69	316.26	5,984.61	-456.82	-222.25	14,601,511.68	1,645,147.61	40.2053506	-104.9830560
6,129.00	0.57	300.08	6,073.60	-456.21	-223.00	14,601,512.29	1,645,146.85	40.2053522	-104.9830587
6,218.00	0.75	283.43	6,162.60	-455.85	-223.95	14,601,512.65	1,645,145.90	40.2053532	-104.9830621
6,307.00	0.67	288.63	6,251.59	-455.55	-225.01	14,601,512.95	1,645,144.84	40.2053541	-104.9830659
6,396.00	0.87	278.90	6,340.58	-455.28	-226.17	14,601,513.22	1,645,143.68	40.2053548	-104.9830700
6,484.00	0.93	283.70	6,428.57	-455.00	-227.53	14,601,513.49	1,645,142.33	40.2053555	-104.9830749
6,573.00	0.70	233.15	6,517.56	-455.16	-228.66	14,601,513.34	1,645,141.19	40.2053551	-104.9830789
First SDI MWD Curve Survey									
6,581.00	1.40	201.56	6,525.56	-455.28	-228.74	14,601,513.22	1,645,141.12	40.2053548	-104.9830792
Curve KOP									
6,662.00	10.26	180.31	6,606.07	-463.43	-229.14	14,601,505.06	1,645,140.71	40.2053324	-104.9830806
6,750.00	14.50	174.69	6,692.00	-482.25	-228.16	14,601,486.25	1,645,141.70	40.2052807	-104.9830771
6,839.00	19.22	170.22	6,777.16	-507.79	-224.64	14,601,460.70	1,645,145.22	40.2052106	-104.9830645
6,928.00	29.24	172.23	6,858.22	-543.86	-219.20	14,601,424.64	1,645,150.67	40.2051115	-104.9830450
7,016.00	38.75	175.82	6,931.10	-592.74	-214.28	14,601,375.76	1,645,155.61	40.2049773	-104.9830274
7,106.00	45.48	176.35	6,997.82	-652.92	-210.18	14,601,315.58	1,645,159.72	40.2048120	-104.9830127
7,198.00	56.14	178.25	7,055.88	-724.04	-206.91	14,601,244.46	1,645,163.00	40.2046167	-104.9830010
7,291.00	62.54	177.96	7,103.28	-803.96	-204.26	14,601,164.55	1,645,165.66	40.2043973	-104.9829915
7,383.00	67.38	177.99	7,142.20	-887.23	-201.32	14,601,081.27	1,645,168.62	40.2041686	-104.9829810
7,476.00	74.82	180.13	7,172.31	-975.14	-199.91	14,600,993.36	1,645,170.05	40.2039272	-104.9829759
7,568.00	78.42	179.99	7,193.60	-1,064.63	-200.00	14,600,903.88	1,645,169.97	40.2036815	-104.9829763
7,657.00	89.63	179.93	7,202.85	-1,153.00	-199.94	14,600,815.50	1,645,170.05	40.2034388	-104.9829760
Landing Point: 292' FNL 962' FEL Sec 27 - Last SDI MWD Curve Survey									
7,673.80	90.42	179.69	7,202.84	-1,169.80	-199.89	14,600,798.70	1,645,170.11	40.2033926	-104.9829758
Exit 460' Circle: 7673.8' MD & 7202.84' TVD 309' FNL 962' FEL									
7,746.00	93.82	178.66	7,200.17	-1,241.93	-198.85	14,600,726.57	1,645,171.16	40.2031946	-104.9829721
First SDI MWD Lateral Survey									
7,835.00	92.58	177.41	7,195.20	-1,330.74	-195.80	14,600,637.77	1,645,174.23	40.2029507	-104.9829612
7,924.00	90.67	177.55	7,192.68	-1,419.61	-191.89	14,600,548.89	1,645,178.16	40.2027066	-104.9829472
8,013.00	89.90	179.24	7,192.23	-1,508.57	-189.40	14,600,459.93	1,645,180.67	40.2024623	-104.9829383
8,101.00	89.23	179.53	7,192.90	-1,596.57	-188.45	14,600,371.94	1,645,181.63	40.2022207	-104.9829349
8,190.00	90.34	179.87	7,193.24	-1,685.56	-187.99	14,600,282.95	1,645,182.11	40.2019763	-104.9829332
8,279.00	89.93	180.83	7,193.03	-1,774.56	-188.53	14,600,193.95	1,645,181.59	40.2017319	-104.9829352
8,368.00	89.46	179.63	7,193.50	-1,863.55	-188.89	14,600,104.95	1,645,181.25	40.2014875	-104.9829364
8,457.00	88.93	178.75	7,194.75	-1,952.54	-187.63	14,600,015.97	1,645,182.52	40.2012432	-104.9829319
8,546.00	92.11	179.89	7,193.94	-2,041.51	-186.57	14,599,926.99	1,645,183.60	40.2009988	-104.9829281
8,634.00	93.15	180.53	7,189.90	-2,129.42	-186.89	14,599,839.09	1,645,183.29	40.2007575	-104.9829293
8,723.00	91.91	181.01	7,185.98	-2,218.32	-188.09	14,599,750.19	1,645,182.12	40.2005133	-104.9829336
8,812.00	91.04	181.30	7,183.68	-2,307.27	-189.88	14,599,661.24	1,645,180.34	40.2002690	-104.9829400
8,901.00	89.33	182.36	7,183.40	-2,396.22	-192.73	14,599,572.29	1,645,177.52	40.2000248	-104.9829502
8,990.00	89.46	181.68	7,184.34	-2,485.16	-195.86	14,599,483.35	1,645,174.40	40.1997805	-104.9829614
9,079.00	88.99	181.39	7,185.54	-2,574.12	-198.25	14,599,394.39	1,645,172.03	40.1995363	-104.9829699
9,168.00	89.26	181.67	7,186.90	-2,663.08	-200.62	14,599,305.43	1,645,169.67	40.1992920	-104.9829784
9,257.00	88.22	181.88	7,188.86	-2,752.01	-203.38	14,599,216.49	1,645,166.93	40.1990477	-104.9829883
9,346.00	89.80	182.22	7,190.39	-2,840.94	-206.56	14,599,127.57	1,645,163.77	40.1988035	-104.9829997
9,434.00	90.77	182.40	7,189.96	-2,928.87	-210.11	14,599,039.64	1,645,160.24	40.1985621	-104.9830124
9,523.00	90.50	181.14	7,188.97	-3,017.82	-212.86	14,598,950.69	1,645,157.51	40.1983178	-104.9830222

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,612.00	90.60	180.67	7,188.12	-3,106.80	-214.26	14,598,861.70	1,645,156.12	40.1980735	-104.9830273
9,701.00	91.14	180.80	7,186.77	-3,195.78	-215.40	14,598,772.72	1,645,155.00	40.1978291	-104.9830314
9,790.00	91.17	180.45	7,184.97	-3,284.76	-216.37	14,598,683.74	1,645,154.04	40.1975848	-104.9830348
9,878.00	90.90	180.26	7,183.38	-3,372.74	-216.92	14,598,595.76	1,645,153.52	40.1973432	-104.9830368
9,967.00	90.47	179.95	7,182.32	-3,461.74	-217.08	14,598,506.77	1,645,153.37	40.1970988	-104.9830374
10,056.00	91.41	178.94	7,180.86	-3,550.72	-216.22	14,598,417.79	1,645,154.25	40.1968544	-104.9830343
10,145.00	91.44	178.31	7,178.64	-3,639.66	-214.09	14,598,328.84	1,645,156.40	40.1966102	-104.9830266
10,234.00	91.78	177.94	7,176.14	-3,728.58	-211.18	14,598,239.92	1,645,159.33	40.1963660	-104.9830162
10,323.00	92.01	177.59	7,173.20	-3,817.47	-207.71	14,598,151.04	1,645,162.82	40.1961219	-104.9830038
10,412.00	90.80	179.07	7,171.02	-3,906.40	-205.11	14,598,062.11	1,645,165.43	40.1958777	-104.9829945
10,502.00	90.84	178.86	7,169.73	-3,996.37	-203.49	14,597,972.14	1,645,167.07	40.1956306	-104.9829887
10,591.00	90.30	178.15	7,168.84	-4,085.34	-201.17	14,597,883.17	1,645,169.41	40.1953863	-104.9829803
10,679.00	90.57	177.87	7,168.18	-4,173.28	-198.11	14,597,795.23	1,645,172.49	40.1951448	-104.9829694
10,768.00	91.48	179.45	7,166.58	-4,262.24	-196.03	14,597,706.27	1,645,174.58	40.1949005	-104.9829619
10,857.00	91.44	179.36	7,164.32	-4,351.21	-195.11	14,597,617.31	1,645,175.53	40.1946562	-104.9829586
10,946.00	91.37	178.85	7,162.13	-4,440.17	-193.72	14,597,528.34	1,645,176.93	40.1944119	-104.9829537
11,035.00	90.67	178.16	7,160.55	-4,529.12	-191.39	14,597,439.39	1,645,179.27	40.1941676	-104.9829453
11,124.00	90.47	177.71	7,159.66	-4,618.06	-188.19	14,597,350.45	1,645,182.50	40.1939234	-104.9829339
11,213.00	92.18	179.12	7,157.61	-4,707.00	-185.73	14,597,261.52	1,645,184.98	40.1936792	-104.9829250
11,302.00	91.95	178.51	7,154.40	-4,795.92	-183.89	14,597,172.60	1,645,186.83	40.1934350	-104.9829185
11,391.00	92.25	177.79	7,151.14	-4,884.81	-181.02	14,597,083.70	1,645,189.72	40.1931909	-104.9829082
11,480.00	91.01	179.04	7,148.61	-4,973.74	-178.56	14,596,994.78	1,645,192.20	40.1929467	-104.9828994
11,569.00	91.24	179.69	7,146.86	-5,062.72	-177.57	14,596,905.80	1,645,193.21	40.1927023	-104.9828958
11,658.00	91.71	179.59	7,144.57	-5,151.68	-177.01	14,596,816.83	1,645,193.78	40.1924580	-104.9828938
11,747.00	89.43	181.18	7,143.68	-5,240.67	-177.61	14,596,727.85	1,645,193.20	40.1922137	-104.9828960
11,836.00	89.66	181.57	7,144.39	-5,329.64	-179.74	14,596,638.88	1,645,191.08	40.1919693	-104.9829036
11,925.00	89.87	181.28	7,144.75	-5,418.61	-181.96	14,596,549.90	1,645,188.89	40.1917250	-104.9829115
12,014.00	89.50	180.97	7,145.24	-5,507.59	-183.70	14,596,460.92	1,645,187.16	40.1914807	-104.9829178
12,102.00	89.16	181.04	7,146.27	-5,595.57	-185.25	14,596,372.94	1,645,185.63	40.1912391	-104.9829233
12,191.00	90.77	181.11	7,146.33	-5,684.55	-186.92	14,596,283.96	1,645,183.98	40.1909947	-104.9829293
12,280.00	91.01	180.85	7,144.95	-5,773.53	-188.44	14,596,194.98	1,645,182.48	40.1907504	-104.9829347
12,369.00	91.14	180.89	7,143.28	-5,862.50	-189.79	14,596,106.01	1,645,181.14	40.1905060	-104.9829396
12,458.00	91.31	180.23	7,141.37	-5,951.48	-190.66	14,596,017.04	1,645,180.29	40.1902617	-104.9829427
12,547.00	90.60	179.73	7,139.89	-6,040.47	-190.63	14,595,928.05	1,645,180.34	40.1900173	-104.9829426
12,636.00	90.67	179.24	7,138.90	-6,129.46	-189.83	14,595,839.06	1,645,181.16	40.1897730	-104.9829397
12,725.00	91.01	179.36	7,137.60	-6,218.44	-188.74	14,595,750.08	1,645,182.26	40.1895286	-104.9829358
12,813.00	91.34	178.92	7,135.79	-6,306.41	-187.42	14,595,662.10	1,645,183.60	40.1892870	-104.9829311
12,902.00	91.71	178.63	7,133.43	-6,395.36	-185.52	14,595,573.16	1,645,185.52	40.1890428	-104.9829243
12,991.00	91.98	178.28	7,130.56	-6,484.28	-183.12	14,595,484.24	1,645,187.94	40.1887986	-104.9829157
13,080.00	91.31	179.68	7,128.00	-6,573.23	-181.54	14,595,395.29	1,645,189.54	40.1885543	-104.9829100
13,169.00	91.88	179.58	7,125.53	-6,662.19	-180.96	14,595,306.33	1,645,190.13	40.1883100	-104.9829079
13,258.00	90.67	180.28	7,123.55	-6,751.17	-180.85	14,595,217.35	1,645,190.26	40.1880657	-104.9829075
13,346.00	91.27	180.33	7,122.06	-6,839.15	-181.32	14,595,129.37	1,645,189.81	40.1878241	-104.9829092
13,435.00	91.21	180.27	7,120.13	-6,928.13	-181.79	14,595,040.39	1,645,189.36	40.1875797	-104.9829109
13,523.00	91.84	180.21	7,115.93	-7,017.07	-182.45	14,594,951.41	1,645,188.73	40.1873353	-104.9829132
Last SDI MWD Survey									
13,657.00	91.84	180.21	7,113.87	-7,106.01	-182.69	14,594,862.43	1,645,188.51	40.1869703	-104.9829141
Projection to TD: 1088' FNL 924' FEL Sec 34									

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 8N2-34HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 8N2-34HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
138.00	138.00	0.17	-0.67	First SDI MWD Survey
1,780.00	1,771.26	-115.79	-70.40	Last SDI MWD Surface Survey
1,839.00	1,829.21	-125.45	-75.80	First SDI MWD Production Survey
1,987.28	1,974.77	-148.63	-91.92	Enter Land Box: 1987.28' MD & 1974.77' TVD
6,573.00	6,517.56	-455.16	-228.66	First SDI MWD Curve Survey
6,581.00	6,525.56	-455.28	-228.74	Curve KOP
7,657.00	7,202.85	-1,153.00	-199.94	Landing Point: 292' FNL 962' FEL Sec 27
7,657.00	7,202.85	-1,153.00	-199.94	Last SDI MWD Curve Survey
7,673.80	7,202.84	-1,169.80	-199.89	Exit 460' Circle: 7673.8' MD & 7202.84' TVD 309' FNL 962' FEL
7,746.00	7,200.17	-1,241.93	-198.85	First SDI MWD Lateral Survey
13,593.00	7,115.93	-7,086.07	-182.45	Last SDI MWD Survey
13,657.00	7,113.87	-7,150.04	-182.69	Projection to TD: 1088' FNL 924' FEL Sec 34

Checked By: _____	Approved By: _____	Date: _____
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Scientific Drilling

JOB NO.: OP.001368
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22HZ Pad
RIG NAME: White Mountain 252
STATE: Colorado
COUNTY: Weld
WELL NAME: Hilgers 8N2-34HZ
Lead Directional : Stewart Paul 10985

Report Time: 2400 **1 of 1**
API JOB # 05-123-43306
WORK ORDER#
FIELD: Wattenberg
Township: 3N
Range/Section 68W 22
Company Man Matt / Bryan
2nd Dir Hand : Trevor Roten 3750

From Monday, May 15, 2017 at 0000 to Monday, May 15, 2017 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	N/A	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	N/A	1	8185	201.00	1.45	1,540.00	4.05	.87	6.37	1,741.00	274.89
Below Rot Hrs.	0.00										
Total Drilled:	0.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 1			
Avg. Total ROP:	NA										
Slide Footage:	0.00			Freshwater		Bit No: 1		13.5" Varel RS619DX 8" SDI Titan 7/8 4.0 1.5deg 8" NMPC 8" NMDC 8" HOS 8" Gap Sub 8" NMDC 8" 4 1/2XH to 6 5/8REG 6" Drill Collars			
Slide Hours	0.00	WOB: 18		Weight: 8.8		Model 13.5" Varel					
Avg. Slide ROP:	NA	Rot Wt: 0		Visc: 28		SN.: 4009524					
Rotate Footage:	0.00	Pick UP: 0		Chlorides: 300		MFG. Varel					
Rotary Hours	0.00	Slack Off: 0		YP: 0		Type PDC					
Avg. Rot ROP:	NA	SPP: 1500		PV: 0		IADC					
Circ Hours	0.00	Flow: 0 - 805		PH: 8		JETS 6-14					
Ream Hours	0.00	SPM: 260		GAS: 0		TFA: 0.902					
Rotary Hrs%:	NA	Rot. RPM 0 - 75		SAND: 0		Hole ID: 13.5					
Slide Hrs%:	NA	Mot RPM: 75 - 75		WL: 0		Bit Hrs: 5.50					
Rotary Ftg%:	NA	Incl. In: 0		SOLID: 1		Bit Ftg: 1741.00					
Slide Ftg%:	NA	Azm. In: 0		BHT°: 83		PUMPS					
CASING		Incl. Out: 0		Flow T°: 0		Liner 0 0					
Size	Lb/Ft	MD	Azm. Out: 0		Oil %: 0		Stroke 0 0				

GENERAL COMMENT

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	02:20	2.33	0	0	0	.00	Standby	Rig Skid
02:20	02:30	0.17	0	0	0	.00	Other	JSA/Safety Meeting
02:30	02:55	0.42	0	0	0	.00	Change BHA	PU BHA #1
02:55	03:02	0.12	92	110	18	154.29	Drilling	Rotate
03:02	03:05	0.05	110	110	0	.00	Survey & Conn.	Survey & Conn.@0' Inc 0° Azm 0°
03:05	03:11	0.10	110	138	28	280.00	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)
03:11	03:14	0.05	138	138	0	.00	Survey & Conn.	Survey & Conn.@133' Inc 0.57° Azm 284.2°
03:14	03:22	0.13	138	164	26	195.00	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)
03:22	03:24	0.03	164	164	0	.00	Survey & Conn.	Survey & Conn.@133' Inc 0.57° Azm 284.2°
03:24	03:30	0.10	164	191	27	270.00	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)
03:30	03:33	0.05	191	191	0	.00	Survey & Conn.	Survey & Conn.@133' Inc 0.57° Azm 284.2°
03:33	03:38	0.08	191	220	29	348.00	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)
03:38	03:41	0.05	220	220	0	.00	Survey & Conn.	Survey & Conn.@194' Inc 0.84° Azm 275.52°
03:41	03:50	0.15	220	252	32	213.33	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
03:50	03:54	0.07	252	252	0	.00	Survey & Conn.	Survey & Conn.@194' Inc 0.84° Azm 275.52°
03:54	03:58	0.07	252	296	44	660.00	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)
03:58	04:00	0.03	296	296	0	.00	Survey & Conn.	Survey & Conn.@280' Inc 0.59° Azm 261.35°
04:00	04:05	0.08	296	338	42	504.00	Drilling	Drilling - (WOB:0;GPM :0;RPM:0)
04:05	04:07	0.03	338	338	0	.00	Survey & Conn.	Survey & Conn.@280' Inc 0.59° Azm 261.35°
04:07	04:11	0.07	338	383	45	675.00	Drilling	Drilling - (WOB:0; :0;RPM:0)
04:11	04:14	0.05	383	383	0	.00	Survey & Conn.	Survey & Conn.@367' Inc 0.83° Azm 270.68°
04:14	04:19	0.08	383	425	42	504.00	Drilling	Drilling - (WOB:18; :805;RPM:75)
04:19	04:21	0.03	425	425	0	.00	Survey & Conn.	Survey & Conn.@367' Inc 0.83° Azm 270.68°
04:21	04:25	0.07	425	435	10	150.00	Sliding	Drilling - (WOB:7; :805;RPM:)
04:25	04:28	0.05	435	469	34	680.00	Drilling	Drilling - (WOB:18; :805;RPM:75)
04:28	04:31	0.05	469	469	0	.00	Survey & Conn.	Survey & Conn.@456' Inc 1.61° Azm 233.02°
04:31	04:35	0.07	469	514	45	675.00	Drilling	Drilling - (WOB:18; :805;RPM:75)
04:35	04:38	0.05	514	514	0	.00	Survey & Conn.	Survey & Conn.@456' Inc 1.61° Azm 233.02°
04:38	04:43	0.08	514	558	44	528.00	Drilling	Drilling - (WOB:18; :805;RPM:75)
04:43	04:46	0.05	558	558	0	.00	Survey & Conn.	Survey & Conn.@545' Inc 1.84° Azm 234.03°
04:46	04:48	0.03	558	568	10	300.00	Sliding	Sliding - (WOB:7; :805;TFO:165M))
04:48	04:51	0.05	568	603	35	700.00	Drilling	Drilling - (WOB:18; :805;RPM:75)
04:51	04:55	0.07	603	603	0	.00	Survey & Conn.	Survey & Conn.@545' Inc 1.84° Azm 234.03°
04:55	05:01	0.10	603	647	44	440.00	Drilling	Drilling - (WOB:18; :805;RPM:75)
05:01	05:03	0.03	647	647	0	.00	Survey & Conn.	Survey & Conn.@633' Inc 2.58° Azm 217.32°
05:03	05:09	0.10	647	691	44	440.00	Drilling	Drilling - (WOB:18; :805;RPM:75)
05:09	05:12	0.05	691	691	0	.00	Survey & Conn.	Survey & Conn.@633' Inc 2.58° Azm 217.32°
05:12	05:17	0.08	691	736	45	540.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
05:17	05:20	0.05	736	736	0	.00	Survey & Conn.	Survey & Conn.@722' Inc 2.93° Azm 225.04°
05:20	05:26	0.10	736	780	44	440.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
05:26	05:29	0.05	780	780	0	.00	Survey & Conn.	Survey & Conn.@722' Inc 2.93° Azm 225.04°
05:29	05:31	0.03	780	788	8	240.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:130M))
05:31	05:38	0.12	788	824	36	308.57	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
05:38	05:40	0.03	824	824	0	.00	Survey & Conn.	Survey & Conn.@811' Inc 3.06° Azm 210.47°
05:40	05:46	0.10	824	869	45	450.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
05:46	05:49	0.05	869	869	0	.00	Survey & Conn.	Survey & Conn.@811' Inc 3.06° Azm 210.47°
05:49	05:50	0.02	869	874	5	300.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:100M))
05:50	05:56	0.10	874	913	39	390.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
05:56	05:59	0.05	913	913	0	.00	Survey & Conn.	Survey & Conn.@899' Inc 3.39° Azm 199.45°
05:59	06:09	0.17	913	957	44	264.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
06:09	06:15	0.10	957	957	0	.00	Survey & Conn.	Survey & Conn.@899' Inc 3.39° Azm 199.45°
06:15	06:17	0.03	957	964	7	210.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:220M))
06:17	06:22	0.08	964	1002	38	456.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
06:22	07:22	1.00	1002	1002	0	.00	Rig repair	Rig repair
07:22	07:24	0.03	1002	1002	0	.00	Survey & Conn.	Survey & Conn.@986' Inc 3.86° Azm 199.83°
07:24	07:28	0.07	1002	1044	42	630.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
07:28	07:32	0.07	1044	1044	0	.00	Survey & Conn.	Survey & Conn.@986' Inc 3.86° Azm 199.83°
07:32	07:36	0.07	1044	1056	12	180.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:220M)
07:36	07:40	0.07	1056	1088	32	480.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
07:40	07:43	0.05	1088	1088	0	.00	Survey & Conn.	Survey & Conn.@1073' Inc 4.6° Azm 199.96°
07:43	07:48	0.08	1088	1131	43	516.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
07:48	07:53	0.08	1131	1131	0	.00	Survey & Conn.	Survey & Conn.@1073' Inc 4.6° Azm 199.96°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
07:53	07:59	0.10	1131	1146	15	150.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:30))
07:59	08:04	0.08	1146	1173	27	324.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
08:04	08:06	0.03	1173	1173	0	.00	Survey & Conn.	Survey & Conn.@1159' Inc 5.38° Azm 207.04°
08:06	08:12	0.10	1173	1217	44	440.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
08:12	08:15	0.05	1217	1217	0	.00	Survey & Conn.	Survey & Conn.@1159' Inc 5.38° Azm 207.04°
08:15	08:22	0.12	1217	1234	17	145.71	Sliding	Sliding - (WOB:7;GPM :805;TFO:30))
08:22	08:27	0.08	1234	1262	28	336.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
08:27	08:30	0.05	1262	1262	0	.00	Survey & Conn.	Survey & Conn.@1248' Inc 6.42° Azm 208.02°
08:30	08:36	0.10	1262	1306	44	440.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
08:36	08:41	0.08	1306	1306	0	.00	Survey & Conn.	Survey & Conn.@1248' Inc 6.42° Azm 208.02°
08:41	08:48	0.12	1306	1326	20	171.43	Sliding	Sliding - (WOB:7;GPM :805;TFO:20))
08:48	08:52	0.07	1326	1350	24	360.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
08:52	08:59	0.12	1350	1350	0	.00	Survey & Conn.	Survey & Conn.@1337' Inc 7.68° Azm 211.74°
08:59	09:06	0.12	1350	1395	45	385.71	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
09:06	09:09	0.05	1395	1395	0	.00	Survey & Conn.	Survey & Conn.@1337' Inc 7.68° Azm 211.74°
09:09	09:17	0.13	1395	1415	20	150.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:-30))
09:17	09:23	0.10	1415	1439	24	240.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
09:23	09:25	0.03	1439	1439	0	.00	Survey & Conn.	Survey & Conn.@1425' Inc 8.53° Azm 213.52°
09:25	09:34	0.15	1439	1483	44	293.33	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
09:34	09:37	0.05	1483	1483	0	.00	Survey & Conn.	Survey & Conn.@1425' Inc 8.53° Azm 213.52°
09:37	09:45	0.13	1483	1503	20	150.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:-30))
09:45	09:51	0.10	1503	1528	25	250.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
09:51	09:54	0.05	1528	1528	0	.00	Survey & Conn.	Survey & Conn.@1514' Inc 9.67° Azm 208.88°
09:54	10:01	0.12	1528	1572	44	377.14	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
10:01	10:05	0.07	1572	1572	0	.00	Survey & Conn.	Survey & Conn.@1514' Inc 9.67° Azm 208.88°
10:05	10:17	0.20	1572	1592	20	100.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:-40))
10:17	10:21	0.07	1592	1617	25	375.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
10:21	10:24	0.05	1617	1617	0	.00	Survey & Conn.	Survey & Conn.@1601' Inc 10.38° Azm 206.8°
10:24	10:33	0.15	1617	1659	42	280.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
10:33	10:38	0.08	1659	1659	0	.00	Survey & Conn.	Survey & Conn.@1601' Inc 10.38° Azm 206.8°
10:38	10:50	0.20	1659	1679	20	100.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:-20))
10:50	10:55	0.08	1679	1701	22	264.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
10:55	10:59	0.07	1701	1701	0	.00	Survey & Conn.	Survey & Conn.@1687' Inc 10.67° Azm 209.23°
10:59	11:07	0.13	1701	1745	44	330.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
11:07	11:11	0.07	1745	1745	0	.00	Survey & Conn.	Survey & Conn.@1687' Inc 10.67° Azm 209.23°
11:11	11:23	0.20	1745	1762	17	85.00	Sliding	Sliding - (WOB:7;GPM :805;TFO:-30))
11:23	11:30	0.12	1762	1788	26	222.86	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
11:30	11:33	0.05	1788	1788	0	.00	Survey & Conn.	Survey & Conn.@1775' Inc 11.05° Azm 207.57°
11:33	11:38	0.08	1788	1833	45	540.00	Drilling	Drilling - (WOB:18;GPM :805;RPM:75)
11:38	11:40	0.03	1833	1833	0	.00	MWD Survey	MWD Survey@1775' Inc 11.05° Azm 207.57°
11:40	12:30	0.83	1833	1833	0	.00	Circulating	Circulating
12:30	14:00	1.50	1833	1833	0	.00	POOH	POOH
14:00	14:30	0.50	1833	1833	0	.00	Change BHA	Change BHA
14:30	21:00	6.50	1833	1833	0	.00	Standby	Standby



