

**Ryan Directional Services
Directional Drilling Report**

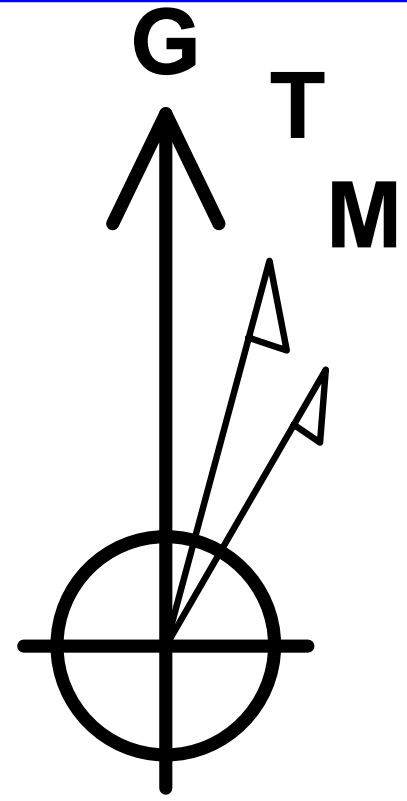
**Field: Crocket Co, Tx
Site: University East 4108
Well: 4108 KH
Wellpath: Wellbore #1**

Prepared For:

EP ENERGY 



WELL DETAILS: 4108 KH
Ground Elevation: 2662.00
RKB Elevation: KB @ 2692.00ft (Noram 21)
Rig Name: Noram 21



Azimuths to Grid North
True North: 0.44°
Magnetic North: 6.41°

Magnetic Field
Strength: 47804.5snT
Dip Angle: 59.36°
Date: 8/26/2014
Model: IGRF2010



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

+E/-W
0.00

Northing
493977.09

Easting
1733438.44

Latitude
31° 1' 19.64 N

Longitude
101° 11' 3.66 W

SECTION DETAILS

No plan data is available

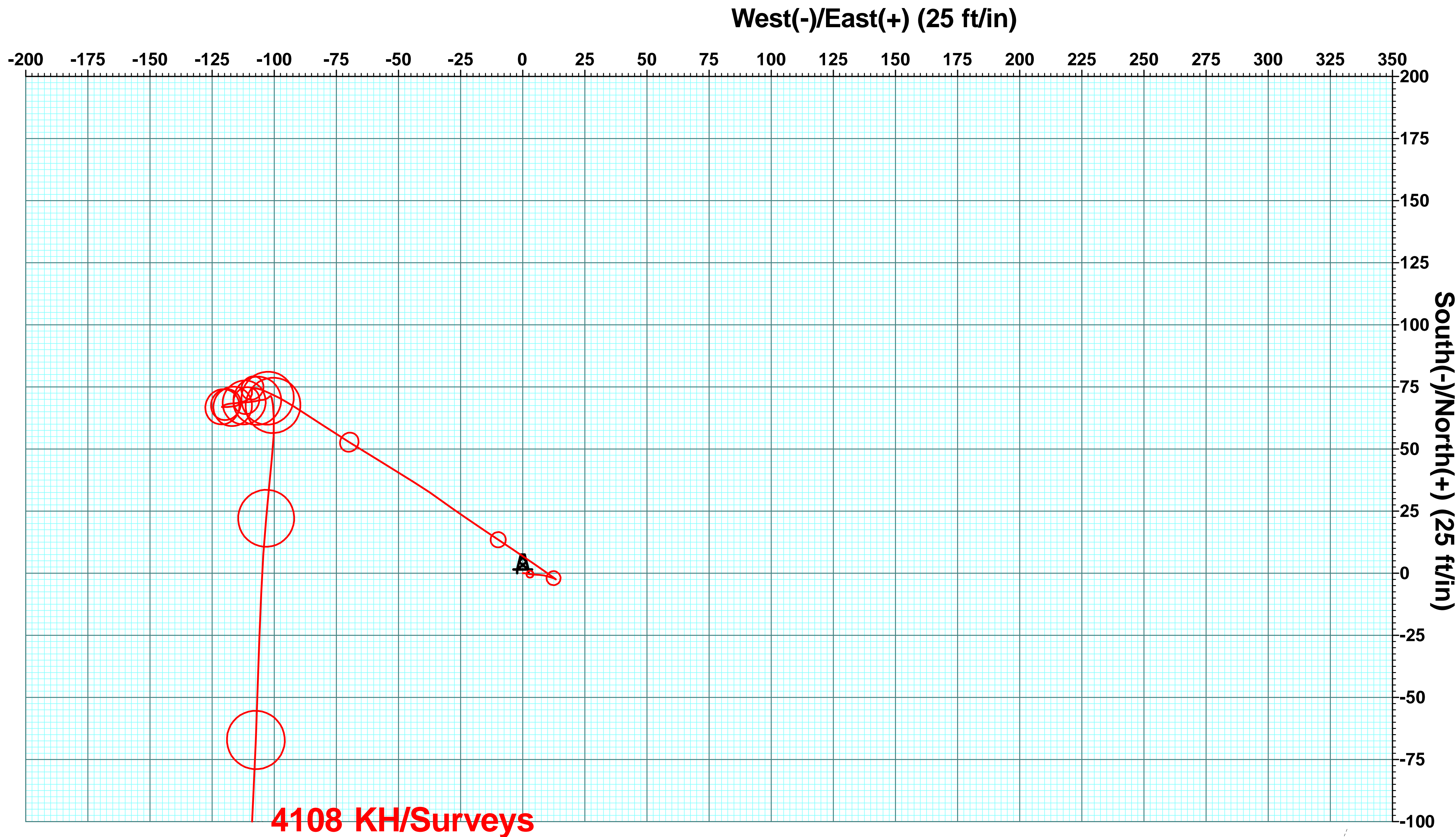
System Datum: Mean Sea Level
Local North: Grid

Project: Crocket Co, Tx
Site: University East 4108
Well: 4108 KH
Wellbore: Wellbore #1
Design: Surveys (4108 KH/Wellbore #1)

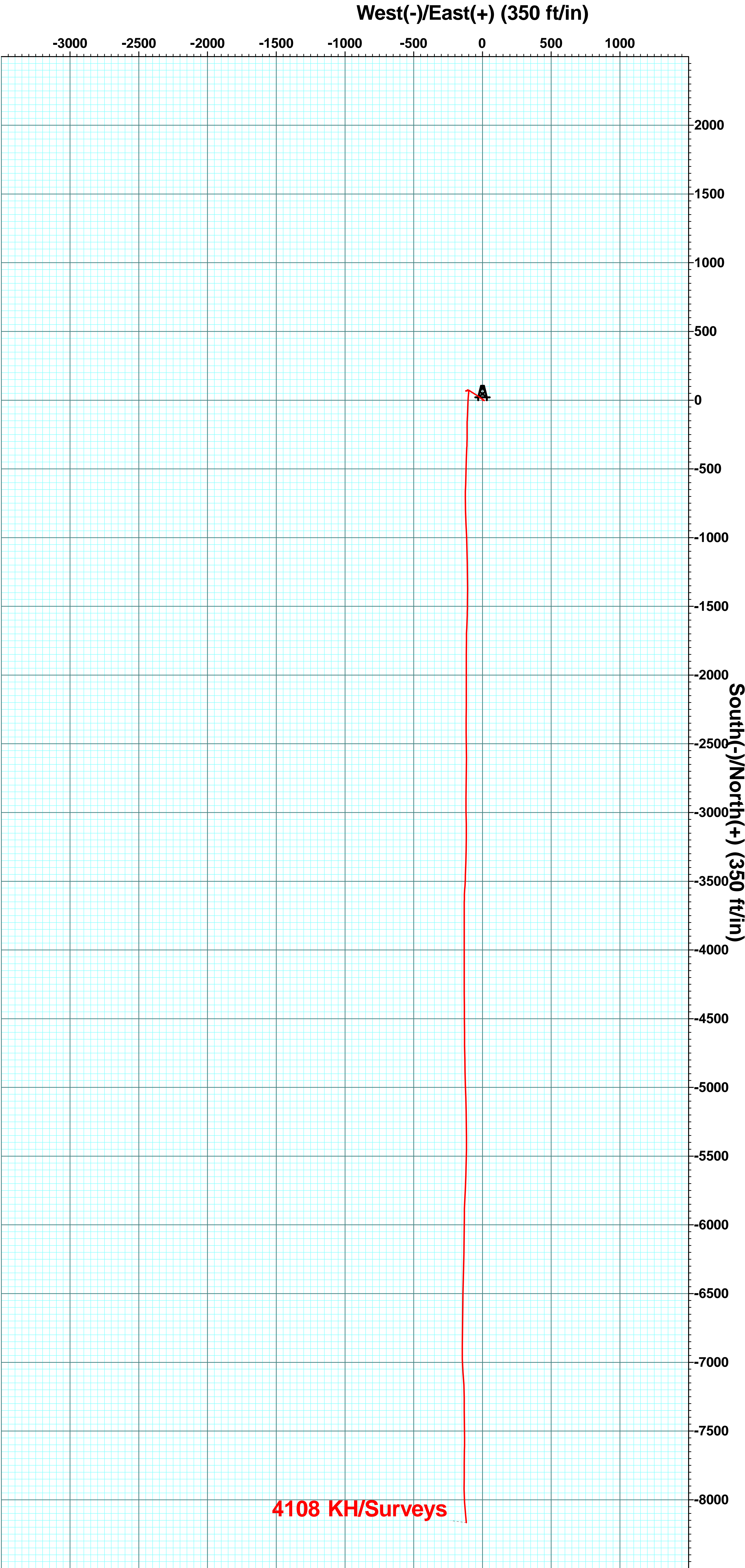
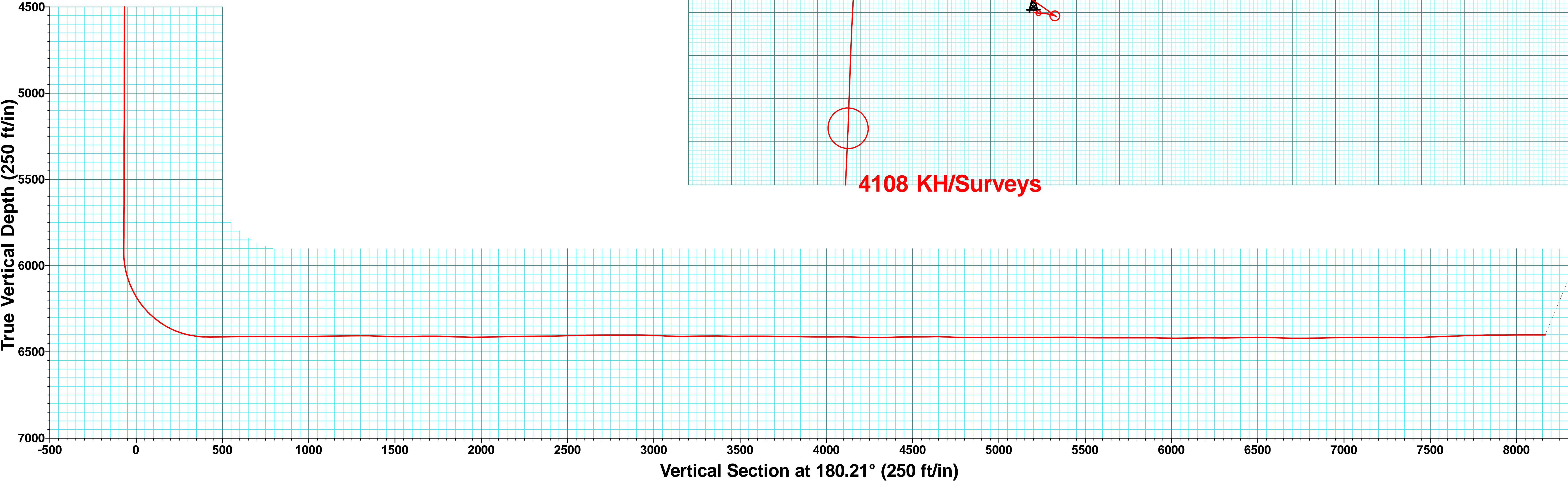
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

No target data is available.

Target Points
6415' TVD @ 0°Vs
6390' TVD @ 8300' Vs



ys





EP Energy E&P Company, L.P.

**Crocket Co, Tx
University East 4108
4108 KH**

Wellbore #1

Design: Surveys

Standard Survey Report

06 September, 2014



**RYAN DIRECTIONAL
SERVICES**
A NABORS COMPANY

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

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

Site	University East 4108		
Site Position:		Northing:	494,157.90 usft
From:	Map	Easting:	1,731,154.02 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	31° 1' 21.26 N
		Longitude:	101° 11' 29.93 W
		Grid Convergence:	-0.44 °

Well	4108 KH		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	2.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	31° 1' 19.64 N
		Longitude:	101° 11' 3.66 W
		Ground Level:	2,662.00 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	8/26/2014	5.97
			Dip Angle (°)
			59.36
			Field Strength (nT)
			47,805

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)
	0.00	0.00	0.00
			Direction (°)
			180.21

Survey Program	Date	9/6/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
30.00	830.00	Survey #1 (Wellbore #1)	Gyro	Gyro
1,026.00	14,407.00	Survey #2 (Wellbore #1)	Ryan MWD R5000	Ryan MWD
14,457.00	14,457.00	Survey #3 (Wellbore #1)	Project	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.00	0.00	360.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	0.56	83.92	130.00	0.05	0.49	-0.05	0.56	0.56	0.00
230.00	0.44	105.69	229.99	0.00	1.34	0.00	0.22	-0.12	21.77
330.00	0.42	102.56	329.99	-0.18	2.07	0.18	0.03	-0.02	-3.13
430.00	0.54	99.39	429.99	-0.34	2.89	0.33	0.12	0.12	-3.17
530.00	0.62	95.37	529.98	-0.47	3.90	0.45	0.09	0.08	-4.02
630.00	0.77	91.77	629.98	-0.54	5.11	0.52	0.16	0.15	-3.60
730.00	1.01	95.91	729.96	-0.65	6.65	0.63	0.25	0.24	4.14

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
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Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

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)
830.00	1.31	97.16	829.94	-0.88	8.66	0.85	0.30	0.30	1.25
1,026.00	1.00	117.30	1,025.90	-1.95	12.41	1.90	0.26	-0.16	10.28
1,089.00	1.00	119.60	1,088.89	-2.47	13.37	2.42	0.06	0.00	3.65
1,184.00	1.80	303.90	1,183.88	-2.05	12.86	2.00	2.95	0.84	-184.95
1,279.00	4.90	305.90	1,278.71	1.16	8.33	-1.19	3.26	3.26	2.11
1,374.00	7.10	303.60	1,373.18	6.79	0.15	-6.79	2.33	2.32	-2.42
1,469.00	7.50	304.10	1,467.41	13.52	-9.87	-13.48	0.43	0.42	0.53
1,564.00	8.20	303.70	1,561.52	20.75	-20.64	-20.68	0.74	0.74	-0.42
1,659.00	8.20	306.40	1,655.55	28.53	-31.73	-28.42	0.41	0.00	2.84
1,754.00	9.50	302.00	1,749.42	36.71	-43.83	-36.55	1.54	1.37	-4.63
1,849.00	9.60	301.70	1,843.10	45.02	-57.22	-44.81	0.12	0.11	-0.32
1,944.00	8.30	301.60	1,936.94	52.78	-69.80	-52.52	1.37	-1.37	-0.11
2,039.00	8.20	303.80	2,030.96	60.14	-81.27	-59.84	0.35	-0.11	2.32
2,134.00	7.10	302.00	2,125.11	67.02	-91.88	-66.68	1.18	-1.16	-1.89
2,229.00	5.20	295.30	2,219.56	71.97	-100.75	-71.60	2.13	-2.00	-7.05
2,323.00	2.50	285.00	2,313.34	74.32	-106.59	-73.93	2.95	-2.87	-10.96
2,419.00	0.40	215.40	2,409.31	74.59	-108.80	-74.19	2.49	-2.19	-72.50
2,513.00	0.50	185.70	2,503.31	73.92	-109.03	-73.52	0.27	0.11	-31.60
2,608.00	0.50	173.20	2,598.30	73.09	-109.03	-72.69	0.11	0.00	-13.16
2,703.00	0.80	184.10	2,693.30	72.02	-109.02	-71.62	0.34	0.32	11.47
2,798.00	1.10	217.20	2,788.29	70.63	-109.62	-70.23	0.65	0.32	34.84
2,893.00	1.30	249.10	2,883.27	69.52	-111.18	-69.11	0.72	0.21	33.58
2,988.00	1.30	257.90	2,978.24	68.91	-113.24	-68.50	0.21	0.00	9.26
3,083.00	1.10	260.90	3,073.22	68.54	-115.20	-68.12	0.22	-0.21	3.16
3,178.00	1.00	267.10	3,168.20	68.36	-116.92	-67.93	0.16	-0.11	6.53
3,273.00	0.70	261.90	3,263.19	68.23	-118.33	-67.80	0.33	-0.32	-5.47
3,368.00	0.70	250.50	3,358.19	67.96	-119.45	-67.52	0.15	0.00	-12.00
3,463.00	0.50	234.00	3,453.18	67.52	-120.33	-67.08	0.28	-0.21	-17.37
3,558.00	0.20	235.50	3,548.18	67.18	-120.80	-66.74	0.32	-0.32	1.58
3,653.00	0.10	221.60	3,643.18	67.03	-120.99	-66.58	0.11	-0.11	-14.63
3,748.00	0.10	296.10	3,738.18	67.00	-121.12	-66.56	0.13	0.00	78.42
3,843.00	0.40	90.20	3,833.18	67.04	-120.87	-66.59	0.52	0.32	162.21
3,938.00	0.50	98.10	3,928.18	66.98	-120.12	-66.53	0.12	0.11	8.32
4,033.00	0.40	84.60	4,023.17	66.95	-119.38	-66.51	0.15	-0.11	-14.21
4,129.00	0.50	88.00	4,119.17	66.99	-118.63	-66.56	0.11	0.10	3.54
4,224.00	0.60	84.40	4,214.17	67.06	-117.72	-66.63	0.11	0.11	-3.79
4,320.00	0.60	78.50	4,310.16	67.21	-116.73	-66.78	0.06	0.00	-6.15
4,414.00	0.60	88.20	4,404.16	67.32	-115.76	-66.90	0.11	0.00	10.32
4,509.00	0.70	55.90	4,499.15	67.66	-114.78	-67.24	0.39	0.11	-34.00
4,604.00	0.60	54.00	4,594.14	68.28	-113.89	-67.86	0.11	-0.11	-2.00
4,699.00	0.60	81.70	4,689.14	68.64	-113.00	-68.23	0.30	0.00	29.16
4,794.00	0.50	78.20	4,784.13	68.80	-112.10	-68.39	0.11	-0.11	-3.68
4,889.00	0.70	90.70	4,879.13	68.88	-111.12	-68.47	0.25	0.21	13.16

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

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)
4,985.00	0.70	77.90	4,975.12	68.99	-109.96	-68.59	0.16	0.00	-13.33
5,080.00	0.60	91.00	5,070.12	69.11	-108.89	-68.71	0.19	-0.11	13.79
5,175.00	0.60	75.10	5,165.11	69.23	-107.91	-68.83	0.17	0.00	-16.74
5,270.00	0.70	78.00	5,260.10	69.47	-106.87	-69.08	0.11	0.11	3.05
5,365.00	0.50	77.90	5,355.10	69.68	-105.89	-69.29	0.21	-0.21	-0.11
5,460.00	0.50	89.60	5,450.10	69.77	-105.07	-69.39	0.11	0.00	12.32
5,555.00	0.50	72.90	5,545.09	69.90	-104.26	-69.51	0.15	0.00	-17.58
5,650.00	0.60	75.00	5,640.09	70.15	-103.39	-69.77	0.11	0.11	2.21
5,745.00	0.40	46.00	5,735.08	70.51	-102.67	-70.13	0.33	-0.21	-30.53
5,839.00	0.50	54.10	5,829.08	70.97	-102.10	-70.60	0.13	0.11	8.62
5,894.00	0.50	51.30	5,884.08	71.26	-101.72	-70.89	0.04	0.00	-5.09
5,935.00	0.50	87.10	5,925.08	71.39	-101.40	-71.01	0.75	0.00	87.32
5,967.00	3.20	164.30	5,957.06	70.53	-101.02	-70.16	9.77	8.44	241.25
5,998.00	7.80	172.30	5,987.91	67.61	-100.50	-67.24	15.01	14.84	25.81
6,030.00	11.40	178.70	6,019.46	62.30	-100.14	-61.93	11.72	11.25	20.00
6,061.00	15.00	183.30	6,049.63	55.23	-100.30	-54.86	12.09	11.61	14.84
6,093.00	18.90	185.20	6,080.24	45.93	-101.01	-45.56	12.31	12.19	5.94
6,125.00	22.30	185.70	6,110.19	34.72	-102.08	-34.35	10.64	10.63	1.56
6,156.00	25.80	185.00	6,138.49	22.15	-103.25	-21.77	11.33	11.29	-2.26
6,188.00	28.90	183.90	6,166.91	7.49	-104.39	-7.11	9.82	9.69	-3.44
6,219.00	32.30	182.70	6,193.59	-8.26	-105.29	8.65	11.14	10.97	-3.87
6,251.00	36.50	181.90	6,219.99	-26.32	-106.00	26.71	13.20	13.13	-2.50
6,282.00	40.30	181.90	6,244.28	-45.56	-106.64	45.95	12.26	12.26	0.00
6,314.00	44.40	182.20	6,267.92	-67.10	-107.42	67.49	12.83	12.81	0.94
6,345.00	47.70	182.80	6,289.44	-89.40	-108.39	89.79	10.74	10.65	1.94
6,377.00	51.40	183.10	6,310.19	-113.71	-109.65	114.11	11.58	11.56	0.94
6,408.00	54.80	182.40	6,328.80	-138.47	-110.83	138.87	11.12	10.97	-2.26
6,440.00	58.80	181.00	6,346.32	-165.23	-111.62	165.63	13.02	12.50	-4.38
6,471.00	62.80	180.80	6,361.44	-192.28	-112.04	192.69	12.92	12.90	-0.65
6,503.00	66.90	179.60	6,375.04	-221.24	-112.14	221.65	13.25	12.81	-3.75
6,534.00	70.70	179.50	6,386.25	-250.13	-111.91	250.54	12.26	12.26	-0.32
6,566.00	75.00	180.50	6,395.68	-280.70	-111.92	281.11	13.77	13.44	3.13
6,598.00	78.90	181.50	6,402.91	-311.86	-112.46	312.27	12.56	12.19	3.13
6,629.00	81.80	182.50	6,408.10	-342.40	-113.53	342.82	9.88	9.35	3.23
6,715.00	90.60	182.10	6,413.80	-428.06	-116.97	428.49	10.24	10.23	-0.47
6,809.00	91.20	181.00	6,412.32	-522.01	-119.51	522.45	1.33	0.64	-1.17
6,904.00	90.30	182.60	6,411.08	-616.95	-122.49	617.40	1.93	-0.95	1.68
6,998.00	89.70	179.40	6,411.08	-710.93	-124.13	711.38	3.46	-0.64	-3.40
7,093.00	90.40	179.70	6,410.99	-805.92	-123.39	806.37	0.80	0.74	0.32
7,187.00	89.50	176.30	6,411.08	-899.85	-120.11	900.29	3.74	-0.96	-3.62
7,282.00	90.50	178.40	6,411.08	-994.74	-115.72	995.16	2.45	1.05	2.21
7,377.00	91.60	178.20	6,409.34	-1,089.68	-112.90	1,090.09	1.18	1.16	-0.21
7,471.00	90.40	179.50	6,407.69	-1,183.65	-111.01	1,184.05	1.88	-1.28	1.38

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Design:	Surveys	Database:	RYANUS R5000

