



**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

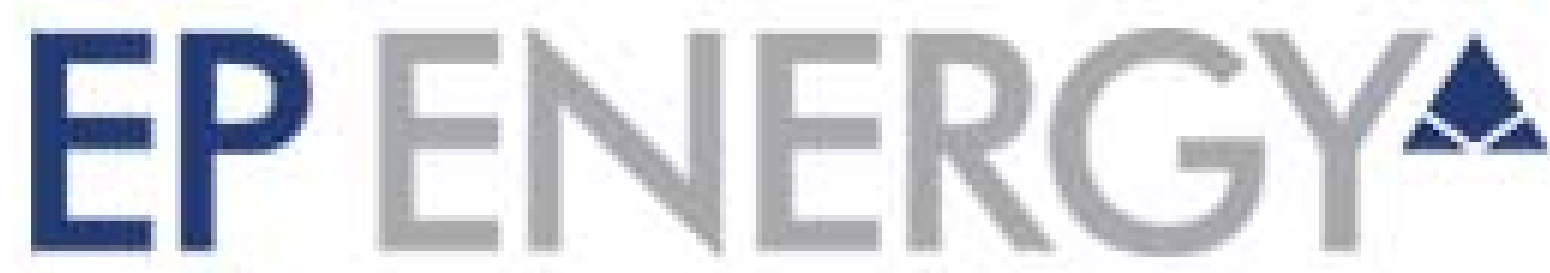
**Ryan Directional Services  
Directional Drilling Report  
Field: Crockett Co, TX  
Site: University East 4110  
Well: NH  
Wellpath: OH**

**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](http://www.nabors.com)**





WELL DETAILS: NH

Ground Elevation: 2636.00  
RKB Elevation: KB @ 2663.00ft (Nabors 888 (KB = 27'))  
Rig Name: Nabors 888 (KB = 27')

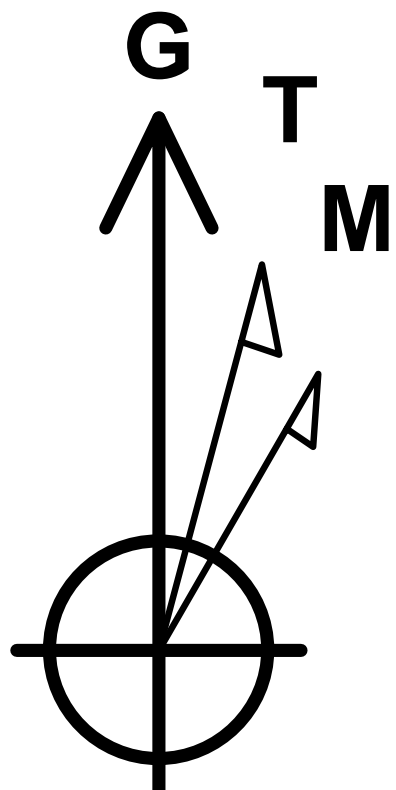
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	494990.28	1742295.58	31° 1' 30.3305 N	101° 9' 21.9483 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
966.00	0.14	279.02	965.99	1.71	-0.94	0.00	0.00	-1.71
973.00	0.00	0.00	972.99	1.71	-0.95	2.00	180.00	-1.71
1100.01	0.00	0.00	1100.00	1.71	-0.95	0.00	0.00	-1.71
1514.64	6.22	299.50	1513.82	12.78	-20.52	1.50	299.50	-12.71
2935.36	6.22	299.50	2926.18	88.57	-154.48	0.00	0.00	-88.00
3350.00	0.00	0.00	3340.00	99.64	-174.05	1.50	180.00	-99.00
5844.00	0.00	0.00	5834.00	99.64	-174.05	0.00	0.00	-99.00
6598.08	90.49	180.18	6311.45	-381.90	-175.56	12.00	180.18	382.54
16716.59	90.49	180.18	6225.00	-10500.00	-207.18	0.00	0.0010500	69

PROJECT DETAILS: Crockett 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



Azimuths to Grid North  
True North: 0.42°  
Magnetic North: 6.11°

Magnetic Field  
Strength: 47742.7snT  
Dip Angle: 59.67°  
Date: 10/28/2015  
Model: HDGM

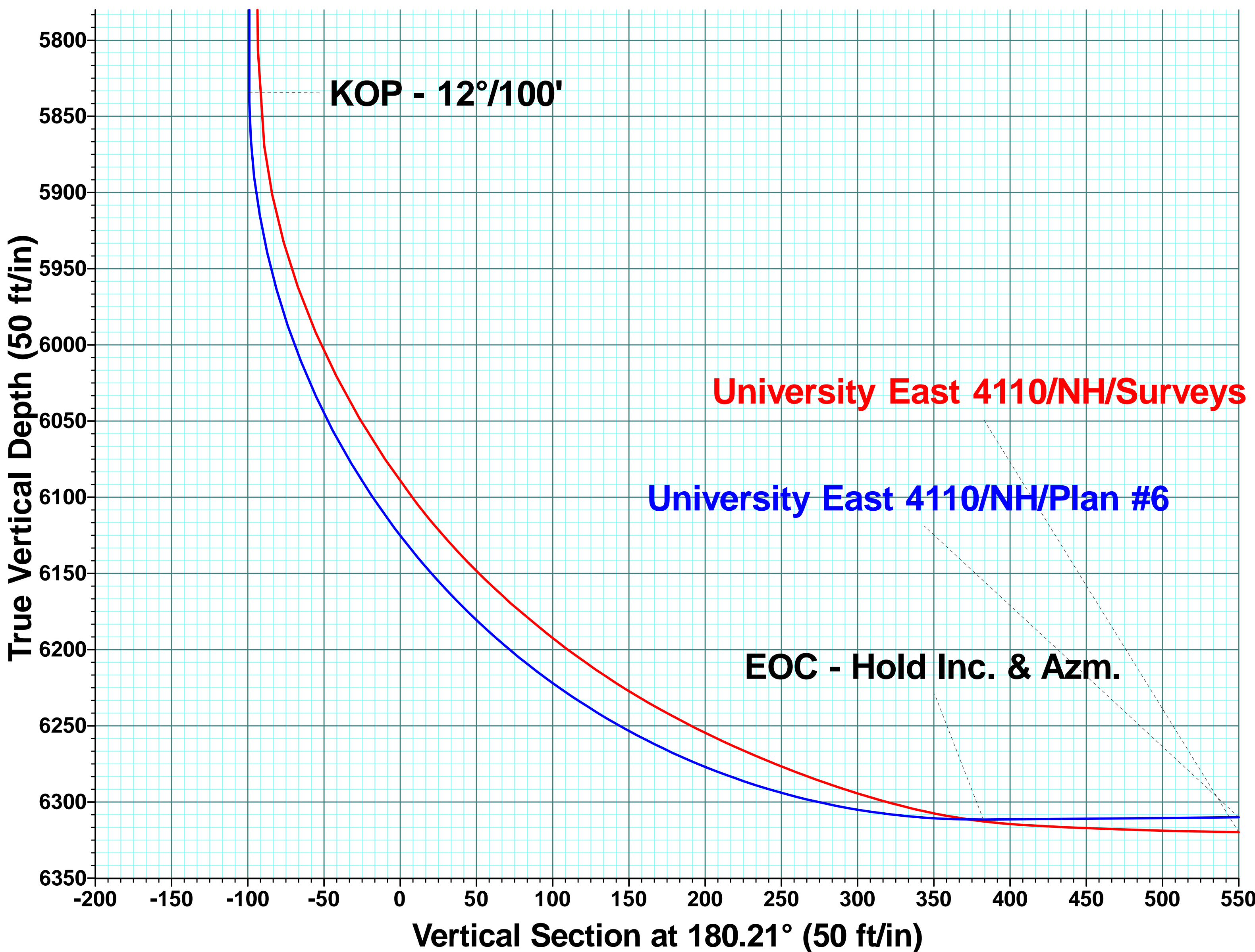
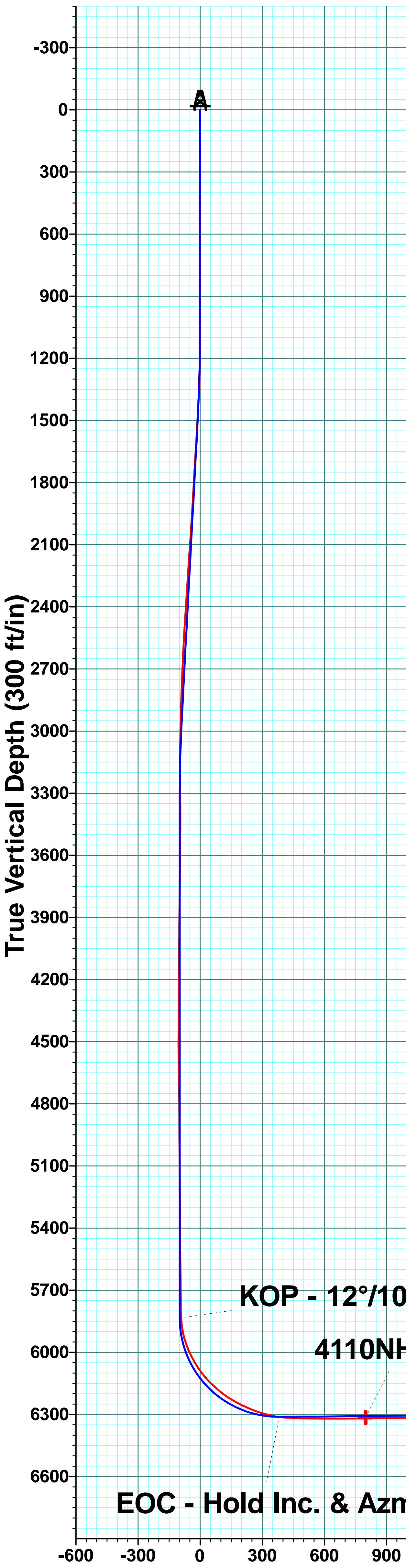
Project: Crockett Co, TX  
Site: University East 4110  
Well: NH  
Wellbore: OH  
Plan: Plan #6 (NH/OH)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

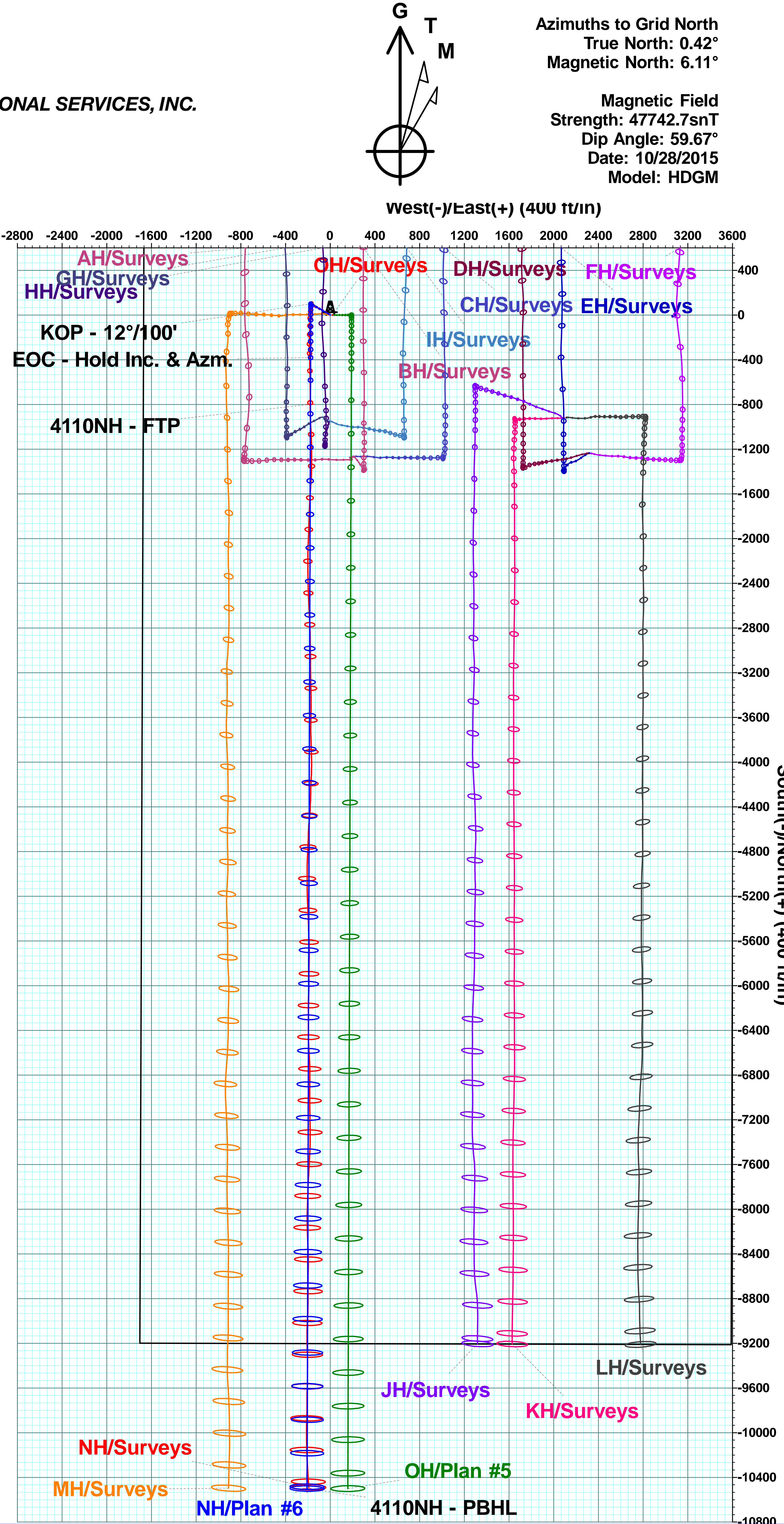
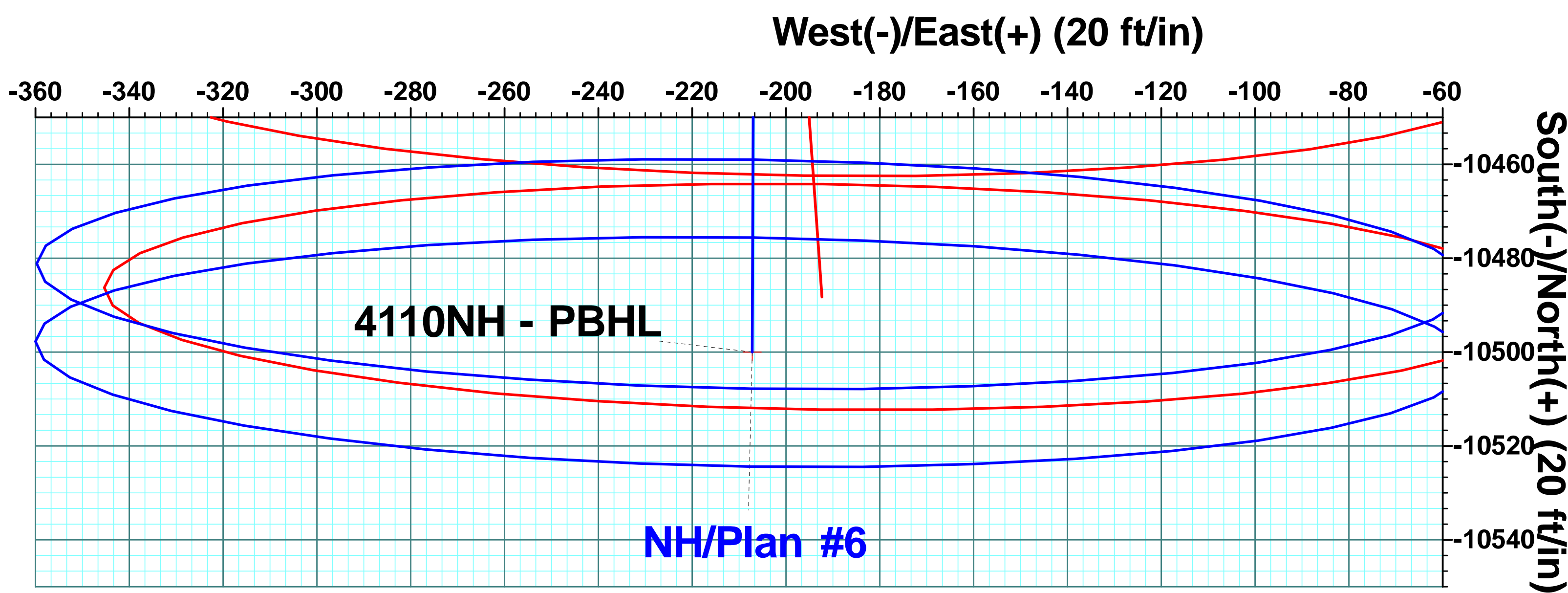
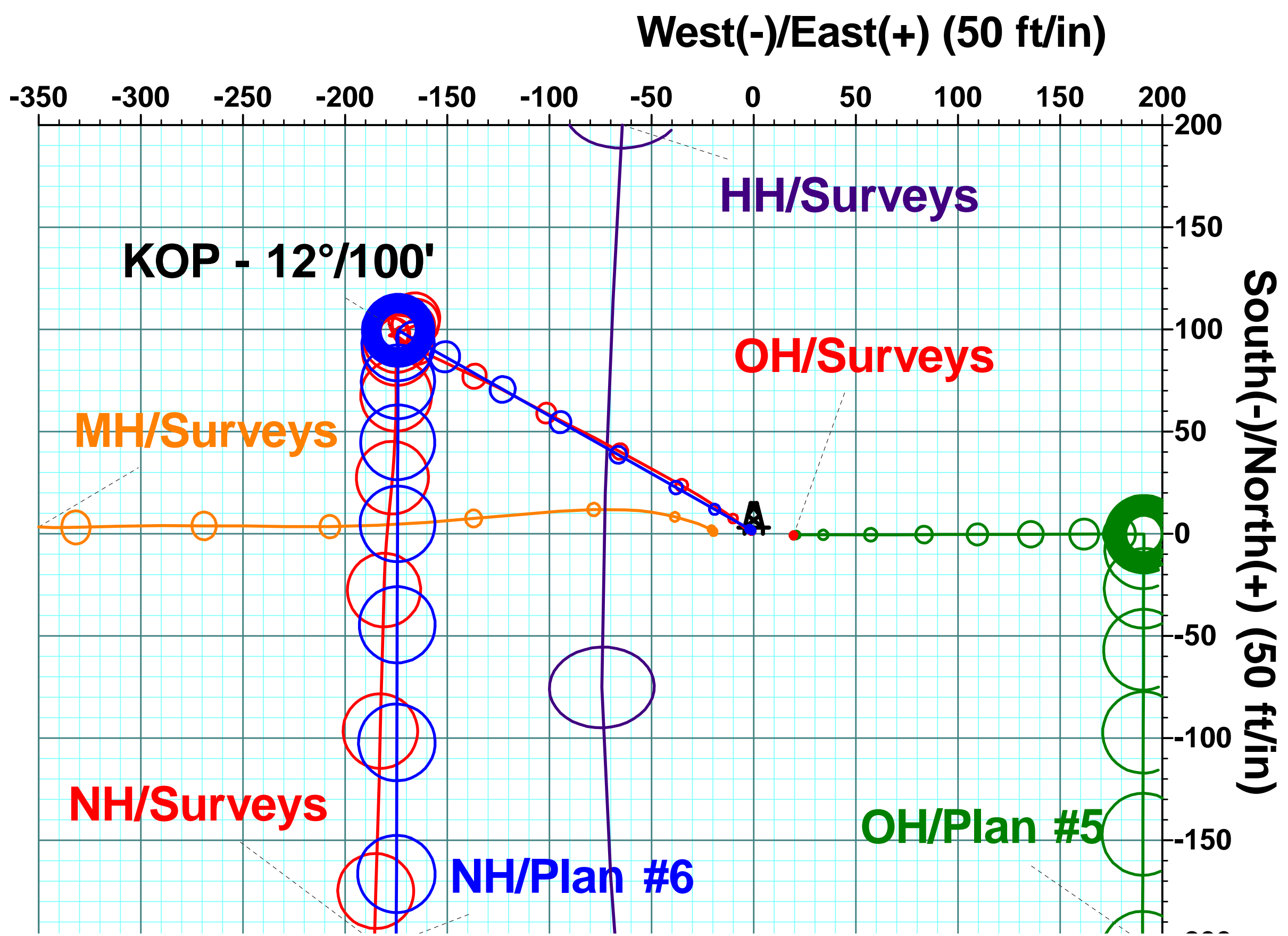
Name	TVD	+N/-S	+E/-W	Northing	Easting
4110NH - FTP	6315.00	-798.99	-176.59	494191.29	1742118.99
4110NH - PBHL	6225.00	-10500.00	-207.18	484490.30	1742088.40

ANNOTATIONS

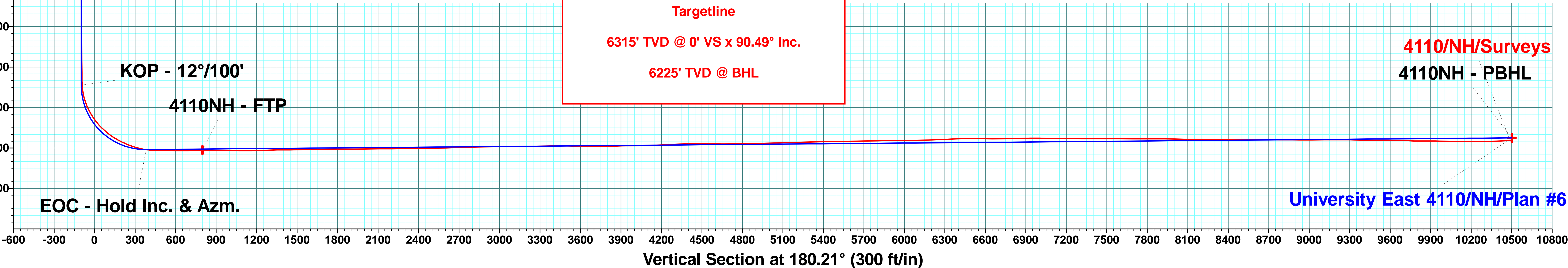
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
5834.00	5844.00	0.00	0.00	99.64	-174.05	-99.00	198.89	KOP - 12°/100'
6311.45	6598.08	90.49	180.18	-381.91	-175.56	382.55	680.44	EOC - Hold Inc. & Azm.



4110NH - PBHL



Targetline  
6315' TVD @ 0° VS x 90.49° Inc.  
6225' TVD @ BHL







## **EP Energy E&P Company, L.P.**

**Crockett Co, TX  
University East 4110  
NH**

**OH**

**Design: Surveys**

## **Standard Survey Report**

**12 December, 2015**



***RYAN DIRECTIONAL SERVICES, INC.***

A NABORS COMPANY

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Ryan USA

<b>Project</b>	Crockett Co, TX, Crockett Co, TX		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Texas Central 4203		

<b>Site</b>	University East 4110		
<b>Site Position:</b>		<b>Northing:</b>	493,716.18 usft
<b>From:</b>	Map	<b>Easting:</b>	1,742,471.02 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	31° 1' 17.7320 N
		<b>Longitude:</b>	101° 9' 19.8238 W
		<b>Grid Convergence:</b>	-0.42 °

<b>Well</b>	NH		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft
		<b>Latitude:</b>	31° 1' 30.3305 N
		<b>Longitude:</b>	101° 9' 21.9483 W
		<b>Ground Level:</b>	2,636.00 ft

<b>Wellbore</b>	OH		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	HDGM	10/28/2015	5.68
			<b>Dip Angle (°)</b>
			59.67
			<b>Field Strength (nT)</b>
			47,743

<b>Design</b>	Surveys		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	0.00	0.00	0.00
			<b>Direction (°)</b>
			180.21

<b>Survey Program</b>	<b>Date</b>	12/12/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
27.00	966.00	MS Energy (OH)	Gyro NS R5000	Continuous north-seeking gyro on wireline
966.00	16,690.00	Ryan MWD (OH)	Ryan-MWD+HDGM	OWSG MWD + HDGM

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
27.00	0.00	0.00	27.00	0.00	0.00	0.00	0.00	0.00	0.00	
77.00	0.30	294.51	77.00	0.05	-0.12	-0.05	0.60	0.60	0.00	
127.00	0.48	335.47	127.00	0.30	-0.33	-0.30	0.64	0.36	81.92	
177.00	0.36	322.62	177.00	0.61	-0.51	-0.61	0.30	-0.24	-25.70	
227.00	0.17	303.93	227.00	0.78	-0.66	-0.78	0.41	-0.38	-37.38	
277.00	0.26	42.19	277.00	0.91	-0.65	-0.90	0.66	0.18	196.52	
327.00	0.25	53.35	327.00	1.06	-0.49	-1.05	0.10	-0.02	22.32	
377.00	0.26	9.28	377.00	1.23	-0.38	-1.23	0.38	0.02	-88.14	
427.00	0.25	4.99	427.00	1.45	-0.35	-1.45	0.04	-0.02	-8.58	

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Ryan USA

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)
477.00	0.05	4.21	476.99	1.58	-0.34	-1.58	0.40	-0.40	-1.56
527.00	0.19	333.85	526.99	1.68	-0.38	-1.68	0.30	0.28	-60.72
577.00	0.22	231.51	576.99	1.69	-0.49	-1.69	0.64	0.06	-204.68
627.00	0.21	249.24	626.99	1.60	-0.65	-1.60	0.13	-0.02	35.46
677.00	0.06	241.64	676.99	1.56	-0.76	-1.55	0.30	-0.30	-15.20
727.00	0.18	145.23	726.99	1.48	-0.74	-1.48	0.39	0.24	-192.82
777.00	0.05	204.59	776.99	1.40	-0.70	-1.39	0.32	-0.26	118.72
827.00	0.17	303.02	826.99	1.42	-0.77	-1.41	0.37	0.24	196.86
877.00	0.22	359.57	876.99	1.55	-0.83	-1.55	0.38	0.10	113.10
927.00	0.10	312.42	926.99	1.68	-0.87	-1.68	0.34	-0.24	-94.30
966.00	0.14	279.02	965.99	1.71	-0.94	-1.71	0.20	0.10	-85.64
1,115.00	0.22	170.03	1,114.99	1.46	-1.07	-1.45	0.20	0.05	-73.15
1,210.00	1.27	282.26	1,209.99	1.50	-2.07	-1.49	1.44	1.11	118.14
1,303.00	3.16	308.63	1,302.91	3.32	-5.08	-3.30	2.26	2.03	28.35
1,398.00	4.70	310.47	1,397.69	7.48	-10.08	-7.44	1.63	1.62	1.94
1,492.00	6.02	301.60	1,491.28	12.56	-17.21	-12.50	1.65	1.40	-9.44
1,587.00	6.50	303.62	1,585.71	18.15	-25.93	-18.05	0.56	0.51	2.13
1,682.00	6.68	298.61	1,680.08	23.77	-35.26	-23.64	0.63	0.19	-5.27
1,776.00	6.81	298.26	1,773.43	29.03	-44.97	-28.86	0.15	0.14	-0.37
1,871.00	7.07	298.96	1,867.74	34.53	-55.05	-34.33	0.29	0.27	0.74
1,965.00	7.47	299.05	1,960.98	40.30	-65.45	-40.06	0.43	0.43	0.10
2,060.00	8.00	297.64	2,055.12	46.36	-76.70	-46.08	0.59	0.56	-1.48
2,155.00	8.52	296.59	2,149.13	52.58	-88.85	-52.25	0.57	0.55	-1.11
2,250.00	8.70	297.91	2,243.06	59.09	-101.50	-58.72	0.28	0.19	1.39
2,344.00	8.09	298.43	2,336.05	65.57	-113.59	-65.15	0.65	-0.65	0.55
2,439.00	7.91	296.41	2,430.13	71.66	-125.33	-71.20	0.35	-0.19	-2.13
2,534.00	7.30	295.18	2,524.29	77.13	-136.64	-76.63	0.66	-0.64	-1.29
2,629.00	6.86	294.57	2,618.57	82.06	-147.27	-81.52	0.47	-0.46	-0.64
2,723.00	5.54	296.06	2,712.01	86.39	-156.45	-85.81	1.41	-1.40	1.59
2,819.00	4.26	297.03	2,807.66	90.04	-163.79	-89.44	1.34	-1.33	1.01
2,913.00	3.43	301.51	2,901.45	93.10	-169.30	-92.48	0.94	-0.88	4.77
3,008.00	2.51	307.31	2,996.32	95.85	-173.37	-95.21	1.02	-0.97	6.11
3,103.00	1.36	292.81	3,091.27	97.54	-176.07	-96.90	1.31	-1.21	-15.26
3,197.00	0.92	235.59	3,185.25	97.55	-177.72	-96.90	1.23	-0.47	-60.87
3,292.00	0.09	93.91	3,280.25	97.11	-178.27	-96.46	1.04	-0.87	-149.14
3,387.00	0.48	113.78	3,375.24	96.95	-177.83	-96.30	0.42	0.41	20.92
3,481.00	0.70	97.52	3,469.24	96.72	-176.90	-96.07	0.29	0.23	-17.30
3,576.00	1.32	61.39	3,564.23	97.16	-175.37	-96.52	0.91	0.65	-38.03
3,670.00	1.49	57.61	3,658.20	98.34	-173.39	-97.70	0.21	0.18	-4.02
3,765.00	1.49	63.24	3,753.16	99.55	-171.24	-98.93	0.15	0.00	5.93
3,860.00	1.54	63.85	3,848.13	100.67	-168.99	-100.05	0.06	0.05	0.64
3,955.00	1.45	73.79	3,943.10	101.57	-166.69	-100.96	0.29	-0.09	10.46
4,050.00	0.22	35.11	4,038.09	102.06	-165.43	-101.45	1.35	-1.29	-40.72

