



Project: Heather Prospect (NAD 27)  
 Site: Mills-Wetzel Pad 3  
 Well: Mills-Wetzel 21H  
 Wellbore: OH  
 Design: As Drilled



WELL DETAILS: Mills-Wetzel 21H

+N/-S +E/-W 0.00 0.00  
 Northing 369590.08  
 Easting 1668999.8239° 30' 35.662"N  
 Longitude 80° 40' 23.456"W  
 Slot MW3#21H

REFERENCE INFORMATION

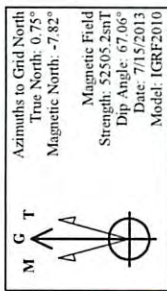
Co-ordinate (N/E) Reference: Well Mills-Wetzel 21H - Slot MW3#21H, Grid North  
 Vertical (TVD) Reference: GL 1291' & KB 18' @ 1309.00ft (Saxon 141)  
 Section (VS) Reference: Slot - MW3#21H(0.00N, 0.00E)  
 Measured Depth Reference: GL 1291' & KB 18' @ 1309.00ft (Saxon 141)  
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Heather Prospect (NAD 27)

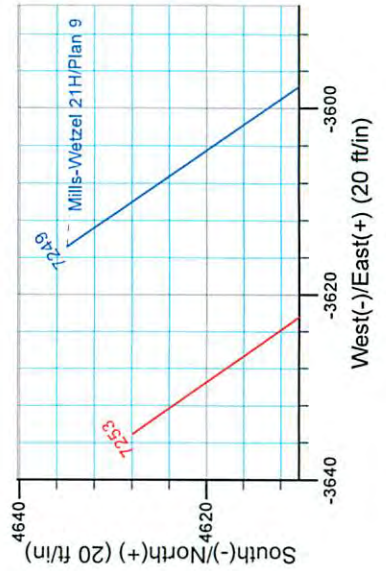
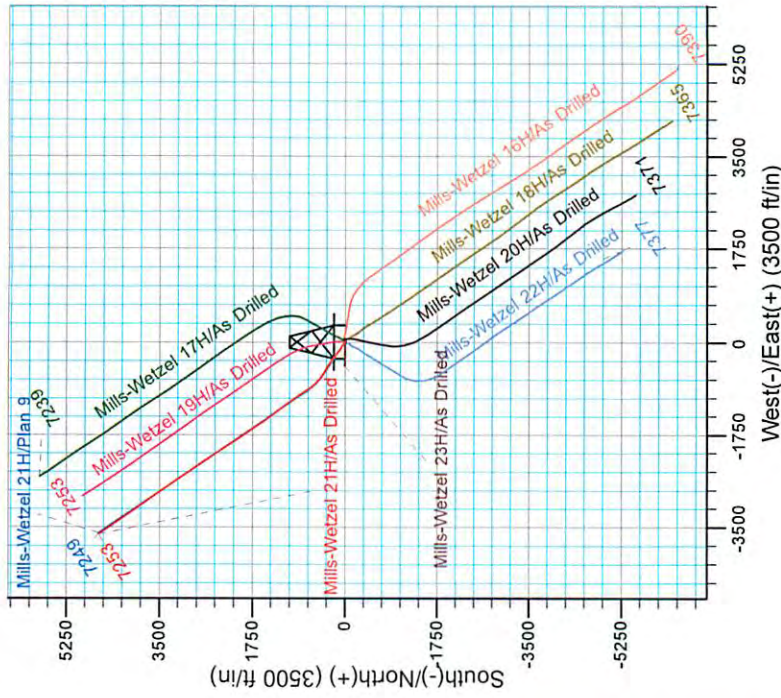
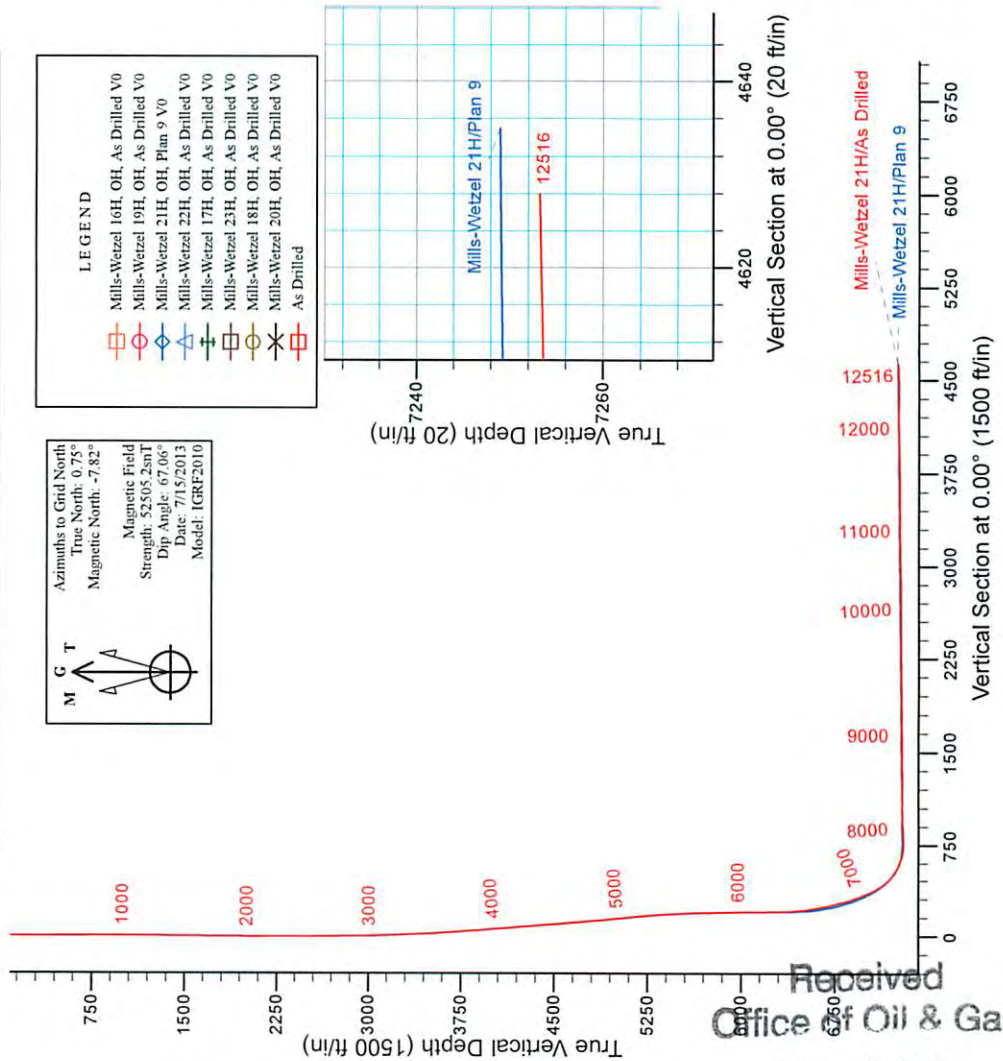
Geodetic System: US State Plane 1927 (Exact solution)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: West Virginia North - 4701  
 System Datum: Mean Sea Level