Survey									
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7,566.00	90.90	178.70	6,406.62	-1,278.63	-109.52	1,279.02	0.99	0.53	-0.84
7,661.00	87.80	180.30	6,407.69	-1,373.60	-108.69	1,373.99	3.67	-3.26	1.68
7,756.00	88.40	180.30	6,410.84	-1,468.55	-109.19	1,468.94	0.63	0.63	0.00
7,851.00	90.90	182.20	6,411.42	-1,563.51	-111.26	1,563.91	3.31	2.63	2.00
7,946.00	92.20	182.00	6,408.86	-1,658.41	-114.74	1,658.82	1.38	1.37	-0.21
8,040.00	87.60	180.50	6,409.02	-1,752.36	-116.79	1,752.78	5.15	-4.89	-1.60
8,135.00	88.30	180.60	6,412.42	-1,847.30	-117.70	1,847.72	0.74	0.74	0.11
8,230.00	89.10	179.40	6,414.57	-1,942.27	-117.70	1,942.69	1.52	0.84	-1.26
8,325.00	91.00	180.60	6,414.49	-2,037.26	-117.70	2,037.68	2.37	2.00	1.26
8,420.00	92.10	179.80	6,411.92	-2,132.23	-118.03	2,132.64	1.43	1.16	-0.84
8,515.00	90.30	180.40	6,409.93	-2,227.20	-118.20	2,227.62	2.00	-1.89	0.63
8,610.00	90.50	180.70	6,409.27	-2,322.19	-119.11	2,322.61	0.38	0.21	0.32
8,706.00	91.20	179.50	6,407.84	-2,418.18	-119.28	2,418.60	1.45	0.73	-1.25
8,801.00	91.80	178.10	6,405.36	-2,513.12	-117.29	2,513.54	1.60	0.63	-1.47
8,895.00	91.20	180.90	6,402.90	-2,607.08	-116.47	2,607.49	3.05	-0.64	2.98
8,990.00	89.80	180.70	6,402.07	-2,702.06	-117.80	2,702.48	1.49	-1.47	-0.21
9,085.00	89.40	180.50	6,402.73	-2,797.06	-118.79	2,797.47	0.47	-0.42	-0.21
9,180.00	90.90	180.50	6,402.48	-2,892.05	-119.62	2,892.47	1.58	1.58	0.00
9,275.00	87.30	179.50	6,403.97	-2,987.02	-119.62	2,987.44	3.93	-3.79	-1.05
9,371.00	87.80	178.90	6,408.08	-3,082.92	-118.28	3,083.34	0.81	0.52	-0.63
9,466.00	90.00	180.30	6,409.90	-3,177.90	-117.62	3,178.30	2.74	2.32	1.47
9,561.00	92.30	181.10	6,407.99	-3,272.86	-118.78	3,273.28	2.56	2.42	0.84
9,655.00	88.40	181.80	6,407.42	-3,366.81	-121.16	3,367.23	4.22	-4.15	0.74
9,750.00	89.00	181.80	6,409.58	-3,461.74	-124.14	3,462.17	0.63	0.63	0.00
9,845.00	91.30	183.90	6,409.33	-3,556.61	-128.86	3,557.06	3.28	2.42	2.21
9,940.00	88.80	180.40	6,409.24	-3,651.52	-132.43	3,651.98	4.53	-2.63	-3.68
10,035.00	89.80	180.20	6,410.40	-3,746.51	-132.92	3,746.97	1.07	1.05	-0.21
10,130.00	88.60	180.30	6,411.73	-3,841.50	-133.34	3,841.96	1.27	-1.26	0.11
10,225.00	89.20	179.40	6,413.55	-3,936.48	-133.09	3,936.94	1.14	0.63	-0.95
10,320.00	91.60	180.20	6,412.89	-4,031.47	-132.76	4,031.93	2.66	2.53	0.84
10,415.00	88.00	180.30	6,413.22	-4,126.45	-133.17	4,126.91	3.79	-3.79	0.11
10,510.00	88.70	179.90	6,415.96	-4,221.41	-133.34	4,221.87	0.85	0.74	-0.42
10,605.00	90.60	179.80	6,416.54	-4,316.41	-133.09	4,316.86	2.00	2.00	-0.11
10,700.00	91.90	179.20	6,414.47	-4,411.38	-132.26	4,411.83	1.51	1.37	-0.63
10,795.00	89.70	179.30	6,413.14	-4,506.35	-131.02	4,506.80	2.32	-2.32	0.11
10,889.00	91.40	180.20	6,412.24	-4,600.34	-130.61	4,600.79	2.05	1.81	0.96
10,984.00	87.80	179.00	6,412.90	-4,695.32	-129.95	4,695.77	3.99	-3.79	-1.26
11,079.00	88.80	179.10	6,415.72	-4,790.27	-128.37	4,790.70	1.06	1.05	0.11
11,175.00	90.30	179.20	6,416.47	-4,886.25	-126.95	4,886.68	1.57	1.56	0.10
11,270.00	90.50	177.30	6,415.81	-4,981.20	-124.05	4,981.62	2.01	0.21	-2.00
11,365.00	89.20	179.00	6,416.06	-5,076.14	-120.98	5,076.55	2.25	-1.37	1.79
11,460.00	90.80	178.70	6,416.06	-5,171.12	-119.07	5,171.52	1.71	1.68	-0.32
11,555.00	89.90	179.60	6,415.48	-5,266.11	-117.66	5,266.50	1.34	-0.95	0.95
11,650.00	90.80	178.60	6,414.90	-5,361.09	-116.17	5,361.48	1.42	0.95	-1.05

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,745.00	88.10	181.50	6,415.81	-5,456.07	-116.25	5,456.46	4.17	-2.84	3.05
11,840.00	89.10	181.50	6,418.13	-5,551.01	-118.74	5,551.40	1.05	1.05	0.00
11,935.00	90.50	181.90	6,418.46	-5,645.96	-121.56	5,646.37	1.53	1.47	0.42
12,030.00	89.20	182.20	6,418.71	-5,740.90	-124.96	5,741.32	1.40	-1.37	0.32
12,125.00	90.80	183.00	6,418.71	-5,835.80	-129.27	5,836.23	1.88	1.68	0.84
12,219.00	88.70	180.30	6,419.12	-5,929.74	-131.97	5,930.19	3.64	-2.23	-2.87
12,315.00	89.70	180.60	6,420.46	-6,025.73	-132.73	6,026.17	1.09	1.04	0.31
12,410.00	92.20	181.00	6,418.89	-6,120.70	-134.05	6,121.15	2.67	2.63	0.42
12,505.00	89.00	180.90	6,417.89	-6,215.67	-135.63	6,216.12	3.37	-3.37	-0.11
12,599.00	89.80	181.20	6,418.88	-6,309.65	-137.35	6,310.11	0.91	0.85	0.32
12,694.00	92.00	181.60	6,417.38	-6,404.60	-139.67	6,405.07	2.35	2.32	0.42
12,789.00	90.00	181.30	6,415.73	-6,499.55	-142.07	6,500.03	2.13	-2.11	-0.32
12,884.00	87.70	180.70	6,417.63	-6,594.51	-143.73	6,594.99	2.50	-2.42	-0.63
12,980.00	88.70	180.30	6,420.65	-6,690.46	-144.57	6,690.94	1.12	1.04	-0.42
13,075.00	90.60	181.00	6,421.23	-6,785.44	-145.65	6,785.93	2.13	2.00	0.74
13,170.00	92.10	180.90	6,418.99	-6,880.40	-147.22	6,880.90	1.58	1.58	-0.11
13,264.00	90.80	178.60	6,416.61	-6,974.36	-146.81	6,974.85	2.81	-1.38	-2.45
13,360.00	90.00	175.20	6,415.94	-7,070.20	-141.62	7,070.68	3.64	-0.83	-3.54
13,454.00	90.50	177.10	6,415.53	-7,163.99	-135.31	7,164.44	2.09	0.53	2.02
13,550.00	88.90	179.90	6,416.03	-7,259.94	-132.79	7,260.38	3.36	-1.67	2.92
13,644.00	89.90	179.70	6,417.02	-7,353.93	-132.47	7,354.37	1.08	1.06	-0.21
13,739.00	91.90	179.50	6,415.53	-7,448.91	-131.80	7,449.35	2.12	2.11	-0.21
13,834.00	92.60	179.40	6,411.80	-7,543.84	-130.89	7,544.27	0.74	0.74	-0.11
13,929.00	91.70	181.20	6,408.23	-7,638.76	-131.39	7,639.19	2.12	-0.95	1.89
14,024.00	92.80	180.50	6,404.50	-7,733.68	-132.80	7,734.11	1.37	1.16	-0.74
14,119.00	89.70	180.00	6,402.43	-7,828.64	-133.21	7,829.08	3.31	-3.26	-0.53
14,213.00	90.70	180.30	6,402.10	-7,922.64	-133.46	7,923.08	1.11	1.06	0.32
14,308.00	90.00	176.60	6,401.52	-8,017.59	-130.89	8,018.01	3.96	-0.74	-3.89
14,407.00	90.00	173.90	6,401.52	-8,116.24	-122.69	8,116.63	2.73	0.00	-2.73
14,457.00	90.00	173.90	6,401.52	-8,165.95	-117.38	8,166.33	0.00	0.00	0.00

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

Crocket Co, Tx

University East 4108

4108 KH

Wellbore #1

Design: Surveys

Completion Report

06 September, 2014



Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

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

Site		University East 4108								
Site Position:		Northing:		494,157.90	usft	Latitude:	31° 1' 21.26 N			
From:	Map	Easting:		1,731,154.02	usft	Longitude:	101° 11' 29.93 W			
Position Uncertainty:		0.00	ft	Slot Radius:		13-3/16	"	Grid Convergence:	-0.44	°

Well		4108 KH				
Well Position	+N/-S	0.00 ft	Northing:	493,977.09 usft	Latitude:	31° 1' 19.64 N
	+E/-W	0.00 ft	Easting:	1,733,438.44 usft	Longitude:	101° 11' 3.66 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	2,662.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/26/2014	5.97	59.36	47,805

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

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey Program		Date 9/6/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
30.00	830.00	Survey #1 (Wellbore #1)	Gyro	Gyro
1,026.00	14,407.00	Survey #2 (Wellbore #1)	Ryan MWD R5000	Ryan MWD
14,457.00	14,457.00	Survey #3 (Wellbore #1)	Project	

Survey										
MD (ft)	Inc (°)	TVD (ft)	V. Sec (ft)	Azi (azimuth) (°)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
30.00	0.00	30.00	0.00	360.00	0.00	0.00	0.00	0.00	0.00	
130.00	0.56	130.00	-0.05	83.92	0.05	0.49	0.49	83.92	0.56	
230.00	0.44	229.99	0.00	105.69	0.00	1.34	1.34	90.01	0.22	
330.00	0.42	329.99	0.18	102.56	-0.18	2.07	2.08	95.08	0.03	
430.00	0.54	429.99	0.33	99.39	-0.34	2.89	2.91	96.71	0.12	
530.00	0.62	529.98	0.45	95.37	-0.47	3.90	3.92	96.85	0.09	
630.00	0.77	629.98	0.52	91.77	-0.54	5.11	5.13	96.03	0.16	
730.00	1.01	729.96	0.63	95.91	-0.65	6.65	6.69	95.59	0.25	
830.00	1.31	829.94	0.85	97.16	-0.88	8.66	8.71	95.83	0.30	
1,026.00	1.00	1,025.90	1.90	117.30	-1.95	12.41	12.56	98.92	0.26	
1,089.00	1.00	1,088.89	2.42	119.60	-2.47	13.37	13.60	100.47	0.06	
1,184.00	1.80	1,183.88	2.00	303.90	-2.05	12.86	13.02	99.05	2.95	
1,279.00	4.90	1,278.71	-1.19	305.90	1.16	8.33	8.41	82.05	3.26	
1,374.00	7.10	1,373.18	-6.79	303.60	6.79	0.15	6.79	1.29	2.33	
1,469.00	7.50	1,467.41	-13.48	304.10	13.52	-9.87	16.74	323.86	0.43	
1,564.00	8.20	1,561.52	-20.68	303.70	20.75	-20.64	29.27	315.15	0.74	
1,659.00	8.20	1,655.55	-28.42	306.40	28.53	-31.73	42.67	311.96	0.41	
1,754.00	9.50	1,749.42	-36.55	302.00	36.71	-43.83	57.17	309.94	1.54	
1,849.00	9.60	1,843.10	-44.81	301.70	45.02	-57.22	72.81	308.20	0.12	

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey										
MD (ft)	Inc (°)	TVD (ft)	V. Sec (ft)	Azi (azimuth) (°)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
1,944.00	8.30	1,936.94	-52.52	301.60	52.78	-69.80	87.51	307.09	1.37	
2,039.00	8.20	2,030.96	-59.84	303.80	60.14	-81.27	101.10	306.50	0.35	
2,134.00	7.10	2,125.11	-66.68	302.00	67.02	-91.88	113.73	306.11	1.18	
2,229.00	5.20	2,219.56	-71.60	295.30	71.97	-100.75	123.82	305.54	2.13	
2,323.00	2.50	2,313.34	-73.93	285.00	74.32	-106.59	129.94	304.89	2.95	
2,419.00	0.40	2,409.31	-74.19	215.40	74.59	-108.80	131.92	304.43	2.49	
2,513.00	0.50	2,503.31	-73.52	185.70	73.92	-109.03	131.73	304.13	0.27	
2,608.00	0.50	2,598.30	-72.69	173.20	73.09	-109.03	131.26	303.84	0.11	
2,703.00	0.80	2,693.30	-71.62	184.10	72.02	-109.02	130.66	303.45	0.34	
2,798.00	1.10	2,788.29	-70.23	217.20	70.63	-109.62	130.41	302.79	0.65	
2,893.00	1.30	2,883.27	-69.11	249.10	69.52	-111.18	131.13	302.02	0.72	
2,988.00	1.30	2,978.24	-68.50	257.90	68.91	-113.24	132.56	301.32	0.21	
3,083.00	1.10	3,073.22	-68.12	260.90	68.54	-115.20	134.04	300.75	0.22	
3,178.00	1.00	3,168.20	-67.93	267.10	68.36	-116.92	135.44	300.31	0.16	
3,273.00	0.70	3,263.19	-67.80	261.90	68.23	-118.33	136.59	299.97	0.33	
3,368.00	0.70	3,358.19	-67.52	250.50	67.96	-119.45	137.43	299.64	0.15	
3,463.00	0.50	3,453.18	-67.08	234.00	67.52	-120.33	137.98	299.30	0.28	
3,558.00	0.20	3,548.18	-66.74	235.50	67.18	-120.80	138.23	299.08	0.32	
3,653.00	0.10	3,643.18	-66.58	221.60	67.03	-120.99	138.32	298.98	0.11	
3,748.00	0.10	3,738.18	-66.56	296.10	67.00	-121.12	138.42	298.95	0.13	
3,843.00	0.40	3,833.18	-66.59	90.20	67.04	-120.87	138.21	299.01	0.52	
3,938.00	0.50	3,928.18	-66.53	98.10	66.98	-120.12	137.53	299.14	0.12	
4,033.00	0.40	4,023.17	-66.51	84.60	66.95	-119.38	136.87	299.28	0.15	
4,129.00	0.50	4,119.17	-66.56	88.00	66.99	-118.63	136.24	299.45	0.11	
4,224.00	0.60	4,214.17	-66.63	84.40	67.06	-117.72	135.48	299.67	0.11	
4,320.00	0.60	4,310.16	-66.78	78.50	67.21	-116.73	134.69	299.93	0.06	
4,414.00	0.60	4,404.16	-66.90	88.20	67.32	-115.76	133.91	300.18	0.11	

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey										
MD (ft)	Inc (°)	TVD (ft)	V. Sec (ft)	Azi (azimuth) (°)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
4,509.00	0.70	4,499.15	-67.24	55.90	67.66	-114.78	133.24	300.52	0.39	
4,604.00	0.60	4,594.14	-67.86	54.00	68.28	-113.89	132.79	300.94	0.11	
4,699.00	0.60	4,689.14	-68.23	81.70	68.64	-113.00	132.22	301.28	0.30	
4,794.00	0.50	4,784.13	-68.39	78.20	68.80	-112.10	131.53	301.54	0.11	
4,889.00	0.70	4,879.13	-68.47	90.70	68.88	-111.12	130.73	301.79	0.25	
4,985.00	0.70	4,975.12	-68.59	77.90	68.99	-109.96	129.81	302.11	0.16	
5,080.00	0.60	5,070.12	-68.71	91.00	69.11	-108.89	128.97	302.40	0.19	
5,175.00	0.60	5,165.11	-68.83	75.10	69.23	-107.91	128.21	302.68	0.17	
5,270.00	0.70	5,260.10	-69.08	78.00	69.47	-106.87	127.46	303.03	0.11	
5,365.00	0.50	5,355.10	-69.29	77.90	69.68	-105.89	126.76	303.35	0.21	
5,460.00	0.50	5,450.10	-69.39	89.60	69.77	-105.07	126.13	303.59	0.11	
5,555.00	0.50	5,545.09	-69.51	72.90	69.90	-104.26	125.52	303.84	0.15	
5,650.00	0.60	5,640.09	-69.77	75.00	70.15	-103.39	124.94	304.16	0.11	
5,745.00	0.40	5,735.08	-70.13	46.00	70.51	-102.67	124.54	304.48	0.33	
5,839.00	0.50	5,829.08	-70.60	54.10	70.97	-102.10	124.34	304.81	0.13	
5,894.00	0.50	5,884.08	-70.89	51.30	71.26	-101.72	124.20	305.02	0.04	
5,935.00	0.50	5,925.08	-71.01	87.10	71.39	-101.40	124.01	305.15	0.75	
5,967.00	3.20	5,957.06	-70.16	164.30	70.53	-101.02	123.20	304.92	9.77	
5,998.00	7.80	5,987.91	-67.24	172.30	67.61	-100.50	121.13	303.93	15.01	
6,030.00	11.40	6,019.46	-61.93	178.70	62.30	-100.14	117.93	301.89	11.72	
6,061.00	15.00	6,049.63	-54.86	183.30	55.23	-100.30	114.50	298.84	12.09	
6,093.00	18.90	6,080.24	-45.56	185.20	45.93	-101.01	110.96	294.45	12.31	
6,125.00	22.30	6,110.19	-34.35	185.70	34.72	-102.08	107.82	288.79	10.64	
6,156.00	25.80	6,138.49	-21.77	185.00	22.15	-103.25	105.60	282.11	11.33	
6,188.00	28.90	6,166.91	-7.11	183.90	7.49	-104.39	104.65	274.10	9.82	
6,219.00	32.30	6,193.59	8.65	182.70	-8.26	-105.29	105.61	265.51	11.14	
6,251.00	36.50	6,219.99	26.71	181.90	-26.32	-106.00	109.22	256.06	13.20	

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey										
MD (ft)	Inc (°)	TVD (ft)	V. Sec (ft)	Azi (azimuth) (°)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
6,282.00	40.30	6,244.28	45.95	181.90	-45.56	-106.64	115.97	246.87	12.26	
6,314.00	44.40	6,267.92	67.49	182.20	-67.10	-107.42	126.65	238.01	12.83	
6,345.00	47.70	6,289.44	89.79	182.80	-89.40	-108.39	140.50	230.49	10.74	
6,377.00	51.40	6,310.19	114.11	183.10	-113.71	-109.65	157.96	223.96	11.58	
6,408.00	54.80	6,328.80	138.87	182.40	-138.47	-110.83	177.36	218.67	11.12	
6,440.00	58.80	6,346.32	165.63	181.00	-165.23	-111.62	199.40	214.04	13.02	
6,471.00	62.80	6,361.44	192.69	180.80	-192.28	-112.04	222.54	210.23	12.92	
6,503.00	66.90	6,375.04	221.65	179.60	-221.24	-112.14	248.03	206.88	13.25	
6,534.00	70.70	6,386.25	250.54	179.50	-250.13	-111.91	274.03	204.10	12.26	
6,566.00	75.00	6,395.68	281.11	180.50	-280.70	-111.92	302.19	201.74	13.77	
6,598.00	78.90	6,402.91	312.27	181.50	-311.86	-112.46	331.52	199.83	12.56	
6,629.00	81.80	6,408.10	342.82	182.50	-342.40	-113.53	360.73	198.34	9.88	
6,715.00	90.60	6,413.80	428.49	182.10	-428.06	-116.97	443.75	195.28	10.24	
6,809.00	91.20	6,412.32	522.45	181.00	-522.01	-119.51	535.52	192.90	1.33	
6,904.00	90.30	6,411.08	617.40	182.60	-616.95	-122.49	629.00	191.23	1.93	
6,998.00	89.70	6,411.08	711.38	179.40	-710.93	-124.13	721.68	189.90	3.46	
7,093.00	90.40	6,410.99	806.37	179.70	-805.92	-123.39	815.31	188.70	0.80	
7,187.00	89.50	6,411.08	900.29	176.30	-899.85	-120.11	907.83	187.60	3.74	
7,282.00	90.50	6,411.08	995.16	178.40	-994.74	-115.72	1,001.45	186.64	2.45	
7,377.00	91.60	6,409.34	1,090.09	178.20	-1,089.68	-112.90	1,095.52	185.92	1.18	
7,471.00	90.40	6,407.69	1,184.05	179.50	-1,183.65	-111.01	1,188.84	185.36	1.88	
7,566.00	90.90	6,406.62	1,279.02	178.70	-1,278.63	-109.52	1,283.31	184.90	0.99	
7,661.00	87.80	6,407.69	1,373.99	180.30	-1,373.60	-108.69	1,377.90	184.52	3.67	
7,756.00	88.40	6,410.84	1,468.94	180.30	-1,468.55	-109.19	1,472.60	184.25	0.63	
7,851.00	90.90	6,411.42	1,563.91	182.20	-1,563.51	-111.26	1,567.47	184.07	3.31	
7,946.00	92.20	6,408.86	1,658.82	182.00	-1,658.41	-114.74	1,662.38	183.96	1.38	
8,040.00	87.60	6,409.02	1,752.78	180.50	-1,752.36	-116.79	1,756.25	183.81	5.15	

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey										
MD (ft)	Inc (°)	TVD (ft)	V. Sec (ft)	Azi (azimuth) (°)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
8,135.00	88.30	6,412.42	1,847.72	180.60	-1,847.30	-117.70	1,851.04	183.65	0.74	
8,230.00	89.10	6,414.57	1,942.69	179.40	-1,942.27	-117.70	1,945.83	183.47	1.52	
8,325.00	91.00	6,414.49	2,037.68	180.60	-2,037.26	-117.70	2,040.66	183.31	2.37	
8,420.00	92.10	6,411.92	2,132.64	179.80	-2,132.23	-118.03	2,135.49	183.17	1.43	
8,515.00	90.30	6,409.93	2,227.62	180.40	-2,227.20	-118.20	2,230.34	183.04	2.00	
8,610.00	90.50	6,409.27	2,322.61	180.70	-2,322.19	-119.11	2,325.25	182.94	0.38	
8,706.00	91.20	6,407.84	2,418.60	179.50	-2,418.18	-119.28	2,421.12	182.82	1.45	
8,801.00	91.80	6,405.36	2,513.54	178.10	-2,513.12	-117.29	2,515.86	182.67	1.60	
8,895.00	91.20	6,402.90	2,607.49	180.90	-2,607.08	-116.47	2,609.68	182.56	3.05	
8,990.00	89.80	6,402.07	2,702.48	180.70	-2,702.06	-117.80	2,704.63	182.50	1.49	
9,085.00	89.40	6,402.73	2,797.47	180.50	-2,797.06	-118.79	2,799.58	182.43	0.47	
9,180.00	90.90	6,402.48	2,892.47	180.50	-2,892.05	-119.62	2,894.52	182.37	1.58	
9,275.00	87.30	6,403.97	2,987.44	179.50	-2,987.02	-119.62	2,989.42	182.29	3.93	
9,371.00	87.80	6,408.08	3,083.34	178.90	-3,082.92	-118.28	3,085.19	182.20	0.81	
9,466.00	90.00	6,409.90	3,178.30	180.30	-3,177.90	-117.62	3,180.07	182.12	2.74	
9,561.00	92.30	6,407.99	3,273.28	181.10	-3,272.86	-118.78	3,275.02	182.08	2.56	
9,655.00	88.40	6,407.42	3,367.23	181.80	-3,366.81	-121.16	3,368.99	182.06	4.22	
9,750.00	89.00	6,409.57	3,462.17	181.80	-3,461.74	-124.14	3,463.96	182.05	0.63	
9,845.00	91.30	6,409.33	3,557.06	183.90	-3,556.61	-128.86	3,558.94	182.08	3.28	
9,940.00	88.80	6,409.24	3,651.98	180.40	-3,651.52	-132.43	3,653.92	182.08	4.53	
10,035.00	89.80	6,410.40	3,746.97	180.20	-3,746.51	-132.92	3,748.87	182.03	1.07	
10,130.00	88.60	6,411.73	3,841.96	180.30	-3,841.50	-133.34	3,843.81	181.99	1.27	
10,225.00	89.20	6,413.55	3,936.94	179.40	-3,936.48	-133.09	3,938.73	181.94	1.14	
10,320.00	91.60	6,412.89	4,031.93	180.20	-4,031.47	-132.76	4,033.65	181.89	2.66	
10,415.00	88.00	6,413.22	4,126.91	180.30	-4,126.45	-133.17	4,128.60	181.85	3.79	
10,510.00	88.70	6,415.96	4,221.87	179.90	-4,221.41	-133.34	4,223.52	181.81	0.85	
10,605.00	90.60	6,416.54	4,316.86	179.80	-4,316.41	-133.09	4,318.46	181.77	2.00	