Scientific Drilling

JOB NO.: OP.002261
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22 Pad
RIG NAME: Xtreme 24
STATE: Colorado
COUNTY: Weld
WELL NAME: Hilgers 8N2-34HZ
Lead Directional : Thomas Thompson

Report Time: 2400 **1 of 5**
API JOB # 05-123-43306
WORK ORDER# OP.002261
FIELD: Wattenberg
Township: 3N
Range/Section 68W 22
Company Man Travis Kruckenberg/John Truett
2nd Dir Hand : Scott Ingram

From Thursday, June 22, 2017 at 0000 to Thursday, June 22, 2017 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	1838.00	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	3413.00	1	65398	179.00	1.90	1,928.00	3.75	.05	5.70	2,107.00	372.92
Below Rot Hrs.	11.00										
Total Drilled:	1575.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 1			
Avg. Total ROP:	392.12	WOB:	36	Weight:	0	Bit No:	1	TK56 7/8 6.4stage Fixed 2.0 Pony NMDC NMDC UBHO FLEX NMDC Pony NMDC Filter Sub			
Slide Footage:	134.00	Rot Wt:	0	Visc:	0	Model	TK56				
Slide Hours	1.28	Pick UP:	0	Chlorides:	0	SN.:	A236460				
Avg. Slide ROP:	104.42	Slack Off:	0	YP:	0	MFG.	REED				
Rotate Footage:	1441.00	SPP:	1975	PV:	0	Type	PDC				
Rotary Hours	2.73	Flow:	0 - 600	PH:	0	IADC					
Avg. Rot ROP:	527.20	SPM:	208	GAS:	0	JETS	7-14				
Circ Hours	0.00	Rot. RPM	0 - 60	SAND:	0	TFA:	1.052				
Ream Hours	0.00	Mot RPM:	0 - 60	WL:	0	Hole ID:	7 7/8				
Rotary Hrs%:	68.05	Incl. In:	11.05	SOLID:	0	Bit Hrs:	5.65				
Slide Hrs%:	31.95	Azm. In:	207.57	BHT°:	0	Bit Ftg:	2107.00				
Rotary Ftg%:	91.49	Incl. Out:	10.27	Flow T°:	0	PUMPS					
Slide Ftg%:	8.51	Azm. Out:	196.88	Oil %:	0	Liner	0	0			
COST BREAKDOWN											
Size Lb/Ft MD											

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
19:41	19:51	0.17	2023	2080	57	342.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
19:51	19:56	0.08	2080	2080	0	.00	Survey & Conn.	Survey & Conn.@2016' Inc 12.04° Azm 213.19°
19:56	20:04	0.13	2080	2169	89	667.50	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
20:04	20:09	0.08	2169	2169	0	.00	Survey & Conn.	Survey & Conn.@2105' Inc 11.88° Azm 208.63°
20:09	20:17	0.13	2169	2189	20	150.00	Sliding	Sliding - (WOB:15;GPM :0;TFO:360))
20:17	20:27	0.17	2189	2257	68	408.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
20:27	20:32	0.08	2257	2257	0	.00	Survey & Conn.	Survey & Conn.@2193' Inc 13.89° Azm 208.12°
20:32	20:37	0.08	2257	2331	74	888.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
20:37	20:43	0.10	2331	2346	15	150.00	Sliding	Sliding - (WOB:15;GPM :600;TFO:360)
20:43	20:48	0.08	2346	2346	0	.00	Survey & Conn.	Survey & Conn.@2282' Inc 13.04° Azm 204.56°
20:48	20:56	0.13	2346	2420	74	555.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
20:56	21:02	0.10	2420	2435	15	150.00	Sliding	Sliding - (WOB:15;GPM :600;TFO:360))
21:02	21:07	0.08	2435	2435	0	.00	Survey & Conn.	Survey & Conn.@2371' Inc 14.27° Azm 203.08°
21:07	21:14	0.12	2435	2524	89	762.86	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
21:14	21:19	0.08	2524	2524	0	.00	Survey & Conn.	Survey & Conn.@2460' Inc 16.15° Azm 206.23°
21:19	21:28	0.15	2524	2596	72	480.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
21:28	21:41	0.22	2596	2613	17	78.46	Sliding	Sliding - (WOB:15;GPM :600;TFO:360))
21:41	21:46	0.08	2613	2613	0	.00	Survey & Conn.	Survey & Conn.@2549' Inc 15.39° Azm 204.28°
21:46	21:54	0.13	2613	2689	76	570.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
21:54	22:00	0.10	2689	2701	12	120.00	Sliding	Sliding - (WOB:15;GPM :600;TFO:20L)
22:00	22:05	0.08	2701	2701	0	.00	Survey & Conn.	Survey & Conn.@2637' Inc 16.6° Azm 200.12°
22:05	22:16	0.18	2701	2770	69	376.36	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
22:16	22:26	0.17	2770	2790	20	120.00	Sliding	Sliding - (WOB:15;GPM :600;TFO:360))
22:26	22:31	0.08	2790	2790	0	.00	Survey & Conn.	Survey & Conn.@2726' Inc 16.42° Azm 192.68°
22:31	22:42	0.18	2790	2879	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
22:42	22:47	0.08	2879	2879	0	.00	Survey & Conn.	Survey & Conn.@2815' Inc 18.13° Azm 194.34°
22:47	22:53	0.10	2879	2968	89	890.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
22:53	22:58	0.08	2968	2968	0	.00	Survey & Conn.	Survey & Conn.@2904' Inc 16.67° Azm 193.42°
22:58	23:06	0.13	2968	3057	89	667.50	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
23:06	23:11	0.08	3057	3057	0	.00	Survey & Conn.	Survey & Conn.@2993' Inc 15.18° Azm 194.15°
23:11	23:23	0.20	3057	3067	10	50.00	Sliding	Sliding - (WOB:15;GPM :600;TFO:360))
23:23	23:33	0.17	3067	3146	79	474.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
23:33	23:38	0.08	3146	3146	0	.00	Survey & Conn.	Survey & Conn.@3082' Inc 12.05° Azm 199.47°
23:38	23:46	0.13	3146	3235	89	667.50	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
23:46	23:51	0.08	3235	3235	0	.00	Survey & Conn.	Survey & Conn.@3171' Inc 10.77° Azm 198.47°
23:51	23:55	0.07	3235	3413	178	2670.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
23:55	24:00	0.08	3413	3413	0	.00	Survey & Conn.	Survey & Conn.@3349' Inc 7.31° Azm 201.44°



Scientific Drilling

JOB NO.: OP.002261

Company: Anadarko E&P Onshore LLC

LOCATION: Hilgers 16-22 Pad

RIG NAME: Xtreme 24

STATE: Colorado

COUNTY: Weld

WELL NAME: Hilgers 8N2-34HZ

Lead Directional : Marco Rolong

Report Time: 2400

2 of 5

API JOB # 05-123-43306

WORK ORDER# OP.002261

FIELD: Wattenberg

Township: 3N

Range/Section 68W 22

Company Man Travis Kruckenberg/John Truett

2nd Dir Hand : Scott Ingram

From Friday, June 23, 2017 at 0000 to Friday, June 23, 2017 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	3413.00	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	7930.00	1	65398	179.00	1.90	1,928.00	3.75	.05	5.70	2,107.00	372.92
Below Rot Hrs.	24.00	2	65398	44.00	0.47	2,593.00	5.97	.27	6.70	2,637.00	393.58
Total Drilled:	4517.00	2	65398	793.00	5.30	2,460.00	2.10	.00	7.40	1,129.00	152.92
Avg. Total ROP:	266.75	Drilling Parameters WOB: 18 Rot Wt: 0 Pick UP: 0 Slack Off: 0 SPP: 3100 Flow: 600 - 600 SPM: 208 Rot. RPM 20 - 60 Mot RPM: 0 - 60 Incl. In: 10.27 Azm. In: 196.88 Incl. Out: 92.58 Azm. Out: 177.41		Mud Record OBM Weight: 9 Visc: 69 Chlorides: 25000 YP: 10 PV: 14 PH: 0 GAS: 0 SAND: 0 WL: 0 SOLID: 7.4 BHT°: 126 Flow T°: 100 Oil %: 0		Bit Record Bit No: 1 Model TK56 SN.: A236460 MFG. REED Type PDC IADC JETS 7-14 TFA: 1.052 Hole ID: 7 7/8 Bit Hrs: 5.65 Bit Ftg: 2107.00		Current BHA # 4 TK56 7/8 6.4stage Fixed 2.0 Pony NMDC NMDC UBHO FLEX NMDC Pony NMDC Filter Sub 22 Stands Drill Pipe Agitator 57 Stands of 5 Drill Pipe 5 Drill Pipe			
Slide Footage:	919.00										
Slide Hours	6.87										
Avg. Slide ROP:	133.83										
Rotate Footage:	3598.00										
Rotary Hours	10.07										
Avg. Rot ROP:	357.42										
Circ Hours	0.70										
Ream Hours	0.00										
Rotary Hrs%:	59.45										
Slide Hrs%:	40.55										
Rotary Ftg%:	79.65										
Slide Ftg%:	20.35										
Casing											
Size	Lb/Ft	MD									
COST BREAKDOWN						PUMPS					
						Liner		0	0		
						Stroke		0	0		
						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
01:29	01:32	0.05	3679	3705	26	520.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
01:32	01:41	0.15	3705	3725	20	133.33	Sliding	Sliding - (WOB:15;GPM :600;TFO:180)
01:41	01:46	0.08	3725	3768	43	516.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
01:46	01:51	0.08	3768	3768	0	.00	Survey & Conn.	Survey & Conn.@3704' Inc 1.58° Azm 212.97°
01:51	02:00	0.15	3768	3856	88	586.67	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
02:00	02:05	0.08	3856	3856	0	.00	Survey & Conn.	Survey & Conn.@3792' Inc 0.55° Azm 337.06°
02:05	02:16	0.18	3856	3945	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
02:16	02:19	0.05	3945	3945	0	.00	MWD Survey	MWD Survey@3881' Inc 0.56° Azm 301.52°
02:19	03:18	0.98	3945	3945	0	.00	POOH	POOH
03:18	03:23	0.08	3945	3945	0	.00	Change BHA	Change BHA (Pick up Agitator)
03:23	04:18	0.92	3945	3945	0	.00	TIH	TIH
04:18	04:31	0.22	3945	3975	30	138.46	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
04:31	04:36	0.08	3975	3975	0	.00	Connection	Connection
04:36	04:44	0.13	3975	4064	89	667.50	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
04:44	04:49	0.08	4064	4064	0	.00	Survey & Conn.	Survey & Conn.@4000' Inc 0.98° Azm 272.13°
04:49	04:57	0.13	4064	4104	40	300.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
04:57	05:05	0.13	4104	4119	15	112.50	Sliding	Sliding - (WOB:15;GPM :600;TFO:180)
05:05	05:14	0.15	4119	4152	33	220.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
05:14	05:19	0.08	4152	4152	0	.00	Survey & Conn.	Survey & Conn.@4088' Inc 0.77° Azm 296.3°
05:19	05:27	0.13	4152	4241	89	667.50	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
05:27	05:32	0.08	4241	4241	0	.00	Survey & Conn.	Survey & Conn.@4177' Inc 2.29° Azm 7.86°
05:32	05:40	0.13	4241	4329	88	660.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
05:40	05:45	0.08	4329	4329	0	.00	Survey & Conn.	Survey & Conn.@4265' Inc 2.13° Azm 355.87°
05:45	06:13	0.47	4329	4418	89	190.71	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
06:13	06:18	0.08	4418	4418	0	.00	Survey & Conn.	Survey & Conn.@4354' Inc 2.22° Azm 344.19°
06:18	06:30	0.20	4418	4507	89	445.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
06:30	06:33	0.05	4507	4507	0	.00	Survey & Conn.	Survey & Conn.@4443' Inc 1.98° Azm 339.35°
06:33	06:37	0.07	4507	4531	24	360.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
06:37	06:48	0.18	4531	4545	14	76.36	Sliding	Sliding - (WOB:8;GPM :600;TFO:150M))
06:48	06:56	0.13	4545	4596	51	382.50	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
06:56	07:01	0.08	4596	4596	0	.00	Survey & Conn.	Survey & Conn.@4532' Inc 1.52° Azm 323.85°
07:01	07:11	0.17	4596	4684	88	528.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
07:11	07:15	0.07	4684	4684	0	.00	Survey & Conn.	Survey & Conn.@4620' Inc 1.29° Azm 296.89°
07:15	07:21	0.10	4684	4710	26	260.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
07:21	07:30	0.15	4710	4725	15	100.00	Sliding	Sliding - (WOB:8;GPM :600;TFO:150M))
07:30	07:37	0.12	4725	4773	48	411.43	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
07:37	07:41	0.07	4773	4773	0	.00	Survey & Conn.	Survey & Conn.@4709' Inc 0.44° Azm 345.67°
07:41	07:54	0.22	4773	4862	89	410.77	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
07:54	07:59	0.08	4862	4862	0	.00	Circulating	Circulating; SPR
07:59	08:03	0.07	4862	4862	0	.00	Survey & Conn.	Survey & Conn.@4798' Inc 1.08° Azm 79.7°
08:03	08:15	0.20	4862	4950	88	440.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
08:15	08:23	0.13	4950	4950	0	.00	Survey & Conn.	Survey & Conn.@4886' Inc 0.96° Azm 83.46°
08:23	08:34	0.18	4950	5039	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
08:34	08:37	0.05	5039	5039	0	.00	Survey & Conn.	Survey & Conn.@4975' Inc 0.78° Azm 77.3°
08:37	08:48	0.18	5039	5127	88	480.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
08:48	08:51	0.05	5127	5127	0	.00	Survey & Conn.	Survey & Conn.@5063' Inc 0.51° Azm 73.56°
08:51	09:04	0.22	5127	5216	89	410.77	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
09:04	09:07	0.05	5216	5216	0	.00	Survey & Conn.	Survey & Conn.@5152' Inc 0.35° Azm 69.29°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
09:07	09:20	0.22	5216	5305	89	410.77	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
09:20	09:26	0.10	5305	5305	0	.00	Circulating	Circulating; SPR
09:26	09:29	0.05	5305	5305	0	.00	Survey & Conn.	Survey & Conn.@5241' Inc 0.05° Azm 51.67°
09:29	09:41	0.20	5305	5394	89	445.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
09:41	09:45	0.07	5394	5394	0	.00	Survey & Conn.	Survey & Conn.@5330' Inc 0.11° Azm 225.39°
09:45	09:58	0.22	5394	5483	89	410.77	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
09:58	10:01	0.05	5483	5483	0	.00	Survey & Conn.	Survey & Conn.@5419' Inc 0.2° Azm 210.54°
10:01	10:11	0.17	5483	5571	88	528.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
10:11	10:16	0.08	5571	5571	0	.00	Survey & Conn.	Survey & Conn.@5507' Inc 0.24° Azm 224.76°
10:16	10:25	0.15	5571	5660	89	593.33	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
10:25	10:30	0.08	5660	5660	0	.00	Survey & Conn.	Survey & Conn.@5596' Inc 0.5° Azm 171.01°
10:30	10:41	0.18	5660	5749	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
10:41	10:46	0.08	5749	5749	0	.00	Survey & Conn.	Survey & Conn.@5685' Inc 0.29° Azm 40.77°
10:46	10:56	0.17	5749	5838	89	534.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
10:56	10:59	0.05	5838	5838	0	.00	Survey & Conn.	Survey & Conn.@5774' Inc 0.35° Azm 15.39°
10:59	11:10	0.18	5838	5927	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
11:10	11:14	0.07	5927	5927	0	.00	Survey & Conn.	Survey & Conn.@5863' Inc 0.38° Azm 340.29°
11:14	11:25	0.18	5927	6016	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
11:25	11:32	0.12	6016	6016	0	.00	Survey & Conn.	Survey & Conn.@5952' Inc 0.49° Azm 340.05°
11:32	11:43	0.18	6016	6104	88	480.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
11:43	11:48	0.08	6104	6104	0	.00	Survey & Conn.	Survey & Conn.@6040' Inc 0.69° Azm 316.26°
11:48	11:59	0.18	6104	6193	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
11:59	12:04	0.08	6193	6193	0	.00	Survey & Conn.	Survey & Conn.@6129' Inc 0.57° Azm 300.08°
12:04	12:13	0.15	6193	6282	89	593.33	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
12:13	12:17	0.07	6282	6282	0	.00	Survey & Conn.	Survey & Conn.@6218' Inc 0.75° Azm 283.43°
12:17	12:28	0.18	6282	6371	89	485.45	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
12:28	12:32	0.07	6371	6371	0	.00	Survey & Conn.	Survey & Conn.@6307' Inc 0.67° Azm 288.63°
12:32	12:44	0.20	6371	6460	89	445.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
12:44	13:07	0.38	6460	6460	0	.00	Rig Service-Inhole	Rig Service-Inhole
13:07	13:13	0.10	6460	6460	0	.00	Survey & Conn.	Survey & Conn.@6396' Inc 0.87° Azm 278.9°
13:13	13:24	0.18	6460	6548	88	480.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
13:24	13:29	0.08	6548	6548	0	.00	Circulating	Circulating; SPR
13:29	13:34	0.08	6548	6548	0	.00	Survey & Conn.	Survey & Conn.@6484' Inc 0.93° Azm 283.7°
13:34	13:38	0.07	6548	6582	34	510.00	Drilling	Drilling - (WOB:36;GPM :600;RPM:60)
13:38	13:39	0.02	6582	6582	0	.00	Change BHA	Change BHA
13:39	14:01	0.37	6582	6635	53	144.55	Sliding	Sliding - (WOB:28;GPM :600;TFO:150M))
14:01	14:08	0.12	6635	6635	0	.00	Survey & Conn.	Survey & Conn.@6573' Inc 0.7° Azm 233.15°
14:08	14:12	0.07	6635	6652	17	255.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
14:12	14:35	0.38	6652	6707	55	143.48	Sliding	Sliding - (WOB:28;GPM :600;TFO:150M))
14:35	14:39	0.07	6707	6726	19	285.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
14:39	14:48	0.15	6726	6726	0	.00	Survey & Conn.	Survey & Conn.@6662' Inc 10.26° Azm 180.31°
14:48	14:52	0.07	6726	6752	26	390.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
14:52	15:15	0.38	6752	6806	54	140.87	Sliding	Sliding - (WOB:28;GPM :600;TFO:30L))
15:15	15:18	0.05	6806	6814	8	160.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
15:18	15:22	0.07	6814	6814	0	.00	Survey & Conn.	Survey & Conn.@6750' Inc 14.5° Azm 174.69°
15:22	15:26	0.07	6814	6840	26	390.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
15:26	15:48	0.37	6840	6903	63	171.82	Sliding	Sliding - (WOB:28;GPM :600;TFO:20R))
15:48	15:52	0.07	6903	6903	0	.00	Survey & Conn.	Survey & Conn.@6839' Inc 19.22° Azm 170.22°

