



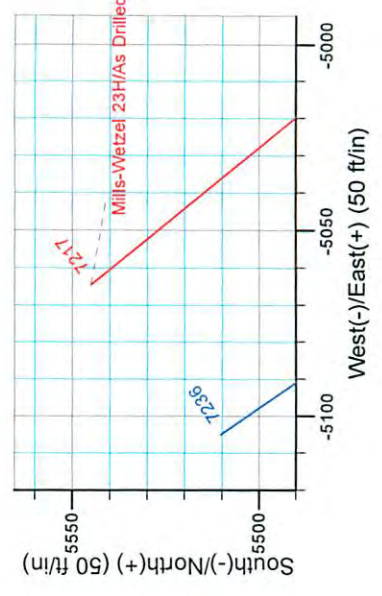
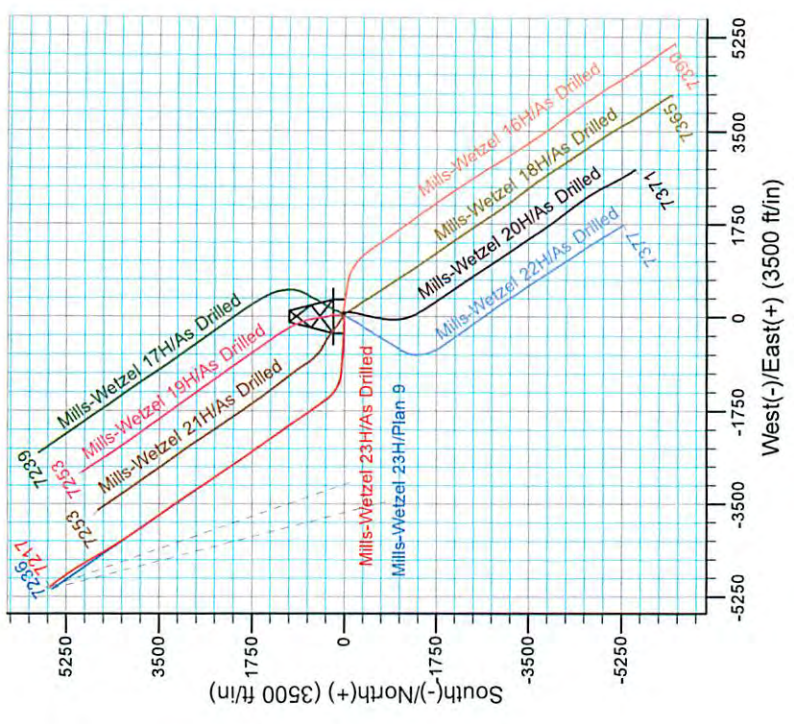
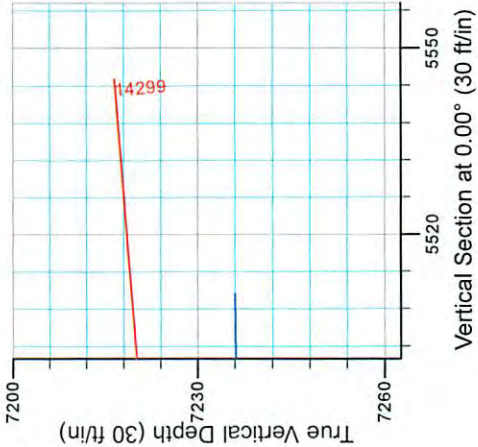
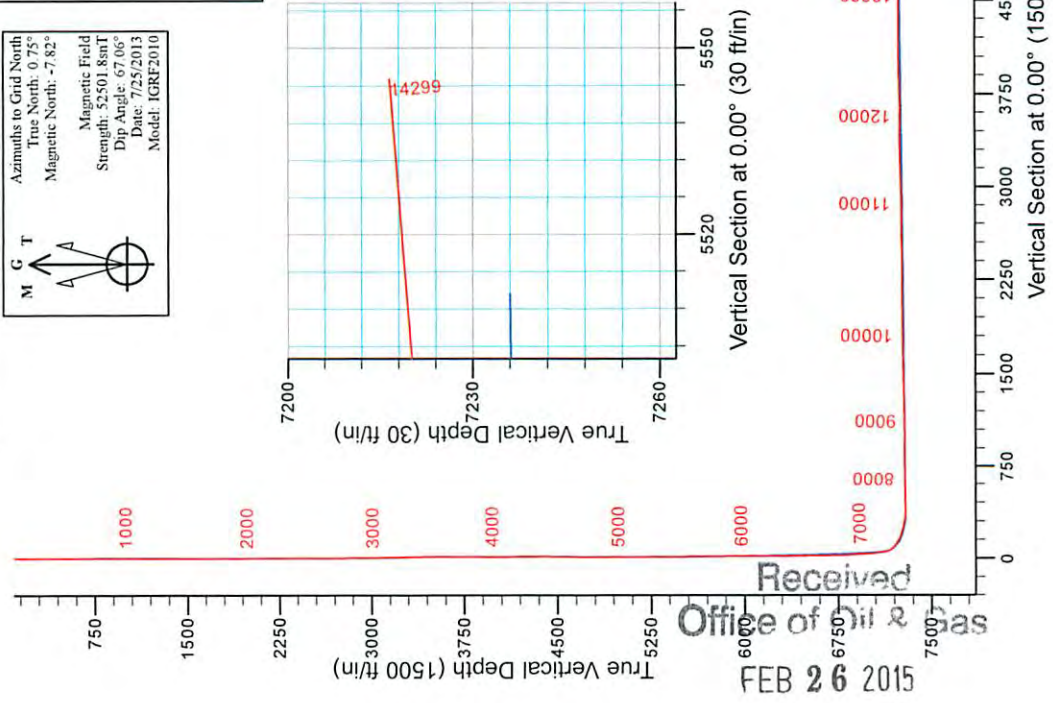
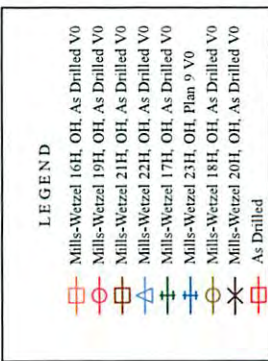
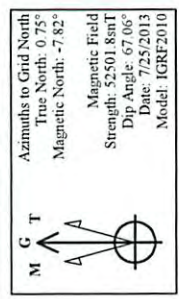
Project: Heather Prospect (NAD 27)  
 Site: Mills-Wetzel Pad 3  
 Well: Mills-Wetzel 23H  
 Wellbore: OH  
 Design: As Drilled



