



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

**Ryan Directional Services
Directional Drilling Report
Field: Crocket Co, Tx
Site: University East 4109
Well: KH
Wellpath: Wellbore #1**

Prepared For:

EP ENERGY 

**Ryan Directional Services
19510 Oil Center BLVD.
Houston, TX 77073
Ph: 281-443-1414
Fx: 281-443-1476
www.nabors.com**



PROJECT DETAILS: Crocket Co, Tx
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Texas Central 4203

System Datum: Mean Sea Level
Local North: Grid

Project: Crocket Co, Tx
Site: University East 4109
Well: KH
Wellbore: Wellbore #1
Plan: Plan 1 (KH/Wellbore #1)

WELL DETAILS: KH

Ground Elevation: 2648.00
RKB Elevation: WELL @ 2677.00ft (Noram 21)
Rig Name: Noram 21

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	494141.18	1735740.00	31° 1' 21.44 N	101° 10' 37.22 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
954.00	1.36	288.90	953.90	4.26	-10.99	0.00	0.00	-4.23	
1044.67	0.00	0.00	1044.56	4.61	-12.01	1.50	180.00	-4.58	
1100.00	0.00	0.00	1099.89	4.61	-12.01	0.00	0.00	-4.58	
1600.00	10.00	90.00	1597.36	4.61	31.51	2.00	90.00	-4.69	
4700.00	10.00	90.00	4650.26	4.61	569.82	0.00	0.00	-6.10	
5200.00	0.00	0.00	5147.73	4.61	613.34	2.00	180.00	-6.22	
5690.00	0.00	0.00	5637.73	4.61	613.34	0.00	0.00	-6.22	
6440.92	90.11	180.15	6115.19	-473.77	612.06	12.00	180.15	472.17	
14306.39	90.11	180.15	6100.00	-8339.20	591.00	0.00	0.00	8337.60	N East 4109KH - BHL

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
UN East 4109KH - BHL	6100.00	-8339.20	591.00	485802.00	1736331.00
UN East 4109KH - FTP	6115.00	-583.18	618.00	493558.00	1736358.00

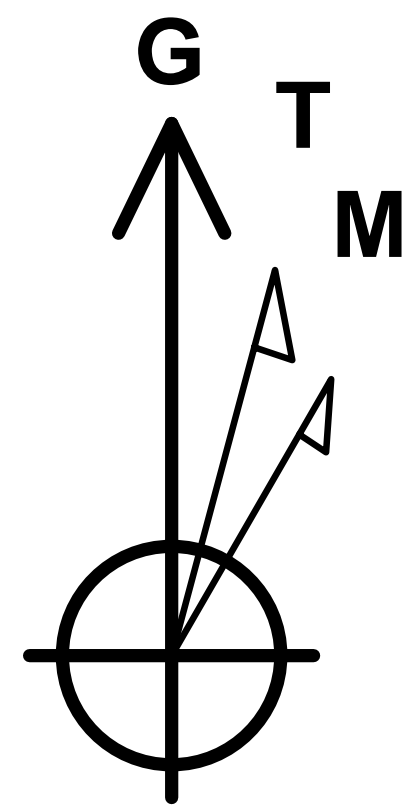
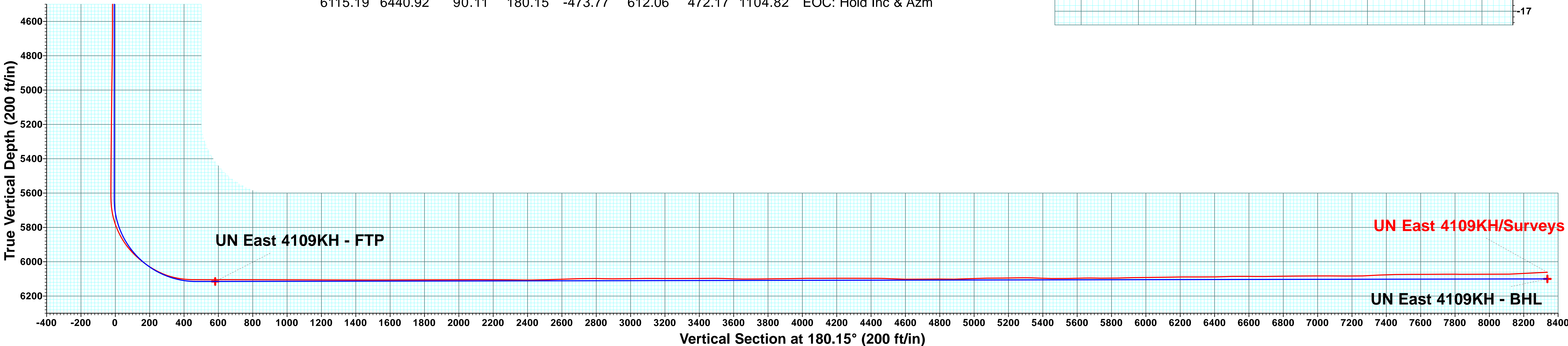
Targetline

6116' TVD @ 0' Vs

6100' TVD @ BHL

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
5637.73	5690.00	0.00	0.00	4.61	613.34	-6.22	626.43	KOP: 12° /100'
6115.19	6440.92	90.11	180.15	-473.77	612.06	472.17	1104.82	EOC: Hold Inc & Azm



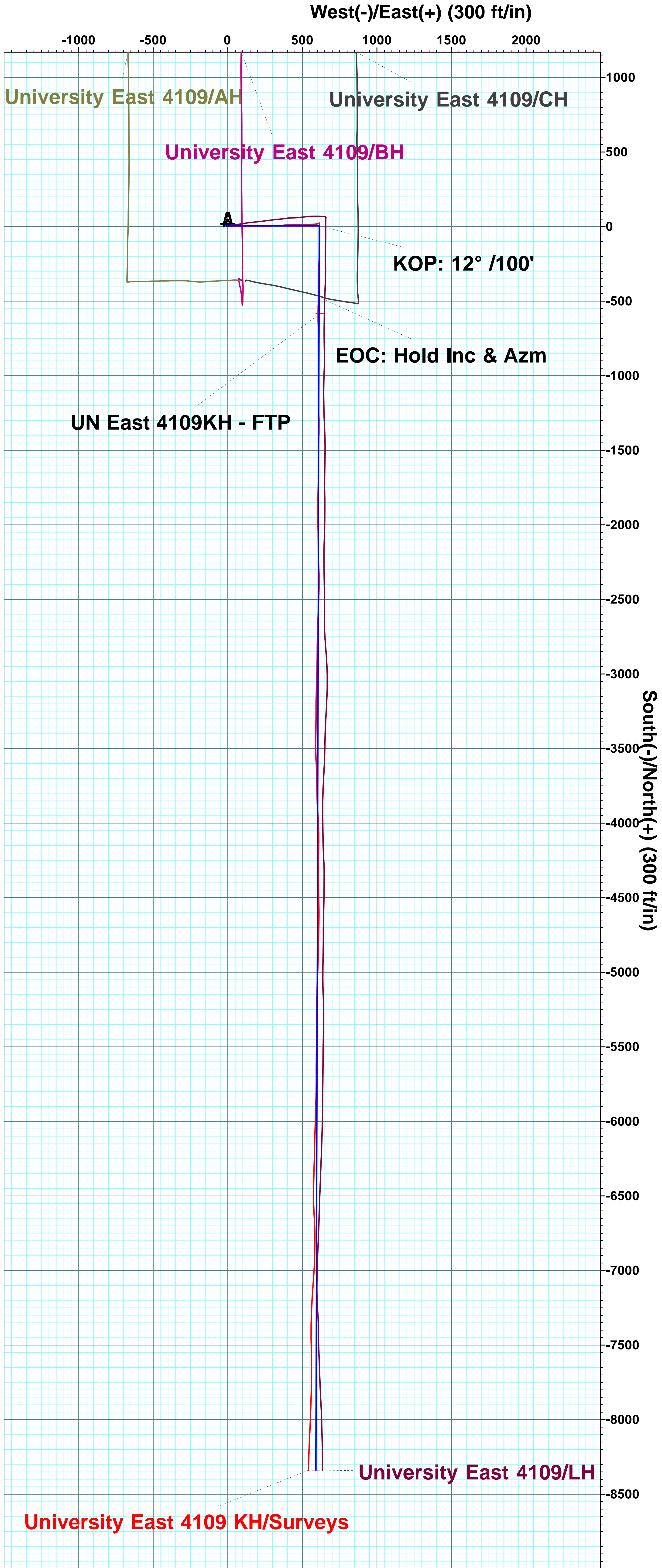
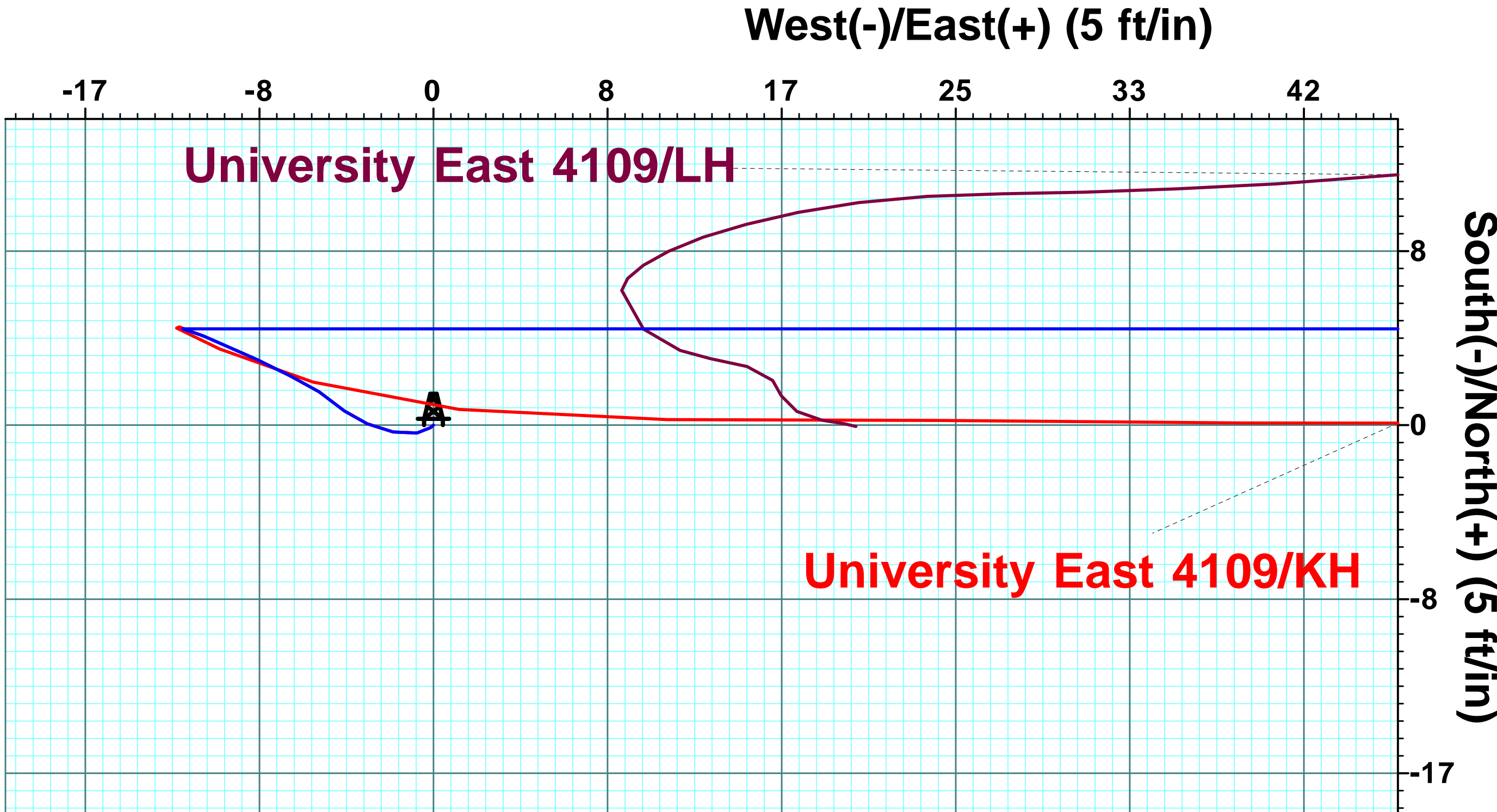
Azimuths to Grid North
True North: 0.43°
Magnetic North: 6.46°

Magnetic Field
Strength: 47746.6snT
Dip Angle: 59.34°
Date: 11/17/2014
Model: BGGM2014



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY





EP Energy E&P Company, L.P.

**Crocket Co, Tx
University East 4109
KH**

Wellbore #1

Design: Surveys

Standard Survey Report

22 December, 2014



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Project	Crocket Co, Tx, Crocket Co, Tx		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site	University East 4109		
Site Position:		Northing:	494,098.70 usft
From:	Map	Easting:	1,738,071.41 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	31° 1' 21.19 N
		Longitude:	101° 10' 10.42 W
		Grid Convergence:	-0.43 °

Well	KH		
Well Position	+N-S	0.00 ft	Northing:
	+E-W	0.00 ft	Easting:
Position Uncertainty		2.00 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	11/17/2014	6.03	59.34	47,747

Design	Surveys				
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		291.19

Survey Program	Date	12/22/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
29.00	954.00	Survey #1 (Wellbore #1)	Gyro NS R5000	Continuous north-seeking gyro on wireline	
1,024.00	14,318.00	Survey #2 (Wellbore #1)	Ryan-MWD+BGGM	OWSG MWD - BGGM	

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	
29.00	0.00	0.00	29.00	0.00	0.00	0.00	0.00	0.00	0.00	
129.00	0.21	229.53	129.00	-0.12	-0.14	0.09	0.21	0.21	0.00	
229.00	0.61	254.75	229.00	-0.38	-0.79	0.60	0.43	0.40	25.22	
329.00	0.75	286.87	328.99	-0.33	-1.93	1.68	0.40	0.14	32.12	
429.00	0.74	288.75	428.98	0.07	-3.17	2.98	0.03	-0.01	1.88	
529.00	0.72	309.88	528.97	0.68	-4.26	4.22	0.27	-0.02	21.13	
629.00	1.03	304.84	628.96	1.60	-5.48	5.69	0.32	0.31	-5.04	
729.00	0.81	291.49	728.95	2.37	-6.88	7.27	0.31	-0.22	-13.35	
829.00	1.20	299.34	828.93	3.14	-8.45	9.01	0.41	0.39	7.85	

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Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

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)
954.00	1.36	288.90	953.90	4.26	-10.99	11.79	0.23	0.13	-8.35
1,024.00	0.70	293.80	1,023.89	4.70	-12.17	13.05	0.95	-0.94	7.00
1,118.00	0.60	126.10	1,117.89	4.65	-12.30	13.15	1.38	-0.11	-178.40
1,212.00	2.20	113.20	1,211.86	3.65	-10.24	10.87	1.72	1.70	-13.72
1,306.00	3.60	107.20	1,305.74	2.06	-5.76	6.12	1.52	1.49	-6.38
1,399.00	5.20	96.10	1,398.46	0.75	1.22	-0.86	1.94	1.72	-11.94
1,493.00	7.00	90.30	1,491.92	0.27	11.18	-10.33	2.02	1.91	-6.17
1,588.00	9.10	90.10	1,585.98	0.22	24.48	-22.75	2.21	2.21	-0.21
1,681.00	8.70	90.90	1,677.86	0.10	38.87	-36.20	0.45	-0.43	0.86
1,776.00	10.20	87.80	1,771.57	0.31	54.46	-50.66	1.67	1.58	-3.26
1,870.00	10.00	89.60	1,864.12	0.69	70.94	-65.89	0.40	-0.21	1.91
1,965.00	9.60	90.00	1,957.73	0.74	87.11	-80.95	0.43	-0.42	0.42
2,059.00	9.50	90.60	2,050.43	0.66	102.70	-95.52	0.15	-0.11	0.64
2,153.00	9.60	91.20	2,143.12	0.42	118.30	-110.14	0.15	0.11	0.64
2,248.00	8.60	92.60	2,236.93	-0.07	133.31	-124.32	1.08	-1.05	1.47
2,343.00	9.40	86.80	2,330.76	0.04	148.15	-138.12	1.27	0.84	-6.11
2,437.00	10.10	87.70	2,423.40	0.80	164.05	-152.67	0.76	0.74	0.96
2,532.00	10.50	85.70	2,516.87	1.78	181.01	-168.12	0.56	0.42	-2.11
2,626.00	10.90	85.20	2,609.24	3.17	198.41	-183.84	0.44	0.43	-0.53
2,720.00	11.30	91.60	2,701.48	3.66	216.47	-200.51	1.38	0.43	6.81
2,814.00	10.10	91.30	2,793.84	3.21	233.92	-216.94	1.28	-1.28	-0.32
2,908.00	10.10	95.10	2,886.39	2.29	250.37	-232.61	0.71	0.00	4.04
3,003.00	10.50	90.70	2,979.86	1.45	267.32	-248.72	0.93	0.42	-4.63
3,098.00	10.90	84.60	3,073.21	2.19	284.92	-264.86	1.26	0.42	-6.42
3,192.00	9.10	82.70	3,165.78	3.97	301.14	-279.34	1.95	-1.91	-2.02
3,285.00	9.70	86.90	3,257.53	5.32	316.26	-292.95	0.98	0.65	4.52
3,380.00	10.40	86.00	3,351.07	6.36	332.80	-308.00	0.76	0.74	-0.95
3,475.00	10.00	89.50	3,444.57	7.03	349.61	-323.42	0.78	-0.42	3.68
3,570.00	10.20	82.70	3,538.10	8.17	366.20	-338.48	1.27	0.21	-7.16
3,665.00	9.70	85.60	3,631.67	9.85	382.52	-353.09	0.74	-0.53	3.05
3,759.00	9.70	90.80	3,724.33	10.35	398.33	-367.66	0.93	0.00	5.53
3,852.00	10.30	87.70	3,815.92	10.57	414.48	-382.63	0.87	0.65	-3.33
3,946.00	10.40	83.50	3,908.39	11.87	431.30	-397.85	0.81	0.11	-4.47
4,039.00	9.90	87.10	3,999.94	13.22	447.63	-412.58	0.87	-0.54	3.87
4,134.00	9.90	92.70	4,093.52	13.25	463.94	-427.78	1.01	0.00	5.89
4,228.00	10.50	95.80	4,186.04	12.01	480.54	-443.70	0.86	0.64	3.30
4,323.00	10.40	85.80	4,279.47	11.76	497.70	-459.79	1.91	-0.11	-10.53
4,418.00	10.50	83.50	4,372.89	13.37	514.85	-475.20	0.45	0.11	-2.42
4,512.00	10.70	87.40	4,465.29	14.73	532.08	-490.77	0.79	0.21	4.15
4,607.00	10.50	90.90	4,558.67	15.00	549.55	-506.96	0.71	-0.21	3.68
4,701.00	8.90	88.70	4,651.33	15.03	565.38	-521.71	1.75	-1.70	-2.34
4,796.00	7.30	85.60	4,745.37	15.66	578.75	-533.95	1.75	-1.68	-3.26
4,891.00	6.20	83.40	4,839.72	16.71	589.86	-543.93	1.19	-1.16	-2.32

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

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)
4,986.00	4.80	80.40	4,934.28	17.96	598.88	-551.88	1.50	-1.47	-3.16
5,081.00	4.00	79.60	5,028.99	19.22	606.05	-558.12	0.84	-0.84	-0.84
5,175.00	2.30	76.50	5,122.85	20.26	611.11	-562.46	1.82	-1.81	-3.30
5,268.00	0.70	35.20	5,215.82	21.15	613.26	-564.13	1.97	-1.72	-44.41
5,360.00	0.70	357.90	5,307.81	22.18	613.56	-564.05	0.49	0.00	-40.54
5,455.00	0.40	9.80	5,402.81	23.08	613.59	-563.75	0.34	-0.32	12.53
5,548.00	0.40	5.10	5,495.80	23.73	613.68	-563.60	0.04	0.00	-5.05
5,643.00	0.00	242.90	5,590.80	24.06	613.71	-563.51	0.42	-0.42	0.00
5,671.00	0.10	145.60	5,618.80	24.04	613.72	-563.53	0.36	0.36	0.00
5,702.00	2.40	170.20	5,649.79	23.37	613.85	-563.88	7.45	7.42	79.35
5,733.00	6.10	170.40	5,680.70	21.11	614.23	-565.06	11.94	11.94	0.65
5,765.00	10.30	173.40	5,712.37	16.59	614.85	-567.27	13.19	13.13	9.38
5,797.00	14.30	175.90	5,743.63	9.80	615.46	-570.29	12.61	12.50	7.81
5,828.00	18.10	177.30	5,773.39	1.17	615.96	-573.88	12.32	12.26	4.52
5,860.00	22.10	177.90	5,803.44	-9.81	616.41	-578.27	12.52	12.50	1.88
5,891.00	26.10	179.30	5,831.73	-22.47	616.71	-583.12	13.03	12.90	4.52
5,923.00	29.50	180.10	5,860.03	-37.39	616.78	-588.59	10.69	10.63	2.50
5,955.00	33.70	179.90	5,887.28	-54.15	616.78	-594.65	13.13	13.13	-0.63
5,986.00	38.20	180.20	5,912.37	-72.35	616.77	-601.21	14.53	14.52	0.97
6,018.00	41.80	181.70	5,936.88	-92.91	616.41	-608.31	11.65	11.25	4.69
6,049.00	45.40	181.80	5,959.33	-114.27	615.76	-615.43	11.62	11.61	0.32
6,081.00	48.90	181.10	5,981.08	-137.72	615.17	-623.35	11.05	10.94	-2.19
6,112.00	51.40	180.90	6,000.95	-161.52	614.76	-631.57	8.08	8.06	-0.65
6,144.00	55.50	181.50	6,020.00	-187.21	614.21	-640.35	12.90	12.81	1.88
6,175.00	59.20	183.10	6,036.72	-213.29	613.16	-648.80	12.70	11.94	5.16
6,206.00	62.00	182.60	6,051.94	-240.26	611.82	-657.30	9.14	9.03	-1.61
6,238.00	65.40	181.20	6,066.12	-268.92	610.87	-666.78	11.33	10.63	-4.38
6,269.00	69.80	180.00	6,077.93	-297.58	610.58	-676.86	14.64	14.19	-3.87
6,301.00	74.40	179.40	6,087.76	-328.02	610.74	-688.01	14.49	14.38	-1.88
6,332.00	78.80	179.30	6,094.94	-358.16	611.08	-699.23	14.20	14.19	-0.32
6,364.00	82.90	181.20	6,100.03	-389.75	610.94	-710.52	14.09	12.81	5.94
6,419.00	87.80	182.10	6,104.49	-444.53	609.36	-728.85	9.06	8.91	1.64
6,513.00	91.40	182.20	6,105.14	-538.44	605.84	-759.51	3.83	3.83	0.11
6,608.00	89.40	178.10	6,104.48	-633.42	605.59	-793.61	4.80	-2.11	-4.32
6,703.00	90.20	180.60	6,104.81	-728.40	606.66	-828.95	2.76	0.84	2.63
6,796.00	89.60	178.80	6,104.97	-821.39	607.15	-863.03	2.04	-0.65	-1.94
6,891.00	90.00	180.00	6,105.31	-916.39	608.15	-898.29	1.33	0.42	1.26
6,985.00	89.90	179.50	6,105.39	-1,010.39	608.56	-932.66	0.54	-0.11	-0.53
7,080.00	89.80	179.00	6,105.64	-1,105.38	609.80	-968.15	0.54	-0.11	-0.53
7,174.00	89.80	180.50	6,105.96	-1,199.37	610.21	-1,002.52	1.60	0.00	1.60
7,269.00	89.70	178.30	6,106.38	-1,294.36	611.21	-1,037.78	2.32	-0.11	-2.32
7,363.00	89.90	182.10	6,106.71	-1,388.34	610.88	-1,071.45	4.05	0.21	4.04
7,458.00	90.30	181.40	6,106.54	-1,483.30	607.98	-1,103.07	0.85	0.42	-0.74

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Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