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey										
MD (ft)	Inc (°)	TVD (ft)	V. Sec (ft)	Azi (azimuth) (°)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
10,700.00	91.90	6,414.47	4,411.83	179.20	-4,411.38	-132.26	4,413.36	181.72	1.51	
10,795.00	89.70	6,413.14	4,506.80	179.30	-4,506.35	-131.02	4,508.26	181.67	2.32	
10,889.00	91.40	6,412.24	4,600.79	180.20	-4,600.34	-130.61	4,602.20	181.63	2.05	
10,984.00	87.80	6,412.90	4,695.77	179.00	-4,695.32	-129.95	4,697.12	181.59	3.99	
11,079.00	88.80	6,415.72	4,790.70	179.10	-4,790.27	-128.37	4,791.99	181.54	1.06	
11,175.00	90.30	6,416.47	4,886.68	179.20	-4,886.25	-126.95	4,887.90	181.49	1.57	
11,270.00	90.50	6,415.81	4,981.62	177.30	-4,981.20	-124.05	4,982.74	181.43	2.01	
11,365.00	89.20	6,416.06	5,076.55	179.00	-5,076.14	-120.98	5,077.58	181.37	2.25	
11,460.00	90.80	6,416.06	5,171.52	178.70	-5,171.12	-119.07	5,172.49	181.32	1.71	
11,555.00	89.90	6,415.48	5,266.50	179.60	-5,266.11	-117.66	5,267.42	181.28	1.34	
11,650.00	90.80	6,414.90	5,361.48	178.60	-5,361.09	-116.17	5,362.35	181.24	1.42	
11,745.00	88.10	6,415.81	5,456.46	181.50	-5,456.07	-116.25	5,457.31	181.22	4.17	
11,840.00	89.10	6,418.13	5,551.40	181.50	-5,551.01	-118.74	5,552.28	181.23	1.05	
11,935.00	90.50	6,418.46	5,646.37	181.90	-5,645.96	-121.56	5,647.27	181.23	1.53	
12,030.00	89.20	6,418.71	5,741.32	182.20	-5,740.90	-124.96	5,742.26	181.25	1.40	
12,125.00	90.80	6,418.71	5,836.23	183.00	-5,835.80	-129.27	5,837.23	181.27	1.88	
12,219.00	88.70	6,419.12	5,930.19	180.30	-5,929.74	-131.97	5,931.21	181.27	3.64	
12,315.00	89.70	6,420.46	6,026.17	180.60	-6,025.73	-132.73	6,027.19	181.26	1.09	
12,410.00	92.20	6,418.89	6,121.15	181.00	-6,120.70	-134.05	6,122.17	181.25	2.67	
12,505.00	89.00	6,417.89	6,216.12	180.90	-6,215.67	-135.63	6,217.15	181.25	3.37	
12,599.00	89.80	6,418.88	6,310.11	181.20	-6,309.65	-137.35	6,311.14	181.25	0.91	
12,694.00	92.00	6,417.38	6,405.07	181.60	-6,404.60	-139.67	6,406.12	181.25	2.35	
12,789.00	90.00	6,415.73	6,500.03	181.30	-6,499.55	-142.07	6,501.10	181.25	2.13	
12,884.00	87.70	6,417.63	6,594.99	180.70	-6,594.51	-143.73	6,596.08	181.25	2.50	
12,980.00	88.70	6,420.65	6,690.94	180.30	-6,690.46	-144.57	6,692.02	181.24	1.12	
13,075.00	90.60	6,421.23	6,785.93	181.00	-6,785.44	-145.65	6,787.01	181.23	2.13	
13,170.00	92.10	6,418.99	6,880.90	180.90	-6,880.40	-147.22	6,881.98	181.23	1.58	

Company:	EP Energy E&P Company, L.P.	Local Co-ordinate Reference:	Well 4108 KH
Project:	Crocket Co, Tx	TVD Reference:	KB @ 2692.00ft (Noram 21)
Site:	University East 4108	MD Reference:	KB @ 2692.00ft (Noram 21)
Well:	4108 KH	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	RYANUS R5000

Survey										
MD (ft)	Inc (°)	TVD (ft)	V. Sec (ft)	Azi (azimuth) (°)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	DLeg (°/100ft)	
13,264.00	90.80	6,416.61	6,974.85	178.60	-6,974.36	-146.81	6,975.91	181.21	2.81	
13,360.00	90.00	6,415.94	7,070.68	175.20	-7,070.20	-141.62	7,071.62	181.15	3.64	
13,454.00	90.50	6,415.53	7,164.43	177.10	-7,163.99	-135.31	7,165.26	181.08	2.09	
13,550.00	88.90	6,416.03	7,260.38	179.90	-7,259.94	-132.79	7,261.15	181.05	3.36	
13,644.00	89.90	6,417.02	7,354.37	179.70	-7,353.93	-132.47	7,355.13	181.03	1.08	
13,739.00	91.90	6,415.53	7,449.35	179.50	-7,448.91	-131.80	7,450.08	181.01	2.12	
13,834.00	92.60	6,411.80	7,544.27	179.40	-7,543.84	-130.89	7,544.97	180.99	0.74	
13,929.00	91.70	6,408.23	7,639.19	181.20	-7,638.76	-131.39	7,639.89	180.99	2.12	
14,024.00	92.80	6,404.50	7,734.11	180.50	-7,733.68	-132.80	7,734.82	180.98	1.37	
14,119.00	89.70	6,402.43	7,829.08	180.00	-7,828.64	-133.21	7,829.78	180.97	3.31	
14,213.00	90.70	6,402.10	7,923.08	180.30	-7,922.64	-133.46	7,923.76	180.97	1.11	
14,308.00	90.00	6,401.52	8,018.01	176.60	-8,017.59	-130.89	8,018.65	180.94	3.96	
14,407.00	90.00	6,401.52	8,116.63	173.90	-8,116.24	-122.69	8,117.16	180.87	2.73	
14,457.00	90.00	6,401.52	8,166.33	173.90	-8,165.95	-117.38	8,166.80	180.82	0.00	

Checked By: _____	Approved By: _____	Date: _____
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RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

SLIDE & ROTATING REPORT

Customer:

Field:

County, State:

EP Energy

Wolfcamp

Crockett Co., Texas

Rig Name & No.:

Well Name & No.:

Ryan Job #:

NORAM 21

University East 4108 KH

7962

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	990	1,077	87	1,026	1.00°	117.30°									10.00	40.00	500.00	1550.00
ROTATE	1,077	1,140	63	1,089	1.00°	119.60°									15.00	50.00	585.00	2100.00
SLIDE	1,140	1,165	25											300 MTF	10.00		585.00	1600.00
ROTATE	1,165	1,235	70	1,184	1.80°	303.90°									15.00	50.00	585.00	1900.00
SLIDE	1,235	1,255	20											300 MTF	10.00		585.00	1600.00
ROTATE	1,255	1,330	75	1,279	4.90°	305.90°									20.00	50.00	585.00	1900.00
SLIDE	1,330	1,340	10											HS	10.00		585.00	1600.00
ROTATE	1,340	1,425	85	1,374	7.10°	303.10°									20.00	50.00	585.00	1900.00
ROTATE	1,425	1,520	95	1,469	7.50°	304.10°									20.00	50.00	585.00	1900.00
SLIDE	1,520	1,530	10											HS	10.00		585.00	1700.00
ROTATE	1,530	1,615	85	1,564	8.20°	303.70°									20.00	50.00	585.00	2000.00
ROTATE	1,615	1,710	95	1,659	8.20°	306.40°									25.00	50.00	585.00	2000.00
SLIDE	1,710	1,725	15											HS	10.00		585.00	1700.00
ROTATE	1,725	1,805	80	1,754	9.50°	302.00°									25.00	60.00	585.00	2000.00
ROTATE	1,805	1,900	95	1,849	9.60°	301.70°									25.00	60.00	585.00	2000.00
SLIDE	1,900	1,910	10											180.00°	15.00		585.00	1700.00
ROTATE	1,910	1,995	85	1,944	8.30°	301.60°									25.00	60.00	585.00	2000.00
ROTATE	1,995	2,090	95	2,039	8.20°	303.80°									25.00	60.00	585.00	2000.00
SLIDE	2,090	2,105	15											150L	15.00		585.00	1700.00
ROTATE	2,105	2,185	80	2,134	7.10°	302.00°									25.00	60.00	585.00	2000.00
SLIDE	2,185	2200	15											150L	15.00		585.00	1700.00
ROTATE	2,200	2280	80	2,229	5.20°	295.30°									25.00	60.00	585.00	2000.00
SLIDE	2,280	2298	18											180.00°	15.00		585.00	1700.00
ROTATE	2,298	2374	76	2,323	2.50°	285.00°									25.00	60.00	585.00	2000.00
SLIDE	2,374	2394	20											110 MTF	15.00		585.00	1700.00
ROTATE	2,394	2470	76	2,419	0.40°	215.40°									25.00	60.00	585.00	2000.00
ROTATE	2,470	4,465	1,995	4,414	0.60°	78.50°									25.00	60.00	585.00	2100.00
ROTATE	4,465	5,945	1,480	5,894	0.50°	51.30°									15.00	40.00	425.00	1700.00
ROTATE	5,945	5,950	5												25.00	20.00	500.00	2000.00
SLIDE	5,950	5,982	32	5,935	0.50°	87.10°				0.00	32.00			180 MTF	30.00		500.00	2000.00
ROTATE	5,982	5,987	5												25.00	20.00	500.00	2000.00
SLIDE	5,987	6,014	27	5,967	3.20°	164.30°	9.70°	8.40°	18.30°	17.00	42.00	11.50°	21-10	180 MTF	30.00		500.00	2000.00
ROTATE	6,014	6,024	10												25.00	20.00	500.00	2000.00
SLIDE	6,024	6,045	21	5,998	7.80°	172.30°	15.00°	14.80°	17.60°	26.00	37.00	11.40°	21-11	35R	30.00		500.00	2000.00
ROTATE	6,045	6,056	11												25.00	20.00	500.00	2000.00
SLIDE	6,056	6,077	21	6,030	11.40°	178.70°	11.70°	11.20°	16.30°	22.00	36.00	11.50°	22-9	25R	35.00		500.00	2000.00
ROTATE	6,077	6,086	9												25.00	20.00	500.00	2000.00
SLIDE	6,086	6,108	22	6,061	15.00°	183.30°	12.00°	11.60°	18.00°	20.00	38.00	11.30°	20-12	HS	35.00		500.00	2000.00
ROTATE	6,108	6,120	12												25.00	20.00	500.00	2000.00
SLIDE	6,120	6,140	20	6,093	18.90°	185.20°	12.30°	12.10°	16.90°	23.00	35.00	11.50°	22-10	HS	35.00		500.00	2000.00
ROTATE	6,140	6,150	10												25.00	20.00	500.00	2000.00
SLIDE	6,150	6,172	22	6,125	22.30°	185.70°	10.60°	10.60°	17.00°	20.00	37.00	11.50°	21-10	20L	35.00		500.00	2000.00
ROTATE	6,172	6,182	10												30.00	20.00	500.00	2000.00
SLIDE	6,182	6,203	21	6,156	25.80°	185.00°	11.30°	11.20°	16.60°	21.00	37.00	11.60°	22-10	20L	35.00		500.00	2000.00
ROTATE	6,203	6,213	10												30.00	20.00	500.00	2000.00
SLIDE	6,213	6,235	22	6,188	28.90°	183.90°	9.80°	9.60°	14.10°	22.00	37.00	12.20°	27-4	20L	35.00		500.00	2000.00
ROTATE	6,235	6,239	4												30.00	20.00	500.00	2000.00
SLIDE	6,239	6,266	27	6,219	32.30°	182.70°	11.10°	11.10°	16.10°	21.00	43.00	11.70°	23-9	HS	35.00		500.00	2000.00
ROTATE	6,266	6,275	9												30.00	20.00	500.00	2000.00
SLIDE	6,275	6,298	23	6,251	36.50°	181.90°	13.20°	13.10°	15.00°	28.00	38.00	12.00°	25-6	HS	35.00		500.00	2000.00
ROTATE	6,298	6,304	6												30.00	20.00	500.00	2000.00
SLIDE	6,304	6,329	25	6,282	40.30°	181.90°	12.20°	12.20°	17.20°	22.00	41.00	11.30°	21-11	HS	35.00		500.00	2000.00
ROTATE	6,329	6,340	11												30.00	20.00	500.00	2000.00
SLIDE	6,340	6,361	21	6,314	44.40°	182.20°	12.80°	12.80°	15.70°	26.00	36.00	11.90°	23-8	HS	35.00		500.00	2000.00
ROTATE	6,361	6,369	8												30.00	20.00	500.00	2000.00
SLIDE	6,369	6,392	23	6,345	47.70°	182.80°	10.70°	10.60°	16.50°	20.00	39.00	11.60°	22-10	HS	35.00		500.00	2000.00
ROTATE	6,392	6,402	10												30.00	20.00	500.00	2000.00
SLIDE	6,402	6,424	22	6,377	51.40°	183.10°	11.50°	11.50°	15.40°	24.00	37.00	12.20°	25-6	20L	35.00		500.00	2000.00
ROTATE	6,424	6,430	6												30.00	20.00	500.00	2000.00
SLIDE	6,430	6,455	25	6,408	54.80°	182.40°	11.10°	10.90°	16.10°	21.00	41.00	11.80°	24-8	HS	35.00		500.00	2000.00
ROTATE	6,455	6463	8												30.00	20.00	500.00	2000.00
SLIDE	6,463	6487	24	6,440	58.80°	181.00°	13.00°	12.50°	15.30°	26.00	39.00	12.30°	26-5	HS	35.00		500.00	2000.00
ROTATE	6,487	6492	5												30.00	20.00	500.00	2000.00
SLIDE	6,492	6518	26	6,471	62.80°	180.80°	12.90°	12.90°	16.60°	24.00	42.00	11.00°	22-10	HS	35.00		500.00	2000.00
ROTATE	6,518	6528	10												30.00	20.00	500.00	2000.00
SLIDE	6,528	6550	22	6,503	66.90°	179.60°	13.20°	12.80°	15.10°	27.00	37.00	12.50°	26-5	HS	35.00		500.00	2000.00
ROTATE	6,550	6555	5												30.00	20.00	500.00	2000.00
SLIDE	6,555	6581	26	6,534	70.70°	179.50°	12.20°	12.20°	17.00°	21.00	42.00	10.00°	22-10	HS	35.00		500.00	2000.00
ROTATE	6,581	6591	10												30.00	20.00	500.00	2000.00
SLIDE	6,591	6613	22	6,566	75.00°	180.50°	13.70°	13.40°	16.00°	27.00	37.00	10.50°	22-10	HS	35.00		500.00	2000.00
ROTATE	6,613	6623	10												30.00	20.00	500.00	2000.00
SLIDE	6,623	6645	22	6,598	78.90°	181.50°	12.50°	12.10°	17.50°	22.00	37.00	10.50°	21-10	HS	35.00		500.00	2000.00
ROTATE	6,645	6,655	10												30.00	20.00	500.00	2000.00
SLIDE	6,655	6,676	21	6,629	81.80°	182.50°	9.80°	9.30°	13.80°	21.00	37.00		LANDED	HS	35.00		500.00	2000.00
SLIDE	6,676	6,696	20											HS	15.00		543.00	2850.00



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

SLIDE & ROTATING REPORT

Customer:

EP Energy

Field:

Wolfcamp

County, State:

Crockett Co., Texas

Rig Name & No.:

NORAM 21

Well Name & No.:

University East 4108 KH

Ryan Job #:

7962

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	6,696	6,765	69	6,715	90.60°	182.10°	10.20°	10.20°	15.40°	57.00					25.00	30.00	543.00	3050.00
ROTATE	6,765	6,859	94	6,809	91.20°	181.00°									25.00	60.00	585.00	3500.00
SLIDE	6,859	6,874	15											180.00°	15.00		585.00	3200.00
ROTATE	6,874	6,954	80	6,904	90.30°	182.60°									25.00	60.00	585.00	3500.00
SLIDE	6,954	6,969	15											120L	15.00		480.00	2400.00
ROTATE	6,969	7,048	79	6,998	89.70°	179.40°									25.00	60.00	480.00	2800.00
ROTATE	7,048	7,143	95	7,093	90.40°	179.70°									25.00	60.00	585.00	3600.00
ROTATE	7,143	7,237	94	7,187	89.50°	176.30°									25.00	60.00	585.00	3600.00
SLIDE	7,237	7,262	25											90R	35.00		585.00	3300.00
ROTATE	7,262	7,332	70	7,282	90.50°	178.40°									25.00	60.00	585.00	3600.00
ROTATE	7,332	7,427	95	7,377	91.60°	178.20°									25.00	60.00	585.00	3600.00
SLIDE	7,427	7,457	30											140R	35.00		585.00	3300.00
ROTATE	7,457	7,521	64	7,471	90.40°	179.50°									25.00	60.00	585.00	3600.00
ROTATE	7,521	7,616	95	7,566	90.90°	178.70°									25.00	60.00	585.00	3600.00
SLIDE	7,616	7,641	25											130R	35.00		585.00	3300.00
ROTATE	7,641	7,711	70	7,661	87.80°	180.30°									25.00	60.00	585.00	3600.00
ROTATE	7,711	7,996	285	7,946	92.20°	182.00°									25.00	60.00	585.00	3600.00
SLIDE	7,996	8,026	30											180.00°	40.00		585.00	3300.00
ROTATE	8,026	8,090	64	8,040	87.60°	180.50°									25.00	60.00	585.00	3600.00
ROTATE	8,090	8,470	380	8,420	92.10°	179.80°									25.00	60.00	585.00	3600.00
SLIDE	8,470	8,495	25											180.00°	40.00		585.00	3300.00
ROTATE	8,495	8,565	70	8,515	90.30°	180.40°									25.00	50.00	585.00	3600.00
ROTATE	8,565	8,851	286	8,801	91.80°	178.10°									25.00	50.00	585.00	3600.00
SLIDE	8,851	8,881	30											140R	40.00		585.00	3300.00
ROTATE	8,881	8,945	64	8,895	91.20°	180.90°									30.00	50.00	585.00	3600.00
SLIDE	8,945	8,970	25											180.00°	40.00		585.00	3300.00
ROTATE	8,970	9,040	70	8,990	89.80°	180.70°									30.00	50.00	585.00	3600.00
SLIDE	9,040	9,055	15											180.00°	40.00		585.00	3500.00
ROTATE	9,055	9,135	80	9,085	89.40°	180.50°									30.00	60.00	585.00	3700.00
ROTATE	9,135	9,230	95	9,180	90.90°	180.50°									30.00	60.00	585.00	3700.00
SLIDE	9,230	9,260	30											180.00°	40.00		585.00	3500.00
ROTATE	9,260	9,325	65	9,275	87.30°	179.50°									30.00	60.00	585.00	3700.00
ROTATE	9,325	9,611	286	9,561	92.30°	181.10°									30.00	60.00	585.00	3700.00
SLIDE	9,611	9,641	30											180.00°	40.00		575.00	3400.00
ROTATE	9,641	9,705	64	9,655	88.40°	181.80°									30.00	60.00	575.00	3700.00
ROTATE	9,705	9,895	190	9,845	91.30°	183.90°									30.00	60.00	575.00	3700.00
SLIDE	9,895	9,925	30											135L	50.00		575.00	3400.00
ROTATE	9,925	9,990	65	9,940	88.80°	180.40°									30.00	60.00	575.00	3700.00
ROTATE	9,990	10,085	95	10,035	89.80°	180.20°									30.00	50.00	575.00	3700.00
SLIDE	10,085	10,105	20											180.00°	50.00		575.00	3400.00
ROTATE	10,105	10,180	75	10,130	88.60°	180.30°									30.00	50.00	575.00	3700.00
ROTATE	10,180	10,370	190	10,320	91.60°	180.20°									30.00	50.00	575.00	3700.00
SLIDE	10,370	10,400	30											180.00°	50.00		575.00	3400.00
ROTATE	10,400	10,465	65	10,415	88.00°	180.30°									30.00	50.00	575.00	3700.00
ROTATE	10,465	10,750	285	10,700	91.90°	179.20°									30.00	50.00	575.00	3700.00
SLIDE	10,750	10,780	30											180.00°	60.00		575.00	3400.00
ROTATE	10,780	10,845	65	10,795	89.70°	179.30°									30.00	50.00	575.00	3700.00
ROTATE	10,845	10,939	94	10,889	91.40°	180.20°									30.00	50.00	575.00	3700.00
SLIDE	10,939	10,969	30											180.00°	60.00		575.00	3400.00
ROTATE	10,969	11,034	65	10,984	87.80°	179.00°									30.00	50.00	575.00	3700.00
ROTATE	11,034	11,320	286	11,270	90.50°	177.30°									30.00	50.00	575.00	3700.00
SLIDE	11,320	11,350	30											110R	60.00		575.00	3400.00
ROTATE	11,350	11,415	65	11,365	89.20°	179.00°									30.00	50.00	575.00	3700.00
ROTATE	11,415	11,510	95	11,460	90.80°	178.70°									30.00	50.00	575.00	3700.00
SLIDE	11,510	11,535	25											110R	60.00		575.00	3400.00
ROTATE	11,535	11,605	70	11,555	89.90°	179.60°									30.00	50.00	575.00	3700.00
ROTATE	11,605	11,700	95	11,650	90.80°	178.60°									30.00	50.00	575.00	3700.00
SLIDE	11,700	11,730	30											110R	60.00		575.00	3400.00
ROTATE	11,730	11,795	65	11,745	88.10°	181.50°									30.00	50.00	575.00	3700.00
ROTATE	11,795	11,890	95	11,840	89.10°	181.50°									30.00	50.00	575.00	3700.00
ROTATE	11,890	11,985	95	11,935	90.50°	181.90°									30.00	50.00	575.00	3700.00
SLIDE	11,985	12,010	25											160 L	60.00		575.00	3400.00
ROTATE	12,010	12,080	70	12,030	89.20°	182.20°									30.00	50.00	575.00	3700.00
ROTATE	12,080	12,175	95	12,125	90.80°	183.00°									30.00	50.00	575.00	3700.00
SLIDE	12,175	12,205	30											135 L	60.00		575.00	3400.00
ROTATE	12,205	12,269	64	12,219	88.70°	180.30°									30.00	50.00	575.00	3700.00
ROTATE	12,269	12,460	191	12,410	92.20°	181.00°									30.00	50.00	575.00	3700.00
SLIDE	12,460	12,490	30											180.00°	70.00		565.00	3400.00
ROTATE	12,490	12,555	65	12,505	89.00°	180.90°									30.00	60.00	565.00	3700.00
ROTATE	12,555	12,744	189	12,694	92.00°	181.60°									30.00	60.00	565.00	3700.00
SLIDE	12,744	12,774	30											150L	70.00		565.00	3400.00
ROTATE	12,774	12,839	65	12,789	90.00°	181.30°									30.00	60.00	565.00	3700.00
SLIDE	12,839	12,859	20											150L	70.00		565.00	3400.00
ROTATE	12,859	12,934	75	12,884	87.70°	180.70°									30.00	60.00	535.00	3700.00
ROTATE	12,934	13,220	286	13,170	92.10°	180.90°									30.00	60.00	535.00	3700.00