**WELL DETAILS:** Mills-Wetzel 23H  
**REFERENCE INFORMATION:** Well MW3#23H - Slot MW3#23H, Grid North  
 Co-ordinate (N/E) Reference: GL 1291 & KB 18 @ 1309.00H (Saxon 141)  
 Vertical (TVD) Reference: GL 1291 & KB 18 @ 1309.00H (Saxon 141)  
 Section (VS) Reference: Slot - MW3#23H(0.00N, 0.00E)  
 Measured Depth Reference: GL 1291 & KB 18 @ 1309.00H (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	Dlog	TFace	VSeet	Target
1	6021.00	10.01	275.12	5987.51	18.95	-425.18	0.00	0.00	302.86	
2	6483.00	10.01	275.12	6442.48	26.12	-505.16	0.00	0.00	362.47	
3	7761.39	63.66	272.96	7120.13	55.44	-1011.85	6.11	-2.40	728.33	MW23H_LP3
4	8076.37	90.50	225.45	7250.00	395.14	-1582.82	8.00	76.69	165.56	MW3#23H_BHL3
5	14287.29	90.50	325.45	7236.00	4510.38	-3105.00	0.00	0.00	511.68	MW3#23H_BHL3



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## Stone Energy

Heather Prospect (NAD 27)

Mills-Wetzel Pad 3

Mills-Wetzel 23H - Slot MW3#23H

OH

Design: As Drilled

## Standard Survey Report

12 August, 2013

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06/12/2015



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 23H - Slot MW3#23H
<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 23H	<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 23H - Slot MW3#23H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	369,975.63 usft	<b>Latitude:</b>	39° 30' 35.517 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,668,985.99 usft	<b>Longitude:</b>	80° 40' 23.630 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	6/5/2013	-8.56	67.07	52,519
	IGRF2010	7/25/2013	-8.56	67.06	52,502

<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>	8/12/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
18.00	2,828.00	Survey 1 - Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
2,925.00	14,299.00	Survey 2 - 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	360.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Ground Level</b>										
103.00	0.18	97.65	103.00	-0.02	0.13	-0.02	0.21	0.21	0.00	
<b>First SDI Gyro Survey</b>										
203.00	0.17	90.05	203.00	-0.04	0.44	-0.04	0.03	-0.01	-7.60	
303.00	0.12	81.96	303.00	-0.02	0.69	-0.02	0.05	-0.05	-8.09	

