

WELL DETAILS: 4H

+N/-S 0.00 +E/W 0.00
 Nothing 421788.00 Easting 1638989.00
 Ground Level: 1215.00
 Longitude 80° 46' 55.766 W

REFERENCE INFORMATION

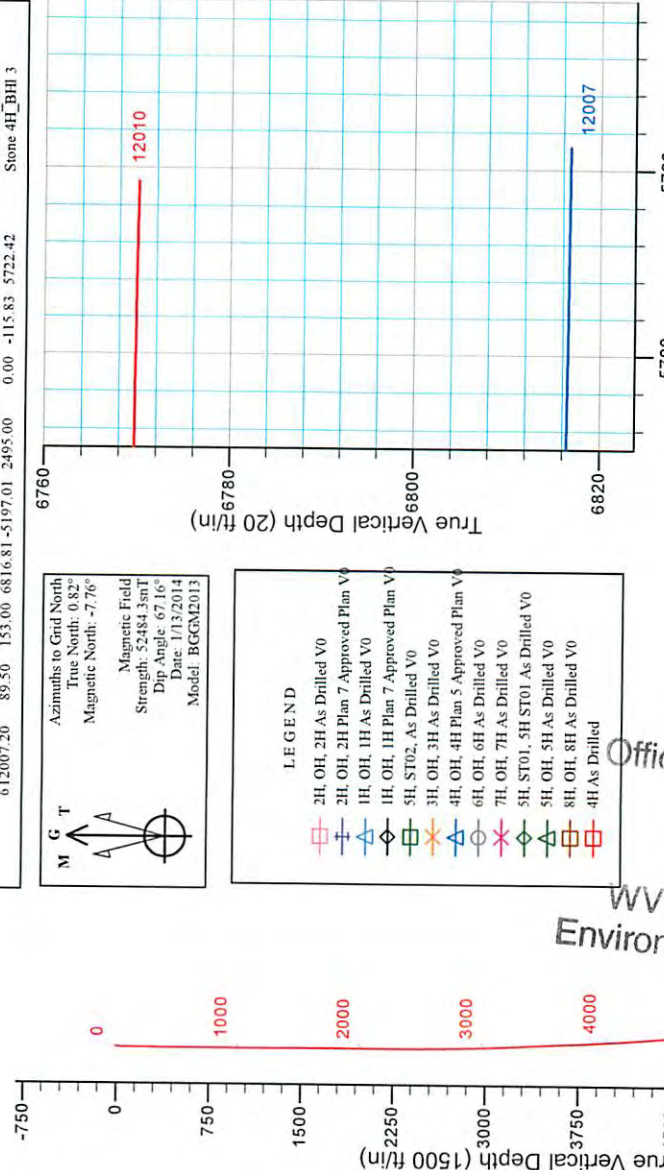
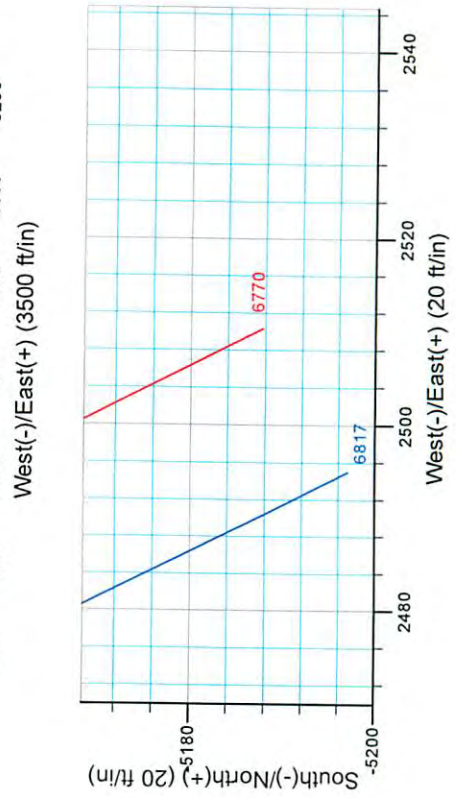
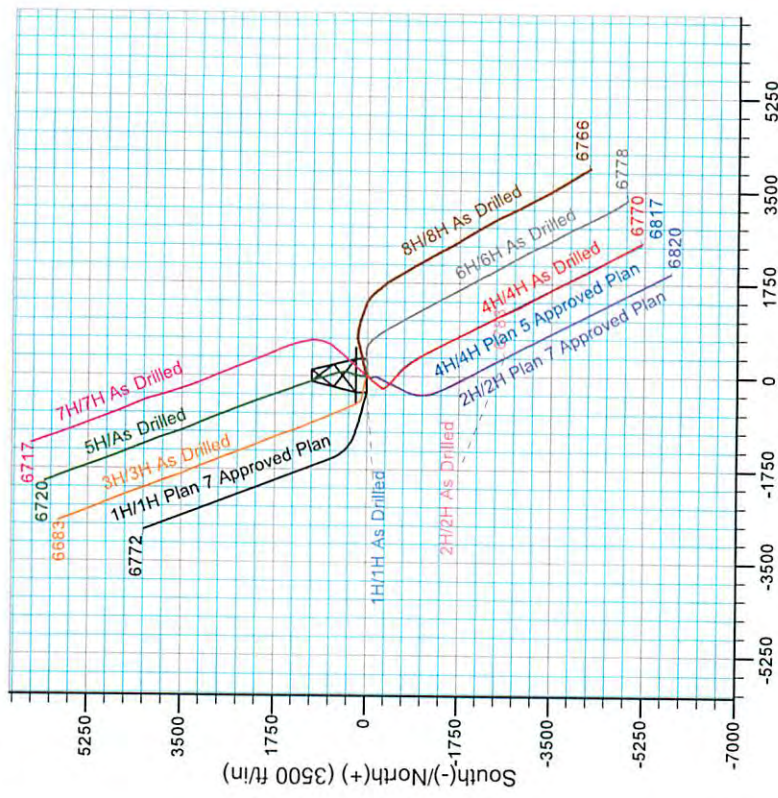
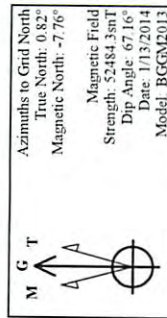
Co-ordinate (N/E) Reference: Well 4H, Grid North
 Vertical (TVD) Reference: GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
 Section (VS) Reference: Shot 0.000 (00E)
 Measured Depth Reference: GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Heather Prospect (NAD 27)