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
15921.00	2.29	306.21	5898.23	190.96	-275.31	0.00	0.00	0.00	319.89	
26421.00	0.00	0.00	6398.09	196.87	-283.37	0.46	180.00	329.51		
37298.36	55.67	303.66	7143.76	415.09	-611.13	6.35	303.66	703.15		
47803.16	90.50	325.45	7290.00	752.56	-941.56	8.00	34.97	172.47	MW21H_LP3	
62517.06	90.50	325.45	7249.00	4634.95	-3614.83	0.00	0.06	877.89	MW21H_BHL3	

SECTION DETAILS



- LEGEND
- Mills-Wetzel 16H, OH, As Drilled V0
  - Mills-Wetzel 19H, OH, As Drilled V0
  - Mills-Wetzel 21H, OH, Plan 9 V0
  - Mills-Wetzel 22H, OH, As Drilled V0
  - Mills-Wetzel 17H, OH, As Drilled V0
  - Mills-Wetzel 23H, OH, As Drilled V0
  - Mills-Wetzel 18H, OH, As Drilled V0
  - Mills-Wetzel 20H, OH, As Drilled V0
  - As Drilled



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## Stone Energy

Heather Prospect (NAD 27)

Mills-Wetzel Pad 3

Mills-Wetzel 21H - Slot MW3#21H

OH

Design: As Drilled

## Standard Survey Report

29 July, 2013

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06/12/2015





<b>Company:</b> Stone Energy	<b>Local Co-ordinate Reference:</b> Well Mills-Wetzel 21H - Slot MW3#21H
<b>Project:</b> Heather Prospect (NAD 27)	<b>TVD Reference:</b> GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b> Mills-Wetzel Pad 3	<b>MD Reference:</b> GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b> Mills-Wetzel 21H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> As Drilled	<b>Database:</b> Northeast District