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
15:52	16:24	0.53	6903	6992	89	166.88	Sliding	Sliding - (WOB:28;GPM :600;TFO:20R)
16:24	16:30	0.10	6992	6992	0	.00	Survey & Conn.	Survey & Conn.@6928' Inc 29.24° Azm 172.23°
16:30	16:57	0.45	6992	7067	75	166.67	Sliding	Sliding - (WOB:28;GPM :600;TFO:20R)
16:57	17:02	0.08	7067	7080	13	156.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
17:02	17:12	0.17	7080	7080	0	.00	Survey & Conn.	Survey & Conn.@7016' Inc 38.75° Azm 175.82°
17:12	17:15	0.05	7080	7095	15	300.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
17:15	17:38	0.38	7095	7175	80	208.70	Sliding	Sliding - (WOB:28;GPM :600;TFO:20R))
17:38	17:45	0.12	7175	7175	0	.00	Survey & Conn.	Survey & Conn.@7106' Inc 45.48° Azm 176.35°
17:45	18:13	0.47	7175	7254	79	169.29	Sliding	Sliding - (WOB:28;GPM :600;TFO:20R)
18:13	18:18	0.08	7254	7262	8	96.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
18:18	18:23	0.08	7262	7262	0	.00	Survey & Conn.	Survey & Conn.@7198' Inc 56.14° Azm 178.25°
18:23	18:43	0.33	7262	7319	57	171.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
18:43	18:57	0.23	7319	7355	36	154.29	Sliding	Sliding - (WOB:28;GPM :600;TFO:360))
18:57	19:02	0.08	7355	7355	0	.00	Survey & Conn.	Survey & Conn.@7291' Inc 62.54° Azm 177.96°
19:02	19:16	0.23	7355	7387	32	137.14	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
19:16	19:36	0.33	7387	7447	60	180.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:360)
19:36	19:41	0.08	7447	7447	0	.00	Survey & Conn.	Survey & Conn.@7383' Inc 67.38° Azm 177.99°
19:41	20:08	0.45	7447	7498	51	113.33	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
20:08	20:23	0.25	7498	7540	42	168.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:360)
20:23	20:28	0.08	7540	7540	0	.00	Survey & Conn.	Survey & Conn.@7476' Inc 74.82° Azm 180.13°
20:28	20:47	0.32	7540	7582	42	132.63	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
20:47	21:26	0.65	7582	7632	50	76.92	Sliding	Sliding - (WOB:28;GPM :600;TFO:360))
21:26	21:31	0.08	7632	7632	0	.00	Survey & Conn.	Survey & Conn.@7568' Inc 78.42° Azm 179.99°
21:31	22:01	0.50	7632	7689	57	114.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:360)
22:01	22:15	0.23	7689	7721	32	137.14	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
22:15	22:20	0.08	7721	7721	0	.00	Survey & Conn.	Survey & Conn.@7657' Inc 89.63° Azm 179.93°
22:20	22:22	0.03	7721	7721	0	.00	Change BHA	Change BHA for Lateral
22:22	22:28	0.10	7721	7751	30	300.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
22:28	22:39	0.18	7751	7763	12	65.45	Sliding	Sliding - (WOB:28;GPM :600;TFO:360))
22:39	23:03	0.40	7763	7810	47	117.50	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
23:03	23:08	0.08	7810	7810	0	.00	Survey & Conn.	Survey & Conn.@7746' Inc 93.82° Azm 178.66°
23:08	23:12	0.07	7810	7820	10	150.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
23:12	23:20	0.13	7820	7825	5	37.50	Sliding	Sliding - (WOB:28;GPM :600;TFO:360)
23:20	23:40	0.33	7825	7899	74	222.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
23:40	23:45	0.08	7899	7899	0	.00	Survey & Conn.	Survey & Conn.@7835' Inc 92.58° Azm 177.41°
23:45	23:47	0.03	7899	7909	10	300.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
23:47	23:57	0.17	7909	7929	20	120.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:150R))
23:57	24:00	0.05	7929	7930	1	20.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)



Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
00:00	00:11	0.18	7930	7988	58	316.36	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
00:11	00:16	0.08	7988	7988	0	.00	Survey & Conn.	Survey & Conn.@7924' Inc 90.67° Azm 177.55°
00:16	00:19	0.05	7988	7998	10	200.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
00:19	00:30	0.18	7998	8012	14	76.36	Sliding	Sliding - (WOB:28;GPM :600;TFO:145R))
00:30	00:43	0.22	8012	8077	65	300.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
00:43	00:48	0.08	8077	8077	0	.00	Survey & Conn.	Survey & Conn.@8013' Inc 89.9° Azm 179.24°
00:48	00:51	0.05	8077	8100	23	460.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
00:51	00:59	0.13	8100	8110	10	75.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:100R))
00:59	01:11	0.20	8110	8165	55	275.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
01:11	01:16	0.08	8165	8165	0	.00	Survey & Conn.	Survey & Conn.@8101' Inc 89.23° Azm 179.53°
01:16	01:32	0.27	8165	8254	89	333.75	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
01:32	01:37	0.08	8254	8254	0	.00	Survey & Conn.	Survey & Conn.@8190' Inc 90.34° Azm 179.87°
01:37	01:41	0.07	8254	8264	10	150.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
01:41	01:50	0.15	8264	8276	12	80.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:120R))

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
01:50	02:03	0.22	8276	8346	70	323.08	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
02:03	02:08	0.08	8346	8346	0	.00	Survey & Conn.	Survey & Conn.@8279' Inc 89.93° Azm 180.83°
02:08	02:22	0.23	8346	8432	86	368.57	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
02:22	02:27	0.08	8432	8432	0	.00	Survey & Conn.	Survey & Conn.@8368' Inc 89.46° Azm 179.63°
02:27	02:42	0.25	8432	8521	89	356.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
02:42	02:47	0.08	8521	8521	0	.00	Survey & Conn.	Survey & Conn.@8457' Inc 88.93° Azm 178.75°
02:47	02:51	0.07	8521	8540	19	285.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
02:51	03:03	0.20	8540	8552	12	60.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:130R))
03:03	03:16	0.22	8552	8610	58	267.69	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
03:16	03:21	0.08	8610	8610	0	.00	Survey & Conn.	Survey & Conn.@8546' Inc 92.11° Azm 179.89°
03:21	03:24	0.05	8610	8637	27	540.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
03:24	03:46	0.37	8637	8657	20	54.55	Sliding	Sliding - (WOB:28;GPM :600;TFO:30R))
03:46	03:58	0.20	8657	8698	41	205.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
03:58	04:03	0.08	8698	8698	0	.00	Survey & Conn.	Survey & Conn.@8634' Inc 93.15° Azm 180.53°
04:03	04:16	0.22	8698	8787	89	410.77	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
04:16	04:21	0.08	8787	8787	0	.00	Survey & Conn.	Survey & Conn.@8723' Inc 91.91° Azm 181.01°
04:21	04:25	0.07	8787	8797	10	150.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
04:25	04:35	0.17	8797	8812	15	90.00	Sliding	Sliding - (WOB:28;GPM :600;TFO:140R))
04:35	04:54	0.32	8812	8876	64	202.11	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
04:54	04:59	0.08	8876	8876	0	.00	Survey & Conn.	Survey & Conn.@8812' Inc 91.04° Azm 181.3°
04:59	05:01	0.03	8876	8886	10	300.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
05:01	05:14	0.22	8886	8906	20	92.31	Sliding	Sliding - (WOB:28;GPM :600;TFO:180)
05:14	05:26	0.20	8906	8965	59	295.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
05:26	05:31	0.08	8965	8965	0	.00	Survey & Conn.	Survey & Conn.@8901' Inc 89.33° Azm 182.36°
05:31	05:46	0.25	8965	9054	89	356.00	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
05:46	05:51	0.08	9054	9054	0	.00	Survey & Conn.	Survey & Conn.@8990' Inc 89.46° Azm 181.68°
05:51	06:00	0.15	9054	9079	25	166.67	Drilling	Drilling - (WOB:18;GPM :600;RPM:20)
06:00	06:10	0.17	9079	9086	7	42.00	Sliding	Sliding - (WOB:44;GPM :600;TFO:150R))
06:10	06:21	0.18	9086	9143	57	310.91	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
06:21	06:27	0.10	9143	9143	0	.00	Survey & Conn.	Survey & Conn.@9079' Inc 88.99° Azm 181.39°
06:27	06:43	0.27	9143	9232	89	333.75	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
06:43	06:48	0.08	9232	9232	0	.00	Survey & Conn.	Survey & Conn.@9168' Inc 89.26° Azm 181.67°
06:48	06:50	0.03	9232	9249	17	510.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
06:50	07:02	0.20	9249	9259	10	50.00	Sliding	Sliding - (WOB:44;GPM :600;TFO:180))
07:02	07:16	0.23	9259	9321	62	265.71	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
07:16	07:23	0.12	9321	9321	0	.00	Circulating	Circulating; SPR
07:23	07:29	0.10	9321	9321	0	.00	Survey & Conn.	Survey & Conn.@9257' Inc 88.22° Azm 181.88°
07:29	07:31	0.03	9321	9331	10	300.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
07:31	07:46	0.25	9331	9346	15	60.00	Sliding	Sliding - (WOB:48;GPM :600;TFO:10L))
07:46	07:57	0.18	9346	9410	64	349.09	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
07:57	08:02	0.08	9410	9410	0	.00	Survey & Conn.	Survey & Conn.@9346' Inc 89.8° Azm 182.22°
08:02	08:20	0.30	9410	9498	88	293.33	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
08:20	08:23	0.05	9498	9498	0	.00	Survey & Conn.	Survey & Conn.@9434' Inc 90.77° Azm 182.4°
08:23	08:27	0.07	9498	9508	10	150.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
08:27	08:46	0.32	9508	9518	10	31.58	Sliding	Sliding - (WOB:48;GPM :600;TFO:120L))
08:46	09:01	0.25	9518	9587	69	276.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
09:01	09:04	0.05	9587	9587	0	.00	Survey & Conn.	Survey & Conn.@9523' Inc 90.5° Azm 181.14°
09:04	09:22	0.30	9587	9676	89	296.67	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
09:22	09:26	0.07	9676	9676	0	.00	Survey & Conn.	Survey & Conn.@9612' Inc 90.6° Azm 180.67°
09:26	09:43	0.28	9676	9765	89	314.12	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
09:43	09:52	0.15	9765	9765	0	.00	Survey & Conn.	Survey & Conn.@9701' Inc 91.14° Azm 180.8°
09:52	10:08	0.27	9765	9854	89	333.75	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
10:08	10:13	0.08	9854	9854	0	.00	Circulating	Circulating; SPR
10:13	10:17	0.07	9854	9854	0	.00	Survey & Conn.	Survey & Conn.@9790' Inc 91.17° Azm 180.45°
10:17	10:33	0.27	9854	9942	88	330.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
10:33	11:09	0.60	9942	9942	0	.00	Rig repair	Rig repair; Change Rotating Head
11:09	11:12	0.05	9942	9942	0	.00	Survey & Conn.	Survey & Conn.@9878' Inc 90.9° Azm 180.26°
11:12	11:27	0.25	9942	10031	89	356.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
11:27	11:32	0.08	10031	10031	0	.00	Survey & Conn.	Survey & Conn.@9967' Inc 90.47° Azm 179.95°
11:32	11:35	0.05	10031	10048	17	340.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
11:35	11:40	0.08	10048	10058	10	120.00	Sliding	Sliding - (WOB:48;GPM :600;TFO:20L))
11:40	11:58	0.30	10058	10120	62	206.67	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
11:58	12:02	0.07	10120	10120	0	.00	Survey & Conn.	Survey & Conn.@10056' Inc 91.41° Azm 178.94°
12:02	12:19	0.28	10120	10209	89	314.12	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
12:19	12:24	0.08	10209	10209	0	.00	Survey & Conn.	Survey & Conn.@10145' Inc 91.44° Azm 178.31°
12:24	12:42	0.30	10209	10298	89	296.67	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
12:42	12:46	0.07	10298	10298	0	.00	Survey & Conn.	Survey & Conn.@10234' Inc 91.78° Azm 177.94°
12:46	13:03	0.28	10298	10387	89	314.12	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
13:03	13:12	0.15	10387	10387	0	.00	Survey & Conn.	Survey & Conn.@10323' Inc 92.01° Azm 177.59°
13:12	13:14	0.03	10387	10397	10	300.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
13:14	13:30	0.27	10397	10411	14	52.50	Sliding	Sliding - (WOB:48;GPM :600;TFO:120R))
13:30	13:45	0.25	10411	10476	65	260.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
13:45	13:48	0.05	10476	10476	0	.00	Survey & Conn.	Survey & Conn.@10412' Inc 90.8° Azm 179.07°
13:48	14:04	0.27	10476	10566	90	337.50	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
14:04	14:07	0.05	10566	10566	0	.00	Survey & Conn.	Survey & Conn.@10502' Inc 90.84° Azm 178.86°
14:07	14:22	0.25	10566	10655	89	356.00	Drilling	Drilling - (WOB:37;GPM :600;RPM:60)
14:22	14:28	0.10	10655	10655	0	.00	Survey & Conn.	Survey & Conn.@10591' Inc 90.3° Azm 178.15°
14:28	14:42	0.23	10655	10743	88	377.14	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
14:42	14:46	0.07	10743	10743	0	.00	Survey & Conn.	Survey & Conn.@10679' Inc 90.57° Azm 177.87°
14:46	14:48	0.03	10743	10753	10	300.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
14:48	15:04	0.27	10753	10768	15	56.25	Sliding	Sliding - (WOB:50;GPM :600;TFO:60R))
15:04	15:18	0.23	10768	10832	64	274.29	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
15:18	15:23	0.08	10832	10832	0	.00	Circulating	Circulating; SPR
15:23	15:27	0.07	10832	10832	0	.00	Survey & Conn.	Survey & Conn.@10768' Inc 91.48° Azm 179.45°
15:27	15:48	0.35	10832	10921	89	254.29	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
15:48	15:52	0.07	10921	10921	0	.00	Survey & Conn.	Survey & Conn.@10857' Inc 91.44° Azm 179.36°
15:52	16:11	0.32	10921	11010	89	281.05	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
16:11	16:16	0.08	11010	11010	0	.00	Survey & Conn.	Survey & Conn.@10946' Inc 91.37° Azm 178.85°
16:16	16:35	0.32	11010	11099	89	281.05	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
16:35	16:39	0.07	11099	11099	0	.00	Survey & Conn.	Survey & Conn.@11035' Inc 90.67° Azm 178.16°
16:39	17:01	0.37	11099	11188	89	242.73	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
17:01	17:29	0.47	11188	11188	0	.00	Rig Service-Inhole	Rig Service-Inhole
17:29	17:33	0.07	11188	11188	0	.00	Survey & Conn.	Survey & Conn.@11124' Inc 90.47° Azm 177.71°
17:33	17:35	0.03	11188	11198	10	300.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
17:35	18:00	0.42	11198	11215	17	40.80	Sliding	Sliding - (WOB:50;GPM :600;TFO:60R))
18:00	18:15	0.25	11215	11277	62	248.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
18:15	18:20	0.08	11277	11277	0	.00	Survey & Conn.	Survey & Conn.@11213' Inc 92.18° Azm 179.12°
18:20	18:36	0.27	11277	11366	89	333.75	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
18:36	18:41	0.08	11366	11366	0	.00	Survey & Conn.	Survey & Conn.@11302' Inc 91.95° Azm 178.51°
18:41	19:02	0.35	11366	11455	89	254.29	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
19:02	19:07	0.08	11455	11455	0	.00	Survey & Conn.	Survey & Conn.@11391' Inc 92.25° Azm 177.79°
19:07	19:17	0.17	11455	11465	10	60.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
19:17	19:42	0.42	11465	11485	20	48.00	Sliding	Sliding - (WOB:50;GPM :600;TFO:60R))
19:42	20:01	0.32	11485	11544	59	186.32	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
20:01	20:06	0.08	11544	11544	0	.00	Survey & Conn.	Survey & Conn.@11480' Inc 91.01° Azm 179.04°
20:06	20:08	0.03	11544	11559	15	450.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
20:08	20:25	0.28	11559	11571	12	42.35	Sliding	Sliding - (WOB:50;GPM :600;TFO:150R))
20:25	20:40	0.25	11571	11633	62	248.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
20:40	20:45	0.08	11633	11633	0	.00	Survey & Conn.	Survey & Conn.@11569' Inc 91.24° Azm 179.69°
20:45	20:59	0.23	11633	11722	89	381.43	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
20:59	21:04	0.08	11722	11722	0	.00	Survey & Conn.	Survey & Conn.@11658' Inc 91.71° Azm 179.59°
21:04	21:36	0.53	11722	11744	22	41.25	Sliding	Sliding - (WOB:50;GPM :600;TFO:130R))
21:36	21:50	0.23	11744	11811	67	287.14	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
21:50	21:55	0.08	11811	11811	0	.00	Survey & Conn.	Survey & Conn.@11747' Inc 89.43° Azm 181.18°
21:55	22:07	0.20	11811	11900	89	445.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
22:07	22:12	0.08	11900	11900	0	.00	Survey & Conn.	Survey & Conn.@11836' Inc 89.66° Azm 181.57°
22:12	22:33	0.35	11900	11989	89	254.29	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
22:33	22:38	0.08	11989	11989	0	.00	Survey & Conn.	Survey & Conn.@11925' Inc 89.87° Azm 181.28°
22:38	22:54	0.27	11989	12078	89	333.75	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
22:54	22:59	0.08	12078	12078	0	.00	Survey & Conn.	Survey & Conn.@12014' Inc 89.5° Azm 180.97°
22:59	23:15	0.27	12078	12166	88	330.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
23:15	23:20	0.08	12166	12166	0	.00	Survey & Conn.	Survey & Conn.@12102' Inc 89.16° Azm 181.04°
23:20	23:23	0.05	12166	12176	10	200.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
23:23	23:37	0.23	12176	12186	10	42.86	Sliding	Sliding - (WOB:50;GPM :600;TFO:125R))
23:37	23:53	0.27	12186	12255	69	258.75	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
23:53	23:58	0.08	12255	12255	0	.00	Survey & Conn.	Survey & Conn.@12191' Inc 90.77° Azm 181.11°
23:58	24:00	0.03	12255	12265	10	300.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)



Scientific Drilling

JOB NO.: OP.002261
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22 Pad
RIG NAME: Xtreme 24
STATE: Colorado
COUNTY: Weld
WELL NAME: Hilgers 8N2-34HZ
Lead Directional : Scott Ingram

Report Time: 2400 **4 of 5**
API JOB # 05-123-43306
WORK ORDER# OP.002261
FIELD: Wattenberg
Township: 3N
Range/Section 68W 22
Company Man Travis Kruckenberg/John Truett
2nd Dir Hand : Thomas Thompson

From Sunday, June 25, 2017 at 0000 to Sunday, June 25, 2017 at 2400

DAILY TOTALS		ASSEMBLY TOTALS										
Start Depth	12265.00	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	13657.00	4	65398	0.00	0.00	0.00	0.00	.00	0.00	0.00	0.00	
Below Rot Hrs.	14.50											
Total Drilled:	1392.00	Drilling Parameters		Mud Record		Bit Record		Current BHA # 5				
Avg. Total ROP:	245.65			OBM		Bit No:						
Slide Footage:	42.00			Weight:		9	Model					
Slide Hours	0.67			WOB:		39	SN.:					
Avg. Slide ROP:	63.00			Rot Wt:		0	MFG.					
Rotate Footage:	1350.00			Pick UP:		0	Type					
Rotary Hours	5.00			Slack Off:		0	IADC					
Avg. Rot ROP:	270.00			SPP:		4180	JETS					
Circ Hours	1.42			Flow:		600 - 600	TFA:					
Ream Hours	0.00			SPM:		208	Hole ID: N/A					
Rotary Hrs%:	88.24			Rot. RPM		60 - 60	Bit Hrs:					
Slide Hrs%:	11.76			Mot RPM:		60 - 60	Bit Ftg:					
Rotary Ftg%:	96.98	Incl. In:		90.77	PUMPS							
Slide Ftg%:	3.02	Az. In:		181.11	Liner		0	0				
Casing		Incl. Out:		0	Stroke		0	0				
Size	Lb/Ft	MD	Az. Out:		0	Oil %:		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	00:04	0.07	12265	12265	0	.00	Survey & Conn.	Survey & Conn. @12191' Inc 90.77° Azm 181.11°
00:04	00:12	0.13	12265	12344	79	592.50	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
00:12	00:20	0.13	12344	12344	0	.00	Survey & Conn.	Survey & Conn. @12280' Inc 91.01° Azm 180.85°
00:20	00:36	0.27	12344	12433	89	333.75	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
00:36	00:40	0.07	12433	12433	0	.00	Survey & Conn.	Survey & Conn. @12369' Inc 91.14° Azm 180.89°
00:40	00:58	0.30	12433	12522	89	296.67	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
00:58	01:04	0.10	12522	12522	0	.00	Survey & Conn.	Survey & Conn. @12458' Inc 91.31° Azm 180.23°
01:04	01:19	0.25	12522	12611	89	356.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
01:19	01:24	0.08	12611	12611	0	.00	Survey & Conn.	Survey & Conn. @12547' Inc 90.6° Azm 179.73°
01:24	01:44	0.33	12611	12700	89	267.00	Drilling	
01:44	01:49	0.08	12700	12700	0	.00	Survey & Conn.	Survey & Conn. @12636' Inc 90.67° Azm 179.24°
01:49	02:06	0.28	12700	12789	89	314.12	Drilling	
02:06	02:10	0.07	12789	12789	0	.00	Survey & Conn.	Survey & Conn. @12725' Inc 91.01° Azm 179.36°
02:10	02:34	0.40	12789	12877	88	220.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)

Start Time	End Time	Hours	Start Depth	End Depth	Delta Depth	ROP	Activity Code	COMMENT
02:34	02:38	0.07	12877	12877	0	.00	Survey & Conn.	Survey & Conn.@12813' Inc 91.34° Azm 178.92°
02:38	02:53	0.25	12877	12966	89	356.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
02:53	02:58	0.08	12966	12966	0	.00	Survey & Conn.	Survey & Conn.@12902' Inc 91.71° Azm 178.63°
02:58	03:18	0.33	12966	13055	89	267.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
03:18	03:27	0.15	13055	13055	0	.00	Survey & Conn.	Survey & Conn.@12991' Inc 91.98° Azm 178.28°
03:27	03:43	0.27	13055	13074	19	71.25	Sliding	Sliding - (WOB:50;GPM :600;TFO:10R))
03:43	04:03	0.33	13074	13144	70	210.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
04:03	04:08	0.08	13144	13144	0	.00	Survey & Conn.	Survey & Conn.@13080' Inc 91.31° Azm 179.68°
04:08	04:28	0.33	13144	13233	89	267.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
04:28	04:32	0.07	13233	13233	0	.00	Survey & Conn.	Survey & Conn.@13169' Inc 91.88° Azm 179.58°
04:32	04:36	0.07	13233	13238	5	75.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
04:36	04:50	0.23	13238	13252	14	60.00	Sliding	Sliding - (WOB:50;GPM :600;TFO:110R))
04:50	05:12	0.37	13252	13322	70	190.91	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
05:12	05:18	0.10	13322	13322	0	.00	Survey & Conn.	Survey & Conn.@13258' Inc 90.67° Azm 180.28°
05:18	05:37	0.32	13322	13410	88	277.89	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
05:37	05:41	0.07	13410	13410	0	.00	Survey & Conn.	Survey & Conn.@13346' Inc 91.27° Azm 180.33°
05:41	05:46	0.08	13410	13424	14	168.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
05:46	05:56	0.17	13424	13433	9	54.00	Sliding	Sliding - (WOB:50;GPM :600;TFO:150R))
05:56	06:16	0.33	13433	13435	2	6.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
06:16	06:21	0.08	13435	13435	0	.00	Survey & Conn.	Survey & Conn.@13346' Inc 91.27° Azm 180.33°
06:21	06:41	0.33	13435	13588	153	459.00	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
06:41	06:43	0.03	13588	13588	0	.00	Connection	Connection
06:43	07:00	0.28	13588	13657	69	243.53	Drilling	Drilling - (WOB:39;GPM :600;RPM:60)
07:00	08:19	1.32	13657	13657	0	.00	Circulating	Circulating
08:19	08:30	0.18	13657	13657	0	.00	Other	Other (Flow Check)
08:30	08:36	0.10	13657	13657	0	.00	Circulating	Circulating Pump Slug
08:36	13:30	4.90	13657	13657	0	.00	POOH	POOH
13:30	14:30	1.00	13657	13657	0	.00	Change BHA	Change BHA (Lay down BHA)
14:30	24:00	9.50	13657	13657	0	.00	Standby	Standby



Scientific Drilling

JOB NO.: OP.002261
 Company: Anadarko E&P Onshore LLC
 LOCATION: Hilgers 16-22 Pad
 RIG NAME: Xtreme 24
 STATE: Colorado
 COUNTY: Weld
 WELL NAME: Hilgers 8N2-34HZ
 Lead Directional : Scott Ingram

Report Time: 2400 5 of 5
 API JOB # 05-123-43306
 WORK ORDER# OP.002261
 FIELD: Wattenberg
 Township: 3N
 Range/Section 68W 22
 Company Man Travis Kruckenberg/John Truett
 2nd Dir Hand : Thomas Thompson