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<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Ryan USA

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)
4,144.00	0.44	350.55	4,132.09	102.56	-165.39	-101.95	0.34	0.23	-47.40
4,239.00	0.44	357.85	4,227.08	103.28	-165.46	-102.68	0.06	0.00	7.68
4,333.00	0.44	1.28	4,321.08	104.01	-165.47	-103.40	0.03	0.00	3.65
4,428.00	0.57	337.37	4,416.08	104.81	-165.64	-104.20	0.26	0.14	-25.17
4,522.00	0.40	283.93	4,510.07	105.32	-166.14	-104.71	0.49	-0.18	-56.85
4,617.00	2.46	233.92	4,605.04	104.20	-168.11	-103.58	2.34	2.17	-52.64
4,712.00	1.80	233.57	4,699.98	102.11	-170.96	-101.48	0.69	-0.69	-0.37
4,807.00	0.79	263.72	4,794.95	101.15	-172.81	-100.52	1.25	-1.06	31.74
4,902.00	0.44	251.94	4,889.95	100.97	-173.81	-100.33	0.39	-0.37	-12.40
4,996.00	0.35	217.05	4,983.94	100.63	-174.32	-99.99	0.27	-0.10	-37.12
5,091.00	0.44	231.20	5,078.94	100.17	-174.78	-99.52	0.14	0.09	14.89
5,186.00	0.44	198.77	5,173.94	99.59	-175.18	-98.95	0.26	0.00	-34.14
5,281.00	0.48	186.46	5,268.93	98.85	-175.34	-98.21	0.11	0.04	-12.96
5,376.00	0.53	181.19	5,363.93	98.02	-175.40	-97.37	0.07	0.05	-5.55
5,470.00	0.53	158.95	5,457.93	97.18	-175.25	-96.53	0.22	0.00	-23.66
5,565.00	0.53	168.97	5,552.92	96.33	-175.01	-95.69	0.10	0.00	10.55
5,660.00	0.53	154.73	5,647.92	95.51	-174.74	-94.86	0.14	0.00	-14.99
5,755.00	0.66	163.61	5,742.91	94.58	-174.40	-93.94	0.17	0.14	9.35
5,819.00	0.53	163.70	5,806.91	93.95	-174.21	-93.31	0.20	-0.20	0.14
5,882.00	7.03	185.06	5,869.74	89.82	-174.47	-89.18	10.38	10.32	33.90
5,914.00	11.60	183.74	5,901.31	84.66	-174.85	-84.02	14.30	14.28	-4.13
5,946.00	15.65	180.05	5,932.40	77.13	-175.06	-76.49	12.94	12.66	-11.53
5,977.00	19.47	179.26	5,961.95	67.78	-175.00	-67.14	12.35	12.32	-2.55
6,009.00	23.29	181.71	5,991.75	56.12	-175.12	-55.47	12.26	11.94	7.66
6,041.00	27.29	183.47	6,020.67	42.46	-175.75	-41.82	12.72	12.50	5.50
6,072.00	30.59	185.06	6,047.80	27.51	-176.88	-26.86	10.93	10.65	5.13
6,104.00	33.75	185.93	6,074.88	10.55	-178.52	-9.90	9.98	9.88	2.72
6,135.00	37.09	183.91	6,100.14	-7.34	-180.04	8.00	11.42	10.77	-6.52
6,167.00	41.13	181.36	6,124.97	-27.50	-180.95	28.16	13.59	12.63	-7.97
6,198.00	45.00	181.71	6,147.61	-48.66	-181.52	49.32	12.51	12.48	1.13
6,230.00	48.65	181.54	6,169.51	-71.98	-182.18	72.65	11.41	11.41	-0.53
6,262.00	51.46	181.19	6,190.05	-96.50	-182.77	97.17	8.82	8.78	-1.09
6,293.00	54.80	181.54	6,208.65	-121.29	-183.36	121.96	10.81	10.77	1.13
6,325.00	58.27	181.89	6,226.29	-147.97	-184.16	148.65	10.88	10.84	1.09
6,356.00	61.52	181.80	6,241.84	-174.77	-185.02	175.45	10.49	10.48	-0.29
6,387.00	64.29	181.36	6,255.96	-202.36	-185.78	203.04	9.02	8.94	-1.42
6,418.00	66.67	180.84	6,268.82	-230.55	-186.32	231.24	7.83	7.68	-1.68
6,450.00	69.21	179.69	6,280.84	-260.21	-186.46	260.89	8.61	7.94	-3.59
6,474.00	71.32	179.34	6,288.94	-282.80	-186.26	283.48	8.90	8.79	-1.46
6,506.00	74.00	178.90	6,298.48	-313.34	-185.79	314.01	8.48	8.38	-1.38
6,538.00	77.69	178.55	6,306.30	-344.35	-185.10	345.03	11.58	11.53	-1.09
6,569.00	82.09	178.64	6,311.74	-374.85	-184.35	375.53	14.20	14.19	0.29
6,601.00	86.62	179.17	6,314.89	-406.68	-183.75	407.35	14.25	14.16	1.66

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Ryan USA

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)
6,694.00	88.68	178.64	6,318.70	-499.58	-181.97	500.25	2.29	2.22	-0.57
6,789.00	89.03	177.67	6,320.60	-594.51	-178.91	595.17	1.09	0.37	-1.02
6,884.00	91.58	181.19	6,320.09	-689.48	-177.97	690.13	4.58	2.68	3.71
6,979.00	89.87	179.87	6,318.89	-784.47	-178.85	785.12	2.27	-1.80	-1.39
7,074.00	91.45	179.43	6,317.80	-879.46	-178.27	880.10	1.73	1.66	-0.46
7,168.00	88.55	177.50	6,317.80	-973.41	-175.75	974.05	3.71	-3.09	-2.05
7,263.00	89.08	176.44	6,319.76	-1,068.25	-170.73	1,068.87	1.25	0.56	-1.12
7,357.00	90.48	179.26	6,320.12	-1,162.17	-167.20	1,162.78	3.35	1.49	3.00
7,452.00	92.90	180.13	6,317.32	-1,257.12	-166.70	1,257.73	2.71	2.55	0.92
7,547.00	90.35	180.57	6,314.63	-1,352.08	-167.28	1,352.68	2.72	-2.68	0.46
7,641.00	90.83	182.24	6,313.66	-1,446.04	-169.58	1,446.65	1.85	0.51	1.78
7,736.00	90.83	184.26	6,312.28	-1,540.87	-174.97	1,541.50	2.13	0.00	2.13
7,831.00	91.01	183.56	6,310.76	-1,635.64	-181.44	1,636.29	0.76	0.19	-0.74
7,926.00	90.53	181.89	6,309.48	-1,730.52	-185.96	1,731.19	1.83	-0.51	-1.76
8,020.00	90.35	181.63	6,308.76	-1,824.47	-188.85	1,825.15	0.34	-0.19	-0.28
8,115.00	90.61	181.98	6,307.96	-1,919.42	-191.84	1,920.11	0.46	0.27	0.37
8,210.00	90.75	182.59	6,306.84	-2,014.34	-195.63	2,015.04	0.66	0.15	0.64
8,304.00	90.13	181.89	6,306.12	-2,108.26	-199.30	2,108.98	0.99	-0.66	-0.74
8,399.00	90.00	178.73	6,306.01	-2,203.25	-199.81	2,203.97	3.33	-0.14	-3.33
8,494.00	91.58	181.19	6,304.70	-2,298.23	-199.75	2,298.95	3.08	1.66	2.59
8,588.00	89.82	177.50	6,303.55	-2,392.20	-198.67	2,392.91	4.35	-1.87	-3.93
8,683.00	91.80	178.46	6,302.21	-2,487.12	-195.32	2,487.82	2.32	2.08	1.01
8,778.00	91.10	177.41	6,299.80	-2,582.03	-191.90	2,582.71	1.33	-0.74	-1.11
8,873.00	92.20	177.23	6,297.07	-2,676.88	-187.46	2,677.55	1.17	1.16	-0.19
8,967.00	91.63	177.06	6,293.93	-2,770.71	-182.78	2,771.36	0.63	-0.61	-0.18
9,062.00	90.66	179.96	6,292.03	-2,865.65	-180.31	2,866.29	3.22	-1.02	3.05
9,157.00	91.54	177.41	6,290.20	-2,960.60	-178.13	2,961.23	2.84	0.93	-2.68
9,252.00	90.22	180.57	6,288.74	-3,055.56	-176.46	3,056.19	3.60	-1.39	3.33
9,347.00	90.44	179.52	6,288.20	-3,150.56	-176.53	3,151.18	1.13	0.23	-1.11
9,442.00	90.61	178.46	6,287.33	-3,245.54	-174.86	3,246.16	1.13	0.18	-1.12
9,536.00	90.88	179.43	6,286.10	-3,339.51	-173.13	3,340.12	1.07	0.29	1.03
9,631.00	90.79	178.99	6,284.72	-3,434.49	-171.82	3,435.10	0.47	-0.09	-0.46
9,726.00	88.55	180.92	6,285.27	-3,529.48	-171.75	3,530.09	3.11	-2.36	2.03
9,821.00	89.34	180.57	6,287.02	-3,624.45	-172.98	3,625.06	0.91	0.83	-0.37
9,915.00	90.04	180.31	6,287.52	-3,718.45	-173.70	3,719.06	0.79	0.74	-0.28
10,010.00	91.01	177.67	6,286.65	-3,813.42	-172.03	3,814.03	2.96	1.02	-2.78
10,105.00	92.02	178.20	6,284.14	-3,908.33	-168.61	3,908.92	1.20	1.06	0.56
10,200.00	89.47	179.17	6,282.91	-4,003.28	-166.43	4,003.87	2.87	-2.68	1.02
10,294.00	91.98	183.21	6,281.72	-4,097.23	-168.38	4,097.82	5.06	2.67	4.30
10,389.00	92.29	181.80	6,278.18	-4,192.07	-172.53	4,192.67	1.52	0.33	-1.48
10,484.00	93.56	180.75	6,273.33	-4,286.92	-174.64	4,287.53	1.73	1.34	-1.11
10,579.00	90.70	182.86	6,269.80	-4,381.79	-177.63	4,382.41	3.74	-3.01	2.22
10,674.00	91.01	184.62	6,268.38	-4,476.57	-183.82	4,477.22	1.88	0.33	1.85
10,769.00	88.55	184.44	6,268.75	-4,571.27	-191.33	4,571.94	2.60	-2.59	-0.19

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27"))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Ryan USA

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,864.00	89.74	181.54	6,270.16	-4,666.12	-196.28	4,666.81	3.30	1.25	-3.05
10,958.00	91.41	182.51	6,269.22	-4,760.05	-199.60	4,760.75	2.05	1.78	1.03
11,053.00	91.49	182.77	6,266.82	-4,854.92	-203.98	4,855.63	0.29	0.08	0.27
11,147.00	90.44	180.13	6,265.23	-4,948.87	-206.35	4,949.59	3.02	-1.12	-2.81
11,241.00	92.46	180.40	6,262.85	-5,042.83	-206.79	5,043.55	2.17	2.15	0.29
11,336.00	91.93	179.08	6,259.22	-5,137.76	-206.36	5,138.48	1.50	-0.56	-1.39
11,430.00	90.53	177.94	6,257.20	-5,231.70	-203.91	5,232.41	1.92	-1.49	-1.21
11,525.00	91.58	177.32	6,255.45	-5,326.60	-199.99	5,327.30	1.28	1.11	-0.65
11,619.00	91.49	177.76	6,252.93	-5,420.48	-195.95	5,421.16	0.48	-0.10	0.47
11,714.00	89.82	178.11	6,251.84	-5,515.41	-192.53	5,516.08	1.80	-1.76	0.37
11,809.00	91.98	178.29	6,250.35	-5,610.34	-189.55	5,611.00	2.28	2.27	0.19
11,903.00	90.40	180.22	6,248.40	-5,704.31	-188.33	5,704.96	2.65	-1.68	2.05
11,998.00	91.23	180.66	6,247.05	-5,799.29	-189.05	5,799.95	0.99	0.87	0.46
12,093.00	91.01	180.49	6,245.19	-5,894.27	-190.01	5,894.93	0.29	-0.23	-0.18
12,187.00	89.56	180.13	6,244.72	-5,988.27	-190.52	5,988.92	1.59	-1.54	-0.38
12,282.00	92.07	182.77	6,243.37	-6,083.21	-192.92	6,083.88	3.83	2.64	2.78
12,377.00	91.06	179.87	6,240.78	-6,178.14	-195.11	6,178.81	3.23	-1.06	-3.05
12,471.00	93.08	180.31	6,237.38	-6,272.07	-195.25	6,272.74	2.20	2.15	0.47
12,566.00	92.64	179.78	6,232.64	-6,366.95	-195.33	6,367.63	0.72	-0.46	-0.56
12,660.00	91.49	179.61	6,229.26	-6,460.89	-194.83	6,461.56	1.24	-1.22	-0.18
12,755.00	87.85	176.97	6,229.80	-6,555.82	-191.99	6,556.48	4.73	-3.83	-2.78
12,850.00	89.30	176.35	6,232.17	-6,650.63	-186.46	6,651.27	1.66	1.53	-0.65
12,944.00	91.54	179.17	6,231.48	-6,744.54	-182.79	6,745.16	3.83	2.38	3.00
13,038.00	91.58	180.57	6,228.92	-6,838.50	-182.57	6,839.12	1.49	0.04	1.49
13,133.00	90.66	180.75	6,227.06	-6,933.47	-183.67	6,934.10	0.99	-0.97	0.19
13,228.00	87.89	178.90	6,228.26	-7,028.45	-183.38	7,029.08	3.51	-2.92	-1.95
13,323.00	90.66	179.17	6,229.46	-7,123.42	-181.78	7,124.04	2.93	2.92	0.28
13,418.00	88.86	179.78	6,229.86	-7,218.41	-180.91	7,219.03	2.00	-1.89	0.64
13,512.00	89.78	179.26	6,230.98	-7,312.40	-180.12	7,313.01	1.12	0.98	-0.55
13,607.00	89.87	180.66	6,231.27	-7,407.40	-180.05	7,408.01	1.48	0.09	1.47
13,702.00	90.13	182.77	6,231.27	-7,502.35	-182.90	7,502.97	2.24	0.27	2.22
13,797.00	89.39	182.59	6,231.67	-7,597.25	-187.34	7,597.88	0.80	-0.78	-0.19
13,892.00	90.22	184.00	6,231.99	-7,692.08	-192.80	7,692.74	1.72	0.87	1.48
13,987.00	89.65	182.24	6,232.10	-7,786.94	-197.97	7,787.61	1.95	-0.60	-1.85
14,082.00	90.13	181.45	6,232.28	-7,881.89	-201.03	7,882.57	0.97	0.51	-0.83
14,176.00	88.73	182.51	6,233.21	-7,975.82	-204.28	7,976.52	1.87	-1.49	1.13
14,271.00	89.30	180.49	6,234.85	-8,070.77	-206.76	8,071.48	2.21	0.60	-2.13
14,366.00	90.26	178.20	6,235.21	-8,165.76	-205.68	8,166.46	2.61	1.01	-2.41
14,461.00	89.25	177.50	6,235.62	-8,260.69	-202.11	8,261.37	1.29	-1.06	-0.74
14,555.00	89.08	177.67	6,236.99	-8,354.60	-198.15	8,355.27	0.26	-0.18	0.18
14,650.00	89.25	179.61	6,238.37	-8,449.55	-195.90	8,450.21	2.05	0.18	2.04
14,745.00	91.58	181.36	6,237.68	-8,544.54	-196.70	8,545.20	3.07	2.45	1.84
14,840.00	90.04	180.57	6,236.34	-8,639.51	-198.30	8,640.18	1.82	-1.62	-0.83



<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	Ryan USA

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
14,935.00	88.15	179.69	6,237.84	-8,734.49	-198.52	8,735.16	2.19	-1.99	-0.93	
15,029.00	90.00	180.31	6,239.36	-8,828.48	-198.52	8,829.15	2.08	1.97	0.66	
15,124.00	88.81	181.54	6,240.35	-8,923.46	-200.05	8,924.13	1.80	-1.25	1.29	
15,219.00	91.45	183.82	6,240.13	-9,018.34	-204.49	9,019.03	3.67	2.78	2.40	
15,314.00	89.39	180.31	6,239.43	-9,113.25	-207.91	9,113.95	4.28	-2.17	-3.69	
15,408.00	90.61	178.46	6,239.43	-9,207.24	-206.90	9,207.94	2.36	1.30	-1.97	
15,503.00	89.12	178.38	6,239.66	-9,302.20	-204.28	9,302.89	1.57	-1.57	-0.08	
15,597.00	88.29	179.69	6,241.78	-9,396.16	-202.70	9,396.84	1.65	-0.88	1.39	
15,692.00	90.92	180.57	6,242.44	-9,491.15	-202.92	9,491.83	2.92	2.77	0.93	
15,787.00	89.25	182.24	6,242.30	-9,586.12	-205.25	9,586.80	2.49	-1.76	1.76	
15,882.00	87.58	180.40	6,244.92	-9,681.05	-207.44	9,681.74	2.62	-1.76	-1.94	
15,977.00	88.73	180.13	6,247.98	-9,775.99	-207.87	9,776.69	1.24	1.21	-0.28	
16,072.00	90.88	181.71	6,248.31	-9,870.97	-209.40	9,871.67	2.81	2.26	1.66	
16,166.00	88.29	180.66	6,248.99	-9,964.94	-211.34	9,965.65	2.97	-2.76	-1.12	
16,261.00	89.25	179.78	6,251.03	-10,059.92	-211.71	10,060.62	1.37	1.01	-0.93	
16,356.00	90.57	178.99	6,251.18	-10,154.91	-210.69	10,155.61	1.62	1.39	-0.83	
16,451.00	89.25	175.83	6,251.32	-10,249.80	-206.40	10,250.48	3.60	-1.39	-3.33	
16,545.00	91.45	177.67	6,250.75	-10,343.63	-201.07	10,344.30	3.05	2.34	1.96	
16,640.00	92.68	176.00	6,247.33	-10,438.42	-195.83	10,439.07	2.18	1.29	-1.76	
16,690.00	92.68	176.00	6,244.99	-10,488.25	-192.34	10,488.88	0.00	0.00	0.00	
PTB										

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
16,690.00	6,244.99	-10,488.25	-192.34	PTB

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

Crockett Co, TX

University East 4110

NH

OH

**Design: Surveys**

## **Completion Report**

**14 December, 2015**



***RYAN DIRECTIONAL SERVICES, INC.***

A NABORS COMPANY

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Project		Crockett Co, TX, Crockett 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 4110									
Site Position:		Northing:		493,716.18 usft		Latitude:		31° 1' 17.7320 N			
From:		Map		Easting:		1,742,471.02 usft		Longitude:		101° 9' 19.8238 W	
Position Uncertainty:		0.00 ft		Slot Radius:		13-3/16 "		Grid Convergence:		-0.42 °	

Well	NH					
Well Position	+N/-S	0.00 ft	Northing:	494,990.28 usft	Latitude:	31° 1' 30.3305 N
	+E/-W	0.00 ft	Easting:	1,742,295.58 usft	Longitude:	101° 9' 21.9483 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	2,636.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/28/2015	5.68	59.67	47,743

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		180.21

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey Program		Date 12/12/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
27.00	966.00	MS Energy (OH)	Gyro NS R5000	Continuous north-seeking gyro on wireline
966.00	16,690.00	Ryan MWD (OH)	Ryan-MWD+HDGM	OWSG MWD + HDGM

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
27.00	0.00	0.00	27.00	0.00	0.00	0.00	0.00	0.00	0.00	
77.00	0.30	294.51	77.00	0.05	-0.12	-0.05	0.60	0.13	294.51	
127.00	0.48	335.47	127.00	0.30	-0.33	-0.30	0.64	0.44	312.61	
177.00	0.36	322.62	177.00	0.61	-0.51	-0.61	0.30	0.80	320.45	
227.00	0.17	303.93	227.00	0.78	-0.66	-0.78	0.41	1.03	319.60	
277.00	0.26	42.19	277.00	0.91	-0.65	-0.90	0.66	1.12	324.36	
327.00	0.25	53.35	327.00	1.06	-0.49	-1.05	0.10	1.16	335.27	
377.00	0.26	9.28	377.00	1.23	-0.38	-1.23	0.38	1.29	342.85	
427.00	0.25	4.99	427.00	1.45	-0.35	-1.45	0.04	1.50	346.37	
477.00	0.05	4.21	476.99	1.58	-0.34	-1.58	0.40	1.62	347.83	
527.00	0.19	333.85	526.99	1.68	-0.38	-1.68	0.30	1.72	347.37	
577.00	0.22	231.51	576.99	1.69	-0.49	-1.69	0.64	1.76	343.93	
627.00	0.21	249.24	626.99	1.60	-0.65	-1.60	0.13	1.73	337.95	
677.00	0.06	241.64	676.99	1.56	-0.76	-1.55	0.30	1.73	334.06	
727.00	0.18	145.23	726.99	1.48	-0.74	-1.48	0.39	1.65	333.57	
777.00	0.05	204.59	776.99	1.40	-0.70	-1.39	0.32	1.56	333.37	
827.00	0.17	303.02	826.99	1.42	-0.77	-1.41	0.37	1.61	331.43	
877.00	0.22	359.57	876.99	1.55	-0.83	-1.55	0.38	1.76	331.76	
927.00	0.10	312.42	926.99	1.68	-0.87	-1.68	0.34	1.89	332.68	
966.00	0.14	279.02	965.99	1.71	-0.94	-1.71	0.20	1.95	331.20	



<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)	
1,115.00	0.22	170.03	1,114.99	1.46	-1.07	-1.45	0.20	1.81	323.69	
1,210.00	1.27	282.26	1,209.99	1.50	-2.07	-1.49	1.44	2.55	305.96	
1,303.00	3.16	308.63	1,302.91	3.32	-5.08	-3.30	2.26	6.07	303.17	
1,398.00	4.70	310.47	1,397.69	7.48	-10.08	-7.44	1.63	12.55	306.57	
1,492.00	6.02	301.60	1,491.28	12.56	-17.21	-12.50	1.65	21.31	306.12	
1,587.00	6.50	303.62	1,585.71	18.15	-25.93	-18.05	0.56	31.65	304.99	
1,682.00	6.68	298.61	1,680.08	23.77	-35.26	-23.64	0.63	42.53	303.99	
1,776.00	6.81	298.26	1,773.43	29.03	-44.97	-28.86	0.15	53.53	302.84	
1,871.00	7.07	298.96	1,867.74	34.53	-55.05	-34.33	0.29	64.98	302.10	
1,965.00	7.47	299.05	1,960.98	40.30	-65.45	-40.06	0.43	76.86	301.62	
2,060.00	8.00	297.64	2,055.12	46.36	-76.70	-46.08	0.59	89.63	301.15	
2,155.00	8.52	296.59	2,149.13	52.58	-88.85	-52.25	0.57	103.24	300.61	
2,250.00	8.70	297.91	2,243.06	59.09	-101.50	-58.72	0.28	117.44	300.21	
2,344.00	8.09	298.43	2,336.05	65.57	-113.59	-65.15	0.65	131.16	299.99	
2,439.00	7.91	296.41	2,430.13	71.66	-125.33	-71.20	0.35	144.37	299.76	
2,534.00	7.30	295.18	2,524.29	77.13	-136.64	-76.63	0.66	156.91	299.44	
2,629.00	6.86	294.57	2,618.57	82.06	-147.27	-81.52	0.47	168.59	299.13	
2,723.00	5.54	296.06	2,712.01	86.39	-156.45	-85.81	1.41	178.71	298.91	
2,819.00	4.26	297.03	2,807.66	90.04	-163.79	-89.44	1.34	186.91	298.80	
2,913.00	3.43	301.51	2,901.45	93.10	-169.30	-92.48	0.94	193.21	298.81	
3,008.00	2.51	307.31	2,996.32	95.85	-173.37	-95.21	1.02	198.10	298.94	
3,103.00	1.36	292.81	3,091.27	97.54	-176.07	-96.90	1.31	201.28	298.99	
3,197.00	0.92	235.59	3,185.25	97.55	-177.72	-96.90	1.23	202.73	298.76	
3,292.00	0.09	93.91	3,280.25	97.11	-178.27	-96.46	1.04	203.01	298.58	
3,387.00	0.48	113.78	3,375.24	96.95	-177.83	-96.30	0.42	202.54	298.60	
3,481.00	0.70	97.52	3,469.24	96.72	-176.90	-96.07	0.29	201.62	298.67	
3,576.00	1.32	61.39	3,564.23	97.16	-175.37	-96.52	0.91	200.49	298.99	

