



Project: Mary Prospect
 Site: ZMBG Pad
 Well: 1H
 Wellbore: OH
 Design: 1H As Drilled



103-02843

WELL DETAILS: 1H

+N-S	+E-W	Northing	Ground Level:	1341.00	Latitude	Longitude
0.00	0.00	418306.00	Easting	1628028.00	39° 38' 27.541 N	80° 49' 15.236 W

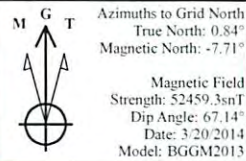
REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well 1H, 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

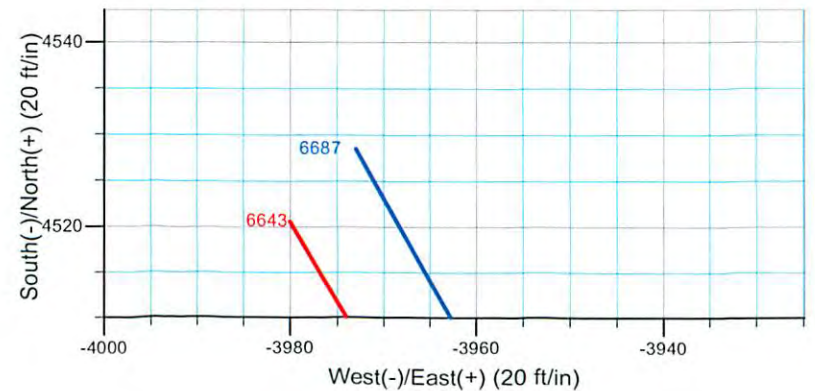
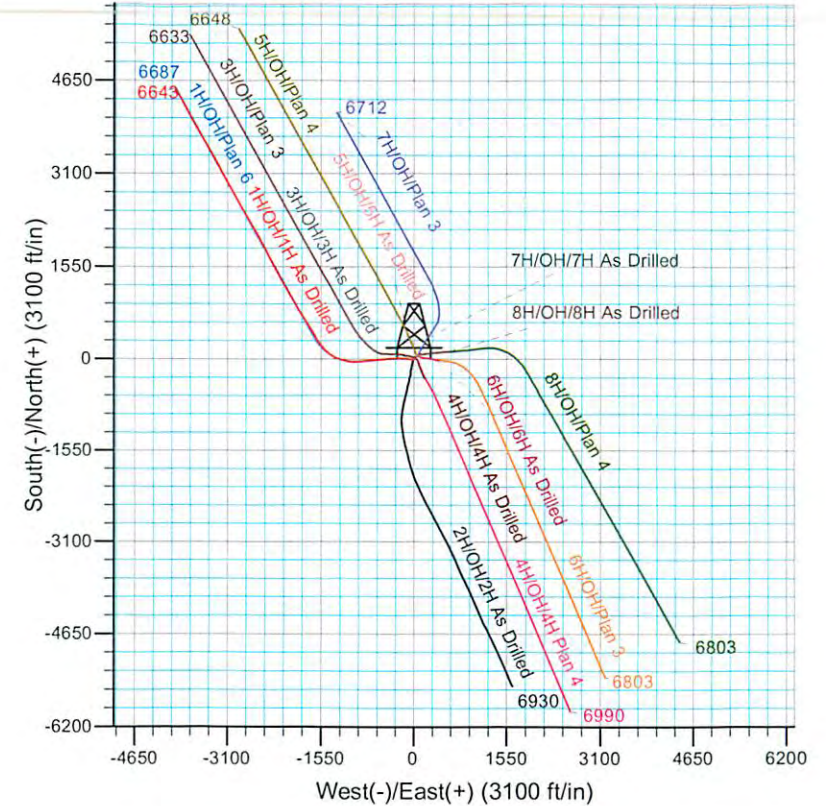
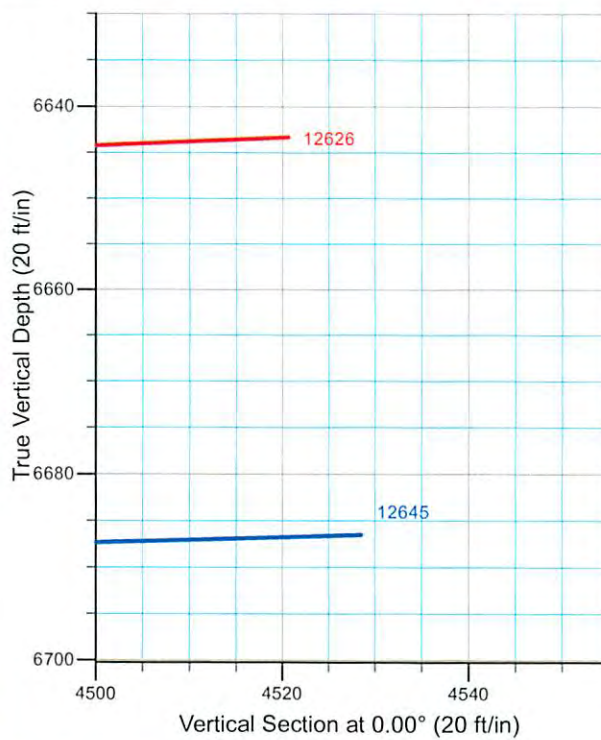
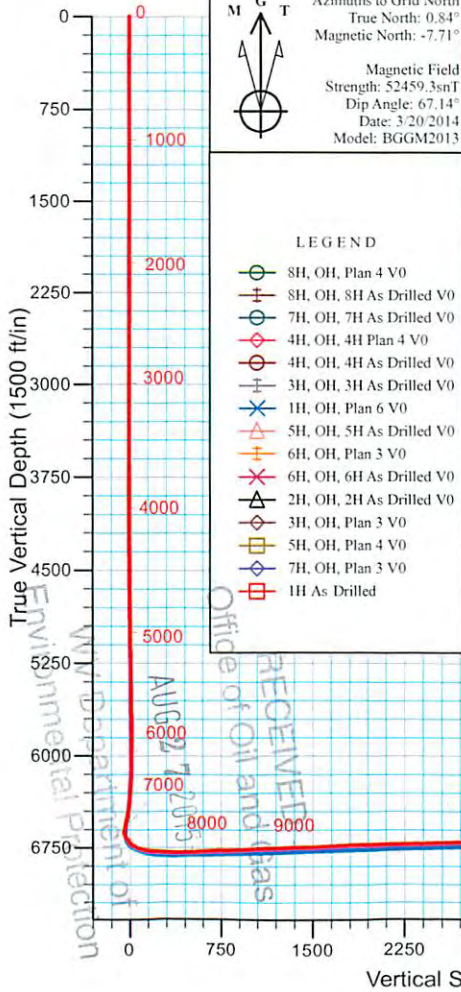
PROJECT DETAILS: Mary Prospect

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

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSeet	Target
1	5605.00	6.17	274.90	5598.85	8.43	-163.32	0.00	0.00	115.81	
2	5750.00	6.17	274.90	5743.01	9.77	-178.85	0.00	0.00	127.21	
3	6803.81	69.31	265.64	6535.05	-26.68	-790.11	6.00	-9.71	510.22	
4	7121.05	69.31	265.64	6647.11	-49.25	-1086.04	0.00	0.00	691.98	
5	7966.38	91.50	331.00	6804.00	336.00	-1766.00	8.00	79.30	1433.82	ZMBG 1H_LP (rev 03)
6	12742.77	91.50	331.00	6678.97	4512.01	-4081.01	0.00	0.00	6083.82	ZMBG 1H_BHL (rev 03)



- LEGEND
- 8H, OH, Plan 4 V0
 - ⊕ 8H, OH, 8H As Drilled V0
 - 7H, OH, 7H As Drilled V0
 - ⊕ 4H, OH, 4H Plan 4 V0
 - 4H, OH, 4H As Drilled V0
 - ⊕ 3H, OH, 3H As Drilled V0
 - ⊕ 1H, OH, Plan 6 V0
 - ⊕ 5H, OH, 5H As Drilled V0
 - ⊕ 6H, OH, Plan 3 V0
 - ⊕ 6H, OH, 6H As Drilled V0
 - ⊕ 2H, OH, 2H As Drilled V0
 - ⊕ 3H, OH, Plan 3 V0
 - ⊕ 5H, OH, Plan 4 V0
 - ⊕ 7H, OH, Plan 3 V0
 - ⊕ 1H As Drilled



RECEIVED
 Office of Oil and Gas
 Environmental Protection
 Department of

103-02893



Stone Energy

Mary Prospect

ZMBG Pad

1H

OH

Design: 1H As Drilled

Standard Survey Report

22 April, 2014



www.scientificdrilling.com



WV Department of
Environmental Protection 10/16/2015

103-02893



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 1H
Project:	Mary Prospect	TVD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	MD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	1H As Drilled	Database:	Northeast District

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

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

Well	1H					
Well Position	+N/-S	0.00 ft	Northing:	418,306.00 usft	Latitude:	39° 38' 27.541 N
	+E/-W	0.00 ft	Easting:	1,628,028.00 usft	Longitude:	80° 49' 15.236 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,341.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	-8.48	67.19	52,608
	BGGM2013	8/28/2013	-8.54	67.19	52,532
	BGGM2013	3/3/2014	-8.55	67.15	52,465
	BGGM2013	3/20/2014	-8.55	67.14	52,459

Design	1H As Drilled				
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	0.00	

Survey Program	Date	4/22/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
22.00	2,563.00	Survey 1 - SDI Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
2,613.00	12,626.00	Survey 2 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22.00	0.00	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00
Ground Level									
107.00	0.46	84.35	107.00	0.03	0.34	0.03	0.54	0.54	0.00
First SDI Gyro Survey									
207.00	0.45	98.51	206.99	0.02	1.13	0.02	0.11	-0.01	14.16
307.00	0.32	102.94	306.99	-0.11	1.79	-0.11	0.13	0.13	4.43

RECEIVED
Office of Oil and Gas
AUG 27 2015
WV Department of Environmental Protection
COMPASS 040 821074
10/16/2015

103-02893



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 1H
Project:	Mary Prospect	TVD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	MD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	1H As Drilled	Database:	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)
407.00	0.09	107.72	406.99	-0.19	2.13	-0.19	0.23	-0.23	4.78
507.00	0.08	117.24	506.99	-0.25	2.27	-0.25	0.02	-0.01	9.52
607.00	0.02	135.71	606.99	-0.29	2.35	-0.29	0.06	-0.06	18.47
707.00	0.04	123.47	706.99	-0.32	2.39	-0.32	0.02	0.02	-12.24
807.00	0.01	114.61	806.99	-0.35	2.42	-0.35	0.03	-0.03	-8.86
907.00	0.07	138.87	906.99	-0.40	2.47	-0.40	0.06	0.06	24.26
1,007.00	0.07	156.49	1,006.99	-0.50	2.54	-0.50	0.02	0.00	17.62
1,107.00	0.05	165.29	1,106.99	-0.60	2.57	-0.60	0.02	-0.02	8.80
1,207.00	0.11	181.92	1,206.99	-0.74	2.58	-0.74	0.06	0.06	16.63
1,307.00	0.11	178.41	1,306.99	-0.93	2.58	-0.93	0.01	0.00	-3.51
1,407.00	0.07	188.02	1,406.99	-1.08	2.57	-1.08	0.04	-0.04	9.61
1,507.00	0.11	200.47	1,506.99	-1.23	2.53	-1.23	0.04	0.04	12.45
1,607.00	0.11	207.20	1,606.99	-1.41	2.45	-1.41	0.01	0.00	6.73
1,707.00	0.06	229.41	1,706.99	-1.53	2.37	-1.53	0.06	-0.05	22.21
1,807.00	0.21	191.12	1,806.99	-1.74	2.30	-1.74	0.17	0.15	-38.29
1,907.00	0.32	176.98	1,906.99	-2.20	2.28	-2.20	0.13	0.11	-14.14
2,007.00	0.24	166.20	2,006.99	-2.68	2.34	-2.68	0.10	-0.08	-10.78
2,107.00	0.20	171.75	2,106.99	-3.06	2.41	-3.06	0.05	-0.04	5.55
2,207.00	0.21	155.92	2,206.99	-3.40	2.51	-3.40	0.06	0.01	-15.83
2,307.00	0.26	186.64	2,306.98	-3.79	2.56	-3.79	0.13	0.05	30.72
2,407.00	0.03	173.67	2,406.98	-4.04	2.54	-4.04	0.23	-0.23	-12.97
2,507.00	0.26	168.71	2,506.98	-4.29	2.59	-4.29	0.23	0.23	-4.96
2,563.00	0.15	162.23	2,562.99	-4.49	2.63	-4.49	0.20	-0.20	-11.57
5,539.00	6.20	275.70	5,533.23	7.78	-156.24	7.78	0.21	0.20	3.81
5,605.00	6.17	274.90	5,598.85	8.43	-163.32	8.43	0.14	-0.05	-1.21
First SDI MWD Survey									
5,669.00	5.75	276.53	5,662.50	9.09	-169.94	9.09	0.71	-0.66	2.55
5,701.00	5.47	276.32	5,694.35	9.44	-173.04	9.44	0.88	-0.88	-0.66
5,732.00	6.15	274.91	5,725.19	9.75	-176.17	9.75	2.24	2.19	-4.55
5,764.00	8.15	271.73	5,756.94	9.96	-180.14	9.96	6.37	6.25	-9.94
5,796.00	10.87	272.34	5,788.50	10.15	-185.43	10.15	8.51	8.50	1.91
5,828.00	12.96	272.42	5,819.81	10.43	-192.03	10.43	6.53	6.53	0.25
5,860.00	14.69	273.00	5,850.88	10.79	-199.66	10.79	5.42	5.41	1.81
5,892.00	16.14	273.00	5,881.73	11.24	-208.16	11.24	4.53	4.53	0.00
5,924.00	18.23	272.09	5,912.30	11.65	-217.60	11.65	6.58	6.53	-2.84
5,955.00	19.60	270.27	5,941.62	11.85	-227.65	11.85	4.81	4.42	-5.87
5,987.00	21.13	267.39	5,971.62	11.62	-238.78	11.62	5.71	4.78	-9.00
6,019.00	22.50	267.36	6,001.33	11.07	-250.66	11.07	4.28	4.28	-0.09
6,051.00	24.52	267.28	6,030.67	10.48	-263.41	10.48	6.31	6.31	-0.25
6,083.00	26.42	267.88	6,059.56	9.90	-277.16	9.90	5.99	5.94	1.88
6,114.00	27.46	268.10	6,087.20	9.40	-291.19	9.40	3.37	3.35	0.71
6,146.00	29.13	267.97	6,115.37	8.88	-306.35	8.88	5.22	5.22	0.41
6,178.00	31.03	268.03	6,143.06	8.32	-322.38	8.32	5.94	5.94	0.19

103.02893



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 1H
Project:	Mary Prospect	TVD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	MD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	1H As Drilled	Database:	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)
6,210.00	33.87	268.10	6,170.06	7.75	-339.54	7.75	8.88	8.88	0.22
6,241.00	37.03	267.02	6,195.31	6.97	-357.50	6.97	10.39	10.19	-3.48
6,273.00	38.89	265.77	6,220.54	5.73	-377.14	5.73	6.29	5.81	-3.91
6,305.00	40.43	264.71	6,245.18	4.03	-397.49	4.03	5.26	4.81	-3.31
6,336.00	41.63	264.84	6,268.56	2.18	-417.76	2.18	3.88	3.87	0.42
6,368.00	43.74	265.32	6,292.08	0.32	-439.37	0.32	6.67	6.59	1.50
6,398.00	45.85	266.28	6,313.37	-1.22	-460.45	-1.22	7.39	7.03	3.20
6,429.00	48.17	266.26	6,334.51	-2.70	-483.08	-2.70	7.48	7.48	-0.06
6,460.00	49.77	266.57	6,354.86	-4.16	-506.41	-4.16	5.22	5.16	1.00
6,490.00	51.36	266.03	6,373.91	-5.66	-529.54	-5.66	5.48	5.30	-1.80
6,520.00	52.40	266.25	6,392.43	-7.24	-553.08	-7.24	3.51	3.47	0.73
6,551.00	53.93	265.38	6,411.02	-9.06	-577.83	-9.06	5.42	4.94	-2.81
6,582.00	55.30	265.45	6,428.97	-11.08	-603.02	-11.08	4.42	4.42	0.23
6,612.00	57.72	264.67	6,445.52	-13.23	-627.94	-13.23	8.35	8.07	-2.60
6,642.00	59.92	264.79	6,461.05	-15.59	-653.50	-15.59	7.34	7.33	0.40
6,673.00	62.58	264.42	6,475.96	-18.15	-680.56	-18.15	8.64	8.58	-1.19
6,703.00	63.94	264.59	6,489.46	-20.71	-707.22	-20.71	4.56	4.53	0.57
6,733.00	64.42	264.59	6,502.52	-23.26	-734.11	-23.26	1.60	1.60	0.00
6,764.00	64.72	264.50	6,515.84	-25.92	-761.98	-25.92	1.00	0.97	-0.29
6,794.00	64.83	264.47	6,528.62	-28.53	-788.99	-28.53	0.38	0.37	-0.10
6,824.00	65.10	264.66	6,541.32	-31.10	-816.05	-31.10	1.07	0.90	0.63
6,855.00	65.34	264.46	6,554.31	-33.77	-844.07	-33.77	0.97	0.77	-0.65
6,885.00	65.72	264.61	6,566.74	-36.37	-871.25	-36.37	1.35	1.27	0.50
6,916.00	65.92	264.10	6,579.43	-39.15	-899.39	-39.15	1.63	0.65	-1.65
6,946.00	66.10	264.10	6,591.63	-41.97	-926.66	-41.97	0.60	0.60	0.00
6,976.00	66.44	264.73	6,603.70	-44.64	-953.99	-44.64	2.23	1.13	2.10
7,006.00	67.36	267.49	6,615.48	-46.51	-981.52	-46.51	9.00	3.07	9.20
7,037.00	68.45	271.38	6,627.14	-46.79	-1,010.23	-46.79	12.15	3.52	12.55
7,067.00	69.84	274.92	6,637.82	-45.25	-1,038.22	-45.25	11.96	4.63	11.80
7,097.00	70.84	277.46	6,647.92	-42.20	-1,066.30	-42.20	8.64	3.33	8.47
7,127.00	71.73	279.28	6,657.54	-38.06	-1,094.41	-38.06	6.47	2.97	6.07
7,158.00	72.38	280.75	6,667.09	-32.93	-1,123.45	-32.93	4.97	2.10	4.74
7,188.00	72.32	281.97	6,676.19	-27.30	-1,151.48	-27.30	3.88	-0.20	4.07
7,219.00	71.14	283.60	6,685.91	-20.79	-1,180.18	-20.79	6.28	-3.81	5.26
7,249.00	70.92	285.68	6,695.66	-13.62	-1,207.63	-13.62	6.60	-0.73	6.93
7,279.00	70.43	287.82	6,705.59	-5.46	-1,234.74	-5.46	6.93	-1.63	7.13
7,309.00	70.16	289.62	6,715.71	3.60	-1,261.49	3.60	5.72	-0.90	6.00
7,340.00	71.33	293.12	6,725.93	14.27	-1,288.73	14.27	11.31	3.77	11.29
7,370.00	73.07	295.94	6,735.11	26.13	-1,314.71	26.13	10.66	5.80	9.40
7,399.00	74.93	298.67	6,743.10	38.91	-1,339.48	38.91	11.09	6.41	9.41
7,431.00	76.87	301.58	6,750.90	54.49	-1,366.32	54.49	10.70	6.06	9.09
7,462.00	78.72	304.18	6,757.45	70.94	-1,391.76	70.94	10.14	5.97	8.39
7,494.00	80.25	306.93	6,763.29	89.23	-1,417.35	89.23	9.71	4.78	8.59

RECEIVED
Office of Oil and Gas
AUG 27 2015
WV Department of Environmental Protection
COMPASS 5040 B01074

103-02893



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 1H
Project:	Mary Prospect	TVD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	MD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	1H As Drilled	Database:	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)
7,526.00	81.68	309.18	6,768.32	108.71	-1,442.23	108.71	8.26	4.47	7.03
7,557.00	83.63	312.14	6,772.28	128.74	-1,465.55	128.74	11.37	6.29	9.55
7,589.00	85.15	314.89	6,775.41	150.67	-1,488.64	150.67	9.78	4.75	8.59
7,621.00	87.01	317.62	6,777.60	173.73	-1,510.71	173.73	10.31	5.81	8.53
7,652.00	88.05	319.46	6,778.93	196.94	-1,531.22	196.94	6.81	3.35	5.94
7,684.00	87.01	322.44	6,780.31	221.77	-1,551.36	221.77	9.86	-3.25	9.31
7,716.00	86.27	325.97	6,782.19	247.67	-1,570.04	247.67	11.25	-2.31	11.03
7,780.00	86.33	329.21	6,786.32	301.58	-1,604.26	301.58	5.05	0.09	5.06
7,843.00	89.13	330.90	6,788.82	356.12	-1,635.68	356.12	5.19	4.44	2.68
7,907.00	91.71	331.15	6,788.35	412.11	-1,666.68	412.11	4.05	4.03	0.39
7,971.00	91.48	329.95	6,786.57	467.81	-1,698.13	467.81	1.91	-0.36	-1.88
8,034.00	92.08	328.93	6,784.61	522.04	-1,730.15	522.04	1.88	0.95	-1.62
8,098.00	93.19	327.77	6,781.67	576.46	-1,763.70	576.46	2.51	1.73	-1.81
8,162.00	93.57	327.08	6,777.89	630.30	-1,798.09	630.30	1.23	0.59	-1.08
8,225.00	92.89	327.11	6,774.34	683.10	-1,832.26	683.10	1.08	-1.08	0.05
8,289.00	90.97	326.73	6,772.19	736.70	-1,867.17	736.70	3.06	-3.00	-0.59
8,352.00	91.11	327.57	6,771.04	789.61	-1,901.34	789.61	1.35	0.22	1.33
8,415.00	91.95	329.78	6,769.36	843.41	-1,934.08	843.41	3.75	1.33	3.51
8,479.00	92.59	330.62	6,766.83	898.90	-1,965.86	898.90	1.65	1.00	1.31
8,543.00	93.16	330.60	6,763.62	954.59	-1,997.23	954.59	0.89	0.89	-0.03
8,606.00	93.26	330.38	6,760.09	1,009.33	-2,028.21	1,009.33	0.38	0.16	-0.35
8,669.00	92.19	331.18	6,757.09	1,064.25	-2,058.93	1,064.25	2.12	-1.70	1.27
8,733.00	91.34	329.58	6,755.12	1,119.86	-2,090.55	1,119.86	2.83	-1.33	-2.50
8,797.00	91.55	329.42	6,753.51	1,174.99	-2,123.02	1,174.99	0.41	0.33	-0.25
8,860.00	91.55	330.52	6,751.80	1,229.51	-2,154.54	1,229.51	1.75	0.00	1.75
8,922.00	91.91	330.95	6,749.93	1,283.57	-2,184.83	1,283.57	0.90	0.58	0.69
8,986.00	91.21	332.29	6,748.19	1,339.86	-2,215.24	1,339.86	2.36	-1.09	2.09
9,049.00	90.67	332.23	6,747.16	1,395.61	-2,244.56	1,395.61	0.86	-0.86	-0.10
9,112.00	91.28	332.42	6,746.09	1,451.39	-2,273.82	1,451.39	1.01	0.97	0.30
9,176.00	91.85	331.77	6,744.34	1,507.93	-2,303.76	1,507.93	1.35	0.89	-1.02
9,240.00	91.07	332.21	6,742.71	1,564.42	-2,333.80	1,564.42	1.40	-1.22	0.69
9,303.00	92.32	332.85	6,740.84	1,620.29	-2,362.85	1,620.29	2.23	1.98	1.02
9,366.00	92.96	332.82	6,737.94	1,676.28	-2,391.58	1,676.28	1.02	1.02	-0.05
9,429.00	93.23	332.78	6,734.54	1,732.23	-2,420.34	1,732.23	0.43	0.43	-0.06
9,493.00	91.78	332.37	6,731.74	1,788.98	-2,449.79	1,788.98	2.35	-2.27	-0.64
9,557.00	91.18	332.49	6,730.09	1,845.69	-2,479.40	1,845.69	0.96	-0.94	0.19
9,620.00	91.65	332.80	6,728.53	1,901.63	-2,508.34	1,901.63	0.89	0.75	0.49
9,684.00	90.71	332.66	6,727.22	1,958.51	-2,537.66	1,958.51	1.48	-1.47	-0.22
9,748.00	91.28	331.66	6,726.10	2,015.09	-2,567.54	2,015.09	1.80	0.89	-1.56
9,811.00	91.65	330.75	6,724.49	2,070.28	-2,597.87	2,070.28	1.56	0.59	-1.44
9,875.00	90.40	330.78	6,723.35	2,126.12	-2,629.13	2,126.12	1.95	-1.95	0.05
9,939.00	91.11	330.24	6,722.51	2,181.82	-2,660.63	2,181.82	1.39	1.11	-0.84
10,002.00	91.82	329.95	6,720.90	2,236.41	-2,692.03	2,236.41	1.22	1.13	-0.46
10,065.00	91.98	330.20	6,718.81	2,290.98	-2,723.44	2,290.98	0.47	0.25	0.40