Customer:	EP Energy	Rig Name & No.:	NORAM 21
Field:	Wolfcamp	Well Name & No.:	University East 4108 KH
County, State:	Crockett Co., Texas	Ryan Job #:	7962

[illegible]

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29-Aug-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

7962

DAILY DRILLING REPORT

Oil Company:	EP Energy
Field:	Wolfcamp
County, State:	Crockett Co., Texas
AFE or PO #:	160794

Customer:	EP Energy
Well Name & No.:	University East 4108 KH
Block or Section:	Big Lake
Rig Contractor & No.:	NORAM 21

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

Footage Today:	0
Current Run Ftg:	0

Drlg Hrs Today:	0.00
Run Drlg Hrs:	0.00

ROP Today:	-
Run Avg. ROP:	-

Last Casing Set: 9 5/8"
Depth:

PUMP Data Total Gals/Min =					MUD DATA		Previous		Current		MOTOR DATA		CURRENT	
Pump	Bonco	Bonco	0	Mud Type	OBM		BHA #	1	BHA #					
Liner (in)	6	6		Sample	IN					BIT		Run No.	1	
%	97.5	97.5		Time						MOTOR		Size (in.)		
Vol (gps)	4.17	4.17	0.00	Wt.						UBHO		Type		
SPM				VIS						NMDC MWD		Serial No.		
DRILLING PARAMETERS				PV						NMDC		Tool Deflection		
ST. WT. ROT 1000's:				YP						XO		Avg. Diff. Press.		
P/U WT. 1000's:				WL						3 - 6 1/4" DC'S		Daily Drill Hrs.	0.00	
S/O WT. 1000's:				CL						XO		Daily Circ. Hrs.	0.00	
WOB 1000's:				Gels								Daily Total Hrs:	0.00	
ROTARY RPM:				% Oil								Acc. Drill Hrs.	0.00	
MOTOR RPM:				% Solids								Acc. Circ. Hrs.	0.00	
TOTAL Bit RPM			0	% Sand								Depth In		
ROT TQ. OFF BTM:				PH								Depth Out		
ROT TQ. ON BTM:				Temp F								LIH Hrs.		
Current Mag Dec:				MWD F			BHA WT					Acc. Hrs Cir/Drilg	0.00	
Pulse Hight				GPM			BELOW JARS					Total K Revs	0.00	
"G" Totals				PSI								Jar # HRS		

[illegible][illegible]

Date: 30-Aug-14



A NABORS COMPANY

Ryan Job # **7962**

[illegible]

Report #: 3

Date: 31-Aug-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
Field: Wolfcamp
County, State: Crockett Co., Texas
AFE or PO #: 160794

Customer: EP Energy
Well Name & No.: University East 4108 KH
Block or Section: Big Lake
Rig Contractor & No.: NORAM 21

00:00 Depth: 990
24:00 Depth: 2185

Footage Today: 1195
Current Run Ftg: 1195

Drig Hrs Today: 5.20
Run Drig Hrs: 5.20

ROP Today: 229.81
Run Avg. ROP: 229.81

Last Casing Set: 9 5/8"
Depth: 990

PUMP Data Total Gals/Min = 584				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	6	6		Sample	IN				Size (in.)	7
%	97.5	97.5		Time	14:00				Type	HUNTING 7/8 5.7
Vol (gals)	4.17	4.17	0.00	Wt.	9.3				Serial No.	7700
SPM	70	70		VIS	70				Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	15				Avg. Diff. Press.	500
ST. WT. ROT 1000's:	85			YP	21			3 - 6 1/4" DC'S	Daily Drill Hrs.	5.20
P/U WT. 1000's:	90			WL				XO	Daily Circ. Hrs.	3.00
S/O WT. 1000's:	80			CL	75000				Daily Total Hrs.	8.20
WOB 1000's:	20			Gels	14.18.22				Acc. Drill Hrs.	5.20
ROTARY RPM:	50			% Oil	72.5				Acc. Circ. Hrs.	3.00
MOTOR RPM:	140			% Solids	2.5				Depth In	990
TOTAL Bit RPM	190			% Sand	0.01				Depth Out	
ROT TQ. OFF BTM:	2500			PH					LIH Hrs.	
ROT TQ. ON BTM:	8000			Temp F	90				Acc. LIH Hrs.	0.00
Current Mag Dec:	6.41			MWD F	116	BHA WT			Acc. Hrs Cir/Drilg	8.20
Pulse Hight	150			GPM	585	BELOW JARS			Total K Revs	59.28
"G" Totals	0.998			PSI	1400				Jar # HRS	

BIT DATA																	
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION							
										IR	OR	DC	LOC	B/S	G/16"	OC	RPLD
1	8 3/4	SECURITY	MM56D	12509025	5 X 22	990											

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown			Current Operations			
0:00	1:30	1:30				6.G	P/U BHA# 1			P/U BHA# 1			
1:30	9:30	8:00				O	WORK ON FLOW LINE						
9:30	10:30	1:00				6.A	TIH						
10:30	10:55	0:25				5.A	DISPLACE			DRILL TANGENT			
10:55	11:30	0:35				3.A	DRILL OUT FLOAT EQUIP						
11:30	12:20	0:50	990	1077	87	2.A	ROTATE WOB-10 RPM-40 DIFF-400						
12:20	12:30	0:10				10	C/S @ 1026' INC-1.0 AZM-117.3 TEMP-91						
12:30	12:40	0:10	1077	1140	63	2.A	ROTATE WOB-15 RPM-50 DIFF-500						
12:40	12:50	0:10				10	C/S @ 1089' INC-1.0 AZM-119.6 TEMP-93						
12:50	13:05	0:15	1140	1165	25	2.B	SLIDE @ 300 MTF WOB-10 DIFF-200						
13:05	13:15	0:10	1165	1235	70	2.A	ROTATE WOB-15 RPM-50 DIFF-500			Estimated Daily Charges			
13:15	13:25	0:10				10	C/S @ 1184' INC-1.8 AZM-303.9 TEMP-98			Description		Cost	
13:25	13:40	0:15	1235	1255	20	2.B	SLIDE @ 300 MTF WOB-10 DIFF-200						
13:40	13:50	0:10	1255	1330	75	2.A	ROTATE WOB-20 RPM-50 DIFF-500						
13:50	14:00	0:10				10	C/S @ 1279' INC-4.9 AZM-305.9 TEMP-102						
14:00	14:10	0:10	1330	1340	10	2.B	SLIDE @ HS GTF WOB-10 DIFF-200						
14:10	14:25	0:15	1340	1425	85	2.A	ROTATE WOB-20 RPM-50 DIFF-500						
14:25	14:35	0:10				10	C/S @ 1374' INC-7.1 AZM-303.6 TEMP-105						
14:35	14:55	0:20	1425	1520	95	2.A	ROTATE WOB-20 RPM-50 DIFF-500						
14:55	15:05	0:10				10	C/S @ 1469' INC-7.5 AZM-304.1 TEMP-109						
15:05	15:15	0:10	1520	1530	10	2.B	SLIDE @ HS GTF WOB-10 DIFF-200						
15:15	15:30	0:15	1530	1615	85	2.A	ROTATE WOB-20 RPM-50 DIFF-500						
15:30	15:40	0:10				10	C/S @ 1564' INC-8.2 AZM-303.7 TEMP-113			Estimated Daily Cost (USD)		\$ -	
15:40	16:00	0:20	1615	1710	95	2.A	ROTATE WOB-25 RPM-50 DIFF-500			Accumulated Cost (USD)		\$ -	
16:00	16:10	0:10				10	C/S @ 1659' INC-8.2 AZM-306.4 TEMP-114			Company Representative (s)			
16:10	16:20	0:10	1710	1725	15	2.B	SLIDE @ 30L GTF WOB-10 DIFF-200			JIMMY DAVIS		GARTH STARR	
16:20	16:30	0:10	1725	1805	80	2.A	ROTATE WOB-25 RPM-60 DIFF-500			CHAD SURBER		RICHARD JOHN	
16:30	16:40	0:10				10	C/S @ 1754' INC-9.5 AZM-302.0 TEMP-114			RYAN Directional Representative (s)			
16:40	17:00	0:20	1805	1900	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500			WESTON WHITE		JARED FAUST	
17:00	17:10	0:10				10	C/S @ 1849' INC-9.6 AZM-301.7 TEMP-116						
17:10	17:25	0:15	1900	1910	10	2.B	SLIDE @ 180 GTF WOB-15 DIFF-200			RYAN MWD Representative (s)			
17:25	17:45	0:20	1910	1995	85	2.A	ROTATE WOB-25 RPM-60 DIFF-500			ERNEST HOTZE		SHANNON KILGORE	
17:45	17:55	0:10				10	C/S @ 1944' INC-8.3 AZM-301.6 TEMP-116						
17:55	18:10	0:15	1995	2090	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500			24 Hour Breakdown			
18:10	18:20	0:10				10	C/S @ 2039' INC- 8.2 AZM- 303.8 TEMP-116			Ftg Rot.	1090	Time Rot.	3.80
18:20	18:30	0:10	2090	2105	15	2.B	SLIDE @ 180 GTF WOB-15 DIFF-200			Ftg Orient	105	Time Orient	1.40
18:30	18:40	0:10	2105	2185	80	2.A	ROTATE WOB-25 RPM-60 DIFF-500			Rot. ROP	286.84	Orient ROP	75.00

Report #: 3A

Date: 31-Aug-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 2185
 24:00 Depth: 3229

Footage Today: 1044
 Current Run Ftg: 2239

Drig Hrs Today: 3.20
 Run Drig Hrs: 8.40

ROP Today: 326.25
 Run Avg. ROP: 266.55

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 584				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	6	6		Sample	IN			MOTOR	Size (in.)	7
%	97.5	97.5		Time	14:00			NM UBHO	Type	HUNTING 7/8 5.7
Vol (gps)	4.17	4.17	0.00	Wt.	9.3			NMDC MWD	Serial No.	7700
SPM	70	70		VIS	70			NMDC	Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	15			XO	Avg. Diff. Press.	500
ST. WT. ROT 1000's:	85			YP	21			3 - 6 1/4" DC'S	Daily Drill Hrs.	3.20
P/U WT. 1000's:	90			WL				XO	Daily Circ. Hrs.	2.20
S/O WT. 1000's:	80			CL	75000				Daily Total Hrs.	5.40
WOB 1000's:	20			Gels	14.18.22				Acc. Drill Hrs.	8.40
ROTARY RPM:	50			% Oil	72.5				Acc. Circ. Hrs.	5.20
MOTOR RPM:	140			% Solids	2.5				Depth In	990
TOTAL Bit RPM	190			% Sand	0.01				Depth Out	
ROT TQ. OFF BTM:	2500			PH					LIH Hrs.	23:59
ROT TQ. ON BTM:	8000			Temp F	90				Acc. LIH Hrs.	23:98
Current Mag Dec:	6.41			MWD F	116	BHA WT			Acc. Hrs Cir/Drig	13.60
Pulse Hight	150			GPM	585	BELOW JARS			Total K Revs	95.76
"G" Totals	0.998			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	SECURITY	MM56D	12509025	5 X 22	990													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations				
18:40	18:55	0:15				10	C/S @ 2134' INC- 7.1 AZM- 302 TEMP-116								
18:55	19:05	0:10	2185	2200	15	2.B	SLIDE @ 150L GTF WOB-15 DIFF-200								
19:05	19:25	0:20	2200	2280	80	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
19:25	19:40	0:15				10	C/S @ 2229' INC- 5.2 AZM- 295.3 TEMP-116				DRILL TANGENT				
19:40	20:05	0:25	2280	2298	18	2.B	SLIDE @ 180 GTF WOB-15 DIFF-200								
20:05	20:15	0:10	2298	2374	76	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
20:15	20:30	0:15				10	C/S @ 2323' INC-2.5 AZM- 285 TEMP-116								
20:30	20:45	0:15	2374	2394	20	2.B	SLIDE @ 110 MTF WOB-15 DIFF-200								
20:45	20:55	0:10	2394	2470	76	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
20:55	21:05	0:10				10	C/S @ 2419' INC- 0.4 AZM- 215.4 TEMP-116								
21:05	21:20	0:15	2470	2564	94	2.A	ROTATE WOB-25 RPM-60 DIFF-500				Estimated Daily Charges				
21:20	21:30	0:10				10	C/S @ 2513' INC- 0.5 AZM- 185.7 TEMP-120				Description		Cost		
21:30	21:40	0:10	2564	2659	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
21:40	21:50	0:10				10	C/S @ 2608' INC- 0.5 AZM- 173.2 TEMP-120								
21:50	22:00	0:10	2659	2754	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
22:00	22:10	0:10				10	C/S @ 2703' INC- 0.8 AZM- 184.1 TEMP-120								
22:10	22:20	0:10	2754	2849	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
22:20	22:30	0:10				10	C/S @ 2798' INC-1.1 AZM- 217.2 TEMP-120								
22:30	22:40	0:10	2849	2944	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
22:40	22:50	0:10				10	C/S @ 2893' INC- 1.3 AZM- 249.1 TEMP-120								
22:50	23:00	0:10	2944	3039	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500								
23:00	23:10	0:10				10	C/S @ 2988' INC-1.3 AZM- 257.1 TEMP-120								
23:10	23:35	0:25	3039	3134	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				Estimated Daily Cost (USD)		\$ -		
23:35	23:50	0:15				10	C/S @ 3083' INC-1.1 AZM- 260.9 TEMP-120				Accumulated Cost (USD)		\$ -		
23:50	23:59	0:09	3134	3229	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				Company Representative (s)				
											JIMMY DAVIS		GARTH STARR		
											CHAD SURBER		RICHARD JOHN		
											RYAN Directional Representative (s)				
											WESTON WHITE		JARED FAUST		
											RYAN MWD Representative (s)				
											ERNEST HOTZE		SHANNON KILGORE		
											24 Hour Breakdown				
											Ftg Rot.		991	Time Rot.	2.30
											Ftg Orient		53	Time Orient	0.80
											Rot. ROP		430.87	Orient ROP	66.25

Report #: 4

Date: 1-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
Field: Wolfcamp
County, State: Crockett Co., Texas
AFE or PO #: 160794

Customer: EP Energy
Well Name & No.: University East 4108 KH
Block or Section: Big Lake
Rig Contractor & No.: NORAM 21

00:00 Depth: 3229
24:00 Depth: 4940

Footage Today: 1711
Current Run Ftg: 3950

Drig Hrs Today: 7.00
Run Drig Hrs: 15.40

ROP Today: 244.43
Run Avg. ROP: 256.49

Last Casing Set: 9 5/8"
Depth: 990

PUMP Data Total Gals/Min = 426				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	6	6		Sample	IN				Size (in.)	7
%	97.5	97.5		Time	10:00				Type	HUNTING 7/8 5.7
Vol (gps)	4.17	4.17	0.00	Wt.	9.2				Serial No.	7700
SPM	51	51		VIS	66				Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	14				Avg. Diff. Press.	500
ST. WT. ROT 1000's:	140			YP	21				Daily Drill Hrs.	7.00
P/U WT. 1000's:	145			WL					Daily Circ. Hrs.	3.30
S/O WT. 1000's:	135			CL	74K				Daily Total Hrs.	10.30
WOB 1000's:	15			Gels	14.18.22				Acc. Drill Hrs.	15.40
ROTARY RPM:	40			% Oil	72.5				Acc. Circ. Hrs.	8.50
MOTOR RPM:	102			% Solids	3.2				Depth In	990
TOTAL Bit RPM	142			% Sand	0.01				Depth Out	
ROT TQ. OFF BTM:	2500			PH					LIH Hrs.	
ROT TQ. ON BTM:	10000			Temp F	90				Acc. LIH Hrs.	23.98
Current Mag Dec:	6.41			MWD F	116	BHA WT			Acc. Hrs Cir/Drilg	23.90
Pulse Hight	90			GPM	425	BELOW JARS			Total K Revs	131.21
"G" Totals	0.998			PSI	1200				Jar # HRS	

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
1	8 3/4	SECURITY	MM56D	12509025	5 X 22	990													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:15	0:15				10	C/S @ 3178' INC-1.0 AZM- 267.1 TEMP-120				
0:15	0:45	0:30	3229	3324	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
0:45	0:55	0:10				10	C/S @ 3273' INC- 0.7 AZM- 261.9 TEMP-120				
0:55	1:10	0:15	3324	3419	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500	DRILL TANGENT			
1:10	1:20	0:10				10	C/S @ 3368' INC-0.7 AZM- 250.5 TEMP-120				
1:20	1:40	0:20	3419	3514	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
1:40	1:50	0:10				10	C/S @ 3463' INC- 0.5 AZM- 234 TEMP-120	F/4520' T/KOP 425 GPM, 40 RPM, 15 WOB			
1:50	2:05	0:15	3514	3609	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
2:05	2:15	0:10				10	C/S @ 3558' INC- 0.2 AZM- 235.5 TEMP-120				
2:15	2:35	0:20	3609	3704	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
2:35	2:45	0:10				10	C/S @ 3653' INC- .1 AZM- 221.6 TEMP-120	Estimated Daily Charges			
2:45	3:05	0:20	3704	3799	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500	Description		Cost	
3:05	3:15	0:10				10	C/S @ 3748' INC-.1 AZM- 296.1 TEMP-120				
3:15	3:40	0:25	3799	3894	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
3:40	3:50	0:10				10	C/S @ 3843' INC- .4 AZM- 90.2 TEMP-120				
3:50	4:10	0:20	3894	3989	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
4:10	4:20	0:10				10	C/S @ 3938' INC-.5 AZM- 98.1 TEMP-120				
4:20	4:40	0:20	3989	4084	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
4:40	4:50	0:10				10	C/S @ 4033' INC- .4 AZM- 84.6 TEMP-120				
4:50	5:10	0:20	4084	4180	96	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
5:10	5:20	0:10				10	C/S @ 4129' INC- .5 AZM- 88 TEMP-120				
5:20	5:30	0:10	4180	4275	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
5:30	5:40	0:10				10	C/S @ 4224' INC- .6 AZM- 84.4 TEMP-120	Estimated Daily Cost (USD)		\$ -	
5:40	5:55	0:15	4275	4371	96	2.A	ROTATE WOB-25 RPM-60 DIFF-500	Accumulated Cost (USD)		\$ -	
5:55	6:05	0:10				10	C/S @ 4320' INC- .6 AZM- 78.5 TEMP-120	Company Representative (s)			
6:05	6:20	0:15	4371	4465	94	2.A	ROTATE WOB-25 RPM-60 DIFF-500	JIMMY DAVIS		GARTH STARR	
6:20	6:30	0:10				10	C/S @ 4414' INC-0.6 AZM-88.2 TEMP-122	CHAD SURBER		RICHARD JOHN	
6:30	7:00	0:30	4465	4560	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500	RYAN Directional Representative (s)			
7:00	7:10	0:10				10	C/S @ 4509' INC-0.7 AZM-55.9 TEMP-122	WESTON WHITE		JARED FAUST	
7:10	7:40	0:30	4560	4655	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
7:40	7:50	0:10				10	C/S @ 4604' INC-0.6 AZM-54.0 TEMP-120	RYAN MWD Representative (s)			
7:50	8:25	0:35	4655	4750	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500	ERNEST HOTZE		SHANNON KILGORE	
8:25	8:35	0:10				10	C/S @ 4699' INC-0.6 AZM-81.7 TEMP-118				
8:35	9:20	0:45	4750	4845	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500	24 Hour Breakdown			
9:20	9:30	0:10				10	C/S @ 4794' INC-0.5 AZM-78.2 TEMP-118	Ftg Rot.	1711	Time Rot.	7.00
9:30	10:05	0:35	4845	4940	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500	Ftg Orient	0	Time Orient	0.00
10:05	10:15	0:10				10	C/S @ 4889' INC-0.7 AZM-90.7 TEMP-118	Rot. ROP	244.43	Orient ROP	-

4A

1-Sep-14



A NABORS COMPANY

7962

DAILY DRILLING REPORT

160794

g Contractor & No.: NORAM 21

1945

4955

Run Drlg Hrs:

un Avg. ROP: 217.32

Depth: 990

PUMP Data Total Gals/Min =					226		MUD DATA			Previous		Current					
Pump		Bonco		Bonco		0		Mud Type		OBM				BIT		Run No.	
Liner (in)		6		6				Sample		IN				MOTOR		Size (in.)	
%		97.5		97.5				Time		10:00				NM UBHO		Type	
Vol (gps)		4.17		4.17		0.00		Wt.		9.2				NMDC MWD		Serial No.	
SPM		51		51				VIS		66				NMDC		Tool Deflection	
DRILLING PARAMETERS							PV		14				XO		Avg. Diff. Press.		
ST. WT. ROT 1000's:			140			YP			21						3 - 6 1/4" DC'S		
P/U WT. 1000's:			145			WL									XO		
S/O WT. 1000's:			135			CL			74K						Daily Drill Hrs:		
WOB 1000's:			15			Gels			14.18.22						Acc. Drill Hrs.		
ROTARY RPM:			40			% Oil			72.5						Acc. Circ. Hrs.		
MOTOR RPM:			102			% Solids			3.2						Depth In		
TOTAL Bit RPM			142			% Sand			0.01						Depth Out		
ROT TQ. OFF BTM:			2500			PH									LIH Hrs.		
ROT TQ. ON BTM:			10000			Temp F			90						Acc. LIH Hrs.		
Current Mag Dec:			6.41			MWD F			116			BHA WT			Acc. Hrs Cir/Drilg		
Pulse Hight			90			GPM			425			BELOW JARS			Total K Revs		
%G" Totals			0.998			PSI			1200						Jar # HRS		

BIT DATA																
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION						
										IR	OR	DC	LOC	B/S	G/16"	OC
1	8 3/4	SECURITY	MM56D	12509025	5 X 22	990	4955	22.8	5945							

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
10:15	10:50	0:35	4940	5036	96	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
10:50	11:00	0:10				10	C/S @ 4985' INC-0.7 AZM-77.9 TEMP-118				
11:00	11:35	0:35	5036	5131	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
11:35	11:45	0:10				10	C/S @ 5080' INC-0.6 AZM-91.0 TEMP-118	DRILL TANGENT			
11:45	12:25	0:40	5131	5226	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
12:25	12:35	0:10				10	C/S @ 5175' INC-0.6 AZM-75.1 TEMP-118				
12:35	13:10	0:35	5226	5321	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500	F/4520' T/KOP 425 GPM, 40 RPM, 15 WOB			
13:10	13:20	0:10				10	C/S @ 5270' INC-0.7 AZM-78.0 TEMP-120				
13:20	14:05	0:45	5321	5416	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
14:05	14:15	0:10				10	C/S @ 5365' INC-0.5 AZM-77.9 TEMP-118				
14:15	15:00	0:45	5416	5511	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500	Estimated Daily Charges			
15:00	15:10	0:10				10	C/S @ 5460' INC-0.5 AZM-89.6 TEMP-120	Description		Cost	
15:10	15:55	0:45	5511	5606	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
15:55	16:05	0:10				10	C/S @ 5555' INC-0.5 AZM-72.9 TEMP-120				
16:05	16:50	0:45	5606	5701	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
16:50	17:20	0:30				7	RIG SERVICE				
17:20	17:30	0:10				10	C/S @ 5650' INC-0.6 AZM-75.0 TEMP-122				
17:30	18:10	0:40	5701	5796	95	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
18:10	18:20	0:10				10	C/S @ 5776' INC- .4 AZM- 46 TEMP-122				
18:20	19:15	0:55	5796	5890	94	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
19:15	19:25	0:10				10	C/S @ 5839' INC- .5 AZM- 54.1 TEMP-122				
19:25	19:50	0:25	5890	5945	55	2.A	ROTATE WOB-15 RPM-40 DIFF-500				
19:50	19:55	0:05				10	C/S @ 5894' INC- AZM- TEMP-122	Estimated Daily Cost (USD)		\$ -	
19:55	20:30	0:35				5.A	CIRCULATE	Accumulated Cost (USD)		\$ -	
20:30	23:59	3:29				6.A	TOOH	Company Representative (s)			
								JIMMY DAVIS		GARTH STARR	
								CHAD SURBER		RICHARD JOHN	
								RYAN Directional Representative (s)			
								WESTON WHITE		JARED FAUST	
								RYAN MWD Representative (s)			
								ERNEST HOTZE		SHANNON KILGORE	
								24 Hour Breakdown			
								Ftg Rot.	1005	Time Rot.	7.40
								Ftg Orient	0	Time Orient	0.00
								Rot. ROP	135.81	Orient ROP	-

