

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #8H - Slot MW#8H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #8H	North Reference:	Grid
Wellbore:	Original Well	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

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	Mills Wetzel Pad 2				
Site Position:		Northing:	374,564.00 usft	Latitude:	39° 31' 21.507 N
From:	Map	Easting:	1,674,001.00 usft	Longitude:	80° 39' 20.400 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.74 °

Well	Mills Wetzel #8H - Slot MW#8H					
Well Position	+N-S	0.0 usft	Northing:	373,956.80 usft	Latitude:	39° 31' 15.451 N
	+E-W	0.0 usft	Easting:	1,673,566.60 usft	Longitude:	80° 39' 25.843 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,303.0 usft

Wellbore	Original Well				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	07/15/12	-8.54	67.16	52,631

Design	As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	172.39	

Survey Program	Date	07/23/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
107.0	6,678.0	SDI Keeper Gyro (Original Well)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
6,721.0	10,765.0	SDI MWD (Original Well)	MWD SDI	MWD - Standard ver 1.0.1	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
107.0	0.74	264.80	107.0	-0.1	-0.7	0.0	0.69	0.69	0.00	0.00
207.0	0.38	290.89	207.0	0.0	-1.6	-0.2	0.43	-0.36	26.09	26.09
307.0	0.25	304.29	307.0	0.2	-2.1	-0.5	0.15	-0.13	13.40	13.40
407.0	0.10	333.17	407.0	0.4	-2.4	-0.7	0.17	-0.15	28.88	28.88
507.0	0.11	340.03	507.0	0.6	-2.4	-0.9	0.02	0.01	6.86	6.86
607.0	0.09	57.85	607.0	0.7	-2.4	-1.0	0.13	-0.02	77.82	77.82
707.0	0.03	23.76	707.0	0.8	-2.3	-1.1	0.07	-0.06	-34.09	-34.09
807.0	0.04	72.28	807.0	0.8	-2.3	-1.1	0.03	0.01	48.52	48.52
907.0	0.12	314.10	907.0	0.9	-2.3	-1.2	0.14	0.08	-118.18	-118.18

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #8H - Slot MW#8H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #8H	North Reference:	Grid
Wellbore:	Original Well	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

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)
1,007.0	0.14	338.67	1,007.0	1.1	-2.4	-1.4	0.06	0.02	24.57
1,107.0	0.04	38.49	1,107.0	1.3	-2.5	-1.6	0.12	-0.10	59.82
1,207.0	0.08	42.27	1,207.0	1.3	-2.4	-1.6	0.04	0.04	3.78
1,307.0	0.39	308.19	1,307.0	1.6	-2.6	-1.9	0.40	0.31	-94.08
1,407.0	0.49	302.84	1,407.0	2.0	-3.2	-2.4	0.11	0.10	-5.35
1,507.0	0.41	306.44	1,507.0	2.5	-3.9	-3.0	0.08	-0.08	3.60
1,607.0	0.80	294.35	1,607.0	3.0	-4.8	-3.6	0.41	0.39	-12.09
1,707.0	0.46	288.74	1,707.0	3.4	-5.8	-4.1	0.35	-0.34	-5.61
1,807.0	0.09	221.52	1,807.0	3.5	-6.3	-4.3	0.43	-0.37	-67.22
1,907.0	0.20	218.30	1,907.0	3.3	-6.4	-4.1	0.11	0.11	-3.22
2,007.0	0.26	212.01	2,007.0	2.9	-6.6	-3.8	0.07	0.06	-6.29
2,107.0	0.11	108.58	2,107.0	2.7	-6.7	-3.6	0.30	-0.15	-103.43
2,207.0	0.17	85.43	2,207.0	2.7	-6.4	-3.5	0.08	0.06	-23.15
2,307.0	0.21	242.42	2,307.0	2.6	-6.4	-3.5	0.37	0.04	156.99
2,407.0	0.38	257.71	2,407.0	2.5	-6.9	-3.4	0.19	0.17	15.29
2,507.0	0.37	269.20	2,507.0	2.4	-7.6	-3.4	0.08	-0.01	11.49
2,607.0	0.62	309.76	2,607.0	2.7	-8.3	-3.8	0.42	0.25	40.56
2,707.0	0.49	313.92	2,707.0	3.4	-9.0	-4.5	0.14	-0.13	4.16
2,807.0	0.80	309.70	2,806.9	4.1	-9.9	-5.4	0.31	0.31	-4.22
2,907.0	1.30	262.86	2,906.9	4.4	-11.5	-5.9	0.95	0.50	-46.84
3,007.0	3.67	230.33	3,006.8	2.2	-15.1	-4.2	2.67	2.37	-32.53
3,107.0	5.73	231.58	3,106.5	-2.9	-21.5	0.0	2.06	2.06	1.25
3,207.0	6.43	228.99	3,205.9	-9.7	-29.6	5.7	0.75	0.70	-2.59
3,307.0	6.58	227.98	3,305.3	-17.2	-38.1	12.0	0.19	0.15	-1.01
3,407.0	6.54	226.48	3,404.6	-24.9	-46.5	18.6	0.18	-0.04	-1.50
3,507.0	7.08	225.56	3,503.9	-33.2	-55.0	25.6	0.55	0.54	-0.92
3,607.0	8.03	222.21	3,603.1	-42.7	-64.1	33.8	1.05	0.95	-3.35
3,707.0	8.51	223.14	3,702.0	-53.2	-73.9	43.0	0.50	0.48	0.93
3,807.0	9.99	224.82	3,800.7	-64.8	-85.1	53.0	1.50	1.48	1.68
3,907.0	9.85	230.58	3,899.2	-76.4	-97.8	62.8	1.00	-0.14	5.76
4,007.0	11.47	230.12	3,997.5	-88.2	-112.0	72.6	1.62	1.62	-0.46
4,107.0	11.95	229.36	4,095.4	-101.3	-127.5	83.5	0.50	0.48	-0.76
4,207.0	12.31	229.13	4,193.2	-115.0	-143.4	95.0	0.36	0.36	-0.23
4,307.0	12.89	228.64	4,290.8	-129.4	-159.9	107.1	0.59	0.58	-0.49
4,407.0	13.75	228.11	4,388.1	-144.7	-177.1	120.0	0.87	0.86	-0.53
4,507.0	14.39	223.40	4,485.1	-161.6	-194.5	134.5	1.31	0.64	-4.71
4,607.0	15.77	222.44	4,581.6	-180.7	-212.2	151.0	1.40	1.38	-0.96
4,707.0	16.36	220.90	4,677.7	-201.4	-230.6	169.1	0.73	0.59	-1.54
4,807.0	15.91	221.80	4,773.8	-222.2	-248.9	187.3	0.51	-0.45	0.90
4,907.0	15.63	224.66	4,870.0	-242.0	-267.5	204.5	0.83	-0.28	2.86
5,007.0	15.27	227.24	4,966.4	-260.6	-286.7	220.3	0.78	-0.36	2.58
5,107.0	15.49	227.23	5,062.8	-278.6	-306.1	235.6	0.22	0.22	-0.01
5,207.0	15.62	226.69	5,159.2	-296.9	-325.7	251.1	0.19	0.13	-0.54

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #8H - Slot MW#8H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #8H	North Reference:	Grid
Wellbore:	Original Well	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

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)
5,307.0	15.58	224.15	5,255.5	-315.7	-344.9	267.3	0.68	-0.04	-2.54
5,407.0	14.89	222.24	5,352.0	-334.9	-362.9	283.9	0.85	-0.69	-1.91
5,507.0	14.49	230.55	5,448.7	-352.3	-381.2	298.8	2.14	-0.40	8.31
5,607.0	16.00	230.56	5,545.2	-369.1	-401.5	312.6	1.51	1.51	0.01
5,707.0	16.39	227.83	5,641.2	-387.3	-422.6	327.9	0.86	0.39	-2.73
5,807.0	16.25	226.97	5,737.2	-406.3	-443.3	344.0	0.28	-0.14	-0.86
5,907.0	16.89	227.52	5,833.0	-425.7	-464.2	360.4	0.66	0.64	0.55
6,007.0	16.32	226.69	5,928.9	-445.1	-485.1	376.9	0.62	-0.57	-0.83
6,107.0	16.13	227.10	6,024.9	-464.2	-505.5	393.2	0.22	-0.19	0.41
6,207.0	16.24	226.93	6,120.9	-483.2	-525.9	409.3	0.12	0.11	-0.17
6,307.0	17.65	226.43	6,216.6	-503.2	-547.1	426.3	1.42	1.41	-0.50
6,407.0	17.41	224.29	6,311.9	-524.4	-568.6	444.4	0.69	-0.24	-2.14
6,507.0	16.90	223.01	6,407.5	-545.7	-588.9	462.9	0.63	-0.51	-1.28
6,607.0	16.27	228.27	6,503.3	-565.7	-609.3	480.0	1.63	-0.63	5.26
6,678.0	16.51	227.73	6,571.4	-579.1	-624.2	491.3	0.40	0.34	-0.76
6,721.0	18.26	229.80	6,612.5	-587.5	-633.9	498.4	4.31	4.07	4.81
6,752.0	21.53	231.33	6,641.6	-594.2	-642.0	504.0	10.68	10.55	4.94
6,784.0	24.41	231.76	6,671.1	-602.0	-651.8	510.4	9.02	9.00	1.34
6,816.0	25.52	229.21	6,700.1	-610.6	-662.2	517.5	4.83	3.47	-7.97
6,848.0	26.16	223.37	6,728.9	-620.2	-672.3	525.7	8.20	2.00	-18.25
6,880.0	27.16	216.30	6,757.5	-631.2	-681.4	535.4	10.39	3.13	-22.09
6,912.0	27.60	207.11	6,785.9	-643.7	-689.1	546.8	13.27	1.38	-28.72
6,944.0	27.60	200.85	6,814.3	-657.2	-695.2	559.4	9.06	0.00	-19.56
6,976.0	27.01	194.42	6,842.7	-671.2	-699.6	572.6	9.40	-1.84	-20.09
7,008.0	26.76	187.58	6,871.3	-685.4	-702.4	586.3	9.69	-0.78	-21.38
7,040.0	27.61	184.62	6,899.8	-699.9	-703.9	600.5	4.99	2.66	-9.25
7,071.0	29.33	184.54	6,927.0	-714.7	-705.1	615.0	5.55	5.55	-0.26
7,102.0	31.62	184.03	6,953.7	-730.3	-706.3	630.4	7.43	7.39	-1.65
7,134.0	33.52	182.06	6,980.7	-747.5	-707.2	647.3	6.80	5.94	-6.16
7,166.0	36.23	178.61	7,006.9	-765.8	-707.3	665.4	10.47	8.47	-10.78
7,198.0	37.92	176.06	7,032.5	-785.1	-706.4	684.6	7.14	5.28	-7.97
7,229.0	40.63	174.82	7,056.5	-804.6	-704.8	704.2	9.10	8.74	-4.00
7,261.0	42.67	173.52	7,080.4	-825.8	-702.6	725.5	6.92	6.38	-4.06
7,293.0	45.96	172.59	7,103.3	-848.0	-699.9	747.8	10.48	10.28	-2.91
7,324.0	48.95	171.48	7,124.2	-870.6	-696.8	770.7	10.00	9.65	-3.58
7,356.0	52.24	170.27	7,144.5	-895.0	-692.8	795.4	10.69	10.28	-3.78
7,388.0	54.97	169.55	7,163.5	-920.4	-688.3	821.1	8.72	8.53	-2.25
7,420.0	56.17	169.28	7,181.6	-946.3	-683.5	847.5	3.81	3.75	-0.84
7,452.0	57.78	168.49	7,199.1	-972.6	-678.3	874.2	5.44	5.03	-2.47
7,483.0	60.56	167.58	7,215.0	-998.7	-672.8	900.8	9.32	8.97	-2.94
7,515.0	63.93	166.44	7,229.9	-1,026.3	-666.4	929.0	10.99	10.53	-3.56
7,547.0	66.62	165.70	7,243.2	-1,054.5	-659.4	957.9	8.66	8.41	-2.31
7,579.0	69.02	164.71	7,255.3	-1,083.1	-651.8	987.3	8.03	7.50	-3.09

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #8H - Slot MW#8H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #8H	North Reference:	Grid
Wellbore:	Original Well	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

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)
7,610.0	70.19	164.47	7,266.1	-1,111.1	-644.1	1,016.0	3.84	3.77	-0.77
7,642.0	72.03	163.75	7,276.5	-1,140.2	-635.8	1,046.0	6.13	5.75	-2.25
7,674.0	75.48	163.10	7,285.4	-1,169.7	-627.1	1,076.3	10.96	10.78	-2.03
7,706.0	77.35	162.32	7,292.9	-1,199.4	-617.8	1,107.0	6.31	5.84	-2.44
7,738.0	78.89	161.98	7,299.5	-1,229.2	-608.2	1,137.8	4.92	4.81	-1.06
7,769.0	81.57	160.79	7,304.8	-1,258.1	-598.5	1,167.8	9.44	8.65	-3.84
7,801.0	84.93	159.78	7,308.6	-1,288.0	-587.7	1,198.9	10.96	10.50	-3.16
7,833.0	85.97	159.53	7,311.1	-1,318.0	-576.7	1,230.0	3.34	3.25	-0.78
7,897.0	87.72	160.13	7,314.6	-1,377.9	-554.6	1,292.4	2.89	2.73	0.94
7,960.0	87.11	159.24	7,317.5	-1,437.0	-532.8	1,353.7	1.71	-0.97	-1.41
8,024.0	87.61	158.92	7,320.4	-1,496.7	-509.9	1,416.0	0.93	0.78	-0.50
8,087.0	88.02	159.22	7,322.8	-1,555.5	-487.5	1,477.2	0.81	0.65	0.48
8,150.0	88.72	159.89	7,324.6	-1,614.5	-465.5	1,538.6	1.54	1.11	1.06
8,214.0	89.43	159.80	7,325.6	-1,674.6	-443.4	1,601.1	1.12	1.11	-0.14
8,277.0	89.93	159.50	7,326.0	-1,733.6	-421.5	1,662.5	0.93	0.79	-0.48
8,340.0	90.03	158.42	7,326.0	-1,792.4	-398.9	1,723.8	1.72	0.16	-1.71
8,404.0	89.03	157.92	7,326.5	-1,851.8	-375.1	1,785.8	1.75	-1.56	-0.78
8,467.0	89.76	157.87	7,327.2	-1,910.2	-351.4	1,846.8	1.16	1.16	-0.08
8,531.0	89.60	157.15	7,327.6	-1,969.3	-326.9	1,908.7	1.15	-0.25	-1.13
8,595.0	88.99	156.38	7,328.3	-2,028.1	-301.6	1,970.3	1.53	-0.95	-1.20
8,658.0	89.80	156.80	7,329.0	-2,085.9	-276.6	2,030.9	1.45	1.29	0.67
8,721.0	89.33	156.57	7,329.5	-2,143.8	-251.7	2,091.6	0.83	-0.75	-0.37
8,785.0	88.29	155.98	7,330.8	-2,202.4	-225.9	2,153.0	1.87	-1.63	-0.92
8,848.0	88.89	155.87	7,332.4	-2,259.9	-200.3	2,213.4	0.97	0.95	-0.17
8,912.0	89.97	155.86	7,333.0	-2,318.3	-174.1	2,274.8	1.69	1.69	-0.02
8,975.0	89.40	156.17	7,333.3	-2,375.8	-148.5	2,335.2	1.03	-0.90	0.49
9,039.0	88.56	156.53	7,334.5	-2,434.4	-122.8	2,396.7	1.43	-1.31	0.56
9,103.0	89.33	156.62	7,335.7	-2,493.2	-97.4	2,458.3	1.21	1.20	0.14
9,166.0	89.36	157.27	7,336.4	-2,551.1	-72.7	2,519.0	1.03	0.05	1.03
9,230.0	88.19	157.14	7,337.8	-2,610.1	-47.9	2,580.8	1.84	-1.83	-0.20
9,294.0	87.68	156.79	7,340.1	-2,669.0	-22.9	2,642.4	0.97	-0.80	-0.55
9,357.0	88.39	156.93	7,342.2	-2,726.9	1.9	2,703.1	1.15	1.13	0.22
9,421.0	89.03	156.91	7,343.7	-2,785.7	26.9	2,764.8	1.00	1.00	-0.03
9,485.0	89.87	156.63	7,344.3	-2,844.5	52.2	2,826.4	1.38	1.31	-0.44
9,548.0	89.53	156.40	7,344.6	-2,902.3	77.3	2,887.0	0.65	-0.54	-0.37
9,612.0	88.66	155.60	7,345.6	-2,960.8	103.3	2,948.4	1.85	-1.36	-1.25
9,676.0	89.13	154.10	7,346.8	-3,018.7	130.5	3,009.4	2.46	0.73	-2.34
9,739.0	89.83	153.96	7,347.4	-3,075.3	158.1	3,069.2	1.13	1.11	-0.22
9,803.0	90.20	155.51	7,347.4	-3,133.2	185.4	3,130.2	2.49	0.58	2.42
9,866.0	89.50	157.26	7,347.6	-3,190.9	210.7	3,190.7	2.99	-1.11	2.78
9,930.0	89.09	157.63	7,348.4	-3,250.0	235.2	3,252.6	0.86	-0.64	0.58
9,994.0	89.73	157.56	7,349.0	-3,309.2	259.6	3,314.4	1.01	1.00	-0.11
10,057.0	90.74	157.95	7,348.8	-3,367.5	283.4	3,375.4	1.72	1.60	0.62
10,121.0	90.40	159.09	7,348.1	-3,427.1	306.9	3,437.5	1.86	-0.53	1.78

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #8H - Slot MW#8H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #8H	North Reference:	Grid
Wellbore:	Original Well	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

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)
10,184.0	90.24	159.49	7,347.8	-3,486.0	329.2	3,498.9	0.68	-0.25	0.63
10,248.0	89.76	160.39	7,347.8	-3,546.1	351.1	3,561.4	1.59	-0.75	1.41
10,312.0	88.72	160.10	7,348.6	-3,606.3	372.7	3,623.9	1.69	-1.63	-0.45
10,375.0	89.53	160.19	7,349.6	-3,665.6	394.1	3,685.5	1.29	1.29	0.14
10,438.0	90.40	159.93	7,349.6	-3,724.8	415.6	3,747.0	1.44	1.38	-0.41
10,501.0	89.73	160.28	7,349.5	-3,784.0	437.1	3,808.6	1.20	-1.06	0.56
10,565.0	88.99	160.61	7,350.3	-3,844.3	458.5	3,871.2	1.27	-1.16	0.52
10,628.0	89.76	159.12	7,350.9	-3,903.5	480.2	3,932.7	2.66	1.22	-2.37
10,692.0	89.26	159.18	7,351.5	-3,963.3	502.9	3,995.0	0.79	-0.78	0.09
10,765.0	89.26	159.18	7,352.4	-4,031.5	528.9	4,066.1	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____