RECEIVED
Office of Oil and Gas
AUG 27 2015
WV Department of Environmental Protection
COMPASS 0140 821071
10/16/2015

103-02893



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 1H
Project:	Mary Prospect	TVD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	MD Reference:	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	1H As Drilled	Database:	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)
10,129.00	90.77	330.48	6,717.27	2,346.58	-2,755.10	2,346.58	1.94	-1.89	0.44
10,193.00	91.78	329.63	6,715.85	2,402.02	-2,787.04	2,402.02	2.06	1.58	-1.33
10,256.00	92.15	329.56	6,713.69	2,456.33	-2,818.90	2,456.33	0.60	0.59	-0.11
10,320.00	91.01	329.62	6,711.92	2,511.50	-2,851.29	2,511.50	1.78	-1.78	0.09
10,383.00	91.92	329.33	6,710.31	2,565.75	-2,883.27	2,565.75	1.52	1.44	-0.46
10,447.00	92.28	329.42	6,707.97	2,620.79	-2,915.85	2,620.79	0.58	0.56	0.14
10,510.00	91.48	330.79	6,705.90	2,675.37	-2,947.24	2,675.37	2.52	-1.27	2.17
10,574.00	92.12	330.23	6,703.89	2,731.05	-2,978.73	2,731.05	1.33	1.00	-0.88
10,637.00	91.38	331.49	6,701.96	2,786.05	-3,009.39	2,786.05	2.32	-1.17	2.00
10,701.00	91.88	330.90	6,700.14	2,842.11	-3,040.21	2,842.11	1.21	0.78	-0.92
10,764.00	91.31	331.32	6,698.39	2,897.25	-3,070.64	2,897.25	1.12	-0.90	0.67
10,827.00	91.88	330.78	6,696.64	2,952.35	-3,101.12	2,952.35	1.25	0.90	-0.86
10,891.00	91.28	331.57	6,694.87	3,008.40	-3,131.96	3,008.40	1.55	-0.94	1.23
10,955.00	92.05	331.95	6,693.01	3,064.76	-3,162.23	3,064.76	1.34	1.20	0.59
11,019.00	91.41	332.84	6,691.08	3,121.45	-3,191.88	3,121.45	1.71	-1.00	1.39
11,082.00	91.31	332.85	6,689.59	3,177.49	-3,220.62	3,177.49	0.16	-0.16	0.02
11,145.00	91.95	331.77	6,687.79	3,233.25	-3,249.88	3,233.25	1.99	1.02	-1.71
11,209.00	91.14	330.51	6,686.07	3,289.28	-3,280.76	3,289.28	2.34	-1.27	-1.97
11,273.00	90.20	330.40	6,685.32	3,344.95	-3,312.32	3,344.95	1.48	-1.47	-0.17
11,336.00	91.48	330.86	6,684.40	3,399.85	-3,343.21	3,399.85	2.16	2.03	0.73
11,398.00	92.66	331.10	6,682.16	3,454.03	-3,373.27	3,454.03	1.94	1.90	0.39
11,462.00	93.13	330.81	6,678.92	3,509.91	-3,404.30	3,509.91	0.86	0.73	-0.45
11,526.00	91.88	330.09	6,676.13	3,565.53	-3,435.84	3,565.53	2.25	-1.95	-1.13
11,589.00	92.52	329.35	6,673.71	3,619.89	-3,467.58	3,619.89	1.55	1.02	-1.17
11,653.00	91.07	329.72	6,671.70	3,675.03	-3,500.01	3,675.03	2.34	-2.27	0.58
11,716.00	92.02	329.08	6,670.01	3,729.23	-3,532.07	3,729.23	1.82	1.51	-1.02
11,779.00	92.42	329.10	6,667.56	3,783.24	-3,564.41	3,783.24	0.64	0.63	0.03
11,840.00	90.87	328.86	6,665.81	3,835.50	-3,595.83	3,835.50	2.57	-2.54	-0.39
11,904.00	91.51	329.10	6,664.48	3,890.33	-3,628.80	3,890.33	1.07	1.00	0.38
11,968.00	89.63	330.22	6,663.85	3,945.56	-3,661.13	3,945.56	3.42	-2.94	1.75
12,032.00	90.23	330.50	6,663.93	4,001.19	-3,692.78	4,001.19	1.03	0.94	0.44
12,095.00	91.44	331.48	6,663.01	4,056.27	-3,723.33	4,056.27	2.47	1.92	1.56
12,158.00	92.45	332.01	6,660.87	4,111.74	-3,753.13	4,111.74	1.81	1.60	0.84
12,222.00	93.40	331.30	6,657.60	4,167.99	-3,783.48	4,167.99	1.85	1.48	-1.11
12,286.00	93.74	330.60	6,653.62	4,223.83	-3,814.49	4,223.83	1.21	0.53	-1.09
12,350.00	91.68	330.90	6,650.59	4,279.60	-3,845.73	4,279.60	3.25	-3.22	0.47
12,413.00	90.77	331.20	6,649.25	4,334.72	-3,876.22	4,334.72	1.52	-1.44	0.48
12,477.00	91.21	331.21	6,648.14	4,390.79	-3,907.04	4,390.79	0.69	0.69	0.02
12,539.00	91.78	330.22	6,646.52	4,444.85	-3,937.36	4,444.85	1.84	0.92	-1.60
12,559.00	92.15	330.63	6,645.84	4,462.23	-3,947.22	4,462.23	2.76	1.85	2.05
Last SDI MWD Survey									
12,626.00	92.15	330.63	6,643.32	4,520.58	-3,980.06	4,520.58	0.00	0.00	0.00
Projection to Bit									

RECEIVED
Office of Oil and Gas
AUG 27 2015