Report #: 5

Date: 2-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 0 Footage Today: 0 Drlg Hrs Today: 0.00 ROP Today: - Last Casing Set: 9 5/8"
 24:00 Depth: 0 Current Run Ftg: -990 Run Drlg Hrs: 22.80 Run Avg. ROP: -43.42 Depth: 990

PUMP Data Total Gals/Min = 426				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	BHA #	1	BHA #	Run No.	1
Liner (in)	6	6		Sample	IN			MOTOR	Size (in.)	7
%	97.5	97.5		Time	10:00			NM UBHO	Type	HUNTING 7/8 5.7
Vol (gps)	4.17	4.17	0.00	Wt.	9.2			NMDC MWD	Serial No.	7700
SPM	51	51		VIS	66			NMDC	Tool Deflection	1.5 FBH
DRILLING PARAMETERS				PV	14			XO	Avg. Diff. Press.	500
ST. WT. ROT 1000's:	140			YP	21			3 - 6 1/4" DC'S	Daily Drill Hrs.	0.00
P/U WT. 1000's:	145			WL				XO	Daily Circ. Hrs.	0.00
S/O WT. 1000's:	135			CL	74K				Daily Total Hrs:	0.00
WOB 1000's:	15			Gels	14.18.22				Acc. Drill Hrs.	22.80
ROTARY RPM:	40			% Oil	72.5				Acc. Circ. Hrs.	10.80
MOTOR RPM:	102			% Solids	3.2				Depth In	990
TOTAL Bit RPM	142			% Sand	0.01				Depth Out	5945
ROT TQ. OFF BTM:	2500			PH					LIH Hrs.	1:00
ROT TQ. ON BTM:	10000			Temp F	90				Acc. LIH Hrs.	48.97
Current Mag Dec:	6.41			MWD F	116	BHA WT			Acc. Hrs Cir/Drilg	33.60
Pulse Hight	90			GPM	425	BELOW JARS			Total K Revs	194.26
"G" Totals	0.998			PSI	1200				Jar # HRS	

BIT DATA																	
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION							
										IR	OR	DC	LOC	B/S	G/16"	OC	RPLD
1	8 3/4	SECURITY	MM56D	12509025	5 X 22	990	4955	22.8	5945								

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown		Current Operations					
0:00	1:00	1:00				6.G	LD BHA# 1							
									DRILL TANGENT					
									F/4520' T/KOP 425 GPM, 40 RPM, 15 WOB					
									Estimated Daily Charges					
									Description		Cost			
									Estimated Daily Cost (USD)		\$ -			
									Accumulated Cost (USD)		\$ -			
									Company Representative (s)					
									JIMMY DAVIS		GARTH STARR			
									CHAD SURBER		RICHARD JOHN			
									RYAN Directional Representative (s)					
									WESTON WHITE		JARED FAUST			
									RYAN MWD Representative (s)					
									ERNEST HOTZE		SHANNON KILGORE			
									24 Hour Breakdown					
									Ftg Rot.		0	Time Rot.		0.00
									Ftg Orient		0	Time Orient		0.00
									Rot. ROP		-	Orient ROP		-

Report #: 5A

Date: 2-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 5945
 24:00 Depth: 6304

Footage Today: 359
 Current Run Ftg: 359

Drig Hrs Today: 6.10
 Run Drig Hrs: 6.10

ROP Today: 58.85
 Run Avg. ROP: 58.85

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 501				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	BIT	BIT	Run No.	2	
Liner (in)	6	6		Sample	IN	MOTOR	MOTOR	Size (in.)	7	
%	97.5	97.5		Time	10:00	NM UBHO	NM UBHO	Type	4/5 7.0	
Vol (gals)	4.17	4.17	0.00	Wt.	9.2	NMDC MWD	NMDC MWD	Serial No.	7619	
SPM	60	60		VIS	66	NMDC	FLEX	Tool Deflection	2.12	
DRILLING PARAMETERS				PV	14	XO		Avg. Diff. Press.	250	
ST. WT. ROT 1000's:	150			YP	21	3 - 6 1/4" DC'S		Daily Drill Hrs.	6.10	
P/U WT. 1000's:	155			WL		XO		Daily Circ. Hrs.	2.50	
S/O WT. 1000's:	145			CL	74K			Daily Total Hrs:	8.60	
WOB 1000's:	30			Gels	14.18.22			Acc. Drill Hrs.	6.10	
ROTARY RPM:	20			% Oil	72.5			Acc. Circ. Hrs.	2.50	
MOTOR RPM:	250			% Solids	3.2			Depth In	5945	
TOTAL Bit RPM	270			% Sand	0.01			Depth Out		
ROT TQ. OFF BTM:	2500			PH				LIH Hrs.		
ROT TQ. ON BTM:	5000			Temp F	90			Acc. LIH Hrs.	0.00	
Current Mag Dec:	6.41			MWD F	127	BHA WT		Acc. Hrs Cir/Drilg	8.60	
Pulse Hight	80			GPM	500	BELOW JARS		Total K Revs	98.82	
G Totals	0.998			PSI	1750			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		
2	8 3/4	SMITH	FHI21	RD0531	3x18's	5945													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations				
1:00	1:30	0:30				O	CLEAN RIG FLOOR								
1:30	3:00	1:30				6.G	P/U BHA# 2				P/U BHA# 2				
3:00	6:45	3:45				6.A	TIH								
6:45	6:50	0:05	5945	5950	5	2.A	ROTATE WOB-25 RPM-20 DIFF-250				TIH				
6:50	7:30	0:40	5950	5982	32	2.B	SLIDE @ 180 MTF WOB-30 DIFF-250								
7:30	7:30	0:00	5982	5982	0	KOP	C/S @ 5935' INC-0.5 AZM-87.1 TEMP-113				DRILL CURVE				
7:30	7:55	0:25	5982	5987	5	2.A	ROTATE WOB-25 RPM-20 DIFF-250								
7:55	8:15	0:20	5987	6014	27	2.B	SLIDE @ 180 MTF WOB-30 DIFF-250								
8:15	8:30	0:15				10	C/S @ 5967' INC-3.5 AZM-164.3 TEMP-114								
8:30	8:35	0:05	6014	6024	10	2.A	ROTATE WOB-25 RPM-20 DIFF-250								
8:35	8:50	0:15	6024	6045	21	2.B	SLIDE @ 35R GTF WOB-30 DIFF-250				Estimated Daily Charges				
8:50	9:05	0:15				10	C/S @ 5998' INC-7.8 AZM-172.3 TEMP-114				Description		Cost		
9:05	9:10	0:05	6045	6056	11	2.A	ROTATE WOB-25 RPM-20 DIFF-250								
9:10	9:30	0:20	6056	6077	21	2.B	SLIDE @ 25R GTF WOB-35 DIFF-250								
9:30	9:45	0:15				10	C/S @ 6030' INC-11.4 AZM-178.7 TEMP-116								
9:45	9:50	0:05	6077	6086	9	2.A	ROTATE WOB-25 RPM-20 DIFF-250								
9:50	10:15	0:25	6086	6108	22	2.B	SLIDE @ HS GTF WOB-35 DIFF-250								
10:15	10:30	0:15				10	C/S @ 6061' INC-15 AZM-183.3 TEMP-118								
10:30	10:40	0:10	6108	6120	12	2.A	ROTATE WOB-25 RPM-20 DIFF-250								
10:40	11:00	0:20	6120	6140	20	2.B	SLIDE @ HS GTF WOB-35 DIFF-250								
11:00	11:15	0:15				10	C/S @ 6093' INC-18.9 AZM-185.2 TEMP-120								
11:15	11:25	0:10	6140	6150	10	2.A	ROTATE WOB-25 RPM-20 DIFF-250								
11:25	11:50	0:25	6150	6172	22	2.B	SLIDE @ 20L GTF WOB-35 DIFF-250				Estimated Daily Cost (USD)		\$ -		
11:50	12:05	0:15				10	C/S @ 6125' INC-22.3 AZM-185.7 TEMP-123				Accumulated Cost (USD)		\$ -		
12:05	12:15	0:10	6172	6182	10	2.A	ROTATE WOB-25 RPM-20 DIFF-250				Company Representative (s)				
12:15	12:35	0:20	6182	6203	21	2.B	SLIDE @ 20L GTF WOB-35 DIFF-250				JIMMY DAVIS		GARTH STARR		
12:35	12:50	0:15				10	C/S @ 6156' INC-25.8 AZM-185 TEMP-123				CHAD SURBER		RICHARD JOHN		
12:50	13:00	0:10	6203	6213	10	2.A	ROTATE WOB-30 RPM-20 DIFF-250				RYAN Directional Representative (s)				
13:00	13:20	0:20	6213	6235	22	2.B	SLIDE @ 20L GTF WOB-35 DIFF-250				WESTON WHITE		JARED FAUST		
13:20	13:35	0:15				10	C/S @ 6188' INC-28.9 AZM-183.9 TEMP-125								
13:35	13:40	0:05	6235	6239	4	2.A	ROTATE WOB-30 RPM-20 DIFF-250				RYAN MWD Representative (s)				
13:40	14:10	0:30	6239	6266	27	2.B	SLIDE @ HS GTF WOB-35 DIFF-250				ERNEST HOTZE		SHANNON KILGORE		
14:10	14:25	0:15				10	C/S @ 6219' INC-32.3 AZM-182.7 TEMP-127								
14:25	14:35	0:10	6266	6275	9	2.A	ROTATE WOB-30 RPM-20 DIFF-250				24 Hour Breakdown				
14:35	15:00	0:25	6275	6298	23	2.B	SLIDE @ HS GTF WOB-35 DIFF-250				Ftg Rot.		101	Time Rot.	1.80
15:00	15:15	0:15				10	C/S @ 6251' INC-36.5 AZM-181.9 TEMP-127				Ftg Orient		258	Time Orient	4.30
15:15	15:20	0:05	6298	6304	6	2.A	ROTATE WOB-30 RPM-20 DIFF-250				Rot. ROP		56.11	Orient ROP	60.00

Report #: 5B

Date: 2-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 6304
 24:00 Depth: 6655

Footage Today: 351
 Current Run Ftg: 710

Drig Hrs Today: 5.90
 Run Drig Hrs: 12.00

ROP Today: 59.49
 Run Avg. ROP: 59.17

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 501				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	BIT	BIT	Run No.	2	
Liner (in)	6	6		Sample	IN	MOTOR	MOTOR	Size (in.)	7	
%	97.5	97.5		Time	10:00	NM UBHO	NM UBHO	Type	4/5 7.0	
Vol (gals)	4.17	4.17	0.00	Wt.	9.2	NMDC MWD	NMDC MWD	Serial No.	7619	
SPM	60	60		VIS	66	NMDC	FLEX	Tool Deflection	2.12	
DRILLING PARAMETERS				PV	14	XO		Avg. Diff. Press.	250	
ST. WT. ROT 1000's:	160			YP	21	3 - 6 1/4" DC'S		Daily Drill Hrs.	5.90	
P/U WT. 1000's:	165			WL		XO		Daily Circ. Hrs.	2.80	
S/O WT. 1000's:	155			CL	74K			Daily Total Hrs.	8.70	
WOB 1000's:	30			Gels	14.18.22			Acc. Drill Hrs.	12.00	
ROTARY RPM:	20			% Oil	72.5			Acc. Circ. Hrs.	5.30	
MOTOR RPM:	250			% Solids	3.2			Depth In	5945	
TOTAL Bit RPM	270			% Sand	0.01			Depth Out		
ROT TQ. OFF BTM:	2500			PH				LIH Hrs.	22:30	
ROT TQ. ON BTM:	5000			Temp F	90			Acc. LIH Hrs.	22.50	
Current Mag Dec:	6.41			MWD F	127	BHA WT		Acc. Hrs Cir/Drig	17.30	
Pulse Hight	80			GPM	500	BELOW JARS		Total K Revs	194.40	
"G" Totals	0.998			PSI	1750			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		
2	8 3/4	SMITH	FHI21	RD0531	3x18's	5945													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
15:20	15:45	0:25	6304	6329	25	2.B	SLIDE @ HS GTF WOB-35 DIFF-250							
15:45	16:00	0:15				10	C/S @ 6282' INC-40.3 AZM-181.9 TEMP-129				P/U BHA# 2			
16:00	16:10	0:10	6329	6340	11	2.A	ROTATE WOB-30 RPM-20 DIFF-250							
16:10	16:30	0:20	6340	6361	21	2.B	SLIDE @ HS GTF WOB-35 DIFF-250				TIH			
16:30	16:45	0:15				10	C/S @ 6314' INC-44.4 AZM-182.2 TEMP-129							
16:45	16:50	0:05	6361	6369	8	2.A	ROTATE WOB-30 RPM-20 DIFF-250				DRILL CURVE			
16:50	17:15	0:25	6369	6392	23	2.B	SLIDE @ HS GTF WOB-35 DIFF-250							
17:15	17:30	0:15				10	C/S @ 6345' INC-47.7 AZM-182.8 TEMP-131							
17:30	17:35	0:05	6392	6402	10	2.A	ROTATE WOB-30 RPM-20 DIFF-250							
17:35	17:50	0:15	6402	6424	22	2.B	SLIDE @ 20L GTF WOB-35 DIFF-250							
17:50	18:05	0:15				10	C/S @ 6377' INC-51.4 AZM-183.1 TEMP-131				Estimated Daily Charges			
18:05	18:15	0:10	6424	6430	6	2.A	ROTATE WOB-30 RPM-20 DIFF-250				Description		Cost	
18:15	18:35	0:20	6430	6455	25	2.B	SLIDE @ HS GTF WOB-35 DIFF-250							
18:35	18:50	0:15				10	C/S @ 6408' INC-54.8 AZM- 182.4 TEMP-131							
18:50	19:00	0:10	6455	6463	8	2.A	ROTATE WOB-30 RPM-20 DIFF-250							
19:00	19:20	0:20	6463	6487	24	2.B	SLIDE @ HS GTF WOB-35 DIFF-250							
19:20	19:35	0:15				10	C/S @ 6440' INC- 58.8 AZM- 181 TEMP-131							
19:35	19:45	0:10	6487	6492	5	2.A	ROTATE WOB-30 RPM-20 DIFF-250							
19:45	19:55	0:10	6492	6518	26	2.B	SLIDE @ HS GTF WOB-35 DIFF-250							
19:55	20:10	0:15				10	C/S @ 6471' INC- 62.8 AZM- 180.9 TEMP-131							
20:10	20:20	0:10	6518	6528	10	2.A	ROTATE WOB-30 RPM-20 DIFF-250							
20:20	21:00	0:40	6528	6550	22	2.B	SLIDE @ HS GTF WOB-35 DIFF-250							
21:00	21:15	0:15				10	C/S @ 6503' INC-66.9 AZM- 179.6 TEMP-131				Estimated Daily Cost (USD)		\$ -	
21:15	21:25	0:10	6550	6555	5	2.A	ROTATE WOB-30 RPM-20 DIFF-250				Accumulated Cost (USD)		\$ -	
21:25	21:55	0:30	6555	6581	26	2.B	SLIDE @ HS GTF WOB-35 DIFF-250				Company Representative (s)			
21:55	22:10	0:15				10	C/S @ 6534' INC- 70.7 AZM- 179.5 TEMP-133				JIMMY DAVIS		GARTH STARR	
22:10	22:20	0:10	6581	6591	10	2.A	ROTATE WOB-30 RPM-20 DIFF-250				CHAD SURBER		RICHARD JOHN	
22:20	22:40	0:20	6591	6613	22	2.B	SLIDE @ HS GTF WOB-35 DIFF-250				RYAN Directional Representative (s)			
22:40	22:55	0:15				10	C/S @ 6566' INC- 75.0 AZM- 180.5 TEMP-133				WESTON WHITE		JARED FAUST	
22:55	23:05	0:10	6613	6623	10	2.A	ROTATE WOB-30 RPM-20 DIFF-250							
23:05	23:30	0:25	6623	6645	22	2.B	SLIDE @ HS GTF WOB-35 DIFF-250				RYAN MWD Representative (s)			
23:30	23:45	0:15				10	C/S @ 6598' INC- 78.9 AZM- 181.5 TEMP-133				ERNEST HOTZE		SHANNON KILGORE	
23:45	23:59	0:14	6645	6655	10	2.A	ROTATE WOB-30 RPM-20 DIFF-250							
											24 Hour Breakdown			
											Ftg Rot.	93	Time Rot.	1.70
											Ftg Orient	258	Time Orient	4.20
											Rot. ROP	54.71	Orient ROP	61.43

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3-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job # **7962**

7962

DAILY DRILLING REPORT

Oil Company:	EP Energy
Field:	Wolfcamp
County, State:	Crockett Co., Texas
AFE or PO #:	160794

Customer:	EP Energy
Well Name & No.:	University East 4108 KH
Block or Section:	Big Lake
Rig Contractor & No.:	NORAM 21

00:00 Depth:	6655
24:00 Depth:	6676

Footage Today:	21
Current Run Ftg:	731

Drlg Hrs Today:	0.30
Run Drlg Hrs:	12.30

ROP Today:	70.00
Run Avg. ROP:	59.43

Last Casing Set: 9 5/8"
Depth: 990

PUMP Data Total Gals/Min =					501		MUD DATA		Previous		Current		MOTOR DATA		CURRENT	
Pump	Bonco	Bonco	0	Mud Type	OBM	BIT		BIT		Run No.	2					
Liner (in)	6	6		Sample	IN	MOTOR		MOTOR		Size (in.)	7					
%	97.5	97.5		Time	11:00	NM UBHO		NM UBHO		Type	4/5 7.0					
Vol (gps)	4.17	4.17	0.00	Wt.	8.9	NMDC MWD		NMDC MWD		Serial No.	7619					
SPM	60	60		VIS	50	NMDC		FLEX		Tool Deflection	2.12					
DRILLING PARAMETERS				PV	11	XO				Avg. Diff. Press.	250					
ST. WT. ROT 1000's:		160		YP	15	3 - 6 1/4" DC'S				Daily Drill Hrs.	0.30					
P/U WT. 1000's:		165		WL		XO				Daily Circ. Hrs.	1.20					
S/O WT. 1000's:		155		CL	72K					Daily Total Hrs:	1.50					
WOB 1000's:		30		Gels	9.12.14.					Acc. Drill Hrs.	12.30					
ROTARY RPM:		20		% Oil	72.8					Acc. Circ. Hrs.	6.50					
MOTOR RPM:		250		% Solids	3.7					Depth In	5945					
TOTAL Bit RPM		270		% Sand	0.01					Depth Out	6676					
ROT TQ. OFF BTM:		2500		PH						LIH Hrs.	6:00					
ROT TQ. ON BTM:		5000		Temp F	122					Acc. LIH Hrs.	28.50					
Current Mag Dec:		6.41		MWD F	135	BHA WT				Acc. Hrs Cir/Drilg	18.80					
Pulse Hight		80		GPM	500	BELOW JARS				Total K Revs	199.26					
"G" Totals		0.998		PSI	1750					Jar # HRS						

BIT DATA																
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	DULL CONDITION						
										IR	OR	DC	LOC	B/S	G/16"	OC
2	8 3/4	SMITH	FHi21	RD0531	3x18's	5945	731	12.0	6676							

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:15	0:15	6655	6676	21	2.B	SLIDE @ HS GTF WOB-35 DIFF-250				
0:15	0:25	0:10				10	C/S @ 6629' INC- 81.8 AZM- 182.5 TEMP-133				
0:25	1:25	1:00				5.A	CIRCULATE				
1:25	4:45	3:20				6.A	TOOH				
4:45	6:00	1:15				6.G	L/D BHA# 2				
6:00	7:00	1:00				7	CLEAN RIG FLOOR	DRILL CURVE			
								Estimated Daily Charges			
								Description	Cost		
								Estimated Daily Cost (USD)	\$	-	
								Accumulated Cost (USD)	\$	-	
								Company Representative (s)			
								JIMMY DAVIS	GARTH STARR		
								CHAD SURBER	RICHARD JOHN		
								RYAN Directional Representative (s)			
								WESTON WHITE	JARED FAUST		
								RYAN MWD Representative (s)			
								ERNEST HOTZE	SHANNON KILGORE		
								24 Hour Breakdown			
								Ftg Rot.	0	Time Rot.	0.00
								Ftg Orient	21	Time Orient	0.30
								Rot. ROP	-	Orient ROP	70.00

Report #: 6A

Date: 3-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
Field: Wolfcamp
County, State: Crockett Co., Texas
AFE or PO #: 160794

Customer: EP Energy
Well Name & No.: University East 4108 KH
Block or Section: Big Lake
Rig Contractor & No.: NORAM 21

00:00 Depth: 6676
24:00 Depth: 7901

Footage Today: 1225
Current Run Ftg: 1225

Drig Hrs Today: 5.80
Run Drig Hrs: 5.80

ROP Today: 211.21
Run Avg. ROP: 211.21

Last Casing Set: 9 5/8"
Depth: 990

PUMP Data Total Gals/Min = 584				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	97.5	97.5		Time	8:00					
Vol (gals)	4.17	4.17	0.00	Wt.	8.9					
SPM	70	70		VIS	51					
DRILLING PARAMETERS				PV	11					
ST. WT. ROT 1000's:	160			YP	15					
P/U WT. 1000's:	165			WL						
S/O WT. 1000's:	155			CL	76K					
WOB 1000's:	25			Gels	10.14.17					
ROTARY RPM:	60			% Oil	72.8					
MOTOR RPM:	140			% Solids	3.4					
TOTAL Bit RPM	200			% Sand	0.01					
ROT TQ. OFF BTM:	3000			PH						
ROT TQ. ON BTM:	12000			Temp F	110					
Current Mag Dec:	6.41			MWD F	135					
Pulse Hight	60			GPM	585					
G Totals	0.998			PSI	3000					