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)
7,553.00	90.00	178.80	6,106.29	-1,578.29	607.81	-1,137.26	2.75	-0.32	-2.74
7,647.00	90.30	181.40	6,106.05	-1,672.28	607.65	-1,171.08	2.78	0.32	2.77
7,741.00	90.10	180.80	6,105.72	-1,766.26	605.84	-1,203.37	0.67	-0.21	-0.64
7,836.00	90.20	180.70	6,105.47	-1,861.25	604.60	-1,236.55	0.15	0.11	-0.11
7,931.00	90.20	179.60	6,105.14	-1,956.25	604.35	-1,270.66	1.16	0.00	-1.16
8,024.00	90.10	178.60	6,104.89	-2,049.24	605.81	-1,305.64	1.08	-0.11	-1.08
8,118.00	89.90	180.50	6,104.89	-2,143.23	606.55	-1,340.31	2.03	-0.21	2.02
8,212.00	90.00	177.50	6,104.98	-2,237.21	608.19	-1,375.81	3.19	0.11	-3.19
8,305.00	88.80	178.40	6,105.95	-2,330.14	611.52	-1,412.50	1.61	-1.29	0.97
8,400.00	90.40	181.40	6,106.61	-2,425.12	611.68	-1,446.99	3.58	1.68	3.16
8,494.00	92.20	181.70	6,104.48	-2,519.06	609.14	-1,478.58	1.94	1.91	0.32
8,588.00	91.10	182.20	6,101.77	-2,612.96	605.94	-1,509.55	1.29	-1.17	0.53
8,683.00	92.80	182.40	6,098.54	-2,707.83	602.13	-1,540.29	1.80	1.79	0.21
8,778.00	88.10	180.20	6,097.80	-2,802.77	599.98	-1,572.60	5.46	-4.95	-2.32
8,873.00	89.60	180.60	6,099.70	-2,897.75	599.31	-1,606.32	1.63	1.58	0.42
8,967.00	91.30	181.30	6,098.96	-2,991.73	597.76	-1,638.84	1.96	1.81	0.74
9,062.00	90.40	182.70	6,097.56	-3,086.65	594.44	-1,670.06	1.75	-0.95	1.47
9,156.00	89.20	180.30	6,097.88	-3,180.61	591.98	-1,701.74	2.85	-1.28	-2.55
9,251.00	90.80	180.00	6,097.88	-3,275.61	591.73	-1,735.85	1.71	1.68	-0.32
9,346.00	89.60	181.00	6,097.55	-3,370.60	590.90	-1,769.41	1.64	-1.26	1.05
9,441.00	90.90	180.70	6,097.14	-3,465.59	589.49	-1,802.44	1.40	1.37	-0.32
9,535.00	87.60	177.20	6,098.37	-3,559.54	591.21	-1,838.00	5.12	-3.51	-3.72
9,630.00	89.10	178.20	6,101.10	-3,654.42	595.02	-1,875.85	1.90	1.58	1.05
9,724.00	91.40	178.90	6,100.69	-3,748.38	597.40	-1,912.04	2.56	2.45	0.74
9,819.00	90.20	179.00	6,099.37	-3,843.35	599.14	-1,948.00	1.27	-1.26	0.11
9,914.00	91.20	175.60	6,098.21	-3,938.22	603.62	-1,986.46	3.73	1.05	-3.58
10,008.00	90.70	178.10	6,096.65	-4,032.06	608.78	-2,025.20	2.71	-0.53	2.66
10,103.00	89.30	180.40	6,096.65	-4,127.04	610.03	-2,060.70	2.83	-1.47	2.42
10,198.00	91.00	181.40	6,096.40	-4,222.03	608.53	-2,093.64	2.08	1.79	1.05
10,293.00	88.90	179.30	6,096.48	-4,317.02	607.95	-2,127.44	3.13	-2.21	-2.21
10,388.00	90.50	179.70	6,096.98	-4,412.01	608.78	-2,162.55	1.74	1.68	0.42
10,483.00	87.50	179.30	6,098.64	-4,506.98	609.61	-2,197.65	3.19	-3.16	-0.42
10,578.00	88.30	178.80	6,102.12	-4,601.90	611.18	-2,233.44	0.99	0.84	-0.53
10,672.00	92.40	182.20	6,101.54	-4,695.86	610.37	-2,266.64	5.67	4.36	3.62
10,768.00	88.30	180.40	6,100.96	-4,791.81	608.19	-2,299.30	4.66	-4.27	-1.88
10,862.00	90.90	181.80	6,101.61	-4,885.78	606.38	-2,331.58	3.14	2.77	1.49
10,957.00	92.80	181.80	6,098.55	-4,980.68	603.40	-2,363.11	2.00	2.00	0.00
11,051.00	90.40	182.20	6,095.92	-5,074.58	600.12	-2,394.00	2.59	-2.55	0.43
11,145.00	90.40	181.10	6,095.27	-5,168.54	597.42	-2,425.44	1.17	0.00	-1.17
11,240.00	91.20	181.10	6,093.94	-5,263.51	595.59	-2,458.07	0.84	0.84	0.00
11,334.00	87.70	180.30	6,094.84	-5,357.48	594.44	-2,490.97	3.82	-3.72	-0.85
11,429.00	88.50	179.50	6,097.99	-5,452.43	594.61	-2,525.45	1.19	0.84	-0.84
11,524.00	92.00	181.40	6,097.58	-5,547.40	593.86	-2,559.09	4.19	3.68	2.00
11,620.00	90.70	179.60	6,095.32	-5,643.37	593.03	-2,593.00	2.31	-1.35	-1.88

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

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)
11,715.00	88.40	180.00	6,096.06	-5,738.36	593.36	-2,627.64	2.46	-2.42	0.42
11,810.00	92.40	181.50	6,095.40	-5,833.33	592.12	-2,660.82	4.50	4.21	1.58
11,906.00	90.80	181.90	6,092.72	-5,929.24	589.27	-2,692.84	1.72	-1.67	0.42
12,001.00	90.70	181.80	6,091.47	-6,024.19	586.20	-2,724.30	0.15	-0.11	-0.11
12,097.00	90.80	181.50	6,090.22	-6,120.14	583.44	-2,756.41	0.33	0.10	-0.31
12,192.00	91.00	181.50	6,088.73	-6,215.09	580.95	-2,788.42	0.21	0.21	0.00
12,288.00	89.10	181.50	6,088.64	-6,311.06	578.44	-2,820.76	1.98	-1.98	0.00
12,383.00	91.20	181.10	6,088.39	-6,406.03	576.28	-2,853.09	2.25	2.21	-0.42
12,479.00	92.20	180.30	6,085.54	-6,501.97	575.11	-2,886.68	1.33	1.04	-0.83
12,574.00	88.20	176.90	6,085.21	-6,596.91	577.43	-2,923.16	5.53	-4.21	-3.58
12,669.00	90.80	177.30	6,086.04	-6,691.78	582.24	-2,961.94	2.77	2.74	0.42
12,765.00	90.90	180.30	6,084.62	-6,787.74	584.25	-2,998.50	3.13	0.10	3.13
12,860.00	90.40	181.00	6,083.54	-6,882.72	583.17	-3,031.83	0.91	-0.53	0.74
12,955.00	90.40	183.30	6,082.88	-6,977.65	579.61	-3,062.82	2.42	0.00	2.42
13,050.00	89.80	184.10	6,082.71	-7,072.45	573.48	-3,091.38	1.05	-0.63	0.84
13,145.00	89.50	184.30	6,083.29	-7,167.19	566.52	-3,119.14	0.38	-0.32	0.21
13,241.00	91.30	181.50	6,082.62	-7,263.05	561.66	-3,149.27	3.47	1.88	-2.92
13,336.00	94.50	181.90	6,077.82	-7,357.88	558.85	-3,180.92	3.39	3.37	0.42
13,432.00	89.50	178.60	6,074.46	-7,453.77	558.43	-3,215.20	6.24	-5.21	-3.44
13,526.00	91.40	178.80	6,073.73	-7,547.74	560.57	-3,251.16	2.03	2.02	0.21
13,620.00	88.90	179.50	6,073.48	-7,641.72	561.96	-3,286.44	2.76	-2.66	0.74
13,715.00	91.70	181.40	6,072.98	-7,736.70	561.21	-3,320.08	3.56	2.95	2.00
13,809.00	87.80	181.00	6,073.39	-7,830.66	559.25	-3,352.21	4.17	-4.15	-0.43
13,904.00	92.50	182.40	6,073.14	-7,925.59	556.43	-3,383.90	5.16	4.95	1.47
14,000.00	88.00	182.00	6,072.73	-8,021.50	552.74	-3,415.13	4.71	-4.69	-0.42
14,096.00	92.40	182.90	6,072.39	-8,117.38	548.64	-3,445.97	4.68	4.58	0.94
14,191.00	93.30	182.30	6,067.67	-8,212.17	544.34	-3,476.22	1.14	0.95	-0.63
14,275.00	92.70	180.80	6,063.27	-8,296.02	542.07	-3,504.42	1.92	-0.71	-1.79
Last Survey Taken									
14,318.00	92.70	180.80	6,061.25	-8,338.97	541.47	-3,519.38	0.00	0.00	0.00
Projection to Bit									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
14,275.00	6,063.27	-8,296.02	542.07	Last Survey Taken
14,318.00	6,061.25	-8,338.97	541.47	Projection to Bit

Checked By: _____	Approved By: _____	Date: _____
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EP Energy E&P Company, L.P.

**Crocket Co, Tx
University East 4109
KH
Wellbore #1**

Design: Surveys

Completion Report

22 December, 2014



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Project		Crocket Co, Tx, Crocket Co, Tx	
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas Central 4203		

Site	University East 4109					
Site Position:		Northing:	494,098.70	usft	Latitude:	31° 1' 21.19 N
From:	Map	Easting:	1,738,071.41	usft	Longitude:	101° 10' 10.42 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16	"	Grid Convergence:	-0.43 °

Well		KH				
Well Position	+N-S	0.00 ft	Northing:	494,141.18 usft	Latitude:	31° 1' 21.44 N
	+E-W	0.00 ft	Easting:	1,735,740.00 usft	Longitude:	101° 10' 37.22 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	2,648.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	11/17/2014	6.03	59.34	47,747

Design		Surveys			
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	291.19

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Survey Program		Date 12/22/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
29.00	954.00	Survey #1 (Wellbore #1)	Gyro NS R5000	Continuous north-seeking gyro on wireline	
1,024.00	14,318.00	Survey #2 (Wellbore #1)	Ryan-MWD+BGGM	OWSG MWD - BGGM	

Survey											
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	N/S (ft)	E/W (ft)	ClsD (ft)	ClsA (°)	DLS (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29.00	0.00	0.00	29.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
129.00	0.21	229.53	129.00	0.09	-0.12	-0.12	-0.14	0.18	229.53	0.21	0.21
229.00	0.61	254.75	229.00	0.60	-0.38	-0.38	-0.79	0.88	244.50	0.43	0.43
329.00	0.75	286.87	328.99	1.68	-0.33	-0.33	-1.93	1.96	260.37	0.40	0.40
429.00	0.74	288.75	428.98	2.98	0.07	0.07	-3.17	3.17	271.26	0.03	0.03
529.00	0.72	309.88	528.97	4.22	0.68	0.68	-4.26	4.32	279.06	0.27	0.27
629.00	1.03	304.84	628.96	5.69	1.60	1.60	-5.48	5.71	286.23	0.32	0.32
729.00	0.81	291.49	728.95	7.27	2.37	2.37	-6.88	7.28	289.00	0.31	0.31
829.00	1.20	299.34	828.93	9.01	3.14	3.14	-8.45	9.01	290.39	0.41	0.41
954.00	1.36	288.90	953.90	11.79	4.26	4.26	-10.99	11.79	291.19	0.23	0.23
1,024.00	0.70	293.80	1,023.89	13.05	4.70	4.70	-12.17	13.05	291.13	0.95	0.95
1,118.00	0.60	126.10	1,117.89	13.15	4.65	4.65	-12.30	13.15	290.69	1.38	1.38
1,212.00	2.20	113.20	1,211.86	10.87	3.65	3.65	-10.24	10.87	289.59	1.72	1.72
1,306.00	3.60	107.20	1,305.74	6.12	2.06	2.06	-5.76	6.12	289.68	1.52	1.52
1,399.00	5.20	96.10	1,398.46	-0.86	0.75	0.75	1.22	1.43	58.31	1.94	1.94
1,493.00	7.00	90.30	1,491.92	-10.33	0.27	0.27	11.18	11.18	88.63	2.02	2.02
1,588.00	9.10	90.10	1,585.98	-22.75	0.22	0.22	24.48	24.48	89.48	2.21	2.21
1,681.00	8.70	90.90	1,677.86	-36.20	0.10	0.10	38.87	38.87	89.85	0.45	0.45
1,776.00	10.20	87.80	1,771.57	-50.66	0.31	0.31	54.46	54.46	89.67	1.67	1.67
1,870.00	10.00	89.60	1,864.12	-65.89	0.69	0.69	70.94	70.94	89.44	0.40	0.40

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	N/S (ft)	E/W (ft)	ClsD (ft)	ClsA (°)	DLS (°/100ft)
1,965.00	9.60	90.00	1,957.73	-80.95	0.74	0.74	87.11	87.11	89.51	0.43
2,059.00	9.50	90.60	2,050.43	-95.52	0.66	0.66	102.70	102.70	89.63	0.15
2,153.00	9.60	91.20	2,143.12	-110.14	0.42	0.42	118.30	118.30	89.80	0.15
2,248.00	8.60	92.60	2,236.93	-124.32	-0.07	-0.07	133.31	133.31	90.03	1.08
2,343.00	9.40	86.80	2,330.76	-138.12	0.04	0.04	148.15	148.15	89.98	1.27
2,437.00	10.10	87.70	2,423.40	-152.67	0.80	0.80	164.05	164.06	89.72	0.76
2,532.00	10.50	85.70	2,516.87	-168.12	1.78	1.78	181.01	181.02	89.44	0.56
2,626.00	10.90	85.20	2,609.24	-183.84	3.17	3.17	198.41	198.43	89.08	0.44
2,720.00	11.30	91.60	2,701.48	-200.51	3.66	3.66	216.47	216.50	89.03	1.38
2,814.00	10.10	91.30	2,793.84	-216.94	3.21	3.21	233.92	233.94	89.21	1.28
2,908.00	10.10	95.10	2,886.39	-232.61	2.29	2.29	250.37	250.38	89.48	0.71
3,003.00	10.50	90.70	2,979.86	-248.72	1.45	1.45	267.32	267.32	89.69	0.93
3,098.00	10.90	84.60	3,073.21	-264.86	2.19	2.19	284.92	284.93	89.56	1.26
3,192.00	9.10	82.70	3,165.78	-279.34	3.97	3.97	301.14	301.17	89.25	1.95
3,285.00	9.70	86.90	3,257.53	-292.95	5.32	5.32	316.26	316.30	89.04	0.98
3,380.00	10.40	86.00	3,351.07	-308.00	6.36	6.36	332.80	332.86	88.91	0.76
3,475.00	10.00	89.50	3,444.57	-323.42	7.03	7.03	349.61	349.68	88.85	0.78
3,570.00	10.20	82.70	3,538.10	-338.48	8.17	8.17	366.20	366.29	88.72	1.27
3,665.00	9.70	85.60	3,631.67	-353.09	9.85	9.85	382.52	382.65	88.53	0.74
3,759.00	9.70	90.80	3,724.33	-367.66	10.35	10.35	398.33	398.47	88.51	0.93
3,852.00	10.30	87.70	3,815.92	-382.63	10.57	10.57	414.48	414.61	88.54	0.87
3,946.00	10.40	83.50	3,908.39	-397.85	11.87	11.87	431.30	431.47	88.42	0.81
4,039.00	9.90	87.10	3,999.94	-412.58	13.22	13.22	447.63	447.82	88.31	0.87
4,134.00	9.90	92.70	4,093.52	-427.78	13.25	13.25	463.94	464.13	88.36	1.01
4,228.00	10.50	95.80	4,186.04	-443.70	12.01	12.01	480.54	480.69	88.57	0.86
4,323.00	10.40	85.80	4,279.47	-459.79	11.76	11.76	497.70	497.84	88.65	1.91
4,418.00	10.50	83.50	4,372.89	-475.20	13.37	13.37	514.85	515.03	88.51	0.45

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	N/S (ft)	E/W (ft)	ClsD (ft)	ClsA (°)	DLS (°/100ft)
4,512.00	10.70	87.40	4,465.29	-490.77	14.73	14.73	532.08	532.28	88.41	0.79
4,607.00	10.50	90.90	4,558.67	-506.96	15.00	15.00	549.55	549.75	88.44	0.71
4,701.00	8.90	88.70	4,651.33	-521.71	15.03	15.03	565.38	565.58	88.48	1.75
4,796.00	7.30	85.60	4,745.37	-533.95	15.66	15.66	578.75	578.96	88.45	1.75
4,891.00	6.20	83.40	4,839.72	-543.93	16.71	16.71	589.86	590.10	88.38	1.19
4,986.00	4.80	80.40	4,934.28	-551.88	17.96	17.96	598.88	599.15	88.28	1.50
5,081.00	4.00	79.60	5,028.99	-558.12	19.22	19.22	606.05	606.36	88.18	0.84
5,175.00	2.30	76.50	5,122.85	-562.46	20.26	20.26	611.11	611.45	88.10	1.82
5,268.00	0.70	35.20	5,215.82	-564.13	21.15	21.15	613.26	613.62	88.02	1.97
5,360.00	0.70	357.90	5,307.81	-564.05	22.18	22.18	613.56	613.96	87.93	0.49
5,455.00	0.40	9.80	5,402.81	-563.75	23.08	23.08	613.59	614.03	87.85	0.34
5,548.00	0.40	5.10	5,495.80	-563.60	23.73	23.73	613.68	614.14	87.79	0.04
5,643.00	0.00	242.90	5,590.80	-563.51	24.06	24.06	613.71	614.18	87.76	0.42
5,671.00	0.10	145.60	5,618.80	-563.53	24.04	24.04	613.72	614.19	87.76	0.36
5,702.00	2.40	170.20	5,649.79	-563.88	23.37	23.37	613.85	614.29	87.82	7.45
5,733.00	6.10	170.40	5,680.70	-565.06	21.11	21.11	614.23	614.60	88.03	11.94
5,765.00	10.30	173.40	5,712.37	-567.27	16.59	16.59	614.85	615.07	88.45	13.19
5,797.00	14.30	175.90	5,743.63	-570.29	9.80	9.80	615.46	615.53	89.09	12.61
5,828.00	18.10	177.30	5,773.39	-573.88	1.17	1.17	615.96	615.96	89.89	12.32
5,860.00	22.10	177.90	5,803.44	-578.27	-9.81	-9.81	616.41	616.49	90.91	12.52
5,891.00	26.10	179.30	5,831.73	-583.12	-22.47	-22.47	616.71	617.12	92.09	13.03
5,923.00	29.50	180.10	5,860.03	-588.59	-37.39	-37.39	616.78	617.91	93.47	10.69
5,955.00	33.70	179.90	5,887.28	-594.65	-54.15	-54.15	616.78	619.16	95.02	13.13
5,986.00	38.20	180.20	5,912.37	-601.21	-72.35	-72.35	616.77	620.99	96.69	14.53
6,018.00	41.80	181.70	5,936.88	-608.31	-92.91	-92.91	616.41	623.38	98.57	11.65
6,049.00	45.40	181.80	5,959.33	-615.43	-114.27	-114.27	615.76	626.27	100.51	11.62
6,081.00	48.90	181.10	5,981.08	-623.35	-137.72	-137.72	615.17	630.40	102.62	11.05

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	N/S (ft)	E/W (ft)	ClsD (ft)	ClsA (°)	DLS (°/100ft)
6,112.00	51.40	180.90	6,000.95	-631.57	-161.52	-161.52	614.76	635.62	104.72	8.08
6,144.00	55.50	181.50	6,020.00	-640.35	-187.21	-187.21	614.21	642.11	106.95	12.90
6,175.00	59.20	183.10	6,036.72	-648.80	-213.29	-213.29	613.16	649.20	109.18	12.70
6,206.00	62.00	182.60	6,051.94	-657.30	-240.26	-240.26	611.82	657.30	111.44	9.14
6,238.00	65.40	181.20	6,066.12	-666.78	-268.92	-268.92	610.87	667.45	113.76	11.33
6,269.00	69.80	180.00	6,077.93	-676.86	-297.58	-297.58	610.58	679.23	115.98	14.64
6,301.00	74.40	179.40	6,087.76	-688.01	-328.02	-328.02	610.74	693.25	118.24	14.49
6,332.00	78.80	179.30	6,094.94	-699.23	-358.16	-358.16	611.08	708.31	120.38	14.20
6,364.00	82.90	181.20	6,100.03	-710.52	-389.75	-389.75	610.94	724.67	122.54	14.09
6,419.00	87.80	182.10	6,104.49	-728.85	-444.53	-444.53	609.36	754.27	126.11	9.06
6,513.00	91.40	182.20	6,105.14	-759.51	-538.44	-538.44	605.84	810.53	131.63	3.83
6,608.00	89.40	178.10	6,104.48	-793.61	-633.42	-633.42	605.59	876.33	136.29	4.80
6,703.00	90.20	180.60	6,104.81	-828.95	-728.40	-728.40	606.66	947.95	140.21	2.76
6,796.00	89.60	178.80	6,104.97	-863.03	-821.39	-821.39	607.15	1,021.43	143.53	2.04
6,891.00	90.00	180.00	6,105.31	-898.29	-916.39	-916.39	608.15	1,099.82	146.43	1.33
6,985.00	89.90	179.50	6,105.39	-932.66	-1,010.39	-1,010.39	608.56	1,179.50	148.94	0.54
7,080.00	89.80	179.00	6,105.64	-968.15	-1,105.38	-1,105.38	609.80	1,262.42	151.12	0.54
7,174.00	89.80	180.50	6,105.96	-1,002.52	-1,199.37	-1,199.37	610.21	1,345.68	153.03	1.60
7,269.00	89.70	178.30	6,106.38	-1,037.78	-1,294.36	-1,294.36	611.21	1,431.41	154.72	2.32
7,363.00	89.90	182.10	6,106.71	-1,071.45	-1,388.34	-1,388.34	610.88	1,516.79	156.25	4.05
7,458.00	90.30	181.40	6,106.54	-1,103.07	-1,483.30	-1,483.30	607.98	1,603.06	157.71	0.85
7,553.00	90.00	178.80	6,106.29	-1,137.26	-1,578.29	-1,578.29	607.81	1,691.28	158.94	2.75
7,647.00	90.30	181.40	6,106.05	-1,171.08	-1,672.28	-1,672.28	607.65	1,779.26	160.03	2.78
7,741.00	90.10	180.80	6,105.72	-1,203.37	-1,766.26	-1,766.26	605.84	1,867.28	161.07	0.67
7,836.00	90.20	180.70	6,105.47	-1,236.55	-1,861.25	-1,861.25	604.60	1,956.99	162.00	0.15
7,931.00	90.20	179.60	6,105.14	-1,270.66	-1,956.25	-1,956.25	604.35	2,047.48	162.83	1.16
8,024.00	90.10	178.60	6,104.89	-1,305.64	-2,049.24	-2,049.24	605.81	2,136.91	163.53	1.08