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)	
3,670.00	1.49	57.61	3,658.20	98.34	-173.39	-97.70	0.21	199.33	299.56	
3,765.00	1.49	63.24	3,753.16	99.55	-171.24	-98.93	0.15	198.08	300.17	
3,860.00	1.54	63.85	3,848.13	100.67	-168.99	-100.05	0.06	196.71	300.78	
3,955.00	1.45	73.79	3,943.10	101.57	-166.69	-100.96	0.29	195.20	301.36	
4,050.00	0.22	35.11	4,038.09	102.06	-165.43	-101.45	1.35	194.38	301.67	
4,144.00	0.44	350.55	4,132.09	102.56	-165.39	-101.95	0.34	194.61	301.80	
4,239.00	0.44	357.85	4,227.08	103.28	-165.46	-102.68	0.06	195.05	301.97	
4,333.00	0.44	1.28	4,321.08	104.01	-165.47	-103.40	0.03	195.44	302.15	
4,428.00	0.57	337.37	4,416.08	104.81	-165.64	-104.20	0.26	196.01	302.32	
4,522.00	0.40	283.93	4,510.07	105.32	-166.14	-104.71	0.49	196.71	302.37	
4,617.00	2.46	233.92	4,605.04	104.20	-168.11	-103.58	2.34	197.78	301.79	
4,712.00	1.80	233.57	4,699.98	102.11	-170.96	-101.48	0.69	199.13	300.85	
4,807.00	0.79	263.72	4,794.95	101.15	-172.81	-100.52	1.25	200.24	300.34	
4,902.00	0.44	251.94	4,889.94	100.97	-173.81	-100.33	0.39	201.00	300.15	
4,996.00	0.35	217.05	4,983.94	100.63	-174.32	-99.99	0.27	201.28	300.00	
5,091.00	0.44	231.20	5,078.94	100.17	-174.78	-99.52	0.14	201.45	299.82	
5,186.00	0.44	198.77	5,173.94	99.59	-175.18	-98.95	0.26	201.51	299.62	
5,281.00	0.48	186.46	5,268.93	98.85	-175.34	-98.21	0.11	201.29	299.41	
5,376.00	0.53	181.19	5,363.93	98.02	-175.40	-97.37	0.07	200.93	299.20	
5,470.00	0.53	158.95	5,457.93	97.18	-175.25	-96.53	0.22	200.39	299.01	
5,565.00	0.53	168.97	5,552.92	96.33	-175.01	-95.69	0.10	199.77	298.83	
5,660.00	0.53	154.73	5,647.92	95.51	-174.74	-94.86	0.14	199.13	298.66	
5,755.00	0.66	163.61	5,742.91	94.58	-174.40	-93.94	0.17	198.39	298.47	
5,819.00	0.53	163.70	5,806.91	93.95	-174.21	-93.31	0.20	197.93	298.34	
5,882.00	7.03	185.06	5,869.74	89.82	-174.47	-89.18	10.38	196.23	297.24	
5,914.00	11.60	183.74	5,901.31	84.66	-174.85	-84.02	14.30	194.27	295.83	
5,946.00	15.65	180.05	5,932.40	77.13	-175.06	-76.49	12.94	191.30	293.78	

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey									
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)
5,977.00	19.47	179.26	5,961.95	67.78	-175.00	-67.14	12.35	187.67	291.17
6,009.00	23.29	181.71	5,991.75	56.12	-175.12	-55.47	12.26	183.89	287.77
6,041.00	27.29	183.47	6,020.67	42.46	-175.75	-41.82	12.72	180.81	283.58
6,072.00	30.59	185.06	6,047.80	27.51	-176.88	-26.86	10.93	179.01	278.84
6,104.00	33.75	185.93	6,074.88	10.55	-178.52	-9.90	9.98	178.83	273.38
6,135.00	37.09	183.91	6,100.14	-7.34	-180.04	8.00	11.42	180.19	267.66
6,167.00	41.13	181.36	6,124.97	-27.50	-180.95	28.16	13.59	183.03	261.36
6,198.00	45.00	181.71	6,147.61	-48.66	-181.52	49.32	12.51	187.93	254.99
6,230.00	48.65	181.54	6,169.51	-71.98	-182.18	72.65	11.41	195.89	248.44
6,262.00	51.46	181.19	6,190.05	-96.50	-182.77	97.17	8.82	206.68	242.17
6,293.00	54.80	181.54	6,208.65	-121.29	-183.36	121.96	10.81	219.85	236.51
6,325.00	58.27	181.89	6,226.29	-147.97	-184.16	148.65	10.88	236.24	231.22
6,356.00	61.52	181.80	6,241.84	-174.77	-185.02	175.45	10.49	254.52	226.63
6,387.00	64.29	181.36	6,255.95	-202.36	-185.78	203.04	9.02	274.71	222.55
6,418.00	66.67	180.84	6,268.82	-230.55	-186.32	231.24	7.83	296.43	218.94
6,450.00	69.21	179.69	6,280.84	-260.21	-186.46	260.89	8.61	320.12	215.62
6,474.00	71.32	179.34	6,288.94	-282.80	-186.26	283.48	8.90	338.63	213.37
6,506.00	74.00	178.90	6,298.48	-313.34	-185.79	314.01	8.48	364.28	210.67
6,538.00	77.69	178.55	6,306.30	-344.35	-185.10	345.03	11.58	390.95	208.26
6,569.00	82.09	178.64	6,311.74	-374.85	-184.35	375.53	14.20	417.73	206.19
6,601.00	86.62	179.17	6,314.89	-406.68	-183.75	407.35	14.25	446.27	204.31
6,694.00	88.68	178.64	6,318.70	-499.58	-181.97	500.25	2.29	531.69	200.01
6,789.00	89.03	177.67	6,320.60	-594.51	-178.91	595.17	1.09	620.85	196.75
6,884.00	91.58	181.19	6,320.09	-689.48	-177.97	690.13	4.58	712.08	194.47
6,979.00	89.87	179.87	6,318.89	-784.47	-178.85	785.12	2.27	804.60	192.84
7,074.00	91.45	179.43	6,317.80	-879.46	-178.27	880.10	1.73	897.34	191.46
7,168.00	88.55	177.50	6,317.80	-973.41	-175.75	974.05	3.71	989.15	190.23

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)	
7,263.00	89.08	176.44	6,319.76	-1,068.25	-170.73	1,068.87	1.25	1,081.81	189.08	
7,357.00	90.48	179.26	6,320.12	-1,162.17	-167.20	1,162.78	3.35	1,174.14	188.19	
7,452.00	92.90	180.13	6,317.32	-1,257.12	-166.70	1,257.73	2.71	1,268.13	187.55	
7,547.00	90.35	180.57	6,314.63	-1,352.08	-167.28	1,352.68	2.72	1,362.38	187.05	
7,641.00	90.83	182.24	6,313.66	-1,446.04	-169.58	1,446.65	1.85	1,455.95	186.69	
7,736.00	90.83	184.26	6,312.28	-1,540.87	-174.97	1,541.50	2.13	1,550.77	186.48	
7,831.00	91.01	183.56	6,310.76	-1,635.64	-181.44	1,636.29	0.76	1,645.67	186.33	
7,926.00	90.53	181.89	6,309.48	-1,730.52	-185.96	1,731.19	1.83	1,740.48	186.13	
8,020.00	90.35	181.63	6,308.76	-1,824.47	-188.85	1,825.15	0.34	1,834.22	185.91	
8,115.00	90.61	181.98	6,307.96	-1,919.42	-191.84	1,920.11	0.46	1,928.98	185.71	
8,210.00	90.75	182.59	6,306.84	-2,014.34	-195.63	2,015.04	0.66	2,023.81	185.55	
8,304.00	90.13	181.89	6,306.12	-2,108.26	-199.30	2,108.98	0.99	2,117.66	185.40	
8,399.00	90.00	178.73	6,306.01	-2,203.25	-199.81	2,203.97	3.33	2,212.29	185.18	
8,494.00	91.58	181.19	6,304.70	-2,298.23	-199.75	2,298.95	3.08	2,306.89	184.97	
8,588.00	89.82	177.50	6,303.55	-2,392.20	-198.67	2,392.91	4.35	2,400.43	184.75	
8,683.00	91.80	178.46	6,302.21	-2,487.12	-195.32	2,487.82	2.32	2,494.78	184.49	
8,778.00	91.10	177.41	6,299.80	-2,582.03	-191.90	2,582.71	1.33	2,589.15	184.25	
8,873.00	92.20	177.23	6,297.07	-2,676.88	-187.46	2,677.55	1.17	2,683.44	184.01	
8,967.00	91.63	177.06	6,293.93	-2,770.71	-182.78	2,771.36	0.63	2,776.74	183.77	
9,062.00	90.66	179.96	6,292.03	-2,865.65	-180.31	2,866.29	3.22	2,871.32	183.60	
9,157.00	91.54	177.41	6,290.20	-2,960.60	-178.13	2,961.23	2.84	2,965.95	183.44	
9,252.00	90.22	180.57	6,288.74	-3,055.56	-176.46	3,056.19	3.60	3,060.65	183.31	
9,347.00	90.44	179.52	6,288.20	-3,150.56	-176.53	3,151.18	1.13	3,155.50	183.21	
9,442.00	90.61	178.46	6,287.33	-3,245.54	-174.86	3,246.16	1.13	3,250.24	183.08	
9,536.00	90.88	179.43	6,286.10	-3,339.51	-173.13	3,340.12	1.07	3,344.00	182.97	
9,631.00	90.79	178.99	6,284.72	-3,434.49	-171.82	3,435.10	0.47	3,438.79	182.86	
9,726.00	88.55	180.92	6,285.27	-3,529.48	-171.75	3,530.09	3.11	3,533.66	182.79	



<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)	
9,821.00	89.34	180.57	6,287.01	-3,624.45	-172.98	3,625.06	0.91	3,628.58	182.73	
9,915.00	90.04	180.31	6,287.52	-3,718.45	-173.70	3,719.06	0.79	3,722.50	182.67	
10,010.00	91.01	177.67	6,286.65	-3,813.42	-172.03	3,814.03	2.96	3,817.30	182.58	
10,105.00	92.02	178.20	6,284.14	-3,908.32	-168.61	3,908.92	1.20	3,911.96	182.47	
10,200.00	89.47	179.17	6,282.91	-4,003.28	-166.43	4,003.87	2.87	4,006.74	182.38	
10,294.00	91.98	183.21	6,281.72	-4,097.23	-168.38	4,097.82	5.06	4,100.69	182.35	
10,389.00	92.29	181.80	6,278.18	-4,192.07	-172.53	4,192.67	1.52	4,195.62	182.36	
10,484.00	93.56	180.75	6,273.33	-4,286.92	-174.64	4,287.53	1.73	4,290.47	182.33	
10,579.00	90.70	182.86	6,269.80	-4,381.79	-177.63	4,382.41	3.74	4,385.39	182.32	
10,674.00	91.01	184.62	6,268.38	-4,476.57	-183.82	4,477.22	1.88	4,480.35	182.35	
10,769.00	88.55	184.44	6,268.75	-4,571.27	-191.33	4,571.94	2.60	4,575.27	182.40	
10,864.00	89.74	181.54	6,270.16	-4,666.12	-196.28	4,666.81	3.30	4,670.24	182.41	
10,958.00	91.41	182.51	6,269.22	-4,760.05	-199.60	4,760.75	2.05	4,764.23	182.40	
11,053.00	91.49	182.77	6,266.82	-4,854.92	-203.98	4,855.63	0.29	4,859.20	182.41	
11,147.00	90.44	180.13	6,265.23	-4,948.86	-206.35	4,949.59	3.02	4,953.17	182.39	
11,241.00	92.46	180.40	6,262.85	-5,042.83	-206.79	5,043.55	2.17	5,047.07	182.35	
11,336.00	91.93	179.08	6,259.22	-5,137.76	-206.36	5,138.48	1.50	5,141.90	182.30	
11,430.00	90.53	177.94	6,257.20	-5,231.70	-203.91	5,232.41	1.92	5,235.67	182.23	
11,525.00	91.58	177.32	6,255.45	-5,326.60	-199.99	5,327.30	1.28	5,330.35	182.15	
11,619.00	91.49	177.76	6,252.93	-5,420.48	-195.95	5,421.16	0.48	5,424.02	182.07	
11,714.00	89.82	178.11	6,251.84	-5,515.41	-192.53	5,516.08	1.80	5,518.77	182.00	
11,809.00	91.98	178.29	6,250.35	-5,610.34	-189.55	5,611.00	2.28	5,613.54	181.94	
11,903.00	90.40	180.22	6,248.40	-5,704.31	-188.33	5,704.96	2.65	5,707.42	181.89	
11,998.00	91.23	180.66	6,247.05	-5,799.29	-189.05	5,799.95	0.99	5,802.37	181.87	
12,093.00	91.01	180.49	6,245.19	-5,894.27	-190.01	5,894.93	0.29	5,897.33	181.85	
12,187.00	89.56	180.13	6,244.72	-5,988.27	-190.52	5,988.92	1.59	5,991.30	181.82	
12,282.00	92.07	182.77	6,243.37	-6,083.21	-192.92	6,083.88	3.83	6,086.27	181.82	

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)	
12,377.00	91.06	179.87	6,240.78	-6,178.14	-195.11	6,178.81	3.23	6,181.22	181.81	
12,471.00	93.08	180.31	6,237.38	-6,272.07	-195.25	6,272.74	2.20	6,275.11	181.78	
12,566.00	92.64	179.78	6,232.64	-6,366.95	-195.33	6,367.63	0.72	6,369.95	181.76	
12,660.00	91.49	179.61	6,229.26	-6,460.89	-194.83	6,461.56	1.24	6,463.83	181.73	
12,755.00	87.85	176.97	6,229.80	-6,555.82	-191.99	6,556.48	4.73	6,558.63	181.68	
12,850.00	89.30	176.35	6,232.16	-6,650.63	-186.46	6,651.27	1.66	6,653.24	181.61	
12,944.00	91.54	179.17	6,231.48	-6,744.54	-182.79	6,745.16	3.83	6,747.01	181.55	
13,038.00	91.58	180.57	6,228.92	-6,838.50	-182.57	6,839.12	1.49	6,840.94	181.53	
13,133.00	90.66	180.75	6,227.06	-6,933.47	-183.67	6,934.10	0.99	6,935.91	181.52	
13,228.00	87.89	178.90	6,228.26	-7,028.45	-183.38	7,029.08	3.51	7,030.84	181.49	
13,323.00	90.66	179.17	6,229.46	-7,123.42	-181.78	7,124.04	2.93	7,125.74	181.46	
13,418.00	88.86	179.78	6,229.86	-7,218.41	-180.91	7,219.03	2.00	7,220.68	181.44	
13,512.00	89.78	179.26	6,230.98	-7,312.40	-180.12	7,313.01	1.12	7,314.62	181.41	
13,607.00	89.87	180.66	6,231.27	-7,407.40	-180.05	7,408.01	1.48	7,409.59	181.39	
13,702.00	90.13	182.77	6,231.27	-7,502.35	-182.90	7,502.97	2.24	7,504.58	181.40	
13,797.00	89.39	182.59	6,231.67	-7,597.25	-187.34	7,597.88	0.80	7,599.55	181.41	
13,892.00	90.22	184.00	6,231.99	-7,692.08	-192.80	7,692.74	1.72	7,694.50	181.44	
13,987.00	89.65	182.24	6,232.10	-7,786.94	-197.97	7,787.61	1.95	7,789.46	181.46	
14,082.00	90.13	181.45	6,232.28	-7,881.89	-201.03	7,882.57	0.97	7,884.45	181.46	
14,176.00	88.73	182.51	6,233.21	-7,975.82	-204.28	7,976.52	1.87	7,978.44	181.47	
14,271.00	89.30	180.49	6,234.85	-8,070.77	-206.76	8,071.48	2.21	8,073.42	181.47	
14,366.00	90.26	178.20	6,235.21	-8,165.76	-205.68	8,166.46	2.61	8,168.35	181.44	
14,461.00	89.25	177.50	6,235.62	-8,260.69	-202.11	8,261.37	1.29	8,263.16	181.40	
14,555.00	89.08	177.67	6,236.99	-8,354.59	-198.15	8,355.27	0.26	8,356.94	181.36	
14,650.00	89.25	179.61	6,238.37	-8,449.55	-195.90	8,450.21	2.05	8,451.82	181.33	
14,745.00	91.58	181.36	6,237.68	-8,544.54	-196.70	8,545.20	3.07	8,546.80	181.32	
14,840.00	90.04	180.57	6,236.34	-8,639.51	-198.30	8,640.18	1.82	8,641.79	181.31	

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Survey										
MD (ft)	Incl (°)	Azm (°)	TVD (ft)	N/S (ft)	E/W (ft)	VS (ft)	DLS (°/100ft)	Closure Distance (ft)	Closure Azimuth (°)	
14,935.00	88.15	179.69	6,237.84	-8,734.49	-198.52	8,735.16	2.19	8,736.75	181.30	
15,029.00	90.00	180.31	6,239.36	-8,828.48	-198.52	8,829.15	2.08	8,830.71	181.29	
15,124.00	88.81	181.54	6,240.35	-8,923.46	-200.05	8,924.13	1.80	8,925.70	181.28	
15,219.00	91.45	183.82	6,240.13	-9,018.34	-204.49	9,019.03	3.67	9,020.66	181.30	
15,314.00	89.39	180.31	6,239.43	-9,113.25	-207.91	9,113.95	4.28	9,115.62	181.31	
15,408.00	90.61	178.46	6,239.43	-9,207.24	-206.90	9,207.94	2.36	9,209.57	181.29	
15,503.00	89.12	178.38	6,239.66	-9,302.20	-204.28	9,302.89	1.57	9,304.45	181.26	
15,597.00	88.29	179.69	6,241.78	-9,396.16	-202.70	9,396.84	1.65	9,398.35	181.24	
15,692.00	90.92	180.57	6,242.44	-9,491.15	-202.92	9,491.83	2.92	9,493.32	181.22	
15,787.00	89.25	182.24	6,242.30	-9,586.11	-205.25	9,586.80	2.49	9,588.31	181.23	
15,882.00	87.58	180.40	6,244.92	-9,681.05	-207.44	9,681.74	2.62	9,683.27	181.23	
15,977.00	88.73	180.13	6,247.98	-9,775.99	-207.87	9,776.69	1.24	9,778.20	181.22	
16,072.00	90.88	181.71	6,248.31	-9,870.97	-209.40	9,871.67	2.81	9,873.19	181.22	
16,166.00	88.29	180.66	6,248.99	-9,964.94	-211.34	9,965.65	2.97	9,967.18	181.21	
16,261.00	89.25	179.78	6,251.03	-10,059.92	-211.71	10,060.62	1.37	10,062.14	181.21	
16,356.00	90.57	178.99	6,251.18	-10,154.91	-210.69	10,155.61	1.62	10,157.09	181.19	
16,451.00	89.25	175.83	6,251.32	-10,249.80	-206.40	10,250.48	3.60	10,251.87	181.15	
16,545.00	91.45	177.67	6,250.75	-10,343.63	-201.07	10,344.30	3.05	10,345.59	181.11	
16,640.00	92.68	176.00	6,247.33	-10,438.42	-195.83	10,439.07	2.18	10,440.26	181.07	
16,690.00	92.68	176.00	6,244.99	-10,488.25	-192.34	10,488.88	0.00	10,490.01	181.05	
PTB										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
16,690.00	6,244.99	-10,488.25	-192.34	PTB	

<b>Company:</b>	EP Energy E&P Company, L.P.	<b>Local Co-ordinate Reference:</b>	Well NH
<b>Project:</b>	Crockett Co, TX	<b>TVD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Site:</b>	University East 4110	<b>MD Reference:</b>	KB @ 2663.00ft (Nabors 888 (KB = 27'))
<b>Well:</b>	NH	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	RyanUSA_Compass

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_





# RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

## SLIDE & ROTATING REPORT

Customer:

Field:

County, State:

EP Energy  
Crockett County  
Crockett, TX

Rig Name & No.:

Well Name & No.:

Ryan Job #:

Nabors 888

University East 4110 NH

9359

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	1,076	1,165	89	1,115	0.22°	170.03°	0.20°	0.05°	10.00°	0.00	0.00	1.50°	15.00		10.00	20.00	500.00	1850.00
Slide	1,165	1,180	15											299 MTF	12.00	0.00	610.00	2250.00
Rotate	1,180	1,260	80	1,210	1.27°	282.26°	1.44°	1.11°	10.00°	15.00	0.00	1.50°	15.00		28.00	40.00	610.00	2600.00
Slide	1,260	1,275	15											299 MTF	15.00	0.00	610.00	2250.00
Rotate	1,275	1,353	78	1,303	3.16°	308.63°	2.26°	2.23°	10.00°	15.00	0.00	1.20°	12.00		28.00	40.00	610.00	2600.00
Slide	1,353	1,365	12											299 MTF	15.00	0.00	610.00	2250.00
Rotate	1,365	1,448	83	1,398	4.70°	310.47°	1.63°	1.62°	10.00°	12.00	0.00	1.00°	10.00		28.00	40.00	610.00	2600.00
Slide	1,448	1,458	10											299 MTF	15.00	0.00	610.00	2250.00
Rotate	1,458	2,963	1,505	2,913	3.43°	301.51°	0.94°	-0.88°	10.00°	0.00	0.00	0.50°	5.00		28.00	40.00	610.00	2600.00
Slide	2,963	2,968	5											120 MTF	15.00	0.00	610.00	2250.00
Rotate	2,968	3,058	90	3,008	2.51°	307.31°	1.02°	-0.97°	10.00°	5.00	0.00	1.00°	10.00		28.00	40.00	610.00	2600.00
Slide	3,058	3,068	10											130 MTF	15.00	0.00	610.00	2250.00
Rotate	3,068	3,153	85	3,103	1.36°	292.81°	1.31°	-1.21°	10.00°	10.00	0.00	1.00°	10.00		28.00	40.00	610.00	2600.00
Slide	3,153	3,163	10											130 MTF	15.00	0.00	610.00	2250.00
Rotate	3,163	3,247	84	3,197	0.92°	235.59°	1.25°	-0.47°	10.00°	10.00	0.00	1.00°	10.00		28.00	40.00	610.00	2600.00
Slide	3,247	3,257	10											30 MTF	15.00	0.00	610.00	2250.00
Rotate	3,257	3,531	274	3,481	0.70°	97.52°	0.29°	0.23°	10.00°	10.00	0.00	1.00°	10.00		28.00	40.00	610.00	2600.00
Slide	3,531	3,541	10											0 MTF	15.00	0.00	610.00	2250.00
Rotate	3,541	4,005	464	3,955	1.45°	73.79°	0.29°	-0.09°	10.00°	0.00	0.00	1.00°	10.00		28.00	40.00	610.00	2600.00
Slide	4,005	4,015	10											270 MTF	15.00	0.00	610.00	2250.00
Rotate	4,015	4,667	652	4,617	2.46°	233.92°	2.34°	2.17°	10.00°	0.00	0.00	1.50°	15.00		28.00	40.00	610.00	2600.00
Slide	4,667	4,682	15											60 MTF	15.00	0.00	610.00	2250.00
Rotate	4,682	4,762	80	4,712	1.80°	233.57°	0.69°	-0.69°	10.00°	15.00	0.00	1.50°	15.00		28.00	40.00	610.00	2600.00
Slide	4,762	4,777	15											60 MTF	15.00	0.00	610.00	2250.00
Rotate	4,777	5,844	1,067	5,755	0.66°	163.61°	0.17°	0.14°	10.00°	0.00	0.00	0.00°	0.00		28.00	40.00	610.00	2600.00
Slide	5,844	5,870	26	5,819	0.53°	163.70°	0.20°	-0.20°	10.00°	0.00	0.00	12.00°	28.00	180 MTF	35.00	0.00	580.00	2500.00
Rotate	5,870	5,874	4												28.00	25.00	580.00	2650.00
Slide	5,874	5,902	28											180 MTF	35.00	0.00	580.00	2500.00
Rotate	5,902	5,906	4												28.00	25.00	580.00	2650.00
Slide	5,906	5,933	27	5,882	7.03°	185.06°	10.38°	10.32°	18.10°	34.00	47.00	10.60°	24.00	180 MTF	35.00	0.00	580.00	2500.00
Rotate	5,933	5,941	8												28.00	25.00	580.00	2650.00
Slide	5,941	5,965	24	5,914	11.60°	83.74	14.30°	14.28°	16.30°	28.00	43.00	10.80°	24.00	30 L	35.00	0.00	580.00	2500.00
Rotate	5,965	5,973	8												28.00	25.00	580.00	2650.00
Slide	5,973	5,997	24	5,946	15.65°	180.05°	12.94°	12.66°	17.20°	24.00	43.00	10.50°	24.00	HS GTF	35.00	0.00	580.00	2500.00
Rotate	5,997	6,005	8												28.00	25.00	580.00	2650.00
Slide	6,005	6,028	23	5,977	19.47°	179.26°	12.35°	12.32°	16.60°	23.00	43.00	10.40°	24.00	20 R	35.00	0.00	580.00	2500.00
Rotate	6,028	6,036	8												28.00	25.00	580.00	2650.00
Slide	6,036	6,060	24	6,009	23.29°	181.71°	12.30°	11.90°	16.30°	24.00	43.00	10.40°	23.00	HS GTF	35.00	0.00	580.00	2500.00
Rotate	6,060	6,069	9												28.00	25.00	580.00	2650.00
Slide	6,069	6,092	23	6,041	27.29°	183.47°	12.70°	12.50°	16.90°	23.00	42.00	10.10°	21.00	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,092	6,102	10												28.00	25.00	580.00	2650.00
Slide	6,102	6,123	21	6,072	30.59°	185.06°	10.90°	10.60°	15.40°	22.00	41.00	10.60°	23.00	10 L	50.00	0.00	580.00	2500.00
Rotate	6,123	6,132	9												28.00	25.00	580.00	2650.00
Slide	6,132	6,155	23	6,104	33.75°	185.93°	9.98°	9.88°	14.50°	22.00	42.00	10.50°	23.17	30 L	50.00	0.00	580.00	2500.00
Rotate	6,155	6,160	5												28.00	25.00	580.00	2650.00
Slide	6,160	6,186	26	6,135	37.09°	183.91°	11.42°	10.77°	16.10°	22.00°	46.00	10.70°	21.27	30 L	50.00	0.00	580.00	2500.00
Rotate	6,186	6,194	8												28.00	25.00	580.00	2650.00
Slide	6,194	6,218	24	6,167	41.13°	181.36°	13.59°	12.62°	16.10°	27.00°	43.00	10.50°	20.87	30 L	50.00	0.00	580.00	2500.00
Rotate	6,218	6,226	8												28.00	25.00	580.00	2650.00
Slide	6,226	6,249	23	6,198	45.00°	181.71°	12.51°	12.48°	16.80°	23.00	43.00	10.20°	19.43	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,249	6,261	12												28.00	25.00	580.00	2650.00
Slide	6,261	6,281	20	6,230	48.65°	181.54°	11.41°	11.41°	15.20°	24.00	39.00	10.00°	21.05	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,281	6,291	10												28.00	25.00	580.00	2650.00
Slide	6,291	6,313	22	6,262	51.46°	181.19°	8.82°	8.78°	14.10°	20.00	41.00	10.30°	23.38	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,313	6,323	10												28.00	25.00	580.00	2650.00
Slide	6,323	6,344	21	6,293	54.80°	181.54°	10.81°	10.77°	16.00°	21.00	41.00	10.20°	20.40	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,344	6,356	12												28.00	25.00	580.00	2650.00
Slide	6,356	6,376	20	6,325	58.27°	181.89°	10.88°	10.84°	15.80°	22.00	39.00	9.30°	18.84	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,376	6,390	14												28.00	25.00	580.00	2650.00
Slide	6,390	6,407	17	6,356	61.52°	181.80°	10.49°	10.48°	17.10°	19.00	37.00	7.80°	14.60	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,407	6,423	16												28.00	25.00	580.00	2650.00
Slide	6,423	6,438	15	6,387	64.29°	181.36°	9.02°	8.94°	14.00°	20.00	32.00	7.30°	16.69	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,438	6,452	14												28.00	25.00	580.00	2650.00
Slide	6,452	6,469	17	6,418	66.67°	180.84°	7.83°	7.68°	14.30°	17.00	32.00	8.30°	18.57	HS GTF	50.00	0.00	580.00	2500.00
Rotate	6,469	6,483	14												28.00	25.00	580.00	2650.00
Slide	6,483	6,501	18	6,450	69.21°	179.69°	8.61°	7.94°	18.30°	15.00	35.00	8.40°	14.69	HS GTF	50.00	0.00	580.00	25