From Monday, June 26, 2017 at 0000 to Monday, June 26, 2017 at 2400

DAILY TOTALS		ASSEMBLY TOTALS									
Start Depth	12265.00	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	13657.00										
Below Rot Hrs.	14.50										
Total Drilled:	1392.00	Drilling Parameters WOB: 0 Rot Wt: 0 Pick UP: 0 Slack Off: 0 SPP: 0 Flow: 0 - 0 SPM: 0 Rot. RPM - Mot RPM: - Incl. In: 0 Azm. In: 0 Incl. Out: 91.28 Azm. Out: 180.33		Mud Record Weight: 0 Visc: 0 Chlorides: 0 YP: 0 PV: 0 PH: 0 GAS: 0 SAND: 0 WL: 0 SOLID: 0 BHT°: 0 Flow T°: 0 Oil %: 0		Bit Record Bit No: Model SN.: MFG. Type IADC JETS TFA: Hole ID: N/A Bit Hrs: Bit Ftg:		Current BHA # 0			
Avg. Total ROP:	245.65										
Slide Footage:	42.00										
Slide Hours	0.67										
Avg. Slide ROP:	63.00										
Rotate Footage:	1350.00										
Rotary Hours	5.00										
Avg. Rot ROP:	270.00										
Circ Hours	1.42										
Ream Hours	0.00										
Rotary Hrs%:	88.24										
Slide Hrs%:	11.76										
Rotary Ftg%:	96.98										
Slide Ftg%:	3.02										
Casing											
Size	Lb/Ft	MD	COST BREAKDOWN					Effic. 95.00% 95.00%			
								Gal/Stk 0.00 0.00			
								BBL/Stk 0.000 0.000			

BHA # 1



JOB NO.: OP.001368 Work Order: FIELD: Wattenberg
 Company: Anadarko E&P Onshore LLC Township: 3N
 LOCATION: Hilgers 16-22HZ Pad SECT. RANGE: 22 68W
 RIG NAME: White Mountain 252 Lead DD: Stewart Paul 10985
 STATE: Colorado Co. Man: Matt / Bryan
 COUNTY: Weld BHA TYPE: Steerable Assembly
 WELL NAME: Hilgers 8N2-34HZ BHA WT: 22999 Wt @ Jars: N/A

Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 15-May-17 @ 02:30	8 SDI Titan 7/8 4.0 1.5deg	SO/PU: 0 - 0 / 0-0
Date Out: 15-May-17 @ 14:30	MFG.: SDI	Rot Strg Wt: 0-0
Hrs In Hole: 12.00	Pad OD: 8.28	WOB: 0 - 18
Start Depth: 92.00	NB Stab: 0	TORQ: 0 - 6
End Depth: 1833.00	Bit to Bend: 6.35	SPP: 0 - 1500
Total Drilled: 1741.00	Bent Hsg/Sub°: 1.5 /	Motor RPM: 137
Avg. Total ROP: 316.55	Lobe/Stage: 7/8 / 4	Rotary RPM: 0 - 75
Circ Hrs: Tot/Only 6.37 / .87	Rev/GAL: 0.17	Flow Rate: 0 - 805
Percent Slide: 11.55	Rotor Jet: 0	Avg Diff:
Percent Hrs: 26.36	Prop BUR:	Stall Pres.: 1000
Slide Hours: 1.45	Act BUR:	Off Bot Pres.: 125
Total Sliding: 201.00		
Avg. Slide ROP: 138.62		
Percent Rotary: 88.45		
Percent Hrs: 73.64		
Rotary Hours: 4.05		
Total Rotary: 1540.00		
Avg. Rotary ROP: 380.25		
Reason POOH: TD		

MWD Spacing	Gamma: 0	Restiv: 0	Sensor: 56	Last Casing	O.D.
	GYRO: 0	DNSC: 0	Sonic: 0	Shoe @:	Hanger @:

INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

8" SDI Titan 7/8 4.0 1.5deg
 .17 rev/gal
 400-900 gpm
 56' Bit to Sensor
 58' Survey

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
13.5" Varel RS619DX	4009524		13.5	1.90	1.90	6 5/8 REGP	Varel
8" SDI Titan 7/8 4.0 1.5deg	8185		8.03	28.51	30.41	6 5/8 REGB	SDI
8" NMPC	126-013	3.75	8.0	9.04	39.45	6 5/8 REGB	SDI
8" NMDC	84-384	3.75	8.0625	30.36	69.81	6 5/8 REGB	SDI
8" HOS	89-044	3.75	7.75	2.52	72.33	6 5/8 REGB	SDI
8" Gap Sub	69-506	3.25	7.8125	5.45	77.78	6 5/8 REGB	SDI
8" NMDC	84-291	3.75	7.938	30.08	107.86	6 5/8 REGB	SDI
8" 4 1/2XH to 6 5/8REG	1-411	3.25	7.8125	2.88	110.74	4 1/2 XHB	SDI
6" Drill Collars	Rig	2.37	6	141.42	252.16	4 1/2 XH	RIG

8" 4 1/2XH to 6 5/8REG
 O.D.=7.8125

8" NMDC
 O.D.=7.938
 Length=30.08

8" Gap Sub
 O.D.=7.8125
 Length=5.45

8" HOS
 O.D.=7.75
 Length=2.52

8" NMDC
 O.D.=8.0625
 Length=30.36

8" NMPC
 O.D.=8.0
 Length=9.04

8" SDI Titan 7/8 4.0 1.5deg
 O.D.=8.03
 Length=28.51

13.5" Varel RS619DX
 O.D.=13.5
 Length=1.9



JOB NO.: OP.001368
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22HZ Pad
RIG NAME: White Mountain 252
STATE: Colorado
COUNTY: Country
WELL NAME: Hilgers 8N2-34HZ

FIELD: Wattenberg
Township: 3N
Range 68W

MOTOR INFORMATION	
Desc: 8 SDI Titan 7/8 4.0 1.5deg	
Bent Hsg/Sub: 1.5 / 0	Bit to Bend: 6.35
Pad OD: 8.28	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	15-May	Drilling	02:55	03:02	0.12	92	110	18		154.3	0	0				0.14	0.00	0.13	
1	15-May	Drilling	03:05	03:11	0.10	110	138	28		280.0	0	0				0.59	283.19	0.47	
1	15-May	Drilling	03:14	03:22	0.13	138	164	26		195.0	0	0				0.71	278.96	0.47	
1	15-May	Drilling	03:24	03:30	0.10	164	191	27		270.0	0	0				0.83	275.81	0.47	
1	15-May	Drilling	03:33	03:38	0.08	191	220	29		348.0	0	0				0.76	272.23	0.35	
1	15-May	Drilling	03:41	03:50	0.15	220	252	32		213.3	0	0				0.67	267.12	0.35	
1	15-May	Drilling	03:54	03:58	0.07	252	296	44		660.0	0	0				0.63	263.59	0.31	
1	15-May	Drilling	04:00	04:05	0.08	296	338	42		504.0	0	0				0.75	268.24	0.31	
1	15-May	Drilling	04:07	04:11	0.07	338	383	45		675.0	0	0				0.93	259.68	1.21	
1	15-May	Drilling	04:14	04:19	0.08	383	425	42	18	504.0	75	6	805	1400		1.29	240.89	1.21	
1	15-May	Sliding	04:21	04:25	0.07	425	435	10	7	150.0		6	805	1400	195M	1.39	237.96	1.21	
1	15-May	Drilling	04:25	04:28	0.05	435	469	34	18	680.0	75	6	805	1400		1.64	233.19	0.26	
1	15-May	Drilling	04:31	04:35	0.07	469	514	45	18	675.0	75	6	805	1400		1.76	233.71	0.26	
1	15-May	Drilling	04:38	04:43	0.08	514	558	44	18	528.0	75	6	805	1400		1.94	230.79	1.11	
1	15-May	Sliding	04:46	04:48	0.03	558	568	10	7	300.0		6	805	1400	165M	2.01	228.51	1.11	
1	15-May	Drilling	04:48	04:51	0.05	568	603	35	18	700.0	75	6	805	1400		2.31	221.80	1.11	
1	15-May	Drilling	04:55	05:01	0.10	603	647	44	18	440.0	75	6	805	1400		2.63	218.67	0.57	
1	15-May	Drilling	05:03	05:09	0.10	647	691	44	18	440.0	75	6	805	1400		2.80	222.57	0.57	
1	15-May	Drilling	05:12	05:17	0.08	691	736	45	18	540.0	75	6	805	1400		2.94	222.68	0.87	
1	15-May	Drilling	05:20	05:26	0.10	736	780	44	18	440.0	75	6	805	1400		2.99	215.39	0.87	
1	15-May	Sliding	05:29	05:31	0.03	780	788	8	7	240.0		6	805	1400	130M	3.01	214.10	0.87	
1	15-May	Drilling	05:31	05:38	0.12	788	824	36	18	308.6	75	6	805	1400		3.10	208.70	0.80	
1	15-May	Drilling	05:40	05:46	0.10	824	869	45	18	450.0	75	6	805	1400		3.26	202.95	0.80	
1	15-May	Sliding	05:49	05:50	0.02	869	874	5	7	300.0		6	805	1400	100M	3.28	202.35	0.80	
1	15-May	Drilling	05:50	05:56	0.10	874	913	39	18	390.0	75	6	805	1400		3.47	199.52	0.54	
1	15-May	Drilling	05:59	06:09	0.17	913	957	44	18	264.0	75	6	805	1400		3.70	199.71	0.54	

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	15-May	Sliding	06:15	06:17	0.03	957	964	7	7	210.0	75	6	805	1400	220M	3.74	199.74	0.54	
1	15-May	Drilling	06:17	06:22	0.08	964	1002	38	18	456.0	75	6	805	1400		4.00	199.86	0.85	
1	15-May	Drilling	07:24	07:28	0.07	1002	1044	42	18	630.0	75	6	805	1400		4.35	199.92	0.85	
1	15-May	Sliding	07:32	07:36	0.07	1044	1056	12	7	180.0	75	6	805	1400	220M	4.46	199.94	0.85	
1	15-May	Drilling	07:36	07:40	0.07	1056	1088	32	18	480.0	75	6	805	1400		4.73	201.36	1.15	
1	15-May	Drilling	07:43	07:48	0.08	1088	1131	43	18	516.0	75	6	805	1400		5.12	204.97	1.15	
1	15-May	Sliding	07:53	07:59	0.10	1131	1146	15	7	150.0	75	6	805	1400	30	5.26	206.11	1.15	
1	15-May	Drilling	07:59	08:04	0.08	1146	1173	27	18	324.0	75	6	805	1400		5.54	207.22	1.17	
1	15-May	Drilling	08:06	08:12	0.10	1173	1217	44	18	440.0	75	6	805	1400		6.06	207.72	1.17	
1	15-May	Sliding	08:15	08:22	0.12	1217	1234	17	7	145.7	75	6	805	1400	360	6.26	207.89	1.17	
1	15-May	Drilling	08:22	08:27	0.08	1234	1262	28	18	336.0	75	6	805	1400		6.62	208.70	1.51	
1	15-May	Drilling	08:30	08:36	0.10	1262	1306	44	18	440.0	75	6	805	1400		7.24	210.59	1.51	
1	15-May	Sliding	08:41	08:48	0.12	1306	1326	20	7	171.4	75	6	805	1400	20	7.52	211.35	1.51	
1	15-May	Drilling	08:48	08:52	0.07	1326	1350	24	18	360.0	75	6	805	1500		7.81	212.03	1.01	
1	15-May	Drilling	08:59	09:06	0.12	1350	1395	45	18	385.7	75	6	805	1500		8.24	212.95	1.01	
1	15-May	Sliding	09:09	09:17	0.13	1395	1415	20	7	150.0	75	6	805	1500	-30	8.43	213.34	1.01	
1	15-May	Drilling	09:17	09:23	0.10	1415	1439	24	18	240.0	75	6	805	1500		8.71	212.71	1.52	
1	15-May	Drilling	09:25	09:34	0.15	1439	1483	44	18	293.3	75	6	805	1500		9.27	210.37	1.52	
1	15-May	Sliding	09:37	09:45	0.13	1483	1503	20	7	150.0	75	6	805	1500	-40	9.53	209.39	1.52	
1	15-May	Drilling	09:45	09:51	0.10	1503	1528	25	18	250.0	75	6	805	1500		9.78	208.53	0.92	
1	15-May	Drilling	09:54	10:01	0.12	1528	1572	44	18	377.1	75	6	805	1500		10.14	207.46	0.92	
1	15-May	Sliding	10:05	10:17	0.20	1572	1592	20	7	100.0	75	6	805	1500	-20	10.31	207.00	0.92	
1	15-May	Drilling	10:17	10:21	0.07	1592	1617	25	18	375.0	75	6	805	1500		10.43	207.26	0.62	
1	15-May	Drilling	10:24	10:33	0.15	1617	1659	42	18	280.0	75	6	805	1500		10.57	208.45	0.62	
1	15-May	Sliding	10:38	10:50	0.20	1659	1679	20	7	100.0	75	6	805	1500	360	10.64	209.01	0.62	
1	15-May	Drilling	10:50	10:55	0.08	1679	1701	22	18	264.0	75	6	805	1500		10.73	208.96	0.56	
1	15-May	Drilling	10:59	11:07	0.13	1701	1745	44	18	330.0	75	6	805	1500		10.92	208.12	0.56	
1	15-May	Sliding	11:11	11:23	0.20	1745	1762	17	7	85.0	75	6	805	1500	-30	10.99	207.81	0.56	
1	15-May	Drilling	11:23	11:30	0.12	1762	1788	26	18	222.9	75	6	805	1500		11.05	207.57	0.00	
1	15-May	Drilling	11:33	11:38	0.08	1788	1833	45	18	540.0	75	6	805	1500		11.05	207.57	0.00	
Total Drilled:						1741	Avg. Total ROP:		316.55		DEPTH% - TIME %								
Total Rotary Drilled:						1540	Avg. Rotary ROP:		380.25		Percent Rotary:		88.45 - 73.64						
Total Drilled Sliding:						201	Avg. Slide ROP:		138.62		Percent Slide:		11.55 - 26.36						

BHA # 1



JOB NO.: OP.002261 Work Order: OP.002261 FIELD: Wattenberg
 Company: Anadarko E&P Onshore LLC Township: 3N
 LOCATION: Hilgers 16-22 Pad SECT. RANGE: 22 68W
 RIG NAME: Xtreme 24 Lead DD: Marco Rolong
 STATE: Colorado Co. Man: Travis Kruckenberg/John Truett
 COUNTY: Weld BHA TYPE: Steerable Assembly
 WELL NAME: Hilgers 8N2-34HZ BHA WT: 9611 Wt @ Jars: N/A

Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 22-Jun-17 @ 13:00	6-1/2" Slick SDI Titan 22 7:8	SO/PU: 0 - 0 / 0-0
Date Out: 23-Jun-17 @ 03:23	MFG.: SDI	Rot Strg Wt: 0-0
Hrs In Hole: 14.38	Pad OD: 6.9	WOB: 0 - 36
Start Depth: 1838.00	NB Stab: 0	TORQ: 0 - 9.6
End Depth: 3945.00	Bit to Bend: 4.03	SPP: 0 - 2400
Total Drilled: 2107.00	Bent Hsg/Sub°: 2 / 2	Motor RPM: - 174
Avg. Total ROP: 372.92	Lobe/Stage: 7/8 / 6.4	Rotary RPM: 0 - 60
Circ Hrs: Tot/Only 5.70 / .05	Rev/GAL: 0.29	Flow Rate: 0 - 600
Percent Slide: 8.50	Rotor Jet: 0	Avg Diff: 700
Percent Hrs: 33.63	Prop BUR: 0	Stall Pres.: 1280
Slide Hours: 1.90	Act BUR: 0	Off Bot Pres.: 2000
Total Sliding: 179.00		
Avg. Slide ROP: 94.21		
Percent Rotary: 91.50		
Percent Hrs: 66.37		
Rotary Hours: 3.75		
Total Rotary: 1928.00		
Avg. Rotary ROP: 514.13		
Reason POOH: TD		

MWD Spacing	Gamma: 66.35 Restiv: 0 Sensor: 64	Last Casing O.D. 9 5/8
	GYRO: 0 DNSC: 1828 Sonic: 0	Shoe @: 1828 Hanger @:

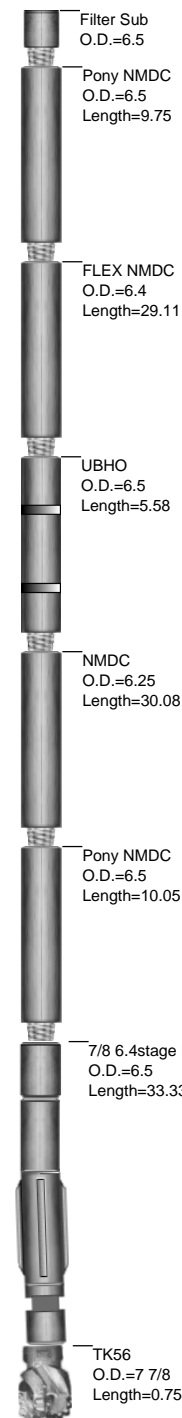
INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

6-1/2" Slick SDI Titan 22 7:8 ML 6.4 Stg 2.0 FBH

Rev/Gal: 0.29
 2.0° Fixed: Bit to Bend: 4.03'
 Flow: 300-600GPM
 MAX RPM: 60 (20RPM in CURVE)
 MAX DIFF: 1250 (Best @ 800)
 Power Section Fit: -.004"
 Directional: 64' FT,

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
TK56	A236460		7 7/8	0.75	0.75	4 1/2 REGP	REED
7/8 6.4stage Fixed 2.0	65398		6.5	33.33	34.08	4 1/2 XHB	SDI
Pony NMDC	125-289	3 1/4	6.5	10.05	44.13	4 1/2 XHB	SDI
NMDC	122-409		6.25	30.08	74.21	4 1/2 XHB	SDI
UBHO	129-557	3 1/4	6.5	5.58	79.79	4 1/2 XHB	SDI
FLEX NMDC	DR22177	3 1/8	6.4	29.11	108.90	4 1/2 XHB	SDI
Pony NMDC	125-408	3 1/4	6.5	9.75	118.65	4 1/2 XHB	SDI
Filter Sub	SD116449	3 1/8	6.5	5.86	124.51	4 1/2 IFB	SDI





JOB NO.: OP.002261
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22 Pad
RIG NAME: Xtreme 24
STATE: Colorado
COUNTY: Country
WELL NAME: Hilgers 8N2-34HZ

FIELD: Wattenberg
Township: 3N
Range 68W

MOTOR INFORMATION

Desc: 6-1/2" Slick SDI Titan 22 7/8 ML 6.4
 Str 2 0 FRH
 Bent Hsg/Sub: 2 / 2 Bit to Bend: 4.03
 Pad OD: 6.9 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	22-Jun	Drilling	18:34	18:55	0.35	1838	1903	65		185.7	0	0				10.84	215.55	1.41	
1	22-Jun	Drilling	19:00	19:04	0.07	1903	1912	9		135.0	0	0				10.88	216.19	1.41	
1	22-Jun	Sliding	19:04	19:12	0.13	1912	1922	10		75.0	0	0			360	10.93	216.89	1.41	
1	22-Jun	Drilling	19:12	19:27	0.25	1922	1991	69		276.0	0	0				11.73	214.25	1.52	
1	22-Jun	Drilling	19:32	19:33	0.02	1991	2008	17		1020.0	0	0				11.94	213.52	1.52	
1	22-Jun	Sliding	19:33	19:41	0.13	2008	2023	15		112.5	0	0			360	12.02	212.84	1.08	
1	22-Jun	Drilling	19:41	19:51	0.17	2023	2080	57	36	342.0	60	9.6	600	2400		11.92	209.92	1.08	
1	22-Jun	Drilling	19:56	20:04	0.13	2080	2169	89	36	667.5	60	0	600	2400		13.34	208.24	2.29	
1	22-Jun	Sliding	20:09	20:17	0.13	2169	2189	20	15	150.0	0	2.4	600	1975	360	13.80	208.14	2.29	
1	22-Jun	Drilling	20:17	20:27	0.17	2189	2257	68	36	408.0	60	2.4	600	1975		13.27	205.61	1.33	
1	22-Jun	Drilling	20:32	20:37	0.08	2257	2331	74	36	888.0	60	2.4	600	1975		13.72	203.71	1.44	
1	22-Jun	Sliding	20:37	20:43	0.10	2331	2346	15	15	150.0	60	2.4	600	1975	360	13.92	203.47	1.44	
1	22-Jun	Drilling	20:48	20:56	0.13	2346	2420	74	36	555.0	60	2.4	600	1975		15.30	204.91	2.31	
1	22-Jun	Sliding	20:56	21:02	0.10	2420	2435	15	15	150.0	60	2.4	600	1975	360	15.62	205.42	2.31	
1	22-Jun	Drilling	21:07	21:14	0.12	2435	2524	89	36	762.9	60	2.4	600	1975		15.60	204.85	1.04	
1	22-Jun	Drilling	21:19	21:28	0.15	2524	2596	72	36	480.0	60	2.4	600	1975		16.03	201.98	1.89	
1	22-Jun	Sliding	21:28	21:41	0.22	2596	2613	17	15	78.5	60	2.4	600	1975	20L	16.26	201.19	1.89	
1	22-Jun	Drilling	21:46	21:54	0.13	2613	2689	76	36	570.0	60	2.4	600	1975		16.46	195.79	2.38	
1	22-Jun	Sliding	21:54	22:00	0.10	2689	2701	12	15	120.0	60	2.4	600	1975	20L	16.44	194.78	2.38	
1	22-Jun	Drilling	22:05	22:16	0.18	2701	2770	69	36	376.4	60	2.4	600	1975		17.26	193.54	2.00	
1	22-Jun	Sliding	22:16	22:26	0.17	2770	2790	20	15	120.0	60	2.4	600	1975	360	17.65	193.91	2.00	
1	22-Jun	Drilling	22:31	22:42	0.18	2790	2879	89	36	485.5	60	2.4	600	1975		17.08	193.69	1.67	
1	22-Jun	Drilling	22:47	22:53	0.10	2879	2968	89	36	890.0	60	2.4	600	1975		15.60	193.93	1.69	
1	22-Jun	Drilling	22:58	23:06	0.13	2968	3057	89	36	667.5	60	2.4	600	1975		12.92	197.72	3.78	
1	22-Jun	Sliding	23:11	23:23	0.20	3057	3067	10	15	50.0	60	2.4	600	1975	140R	12.57	198.39	3.78	
1	22-Jun	Drilling	23:23	23:33	0.17	3067	3146	79	36	474.0	60	2.4	600	1975		11.13	198.77	1.46	

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	22-Jun	Drilling	23:38	23:46	0.13	3146	3235	89	36	667.5	60	2.4	600	1975		10.00	197.36	1.24	
1	22-Jun	Drilling	23:51	23:55	0.07	3235	3413	178	36	2670.0	60	2.4	600	1975		6.30	202.80	1.60	
1	23-Jun	Sliding	00:08	00:21	0.22	3413	3418	5	15	23.1	60	2.4	600	1975	140R	6.22	202.93	1.60	
1	23-Jun	Drilling	00:21	00:28	0.12	3418	3425	7	36	60.0	60	2.4	600	1975		6.11	203.11	1.60	
1	23-Jun	Drilling	00:33	00:36	0.05	3425	3447	22	36	440.0	60	2.4	600	1975		5.63	203.39	2.90	
1	23-Jun	Sliding	00:36	00:44	0.13	3447	3457	10	15	75.0	60	2.4	600	1975	180	5.34	203.34	2.90	
1	23-Jun	Drilling	00:44	00:50	0.10	3457	3501	44	36	440.0	60	2.4	600	1975		4.06	203.05	2.90	
1	23-Jun	Drilling	00:55	00:58	0.05	3501	3526	25	36	500.0	60	2.4	600	1975		3.34	202.78	2.90	
1	23-Jun	Sliding	00:58	01:05	0.12	3526	3536	10	15	85.7	60	2.4	600	1975	180	3.24	203.12	0.98	
1	23-Jun	Drilling	01:05	01:11	0.10	3536	3590	54	36	540.0	60	2.4	600	1975		2.73	205.35	0.98	
1	23-Jun	Drilling	01:16	01:24	0.13	3590	3679	89	36	667.5	60	2.4	600	1975		1.83	210.58	1.05	
1	23-Jun	Drilling	01:29	01:32	0.05	3679	3705	26	36	520.0	60	2.4	600	1975		1.56	213.16	2.21	
1	23-Jun	Sliding	01:32	01:41	0.15	3705	3725	20	15	133.3	60	2.4	600	1975	180	1.13	218.47	2.21	
1	23-Jun	Drilling	01:41	01:46	0.08	3725	3768	43	36	516.0	60	2.4	600	1975		0.39	271.01	2.21	
1	23-Jun	Drilling	01:51	02:00	0.15	3768	3856	88	36	586.7	60	2.4	600	1975		0.54	311.17	0.38	
1	23-Jun	Drilling	02:05	02:16	0.18	3856	3945	89	36	485.5	60	2.4	600	1975		0.76	281.71	0.47	