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	Vsect	Target
1	5715.00	8.00	209.30	5692.52	-274.38	-223.44	0.00	0.00	188.34	
2	5800.00	7.85	221.61	5776.72	-283.88	-230.19	2.00	101.03	195.17	
3	6635.18	49.41	129.85	6509.38	-546.71	-10.40	6.00	-98.39	514.56	
4	6742.07	49.41	129.85	6578.92	-598.73	-51.92	0.00	0.00	583.81	
5	7507.77	89.50	153.00	6775.75	-1010.00	361.50	8.00	33.61	1072.58	Stones 4H LP4
6	12007.20	89.50	153.00	6816.81	-5197.01	2495.00	0.00	-115.83	5722.42	Stones 4H_BH1 3



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Stone Energy

Heather Prospect (NAD 27)

Stone

4H

OH

Design: 4H As Drilled

Standard Survey Report

20 February, 2014



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Environmental Protection



06/05/2015



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 4H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Site:	Stone	MD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Well:	4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	4H As Drilled	Database:	Northeast District

Project	Heather Prospect (NAD 27), Wetzel County, 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	Stone		
Site Position:		Northing:	421,797.00 usft
From:	Map	Easting:	1,638,950.00 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	39° 39' 3.606 N
		Longitude:	80° 46' 56.267 W
		Grid Convergence:	-0.82 °

Well	4H		
Well Position	+N/-S	0.00 ft	Northing: 421,788.00 usft
	+E/-W	0.00 ft	Easting: 1,638,989.00 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	39° 39' 3.522 N
		Longitude:	80° 46' 55.766 W
		Ground Level:	1,215.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/15/2013	-8.51	67.21	52,620
	IGRF2010	5/13/2013	-8.51	67.20	52,611
	BGGM2013	11/26/2013	-8.57	67.17	52,501
	BGGM2013	1/13/2014	-8.58	67.16	52,484

Design	4H 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	161.31	

Survey Program	Date	2/20/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
15.00	2,479.00	Survey 2 - SDI Gyro Survey (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
2,479.00	12,010.00	Survey 5 SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

Survey	<div style="text-align: right;"> RECEIVED Office of Oil and Gas APR 28 2015 WV Department of Environmental Protection </div>									
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	
15.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	
Ground Level										
101.17	2.12	7.27	101.15	1.58	0.20	-1.43	2.46	2.46	2.46	
First SDI Gyro Survey										
125.56	1.83	6.99	125.53	2.42	0.31	-2.19	1.19	-1.19	-1.15	
150.43	1.46	10.29	150.39	3.12	0.41	-2.82	1.54	-1.49	13.27	



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 4H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Site:	Stone	MD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Well:	4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	4H As Drilled	Database:	Northeast District

