

INTREPID

Directional Services

SM Energy

Eddy County, NM (NAD 83)

Sec 34, T19S, R29E

Osage 34 Fed #6H

15- 41597

Original Wellbore

Survey: MWD Survey

Standard Survey Report

06 October, 2013



Company:	SM Energy	Local Co-ordinate Reference:	Well Osage 34 Fed #6H
Project:	Eddy County NM (NAD 83)	TVD Reference:	WELL @ 3350.0usft (Original Well Elev)
Site:	Sec 34 T19S R29E	MD Reference:	WELL @ 3350.0usft (Original Well Elev)
Well:	Osage 34 Fed #6H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Project	Eddy County NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 34 T19S R29E		
Site Position:		Northing:	0.00 usft
From:	Map	Easting:	0.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	30° 59' 18.404 N
		Longitude:	106° 3' 38.987 W
		Grid Convergence:	-0.89 °

Well	Osage 34 Fed #6H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	3,350.0 usft
		Latitude:	32° 36' 52.477 N
		Longitude:	104° 3' 15.345 W
		Ground Level:	3,332.0 usft

Wellbore	Original Wellbore		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	7/31/2013	7.58
			Dip Angle
			60.41
			Field Strength
			48,586

Design	Original Wellbore		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			269.51

Survey Program	Date 10/6/2013		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
179.0	1,603.0	Nabors M-09 Surveys (Original Wellbore)	MWD
1,715.0	11,871.0	MWD Survey (Original Wellbore)	MWD
			Description
			MWD - Standard
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
1,603.0	0.40	115.00	1,602.8	10.8	18.8	-18.9	0.00	0.00	0.00	
1,715.0	1.10	104.60	1,714.7	10.3	20.2	-20.3	0.63	0.63	-9.29	
First MWD Survey										
1,810.0	1.10	114.80	1,809.7	9.7	21.9	-22.0	0.21	0.00	10.74	
1,906.0	1.50	134.10	1,905.7	8.5	23.6	-23.7	0.61	0.42	20.10	
2,001.0	1.70	135.80	2,000.7	6.6	25.5	-25.6	0.22	0.21	1.79	
2,097.0	1.70	141.60	2,096.6	4.5	27.4	-27.4	0.18	0.00	6.04	
2,192.0	1.80	142.80	2,191.6	2.2	29.2	-29.2	0.11	0.11	1.26	
2,288.0	1.20	176.40	2,287.5	0.0	30.1	-30.1	1.08	-0.63	35.00	
2,383.0	1.30	210.50	2,382.5	-2.0	29.6	-29.6	0.78	0.11	35.89	

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Well:	Osage 34 Fed #6H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,479.0	1.40	226.60	2,478.5	-3.7	28.2	-28.2	0.41	0.10	16.77	
2,574.0	1.40	234.30	2,573.5	-5.2	26.5	-26.4	0.20	0.00	8.11	
2,670.0	1.40	245.20	2,669.4	-6.4	24.4	-24.4	0.28	0.00	11.35	
2,765.0	1.10	251.80	2,764.4	-7.1	22.5	-22.5	0.35	-0.32	6.95	
2,860.0	1.20	246.70	2,859.4	-7.8	20.7	-20.7	0.15	0.11	-5.37	
2,956.0	1.20	258.60	2,955.4	-8.4	18.8	-18.8	0.26	0.00	12.40	
3,051.0	1.30	258.40	3,050.4	-8.8	16.8	-16.7	0.11	0.11	-0.21	
3,146.0	1.50	252.00	3,145.3	-9.4	14.6	-14.5	0.27	0.21	-6.74	
3,242.0	1.50	248.60	3,241.3	-10.3	12.2	-12.1	0.09	0.00	-3.54	
3,363.0	1.60	249.70	3,362.3	-11.4	9.1	-9.0	0.09	0.08	0.91	
3,459.0	1.70	248.90	3,458.2	-12.4	6.6	-6.4	0.11	0.10	-0.83	
3,554.0	1.80	238.40	3,553.2	-13.7	4.0	-3.9	0.35	0.11	-11.05	
3,650.0	1.70	235.30	3,649.1	-15.3	1.5	-1.4	0.14	-0.10	-3.23	
3,745.0	1.50	238.80	3,744.1	-16.7	-0.7	0.9	0.23	-0.21	3.68	
3,841.0	1.40	241.70	3,840.1	-17.9	-2.8	3.0	0.13	-0.10	3.02	
3,936.0	1.70	312.80	3,935.0	-17.5	-4.9	5.0	1.91	0.32	74.84	
4,032.0	1.50	313.60	4,031.0	-15.7	-6.8	7.0	0.21	-0.21	0.83	
4,127.0	1.50	318.80	4,126.0	-13.9	-8.5	8.7	0.14	0.00	5.47	
4,222.0	1.50	327.80	4,220.9	-11.9	-10.0	10.1	0.25	0.00	9.47	
4,318.0	1.50	335.70	4,316.9	-9.7	-11.2	11.3	0.22	0.00	8.23	
4,413.0	1.70	342.80	4,411.9	-7.2	-12.1	12.2	0.30	0.21	7.47	
4,509.0	1.70	345.50	4,507.8	-4.5	-12.9	13.0	0.08	0.00	2.81	
4,604.0	2.00	358.90	4,602.8	-1.5	-13.3	13.3	0.55	0.32	14.11	
4,700.0	1.10	8.70	4,698.7	1.1	-13.2	13.2	0.97	-0.94	10.21	
4,795.0	1.10	15.20	4,793.7	2.9	-12.8	12.8	0.13	0.00	6.84	
4,891.0	1.20	27.30	4,889.7	4.7	-12.1	12.1	0.27	0.10	12.60	
4,986.0	1.20	32.70	4,984.7	6.4	-11.1	11.1	0.12	0.00	5.68	
5,082.0	1.40	23.70	5,080.6	8.3	-10.1	10.0	0.30	0.21	-9.38	
5,177.0	1.40	16.40	5,175.6	10.5	-9.3	9.2	0.19	0.00	-7.68	
5,272.0	1.30	16.20	5,270.6	12.6	-8.7	8.6	0.11	-0.11	-0.21	
5,368.0	1.50	14.90	5,366.6	14.9	-8.1	7.9	0.21	0.21	-1.35	
5,463.0	1.50	79.10	5,461.5	16.3	-6.5	6.4	1.68	0.00	67.58	
5,559.0	1.50	83.20	5,557.5	16.7	-4.0	3.9	0.11	0.00	4.27	
5,654.0	1.50	84.50	5,652.5	17.0	-1.6	1.4	0.04	0.00	1.37	
5,750.0	1.20	87.10	5,748.4	17.2	0.7	-0.8	0.32	-0.31	2.71	
5,845.0	1.10	95.80	5,843.4	17.1	2.6	-2.7	0.21	-0.11	9.16	
5,940.0	1.00	87.20	5,938.4	17.1	4.3	-4.5	0.20	-0.11	-9.05	
6,036.0	0.80	77.70	6,034.4	17.3	5.8	-6.0	0.26	-0.21	-9.90	
6,131.0	0.70	67.20	6,129.4	17.6	7.0	-7.1	0.18	-0.11	-11.05	
6,227.0	0.80	43.10	6,225.4	18.3	8.0	-8.2	0.34	0.10	-25.10	
6,322.0	1.10	27.00	6,320.4	19.6	8.9	-9.0	0.42	0.32	-16.95	
6,417.0	0.70	154.90	6,415.4	19.9	9.5	-9.7	1.71	-0.42	134.63	
6,513.0	0.10	146.60	6,511.4	19.3	9.8	-10.0	0.63	-0.63	-8.65	

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Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,573.0	0.30	25.80	6,571.4	19.4	9.9	-10.1	0.60	0.33	-201.33
6,605.0	1.20	279.00	6,603.4	19.5	9.6	-9.8	4.12	2.81	-333.75
6,637.0	4.50	267.20	6,635.3	19.5	8.0	-8.2	10.42	10.31	-36.88
6,669.0	7.30	266.60	6,667.1	19.4	4.8	-4.9	8.75	8.75	-1.88
6,700.0	10.00	268.50	6,697.8	19.2	0.1	-0.3	8.76	8.71	6.13
6,732.0	13.40	270.10	6,729.1	19.1	-6.4	6.2	10.67	10.63	5.00
6,764.0	16.90	270.70	6,760.0	19.2	-14.8	14.6	10.95	10.94	1.88
6,796.0	20.40	269.70	6,790.3	19.2	-25.0	24.8	10.98	10.94	-3.13
6,828.0	24.60	268.90	6,819.9	19.0	-37.2	37.1	13.16	13.13	-2.50
6,859.0	28.30	267.50	6,847.6	18.6	-51.0	50.9	12.10	11.94	-4.52
6,891.0	31.30	266.60	6,875.4	17.8	-66.9	66.7	9.48	9.38	-2.81
6,923.0	34.20	266.30	6,902.3	16.7	-84.2	84.0	9.08	9.06	-0.94
6,955.0	37.20	266.30	6,928.3	15.5	-102.8	102.7	9.38	9.38	0.00
6,987.0	41.00	266.60	6,953.1	14.2	-123.0	122.8	11.89	11.88	0.94
7,018.0	44.60	266.00	6,975.9	12.9	-144.0	143.8	11.69	11.61	-1.94
7,050.0	47.50	266.50	6,998.1	11.4	-167.0	166.8	9.13	9.06	1.56
7,082.0	50.90	266.10	7,019.0	9.8	-191.1	191.0	10.67	10.63	-1.25
7,114.0	52.70	266.70	7,038.8	8.2	-216.2	216.1	5.81	5.63	1.88
7,146.0	53.50	266.40	7,058.0	6.7	-241.8	241.7	2.61	2.50	-0.94
7,178.0	56.20	266.40	7,076.4	5.0	-267.9	267.8	8.44	8.44	0.00
7,210.0	59.30	266.60	7,093.5	3.4	-294.9	294.8	9.70	9.69	0.63
7,241.0	62.20	267.10	7,108.6	1.9	-321.9	321.9	9.46	9.35	1.61
7,273.0	64.20	267.80	7,123.0	0.6	-350.4	350.4	6.55	6.25	2.19
7,305.0	66.40	267.40	7,136.4	-0.6	-379.5	379.5	6.97	6.88	-1.25
7,337.0	69.20	267.40	7,148.5	-1.9	-409.1	409.1	8.75	8.75	0.00
7,369.0	72.70	267.20	7,158.9	-3.3	-439.3	439.3	10.95	10.94	-0.63
7,401.0	75.30	266.40	7,167.8	-5.1	-470.0	470.0	8.47	8.13	-2.50
7,432.0	78.30	267.10	7,174.8	-6.8	-500.1	500.1	9.92	9.68	2.26
7,464.0	81.70	268.40	7,180.4	-8.0	-531.6	531.6	11.35	10.63	4.06
7,496.0	84.80	269.50	7,184.2	-8.6	-563.4	563.4	10.27	9.69	3.44
7,507.0	85.90	269.30	7,185.0	-8.7	-574.3	574.4	10.16	10.00	-1.82
7,588.0	91.90	269.00	7,186.6	-9.9	-655.3	655.3	7.42	7.41	-0.37
7,682.0	89.50	271.60	7,185.5	-9.4	-749.2	749.3	3.76	-2.55	2.77
7,777.0	89.60	271.90	7,186.2	-6.5	-844.2	844.2	0.33	0.11	0.32
7,872.0	88.80	272.20	7,187.5	-3.1	-939.1	939.1	0.90	-0.84	0.32
7,967.0	90.50	270.10	7,188.1	-1.2	-1,034.1	1,034.1	2.84	1.79	-2.21
8,062.0	88.80	268.60	7,188.7	-2.3	-1,129.1	1,129.1	2.39	-1.79	-1.58
8,157.0	88.70	267.30	7,190.8	-5.7	-1,224.0	1,224.0	1.37	-0.11	-1.37
8,251.0	91.60	266.20	7,190.5	-11.0	-1,317.8	1,317.9	3.30	3.09	-1.17
8,346.0	93.50	267.60	7,186.3	-16.1	-1,412.6	1,412.7	2.48	2.00	1.47
8,441.0	94.20	267.00	7,179.9	-20.6	-1,507.3	1,507.4	0.97	0.74	-0.63
8,536.0	94.20	270.20	7,172.9	-22.9	-1,602.0	1,602.1	3.36	0.00	3.37
8,630.0	93.80	271.10	7,166.4	-21.9	-1,695.7	1,695.9	1.05	-0.43	0.96

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Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,725.0	91.80	272.30	7,161.7	-19.0	-1,790.6	1,790.7	2.45	-2.11	1.26
8,820.0	92.60	272.20	7,158.1	-15.3	-1,885.4	1,885.5	0.85	0.84	-0.11
8,915.0	91.20	271.60	7,155.0	-12.2	-1,980.3	1,980.4	1.60	-1.47	-0.63
9,008.0	91.70	271.90	7,152.6	-9.3	-2,073.2	2,073.3	0.63	0.54	0.32
9,102.0	90.60	272.20	7,150.7	-6.0	-2,167.2	2,167.1	1.21	-1.17	0.32
9,198.0	89.20	271.60	7,150.9	-2.8	-2,263.1	2,263.1	1.59	-1.46	-0.63
9,293.0	92.00	269.40	7,149.9	-2.0	-2,358.1	2,358.0	3.75	2.95	-2.32
9,387.0	90.50	268.60	7,147.8	-3.6	-2,452.0	2,452.0	1.81	-1.60	-0.85
9,482.0	90.90	268.30	7,146.7	-6.2	-2,547.0	2,547.0	0.53	0.42	-0.32
9,577.0	91.50	268.60	7,144.7	-8.7	-2,641.9	2,641.9	0.71	0.63	0.32
9,671.0	89.90	268.30	7,143.5	-11.3	-2,735.9	2,735.9	1.73	-1.70	-0.32
9,766.0	90.10	268.60	7,143.5	-13.8	-2,830.9	2,830.9	0.38	0.21	0.32
9,861.0	90.60	269.10	7,143.0	-15.8	-2,925.8	2,925.9	0.74	0.53	0.53
9,956.0	90.80	269.10	7,141.8	-17.2	-3,020.8	3,020.9	0.21	0.21	0.00
10,050.0	91.60	270.30	7,139.8	-17.7	-3,114.8	3,114.8	1.53	0.85	1.28
10,145.0	91.40	270.00	7,137.3	-17.5	-3,209.8	3,209.8	0.38	-0.21	-0.32
10,240.0	90.30	270.00	7,135.9	-17.5	-3,304.8	3,304.8	1.16	-1.16	0.00
10,335.0	91.10	269.30	7,134.8	-18.1	-3,399.7	3,399.8	1.12	0.84	-0.74
10,430.0	92.40	268.50	7,131.9	-19.9	-3,494.7	3,494.7	1.61	1.37	-0.84
10,524.0	92.70	269.10	7,127.7	-21.9	-3,588.6	3,588.6	0.71	0.32	0.64
10,619.0	90.90	269.90	7,124.7	-22.7	-3,683.5	3,683.6	2.07	-1.89	0.84
10,714.0	92.60	270.50	7,121.8	-22.4	-3,778.5	3,778.5	1.90	1.79	0.63
10,809.0	89.80	270.80	7,119.8	-21.3	-3,873.4	3,873.5	2.96	-2.95	0.32
10,903.0	89.60	270.90	7,120.3	-19.9	-3,967.4	3,967.4	0.24	-0.21	0.11
10,998.0	90.20	270.40	7,120.5	-18.8	-4,062.4	4,062.4	0.82	0.63	-0.53
11,093.0	89.30	268.70	7,120.9	-19.6	-4,157.4	4,157.4	2.02	-0.95	-1.79
11,188.0	88.40	267.80	7,122.8	-22.5	-4,252.3	4,252.4	1.34	-0.95	-0.95
11,283.0	89.10	268.40	7,124.9	-25.6	-4,347.3	4,347.3	0.97	0.74	0.63
11,378.0	89.60	268.60	7,125.9	-28.1	-4,442.2	4,442.3	0.57	0.53	0.21
11,473.0	88.90	267.40	7,127.2	-31.4	-4,537.2	4,537.3	1.46	-0.74	-1.26
11,567.0	88.90	267.40	7,129.0	-35.7	-4,631.0	4,631.2	0.00	0.00	0.00
11,662.0	92.00	269.00	7,128.2	-38.7	-4,726.0	4,726.1	3.67	3.26	1.68
11,758.0	88.30	267.10	7,128.0	-41.9	-4,821.9	4,822.1	4.33	-3.85	-1.98
11,821.0	87.90	267.20	7,130.1	-45.0	-4,884.8	4,885.0	0.65	-0.63	0.16
Last MWD Survey									
11,871.0	87.90	267.20	7,131.9	-47.5	-4,934.7	4,934.9	0.00	0.00	0.00
PTB: TD									

Company:	SM Energy	Local Co-ordinate Reference:	Well Osage 34 Fed #6H
Project:	Eddy County NM (NAD 83)	TVD Reference:	WELL @ 3350.0usft (Original Well Elev)
Site:	Sec 34 T19S R29E	MD Reference:	WELL @ 3350.0usft (Original Well Elev)
Well:	Osage 34 Fed #6H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	EDM 5000.1 Single User Db

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,715.0	1,714.7	10.3	20.2	First MWD Survey
11,821.0	7,130.1	-45.0	-4,884.8	Last MWD Survey
11,871.0	7,131.9	-47.5	-4,934.7	PTB - TD

Checked By: _____	Approved By: _____	Date: _____
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