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	N/S (ft)	E/W (ft)	ClsD (ft)	ClsA (°)	DLS (°/100ft)
8,118.00	89.90	180.50	6,104.89	-1,340.31	-2,143.23	-2,143.23	606.55	2,227.41	164.20	2.03
8,212.00	90.00	177.50	6,104.98	-1,375.81	-2,237.21	-2,237.21	608.19	2,318.40	164.79	3.19
8,305.00	88.80	178.40	6,105.95	-1,412.50	-2,330.14	-2,330.14	611.52	2,409.04	165.30	1.61
8,400.00	90.40	181.40	6,106.61	-1,446.99	-2,425.12	-2,425.12	611.68	2,501.07	165.84	3.58
8,494.00	92.20	181.70	6,104.48	-1,478.58	-2,519.06	-2,519.06	609.14	2,591.66	166.41	1.94
8,588.00	91.10	182.20	6,101.77	-1,509.55	-2,612.96	-2,612.96	605.94	2,682.30	166.94	1.29
8,683.00	92.80	182.40	6,098.54	-1,540.29	-2,707.83	-2,707.83	602.13	2,773.97	167.46	1.80
8,778.00	88.10	180.20	6,097.80	-1,572.60	-2,802.77	-2,802.77	599.98	2,866.27	167.92	5.46
8,873.00	89.60	180.60	6,099.70	-1,606.32	-2,897.74	-2,897.74	599.31	2,959.07	168.31	1.63
8,967.00	91.30	181.30	6,098.96	-1,638.84	-2,991.73	-2,991.73	597.76	3,050.86	168.70	1.96
9,062.00	90.40	182.70	6,097.56	-1,670.06	-3,086.65	-3,086.65	594.44	3,143.37	169.10	1.75
9,156.00	89.20	180.30	6,097.88	-1,701.74	-3,180.61	-3,180.61	591.98	3,235.23	169.46	2.85
9,251.00	90.80	180.00	6,097.88	-1,735.85	-3,275.61	-3,275.61	591.73	3,328.63	169.76	1.71
9,346.00	89.60	181.00	6,097.55	-1,769.41	-3,370.60	-3,370.60	590.90	3,422.01	170.06	1.64
9,441.00	90.90	180.70	6,097.14	-1,802.44	-3,465.59	-3,465.59	589.49	3,515.37	170.35	1.40
9,535.00	87.60	177.20	6,098.37	-1,838.00	-3,559.54	-3,559.54	591.21	3,608.30	170.57	5.12
9,630.00	89.10	178.20	6,101.10	-1,875.85	-3,654.42	-3,654.42	595.02	3,702.54	170.75	1.90
9,724.00	91.40	178.90	6,100.69	-1,912.04	-3,748.38	-3,748.38	597.40	3,795.69	170.94	2.56
9,819.00	90.20	179.00	6,099.37	-1,948.00	-3,843.35	-3,843.35	599.14	3,889.77	171.14	1.27
9,914.00	91.20	175.60	6,098.21	-1,986.46	-3,938.22	-3,938.22	603.62	3,984.21	171.29	3.73
10,008.00	90.70	178.10	6,096.65	-2,025.20	-4,032.06	-4,032.06	608.78	4,077.76	171.41	2.71
10,103.00	89.30	180.40	6,096.65	-2,060.70	-4,127.04	-4,127.04	610.03	4,171.89	171.59	2.83
10,198.00	91.00	181.40	6,096.40	-2,093.64	-4,222.03	-4,222.03	608.53	4,265.66	171.80	2.08
10,293.00	88.90	179.30	6,096.48	-2,127.44	-4,317.02	-4,317.02	607.95	4,359.61	171.98	3.13
10,388.00	90.50	179.70	6,096.98	-2,162.55	-4,412.01	-4,412.01	608.78	4,453.81	172.14	1.74
10,483.00	87.50	179.30	6,098.64	-2,197.65	-4,506.98	-4,506.98	609.61	4,548.02	172.30	3.19
10,578.00	88.30	178.80	6,102.12	-2,233.44	-4,601.90	-4,601.90	611.18	4,642.31	172.43	0.99

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	N/S (ft)	E/W (ft)	ClsD (ft)	ClsA (°)	DLS (°/100ft)
10,672.00	92.40	182.20	6,101.54	-2,266.64	-4,695.86	-4,695.86	610.37	4,735.36	172.59	5.67
10,768.00	88.30	180.40	6,100.96	-2,299.30	-4,791.81	-4,791.81	608.19	4,830.25	172.77	4.66
10,862.00	90.90	181.80	6,101.61	-2,331.58	-4,885.78	-4,885.78	606.38	4,923.27	172.93	3.14
10,957.00	92.80	181.80	6,098.55	-2,363.11	-4,980.68	-4,980.68	603.40	5,017.10	173.09	2.00
11,051.00	90.40	182.20	6,095.92	-2,394.00	-5,074.58	-5,074.58	600.12	5,109.94	173.26	2.59
11,145.00	90.40	181.10	6,095.27	-2,425.44	-5,168.54	-5,168.54	597.42	5,202.95	173.41	1.17
11,240.00	91.20	181.10	6,093.94	-2,458.07	-5,263.51	-5,263.51	595.59	5,297.10	173.54	0.84
11,334.00	87.70	180.30	6,094.84	-2,490.97	-5,357.48	-5,357.48	594.44	5,390.36	173.67	3.82
11,429.00	88.50	179.50	6,097.99	-2,525.45	-5,452.43	-5,452.43	594.61	5,484.75	173.78	1.19
11,524.00	92.00	181.40	6,097.58	-2,559.09	-5,547.40	-5,547.40	593.86	5,579.10	173.89	4.19
11,620.00	90.70	179.60	6,095.31	-2,593.00	-5,643.37	-5,643.37	593.03	5,674.44	174.00	2.31
11,715.00	88.40	180.00	6,096.06	-2,627.64	-5,738.36	-5,738.36	593.36	5,768.95	174.10	2.46
11,810.00	92.40	181.50	6,095.40	-2,660.82	-5,833.33	-5,833.33	592.12	5,863.30	174.20	4.50
11,906.00	90.80	181.90	6,092.72	-2,692.84	-5,929.24	-5,929.24	589.27	5,958.45	174.32	1.72
12,001.00	90.70	181.80	6,091.47	-2,724.30	-6,024.19	-6,024.19	586.20	6,052.64	174.44	0.15
12,097.00	90.80	181.50	6,090.22	-2,756.41	-6,120.14	-6,120.14	583.44	6,147.88	174.55	0.33
12,192.00	91.00	181.50	6,088.73	-2,788.42	-6,215.09	-6,215.09	580.95	6,242.19	174.66	0.21
12,288.00	89.10	181.50	6,088.64	-2,820.76	-6,311.06	-6,311.06	578.44	6,337.51	174.76	1.98
12,383.00	91.20	181.10	6,088.39	-2,853.09	-6,406.03	-6,406.03	576.28	6,431.89	174.86	2.25
12,479.00	92.20	180.30	6,085.54	-2,886.68	-6,501.97	-6,501.97	575.11	6,527.36	174.95	1.33
12,574.00	88.20	176.90	6,085.21	-2,923.16	-6,596.91	-6,596.91	577.43	6,622.13	175.00	5.53
12,669.00	90.80	177.30	6,086.04	-2,961.94	-6,691.78	-6,691.78	582.24	6,717.06	175.03	2.77
12,765.00	90.90	180.30	6,084.62	-2,998.50	-6,787.74	-6,787.74	584.25	6,812.83	175.08	3.13
12,860.00	90.40	181.00	6,083.54	-3,031.83	-6,882.72	-6,882.72	583.17	6,907.38	175.16	0.91
12,955.00	90.40	183.30	6,082.88	-3,062.82	-6,977.65	-6,977.65	579.61	7,001.68	175.25	2.42
13,050.00	89.80	184.10	6,082.71	-3,091.38	-7,072.45	-7,072.45	573.48	7,095.66	175.36	1.05
13,145.00	89.50	184.30	6,083.29	-3,119.14	-7,167.19	-7,167.19	566.52	7,189.55	175.48	0.38

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well KH
Project:	Crocket Co, Tx	TVD Reference:	WELL @ 2677.00ft (Noram 21)
Site:	University East 4109	MD Reference:	WELL @ 2677.00ft (Noram 21)
Well:	KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	N/S (ft)	E/W (ft)	ClsD (ft)	ClsA (°)	DLS (°/100ft)
13,241.00	91.30	181.50	6,082.62	-3,149.27	-7,263.05	-7,263.05	561.66	7,284.74	175.58	3.47
13,336.00	94.50	181.90	6,077.81	-3,180.92	-7,357.88	-7,357.88	558.85	7,379.07	175.66	3.39
13,432.00	89.50	178.60	6,074.46	-3,215.20	-7,453.77	-7,453.77	558.43	7,474.66	175.72	6.24
13,526.00	91.40	178.80	6,073.73	-3,251.16	-7,547.74	-7,547.74	560.57	7,568.53	175.75	2.03
13,620.00	88.90	179.50	6,073.48	-3,286.44	-7,641.72	-7,641.72	561.96	7,662.36	175.79	2.76
13,715.00	91.70	181.40	6,072.98	-3,320.08	-7,736.70	-7,736.70	561.21	7,757.03	175.85	3.56
13,809.00	87.80	181.00	6,073.39	-3,352.21	-7,830.66	-7,830.66	559.25	7,850.61	175.92	4.17
13,904.00	92.50	182.40	6,073.14	-3,383.90	-7,925.59	-7,925.59	556.43	7,945.10	175.98	5.16
14,000.00	88.00	182.00	6,072.73	-3,415.13	-8,021.50	-8,021.50	552.74	8,040.52	176.06	4.71
14,096.00	92.40	182.90	6,072.39	-3,445.97	-8,117.38	-8,117.38	548.64	8,135.90	176.13	4.68
14,191.00	93.30	182.30	6,067.67	-3,476.22	-8,212.17	-8,212.17	544.34	8,230.19	176.21	1.14
14,275.00	92.70	180.80	6,063.27	-3,504.42	-8,296.02	-8,296.02	542.07	8,313.71	176.26	1.92
Last Survey Taken										
14,318.00	92.70	180.80	6,061.25	-3,519.38	-8,338.97	-8,338.97	541.47	8,356.53	176.28	0.00
Projection to Bit										

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
14,275.00	6,063.27	-8,296.02	542.07	Last Survey Taken
14,318.00	6,061.25	-8,338.97	541.47	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____



RYAN DIRECTIONAL SERVICES, INC.
A NABORS COMPANY

SLIDE & ROTATING REPORT

Customer:

Field:

County, State:

EP Energy

Crockett County, Texas

Crockett, Texas

Rig Name & No.:

Well Name & No.:

Ryan Job #:

Sidewinder 222

University East 4109 KH

8247

MODE	DEPTH FROM	DEPTH TO	FEET MADE	SURVEY DEPTH	INC	AZI	DLS	BUILD RATE	MOTOR OUTPUT	SLIDE SEEN	SLIDE AHEAD	DLN	SIDE / ROTATE (Based on Formula)	MTF / GTF	WOB (1K lbs)	RPM	PUMP GPM	PUMP PRESSURE
Rotate	998	1,067	69	1,024	0.70°	293.80°	0.95°								15.00	40.00	420.00	1000.00
Slide	1,067	1,082	15											90 MTF	5.00		600.00	1630.00
Rotate	1,082	1,161	79	1,118	0.60°	126.10°	1.38°								15.00	60.00	600.00	1630.00
Slide	1,161	1,176	15											90 MTF	5.00		600.00	1630.00
Rotate	1,176	1,255	79	1,212	2.20°	113.20°	1.72°								15.00	60.00	600.00	1630.00
Slide	1,255	1,273	18											70 MTF	5.00		600.00	1630.00
Rotate	1,273	1,349	76	1,306	3.60°	107.20°	1.52°								15.00	60.00	600.00	1630.00
Slide	1,349	1,369	20											60 MTF	5.00		600.00	1630.00
Rotate	1,369	1,442	73	1,399	5.20°	96.10°	1.94°								15.00	60.00	600.00	1630.00
Slide	1,442	1,462	20											20 L	5.00		600.00	1630.00
Rotate	1,462	1,536	74	1,493	7.00°	90.30°	2.02°								15.00	60.00	600.00	1630.00
Slide	1,536	1,556	20											HS	5.00		600.00	1630.00
Rotate	1,556	1,724	168	1,681	8.70°	90.70°	0.45°								15.00	60.00	600.00	1630.00
Slide	1,724	1,740	16											10 L	5.00		600.00	1630.00
Rotate	1,740	2,291	551	2,248	8.60°	92.60°	1.08°								15.00	60.00	600.00	1630.00
Slide	2,291	2,311	20											30 L	5.00		600.00	1630.00
Rotate	2,311	2,386	75	2,343	9.40°	86.80°	1.27°								15.00	60.00	600.00	1630.00
Slide	2,386	2,406	20											HS	5.00		600.00	1630.00
Rotate	2,406	2,480	74	2,437	10.10°	87.70°	0.76°								15.00	60.00	600.00	1630.00
Slide	2,480	2,500	20											HS	5.00		600.00	1630.00
Rotate	2,500	2,575	75	2,532	10.50°	85.70°	0.56°								15.00	60.00	600.00	1630.00
Slide	2,575	2,595	20											30R	5.00		600.00	1630.00
Rotate	2,595	2,669	74	2,626	10.90°	85.20°	0.44°								15.00	60.00	600.00	1630.00
Slide	2,669	2,689	20											60R	5.00		600.00	1630.00
Rotate	2,689	2,857	168	2,814	10.10°	91.30°	1.28°								15.00	60.00	600.00	1630.00
Slide	2,857	2,877	20											HS	5.00		600.00	1630.00
Rotate	2,877	2,951	74	2,908	10.10°	95.10°	0.71°								15.00	60.00	600.00	1630.00
Slide	2,951	2,971	20											40L	5.00		600.00	1630.00
Rotate	2,971	3,046	75	3,003	10.50°	90.70°	0.93°								15.00	60.00	600.00	1630.00
Slide	3,046	3,066	20											40L	5.00		600.00	1630.00
Rotate	3,066	3,235	169	3,192	9.10°	82.70°	1.95°								15.00	60.00	600.00	1630.00
Slide	3,235	3,260	25											40R	5.00		600.00	1630.00
Rotate	3,260	3,328	68	3,285	9.70°	86.90°	0.98°								15.00	60.00	600.00	1630.00
Slide	3,328	3,358	30											10R	5.00		600.00	1630.00
Rotate	3,358	3,423	65	3,380	10.40°	86.00°	0.76°								15.00	60.00	600.00	1630.00
Slide	3,423	3,453	30											10R	5.00		600.00	1630.00
Rotate	3,453	3,518	65	3,475	10.00°	89.50°	0.78°								15.00	60.00	600.00	1630.00
Slide	3,518	3,548	30											HS	5.00		600.00	1920.00
Rotate	3,548	3,613	65	3,570	10.20°	82.70°	1.27°								15.00	60.00	600.00	2500.00
Slide	3,613	3,643	30											20 R	5.00		600.00	1920.00
Rotate	3,643	3,708	65	3,665	9.70°	85.60°	0.74°								15.00	60.00	600.00	2500.00
Slide	3,708	3,738	30											20 R	5.00		600.00	1920.00
Rotate	3,738	3,802	64	3,759	9.70°	90.80°	0.93°								15.00	60.00	600.00	2500.00
Slide	3,802	3,832	30											HS	5.00		600.00	1920.00
Rotate	3,832	3,895	63	3,852	10.30°	87.70°	0.87°								15.00	60.00	600.00	2500.00
Slide	3,895	3,925	30											HS	5.00		600.00	1920.00
Rotate	3,925	3,989	64	3,946	10.40°	83.50°	0.81°								15.00	60.00	600.00	2500.00
Slide	3,989	4,019	30											HS	5.00		600.00	1920.00
Rotate	4,019	4,082	63	4,039	9.90°	87.10°	0.87°								15.00	60.00	600.00	2500.00
Slide	4,082	4,112	30											HS	5.00		600.00	1920.00
Rotate	4,112	4,177	65	4,134	9.90°	92.70°	1.01°								15.00	60.00	600.00	2500.00
Slide	4,177	4,207	30											HS	5.00		600.00	1920.00
Rotate	4,207	4,271	64	4,278	10.50°	95.80°	0.86°								15.00	60.00	600.00	2500.00
Slide	4,271	4,301	30											HS	5.00		600.00	1920.00
Rotate	4,301	4,366	65	4,323	10.40°	85.80°	1.91°								15.00	60.00	600.00	2500.00
Slide	4,366	4,396	30											HS	5.00		600.00	1920.00
Rotate	4,396	4,461	65	4,418	10.50°	83.50°	0.45°								15.00	60.00	600.00	2500.00
Slide	4,461	4,491	30											HS	5.00		600.00	1920.00
Rotate	4,491	4,555	64	4,512	10.70°	87.40°	0.79°								15.00	60.00	600.00	2500.00
Slide	4,555	4,585	30											HS	5.00		425.00	1400.00
Rotate	4,585	5,124	539	5,081	4.00°	79.60°	0.84°								15.00	40.00	425.00	1800.00
Slide	5,124	5,149	25											290 MTF	5.00		425.00	1400.00
Rotate	5,149	5,218	69	5,175	2.30°	76.50°	1.82°								15.00	40.00	425.00	1800.00
Slide	5,218	5,248	30											270 MTF	5.00		425.00	1400.00
Rotate	5,248	5,690	442	5,643	0.00°	242.90°	0.42°								15.00	40.00	425.00	1800.00
Slide	5,690	5,715	25											180 MTF	25.00		460.00	1700.00
Rotate	5,715	5,719	4												20.00	20.00	460.00	1700.00
Slide	5,719	5,746	27	5,702	2.40°	170.20°	7.40°	7.40°	19.20°	12.00	40.00	11.20°		180 MTF	25.00		460.00	1700.00
Rotate	5,746	5,751	5												20.00	20.00	460.00	1700.00
Slide	5,751	5,777	26	5,733	6.10°	170.40°	11.90°	11.90°	13.70°	27.00	39.00	11.70°		180 MTF	25.00		460.00	1700.00
Rotate	5,777	5,781	4												20.00	20.00	460.00	1700.00
Slide	5,781	5,809	28	5,765	10.30°	173.40°	13.20°	13.10°	15.60°	27.00	40.00	11.40°		20 R	25.00		460.00	1700.00
Rotate	5,809	5,814	5												20.00	20.00	460.00	1700.00
Slide	5,814	5,841	27	5,797	14.30°	175.90°	12.60°	12.50°	14.40°	28.00	39.00	11.40°		HS	25.00		460.00	1700.00
Rotate	5,841	5,845	4												20.00	20.00	460.00	1700.00



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

SLIDE & ROTATING REPORT

Customer:

Field:

County, State:

EP Energy

Crockett County, Texas

Crockett, Texas

Rig Name & No.:

Well Name & No.:

Ryan Job #:

Sidewinder 222

University East 4109 KH

8247

MODE	DEPTH FROM	DEPTH TO	FEET MADE	SURVEY DEPTH	INC	AZI	DLS	BUILD RATE	MOTOR OUTPUT	SLIDE SEEN	SLIDE AHEAD	DLN	SIDE / ROTATE (Based on Formula)	MTF / GTF	WOB (1K lbs)	RPM	PUMP GPM	PUMP PRESSURE	
Slide	5,845	5,872	27	5,828	18.10°	177.30°	12.30°	12.30°	14.70°	26.00	40.00	11.30°		HS	25.00		460.00	1700.00	
Rotate	5,872	5,876	4												20.00	20.00	460.00	1700.00	
Slide	5,876	5,904	28	5,860	22.10°	177.90°	12.50°	12.50°	14.30°	28.00	40.00	11.20°		20 R	25.00		460.00	1700.00	
Rotate	5,904	5,908	4												20.00	20.00	460.00	1700.00	
Slide	5,908	5,935	27	5,891	26.10°	179.30°	13.00°	12.90°	14.90°	27.00	40.00	11.00°		HS	25.00		460.00	1700.00	
Rotate	5,935	5,939	4												20.00	20.00	460.00	1700.00	
Slide	5,939	5,967	28	5,923	29.50°	180.10°	10.70°	10.60°	12.20°	28.00	40.00	11.40°		HS	25.00		460.00	1700.00	
Slide	5,967	5,999	32	5,955	33.70°	179.90°	13.10°	13.10°	15.00°	28.00	44.00	10.50°		HS	25.00		460.00	1700.00	
Rotate	5,999	6,004	5												20.00	20.00	460.00	1700.00	
Slide	6,004	6,030	26	5,986	38.20°	180.20°	14.50°	14.50°	14.50°	31.00	39.00	10.30°		20 R	25.00		460.00	1700.00	
Rotate	6,030	6,035	5												20.00	20.00	460.00	1700.00	
Slide	6,035	6,062	27	6,018	41.80°	181.70°	11.60°	11.20°	13.80°	27.00	39.00	10.40°		HS	25.00		460.00	1700.00	
Rotate	6,062	6,068	6												20.00	20.00	460.00	1700.00	
Slide	6,068	6,093	25	6,049	45.40°	181.80°	11.60°	11.60°	13.80°	26.00	38.00	10.60°		HS	25.00		460.00	1700.00	
Rotate	6,093	6,102	9												20.00	20.00	460.00	1700.00	
Slide	6,102	6,125	23	6,081	48.90°	181.10°	11.00°	10.90°	13.60°	26.00	35.00	10.50°		HS	25.00		460.00	1700.00	
Rotate	6,125	6,128	3												20.00	20.00	460.00	1700.00	
Slide	6,128	6,156	28	6,112	51.40°	180.90°	8.10°	8.10°	11.40°	22.00	41.00	11.00°		HS	25.00		460.00	1700.00	
Rotate	6,156	6,159	3												20.00	20.00	460.00	1700.00	
Slide	6,159	6,188	29	6,144	55.50°	181.50°	12.90°	12.80°	14.20°	29.00	41.00	10.60°		HS	25.00		460.00	1700.00	
Rotate	6,188	6,191	3												20.00	20.00	460.00	1700.00	
Slide	6,191	6,219	28	6,175	59.20°	183.10°	12.70°	12.00°	14.10°	28.00	41.00	10.30°		HS	25.00		460.00	1700.00	
Rotate	6,219	6,224	5												20.00	20.00	460.00	1700.00	
Slide	6,224	6,250	26	6,206	62.00°	182.60°	9.10°	9.00°	10.10°	28.00	39.00	10.60°		30L	25.00		460.00	1700.00	
Rotate	6,250	6,253	3												20.00	20.00	460.00	1700.00	
Slide	6,253	6,282	29	6,238	65.40°	181.20°	11.30°	10.60°	13.40°	27.00	41.00	13.80°		10L	25.00		460.00	1700.00	
Slide	6,282	6,313	31	6,269	69.80°	180.00°	14.60°	14.20°	16.20°	28.00	44.00	13.50°		HS	25.00		460.00	1700.00	
Rotate	6,313	6,317	4												20.00	20.00	460.00	1700.00	
Slide	6,317	6,345	28	6,301	74.40°	179.40°	14.50°	14.40°	14.50°	32.00	40.00	13.00°		HS	25.00		460.00	1700.00	
Rotate	6,345	6,348	3												20.00	20.00	460.00	1700.00	
Slide	6,348	6,376	28	6,332	78.80°	179.30°	14.20°	14.20°	16.30°	27.00	41.00	12.00°		30R	25.00		460.00	1700.00	
Rotate	6,376	6,383	7												20.00	20.00	460.00	1700.00	
Slide	6,383	6,408	25	6,364	82.90°	181.20°	14.00°	12.80°	15.50°	29.00	39.00	N/A		HS	25.00		460.00	1700.00	
Rotate	6,408	6,462	54	6,419	87.80°	182.10°	9.06°			37.00	0.00				20.00	60.00	602.00	3400.00	
Slide	6,462	6,472	10												60 L	20.00		602.00	3000.00
Rotate	6,472	6,556	84	6,513	91.40°	182.20°	3.83°								20.00	60.00	602.00	3400.00	
Slide	6,556	6,571	15												110 L	20.00		602.00	3000.00
Rotate	6,571	6,651	80	6,608	89.40°	178.10°	4.80°								20.00	60.00	602.00	3400.00	
Slide	6,651	6,666	15												90 R	20.00		602.00	3000.00
Rotate	6,666	6,839	173	6,796	89.60°	178.80°	2.04°								20.00	70.00	602.00	3400.00	
Slide	6,839	6,854	15												90 R	20.00		602.00	3000.00
Rotate	6,854	7,123	269	7,080	89.80°	179.00°	0.54°								20.00	60.00	602.00	3400.00	
Slide	7,123	7,138	15												90 R	20.00		602.00	3000.00
Rotate	7,138	7,312	174	7,269	89.70°	178.30°	2.32°								20.00	60.00	602.00	3400.00	
Slide	7,312	7,332	20												90 R	20.00		602.00	3000.00
Rotate	7,332	7,596	264	7,553	90.00°	178.80°	2.75°								20.00	60.00	602.00	3400.00	
Slide	7,596	7,611	15												90 R	20.00		602.00	3000.00
Rotate	7,611	8,067	456	8,024	90.10°	178.60°	1.08°								20.00	60.00	602.00	3400.00	
Slide	8,067	8,087	20												90 R	20.00		602.00	3000.00
Rotate	8,087	8,255	168	8,212	90.00°	177.50°	3.19°								20.00	60.00	602.00	3400.00	
Slide	8,255	8,280	25												90 R	20.00		602.00	3000.00
Rotate	8,280	8,348	68	8,305	88.80°	178.40°	1.61°								20.00	60.00	602.00	3400.00	
Slide	8,348	8,368	20												80 R	20.00		602.00	3000.00
Rotate	8,368	8,537	169	8,494	92.20°	181.70°	1.94°								20.00	60.00	602.00	3400.00	
Slide	8,537	8,552	15												180.00°	20.00		602.00	3000.00
Rotate	8,552	8,726	174	8,683	92.80°	182.40°	1.80°								20.00	60.00	602.00	3400.00	
Slide	8,726	8,751	25												160 L	20.00		602.00	3000.00
Rotate	8,751	9,010	259	8,967	91.30°	181.30°	1.96°								20.00	60.00	602.00	3400.00	
Slide	9,010	9,030	20												160 L	20.00		602.00	3000.00
Rotate	9,030	9,105	75	9,062	90.40°	182.70°	1.75°								20.00	60.00	602.00	3400.00	
Slide	9,105	9,120	15												135 L	20.00		602.00	3000.00
Rotate	9,120	9,294	174	9,251	90.80°	180.00°	1.71°								20.00	60.00	602.00	3400.00	
Slide	9,294	9,309	15												180.00°	20.00		602.00	3000.00
Rotate	9,309	9,484	175	9,441	90.90°	180.70°	1.40°								20.00	60.00	602.00	3400.00	
Slide	9,484	9,499	15												180.00°	20.00		602.00	3000.00
Rotate	9,499	9,578	79	9,535	87.60°	177.20°	5.12°								20.00	60.00	602.00	3400.00	
Slide	9,578	9,588	10												90 R	30.00		602.00	3000.00
Rotate	9,588	9,767	179	9,724	91.40°	178.90°	2.56°								20.00	60.00	602.00	3400.00	
Slide	9,767	9,787	20												140 R	30.00		602.00	3000.00
Rotate	9,787	9,957	170	9,914	91.20°	175.60°	3.73°								20.00	60.00	602.00	3400.00	
Slide	9,957	9,982	25												120 R	30.00		602.00	3000.00
Rotate	9,982	10,051	69	10,008	90.70°	178.10°	2.71°								20.00	60.00	602.00	3400.00	
Slide	10,051	10,071	20												135 R	30.00		602.00	3000.00
Rotate	10,071	10,241	170	10,198	91.00°	181.40°	2.08°								20.00	60.00	602.00	3400.00	
Slide	10,241	10,261	20												180.00°	30.00		602.00	3000.00