<b>Project</b> Heather Prospect (NAD 27), Wetzel County, 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> Mills-Wetzel Pad 3
<b>Site Position:</b> <b>Northing:</b> 370,004.38 usft <b>Latitude:</b> 39° 30' 35.809 N
<b>From:</b> Map <b>Easting:</b> 1,669,041.12 usft <b>Longitude:</b> 80° 40' 22.931 W
<b>Position Uncertainty:</b> 0.00 ft <b>Slot Radius:</b> 13-3/16 " <b>Grid Convergence:</b> -0.75 °

<b>Well</b> Mills-Wetzel 21H - Slot MW3#21H
<b>Well Position</b> <b>+N/-S</b> 0.00 ft <b>Northing:</b> 369,990.08 usft <b>Latitude:</b> 39° 30' 35.662 N
<b>+E/-W</b> 0.00 ft <b>Easting:</b> 1,668,999.82 usft <b>Longitude:</b> 80° 40' 23.456 W
<b>Position Uncertainty</b> 0.00 ft <b>Wellhead Elevation:</b> ft <b>Ground Level:</b> 1,291.00 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	4/4/2013	-8.55	67.08	52,539
	IGRF2010	7/15/2013	-8.56	67.06	52,505

<b>Design</b> 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	0.00

<b>Survey Program</b>	<b>Date</b> 7/29/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
18.00	5,883.73	Survey #3 - Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3
5,912.00	12,516.00	Survey 4 - 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	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Ground Level</b>									
100.19	0.18	215.06	100.19	-0.11	-0.07	-0.11	0.22	0.22	0.00
<b>First SDI Gyro Survey</b>									
103.00	0.17	206.46	103.00	-0.11	-0.08	-0.11	1.00	-0.36	306.05
203.00	0.11	101.20	203.00	-0.26	-0.05	-0.26	0.23	-0.06	-105.26
303.00	0.04	71.69	303.00	-0.27	0.08	-0.27	0.08	-0.07	-29.51