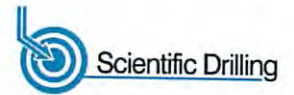
Survey

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)
175.19	1.30	7.78	175.14	3.71	0.51	-3.35	0.69	-0.65	-10.14
200.04	0.84	9.77	199.98	4.17	0.57	-3.76	1.86	-1.85	8.01
225.68	0.70	8.31	225.62	4.51	0.63	-4.07	0.55	-0.55	-5.69
250.70	0.64	7.94	250.64	4.80	0.67	-4.33	0.24	-0.24	-1.48
275.08	0.54	6.75	275.02	5.05	0.70	-4.56	0.41	-0.41	-4.88
300.50	0.30	8.40	300.44	5.23	0.73	-4.72	0.95	-0.94	6.49
325.81	0.28	23.25	325.75	5.35	0.76	-4.83	0.31	-0.08	58.67
350.65	0.25	11.88	350.59	5.46	0.80	-4.92	0.24	-0.12	-45.77
375.63	0.13	36.97	375.57	5.54	0.82	-4.98	0.57	-0.48	100.44
400.77	0.06	12.98	400.71	5.57	0.84	-5.01	0.31	-0.28	-95.43
426.05	0.11	54.02	425.99	5.60	0.87	-5.03	0.30	0.20	162.34
450.33	0.06	141.71	450.27	5.61	0.89	-5.02	0.51	-0.21	361.16
476.03	0.22	325.68	475.97	5.64	0.87	-5.06	1.09	0.62	-684.94
501.03	0.16	335.37	500.97	5.71	0.83	-5.14	0.27	-0.24	38.76
525.73	0.13	0.51	525.67	5.77	0.82	-5.20	0.28	-0.12	101.78
550.74	0.24	345.79	550.68	5.85	0.81	-5.28	0.48	0.44	-58.86
575.52	0.31	341.72	575.46	5.96	0.77	-5.40	0.29	0.28	-16.42
600.37	0.16	345.18	600.31	6.06	0.74	-5.50	0.61	-0.60	13.92
626.04	0.16	55.35	625.98	6.11	0.76	-5.55	0.72	0.00	273.35
650.51	0.09	43.12	650.45	6.15	0.80	-5.56	0.30	-0.29	-49.98
676.05	0.14	99.96	675.99	6.15	0.85	-5.56	0.46	0.20	222.55
700.80	0.11	97.83	700.74	6.15	0.90	-5.53	0.12	-0.12	-8.61
725.74	0.24	129.89	725.68	6.11	0.97	-5.48	0.63	0.52	128.55
750.84	0.14	115.48	750.78	6.06	1.03	-5.41	0.44	-0.40	-57.41
775.65	0.14	110.87	775.59	6.04	1.09	-5.37	0.05	0.00	-18.58
800.51	0.03	45.96	800.45	6.03	1.12	-5.36	0.52	-0.44	-261.10
826.04	0.05	28.29	825.98	6.05	1.13	-5.37	0.09	0.08	-69.21
850.16	0.08	17.83	850.10	6.07	1.14	-5.39	0.13	0.12	-43.37
875.07	0.08	54.55	875.01	6.10	1.16	-5.41	0.20	0.00	147.41
900.12	0.13	13.64	900.06	6.14	1.18	-5.43	0.35	0.20	-163.31
925.85	0.15	70.97	925.79	6.18	1.22	-5.46	0.53	0.08	222.81
950.90	0.23	92.27	950.84	6.18	1.30	-5.44	0.42	0.32	85.03
976.00	0.18	93.28	975.94	6.18	1.39	-5.41	0.20	0.00	4.02
1,000.78	0.17	109.41	1,000.72	6.17	1.47	-5.37	0.20	0.04	65.09
1,025.28	0.14	107.93	1,025.21	6.14	1.53	-5.33	0.12	0.00	-5.04
1,051.05	0.19	116.38	1,050.98	6.12	1.60	-5.28	0.22	0.19	332.76
1,075.51	0.20	125.58	1,075.44	6.07	1.67	-5.22	0.13	0.04	37.61
1,100.10	0.06	87.25	1,100.03	6.05	1.72	-5.18	0.64	0.57	155.88
1,125.53	0.18	132.92	1,125.46	6.02	1.76	-5.14	0.57	0.47	179.59
1,150.68	0.12	16.73	1,150.61	6.02	1.79	-5.13	0.09	0.25	-161.99
1,175.96	0.07	37.88	1,175.89	6.06	1.81	-5.16	0.24	-0.20	83.66
1,201.09	0.18	100.68	1,201.02	6.06	1.86	-5.15	0.64	0.44	246.50
1,225.24	0.20	118.19	1,225.17	6.04	1.93	-5.10	0.25	0.08	72.51

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Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 4H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Site:	Stone	MD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Well:	4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	4H 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)
1,250.22	0.11	129.92	1,250.15	6.00	1.99	-5.05	0.38	-0.36	46.96
1,276.07	0.09	116.50	1,276.00	5.98	2.03	-5.01	0.12	-0.08	-51.91
1,301.09	0.09	153.70	1,301.02	5.95	2.05	-4.98	0.23	0.00	148.68
1,325.47	0.09	71.03	1,325.40	5.94	2.08	-4.96	0.49	0.00	-339.09
1,350.79	0.07	76.17	1,350.72	5.95	2.12	-4.96	0.08	-0.08	20.30
1,375.76	0.08	120.56	1,375.69	5.94	2.14	-4.94	0.23	0.04	177.77
1,400.93	0.20	135.09	1,400.86	5.90	2.19	-4.89	0.49	0.48	57.73
1,425.01	0.09	63.82	1,424.94	5.88	2.24	-4.85	0.79	-0.46	-295.97
1,450.24	0.20	97.67	1,450.17	5.88	2.30	-4.84	0.53	0.44	134.17
1,475.65	0.33	107.24	1,475.58	5.86	2.41	-4.77	0.54	0.51	37.66
1,501.03	0.16	131.22	1,500.96	5.81	2.51	-4.70	0.77	-0.67	94.48
1,525.77	0.21	138.79	1,525.70	5.75	2.57	-4.63	0.22	0.20	30.60
1,550.86	0.06	39.04	1,550.79	5.73	2.60	-4.59	0.91	-0.60	-397.57
1,575.06	0.16	119.38	1,574.99	5.72	2.64	-4.58	0.67	0.41	331.98
1,600.59	0.27	115.10	1,600.52	5.68	2.73	-4.51	0.44	0.43	-16.76
1,625.09	0.21	147.95	1,625.02	5.62	2.80	-4.42	0.60	-0.24	134.08
1,650.12	0.04	320.71	1,650.05	5.59	2.82	-4.39	1.00	-0.68	690.21
1,676.04	0.05	151.44	1,675.97	5.58	2.82	-4.38	0.35	0.04	-653.05
1,701.02	0.09	320.34	1,700.95	5.59	2.81	-4.39	0.56	0.16	676.14
1,725.65	0.04	80.31	1,725.58	5.60	2.81	-4.41	0.47	-0.20	487.09
1,750.77	0.08	263.61	1,750.70	5.60	2.80	-4.41	0.48	0.16	-703.42
1,775.53	0.03	123.33	1,775.46	5.60	2.79	-4.41	0.42	-0.20	-566.56
1,800.56	0.08	81.10	1,800.49	5.60	2.81	-4.40	0.24	0.20	-168.72
1,826.06	0.28	325.84	1,825.99	5.65	2.79	-4.46	1.26	0.78	-452.00
1,850.67	0.08	323.39	1,850.60	5.72	2.75	-4.53	0.81	-0.81	-9.96
1,875.04	0.08	317.28	1,874.97	5.74	2.73	-4.56	0.03	0.00	-25.07
1,900.35	0.03	57.39	1,900.28	5.76	2.72	-4.58	0.36	-0.20	395.54
1,925.55	0.08	34.92	1,925.48	5.78	2.74	-4.59	0.21	0.20	-89.17
1,950.24	0.10	304.40	1,950.17	5.80	2.73	-4.62	0.52	0.08	-366.63
1,975.54	0.20	255.89	1,975.47	5.80	2.67	-4.64	0.61	0.40	-191.74
2,001.09	0.16	275.34	2,001.02	5.80	2.59	-4.66	0.28	-0.16	76.13
2,025.67	0.14	250.38	2,025.60	5.79	2.53	-4.67	0.28	-0.08	-101.55
2,050.48	0.14	282.50	2,050.41	5.79	2.47	-4.69	0.31	0.00	129.46
2,075.68	0.15	241.68	2,075.61	5.78	2.41	-4.70	0.40	0.04	-161.98
2,100.68	0.14	261.90	2,100.61	5.76	2.35	-4.70	0.21	-0.04	80.88
2,125.43	0.28	265.20	2,125.36	5.75	2.26	-4.72	0.57	0.57	13.33
2,150.69	0.17	290.16	2,150.62	5.76	2.17	-4.76	0.57	-0.44	98.81
2,176.04	0.02	304.34	2,175.97	5.77	2.13	-4.79	0.59	-0.59	55.94
2,200.55	0.19	253.63	2,200.48	5.76	2.08	-4.79	0.73	0.69	-206.90
2,225.53	0.16	273.57	2,225.46	5.75	2.01	-4.81	0.27	-0.12	79.82
2,250.97	0.19	203.91	2,250.90	5.72	1.96	-4.79	0.79	0.12	-273.82
2,275.03	0.10	264.72	2,274.96	5.68	1.92	-4.76	0.69	-0.37	252.74
2,300.26	0.20	214.59	2,300.19	5.64	1.87	-4.74	0.62	0.40	-198.69



Scientific Drilling
Survey Report



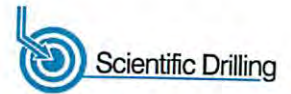
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Design:	4H As Drilled	Database:	Northeast District

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)
2,325.71	0.11	168.55	2,325.64	5.58	1.85	-4.69	0.58	-0.35	-180.90
2,350.72	0.02	203.29	2,350.65	5.55	1.86	-4.66	0.38	-0.36	138.90
2,375.83	0.03	220.39	2,375.76	5.54	1.85	-4.66	0.05	0.04	68.10
2,400.72	0.10	224.14	2,400.65	5.52	1.83	-4.65	0.28	0.28	15.07
2,425.51	0.07	120.46	2,425.44	5.50	1.83	-4.62	0.54	-0.12	-418.23
2,451.40	0.14	260.25	2,451.33	5.49	1.81	-4.62	0.77	0.27	539.94
2,479.00	0.05	270.87	2,478.93	5.48	1.77	-4.63	0.33	-0.33	38.48
Last SDI Gyro Survey									
2,569.00	1.08	217.01	2,568.93	4.80	1.22	-4.16	1.17	1.14	-59.84
First SDI MWD Survey									
2,662.00	1.66	219.01	2,661.90	3.06	-0.16	-2.95	0.63	0.62	2.15
2,753.00	1.46	204.33	2,752.87	0.98	-1.47	-1.40	0.49	-0.22	-16.13
2,848.00	2.51	206.31	2,847.81	-1.99	-2.89	0.96	1.11	1.11	2.08
2,941.00	3.78	218.41	2,940.67	-6.22	-5.70	4.07	1.53	1.37	13.01
3,033.00	5.15	221.03	3,032.38	-11.71	-10.29	7.80	1.51	1.49	2.85
3,126.00	5.21	214.86	3,125.01	-18.32	-15.44	12.41	0.60	0.06	-6.63
3,218.00	6.09	222.37	3,216.56	-25.36	-21.12	17.25	1.25	0.96	8.16
3,310.00	7.31	234.07	3,307.93	-32.40	-29.15	21.35	1.98	1.33	12.72
3,401.00	7.67	228.50	3,398.16	-39.82	-38.39	25.42	0.89	0.40	-6.12
3,492.00	7.88	224.06	3,488.32	-48.33	-47.27	30.63	0.70	0.23	-4.88
3,584.00	6.48	228.00	3,579.60	-56.33	-55.52	35.58	1.61	-1.52	4.28
3,676.00	6.05	223.91	3,671.05	-63.30	-62.74	39.86	0.67	-0.47	-4.45
3,766.00	6.26	222.26	3,760.53	-70.35	-69.33	44.43	0.31	0.23	-1.83
3,859.00	6.14	221.87	3,852.99	-77.80	-76.05	49.34	0.14	-0.13	-0.42
3,953.00	6.86	218.81	3,946.38	-85.92	-82.93	54.82	0.85	0.77	-3.26
4,043.00	6.84	215.60	4,035.74	-94.47	-89.42	60.84	0.43	-0.02	-3.57
4,135.00	7.59	219.36	4,127.01	-103.62	-96.46	67.25	0.96	0.82	4.09
4,228.00	7.72	215.39	4,219.18	-113.46	-103.97	74.17	0.59	0.14	-4.27
4,322.00	7.92	209.69	4,312.31	-124.23	-110.84	82.18	0.85	0.21	-6.06
4,415.00	7.88	216.00	4,404.43	-134.96	-117.76	90.12	0.93	-0.04	6.78
4,508.00	7.90	209.23	4,496.55	-145.69	-124.63	98.09	1.00	0.02	-7.28
4,602.00	7.57	214.81	4,589.70	-156.41	-131.31	106.10	0.87	-0.35	5.94
4,693.00	7.70	218.15	4,679.89	-166.13	-138.50	113.00	0.51	0.14	3.67
4,786.00	7.60	219.11	4,772.06	-175.80	-146.23	119.69	0.17	-0.11	1.03
4,878.00	7.55	227.83	4,863.26	-184.58	-154.55	125.34	1.25	-0.05	2.48
4,970.00	7.85	223.52	4,954.43	-193.19	-163.35	130.67	0.71	0.33	-4.68
5,064.00	7.89	216.62	5,047.55	-203.03	-171.62	137.34	1.01	0.04	-7.34
5,156.00	7.82	220.64	5,138.69	-212.84	-179.47	144.13	0.60	0.08	4.37
5,253.00	8.00	218.06	5,234.77	-223.17	-187.93	151.20	0.41	0.19	-2.66
5,346.00	8.11	214.22	5,326.85	-233.69	-195.60	158.70	0.59	0.12	-4.13
5,437.00	7.27	219.23	5,417.03	-243.45	-202.86	165.63	1.18	-0.92	5.91
5,530.00	7.51	216.80	5,509.26	-252.88	-210.22	172.20	0.42	0.26	-2.91
5,623.00	7.85	211.88	5,601.43	-263.14	-217.21	179.68	0.80	0.37	-5.29
5,671.00	8.13	208.35	5,648.96	-268.91	-220.56	184.07	1.18	0.58	-7.35

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Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 4H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Site:	Stone	MD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Well:	4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	4H 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)
5,702.00	8.08	206.91	5,679.65	-272.78	-222.58	187.09	0.67	-0.16	-4.65
5,732.00	7.91	212.49	5,709.36	-276.40	-224.65	189.86	2.65	-0.57	18.60
5,762.00	7.64	222.04	5,739.08	-279.62	-227.09	192.13	4.39	-0.90	31.83
5,793.00	8.21	225.06	5,769.79	-282.72	-230.04	194.12	2.28	1.84	9.74
5,823.00	8.81	217.98	5,799.46	-286.04	-232.97	196.33	4.02	2.00	-23.60
5,853.00	9.49	207.71	5,829.08	-290.04	-235.53	199.30	5.89	2.27	-34.23
5,884.00	10.71	195.90	5,859.60	-295.08	-237.51	203.43	7.73	3.94	-38.10
5,914.00	11.42	185.70	5,889.05	-300.71	-238.57	208.43	6.93	2.37	-34.00
5,945.00	11.41	175.20	5,919.44	-306.82	-238.62	214.20	6.69	-0.03	-33.87
5,975.00	12.22	165.40	5,948.80	-312.85	-237.57	220.25	7.20	2.70	-32.67
6,005.00	13.23	157.87	5,978.07	-319.11	-235.47	226.85	6.47	3.37	-25.10
6,035.00	14.20	151.89	6,007.21	-325.53	-232.45	233.90	5.72	3.23	-19.93
6,065.00	15.34	148.35	6,036.22	-332.16	-228.63	241.40	4.84	3.80	-11.80
6,095.00	17.07	145.92	6,065.03	-339.18	-224.08	249.51	6.19	5.77	-8.10
6,125.00	18.58	144.72	6,093.59	-346.73	-218.85	258.34	5.18	5.03	-4.00
6,156.00	20.48	143.61	6,122.80	-355.13	-212.78	268.24	6.24	6.13	-3.58
6,186.00	22.48	142.18	6,150.72	-363.89	-206.15	278.66	6.89	6.67	-4.77
6,216.00	24.52	140.82	6,178.23	-373.24	-198.70	289.91	7.04	6.80	-4.53
6,246.00	26.40	139.59	6,205.32	-383.15	-190.44	301.94	6.51	6.27	-4.10
6,276.00	28.49	138.60	6,231.94	-393.59	-181.39	314.74	7.13	6.97	-3.30
6,307.00	30.56	137.80	6,258.91	-404.98	-171.20	328.78	6.80	6.68	-2.58
6,337.00	32.83	137.22	6,284.43	-416.60	-160.55	343.20	7.63	7.57	-1.93
6,367.00	34.01	136.69	6,309.47	-428.67	-149.28	358.25	4.05	3.93	-1.77
6,398.00	35.89	135.11	6,334.88	-441.42	-136.91	374.29	6.73	6.06	-5.10
6,428.00	37.88	134.20	6,358.88	-454.07	-124.10	390.38	6.88	6.63	-3.03
6,458.00	39.75	133.28	6,382.25	-467.07	-110.52	407.04	6.52	6.23	-3.07
6,488.00	41.03	131.99	6,405.10	-480.24	-96.21	424.10	5.10	4.27	-4.30
6,518.00	42.41	131.46	6,427.49	-493.52	-81.31	441.46	4.75	4.60	-1.77
6,549.00	43.35	131.22	6,450.21	-507.45	-65.48	459.73	3.08	3.03	-0.77
6,579.00	44.50	131.28	6,471.82	-521.18	-49.83	477.74	3.84	3.83	0.20
6,609.00	46.51	131.36	6,492.84	-535.31	-33.76	496.27	6.70	6.70	0.27
6,640.00	48.81	131.11	6,513.72	-550.41	-16.53	516.10	7.44	7.42	-0.81
6,671.00	50.09	130.73	6,533.87	-565.83	1.27	536.42	4.23	4.13	-1.23
6,703.00	50.36	130.83	6,554.34	-581.90	19.89	557.60	0.88	0.84	0.31
6,735.00	51.33	130.83	6,574.55	-598.12	38.67	578.98	3.03	3.03	0.00
6,767.00	52.95	132.08	6,594.19	-614.85	57.60	600.89	5.93	5.93	3.91
6,798.00	54.61	133.62	6,612.51	-631.86	75.93	622.88	6.88	5.35	4.97
6,830.00	55.95	134.57	6,630.73	-650.16	94.82	646.27	4.85	4.19	2.97
6,862.00	57.44	135.70	6,648.30	-669.12	113.68	670.27	5.51	4.66	3.53
6,894.00	59.71	138.18	6,664.99	-689.07	132.32	695.14	9.70	7.09	7.75
6,926.00	61.80	140.22	6,680.62	-710.21	150.56	721.01	8.58	6.53	6.38
6,958.00	63.84	141.64	6,695.24	-732.31	168.50	747.69	7.50	5.88	4.44
6,988.00	66.00	142.21	6,707.95	-753.70	185.25	773.32	7.40	7.20	0.00

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Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 4H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Site:	Stone	MD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Well:	4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	4H 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)
7,019.00	68.41	143.09	6,719.96	-776.41	202.58	800.39	8.20	7.77	2.84
7,051.00	70.41	143.89	6,731.22	-800.49	220.41	828.91	6.67	6.25	2.50
7,082.00	72.08	144.84	6,741.18	-824.35	237.51	856.99	6.12	5.39	3.06
7,114.00	74.03	145.42	6,750.51	-849.46	255.00	886.38	6.34	6.09	1.81
7,146.00	76.42	146.49	6,758.67	-875.10	272.32	916.22	8.14	7.47	3.34
7,178.00	78.32	147.42	6,765.67	-901.27	289.35	946.47	6.58	5.94	2.91
7,210.00	80.20	148.13	6,771.63	-927.87	306.11	977.03	6.27	5.88	2.22
7,242.00	82.04	149.29	6,776.57	-954.88	322.53	1,007.88	6.77	5.75	3.63
7,274.00	84.04	150.46	6,780.45	-982.36	338.47	1,039.02	7.23	6.25	3.66
7,306.00	84.95	150.82	6,783.52	-1,010.12	354.09	1,070.32	3.06	2.84	1.13
7,338.00	85.43	150.99	6,786.20	-1,037.98	369.60	1,101.68	1.59	1.50	0.53
7,401.00	87.82	151.09	6,789.91	-1,093.00	400.04	1,163.56	3.80	3.79	0.16
7,465.00	88.86	151.27	6,791.76	-1,149.05	430.88	1,226.53	1.65	1.63	0.28
7,529.00	89.73	151.75	6,792.55	-1,205.30	461.41	1,289.59	1.55	1.36	0.75
7,592.00	89.26	151.99	6,793.11	-1,260.85	491.11	1,351.73	0.84	-0.75	0.38
7,655.00	89.26	151.72	6,793.92	-1,316.40	520.83	1,413.87	0.43	0.00	-0.43
7,718.00	91.31	153.92	6,793.61	-1,372.43	549.60	1,476.17	4.77	3.25	3.49
7,782.00	90.54	154.02	6,792.57	-1,429.94	577.68	1,539.64	1.21	-1.20	0.16
7,845.00	90.71	153.98	6,791.89	-1,486.56	605.30	1,602.12	0.28	0.27	-0.06
7,908.00	91.88	153.70	6,790.46	-1,543.09	633.06	1,664.57	1.91	1.86	-0.44
7,972.00	91.51	153.35	6,788.57	-1,600.35	661.58	1,727.95	0.80	-0.58	-0.55
8,035.00	91.58	152.91	6,786.87	-1,656.53	690.05	1,790.29	0.71	0.11	-0.70
8,099.00	91.38	152.82	6,785.22	-1,713.46	719.23	1,853.57	0.34	-0.31	-0.14
8,160.00	90.81	153.11	6,784.05	-1,767.79	746.95	1,913.91	1.05	-0.93	0.48
8,223.00	90.67	152.94	6,783.24	-1,823.93	775.52	1,976.25	0.35	-0.22	-0.27
8,287.00	90.67	153.20	6,782.49	-1,880.99	804.51	2,039.58	0.41	0.00	0.41
8,350.00	91.04	154.50	6,781.55	-1,937.53	832.27	2,102.04	2.15	0.59	2.06
8,414.00	90.87	154.45	6,780.48	-1,995.28	859.84	2,165.58	0.28	-0.27	-0.08
8,477.00	89.66	153.84	6,780.19	-2,051.97	887.32	2,228.08	2.15	-1.92	-0.97
8,541.00	89.87	153.83	6,780.45	-2,109.41	915.54	2,291.54	0.33	0.33	-0.02
8,604.00	91.04	154.33	6,779.95	-2,166.07	943.07	2,354.03	2.02	1.86	0.79
8,667.00	90.70	153.94	6,779.00	-2,222.75	970.55	2,416.53	0.82	-0.54	-0.62
8,731.00	89.46	152.31	6,778.91	-2,279.83	999.48	2,479.88	3.20	-1.94	-2.55
8,795.00	89.60	151.45	6,779.43	-2,336.28	1,029.65	2,543.01	1.36	0.22	-1.34
8,858.00	89.63	152.17	6,779.86	-2,391.80	1,059.41	2,605.14	1.14	0.05	1.14
8,921.00	88.62	152.27	6,780.82	-2,447.53	1,088.77	2,667.34	1.61	0.16	0.16
8,984.00	88.38	151.88	6,782.47	-2,503.18	1,118.26	2,729.50	0.73	-0.38	-0.62
9,048.00	89.93	152.63	6,783.41	-2,559.81	1,148.05	2,792.70	2.69	2.43	2.07
9,111.00	92.46	156.80	6,782.10	-2,616.75	1,174.95	2,855.25	7.74	4.02	6.62
9,175.00	92.42	157.21	6,779.37	-2,675.61	1,199.92	2,919.01	0.64	-0.06	0.64
9,238.00	91.95	156.34	6,776.97	-2,733.46	1,224.75	2,981.76	1.57	-0.75	-1.38
9,302.00	92.32	156.19	6,774.59	-2,792.01	1,250.49	3,045.47	0.62	0.58	-0.23
9,366.00	92.42	155.76	6,771.94	-2,850.41	1,276.53	3,109.14	0.69	0.16	-0.67
9,430.00	92.08	154.45	6,769.43	-2,908.42	1,303.45	3,172.71	2.11	0.59	2.05

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Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 4H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Site:	Stone	MD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Well:	4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	4H 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)
9,493.00	90.30	154.00	6,768.12	-2,965.14	1,330.83	3,235.21	2.91	-2.83	-0.71
9,557.00	90.77	153.00	6,767.52	-3,022.41	1,359.39	3,298.62	1.73	0.73	-1.56
9,620.00	91.24	151.46	6,766.42	-3,078.14	1,388.74	3,360.81	2.56	0.75	-2.44
9,683.00	91.88	151.68	6,764.70	-3,133.52	1,418.72	3,422.88	1.07	1.02	0.35
9,747.00	90.57	151.37	6,763.33	-3,189.77	1,449.22	3,485.93	2.10	-2.05	-0.48
9,810.00	90.34	150.77	6,762.83	-3,244.90	1,479.70	3,547.93	1.02	-0.37	-0.95
9,874.00	89.03	150.68	6,763.18	-3,300.73	1,510.99	3,610.83	2.05	-2.05	-0.14
9,938.00	90.30	150.99	6,763.56	-3,356.61	1,542.18	3,673.76	2.04	1.98	0.48
10,002.00	89.93	151.71	6,763.43	-3,412.77	1,572.87	3,736.80	1.26	-0.58	1.13
10,065.00	88.89	152.36	6,764.08	-3,468.41	1,602.41	3,798.97	1.95	-1.65	1.03
10,129.00	88.62	152.29	6,765.47	-3,525.08	1,632.13	3,862.17	0.44	-0.42	-0.11
10,193.00	88.39	152.05	6,767.14	-3,581.66	1,661.99	3,925.33	0.52	-0.36	-0.38
10,256.00	89.66	152.05	6,768.21	-3,637.30	1,691.52	3,987.50	2.02	2.02	0.00
10,319.00	89.46	152.80	6,768.70	-3,693.14	1,720.68	4,049.74	1.23	-0.32	1.19
10,383.00	88.18	153.32	6,770.01	-3,750.18	1,749.67	4,113.06	2.16	-2.00	0.81
10,447.00	89.60	153.70	6,771.25	-3,807.45	1,778.21	4,176.46	2.30	2.22	0.59
10,510.00	91.71	155.90	6,770.53	-3,864.44	1,805.03	4,239.04	4.84	3.35	3.49
10,574.00	91.44	155.24	6,768.77	-3,922.69	1,831.49	4,302.69	1.11	-0.42	-1.03
10,638.00	90.37	153.83	6,767.76	-3,980.46	1,859.00	4,366.24	2.77	-1.67	-2.20
10,701.00	89.63	152.70	6,767.76	-4,036.73	1,887.34	4,428.61	2.14	-1.17	-1.79
10,765.00	89.03	151.87	6,768.51	-4,093.38	1,917.10	4,491.82	1.60	-0.94	-1.30
10,827.00	90.37	152.98	6,768.84	-4,148.34	1,945.80	4,553.07	2.81	2.16	1.79
10,890.00	90.74	151.88	6,768.23	-4,204.18	1,974.96	4,615.31	1.84	0.59	-1.75
10,954.00	89.90	151.41	6,767.87	-4,260.50	2,005.35	4,678.40	1.50	-1.31	-0.73
11,017.00	89.97	151.66	6,767.94	-4,315.88	2,035.38	4,740.48	0.41	0.11	0.40
11,081.00	89.70	151.69	6,768.12	-4,372.22	2,065.75	4,803.58	0.42	-0.42	0.05
11,144.00	89.70	151.87	6,768.45	-4,427.73	2,095.54	4,865.71	0.29	0.00	0.29
11,208.00	89.13	151.81	6,769.11	-4,484.15	2,125.74	4,928.83	0.90	-0.89	-0.09
11,271.00	89.46	150.42	6,769.88	-4,539.31	2,156.17	4,990.83	2.27	0.52	-2.21
11,335.00	88.39	150.16	6,771.08	-4,594.88	2,187.88	5,053.64	1.72	-1.67	-0.41
11,399.00	88.08	150.88	6,773.05	-4,650.57	2,219.36	5,116.47	1.22	-0.48	1.13
11,463.00	89.29	150.84	6,774.52	-4,706.45	2,250.52	5,179.39	1.89	1.89	-0.06
11,527.00	90.81	151.03	6,774.47	-4,762.39	2,281.61	5,242.34	2.39	2.38	0.30
11,591.00	90.71	150.66	6,773.62	-4,818.28	2,312.78	5,305.27	0.60	-0.16	-0.58
11,653.00	90.30	150.77	6,773.07	-4,872.35	2,343.11	5,366.21	0.68	-0.66	0.18
11,717.00	91.41	151.41	6,772.12	-4,928.37	2,374.05	5,429.19	2.00	1.73	1.00
11,781.00	91.44	152.02	6,770.53	-4,984.71	2,404.36	5,492.27	0.95	0.05	0.95
11,844.00	90.34	151.95	6,769.55	-5,040.32	2,433.95	5,554.43	1.75	-1.75	-0.11
11,908.00	90.27	152.67	6,769.21	-5,096.99	2,463.69	5,617.64	1.13	-0.11	1.13
11,953.00	89.33	152.85	6,769.36	-5,137.00	2,484.29	5,662.14	2.13	-2.09	0.40
Last SDI MWD Survey									
12,010.00	89.33	152.85	6,770.03	-5,187.72	2,510.30	5,718.51	0.00	0.00	0.00
Projection to Bit									



Scientific Drilling
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well 4H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Site:	Stone	MD Reference:	GL 1215' & KB 18' @ 1233.00ft (Saxon 141)
Well:	4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	4H 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)
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Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
15.00	15.00	0.00	0.00	Ground Level
101.17	101.15	1.58	0.20	First SDI Gyro Survey
2,479.00	2,478.93	5.48	1.77	Last SDI Gyro Survey
2,569.00	2,568.93	4.80	1.22	First SDI MWD Survey
11,953.00	6,769.36	-5,137.00	2,484.29	Last SDI MWD Survey
12,010.00	6,770.03	-5,187.72	2,510.30	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____