MODE	DEPTH FROM	DEPTH TO	FEET MADE	SURVEY DEPTH	INC	AZI	DLS	BUILD RATE	MOTOR OUTPUT	SLIDE SEEN	SLIDE AHEAD	DLN	SIDE / ROTATE (Based on Formula)	MTF / GTF	WOB (1K lbs)	RPM	PUMP GPM	PUMP PRESSURE	
Rotate	10,261	10,431	170	10,388	90.50°	179.70°	1.74°											602.00	3400.00
Slide	10,431	10,451	20												160 R	30.00	70.00	602.00	3000.00
Rotate	10,451	10,715	264	10,672	92.40°	182.20°	5.67°									20.00	70.00	602.00	3400.00
Slide	10,715	10,735	20											180.00°		30.00		602.00	3000.00
Rotate	10,735	11,000	265	10,957	92.80°	181.80°	2.00°									20.00	70.00	602.00	3400.00
Slide	11,000	11,020	20											180.00°		30.00		602.00	3000.00
Rotate	11,020	11,094	74	11,051	90.40°	182.20°	2.59°									20.00	70.00	602.00	3400.00
Slide	11,094	11,114	20											160 L		30.00		602.00	3000.00
Rotate	11,114	11,283	169	11,240	91.20°	181.10°	0.84°									20.00	70.00	602.00	3400.00
Slide	11,283	11,303	20											180.00°		50.00		602.00	3000.00
Rotate	11,303	11,567	264	11,524	92.00°	181.40°	4.19°									20.00	70.00	602.00	3400.00
Slide	11,567	11,587	20											180.00°		50.00		602.00	3000.00
Rotate	11,587	11,663	76	11,620	90.70°	179.60°	2.31°									20.00	70.00	602.00	3400.00
Slide	11,663	11,678	15											150 R		50.00		602.00	3000.00
Rotate	11,678	11,853	175	11,810	92.40°	181.50°	4.50°									20.00	70.00	602.00	3400.00
Slide	11,853	11,873	20											160 L		50.00		602.00	3000.00
Rotate	11,873	12,235	362	12,192	91.00°	181.50°	0.21°									20.00	70.00	602.00	3400.00
Slide	12,235	12,245	10											160 L		50.00		602.00	3000.00
Rotate	12,245	12,522	277	12,479	92.20°	180.30°	1.33°									20.00	70.00	602.00	3400.00
Slide	12,522	12,537	15											180.00°		50.00		602.00	3000.00
Rotate	12,537	12,712	175	12,669	90.80°	177.30°	2.77°									20.00	70.00	602.00	3400.00
Slide	12,712	12,727	15											150 R		50.00		602.00	3000.00
Rotate	12,727	12,903	176	12,860	90.40°	181.00°	0.91°									20.00	70.00	602.00	3400.00
Slide	12,903	12,918	15											180.00°		50.00		602.00	3000.00
Rotate	12,918	12,998	80	12,955	90.40°	183.30°	2.42°									20.00	70.00	602.00	3400.00
Slide	12,998	13,023	25											150 L		50.00		602.00	3000.00
Rotate	13,023	13,093	70	13,050	89.80°	184.10°	1.05°									20.00	70.00	602.00	3400.00
Slide	13,093	13,118	25											135 L		50.00		602.00	3000.00
Rotate	13,118	13,188	70	13,145	89.50°	184.30°	0.38°									20.00	70.00	602.00	3400.00
Slide	13,188	13,210	22											90 L		50.00		602.00	3000.00
Rotate	13,210	13,379	169	13,336	94.50°	181.90°	3.39°									20.00	70.00	602.00	3400.00
Slide	13,379	13,409	30											150 L		50.00		602.00	3000.00
Rotate	13,409	13,569	160	13,526	91.40°	178.80°	2.03°									20.00	70.00	602.00	3400.00
Slide	13,569	13,599	30											180.00°		50.00		602.00	3000.00
Rotate	13,599	13,758	159	13,715	91.70°	181.00°	3.56°									20.00	70.00	602.00	3400.00
Slide	13,758	13,788	30											150 L		50.00		602.00	3000.00
Rotate	13,788	13,947	159	13,904	92.50°	182.40°	4.71°									20.00	70.00	602.00	3400.00
Slide	13,947	13,977	30											150 L		50.00		602.00	3000.00
Rotate	13,977	14,318	341	14,275	92.70°	180.80°	1.92°									20.00	70.00	602.00	3400.00
			-																

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19-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

8247

DAILY DRILLING REPORT

Oil Company:	EP Energy
Field:	Crockett County, Texas
County, State:	Crockett, Texas
AFE or PO #:	160798

Customer:	EP Energy
Well Name & No.:	University East 4109 KH
Block or Section:	Section 09, Block 41
Rig Contractor & No.:	Sidewinder 222

00:00 Depth:	0
24:00 Depth:	0

Footage Today:	0
Current Run Ftg:	0

Drlg Hrs Today:	0.00
Run Drlg Hrs:	0.00

ROP Today:	-
Run Avg. ROP:	-

Last Casing Set: _____
Depth: _____

PUMP Data Total Gals/Min =					MUD DATA		Previous		Current		MOTOR DATA		CURRENT	
Pump		National	National	0	Mud Type	OBM		BHA #		BHA #				
Liner (in)	6	6			Sample	IN						Run No.		
%	95	95			Time							Size (in.)		
Vol (gps)	4.18	4.18	0.00		Wt.							Type		
SPM					VIS							Serial No.		
DRILLING PARAMETERS					PV							Tool Deflection		
ST. WT. ROT 1000's:					YP							Avg. Diff. Press.		
P/U WT. 1000's:					WL							Daily Drill Hrs.	0.00	
S/O WT. 1000's:					CL							Daily Circ. Hrs.	0.00	
WOB 1000's:					Gels							Daily Total Hrs:	0.00	
ROTARY RPM:					% Oil							Acc. Drill Hrs.	0.00	
MOTOR RPM:					% Solids							Acc. Circ. Hrs.	0.00	
TOTAL Bit RPM					% Sand							Depth In		
ROT TQ. OFF BTM:					PH							Depth Out		
ROT TQ. ON BTM:					Temp F							LIH Hrs.		
Current Mag Dec:					MWD F		BHA WT					Acc. Hrs Cir/Drilg	0.00	
Pulse Hight					GPM		BELOW JARS					Total K Revs	0.00	
"G" Totals					PSI							Jar # HRS		

[illegible][illegible]

Date: 20-Nov-14



A NABORS COMPANY

Ryan Job #	8247
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Oil Company:	EP Energy
Field:	Crockett County, Texas
County, State:	Crockett, Texas
AFE or PO #:	160798

Customer:	EP Energy
Well Name & No.:	University East 4109 KH
Block or Section:	Section 09, Block 41
Rig Contractor & No.:	Sidewinder 222

00:00 Depth:	0	Footage Today:	0	Drlg Hrs Today:	0.00	ROP Today:	-	Last Casing Set:	
24:00 Depth:	0	Current Run Ftg:	0	Run Drlg Hrs:	0.00	Run Avg. ROP:	-	Depth:	

[illegible]

Report #: 3

Date: 21-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 998
 24:00 Depth: 2196

Footage Today: 1198
 Current Run Ftg: 1198

Drig Hrs Today: 2.80
 Run Drig Hrs: 2.80

ROP Today: 427.86
 Run Avg. ROP: 427.86

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 602				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	6	6		Sample	IN			MOTOR	Size (in.)	6 3/4
%	95	95		Time	3:00			EM TOOL	Type	7/8 5.0
Vol (gals)	4.18	4.18	0.00	Wt.	9.1			UBHO	Serial No.	RY700038
SPM	72	72		VIS	85			NMDC	Tool Deflection	1.5
DRILLING PARAMETERS				PV	16			NMDC	Avg. Diff. Press.	
ST. WT. ROT 1000's:	70			YP	16			X-O	Daily Drill Hrs.	2.80
P/U WT. 1000's:	80			WL	N/A			6 1/2" DC'S	Daily Circ. Hrs.	4.80
S/O WT. 1000's:	65			CL	86,000			X-O	Daily Total Hrs.	7.60
WOB 1000's:	18			Gels	20				Acc. Drill Hrs.	2.80
ROTARY RPM:	60			% Oil	71				Acc. Circ. Hrs.	4.80
MOTOR RPM:	174			% Solids	7				Depth In	998
TOTAL Bit RPM	234			% Sand	N/A				Depth Out	
ROT TQ. OFF BTM:	1000			PH	N/A				LIH Hrs.	11:05
ROT TQ. ON BTM:	4000			Temp F	72				Acc. LIH Hrs.	11.08
Current Mag Dec:	6.46			MWD F	87	BHA WT			Acc. Hrs Cir/Drilg	7.60
Pulse Hight	70			GPM	427	BELOW JARS			Total K Revs	39.31
"G" Totals	1.004			PSI	1700				Jar # HRS	

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12406776	5X22'S	998													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	2:00	2:00				S	STANDBY	DA TANGENT			
2:00	4:45	2:45				6.A	P/U BHA 1				
4:45	5:30	0:45				6.A	TIH				
5:30	7:00	1:30				5.A	DRILLOUT FLOAT EQUIPMENT				
7:00	7:15	0:15	998	1067	69	2.A	ROTATE 40 RPM, 15 WOB, SPP 1000, DIFF 300				
7:15	7:30	0:15				10	C/S 1,024' MD 0.7° INC 293.8° AZM 87° TEMP				
7:30	7:40	0:10	1067	1082	15	2.B	SLIDE 90 MTF, 300 DIFF, 5 WOB				
7:40	8:00	0:20	1082	1161	79	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				
8:00	8:15	0:15				10	C/S 1,118' MD 0.6° INC 126.1° AZM 87° TEMP				
8:15	8:20	0:05	1161	1176	15	2.B	SLIDE 90 MTF, 300 DIFF, 5 WOB				
8:20	8:35	0:15	1176	1255	79	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Estimated Daily Charges			
8:35	8:50	0:15				10	C/S 1,212' MD 2.2° INC 113.2° AZM 87° TEMP	Description	Cost		
8:50	8:55	0:05	1255	1273	18	2.B	SLIDE 70 MTF, 300 DIFF, 5 WOB				
8:55	9:00	0:05	1273	1349	76	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				
9:00	9:15	0:15				10	C/S 1,306' MD 3.6° INC 107.2° AZM 87° TEMP				
9:15	9:20	0:05	1349	1369	20	2.B	SLIDE 60 MTF, 300 DIFF, 5 WOB				
9:20	9:30	0:10	1369	1442	73	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				
9:30	9:45	0:15				10	C/S 1,399' MD 5.2° INC 96.1° AZM 87° TEMP				
9:45	10:00	0:15	1442	1462	20	2.B	SLIDE 20L GTF, 300 DIFF, 5 WOB				
10:00	10:15	0:15	1462	1536	74	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				
10:15	10:30	0:15				10	C/S 1,493' MD 7.0° INC 90.3° AZM 87° TEMP				
10:30	10:35	0:05	1536	1556	20	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB				
10:35	10:40	0:05	1556	1631	75	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Estimated Daily Cost (USD)		\$ -	
10:40	10:55	0:15				10	C/S 1,588' MD 9.1° INC 90.1° AZM 87° TEMP	Accumulated Cost (USD)		\$ -	
10:55	11:00	0:05	1631	1724	93	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Company Representative (s)			
11:00	11:15	0:15				10	C/S 1,681' MD 8.7° INC 90.9° AZM 87° TEMP	Michael Aaron		Craig Cart	
11:15	11:20	0:05	1724	1740	16	2.B	SLIDE 10L GTF, 300 DIFF, 5 WOB	James Wilson		Johnny Wynne	
11:20	11:30	0:10	1740	1819	79	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	RYAN Directional Representative (s)			
11:30	11:45	0:15				10	C/S 1,776' MD 10.2° INC 87.8° AZM 109° TEMP	Lyndon Vestal		Shawn Williamson	
11:45	11:50	0:05	1819	1913	94	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				
11:50	12:05	0:15				10	C/S 1,870' MD 10.0° INC 89.6° AZM 109° TEMP	RYAN MWD Representative (s)			
12:05	12:10	0:05	1913	2008	95	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Scott Lane		Josh Ferguson	
12:10	12:25	0:15				10	C/S 1,965' MD 9.6° INC 90.0° AZM 109° TEMP				
12:25	12:30	0:05	2008	2102	94	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	24 Hour Breakdown			
12:30	12:45	0:15				10	C/S 2,059' MD 9.5° INC 90.6° AZM 109° TEMP	Ftg Rot.	1074	Time Rot.	2.00
12:45	12:50	0:05	2102	2196	94	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Ftg Orient	124	Time Orient	0.80
12:50	13:05	0:15				10	C/S 2,153' MD 9.6° INC 91.2° AZM 109° TEMP	Rot. ROP	537.00	Orient ROP	155.00

Report #: 3A

Date: 21-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 2196
 24:00 Depth: 3423

Footage Today: 1227
 Current Run Ftg: 2425

Drig Hrs Today: 2.10
 Run Drig Hrs: 4.90

ROP Today: 584.29
 Run Avg. ROP: 494.90

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 602				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	6	6		Sample	IN			MOTOR	Size (in.)	6 3/4
%	95	95		Time	3:00			EM TOOL	Type	7/8 5.0
Vol (gals)	4.18	4.18	0.00	Wt.	9.1			UBHO	Serial No.	RY700038
SPM	72	72		VIS	85			NMDC	Tool Deflection	1.5
DRILLING PARAMETERS				PV	16			NMDC	Avg. Diff. Press.	
ST. WT. ROT 1000's:	70			YP	16			X-O	Daily Drill Hrs.	2.10
P/U WT. 1000's:	80			WL	N/A			6 1/2" DC'S	Daily Circ. Hrs.	2.50
S/O WT. 1000's:	65			CL	86,000			X-O	Daily Total Hrs.	4.60
WOB 1000's:	18			Gels	20				Acc. Drill Hrs.	4.90
ROTARY RPM:	60			% Oil	71				Acc. Circ. Hrs.	7.30
MOTOR RPM:	174			% Solids	7				Depth In	998
TOTAL Bit RPM	234			% Sand	N/A				Depth Out	
ROT TQ. OFF BTM:	1000			PH	N/A				LIH Hrs.	5:05
ROT TQ. ON BTM:	4000			Temp F	72				Acc. LIH Hrs.	16.17
Current Mag Dec:	6.46			MWD F	87	BHA WT			Acc. Hrs Cir/Drilg	12.20
Pulse Hight	70			GPM	427	BELOW JARS			Total K Revs	68.80
"G" Totals	1.004			PSI	1700				Jar # HRS	

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12406776	5X22'S	998													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
13:05	13:10	0:05	2196	2291	95	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				DA TANGENT			
13:10	13:25	0:15				10	C/S 2,248' MD 8.6° INC 92.6° AZM 109° TEMP							
13:25	13:30	0:05	2291	2311	20	2.B	SLIDE 30L GTF, 300 DIFF, 5 WOB							
13:30	13:35	0:05	2311	2386	75	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
13:35	13:50	0:15				10	C/S 2,343' MD 9.4° INC 86.8° AZM 109° TEMP							
13:50	13:55	0:05	2386	2406	20	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB							
13:55	14:00	0:05	2406	2480	74	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
14:00	14:15	0:15				10	C/S 2,437' MD 10.1° INC 87.7° AZM 115° TEMP							
14:15	14:20	0:05	2480	2500	20	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB							
14:20	14:25	0:05	2500	2575	75	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
14:25	14:40	0:15				10	C/S 2,532' MD 10.5° INC 85.7° AZM 115° TEMP				Estimated Daily Charges			
14:40	14:45	0:05	2575	2595	20	2.B	SLIDE 30R GTF, 300 DIFF, 5 WOB				Description		Cost	
14:45	14:50	0:05	2595	2669	74	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
14:50	15:00	0:10				10	C/S 2,626' MD 10.9° INC 85.2° AZM 115° TEMP							
15:00	15:05	0:05	2669	2689	20	2.B	SLIDE 60R GTF, 300 DIFF, 5 WOB							
15:05	15:10	0:05	2689	2763	74	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
15:10	15:20	0:10				10	C/S 2,720' MD 11.3° INC 91.6° AZM 115° TEMP							
15:20	15:25	0:05	2763	2857	94	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
15:25	15:35	0:10				10	C/S 2,814' MD 10.1° INC 91.3° AZM 115° TEMP							
15:35	15:40	0:05	2857	2877	20	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB							
15:40	15:45	0:05	2877	2951	74	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
15:45	16:15	0:30				7	RIG SERVICE							
16:15	16:25	0:10				10	C/S 2,908' MD 10.1° INC 95.1° AZM 115° TEMP				Estimated Daily Cost (USD)		\$ -	
16:25	16:30	0:05	2951	2971	20	2.B	SLIDE 40L GTF, 300 DIFF, 5 WOB				Accumulated Cost (USD)		\$ -	
16:30	16:35	0:05	2971	3046	75	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				Company Representative (s)			
16:35	16:45	0:10				10	C/S 3,003' MD 10.5° INC 90.7° AZM 115° TEMP				Michael Aaron		Craig Cart	
16:45	16:50	0:05	3046	3066	20	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB				James Wilson		Johnny Wynne	
16:50	17:00	0:10	3066	3141	75	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				RYAN Directional Representative (s)			
17:00	17:10	0:10				10	C/S 3,098' MD 10.9° INC 84.6° AZM 115° TEMP				Lyndon Vestal		Shawn Williamson	
17:10	17:15	0:05	3141	3235	94	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
17:15	17:25	0:10				10	C/S 3,192' MD 9.1° INC 82.7° AZM 115° TEMP				RYAN MWD Representative (s)			
17:25	17:30	0:05	3235	3260	25	2.B	SLIDE 40R GTF, 300 DIFF, 5 WOB				Scott Lane		Josh Ferguson	
17:30	17:35	0:05	3260	3328	68	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500							
17:35	17:45	0:10				10	C/S 3,285' MD 9.7° INC 86.9° AZM 115° TEMP				24 Hour Breakdown			
17:45	17:55	0:10	3328	3358	30	2.B	SLIDE 10R GTF, 300 DIFF, 5 WOB				Ftg Rot.	1012	Time Rot.	1.20
17:55	18:00	0:05	3358	3423	65	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500				Ftg Orient	215	Time Orient	0.90
18:00	18:10	0:10				10	C/S 3,380' MD 10.4° INC 86.0° AZM 115° TEMP				Rot. ROP	843.33	Orient ROP	238.89

Report #: 3B

Date: 21-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 3423
 24:00 Depth: 4491

Footage Today: 1068
 Current Run Ftg: 3493

Drig Hrs Today: 4.10
 Run Drig Hrs: 9.00

ROP Today: 260.49
 Run Avg. ROP: 388.11

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 602				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	Run No.
Liner (in)	6	6		Sample	IN			MOTOR	Size (in.)
%	95	95		Time	3:00			EM TOOL	Type
Vol (gals)	4.18	4.18	0.00	Wt.	9.1			UBHO	Serial No.
SPM	72	72		VIS	85			NMDC	Tool Deflection
DRILLING PARAMETERS				PV	16			NMDC	Avg. Diff. Press.
ST. WT. ROT 1000's:	70			YP	16			X-O	Daily Drill Hrs.
P/U WT. 1000's:	80			WL	N/A			6 1/2" DC'S	Daily Circ. Hrs.
S/O WT. 1000's:	65			CL	86,000			X-O	Daily Total Hrs.
WOB 1000's:	18			Gels	20				Acc. Drill Hrs.
ROTARY RPM:	60			% Oil	71				Acc. Circ. Hrs.
MOTOR RPM:	174			% Solids	7				Depth In
TOTAL Bit RPM	234			% Sand	N/A				Depth Out
ROT TQ. OFF BTM:	1000			PH	N/A				LIH Hrs.
ROT TQ. ON BTM:	4000			Temp F	72				Acc. LIH Hrs.
Current Mag Dec:	6.46			MWD F	87	BHA WT			Acc. Hrs Cir/Drilg
Pulse Hight	70			GPM	427	BELOW JARS			Total K Revs
G Totals	1,004			PSI	1700				Jar # HRS