Rig Name & No.:	Nabors 888
Well Name & No.:	University East 4110 NH
Ryan Job #:	9359

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	7,134	7,313	179	7,263	89.08°	176.44°	1.25°	0.56°	10.00°	0.00	0.00	1.00°	10.00					
Slide	7,313	7,323	10											90 R	50.00	0.00	595.00	3250.00
Rotate	7,323	7,502	179	7,452	92.90°	180.13°	2.71°	2.55°	10.00°	0.00	0.00	1.20°	12.00					
Slide	7,502	7,514	12											160 R	50.00	0.00	595.00	3250.00
Rotate	7,514	7,786	272	7,736	90.83°	184.26°	2.13°	0.00°	10.00°	0.00	0.00	1.00°	10.00					
Slide	7,786	7,796	10											90 L	50.00	0.00	595.00	3250.00
Rotate	7,796	7,881	85	7,831	91.01°	183.56°	0.76°	0.19°	10.00°	10.00	0.00	1.20°	10.00					
Slide	7,881	7,893	12											120 L	50.00	0.00	595.00	3250.00
Rotate	7,893	8,260	367	8,210	90.75°	182.59°	0.66°	0.15°	10.00°	0.00	0.00	1.50°	15.00					
Slide	8,260	8,275	15											130 L	50.00	0.00	595.00	3250.00
Rotate	8,275	8,354	79	8,304	90.13°	181.89°	3.33°	-0.14°	10.00°	15.00	0.00	1.50°	15.00					
Slide	8,354	8,369	15											90 L	50.00	0.00	595.00	3250.00
Rotate	8,369	8,544	175	8,494	91.58°	181.19°	3.08°	1.66°	10.00°	0.00	0.00	1.50°	15.00					
Slide	8,544	8,559	15											120 L	50.00	0.00	595.00	3250.00
Rotate	8,559	8,733	174	8,683	91.80°	178.46°	2.32°	2.08°	10.00°	0.00	0.00	1.00°	10.00					
Slide	8,733	8,743	10											180.00°	50.00	0.00	595.00	3250.00
Rotate	8,743	8,923	180	8,873	92.20°	177.23°	1.17°	1.16°	10.00°	0.00	0.00	1.50°	15.00					
Slide	8,923	8,938	15											135 R	50.00	0.00	595.00	3250.00
Rotate	8,938	9,017	79	8,967	91.63°	177.06°	0.63°	-0.61°	10.00°	15.00	0.00	2.00°	20.00					
Slide	9,017	9,037	20											120 R	50.00	0.00	595.00	3250.00
Rotate	9,037	9,207	170	9,157	91.54°	177.41°	2.84°	0.93°	10.00°	0.00	0.00	2.00°	20.00					
Slide	9,207	9,227	20											120 R	50.00	0.00	595.00	3250.00
Rotate	9,227	9,492	265	9,442	90.61°	178.46°	1.13°	0.18°	10.00°	0.00	0.00	2.00°	20.00					
Slide	9,492	9,512	20											90 R	50.00	0.00	595.00	3250.00
Rotate	9,512	9,681	169	9,631	90.79°	178.99°	0.47°	-0.09°	10.00°	0.00	0.00	2.00°	20.00					
Slide	9,681	9,701	20											120 R	50.00	0.00	595.00	3250.00
Rotate	9,701	10,060	359	10,010	91.01°	177.67°	2.96°	1.02°	10.00°	0.00	0.00	2.00°	20.00					
Slide	10,060	10,080	20											100 R	50.00	0.00	595.00	3250.00
Rotate	10,080	10,155	75	10,105	92.02°	178.20°	1.20°	1.06°	10.00°	20.00	0.00	2.00°	20.00					
Slide	10,155	10,175	20											110 R	50.00	0.00	595.00	3250.00
Rotate	10,175	10,250	75	10,200	89.47°	179.17°	2.87°	-2.68°	10.00°	20.00	0.00	2.50°	25.00					
Slide	10,250	10,275	25											90 R	50.00	0.00	595.00	3250.00
Rotate	10,275	10,534	259	10,484	93.56°	180.75°	1.73°	1.34°	10.00°	0.00	0.00	2.00°	20.00					
Slide	10,534	10,554	20											135 R	50.00	0.00	595.00	3250.00
Rotate	10,554	10,724	170	10,674	91.01°	184.62°	1.88°	0.33°	10.00°	0.00	0.00	1.20°	12.00					
Slide	10,724	10,736	12											150 L	50.00	0.00	595.00	3250.00
Rotate	10,736	10,819	83	10,769	88.55°	184.44°	2.60°	-2.59°	10.00°	12.00	0.00	2.00°	20.00					
Slide	10,819	10,839	20											90 L	50.00	0.00	595.00	3250.00
Rotate	10,839	11,025	186	10,958	91.41°	182.51°	2.05°	1.78°	10.00°	0.00	0.00	1.00°	10.00					
Slide	11,025	11,032	7											90 L	50.00	0.00	595.00	3250.00
Rotate	11,032	11,103	71	11,053	91.49°	182.77°	0.29°	0.08°	10.00°	7.00	0.00	1.00°	10.00					
Slide	11,103	11,111	8											120 L	50.00	0.00	595.00	3250.00
Rotate	11,111	11,291	180	11,241	92.46°	180.40°	4.63°	4.59°	10.00°	0.00	0.00	1.20°	12.00					
Slide	11,291	11,303	12											160 L	50.00	0.00	595.00	3250.00
Rotate	11,303	11,386	83	11,336	91.93°	179.08°	1.50°	-0.56°	12.00°	0.00	0.00	1.20°	12.00					
Slide	11,386	11,398	12											180 GTF	50.00	0.00	595.00	3250.00
Rotate	11,398	11,575	177	11,525	91.58°	177.32°	1.28°	1.11°	10.00°	0.00	0.00	1.50°	15.00					
Slide	11,575	11,590	15											180 GTF	50.00	0.00	595.00	3250.00
Rotate	11,590	11,669	79	11,619	91.49°	177.76°	0.48°	-0.10°	10.00°	15.00	0.00	2.00°	20.00					
Slide	11,669	11,689	20											120 R	50.00	0.00	595.00	3250.00
Rotate	11,689	11,859	170	11,809	91.98°	178.29°	2.28°	2.27°	10.00°	0.00	0.00	2.00°	20.00					
Slide	11,859	11,879	20											120 R	50.00	0.00	595.00	3250.00
Rotate	11,879	12,048	169	11,998	91.23°	180.66°	0.99°	0.87°	10.00°	0.00	0.00	1.20°	12.00					
Slide	12,048	12,060	12											180 GTF	50.00	0.00	595.00	3250.00
Rotate	12,060	12,143	83	12,093	91.01°	180.49°	0.29°	-0.23°	10.00°	12.00	0.00	1.20°	12.00					
Slide	12,143	12,155	12											180 GTF	50.00	0.00	595.00	3250.00
Rotate	12,155	12,332	177	12,282	92.07°	182.77°	3.83°	2.64°	10.00°	0.00	0.00	1.00°	10.00					
Slide	12,332	12,342	10											180 GTF	50.00	0.00	595.00	3250.00
Rotate	12,342	12,521	179	12,471	93.08°	180.31°	2.20°	2.15°	10.00°	0.00	0.00	1.50°	15.00					
Slide	12,521	12,536	15											180 GTF	50.00	0.00	595.00	3250.00
Rotate	12,536	12,616	80	12,566	92.64°	179.78°	0.72°	-0.46°	10.00°	15.00	0.00	2.00°	20.00					
Slide	12,616	12,636	20											180 GTF	50.00	0.00	595.00	3250.00
Rotate	12,636	12,710	74	12,660	91.49°	179.61°	1.24°	-1.22°	10.00°	20.00	0.00	2.00°	20.00					
Slide	12,710	12,730	20											180 GTF	50.00	0.00	595.00	3250.00
Rotate	12,730	12,900	170	12,850	89.30°	176.35°	1.66°	1.53°	10.00°	0.00	0.00	2.00°	20.00					
Slide	12,900	12,920	20											90 R	50.00	0.00	595.00	3250.00
Rotate	12,920	12,994	74	12,944	91.54°	179.17°	3.83°	2.38°	10.00°	20.00	0.00	1.30°	13.00					
Slide	12,994	13,007	13											180 GTF	50.00	0.00	595.00	3250.00
Rotate	13,007	13,088	81	13,038	91.58°	180.57°	1.49°	0.04°	10.00°	13.00	0.00	2.00°	20.00					
Slide	13,088	13,108	20											180 GTF	50.00	0.00	595.00	3250.00
Rotate	13,108	13,183	75	13,133	90.66°	180.75°	0.99°	-0.97°	10.00°	20.00	0.00	25.00°	25.00					
Slide	13,183	13,208	25											180 GTF	50.00	0.00	595.00	3250.00
Rotate	13,208	13,373	165	13,323	90.66°	179.17°	2.93°	2.92°	10.00°	0.00	0.00	2.00°	20.00					
Slide	13,373	13,393	20											180 GTF	50.00	0.00	595.00	3250.00
Rotate	13,393	13,752	359	13,702	90.13°	182.77°	2.27°	0.27°	10.00°	20.00	0.00	NA	20.00					



Customer:  
Field:  
County, State:

EP Energy
Crockett County
Crockett, TX

Rig Name & No.:	Nabors 888
Well Name & No.:	University East 4110 NH
Ryan Job #:	9359

[illegible]

Report #: 1

Date: 5-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 0 Footage Today: 0 Drlg Hrs Today: 0.00 ROP Today: - Last Casing Set: \_\_\_\_\_  
 24:00 Depth: 0 Current Run Ftg: -1076 Run Drlg Hrs: 0.00 Run Avg. ROP: - Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	5 1/2	5 1/2		Sample	IN				Size (in.)	6 3/4
%	97	97		Time	3:00				Type	7/8,5.0
Vol (gals)	3.59	3.59	0.00	Wt.	8.8				Serial No.	RY675083
SPM	84	84		VIS	58				ACUUMP	Tool Deflection
DRILLING PARAMETERS				PV	18				NMDC	Avg. Diff. Press.
ST. WT. ROT 1000's:	100			YP	13				XO	Daily Drill Hrs.
P/U WT. 1000's:	105			WL	N/A				3 DC'S	Daily Circ. Hrs.
S/O WT. 1000's:	95			CL	76,000				XO	Daily Total Hrs.
WOB 1000's:	15			Gels	12/15/18.					Acc. Drill Hrs.
ROTARY RPM:	40			% Oil	73.5					Acc. Circ. Hrs.
MOTOR RPM:	175			% Solids	6.3					Depth In
TOTAL Bit RPM	215			% Sand	0.01					Depth Out
ROT TQ. OFF BTM:	1			PH	N/A					LIH Hrs.
ROT TQ. ON BTM:	7500			Temp F	113					Acc. LIH Hrs.
Current Mag Dec:	5.9			MWD F	129	BHA WT				Acc. Hrs Cir/Drilg
Pulse Hight	4.2			GPM	400	BELOW JARS				Total K Revs
"G" Totals	1			PSI	1400					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	ALIBURTO	MM56D	12625399	5x22's	1076													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	21:00	21:00				S	STANDBY	STANDBY			
21:00	22:30	1:30				6.A	P/U BHA #1				
22:30	23:00	0:30				6.A	TIH	DA TANGENT			
23:00	23:59	0:59				O	DRILL FLOAT TRACK				
							</				



Report #: 2

Date: 6-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 1076  
 24:00 Depth: 2679

Footage Today: 1603  
 Current Run Ftg: 1647

Drig Hrs Today: 3.80  
 Run Drig Hrs: 3.80

ROP Today: 421.84  
 Run Avg. ROP: 433.42

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	5 1/2	5 1/2		Sample	IN			MOTOR	Size (in.)	6 3/4
%	97	97		Time	3:00			NMPC	Type	7/8,5.0
Vol (gals)	3.59	3.59	0.00	Wt.	8.8			EM TOOL	Serial No.	RY675083
SPM	84	84		VIS	58			ACUUMP	Tool Deflection	1.5
DRILLING PARAMETERS				PV	18			NMDC	Avg. Diff. Press.	600
ST. WT. ROT 1000's:	100			YP	13			XO	Daily Drill Hrs.	3.80
P/U WT. 1000's:	105			WL	N/A			3 DC'S	Daily Circ. Hrs.	1.30
S/O WT. 1000's:	95			CL	76,000			XO	Daily Total Hrs.	5.10
WOB 1000's:	15			Gels	12/15/18.				Acc. Drill Hrs.	3.80
ROTARY RPM:	40			% Oil	73.5				Acc. Circ. Hrs.	1.30
MOTOR RPM:	175			% Solids	6.3				Depth In	1032
TOTAL Bit RPM	215			% Sand	0.01				Depth Out	
ROT TQ. OFF BTM:	1			PH	N/A				LIH Hrs.	5:10
ROT TQ. ON BTM:	7500			Temp F	113				Acc. LIH Hrs.	6.67
Current Mag Dec:	5.9			MWD F	129	BHA WT			Acc. Hrs Cir/Drilg	5.10
Pulse Hight	4.2			GPM	400	BELOW JARS			Total K Revs	49.02
"G" Totals	1			PSI	1400				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	ALIBURTO	MM56D	12625399	5x22's	1076													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown			Current Operations			
0:00	0:15	0:15	1076	1165	89	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			DA TANGENT			
0:15	0:20	0:05				10	C/S @ 1,115' MD 0.22° INC 170.03° AZM 76° F						
0:20	0:25	0:05	1165	1180	15	2.B	SLIDE @ 299 MTF, 15 WOB, 400 DIFF						
0:25	0:45	0:20	1180	1260	80	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
0:45	0:50	0:05				10	C/S @ 1,210' MD 1.27° INC 282.26° AZM 76° F						
0:50	0:55	0:05	1260	1275	15	2.B	SLIDE @ 299 MTF, 15 WOB, 400 DIFF						
0:55	1:05	0:10	1275	1353	78	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
1:05	1:10	0:05				10	C/S @ 1,303' MD 3.16° INC 308.63° AZM 76° F						
1:10	1:15	0:05	1353	1365	12	2.B	SLIDE @ 299 MTF, 15 WOB, 400 DIFF						
1:15	1:35	0:20	1365	1448	83	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
1:35	1:40	0:05				10	C/S @ 1,398' MD 4.70° INC 310.47° AZM 76° F			Estimated Daily Charges			
1:40	1:45	0:05	1448	1458	10	2.B	SLIDE @ 299 MTF, 15 WOB, 400 DIFF			Description		Cost	
1:45	1:55	0:10	1458	1542	84	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
1:55	2:00	0:05				10	C/S @ 1,492' MD 6.02° INC 301.60° AZM 76° F						
2:00	2:10	0:10	1542	1637	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
2:10	2:15	0:05				10	C/S @ 1,587' MD 6.50° INC 303.62° AZM 76° F						
2:15	2:30	0:15	1637	1732	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
2:30	2:35	0:05				10	C/S @ 1,682' MD 6.68° INC 298.61° AZM 76° F						
2:35	2:40	0:05	1732	1826	94	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
2:40	2:45	0:05				10	C/S @ 1,776' MD 6.81° INC 298.26° AZM 108° F						
2:45	3:00	0:15	1826	1921	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
3:00	3:05	0:05				10	C/S @ 1,871' MD 7.07° INC 298.96° AZM 108° F						
3:05	3:10	0:05	1921	2015	94	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			Estimated Daily Cost (USD)		\$ -	
3:10	3:15	0:05				10	C/S @ 1,965' MD 7.47° INC 299.05° AZM 108° F			Accumulated Cost (USD)		\$ -	
3:15	3:25	0:10	2015	2110	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			Company Representative (s)			
3:25	3:30	0:05				10	C/S @ 2,060' MD 8.00° INC 297.64° AZM 108° F			Joe Wilkerson		Weston White	
3:30	4:00	0:30	2110	2205	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			Kenneth Swilley		Jimmy Davis	
4:00	4:05	0:05				10	C/S @ 2,155' MD 8.52° INC 296.59° AZM 108° F			RYAN Directional Representative (s)			
4:05	4:15	0:10	2205	2300	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			Lyndon Vestal		Brad Davidson	
4:15	4:20	0:05				10	C/S @ 2,250' MD 8.70° INC 297.91° AZM 108° F						
4:20	4:25	0:05	2300	2394	94	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			RYAN MWD Representative (s)			
4:25	4:30	0:05				10	C/S @ 2,344' MD 8.09° INC 298.43° AZM 108° F			Scott Lane			
4:30	4:40	0:10	2394	2489	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF						
4:40	4:45	0:05				10	C/S @ 2,439' MD 7.91° INC 296.41° AZM 108° F			24 Hour Breakdown			
4:45	4:55	0:10	2489	2584	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			Ftg Rot.	1551	Time Rot.	3.50
4:55	5:00	0:05				10	C/S @ 2,534' MD 7.30° INC 295.18° AZM 115° F			Ftg Orient	52	Time Orient	0.30
5:00	5:10	0:10	2584	2679	95	2.A	ROTATE 28 WOB, 40 RPM, 700 DIFF			Rot. ROP	443.14	Orient ROP	173.33

Report #: 2A

Date: 6-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 2679  
 24:00 Depth: 4100

Footage Today: 1421  
 Current Run Ftg: 3024

Drig Hrs Today: 2.70  
 Run Drig Hrs: 6.50

ROP Today: 526.30  
 Run Avg. ROP: 465.23

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	5 1/2	5 1/2		Sample	IN			MOTOR	Size (in.)	6 3/4
%	97	97		Time	3:00			NMPC	Type	7/8,5.0
Vol (gals)	3.59	3.59	0.00	Wt.	8.8			EM TOOL	Serial No.	RY675083
SPM	84	84		VIS	58			ACUUMP	Tool Deflection	1.5
DRILLING PARAMETERS				PV	18			NMDC	Avg. Diff. Press.	600
ST. WT. ROT 1000's:	100			YP	13			XO	Daily Drill Hrs.	2.70
P/U WT. 1000's:	105			WL	N/A			3 DC'S	Daily Circ. Hrs.	2.20
S/O WT. 1000's:	95			CL	76,000			XO	Daily Total Hrs.	4.90
WOB 1000's:	15			Gels	12/15/18.				Acc. Drill Hrs.	6.50
ROTARY RPM:	40			% Oil	73.5				Acc. Circ. Hrs.	3.50
MOTOR RPM:	175			% Solids	6.3				Depth In	1076
TOTAL Bit RPM	215			% Sand	0.01				Depth Out	
ROT TQ. OFF BTM:	1			PH	N/A				LIH Hrs.	4:50
ROT TQ. ON BTM:	7500			Temp F	113				Acc. LIH Hrs.	11.50
Current Mag Dec:	5.9			MWD F	129	BHA WT			Acc. Hrs Cir/Drilg	10.00
Pulse Hight	4.2			GPM	400	BELOW JARS			Total K Revs	83.85
"G" Totals	1			PSI	1400				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	ALIBURTO	MM56D	12625399	5x22's	1076													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
5:10	5:15	0:05				10	C/S @ 2.629' MD 6.86° INC 294.57° AZM 115° F				DA TANGENT			
5:15	5:20	0:05	2679	2773	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
5:20	5:25	0:05				10	C/S @ 2.723' MD 5.54° INC 296.06° AZM 115° F							
5:25	5:35	0:10	2773	2869	96	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
5:35	5:40	0:05				10	C/S @ 2.819' MD 4.26° INC 297.03° AZM 115° F							
5:40	5:50	0:10	2869	2963	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
5:50	5:55	0:05				10	C/S @ 2.913' MD 3.43° INC 301.51° AZM 115° F							
5:55	6:00	0:05	2963	2968	5	2.B	SLIDE @ 130 MTF, 15 WOB, 400 DIFF							
6:00	6:10	0:10	2968	3058	90	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
6:10	6:15	0:05				10	C/S @ 3.008' MD 2.51° INC 307.31° AZM 115° F							
6:15	6:25	0:10	3058	3068	10	2.B	SLIDE @ 120 MTF, 15 WOB, 400 DIFF				Estimated Daily Charges			
6:25	6:35	0:10	3068	3153	85	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Description		Cost	
6:35	6:45	0:10				10	C/S @ 3.103' MD 1.36° INC 292.81° AZM 115° F							
6:45	6:55	0:10	3153	3163	10	2.B	SLIDE @ 130 MTF, 15 WOB, 400 DIFF							
6:55	7:05	0:10	3163	3247	84	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
7:05	7:15	0:10				10	C/S @ 3.197' MD 0.92° INC 235.59° AZM 115° F							
7:15	7:20	0:05	3247	3257	10	2.B	SLIDE @ 30 MTF, 15 WOB, 400 DIFF							
7:20	7:30	0:10	3257	3342	85	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
7:30	7:40	0:10				10	C/S @ 3.292' MD 0.09° INC 93.91° AZM 115° F							
7:40	7:50	0:10	3342	3437	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
7:50	8:00	0:10				10	C/S @ 3.387' MD 0.48° INC 113.78° AZM 115° F							
8:00	8:05	0:05	3437	3531	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
8:05	8:10	0:05				10	C/S @ 3.481' MD 0.70° INC 97.52° AZM 115° F				Estimated Daily Cost (USD)		\$ -	
8:10	8:15	0:05	3531	3541	10	2.B	SLIDE @ 0 MTF, 15 WOB, 400 DIFF				Accumulated Cost (USD)		\$ -	
8:15	8:20	0:05	3541	3626	85	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Company Representative (s)			
8:20	8:30	0:10				10	C/S @ 3.576' MD 1.32° INC 61.39° AZM 115° F				Joe Wilkerson		Weston White	
8:30	8:35	0:05	3626	3720	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Kenneth Swilley		Jimmy Davis	
8:35	8:45	0:10				10	C/S @ 3.670' MD 1.49° INC 57.61° AZM 115° F				RYAN Directional Representative (s)			
8:45	8:50	0:05	3720	3815	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Lyndon Vestal		Brad Davidson	
8:50	9:00	0:10				10	C/S @ 3.765' MD 1.49° INC 63.24° AZM 115° F							
9:00	9:15	0:15	3815	3910	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				RYAN MWD Representative (s)			
9:15	9:25	0:10				10	C/S @ 3.860' MD 1.54° INC 63.85° AZM 115° F				Scott Lane			
9:25	9:30	0:05	3910	4005	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
9:30	9:40	0:10				10	C/S @ 3.955' MD 1.45° INC 73.79° AZM 115° F				24 Hour Breakdown			
9:40	9:45	0:05	4005	4015	10	2.B	SLIDE @ 270 MTF, 15 WOB, 400 DIFF				Ftg Rot.	1366	Time Rot.	2.00
9:45	9:50	0:05	4015	4100	85	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Ftg Orient	55	Time Orient	0.70
9:50	10:00	0:10				10	C/S @ 4.050' MD 0.22° INC 35.11° AZM 115° F				Rot. ROP	683.00	Orient ROP	78.57

Report #: 2B

Date: 6-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 4100  
 24:00 Depth: 5805

Footage Today: 1705  
 Current Run Ftg: 4729

Drig Hrs Today: 5.40  
 Run Drig Hrs: 11.90

ROP Today: 315.74  
 Run Avg. ROP: 397.39

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	BHA #	1	BHA #	
Liner (in)	5 1/2	5 1/2		Sample	IN			PDC	Run No. 1
%	97	97		Time	3:00			MOTOR	Size (in.) 6 3/4
Vol (gals)	3.59	3.59	0.00	Wt.	8.8			NMPC	Type 7/8,5.0
SPM	84	84		VIS	58			EM TOOL	Serial No. RY675083
DRILLING PARAMETERS				PV	18			ACUUMP	Tool Deflection 1.5
ST. WT. ROT 1000's:	100			YP	13			NMDC	Avg. Diff. Press. 600
P/U WT. 1000's:	105			WL	N/A			XO	Daily Drill Hrs. 5.40
S/O WT. 1000's:	95			CL	76,000			3 DC'S	Daily Circ. Hrs. 2.80
WOB 1000's:	15			Gels	12/15/18.			XO	Daily Total Hrs. 8.20
ROTARY RPM:	40			% Oil	73.5				Acc. Drill Hrs. 11.90
MOTOR RPM:	175			% Solids	6.3				Acc. Circ. Hrs. 6.30
TOTAL Bit RPM	215			% Sand	0.01				Depth In 1076
ROT TQ. OFF BTM:	1			PH	N/A				Depth Out
ROT TQ. ON BTM:	7500			Temp F	113				LIH Hrs. 8:15
Current Mag Dec:	5.9			MWD F	129	BHA WT			Acc. LIH Hrs. 19.75
Pulse Hight	4.2			GPM	400	BELOW JARS			Acc. Hrs Cir/Drilg 18.20
"G" Totals	1			PSI	1400				Total K Revs 153.51
									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	ALIBURTO	MM56D	12625399	5x22's	1076													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
10:00	10:05	0:05	4100	4194	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				DA TANGENT			
10:05	10:15	0:10				10	C/S @ 4,144' MD 0.44° INC 350.55° AZM 115° F							
10:15	10:20	0:05	4194	4289	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
10:20	10:30	0:10				10	C/S @ 4,239' MD 0.44° INC 357.85° AZM 115° F							
10:30	10:40	0:10	4289	4383	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
10:40	10:50	0:10				10	C/S @ 4,333' MD 0.44° INC 1.28° AZM 115° F							
10:50	11:05	0:15	4383	4478	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
11:05	11:15	0:10				10	C/S @ 4,428' MD 0.57° INC 337.37° AZM 115° F							
11:15	11:25	0:10	4478	4572	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
11:25	11:35	0:10				10	C/S @ 4,522' MD 0.40° INC 283.93° AZM 115° F							
11:35	12:00	0:25	4572	4667	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Estimated Daily Charges			
12:00	12:10	0:10				10	C/S @ 4,617' MD 2.46° INC 234.63° AZM 115° F				Description		Cost	
12:10	12:25	0:15	4667	4682	15	2.B	SLIDE @ 60 MTF, 15 WOB, 400 DIFF							
12:25	12:45	0:20	4682	4762	80	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
12:45	12:55	0:10				10	C/S @ 4,712' MD 1.80° INC 233.57° AZM 115° F							
12:55	13:15	0:20	4762	4777	15	2.B	SLIDE @ 60 MTF, 15 WOB, 400 DIFF							
13:15	13:35	0:20	4777	4857	80	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
13:35	13:45	0:10				10	C/S @ 4,807' MD 0.79° INC 263.72° AZM 115° F							
13:45	14:05	0:20	4857	4952	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
14:05	14:15	0:10				10	C/S @ 4,902' MD 0.44° INC 251.94° AZM 115° F							
14:15	14:35	0:20	4952	5046	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
14:35	14:45	0:10				10	C/S @ 4,996' MD 0.35° INC 217.05° AZM 115° F							
14:45	15:05	0:20	5046	5141	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Estimated Daily Cost (USD)		\$ -	
15:05	15:15	0:10				10	C/S @ 5,091' MD 0.44° INC 231.20° AZM 115° F				Accumulated Cost (USD)		\$ -	
15:15	15:35	0:20	5141	5236	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Company Representative (s)			
15:35	15:45	0:10				10	C/S @ 5,186' MD 0.44° INC 198.77° AZM 115° F				Joe Wilkerson		Weston White	
15:45	16:00	0:15	5236	5331	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Kenneth Swilley		Jimmy Davis	
16:00	16:10	0:10				10	C/S @ 5,281' MD 0.48° INC 186.46° AZM 115° F				RYAN Directional Representative (s)			
16:10	16:30	0:20	5331	5426	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Lyndon Vestal		Brad Davidson	
16:30	16:40	0:10				10	C/S @ 5,376' MD 0.53° INC 181.19° AZM 115° F							
16:40	16:50	0:10	5426	5520	94	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				RYAN MWD Representative (s)			
16:50	17:00	0:10				10	C/S @ 5,470' MD 0.53° INC 158.95° AZM 115° F				Scott Lane			
17:00	17:20	0:20	5520	5615	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
17:20	17:30	0:10				10	C/S @ 5,565' MD 0.53° INC 168.97° AZM 115° F				24 Hour Breakdown			
17:30	17:50	0:20	5615	5710	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Ftg Rot.	1675	Time Rot.	4.80
17:50	18:00	0:10				10	C/S @ 5,660' MD 0.53° INC 154.73° AZM 115° F				Ftg Orient	30	Time Orient	0.60
18:00	18:15	0:15	5710	5805	95	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF				Rot. ROP	348.96	Orient ROP	50.00