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
7:00	8:15	1:15				6.G	P/U BHA# 3				P/U BHA# 3			
8:15	9:00	0:45				6.A	TIH TO SHOE				TIH			
9:00	11:30	2:30				O	CUT AND SLIP DRILL LINE				DRILL LATERAL			
11:30	15:15	3:45				6.A	TIH							
15:15	15:25	0:10				10	BENCHMARK SURVEYS							
15:25	15:45	0:20	6676	6696	20	2.B	SLIDE @ HS GTF WOB-15 DIFF-200							
15:45	16:10	0:25	6696	6765	69	2.A	ROTATE WOB-25 RPM-30 DIFF-400							
16:10	16:10	0:00	6765	6765	0	EOC	C/S @ 6715' INC-90.6 AZM-182.1 TEMP-124							
16:10	16:45	0:35	6765	6859	94	2.A	ROTATE WOB-25 RPM-60 DIFF-500							
16:45	16:55	0:10				10	C/S @ 6809' INC-91.2 AZM-181 TEMP-127							
16:55	17:10	0:15	6859	6874	15	2.B	SLIDE @ 180 GTF WOB-15 DIFF-200				Estimated Daily Charges			
17:10	17:25	0:15	6874	6954	80	2.A	ROTATE WOB-25 RPM-60 DIFF-500				Description		Cost	
17:25	17:35	0:10				10	C/S @ 6904' INC-90.3 AZM-182.6 TEMP-131							
17:35	17:50	0:15	6954	6969	15	2.B	SLIDE @ 120L GTF WOB-15 DIFF-200							
17:50	18:15	0:25	6969	7048	79	2.A	ROTATE WOB-25 RPM-60 DIFF-500							
18:15	18:30	0:15				10	C/S @ 6998' INC- 89.7 AZM- 179.4 TEMP-131							
18:30	18:45	0:15	7048	7143	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500							
18:45	19:00	0:15				10	C/S @ 7093' INC-90.4 AZM- 179.7 TEMP-131							
19:00	19:15	0:15	7143	7237	94	2.A	ROTATE WOB-25 RPM-60 DIFF-500							
19:15	19:30	0:15				10	C/S @ 7187' INC- 89.5 AZM- 176.3 TEMP-131							
19:30	19:50	0:20	7237	7262	25	2.B	SLIDE @ 90R GTF WOB-35 DIFF-300							
19:50	20:05	0:15	7262	7332	70	2.A	ROTATE WOB-25 RPM-60 DIFF-500							
20:05	20:20	0:15				10	C/S @ 7282' INC- 90.5 AZM- 178.4 TEMP-131				Estimated Daily Cost (USD)		\$ -	
20:20	20:35	0:15	7332	7427	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				Accumulated Cost (USD)		\$ -	
20:35	20:50	0:15				10	C/S @ 7377' INC- 91.6 AZM- 178.2 TEMP-131				Company Representative (s)			
20:50	21:00	0:10	7427	7457	30	2.B	SLIDE @ 140R GTF WOB-35 DIFF-300				JIMMY DAVIS		GARTH STARR	
21:00	21:15	0:15	7457	7521	64	2.A	ROTATE WOB-25 RPM-60 DIFF-500				CHAD SURBER		RICHARD JOHN	
21:15	21:25	0:10				10	C/S @ 7471' INC-90.4 AZM- 179.5 TEMP-131				RYAN Directional Representative (s)			
21:25	21:45	0:20	7521	7616	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				WESTON WHITE		JARED FAUST	
21:45	21:55	0:10				10	C/S @ 7566' INC- 90.9 AZM- 178.7 TEMP-131							
21:55	22:15	0:20	7616	7641	25	2.B	SLIDE @ 130R GTF WOB-35 DIFF-300				RYAN MWD Representative (s)			
22:15	22:30	0:15	7641	7711	70	2.A	ROTATE WOB-25 RPM-60 DIFF-500				ERNEST HOTZE		SHANNON KILGORE	
22:30	22:40	0:10				10	C/S @ 7661' INC- 87.8 AZM- 180.3 TEMP-131							
22:40	23:00	0:20	7711	7806	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				24 Hour Breakdown			
23:00	23:10	0:10				10	C/S @ 7756' INC-88.4 AZM- 180.3 TEMP-145				Ftg Rot.	1095	Time Rot.	4.20
23:10	23:30	0:20	7806	7901	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				Ftg Orient	130	Time Orient	1.70
23:30	23:40	0:10				10	C/S @ 7851' INC- 90.9 AZM- 182.2 TEMP-145				Rot. ROP	260.71	Orient ROP	76.47

Report #: 6B

Date: 3-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 7901
 24:00 Depth: 7996

Footage Today: 95
 Current Run Ftg: 1320

Drig Hrs Today: 0.30
 Run Drig Hrs: 6.10

ROP Today: 316.67
 Run Avg. ROP: 216.39

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 584				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	97.5	97.5		Time	8:00					
Vol (gps)	4.17	4.17	0.00	Wt.	8.9					
SPM	70	70		VIS	51					
DRILLING PARAMETERS				PV	11					
ST. WT. ROT 1000's:	160			YP	15					
P/U WT. 1000's:	165			WL						
S/O WT. 1000's:	155			CL	76K					
WOB 1000's:	25			Gels	10.14.17					
ROTARY RPM:	60			% Oil	72.8					
MOTOR RPM:	140			% Solids	3.4					
TOTAL Bit RPM	200			% Sand	0.01					
ROT TQ. OFF BTM:	3000			PH						
ROT TQ. ON BTM:	12000			Temp F	110					
Current Mag Dec:	6.41			MWD F	135					
Pulse Hight	60			GPM	585					
"G" Totals	0.998			PSI	3000					

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
23:40	23:59	0:19	7901	7996	95	2.A	ROTATE	WOB-25	RPM-60	DIFF-500				
											DRILL LATERAL			

Report #: 7

Date: 4-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: **EP Energy**
 Field: **Wolfcamp**
 County, State: **Crockett Co., Texas**
 AFE or PO #: **160794**

Customer: **EP Energy**
 Well Name & No.: **University East 4108 KH**
 Block or Section: **Big Lake**
 Rig Contractor & No.: **NORAM 21**

00:00 Depth: 7996
 24:00 Depth: 9421

Footage Today: 1425
 Current Run Ftg: 2745

Drig Hrs Today: 5.80
 Run Drig Hrs: 11.90

ROP Today: 245.69
 Run Avg. ROP: 230.67

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 584				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	6	6		Sample	IN				
%	97.5	97.5		Time	8:00				
Vol (gals)	4.17	4.17	0.00	Wt.	8.9				
SPM	70	70		VIS	51				
DRILLING PARAMETERS				PV	11				
ST. WT. ROT 1000's:	160			YP	15				
P/U WT. 1000's:	165			WL					
S/O WT. 1000's:	155			CL	76K				
WOB 1000's:	30			Gels	10.14.17				
ROTARY RPM:	60			% Oil	72.8				
MOTOR RPM:	140			% Solids	3.4				
TOTAL Bit RPM	200			% Sand	0.01				
ROT TQ. OFF BTM:	3000			PH					
ROT TQ. ON BTM:	12000			Temp F	110				
Current Mag Dec:	6.41			MWD F	135				
Pulse Hight	60			GPM	585				
G Totals	0.998			PSI	3200				

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
0:00	0:15	0:15				10	C/S @ 7946' INC- 92.2 AZM- 182.0 TEMP-145				
0:15	0:30	0:15	7996	8026	30	2.B	SLIDE @ 180 GTF WOB-40 DIFF-300				
0:30	0:45	0:15	8026	8090	64	2.A	ROTATE WOB-25 RPM-60 DIFF-500	DRILL LATERAL			
0:45	0:55	0:10				10	C/S @ 8040' INC- 87.6 AZM- 180.5 TEMP-145				
0:55	1:15	0:20	8090	8185	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
1:15	1:25	0:10				10	C/S @ 8135' INC- 88.3 AZM- 180.6 TEMP-145				
1:25	1:50	0:25	8185	8280	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
1:50	2:05	0:15				10	C/S @ 8230' INC- 89.1 AZM- 179.4 TEMP-145				
2:05	2:20	0:15	8280	8375	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
2:20	2:35	0:15				10	C/S @ 8325' INC- 91.0 AZM- 180.6 TEMP-145				
2:35	2:55	0:20	8375	8470	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500	Estimated Daily Charges			
2:55	3:10	0:15				10	C/S @ 8420' INC- 92.0 AZM- 179.8 TEMP-145	Description	Cost		
3:10	3:20	0:10	8470	8495	25	2.B	SLIDE @ 180 GTF WOB-40 DIFF-300				
3:20	3:35	0:15	8495	8565	70	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
3:35	3:45	0:10				10	C/S @ 8515' INC- 90.3 AZM- 180.4 TEMP-150				
3:45	4:00	0:15	8565	8660	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
4:00	4:10	0:10				10	C/S @ 8610' INC-90.5 AZM- 180.7 TEMP-150				
4:10	4:30	0:20	8660	8756	96	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
4:30	4:45	0:15				10	C/S @ 8706' INC- 91.2 AZM- 179.5 TEMP-150				
4:45	5:05	0:20	8756	8851	95	2.A	ROTATE WOB-25 RPM-60 DIFF-500				
5:05	5:20	0:15				10	C/S @ 8801' INC- 91.8 AZM- 178.1 TEMP-150				
5:20	5:40	0:20	8851	8881	30	2.B	SLIDE @ 140R GTF WOB-40 DIFF-300				
5:40	5:55	0:15	8881	8945	64	2.A	ROTATE WOB-30 RPM-50 DIFF-500	Estimated Daily Cost (USD)		\$	-
5:55	6:10	0:15				10	C/S @ 8895' INC- 91.2 AZM- 180.9 TEMP-150	Accumulated Cost (USD)		\$	-
6:10	6:30	0:20	8945	8970	25	2.B	SLIDE @ 180 GTF WOB-40 DIFF-300	Company Representative (s)			
6:30	6:45	0:15	8970	9040	70	2.A	ROTATE WOB-30 RPM-50 DIFF-500	JIMMY DAVIS		GARTH STARR	
6:45	6:55	0:10				10	C/S @ 8990' INC-89.8 AZM-180.7 TEMP-156	CHAD SURBER		RICHARD JOHN	
6:55	7:05	0:10	9040	9055	15	2.B	SLIDE @ 180 GTF WOB-40 DIFF-300	RYAN Directional Representative (s)			
7:05	7:15	0:10	9055	9135	80	2.A	ROTATE WOB-30 RPM-60 DIFF-500	WESTON WHITE		JARED FAUST	
7:15	7:30	0:15				10	C/S @ 9085' INC-89.4 AZM-180.5 TEMP-158				
7:30	7:50	0:20	9135	9230	95	2.A	ROTATE WOB-30 RPM-60 DIFF-500	RYAN MWD Representative (s)			
7:50	8:00	0:10				10	C/S @ 9180' INC-90.9 AZM-180.5 TEMP-159	ERNEST HOTZE		SHANNON KILGORE	
8:00	8:15	0:15	9230	9260	30	2.B	SLIDE @ 180 GTF WOB-40 DIFF-300				
8:15	8:35	0:20	9260	9325	65	2.A	ROTATE WOB-30 RPM-60 DIFF-500	24 Hour Breakdown			
8:35	8:50	0:15				10	C/S @ 9275' INC-87.3 AZM-179.5 TEMP-159	Ftg Rot.	1270	Time Rot.	4.30
8:50	9:05	0:15	9325	9421	96	2.A	ROTATE WOB-30 RPM-60 DIFF-500	Ftg Orient	155	Time Orient	1.50
9:05	9:15	0:10				10	C/S @ 9371' INC-87.8 AZM-178.9 TEMP-161	Rot. ROP	295.35	Orient ROP	103.33

Report #: 7A

Date: 4-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 9421
 24:00 Depth: 10939

Footage Today: 1518
 Current Run Ftg: 4263

Drig Hrs Today: 6.40
 Run Drig Hrs: 18.30

ROP Today: 237.19
 Run Avg. ROP: 232.95

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 576				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	97.5	97.5		Time	8:00					
Vol (gals)	4.17	4.17	0.00	Wt.	8.9					
SPM	69	69		VIS	51					
DRILLING PARAMETERS				PV	11					
ST. WT. ROT 1000's:	160			YP	15					
P/U WT. 1000's:	165			WL						
S/O WT. 1000's:	155			CL	76K					
WOB 1000's:	30			Gels	10.14.17					
ROTARY RPM:	60			% Oil	72.8					
MOTOR RPM:	140			% Solids	3.4					
TOTAL Bit RPM	200			% Sand	0.01					
ROT TQ. OFF BTM:	3000			PH						
ROT TQ. ON BTM:	12000			Temp F	110					
Current Mag Dec:	6.41			MWD F	135					
Pulse Height	60			GPM	575					
G Totals	0.998			PSI	3200					

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations				
9:15	9:35	0:20	9421	9516	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500					
9:35	9:50	0:15				10	C/S @ 9466'	INC-90	AZM-180.3	TEMP-163					
9:50	10:05	0:15	9516	9611	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500	DRILL LATERAL				
10:05	10:15	0:10				10	C/S @ 9561'	INC-92.3	AZM-181.1	TEMP-163					
10:15	10:40	0:25	9611	9641	30	2.B	SLIDE @ 180 GTF	WOB-40	DIFF-200						
10:40	10:55	0:15	9641	9705	64	2.A	ROTATE	WOB-30	RPM-60	DIFF-500					
10:55	11:10	0:15				10	C/S @ 9655'	INC-88.4	AZM-181.8	TEMP-163					
11:10	11:25	0:15	9705	9800	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500					
11:25	11:35	0:10				10	C/S @ 9750'	INC-89.0	AZM-181.8	TEMP-163					
11:35	11:55	0:20	9800	9895	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500					
11:55	12:10	0:15				10	C/S @ 9845'	INC-91.3	AZM-183.9	TEMP-165	Estimated Daily Charges				
12:10	12:30	0:20	9895	9925	30	2.B	SLIDE @ 135L GTF	WOB-50	DIFF-200	Description		Cost			
12:30	12:45	0:15	9925	9990	65	2.A	ROTATE	WOB-30	RPM-60	DIFF-500					
12:45	12:55	0:10				10	C/S @ 9940'	INC-88.8	AZM-180.4	TEMP-165					
12:55	13:15	0:20	9990	10085	95	2.A	ROTATE	WOB-30	RPM-50	DIFF-500					
13:15	13:30	0:15				10	C/S @ 10035'	INC-89.8	AZM-180.2	TEMP-165					
13:30	13:40	0:10	10085	10105	20	2.B	SLIDE @ 180 GTF	WOB-50	DIFF-200						
13:40	14:00	0:20	10105	10180	75	2.A	ROTATE	WOB-30	RPM-50	DIFF-500					
14:00	14:10	0:10				10	C/S @ 10130'	INC-88.6	AZM-180.3	TEMP-165					
14:10	14:30	0:20	10180	10275	95	2.A	ROTATE	WOB-30	RPM-50	DIFF-500					
14:30	14:45	0:15				10	C/S @ 10225'	INC-89.2	AZM-179.4	TEMP-165					
14:45	15:05	0:20	10275	10370	95	2.A	ROTATE	WOB-30	RPM-50	DIFF-500					
15:05	15:15	0:10				10	C/S @ 10320'	INC-91.6	AZM-180.2	TEMP-167	Estimated Daily Cost (USD)		\$ -		
15:15	15:35	0:20	10370	10400	30	2.B	SLIDE @ 180 GTF	WOB-50	DIFF-200	Accumulated Cost (USD)		\$ -			
15:35	15:55	0:20	10400	10465	65	2.A	ROTATE	WOB-30	RPM-50	DIFF-500	Company Representative (s)				
15:55	16:10	0:15				10	C/S @ 10415'	INC-88.0	AZM-180.3	TEMP-167	JIMMY DAVIS		GARTH STARR		
16:10	16:30	0:20	10465	10560	95	2.A	ROTATE	WOB-30	RPM-50	DIFF-500	CHAD SURBER		RICHARD JOHN		
16:30	16:40	0:10				10	C/S @ 10510'	INC-88.7	AZM-179.9	TEMP-168	RYAN Directional Representative (s)				
16:40	17:00	0:20	10560	10655	95	2.A	ROTATE	WOB-30	RPM-50	DIFF-500	WESTON WHITE		JARED FAUST		
17:00	17:30	0:30				7	RIG SERVICE								
17:30	17:40	0:10				10	C/S @ 10605'	INC-90.6	AZM-179.8	TEMP-168	RYAN MWD Representative (s)				
17:40	18:00	0:20	10655	10750	95	2.A	ROTATE	WOB-30	RPM-50	DIFF-500	ERNEST HOTZE		SHANNON KILGORE		
18:00	18:10	0:10				10	C/S @ 10700'	INC-91.9	AZM-179.2	TEMP-168					
18:10	18:25	0:15	10750	10780	30	2.B	SLIDE @ 180 GTF	WOB-60	DIFF-200	24 Hour Breakdown					
18:25	18:45	0:20	10780	10845	65	2.A	ROTATE	WOB-30	RPM-50	DIFF-500	Ftg Rot.	1378	Time Rot.	4.90	
18:45	19:00	0:15				10	C/S @ 10795'	INC-89.7	AZM-179.3	TEMP-168	Ftg Orient	140	Time Orient	1.50	
19:00	19:15	0:15	10845	10939	94	2.A	ROTATE	WOB-30	RPM-50	DIFF-500	Rot. ROP	281.22	Orient ROP	93.33	

Report #: 7B

Date: 4-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 10939
 24:00 Depth: 11605

Footage Today: 666
 Current Run Ftg: 4929

Drig Hrs Today: 3.00
 Run Drig Hrs: 21.30

ROP Today: 222.00
 Run Avg. ROP: 231.41

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 576				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	97.5	97.5		Time	8:00					
Vol (gals)	4.17	4.17	0.00	Wt.	8.9					
SPM	69	69		VIS	54					
DRILLING PARAMETERS				PV	13					
ST. WT. ROT 1000's:	160			YP	20					
P/U WT. 1000's:	165			WL						
S/O WT. 1000's:	155			CL	94K					
WOB 1000's:	30			Gels	13.16.20					
ROTARY RPM:	60			% Oil	71					
MOTOR RPM:	140			% Solids	3.4					
TOTAL Bit RPM	200			% Sand	0.01					
ROT TQ. OFF BTM:	3000			PH						
ROT TQ. ON BTM:	12000			Temp F	125					
Current Mag Dec:	6.41			MWD F	160					
Pulse Hight	60			GPM	575					
G Totals	0.998			PSI	3200					

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations			
19:15	19:30	0:15				10	C/S @ 10889' INC- 91.4 AZM- 180.2 TEMP-168				
19:30	19:45	0:15	10939	10969	30	2.B	SLIDE @ 180 GTF WOB-60 DIFF-200				
19:45	20:00	0:15	10969	11034	65	2.A	ROTATE WOB-30 RPM-50 DIFF-500	DRILL LATERAL			
20:00	20:15	0:15				10	C/S @ 10984' INC- 87.8 AZM- 179.0 TEMP-168				
20:15	20:45	0:30	11034	11129	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500				
20:45	21:00	0:15				10	C/S @ 11079' INC- 88.8 AZM-179.1 TEMP-168				
21:00	21:25	0:25	11129	11225	96	2.A	ROTATE WOB-30 RPM-50 DIFF-500				
21:25	21:40	0:15				10	C/S @ 11175' INC- 90.3 AZM- 179.2 TEMP-168				
21:40	21:55	0:15	11225	11320	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500				
21:55	22:10	0:15				10	C/S @ 11270' INC- 90.5 AZM- 177.3 TEMP-168				
22:10	22:25	0:15	11320	11350	30	2.B	SLIDE @ 110R GTF WOB-60 DIFF-200	Estimated Daily Charges			
22:25	22:40	0:15	11350	11415	65	2.A	ROTATE WOB-30 RPM-50 DIFF-500	Description		Cost	
22:40	22:55	0:15				10	C/S @ 11365' INC-89.2 AZM- 179.0 TEMP-168				
22:55	23:15	0:20	11415	11510	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500				
23:15	23:30	0:15				10	C/S @ 11460' INC- 90.8 AZM- 178.7 TEMP-168				
23:30	23:45	0:15	11510	11535	25	2.B	SLIDE @ 110R GTF WOB-60 DIFF-200				
23:45	23:59	0:14	11535	11605	70	2.A	ROTATE WOB-30 RPM-50 DIFF-500				
								Estimated Daily Cost (USD)		\$ -	
								Accumulated Cost (USD)		\$ -	
								Company Representative (s)			
								JIMMY DAVIS		GARTH STARR	
								CHAD SURBER		RICHARD JOHN	
								RYAN Directional Representative (s)			
								WESTON WHITE		JARED FAUST	
								RYAN MWD Representative (s)			
								ERNEST HOTZE		SHANNON KILGORE	
								24 Hour Breakdown			
								Ftg Rot.	581	Time Rot.	2.20
								Ftg Orient	85	Time Orient	0.80
								Rot. ROP	264.09	Orient ROP	106.25

Report #: 8

Date: 5-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 11605
 24:00 Depth: 13030

Footage Today: 1425
 Current Run Ftg: 6354

Drig Hrs Today: 9.30
 Run Drig Hrs: 30.60

ROP Today: 153.23
 Run Avg. ROP: 207.65

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 534				MUD DATA		Previous	Current	MOTOR DATA	CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #
Liner (in)	6	6		Sample	IN				
%	97.5	97.5		Time	8:00				
Vol (gals)	4.17	4.17	0.00	Wt.	8.9				
SPM	64	64		VIS	54				
DRILLING PARAMETERS				PV	13				
ST. WT. ROT 1000's:	160			YP	20				
P/U WT. 1000's:	220			WL					
S/O WT. 1000's:	100			CL	94K				
WOB 1000's:	30			Gels	13.16.20				
ROTARY RPM:	60			% Oil	71				
MOTOR RPM:	128			% Solids	3.4				
TOTAL Bit RPM	188			% Sand	0.01				
ROT TQ. OFF BTM:	3000			PH					
ROT TQ. ON BTM:	15000			Temp F	125				
Current Mag Dec:	6.41			MWD F	171				
Pulse Hight	25			GPM	535				
G Totals	0.998			PSI	3200				

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown	Current Operations
0:00	0:15	0:15				10	C/S @ 11555' INC-89.9 AZM- 179.6 TEMP-168	
0:15	0:30	0:15	11605	11700	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
0:30	0:45	0:15				10	C/S @ 11650' INC-90.8 AZM- 178.6 TEMP-168	DRILL LATERAL
0:45	1:00	0:15	11700	11730	30	2.B	SLIDE @ 110R GTF WOB-60 DIFF-200	
1:00	1:20	0:20	11730	11795	65	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
1:20	1:35	0:15				10	C/S @ 11745' INC- 88.1 AZM- 181.5 TEMP-168	
1:35	2:00	0:25	11795	11890	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
2:00	2:15	0:15				10	C/S @ 11840' INC- 89.1 AZM- 181.5 TEMP-168	
2:15	2:55	0:40	11890	11985	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
2:55	3:10	0:15				10	C/S @ 11935' INC- 90.5 AZM- 181.9 TEMP-168	
3:10	3:30	0:20	11985	12010	25	2.B	SLIDE @ 180 GTF WOB-60 DIFF-200	Estimated Daily Charges
3:30	3:50	0:20	12010	12080	70	2.A	ROTATE WOB-30 RPM-50 DIFF-500	Description Cost
3:50	4:05	0:15				10	C/S @ 12030' INC- 89.2 AZM- 182.2 TEMP-171	
4:05	4:35	0:30	12080	12175	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
4:35	4:50	0:15				10	C/S @ 12125' INC- 90.8 AZM- 183.0 TEMP-171	
4:50	5:15	0:25	12175	12205	30	2.B	SLIDE @ 135 L GTF WOB-60 DIFF-200	
5:15	5:40	0:25	12205	12269	64	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
5:40	5:55	0:15				10	C/S @ 12219' INC- 88.7 AZM- 180.3 TEMP-171	
5:55	6:15	0:20	12269	12365	96	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
6:15	6:30	0:15				10	C/S @ 12315' INC-89.7 AZM-180.6 TEMP-171	
6:30	7:15	0:45	12365	12460	95	2.A	ROTATE WOB-30 RPM-50 DIFF-500	
7:15	7:30	0:15				10	C/S @ 12410' INC-92.2 AZM-181 TEMP-171	
7:30	7:55	0:25	12460	12490	30	2.B	SLIDE @ 180 GTF WOB-70 DIFF-200	Estimated Daily Cost (USD) \$ -
7:55	8:15	0:20	12490	12555	65	2.A	ROTATE WOB-30 RPM-60 DIFF-500	Accumulated Cost (USD) \$ -
8:15	8:30	0:15				10	C/S @ 12505' INC-89.0 AZM-180.9 TEMP-171	Company Representative (s)
8:30	9:00	0:30	12555	12649	94	2.A	ROTATE WOB-30 RPM-60 DIFF-500	JIMMY DAVIS GARTH STARR
9:00	9:15	0:15				10	C/S @ 12599' INC-89.8 AZM-181.2 TEMP-172	CHAD SURBER RICHARD JOHN
9:15	9:40	0:25	12649	12744	95	2.A	ROTATE WOB-30 RPM-60 DIFF-500	RYAN Directional Representative (s)
9:40	9:55	0:15				10	C/S @ 12694' INC-92 AZM-181.6 TEMP-174	WESTON WHITE JARED FAUST
9:55	10:25	0:30	12744	12774	30	2.B	SLIDE @ 150L GTF WOB-70 DIFF-200	BRAD DAVIDSON
10:25	10:55	0:30	12774	12839	65	2.A	ROTATE WOB-30 RPM-60 DIFF-500	RYAN MWD Representative (s)
10:55	11:10	0:15				10	C/S @ 12789' INC-90.0 AZM-181.3 TEMP-174	ERNEST HOTZE SHANNON KILGORE
11:10	11:40	0:30	12839	12859	20	2.B	SLIDE @ 140L GTF WOB-70 DIFF-200	
11:40	12:10	0:30	12859	12934	75	2.A	ROTATE WOB-30 RPM-60 DIFF-500	24 Hour Breakdown
12:10	12:20	0:10				10	C/S @ 12884' INC-87.7 AZM-180.7 TEMP-174	Ftg Rot. 1260 Time Rot. 6.90
12:20	13:00	0:40	12934	13030	96	2.A	ROTATE WOB-30 RPM-60 DIFF-500	Ftg Orient 165 Time Orient 2.40
13:00	13:10	0:10				10	C/S @ 12980' INC-88.7 AZM-180.3 TEMP-174	Rot. ROP 182.61 Orient ROP 68.75