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12406776	5X22'S	998													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations
18:10	18:20	0:10	3423	3453	30	2.B	SLIDE 10R GTF, 300 DIFF, 5 WOB	DA TANGENT
18:20	18:30	0:10	3453	3518	65	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	
18:30	18:40	0:10				10	C/S 3,475' MD 10.0° INC 89.5° AZM 115° TEMP	
18:40	18:55	0:15	3518	3548	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	
18:55	19:05	0:10	3548	3613	65	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	
19:05	19:15	0:10				10	C/S 3,570' MD 10.2° INC 82.7° AZM 115° TEMP	
19:15	19:25	0:10	3613	3643	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	
19:25	19:35	0:10	3643	3708	65	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	
19:35	19:45	0:10				10	C/S 3,665' MD 9.7° INC 85.6° AZM 115° TEMP	
19:45	19:55	0:10	3708	3738	30	2.B	SLIDE 20 R GTF, 300 DIFF, 5 WOB	
19:55	20:05	0:10	3738	3802	64	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Estimated Daily Charges
20:05	20:15	0:10				10	C/S 3,759' MD 9.7° INC 90.8° AZM 115° TEMP	Description Cost
20:15	20:25	0:10	3802	3832	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	
20:25	20:35	0:10	3832	3895	63	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	
20:35	20:45	0:10				10	C/S 3,852' MD 10.3° INC 87.7° AZM 124° TEMP	
20:45	20:55	0:10	3895	3925	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	
20:55	21:05	0:10	3925	3989	64	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	
21:05	21:10	0:05				10	C/S 3,946' MD 10.4° INC 83.5° AZM 124° TEMP	
21:10	21:25	0:15	3989	4019	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	
21:25	21:35	0:10	4019	4082	63	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	
21:35	21:45	0:10				10	C/S 4,039' MD 9.9° INC 87.1° AZM 124° TEMP	
21:45	22:00	0:15	4082	4112	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	
22:00	22:05	0:05	4112	4177	65	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Estimated Daily Cost (USD) \$ -
22:05	22:15	0:10				10	C/S 4,134' MD 9.9° INC 92.7° AZM 124° TEMP	Accumulated Cost (USD) \$ -
22:15	22:25	0:10	4177	4207	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	Company Representative (s)
22:25	22:35	0:10	4207	4271	64	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Michael Aaron Craig Cart
22:35	22:45	0:10				10	C/S 4,134' MD 10.5° INC 95.8° AZM 126° TEMP	James Wilson Johnny Wynne
22:45	22:55	0:10	4271	4301	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	RYAN Directional Representative (s)
22:55	23:05	0:10	4301	4366	65	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Lyndon Vestal Shawn Williamson
23:05	23:15	0:10				10	C/S 4,323' MD 10.4° INC 85.8° AZM 126° TEMP	
23:15	23:30	0:15	4366	4396	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	RYAN MWD Representative (s)
23:30	23:40	0:10	4396	4461	65	2.A	ROTATE 60 RPM, 15 WOB, SPP 1630, DIFF 500	Scott Lane Josh Ferguson
23:40	23:50	0:10				10	C/S 4,418' MD 10.5° INC 83.5° AZM 126° TEMP	
23:50	23:59	0:09	4461	4491	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB	24 Hour Breakdown
								Ftg Rot. 708 Time Rot. 1.80
								Ftg Orient 360 Time Orient 2.30
								Rot. ROP 393.33 Orient ROP 156.52

Report #: 4

Date: 22-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: **EP Energy**
 Field: **Crockett County, Texas**
 County, State: **Crockett, Texas**
 AFE or PO #: **160798**

Customer: **EP Energy**
 Well Name & No.: **University East 4109 KH**
 Block or Section: **Section 09, Block 41**
 Rig Contractor & No.: **Sidewinder 222**

00:00 Depth: 4491
 24:00 Depth: 5686

Footage Today: 1195
 Current Run Ftg: 4688

Drig Hrs Today: 6.80
 Run Drig Hrs: 15.80

ROP Today: 175.74
 Run Avg. ROP: 296.71

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 602				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	6	6		Sample	IN			MOTOR	Size (in.)	6 3/4
%	95	95		Time	3:00			EM TOOL	Type	7/8 5.0
Vol (gps)	4.18	4.18	0.00	Wt.	9.1			UBHO	Serial No.	RY700038
SPM	72	72		VIS	85			NMDC	Tool Deflection	1.5
DRILLING PARAMETERS				PV	16			NMDC	Avg. Diff. Press.	800
ST. WT. ROT 1000's:	130			YP	16			X-O	Daily Drill Hrs.	6.80
P/U WT. 1000's:	136			WL	N/A			6 1/2" DC'S	Daily Circ. Hrs.	3.20
S/O WT. 1000's:	125			CL	86,000			X-O	Daily Total Hrs.	10.00
WOB 1000's:	18			Gels	20				Acc. Drill Hrs.	15.80
ROTARY RPM:	40			% Oil	71				Acc. Circ. Hrs.	12.30
MOTOR RPM:	174			% Solids	7				Depth In	998
TOTAL Bit RPM	214			% Sand	N/A				Depth Out	5686
ROT TQ. OFF BTM:	1000			PH	N/A				LIH Hrs.	13:00
ROT TQ. ON BTM:	4000			Temp F	72				Acc. LIH Hrs.	35.00
Current Mag Dec:	6.46			MWD F	136	BHA WT			Acc. Hrs Cir/Drig	28.10
Pulse Hight	70			GPM	427	BELOW JARS			Total K Revs	202.87
"G" Totals	1.004			PSI	1700				Jar # HRS	

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12406776	5X22'S	998	4688	15.8	5686	1	2	WT	G	N/A	1/16"	CT	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:15	0:15	4491	4555	64	2.A	ROTATE 60 RPM, 15 WOB, SPP 2500, DIFF 500	DA TANGENT			
0:15	0:30	0:15				10	C/S 4,512' MD 10.7° INC 87.4° AZM 136° TEMP				
0:30	0:40	0:10	4555	4585	30	2.B	SLIDE HS GTF, 300 DIFF, 5 WOB				
0:40	0:55	0:15	4585	4650	65	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
0:55	1:05	0:10				10	C/S 4,607' MD 10.5° INC 90.9° AZM 136° TEMP				
1:05	1:25	0:20	4650	4744	94	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
1:25	1:35	0:10				10	C/S 4,701' MD 8.9° INC 88.7° AZM 136° TEMP				
1:35	2:10	0:35	4744	4839	95	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
2:10	2:15	0:05				10	C/S 4,796' MD 7.3° INC 85.6° AZM 136° TEMP				
2:15	2:45	0:30	4839	4934	95	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
2:45	2:55	0:10				10	C/S 4,891' MD 6.2° INC 83.4° AZM 136° TEMP	Estimated Daily Charges			
2:55	3:25	0:30	4934	5029	95	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500	Description		Cost	
3:25	3:35	0:10				10	C/S 4,986' MD 4.8° INC 80.4° AZM 136° TEMP				
3:35	4:00	0:25	5029	5124	95	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
4:00	4:10	0:10				10	C/S 5,081' MD 4.0° INC 79.6° AZM 136° TEMP				
4:10	4:35	0:25	5124	5149	25	2.B	SLIDE 290 MTF, 300 DIFF, 5 WOB				
4:35	4:55	0:20	5149	5218	69	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
4:55	5:05	0:10				10	C/S 5,175' MD 2.3° INC 76.5° AZM 136° TEMP				
5:05	5:55	0:50	5218	5248	30	2.B	SLIDE 290 MTF, 300 DIFF, 5 WOB				
5:55	6:10	0:15	5248	5311	63	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
6:10	6:20	0:10				10	C/S 5,268' MD 0.7° INC 35.2° AZM 136° TEMP				
6:20	6:50	0:30	5311	5403	92	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500				
6:50	7:00	0:10				10	C/S 5,360' MD 0.7° INC 357.9° AZM 136° TEMP	Estimated Daily Cost (USD)		\$ -	
7:00	7:35	0:35	5403	5498	95	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500	Accumulated Cost (USD)		\$ -	
7:35	7:45	0:10				10	C/S 5,455' MD 0.4° INC 9.8° AZM 136° TEMP	Company Representative (s)			
7:45	8:15	0:30	5498	5591	93	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500	Michael Aaron		Craig Cart	
8:15	8:25	0:10				10	C/S 5,548' MD 0.4° INC 5.1° AZM 136° TEMP	James Wilson		Johnny Wynne	
8:25	8:50	0:25	5591	5686	95	2.A	ROTATE 40 RPM, 15 WOB, SPP 2500, DIFF 500	RYAN Directional Representative (s)			
8:50	9:00	0:10				10	C/S 5,643' MD 0.0° INC 242.9° AZM 136° TEMP	Lyndon Vestal		Shawn Williamson	
9:00	10:00	1:00				5.A	CIRC				
10:00	13:00	3:00				6.G	TOH	RYAN MWD Representative (s)			
13:00	14:00	1:00				6.G	L/D BHA 1.	Scott Lane		Josh Ferguson	
								24 Hour Breakdown			
								Ftg Rot.	1110	Time Rot.	5.40
								Ftg Orient	85	Time Orient	1.40
								Rot. ROP	205.56	Orient ROP	60.71

Report #: 4A

Date: 22-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 5686
 24:00 Depth: 5841

Footage Today: 155
 Current Run Ftg: 155

Drig Hrs Today: 3.50
 Run Drig Hrs: 3.50

ROP Today: 44.29
 Run Avg. ROP: 44.29

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 460				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	1	BHA #	2	BHA #	
Liner (in)	6	6		Sample	IN					
%	95	95		Time	3:00					
Vol (gals)	4.18	4.18	0.00	Wt.	9.1					
SPM	110	0		VIS	85					
DRILLING PARAMETERS				PV	16					
ST. WT. ROT 1000's:		130		YP	16					
P/U WT. 1000's:		136		WL	N/A					
S/O WT. 1000's:		125		CL	86,000					
WOB 1000's:		18		Gels	20					
ROTARY RPM:		20		% Oil	71					
MOTOR RPM:		221		% Solids	7					
TOTAL Bit RPM		241		% Sand	N/A					
ROT TQ. OFF BTM:		1000		PH	N/A					
ROT TQ. ON BTM:		4000		Temp F	72					
Current Mag Dec:		6.46		MWD F	136					
Pulse Hight		70		GPM	427					
"G" Totals		1.004		PSI	1700					

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12406776	5X22'S	998	4688	15.8	5686	1	2	WT	G	N/A	1/16"	CT	BHA		
2	8 3/4	SMITH	FH121	RD3071	3X20'S	5686													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations							
14:00	16:00	2:00				6.G	P/U BHA 2.				DA CURVE							
16:00	19:50	3:50				6.A	TIH											
19:50	20:00	0:10	5686	5690	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200											
20:00	20:35	0:35	5690	5715	25	2.B	SLIDE 180 MTF, 300 DIFF, 25 WOB											
20:35	20:45	0:10				10	C/S 5,671' MD 0.1° INC 145.6° AZM 136° TEMP											
20:45	20:50	0:05	5715	5719	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200											
20:50	21:20	0:30	5719	5746	27	2.B	SLIDE 180 MTF, 300 DIFF, 25 WOB											
21:20	21:20	0:00	5746	5746	0	KOP	C/S 5,702' MD 2.4° INC 170.2° AZM 118° TEMP											
21:20	21:35	0:15	5746	5751	5	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200											
21:35	22:05	0:30	5751	5777	26	2.B	SLIDE 180 MTF, 300 DIFF, 25 WOB											
22:05	22:15	0:10				10	C/S 5,733' MD 6.1° INC 170.4° AZM 118° TEMP				Estimated Daily Charges							
22:15	22:20	0:05	5777	5781	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				Description		Cost					
22:20	23:00	0:40	5781	5809	28	2.B	SLIDE 20R GTF, 300 DIFF, 25 WOB											
23:00	23:10	0:10				10	C/S 5,765' MD 10.3° INC 173.4° AZM 118° TEMP											
23:10	23:15	0:05	5809	5814	5	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200											
23:15	23:50	0:35	5814	5841	27	2.B	SLIDE HS GTF, 300 DIFF, 25 WOB											
23:50	23:59	0:09				10	C/S 5,797' MD 14.3° INC 175.9° AZM 118° TEMP											
											Estimated Daily Cost (USD)		\$ -					
											Accumulated Cost (USD)		\$ -					
											Company Representative (s)							
											Michael Aaron		Craig Cart					
											James Wilson		Johnny Wynne					
											RYAN Directional Representative (s)							
											Lyndon Vestal		Shawn Williamson					
											RYAN MWD Representative (s)							
											Scott Lane		Josh Ferguson					
											24 Hour Breakdown							
											Ftg Rot.		22		Time Rot.		0.70	
											Ftg Orient		133		Time Orient		2.80	
											Rot. ROP		31.43		Orient ROP		47.50	

Report #: 5

Date: 23-Nov-14


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: **EP Energy**
 Field: **Crockett County, Texas**
 County, State: **Crockett, Texas**
 AFE or PO #: **160798**

Customer: **EP Energy**
 Well Name & No.: **University East 4109 KH**
 Block or Section: **Section 09, Block 41**
 Rig Contractor & No.: **Sidewinder 222**

00:00 Depth: 5841
 24:00 Depth: 6224

Footage Today: 383
 Current Run Ftg: 538

Drig Hrs Today: 6.70
 Run Drig Hrs: 10.20

ROP Today: 57.16
 Run Avg. ROP: 52.75

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 460				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	1	BHA #	2	BHA #	
Liner (in)	6	6		Sample	IN		MOTOR		MOTOR	Run No. 2
%	95	95		Time	3:00		EM TOOL		EM TOOL	Size (in.) 6 3/4
Vol (gals)	4.18	4.18	0.00	Wt.	9.1		UBHO		UBHO	Type 4/5 7.0
SPM	110	0		VIS	85		NMDC		NMDC	Serial No. RY650609
DRILLING PARAMETERS				PV	16		NMDC		NMDC	Tool Deflection 2.12
ST. WT. ROT 1000's:		135		YP	16		X-O			Avg. Diff. Press.
P/U WT. 1000's:		141		WL	N/A		6 1/2" DC'S			Daily Drill Hrs. 6.70
S/O WT. 1000's:		129		CL	86,000		X-O			Daily Circ. Hrs. 2.00
WOB 1000's:		18		Gels	20					Daily Total Hrs. 8.70
ROTARY RPM:		20		% Oil	71					Acc. Drill Hrs. 10.20
MOTOR RPM:		221		% Solids	7					Acc. Circ. Hrs. 2.70
TOTAL Bit RPM		241		% Sand	N/A					Depth In 5686
ROT TQ. OFF BTM:		1000		PH	N/A					Depth Out
ROT TQ. ON BTM:		4000		Temp F	72					LIH Hrs. 11:10
Current Mag Dec:		6.46		MWD F	136		BHA WT			Acc. LIH Hrs. 19.17
Pulse Hight		70		GPM	427		BELOW JARS			Acc. Hrs Cir/Drilg 12.90
"G" Totals		1.004		PSI	1700					Total K Revs 147.49
										Jar # HRS

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12406776	5X22'S	998	4688	15.8	5686	1	2	WT	G	N/A	1/16"	CT	BHA		
2	8 3/4	SMITH	FHI21	RD3071	3X20'S	5686													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:05	0:05	5841	5845	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200	DA CURVE			
0:05	0:30	0:25	5845	5872	27	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB				
0:30	0:40	0:10				10	C/S 5,828' MD 18.1° INC 177.3° AZM 118° TEMP				
0:40	0:45	0:05	5872	5876	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				
0:45	1:25	0:40	5876	5904	28	2.B	SLIDE 20R GTF, 200 DIFF, 25 WOB				
1:25	1:35	0:10				10	C/S 5,860' MD 22.1° INC 177.9° AZM 118° TEMP				
1:35	1:40	0:05	5904	5908	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				
1:40	2:15	0:35	5908	5935	27	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB				
2:15	2:25	0:10				10	C/S 5,891' MD 26.1° INC 179.3° AZM 124° TEMP				
2:25	2:30	0:05	5935	5939	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				
2:30	3:00	0:30	5939	5967	28	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB	Estimated Daily Charges			
3:00	3:10	0:10				10	C/S 5,923' MD 29.5° INC 180.1° AZM 124° TEMP	Description	Cost		
3:10	3:45	0:35	5967	5999	32	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB				
3:45	3:55	0:10				10	C/S 5,955' MD 33.7° INC 179.9° AZM 124° TEMP				
3:55	4:00	0:05	5999	6004	5	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				
4:00	4:35	0:35	6004	6030	26	2.B	SLIDE 20 R GTF, 200 DIFF, 25 WOB				
4:35	4:45	0:10				10	C/S 5,986' MD 38.2° INC 180.2° AZM 124° TEMP				
4:45	4:50	0:05	6030	6035	5	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				
4:50	5:20	0:30	6035	6062	27	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB				
5:20	5:30	0:10				10	C/S 6,018' MD 41.8° INC 181.7° AZM 124° TEMP				
5:30	8:00	2:30				8	RIG REPAIR (HYDRAULIC HOSE ON TOP DRIVE)				
8:00	8:10	0:10	6062	6068	6	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				
8:10	8:40	0:30	6068	6093	25	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB	Estimated Daily Cost (USD)		\$ -	
8:40	8:50	0:10				10	C/S 6,049' MD 45.4° INC 181.8° AZM 124° TEMP	Accumulated Cost (USD)		\$ -	
8:50	9:00	0:10	6093	6102	9	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200	Company Representative (s)			
9:00	9:15	0:15	6102	6125	23	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB	Michael Aaron		Craig Cart	
9:15	9:25	0:10				10	C/S 6,081' MD 48.9° INC 181.1° AZM 124° TEMP	James Wilson		Johnny Wynne	
9:25	9:30	0:05	6125	6128	3	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200	RYAN Directional Representative (s)			
9:30	9:50	0:20	6128	6156	28	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB	Lyndon Vestal		Shawn Williamson	
9:50	10:00	0:10				10	C/S 6,112' MD 51.4° INC 180.9° AZM 124° TEMP				
10:00	10:05	0:05	6156	6159	3	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200	RYAN MWD Representative (s)			
10:05	10:20	0:15	6159	6188	29	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB	Scott Lane		Josh Ferguson	
10:20	10:30	0:10				10	C/S 6,144' MD 55.5° INC 181.5° AZM 124° TEMP				
10:30	10:35	0:05	6188	6191	3	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200	24 Hour Breakdown			
10:35	10:55	0:20	6191	6219	28	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB	Ftg Rot.	55	Time Rot.	1.20
10:55	11:05	0:10				10	C/S 6,175' MD 59.2° INC 183.1° AZM 124° TEMP	Ftg Orient	328	Time Orient	5.50
11:05	11:10	0:05	6219	6224	5	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200	Rot. ROP	45.83	Orient ROP	59.64

Report #: 5A
Date: 23-Nov-14



RYAN DIRECTIONAL SERVICES, INC.
A NABORS COMPANY

Ryan Job # 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
Field: Crockett County, Texas
County, State: Crockett, Texas
AFE or PO #: 160798

Customer: EP Energy
Well Name & No.: University East 4109 KH
Block or Section: Section 09, Block 41
Rig Contractor & No.: Sidewinder 222

00:00 Depth: 6224 Footage Today: 184 Drlg Hrs Today: 3.20 ROP Today: 57.50 Last Casing Set: _____
24:00 Depth: 6408 Current Run Ftg: 722 Run Drlg Hrs: 13.40 Run Avg. ROP: 53.88 Depth: _____

PUMP Data Total Gals/Min = 460				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	1	BHA #	2	BHA #	
Liner (in)	6	6		Sample	IN		BIT		BIT	Run No. 2
%	95	95		Time	3:00		MOTOR		MOTOR	Size (in.) 6 3/4
Vol (gps)	4.18	4.18	0.00	Wt.	9.1		EM TOOL		EM TOOL	Type 4/5 7.0
SPM	110	0		VIS	85		UBHO		UBHO	Serial No. RY650609
DRILLING PARAMETERS							NMDC		NMDC	Tool Deflection 2.12
ST. WT. ROT 1000's:		135		PV	16		NMDC		NMDC	Avg. Diff. Press. 200
P/U WT. 1000's:		141		YP	16		X-O			Daily Drill Hrs. 3.20
S/O WT. 1000's:		129		WL	N/A		6 1/2" DC'S			Daily Circ. Hrs. 1.80
WOB 1000's:		18		CL	86,000		X-O			Daily Total Hrs. 5.00
ROTARY RPM:		20		Gels	20					Acc. Drill Hrs. 13.40
MOTOR RPM:		221		% Oil	71					Acc. Circ. Hrs. 4.50
TOTAL Bit RPM		241		% Solids	7					Depth In 5686
ROT TQ. OFF BTM:		1000		% Sand	N/A					Depth Out 6408
ROT TQ. ON BTM:		4000		PH	N/A					LIH Hrs. 10:50
Current Mag Dec:		6.46		Temp F	72					Acc. LIH Hrs. 30.00
Pulse Hight		70		MWD F	136		BHA WT			Acc. Hrs Cir/Drilg 17.90
"G" Totals		1.004		GPM	427		BELOW JARS			Total K Revs 193.76
				PSI	1700					Jar # HRS

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12406776	5X22'S	998	4688	15.8	5686	1	2	WT	G	N/A	1/16"	CT	BHA		
2	8 3/4	SMITH	FHI21	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations							
11:10	11:35	0:25	6224	6250	26	2.B	SLIDE 30L GTF, 200 DIFF, 25 WOB				DA CURVE							
11:35	11:45	0:10				10	C/S 6,206' MD 62.0° INC 182.6° AZM 124° TEMP											
11:45	11:50	0:05	6250	6253	3	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200											
11:50	12:20	0:30	6253	6282	29	2.B	SLIDE 10L GTF, 200 DIFF, 25 WOB											
12:20	12:30	0:10				10	C/S 6,238' MD 65.4° INC 181.2° AZM 124° TEMP											
12:30	13:00	0:30	6282	6313	31	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB											
13:00	13:10	0:10				10	C/S 6,269' MD 69.8° INC 180.0° AZM 124° TEMP											
13:10	13:20	0:10	6313	6317	4	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200											
13:20	13:45	0:25	6317	6345	28	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB											
13:45	13:55	0:10				10	C/S 6,301' MD 74.4° INC 179.4° AZM 124° TEMP											
13:55	14:15	0:20				O	PASON RECALIBRATING BLOCK HEIGHT				Estimated Daily Charges							
14:15	14:20	0:05	6345	6348	3	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200				Description		Cost					
14:20	14:40	0:20	6348	6376	28	2.B	SLIDE 30R GTF, 200 DIFF, 25 WOB											
14:40	14:50	0:10				10	C/S 6,332' MD 78.8° INC 179.3° AZM 124° TEMP											
14:50	15:00	0:10	6376	6383	7	2.A	ROTATE 20 RPM, 20 WOB, DIFF 200											
15:00	15:30	0:30	6383	6408	25	2.B	SLIDE HS GTF, 200 DIFF, 25 WOB											
15:30	15:40	0:10				10	C/S 6,364' MD 82.9° INC 181.2° AZM 124° TEMP											
15:40	16:30	0:50				5.A	CIRC											
16:30	21:00	4:30				6.G	TOH											
21:00	22:00	1:00				6.G	L/D BHA 2.											
											Estimated Daily Cost (USD)		\$ -					
											Accumulated Cost (USD)		\$ -					
											Company Representative (s)							
											Michael Aaron		Craig Cart					
											James Wilson		Johnny Wynne					
											RYAN Directional Representative (s)							
											Lyndon Vestal		Shawn Williamson					
											RYAN MWD Representative (s)							
											Scott Lane		Josh Ferguson					
											24 Hour Breakdown							
											Ftg Rot.		17		Time Rot.		0.50	
											Ftg Orient		167		Time Orient		2.70	
											Rot. ROP		34.00		Orient ROP		61.85	

Report #: 5B
Date: 23-Nov-14



RYAN DIRECTIONAL SERVICES, INC.
A NABORS COMPANY

Ryan Job # 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
Field: Crockett County, Texas
County, State: Crockett, Texas
AFE or PO #: 160798

Customer: EP Energy
Well Name & No.: University East 4109 KH
Block or Section: Section 09, Block 41
Rig Contractor & No.: Sidewinder 222

00:00 Depth: 0 Footage Today: 0 Drlg Hrs Today: 0.00 ROP Today: - Last Casing Set: _____
24:00 Depth: 0 Current Run Ftg: -6408 Run Drlg Hrs: 0.00 Run Avg. ROP: - Depth: _____

PUMP Data Total Gals/Min = 586				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	95	95		Time	3:00					
Vol (gps)	4.18	4.18	0.00	Wt.	9.1					
SPM	70	70		VIS	85					
DRILLING PARAMETERS				PV	16					
ST. WT. ROT 1000's:		135		YP	16			25 STANDS 5" DP		Daily Drill Hrs. 0.00
P/U WT. 1000's:		141		WL	N/A			AGITATOR		Daily Circ. Hrs. 0.00
S/O WT. 1000's:		129		CL	86,000			SHOCK SUB		Daily Total Hrs. 0.00
WOB 1000's:		18		Gels	20					Acc. Drill Hrs. 0.00
ROTARY RPM:		20		% Oil	71					Acc. Circ. Hrs. 0.00
MOTOR RPM:		221		% Solids	7					Depth In 6408
TOTAL Bit RPM		241		% Sand	N/A					Depth Out
ROT TQ. OFF BTM:		1000		PH	N/A					LIH Hrs. 0:15
ROT TQ. ON BTM:		4000		Temp F	72					Acc. LIH Hrs. 0.25
Current Mag Dec:		6.46		MWD F	136		BHA WT			Acc. Hrs Cir/Drilg 0.00
Pulse Hight		70		GPM	427		BELOW JARS			Total K Revs 0.00
"G" Totals		1,004		PSI	1700					Jar # HRS

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ulterra	U519S	27397	7X18'S	6408													
2	8 3/4	SMITH	FHi21	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown		Current Operations			
22:00	23:45	1:45				6.A	P/U BHA 3		DA CURVE			
23:45	23:59	0:14				6.A	TIH					
									</			

Report #: 6

Date: 24-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 6408
 24:00 Depth: 7784

Footage Today: 1376
 Current Run Ftg: 1376

Drig Hrs Today: 4.30
 Run Drig Hrs: 4.30

ROP Today: 320.00
 Run Avg. ROP: 320.00

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 602				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	6	6		Sample	IN				
%	95	95		Time	3:00				
Vol (gals)	4.18	4.18	0.00	Wt.	9.1				
SPM	72	72		VIS	85				
DRILLING PARAMETERS				PV	16				
ST. WT. ROT 1000's:		135		YP	16			25 STANDS 5" DP	Daily Drill Hrs. 4.30
P/U WT. 1000's:		141		WL	N/A			AGITATOR	Daily Circ. Hrs. 2.20
S/O WT. 1000's:		129		CL	86,000			SHOCK SUB	Daily Total Hrs. 6.50
WOB 1000's:		18		Gels	20				Acc. Drill Hrs. 4.30
ROTARY RPM:		70		% Oil	71				Acc. Circ. Hrs. 2.20
MOTOR RPM:		174		% Solids	7				Depth In 6408
TOTAL Bit RPM		244		% Sand	N/A				Depth Out
ROT TQ. OFF BTM:		1000		PH	N/A				LIH Hrs. 10:20
ROT TQ. ON BTM:		4000		Temp F	72				Acc. LIH Hrs. 10.58
Current Mag Dec:		6.46		MWD F	136		BHA WT		Acc. Hrs Cir/Drilg 6.50
Pulse Hight		70		GPM	427		BELOW JARS		Total K Revs 62.95
"G" Totals		1.004		PSI	1700				Jar # HRS

BIT DATA																	
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION							
										IR	OR	DC	LOC	B/S	G/16"	OC	RPLD
3	8 3/4	ULTERRA	U519S	27397	7X18'S	6408											
2	8 3/4	SMITH	FH121	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	3:50	3:50				6.A	TIH	DA LATERAL			
3:50	4:00	0:10	6408	6462	54	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				
4:00	4:00	0:00	6462	6462	0	EOC	C/S 6,419' MD 87.8° INC 182.1° AZM 126° TEMP				
4:00	4:20	0:20	6462	6472	10	2.B	SLIDE 60L GTF, 20 WOB, 200 DIFF				
4:20	4:35	0:15	6472	6556	84	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				
4:35	4:45	0:10				10	C/S 6,513' MD 91.4° INC 182.2° AZM 126° TEMP				
4:45	5:00	0:15	6556	6571	15	2.B	SLIDE 110L GTF, 20 WOB, 200 DIFF				
5:00	5:20	0:20	6571	6651	80	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				
5:20	5:30	0:10				10	C/S 6,608' MD 89.4° INC 178.1° AZM 1296° TEMP				
5:30	5:40	0:10	6651	6666	15	2.B	SLIDE 90 R GTF, 20 WOB, 200 DIFF				
5:40	5:55	0:15	6666	6746	80	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600	Estimated Daily Charges			
5:55	6:05	0:10				10	C/S 6,703' MD 90.2° INC 180.6° AZM 133° TEMP	Description	Cost		
6:05	6:15	0:10	6746	6839	93	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
6:15	6:25	0:10				10	C/S 6,796' MD 89.6° INC 178.8° AZM 133° TEMP				
6:25	6:30	0:05	6839	6854	15	2.B	SLIDE 90 R GTF, 20 WOB, 200 DIFF				
6:30	6:50	0:20	6854	6934	80	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				
6:50	7:00	0:10				10	C/S 6,891' MD 90.0° INC 180.0° AZM 133° TEMP				
7:00	7:10	0:10	6934	7028	94	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				
7:10	7:20	0:10				10	C/S 6,985' MD 89.9° INC 179.5° AZM 142° TEMP				
7:20	7:30	0:10	7028	7123	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				
7:30	7:40	0:10				10	C/S 7,080' MD 89.8° INC 179.0° AZM 142° TEMP				
7:40	7:45	0:05	7123	7138	15	2.B	SLIDE 90 R GTF, 20 WOB, 200 DIFF				
7:45	8:00	0:15	7138	7217	79	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600	Estimated Daily Cost (USD)		\$ -	
8:00	8:10	0:10				10	C/S 7,174' MD 89.8° INC 180.5° AZM 142° TEMP	Accumulated Cost (USD)		\$ -	
8:10	8:20	0:10	7217	7312	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600	Company Representative (s)			
8:20	8:30	0:10				10	C/S 7,269' MD 89.7° INC 178.3° AZM 142° TEMP	Michael Aaron		Craig Cart	
8:30	8:35	0:05	7312	7332	20	2.B	SLIDE 90 R GTF, 20 WOB, 200 DIFF	James Wilson		Johnny Wynne	
8:35	8:45	0:10	7332	7406	74	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600	RYAN Directional Representative (s)			
8:45	8:55	0:10				10	C/S 7,363' MD 89.9° INC 182.1° AZM 142° TEMP	Lyndon Vestal		Shawn Williamson	
8:55	9:10	0:15	7406	7501	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				
9:10	9:20	0:10				10	C/S 7,458' MD 90.3° INC 181.4° AZM 142° TEMP	RYAN MWD Representative (s)			
9:20	9:30	0:10	7501	7596	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600	Scott Lane		Josh Ferguson	
9:30	9:40	0:10				10	C/S 7,553' MD 90.0° INC 178.8° AZM 142° TEMP				
9:40	9:45	0:05	7596	7611	15	2.B	SLIDE 90 R GTF, 20 WOB, 200 DIFF	24 Hour Breakdown			
9:45	10:00	0:15	7611	7690	79	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600	Ftg Rot.	1271	Time Rot.	3.30
10:00	10:10	0:10				10	C/S 7,647' MD 90.3° INC 181.4° AZM 142° TEMP	Ftg Orient	105	Time Orient	1.10
10:10	10:20	0:10	7690	7784	94	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600	Rot. ROP	385.15	Orient ROP	95.45

Report #: 6A

Date: 24-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 7784
 24:00 Depth: 9199

Footage Today: 1415
 Current Run Ftg: 2791

Drig Hrs Today: 4.20
 Run Drig Hrs: 8.50

ROP Today: 336.90
 Run Avg. ROP: 328.35

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min =					602		MUD DATA		Previous		Current			
2		BHA #		3		BHA #		MOTOR DATA		CURRENT				
Pump	National	National	0	Mud Type	OBM	BIT		BIT		Run No.		3		
Liner (in)	6	6		Sample	IN	MOTOR		MOTOR		Size (in.)		6 3/4		
%	95	95		Time	3:00	EM TOOL		EM TOOL		Type		7/8 5.0		
Vol (gps)	4.18	4.18	0.00	Wt.	9.1	UBHO		UBHO		Serial No.		RY700019		
SPM	72	72		VIS	85	NMDC		NMDC		Tool Deflection		1.75		
DRILLING PARAMETERS				PV	16	NMDC		NMDC		Avg. Diff. Press.				
ST. WT. ROT 1000's:		135		YP	16			25 STANDS 5" DP		Daily Drill Hrs.		4.20		
P/U WT. 1000's:		141		WL	N/A			AGITATOR		Daily Circ. Hrs.		2.50		
S/O WT. 1000's:		129		CL	86,000			SHOCK SUB		Daily Total Hrs:		6.70		
WOB 1000's:		18		Gels	20					Acc. Drill Hrs.		8.50		
ROTARY RPM:		70		% Oil	71					Acc. Circ. Hrs.		4.70		
MOTOR RPM:		174		% Solids	7					Depth In		6408		
TOTAL Bit RPM		244		% Sand	N/A					Depth Out				
ROT TQ. OFF BTM:		1000		PH	N/A					LIH Hrs.		6:40		
ROT TQ. ON BTM:		4000		Temp F	72					Acc. LIH Hrs.		17.25		
Current Mag Dec:		6.46		MWD F	136	BHA WT				Acc. Hrs Cir/Drilg		13.20		
Pulse Hight		70		GPM	427	BELOW JARS				Total K Revs		124.44		
%G" Totals		1.004		PSI	1700					Jar # HRS				

BIT DATA																	
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION							
										IR	OR	DC	LOC	B/S	G/16"	OC	RPLD
3	8 3/4	ULTERRA	U519S	27397	7X18'S	6408											
2	8 3/4	SMITH	FH121	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
10:20	10:30	0:10				10	C/S 7,741' MD	90.1° INC	180.8° AZM	142° TEMP	DA LATERAL			
10:30	10:40	0:10	7784	7879	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
10:40	10:50	0:10				10	C/S 7,836' MD	90.2° INC	180.7° AZM	142° TEMP				
10:50	11:00	0:10	7879	7974	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
11:00	11:10	0:10				10	C/S 7,931' MD	90.2° INC	179.6° AZM	142° TEMP				
11:10	11:20	0:10	7974	8067	93	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
11:20	11:30	0:10				10	C/S 8,024' MD	90.1° INC	178.6° AZM	142° TEMP				
11:30	11:35	0:05	8067	8087	20	2.B	SLIDE 90 R GTF, 20 WOB, 200 DIFF							
11:35	11:45	0:10	8087	8161	74	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
11:45	11:55	0:10				10	C/S 8,118' MD	89.9° INC	180.5° AZM	142° TEMP				
11:55	12:10	0:15	8161	8255	94	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				Estimated Daily Charges			
12:10	12:20	0:10				10	C/S 8,212' MD	90.0° INC	177.5° AZM	142° TEMP	Description		Cost	
12:20	12:30	0:10	8255	8280	25	2.B	SLIDE 90 R GTF, 20 WOB, 200 DIFF							
12:30	12:45	0:15	8280	8348	68	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
12:45	12:55	0:10				10	C/S 8,305' MD	88.8° INC	178.4° AZM	142° TEMP				
12:55	13:00	0:05	8348	8368	20	2.B	SLIDE 80 R GTF, 20 WOB, 200 DIFF							
13:00	13:10	0:10	8368	8443	75	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
13:10	13:20	0:10				10	C/S 8,400' MD	90.4° INC	181.4° AZM	142° TEMP				
13:20	13:40	0:20	8443	8537	94	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
13:40	13:50	0:10				10	C/S 8,494' MD	92.2° INC	181.7° AZM	142° TEMP				
13:50	13:55	0:05	8537	8552	15	2.B	SLIDE 180 GTF, 20 WOB, 200 DIFF							
13:55	14:10	0:15	8552	8631	79	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
14:10	14:20	0:10				10	C/S 8,588' MD	91.1° INC	182.2° AZM	142° TEMP	Estimated Daily Cost (USD)		\$ -	
14:20	14:35	0:15	8631	8726	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				Accumulated Cost (USD)		\$ -	
14:35	14:45	0:10				10	C/S 8,683' MD	91.1° INC	182.2° AZM	142° TEMP	Company Representative (s)			
14:45	15:00	0:15	8726	8751	25	2.B	SLIDE 160 L GTF, 20 WOB, 200 DIFF				Michael Aaron		Craig Cart	
15:00	15:20	0:20	8751	8821	70	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				James Wilson		Johnny Wynne	
15:20	15:30	0:10				10	C/S 8,778' MD	88.1° INC	180.2° AZM	142° TEMP	RYAN Directional Representative (s)			
15:30	15:45	0:15	8821	8916	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				Lyndon Vestal		Shawn Williamson	
15:45	15:55	0:10				10	C/S 8,873' MD	89.6° INC	180.6° AZM	142° TEMP				
15:55	16:10	0:15	8916	9010	94	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				RYAN MWD Representative (s)			
16:10	16:20	0:10				10	C/S 8,967' MD	91.3° INC	181.3° AZM	142° TEMP	Scott Lane		Josh Ferguson	
16:20	16:25	0:05	9010	9030	20	2.B	SLIDE 160 L GTF, 20 WOB, 200 DIFF							
16:25	16:35	0:10	9030	9105	75	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				24 Hour Breakdown			
16:35	16:45	0:10				10	C/S 9,062' MD	91.3° INC	181.3° AZM	162° TEMP	Ftg Rot.	1275	Time Rot.	3.30
16:45	16:50	0:05	9105	9120	15	2.B	SLIDE 135 L GTF, 20 WOB, 200 DIFF				Ftg Orient	140	Time Orient	0.80
16:50	17:00	0:10	9120	9199	79	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				Rot. ROP	386.36	Orient ROP	175.00

Report #: 6B

Date: 24-Nov-14


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: **EP Energy**
 Field: **Crockett County, Texas**
 County, State: **Crockett, Texas**
 AFE or PO #: **160798**

Customer: **EP Energy**
 Well Name & No.: **University East 4109 KH**
 Block or Section: **Section 09, Block 41**
 Rig Contractor & No.: **Sidewinder 222**

00:00 Depth: 9199
 24:00 Depth: 10526

Footage Today: 1327
 Current Run Ftg: 4118

Drig Hrs Today: 4.40
 Run Drig Hrs: 12.90

ROP Today: 301.59
 Run Avg. ROP: 319.22

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min =					602		MUD DATA		Previous		Current			
Pump		National	National	0	Mud Type	OBM	2	BHA #	3	BHA #	MOTOR DATA		CURRENT	
Liner (in)	6	6		Sample	IN		MOTOR		MOTOR		Run No.		3	
%	95	95		Time	3:00		EM TOOL		EM TOOL		Type		7/8 5.0	
Vol (gps)	4.18	4.18	0.00	Wt.	9.1		UBHO		UBHO		Serial No.		RY700019	
SPM	72	72		VIS	85		NMDC		NMDC		Tool Deflection		1.75	
DRILLING PARAMETERS					PV	16		NMDC		NMDC		Avg. Diff. Press.		
ST. WT. ROT 1000's:		135			YP	16			25 STANDS 5" DP		Daily Drill Hrs.		4.40	
P/U WT. 1000's:		141			WL	N/A			AGITATOR		Daily Circ. Hrs.		2.60	
S/O WT. 1000's:		129			CL	86,000			SHOCK SUB		Daily Total Hrs:		7.00	
WOB 1000's:		18			Gels	20					Acc. Drill Hrs.		12.90	
ROTARY RPM:		70			% Oil	71					Acc. Circ. Hrs.		7.30	
MOTOR RPM:		174			% Solids	7					Depth In		6408	
TOTAL Bit RPM		244			% Sand	N/A					Depth Out			
ROT TQ. OFF BTM:		1000			PH	N/A					LIH Hrs.		7:00	
ROT TQ. ON BTM:		4000			Temp F	72					Acc. LIH Hrs.		24.25	
Current Mag Dec:		6.46			MWD F	136	BHA WT				Acc. Hrs Cir/Drilg		20.20	
Pulse Hight		70			GPM	427	BELOW JARS				Total K Revs		188.86	
"G" Totals		1.004			PSI	1700					Jar # HRS			

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	27397	7X18'S	6408													
2	8 3/4	SMITH	FH21	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
17:00	17:10	0:10				10	C/S 9,156' MD	89.2° INC	180.3° AZM	162° TEMP	DA LATERAL			
17:10	17:25	0:15	9199	9294	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
17:25	17:35	0:10				10	C/S 9,251' MD	90.8° INC	180.0° AZM	162° TEMP				
17:35	17:40	0:05	9294	9309	15	2.B	SLIDE 180 GTF, 20 WOB, 200 DIFF							
17:40	17:50	0:10	9309	9389	80	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
17:50	18:00	0:10				10	C/S 9,346' MD	89.6° INC	181.0° AZM	162° TEMP				
18:00	18:20	0:20	9389	9484	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
18:20	18:30	0:10				10	C/S 9,441' MD	90.9° INC	180.7° AZM	162° TEMP				
18:30	18:40	0:10	9484	9499	15	2.B	SLIDE 180 GTF, 20 WOB, 200 DIFF							
18:40	19:00	0:20	9499	9578	79	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
19:00	19:10	0:10				10	C/S 9,535' MD	87.6° INC	177.2° AZM	162° TEMP	Estimated Daily Charges			
19:10	19:15	0:05	9578	9588	10	2.B	SLIDE 80R GTF, 20 WOB, 200 DIFF				Description		Cost	
19:15	19:40	0:25	9588	9673	85	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
19:40	19:50	0:10				10	C/S 9,630' MD	89.1° INC	178.2° AZM	162° TEMP				
19:50	20:00	0:10	9673	9767	94	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
20:00	20:10	0:10				10	C/S 9,724' MD	91.4° INC	178.9° AZM	162° TEMP				
20:10	20:15	0:05	9767	9787	20	2.B	SLIDE 140R GTF, 20 WOB, 200 DIFF							
20:15	20:35	0:20	9787	9862	75	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
20:35	20:45	0:10				10	C/S 9,819' MD	90.2° INC	179.0° AZM	162° TEMP				
20:45	20:55	0:10	9862	9957	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600							
20:55	21:05	0:10				10	C/S 9,914' MD	91.2° INC	175.6° AZM	162° TEMP				
21:05	21:15	0:10	9957	9982	25	2.B	SLIDE 120R GTF, 20 WOB, 200 DIFF							
21:15	21:30	0:15	9982	10051	69	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				Estimated Daily Cost (USD)		\$ -	
21:30	21:40	0:10				10	C/S 10,008' MD	90.7° INC	178.1° AZM	162° TEMP	Accumulated Cost (USD)		\$ -	
21:40	21:45	0:05	10051	10071	20	2.B	SLIDE 135R GTF, 20 WOB, 200 DIFF				Company Representative (s)			
21:45	22:00	0:15	10071	10146	75	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				Michael Aaron		Craig Cart	
22:00	22:10	0:10				10	C/S 10,103' MD	89.3° INC	180.4° AZM	162° TEMP	James Wilson		Johnny Wynne	
22:10	22:20	0:10	10146	10241	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				RYAN Directional Representative (s)			
22:20	22:30	0:10				10	C/S 10,198' MD	91.0° INC	181.4° AZM	162° TEMP	Lyndon Vestal		Shawn Williamson	
22:30	22:35	0:05	10241	10261	20	2.B	SLIDE 180 GTF, 20 WOB, 200 DIFF							
22:35	22:50	0:15	10261	10336	75	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				RYAN MWD Representative (s)			
22:50	23:00	0:10				10	C/S 10,293' MD	88.9° INC	179.3° AZM	162° TEMP	Scott Lane		Josh Ferguson	
23:00	23:10	0:10	10336	10431	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
23:10	23:20	0:10				10	C/S 10,388' MD	90.5° INC	179.7° AZM	162° TEMP	24 Hour Breakdown			
23:20	23:30	0:10	10431	10451	20	2.B	SLIDE 160R GTF, 20 WOB, 200 DIFF				Ftg Rot.	1182	Time Rot.	3.50
23:30	23:45	0:15	10451	10526	75	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				Ftg Orient	145	Time Orient	0.90
23:45	23:59	0:14				10	C/S 10,483' MD	87.5° INC	179.3° AZM	162° TEMP	Rot. ROP	337.71	Orient ROP	161.11

Report #: 7

Date: 25-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 10526
 24:00 Depth: 11949

Footage Today: 1423
 Current Run Ftg: 5541

Drig Hrs Today: 6.00
 Run Drig Hrs: 18.90

ROP Today: 237.17
 Run Avg. ROP: 293.17

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min =					602		MUD DATA		Previous		Current			
2		BHA #		3		BHA #		MOTOR DATA		CURRENT				
Pump	National	National	0	Mud Type	OBM	BIT		BIT		Run No.		3		
Liner (in)	6	6		Sample	IN	MOTOR		MOTOR		Size (in.)		6 3/4		
%	95	95		Time	3:00	EM TOOL		EM TOOL		Type		7/8 5.0		
Vol (gps)	4.18	4.18	0.00	Wt.	9.1	UBHO		UBHO		Serial No.		RY700019		
SPM	72	72		VIS	85	NMDC		NMDC		Tool Deflection		1.75		
DRILLING PARAMETERS				PV	16	NMDC		NMDC		Avg. Diff. Press.				
ST. WT. ROT 1000's:		135		YP	16			25 STANDS 5" DP		Daily Drill Hrs.		6.00		
P/U WT. 1000's:		141		WL	N/A			AGITATOR		Daily Circ. Hrs.		2.60		
S/O WT. 1000's:		129		CL	86,000			SHOCK SUB		Daily Total Hrs:		8.60		
WOB 1000's:		18		Gels	20					Acc. Drill Hrs.		18.90		
ROTARY RPM:		70		% Oil	71					Acc. Circ. Hrs.		9.90		
MOTOR RPM:		174		% Solids	7					Depth In		6408		
TOTAL Bit RPM		244		% Sand	N/A					Depth Out				
ROT TQ. OFF BTM:		1000		PH	N/A					LIH Hrs.		8:35		
ROT TQ. ON BTM:		4000		Temp F	72					Acc. LIH Hrs.		32.83		
Current Mag Dec:		6.46		MWD F	136	BHA WT				Acc. Hrs Cir/Drilg		28.80		
Pulse Hight		70		GPM	427	BELOW JARS				Total K Revs		276.70		
"G" Totals		1.004		PSI	1700					Jar # HRS				

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	27397	7X18'S	6408													
2	8 3/4	SMITH	FH121	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:15	0:15	10526	10621	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600	DA LATERAL			
0:15	0:25	0:10				10	C/S 10,578' MD 88.3° INC 178.8° AZM 162° TEMP				
0:25	0:35	0:10	10621	10715	94	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
0:35	0:45	0:10				10	C/S 10,672' MD 92.4° INC 182.2° AZM 162° TEMP				
0:45	1:00	0:15	10715	10735	20	2.B	SLIDE 180 GTF, 30 WOB, 250 DIFF				
1:00	1:15	0:15	10735	10811	76	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
1:15	1:30	0:15				10	C/S 10,768' MD 88.3° INC 180.4° AZM 162° TEMP				
1:30	1:35	0:05	10811	10905	94	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
1:35	1:45	0:10				10	C/S 10,862' MD 90.9° INC 181.8° AZM 162° TEMP				
1:45	2:00	0:15	10905	11000	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
2:00	2:10	0:10				10	C/S 10,957' MD 92.8° INC 181.8° AZM 162° TEMP	Estimated Daily Charges			
2:10	2:30	0:20	11000	11020	20	2.B	SLIDE 180 GTF, 30 WOB, 250 DIFF	Description		Cost	
2:30	2:45	0:15	11020	11094	74	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
2:45	2:55	0:10				10	C/S 11,051' MD 90.4° INC 182.2° AZM 162° TEMP				
2:55	3:10	0:15	11094	11114	20	2.B	SLIDE 160L GTF, 30 WOB, 250 DIFF				
3:10	3:25	0:15	11114	11188	74	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
3:25	3:35	0:10				10	C/S 11,145' MD 90.4° INC 181.1° AZM 162° TEMP				
3:35	3:55	0:20	11188	11283	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
3:55	4:05	0:10				10	C/S 11,240' MD 91.2° INC 181.1° AZM 162° TEMP				
4:05	4:25	0:20	11283	11303	20	2.B	SLIDE 180 GTF, 30 WOB, 250 DIFF				
4:25	5:00	0:35	11303	11377	74	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
5:00	5:10	0:10				10	C/S 11,334' MD 87.7° INC 180.3° AZM 162° TEMP				
5:10	5:25	0:15	11377	11472	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600	Estimated Daily Cost (USD)		\$	-
5:25	5:35	0:10				10	C/S 11,429' MD 88.5° INC 179.5° AZM 162° TEMP	Accumulated Cost (USD)		\$	-
5:35	5:50	0:15	11472	11567	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600	Company Representative (s)			
5:50	6:00	0:10				10	C/S 11,524' MD 92.0° INC 181.4° AZM 162° TEMP	Michael Aaron		Craig Cart	
6:00	6:15	0:15	11567	11587	20	2.B	SLIDE 180 GTF, 30 WOB, 250 DIFF	James Wilson		Johnny Wynne	
6:15	6:30	0:15	11587	11663	76	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600	RYAN Directional Representative (s)			
6:30	6:40	0:10				10	C/S 11,620' MD 90.7° INC 179.6° AZM 162° TEMP	Lyndon Vestal		Shawn Williamson	
6:40	6:55	0:15	11663	11678	15	2.B	SLIDE 150R GTF, 30 WOB, 250 DIFF				
6:55	7:15	0:20	11678	11758	80	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600	RYAN MWD Representative (s)			
7:15	7:25	0:10				10	C/S 11,715' MD 88.4° INC 180.0° AZM 162° TEMP	Scott Lane		Josh Ferguson	
7:25	7:45	0:20	11758	11853	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				
7:45	7:55	0:10				10	C/S 11,810' MD 92.4° INC 181.5° AZM 162° TEMP	24 Hour Breakdown			
7:55	8:10	0:15	11853	11873	20	2.B	SLIDE 160L GTF, 30 WOB, 250 DIFF	Ftg Rot.	1288	Time Rot.	4.10
8:10	8:25	0:15	11873	11949	76	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600	Ftg Orient	135	Time Orient	1.90
8:25	8:35	0:10				10	C/S 11,906' MD 90.8° INC 181.9° AZM 162° TEMP	Rot. ROP	314.15	Orient ROP	71.05

Report #: 7A

Date: 25-Nov-14


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: **EP Energy**
 Field: **Crockett County, Texas**
 County, State: **Crockett, Texas**
 AFE or PO #: **160798**

Customer: **EP Energy**
 Well Name & No.: **University East 4109 KH**
 Block or Section: **Section 09, Block 41**
 Rig Contractor & No.: **Sidewinder 222**

00:00 Depth: **11949**
 24:00 Depth: **13300**

Footage Today: **1351**
 Current Run Ftg: **6892**

Drig Hrs Today: **9.10**
 Run Drig Hrs: **28.00**

ROP Today: **148.46**
 Run Avg. ROP: **246.14**

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 602				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	95	95		Time	3:00					
Vol (gals)	4.18	4.18	0.00	Wt.	9.1					
SPM	72	72		VIS	85					
DRILLING PARAMETERS				PV	16					
ST. WT. ROT 1000's:		135		YP	16			25 STANDS 5" DP		Daily Drill Hrs. 9.10
P/U WT. 1000's:		141		WL	N/A			AGITATOR		Daily Circ. Hrs. 2.30
S/O WT. 1000's:		129		CL	86,000			SHOCK SUB		Daily Total Hrs. 11.40
WOB 1000's:		18		Gels	20					Acc. Drill Hrs. 28.00
ROTARY RPM:		70		% Oil	71					Acc. Circ. Hrs. 12.20
MOTOR RPM:		174		% Solids	7					Depth In 6408
TOTAL Bit RPM		244		% Sand	N/A					Depth Out
ROT TQ. OFF BTM:		1000		PH	N/A					LIH Hrs. 11:55
ROT TQ. ON BTM:		4000		Temp F	72					Acc. LIH Hrs. 44.75
Current Mag Dec:		6.46		MWD F	136		BHA WT			Acc. Hrs Cir/Drilg 40.20
Pulse Height		70		GPM	427		BELOW JARS			Total K Revs 409.92
G Totals		1.004		PSI	1700					Jar # HRS

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	27397	7X18'S	6408													
2	8 3/4	SMITH	FH121	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
8:35	8:50	0:15	11949	12044	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				DA LATERAL			
8:50	9:00	0:10				10	C/S 12,001' MD 90.7° INC 181.8° AZM 162° TEMP							
9:00	9:20	0:20	12044	12140	96	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
9:20	9:30	0:10				10	C/S 12,097' MD 90.8° INC 181.5° AZM 162° TEMP							
9:30	9:45	0:15	12140	12235	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
9:45	9:55	0:10				10	C/S 12,192' MD 91.0° INC 181.5° AZM 162° TEMP							
9:55	10:05	0:10	12235	12245	10	2.B	SLIDE 160L GTF, 30 WOB, 250 DIFF							
10:05	10:25	0:20	12245	12331	86	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
10:25	10:35	0:10				10	C/S 12,288' MD 89.1° INC 181.5° AZM 162° TEMP							
10:35	10:55	0:20	12331	12426	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
10:55	11:05	0:10				10	C/S 12,383' MD 91.2° INC 181.1° AZM 162° TEMP				Estimated Daily Charges			
11:05	11:30	0:25	12426	12522	96	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				Description		Cost	
11:30	11:40	0:10				10	C/S 12,479' MD 92.2° INC 180.3° AZM 162° TEMP							
11:40	11:55	0:15	12522	12537	15	2.B	SLIDE 180 GTF, 50 WOB, 250 DIFF							
11:55	12:20	0:25	12537	12617	80	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
12:20	12:30	0:10				10	C/S 12,574' MD 88.2° INC 176.9° AZM 162° TEMP							
12:30	12:55	0:25	12617	12712	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
12:55	13:05	0:10				10	C/S 12,662' MD 90.8° INC 177.3° AZM 162° TEMP							
13:05	13:15	0:10	12712	12727	15	2.B	SLIDE 150R GTF, 50 WOB, 250 DIFF							
13:15	14:10	0:55	12727	12808	81	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
14:10	14:20	0:10				10	C/S 12,765' MD 90.9° INC 180.3° AZM 162° TEMP							
14:20	14:40	0:20	12808	12903	95	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600							
14:40	14:50	0:10				10	C/S 12,860' MD 90.4° INC 181.0° AZM 162° TEMP				Estimated Daily Cost (USD)		\$ -	
14:50	15:05	0:15	12903	12918	15	2.B	SLIDE 180 GTF, 50 WOB, 250 DIFF				Accumulated Cost (USD)		\$ -	
15:05	15:25	0:20	12918	12998	80	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				Company Representative (s)			
15:25	15:35	0:10				10	C/S 12,955' MD 90.4° INC 181.0° AZM 162° TEMP				Michael Aaron		Craig Cart	
15:35	16:00	0:25	12998	13023	25	2.B	SLIDE 150 L GTF, 50 WOB, 250 DIFF				James Wilson		Johnny Wynne	
16:00	16:15	0:15	13023	13093	70	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				RYAN Directional Representative (s)			
16:15	16:25	0:10				10	C/S 13,050' MD 89.8° INC 184.1° AZM 162° TEMP				Lyndon Vestal		Shawn Williamson	
16:25	16:55	0:30				7	RIG SERVICE							
16:55	17:40	0:45	13093	13118	25	2.B	SLIDE 135 L GTF, 50 WOB, 250 DIFF				RYAN MWD Representative (s)			
17:40	18:15	0:35	13118	13188	70	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				Scott Lane		Josh Ferguson	
18:15	18:25	0:10				10	C/S 13,145' MD 89.5° INC 184.3° AZM 162° TEMP							
18:25	19:05	0:40	13188	13210	22	2.B	SLIDE 90 L GTF, 50 WOB, 250 DIFF				24 Hour Breakdown			
19:05	19:50	0:45	13210	13284	74	2.A	ROTATE 70 RPM, 20 WOB, DIFF 600				Ftg Rot.	1224	Time Rot.	6.40
19:50	20:00	0:10				10	C/S 13,241' MD 91.3° INC 181.5° AZM 162° TEMP				Ftg Orient	127	Time Orient	2.70
20:00	20:30	0:30	13284	13300	16	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				Rot. ROP	191.25	Orient ROP	47.04

Date: 25-Nov-14



A NABORS COMPANY

Ryan Job # 8247

Oil Company:	EP Energy
Field:	Crockett County, Texas
County, State:	Crockett, Texas
AFE or PO #:	160798

Customer:	EP Energy
Well Name & No.:	University East 4109 KH
Block or Section:	Section 09, Block 41
Rig Contractor & No.:	Sidewinder 222

00:00 Depth:	13300
24:00 Depth:	13758

Footage Today:	458
Current Run Ftg:	7350

Drlg Hrs Today:	2.30
Run Drlg Hrs:	30.30

ROP Today:	199.13
Un Adj. Avg. ROP:	242.57

Last Casing Set: _____
Depth: _____

[illegible]

Report #: 8

Date: 26-Nov-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 8247

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Crockett County, Texas
 County, State: Crockett, Texas
 AFE or PO #: 160798

Customer: EP Energy
 Well Name & No.: University East 4109 KH
 Block or Section: Section 09, Block 41
 Rig Contractor & No.: Sidewinder 222

00:00 Depth: 13758
 24:00 Depth: 14318

Footage Today: 560
 Current Run Ftg: 7910

Drig Hrs Today: 3.70
 Run Drig Hrs: 34.00

ROP Today: 151.35
 Run Avg. ROP: 232.65

Last Casing Set: _____
 Depth: _____

PUMP Data Total Gals/Min = 544				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	6	6		Sample	IN				
%	95	95		Time	3:00				
Vol (gals)	4.18	4.18	0.00	Wt.	9.2				
SPM	65	65		VIS	52				
DRILLING PARAMETERS				PV	16				
ST. WT. ROT 1000's:	135			YP	16			25 STANDS 5" DP	Daily Drill Hrs.
P/U WT. 1000's:	141			WL	N/A			AGITATOR	Daily Circ. Hrs.
S/O WT. 1000's:	129			CL	86,000			SHOCK SUB	Daily Total Hrs.
WOB 1000's:	25			Gels	20				Acc. Drill Hrs.
ROTARY RPM:	70			% Oil	71				Acc. Circ. Hrs.
MOTOR RPM:	174			% Solids	7				Depth In
TOTAL Bit RPM	244			% Sand	N/A				Depth Out
ROT TQ. OFF BTM:	7000			PH	N/A				LIH Hrs.
ROT TQ. ON BTM:	20000			Temp F	72				Acc. LIH Hrs.
Current Mag Dec:	6.46			MWD F	162		BHA WT		Acc. Hrs Cir/Drilg
Pulse Hight	70			GPM	560		BELOW JARS		Total K Revs
"G" Totals	1.004			PSI	3700				Jar # HRS

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	27397	7X18'S	6408	7910	33.9	14308	2	3	CT	G	N/A	1/16"	WT	TD		
2	8 3/4	SMITH	FH21	RD3071	3X20'S	5686	722	13.2	6408	1	1	WT	G	E	1	N/A	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations							
0:00	0:30	0:30	13758	13788	30	2.B	SLIDE 150 L GTF, 50 WOB, 250 DIFF				DA LATERAL							
0:30	0:50	0:20	13788	13852	64	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600											
0:50	1:00	0:10				10	C/S 13,809' MD 87.8° INC 181.0° AZM 162° TEMP											
1:00	1:30	0:30	13852	13947	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600											
1:30	1:40	0:10				10	C/S 13,904' MD 92.5° INC 182.4° AZM 162° TEMP											
1:40	2:15	0:35	13947	13977	30	2.B	SLIDE 150 L GTF, 50 WOB, 250 DIFF											
2:15	2:40	0:25	13977	14043	66	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600											
2:40	2:50	0:10				10	C/S 14,000' MD 88.0° INC 182.0° AZM 162° TEMP											
2:50	3:20	0:30	14043	14139	96	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600											
3:20	3:30	0:10				10	C/S 14,096' MD 92.4° INC 182.9° AZM 162° TEMP											
3:30	4:05	0:35	14139	14234	95	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600				Estimated Daily Charges							
4:05	4:15	0:10				10	C/S 14,191' MD 93.3° INC 182.3° AZM 162° TEMP				Description		Cost					
4:15	4:30	0:15	14234	14318	84	2.A	ROTATE 60 RPM, 20 WOB, DIFF 600											
4:30	4:40	0:10				10	C/S 14,275' MD 92.7° INC 180.8° AZM 162° TEMP											
4:40	8:00	3:20				5.A	CIRCULATE											
8:00	17:00	9:00				6.G	TOH											
17:00	18:00	1:00				6.G	L/D TOOLS											
18:00	23:59	5:59				S	STANDBY											
											Estimated Daily Cost (USD)		\$ -					
											Accumulated Cost (USD)		\$ -					
											Company Representative (s)							
											Michael Aaron		Craig Cart					
											James Wilson		Johnny Wynne					
											RYAN Directional Representative (s)							
											Lyndon Vestal		Shawn Williamson					
											RYAN MWD Representative (s)							
											Scott Lane		Josh Ferguson					
											24 Hour Breakdown							
											Ftg Rot.		500		Time Rot.		2.60	
											Ftg Orient		60		Time Orient		1.10	
											Rot. ROP		192.31		Orient ROP		54.55	



BOTTOM HOLE ASSEMBLY

[illegible]



BOTTOM HOLE ASSEMBLY

[illegible]



BOTTOM HOLE ASSEMBLY

[illegible]



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Motor Run Report #1

General Information:		In the Event of an Incident:	
Ryan Job #:	8247	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett, Texas	Person Notified:	
Lease:	Section 09, Block 41		
Well Name & Number:	University East 4109 KH		
Rig Name & Number:	Sidewinder 222	Incident Comments:	
Directional Driller ('s):	LYNDON VESTAL		
	SHAWN WILLIAMSON		
Motor Information:			
Motor Serial #:	RY700038		
Motor Size (OD):	6 3/4"		
Motor Company:	RYAN		
Motor Stabilizer Size:	N/A		
Degree Bent Housing:	1.5		
Rotor / Stator Conf.:	7/8 5.0		
Depth In:	998		
Depth Out:	5686		
Footage:	4688		
Drilg Hours:	15.8		
Circulating Hours:	12.3		
Total Hours:	28.1		
Hours Below Rotary Table (LIH):	35		
Motor Yield:	10'S		
Start of Run: Date		November 21, 2014	
GPM'S:	600	Bit Information:	
Standpipe Press / Off Bottom:	1700	Bit Size:	8 3/4"
Standpipe Press / On Bottom:	2600	Bit Type:	MM56D
Weight on Bit Avg :	15	Bit Manufacture:	SECURITY
End Of Run: Date		Serial #:	12406776
November 22, 2014		Jets / TFA:	5X22'S
GPM'S:	425	Mud Information End of Run:	
Standpipe Press / Off Bottom:	1400	Mud Type:	OBM
Standpipe Press / On Bottom:	1800	Mud Weight:	8.8
Weight on Bit Avg :	15	Viscosity:	54
		Plastic Vis:	14
		Yield Point:	15
		Sand %:	TRACE
		Solids %:	5.8
		LCM (yes or no):	NO
		% LCM per/BBL:	N/A
		Static Temp:	90
		Circulating Temp:	116
		OBM Aniline Point:	165

Comments

MOTOR PERFORMED AS EXPECTED.



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Motor Run Report #2

General Information:		In the Event of an Incident:	
Ryan Job #:	8247	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett, Texas	Person Notified:	
Lease:	Section 09, Block 41		
Well Name & Number:	University East 4109 KH		
Rig Name & Number:	Sidewinder 222	Incident Comments:	
Directional Driller ('s):	LYNDON VESTAL		
	SHAWN WILLIAMSON		
Motor Information:			
Motor Serial #:	RY650609		
Motor Size (OD):	6 3/4"		
Motor Company:	RYAN		
Motor Stabilizer Size:	N/A		
Degree Bent Housing:	2.12		
Rotor / Stator Conf.:	4/5 7.0		
Depth In:	5686		
Depth Out:	6408		
Footage:	722		
Drilg Hours:	13.2		
Circulating Hours:	4.5		
Total Hours:	17.7		
Hours Below Rotary Table (LIH):	30		
Motor Yield:	15'S		
Start of Run: Date		November 22, 2014	
GPM'S:	460	Bit Information:	
Standpipe Press / Off Bottom:	1250	Bit Size:	8 3/4"
Standpipe Press / On Bottom:	1600	Bit Type:	FHi21
Weight on Bit Avg :	15	Bit Manufacture:	SMITH
End Of Run: Date		Serial #:	RD3071
November 23, 2014		Jets / TFA:	3X20'S
GPM'S:	460	Mud Information End of Run:	
Standpipe Press / Off Bottom:	1250	Mud Type:	OBM
Standpipe Press / On Bottom:	1600	Mud Weight:	8.8
Weight on Bit Avg :	25	Viscosity:	54
		Plastic Vis:	14
		Yield Point:	15
		Sand %:	TRACE
		Solids %:	5.8
		LCM (yes or no):	NO
		% LCM per/BBL:	N/A
		Static Temp:	90
		Circulating Temp:	116
		OBM Aniline Point:	165

Comments

MOTOR PERFORMED AS EXPECTED.



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Motor Run Report #3

General Information:		In the Event of an Incident:	
Ryan Job #:	8247	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett, Texas	Person Notified:	
Lease:	Section 09, Block 41		
Well Name & Number:	University East 4109 KH		
Rig Name & Number:	Sidewinder 222	Incident Comments:	
Directional Driller ('s):	LYNDON VESTAL		
	SHAWN WILLIAMSON		
Motor Information:			
Motor Serial #:	RY700019		
Motor Size (OD):	6 3/4"		
Motor Company:	RYAN		
Motor Stabilizer Size:	N/A		
Degree Bent Housing:	1.75		
Rotor / Stator Conf.:	7/8 5.0		
Depth In:	6408		
Depth Out:	14318		
Footage:	7910		
Drilg Hours:	34.1		
Circulating Hours:	17.8		
Total Hours:	51.9		
Hours Below Rotary Table (LIH):	65.25		
Motor Yield:	10'S		
Start of Run: Date		November 23, 2014	
GPM'S:	602	Bit Information:	
Standpipe Press / Off Bottom:	2800	Bit Size:	8 3/4"
Standpipe Press / On Bottom:	3400	Bit Type:	U519S
Weight on Bit Avg :	20	Bit Manufacture:	ULTERRA
End Of Run: Date		Serial #:	27397
GPM'S:	544	Jets / TFA:	7X18'S
Standpipe Press / Off Bottom:	3100	Mud Information End of Run:	
Standpipe Press / On Bottom:	3700	Mud Type:	OBM
Weight on Bit Avg :	20	Mud Weight:	8.8
		Viscosity:	54
		Plastic Vis:	14
		Yield Point:	15
		Sand %:	TRACE
		Solids %:	5.8
		LCM (yes or no):	NO
		% LCM per/BBL:	N/A
		Static Temp:	90
		Circulating Temp:	116
		OBM Aniline Point:	165

Comments

MOTOR PERFORMED AS EXPECTED.

EP Energy E&P Company, L.P.

University East 4109KH

Sidewinder 222

Drilling Time Only

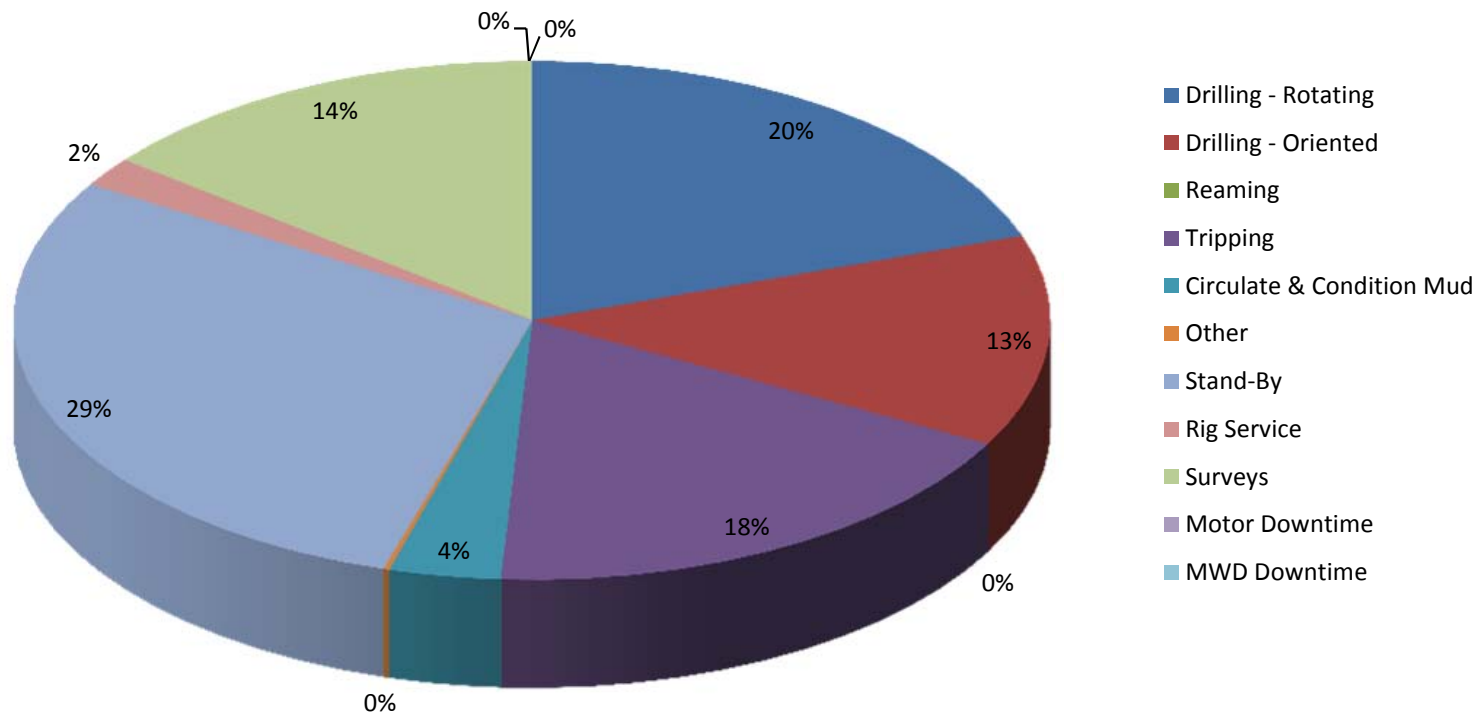
	Rotating Ftg	Rotating Hrs	Rotating ROP	Rotating %	Slide Ftg	Slide Hrs	Slide ROP	Slide %	Total Ftg	Total Hrs	Avg ROP
Vertical Hole	3912.00	10.55	370.81	82.39%	836.00	6.55	127.63	17.61%	4748.00	17.10	277.66
Curve	140.00	2.22	63.06	19.55%	576.00	9.91	58.12	80.45%	716.00	12.13	59.03
Lateral	7084.00	25.03	283.02	90.17%	772.00	8.81	87.63	9.83%	7856.00	33.84	232.15

Start Depth: 998

Date	Day	Depth	KOP / EOC	Ftg. Today	Ftg. Oriented	Ftg. Rotating	Drilling - Rotating	Drilling - Oriented	Reaming	Tripping	Circulate & Condition Mud	Other	Stand-By	Rig Service	Surveys	Motor Downtime	MWD Downtime	Run Casing, Testing BOP	Fishing	Total Hours
11/19/2014	1	998	KOP @ 5746 EOC @ 6462	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	23.98	0.00	0.00	0.00	0.00	0.00	0.00	24.00
11/20/2014	2	998		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	23.98	0.00	0.00	0.00	0.00	0.00	0.00	24.00
11/21/2014	3	4491		3493	699	2794	4.92	4.07	0.00	3.50	1.50	0.00	2.00	0.50	7.50	0.00	0.00	0.00	0.00	24.00
11/22/2014	4	5841		1350	218	1132	6.08	4.25	0.00	9.83	1.00	0.00	0.00	0.00	2.82	0.00	0.00	0.00	0.00	24.00
11/23/2014	5	6408		567	495	72	1.67	8.17	0.00	7.48	0.83	0.33	0.00	2.50	3.00	0.00	0.00	0.00	0.00	24.00
11/24/2014	6	10526		4118	390	3728	10.08	2.83	0.00	3.83	0.00	0.00	0.00	0.00	7.23	0.00	0.00	0.00	0.00	24.00
11/25/2014	7	13758		3232	322	2910	12.50	4.92	0.00	0.00	0.00	0.00	0.00	0.50	6.07	0.00	0.00	0.00	0.00	24.00
11/26/2014	8	14318		560	60	500	2.58	1.08	0.00	10.00	3.33	0.00	5.98	0.00	1.00	0.00	0.00	0.00	0.00	24.00
				13320	2184	11136	37.83	25.32	0.00	34.65	6.67	0.33	55.95	3.50	27.62	0.00	0.00	0.00	0.00	192.00