Report #: 2C

Date: 6-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
Field: Crockett County  
County, State: Crockett, TX  
AFE or PO #: 165332

Customer: EP Energy  
Well Name & No.: University East 4110 NH  
Block or Section: Section 10, Block 41  
Rig Contractor & No.: Nabors 888

00:00 Depth: 5805  
24:00 Depth: 5842

Footage Today: 37  
Current Run Ftg: 4766

Drig Hrs Today: 0.20  
Run Drig Hrs: 12.10

ROP Today: 185.00  
Run Avg. ROP: 393.88

Last Casing Set: \_\_\_\_\_  
Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	BHA #	Current	1	BHA #	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM			PDC			Run No.	1
Liner (in)	5 1/2	5 1/2		Sample	IN			MOTOR			Size (in.)	6 3/4
%	97	97		Time	3:00			NMPC			Type	7/8,5.0
Vol (gals)	3.59	3.59	0.00	Wt.	8.8			EM TOOL			Serial No.	RY675083
SPM	84	84		VIS	58			ACUUMP			Tool Deflection	1.5
DRILLING PARAMETERS				PV	18			NMDC			Avg. Diff. Press.	600
ST. WT. ROT 1000's:	100			YP	13			XO			Daily Drill Hrs.	0.20
P/U WT. 1000's:	105			WL	N/A			3 DC'S			Daily Circ. Hrs.	0.60
S/O WT. 1000's:	95			CL	76,000			XO			Daily Total Hrs:	0.80
WOB 1000's:	15			Gels	12/15/18.						Acc. Drill Hrs.	12.10
ROTARY RPM:	40			% Oil	73.5						Acc. Circ. Hrs.	6.90
MOTOR RPM:	175			% Solids	6.3						Depth In	1076
TOTAL Bit RPM	215			% Sand	0.01						Depth Out	
ROT TQ. OFF BTM:	1			PH	N/A						LIH Hrs.	2:45
ROT TQ. ON BTM:	7500			Temp F	113						Acc. LIH Hrs.	22.50
Current Mag Dec:	5.9			MWD F	129		BHA WT				Acc. Hrs Cir/Drilg	19.00
Pulse Hight	4.2			GPM	400		BELOW JARS				Total K Revs	156.09
"G" Totals	1			PSI	1400						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	ALIBURTO	MM56D	12625399	5x22's	1076	4768	13.1	5844	0	1	CT	G	N/A	1/16	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
18:15	18:20	0:05				10	C/S @ 5,755' MD	0.66° INC	163.61° AZM	115° F	DA TANGENT			
18:20	18:30	0:10	5805	5842	37	2.A	ROTATE 28 WOB, 70 RPM, 700 DIFF							
18:30	19:00	0:30				5.A	CIRC							
19:00	21:00	2:00				6.G	TOOH							
21:00	21:30	0:30				6.G	L/D BHA 1.							

Report #: 2D

Date: 6-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 0 Footage Today: 0 Drlg Hrs Today: 0.00 ROP Today: - Last Casing Set: \_\_\_\_\_  
 24:00 Depth: 0 Current Run Ftg: -5844 Run Drlg Hrs: 0.00 Run Avg. ROP: - Depth: \_\_\_\_\_

						Previous		Current			
PUMP Data Total Gals/Min =			603	MUD DATA		1	BHA #	2	BHA #	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	PDC		INSERT		Run No.	2
Liner (in)	5 1/2	5 1/2		Sample	IN	MOTOR		MOTOR		Size (in.)	6 3/4
%	97	97		Time	3:00	NMPC		NMPC		Type	4/5, 7.0
Vol (gps)	3.59	3.59	0.00	Wt.	8.8	EM TOOL		EM TOOL		Serial No.	RY700022
SPM	84	84		VIS	58	ACUUMP		NMFC		Tool Deflection	2.12
DRILLING PARAMETERS				PV	18	NMDC				Avg. Diff. Press.	
ST. WT. ROT 1000's:		100		YP	13	XO				Daily Drill Hrs.	0.00
P/U WT. 1000's:		105		WL	N/A	3 DC'S				Daily Circ. Hrs.	0.00
S/O WT. 1000's:		95		CL	76,000	XO				Daily Total Hrs:	0.00
WOB 1000's:		15		Gels	12/15/18.					Acc. Drill Hrs.	0.00
ROTARY RPM:		40		% Oil	73.5					Acc. Circ. Hrs.	0.00
MOTOR RPM:		175		% Solids	6.3					Depth In	5844
TOTAL Bit RPM		215		% Sand	0.01					Depth Out	
ROT TQ. OFF BTM:		1		PH	N/A					LIH Hrs.	2:00
ROT TQ. ON BTM:		7500		Temp F	113					Acc. LIH Hrs.	2.00
Current Mag Dec:		5.9		MWD F	129	BHA WT				Acc. Hrs Cir/Drilg	0.00
Pulse Hight		4.2		GPM	400	BELOW JARS				Total K Revs	0.00
"G" Totals		1		PSI	1400					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	ALIBURTO	MM56D	12625399	5x22's	1076	4768	13.1	5844	0	1	CT	G	N/A	1/16	NA	BHA
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844											

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown		Current Operations			
21:30	22:00	0:30				6.A	M/U BHA 2		TIH			
22:00	23:59	1:59				6.A	TIH					

Report #: 3

Date: 7-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 5842  
 24:00 Depth: 6249

Footage Today: 407  
 Current Run Ftg: 405

Drig Hrs Today: 6.00  
 Run Drig Hrs: 6.00

ROP Today: 67.83  
 Run Avg. ROP: 67.50

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min =					603		MUD DATA		Previous		Current		MOTOR DATA		CURRENT	
Pump	National	National	0	Mud Type	OBM	1	BHA #	2	BHA #							
Liner (in)	5 1/2	5 1/2		Sample	IN		MOTOR		MOTOR			Run No.				2
%	97	97		Time	3:00		NMPC		NMPC			Size (in.)				6 3/4
Vol (gps)	3.59	3.59	0.00	Wt.	8.8		EM TOOL		EM TOOL			Type				4/5, 7.0
SPM	84	84		VIS	58		ACUUMP		NMFC			Serial No.				RY700022
DRILLING PARAMETERS				PV	18		NMDC					Tool Deflection				2.12
ST. WT. ROT 1000's:			100	YP	13		XO					Avg. Diff. Press.				300
P/U WT. 1000's:			105	WL	N/A		3 DC'S					Daily Drill Hrs.				6.00
S/O WT. 1000's:			95	CL	76,000		XO					Daily Circ. Hrs.				1.10
WOB 1000's:			15	Gels	12/15/18.							Daily Total Hrs:				7.10
ROTARY RPM:			40	% Oil	73.5							Acc. Drill Hrs.				6.00
MOTOR RPM:			175	% Solids	6.3							Acc. Circ. Hrs.				1.10
TOTAL Bit RPM			215	% Sand	0.01							Depth In				5844
ROT TQ. OFF BTM:			1	PH	N/A							Depth Out				
ROT TQ. ON BTM:			7500	Temp F	113							LIH Hrs.				8:05
Current Mag Dec:			5.9	MWD F	129		BHA WT					Acc. LIH Hrs.				10.08
Pulse Height			4.2	GPM	400		BELOW JARS					Acc. Hrs Cir/Drilg				7.10
"G" Totals			1	PSI	1400							Total K Revs				77.40
												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	ALIBURTO	MM56D	12625399	5x22's	1076	4768	13.1	5844	0	1	CT	G	N/A	1/16	NA	BHA		
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
0:00	1:00	1:00				6.A	TIH				TIH			
1:00	1:35	0:35	5842	5870	28	2.B	SLIDE @ 180 MTF, 15 WOB, 300 DIFF							
1:35	1:35	0:00	5870	5870	0	KOP	C/S @ 5.819° MD 0.53° INC 163.70° AZM 115° F				BUILDING CURVE			
1:35	1:45	0:10	5870	5874	4	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
1:45	2:15	0:30	5874	5902	28	2.B	SLIDE @ 180 MTF, 15 WOB, 300 DIFF							
2:15	2:20	0:05	5902	5906	4	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
2:20	2:30	0:10	5906	5933	27	2.B	SLIDE @ 180 MTF, 15 WOB, 300 DIFF							
2:30	2:35	0:05				10	C/S @ 5.882° MD 7.03° INC 185.06° AZM 115° F							
2:35	2:45	0:10	5933	5941	8	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
2:45	3:00	0:15	5941	5965	24	2.B	SLIDE @ 30 L GTF, 30 WOB, 300 DIFF							
3:00	3:05	0:05				10	C/S @ 5.914° MD 11.60° INC 183.74° AZM 115° F				Estimated Daily Charges			
3:05	3:10	0:05	5965	5973	8	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF				Description		Cost	
3:10	3:30	0:20	5973	5997	24	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF							
3:30	3:35	0:05				10	C/S @ 5.946° MD 15.65° INC 180.05° AZM 115° F							
3:35	3:40	0:05	5997	6005	8	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
3:40	4:05	0:25	6005	6028	23	2.B	SLIDE @ 20 R GTF, 15 WOB, 300 DIFF							
4:05	4:10	0:05				10	C/S @ 5.977° MD 19.47° INC 179.26° AZM 115° F							
4:10	4:15	0:05	6028	6036	8	2.B	ROTATE 28 WOB, 20 RPM, 400 DIFF							
4:15	4:45	0:30	6036	6060	24	2.A	SLIDE @ HS GTF, 15 WOB, 300 DIFF							
4:45	4:50	0:05				10	C/S @ 6.009° MD 23.29° INC 181.71° AZM 115° F							
4:50	4:55	0:05	6060	6069	9	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
4:55	5:10	0:15	6069	6092	23	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF							
5:10	5:15	0:05				10	C/S @ 6.041° MD 27.29° INC 183.47° AZM 115° F				Estimated Daily Cost (USD)		\$ -	
5:15	5:20	0:05	6092	6102	10	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF				Accumulated Cost (USD)		\$ -	
5:20	5:45	0:25	6102	6123	21	2.B	SLIDE @ 10 L GTF, 15 WOB, 300 DIFF				Company Representative (s)			
5:45	5:50	0:05				10	C/S @ 6.072° MD 30.59° INC 185.06° AZM 115° F				Joe Wilkerson		Weston White	
5:50	6:00	0:10	6123	6132	9	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF				Kenneth Swilley		Jimmy Davis	
6:00	6:20	0:20	6132	6155	23	2.B	SLIDE @ 30 L GTF, 30 WOB, 300 DIFF				RYAN Directional Representative (s)			
6:20	6:30	0:10				10	C/S @ 6.104° MD 33.75° INC 185.93° AZM 115° F				Lyndon Vestal		Brad Davidson	
6:30	6:35	0:05	6155	6160	5	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
6:35	6:55	0:20	6160	6186	26	2.B	SLIDE @ 30 L GTF, 30 WOB, 300 DIFF				RYAN MWD Representative (s)			
6:55	7:05	0:10				10	C/S @ 6.135° MD 37.09° INC 183.91° AZM 115° F				Scott Lane			
7:05	7:10	0:05	6186	6194	8	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
7:10	7:30	0:20	6194	6218	24	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF				24 Hour Breakdown			
7:30	7:40	0:10				10	C/S @ 6.167° MD 41.13° INC 181.36° AZM 115° F				Ftg Rot.	105	Time Rot.	1.70
7:40	7:45	0:05	6218	6226	8	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF				Ftg Orient	302	Time Orient	4.30
7:45	8:05	0:20	6226	6249	23	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF				Rot. ROP	61.76	Orient ROP	70.23



Report #: 3A

Date: 7-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 6249  
 24:00 Depth: 6501

Footage Today: 252  
 Current Run Ftg: 657

Drig Hrs Today: 3.20  
 Run Drig Hrs: 9.20

ROP Today: 78.75  
 Run Avg. ROP: 71.41

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	National	National	0	Mud Type	OBM	1	BHA #	2	BHA #	
Liner (in)	5 1/2	5 1/2		Sample	IN					
%	97	97		Time	3:00					
Vol (gals)	3.59	3.59	0.00	Wt.	8.8					
SPM	84	84		VIS	58					
DRILLING PARAMETERS				PV	18					
ST. WT. ROT 1000's:	100			YP	13					
P/U WT. 1000's:	105			WL	N/A					
S/O WT. 1000's:	95			CL	76,000					
WOB 1000's:	15			Gels	12/15/18.					
ROTARY RPM:	40			% Oil	73.5					
MOTOR RPM:	175			% Solids	6.3					
TOTAL Bit RPM	215			% Sand	0.01					
ROT TQ. OFF BTM:	1			PH	N/A					
ROT TQ. ON BTM:	7500			Temp F	113					
Current Mag Dec:	5.9			MWD F	129					
Pulse Hight	4.2			GPM	400					
"G" Totals	1			PSI	1400					

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	ALIBURTO	MM56D	12625399	5x22's	1076	4768	13.1	5844	0	1	CT	G	N/A	1/16	NA	BHA		
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
8:05	8:15	0:10				10	C/S @ 6,198' MD	45.00° INC	181.71° AZM	115° F				
8:15	8:25	0:10	6249	6261	12	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
8:25	8:45	0:20	6261	6281	20	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF				BUILDING CURVE			
8:45	8:55	0:10				10	C/S @ 6,230' MD	48.65° INC	181.54° AZM	115° F				
8:55	9:05	0:10	6281	6291	10	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
9:05	9:20	0:15	6291	6313	22	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF				TARGET LANDING CHANGED TO			
9:20	9:30	0:10				10	C/S @ 6,262' MD	51.46° INC	181.19° AZM	115° F	6325' TVD AS PER EP ENERGY.			
9:30	9:40	0:10	6313	6323	10	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
9:40	9:50	0:10	6323	6344	21	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF							
9:50	10:00	0:10				10	C/S @ 6,293' MD	54.80° INC	181.54° AZM	115° F				
10:00	10:10	0:10	6344	6356	12	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF				Estimated Daily Charges			
10:10	10:20	0:10	6356	6376	20	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF				Description		Cost	
10:20	10:30	0:10				10	C/S @ 6,325' MD	58.27° INC	181.89° AZM	115° F				
10:30	10:40	0:10	6376	6390	14	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
10:40	10:50	0:10	6390	6407	17	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF							
10:50	11:00	0:10				10	C/S @ 6,356' MD	61.52° INC	181.80° AZM	115° F				
11:00	11:15	0:15	6407	6423	16	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
11:15	11:25	0:10	6423	6438	15	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF							
11:25	11:35	0:10				10	C/S @ 6,387' MD	64.29° INC	181.36° AZM	115° F				
11:35	11:50	0:15	6438	6452	14	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF							
11:50	12:00	0:10	6452	6469	17	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF							
12:00	12:10	0:10				10	C/S @ 6,418' MD	66.67° INC	180.84° AZM	115° F				
12:10	12:25	0:15	6469	6483	14	2.A	ROTATE 28 WOB, 20 RPM, 400 DIFF				Estimated Daily Cost (USD)		\$ -	
12:25	12:35	0:10	6483	6501	18	2.B	SLIDE @ HS GTF, 15 WOB, 300 DIFF				Accumulated Cost (USD)		\$ -	
12:35	12:45	0:10				10	C/S @ 6,450' MD	69.21° INC	179.69° AZM	115° F	Company Representative (s)			
12:45	13:30	0:45				5.A	CIRC				Joe Wilkerson		Weston White	
13:30	15:30	2:00				6.G	TOH				Kenneth Swiley		Jimmy Davis	
15:30	16:00	0:30				6.G	L/D BHA 2.				RYAN Directional Representative (s)			
											Lyndon Vestal		Brad Davidson	
											RYAN MWD Representative (s)			
											Scott Lane			
											24 Hour Breakdown			
											Ftg Rot.	102	Time Rot.	1.60
											Ftg Orient	150	Time Orient	1.60
											Rot. ROP	63.75	Orient ROP	93.75



Report #: 3B

Date: 7-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 6501  
 24:00 Depth: 7323

Footage Today: 822  
 Current Run Ftg: 822

Drig Hrs Today: 3.60  
 Run Drig Hrs: 3.60

ROP Today: 228.33  
 Run Avg. ROP: 228.33

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	INSERT		PDC	
%	97	97		Time	3:00	MOTOR		MOTOR	
Vol (gals)	3.59	3.59	0.00	Wt.	8.8	NMPC		NMPC	
SPM	84	84		VIS	58	EM TOOL		EM TOOL	
DRILLING PARAMETERS				PV	18	NMFC		NMDC	
ST. WT. ROT 1000's:	100			YP	13	30 STDS DP		AGITATOR	
P/U WT. 1000's:	105			WL	N/A			SHOCK SUB	
S/O WT. 1000's:	95			CL	76,000				
WOB 1000's:	15			Gels	12/15/18.				
ROTARY RPM:	40			% Oil	73.5				
MOTOR RPM:	175			% Solids	6.3				
TOTAL Bit RPM	215			% Sand	0.01				
ROT TQ. OFF BTM:	1			PH	N/A				
ROT TQ. ON BTM:	7500			Temp F	113				
Current Mag Dec:	5.9			MWD F	129	BHA WT			
Pulse Hight	4.2			GPM	400	BELOW JARS			
"G" Totals	1			PSI	1400				

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	ALIBURTO	T606X	7158045	6x18's	6501													
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
16:00	16:30	0:30				6.G	P/U BHA 3.				DA LATERAL			
16:30	19:30	3:00				6.A	TIH							
19:30	19:40	0:10	6501	6506	5	2.A	ROTATE 30 WOB, 20 RPM, 400 DIFF							
19:40	20:00	0:20	6506	6524	18	2.B	SLIDE @ HS GTF, 45 WOB, 300 DIFF				Current Lateral Target			
20:00	20:05	0:05				10	C/S @ 6,474' MD 71.32° INC 179.34° AZM 115° F				Received on 12/07/2015 @ 2350			
20:05	20:15	0:10	6524	6566	42	2.B	SLIDE @ HS GTF, 45 WOB, 300 DIFF				6305' TVD @ 2500' VS @ 90.49° Dip			
20:15	20:20	0:05				10	C/S @ 6,506' MD 74.00° INC 178.90° AZM 115° F							
20:20	20:35	0:15	6566	6588	22	2.B	SLIDE @ HS GTF, 45 WOB, 300 DIFF							
20:35	20:40	0:05				10	C/S @ 6,538' MD 77.69° INC 178.55° AZM 115° F							
20:40	21:00	0:20	6588	6608	20	2.B	SLIDE @ HS GTF, 45 WOB, 300 DIFF							
21:00	21:05	0:05	6608	6619	11	2.A	ROTATE 30 WOB, 20 RPM, 400 DIFF				Estimated Daily Charges			
21:05	21:10	0:05				10	C/S @ 6,569' MD 82.09° INC 178.64° AZM 115° F				Description		Cost	
21:10	21:15	0:05	6619	6651	32	2.A	ROTATE 30 WOB, 20 RPM, 400 DIFF							
21:15	21:15	0:00	6651	6651	0	EOC	C/S @ 6,601' MD 86.62° INC 179.17° AZM 115° F							
21:15	21:35	0:20	6651	6744	93	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
21:35	21:40	0:05				10	C/S @ 6,694' MD 88.68° INC 178.64° AZM 115° F							
21:40	21:50	0:10	6744	6839	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
21:50	21:55	0:05				10	C/S @ 6,789' MD 89.03° INC 177.67° AZM 115° F							
21:55	22:10	0:15	6839	6934	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
22:10	22:15	0:05				10	C/S @ 6,884' MD 91.58° INC 181.19° AZM 115° F							
22:15	22:25	0:10	6934	6944	10	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF							
22:25	22:35	0:10	6944	7029	85	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
22:35	22:40	0:05				10	C/S @ 6,979' MD 89.87° INC 179.87° AZM 115° F				Estimated Daily Cost (USD)		\$ -	
22:40	22:55	0:15	7029	7124	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Accumulated Cost (USD)		\$ -	
22:55	23:00	0:05				10	C/S @ 7,074' MD 91.45° INC 179.43° AZM 115° F				Company Representative (s)			
23:00	23:05	0:05	7124	7134	10	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				Joe Wilkerson		Weston White	
23:05	23:20	0:15	7134	7218	84	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Kenneth Swilley		Jimmy Davis	
23:20	23:25	0:05				10	C/S @ 7,168' MD 88.55° INC 177.50° AZM 115° F				RYAN Directional Representative (s)			
23:25	23:45	0:20	7218	7313	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Lyndon Vestal		Brad Davidson	
23:45	23:50	0:05				10	C/S @ 7,263' MD 89.08° INC 176.44° AZM 115° F							
23:50	23:59	0:09	7313	7323	10	2.B	SLIDE @ 90 R GTF, 45 WOB, 300 DIFF				RYAN MWD Representative (s)			
											Scott Lane			
											24 Hour Breakdown			
											Ftg Rot.	690	Time Rot.	2.10
											Ftg Orient	132	Time Orient	1.50
											Rot. ROP	328.57	Orient ROP	88.00

Report #: 4

Date: 8-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 7323  
 24:00 Depth: 8743

Footage Today: 1420  
 Current Run Ftg: 2242

Drig Hrs Today: 3.80  
 Run Drig Hrs: 7.40

ROP Today: 373.68  
 Run Avg. ROP: 302.97

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	INSERT		PDC	
%	97	97		Time	3:00	MOTOR		MOTOR	Run No. 3
Vol (gals)	3.59	3.59	0.00	Wt.	8.8	NMPC		NMPC	Size (in.) 6 3/4
SPM	84	84		VIS	58	EM TOOL		EM TOOL	Type 7/8 5.0
DRILLING PARAMETERS				PV	18	NMFC		NMFC	Serial No. RY65071
ST. WT. ROT 1000's:	100			YP	13			30 STDS DP	Tool Deflection 1.75
P/U WT. 1000's:	105			WL	N/A			AGITATOR	Avg. Diff. Press. 600
S/O WT. 1000's:	95			CL	76,000			SHOCK SUB	Daily Drill Hrs. 3.80
WOB 1000's:	30			Gels	12/15/18.				Daily Circ. Hrs. 1.30
ROTARY RPM:	70			% Oil	73.5				Daily Total Hrs. 5.10
MOTOR RPM:	175			% Solids	6.3				Acc. Drill Hrs. 7.40
TOTAL Bit RPM	245			% Sand	0.01				Acc. Circ. Hrs. 2.20
ROT TQ. OFF BTM:	6			PH	N/A				Depth In 6501
ROT TQ. ON BTM:	15			Temp F	113				Depth Out
Current Mag Dec:	5.9			MWD F	129	BHA WT			LIH Hrs. 5:05
Pulse Height	4.2			GPM	400	BELOW JARS			Acc. LIH Hrs. 13.08
"G" Totals	1			PSI	1400				Acc. Hrs Cir/Drilg 9.60
									Total K Revs 108.78
									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	ALIBURTO	T606X	7158045	6x18's	6501													
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations							
0:00	0:05	0:05	7323	7407	84	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				DA LATERAL							
0:05	0:10	0:05				10	C/S @ 7,357' MD 90.48° INC 179.26° AZM 115° F											
0:10	0:15	0:05	7407	7502	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
0:15	0:20	0:05				10	C/S @ 7,452' MD 92.90° INC 180.13° AZM 115° F				Current Lateral Target							
0:20	0:30	0:10	7502	7514	12	2.B	SLIDE @ 160 R GTF, 45 WOB, 300 DIFF				Received on 12/08/2015 @ 330							
0:30	0:40	0:10	7514	7597	83	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				6287' TVD @ 3500' VS @ 90.75° Dip							
0:40	0:45	0:05				10	C/S @ 7,547' MD 90.35° INC 180.57° AZM 115° F											
0:45	1:00	0:15	7597	7691	94	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
1:00	1:05	0:05				10	C/S @ 7,641' MD 90.83° INC 182.24° AZM 115° F											
1:05	1:15	0:10	7691	7786	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
1:15	1:20	0:05				10	C/S @ 7,736' MD 90.83° INC 184.26° AZM 158° F				Estimated Daily Charges							
1:20	1:30	0:10	7786	7796	10	2.B	SLIDE @ 90 L GTF, 45 WOB, 300 DIFF				Description		Cost					
1:30	1:45	0:15	7796	7881	85	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
1:45	1:50	0:05				10	C/S @ 7,831' MD 91.01° INC 183.56° AZM 158° F											
1:50	2:00	0:10	7881	7893	12	2.B	SLIDE @ 120 L GTF, 45 WOB, 300 DIFF											
2:00	2:10	0:10	7893	7976	83	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
2:10	2:15	0:05				10	C/S @ 7,926' MD 90.53° INC 181.89° AZM 158° F											
2:15	2:30	0:15	7976	8070	94	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
2:30	2:35	0:05				10	C/S @ 8,020' MD 90.35° INC 181.63° AZM 165° F											
2:35	2:45	0:10	8070	8165	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
2:45	2:50	0:05				10	C/S @ 8,115' MD 90.61° INC 181.98° AZM 165° F											
2:50	3:00	0:10	8165	8260	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
3:00	3:05	0:05				10	C/S @ 8,210' MD 90.75° INC 182.59° AZM 165° F				Estimated Daily Cost (USD)		\$ -					
3:05	3:15	0:10	8260	8275	15	2.B	SLIDE @ 130 L GTF, 45 WOB, 300 DIFF				Accumulated Cost (USD)		\$ -					
3:15	3:30	0:15	8275	8354	79	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Company Representative (s)							
3:30	3:35	0:05				10	C/S @ 8,304' MD 90.13° INC 181.89° AZM 165° F				Joe Wilkerson		Weston White					
3:35	3:40	0:05	8354	8369	15	2.B	SLIDE @ 90 L GTF, 45 WOB, 300 DIFF				Kenneth Swilley		Jimmy Davis					
3:40	3:50	0:10	8369	8449	80	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				RYAN Directional Representative (s)							
3:50	3:55	0:05				10	C/S @ 8,399' MD 90.00° INC 178.73° AZM 165° F				Lyndon Vestal		Brad Davidson					
3:55	4:05	0:10	8449	8544	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
4:05	4:15	0:10				10	C/S @ 8,494' MD 91.58° INC 181.19° AZM 165° F				RYAN MWD Representative (s)							
4:15	4:25	0:10	8544	8559	15	2.B	SLIDE @ 120 L GTF, 45 WOB, 300 DIFF				Scott Lane							
4:25	4:35	0:10	8559	8638	79	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF											
4:35	4:40	0:05				10	C/S @ 8,588' MD 89.82° INC 177.50° AZM 165° F				24 Hour Breakdown							
4:40	4:55	0:15	8638	8733	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Ftg Rot.		1331		Time Rot.		2.80	
4:55	5:00	0:05				10	C/S @ 8,683' MD 91.80° INC 178.46° AZM 165° F				Ftg Orient		89		Time Orient		1.00	
5:00	5:05	0:05	8733	8743	10	2.B	SLIDE @ 120 L R GTF, 45 WOB, 300 DIFF				Rot. ROP		475.36		Orient ROP		89.00	