Total Drilled: 2107 **Avg. Total ROP:** 372.92 **DEPTH% - TIME %**

Total Rotary Drilled: 1928 **Avg. Rotary ROP:** 514.13 **Percent Rotary:** 91.50 - 66.37

Total Drilled Sliding: 179 **Avg. Slide ROP:** 94.21 **Percent Slide:** 8.50 - 33.63

BHA # 2



JOB NO.: OP.002261 Work Order: OP.002261 FIELD: Wattenberg
 Company: Anadarko E&P Onshore LLC Township: 3N
 LOCATION: Hilgers 16-22 Pad SECT. RANGE: 22 68W
 RIG NAME: Xtreme 24 Lead DD: Marco Rolong
 STATE: Colorado Co. Man: Travis Kruckenberg/John Truett
 COUNTY: Weld BHA TYPE: Steerable Assembly
 WELL NAME: Hilgers 8N2-34HZ BHA WT: 50620 Wt @ Jars: N/A

Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 23-Jun-17 @ 03:23	6-1/2" Slick SDI Titan 22 7:8	SO/PU: 0 - 0 / 0-0
Date Out: 23-Jun-17 @ 13:39	MFG.: SDI	Rot Strg Wt: 0-0
Hrs In Hole: 10.27	Pad OD: 6.9	WOB: 8 - 36
Start Depth: 3945.00	NB Stab: 0	TORQ: 2.4 - 13
End Depth: 6582.00	Bit to Bend: 4.03	SPP: 1975 - 3620
Total Drilled: 2637.00	Bent Hsg/Sub°: 2 / 2	Motor RPM: 174
Avg. Total ROP: 409.90	Lobe/Stage: 7/8 /	Rotary RPM: 60 - 60
Circ Hrs: Tot/Only 7.08 / .65	Rev/GAL: 0.29	Flow Rate: 600 - 600
Percent Slide: 1.67	Rotor Jet: 0	Avg Diff: 600
Percent Hrs: 7.25	Prop BUR: 0	Stall Pres.: 1280
Slide Hours: .47	Act BUR: 0	Off Bot Pres.: 2000
Total Sliding: 44.00		
Avg. Slide ROP: 94.29		
Percent Rotary: 98.33		
Percent Hrs: 92.75		
Rotary Hours: 5.97		
Total Rotary: 2593.00		
Avg. Rotary ROP: 434.58		
Reason POOH:		

MWD Spacing	Gamma: 66.35 Restiv: 0 Sensor: 64	Last Casing O.D. 9 5/8
	GYRO: 0 DNSC: 3945 Sonic: 0	Shoe @: 1828 Hanger @:

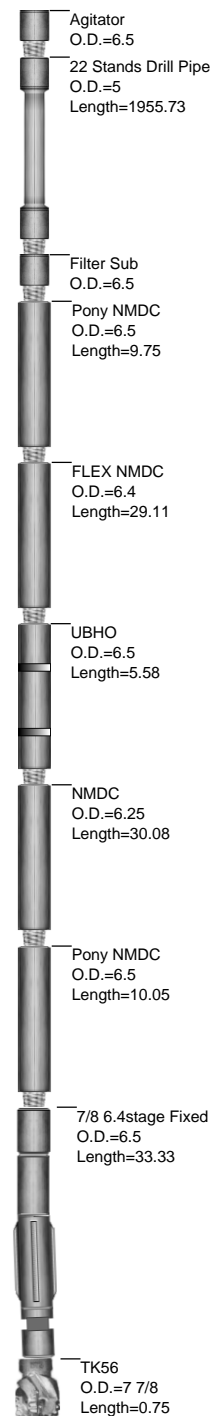
INC IN: .0 INC OUT: .0 AZM IN: .00 AZM OUT: .00

6-1/2" Slick SDI Titan 22 7:8 ML 6.4 Stg 2.0 FBH

Rev/Gal: 0.29
 2.0° Fixed: Bit to Bend: 4.03'
 Flow: 300-600GPM
 MAX RPM: 60 (20RPM in CURVE)
 MAX DIFF: 1250 (Best @ 800)
 Power Section Fit: -.004"
 Directional: 64' FT,

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
TK56	A236460		7 7/8	0.75	0.75	4 1/2 REGP	REED
7/8 6.4stage Fixed 2.0	65398		6.5	33.33	34.08	4 1/2 XHB	SDI
Pony NMDC	125-289	3 1/4	6.5	10.05	44.13	4 1/2 XHB	SDI
NMDC	122-409		6.25	30.08	74.21	4 1/2 XHB	SDI
UBHO	129-557	3 1/4	6.5	5.58	79.79	4 1/2 XHB	SDI
FLEX NMDC	DR22177	3 1/8	6.4	29.11	108.90	4 1/2 XHB	SDI
Pony NMDC	125-408	3 1/4	6.5	9.75	118.65	4 1/2 XHB	SDI
Filter Sub	SD116449	3 1/8	6.5	5.86	124.51	4 1/2 IFB	SDI
22 Stands Drill Pipe	DP-4.276-S-13	4.276	5	1,955.73	2080.24	I.F.B	Rig
Agitator	150-65484		6.5	29.60	2109.84	4 1/2 IFB	NOV





JOB NO.: OP.002261
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22 Pad
RIG NAME: Xtreme 24
STATE: Colorado
COUNTY: Country
WELL NAME: Hilgers 8N2-34HZ

FIELD: Wattenberg
Township: 3N
Range 68W

MOTOR INFORMATION			
Desc: 6-1/2" Slick SDI Titan 22 7/8 ML 6.4			
Str 2 0 FRH			
Bent Hsg/Sub: 2	/	2	Bit to Bend: 4.03
Pad OD: 6.9		NB Stab:	

Slide Report for BHA # 2

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
2	23-Jun	Drilling	04:18	04:31	0.22	3945	3975	30	36	138.5	60	2.4	600	1975		0.88	275.90	0.47	
2	23-Jun	Drilling	04:36	04:44	0.13	3975	4064	89	36	667.5	60	2.4	600	1975		0.81	288.55	0.48	
2	23-Jun	Drilling	04:49	04:57	0.13	4064	4104	40	36	300.0	60	2.4	600	1975		0.86	323.44	2.44	
2	23-Jun	Sliding	04:57	05:05	0.13	4104	4119	15	15	112.5	60	2.4	600	1975	180	1.07	341.39	2.44	
2	23-Jun	Drilling	05:05	05:14	0.15	4119	4152	33	36	220.0	60	2.4	600	1975		1.73	1.04	2.44	
2	23-Jun	Drilling	05:19	05:27	0.13	4152	4241	89	36	667.5	60	2.4	600	1975		2.16	359.31	0.55	
2	23-Jun	Drilling	05:32	05:40	0.13	4241	4329	88	36	660.0	60	2.4	600	1975		2.19	347.37	0.51	
2	23-Jun	Drilling	05:45	06:13	0.47	4329	4418	89	36	190.7	60	2.4	600	1975		2.05	340.82	0.34	
2	23-Jun	Drilling	06:18	06:30	0.20	4418	4507	89	36	445.0	60	2.4	600	1975		1.64	329.06	0.74	
2	23-Jun	Drilling	06:33	06:37	0.07	4507	4531	24	36	360.0	60	2.4	600	1975		1.52	324.07	0.74	
2	23-Jun	Sliding	06:37	06:48	0.18	4531	4545	14	8	76.4	0	2.8	600	2840	150M	1.47	320.48	0.79	
2	23-Jun	Drilling	06:48	06:56	0.13	4545	4596	51	36	382.5	60	13	600	3300		1.32	305.07	0.79	
2	23-Jun	Drilling	07:01	07:11	0.17	4596	4684	88	36	528.0	60	13	600	3300		0.62	319.52	1.18	
2	23-Jun	Drilling	07:15	07:21	0.10	4684	4710	26	36	260.0	60	13	600	3300		0.43	347.27	1.34	
2	23-Jun	Sliding	07:21	07:30	0.15	4710	4725	15	8	100.0	0	3.2	600	2900	150M	0.40	14.82	1.34	
2	23-Jun	Drilling	07:30	07:37	0.12	4725	4773	48	36	411.4	60	13	600	3300		0.78	70.58	1.34	
2	23-Jun	Drilling	07:41	07:54	0.22	4773	4862	89	36	410.8	60	13	600	3300		0.99	82.34	0.16	
2	23-Jun	Drilling	08:03	08:15	0.20	4862	4950	88	36	440.0	60	13	600	3300		0.83	79.30	0.23	
2	23-Jun	Drilling	08:23	08:34	0.18	4950	5039	89	36	485.5	60	13	600	3300		0.58	74.92	0.31	
2	23-Jun	Drilling	08:37	08:48	0.18	5039	5127	88	36	480.0	60	13	600	3300		0.39	70.84	0.18	
2	23-Jun	Drilling	08:51	09:04	0.22	5127	5216	89	36	410.8	60	13	600	3300		0.13	64.60	0.34	
2	23-Jun	Drilling	09:07	09:20	0.22	5216	5305	89	36	410.8	60	13	600	3300		0.07	224.04	0.18	
2	23-Jun	Drilling	09:29	09:41	0.20	5305	5394	89	36	445.0	60	13	600	3300		0.17	213.15	0.11	
2	23-Jun	Drilling	09:45	09:58	0.22	5394	5483	89	36	410.8	60	13	600	3300		0.23	221.39	0.08	
2	23-Jun	Drilling	10:01	10:11	0.17	5483	5571	88	36	528.0	60	13	600	3300		0.40	178.76	0.46	
2	23-Jun	Drilling	10:16	10:25	0.15	5571	5660	89	36	593.3	60	13	600	3620		0.16	83.07	0.81	

Slide Report for BHA # 2

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
2	23-Jun	Drilling	10:30	10:41	0.18	5660	5749	89	36	485.5	60	13	600	3620		0.33	21.52	0.17	
2	23-Jun	Drilling	10:46	10:56	0.17	5749	5838	89	36	534.0	60	13	600	3620		0.36	349.37	0.25	
2	23-Jun	Drilling	10:59	11:10	0.18	5838	5927	89	36	485.5	60	13	600	3620		0.46	340.11	0.12	
2	23-Jun	Drilling	11:14	11:25	0.18	5927	6016	89	36	485.5	60	13	600	3620		0.63	321.20	0.35	
2	23-Jun	Drilling	11:32	11:43	0.18	6016	6104	88	36	480.0	60	13	600	3620		0.60	305.26	0.24	
2	23-Jun	Drilling	11:48	11:59	0.18	6104	6193	89	36	485.5	60	13	600	3620		0.69	287.22	0.29	
2	23-Jun	Drilling	12:04	12:13	0.15	6193	6282	89	36	593.3	60	13	600	3620		0.69	287.05	0.12	
2	23-Jun	Drilling	12:17	12:28	0.18	6282	6371	89	36	485.5	60	13	600	3620		0.81	281.15	0.27	
2	23-Jun	Drilling	12:32	12:44	0.20	6371	6460	89	36	445.0	60	13	600	3620		0.91	282.45	0.11	
2	23-Jun	Drilling	13:13	13:24	0.18	6460	6548	88	36	480.0	60	13	600	3620		0.70	249.92	0.82	
2	23-Jun	Drilling	13:34	13:38	0.07	6548	6582	34	36	510.0	60	13	600	3620		1.50	199.81	11.07	

Total Drilled: 2637 **Avg. Total ROP:** 409.90

DEPTH% - TIME %

Total Rotary Drilled: 2593 **Avg. Rotary ROP:** 434.58 **Percent Rotary:** 98.33 - 92.75

Total Drilled Sliding: 44 **Avg. Slide ROP:** 94.29 **Percent Slide:** 1.67 - 7.25

BHA # 3



JOB NO.: OP.002261 Work Order: OP.002261
 Company: Anadarko E&P Onshore LLC
 LOCATION: Hilgers 16-22 Pad
 RIG NAME: Xtreme 24
 STATE: Colorado
 COUNTY: Weld
 WELL NAME: Hilgers 8N2-34HZ

FIELD: Wattenberg
 Township: 3N
 SECT. RANGE: 22 68W
 Lead DD: Marco Rolong
 Co. Man: Travis Kruckenberg/John Truett
 BHA TYPE: Steerable Assembly
 BHA WT: 163217 Wt @ Jars: N/A

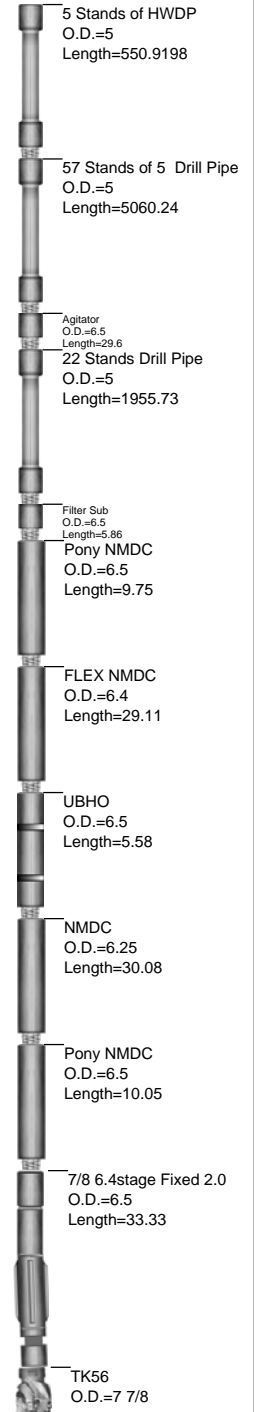
Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 23-Jun-17 @ 13:39	6-1/2" Slick SDI Titan 22 7:8	SO/PU: 0 - 0 / 0-0
Date Out: 23-Jun-17 @ 22:22	MFG.: SDI	Rot Strg Wt: 0-0
Hrs In Hole: 8.72	Pad OD: 6.9	WOB: 18 - 28
Start Depth: 6582.00	NB Stab: 0	TORQ: 4.2 - 7.6
End Depth: 7721.00	Bit to Bend: 4.03	SPP: 3100 - 3250
Total Drilled: 1139.00	Bent Hsg/Sub°: 2 / 2	Motor RPM: 174
Avg. Total ROP: 153.92	Lobe/Stage: 7/8 /	Rotary RPM: 20 - 20
Circ Hrs: Tot/Only 7.40 / .00	Rev/GAL: 0.29	Flow Rate: 600 - 600
Percent Slide: 69.62	Rotor Jet: 0	Avg Diff: 600
Percent Hrs: 71.62	Prop BUR: 0	Stall Pres.: 1280
Slide Hours: 5.30	Act BUR: 0	Off Bot Pres.: 2300
Total Sliding: 793.00		
Avg. Slide ROP: 149.62		
Percent Rotary: 30.38		
Percent Hrs: 28.38		
Rotary Hours: 2.10		
Total Rotary: 346.00		
Avg. Rotary ROP: 164.76		
Reason POOH:		

MWD Spacing	Gamma: 66.35 Restiv: 0 Sensor: 64	Last Casing O.D. 9 5/8
	GYRO: 0 DNSC: 6581 Sonic: 0	Shoe @: 1828 Hanger @:

INC IN: 7.3 INC OUT: .0 AZM IN: 181.65 AZM OUT: .00

6-1/2" Slick SDI Titan 22 7:8 ML 6.4 Stg 2.0 FBH
 Rev/Gal: 0.29
 2.0° Fixed: Bit to Bend: 4.03'
 Flow: 300-600GPM
 MAX RPM: 60 (20RPM in CURVE)
 MAX DIFF: 1250 (Best @ 800)
 Power Section Fit: -.004"
 Directional: 64' FT,

BHA Detail							
Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
TK56	A236460		7 7/8	0.75	0.75	4 1/2 REGP	REED
7/8 6.4stage Fixed 2.0	65398		6.5	33.33	34.08	4 1/2 XHB	SDI
Pony NMDC	125-289	3 1/4	6.5	10.05	44.13	4 1/2 XHB	SDI
NMDC	122-409		6.25	30.08	74.21	4 1/2 XHB	SDI
UBHO	129-557	3 1/4	6.5	5.58	79.79	4 1/2 XHB	SDI
FLEX NMDC	DR22177	3 1/8	6.4	29.11	108.90	4 1/2 XHB	SDI
Pony NMDC	125-408	3 1/4	6.5	9.75	118.65	4 1/2 XHB	SDI
Filter Sub	SD116449	3 1/8	6.5	5.86	124.51	4 1/2 IFB	SDI
22 Stands Drill Pipe	DP-4.276-S-13	4.276	5	1,955.73	2080.24	I.F.B	Rig
Agitator	150-65484		6.5	29.60	2109.84	4 1/2 IFB	NOV
57 Stands of 5 Drill Pipe	DP-4.276-S-13	4.276	5	5,060.24	7170.08	I.F.B	Rig
5 Stands of HWDP	DP-4-S-135	4	5	550.92	7721.00	F.H.B	Rig





JOB NO.: OP.002261
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22 Pad
RIG NAME: Xtreme 24
STATE: Colorado
COUNTY: Country
WELL NAME: Hilgers 8N2-34HZ

FIELD: Wattenberg
Township: 3N
Range 68W

MOTOR INFORMATION			
Desc: 6-1/2" Slick SDI Titan Z2 7.8 ML 6.4			
Sta 2.0 FRH			
Bent Hsg/Sub: 2	/	2	Bit to Bend: 4.03
Pad OD: 6.9		NB Stab:	

Slide Report for BHA # 3

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
3	23-Jun	Sliding	13:39	14:01	0.37	6582	6635	53	28	144.5	0	4.8	600	3250	170M	7.28	181.65	11.07	
3	23-Jun	Drilling	14:08	14:12	0.07	6635	6652	17	18	255.0	20	7.6	600	3200		9.15	180.71	11.07	
3	23-Jun	Sliding	14:12	14:35	0.38	6652	6707	55	28	143.5	20	7.6	600	3200	170M	12.41	176.96	5.00	
3	23-Jun	Drilling	14:35	14:39	0.07	6707	6726	19	18	285.0	20	7.6	600	3200		13.33	175.87	5.00	
3	23-Jun	Drilling	14:48	14:52	0.07	6726	6752	26	18	390.0	20	7.6	600	3200		14.60	174.56	5.50	
3	23-Jun	Sliding	14:52	15:15	0.38	6752	6806	54	28	140.9	0	4.2	600	3150	30L	17.46	171.60	5.50	
3	23-Jun	Drilling	15:15	15:18	0.05	6806	6814	8	18	160.0	20	7.6	600	3200		17.89	171.24	5.50	
3	23-Jun	Drilling	15:22	15:26	0.07	6814	6840	26	18	390.0	20	7.6	600	3200		19.33	170.25	11.29	
3	23-Jun	Sliding	15:26	15:48	0.37	6840	6903	63	28	171.8	0	4.2	600	3100	20R	26.42	171.81	11.29	
3	23-Jun	Sliding	15:52	16:24	0.53	6903	6992	89	28	166.9	0	4.2	600	3100	20R	36.15	175.01	11.04	
3	23-Jun	Sliding	16:30	16:57	0.45	6992	7067	75	28	166.7	0	4.2	600	3100	20R	42.56	176.14	7.49	
3	23-Jun	Drilling	16:57	17:02	0.08	7067	7080	13	18	156.0	20	4.2	600	3100		43.54	176.21	7.49	
3	23-Jun	Drilling	17:12	17:15	0.05	7080	7095	15	18	300.0	20	4.2	600	3100		44.66	176.29	7.49	
3	23-Jun	Sliding	17:15	17:38	0.38	7095	7175	80	28	208.7	20	4.2	600	3100	20R	53.47	177.83	11.70	
3	23-Jun	Sliding	17:45	18:13	0.47	7175	7254	79	28	169.3	20	4.2	600	3100	20R	59.99	178.07	6.89	
3	23-Jun	Drilling	18:13	18:18	0.08	7254	7262	8	18	96.0	20	4.2	600	3100		60.54	178.05	6.89	
3	23-Jun	Drilling	18:23	18:43	0.33	7262	7319	57	18	171.0	20	4.2	600	3100		64.01	177.97	5.26	
3	23-Jun	Sliding	18:43	18:57	0.23	7319	7355	36	28	154.3	20	4.2	600	3100	360	65.91	177.98	5.26	
3	23-Jun	Drilling	19:02	19:16	0.23	7355	7387	32	18	137.1	20	4.2	600	3100		67.70	178.09	8.29	
3	23-Jun	Sliding	19:16	19:36	0.33	7387	7447	60	28	180.0	20	4.2	600	3100	360	72.50	179.48	8.29	
3	23-Jun	Drilling	19:41	20:08	0.45	7447	7498	51	18	113.3	20	4.2	600	3100		75.68	180.10	3.92	
3	23-Jun	Sliding	20:08	20:23	0.25	7498	7540	42	28	168.0	20	4.2	600	3100	360	77.32	180.03	3.92	
3	23-Jun	Drilling	20:28	20:47	0.32	7540	7582	42	18	132.6	20	4.2	600	3100		80.18	179.98	12.60	
3	23-Jun	Sliding	20:47	21:26	0.65	7582	7632	50	28	76.9	20	4.2	600	3100	360	86.48	179.95	12.60	
3	23-Jun	Sliding	21:31	22:01	0.50	7632	7689	57	28	114.0	20	4.2	600	3100	360	91.14	179.47	4.92	
3	23-Jun	Drilling	22:01	22:15	0.23	7689	7721	32	18	137.1	20	4.2	600	3100		92.64	179.02	4.92	

Slide Report for BHA # 3

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
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Total Drilled: 1139 **Avg. Total ROP:** 153.92 **DEPTH% - TIME %**

Total Rotary Drilled: 346 **Avg. Rotary ROP:** 164.76 **Percent Rotary:** 30.38 - 28.38

Total Drilled Sliding: 793 **Avg. Slide ROP:** 149.62 **Percent Slide:** 69.62 - 71.62

BHA # 4



JOB NO.: OP.002261 Work Order: OP.002261
 Company: Anadarko E&P Onshore LLC
 LOCATION: Hilgers 16-22 Pad
 RIG NAME: Xtreme 24
 STATE: Colorado
 COUNTY: Weld
 WELL NAME: Hilgers 8N2-34HZ

FIELD: Wattenberg
 Township: 3N
 SECT. RANGE: 22 68W
 Lead DD: Scott Ingram
 Co. Man: Travis Kruckenberg/John Truett
 BHA TYPE: Steerable Assembly
 BHA WT: 275732 Wt @ Jars: N/A

Time and Depths	MOTOR DATA	Drilling Parameters
Date In: 23-Jun-17 @ 22:22	6-1/2" Slick SDI Titan 22 7:8	SO/PU: 0 - 0 / 0-0
Date Out: 25-Jun-17 @ 14:30	MFG.: SDI	Rot Strg Wt: 0-0
Hrs In Hole: 40.13	Pad OD: 6.9	WOB: 18 - 50
Start Depth: 7721.00	NB Stab: 0	TORQ: 4.2 - 16
End Depth: 13657.00	Bit to Bend: 4.03	SPP: 3100 - 4180
Total Drilled: 5936.00	Bent Hsg/Sub°: 2 / 2	Motor RPM: 174
Avg. Total ROP: 229.78	Lobe/Stage: 7/8 / 6.4	Rotary RPM: 20 - 60
Circ Hrs: Tot/Only 28.00 / 2.17	Rev/GAL: 0.29	Flow Rate: 600 - 600
Percent Slide: 5.80	Rotor Jet: 0	Avg Diff: 600
Percent Hrs: 23.23	Prop BUR: 0	Stall Pres.: 1280
Slide Hours: 6.00	Act BUR: 0	Off Bot Pres.: 2300
Total Sliding: 344.00		
Avg. Slide ROP: 57.33		
Percent Rotary: 94.20		
Percent Hrs: 76.77		
Rotary Hours: 19.83		
Total Rotary: 5592.00		
Avg. Rotary ROP: 281.95		
Reason POOH: TD		