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<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 21H - Slot MW3#21H
<b>Project:</b>	Heather Prospect (NAD 27)	<b>TVD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b>	Mills-Wetzel Pad 3	<b>MD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b>	Mills-Wetzel 21H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	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)
403.00	0.14	356.29	403.00	-0.14	0.10	-0.14	0.14	0.10	-75.40
503.00	0.14	69.40	503.00	0.03	0.21	0.03	0.17	0.00	73.11
603.00	0.12	107.15	603.00	0.04	0.42	0.04	0.09	-0.02	37.75
703.00	0.24	81.88	703.00	0.04	0.73	0.04	0.14	0.12	-25.27
803.00	0.30	90.80	802.99	0.06	1.20	0.06	0.07	0.06	8.92
903.00	0.30	113.18	902.99	-0.04	1.70	-0.04	0.12	0.00	22.38
1,003.00	0.16	118.15	1,002.99	-0.21	2.07	-0.21	0.14	-0.14	4.97
1,103.00	0.33	148.18	1,102.99	-0.52	2.34	-0.52	0.21	0.17	30.03
1,203.00	0.19	115.16	1,202.99	-0.84	2.64	-0.84	0.20	-0.14	-33.02
1,303.00	0.23	133.52	1,302.99	-1.05	2.94	-1.05	0.08	0.04	18.36
1,403.00	0.42	139.59	1,402.99	-1.47	3.32	-1.47	0.19	0.19	6.07
1,503.00	0.25	159.78	1,502.99	-1.95	3.63	-1.95	0.20	-0.17	20.19
1,603.00	0.16	181.62	1,602.99	-2.29	3.71	-2.29	0.12	-0.09	21.84
1,703.00	0.17	154.46	1,702.99	-2.57	3.77	-2.57	0.08	0.01	-27.16
1,803.00	0.46	167.81	1,802.98	-3.09	3.91	-3.09	0.30	0.29	13.35
1,903.00	0.53	214.03	1,902.98	-3.87	3.74	-3.87	0.39	0.07	46.22
2,003.00	0.32	169.41	2,002.98	-4.53	3.53	-4.53	0.38	-0.21	-44.62
2,103.00	0.58	280.02	2,102.98	-4.71	3.09	-4.71	0.75	0.26	110.61
2,203.00	0.40	85.40	2,202.97	-4.60	2.94	-4.60	0.97	-0.18	165.38
2,303.00	0.79	93.18	2,302.97	-4.61	3.97	-4.61	0.40	0.39	7.78
2,403.00	0.61	88.10	2,402.96	-4.63	5.19	-4.63	0.19	-0.18	-5.08
2,503.00	0.48	76.86	2,502.96	-4.51	6.13	-4.51	0.17	-0.13	-11.24
2,603.00	0.72	87.92	2,602.95	-4.40	7.17	-4.40	0.27	0.24	11.06
2,703.00	0.57	74.39	2,702.95	-4.24	8.27	-4.24	0.21	-0.15	-13.53
2,803.00	0.53	23.02	2,802.94	-3.68	8.93	-3.68	0.48	-0.04	-51.37
2,903.00	0.60	11.51	2,902.94	-2.74	9.22	-2.74	0.13	0.07	-11.51
3,003.00	0.51	355.74	3,002.93	-1.78	9.29	-1.78	0.18	-0.09	-15.77
3,103.00	2.66	318.30	3,102.89	0.39	7.71	0.39	2.28	2.15	-37.44
3,203.00	3.21	315.84	3,202.76	4.13	4.22	4.13	0.56	0.55	-2.46
3,303.00	4.27	308.48	3,302.54	8.46	-0.64	8.46	1.16	1.06	-7.36
3,403.00	5.25	301.73	3,402.20	13.18	-7.45	13.18	1.13	0.98	-6.75
3,503.00	5.64	297.30	3,501.75	17.84	-15.71	17.84	0.57	0.39	-4.43
3,603.00	7.23	296.91	3,601.11	22.94	-25.69	22.94	1.59	1.59	-0.39
3,703.00	7.92	296.16	3,700.24	28.83	-37.48	28.83	0.70	0.69	-0.75
3,803.00	8.54	303.07	3,799.21	35.92	-49.89	35.92	1.17	0.62	6.91
3,903.00	8.94	302.98	3,898.05	44.20	-62.63	44.20	0.40	0.40	-0.09
4,003.00	9.37	302.83	3,996.78	52.84	-75.99	52.84	0.43	0.43	-0.15
4,103.00	8.42	303.39	4,095.57	61.28	-88.94	61.28	0.95	-0.95	0.56
4,203.00	8.48	300.80	4,194.49	69.09	-101.39	69.09	0.39	0.06	-2.59
4,303.00	8.97	301.75	4,293.33	76.97	-114.35	76.97	0.51	0.49	0.95
4,403.00	8.12	303.19	4,392.22	84.94	-126.89	84.94	0.88	-0.95	1.44
4,503.00	7.92	300.45	4,491.24	92.29	-138.74	92.29	0.43	-0.20	-2.74
4,603.00	8.41	303.98	4,590.23	99.87	-150.74	99.87	0.70	0.49	3.53
4,703.00	8.72	305.63	4,689.11	108.37	-162.97	108.37	0.40	0.31	1.65

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Scientific Drilling International  
Survey Report



<b>Company:</b> Stone Energy	<b>Local Co-ordinate Reference:</b> Well Mills-Wetzel 21H - Slot MW3#21H
<b>Project:</b> Heather Prospect (NAD 27)	<b>TVD Reference:</b> GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b> Mills-Wetzel Pad 3	<b>MD Reference:</b> GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b> Mills-Wetzel 21H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> 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)
4,803.00	8.19	311.37	4,788.03	117.50	-174.47	117.50	1.00	-0.53	5.74
4,903.00	8.08	312.22	4,887.02	126.93	-185.02	126.93	0.16	-0.11	0.85
5,003.00	7.82	310.78	4,986.06	136.09	-195.38	136.09	0.33	-0.26	-1.44
5,103.00	8.60	310.15	5,085.04	145.36	-206.25	145.36	0.79	0.78	-0.63
5,203.00	8.82	309.35	5,183.88	155.04	-217.89	155.04	0.25	0.22	-0.80
5,303.00	8.19	308.87	5,282.78	164.37	-229.36	164.37	0.63	-0.63	-0.48
5,403.00	7.27	304.25	5,381.87	172.40	-240.14	172.40	1.11	-0.92	-4.62
5,503.00	5.30	295.31	5,481.27	177.94	-249.55	177.94	2.19	-1.97	-8.94
5,603.00	4.98	296.13	5,580.87	181.83	-257.62	181.83	0.33	-0.32	0.82
5,703.00	3.57	296.34	5,680.59	185.12	-264.31	185.12	1.41	-1.41	0.21
5,803.00	3.41	296.32	5,780.40	187.82	-269.76	187.82	0.16	-0.16	-0.02
5,883.73	3.15	300.38	5,861.00	190.01	-273.83	190.01	0.43	-0.32	5.03
<b>First SDI MWD Survey</b>									
5,912.00	2.03	301.97	5,889.24	190.66	-274.92	190.66	3.97	-3.96	5.62
5,973.00	1.79	303.94	5,950.21	191.77	-276.63	191.77	0.41	-0.39	3.23
6,034.00	1.68	304.59	6,011.18	192.81	-278.16	192.81	0.18	-0.18	1.07
6,095.00	1.53	307.31	6,072.16	193.81	-279.54	193.81	0.28	-0.25	4.46
6,155.00	1.28	306.91	6,132.14	194.70	-280.71	194.70	0.42	-0.42	-0.67
6,216.00	1.16	312.83	6,193.12	195.52	-281.71	195.52	0.29	-0.20	9.70
6,278.00	1.24	314.61	6,255.11	196.42	-282.65	196.42	0.14	0.13	2.87
6,338.00	1.04	307.08	6,315.10	197.21	-283.54	197.21	0.42	-0.33	-12.55
6,369.00	1.02	309.76	6,346.09	197.55	-283.98	197.55	0.17	-0.06	8.65
6,399.00	0.91	306.36	6,376.09	197.87	-284.38	197.87	0.41	-0.37	-11.33
6,429.00	1.85	316.75	6,406.08	198.36	-284.90	198.36	3.23	3.13	34.63
6,460.00	4.31	325.72	6,437.03	199.69	-285.90	199.69	8.06	7.94	28.94
6,490.00	7.14	329.78	6,466.88	202.23	-287.47	202.23	9.52	9.43	13.53
6,521.00	9.51	331.49	6,497.55	206.14	-289.67	206.14	7.69	7.65	5.52
6,551.00	11.25	328.16	6,527.06	210.81	-292.39	210.81	6.13	5.80	-11.10
6,581.00	12.95	322.03	6,556.39	215.95	-296.01	215.95	7.10	5.67	-20.43
6,611.00	15.75	317.03	6,585.46	221.58	-300.85	221.58	10.20	9.33	-16.67
6,642.00	17.45	312.24	6,615.17	227.78	-307.16	227.78	7.04	5.48	-15.45
6,672.00	18.70	307.74	6,643.69	233.75	-314.29	233.75	6.24	4.17	-15.00
6,702.00	19.92	306.06	6,672.00	239.70	-322.23	239.70	4.47	4.07	-5.60
6,732.00	21.12	305.07	6,700.09	245.81	-330.78	245.81	4.16	4.00	-3.30
6,762.00	22.19	302.04	6,727.98	251.93	-340.01	251.93	5.16	3.57	-10.10
6,793.00	23.26	300.63	6,756.57	258.15	-350.24	258.15	3.87	3.45	-4.55
6,823.00	25.01	300.99	6,783.95	264.43	-360.78	264.43	5.85	5.83	1.20
6,854.00	26.95	301.64	6,811.81	271.49	-372.37	271.49	6.33	6.26	2.10
6,884.00	28.84	302.84	6,838.33	278.98	-384.24	278.98	6.57	6.30	1.10
6,916.00	30.71	303.98	6,866.10	287.74	-397.50	287.74	6.11	5.91	0.55
6,948.00	32.27	303.80	6,893.39	297.06	-411.38	297.06	4.88	4.88	-0.56
6,979.00	33.57	303.41	6,919.41	306.38	-425.41	306.38	4.25	4.19	-0.26
7,011.00	35.56	301.90	6,945.76	316.17	-440.70	316.17	6.77	6.22	-4.72

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<b>Well:</b>	Mills-Wetzel 21H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	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)
7,043.00	37.85	300.83	6,971.41	326.12	-457.03	326.12	7.43	7.16	-3.34
7,075.00	40.09	300.12	6,996.29	336.32	-474.38	336.32	7.14	7.00	-2.22
7,107.00	41.89	300.42	7,020.44	346.90	-492.50	346.90	5.66	5.63	0.94
7,138.00	44.72	300.76	7,043.00	357.72	-510.80	357.72	9.16	9.13	1.10
7,170.00	47.40	300.58	7,065.20	369.48	-530.62	369.48	8.38	8.38	-0.56
7,201.00	50.58	300.34	7,085.54	381.33	-550.78	381.33	10.27	10.26	-0.77
7,233.00	52.55	300.14	7,105.43	393.96	-572.44	393.96	6.18	6.16	-0.63
7,264.00	54.10	300.95	7,123.95	406.59	-593.85	406.59	5.42	5.00	2.61
7,296.00	55.14	301.93	7,142.48	420.20	-616.11	420.20	4.10	3.25	3.06
7,328.00	57.19	305.02	7,160.30	434.87	-638.27	434.87	10.26	6.41	9.66
7,359.00	59.45	306.81	7,176.58	450.34	-659.63	450.34	8.79	7.29	5.77
7,391.00	62.42	309.29	7,192.12	467.59	-681.64	467.59	11.49	9.28	7.75
7,423.00	64.46	311.09	7,206.43	486.06	-703.50	486.06	8.12	6.38	5.63
7,454.00	66.63	312.95	7,219.27	504.95	-724.46	504.95	8.88	7.00	6.00
7,486.00	67.94	314.68	7,231.62	525.38	-745.76	525.38	6.45	4.09	5.41
7,518.00	69.61	315.82	7,243.21	546.57	-766.76	546.57	6.19	5.22	3.56
7,550.00	70.76	318.14	7,254.06	568.58	-787.29	568.58	7.71	3.59	7.25
7,581.00	72.62	320.04	7,263.80	590.82	-806.56	590.82	8.36	6.00	6.13
7,613.00	73.11	321.78	7,273.22	614.55	-825.84	614.55	5.42	1.53	5.44
7,645.00	75.40	323.70	7,281.91	639.07	-844.48	639.07	9.20	7.16	6.00
7,677.00	78.08	325.33	7,289.25	664.43	-862.56	664.43	9.73	8.38	5.09
7,708.00	82.22	326.26	7,294.55	689.68	-879.73	689.68	13.68	13.35	3.00
7,770.00	90.64	326.51	7,298.41	741.17	-913.95	741.17	13.59	13.58	0.40
7,834.00	91.44	325.85	7,297.24	794.33	-949.57	794.33	1.62	1.25	-1.03
7,897.00	92.30	325.47	7,295.19	846.32	-985.09	846.32	1.49	1.37	-0.60
7,960.00	93.02	324.88	7,292.27	897.98	-1,021.02	897.98	1.48	1.14	-0.94
8,023.00	92.65	323.93	7,289.15	949.14	-1,057.65	949.14	1.62	-0.59	-1.51
8,087.00	91.11	323.35	7,287.05	1,000.65	-1,095.57	1,000.65	2.57	-2.41	-0.91
8,150.00	89.90	323.40	7,286.49	1,051.21	-1,133.15	1,051.21	1.92	-1.92	0.08
8,213.00	88.66	322.86	7,287.29	1,101.61	-1,170.95	1,101.61	2.15	-1.97	-0.86
8,277.00	88.39	323.25	7,288.93	1,152.74	-1,209.40	1,152.74	0.74	-0.42	0.61
8,340.00	89.13	323.40	7,290.30	1,203.26	-1,247.02	1,203.26	1.20	1.17	0.24
8,404.00	89.83	323.09	7,290.88	1,254.53	-1,285.32	1,254.53	1.20	1.09	-0.48
8,467.00	90.37	323.11	7,290.77	1,304.91	-1,323.14	1,304.91	0.86	0.86	0.03
8,531.00	90.60	323.02	7,290.23	1,356.06	-1,361.60	1,356.06	0.39	0.36	-0.14
8,594.00	90.64	322.94	7,289.54	1,406.36	-1,399.53	1,406.36	0.14	0.06	-0.13
8,657.00	90.84	323.68	7,288.73	1,456.88	-1,437.17	1,456.88	1.22	0.32	1.17
8,720.00	90.87	324.51	7,287.79	1,507.90	-1,474.11	1,507.90	1.32	0.05	1.32
8,784.00	90.44	323.97	7,287.06	1,559.83	-1,511.51	1,559.83	1.08	-0.67	-0.84
8,847.00	89.63	324.72	7,287.02	1,611.02	-1,548.23	1,611.02	1.75	-1.29	-1.19
8,911.00	90.17	325.22	7,287.13	1,663.43	-1,584.96	1,663.43	1.15	0.61	0.78
8,974.00	90.13	325.29	7,286.97	1,715.19	-1,620.87	1,715.19	0.13	-0.06	0.11
9,037.00	90.23	325.90	7,286.77	1,767.17	-1,656.47	1,767.17	0.98	0.16	0.97

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Survey Report



<b>Company:</b> Stone Energy	<b>Local Co-ordinate Reference:</b> Well Mills-Wetzel 21H - Slot MW3#21H
<b>Project:</b> Heather Prospect (NAD 27)	<b>TVD Reference:</b> GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b> Mills-Wetzel Pad 3	<b>MD Reference:</b> GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b> Mills-Wetzel 21H	<b>North Reference:</b> Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> 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)
9,101.00	91.17	326.54	7,285.99	1,820.36	-1,692.05	1,820.36	1.78	1.47	1.00
9,165.00	90.91	325.99	7,284.83	1,873.58	-1,727.58	1,873.58	0.95	-0.41	-0.86
9,229.00	90.23	325.98	7,284.19	1,926.62	-1,763.38	1,926.62	1.06	-1.06	-0.02
9,292.00	90.57	326.33	7,283.75	1,978.94	-1,798.47	1,978.94	0.77	0.54	0.56
9,356.00	91.38	326.19	7,282.66	2,032.16	-1,834.01	2,032.16	1.28	1.27	-0.22
9,419.00	91.17	326.12	7,281.26	2,084.47	-1,869.09	2,084.47	0.35	-0.33	-0.11
9,483.00	90.54	325.74	7,280.30	2,137.48	-1,904.94	2,137.48	1.15	-0.98	-0.59
9,546.00	90.84	325.49	7,279.54	2,189.46	-1,940.52	2,189.46	0.62	0.48	-0.40
9,610.00	90.67	325.08	7,278.70	2,242.07	-1,976.96	2,242.07	0.69	-0.27	-0.64
9,674.00	90.17	326.38	7,278.23	2,294.95	-2,013.00	2,294.95	2.18	-0.78	2.03
9,737.00	89.87	326.68	7,278.21	2,347.51	-2,047.74	2,347.51	0.67	-0.48	0.48
9,801.00	90.54	326.22	7,277.98	2,400.84	-2,083.11	2,400.84	1.27	1.05	-0.72
9,865.00	90.47	326.29	7,277.42	2,454.06	-2,118.66	2,454.06	0.15	-0.11	0.11
9,928.00	90.03	326.61	7,277.14	2,506.56	-2,153.48	2,506.56	0.86	-0.70	0.51
9,991.00	89.77	325.87	7,277.25	2,558.94	-2,188.49	2,558.94	1.24	-0.41	-1.17
10,055.00	89.26	325.46	7,277.79	2,611.78	-2,224.59	2,611.78	1.02	-0.80	-0.64
10,118.00	90.27	325.68	7,278.05	2,663.75	-2,260.21	2,663.75	1.64	1.60	0.35
10,182.00	90.77	326.05	7,277.47	2,716.72	-2,296.12	2,716.72	0.97	0.78	0.58
10,245.00	91.17	326.34	7,276.40	2,769.06	-2,331.16	2,769.06	0.78	0.63	0.46
10,371.00	90.50	326.30	7,274.57	2,873.90	-2,401.03	2,873.90	0.53	-0.53	-0.03
10,434.00	90.27	326.14	7,274.15	2,926.26	-2,436.06	2,926.26	0.44	-0.37	-0.25
10,497.00	90.91	325.44	7,273.50	2,978.36	-2,471.48	2,978.36	1.51	1.02	-1.11
10,561.00	90.57	324.64	7,272.67	3,030.80	-2,508.14	3,030.80	1.36	-0.53	-1.25
10,624.00	90.10	324.57	7,272.30	3,082.16	-2,544.63	3,082.16	0.75	-0.75	-0.11
10,684.00	91.11	324.79	7,271.67	3,131.11	-2,579.32	3,131.11	1.72	1.68	0.37
10,747.00	90.91	324.42	7,270.56	3,182.46	-2,615.80	3,182.46	0.67	-0.32	-0.59
10,809.00	89.46	324.51	7,270.36	3,232.91	-2,651.84	3,232.91	2.34	-2.34	0.15
10,872.00	89.50	324.97	7,270.93	3,284.35	-2,688.21	3,284.35	0.73	0.06	0.73
10,936.00	90.13	324.33	7,271.14	3,336.55	-2,725.23	3,336.55	1.40	0.98	-1.00
10,999.00	90.64	323.56	7,270.71	3,387.48	-2,762.31	3,387.48	1.47	0.81	-1.22
11,063.00	90.64	324.01	7,270.00	3,439.11	-2,800.12	3,439.11	0.70	0.00	0.70
11,126.00	91.28	324.35	7,268.94	3,490.19	-2,836.99	3,490.19	1.15	1.02	0.54
11,190.00	91.38	324.74	7,267.46	3,542.31	-2,874.10	3,542.31	0.63	0.16	0.61
11,253.00	90.81	325.08	7,266.25	3,593.85	-2,910.31	3,593.85	1.05	-0.90	0.54
11,317.00	90.50	324.86	7,265.52	3,646.25	-2,947.04	3,646.25	0.59	-0.48	-0.34
11,380.00	90.54	325.32	7,264.95	3,697.91	-2,983.10	3,697.91	0.73	0.06	0.73
11,444.00	90.20	324.81	7,264.54	3,750.38	-3,019.74	3,750.38	0.96	-0.53	-0.80
11,507.00	89.73	324.79	7,264.57	3,801.86	-3,056.06	3,801.86	0.75	-0.75	-0.03
11,571.00	90.60	325.55	7,264.39	3,854.39	-3,092.61	3,854.39	1.81	1.36	1.19
11,633.00	91.51	325.45	7,263.25	3,905.48	-3,127.72	3,905.48	1.48	1.47	1.15
11,696.00	92.51	325.39	7,261.04	3,957.32	-3,163.46	3,957.32	1.59	1.59	1.10
11,759.00	91.01	325.60	7,259.10	4,009.21	-3,199.13	4,009.21	2.40	-2.38	0.33
11,823.00	89.16	324.46	7,259.01	4,061.65	-3,235.81	4,061.65	3.40	-2.89	0.78
11,886.00	89.73	324.58	7,259.62	4,112.95	-3,272.37	4,112.95	0.92	0.90	0.19

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<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 21H - Slot MW3#21H
<b>Project:</b>	Heather Prospect (NAD 27)	<b>TVD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b>	Mills-Wetzel Pad 3	<b>MD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b>	Mills-Wetzel 21H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	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)	
11,950.00	90.54	325.01	7,259.47	4,165.24	-3,309.27	4,165.24	1.43	1.27	0.67	
12,013.00	90.87	324.60	7,258.69	4,216.72	-3,345.57	4,216.72	0.84	0.52	-0.65	
12,077.00	88.93	324.86	7,258.81	4,268.97	-3,382.53	4,268.97	3.06	-3.03	0.41	
12,140.00	89.76	324.95	7,259.53	4,320.51	-3,418.75	4,320.51	1.33	1.32	0.14	
12,204.00	90.57	324.82	7,259.34	4,372.87	-3,455.56	4,372.87	1.28	1.27	-0.20	
12,267.00	91.24	324.69	7,258.35	4,424.31	-3,491.91	4,424.31	1.08	1.06	-0.21	
12,330.00	91.01	325.11	7,257.11	4,475.84	-3,528.13	4,475.84	0.76	-0.37	0.67	
12,394.00	91.51	325.06	7,255.70	4,528.31	-3,564.75	4,528.31	0.79	0.78	-0.08	
12,457.00	91.04	324.64	7,254.30	4,579.81	-3,601.01	4,579.81	1.00	-0.75	-0.67	
<b>Last SDI MWD Survey</b>										
12,516.00	91.04	324.64	7,253.23	4,627.92	-3,635.15	4,627.92	0.00	0.00	0.00	
<b>Projection to Bit</b>										

Design Annotations					
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	
100.19	100.19	-0.11	-0.07	First SDI Gyro Survey	
5,883.73	5,861.00	190.01	-273.83	First SDI MWD Survey	
12,457.00	7,254.30	4,579.81	-3,601.01	Last SDI MWD Survey	
12,516.00	7,253.23	4,627.92	-3,635.15	Projection to Bit	

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

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