Report #: 8A

Date: 5-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 13030
 24:00 Depth: 13979

Footage Today: 949
 Current Run Ftg: 7303

Drig Hrs Today: 8.20
 Run Drig Hrs: 38.80

ROP Today: 115.73
 Run Avg. ROP: 188.22

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 534				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	97.5	97.5		Time	8:00					
Vol (gals)	4.17	4.17	0.00	Wt.	8.9					
SPM	64	64		VIS	54					
DRILLING PARAMETERS				PV	13					
ST. WT. ROT 1000's:	160			YP	20					
P/U WT. 1000's:	220			WL						
S/O WT. 1000's:	100			CL	94K					
WOB 1000's:	30			Gels	13.16.20					
ROTARY RPM:	60			% Oil	71					
MOTOR RPM:	128			% Solids	3.4					
TOTAL Bit RPM	188			% Sand	0.01					
ROT TQ. OFF BTM:	3000			PH						
ROT TQ. ON BTM:	15000			Temp F	125					
Current Mag Dec:	6.41			MWD F	171					
Pulse Height	25			GPM	535					
"G" Totals	0.998			PSI	3200					

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676													

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
13:10	13:55	0:45	13030	13125	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
13:55	14:05	0:10				10	C/S @ 13075'	INC-90.6	AZM-181	TEMP-174				
14:05	14:40	0:35	13125	13220	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500	DRILL LATERAL			
14:40	14:50	0:10				10	C/S @ 13170'	INC-92.1	AZM-180.9	TEMP-174				
14:50	15:10	0:20	13220	13240	20	2.B	SLIDE @ 135L	GTF	WOB-70	DIFF-200				
15:10	15:40	0:30	13240	13314	74	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
15:40	16:10	0:30				7	RIG SERVICE							
16:10	16:20	0:10				10	C/S @ 13264'	INC-90.8	AZM-178.6	TEMP-174				
16:20	16:45	0:25	13314	13410	96	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
16:45	16:55	0:10				10	C/S @ 13360'	INC-90.0	AZM-175.2	TEMP-174				
16:55	17:45	0:50	13410	13450	40	2.B	SLIDE @ 90R	GTF	WOB-70	DIFF-200	Estimated Daily Charges			
17:45	18:15	0:30	13450	13504	54	2.A	ROTATE	WOB-30	RPM-60	DIFF-500	Description		Cost	
18:15	18:30	0:15				10	C/S @ 13454'	INC-90.5	AZM-177.1	TEMP-174				
18:30	19:20	0:50	13504	13544	40	2.B	SLIDE @ 120R	GTF	WOB-70	DIFF-200				
19:20	19:45	0:25	13544	13600	56	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
19:45	20:00	0:15				10	C/S @ 13550'	INC-89.9	AZM-179.9	TEMP-171				
20:00	20:30	0:30	13600	13694	94	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
20:30	20:45	0:15				10	C/S @ 13644'	INC-89.9	AZM-179.7	TEMP-171				
20:45	21:05	0:20	13694	13789	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
21:05	21:20	0:15				10	C/S @ 13739'	INC-91.1	AZM-179.5	TEMP-171				
21:20	21:50	0:30	13789	13884	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
21:50	22:05	0:15				10	C/S @ 13834'	INC-92.6	AZM-179.4	TEMP-171				
22:05	23:30	1:25	13884	13909	25	2.B	SLIDE @ 135R	GTF	WOB-70	DIFF-200	Estimated Daily Cost (USD)		\$ -	
23:30	23:45	0:15	13909	13979	70	2.A	ROTATE	WOB-30	RPM-60	DIFF-500	Accumulated Cost (USD)		\$ -	
23:45	23:59	0:14				10	C/S @ 13929'	INC-91.7	AZM-181.2	TEMP-171	Company Representative (s)			
											JIMMY DAVIS		GARTH STARR	
											CHAD SURBER		RICHARD JOHN	
											RYAN Directional Representative (s)			
											WESTON WHITE		JARED FAUST	
											BRAD DAVIDSON			
											RYAN MWD Representative (s)			
											ERNEST HOTZE		SHANNON KILGORE	
											24 Hour Breakdown			
											Ftg Rot.	824	Time Rot.	4.80
											Ftg Orient	125	Time Orient	3.40
											Rot. ROP	171.67	Orient ROP	36.76

Report #: 9

Date: 6-Sep-14



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Ryan Job #: 7962

DAILY DRILLING REPORT

Oil Company: EP Energy
 Field: Wolfcamp
 County, State: Crockett Co., Texas
 AFE or PO #: 160794

Customer: EP Energy
 Well Name & No.: University East 4108 KH
 Block or Section: Big Lake
 Rig Contractor & No.: NORAM 21

00:00 Depth: 13979
 24:00 Depth: 14457

Footage Today: 478
 Current Run Ftg: 7781

Drig Hrs Today: 3.80
 Run Drig Hrs: 42.60

ROP Today: 125.79
 Run Avg. ROP: 182.65

Last Casing Set: 9 5/8"
 Depth: 990

PUMP Data Total Gals/Min = 534				MUD DATA		Previous	Current	MOTOR DATA		CURRENT
Pump	Bonco	Bonco	0	Mud Type	OBM	2	BHA #	3	BHA #	
Liner (in)	6	6		Sample	IN					
%	97.5	97.5		Time	18:00					
Vol (gps)	4.17	4.17	0.00	Wt.	9.1					
SPM	64	64		VIS	60					
DRILLING PARAMETERS				PV	15					
ST. WT. ROT 1000's:	160			YP	19					
P/U WT. 1000's:	220			WL						
S/O WT. 1000's:	100			CL	84000					
WOB 1000's:	30			Gels	13.16.20					
ROTARY RPM:	60			% Oil	70.7					
MOTOR RPM:	128			% Solids	2					
TOTAL Bit RPM	188			% Sand	0.01					
ROT TQ. OFF BTM:	3000			PH						
ROT TQ. ON BTM:	15000			Temp F	140					
Current Mag Dec:	6.41			MWD F	171					
Pulse Hight	25			GPM	535					
G Totals	0.998			PSI	3200					

BIT DATA														DULL CONDITION					
Bit No.	Size (in)	Mfg.	Type	Serial No.	Nozzles or TFA	Depth In	Cum. Footage	Cum. Hrs.	Depth Out	IR	OR	DC	LOC	B/S	G/16"	OC	RPLD		
3	8 3/4	ULTERRA	U519S	22469	7x14's	6676	7781	42.5	14457										

From	To	Hrs.	Start Depth	End Depth	CL	Code	Time Breakdown				Current Operations			
0:00	0:35	0:35	13979	14074	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
0:35	0:50	0:15				10	C/S @ 14024'	INC-92.8	AZM-180.5	TEMP-169	CIRCULATING MUD			
0:50	2:00	1:10	14074	14099	25	2.B	SLIDE @ 180	GTF	WOB-70	DIFF-200				
2:00	2:25	0:25	14099	14169	70	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
2:25	2:40	0:15				10	C/S @ 14119'	INC-89.7	AZM-180.0	TEMP-171	TOOH			
2:40	3:10	0:30	14169	14263	94	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
3:10	3:25	0:15				10	C/S @ 14213'	INC-90.7	AZM-180.3	TEMP-171	STAND BY			
3:25	3:55	0:30	14263	14358	95	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
3:55	4:10	0:15				10	C/S @ 14308'	INC-90.0	AZM-176.6	TEMP-171				
4:10	4:45	0:35	14358	14457	99	2.A	ROTATE	WOB-30	RPM-60	DIFF-500				
4:45	5:00	0:15				10	C/S @ 14407'	INC-90.0	AZM-173.9	TEMP-171	Estimated Daily Charges			
5:00	11:00	6:00				5.A	CIRCULATE MUD - WELL TD				Description		Cost	
11:00	14:15	3:15				6.A	TOOH TO BOTTOM OF CURVE							
14:15	15:30	1:15				5.A	CIRCULATE							
15:30	19:00	3:30				6.A	TOOH TO BHA							
19:00	20:00	1:00				6.G	L/D BHA #3							
20:00	23:59	3:59				S	STAND BY							
											Estimated Daily Cost (USD)		\$ -	
											Accumulated Cost (USD)		\$ -	
											Company Representative (s)			
											JIMMY DAVIS		GARTH STARR	
											CHAD SURBER		RICHARD JOHN	
											RYAN Directional Representative (s)			
											BRAD DAVIDSON		JARED FAUST	
											RYAN MWD Representative (s)			
											ERNEST HOTZE		SHANNON KILGORE	
											24 Hour Breakdown			
							Ftg Rot.		453		Time Rot.		2.60	
							Ftg Orient		25		Time Orient		1.20	
							Rot. ROP		174.23		Orient ROP		20.83	



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 #:	7962	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett Co., Texas	Person Notified:	
Lease:	Big Lake		
Well Name & Number:	University East 4108 KH		
Rig Name & Number:	NORAM 21	Incident Comments:	
Directional Driller ('s):	WESTON WHITE		
	JARED FAUST		
Motor Information:			
Motor Serial #:	7700		
Motor Size (OD):	7		
Motor Company:	HUNTING		
Motor Stabilizer Size:	SLICK		
Degree Bent Housing:	1.5		
Rotor / Stator Conf.:	7/8 5.7		
Depth In:	990		
Depth Out:	5945		
Footage:	4955		
Drilg Hours:	22.8		
Circulating Hours:	10.8		
Total Hours:	33.6		
Hours Below Rotary Table (LIH):	48.97		
Motor Yield:	10		
Start of Run: Date		August 31, 2014	
GPM'S:	600	Bit Information:	
Standpipe Press / Off Bottom:	1400	Bit Size:	8 3/4
Standpipe Press / On Bottom:	2100	Bit Type:	MM56D
Weight on Bit Avg :	15	Bit Manufacture:	SECURITY
End Of Run: Date		Serial #:	12509025
GPM'S:	425	Jets / TFA:	5x22
Standpipe Press / Off Bottom:	1200	Mud Information End of Run:	
Standpipe Press / On Bottom:	1600	Mud Type:	OBM
Weight on Bit Avg :	15	Mud Weight:	9.2
		Viscosity:	66
		Plastic Vis:	14
		Yield Point:	21
		Sand %:	0.01
		Solids %:	3.2
		LCM (yes or no):	NO
		% LCM per/BBL:	0
		Static Temp:	90
		Circulating Temp:	120
		OBM Aniline Point:	

Comments

MOTOR DID WELL



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Motor Run Report #2

General Information:		In the Event of an Incident:	
Ryan Job #:	7962	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett Co., Texas	Person Notified:	
Lease:	Big Lake		
Well Name & Number:	University East 4108 KH		
Rig Name & Number:	NORAM 21	Incident Comments:	
Directional Driller ('s):	WESTON WHITE		
	JARED FAUST		
Motor Information:			
Motor Serial #:	7619		
Motor Size (OD):	7		
Motor Company:	HUNTING		
Motor Stabilizer Size:	SLICK		
Degree Bent Housing:	2.12		
Rotor / Stator Conf.:	4/5 7.0		
Depth In:	5945		
Depth Out:	6676		
Footage:	731		
Drilg Hours:	12		
Circulating Hours:	6.8		
Total Hours:	18.8		
Hours Below Rotary Table (LIH):	28.5		
Motor Yield:	15		
Start of Run: Date		September 2, 2014	
GPM'S:	500	Bit Information:	
Standpipe Press / Off Bottom:	1750	Bit Size:	8 3/4
Standpipe Press / On Bottom:	2000	Bit Type:	FHi21
Weight on Bit Avg :	25	Bit Manufacture:	SMITH
End Of Run: Date		Serial #:	RD0531
September 3, 2014		Jets / TFA:	3x18'S
GPM'S:	500	Mud Information End of Run:	
Standpipe Press / Off Bottom:	1750	Mud Type:	OBM
Standpipe Press / On Bottom:	2000	Mud Weight:	9.2
Weight on Bit Avg :	35	Viscosity:	66
		Plastic Vis:	14
		Yield Point:	21
		Sand %:	0.01
		Solids %:	3.2
		LCM (yes or no):	NO
		% LCM per/BBL:	0
		Static Temp:	90
		Circulating Temp:	120
		OBM Aniline Point:	

Comments

MOTOR DID WELL



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

Motor Run Report #3

General Information:		In the Event of an Incident:	
Ryan Job #:	7962	Date of Incident:	
Customer:	EP Energy	Date Notified Office:	
Location:	Crockett Co., Texas	Person Notified:	
Lease:	Big Lake		
Well Name & Number:	University East 4108 KH		
Rig Name & Number:	NORAM 21	Incident Comments:	
Directional Driller ('s):	WESTON WHITE		
	JARED FAUST		
Motor Information:			
Motor Serial #:	7701		
Motor Size (OD):	7		
Motor Company:	HUNTING		
Motor Stabilizer Size:	SLICK		
Degree Bent Housing:	1.5		
Rotor / Stator Conf.:	7/8 5.7		
Depth In:	6676		
Depth Out:	14457		
Footage:	7781		
Drilg Hours:	42.5		
Circulating Hours:	25.6		
Total Hours:	68.1		
Hours Below Rotary Table (LIH):	85		
Motor Yield:	10		
Start of Run: Date		September 3, 2014	
GPM'S:	585	Bit Information:	
Standpipe Press / Off Bottom:	3000	Bit Size:	8 3/4
Standpipe Press / On Bottom:	3500	Bit Type:	U519S
Weight on Bit Avg :	25	Bit Manufacture:	ULTERRA
End Of Run: Date		Serial #:	22469
September 6, 2014		Jets / TFA:	7x14's
GPM'S:	535	Mud Information End of Run:	
Standpipe Press / Off Bottom:	3400	Mud Type:	OBM
Standpipe Press / On Bottom:	3800	Mud Weight:	9.1
Weight on Bit Avg :	30	Viscosity:	60
		Plastic Vis:	15
		Yield Point:	19
		Sand %:	0.01
		Solids %:	2
		LCM (yes or no):	NO
		% LCM per/BBL:	0
		Static Temp:	140
		Circulating Temp:	171
		OBM Aniline Point:	

Comments

MOTOR DID WELL

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Noram 21

Drilling Time Only

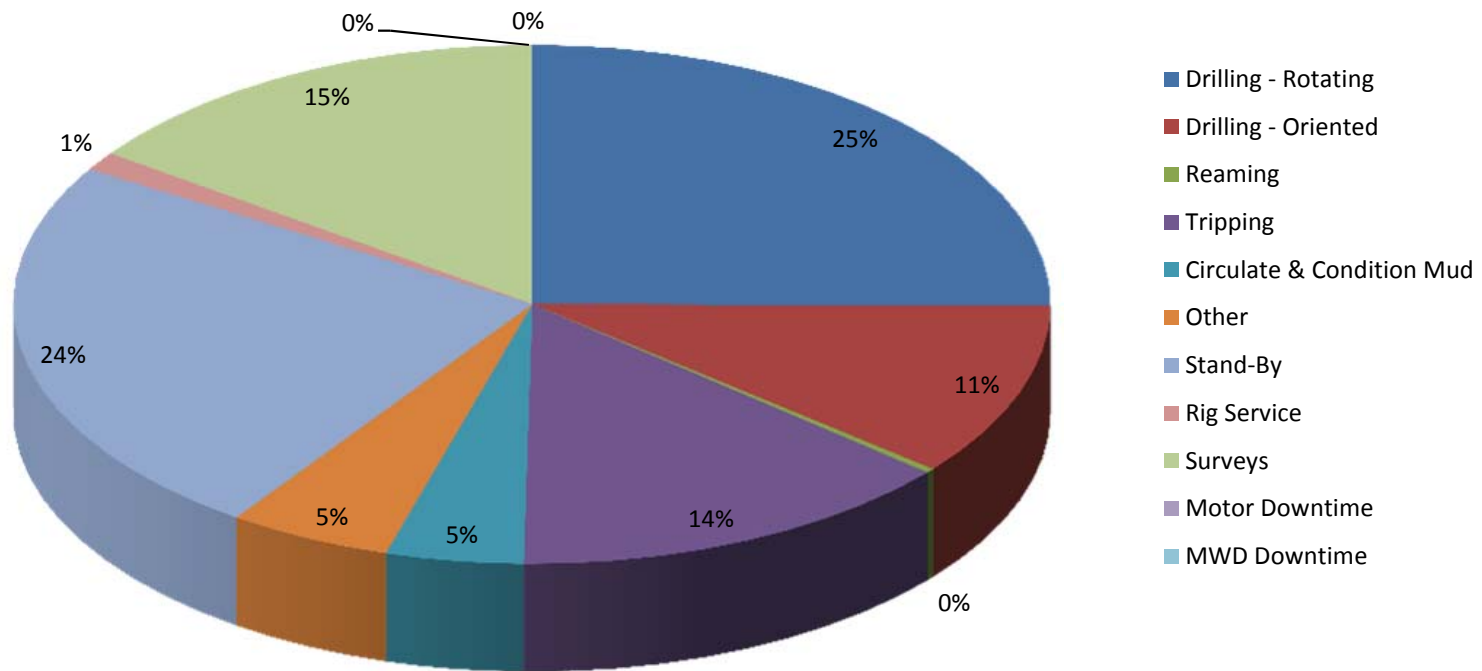
	Rotating Ftg	Rotating Hrs	Rotating ROP	Rotating %	Slide Ftg	Slide Hrs	Slide ROP	Slide %	Total Ftg	Total Hrs	Avg ROP
Vertical Hole	4802.00	20.57	233.45	96.19%	190.00	2.94	64.63	3.81%	4992.00	23.51	212.34
Curve	258.00	3.84	67.19	32.95%	525.00	8.41	62.43	67.05%	783.00	12.25	63.92
Lateral	6887.00	29.74	231.57	89.53%	805.00	12.08	66.64	10.47%	7692.00	41.82	183.93

Start Depth: 990

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
8/29/2014	1	990	KOP @ 5982 EOC @ 6765	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	23.98	0.00	0.00	0.00	0.00	0.00	0.00	24.00
8/30/2014	2	990		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	23.98	0.00	0.00	0.00	0.00	0.00	0.00	24.00
8/31/2014	3	3229		2239	158	2081	6.07	2.25	0.58	2.50	0.42	8.00	0.00	0.00	4.17	0.00	0.00	0.00	0.00	24.00
9/1/2014	4	5945		2716	0	2716	14.42	0.00	0.00	3.48	0.58	0.00	0.00	0.50	5.00	0.00	0.00	0.00	0.00	24.00
9/2/2014	5	6655		710	516	194	3.48	8.50	0.00	6.25	0.00	0.50	0.00	0.00	5.25	0.00	0.00	0.00	0.00	24.00
9/3/2014	6	7996		1341	151	1190	4.48	1.92	0.00	10.33	1.00	2.50	0.00	1.00	2.75	0.00	0.00	0.00	0.00	24.00
9/4/2014	7	11605		3609	380	3229	11.48	3.75	0.00	0.00	0.00	0.00	0.00	0.50	8.25	0.00	0.00	0.00	0.00	24.00
9/5/2014	8	13979		2374	290	2084	11.67	5.83	0.00	0.00	0.00	0.00	0.00	0.50	5.98	0.00	0.00	0.00	0.00	24.00
9/6/2014	9	14457		478	25	453	2.58	1.17	0.00	7.75	7.25	0.00	3.98	0.00	1.25	0.00	0.00	0.00	0.00	24.00
				13467	1520	11947	54.18	23.42	0.58	30.32	9.25	11.00	51.95	2.50	32.65	0.00	0.00	0.00	0.00	216.00