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Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 23H - Slot MW3#23H
<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 23H	<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)	
403.00	0.08	70.45	403.00	0.01	0.86	0.01	0.04	-0.04	-11.51	
503.00	0.18	85.38	503.00	0.05	1.08	0.05	0.10	0.10	14.93	
603.00	0.27	86.29	603.00	0.08	1.47	0.08	0.09	0.09	0.91	
703.00	0.15	87.46	702.99	0.10	1.84	0.10	0.12	-0.12	1.17	
803.00	0.56	84.33	802.99	0.15	2.45	0.15	0.41	0.41	-3.13	
903.00	0.38	89.65	902.99	0.20	3.27	0.20	0.19	-0.18	5.32	
1,003.00	0.29	91.14	1,002.99	0.20	3.86	0.20	0.09	-0.09	1.49	
1,103.00	0.29	110.09	1,102.99	0.11	4.35	0.11	0.10	0.00	18.95	
1,203.00	0.03	134.33	1,202.99	0.00	4.60	0.00	0.26	-0.26	24.24	
1,303.00	0.25	156.29	1,302.99	-0.22	4.71	-0.22	0.22	0.22	21.96	
1,403.00	0.11	111.79	1,402.98	-0.45	4.89	-0.45	0.19	-0.14	-44.50	
1,503.00	0.16	96.45	1,502.98	-0.50	5.12	-0.50	0.06	0.05	-15.34	
1,603.00	0.17	80.74	1,602.98	-0.49	5.40	-0.49	0.05	0.01	-15.71	
1,703.00	0.18	110.65	1,702.98	-0.53	5.69	-0.53	0.09	0.01	29.91	
1,803.00	0.10	149.92	1,802.98	-0.66	5.89	-0.66	0.12	-0.08	39.27	
1,903.00	0.31	213.00	1,902.98	-0.96	5.78	-0.96	0.28	0.21	63.08	
2,003.00	0.20	226.72	2,002.98	-1.31	5.51	-1.31	0.13	-0.11	13.72	
2,103.00	0.32	282.76	2,102.98	-1.36	5.11	-1.36	0.27	0.12	56.04	
2,203.00	0.43	56.35	2,202.98	-1.09	5.15	-1.09	0.69	0.11	133.59	
2,303.00	0.59	90.76	2,302.98	-0.89	5.97	-0.89	0.34	0.16	34.41	
2,403.00	0.77	75.92	2,402.97	-0.74	7.14	-0.74	0.25	0.18	-14.84	
2,503.00	0.67	81.45	2,502.96	-0.49	8.37	-0.49	0.12	-0.10	5.53	
2,603.00	0.52	65.18	2,602.96	-0.21	9.36	-0.21	0.22	-0.15	-16.27	
2,703.00	0.42	64.91	2,702.95	0.14	10.11	0.14	0.10	-0.10	-0.27	
2,803.00	0.35	65.95	2,802.95	0.42	10.72	0.42	0.07	-0.07	1.04	
2,828.00	0.23	66.40	2,827.95	0.47	10.83	0.47	0.48	-0.48	1.80	
<b>Last SDI Gyro Survey</b>										
2,925.00	1.31	286.27	2,924.94	0.86	9.95	0.86	1.54	1.11	-144.46	
<b>First SDI MWD Survey</b>										
3,019.00	1.82	288.67	3,018.91	1.64	7.50	1.64	0.55	0.54	2.55	
3,112.00	2.66	295.81	3,111.84	3.05	4.16	3.05	0.95	0.90	7.68	
3,206.00	3.73	293.40	3,205.69	5.21	-0.61	5.21	1.15	1.14	-2.56	
3,296.00	4.83	287.27	3,295.44	7.50	-6.92	7.50	1.32	1.22	-6.81	
3,389.00	6.14	281.58	3,388.01	9.66	-15.53	9.66	1.52	1.41	-6.12	
3,479.00	7.19	276.13	3,477.40	11.23	-25.84	11.23	1.36	1.17	-6.06	
3,573.00	8.49	270.39	3,570.52	11.90	-38.63	11.90	1.61	1.38	-6.11	
3,668.00	9.14	269.53	3,664.40	11.89	-53.19	11.89	0.70	0.68	-0.91	
3,761.00	9.89	268.98	3,756.12	11.69	-68.56	11.69	0.81	0.81	-0.59	
3,856.00	9.50	267.41	3,849.76	11.19	-84.55	11.19	0.50	-0.41	-1.65	
3,949.00	10.30	266.84	3,941.38	10.38	-100.52	10.38	0.87	0.86	-0.61	
4,046.00	9.86	270.80	4,036.88	10.02	-117.48	10.02	0.85	-0.45	-4.08	
4,136.00	8.69	275.90	4,125.71	10.83	-131.95	10.83	1.59	-1.30	5.67	
4,226.00	8.95	274.67	4,214.64	12.10	-145.69	12.10	0.36	0.29	-1.37	
4,321.00	9.73	274.22	4,308.38	13.29	-161.06	13.29	0.82	0.82	-0.82	

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Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 23H - Slot MW3#23H
<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 23H	<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)
4,412.00	8.31	270.95	4,398.25	13.96	-175.31	13.96	1.66	-1.56	-3.59
4,504.00	8.35	266.18	4,489.28	13.63	-188.62	13.63	0.75	0.04	-5.18
4,596.00	8.67	264.74	4,580.27	12.55	-202.19	12.55	0.42	0.35	-1.57
4,690.00	8.86	262.76	4,673.17	10.99	-216.43	10.99	0.38	0.20	-2.11
4,781.00	7.64	266.01	4,763.23	9.68	-229.42	9.68	1.43	-1.34	3.57
4,873.00	7.39	271.61	4,854.44	9.42	-241.43	9.42	0.84	-0.27	6.09
4,963.00	7.77	274.03	4,943.66	10.01	-253.29	10.01	0.55	0.42	2.69
5,054.00	8.57	271.27	5,033.73	10.60	-266.20	10.60	0.98	0.88	-3.03
5,150.00	9.61	271.91	5,128.52	11.02	-281.36	11.02	1.09	1.08	0.67
5,244.00	9.57	271.28	5,221.21	11.46	-297.01	11.46	0.12	-0.04	-0.67
5,336.00	9.18	269.91	5,311.98	11.62	-312.00	11.62	0.49	-0.42	-1.49
5,429.00	9.42	273.01	5,403.76	12.00	-327.02	12.00	0.60	0.26	3.33
5,523.00	9.40	272.88	5,496.50	12.79	-342.37	12.79	0.03	-0.02	-0.14
5,616.00	9.62	272.77	5,588.22	13.55	-357.71	13.55	0.24	0.24	-0.12
5,711.00	9.72	272.47	5,681.87	14.28	-373.65	14.28	0.12	0.11	-0.32
5,804.00	9.57	275.43	5,773.55	15.35	-389.19	15.35	0.56	-0.16	3.18
5,899.00	9.44	275.27	5,867.25	16.81	-404.81	16.81	0.14	-0.14	-0.17
5,965.00	9.63	276.78	5,932.34	17.96	-415.68	17.96	0.48	0.29	2.29
6,027.00	10.05	274.95	5,993.43	19.04	-426.22	19.04	0.84	0.68	-2.95
6,090.00	10.15	270.71	6,055.45	19.58	-437.25	19.58	1.19	0.16	-6.73
6,154.00	9.30	269.28	6,118.53	19.59	-448.06	19.59	1.38	-1.33	-2.23
6,217.00	8.85	267.53	6,180.74	19.32	-457.99	19.32	0.84	-0.71	-2.78
6,281.00	10.03	269.87	6,243.87	19.09	-468.48	19.09	1.94	1.84	3.66
6,344.00	9.03	269.87	6,306.00	19.07	-478.92	19.07	1.59	-1.59	0.00
6,407.00	9.45	276.16	6,368.19	19.61	-489.00	19.61	1.74	0.67	9.98
6,439.00	9.15	276.72	6,399.77	20.19	-494.14	20.19	0.98	-0.94	1.75
6,471.00	9.29	275.55	6,431.35	20.74	-499.24	20.74	0.73	0.44	-3.66
6,503.00	10.90	273.94	6,462.86	21.20	-504.83	21.20	5.11	5.03	-5.03
6,534.00	12.85	272.15	6,493.19	21.53	-511.20	21.53	6.40	6.29	-5.77
6,566.00	14.65	272.12	6,524.27	21.81	-518.80	21.81	5.63	5.63	-0.09
6,598.00	16.79	271.15	6,555.08	22.05	-527.46	22.05	6.74	6.69	-3.03
6,629.00	18.66	272.17	6,584.60	22.33	-536.90	22.33	6.11	6.03	3.29
6,661.00	20.87	272.33	6,614.72	22.76	-547.71	22.76	6.91	6.91	0.50
6,691.00	23.04	272.74	6,642.54	23.25	-558.91	23.25	7.25	7.23	1.37
6,723.00	25.40	273.01	6,671.72	23.91	-572.02	23.91	7.38	7.38	0.84
6,754.00	27.32	272.78	6,699.49	24.61	-585.77	24.61	6.20	6.19	-0.74
6,786.00	29.23	272.17	6,727.68	25.26	-600.91	25.26	6.04	5.97	-1.91
6,818.00	30.71	272.92	6,755.40	25.97	-616.88	25.97	4.77	4.63	2.34
6,850.00	32.94	273.03	6,782.58	26.85	-633.73	26.85	6.97	6.97	0.34
6,881.00	34.35	272.90	6,808.39	27.74	-650.88	27.74	4.55	4.55	-0.42
6,913.00	36.51	273.42	6,834.46	28.76	-669.41	28.76	6.82	6.82	0.63
6,944.00	38.18	273.34	6,859.11	29.87	-688.18	29.87	5.39	5.39	-0.26
6,976.00	40.84	273.13	6,883.79	31.02	-708.50	31.02	8.32	8.32	0.28

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<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 23H	<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)
7,008.00	42.79	273.58	6,907.64	32.27	-729.80	32.27	6.17	6.09	1.41
7,040.00	44.65	273.61	6,930.77	33.65	-751.87	33.65	5.81	5.81	0.09
7,071.00	45.57	273.56	6,952.65	35.03	-773.79	35.03	2.97	2.97	-0.16
7,103.00	47.31	274.45	6,974.70	36.65	-796.92	36.65	5.80	5.44	2.78
7,134.00	49.08	274.63	6,995.36	38.48	-819.95	38.48	5.73	5.71	0.58
7,166.00	51.54	275.15	7,015.80	40.58	-844.49	40.58	7.79	7.69	1.63
7,198.00	53.35	275.00	7,035.30	42.82	-869.76	42.82	5.67	5.66	-0.47
7,230.00	56.15	274.48	7,053.77	44.98	-895.80	44.98	8.85	8.75	-1.63
7,262.00	58.12	274.05	7,071.13	46.98	-922.60	46.98	6.26	6.16	-1.34
7,293.00	60.61	273.82	7,086.93	48.81	-949.21	48.81	8.06	8.03	-0.74
7,325.00	63.54	273.95	7,101.91	50.72	-977.41	50.72	9.16	9.16	0.41
7,357.00	65.36	274.41	7,115.71	52.83	-1,006.21	52.83	5.83	5.69	1.44
7,388.00	65.69	275.35	7,128.55	55.23	-1,034.32	55.23	2.96	1.06	3.03
7,420.00	66.26	277.82	7,141.58	58.58	-1,063.35	58.58	7.27	1.78	7.72
7,450.00	67.46	280.21	7,153.38	62.91	-1,090.59	62.91	8.35	4.00	7.97
7,480.00	68.95	282.78	7,164.52	68.46	-1,117.88	68.46	9.38	4.97	8.57
7,511.00	70.45	284.92	7,175.27	75.42	-1,146.11	75.42	8.08	4.84	6.90
7,541.00	71.59	286.71	7,185.03	83.15	-1,173.40	83.15	6.80	3.80	5.97
7,571.00	72.42	288.95	7,194.30	91.89	-1,200.56	91.89	7.62	2.77	7.47
7,601.00	73.07	291.18	7,203.20	101.72	-1,227.47	101.72	7.42	2.17	7.43
7,631.00	73.86	293.40	7,211.74	112.63	-1,254.08	112.63	7.57	2.63	7.40
7,662.00	74.12	296.12	7,220.29	125.11	-1,281.13	125.11	8.48	0.84	8.77
7,692.00	74.34	298.45	7,228.44	138.34	-1,306.79	138.34	7.51	0.73	7.77
7,723.00	74.96	300.89	7,236.65	153.14	-1,332.76	153.14	7.85	2.00	7.87
7,753.00	76.62	303.52	7,244.01	168.64	-1,357.36	168.64	10.14	5.53	8.77
7,782.00	77.43	306.02	7,250.53	184.75	-1,380.58	184.75	8.85	2.79	8.62
7,813.00	78.50	308.95	7,256.99	203.20	-1,404.63	203.20	9.87	3.45	9.45
7,843.00	79.34	311.46	7,262.76	222.21	-1,427.11	222.21	8.67	2.80	8.37
7,874.00	80.54	314.37	7,268.17	242.99	-1,449.46	242.99	10.02	3.87	9.39
7,904.00	81.23	316.58	7,272.93	264.11	-1,470.23	264.11	7.63	2.30	7.37
7,935.00	82.14	319.02	7,277.41	286.83	-1,490.83	286.83	8.32	2.94	7.87
7,965.00	83.16	320.37	7,281.25	309.52	-1,510.08	309.52	5.61	3.40	4.50
7,995.00	84.69	321.93	7,284.42	332.75	-1,528.79	332.75	7.26	5.10	5.20
8,026.00	86.81	323.16	7,286.72	357.29	-1,547.59	357.29	7.90	6.84	3.97
8,056.00	88.75	322.81	7,287.88	381.22	-1,565.63	381.22	6.57	6.47	-1.17
8,087.00	89.70	324.10	7,288.30	406.13	-1,584.09	406.13	5.17	3.06	4.16
8,147.00	90.37	324.37	7,288.27	454.81	-1,619.16	454.81	1.20	1.12	0.45
8,208.00	91.41	325.88	7,287.32	504.85	-1,654.03	504.85	3.01	1.70	2.48
8,268.00	92.42	325.28	7,285.31	554.31	-1,687.93	554.31	1.96	1.68	1.00
8,328.00	90.74	325.08	7,283.66	603.55	-1,722.17	603.55	2.82	-2.80	-0.33
8,389.00	90.40	324.74	7,283.05	653.46	-1,757.24	653.46	0.79	-0.56	-0.56
8,453.00	91.01	324.77	7,282.26	705.73	-1,794.17	705.73	0.95	0.95	0.95
8,516.00	89.53	325.61	7,281.97	757.45	-1,830.13	757.45	2.70	-2.35	1.33
8,579.00	90.61	326.06	7,281.89	809.58	-1,865.51	809.58	1.86	1.71	0.71

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**Scientific Drilling International**  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 23H - Slot MW3#23H
<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 23H	<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)	
8,642.00	89.83	326.19	7,281.65	861.88	-1,900.62	861.88	1.26	-1.24	0.21	
8,705.00	90.40	325.88	7,281.52	914.13	-1,935.82	914.13	1.03	0.90	-0.49	
8,768.00	89.16	325.73	7,281.76	966.24	-1,971.23	966.24	1.98	-1.97	-0.24	
8,832.00	90.00	324.99	7,282.23	1,018.89	-2,007.60	1,018.89	1.75	1.31	-1.16	
8,896.00	90.57	324.40	7,281.92	1,071.12	-2,044.59	1,071.12	1.28	0.89	-0.92	
8,960.00	90.40	325.55	7,281.37	1,123.53	-2,081.32	1,123.53	1.82	-0.27	1.80	
9,023.00	91.28	326.06	7,280.45	1,175.63	-2,116.72	1,175.63	1.61	1.40	0.81	
9,087.00	90.27	326.26	7,279.58	1,228.78	-2,152.36	1,228.78	1.61	-1.58	0.31	
9,151.00	91.04	326.32	7,278.85	1,282.02	-2,187.88	1,282.02	1.21	1.20	0.09	
9,214.00	90.81	326.84	7,277.84	1,334.59	-2,222.57	1,334.59	0.90	-0.37	0.83	
9,278.00	91.21	326.60	7,276.71	1,388.09	-2,257.68	1,388.09	0.73	0.63	-0.38	
9,341.00	90.74	324.49	7,275.64	1,440.03	-2,293.32	1,440.03	3.43	-0.75	-3.35	
9,405.00	91.58	324.79	7,274.34	1,492.21	-2,330.35	1,492.21	1.39	1.31	0.47	
9,468.00	92.75	324.48	7,271.96	1,543.55	-2,366.78	1,543.55	1.92	1.86	-0.49	
9,532.00	91.18	324.64	7,269.77	1,595.66	-2,403.87	1,595.66	2.47	-2.45	0.25	
9,595.00	90.44	324.66	7,268.87	1,647.04	-2,440.32	1,647.04	1.18	-1.17	0.03	
9,659.00	91.21	324.49	7,267.95	1,699.18	-2,477.41	1,699.18	1.23	1.20	-0.27	
9,722.00	90.07	325.20	7,267.25	1,750.69	-2,513.68	1,750.69	2.13	-1.81	1.13	
9,785.00	90.44	325.33	7,266.97	1,802.46	-2,549.58	1,802.46	0.62	0.59	0.21	
9,848.00	91.74	325.18	7,265.77	1,854.22	-2,585.48	1,854.22	2.08	2.06	-0.24	
9,911.00	89.66	324.44	7,265.00	1,905.70	-2,621.78	1,905.70	3.50	-3.30	-1.17	
9,975.00	91.07	325.18	7,264.59	1,958.00	-2,658.66	1,958.00	2.49	2.20	1.16	
10,038.00	91.95	325.06	7,262.93	2,009.66	-2,694.67	2,009.66	1.41	1.40	-0.19	
10,101.00	91.21	325.42	7,261.20	2,061.40	-2,730.58	2,061.40	1.31	-1.17	0.57	
10,165.00	87.95	326.00	7,261.67	2,114.27	-2,766.63	2,114.27	5.17	-5.09	0.91	
10,228.00	88.52	325.84	7,263.61	2,166.42	-2,801.91	2,166.42	0.94	0.90	-0.25	
10,292.00	89.77	325.51	7,264.56	2,219.27	-2,838.00	2,219.27	2.02	1.95	-0.52	
10,355.00	90.60	324.74	7,264.36	2,270.95	-2,874.02	2,270.95	1.80	1.32	-1.22	
10,419.00	91.07	324.30	7,263.42	2,323.06	-2,911.16	2,323.06	1.01	0.73	-0.69	
10,482.00	89.93	325.25	7,262.87	2,374.52	-2,947.50	2,374.52	2.36	-1.81	1.51	
10,546.00	91.01	325.21	7,262.35	2,427.09	-2,983.99	2,427.09	1.69	1.69	-0.06	
10,609.00	91.24	325.04	7,261.11	2,478.77	-3,020.01	2,478.77	0.45	0.37	-0.27	
10,673.00	89.80	325.53	7,260.53	2,531.37	-3,056.45	2,531.37	2.38	-2.25	0.77	
10,736.00	90.91	325.77	7,260.14	2,583.38	-3,092.00	2,583.38	1.80	1.76	0.38	
10,799.00	90.17	326.71	7,259.55	2,635.76	-3,127.01	2,635.76	1.90	-1.17	1.49	
10,863.00	90.91	327.14	7,258.94	2,689.38	-3,161.93	2,689.38	1.34	1.16	0.67	
10,926.00	90.81	327.81	7,258.00	2,742.50	-3,195.80	2,742.50	1.08	-0.16	1.06	
10,990.00	91.28	327.59	7,256.83	2,796.58	-3,230.00	2,796.58	0.81	0.73	-0.34	
11,053.00	90.24	326.99	7,256.00	2,849.59	-3,264.04	2,849.59	1.91	-1.55	-0.95	
11,116.00	91.08	326.38	7,255.27	2,902.23	-3,298.64	2,902.23	1.65	1.59	-0.97	
11,179.00	90.20	326.27	7,254.57	2,954.66	-3,333.57	2,954.66	1.41	1.40	0.17	
11,242.00	91.48	325.93	7,253.64	3,006.94	-3,368.70	3,006.94	2.10	2.03	-0.54	
11,305.00	93.02	325.54	7,251.17	3,058.96	-3,404.14	3,058.96	2.52	2.44	-0.62	

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Scientific Drilling International  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 23H - Slot MW3#23H
<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 23H	<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)
11,368.00	92.32	325.10	7,248.24	3,110.71	-3,439.95	3,110.71	1.31	-1.11	-0.70
11,432.00	90.50	324.05	7,246.66	3,162.85	-3,477.03	3,162.85	3.28	-2.84	-1.64
11,495.00	90.07	323.39	7,246.35	3,213.63	-3,514.31	3,213.63	1.25	-0.68	-1.05
11,559.00	90.37	323.96	7,246.10	3,265.20	-3,552.22	3,265.20	1.01	0.47	0.89
11,622.00	91.88	323.90	7,244.86	3,316.11	-3,589.31	3,316.11	2.40	2.40	-0.10
11,685.00	90.54	324.07	7,243.53	3,367.05	-3,626.34	3,367.05	2.14	-2.13	0.27
11,749.00	88.69	324.60	7,243.96	3,419.05	-3,663.65	3,419.05	3.01	-2.89	0.83
11,812.00	89.60	324.62	7,244.90	3,470.40	-3,700.13	3,470.40	1.44	1.44	0.03
11,876.00	88.25	324.70	7,246.10	3,522.59	-3,737.15	3,522.59	2.11	-2.11	0.13
11,940.00	89.33	324.28	7,247.46	3,574.68	-3,774.31	3,574.68	1.81	1.69	-0.66
12,003.00	90.31	323.52	7,247.65	3,625.58	-3,811.43	3,625.58	1.97	1.56	-1.21
12,066.00	91.85	322.89	7,246.47	3,676.02	-3,849.15	3,676.02	2.64	2.44	-1.00
12,129.00	92.25	323.96	7,244.21	3,726.58	-3,886.67	3,726.58	1.81	0.63	1.70
12,193.00	92.45	325.30	7,241.59	3,778.72	-3,923.69	3,778.72	2.12	0.31	2.09
12,256.00	90.87	326.70	7,239.76	3,830.93	-3,958.90	3,830.93	3.35	-2.51	2.22
12,319.00	89.70	326.90	7,239.45	3,883.64	-3,993.39	3,883.64	1.88	-1.86	0.32
12,383.00	90.84	326.80	7,239.15	3,937.22	-4,028.39	3,937.22	1.79	1.78	-0.16
12,446.00	90.00	327.59	7,238.69	3,990.17	-4,062.52	3,990.17	1.83	-1.33	1.25
12,510.00	90.07	327.91	7,238.65	4,044.30	-4,096.67	4,044.30	0.51	0.11	0.50
12,573.00	91.41	327.65	7,237.83	4,097.59	-4,130.26	4,097.59	2.17	2.13	-0.41
12,637.00	90.37	327.16	7,236.84	4,151.51	-4,164.73	4,151.51	1.80	-1.63	-0.77
12,699.00	89.63	327.09	7,236.84	4,203.58	-4,198.38	4,203.58	1.20	-1.19	-0.11
12,761.00	90.97	326.59	7,236.52	4,255.48	-4,232.29	4,255.48	2.31	2.16	-0.81
12,822.00	90.34	326.37	7,235.82	4,306.33	-4,265.98	4,306.33	1.09	-1.03	-0.36
12,885.00	90.20	326.92	7,235.52	4,358.95	-4,300.62	4,358.95	0.90	-0.22	0.87
12,948.00	89.77	327.44	7,235.54	4,411.90	-4,334.76	4,411.90	1.07	-0.68	0.83
13,010.00	90.20	327.70	7,235.55	4,464.23	-4,368.01	4,464.23	0.81	0.69	0.42
13,073.00	91.41	328.70	7,234.67	4,517.76	-4,401.20	4,517.76	2.49	1.92	1.59
13,136.00	90.97	330.57	7,233.36	4,572.11	-4,433.04	4,572.11	3.05	-0.70	2.97
13,198.00	91.28	331.33	7,232.14	4,626.30	-4,463.14	4,626.30	1.32	0.50	1.23
13,262.00	88.89	330.51	7,232.05	4,682.22	-4,494.25	4,682.22	3.95	-3.73	-1.28
13,325.00	88.59	329.85	7,233.43	4,736.87	-4,525.57	4,736.87	1.15	-0.48	-1.05
13,388.00	89.73	329.84	7,234.36	4,791.34	-4,557.21	4,791.34	1.81	1.81	-0.02
13,451.00	90.00	330.83	7,234.51	4,846.08	-4,588.39	4,846.08	1.63	0.43	1.57
13,514.00	90.67	331.01	7,234.14	4,901.13	-4,619.01	4,901.13	1.10	1.06	0.29
13,577.00	92.35	331.74	7,232.48	4,956.41	-4,649.18	4,956.41	2.91	2.67	1.16
13,640.00	90.64	329.88	7,230.83	5,011.39	-4,679.89	5,011.39	4.01	-2.71	-2.95
13,703.00	89.83	328.30	7,230.58	5,065.44	-4,712.25	5,065.44	2.82	-1.29	-2.51
13,766.00	88.36	326.06	7,231.57	5,118.37	-4,746.39	5,118.37	4.25	-2.38	2.56
13,830.00	88.69	325.67	7,233.22	5,171.33	-4,782.29	5,171.33	0.80	0.52	-0.61
13,893.00	89.40	324.09	7,234.27	5,222.85	-4,818.53	5,222.85	2.75	1.13	-2.51
13,956.00	90.81	324.27	7,234.15	5,273.93	-4,855.40	5,273.93	2.26	2.24	0.29
14,020.00	92.25	324.42	7,232.44	5,325.91	-4,892.69	5,325.91	2.26	2.25	0.23

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**Scientific Drilling International**  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 23H - Slot MW3#23H
<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 23H	<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)
14,083.00	92.15	322.55	7,230.02	5,376.51	-4,930.15	5,376.51	2.97	-0.16	-2.97
14,146.00	93.43	321.79	7,226.96	5,426.21	-4,968.74	5,426.21	2.36	2.03	-1.21
14,209.00	94.90	321.14	7,222.38	5,475.36	-5,007.88	5,475.36	2.55	2.33	-1.03
14,232.00	93.56	320.83	7,220.69	5,493.18	-5,022.32	5,493.18	5.98	-5.83	-1.35
<b>Last SDI MWD Survey</b>									
14,299.00	93.56	320.83	7,216.53	5,545.02	-5,064.56	5,545.02	0.00	0.00	0.00
<b>Projection to Bit</b>									

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
103.00	103.00	-0.02	0.13	First SDI Gyro Survey
2,828.00	2,827.95	0.47	10.83	Last SDI Gyro Survey
2,925.00	2,924.94	0.86	9.95	First SDI MWD Survey
14,232.00	7,220.69	5,493.18	-5,022.32	Last SDI MWD Survey
14,299.00	7,216.53	5,545.02	-5,064.56	Projection to Bit

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

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