Report #: 4A

Date: 8-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 8743  
 24:00 Depth: 10155

Footage Today: 1412  
 Current Run Ftg: 3654

Drig Hrs Today: 3.30  
 Run Drig Hrs: 10.70

ROP Today: 427.88  
 Run Avg. ROP: 341.50

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	INSERT		PDC	
%	97	97		Time	3:00	MOTOR		MOTOR	Run No. 3
Vol (gals)	3.59	3.59	0.00	Wt.	8.8	NMPC		NMPC	Size (in.) 6 3/4
SPM	84	84		VIS	58	EM TOOL		EM TOOL	Type 7/8 5.0
DRILLING PARAMETERS				PV	18	NMFC		NMFC	Serial No. RY65071
ST. WT. ROT 1000's:	165			YP	13			30 STDS DP	Tool Deflection 1.75
P/U WT. 1000's:	205			WL	N/A			AGITATOR	Avg. Diff. Press. 600
S/O WT. 1000's:	120			CL	76,000			SHOCK SUB	Daily Drill Hrs. 3.30
WOB 1000's:	30			Gels	12/15/18.				Daily Circ. Hrs. 2.50
ROTARY RPM:	70			% Oil	73.5				Daily Total Hrs. 5.80
MOTOR RPM:	175			% Solids	6.3				Acc. Drill Hrs. 10.70
TOTAL Bit RPM	245			% Sand	0.01				Acc. Circ. Hrs. 4.70
ROT TQ. OFF BTM:	6			PH	N/A				Depth In 6501
ROT TQ. ON BTM:	15			Temp F	113				Depth Out
Current Mag Dec:	5.9			MWD F	129	BHA WT			LIH Hrs. 6:20
Pulse Hight	4.2			GPM	400	BELOW JARS			Acc. LIH Hrs. 19.42
"G" Totals	1			PSI	1400				Acc. Hrs Cir/Drig 15.40
									Total K Revs 157.29
									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	ALIBURTO	T606X	7158045	6x18's	6501													
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
5:05	5:20	0:15	8743	8828	85	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	DA LATERAL			
5:20	5:30	0:10				10	C/S @ 8.778° MD 91.10° INC 177.41° AZM 165° F				
5:30	6:00	0:30				7	RIG SERVICE				
6:00	6:15	0:15	8828	8923	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	Current Lateral Target			
6:15	6:25	0:10				10	C/S @ 8.873° MD 92.20° INC 177.23° AZM 165° F	Received on 12/08/2015 @ 0949			
6:25	6:35	0:10	8923	8938	15	2.B	SLIDE @ 130 R GTF, 45 WOB, 300 DIFF	6269' TVD @ 5000' VS @ 90.58° Dip			
6:35	6:45	0:10	8938	9017	79	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				
6:45	6:55	0:10				10	C/S @ 8.967° MD 91.63° INC 177.06° AZM 165° F				
6:55	7:05	0:10	9017	9037	20	2.B	SLIDE @ 120 R GTF, 45 WOB, 300 DIFF				
7:05	7:10	0:05	9037	9112	75	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				
7:10	7:20	0:10				10	C/S @ 9.062° MD 90.66° INC 179.96° AZM 165° F	Estimated Daily Charges			
7:20	7:35	0:15	9112	9207	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	Description	Cost		
7:35	7:45	0:10				10	C/S @ 9.157° MD 91.54° INC 177.41° AZM 165° F				
7:45	7:55	0:10	9207	9227	20	2.B	SLIDE @ 120 R GTF, 45 WOB, 300 DIFF				
7:55	8:05	0:10	9227	9302	75	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				
8:05	8:15	0:10				10	C/S @ 9.252° MD 90.22° INC 180.57° AZM 165° F				
8:15	8:25	0:10	9302	9397	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				
8:25	8:35	0:10				10	C/S @ 9.347° MD 90.44° INC 179.52° AZM 165° F				
8:35	8:40	0:05	9397	9492	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				
8:40	8:50	0:10				10	C/S @ 9.442° MD 90.61° INC 178.46° AZM 172° F				
8:50	9:00	0:10	9492	9512	20	2.B	SLIDE @ 90 R GTF, 45 WOB, 300 DIFF				
9:00	9:10	0:10	9512	9586	74	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				
9:10	9:20	0:10				10	C/S @ 9.536° MD 90.88° INC 179.43° AZM 172° F	Estimated Daily Cost (USD)	\$ -		
9:20	9:30	0:10	9586	9681	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	Accumulated Cost (USD)	\$ -		
9:30	9:40	0:10				10	C/S @ 9.631° MD 90.79° INC 178.99° AZM 172° F	Company Representative (s)			
9:40	9:45	0:05	9681	9701	20	2.B	SLIDE @ 120 R GTF, 45 WOB, 300 DIFF	Joe Wilkerson	Weston White		
9:45	9:55	0:10	9701	9776	75	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	Kenneth Swilley	Jimmy Davis		
9:55	10:05	0:10				10	C/S @ 9.726° MD 88.55° INC 180.92° AZM 172° F	RYAN Directional Representative (s)			
10:05	10:15	0:10	9776	9871	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	Lyndon Vestal	Brad Davidson		
10:15	10:25	0:10				10	C/S @ 9.821° MD 89.34° INC 180.57° AZM 172° F				
10:25	10:30	0:05	9871	9965	94	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	RYAN MWD Representative (s)			
10:30	10:40	0:10				10	C/S @ 9.915° MD 90.04° INC 180.31° AZM 172° F	Scott Lane			
10:40	10:45	0:05	9965	10060	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				
10:45	10:55	0:10				10	C/S @ 10.010° MD 91.01° INC 177.67° AZM 172° F	24 Hour Breakdown			
10:55	11:05	0:10	10060	10080	20	2.B	SLIDE @ 100 R GTF, 45 WOB, 300 DIFF	Ftg Rot.	1297	Time Rot.	2.40
11:05	11:15	0:10	10080	10155	75	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF	Ftg Orient	115	Time Orient	0.90
11:15	11:25	0:10				10	C/S @ 10.105° MD 92.02° INC 178.20° AZM 172° F	Rot. ROP	540.42	Orient ROP	127.78

Report #: 4B

Date: 8-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 10155  
 24:00 Depth: 11032

Footage Today: 877  
 Current Run Ftg: 4531

Drig Hrs Today: 4.10  
 Run Drig Hrs: 14.80

ROP Today: 213.90  
 Run Avg. ROP: 306.15

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 589				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN				
%	97	97		Time	3:00				
Vol (gals)	3.59	3.59	0.00	Wt.	9				
SPM	82	82		VIS	47				
DRILLING PARAMETERS				PV	15			30 STDS DP	
ST. WT. ROT 1000's:	165			YP	11			AGITATOR	
P/U WT. 1000's:	205			WL	N/A			SHOCK SUB	
S/O WT. 1000's:	120			CL	69,000				
WOB 1000's:	30			Gels	N/A				
ROTARY RPM:	70			% Oil	73.5				
MOTOR RPM:	175			% Solids	7.1				
TOTAL Bit RPM	245			% Sand	N/A				
ROT TQ. OFF BTM:	6			PH	N/A				
ROT TQ. ON BTM:	15			Temp F	158				
Current Mag Dec:	5.9			MWD F	180				
Pulse Hight	4.2			GPM	600				
"G" Totals	1			PSI	3600				

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	ALIBURTO	T606X	7158045	6x18's	6501													
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
11:25	11:35	0:10	10155	10175	20	2.B	SLIDE @ 110 R GTF, 45 WOB, 300 DIFF				DA LATERAL			
11:35	11:50	0:15	10175	10250	75	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
11:50	12:00	0:10				10	C/S @ 10,200' MD 89.47° INC 179.17° AZM 172° F							
12:00	12:10	0:10	10250	10275	25	2.B	SLIDE @ 90 R GTF, 45 WOB, 300 DIFF				Current Lateral Target			
12:10	12:20	0:10	10275	10344	69	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Received on 12/08/2015 @ 1507			
12:20	12:30	0:10				10	C/S @ 10,294' MD 91.98° INC 183.21° AZM 172° F				6245' TVD @ 6500' VS @ 90.70° Dip			
12:30	12:40	0:10	10344	10439	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
12:40	12:50	0:10				10	C/S @ 10,389' MD 92.29° INC 181.80° AZM 172° F							
12:50	13:00	0:10	10439	10534	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
13:00	13:10	0:10				10	C/S @ 10,484' MD 93.56° INC 180.75° AZM 172° F							
13:10	13:15	0:05	10534	10554	20	2.B	SLIDE @ 135 R GTF, 45 WOB, 300 DIFF				Estimated Daily Charges			
13:15	13:25	0:10	10554	10629	75	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Description		Cost	
13:25	13:35	0:10				10	C/S @ 10,579' MD 90.70° INC 182.86° AZM 180° F							
13:35	13:50	0:15	10629	10724	95	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
13:50	14:00	0:10				10	C/S @ 10,674' MD 91.01° INC 184.62° AZM 180° F							
14:00	14:05	0:05	10724	10736	12	2.B	SLIDE @ 150 L GTF, 45 WOB, 300 DIFF							
14:05	14:30	0:25	10736	10819	83	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
14:30	14:40	0:10				10	C/S @ 10,769' MD 88.55° INC 184.44° AZM 180° F							
14:40	14:50	0:10	10819	10839	20	2.B	SLIDE @ 90 L GTF, 45 WOB, 300 DIFF							
14:50	15:20	0:30	10839	10914	75	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
15:20	15:30	0:10				10	C/S @ 10,864' MD 89.74° INC 181.54° AZM 180° F							
15:30	16:40	1:10	10914	11008	94	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF							
16:40	16:55	0:15				10	C/S @ 10,958' MD 89.74° INC 181.54° AZM 180° F				Estimated Daily Cost (USD)		\$ -	
16:55	17:00	0:05	11008	11027	19	2.A	ROTATE 30 WOB, 70 RPM, 600 DIFF				Accumulated Cost (USD)		\$ -	
17:00	17:05	0:05	11027	11032	5	2.B	SLIDE @ 90 L GTF, 45 WOB, 300 DIFF				Company Representative (s)			
17:05	18:30	1:25				5.A	CIRC				Joe Wilkerson		Weston White	
18:30	22:30	4:00				6.I	POOH TO INSPECT BHA.				Kenneth Swilley		Jimmy Davis	
22:30	23:00	0:30				6.G	L/D BHA 3				RYAN Directional Representative (s)			
											Lyndon Vestal		Brad Davidson	
											RYAN MWD Representative (s)			
											Scott Lane			
											24 Hour Breakdown			
							Ftg Rot.		775		Time Rot.		3.30	
							Ftg Orient		102		Time Orient		0.80	
							Rot. ROP		234.85		Orient ROP		127.50	

Report #: 4C

Date: 8-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 0 Footage Today: 0 Drlg Hrs Today: 0.00 ROP Today: - Last Casing Set: \_\_\_\_\_  
 24:00 Depth: 0 Current Run Ftg: -11032 Run Drlg Hrs: 0.00 Run Avg. ROP: - Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	3	BHA #	4	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	MOTOR	MOTOR	Run No.	4
%	97	97		Time	3:00	NMPC	NMPC	Size (in.)	6 3/4
Vol (gals)	3.59	3.59	0.00	Wt.	9	EM TOOL	EM TOOL	Type	7/8 5.0
SPM	84	84		VIS	47	NMDC	NMDC	Serial No.	RY65071
DRILLING PARAMETERS				PV	15	30 STDS DP	30 STDS DP	Tool Deflection	1.83
ST. WT. ROT 1000's:	165			YP	11	AGITATOR	AGITATOR	Avg. Diff. Press.	600
P/U WT. 1000's:	205			WL	N/A	SHOCK SUB	SHOCK SUB	Daily Drill Hrs.	0.00
S/O WT. 1000's:	120			CL	69,000			Daily Circ. Hrs.	0.00
WOB 1000's:	30			Gels	N/A			Daily Total Hrs.	0.00
ROTARY RPM:	70			% Oil	73.5			Acc. Drill Hrs.	0.00
MOTOR RPM:	175			% Solids	7.1			Acc. Circ. Hrs.	0.00
TOTAL Bit RPM	245			% Sand	N/A			Depth In	11032
ROT TQ. OFF BTM:	6			PH	N/A			Depth Out	
ROT TQ. ON BTM:	15			Temp F	158			LIH Hrs.	1:00
Current Mag Dec:	5.9			MWD F	180	BHA WT		Acc. LIH Hrs.	1.00
Pulse Hight	4.2			GPM	600	BELOW JARS		Acc. Hrs Cir/Drilg	0.00
"G" Totals	1			PSI	3600			Total K Revs	0.00
								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 RR	8 3/4	ALIBURTO	T606X	7158045	6x18's	6501													
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown		Current Operations					
23:00	23:30	0:30				6.A	M/U BHA 4		DA LATERAL					
23:30	23:59	0:29				6.A	TIH							
									Current Lateral Target					
									Received on 12/08/2015 @ 1507					
									6245' TVD @ 6500' VS @ 90.70° Dip					
									Estimated Daily Charges					
									Description		Cost			
									Estimated Daily Cost (USD)		\$ -			
									Accumulated Cost (USD)		\$ -			
									Company Representative (s)					
									Joe Wilkerson		Weston White			
									Kenneth Swilley		Jimmy Davis			
									RYAN Directional Representative (s)					
									Lyndon Vestal		Brad Davidson			
									RYAN MWD Representative (s)					
									Scott Lane					
									24 Hour Breakdown					
									Ftg Rot.		0	Time Rot.		0.00
									Ftg Orient		0	Time Orient		0.00
									Rot ROP		-	Orient ROP		-

Report #: 5

Date: 9-Dec-15


**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

Ryan Job # 9359

**DAILY DRILLING REPORT**

Oil Company: **EP Energy**  
 Field: **Crockett County**  
 County, State: **Crockett, TX**  
 AFE or PO #: **165332**

Customer: **EP Energy**  
 Well Name & No.: **University East 4110 NH**  
 Block or Section: **Section 10, Block 41**  
 Rig Contractor & No.: **Nabors 888**

00:00 Depth: **11032**  
 24:00 Depth: **12332**

Footage Today: **1300**  
 Current Run Ftg: **1300**

Drig Hrs Today: **4.80**  
 Run Drig Hrs: **4.80**

ROP Today: **270.83**  
 Run Avg. ROP: **270.83**

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	3	BHA #	4	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	PDC	PDC	Run No.	4
%	97	97		Time	3:00	MOTOR	MOTOR	Size (in.)	6 3/4
Vol (gals)	3.59	3.59	0.00	Wt.	9	NMPC	NMPC	Type	7/8 5.0
SPM	84	84		VIS	47	EM TOOL	EM TOOL	Serial No.	RY65071
DRILLING PARAMETERS				PV	15	NMDC	NMDC	Tool Deflection	1.83
ST. WT. ROT 1000's:	165			YP	11	30 STDS DP	30 STDS DP	Avg. Diff. Press.	600
P/U WT. 1000's:	205			WL	N/A	AGITATOR	AGITATOR	Daily Drill Hrs.	4.80
S/O WT. 1000's:	120			CL	69,000	SHOCK SUB	SHOCK SUB	Daily Circ. Hrs.	1.90
WOB 1000's:	30			Gels	N/A			Daily Total Hrs.	6.70
ROTARY RPM:	70			% Oil	73.5			Acc. Drill Hrs.	4.80
MOTOR RPM:	175			% Solids	7.1			Acc. Circ. Hrs.	1.90
TOTAL Bit RPM	245			% Sand	N/A			Depth In	11032
ROT TQ. OFF BTM:	6			PH	N/A			Depth Out	
ROT TQ. ON BTM:	15			Temp F	158			LIH Hrs.	
Current Mag Dec:	5.9			MWD F	180	BHA WT		Acc. LIH Hrs.	1.00
Pulse Hight	4.2			GPM	600	BELOW JARS		Acc. Hrs Cir/Drilg	6.70
"G" Totals	1			PSI	3600			Total K Revs	70.56
								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 RR	8 3/4	ALIBURTO	T606X	7158045	6x18's	6501													
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations							
0:00	3:30	3:30				6.A	TIH				DA LATERAL							
3:30	3:50	0:20	11032	11103	71	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
3:50	3:55	0:05				10	C/S @ 11,053' MD 91.49° INC 182.77° AZM 165° F											
3:55	4:05	0:10	11103	11111	8	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				Current Lateral Target							
4:05	4:20	0:15	11111	11197	86	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Received on 12/09/2015 @ 0753							
4:20	4:25	0:05				10	C/S @ 11,147' MD 90.44° INC 180.13° AZM 165° F				6234' TVD @ 7000' VS @ 90.70° Dip							
4:25	4:35	0:10	11197	11291	94	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
4:35	4:40	0:05				10	C/S @ 11,241' MD 92.46° INC 180.40° AZM 165° F											
4:40	4:55	0:15	11291	11303	12	2.B	SLIDE @ 160 L GTF, 45 WOB, 300 DIFF											
4:55	5:15	0:20	11303	11386	83	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
5:15	5:20	0:05				10	C/S @ 11,336' MD 91.93° INC 179.08° AZM 165° F				Estimated Daily Charges							
5:20	5:30	0:10	11386	11398	12	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				Description		Cost					
5:30	5:45	0:15	11398	11480	82	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
5:45	5:50	0:05				10	C/S @ 11,430' MD 90.53° INC 177.94° AZM 165° F											
5:50	6:00	0:10	11480	11575	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
6:00	6:10	0:10				10	C/S @ 11,525' MD 91.58° INC 177.32° AZM 165° F											
6:10	6:25	0:15	11575	11590	15	2.B	SLIDE @ 120 R GTF, 45 WOB, 300 DIFF											
6:25	6:35	0:10	11590	11669	79	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
6:35	6:45	0:10				10	C/S @ 11,619' MD 91.49° INC 177.76° AZM 165° F											
6:45	7:05	0:20	11669	11689	20	2.B	SLIDE @ 120 R GTF, 45 WOB, 300 DIFF											
7:05	7:20	0:15	11689	11764	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
7:20	7:30	0:10				10	C/S @ 11,714' MD 89.82° INC 178.11° AZM 165° F											
7:30	7:40	0:10	11764	11859	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Estimated Daily Cost (USD)		\$ -					
7:40	7:50	0:10				10	C/S @ 11,809' MD 91.98° INC 178.29° AZM 165° F				Accumulated Cost (USD)		\$ -					
7:50	8:00	0:10	11859	11879	20	2.B	SLIDE @ 120 R GTF, 45 WOB, 300 DIFF				Company Representative (s)							
8:00	8:15	0:15	11879	11953	74	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Joe Wilkerson		Weston White					
8:15	8:25	0:10				10	C/S @ 11,903' MD 90.40° INC 180.22° AZM 180° F				Kenneth Swilley		Jimmy Davis					
8:25	8:30	0:05	11953	12048	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				RYAN Directional Representative (s)							
8:30	8:40	0:10				10	C/S @ 11,998' MD 91.23° INC 180.66° AZM 180° F				Lyndon Vestal		Brad Davidson					
8:40	8:45	0:05	12048	12060	12	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
8:45	9:05	0:20	12060	12143	83	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				RYAN MWD Representative (s)							
9:05	9:15	0:10				10	C/S @ 12,093' MD 91.01° INC 180.49° AZM 180° F				Scott Lane							
9:15	9:25	0:10	12143	12155	12	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
9:25	9:40	0:15	12155	12237	82	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				24 Hour Breakdown							
9:40	9:50	0:10				10	C/S @ 12,187' MD 89.56° INC 180.13° AZM 180° F				Ftg Rot.		1189		Time Rot.		3.20	
9:50	10:00	0:10	12237	12332	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Ftg Orient		111		Time Orient		1.60	
10:00	10:10	0:10				10	C/S @ 12,282' MD 92.07° INC 182.77° AZM 180° F				Rot. ROP		371.56		Orient ROP		69.38	



Report #: 5A

Date: 9-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
Field: Crockett County  
County, State: Crockett, TX  
AFE or PO #: 165332

Customer: EP Energy  
Well Name & No.: University East 4110 NH  
Block or Section: Section 10, Block 41  
Rig Contractor & No.: Nabors 888

00:00 Depth: 12332  
24:00 Depth: 13657

Footage Today: 1325  
Current Run Ftg: 2625

Drig Hrs Today: 5.30  
Run Drig Hrs: 10.10

ROP Today: 250.00  
Run Avg. ROP: 259.90

Last Casing Set: \_\_\_\_\_  
Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	3	BHA #	4	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	MOTOR	MOTOR	Run No.	4
%	97	97		Time	3:00	NMPC	NMPC	Size (in.)	6 3/4
Vol (gals)	3.59	3.59	0.00	Wt.	9	EM TOOL	EM TOOL	Type	7/8 5.0
SPM	84	84		VIS	47	NMDC	NMDC	Serial No.	RY65071
DRILLING PARAMETERS				PV	15	30 STDS DP	30 STDS DP	Tool Deflection	1.83
ST. WT. ROT 1000's:	165			YP	11	AGITATOR	AGITATOR	Avg. Diff. Press.	600
P/U WT. 1000's:	205			WL	N/A	SHOCK SUB	SHOCK SUB	Daily Drill Hrs.	5.30
S/O WT. 1000's:	120			CL	69,000			Daily Circ. Hrs.	2.30
WOB 1000's:	30			Gels	N/A			Daily Total Hrs.	7.60
ROTARY RPM:	70			% Oil	73.5			Acc. Drill Hrs.	10.10
MOTOR RPM:	175			% Solids	7.1			Acc. Circ. Hrs.	4.20
TOTAL Bit RPM	245			% Sand	N/A			Depth In	11032
ROT TQ. OFF BTM:	6			PH	N/A			Depth Out	
ROT TQ. ON BTM:	15			Temp F	158			LIH Hrs.	0:00
Current Mag Dec:	5.9			MWD F	180	BHA WT		Acc. LIH Hrs.	1.00
Pulse Height	4.2			GPM	600	BELOW JARS		Acc. Hrs Cir/Drilg	14.30
"G" Totals	1			PSI	3600			Total K Revs	148.47
								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 RR	8 3/4	ALIBURTO	T606X	7158045	6x18's	6501													
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA		

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations							
10:10	10:20	0:10	12332	12342	10	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				DA LATERAL							
10:20	10:45	0:25	12342	12427	85	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
10:45	10:55	0:10				10	C/S @ 12,377' MD 91.06° INC 179.87° AZM 180° F											
10:55	11:10	0:15	12427	12521	94	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Current Lateral Target							
11:10	11:20	0:10				10	C/S @ 12,471' MD 93.08° INC 180.31° AZM 180° F				Received on 12/09/2015 @ 1529							
11:20	11:30	0:10	12521	12536	15	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				6245' TVD @ 8000' VS @ 89.20° Dip							
11:30	11:50	0:20	12536	12616	80	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
11:50	12:00	0:10				10	C/S @ 12,566' MD 92.64° INC 179.78° AZM 180° F											
12:00	12:10	0:10	12616	12636	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
12:10	12:20	0:10	12636	12710	74	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
12:20	12:30	0:10				10	C/S @ 12,660' MD 91.49° INC 179.61° AZM 180° F				Estimated Daily Charges							
12:30	12:45	0:15	12710	12730	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				Description		Cost					
12:45	13:00	0:15	12730	12805	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
13:00	13:10	0:10				10	C/S @ 12,755' MD 87.85° INC 176.97° AZM 180° F											
13:10	13:25	0:15	12805	12900	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
13:25	13:35	0:10				10	C/S @ 12,850' MD 89.30° INC 176.35° AZM 187° F											
13:35	13:45	0:10	12900	12920	20	2.B	SLIDE @ 90 R GTF, 45 WOB, 300 DIFF											
13:45	13:55	0:10	12920	12994	74	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
13:55	14:05	0:10				10	C/S @ 12,944' MD 91.54° INC 179.17° AZM 187° F											
14:05	14:20	0:15	12994	13007	13	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
14:20	14:35	0:15	13007	13088	81	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
14:35	14:45	0:10				10	C/S @ 13,038' MD 91.58° INC 180.57° AZM 187° F											
14:45	14:55	0:10	13088	13108	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				Estimated Daily Cost (USD)		\$ -					
14:55	15:10	0:15	13108	13183	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Accumulated Cost (USD)		\$ -					
15:10	15:20	0:10				10	C/S @ 13,133' MD 90.66° INC 180.75° AZM 187° F				Company Representative (s)							
15:20	15:35	0:15	13183	13208	25	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				Joe Wilkerson		Weston White					
15:35	15:50	0:15	13208	13278	70	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Kenneth Swiley		Jimmy Davis					
15:50	16:00	0:10				10	C/S @ 13,228' MD 87.89° INC 178.90° AZM 187° F				RYAN Directional Representative (s)							
16:00	16:10	0:10	13278	13373	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Lyndon Vestal		Brad Davidson					
16:10	16:20	0:10				10	C/S @ 13,323' MD 90.66° INC 179.17° AZM 187° F											
16:20	16:35	0:15	13373	13393	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				RYAN MWD Representative (s)							
16:35	16:50	0:15	13393	13468	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Scott Lane							
16:50	17:00	0:10				10	C/S @ 13,418' MD 88.86° INC 179.78° AZM 187° F											
17:00	17:15	0:15	13468	13562	94	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				24 Hour Breakdown							
17:15	17:25	0:10				10	C/S @ 13,512' MD 89.78° INC 179.26° AZM 187° F				Ftg Rot.		1162		Time Rot.		3.40	
17:25	17:35	0:10	13562	13657	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Ftg Orient		163		Time Orient		1.80	
17:35	17:45	0:10				10	C/S @ 13,607' MD 89.87° INC 180.66° AZM 187° F				Rot. ROP		341.76		Orient ROP		90.56	



Report #: 5B

Date: 9-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 13657  
 24:00 Depth: 14605