**EP Energy
University East 4109 KH**

TIME BREAKDOWN



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

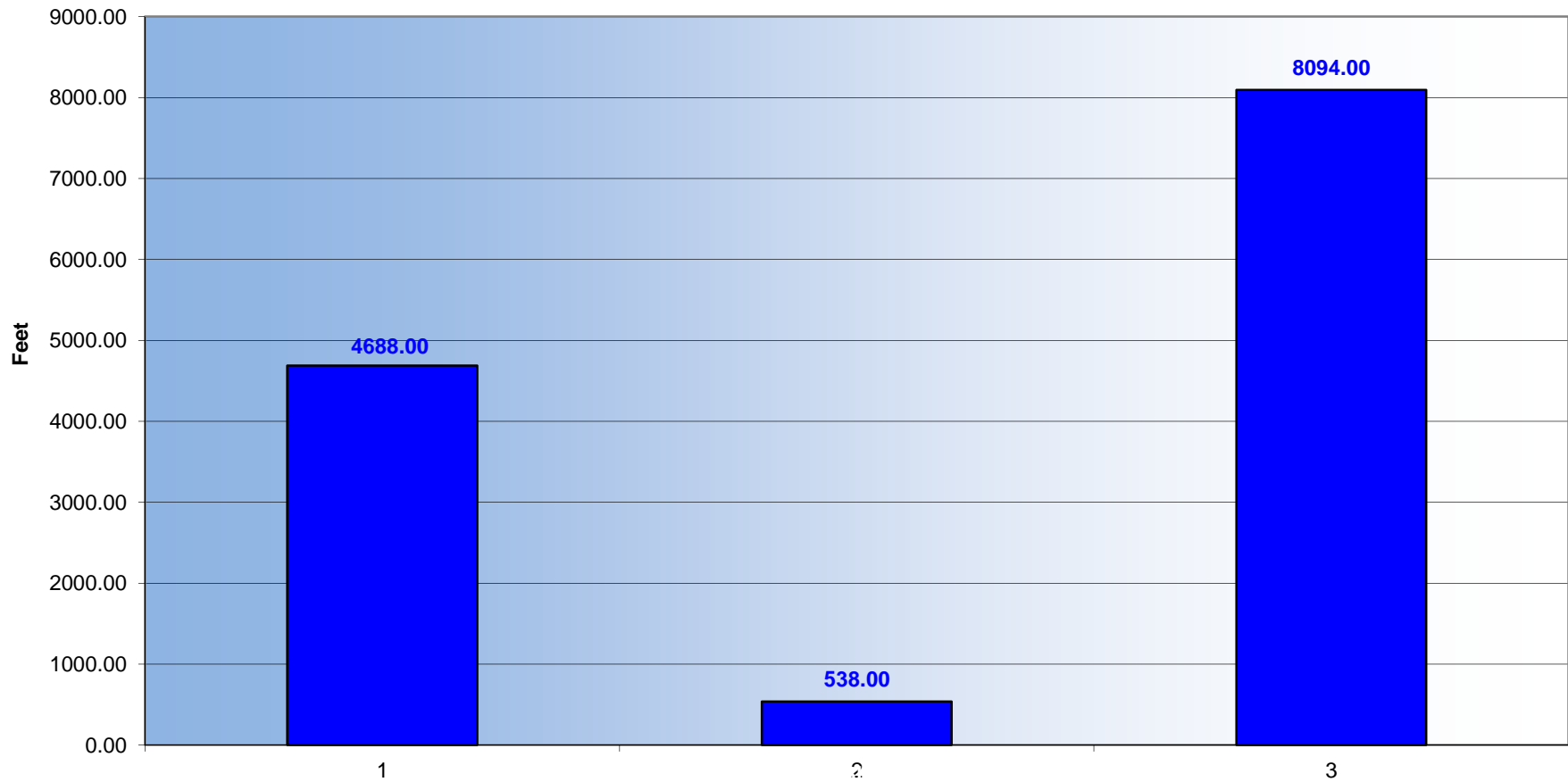
EP Energy
University East 4109 KH

Days vs. Depth



**EP Energy
University East 4109 KH**

Footage Per BHA

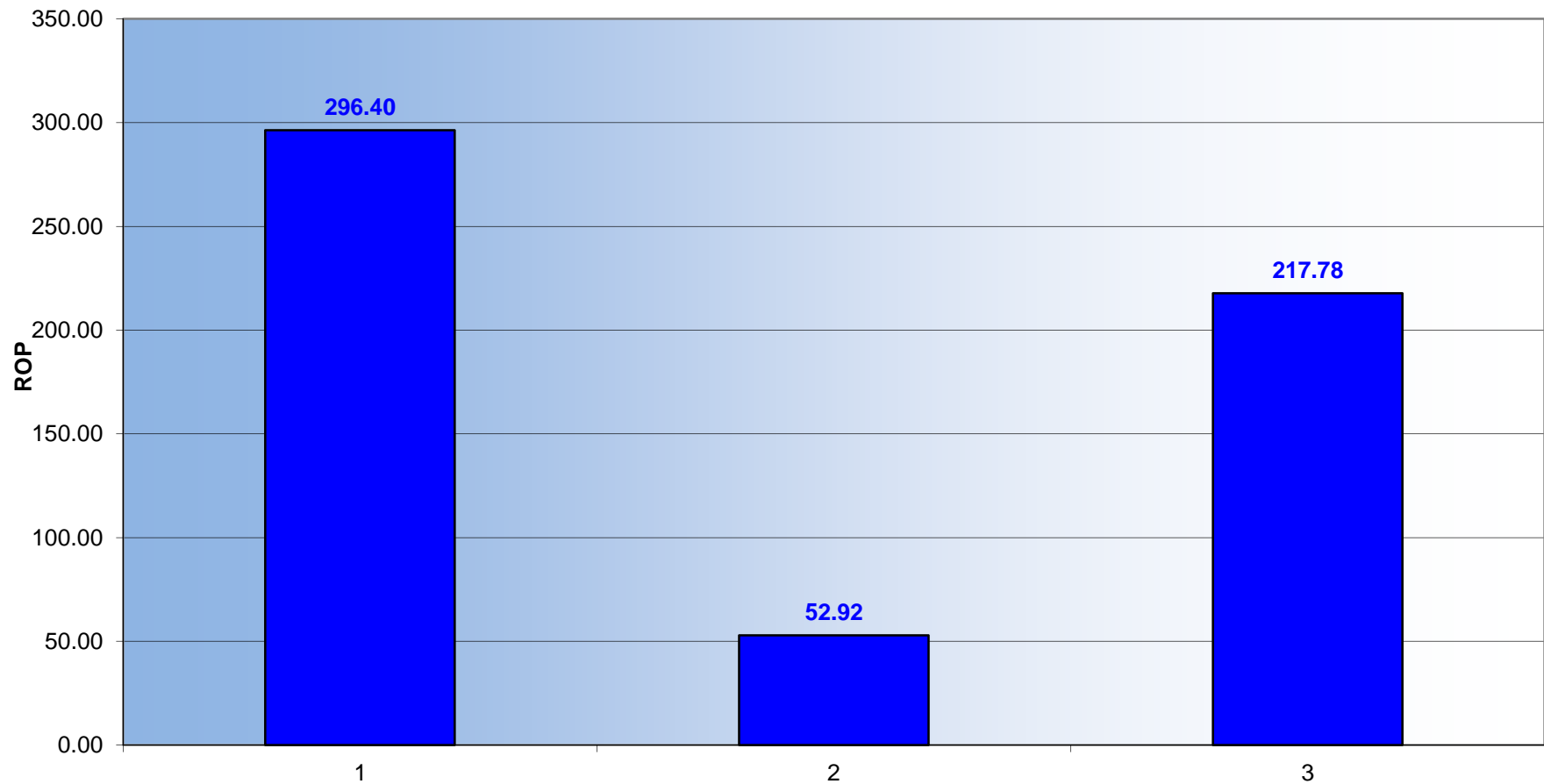


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

**EP Energy
University East 4109 KH**

Average Rate of Penetration Per BHA

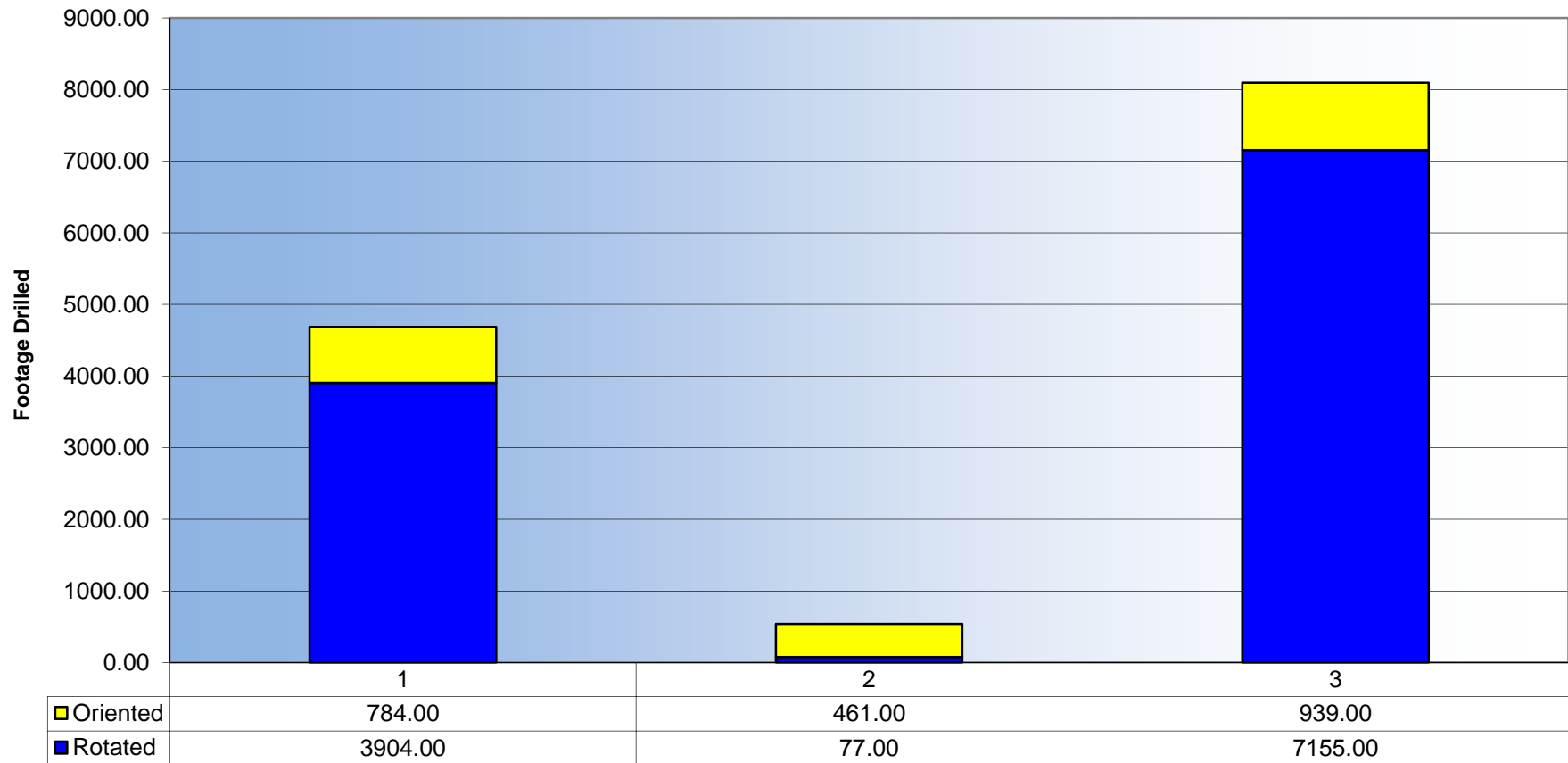


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

**EP Energy
University East 4109 KH**

Oriented vs. Rotated

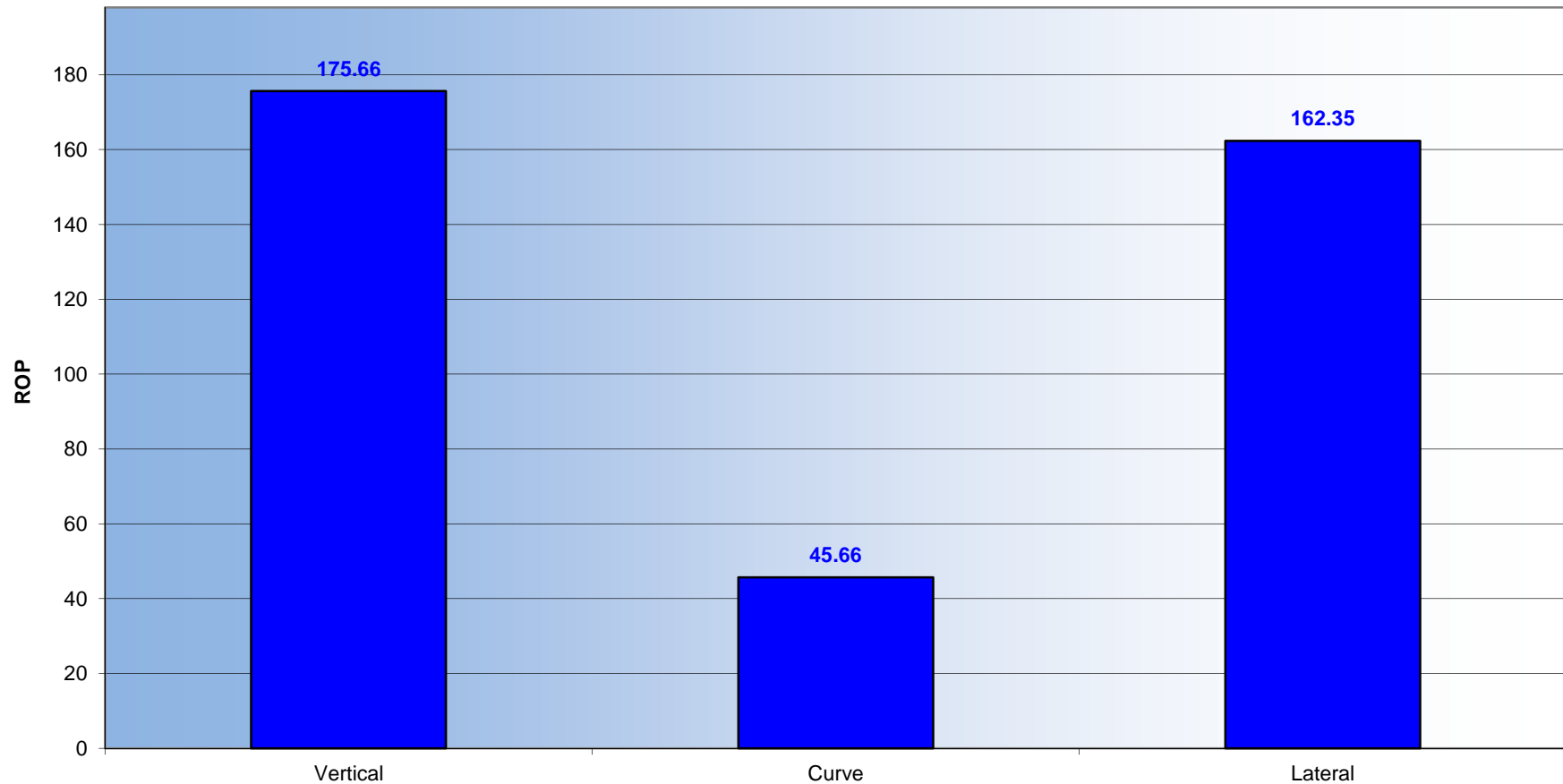


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

EP Energy
University East 4109 KH

Vertical, Curve, and Lateral Average ROP

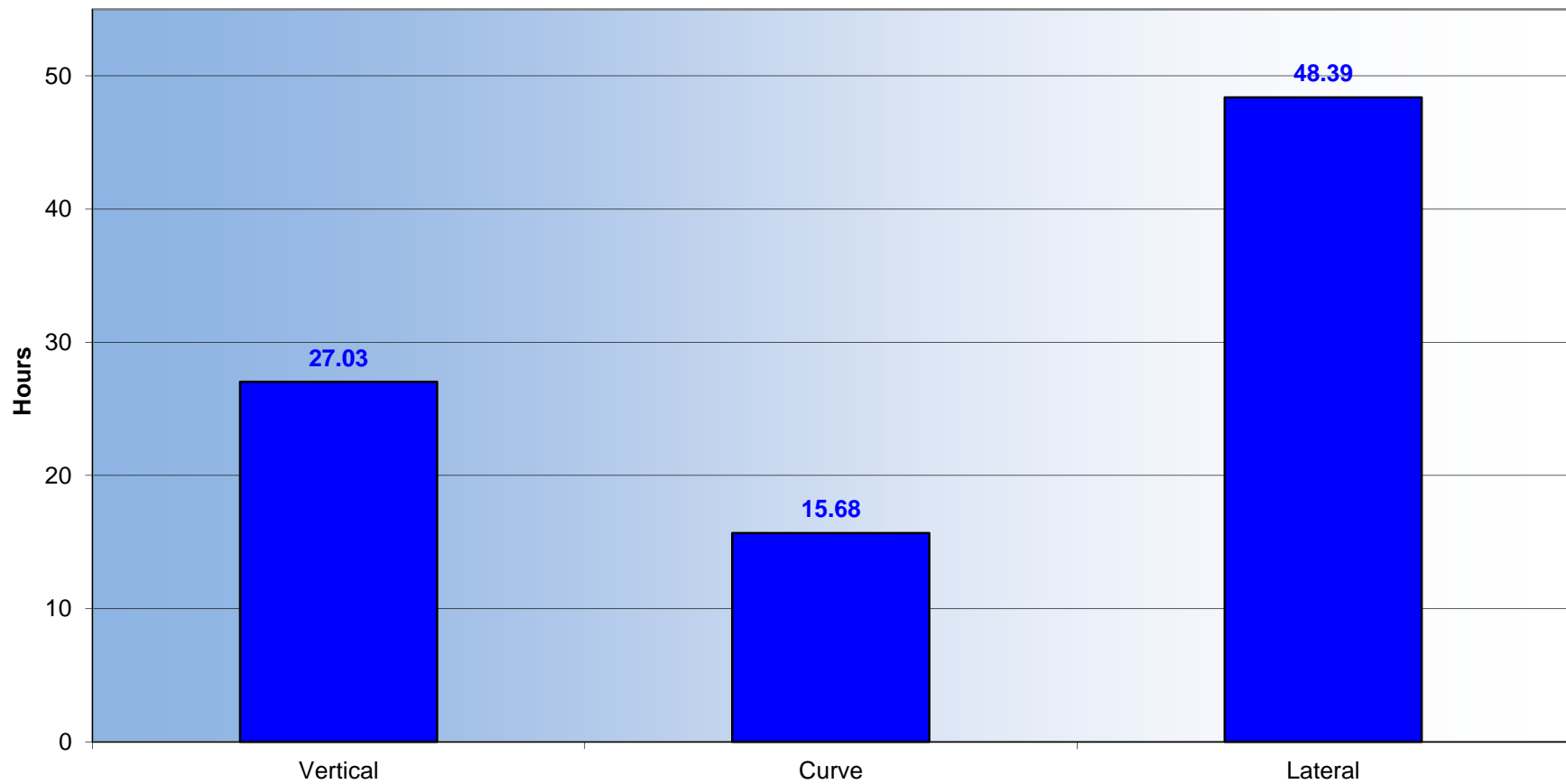


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

**EP Energy
University East 4109 KH**

Vertical, Curve, and Lateral Hours

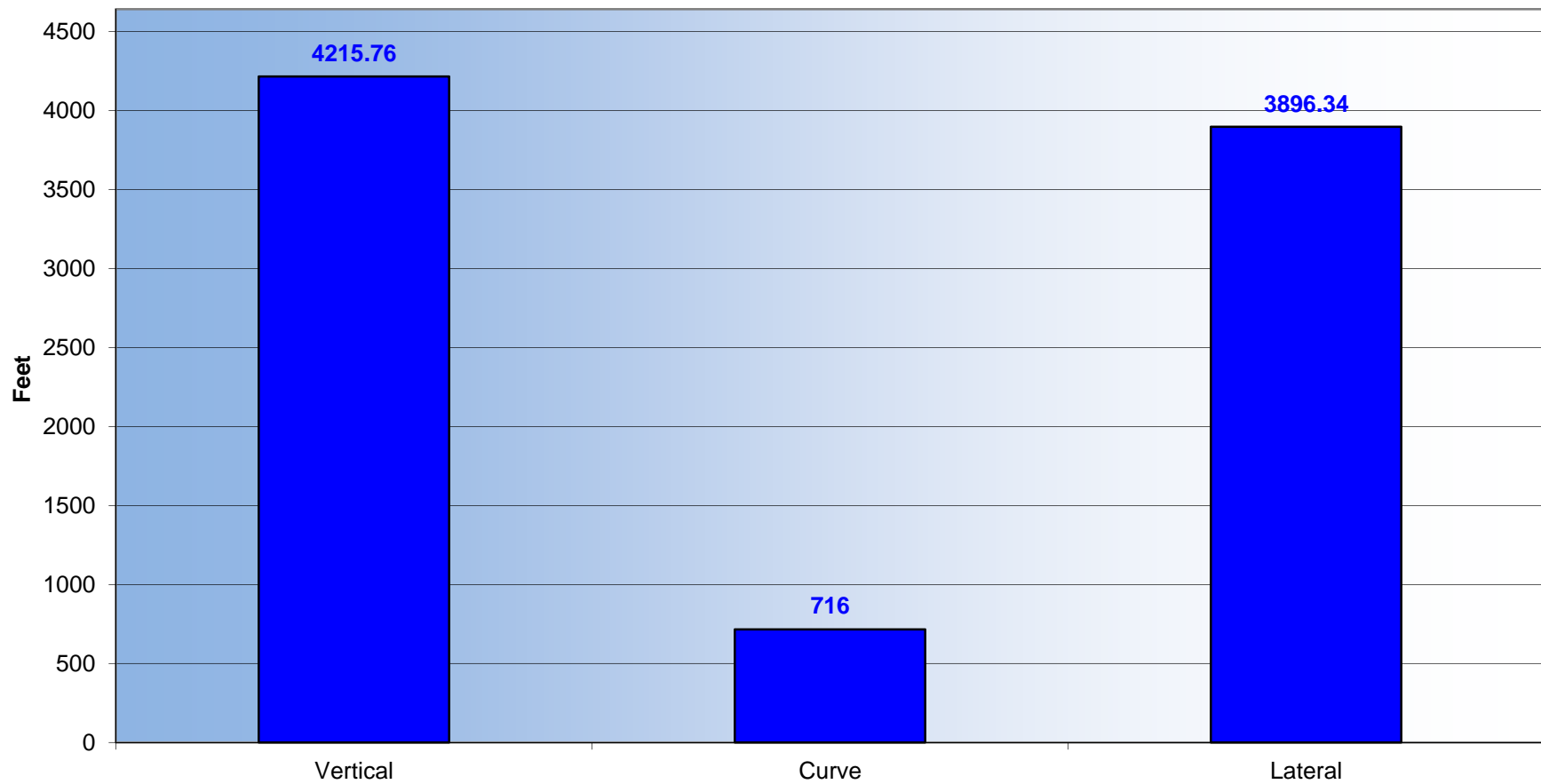


RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

**EP Energy
University East 4109 KH**

Vertical, Curve, and Lateral Average Footage Per Day



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY