



Project: Mary Prospect  
 Site: ZMBG Pad  
 Well: 4H  
 Wellbore: OH  
 Design: 4H As Drilled



WELL DETAILS: 4H

+N/-S	+E/-W	Northing	Ground Level: Easting	1341.00	Latitude	Longitude
0.00	0.00	418321.00	1628042.00		39° 38' 27.692 N	80° 49' 15.059 W

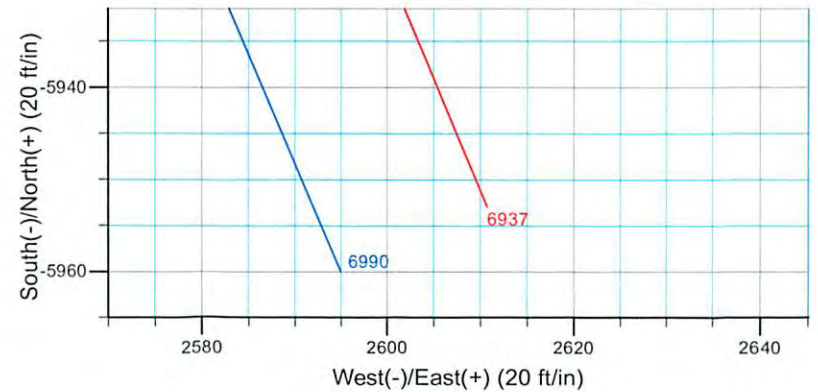
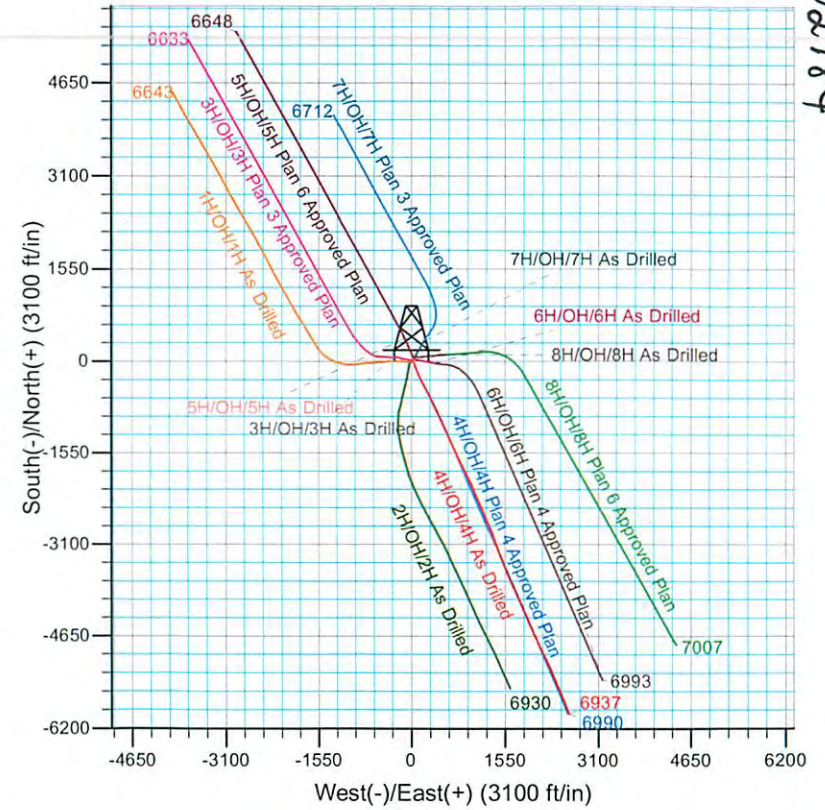
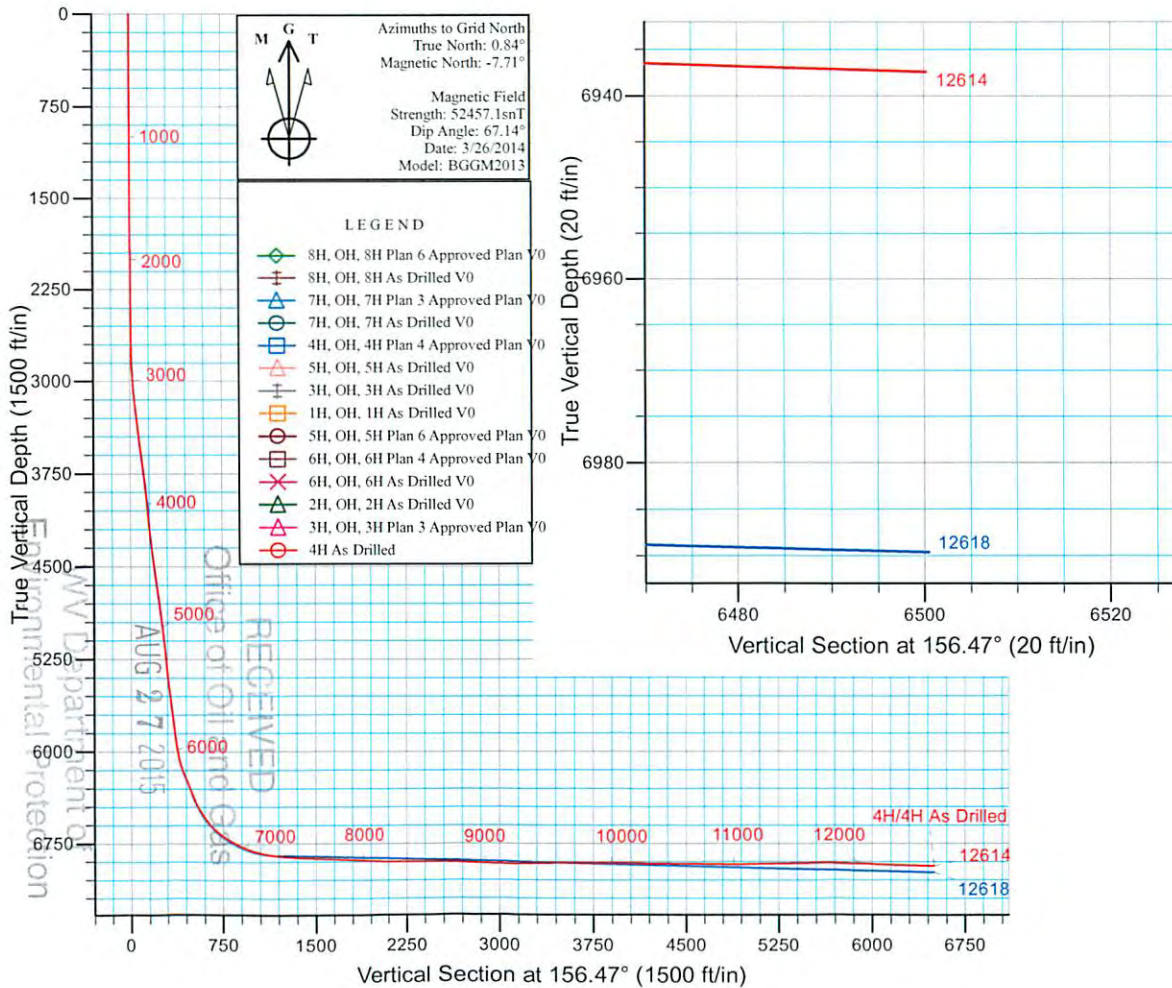
REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well 4H, Grid North  
 Vertical (TVD) Reference: GL 1341 & KB 18 @ 1359.00ft (Saxon 141)  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: GL 1341 & KB 18 @ 1359.00ft (Saxon 141)  
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Mary Prospect

Geodetic System: US State Plane 1927 (Exact solution)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: West Virginia North 4701  
 System Datum: Mean Sea Level

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSet	Target
1	5999.00	8.16	152.75	5976.45	-340.13	165.27	0.00	0.00	377.83	
2	6237.88	22.47	149.59	6206.26	-394.86	196.31	6.00	-4.89	440.40	
3	6454.18	22.47	149.59	6406.13	-466.17	238.17	0.00	0.00	522.49	
4	7282.01	88.50	157.00	6850.00	-1050.00	511.00	8.00	8.10	1166.70	ZMBG 4H_LP4
	512617.81	88.50	157.00	6989.68	-5960.01	2595.01	0.00	0.00	6500.45	ZMBG 4H_BHL4



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## Stone Energy

Mary Prospect  
ZMBG Pad  
4H

OH

Design: 4H As Drilled

## Standard Survey Report

13 May, 2014



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Scientific Drilling  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well 4H
<b>Project:</b>	Mary Prospect	<b>TVD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Site:</b>	ZMBG Pad	<b>MD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Well:</b>	4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	4H As Drilled	<b>Database:</b>	Northeast District

<b>Project</b>	Mary Prospect, West Virginia		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		

<b>Site</b>	ZMBG Pad				
<b>Site Position:</b>		<b>Northing:</b>	418,393.00 usft	<b>Latitude:</b>	39° 38' 28.413 N
<b>From:</b>	Map	<b>Easting:</b>	1,628,110.00 usft	<b>Longitude:</b>	80° 49' 14.204 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.84 °

<b>Well</b>	4H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	418,321.00 usft	<b>Latitude:</b>	39° 38' 27.692 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,628,042.00 usft	<b>Longitude:</b>	80° 49' 15.059 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	1,341.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/16/2013	-8.48	67.19	52,608
	BGGM2013	8/28/2013	-8.54	67.19	52,532
	BGGM2013	3/7/2014	-8.55	67.14	52,464
	BGGM2013	2/26/2014	-8.55	67.15	52,467
	BGGM2013	3/26/2014	-8.56	67.14	52,457

<b>Design</b>	4H As Drilled				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	156.47	

<b>Survey Program</b>	<b>Date</b>	5/9/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
18.00	2,578.00	Survey 3 - Vaughn Gyro (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
2,592.00	5,933.00	Survey 4 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	
5,962.00	12,614.00	Survey 5 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.00	0.00	360.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Ground Level</b>									
103.00	0.64	91.07	103.00	-0.01	0.47	0.20	0.75	0.75	0.00
<b>First Vaughn Gyro Survey</b>									

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Scientific Drilling  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well 4H
<b>Project:</b>	Mary Prospect	<b>TVD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Site:</b>	ZMBG Pad	<b>MD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Well:</b>	4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	4H As Drilled	<b>Database:</b>	Northeast District

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
203.00	0.66	95.46	202.99	-0.07	1.61	0.71	0.05	0.02	4.39	
303.00	0.43	96.07	302.99	-0.17	2.55	1.17	0.23	-0.23	0.61	
403.00	0.15	134.80	402.99	-0.30	3.02	1.48	0.33	-0.28	38.73	
503.00	0.24	208.91	502.99	-0.58	3.01	1.73	0.25	0.09	74.11	
603.00	0.10	250.27	602.99	-0.79	2.83	1.85	0.18	-0.14	41.36	
703.00	0.32	280.41	702.98	-0.77	2.47	1.69	0.24	0.22	30.14	
803.00	0.30	357.34	802.98	-0.46	2.18	1.29	0.39	-0.02	76.93	
903.00	0.24	125.53	902.98	-0.32	2.34	1.22	0.49	-0.06	128.19	
1,003.00	0.19	157.11	1,002.98	-0.59	2.58	1.57	0.13	-0.05	31.58	
1,103.00	0.27	164.10	1,102.98	-0.97	2.71	1.97	0.08	0.08	6.99	
1,203.00	0.11	129.18	1,202.98	-1.26	2.84	2.29	0.19	-0.16	-34.92	
1,303.00	0.30	63.91	1,302.98	-1.20	3.15	2.36	0.27	0.19	-65.27	
1,403.00	0.32	77.98	1,402.98	-1.03	3.66	2.41	0.08	0.02	14.07	
1,503.00	0.24	120.30	1,502.98	-1.08	4.12	2.63	0.22	-0.08	42.32	
1,603.00	0.20	145.30	1,602.98	-1.33	4.40	2.97	0.10	-0.04	25.00	
1,703.00	0.23	166.19	1,702.98	-1.66	4.54	3.34	0.08	0.03	20.89	
1,803.00	0.14	141.06	1,802.98	-1.95	4.67	3.66	0.12	-0.09	-25.13	
1,903.00	0.14	144.31	1,902.98	-2.15	4.82	3.89	0.01	0.00	3.25	
2,003.00	0.30	136.11	2,002.97	-2.44	5.07	4.26	0.16	0.16	-8.20	
2,103.00	0.22	92.03	2,102.97	-2.63	5.44	4.59	0.21	-0.08	-44.08	
2,203.00	0.19	85.49	2,202.97	-2.63	5.80	4.72	0.04	-0.03	-6.54	
2,303.00	0.16	112.62	2,302.97	-2.67	6.09	4.88	0.09	-0.03	27.13	
2,403.00	0.31	168.96	2,402.97	-2.99	6.27	5.24	0.26	0.15	56.34	
2,503.00	0.23	173.67	2,502.97	-3.45	6.35	5.70	0.08	-0.08	4.71	
2,578.00	0.33	176.67	2,577.97	-3.82	6.38	6.04	0.13	0.13	4.00	
<b>Last Vaughn Gyro Survey</b>										
2,603.00	0.23	125.63	2,602.97	-3.92	6.42	6.16	1.03	-0.40	-204.16	
<b>First SDI MWD Survey</b>										
2,695.00	0.96	137.99	2,694.96	-4.60	7.09	7.04	0.80	0.79	13.43	
2,786.00	1.95	126.94	2,785.93	-6.09	8.84	9.12	1.13	1.09	-12.14	
2,881.00	3.25	133.34	2,880.83	-8.91	12.09	13.00	1.40	1.37	6.74	
2,975.00	4.43	128.31	2,974.62	-12.99	16.87	18.65	1.30	1.26	-5.35	
3,066.00	4.89	132.21	3,065.32	-17.78	22.50	25.28	0.61	0.51	4.29	
3,158.00	6.18	137.46	3,156.89	-24.06	28.76	33.54	1.50	1.40	5.71	
3,249.00	6.88	143.73	3,247.30	-32.06	35.29	43.49	1.10	0.77	6.89	
3,340.00	6.78	145.31	3,337.65	-40.88	41.57	54.07	0.23	-0.11	1.74	
3,433.00	6.67	156.03	3,430.02	-50.33	46.89	64.86	1.35	-0.12	11.53	
3,523.00	6.95	168.11	3,519.39	-60.43	50.14	75.42	1.62	0.31	13.42	
3,614.00	7.15	168.92	3,609.70	-71.38	52.36	86.34	0.25	0.22	0.89	
3,706.00	7.41	163.51	3,700.96	-82.68	55.15	97.82	0.80	0.28	-5.88	
3,798.00	7.71	159.38	3,792.16	-94.15	59.00	109.87	0.67	0.33	-4.49	
3,889.00	6.47	162.31	3,882.46	-104.75	62.71	121.07	1.42	-1.36	3.22	
3,980.00	5.63	159.48	3,972.96	-113.81	65.83	130.63	0.98	0.92	-3.11	
4,073.00	5.71	157.54	4,065.50	-122.36	69.20	139.81	0.22	0.09	-2.09	

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Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well 4H
<b>Project:</b>	Mary Prospect	<b>TVD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Site:</b>	ZMBG Pad	<b>MD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Well:</b>	4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	4H As Drilled	<b>Database:</b>	Northeast District

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,168.00	5.64	152.27	4,160.04	-130.86	73.18	149.19	0.55	-0.07	-5.55
4,261.00	6.30	154.77	4,252.53	-139.52	77.48	158.85	0.76	0.71	2.69
4,354.00	7.34	156.30	4,344.87	-149.58	82.04	169.89	1.14	1.12	1.65
4,446.00	7.98	157.00	4,436.05	-160.84	86.90	182.15	0.70	0.70	0.76
4,540.00	8.64	152.69	4,529.06	-173.12	92.69	195.72	0.97	0.70	-4.59
4,632.00	8.70	156.38	4,620.01	-185.63	98.65	209.58	0.61	0.07	4.01
4,726.00	8.15	161.66	4,713.00	-198.47	103.59	223.32	1.01	-0.59	5.62
4,818.00	7.13	164.06	4,804.18	-210.15	107.21	235.48	1.16	-1.11	2.61
4,911.00	7.21	162.20	4,896.46	-221.26	110.58	247.01	0.26	0.09	-2.00
5,005.00	7.70	160.92	4,989.66	-232.82	114.44	259.15	0.55	0.52	-1.36
5,096.00	7.23	159.40	5,079.89	-243.95	118.45	270.95	0.56	-0.52	-1.67
5,193.00	5.96	159.72	5,176.25	-254.38	122.34	282.07	1.31	-1.31	0.33
5,288.00	5.72	155.66	5,270.75	-263.32	126.01	291.73	0.50	-0.25	-4.27
5,379.00	6.22	154.65	5,361.26	-271.91	129.99	301.19	0.56	0.55	-1.11
5,472.00	6.83	154.12	5,453.66	-281.44	134.56	311.76	0.66	0.66	-0.57
5,564.00	7.39	151.48	5,544.95	-291.56	139.77	323.12	0.70	0.61	-2.87
5,658.00	6.68	151.74	5,638.24	-301.69	145.24	334.59	0.76	-0.76	0.28
5,749.00	6.62	151.86	5,728.63	-310.97	150.22	345.09	0.07	-0.07	0.13
5,841.00	7.25	153.00	5,819.95	-320.82	155.36	356.17	0.70	0.68	1.24
5,933.00	8.16	152.75	5,911.12	-331.80	160.99	368.48	0.99	0.99	-0.27
5,962.00	8.37	155.24	5,939.82	-335.55	162.81	372.64	1.43	0.72	8.59
5,994.00	9.05	155.22	5,971.45	-339.95	164.84	377.49	2.13	2.13	-0.06
6,026.00	10.71	158.90	6,002.98	-345.01	166.97	382.98	5.55	5.19	11.50
6,057.00	12.31	160.25	6,033.35	-350.80	169.12	389.15	5.23	5.16	4.35
6,087.00	13.87	158.28	6,062.57	-357.15	171.53	395.94	5.41	5.20	-6.57
6,117.00	15.59	156.33	6,091.59	-364.19	174.48	403.56	5.97	5.73	-6.50
6,148.00	17.47	155.05	6,121.30	-372.22	178.12	412.38	6.18	6.06	-4.13
6,178.00	19.00	154.14	6,149.80	-380.70	182.15	421.76	5.19	5.10	-3.03
6,209.00	21.10	152.72	6,178.92	-390.20	186.91	432.38	6.95	6.77	-4.58
6,239.00	22.77	151.20	6,206.74	-400.09	192.18	443.55	5.88	5.57	-5.07
6,269.00	22.86	150.06	6,234.40	-410.23	197.88	455.12	1.50	0.30	-3.80
6,299.00	22.09	149.28	6,262.12	-420.13	203.67	466.50	2.75	-2.57	-2.60
6,329.00	21.89	148.66	6,289.93	-429.75	209.46	477.64	1.02	-0.67	-2.07
6,360.00	22.30	149.74	6,318.66	-439.77	215.43	489.21	1.86	1.32	3.48
6,390.00	22.71	151.27	6,346.37	-449.76	221.09	500.63	2.38	1.37	5.10
6,420.00	22.37	151.59	6,374.08	-459.86	226.59	512.08	1.20	-1.13	1.07
6,450.00	22.82	151.31	6,401.78	-469.99	232.09	523.57	1.54	1.50	-0.93
6,481.00	24.86	151.78	6,430.13	-481.00	238.06	536.05	6.61	6.58	1.52
6,511.00	27.13	153.54	6,457.10	-492.68	244.09	549.17	7.99	7.57	5.87
6,542.00	29.48	154.16	6,484.39	-505.88	250.57	563.85	7.64	7.58	2.00
6,572.00	31.86	154.69	6,510.19	-519.68	257.17	579.14	7.98	7.93	1.77
6,602.00	34.36	154.96	6,535.32	-534.51	264.14	595.52	8.35	8.33	0.90
6,633.00	37.20	154.97	6,560.46	-550.93	271.81	613.64	9.16	9.16	0.03

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Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well 4H
<b>Project:</b>	Mary Prospect	<b>TVD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Site:</b>	ZMBG Pad	<b>MD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Well:</b>	4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	4H As Drilled	<b>Database:</b>	Northeast District

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,663.00	39.99	154.90	6,583.91	-567.88	279.74	632.34	9.30	9.30	-0.23
6,693.00	42.66	155.23	6,606.44	-585.84	288.09	652.14	8.93	8.90	1.10
6,723.00	45.47	155.18	6,627.99	-604.78	296.84	673.00	9.37	9.37	-0.17
6,753.00	48.16	154.57	6,648.52	-624.59	306.13	694.87	9.09	8.97	-2.03
6,785.00	51.00	155.09	6,669.27	-646.63	316.48	719.21	8.96	8.88	1.63
6,817.00	53.69	154.78	6,688.81	-669.58	327.22	744.54	8.44	8.41	-0.97
6,849.00	55.83	155.03	6,707.28	-693.25	338.30	770.66	6.72	6.69	0.78
6,881.00	58.04	155.05	6,724.73	-717.56	349.62	797.47	6.91	6.91	0.06
6,913.00	60.15	154.60	6,741.17	-742.40	361.30	824.91	6.70	6.59	-1.41
6,944.00	62.37	154.73	6,756.07	-766.97	372.93	852.08	7.17	7.16	0.42
6,976.00	64.76	155.10	6,770.32	-792.92	385.07	880.72	7.54	7.47	1.16
7,008.00	66.77	155.15	6,783.45	-819.39	397.35	909.89	6.28	6.28	0.16
7,040.00	68.76	155.27	6,795.56	-846.28	409.76	939.50	6.23	6.22	0.38
7,072.00	70.68	155.38	6,806.65	-873.56	422.29	969.51	6.01	6.00	0.34
7,103.00	72.98	155.85	6,816.32	-900.38	434.45	998.96	7.56	7.42	1.52
7,135.00	75.11	156.30	6,825.11	-928.50	446.93	1,029.73	6.79	6.66	1.41
7,167.00	77.34	156.46	6,832.73	-956.98	459.38	1,060.80	6.99	6.97	0.50
7,199.00	78.23	156.57	6,839.50	-985.66	471.85	1,092.08	2.80	2.78	0.34
7,230.00	80.04	156.37	6,845.35	-1,013.57	484.00	1,122.52	5.87	5.84	-0.65
7,262.00	81.40	156.15	6,850.51	-1,042.48	496.71	1,154.10	4.30	4.25	-0.69
7,294.00	83.21	156.26	6,854.79	-1,071.50	509.51	1,185.81	5.67	5.66	0.34
7,326.00	84.37	156.59	6,858.25	-1,100.65	522.23	1,217.62	3.77	3.63	1.03
7,358.00	84.70	156.31	6,861.30	-1,129.85	534.96	1,249.48	1.35	1.03	-0.88
7,389.00	84.76	156.32	6,864.15	-1,158.12	547.36	1,280.35	0.20	0.19	0.03
7,421.00	85.31	156.55	6,866.92	-1,187.34	560.10	1,312.23	1.86	1.72	0.72
7,453.00	85.51	156.48	6,869.48	-1,216.60	572.81	1,344.12	0.66	0.63	-0.22
7,516.00	88.36	156.70	6,872.85	-1,274.32	597.81	1,407.03	4.54	4.52	0.35
7,579.00	88.25	156.14	6,874.71	-1,332.04	623.00	1,470.00	0.91	-0.17	-0.89
7,643.00	87.45	155.27	6,877.11	-1,390.33	649.31	1,533.95	1.85	-1.25	-1.36
7,707.00	87.35	154.99	6,880.01	-1,448.33	676.20	1,597.86	0.46	-0.16	-0.44
7,770.00	86.98	155.91	6,883.13	-1,505.57	702.34	1,660.78	1.57	-0.59	1.46
7,834.00	86.58	155.62	6,886.73	-1,563.84	728.57	1,724.67	0.77	-0.63	-0.45
7,897.00	87.82	155.56	6,889.80	-1,621.13	754.57	1,787.59	1.97	1.97	-0.10
7,961.00	88.29	153.70	6,891.97	-1,678.93	781.98	1,851.51	3.00	0.73	-2.91
8,024.00	88.62	152.28	6,893.67	-1,735.03	810.58	1,914.37	2.31	0.52	-2.25
8,087.00	88.19	152.62	6,895.43	-1,790.87	839.71	1,977.19	0.87	-0.68	0.54
8,150.00	87.82	153.38	6,897.62	-1,846.97	868.29	2,040.04	1.34	-0.59	1.21
8,212.00	88.89	153.41	6,899.40	-1,902.38	896.04	2,101.92	1.73	1.73	0.05
8,273.00	89.70	153.84	6,900.15	-1,957.02	923.14	2,162.84	1.50	1.39	0.70
8,337.00	90.27	154.25	6,900.17	-2,014.57	951.15	2,226.78	1.10	0.89	0.64
8,400.00	90.37	155.79	6,899.82	-2,071.67	977.76	2,289.76	2.45	0.16	2.44
8,464.00	89.26	157.26	6,900.02	-2,130.37	1,003.25	2,353.76	2.88	-1.73	2.30
8,528.00	88.26	158.27	6,901.41	-2,189.60	1,027.46	2,417.72	2.22	-1.56	1.58

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Scientific Drilling  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well 4H
<b>Project:</b>	Mary Prospect	<b>TVD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Site:</b>	ZMBG Pad	<b>MD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Well:</b>	4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	4H As Drilled	<b>Database:</b>	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,592.00	88.69	158.38	6,903.11	-2,249.05	1,051.09	2,481.67	0.69	0.67	0.17
8,655.00	89.30	158.36	6,904.22	-2,307.61	1,074.31	2,544.62	0.97	0.97	-0.03
8,719.00	89.10	158.65	6,905.11	-2,367.15	1,097.76	2,608.58	0.55	-0.31	0.45
8,782.00	88.26	157.88	6,906.56	-2,425.65	1,121.08	2,671.53	1.81	-1.33	-1.22
8,846.00	88.19	157.40	6,908.54	-2,484.81	1,145.42	2,735.48	0.76	-0.11	-0.75
8,909.00	87.89	156.71	6,910.70	-2,542.79	1,169.96	2,798.44	1.19	-0.48	-1.10
8,972.00	87.85	156.41	6,913.04	-2,600.55	1,195.00	2,861.40	0.48	-0.06	-0.48
9,036.00	88.29	156.69	6,915.19	-2,659.23	1,220.46	2,925.36	0.81	0.69	0.44
9,100.00	88.66	156.18	6,916.90	-2,717.88	1,246.04	2,989.34	0.98	0.58	-0.80
9,164.00	88.42	156.01	6,918.53	-2,776.37	1,271.96	3,053.32	0.46	-0.38	-0.27
9,228.00	89.70	157.85	6,919.58	-2,835.24	1,297.04	3,117.30	3.50	2.00	2.88
9,291.00	92.11	161.35	6,918.58	-2,894.27	1,318.99	3,180.19	6.74	3.83	5.56
9,354.00	92.05	161.08	6,916.30	-2,953.87	1,339.26	3,242.93	0.44	-0.10	-0.43
9,417.00	90.74	161.10	6,914.76	-3,013.45	1,359.67	3,305.71	2.08	-2.08	0.03
9,480.00	90.70	161.37	6,913.97	-3,073.10	1,379.94	3,368.48	0.43	-0.06	0.43
9,544.00	90.50	161.51	6,913.30	-3,133.77	1,400.31	3,432.24	0.38	-0.31	0.22
9,608.00	90.07	161.44	6,912.98	-3,194.45	1,420.64	3,495.99	0.68	-0.67	-0.11
9,671.00	91.04	160.95	6,912.37	-3,254.08	1,440.95	3,558.78	1.72	1.54	-0.78
9,734.00	90.23	159.35	6,911.67	-3,313.33	1,462.34	3,621.64	2.85	-1.29	-2.54
9,798.00	89.90	158.72	6,911.60	-3,373.10	1,485.24	3,685.58	1.11	-0.52	-0.98
9,862.00	90.23	158.43	6,911.53	-3,432.67	1,508.61	3,749.53	0.69	0.52	-0.45
9,925.00	89.93	157.92	6,911.44	-3,491.16	1,532.04	3,812.50	0.94	-0.48	-0.81
9,988.00	89.90	156.62	6,911.53	-3,549.26	1,556.38	3,875.50	2.06	-0.05	-2.06
10,052.00	90.57	156.48	6,911.27	-3,607.98	1,581.85	3,939.50	1.07	1.05	-0.22
10,116.00	89.97	156.57	6,910.97	-3,666.68	1,607.34	4,003.49	0.95	-0.94	0.14
10,179.00	89.50	156.41	6,911.26	-3,724.45	1,632.47	4,066.49	0.79	-0.75	-0.25
10,243.00	88.63	155.63	6,912.31	-3,782.91	1,658.48	4,130.48	1.83	-1.36	-1.22
10,307.00	87.96	155.00	6,914.21	-3,841.04	1,685.19	4,194.44	1.44	-1.05	-0.98
10,370.00	88.19	156.33	6,916.33	-3,898.41	1,711.14	4,257.40	2.14	0.37	2.11
10,434.00	88.22	156.90	6,918.33	-3,957.12	1,736.53	4,321.36	0.89	0.05	0.89
10,498.00	89.36	157.71	6,919.68	-4,016.15	1,761.22	4,385.34	2.18	1.78	1.27
10,561.00	90.17	159.12	6,919.94	-4,074.73	1,784.39	4,448.30	2.58	1.29	2.24
10,625.00	90.37	158.21	6,919.64	-4,134.34	1,807.67	4,512.26	1.46	0.31	-1.42
10,689.00	89.50	156.50	6,919.71	-4,193.41	1,832.32	4,576.24	3.00	-1.36	-2.67
10,752.00	88.86	155.42	6,920.61	-4,250.94	1,857.98	4,639.23	1.99	-1.02	-1.71
10,816.00	89.16	154.95	6,921.72	-4,309.02	1,884.83	4,703.21	0.87	0.47	-0.73
10,880.00	89.26	155.83	6,922.60	-4,367.20	1,911.48	4,767.19	1.38	0.16	1.38
10,943.00	89.53	156.53	6,923.27	-4,424.83	1,936.92	4,830.19	1.19	0.43	1.11
11,007.00	90.30	156.72	6,923.36	-4,483.58	1,962.32	4,894.18	1.24	1.20	0.30
11,070.00	90.50	155.87	6,922.92	-4,541.26	1,987.64	4,957.18	1.39	0.32	-1.35
11,134.00	90.44	155.19	6,922.40	-4,599.51	2,014.15	5,021.17	1.07	-0.09	-1.06
11,198.00	91.74	156.32	6,921.18	-4,657.85	2,040.43	5,085.15	2.69	2.03	1.77
11,261.00	91.01	155.23	6,919.67	-4,715.28	2,066.27	5,148.13	2.08	-1.16	-1.73
11,324.00	90.34	153.63	6,918.93	-4,772.11	2,093.46	5,211.08	2.75	-1.06	-2.54