Footage Today: 948  
 Current Run Ftg: 3573

Drig Hrs Today: 4.70  
 Run Drig Hrs: 14.80

ROP Today: 201.70  
 Run Avg. ROP: 241.42

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	3	BHA #	4	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	MOTOR	MOTOR	Run No.	4
%	97	97		Time	3:00	NMPC	NMPC	Size (in.)	6 3/4
Vol (gals)	3.59	3.59	0.00	Wt.	9	EM TOOL	EM TOOL	Type	7/8 5.0
SPM	84	84		VIS	47	NMDC	NMDC	Serial No.	RY65071
DRILLING PARAMETERS				PV	15	30 STDS DP	30 STDS DP	Tool Deflection	1.83
ST. WT. ROT 1000's:	165			YP	11	AGITATOR	AGITATOR	Avg. Diff. Press.	600
P/U WT. 1000's:	205			WL	N/A	SHOCK SUB	SHOCK SUB	Daily Drill Hrs.	4.70
S/O WT. 1000's:	120			CL	69,000			Daily Circ. Hrs.	1.50
WOB 1000's:	30			Gels	N/A			Daily Total Hrs.	6.20
ROTARY RPM:	70			% Oil	73.5			Acc. Drill Hrs.	14.80
MOTOR RPM:	175			% Solids	7.1			Acc. Circ. Hrs.	5.70
TOTAL Bit RPM	245			% Sand	N/A			Depth In	11032
ROT TQ. OFF BTM:	6			PH	N/A			Depth Out	
ROT TQ. ON BTM:	15			Temp F	158			LIH Hrs.	23:59
Current Mag Dec:	5.9			MWD F	180	BHA WT		Acc. LIH Hrs.	24.98
Pulse Hight	4.2			GPM	600	BELOW JARS		Acc. Hrs Cir/Drilg	20.50
"G" Totals	1			PSI	3600			Total K Revs	217.56
								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"
3 RR	8 3/4	ALIBURTO	T606X	7158045	6x18's	6501									
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16" NA BHA

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
17:45	18:00	0:15	13657	13752	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				DA LATERAL			
18:00	18:10	0:10				10	C/S @ 13,702' MD 90.13° INC 182.77° AZM 187° F							
18:10	18:25	0:15	13752	13770	18	2.B	SLIDE @ 160L GTF, 45 WOB, 300 DIFF							
18:25	18:40	0:15	13770	13847	77	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Current Lateral Target			
18:40	18:50	0:10				10	C/S @ 13,797' MD 89.39° INC 182.55° AZM 187° F				Received on 12/09/2015 @ 1930			
18:50	19:10	0:20	13847	13867	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				6243' TVD @ 9000' VS @ 89.55° Dip			
19:10	19:25	0:15	13867	13942	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
19:25	19:35	0:10				10	C/S @ 13.897' MD 90.22° INC 184.0° AZM 187° F							
19:35	19:50	0:15	13942	13967	25	2.B	SLIDE @ 140L GTF, 45 WOB, 300 DIFF							
19:50	20:05	0:15	13967	14037	70	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
20:05	20:15	0:10				10	C/S @ 13.987' MD 89.65° INC 182.24° AZM 187° F				Estimated Daily Charges			
20:15	20:30	0:15	14037	14132	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Description		Cost	
20:30	20:40	0:10				10	C/S @ 14,082' MD 90.13° INC 181.45° AZM 187° F							
20:40	20:55	0:15	14132	14152	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF							
20:55	21:20	0:25	14152	14226	74	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
21:20	21:30	0:10				10	C/S @ 14,176' MD 88.73° INC 182.51° AZM 187° F							
21:30	21:45	0:15	14226	14321	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
21:45	21:55	0:10				10	C/S @ 14,271' MD 89.30° INC 180.49° AZM 187° F							
21:55	22:10	0:15	14321	14416	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
22:10	22:20	0:10				10	C/S @ 14,366' MD 90.26° INC 178.20° AZM 187° F							
22:20	22:30	0:10	14416	14436	20	2.B	SLIDE @ 150R GTF, 45 WOB, 300 DIFF							
22:30	22:50	0:20	14436	14511	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
22:50	23:00	0:10				10	C/S @ 14,461' MD 89.25° INC 177.50° AZM 187° F				Estimated Daily Cost (USD)		\$ -	
23:00	23:40	0:40	14511	14536	25	2.B	SLIDE @ 130R GTF, 45 WOB, 300 DIFF				Accumulated Cost (USD)		\$ -	
23:40	23:59	0:19	14536	14605	69	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Company Representative (s)			
											Joe Wilkerson		Weston White	
											Kenneth Swilley		Jimmy Davis	
											RYAN Directional Representative (s)			
											Lyndon Vestal		Brad Davidson	
											Shon Calcote			
											RYAN MWD Representative (s)			
											Scott Lane			
											24 Hour Breakdown			
							Ftg Rot.		820		Time Rot.		2.80	
							Ftg Orient		128		Time Orient		1.90	
							Rot. ROP		292.86		Orient ROP		67.37	

Date: 10-Dec-15



A NABORS COMPANY

Ryan Job # 9359

Oil Company:	EP Energy
Field:	Crockett County
County, State:	Crockett, TX
AFE or PO #:	165332

Customer:	EP Energy
Well Name & No.:	University East 4110 NH
Block or Section:	Section 10, Block 41
Rig Contractor & No.:	Nabors 888

00:00 Depth:	14605
24:00 Depth:	15932

Footage Today:	1327
Current Run Ftg:	4900

Drlg Hrs Today:	10.50
Run Drlg Hrs:	25.30

ROP Today:	126.38
Un Adj. Avg. ROP:	193.68

Last Casing Set: \_\_\_\_\_  
Depth: \_\_\_\_\_

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations							
0:00	0:10	0:10				10	C/S @ 14,555' MD	89.08° INC	177.67° AZM	187° F	DA LATERAL							
0:10	0:40	0:30	14605	14620	15	2.B	SLIDE @ 110R GTF, 45 WOB, 300 DIFF											
0:40	1:10	0:30	14620	14700	80	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
1:10	1:20	0:10				10	C/S @ 14,650' MD	89.25° INC	179.61° AZM	187° F	Current Lateral Target							
1:20	1:30	0:10	14700	14795	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Received on 12/09/2015 @ 2341							
1:30	1:40	0:10				10	C/S @ 14,745' MD	91.58° INC	181.36° AZM	187° F	6250' TVD @ 10500' VS @ 89.63° Dip							
1:40	2:10	0:30	14795	14825	30	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
2:10	2:25	0:15	14825	14890	65	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
2:25	2:35	0:10				10	C/S @ 14,840' MD	90.04° INC	180.57° AZM	187° F								
2:35	2:45	0:10	14890	14915	25	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
2:45	2:55	0:10	14915	14985	70	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Estimated Daily Charges							
2:55	3:05	0:10				10	C/S @ 14,840' MD	88.15° INC	179.69° AZM	187° F	Description		Cost					
3:05	3:30	0:25	14985	15079	94	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
3:30	3:40	0:10				10	C/S @ 15,029' MD	90.00° INC	180.31° AZM	187° F								
3:40	4:40	1:00	15079	15109	30	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
4:40	5:10	0:30	15109	15174	65	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
5:10	5:20	0:10				10	C/S @ 15,124' MD	88.81° INC	181.54° AZM	187° F								
5:20	5:50	0:30	15174	15269	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
5:50	6:00	0:10				10	C/S @ 15,219' MD	91.45° INC	183.82° AZM	187° F								
6:00	6:30	0:30	15269	15299	30	2.B	SLIDE @ 150 L GTF, 45 WOB, 300 DIFF											
6:30	6:45	0:15	15299	15364	65	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF											
6:45	6:55	0:10				10	C/S @ 15,314' MD	89.39° INC	180.31° AZM	187° F								
6:55	7:15	0:20	15364	15458	94	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Estimated Daily Cost (USD)		\$ -					
7:15	7:25	0:10				10	C/S @ 15,408' MD	90.61° INC	178.46° AZM	187° F	Accumulated Cost (USD)		\$ -					
7:25	8:45	1:20	15458	15488	30	2.B	SLIDE @ 150 R GTF, 45 WOB, 300 DIFF				Company Representative (s)							
8:45	9:10	0:25	15488	15553	65	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Joe Wilkerson		Weston White					
9:10	9:20	0:10				10	C/S @ 15,503' MD	89.12° INC	178.38° AZM	187° F	Kenneth Swilley		Jimmy Davis					
9:20	9:55	0:35	15553	15573	20	2.B	SLIDE @ 110 R GTF, 45 WOB, 300 DIFF				RYAN Directional Representative (s)							
9:55	10:10	0:15	15573	15647	74	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Lyndon Vestal		Shon Calcote					
10:10	10:20	0:10				10	C/S @ 15,597' MD	88.29° INC	179.69° AZM	187° F								
10:20	10:40	0:20	15647	15742	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				RYAN MWD Representative (s)							
10:40	10:50	0:10				10	C/S @ 15,692' MD	90.92° INC	180.57° AZM	187° F	Scott Lane							
10:50	11:35	0:45	15742	15772	30	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF											
11:35	11:55	0:20	15772	15837	65	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				24 Hour Breakdown							
11:55	12:05	0:10				10	C/S @ 15,787' MD	89.25° INC	182.74° AZM	187° F	Ftg Rot.		1097		Time Rot.		4.60	
12:05	12:40	0:35	15837	15857	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF				Ftg Orient		230		Time Orient		5.90	
12:40	12:50	0:10	15857	15932	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Rot. ROP		238.48		Orient ROP		38.98	

Report #: 6A

Date: 10-Dec-15



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 9359

## DAILY DRILLING REPORT

Oil Company: EP Energy  
 Field: Crockett County  
 County, State: Crockett, TX  
 AFE or PO #: 165332

Customer: EP Energy  
 Well Name & No.: University East 4110 NH  
 Block or Section: Section 10, Block 41  
 Rig Contractor & No.: Nabors 888

00:00 Depth: 15932  
 24:00 Depth: 16690

Footage Today: 758  
 Current Run Ftg: 5658

Drig Hrs Today: 4.30  
 Run Drig Hrs: 29.60

ROP Today: 176.28  
 Run Avg. ROP: 191.15

Last Casing Set: \_\_\_\_\_  
 Depth: \_\_\_\_\_

PUMP Data Total Gals/Min = 603				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	National	National	0	Mud Type	OBM	3	BHA #	4	BHA #
Liner (in)	5 1/2	5 1/2		Sample	IN	MOTOR	MOTOR	Run No.	4
%	97	97		Time	3:00	NMPC	NMPC	Size (in.)	6 3/4
Vol (gals)	3.59	3.59	0.00	Wt.	9	EM TOOL	EM TOOL	Type	7/8 5.0
SPM	84	84		VIS	47	NMDC	NMDC	Serial No.	RY65071
DRILLING PARAMETERS				PV	15	30 STDS DP	30 STDS DP	Tool Deflection	1.83
ST. WT. ROT 1000's:	165			YP	11	AGITATOR	AGITATOR	Avg. Diff. Press.	600
P/U WT. 1000's:	205			WL	N/A	SHOCK SUB	SHOCK SUB	Daily Drill Hrs.	4.30
S/O WT. 1000's:	120			CL	69,000			Daily Circ. Hrs.	6.40
WOB 1000's:	30			Gels	N/A			Daily Total Hrs.	10.70
ROTARY RPM:	70			% Oil	73.5			Acc. Drill Hrs.	29.60
MOTOR RPM:	175			% Solids	7.1			Acc. Circ. Hrs.	14.40
TOTAL Bit RPM	245			% Sand	N/A			Depth In	11032
ROT TQ. OFF BTM:	6			PH	N/A			Depth Out	
ROT TQ. ON BTM:	15			Temp F	158			LIH Hrs.	23:59
Current Mag Dec:	5.9			MWD F	180	BHA WT		Acc. LIH Hrs.	48.97
Pulse Hight	4.2			GPM	600	BELOW JARS		Acc. Hrs Cir/Drilg	44.00
"G" Totals	1			PSI	3600			Total K Revs	435.12
								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 RR	8 3/4	ALIBURTO	T606X	7158045	6x18's	6501											
2	8 3/4	HUGHES	VG-20M	5257788	3x18's	5844	657	9.1	6501	1	1	WT	A	E	G/16"	NA	BHA

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
12:50	13:00	0:10				10	C/S @ 15,882' MD	87.58° INC	180.40° AZM	187° F	DA LATERAL			
13:00	13:30	0:30				7	RIG SERVICE							
13:30	13:40	0:10	15932	16027	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
13:40	13:50	0:10				10	C/S @ 15,977' MD	88.73° INC	180.13° AZM	187° F	Current Lateral Target			
13:50	14:10	0:20	16027	16122	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Received on 12/09/2015 @ 2341			
14:10	14:20	0:10				10	C/S @ 16,072' MD	90.88° INC	181.71° AZM	187° F	6250' TVD @ 10500' VS @ 89.63° Dip			
14:20	15:10	0:50	16122	16152	30	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF							
15:10	15:25	0:15	16152	16216	64	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
15:25	15:35	0:10				10	C/S @ 16,166' MD	88.29° INC	180.66° AZM	187° F				
15:35	16:25	0:50	16216	16311	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
16:25	16:35	0:10				10	C/S @ 16,261' MD	89.25° INC	182.74° AZM	187° F	Estimated Daily Charges			
16:35	16:55	0:20	16311	16406	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF				Description		Cost	
16:55	17:05	0:10				10	C/S @ 16,356' MD	90.57° INC	178.99° AZM	187° F				
17:05	17:40	0:35	16406	16426	20	2.B	SLIDE @ 180 GTF, 45 WOB, 300 DIFF							
17:40	18:00	0:20	16426	16501	75	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
18:00	18:10	0:10				10	C/S @ 16,451' MD	89.25° INC	175.83° AZM	187° F				
18:10	18:25	0:15	16501	16595	94	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
18:25	18:35	0:10				10	C/S @ 16,545' MD	91.45° INC	177.67° AZM	187° F				
18:35	18:55	0:20	16595	16690	95	2.A	ROTATE 30 WOB, 60 RPM, 600 DIFF							
18:55	19:05	0:10				10	C/S @ 16,640' MD	92.68° INC	176.00° AZM	187° F				
19:05	23:59	4:54				5.A	Circ. Bottoms Up							
											Estimated Daily Cost (USD)		\$ -	
											Accumulated Cost (USD)		\$ -	
											Company Representative (s)			
											Joe Wilkerson		Weston White	
											Kenneth Swilley		Jimmy Davis	
											RYAN Directional Representative (s)			
											Lyndon Vestal		Shon Calcote	
											RYAN MWD Representative (s)			
											Scott Lane			
											24 Hour Breakdown			
							Ftg Rot.	708	Time Rot.	2.80				
							Ftg Orient	50	Time Orient	1.40				
							Rot. ROP	252.86	Orient ROP	35.71				

Date: 11-Dec-15



A NABORS COMPANY

Ryan Job # 9359

[illegible]



## BOTTOM HOLE ASSEMBLY

[illegible]



## 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 #:	9359	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett, TX	Person Notified:	
Lease:	Section 10, Block 41		
Well Name & Number:	University East 4110 NH		
Rig Name & Number:	Nabors 888	Incident Comments:	
Directional Driller ('s):	Lyndon Vestal		
	Brad Davidson		
Motor Information:			
Motor Serial #:	RY675083		
Motor Size (OD):	6 3/4		
Motor Company:	Ryan		
Motor Stabilizer Size:	None		
Degree Bent Housing:	1.5		
Rotor / Stator Conf.:	7/8 5.0		
Depth In:	1076		
Depth Out:	5844		
Footage:	4768		
Drilg Hours:	13.1		
Circulating Hours:	6.9		
Total Hours:	20		
Hours Below Rotary Table (LIH):	22.5		
Motor Yield:	10		
Start of Run: Date		December 5, 2015	
GPM'S:	600	Bit Information:	
Standpipe Press / Off Bottom:	1350	Bit Size:	8 3/4
Standpipe Press / On Bottom:	1900	Bit Type:	MM56D
Weight on Bit Avg :	25	Bit Manufacture:	Halliburton
End Of Run: Date		Serial #:	12625399
December 6, 2015		Jets / TFA:	5x22s
GPM'S:	600	Mud Information End of Run:	
Standpipe Press / Off Bottom:	2600	Mud Type:	OBM
Standpipe Press / On Bottom:	3200	Mud Weight:	9.1
Weight on Bit Avg :	31	Viscosity:	58
		Plastic Vis:	18
		Yield Point:	13
		Sand %:	0.01
		Solids %:	6.3
		LCM (yes or no):	no
		% LCM per/BBL:	n/a
		Static Temp:	113
		Circulating Temp:	129
		OBM Aniline Point:	165

### Comments

GOOD RUN, 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 #:	9359	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett, TX	Person Notified:	
Lease:	Section 10, Block 41		
Well Name & Number:	University East 4110 NH		
Rig Name & Number:	Nabors 888	Incident Comments:	
Directional Driller ('s):	Lyndon Vestal		
	Brad Davidson		
Motor Information:			
Motor Serial #:	RY700022		
Motor Size (OD):	6 3/4		
Motor Company:	Ryan		
Motor Stabilizer Size:	None		
Degree Bent Housing:	2.12		
Rotor / Stator Conf.:	4/5 7.0		
Depth In:	5844		
Depth Out:	6501		
Footage:	657		
Drilg Hours:	9.1		
Circulating Hours:	3.5		
Total Hours:	12.6		
Hours Below Rotary Table (LIH):	17.5		
Motor Yield:	16'S		
Start of Run: Date		December 6, 2015	
GPM'S:	600	Bit Information:	
Standpipe Press / Off Bottom:	2100	Bit Size:	8 3/4
Standpipe Press / On Bottom:	2400	Bit Type:	VG-20M
Weight on Bit Avg :	28	Bit Manufacture:	Hughes
End Of Run: Date		Serial #:	5257788
December 7, 2015		Jets / TFA:	3x18s
GPM'S:	600	Mud Information End of Run:	
Standpipe Press / Off Bottom:	2200	Mud Type:	OBM
Standpipe Press / On Bottom:	2500	Mud Weight:	9.1
Weight on Bit Avg :	45	Viscosity:	58
		Plastic Vis:	18
		Yield Point:	13
		Sand %:	0.01
		Solids %:	6.3
		LCM (yes or no):	no
		% LCM per/BBL:	n/a
		Static Temp:	113
		Circulating Temp:	129
		OBM Aniline Point:	165

### Comments

GOOD RUN, 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 #:	9359	Date of Incident:	12/8/2015
Customer:	EP Energy	Date Notified Office:	12/8/2015
Location:	Crockett, TX	Person Notified:	Alex Genthon
Lease:	Section 10, Block 41		
Well Name & Number:	University East 4110 NH		
Rig Name & Number:	Nabors 888	Incident Comments:	
Directional Driller ('s):	Lyndon Vestal	REDUCED ROP, INCREASED TORQUE, INCREASED DIFF SPIKES. POOH TO INSPECT BHA.	
	Brad Davidson		
Motor Information:		Bit Information:	
Motor Serial #:	RY65071	Bit Size:	8 3/4
Motor Size (OD):	6 3/4	Bit Type:	T606X
Motor Company:	Ryan	Bit Manufacture:	HALLIBURTON
Motor Stabilizer Size:	None	Serial #:	7158045
Degree Bent Housing:	1.75	Jets / TFA:	6x18's
Rotor / Stator Conf.:	7/8 5.0	Mud Information End of Run:	
Depth In:	6501	Mud Type:	OBM
Depth Out:	11032	Mud Weight:	9.1
Footage:	4531	Viscosity:	58
Drilg Hours:	14.7	Plastic Vis:	18
Circulating Hours:	8.4	Yield Point:	13
Total Hours:	23.1	Sand %:	0.01
Hours Below Rotary Table (LIH):		Solids %:	6.3
Motor Yield:	10'S	LCM (yes or no):	no
Start of Run: Date		% LCM per/BBL:	n/a
December 7, 2015		Static Temp:	113
GPM'S:	600	Circulating Temp:	129
Standpipe Press / Off Bottom:	2200	OBM Aniline Point:	165
Standpipe Press / On Bottom:	2500		
Weight on Bit Avg :	45		
End Of Run: Date			
December 8, 2015			
GPM'S:	590		
Standpipe Press / Off Bottom:	3600		
Standpipe Press / On Bottom:	4300		
Weight on Bit Avg :	30		

### Comments

REDUCED ROP, INCREASED TORQUE, INCREASED DIFF SPIKES. POOH TO INSPECT BHA.



# RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

## Motor Run Report #4

General Information:		In the Event of an Incident:	
Ryan Job #:	9359	Date of Incident:	12/8/2015
Customer:	EP Energy	Date Notified Office:	12/8/2015
Location:	Crockett, TX	Person Notified:	Alex Genthon
Lease:	Section 10, Block 41		
Well Name & Number:	University East 4110 NH		
Rig Name & Number:	Nabors 888	Incident Comments:	
Directional Driller ('s):	Lyndon Vestal		
	Shon Calcote		
Motor Information:			
Motor Serial #:	RY675081		
Motor Size (OD):	6 3/4		
Motor Company:	Ryan		
Motor Stabilizer Size:	None		
Degree Bent Housing:	1.75		
Rotor / Stator Conf.:	7/8 5.0		
Depth In:	11032		
Depth Out:	16690		
Footage:	5658		
Drilg Hours:	29.6		
Circulating Hours:	14.9		
Total Hours:	44.5		
Hours Below Rotary Table (LIH):	56.72		
Motor Yield:	10'S		
Start of Run: Date		December 8, 2015	
GPM'S:	590	Bit Information:	
Standpipe Press / Off Bottom:	3600	Bit Size:	8 3/4
Standpipe Press / On Bottom:	4300	Bit Type:	T606X
Weight on Bit Avg :	30	Bit Manufacture:	HALLIBURTON
End Of Run: Date		Serial #:	7158045
December 11, 2015		Jets / TFA:	6x18's
GPM'S:	590	Mud Information End of Run:	
Standpipe Press / Off Bottom:	3600	Mud Type:	OBM
Standpipe Press / On Bottom:	4300	Mud Weight:	9.2
Weight on Bit Avg :	30	Viscosity:	58
		Plastic Vis:	18
		Yield Point:	13
		Sand %:	0.01
		Solids %:	6.3
		LCM (yes or no):	no
		% LCM per/BBL:	n/a
		Static Temp:	113
		Circulating Temp:	129
		OBM Aniline Point:	165

### Comments

TD Well, Motor Performed Well, No Issues, No Stalls, No Torque Issues, On Surface no Visible issue, No Squat, Drained as it Should

**EP Energy E&P Company, L.P.**

**University East 4110NH**

**Nabors 888**

**Drilling Time Only**

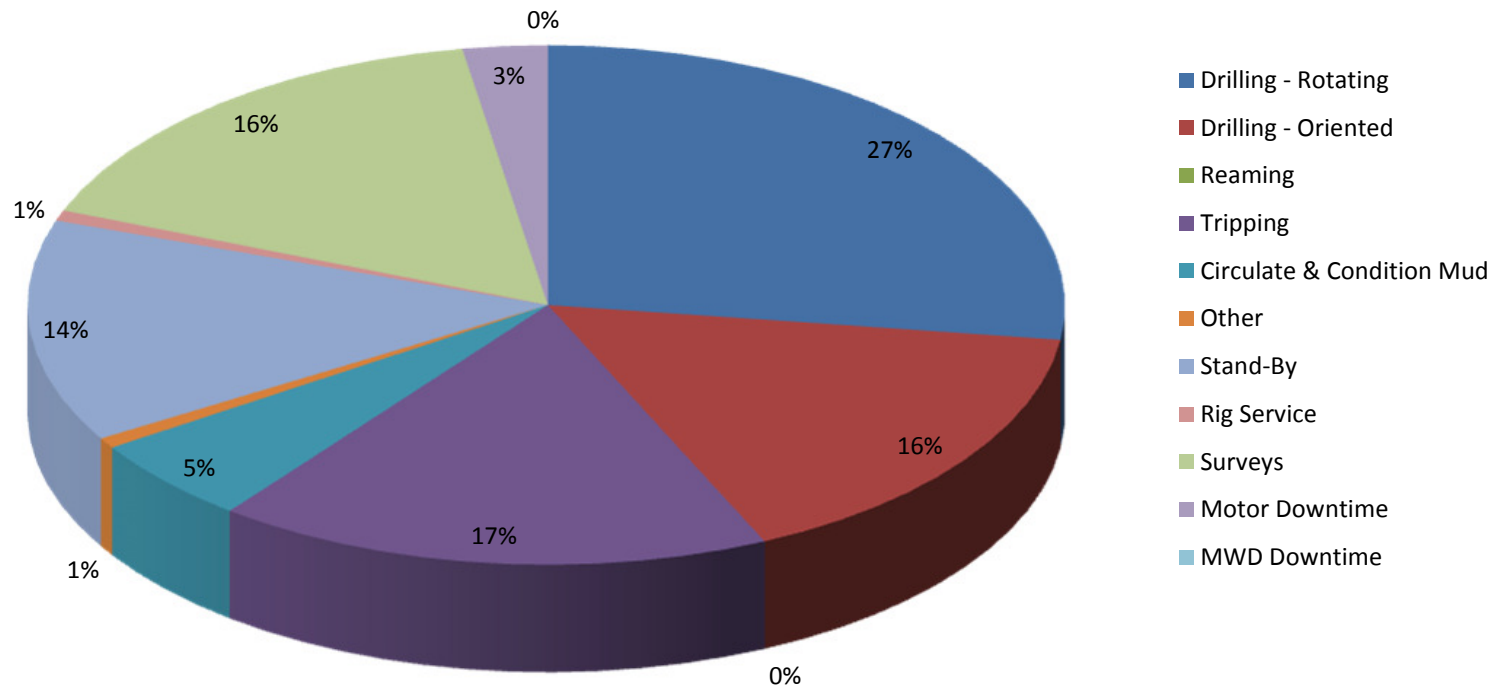
	Rotating Ftg	Rotating Hrs	Rotating ROP	Rotating %	Slide Ftg	Slide Hrs	Slide ROP	Slide %	Total Ftg	Total Hrs	Avg ROP
Vertical Hole	4629.00	10.49	441.28	96.56%	165.00	2.14	77.10	3.44%	4794.00	12.63	379.57
Curve	255.00	3.58	71.23	32.65%	526.00	6.42	81.93	67.35%	781.00	10.00	78.10
Lateral	9021.00	27.13	332.51	89.86%	1018.00	15.77	64.55	10.14%	10039.00	42.90	234.01

**Start Depth: 1076**

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
12/5/2015	1	1076	KOP @ 5870 EOC @ 6651	0	0	0	0.00	0.00	0.00	2.00	0.00	0.98	21.00	0.00	0.00	0.00	0.00	0.00	0.00	24.00
12/6/2015	2	5842		4766	137	4629	10.50	1.58	0.00	4.98	0.50	0.00	0.00	0.00	6.42	0.00	0.00	0.00	0.00	24.00
12/7/2015	3	7323		1481	584	897	5.33	7.40	0.00	7.00	0.75	0.00	0.00	0.00	3.50	0.00	0.00	0.00	0.00	24.00
12/8/2015	4	11032		3709	306	3403	8.50	2.67	0.00	1.48	1.42	0.00	0.00	0.50	5.42	4.00	0.00	0.00	0.00	24.00
12/9/2015	5	14605		3573	402	3171	9.40	5.33	0.00	3.50	0.00	0.00	0.00	0.00	5.75	0.00	0.00	0.00	0.00	24.00
12/10/2015	6	16690		2085	280	1805	7.42	7.33	0.00	0.00	4.90	0.00	0.00	0.50	3.83	0.00	0.00	0.00	0.00	24.00
12/11/2015	7	16690		0	0	0	0.00	0.00	0.00	7.25	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.80
				15614	1709	13905	41.15	24.32	0.00	26.22	8.07	0.98	21.00	1.00	24.92	4.00	0.00	0.00	0.00	151.80