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TIME BREAKDOWN

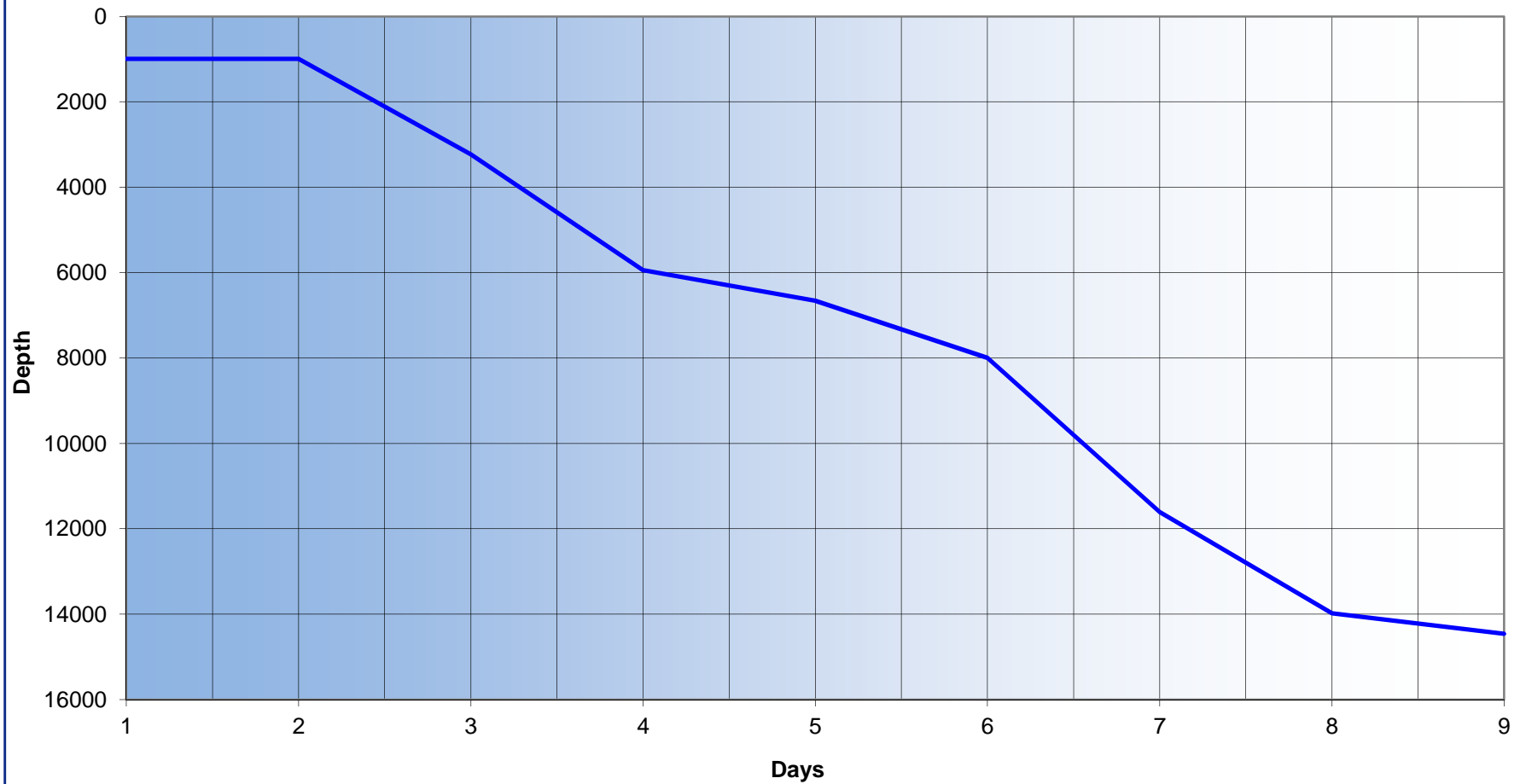


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Days vs. Depth

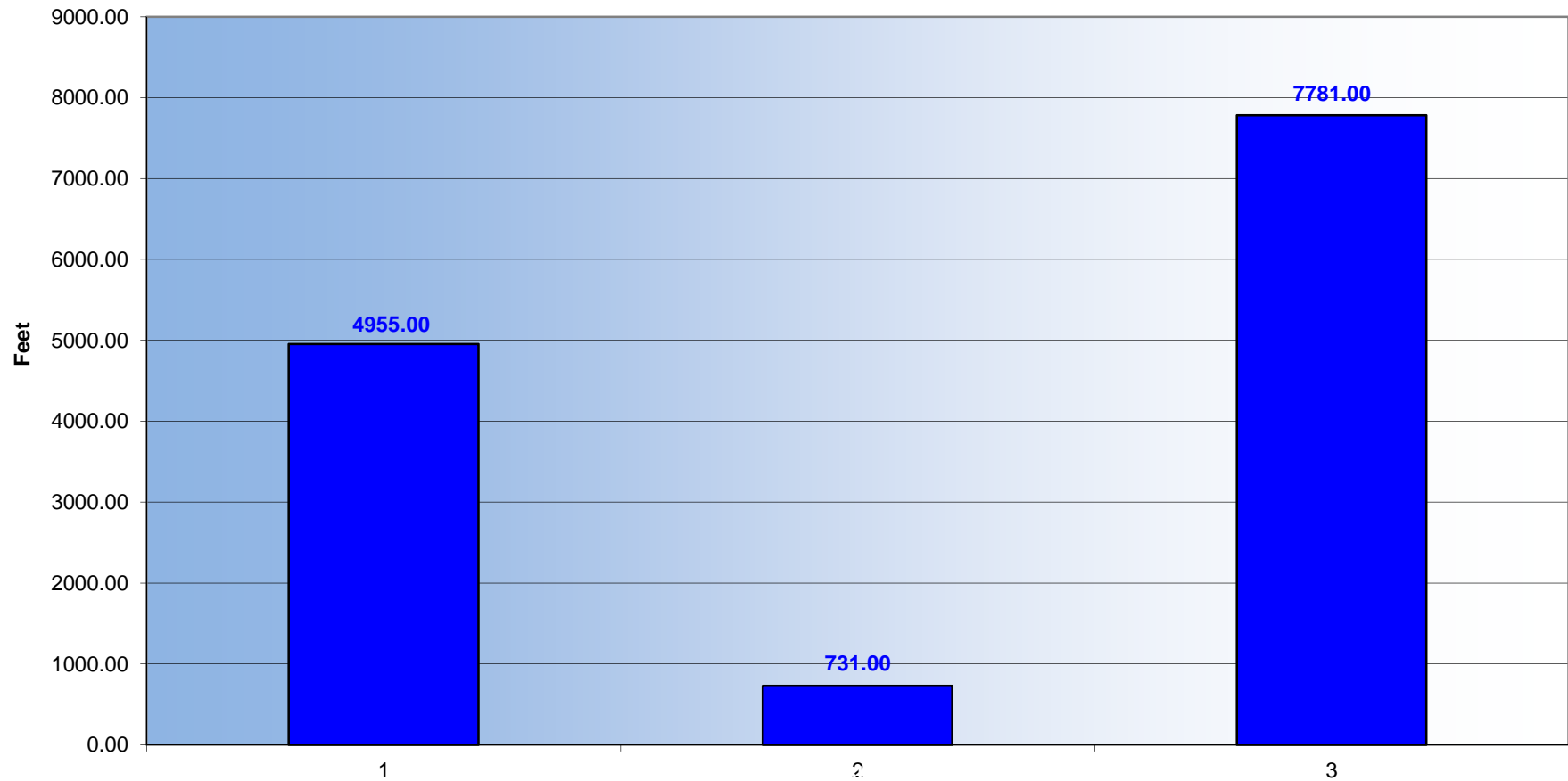


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Footage Per BHA

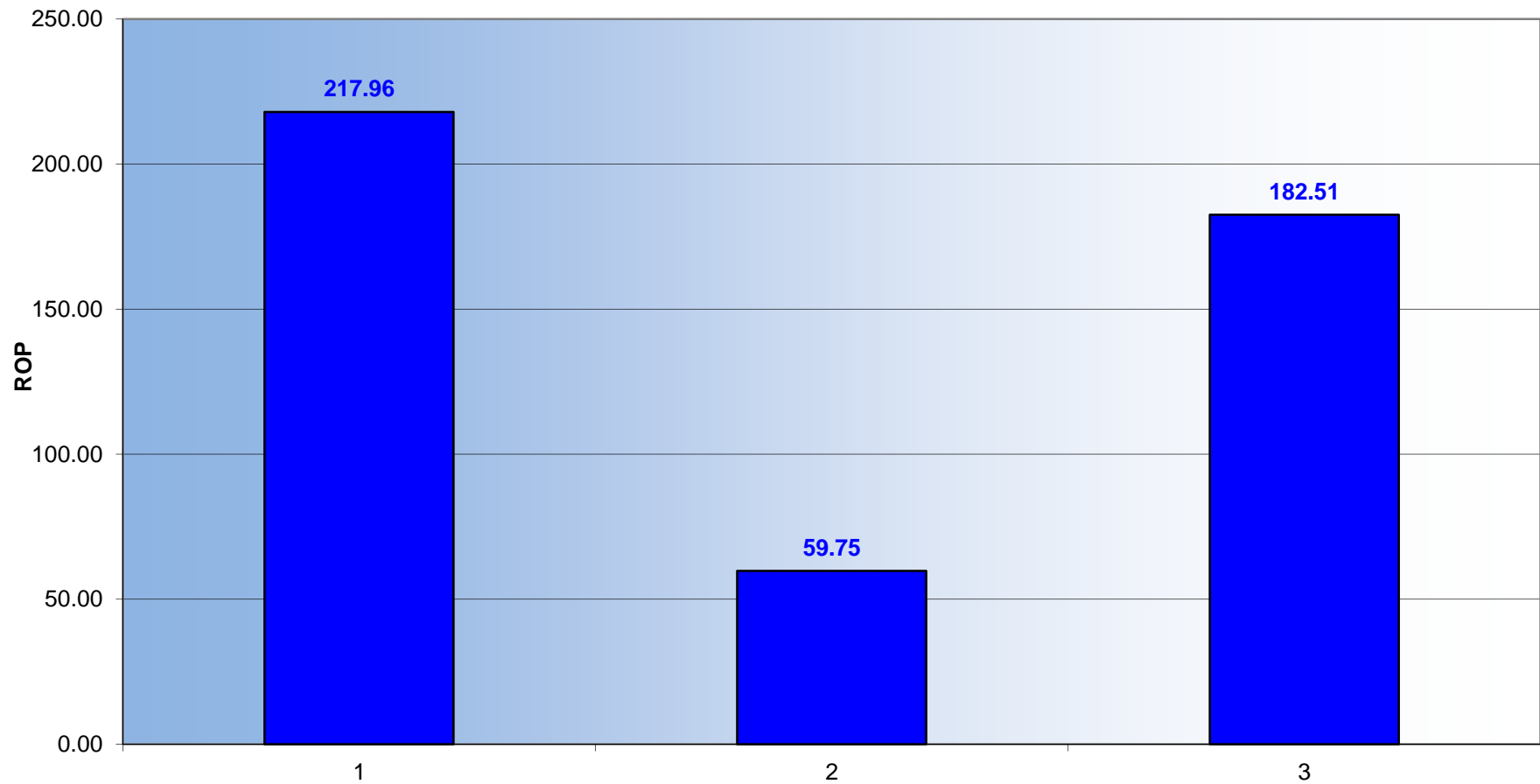


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Average Rate of Penetration Per BHA

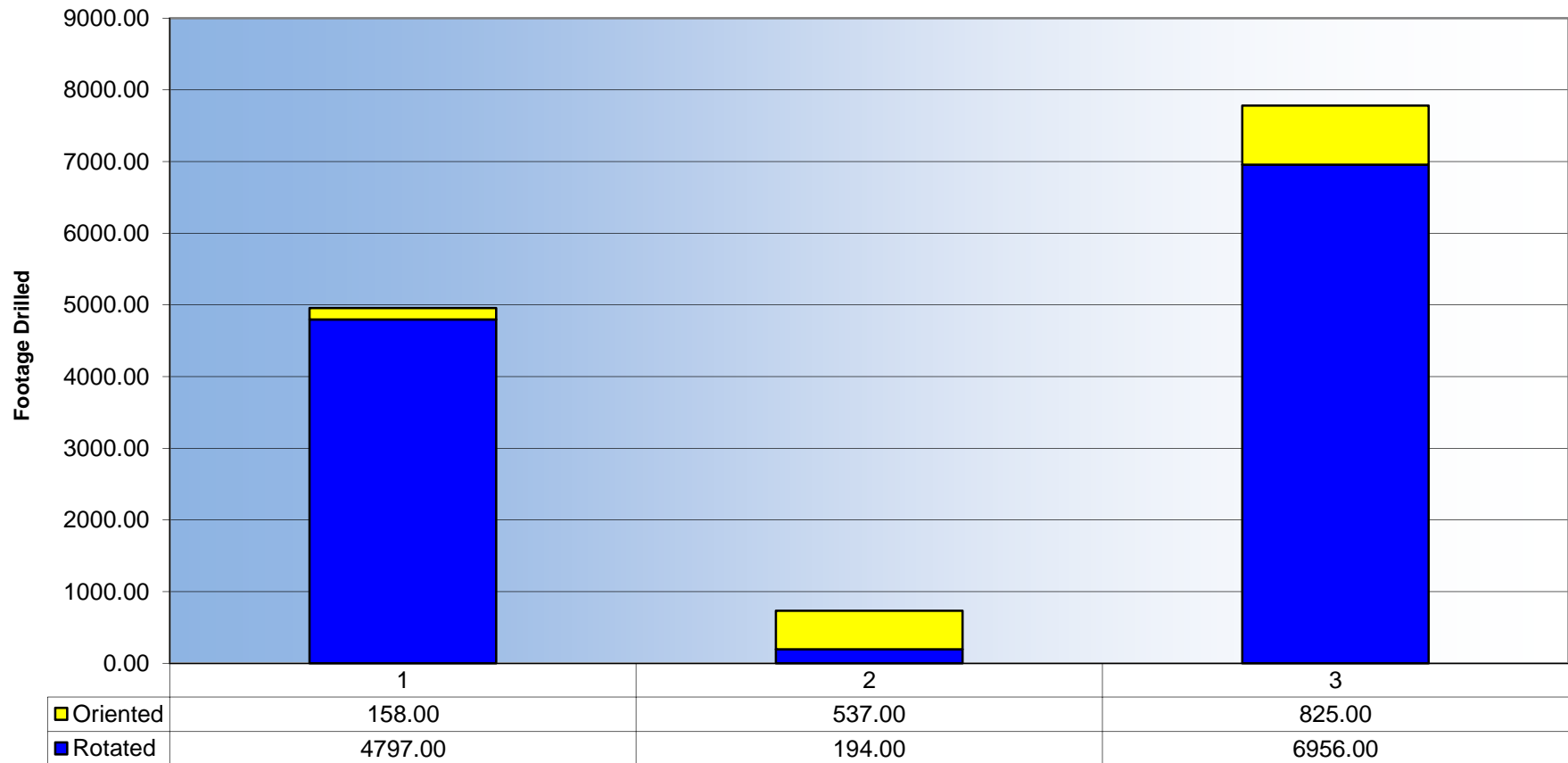


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Oriented vs. Rotated

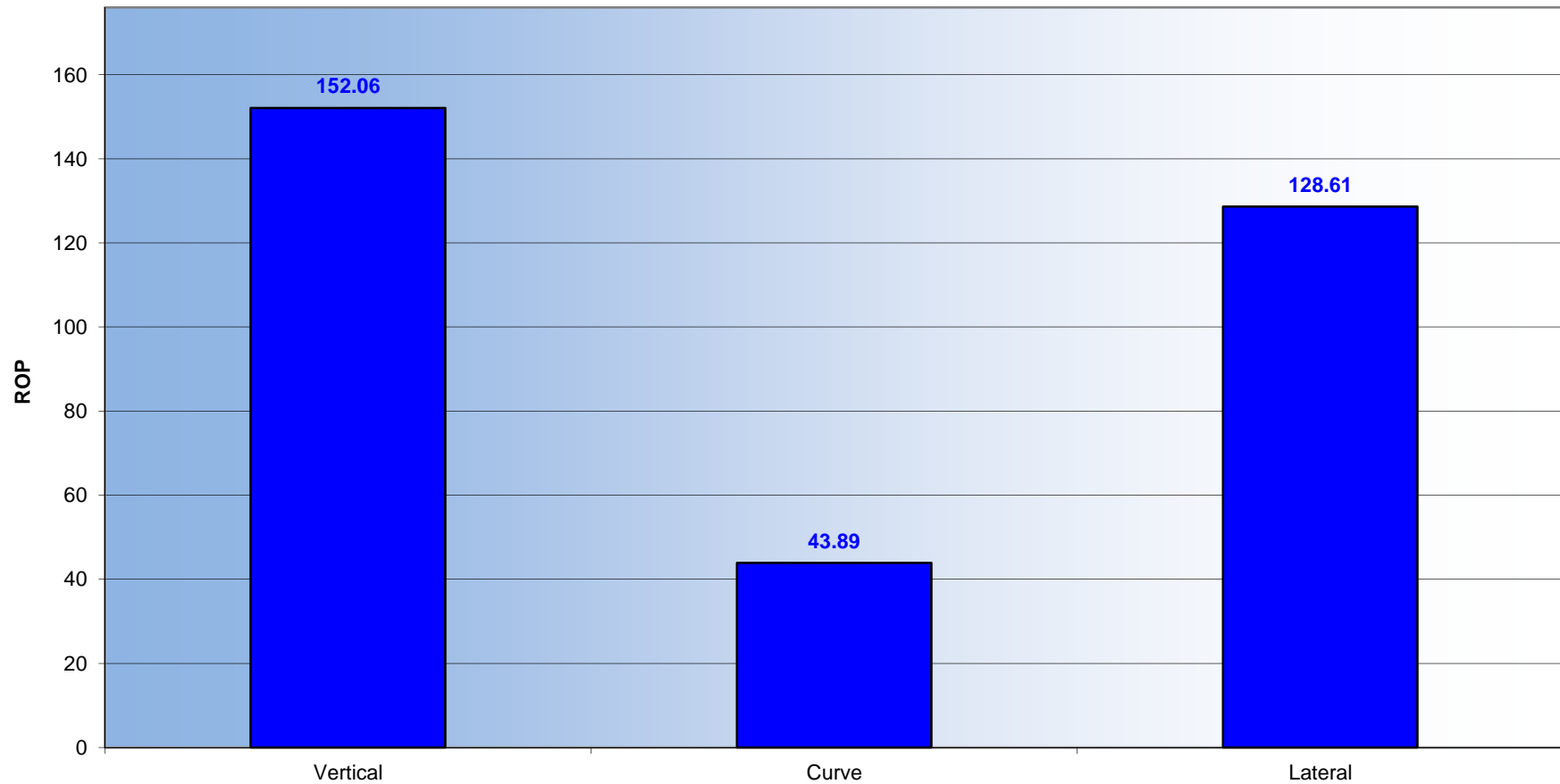


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Vertical, Curve, and Lateral Average ROP

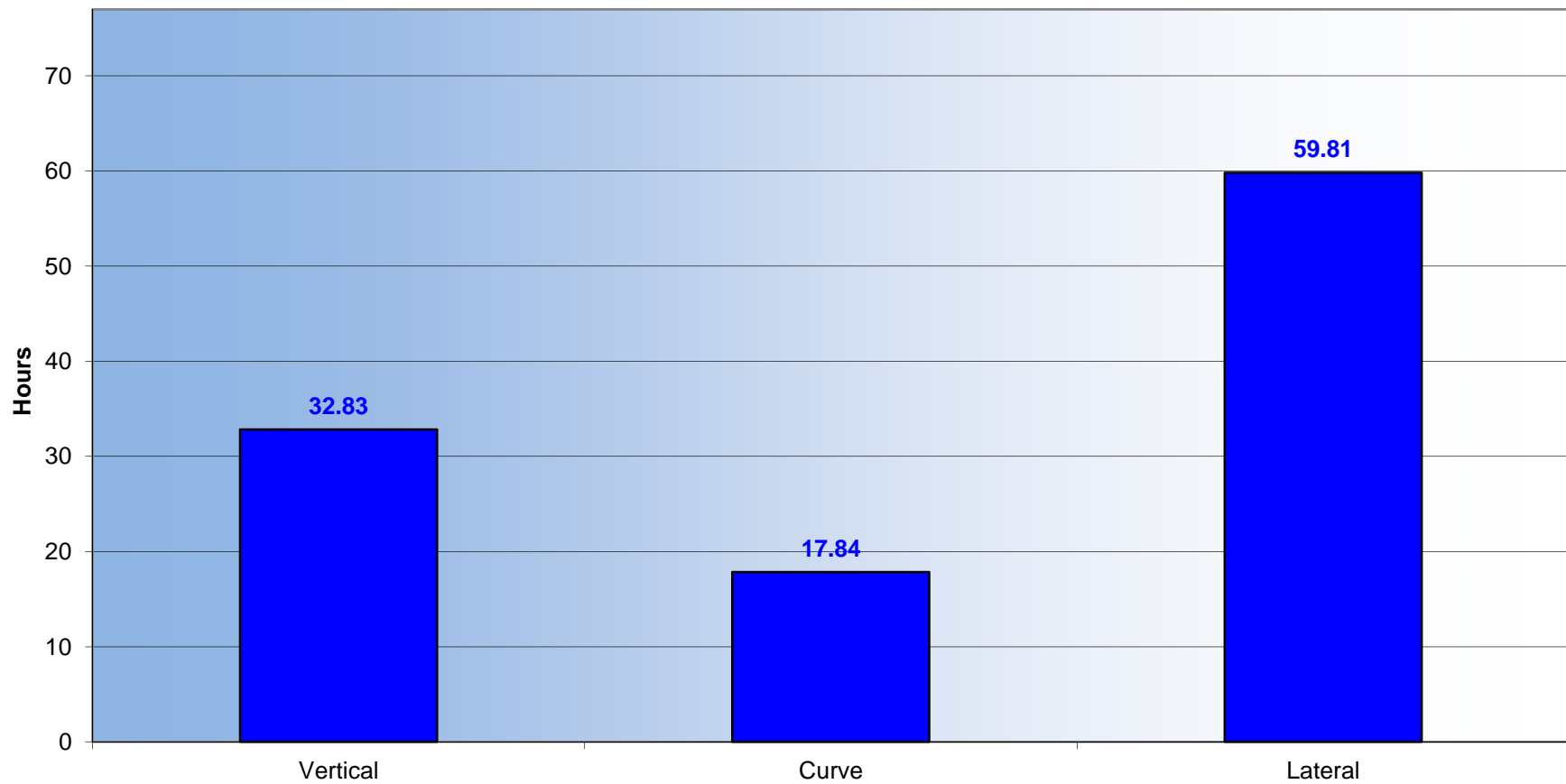


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Vertical, Curve, and Lateral Hours

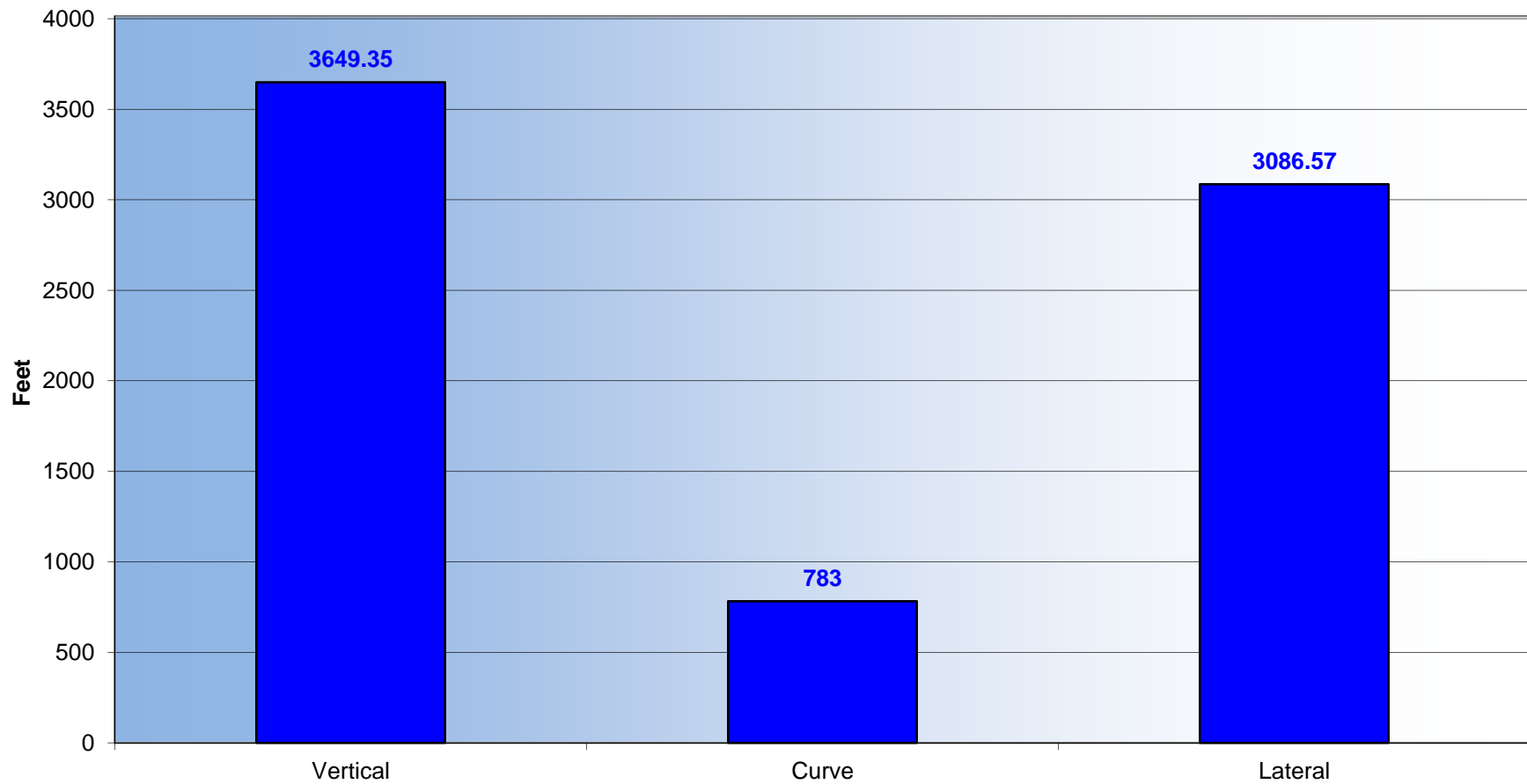


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Vertical, Curve, and Lateral Average Footage Per Day



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