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Scientific Drilling  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well 4H
<b>Project:</b>	Mary Prospect	<b>TVD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Site:</b>	ZMBG Pad	<b>MD Reference:</b>	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
<b>Well:</b>	4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	4H As Drilled	<b>Database:</b>	Northeast District

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,388.00	91.07	153.93	6,918.14	-4,829.52	2,121.73	5,275.01	1.23	1.14	0.47
11,451.00	91.54	154.60	6,916.70	-4,886.25	2,149.08	5,337.94	1.30	0.75	1.06
11,515.00	91.74	154.31	6,914.87	-4,943.97	2,176.67	5,401.88	0.55	0.31	-0.45
11,579.00	90.67	154.65	6,913.53	-5,001.72	2,204.23	5,465.82	1.75	-1.67	0.53
11,642.00	90.00	154.64	6,913.16	-5,058.65	2,231.21	5,528.79	1.06	-1.06	-0.02
11,705.00	90.57	155.21	6,912.84	-5,115.71	2,257.91	5,591.76	1.28	0.90	0.90
11,769.00	90.60	156.09	6,912.19	-5,174.01	2,284.30	5,655.75	1.38	0.05	1.38
11,832.00	89.63	155.95	6,912.06	-5,231.57	2,309.90	5,718.75	1.56	-1.54	-0.22
11,896.00	88.32	156.76	6,913.21	-5,290.19	2,335.56	5,782.74	2.41	-2.05	1.27
11,960.00	88.15	156.99	6,915.18	-5,349.02	2,360.69	5,846.71	0.45	-0.27	0.36
12,023.00	87.59	157.13	6,917.52	-5,406.99	2,385.22	5,909.66	0.92	-0.89	0.22
12,087.00	87.35	157.45	6,920.35	-5,465.97	2,409.91	5,973.59	0.62	-0.38	0.50
12,151.00	88.19	157.60	6,922.84	-5,525.07	2,434.36	6,037.53	1.33	1.31	0.23
<b>First SDI MWD Survey</b>									
12,314.00	88.19	157.60	6,927.99	-5,675.69	2,496.44	6,200.42	0.00	0.00	0.00
<b>Projection to Bit</b>									
12,614.00	88.19	157.60	6,937.46	-5,952.92	2,610.70	6,500.21	0.00	0.00	0.00

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
18.00	18.00	0.00	0.00	Ground Level
103.00	103.00	-0.01	0.47	First Vaughn Gyro Survey
2,578.00	2,577.97	-3.82	6.38	Last Vaughn Gyro Survey
2,603.00	2,602.97	-3.92	6.42	First SDI MWD Survey
12,151.00	6,922.84	-5,525.07	2,434.36	First SDI MWD Survey
12,314.00	6,927.99	-5,675.69	2,496.44	Projection to Bit

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

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