**EP Energy  
University East 4110 NH**

**TIME BREAKDOWN**



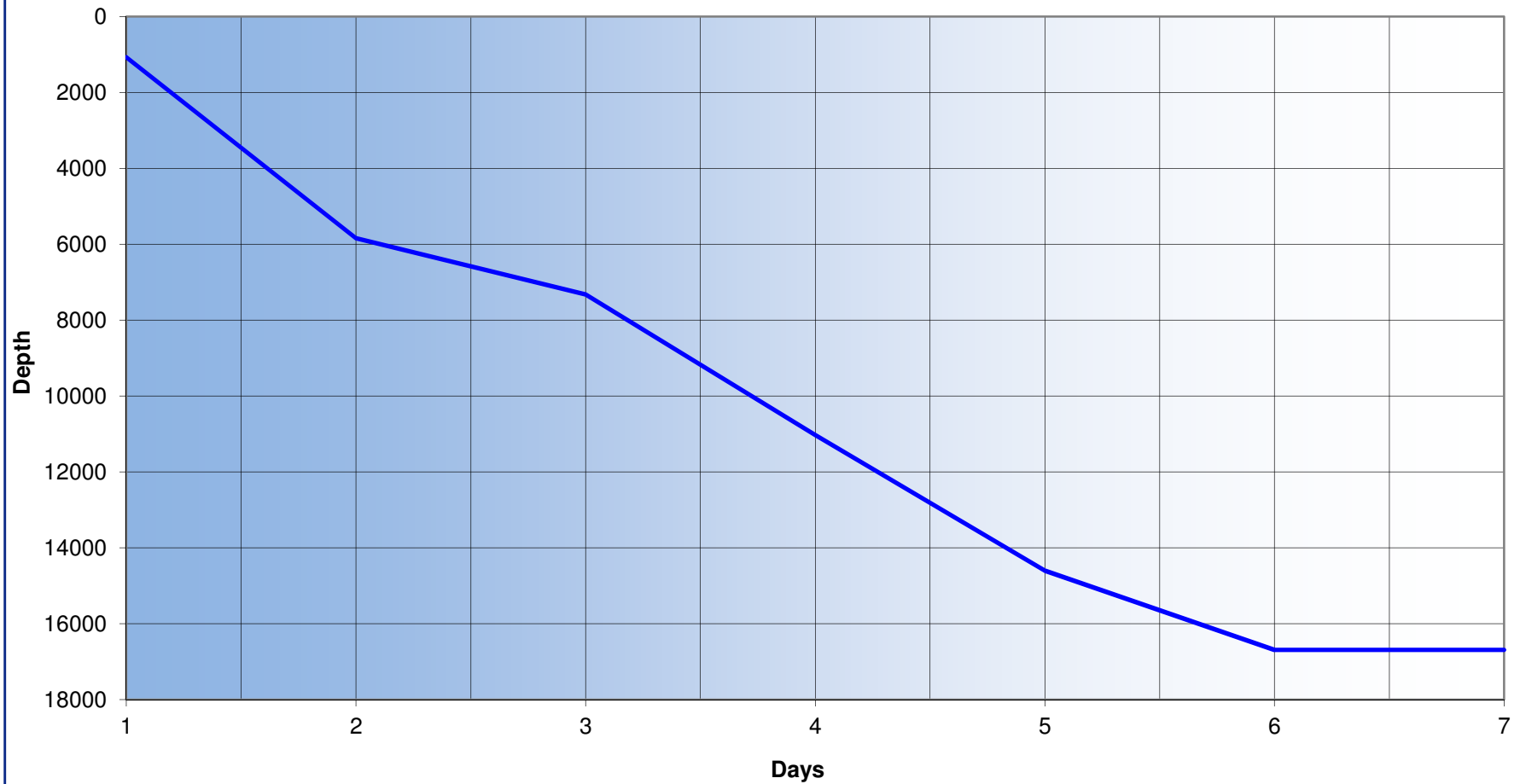
**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY



**EP Energy  
University East 4110 NH**

**Days vs. Depth**

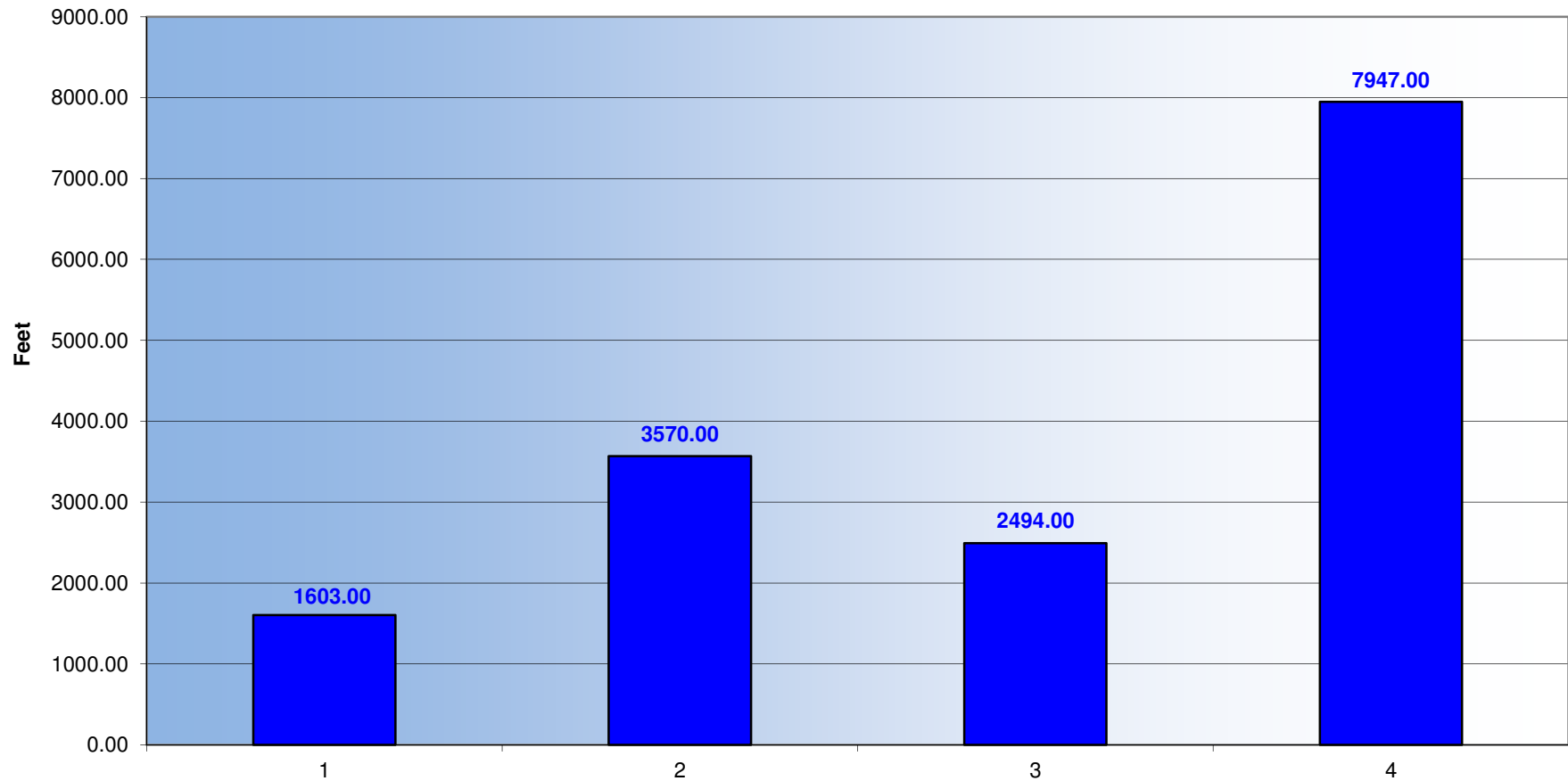


***RYAN DIRECTIONAL SERVICES, INC.***

A NABORS COMPANY

**EP Energy  
University East 4110 NH**

**Footage Per BHA**

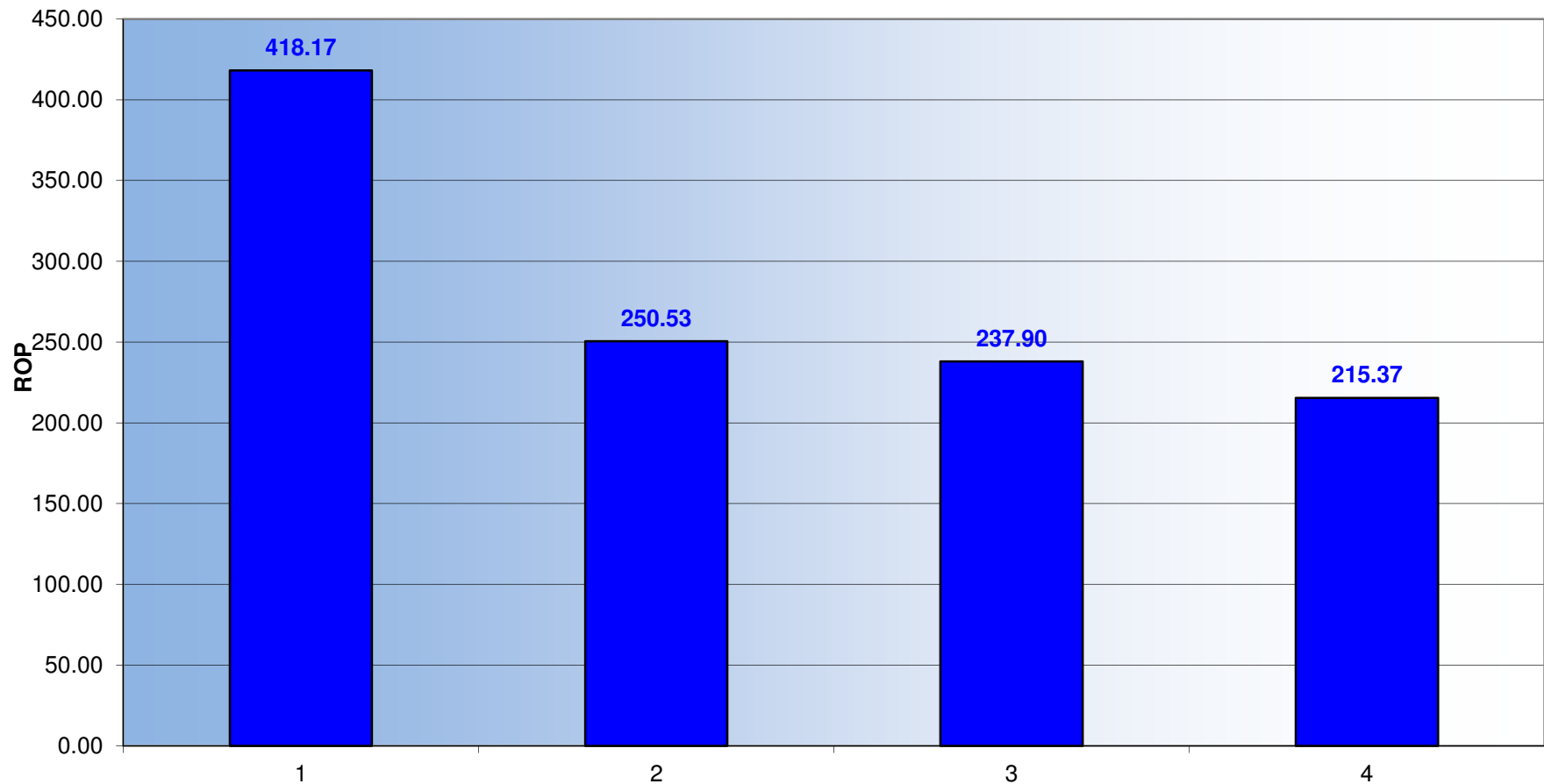


***RYAN DIRECTIONAL SERVICES, INC.***

A NABORS COMPANY

**EP Energy**  
**University East 4110 NH**

**Average Rate of Penetration Per BHA**

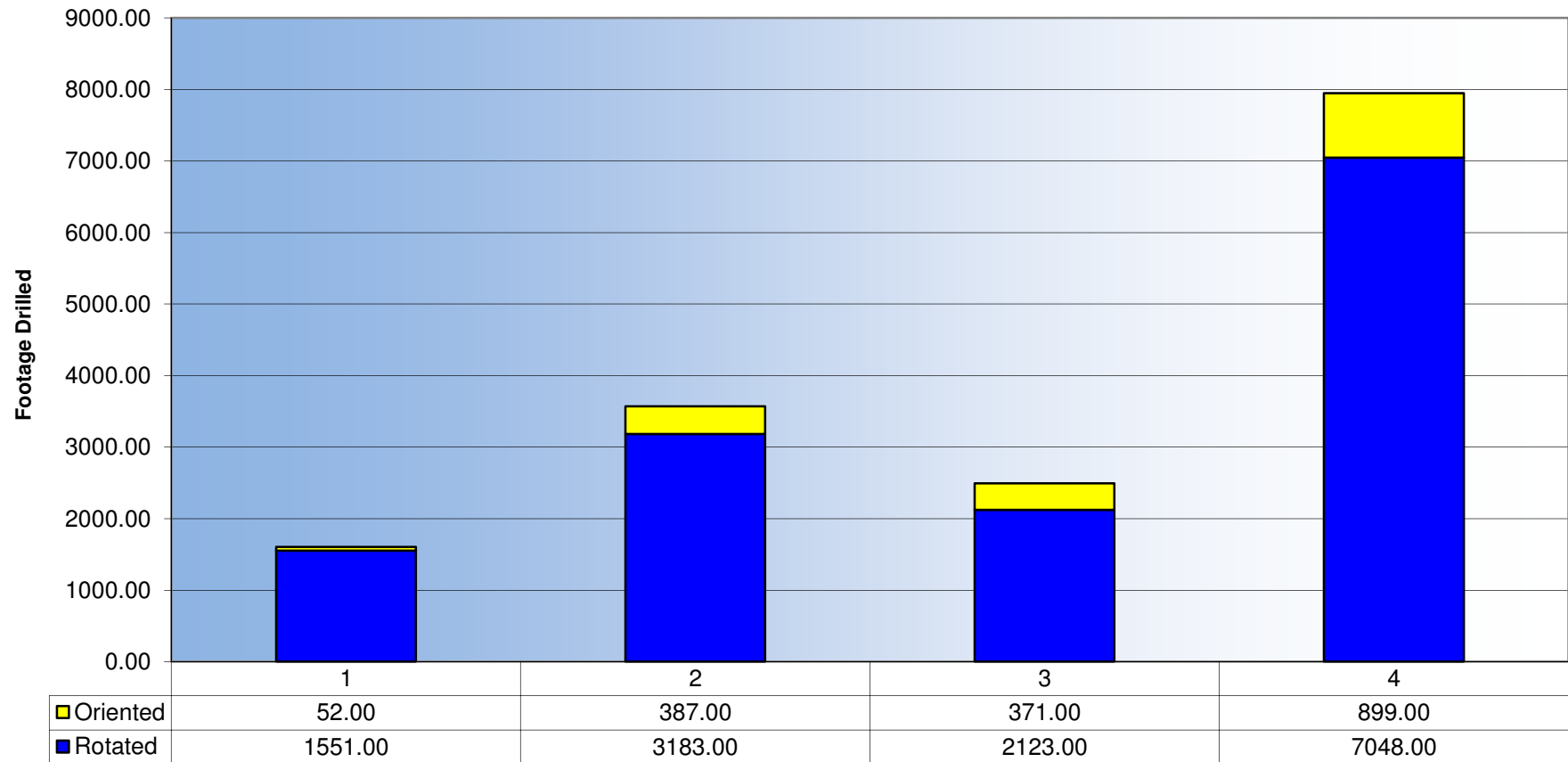


**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

**EP Energy  
University East 4110 NH**

**Oriented vs. Rotated**

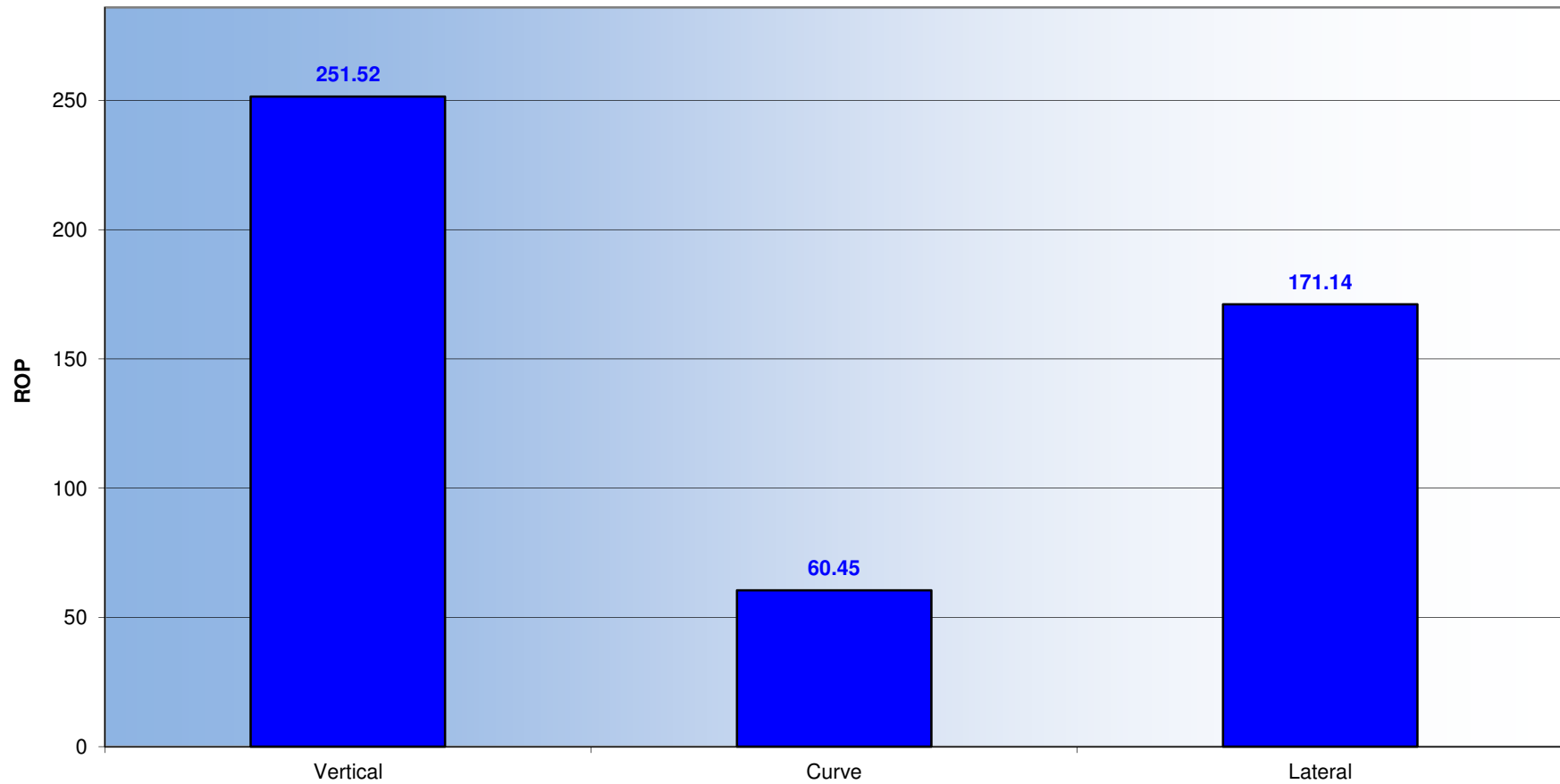


***RYAN DIRECTIONAL SERVICES, INC.***

A NABORS COMPANY

**EP Energy**  
**University East 4110 NH**

**Vertical, Curve, and Lateral Average ROP**

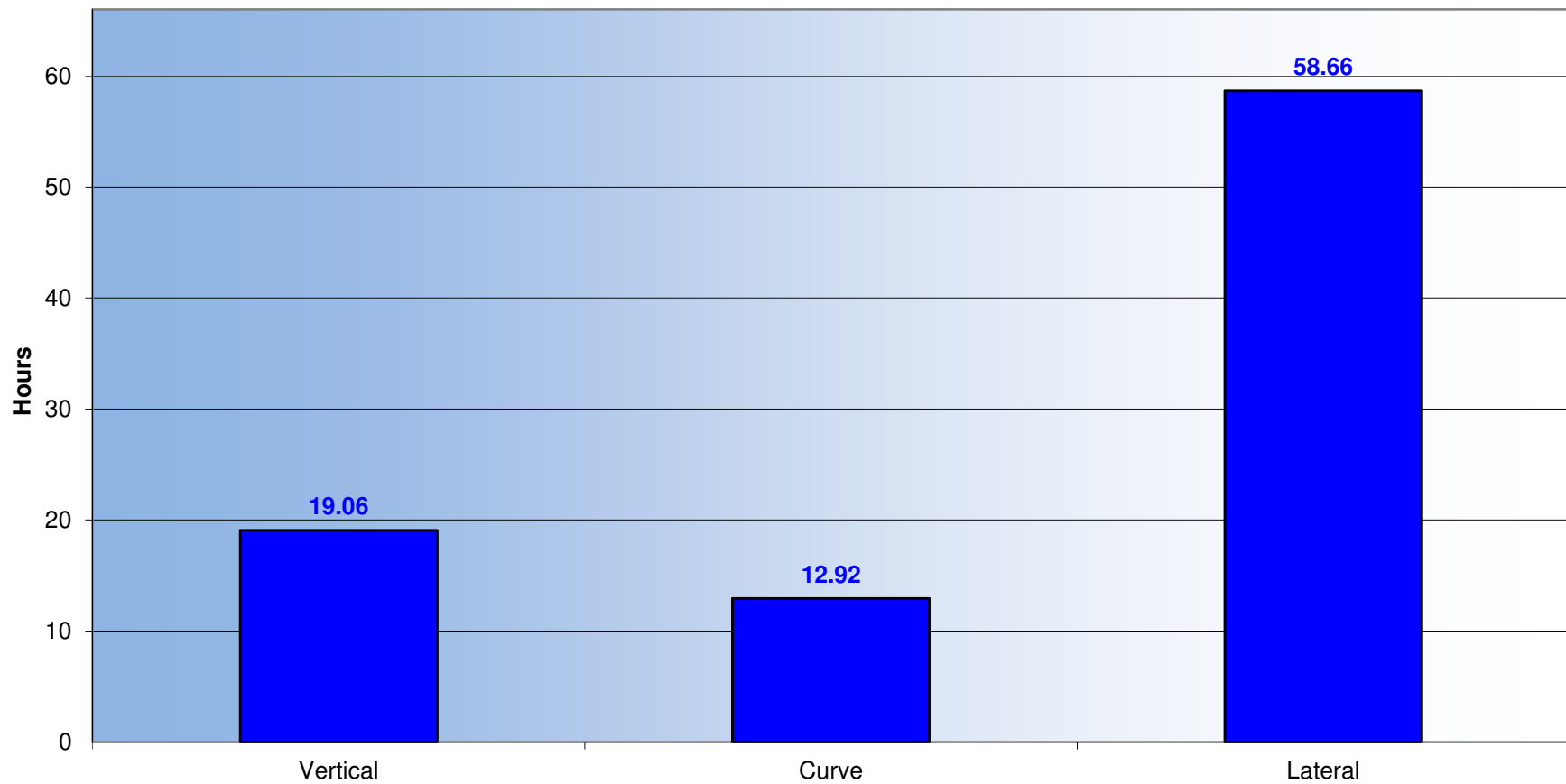


***RYAN DIRECTIONAL SERVICES, INC.***

A NABORS COMPANY

**EP Energy  
University East 4110 NH**

**Vertical, Curve, and Lateral Hours**

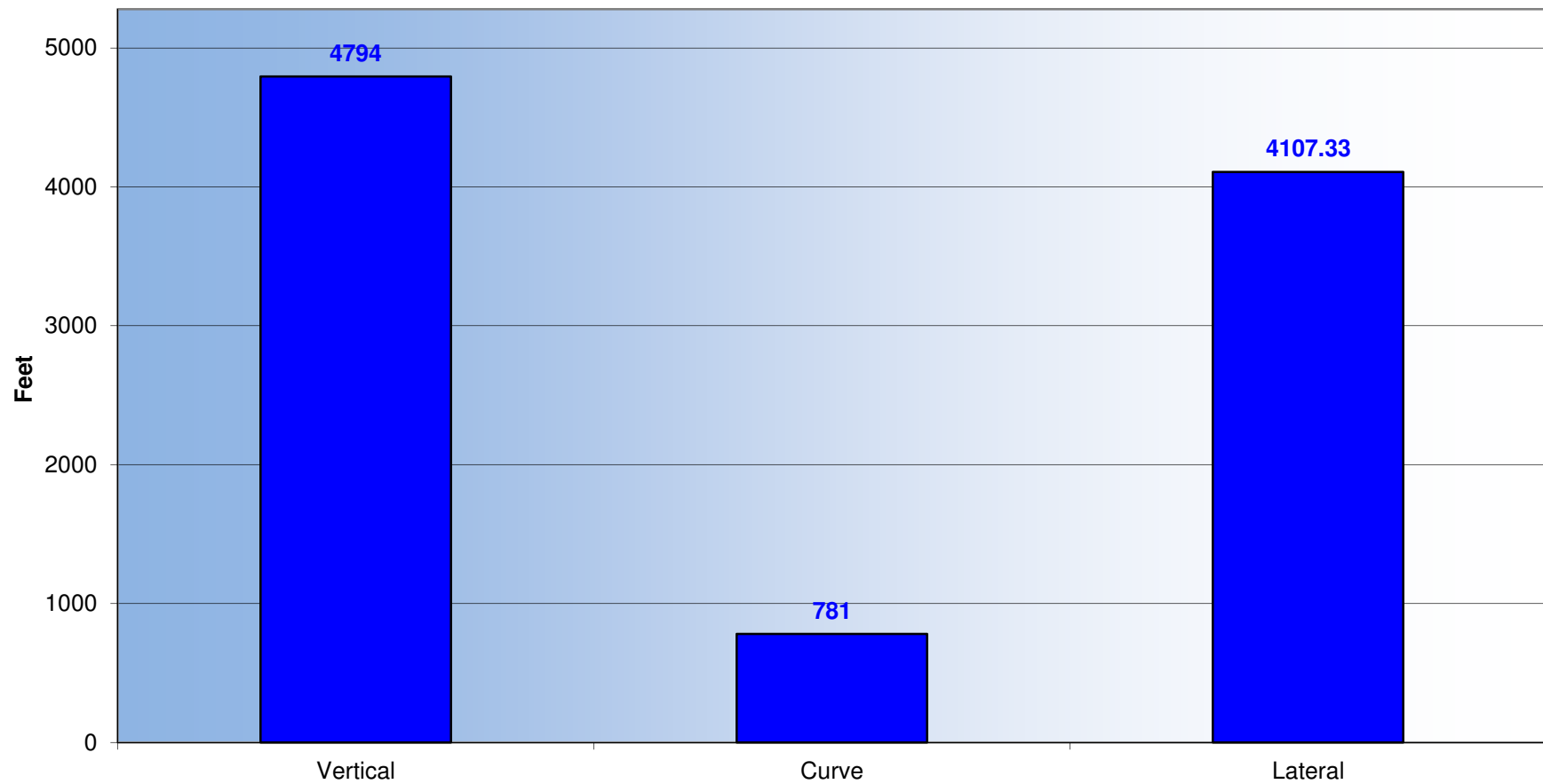


***RYAN DIRECTIONAL SERVICES, INC.***

A NABORS COMPANY

**EP Energy  
University East 4110 NH**

**Vertical, Curve, and Lateral Average Footage Per Day**



**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY