

WELL DETAILS: Mills-Wetzel 20H

+N/S	+E/W	Ground Level:	1291.00	Longitude	Slot	TVD	MD	Inc	Azi	+N/S	+E/W	VSe@Departure	Annotation
0.00	0.00	Northing	369975.47	39° 30' 35.519" N	80° 40' 23.279" W	MW3#20H	103.00	0.34	265.83	-0.02	-0.30	-0.12	0.31
		Easting	1669013.48				5487.71	3.98	183.70	6.59	52.80	18.92	123.15
							5533.72	4.40	182.67	3.23	52.62	21.81	126.52
							7366.88	85.93	147.05	54.50	91.27	18.11	60.89
							7370.90	85.93	147.05	54.98	62.27	19.04	61.45
												74.64	84.72
													Projection to Bit

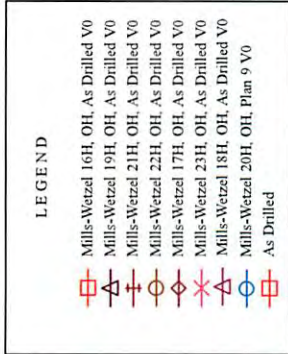
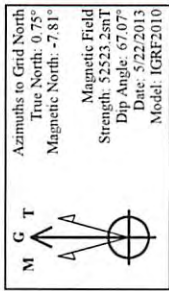
ANNOTATIONS

PROJECT DETAILS: Heather Prospect (NAD 27)

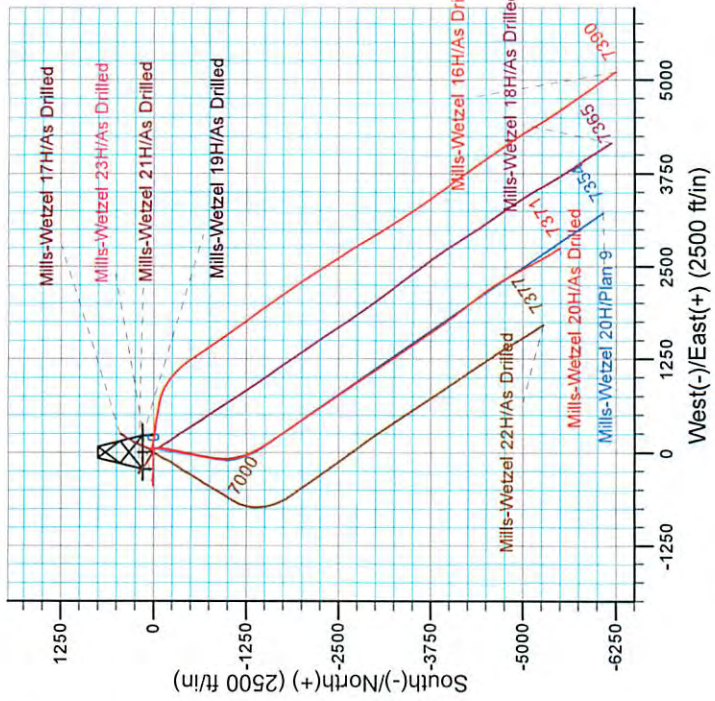
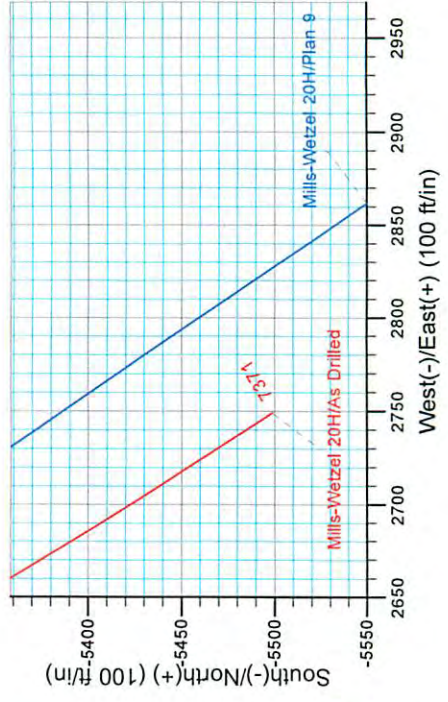
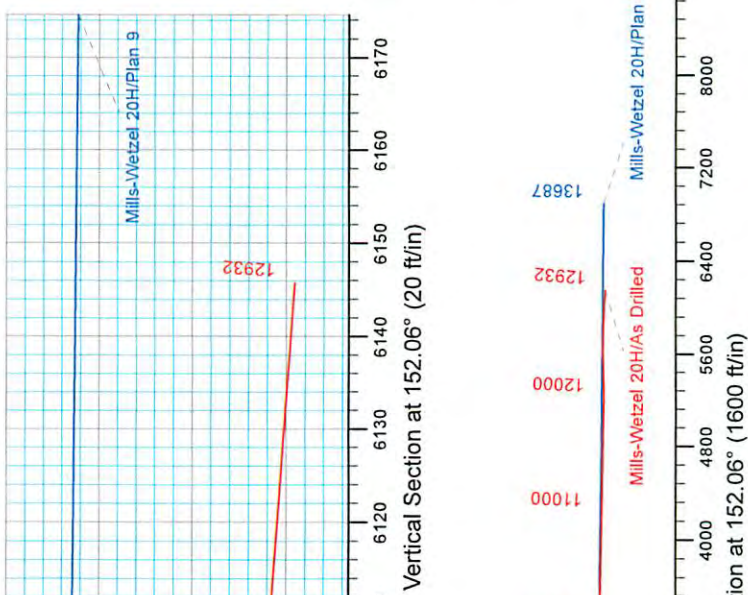
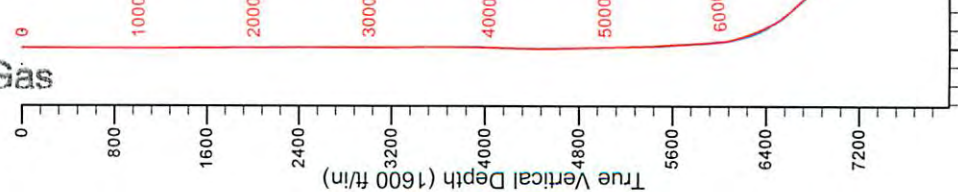
Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: West Virginia North 4701
 System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Mills-Wetzel 20H - Slot MW3#20H, Grid North
 Vertical (TVD) Reference: GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
 Section (VS) Reference: Slot - MW3#20H(0.00N, 0.00E)
 Measured Depth Reference: GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
 Calculation Method: Minimum Curvature



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Stone Energy

Heather Prospect (NAD 27)

Mills-Wetzel Pad 3

Mills-Wetzel 20H - Slot MW3#20H

OH

Design: As Drilled

Standard Survey Report

24 June, 2013



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06/12/2015



Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 20H - Slot MW3#20H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 20H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	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	Mills-Wetzel Pad 3				
Site Position:		Northing:	370,004.38 usft	Latitude:	39° 30' 35.809 N
From:	Map	Easting:	1,669,041.12 usft	Longitude:	80° 40' 22.931 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.75 °

Well	Mills-Wetzel 20H - Slot MW3#20H					
Well Position	+N-S	0.00 ft	Northing:	369,975.47 usft	Latitude:	39° 30' 35.519 N
	+E/-W	0.00 ft	Easting:	1,669,013.48 usft	Longitude:	80° 40' 23.279 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,291.00 ft

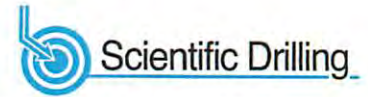
Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/4/2013	-8.55	67.08	52,539
	IGRF2010	5/22/2013	-8.56	67.07	52,523

Design	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	152.06	

Survey Program	Date	6/24/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
103.00	5,489.87	SDI Keeper Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
5,536.00	12,932.00	Survey 2 - MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
103.00	0.34	265.83	103.00	-0.02	-0.30	-0.12	0.33	0.33	0.00	
First SDI Gyro Survey										
203.00	0.32	269.32	203.00	-0.05	-0.88	-0.37	0.03	-0.02	3.49	
303.00	0.24	248.79	302.99	-0.13	-1.35	-0.52	0.13	-0.08	-20.53	
403.00	0.13	181.56	402.99	-0.32	-1.55	-0.45	0.22	0.11	-67.23	
503.00	0.19	119.41	502.99	-0.51	-1.41	-0.21	0.17	0.09	62.15	
603.00	0.27	78.99	602.99	-0.55	-1.04	0.00	0.18	0.08	40.42	

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Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 20H - Slot MW3#20H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 20H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	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)	
703.00	0.27	67.63	702.99	-0.41	-0.59	0.09	0.05	0.00	-11.36	
803.00	0.26	74.61	802.99	-0.26	-0.15	0.16	0.03	-0.01	6.98	
903.00	0.23	85.12	902.99	-0.18	0.27	0.29	0.05	-0.03	10.51	
1,003.00	0.37	127.87	1,002.99	-0.37	0.72	0.66	0.25	0.14	42.75	
1,103.00	0.34	73.25	1,102.99	-0.48	1.26	1.01	0.33	-0.03	-54.62	
1,203.00	0.21	68.88	1,202.99	-0.33	1.72	1.09	0.13	-0.13	-4.37	
1,303.00	0.40	95.75	1,302.99	-0.30	2.24	1.31	0.23	0.19	26.87	
1,403.00	0.82	93.78	1,402.98	-0.38	3.30	1.88	0.42	0.42	-1.97	
1,503.00	0.82	80.37	1,502.97	-0.31	4.72	2.48	0.19	0.00	-13.41	
1,603.00	0.86	85.94	1,602.96	-0.13	6.17	3.01	0.09	0.04	5.57	
1,703.00	0.82	101.56	1,702.95	-0.22	7.62	3.77	0.23	-0.04	15.62	
1,803.00	0.85	120.17	1,802.94	-0.74	8.96	4.85	0.27	0.03	18.61	
1,903.00	0.83	137.34	1,902.93	-1.64	10.09	6.18	0.25	-0.02	17.17	
2,003.00	0.64	209.07	2,002.92	-2.67	10.31	7.19	0.87	-0.19	71.73	
2,103.00	0.19	188.36	2,102.92	-3.32	10.02	7.63	0.47	-0.45	-20.71	
2,203.00	0.98	73.46	2,202.92	-3.24	10.81	7.93	1.07	0.79	-114.90	
2,303.00	1.26	71.39	2,302.90	-2.64	12.68	8.28	0.28	0.28	-2.07	
2,403.00	1.72	68.73	2,402.86	-1.75	15.12	8.63	0.47	0.46	-2.66	
2,503.00	2.21	64.27	2,502.80	-0.37	18.25	8.88	0.51	0.49	-4.46	
2,603.00	2.49	61.19	2,602.72	1.52	21.89	8.92	0.31	0.28	-3.08	
2,703.00	2.60	58.85	2,702.62	3.74	25.74	8.76	0.15	0.11	-2.34	
2,803.00	2.80	58.14	2,802.51	6.20	29.75	8.47	0.20	0.20	-0.71	
2,903.00	4.41	58.42	2,902.31	9.50	35.10	8.06	1.61	1.61	0.28	
3,003.00	4.81	56.49	3,001.99	13.83	41.87	7.40	0.43	0.40	-1.93	
3,103.00	3.03	52.35	3,101.75	17.76	47.46	6.55	1.80	-1.78	-4.14	
3,203.00	1.50	77.94	3,201.67	19.65	50.84	6.47	1.80	-1.53	25.59	
3,303.00	0.87	173.03	3,301.66	19.17	52.21	7.53	1.80	-0.63	95.09	
3,403.00	1.00	179.26	3,401.64	17.54	52.31	9.02	0.16	0.13	6.23	
3,503.00	1.07	178.59	3,501.63	15.74	52.35	10.63	0.07	0.07	-0.67	
3,603.00	0.93	183.91	3,601.61	13.99	52.31	12.15	0.17	-0.14	5.32	
3,703.00	1.23	259.44	3,701.60	12.99	51.20	12.52	1.34	0.30	75.53	
3,803.01	1.09	259.78	3,801.58	12.62	49.21	11.91	0.14	-0.14	0.34	
3,903.01	1.48	311.11	3,901.56	13.30	47.30	10.42	1.17	0.39	51.33	
4,003.01	1.97	320.82	4,001.51	15.48	45.24	7.52	0.57	0.49	9.71	
4,103.01	2.03	320.85	4,101.45	18.19	43.04	4.10	0.06	0.06	0.03	
4,203.01	2.09	313.91	4,201.39	20.83	40.61	0.63	0.26	0.06	-6.94	
4,303.01	2.10	315.65	4,301.32	23.40	38.01	-2.86	0.06	0.01	1.74	
4,403.01	1.27	8.43	4,401.28	25.81	36.89	-5.51	1.67	-0.83	52.78	
4,503.01	1.53	108.93	4,501.26	26.47	38.32	-5.43	2.16	0.26	100.50	
4,603.01	1.57	108.41	4,601.23	25.61	40.88	-3.46	0.04	0.04	-0.52	
4,703.01	1.39	113.32	4,701.19	24.69	43.30	-1.52	0.22	-0.18	4.91	
4,803.01	1.37	118.26	4,801.16	23.65	45.46	0.42	0.12	0.02	4.94	
4,903.01	1.10	140.97	4,901.14	22.33	47.12	2.35	0.55	0.27	22.71	

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Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 20H - Slot MW3#20H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 20H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	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)
5,003.01	1.19	146.17	5,001.12	20.73	48.30	4.33	0.14	0.09	5.20
5,103.01	1.19	159.71	5,101.10	18.89	49.24	6.39	0.28	0.00	13.54
5,203.01	1.52	151.92	5,201.07	16.75	50.23	8.74	0.38	0.33	-7.79
5,303.01	1.62	155.90	5,301.04	14.29	51.43	11.48	0.15	0.10	3.98
5,403.01	2.17	163.72	5,400.98	11.18	52.54	14.74	0.61	0.55	7.82
5,489.87	3.98	183.70	5,487.71	6.59	52.80	18.92	2.39	2.08	23.00
Last SDI Gyro Survey									
5,536.00	4.40	182.67	5,533.72	3.23	52.62	21.81	0.92	0.91	-2.23
First SDI MWD Survey									
5,599.00	4.05	184.25	5,596.55	-1.41	52.34	25.77	0.59	-0.56	2.51
5,663.00	3.98	184.85	5,660.39	-5.87	51.98	29.55	0.13	-0.11	0.94
5,726.00	4.00	184.26	5,723.24	-10.24	51.64	33.25	0.07	0.03	-0.94
5,789.00	4.45	181.85	5,786.07	-14.88	51.39	37.23	0.77	0.71	-3.83
5,853.00	4.42	182.91	5,849.88	-19.82	51.19	41.50	0.14	-0.05	1.66
5,885.00	4.29	186.67	5,881.79	-22.24	50.99	43.54	0.98	-0.41	11.75
5,916.00	4.28	190.59	5,912.70	-24.53	50.64	45.40	0.95	-0.03	12.65
5,947.00	4.88	186.64	5,943.60	-26.98	50.27	47.39	2.19	1.94	-12.74
5,978.00	6.08	180.34	5,974.46	-29.93	50.11	49.92	4.32	3.87	-20.32
6,010.00	7.64	177.35	6,006.23	-33.75	50.20	53.34	5.00	4.88	-9.34
6,041.00	9.30	175.86	6,036.89	-38.31	50.48	57.49	5.40	5.35	-4.81
6,073.00	11.69	175.10	6,068.35	-44.12	50.94	62.84	7.48	7.47	-2.38
6,105.00	13.65	175.94	6,099.57	-51.11	51.48	69.28	6.15	6.13	2.63
6,136.00	15.50	176.54	6,129.57	-58.90	51.99	76.40	5.99	5.97	1.94
6,168.00	16.95	176.61	6,160.30	-67.82	52.53	84.53	4.53	4.53	0.22
6,200.00	18.96	178.80	6,190.74	-77.68	52.91	93.42	6.63	6.28	6.84
6,231.00	20.87	180.70	6,219.88	-88.24	52.95	102.76	6.50	6.16	6.13
6,263.00	23.61	182.06	6,249.50	-100.34	52.65	113.31	8.71	8.56	4.25
6,295.00	25.08	184.73	6,278.65	-113.51	51.86	124.57	5.74	4.59	8.34
6,327.00	26.16	187.04	6,307.51	-127.27	50.44	136.06	4.60	3.38	7.22
6,359.00	27.49	189.58	6,336.07	-141.55	48.34	147.70	5.49	4.16	7.94
6,391.00	28.82	191.27	6,364.28	-156.40	45.61	159.53	4.85	4.16	5.28
6,422.00	31.16	192.30	6,391.13	-171.56	42.44	171.45	7.73	7.55	3.32
6,454.00	32.72	192.59	6,418.28	-188.09	38.79	184.34	4.90	4.88	0.91
6,486.00	35.60	192.32	6,444.76	-205.64	34.91	198.02	9.01	9.00	-0.84
6,518.00	37.22	191.93	6,470.51	-224.21	30.93	212.56	5.11	5.06	-1.22
6,550.00	40.40	190.21	6,495.44	-243.89	27.09	228.14	10.49	9.94	-5.38
6,581.00	42.56	190.84	6,518.67	-264.07	23.33	244.22	7.10	6.97	2.03
6,613.00	45.25	191.33	6,541.72	-285.85	19.06	261.45	8.47	8.41	1.53
6,645.00	46.11	192.60	6,564.08	-308.24	14.32	279.01	3.91	2.69	3.97
6,677.00	48.00	193.04	6,585.88	-331.08	9.12	296.75	5.99	6.00	1.38
6,708.00	50.09	192.75	6,606.20	-353.90	3.89	314.46	6.78	6.74	0.89
6,738.00	50.13	192.56	6,625.44	-376.36	-1.15	331.94	0.50	0.13	-0.63
6,801.00	50.10	191.70	6,665.83	-423.62	-11.31	368.93	1.05	-0.05	-1.37
6,865.00	49.78	191.95	6,707.02	-471.57	-21.34	406.58	0.58	-0.50	0.39

Received
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Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 20H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	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)
6,928.00	50.06	190.59	6,747.59	-518.84	-30.76	443.93	1.71	0.44	-2.16
6,991.00	50.11	189.46	6,788.01	-566.42	-39.17	482.02	1.38	0.08	-1.79
7,055.00	50.03	189.43	6,829.09	-614.83	-47.23	521.02	0.13	-0.13	-0.05
7,118.00	49.72	189.22	6,869.69	-662.37	-55.03	559.35	0.55	-0.49	-0.33
7,182.00	49.58	189.49	6,911.13	-710.50	-62.96	598.15	0.39	-0.22	0.42
7,245.00	49.40	188.09	6,952.05	-757.83	-70.28	636.53	1.71	-0.29	-2.22
7,305.00	48.98	188.17	6,991.27	-802.79	-76.70	673.24	0.71	-0.70	0.13
7,336.00	48.81	188.22	7,011.65	-825.91	-80.03	692.10	0.56	-0.55	0.16
7,366.00	48.38	188.34	7,031.49	-848.17	-83.27	710.26	1.46	-1.43	0.40
7,396.00	48.55	187.66	7,051.38	-870.41	-86.40	728.44	1.79	0.57	-2.27
7,427.00	50.01	184.56	7,071.61	-893.77	-88.89	747.90	8.92	4.71	-10.00
7,457.00	51.85	181.36	7,090.52	-917.02	-90.09	767.88	10.30	6.13	-10.67
7,487.00	54.21	177.85	7,108.56	-940.98	-89.91	789.13	12.22	7.87	-11.70
7,518.00	55.88	176.06	7,126.32	-966.35	-88.56	812.18	7.17	5.39	-5.77
7,548.00	57.14	174.78	7,142.88	-991.29	-86.56	835.15	5.50	4.20	-4.27
7,579.00	58.14	173.66	7,159.47	-1,017.34	-83.92	859.40	4.44	3.23	-3.61
7,610.00	60.56	172.11	7,175.27	-1,043.80	-80.61	884.32	8.91	7.81	-5.00
7,640.00	62.08	171.20	7,189.67	-1,069.84	-76.79	909.12	5.72	5.07	-3.03
7,671.00	64.02	170.48	7,203.72	-1,097.12	-72.39	935.28	6.59	6.26	-2.32
7,702.00	65.92	168.11	7,216.84	-1,124.71	-67.17	962.10	9.25	6.13	-7.65
7,732.00	67.45	166.56	7,228.71	-1,151.59	-61.13	988.68	6.97	5.10	-5.17
7,763.00	68.61	164.94	7,240.31	-1,179.45	-54.05	1,016.61	6.12	3.74	-5.23
7,793.00	69.50	164.18	7,251.03	-1,206.46	-46.59	1,043.96	3.79	2.97	-2.53
7,823.00	71.59	161.87	7,261.02	-1,233.51	-38.33	1,071.73	10.06	6.97	-7.70
7,854.00	74.32	159.80	7,270.11	-1,261.50	-28.60	1,101.01	10.88	8.81	-6.68
7,884.00	77.04	158.68	7,277.53	-1,288.68	-18.29	1,129.85	9.76	9.07	-3.73
7,915.00	78.83	156.62	7,284.01	-1,316.71	-6.76	1,160.02	8.69	5.77	-6.65
7,945.00	80.47	154.83	7,289.40	-1,343.61	5.37	1,189.47	8.02	5.47	-5.97
7,975.00	81.34	152.60	7,294.14	-1,370.17	18.49	1,219.08	7.89	2.90	-7.43
8,006.00	82.29	150.83	7,298.56	-1,397.19	33.03	1,249.76	6.43	3.06	-5.71
8,036.00	83.71	149.91	7,302.21	-1,423.07	47.75	1,279.52	5.63	4.73	-3.07
8,066.00	85.64	148.98	7,305.00	-1,448.79	62.93	1,309.36	7.14	6.43	-3.10
8,097.00	87.14	148.15	7,306.95	-1,475.19	79.07	1,340.24	5.53	4.84	-2.68
8,158.00	87.88	148.14	7,309.60	-1,526.95	111.23	1,401.04	1.21	1.21	-0.02
8,218.00	89.16	148.23	7,311.15	-1,577.92	142.85	1,460.88	2.14	2.13	0.15
8,280.00	90.00	147.25	7,311.60	-1,630.34	175.94	1,522.70	2.08	1.35	-1.58
8,343.00	90.27	145.56	7,311.46	-1,682.82	210.80	1,585.39	2.72	0.43	-2.68
8,407.00	91.01	145.91	7,310.74	-1,735.71	246.83	1,649.00	1.28	1.16	0.55
8,470.00	90.91	145.64	7,309.69	-1,787.79	282.26	1,711.61	0.46	-0.16	-0.43
8,533.00	88.62	145.56	7,309.94	-1,839.77	317.85	1,774.21	3.64	-3.63	-0.13
8,596.00	88.42	145.39	7,311.57	-1,891.66	353.54	1,836.77	0.42	0.32	0.25
8,659.00	89.16	145.38	7,312.90	-1,943.49	389.32	1,899.33	1.17	1.17	-0.02
8,723.00	88.96	145.91	7,313.95	-1,996.32	425.43	1,962.92	0.89	-0.31	0.83

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Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 20H - Slot MW3#20H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 20H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	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)	
8,786.00	88.59	147.07	7,315.30	-2,048.84	460.21	2,025.61	1.93	-0.59	1.84	
8,850.00	88.56	146.28	7,316.89	-2,102.30	495.36	2,089.31	1.23	-0.05	-1.23	
8,913.00	89.83	146.40	7,317.77	-2,154.73	530.27	2,151.99	2.02	2.02	0.19	
8,976.00	90.64	146.37	7,317.52	-2,207.19	565.15	2,214.68	1.29	1.29	-0.05	
9,039.00	89.73	146.19	7,317.31	-2,259.59	600.12	2,277.36	1.47	-1.44	-0.29	
9,103.00	88.89	146.04	7,318.08	-2,312.72	635.80	2,341.01	1.33	-1.31	-0.23	
9,166.00	88.86	145.61	7,319.32	-2,364.83	671.18	2,403.62	0.68	-0.05	-0.68	
9,229.00	89.23	145.71	7,320.37	-2,416.84	706.72	2,466.22	0.61	0.59	0.16	
9,293.00	89.16	146.37	7,321.27	-2,469.92	742.46	2,529.86	1.04	-0.11	1.03	
9,354.00	89.46	146.48	7,322.00	-2,520.74	776.20	2,590.56	0.52	0.49	0.18	
9,418.00	90.37	146.75	7,322.10	-2,574.18	811.41	2,654.27	1.48	1.42	0.42	
9,482.00	90.13	146.80	7,321.82	-2,627.71	846.48	2,718.00	0.38	-0.38	0.08	
9,545.00	89.40	146.97	7,322.08	-2,680.48	880.90	2,780.74	1.19	-1.16	0.27	
9,608.00	90.03	146.75	7,322.39	-2,733.23	915.34	2,843.48	1.06	1.00	-0.35	
9,672.00	90.27	146.26	7,322.22	-2,786.60	950.66	2,907.18	0.85	0.38	-0.77	
9,736.00	91.01	147.03	7,321.51	-2,840.06	985.84	2,970.89	1.67	1.16	1.20	
9,799.00	91.51	147.97	7,320.12	-2,893.18	1,019.68	3,033.68	1.69	0.79	1.49	
9,863.00	90.17	146.38	7,319.19	-2,946.95	1,054.37	3,097.44	3.25	-2.09	-2.48	
9,926.00	89.06	145.93	7,319.61	-2,999.27	1,089.46	3,160.10	1.90	-1.76	-0.71	
9,989.00	88.86	146.08	7,320.75	-3,051.49	1,124.68	3,222.74	0.40	-0.32	0.24	
10,021.00	89.83	146.10	7,321.12	-3,078.05	1,142.53	3,254.56	3.03	3.03	0.06	
10,053.00	89.93	145.35	7,321.19	-3,104.49	1,160.55	3,286.37	2.36	0.31	-2.34	
10,085.00	88.69	145.59	7,321.57	-3,130.85	1,178.68	3,318.15	3.95	-3.88	0.75	
10,117.00	87.85	145.71	7,322.54	-3,157.26	1,196.73	3,349.94	2.65	-2.63	0.38	
10,148.00	88.05	145.77	7,323.65	-3,182.86	1,214.17	3,380.73	0.67	0.65	0.19	
10,180.00	88.72	145.67	7,324.55	-3,209.30	1,232.19	3,412.52	2.12	2.09	-0.31	
10,212.00	88.62	146.17	7,325.29	-3,235.79	1,250.12	3,444.33	1.59	-0.31	1.56	
10,244.00	87.52	146.22	7,326.37	-3,262.37	1,267.91	3,476.15	3.44	-3.44	0.16	
10,276.00	87.24	146.07	7,327.83	-3,288.91	1,285.72	3,507.94	0.99	-0.88	-0.47	
10,307.00	87.62	145.91	7,329.22	-3,314.58	1,303.04	3,538.74	1.33	1.23	-0.52	
10,370.00	87.85	145.56	7,331.71	-3,366.61	1,338.48	3,601.30	0.66	0.37	-0.56	
10,433.00	88.52	144.77	7,333.71	-3,418.29	1,374.45	3,663.82	1.64	1.06	-1.25	
10,497.00	88.62	144.98	7,335.30	-3,470.62	1,411.26	3,727.30	0.36	0.16	0.33	
10,560.00	89.13	145.61	7,336.54	-3,522.40	1,447.12	3,789.85	1.29	0.81	1.00	
10,623.00	89.50	145.80	7,337.29	-3,574.45	1,482.62	3,852.45	0.66	0.59	0.30	
10,687.00	89.23	146.15	7,338.00	-3,627.49	1,518.43	3,916.09	0.69	-0.42	0.55	
10,750.00	89.77	146.43	7,338.55	-3,679.89	1,553.39	3,978.77	0.97	0.86	0.44	
10,814.00	89.76	146.64	7,338.81	-3,733.28	1,588.68	4,042.47	0.33	-0.02	0.33	
10,877.00	90.47	146.10	7,338.69	-3,785.74	1,623.57	4,105.16	1.42	1.13	-0.86	
10,941.00	87.45	145.55	7,339.85	-3,838.67	1,659.51	4,168.76	4.80	0.86	0.86	
11,004.00	88.22	145.17	7,342.23	-3,890.47	1,695.30	4,231.29	1.36	1.22	-0.60	
11,067.00	88.66	144.51	7,343.94	-3,941.95	1,731.56	4,293.77	1.26	-0.70	-1.05	
11,130.00	88.66	143.73	7,345.42	-3,992.98	1,768.48	4,356.15	1.24	0.00	-1.24	
11,194.00	88.22	142.62	7,347.16	-4,044.19	1,806.82	4,419.35	1.87	-0.69	-1.73	

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06/12/2015



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Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 20H - Slot MW3#20H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 20H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	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)
11,258.00	88.89	142.12	7,348.77	-4,094.86	1,845.88	4,482.42	1.31	1.05	-0.78
11,321.00	89.73	141.67	7,349.53	-4,144.43	1,884.76	4,544.43	1.51	1.33	-0.71
11,384.00	90.47	140.96	7,349.42	-4,193.61	1,924.13	4,606.32	1.63	1.17	-1.13
11,447.00	91.07	141.11	7,348.58	-4,242.59	1,963.75	4,668.16	0.98	0.95	0.24
11,511.00	90.50	142.04	7,347.70	-4,292.72	2,003.52	4,731.08	1.70	-0.89	1.45
11,574.00	89.19	142.36	7,347.87	-4,342.50	2,042.13	4,793.15	2.14	-2.08	0.51
11,638.00	88.69	142.82	7,349.05	-4,393.33	2,081.01	4,856.27	1.06	-0.78	0.72
11,701.00	89.43	142.88	7,350.09	-4,443.53	2,119.05	4,918.45	1.18	1.17	0.10
11,765.00	88.89	144.68	7,351.03	-4,495.16	2,156.86	4,981.77	2.94	-0.84	2.81
11,828.00	88.22	146.62	7,352.61	-4,547.15	2,192.39	5,044.35	3.26	-1.06	3.08
11,891.00	88.39	146.98	7,354.48	-4,599.85	2,226.87	5,107.06	0.63	0.27	0.57
11,955.00	87.38	147.08	7,356.84	-4,653.50	2,261.68	5,170.77	1.59	-1.58	0.16
12,018.00	88.19	147.47	7,359.28	-4,706.46	2,295.71	5,233.50	1.43	1.29	0.62
12,081.00	91.68	148.35	7,359.35	-4,759.83	2,329.17	5,296.33	5.71	5.54	1.40
12,145.00	92.45	148.81	7,357.04	-4,814.41	2,362.51	5,360.17	1.40	1.20	0.72
12,208.00	91.95	150.89	7,354.62	-4,868.84	2,394.13	5,423.07	3.39	-0.79	3.30
12,272.00	92.05	151.81	7,352.39	-4,924.97	2,424.80	5,487.03	1.45	0.16	1.44
12,335.00	92.18	151.98	7,350.06	-4,980.50	2,454.46	5,549.98	0.34	0.21	0.27
12,399.00	90.47	153.19	7,348.58	-5,037.30	2,483.91	5,613.96	3.27	-2.67	1.89
12,463.00	88.39	152.55	7,349.22	-5,094.25	2,513.10	5,677.95	3.40	-3.25	-1.00
12,526.00	88.12	152.10	7,351.14	-5,150.02	2,542.34	5,740.92	0.83	-0.43	-0.71
12,590.00	88.32	151.16	7,353.13	-5,206.30	2,572.74	5,804.88	1.50	0.31	-1.47
12,653.00	87.95	151.25	7,355.18	-5,261.48	2,603.07	5,867.84	0.60	-0.59	0.14
12,717.00	87.41	149.23	7,357.77	-5,316.99	2,634.81	5,931.76	3.26	-0.84	-3.16
12,780.00	87.32	148.51	7,360.66	-5,370.86	2,667.34	5,994.59	1.15	-0.14	-1.14
12,843.00	85.67	147.21	7,364.52	-5,424.11	2,700.79	6,057.30	3.33	-2.62	-2.06
12,875.00	85.93	147.05	7,366.86	-5,450.91	2,718.11	6,089.10	0.95	0.81	-0.50
Last SDI MWD Survey									
12,932.00	85.93	147.05	7,370.90	-5,498.62	2,749.04	6,145.74	0.00	0.00	0.00
Projection to Bit									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
103.00	103.00	-0.02	-0.30	First SDI Gyro Survey
5,489.87	5,487.71	6.59	52.80	Last SDI Gyro Survey
5,536.00	5,533.72	3.23	52.62	First SDI MWD Survey
12,875.00	7,366.86	-5,450.91	2,718.11	Last SDI MWD Survey
12,932.00	7,370.90	-5,498.62	2,749.04	Projection to Bit

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FEB 26 2015

Checked By: _____ Approved By: _____ Date: _____