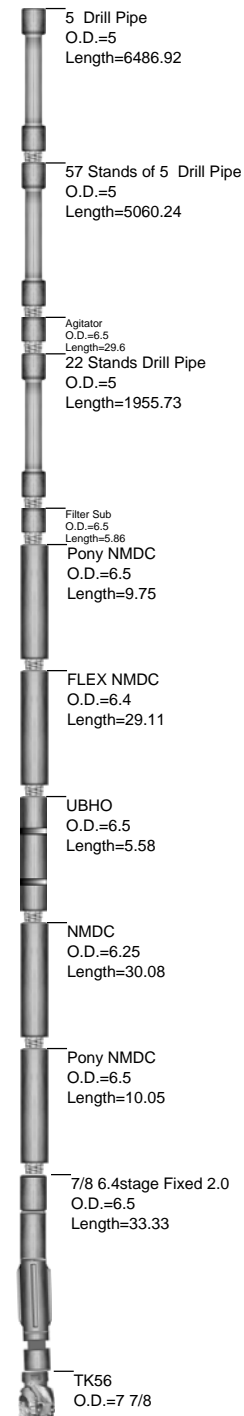
MWD Spacing	Gamma: 66.35 Restiv: 0 Sensor: 64	Last Casing O.D. 9 5/8
	GYRO: 0 DNSC: 7657 Sonic: 0	Shoe @: 1828 Hanger @:

INC IN: 93.8 INC OUT: .0 AZM IN: 178.59 AZM OUT: .00

6-1/2" Slick SDI Titan 22 7:8 ML 6.4 Stg 2.0 FBH
 Rev/Gal: 0.29
 2.0° Fixed: Bit to Bend: 4.03'
 Flow: 300-600GPM
 MAX RPM: 60 (20RPM in CURVE)
 MAX DIFF: 1250 (Best @ 800)
 Power Section Fit: -.004"
 Directional: 64' FT,

BHA Detail

Description	Serial #	I.D.	O.D.	Length	Sum	Top Conn	MFG.
TK56	A236460		7 7/8	0.75	0.75	4 1/2 REGP	REED
7/8 6.4stage Fixed 2.0	65398		6.5	33.33	34.08	4 1/2 XHB	SDI
Pony NMDC	125-289	3 1/4	6.5	10.05	44.13	4 1/2 XHB	SDI
NMDC	122-409		6.25	30.08	74.21	4 1/2 XHB	SDI
UBHO	129-557	3 1/4	6.5	5.58	79.79	4 1/2 XHB	SDI
FLEX NMDC	DR22177	3 1/8	6.4	29.11	108.90	4 1/2 XHB	SDI
Pony NMDC	125-408	3 1/4	6.5	9.75	118.65	4 1/2 XHB	SDI
Filter Sub	SD116449	3 1/8	6.5	5.86	124.51	4 1/2 IFB	SDI
22 Stands Drill Pipe	DP-4.276-S-13	4.276	5	1,955.73	2080.24	I.F.B	Rig
Agitator	150-65484		6.5	29.60	2109.84	4 1/2 IFB	NOV
57 Stands of 5 Drill Pipe	DP-4.276-S-13	4.276	5	5,060.24	7170.08	I.F.B	Rig
5 Drill Pipe	DP-4.276-S-13	4.276	5	6,486.92	13657.00	I.F.B	Rig





JOB NO.: OP.002261
Company: Anadarko E&P Onshore LLC
LOCATION: Hilgers 16-22 Pad
RIG NAME: Xtreme 24
STATE: Colorado
COUNTY: Country
WELL NAME: Hilgers 8N2-34HZ

FIELD: Wattenberg
Township: 3N
Range 68W

MOTOR INFORMATION			
Desc: 6-1/2" Slick SDI Titan 22 7/8 ML 6.4			
Sta 2.0 FRH			
Bent Hsg/Sub: 2	/	2	Bit to Bend: 4.03
Pad OD: 6.9		NB Stab:	

Slide Report for BHA # 4

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
4	23-Jun	Drilling	22:22	22:28	0.10	7721	7751	30	18	300.0	20	4.2	600	3100		93.75	178.59	1.98	
4	23-Jun	Sliding	22:28	22:39	0.18	7751	7763	12	28	65.5	20	4.2	600	3100	180	93.58	178.42	1.98	
4	23-Jun	Drilling	22:39	23:03	0.40	7763	7810	47	18	117.5	20	4.2	600	3100		92.93	177.76	1.98	
4	23-Jun	Drilling	23:08	23:12	0.07	7810	7820	10	18	150.0	20	4.2	600	3100		92.79	177.62	1.98	
4	23-Jun	Sliding	23:12	23:20	0.13	7820	7825	5	28	37.5	20	4.2	600	3100	150R	92.72	177.55	1.98	
4	23-Jun	Drilling	23:20	23:40	0.33	7825	7899	74	18	222.0	20	4.2	600	3100		91.21	177.51	2.15	
4	23-Jun	Drilling	23:45	23:47	0.03	7899	7909	10	18	300.0	20	4.2	600	3100		90.99	177.53	2.15	
4	23-Jun	Sliding	23:47	23:57	0.17	7909	7929	20	28	120.0	20	4.2	600	3100	145R	90.63	177.65	2.09	
4	23-Jun	Drilling	23:57	24:00	0.05	7929	7930	1	18	20.0	20	4.2	600	3100		90.62	177.66	2.09	
4	24-Jun	Drilling	00:00	00:11	0.18	7930	7988	58	18	316.4	20	4.2	600	3100		90.12	178.77	2.09	
4	24-Jun	Drilling	00:16	00:19	0.05	7988	7998	10	18	200.0	20	4.2	600	3100		90.03	178.96	2.09	
4	24-Jun	Sliding	00:19	00:30	0.18	7998	8012	14	28	76.4	20	4.2	600	3100	100R	89.91	179.22	2.09	
4	24-Jun	Drilling	00:30	00:43	0.22	8012	8077	65	18	300.0	20	4.2	600	3100		89.41	179.45	0.83	
4	24-Jun	Drilling	00:48	00:51	0.05	8077	8100	23	18	460.0	20	4.2	600	3100		89.24	179.53	0.83	
4	24-Jun	Sliding	00:51	00:59	0.13	8100	8110	10	28	75.0	20	4.2	600	3100	120R	89.34	179.56	1.30	
4	24-Jun	Drilling	00:59	01:11	0.20	8110	8165	55	18	275.0	20	4.2	600	3100		90.03	179.77	1.30	
4	24-Jun	Drilling	01:16	01:32	0.27	8165	8254	89	18	333.8	20	4.2	600	3100		90.05	180.56	1.17	
4	24-Jun	Drilling	01:37	01:41	0.07	8254	8264	10	18	150.0	20	4.2	600	3100		90.00	180.67	1.17	
4	24-Jun	Sliding	01:41	01:50	0.15	8264	8276	12	28	80.0	20	4.2	600	3100	130R	89.94	180.80	1.17	
4	24-Jun	Drilling	01:50	02:03	0.22	8276	8346	70	18	323.1	20	4.2	600	3100		89.58	179.93	1.45	
4	24-Jun	Drilling	02:08	02:22	0.23	8346	8432	86	18	368.6	20	4.2	600	3100		89.08	179.00	1.15	
4	24-Jun	Drilling	02:27	02:42	0.25	8432	8521	89	18	356.0	20	4.2	600	3100		91.22	179.57	3.80	
4	24-Jun	Drilling	02:47	02:51	0.07	8521	8540	19	18	285.0	20	4.2	600	3100		91.90	179.81	3.80	
4	24-Jun	Sliding	02:51	03:03	0.20	8540	8552	12	28	60.0	20	4.2	600	3100	30R	92.18	179.93	1.39	
4	24-Jun	Drilling	03:03	03:16	0.22	8552	8610	58	18	267.7	20	4.2	600	3100		92.87	180.36	1.39	
4	24-Jun	Drilling	03:21	03:24	0.05	8610	8637	27	18	540.0	20	4.2	600	3100		93.11	180.55	1.49	

Slide Report for BHA # 4

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
4	24-Jun	Sliding	03:24	03:46	0.37	8637	8657	20	28	54.5	20	4.2	600	3100	140R	92.83	180.65	1.49	
4	24-Jun	Drilling	03:46	03:58	0.20	8657	8698	41	18	205.0	20	4.2	600	3100		92.26	180.88	1.49	
4	24-Jun	Drilling	04:03	04:16	0.22	8698	8787	89	18	410.8	20	4.2	600	3100		91.28	181.22	1.03	
4	24-Jun	Drilling	04:21	04:25	0.07	8787	8797	10	18	150.0	20	4.2	600	3100		91.19	181.25	1.03	
4	24-Jun	Sliding	04:25	04:35	0.17	8797	8812	15	28	90.0	20	4.2	600	3100	180	91.04	181.30	1.03	
4	24-Jun	Drilling	04:35	04:54	0.32	8812	8876	64	18	202.1	20	4.2	600	3100		89.81	182.06	2.26	
4	24-Jun	Drilling	04:59	05:01	0.03	8876	8886	10	18	300.0	20	4.2	600	3100		89.62	182.18	2.26	
4	24-Jun	Sliding	05:01	05:14	0.22	8886	8906	20	28	92.3	20	4.2	600	3100	180	89.34	182.32	0.78	
4	24-Jun	Drilling	05:14	05:26	0.20	8906	8965	59	18	295.0	20	4.2	600	3100		89.42	181.87	0.78	
4	24-Jun	Drilling	05:31	05:46	0.25	8965	9054	89	18	356.0	20	4.2	600	3100		89.12	181.47	0.62	
4	24-Jun	Drilling	05:51	06:00	0.15	9054	9079	25	18	166.7	20	4.2	600	3100		88.99	181.39	0.62	
4	24-Jun	Sliding	06:00	06:10	0.17	9079	9086	7	44	42.0	0	4.2	600	3550	150R	89.01	181.41	0.44	
4	24-Jun	Drilling	06:10	06:21	0.18	9086	9143	57	37	310.9	60	16	600	3990		89.18	181.59	0.44	
4	24-Jun	Drilling	06:27	06:43	0.27	9143	9232	89	37	333.8	60	16	600	3990		88.51	181.82	1.19	
4	24-Jun	Drilling	06:48	06:50	0.03	9232	9249	17	37	510.0	60	16	600	3990		88.31	181.86	1.19	
4	24-Jun	Sliding	06:50	07:02	0.20	9249	9259	10	48	50.0	0	4.2	600	3550	180	88.26	181.89	1.82	
4	24-Jun	Drilling	07:02	07:16	0.23	9259	9321	62	37	265.7	60	16	600	3990		89.36	182.12	1.82	
4	24-Jun	Drilling	07:29	07:31	0.03	9321	9331	10	37	300.0	60	16	600	3990		89.53	182.16	1.82	
4	24-Jun	Sliding	07:31	07:46	0.25	9331	9346	15	48	60.0	0	4.2	600	3550	10L	89.80	182.22	1.82	
4	24-Jun	Drilling	07:46	07:57	0.18	9346	9410	64	37	349.1	60	16	600	3990		90.51	182.35	1.12	
4	24-Jun	Drilling	08:02	08:20	0.30	9410	9498	88	37	293.3	60	16	600	3990		90.58	181.49	1.45	
4	24-Jun	Drilling	08:23	08:27	0.07	9498	9508	10	37	150.0	60	16	600	3990		90.55	181.35	1.45	
4	24-Jun	Sliding	08:27	08:46	0.32	9508	9518	10	48	31.6	0	4.2	600	3550	120L	90.52	181.21	1.45	
4	24-Jun	Drilling	08:46	09:01	0.25	9518	9587	69	37	276.0	60	16	600	3990		90.57	180.80	0.54	
4	24-Jun	Drilling	09:04	09:22	0.30	9587	9676	89	37	296.7	60	16	600	3990		90.99	180.76	0.62	
4	24-Jun	Drilling	09:26	09:43	0.28	9676	9765	89	37	314.1	60	16	600	3990		91.16	180.55	0.39	
4	24-Jun	Drilling	09:52	10:08	0.27	9765	9854	89	37	333.8	60	16	600	3990		90.97	180.31	0.38	
4	24-Jun	Drilling	10:17	10:33	0.27	9854	9942	88	37	330.0	60	16	600	3990		90.59	180.04	0.60	
4	24-Jun	Drilling	11:12	11:27	0.25	9942	10031	89	37	356.0	60	16	600	3990		91.15	179.22	1.55	
4	24-Jun	Drilling	11:32	11:35	0.05	10031	10048	17	37	340.0	60	16	600	3990		91.33	179.03	1.55	
4	24-Jun	Sliding	11:35	11:40	0.08	10048	10058	10	48	120.0	0	4.2	600	3550	20L	91.41	178.93	0.71	
4	24-Jun	Drilling	11:40	11:58	0.30	10058	10120	62	37	206.7	60	16	600	3550		91.43	178.49	0.71	
4	24-Jun	Drilling	12:02	12:19	0.28	10120	10209	89	37	314.1	60	16	600	3550		91.68	178.04	0.56	
4	24-Jun	Drilling	12:24	12:42	0.30	10209	10298	89	37	296.7	60	16	600	3550		91.95	177.69	0.47	
4	24-Jun	Drilling	12:46	13:03	0.28	10298	10387	89	37	314.1	60	16	600	3550		91.14	178.65	2.15	

Slide Report for BHA # 4

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
4	24-Jun	Drilling	13:12	13:14	0.03	10387	10397	10	37	300.0	60	16	600	3550		91.00	178.82	2.15	
4	24-Jun	Sliding	13:14	13:30	0.27	10397	10411	14	48	52.5	0	4.2	600	3550	120R	90.81	179.05	2.15	
4	24-Jun	Drilling	13:30	13:45	0.25	10411	10476	65	37	260.0	60	16	600	3550		90.83	178.92	0.24	
4	24-Jun	Drilling	13:48	14:04	0.27	10476	10566	90	37	337.5	60	16	600	3550		90.45	178.35	1.00	
4	24-Jun	Drilling	14:07	14:22	0.25	10566	10655	89	37	356.0	60	16	600	3550		90.50	177.95	0.44	
4	24-Jun	Drilling	14:28	14:42	0.23	10655	10743	88	39	377.1	60	16	600	4180		91.22	179.01	2.05	
4	24-Jun	Drilling	14:46	14:48	0.03	10743	10753	10	39	300.0	60	16	600	4180		91.33	179.18	2.05	
4	24-Jun	Sliding	14:48	15:04	0.27	10753	10768	15	50	56.3	60	4.2	600	3800	60R	91.48	179.45	2.05	
4	24-Jun	Drilling	15:04	15:18	0.23	10768	10832	64	39	274.3	60	16	600	4180		91.45	179.39	0.11	
4	24-Jun	Drilling	15:27	15:48	0.35	10832	10921	89	39	254.3	60	16	600	4180		91.39	178.99	0.58	
4	24-Jun	Drilling	15:52	16:11	0.32	10921	11010	89	39	281.1	60	16	600	4180		90.87	178.35	1.10	
4	24-Jun	Drilling	16:16	16:35	0.32	11010	11099	89	39	281.1	60	16	600	4180		90.53	177.84	0.55	
4	24-Jun	Drilling	16:39	17:01	0.37	11099	11188	89	39	242.7	60	16	600	4180		91.70	178.72	2.49	
4	24-Jun	Drilling	17:33	17:35	0.03	11188	11198	10	39	300.0	60	16	600	4180		91.89	178.88	2.49	
4	24-Jun	Sliding	17:35	18:00	0.42	11198	11215	17	50	40.8	60	16	600	4180	60R	92.17	179.11	0.73	
4	24-Jun	Drilling	18:00	18:15	0.25	11215	11277	62	39	248.0	60	16	600	4180		92.01	178.68	0.73	
4	24-Jun	Drilling	18:20	18:36	0.27	11277	11366	89	39	333.8	60	16	600	4180		92.17	177.99	0.88	
4	24-Jun	Drilling	18:41	19:02	0.35	11366	11455	89	39	254.3	60	16	600	4180		91.36	178.69	1.98	
4	24-Jun	Drilling	19:07	19:17	0.17	11455	11465	10	39	60.0	60	16	600	4180		91.22	178.83	1.98	
4	24-Jun	Sliding	19:17	19:42	0.42	11465	11485	20	50	48.0	60	16	600	4180	150R	91.02	179.08	0.77	
4	24-Jun	Drilling	19:42	20:01	0.32	11485	11544	59	39	186.3	60	16	600	4180		91.18	179.51	0.77	
4	24-Jun	Drilling	20:06	20:08	0.03	11544	11559	15	39	450.0	60	16	600	4180		91.21	179.62	0.77	
4	24-Jun	Sliding	20:08	20:25	0.28	11559	11571	12	50	42.4	60	16	600	4180	130R	91.25	179.69	0.54	
4	24-Jun	Drilling	20:25	20:40	0.25	11571	11633	62	39	248.0	60	16	600	4180		91.58	179.62	0.54	
4	24-Jun	Drilling	20:45	20:59	0.23	11633	11722	89	39	381.4	60	16	600	4180		90.07	180.73	3.12	
4	24-Jun	Sliding	21:04	21:36	0.53	11722	11744	22	50	41.3	60	16	600	4180	125R	89.51	181.13	3.12	
4	24-Jun	Drilling	21:36	21:50	0.23	11744	11811	67	39	287.1	60	16	600	4180		89.60	181.46	0.51	
4	24-Jun	Drilling	21:55	22:07	0.20	11811	11900	89	39	445.0	60	16	600	4180		89.81	181.36	0.40	
4	24-Jun	Drilling	22:12	22:33	0.35	11900	11989	89	39	254.3	60	16	600	4180		89.60	181.06	0.54	
4	24-Jun	Drilling	22:38	22:54	0.27	11989	12078	89	39	333.8	60	16	600	4180		89.25	181.02	0.39	
4	24-Jun	Drilling	22:59	23:15	0.27	12078	12166	88	39	330.0	60	16	600	4180		90.32	181.09	1.81	
4	24-Jun	Drilling	23:20	23:23	0.05	12166	12176	10	39	200.0	60	16	600	4180		90.50	181.10	1.81	
4	24-Jun	Sliding	23:23	23:37	0.23	12176	12186	10	50	42.9	60	16	600	4180	10R	90.68	181.11	1.81	
4	24-Jun	Drilling	23:37	23:53	0.27	12186	12255	69	39	258.8	60	16	600	4180		90.94	180.92	0.40	
4	24-Jun	Drilling	23:58	24:00	0.03	12255	12265	10	39	300.0	60	16	600	4180		90.97	180.89	0.40	

Slide Report for BHA # 4

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
4	25-Jun	Drilling	00:04	00:12	0.13	12265	12344	79	39	592.5	60	16	600	4180		91.10	180.88	0.15	
4	25-Jun	Drilling	00:20	00:36	0.27	12344	12433	89	39	333.8	60	16	600	4180		91.26	180.42	0.77	
4	25-Jun	Drilling	00:40	00:58	0.30	12433	12522	89	39	296.7	60	16	600	4180		90.80	179.87	0.98	
4	25-Jun	Drilling	01:04	01:19	0.25	12522	12611	89	39	356.0	60	16	600	4180		90.65	179.38	0.56	
4	25-Jun	Drilling	01:24	01:44	0.33	12611	12700	89	39	267.0	60	16	600	4180		90.91	179.33	0.41	
4	25-Jun	Drilling	01:49	02:06	0.28	12700	12789	89	39	314.1	60	16	600	4180		91.25	179.04	0.62	
4	25-Jun	Drilling	02:10	02:34	0.40	12789	12877	88	39	220.0	60	16	600	4180		91.61	178.71	0.53	
4	25-Jun	Drilling	02:38	02:53	0.25	12877	12966	89	39	356.0	60	16	600	4180		91.90	178.38	0.50	
4	25-Jun	Drilling	02:58	03:18	0.33	12966	13055	89	39	267.0	60	16	600	4180		91.50	179.29	1.74	
4	25-Jun	Sliding	03:27	03:43	0.27	13055	13074	19	50	71.3	60	16	600	4180	110R	91.36	179.59	1.74	
4	25-Jun	Drilling	03:43	04:03	0.33	13074	13144	70	39	210.0	60	16	600	4180		91.72	179.61	0.65	
4	25-Jun	Drilling	04:08	04:28	0.33	13144	13233	89	39	267.0	60	16	600	4180		91.01	180.08	1.57	
4	25-Jun	Drilling	04:32	04:36	0.07	13233	13238	5	39	75.0	60	16	600	4180		90.94	180.12	1.57	
4	25-Jun	Sliding	04:36	04:50	0.23	13238	13252	14	50	60.0	60	16	600	4180	150R	90.75	180.23	1.57	
4	25-Jun	Drilling	04:50	05:12	0.37	13252	13322	70	39	190.9	60	16	600	4180		91.11	180.32	0.68	
4	25-Jun	Drilling	05:18	05:37	0.32	13322	13410	88	39	277.9	60	16	600	4180		91.23	180.29	0.10	
4	25-Jun	Drilling	05:41	05:46	0.08	13410	13424	14	39	168.0	60	16	600	4180		91.22	180.28	0.10	
4	25-Jun	Sliding	05:46	05:56	0.17	13424	13433	9	50	54.0	60	16	600	4180	160R	91.21	180.27	0.10	
4	25-Jun	Drilling	05:56	06:16	0.33	13433	13435	2	39	6.0	60	16	600	4180		91.21	180.27	0.10	
4	25-Jun	Drilling	06:21	06:41	0.33	13435	13588	153	39	459.0	60	16	600	4180		91.82	180.21	0.40	
4	25-Jun	Drilling	06:43	07:00	0.28	13588	13657	69	39	243.5	60	16	600	4180		91.84	180.21	0.00	

Total Drilled: 5936 **Avg. Total ROP:** 229.78

DEPTH% - TIME %

Total Rotary Drilled: 5592 **Avg. Rotary ROP:** 281.95

Percent Rotary: 94.20 - 76.77

Total Drilled Sliding: 344 **Avg. Slide ROP:** 57.33

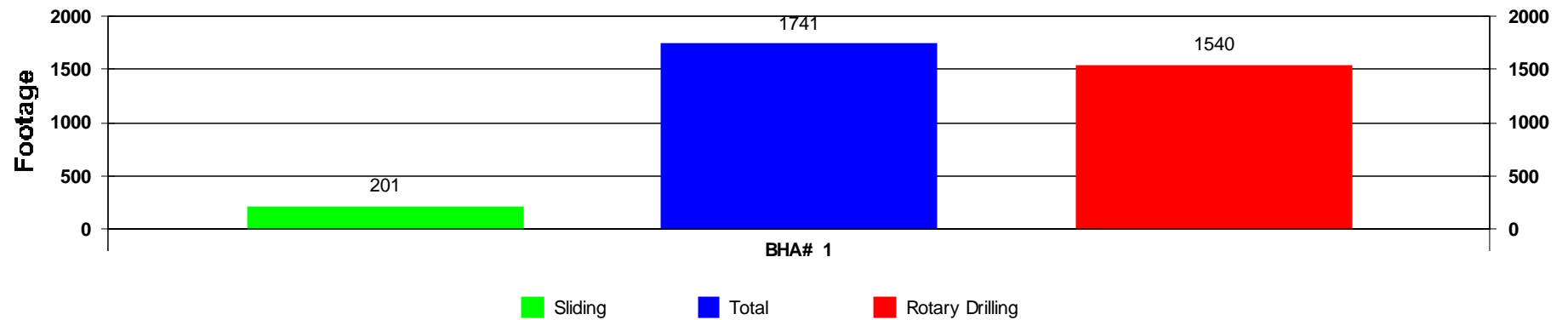
Percent Slide: 5.80 - 23.23



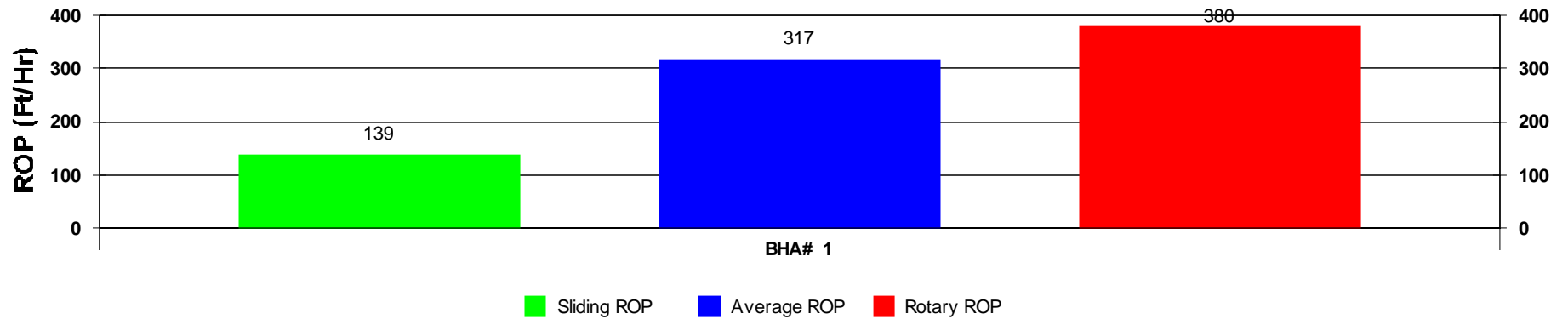
Scientific Drilling

JOB NO.:	OP.001368	FIELD:	Wattenberg	
Company:	Anadarko E&P Onshore LLC	Township:	3N	
LOCATION:	Hilgers 16-22HZ Pad	SECTRANGE:	22	68W
RIG NAME:	White Mountain 252	COMMENT		
STATE:	Colorado			
COUNTY:	Weld			
WELL NAME:	Hilgers 8N2-34HZ			

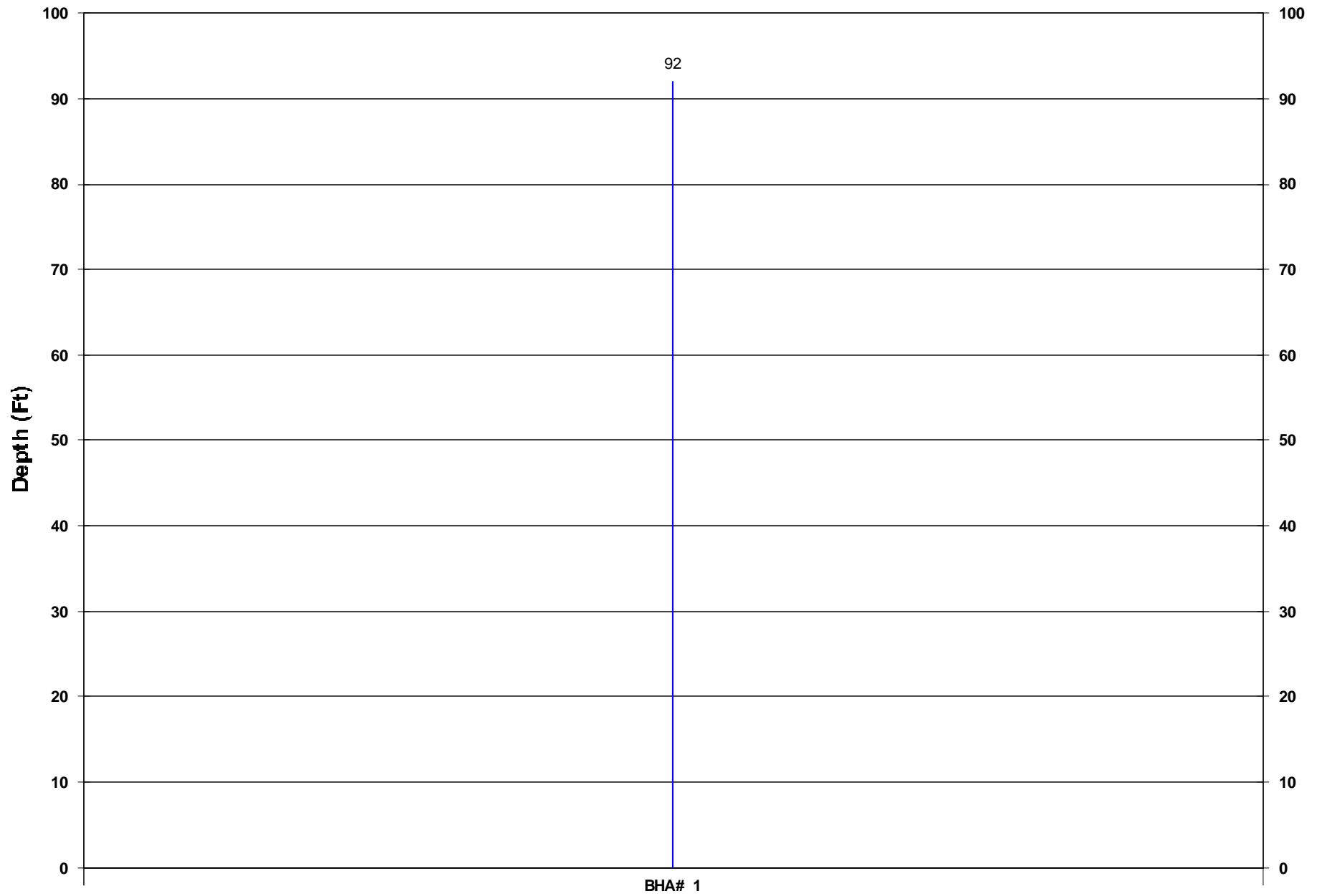
Footage Drilled with BHA



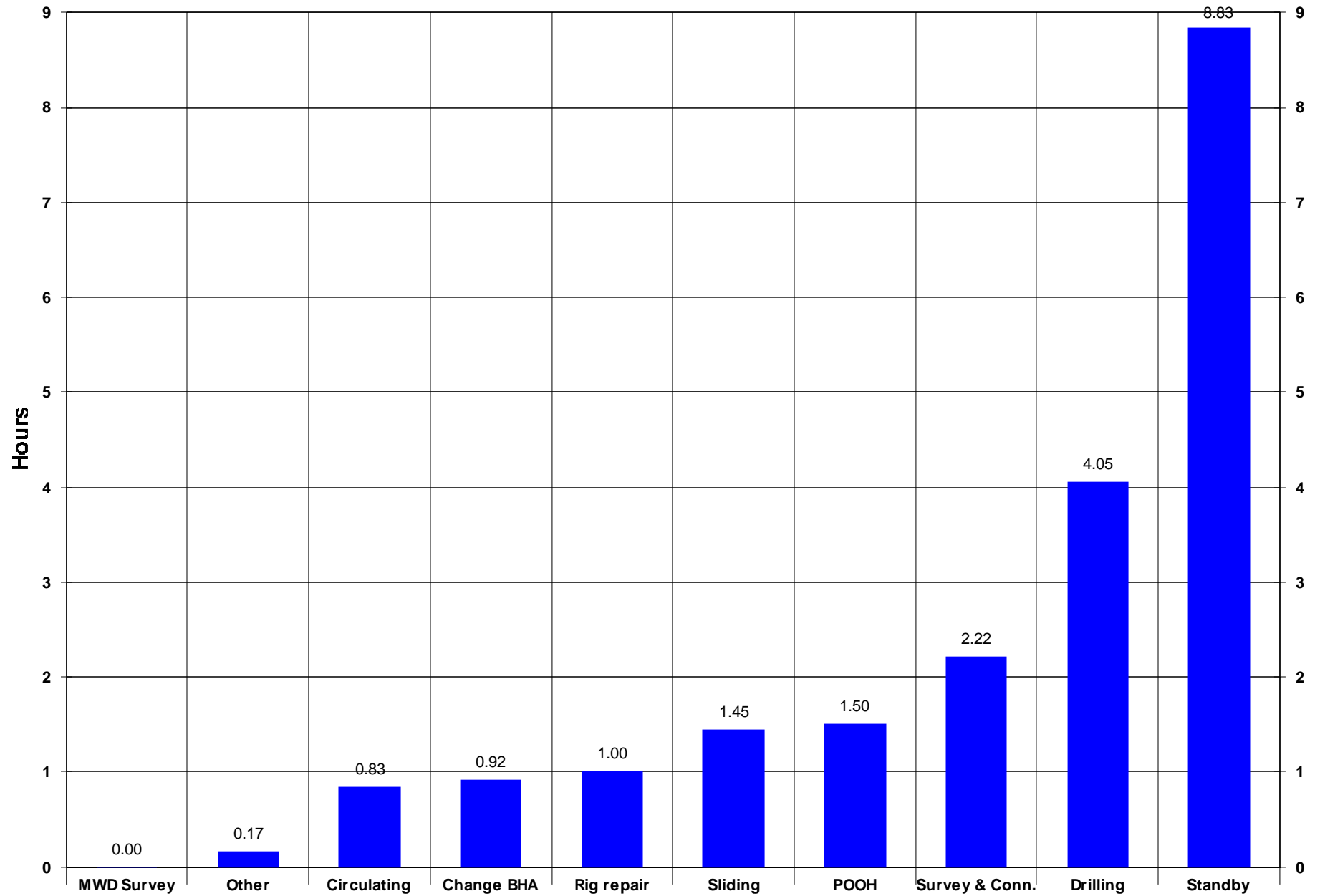
ROP vs BHA



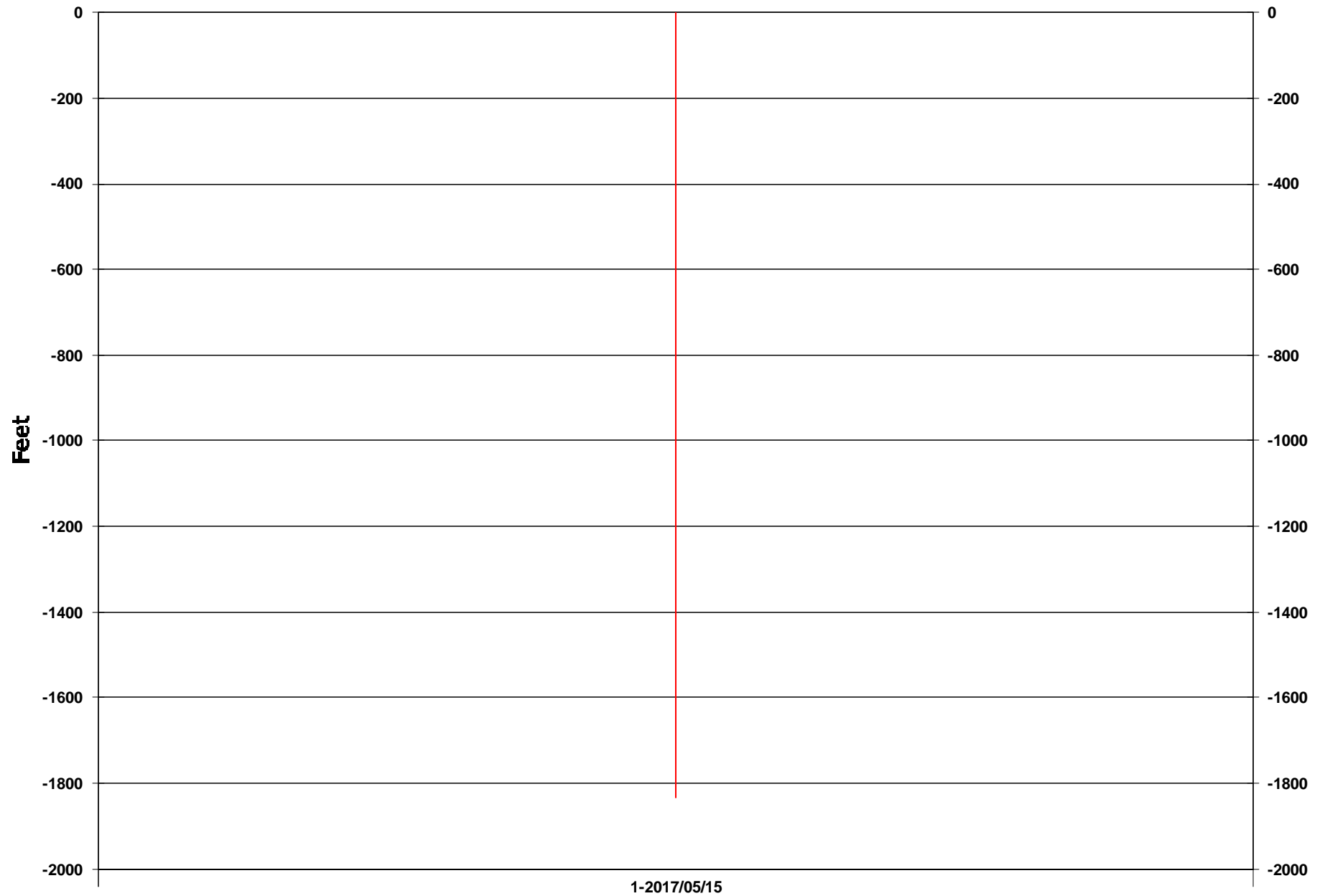
Depth vs BHA



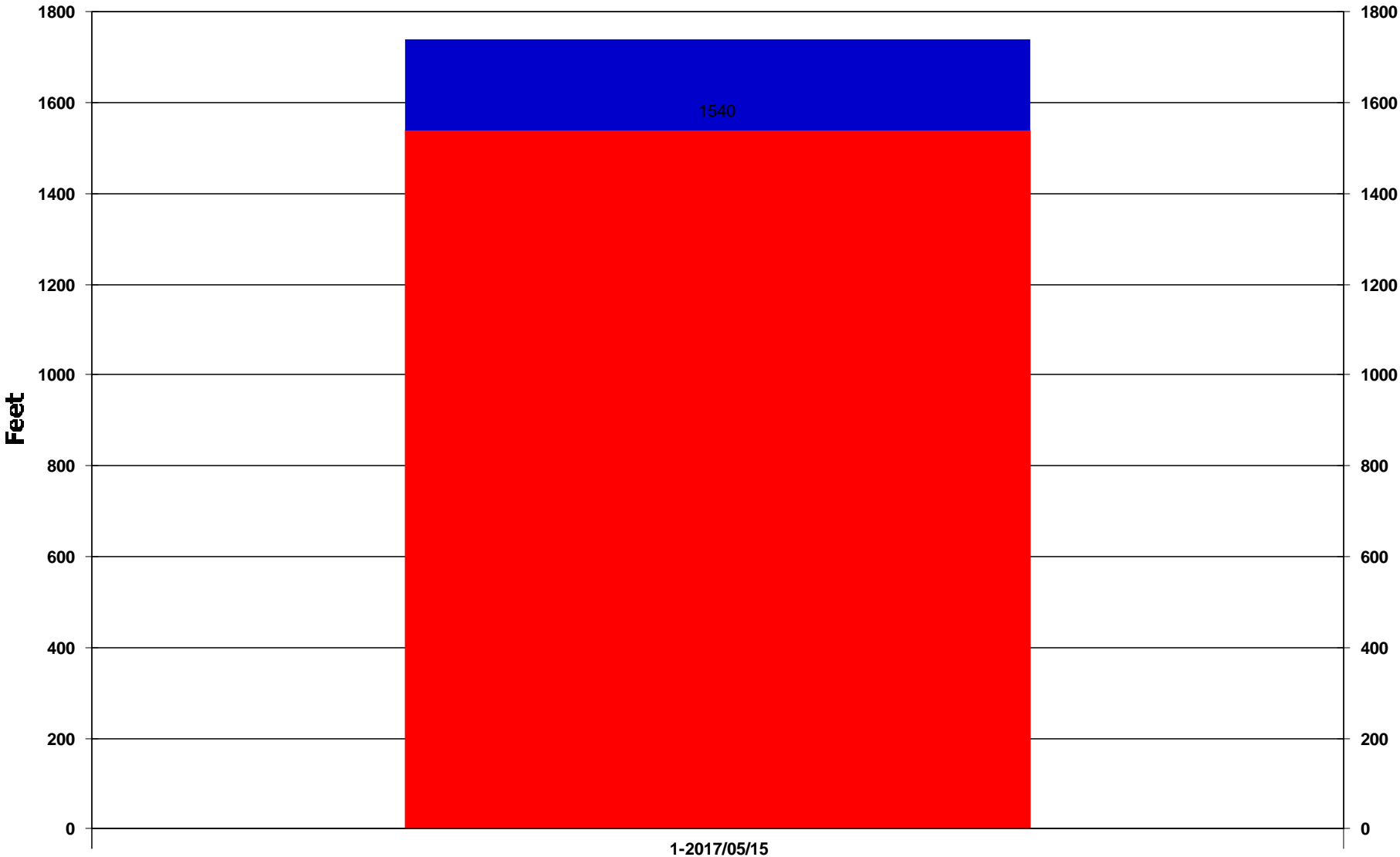
Activity Histogram



Measured Depth vs Days

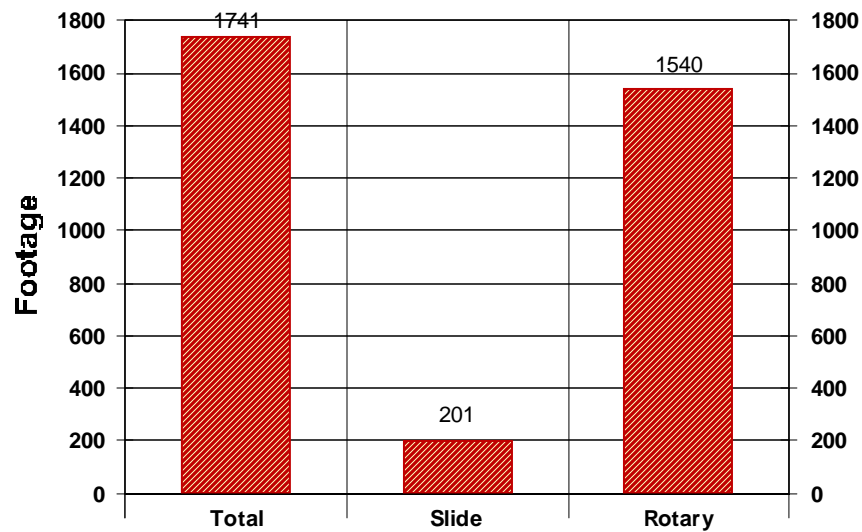


Daily Footage

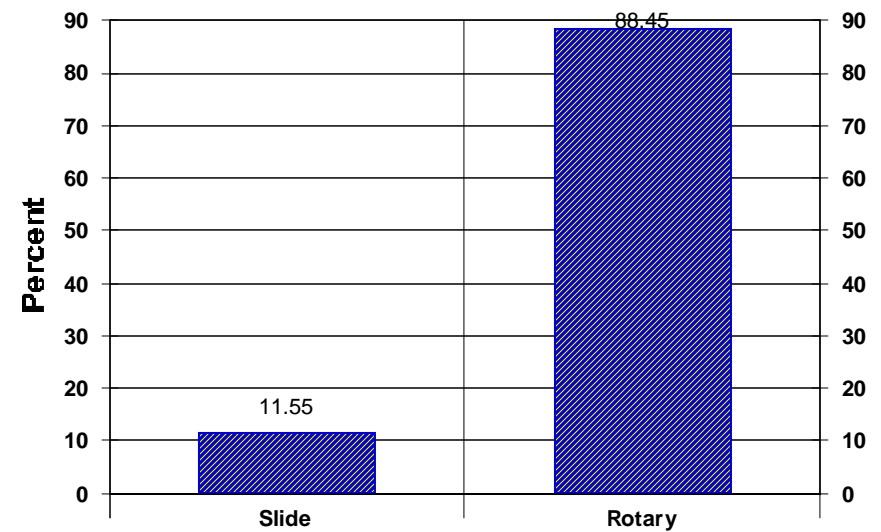


Rotary Drilling Sliding

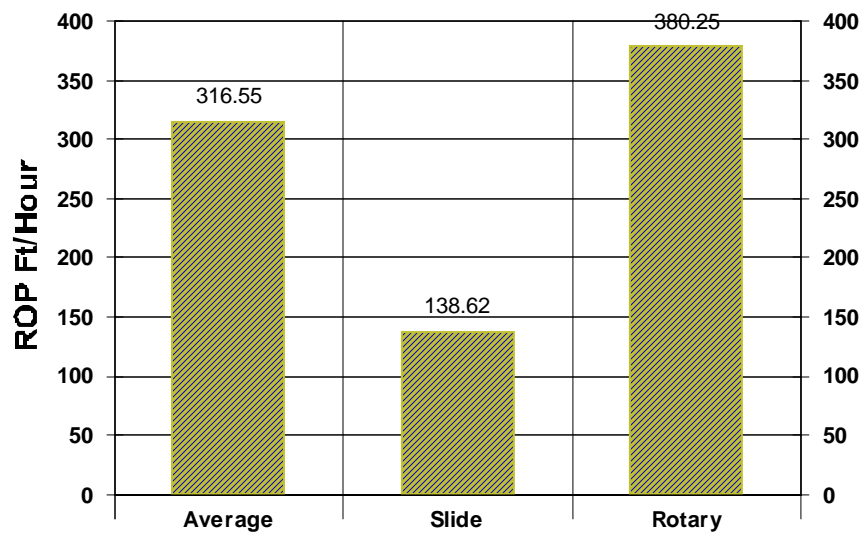
Footage Drilled Totals



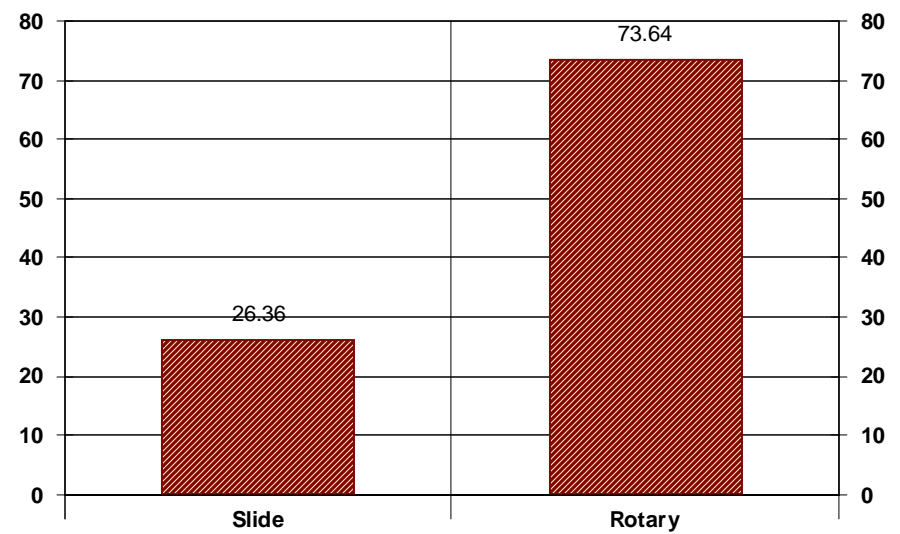
Footage Percent



Rate of Penetration Totals



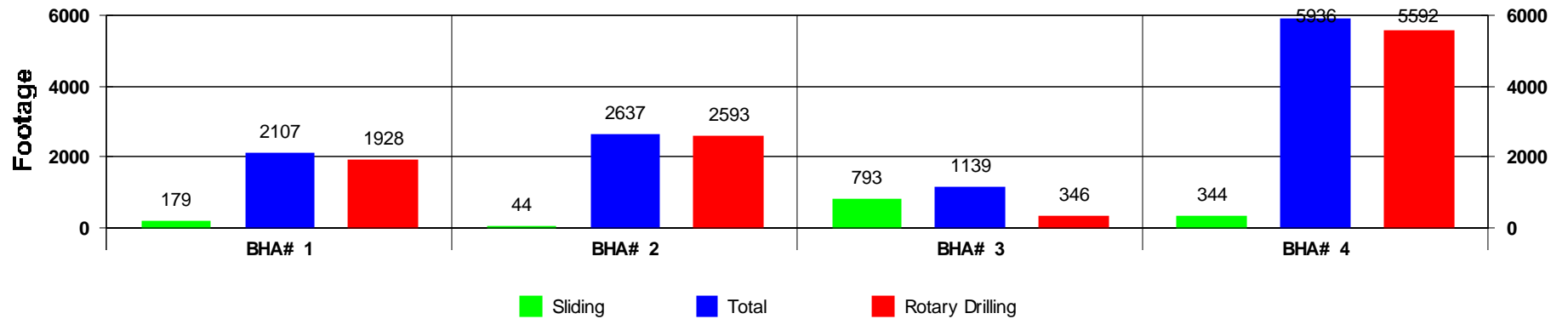
Time Percent



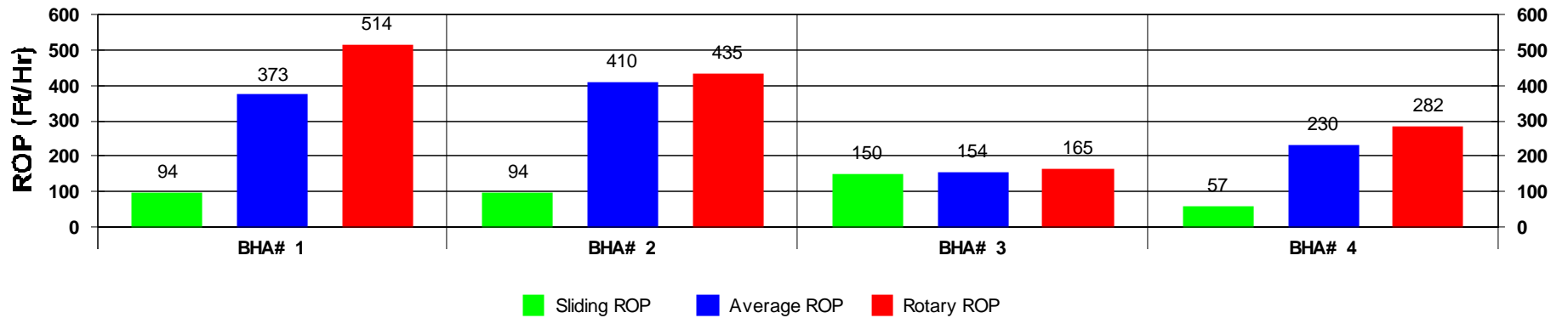


JOB NO.:	OP.002261	FIELD:	Wattenberg
Company:	Anadarko E&P Onshore LLC	Township:	3N
LOCATION:	Hilgers 16-22 Pad	SECTRANGE:	22 68W
RIG NAME:	Xtreme 24	COMMENT	
STATE:	Colorado		
COUNTY:	Weld		
WELL NAME:	Hilgers 8N2-34HZ		

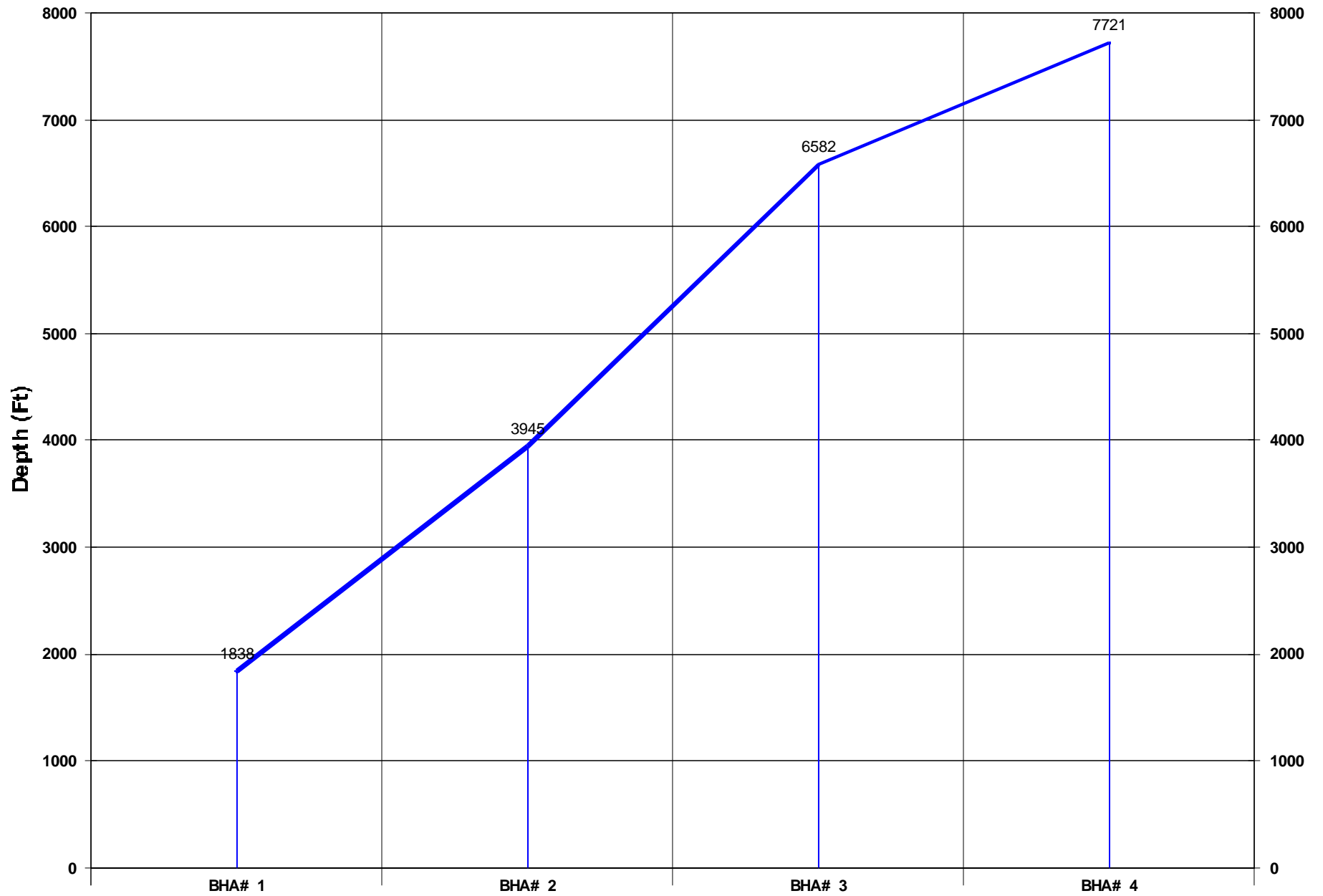
Footage Drilled with BHA



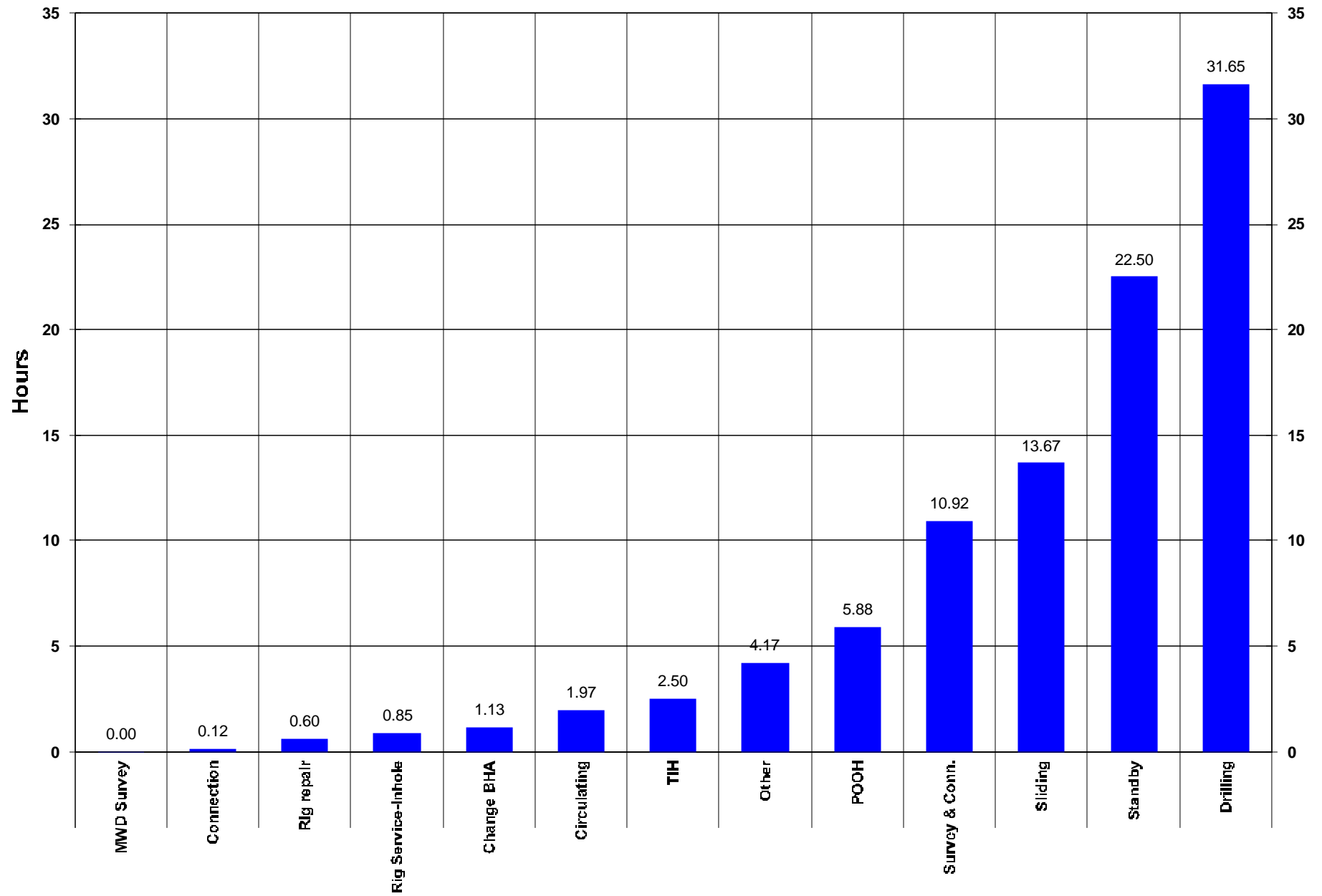
ROP vs BHA



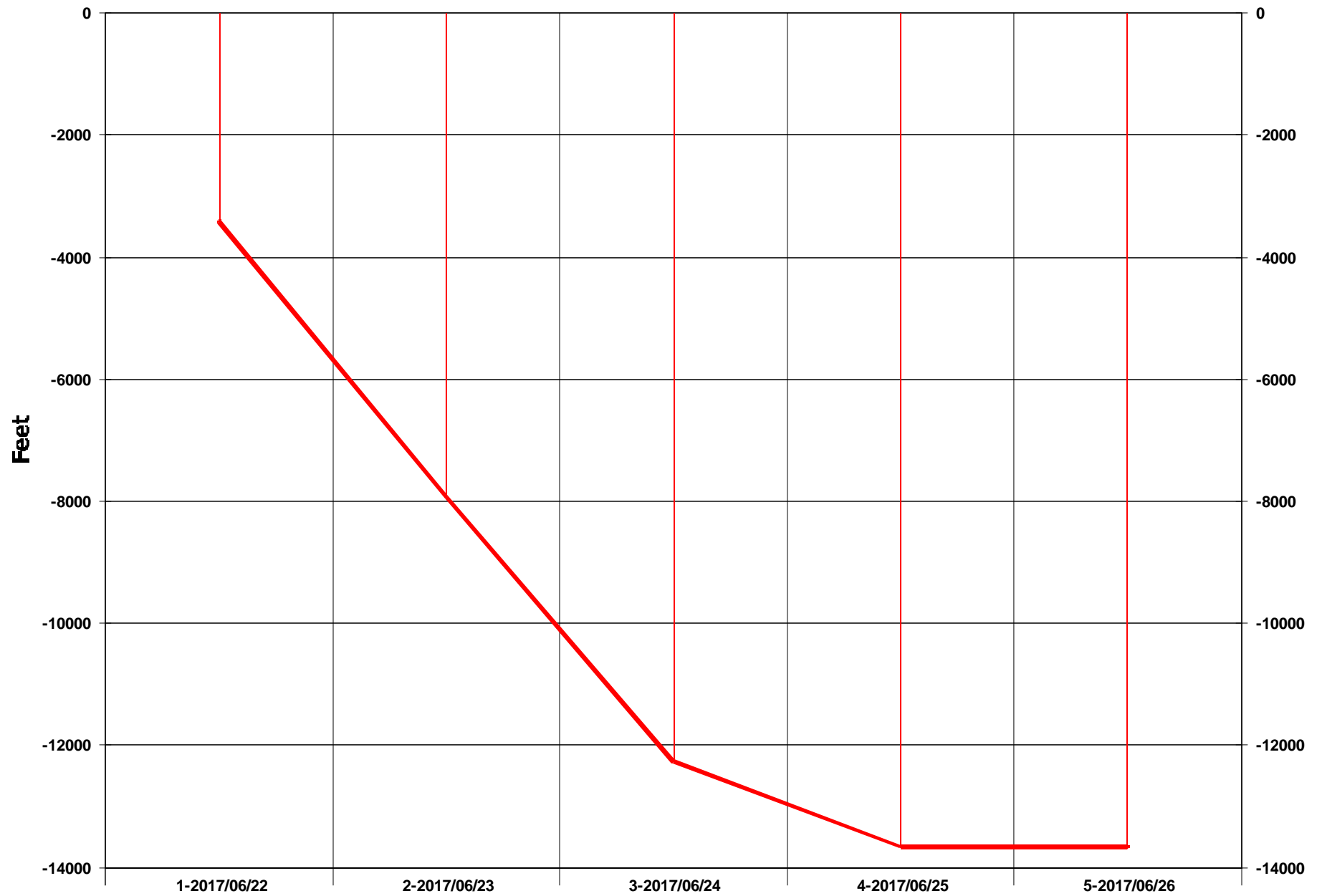
Depth vs BHA



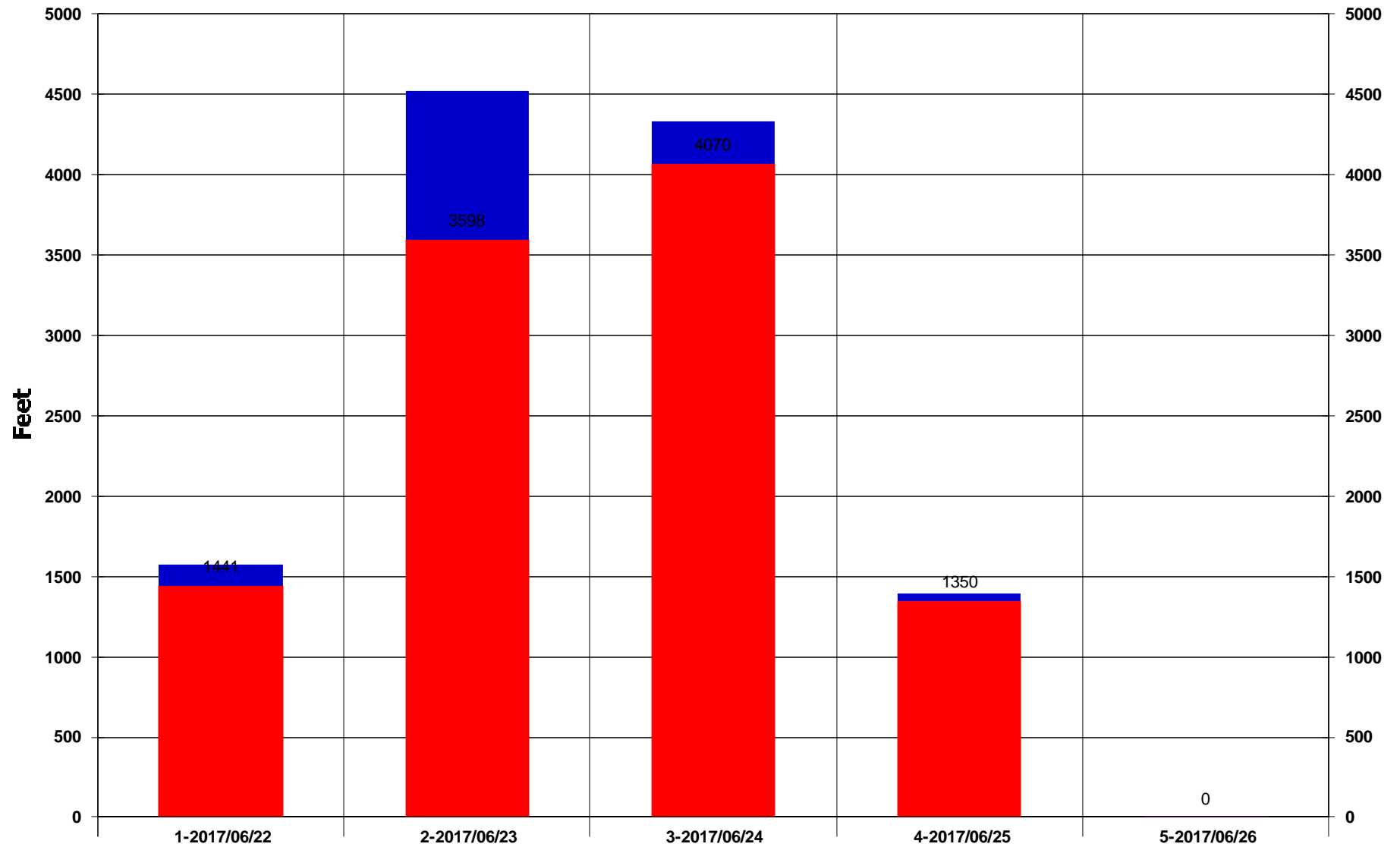
Activity Histogram



Measured Depth vs Days

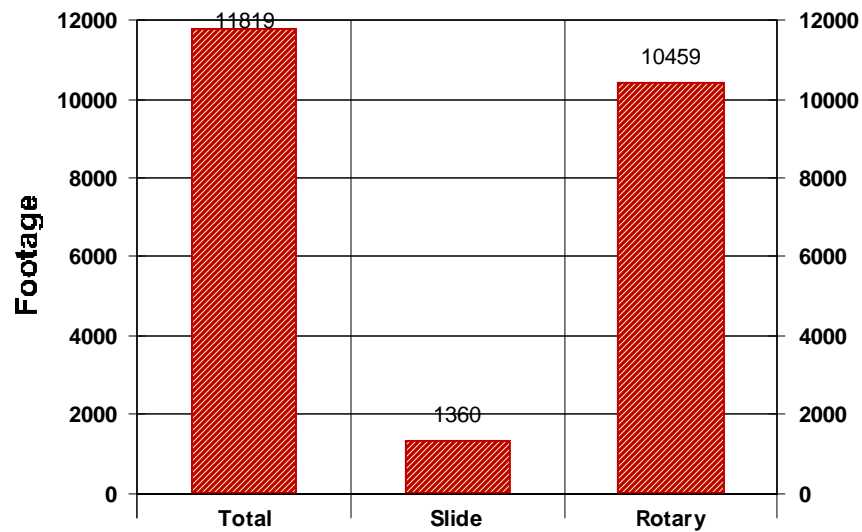


Daily Footage

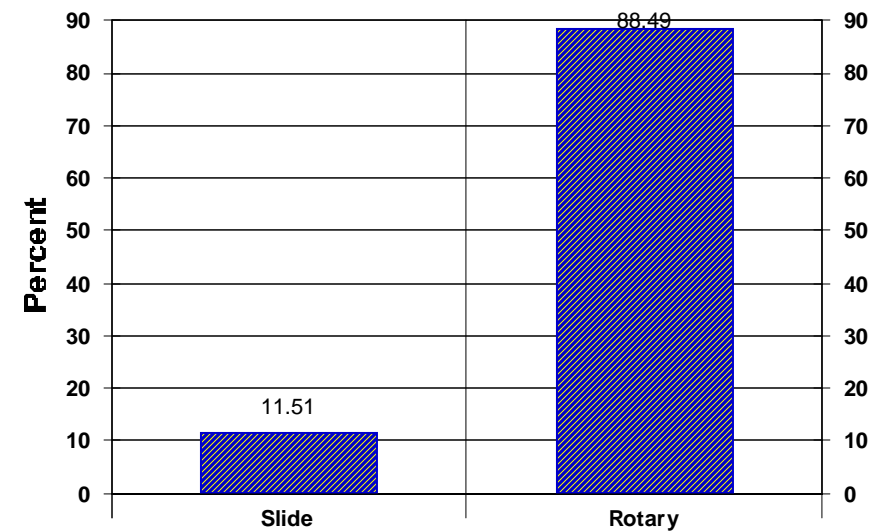


Rotary Drilling Sliding

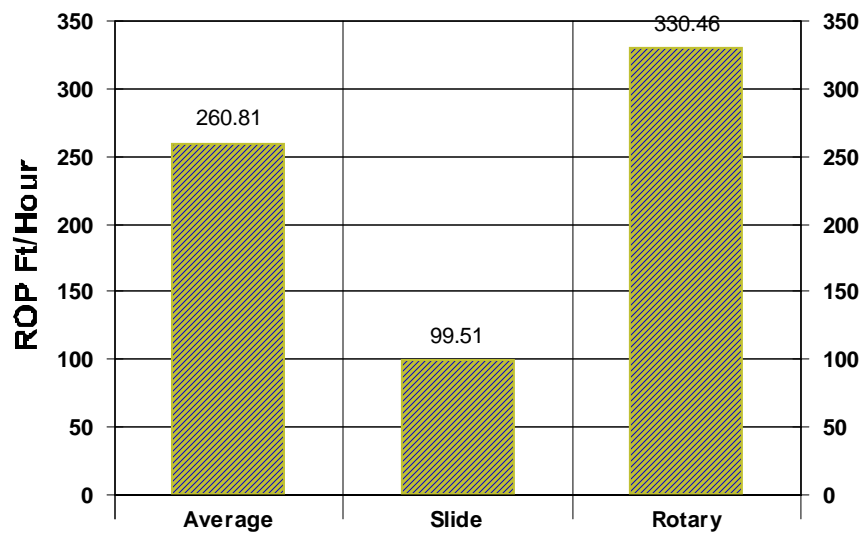
Footage Drilled Totals



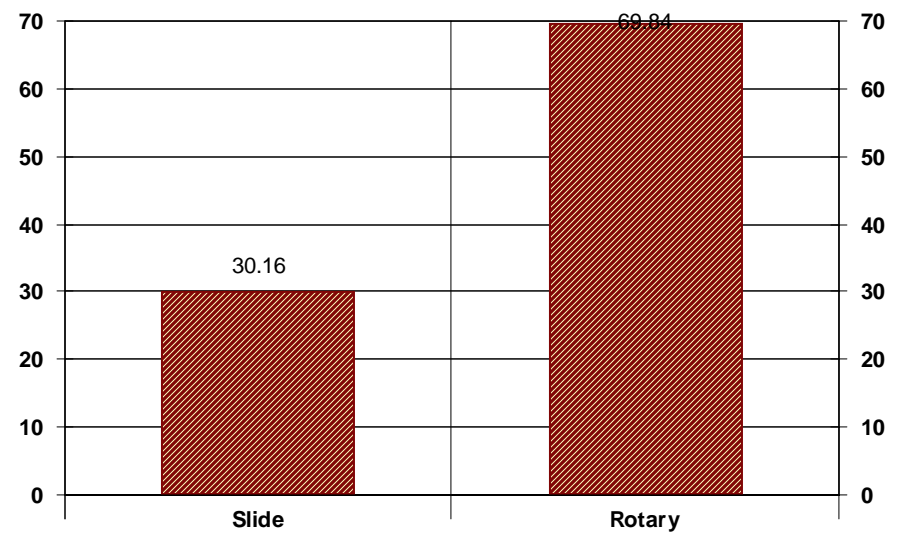
Footage Percent



Rate of Penetration Totals



Time Percent





SUPPORT STAFF

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