

WR-35
Rev (9-11)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: January 28, 2014
API #: 47-103-02771

Farm name: Denoon Trust, Janie Operator Well No.: Bowyers #2H

LOCATION: Elevation: 1,156' Quadrangle: New Martinsville

District: Magnolia County: Wetzel
Latitude: 13,440 Feet South of 39 Deg. 42 Min. 30 Sec.
Longitude 3,070 Feet West of 80 Deg. 50 Min. 00 Sec.

Company: Stone Energy Corporation

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<u>6000 Hampton Center, Suite B</u> <u>Morgantown, WV 26505</u>	<u>20"</u>	<u>54'</u>	<u>54'</u>	<u>GTS</u>
Agent: <u>Tim McGregor</u>	<u>13.375"</u>	<u>1,111'</u>	<u>1,111'</u>	<u>1,025 - CTS</u>
Inspector: <u>Derek Haught</u>	<u>9.625"</u>	<u>2,252'</u>	<u>2,252'</u>	<u>672 Lead - 244 Tail - CTS</u>
Date Permit Issued: <u>6/29/2012 & 10/22/2012</u>	<u>5.5"</u>		<u>12,270'</u>	<u>936 Lead - 2,232 Tail</u>
Date Well Work Commenced: <u>9/11/2012</u>	<u>2.375"</u>		<u>7,053'</u>	
Date Well Work Completed: <u>9/1/2013</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): <u>6,399</u>				
Total Measured Depth (ft): <u>12,283</u>				
Fresh Water Depth (ft.): <u>78</u>				
Salt Water Depth (ft.): <u>1,156</u>				
Is coal being mined in area (N/Y)? <u>No</u>				
Coal Depths (ft.): <u>828</u>				
Void(s) encountered (N/Y) Depth(s) <u>N/A</u>				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 7,145' to 12,170'

Gas: Initial open flow 200 MCF/d Oil: Initial open flow 0 Bbl/d

Final open flow 3,520 MCF/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 192 Hours

Static rock Pressure 1,526 psig (surface pressure) after 1 Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

W.A. Bowyers
Signature

1/28/2014
Date

03/21/2014

Were core samples taken? Yes _____ No X

Were cuttings caught during drilling? Yes X No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list MWD Gamma Ray, Mud Log, and CBL

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Perforated 19 intervals from 12,170' to 7,145'. Performed 19 individual stages of slick water stimulation using 6,639,329 gals fresh water, Sand - 750,410 lbs 100 Mesh and 6,991,245 lbs 40/70. AvBDP = 6,234 psi, AvTP = 6,970 psi, AvMTP = 9,061 psi, AvInjRate = 82.4 bpm, and AvSIP = 4,214 psi.

See Attachment for FracFocus information.

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			

See attached sheet for formations encountered and their depths.

BOWYERS #2H						
API 47-103-02771						
Stone Energy Corporation						
	Horizontal					
	Top	Top	(ft	Bottom (ft	Bottom (ft	
	(ft TVD)	MD)		TVD)	MD)	
Sandstone & Shale	Surface		*	828		FW @ 78'
Pittsburgh Coal	828		*	832		
Sandstone & Shale	832		*	1733		SW @ 1156'
Little Lime	1733		*	1768		
Big Lime	1768		*	1868		
Big Injun	1868		*	2062		
Sandstone & Shale	2062		*	2435		
Berea Sandstone	2435		*	2475		
Shale	2475		*	2665		
Gordon	2665		*	2725		
Undiff Devonian Shale	2275		*	5710	5812	
Rhinestreet	5710	5812	~	6054	6345	
Cashaqua	6054	6345	~	2190	6598	
Middlesex	6190	6598	~	6202	6628	
West River	6202	6628	~	6270	6782	
Geneseo	6272	6782	~	6292	6845	
Tully Limestone	6292	6845	~	6338	6946	
Marcellus	6328	6946	~	6399	12283	
TD				6399	12283	

* From Pilot Hole Log and Driller's Log

~ From MWD Gamma Log

Hydraulic Fracturing Fluid Product Component Information Disclosure

103 02771

Fracture Date:	6/13/2013
State:	West Virginia
County/Parish:	Wetzel County
API Number:	
Operator Name:	Stone
Well Name and Number:	Bowyers 2H
Longitude:	
Latitude:	
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	6639329

Hydraulic Fracturing Fluid Composition

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
15% HCl, Slickwater, WF115	Schlumberger	Corrosion Inhibitor, Bactericide (Myacide GA25), Scale Inhibitor, AntiFoam Agent, Surfactant, Acid, Breaker, Gelling Agent, Friction Reducer, Iron Control Agent, Clay Control Agent, Buffer, Fluid Loss Additive	Water (Including Mix Water Supplied by Client)*	NA		87.57501%	
			Crystalline silica	14808-60-7	98.42015%	12.22869%	
			Hydrogen chloride	7647-01-0	0.69739%	0.08665%	
			Guar gum	9000-30-0	0.42011%	0.05220%	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.08467%	0.01052%	
			Ammonium sulfate	7783-20-2	0.08002%	0.00994%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06295%	0.00782%	
			Glutaraldehyde	111-30-8	0.05415%	0.00673%	
			Sodium chloride	7647-14-5	0.03865%	0.00480%	
			Magnesium chloride	7786-30-3	0.03623%	0.00450%	
			Sodium sulfate	7757-82-6	0.03459%	0.00430%	
			Diammonium peroxodisulfate	7727-54-0	0.01749%	0.00217%	
			Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.00907%	0.00113%	
			Urea	57-13-6	0.00557%	0.00069%	
			Calcium chloride	10043-52-4	0.00507%	0.00063%	
			Polypropylene glycol	25322-69-4	0.00372%	0.00046%	
			Trisodium orthophosphate	7601-54-9	0.00303%	0.00038%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00276%	0.00034%	
			Sodium carbonate	497-19-8	0.00254%	0.00032%	
			Sodium erythorbate	6381-77-7	0.00252%	0.00031%	
			Methanol	67-56-1	0.00202%	0.00025%	
			Non-crystalline silica	7631-86-9	0.00195%	0.00024%	
			Fatty acids, tall-oil	61790-12-3	0.00148%	0.00018%	
			Thiourea, polymer with formaldehyde and 1-phenylethanol	68527-49-1	0.00122%	0.00015%	
			Potassium chloride	7447-40-7	0.00097%	0.00012%	
			Ethane-1,2-diol	107-21-1	0.00086%	0.00011%	
			Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00057%	0.00007%	
			Propan-2-ol	67-63-0	0.00055%	0.00007%	
			Prop-2-yn-1-ol	107-19-7	0.00038%	0.00005%	
			Alkenes, C>10 a-	64743-02-8	0.00025%	0.00003%	
			Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00018%	0.00002%	
			Potassium hydroxide	1310-58-3	0.00013%	0.00002%	
			Dimethyl siloxanes and silicones	63148-62-9	0.00008%	0.00001%	
			Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	0.00001%	< 0.00001%	
			Octamethylcyclotetrasiloxane	556-67-2	0.00001%	< 0.00001%	
			Sodium hydroxide	1310-73-2	0.00001%	< 0.00001%	
			Decamethyl cyclopentasiloxane	541-02-6	0.00001%	< 0.00001%	
			Dodecamethylcyclohexasiloxane	540-97-6	< 0.00001%	< 0.00001%	

† Proprietary Technology

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Report ID: RPT-16777 (Generated on 7/18/2013 3:21 PM)

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and

03/21/2014



Scientific Drilling

Stone Energy

Mary Prospect

Bowyers Pad - Wetzel County, West Virginia

Bowyers #2H - Slot Bowyers #2H

ST01

Design: As Drilled

Standard Survey Report

02 November, 2012





SDI
Survey Report

103.02771



Company:	Stone Energy	Local Co-ordinate Reference:	Well Bowyers #2H - Slot Bowyers #2H
Project:	Mary Prospect	TVD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Site:	Bowyers Pad - Wetzel County, West Virginia	MD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Well:	Bowyers #2H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

Project	Mary Prospect, 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	Bowyers Pad - Wetzel County, West Virginia				
Site Position:		Northing:	429,490.00 usft	Latitude:	39° 40' 17.125 N
From:	Map	Easting:	1,621,591.00 usft	Longitude:	80° 50' 39.652 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.86 °

Well	Bowyers #2H - Slot Bowyers #2H					
Well Position	+N/-S	0.0 usft	Northing:	429,490.00 usft	Latitude:	39° 40' 17.125 N
	+E/-W	0.0 usft	Easting:	1,621,591.00 usft	Longitude:	80° 50' 39.652 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,156.0 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/14/12	-8.45	67.28	52,699

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	183.55	

Survey Program	Date	10/29/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
103.0	2,555.0	SDI Keeper Gyro (ST01)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
2,620.0	12,283.0	SDI MWD (ST01)	MWD SDI	MWD - Standard ver 1.0.1	

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
103.0	0.34	79.35	103.0	0.1	0.3	-0.1	0.33	0.33	0.00
203.0	0.30	23.80	203.0	0.4	0.7	-0.4	0.30	-0.04	-55.55
303.0	0.22	51.03	303.0	0.7	1.0	-0.8	0.15	-0.08	27.23
403.0	0.42	79.31	403.0	0.9	1.5	-1.0	0.25	0.20	28.28
503.0	0.34	71.02	503.0	1.1	2.1	-1.2	0.10	-0.08	-8.29
603.0	0.31	56.72	603.0	1.3	2.6	-1.5	0.09	-0.03	-14.30
703.0	0.27	60.71	703.0	1.6	3.0	-1.8	0.04	-0.04	3.99
803.0	0.30	24.81	803.0	1.9	3.4	-2.1	0.18	0.03	-35.90
903.0	0.28	27.48	903.0	2.4	3.6	-2.6	0.02	-0.02	2.67

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SDI
Survey Report



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Well:	Bowyers #2H	North Reference:	Grid
Wellbore:	ST01	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)
1,003.0	0.34	27.79	1,003.0	2.9	3.8	-3.1	0.06	0.06	0.31
1,103.0	0.34	19.19	1,103.0	3.4	4.1	-3.6	0.05	0.00	-8.60
1,203.0	0.46	8.56	1,203.0	4.1	4.2	-4.3	0.14	0.12	-10.63
1,303.0	0.27	353.94	1,303.0	4.7	4.3	-5.0	0.21	-0.19	-14.62
1,403.0	0.42	345.05	1,403.0	5.3	4.1	-5.5	0.16	0.15	-8.89
1,503.0	0.41	335.74	1,503.0	6.0	3.9	-6.2	0.07	-0.01	-9.31
1,603.0	0.40	334.04	1,603.0	6.6	3.6	-6.8	0.02	-0.01	-1.70
1,703.0	0.14	324.65	1,703.0	7.0	3.4	-7.2	0.26	-0.26	-9.39
1,803.0	0.02	145.44	1,803.0	7.1	3.3	-7.3	0.16	-0.12	-179.21
1,903.0	0.34	294.71	1,903.0	7.2	3.1	-7.4	0.36	0.32	149.27
2,003.0	0.04	294.28	2,003.0	7.4	2.8	-7.5	0.30	-0.30	-0.43
2,103.0	0.21	63.82	2,103.0	7.5	2.9	-7.6	0.24	0.17	129.54
2,203.0	0.26	89.04	2,203.0	7.5	3.3	-7.7	0.11	0.05	25.22
2,303.0	0.65	106.97	2,303.0	7.4	4.0	-7.6	0.41	0.39	17.93
2,333.0	0.49	106.50	2,333.0	7.3	4.3	-7.6	0.53	-0.53	-1.57
2,365.0	0.40	205.98	2,365.0	7.2	4.4	-7.4	2.13	-0.28	310.88
2,428.0	2.67	241.29	2,427.9	6.3	3.0	-6.4	3.74	3.60	56.05
2,492.0	4.56	262.68	2,491.8	5.2	-0.8	-5.2	3.58	2.95	33.42
2,555.0	5.51	267.11	2,554.6	4.7	-6.3	-4.3	1.63	1.51	7.03
2,620.0	7.28	264.37	2,619.2	4.2	-13.5	-3.3	2.76	2.72	-4.22
2,652.0	8.07	263.78	2,650.9	3.7	-17.8	-2.6	2.48	2.47	-1.84
2,716.0	9.89	267.60	2,714.1	3.0	-27.7	-1.3	2.99	2.84	5.97
2,780.0	9.31	268.81	2,777.2	2.7	-38.4	-0.3	0.96	-0.91	1.89
2,843.0	8.96	266.19	2,839.4	2.3	-48.4	0.7	0.86	-0.56	-4.16
2,907.0	9.69	266.05	2,902.5	1.6	-58.7	2.1	1.14	1.14	-0.22
2,970.0	9.87	268.06	2,964.6	1.0	-69.4	3.3	0.61	0.29	3.19
3,033.0	8.91	264.93	3,026.8	0.4	-79.7	4.5	1.73	-1.52	-4.97
3,097.0	7.71	259.55	3,090.1	-0.8	-88.8	6.3	2.23	-1.88	-8.41
3,158.0	7.23	258.21	3,150.6	-2.4	-96.6	8.3	0.84	-0.79	-2.20
3,222.0	6.98	259.45	3,214.1	-3.9	-104.4	10.3	0.46	-0.39	1.94
3,285.0	6.50	258.83	3,276.7	-5.3	-111.6	12.2	0.77	-0.76	-0.98
3,349.0	5.90	261.56	3,340.3	-6.5	-118.5	13.8	1.04	-0.94	4.27
3,412.0	5.36	264.86	3,403.0	-7.2	-124.6	14.9	1.00	-0.86	5.24
3,476.0	4.85	264.22	3,466.7	-7.7	-130.3	15.8	0.80	-0.80	-1.00
3,540.0	4.53	262.72	3,530.5	-8.3	-135.5	16.7	0.54	-0.50	-2.34
3,603.0	4.13	261.01	3,593.3	-9.0	-140.2	17.7	0.67	-0.63	-2.71
3,667.0	3.63	264.52	3,657.2	-9.6	-144.5	18.5	0.86	-0.78	5.48
3,731.0	3.24	266.54	3,721.1	-9.9	-148.3	19.0	0.64	-0.61	3.16
3,794.0	2.76	264.32	3,784.0	-10.1	-151.6	19.5	0.78	-0.76	-3.52
3,857.0	2.71	263.64	3,846.9	-10.4	-154.6	20.0	0.09	-0.08	-1.08
3,921.0	2.53	266.93	3,910.9	-10.7	-157.5	20.4	0.37	-0.28	5.14
3,984.0	2.23	271.50	3,973.8	-10.7	-160.1	20.6	0.56	-0.48	7.25
4,048.0	1.17	265.13	4,037.8	-10.7	-162.0	20.8	1.68	-1.66	-9.95

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Well:	Bowyers #2H	North Reference:	Grid
Wellbore:	ST01	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)
4,112.0	0.79	259.57	4,101.8	-10.9	-163.1	21.0	0.61	-0.59	-8.69
4,176.0	0.63	279.94	4,165.8	-10.9	-163.8	21.0	0.46	-0.25	31.83
4,239.0	0.59	286.31	4,228.8	-10.7	-164.5	20.9	0.12	-0.06	10.11
4,302.0	0.14	78.85	4,291.8	-10.6	-164.7	20.8	1.14	-0.71	242.13
4,365.0	0.44	84.37	4,354.8	-10.6	-164.4	20.8	0.48	0.48	8.76
4,429.0	0.66	105.22	4,418.7	-10.7	-163.8	20.8	0.46	0.34	32.58
4,501.0	1.29	212.43	4,490.7	-11.5	-163.8	21.6	2.24	0.88	148.90
4,565.0	3.88	218.31	4,554.7	-13.8	-165.6	24.0	4.06	4.05	9.19
4,628.0	5.38	217.56	4,617.5	-17.8	-168.7	28.2	2.38	2.38	-1.19
4,692.0	6.76	217.76	4,681.1	-23.1	-172.8	33.8	2.16	2.16	0.31
4,755.0	8.69	215.90	4,743.5	-29.9	-177.9	40.9	3.09	3.06	-2.95
4,818.0	10.09	218.25	4,805.7	-38.1	-184.1	49.4	2.30	2.22	3.73
4,882.0	11.71	225.96	4,868.5	-47.0	-192.2	58.9	3.40	2.53	12.05
4,945.0	13.19	233.17	4,930.1	-55.8	-202.6	68.2	3.40	2.35	11.44
5,009.0	14.81	234.83	4,992.1	-64.9	-215.1	78.1	2.61	2.53	2.59
5,072.0	16.50	236.99	5,052.8	-74.4	-229.2	88.4	2.84	2.68	3.43
5,136.0	18.40	237.48	5,113.9	-84.8	-245.4	99.8	2.98	2.97	0.77
5,199.0	20.98	237.41	5,173.2	-96.2	-263.2	112.3	4.10	4.10	-0.11
5,263.0	23.94	235.72	5,232.3	-109.7	-283.6	127.0	4.73	4.63	-2.64
5,326.0	24.89	236.30	5,289.7	-124.2	-305.2	142.9	1.56	1.51	0.92
5,389.0	25.63	236.54	5,346.7	-139.1	-327.6	159.1	1.19	1.17	0.38
5,453.0	27.32	235.92	5,403.9	-155.0	-351.3	176.4	2.68	2.64	-0.97
5,517.0	30.15	235.14	5,460.1	-172.4	-376.7	195.4	4.46	4.42	-1.22
5,580.0	33.09	234.99	5,513.7	-191.3	-403.8	215.9	4.67	4.67	-0.24
5,644.0	34.09	234.93	5,567.0	-211.6	-432.8	238.0	1.56	1.56	-0.09
5,708.0	34.75	236.02	5,619.8	-232.1	-462.6	260.3	1.41	1.03	1.70
5,772.0	36.64	238.09	5,671.8	-252.4	-493.9	282.5	3.50	2.95	3.23
5,835.0	39.52	236.84	5,721.4	-273.3	-526.6	305.4	4.73	4.57	-1.98
5,899.0	42.47	236.53	5,769.7	-296.4	-561.7	330.6	4.62	4.61	-0.48
5,962.0	45.57	235.28	5,815.0	-320.9	-598.0	357.4	5.11	4.92	-1.98
6,026.0	48.12	235.94	5,858.7	-347.3	-636.5	386.1	4.05	3.98	1.03
6,090.0	49.38	235.46	5,900.9	-374.4	-676.2	415.6	2.05	1.97	-0.75
6,154.0	50.71	234.47	5,942.0	-402.6	-716.4	446.2	2.39	2.08	-1.55
6,218.0	53.37	233.43	5,981.4	-432.3	-757.2	478.3	4.35	4.16	-1.63
6,281.0	55.18	232.50	6,018.2	-463.1	-798.0	511.6	3.11	2.87	-1.48
6,345.0	56.76	231.64	6,054.0	-495.7	-839.8	546.8	2.71	2.47	-1.34
6,377.0	58.08	231.55	6,071.2	-512.5	-861.0	564.8	4.13	4.13	-0.28
6,408.0	58.00	230.67	6,087.6	-529.0	-881.4	582.5	2.42	-0.26	-2.84
6,440.0	57.52	228.12	6,104.7	-546.6	-902.0	601.4	6.90	-1.50	-7.97
6,471.0	57.16	225.33	6,121.4	-564.5	-921.0	620.4	7.67	-1.16	-9.00
6,503.0	57.16	222.17	6,138.8	-583.9	-939.6	640.9	8.30	0.00	-9.88
6,534.0	57.40	219.24	6,155.6	-603.6	-956.6	661.7	7.99	0.77	-9.45
6,566.0	58.27	217.09	6,172.6	-624.9	-973.3	684.0	6.30	2.72	-6.72



Company:	Stone Energy	Local Co-ordinate Reference:	Well Bowyers #2H - Slot Bowyers #2H
Project:	Mary Prospect	TVD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Site:	Bowyers Pad - Wetzel County, West Virginia	MD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Well:	Bowyers #2H	North Reference:	Grid
Wellbore:	ST01	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)
6,598.0	59.56	216.08	6,189.1	-647.0	-989.7	707.0	4.85	4.03	-3.16
6,630.0	61.43	214.96	6,204.9	-669.6	-1,005.8	730.6	6.59	5.84	-3.50
6,661.0	63.35	213.57	6,219.2	-692.3	-1,021.3	754.2	7.36	6.19	-4.48
6,693.0	64.84	210.80	6,233.2	-716.7	-1,036.6	779.5	9.07	4.66	-8.66
6,725.0	65.68	207.96	6,246.6	-742.0	-1,050.9	805.6	8.48	2.63	-8.88
6,756.0	66.39	205.90	6,259.2	-767.3	-1,063.7	831.6	6.49	2.29	-6.65
6,787.0	67.46	203.38	6,271.4	-793.2	-1,075.6	858.3	8.24	3.45	-8.13
6,817.0	68.36	200.37	6,282.6	-819.0	-1,085.9	884.6	9.77	3.00	-10.03
6,848.0	69.34	197.12	6,293.8	-846.3	-1,095.2	912.5	10.28	3.16	-10.48
6,879.0	69.58	193.83	6,304.7	-874.3	-1,103.0	940.9	9.97	0.77	-10.61
6,910.0	70.21	191.41	6,315.4	-902.7	-1,109.3	969.7	7.61	2.03	-7.81
6,940.0	71.05	189.34	6,325.3	-930.6	-1,114.4	997.8	7.09	2.80	-6.90
6,971.0	72.90	187.05	6,334.9	-959.7	-1,118.6	1,027.2	9.22	5.97	-7.39
7,001.0	75.10	184.67	6,343.2	-988.4	-1,121.6	1,056.0	10.58	7.33	-7.93
7,032.0	76.60	183.48	6,350.8	-1,018.4	-1,123.7	1,086.0	6.10	4.84	-3.84
7,062.0	79.49	182.83	6,357.0	-1,047.7	-1,125.3	1,115.4	9.86	9.63	-2.17
7,093.0	82.09	181.87	6,361.9	-1,078.3	-1,126.6	1,146.0	8.93	8.39	-3.10
7,123.0	84.89	182.29	6,365.3	-1,108.1	-1,127.7	1,175.8	9.44	9.33	1.40
7,153.0	87.78	181.35	6,367.3	-1,138.0	-1,128.6	1,205.7	10.13	9.63	-3.13
7,214.0	87.88	179.18	6,369.6	-1,198.9	-1,128.9	1,266.5	3.56	0.16	-3.56
7,276.0	88.15	176.29	6,371.7	-1,260.8	-1,126.4	1,328.2	4.68	0.44	-4.66
7,338.0	88.96	173.96	6,373.3	-1,322.6	-1,121.2	1,389.5	3.98	1.31	-3.76
7,399.0	89.36	172.15	6,374.2	-1,383.1	-1,113.8	1,449.4	3.04	0.66	-2.97
7,460.0	90.40	172.45	6,374.3	-1,443.6	-1,105.6	1,509.3	1.77	1.70	0.49
7,522.0	90.00	169.82	6,374.1	-1,504.8	-1,096.1	1,569.8	4.29	-0.65	-4.24
7,583.0	90.74	168.83	6,373.7	-1,564.8	-1,084.8	1,628.9	2.03	1.21	-1.62
7,644.0	88.86	166.75	6,373.9	-1,624.4	-1,071.9	1,687.6	4.60	-3.08	-3.41
7,705.0	89.26	167.51	6,374.9	-1,683.8	-1,058.3	1,746.1	1.41	0.66	1.25
7,766.0	89.93	168.00	6,375.3	-1,743.5	-1,045.3	1,804.8	1.36	1.10	0.80
7,826.0	89.40	166.98	6,375.7	-1,802.0	-1,032.3	1,862.5	1.92	-0.88	-1.70
7,890.0	89.73	167.71	6,376.2	-1,864.5	-1,018.3	1,924.0	1.25	0.52	1.14
7,953.0	90.84	167.25	6,375.9	-1,926.0	-1,004.7	1,984.5	1.91	1.76	-0.73
8,017.0	88.76	166.44	6,376.1	-1,988.3	-990.1	2,045.8	3.49	-3.25	-1.27
8,080.0	87.10	166.64	6,378.4	-2,049.5	-975.5	2,106.0	2.65	-2.63	0.32
8,143.0	87.75	167.25	6,381.2	-2,110.8	-961.2	2,166.3	1.41	1.03	0.97
8,206.0	88.32	166.85	6,383.3	-2,172.2	-947.1	2,226.7	1.11	0.90	-0.63
8,270.0	91.14	168.91	6,383.6	-2,234.8	-933.7	2,288.3	5.46	4.41	3.22
8,333.0	92.55	168.81	6,381.6	-2,296.5	-921.5	2,349.2	2.24	2.24	-0.16
8,397.0	90.44	168.19	6,379.9	-2,359.2	-908.8	2,411.0	3.44	-3.30	-0.97
8,460.0	90.91	168.38	6,379.2	-2,420.9	-896.0	2,471.7	0.80	0.75	0.30
8,524.0	90.74	168.38	6,378.3	-2,483.6	-883.1	2,533.5	0.27	-0.27	0.00
8,587.0	91.57	168.19	6,377.0	-2,545.3	-870.3	2,594.3	1.35	1.32	-0.30
8,650.0	90.07	166.61	6,376.1	-2,606.7	-856.6	2,654.8	3.46	-2.38	-2.51
8,713.0	90.37	166.65	6,375.9	-2,668.0	-842.0	2,715.0	0.48	0.48	0.06

103-02771



SDI
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Bowyers #2H - Slot Bowyers #2H
Project:	Mary Prospect	TVD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Site:	Bowyers Pad - Wetzel County, West Virginia	MD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Well:	Bowyers #2H	North Reference:	Grid
Wellbore:	ST01	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)
8,777.0	88.92	165.30	6,376.3	-2,730.1	-826.5	2,776.1	3.10	-2.27	-2.11
8,841.0	88.09	165.26	6,377.9	-2,792.0	-810.2	2,836.8	1.30	-1.30	-0.06
8,904.0	88.53	165.18	6,379.8	-2,852.9	-794.2	2,896.6	0.71	0.70	-0.13
8,968.0	89.46	165.64	6,380.9	-2,914.8	-778.0	2,957.4	1.62	1.45	0.72
9,031.0	90.27	166.18	6,381.1	-2,975.9	-762.7	3,017.4	1.55	1.29	0.86
9,095.0	91.11	166.00	6,380.3	-3,038.0	-747.3	3,078.5	1.34	1.31	-0.28
9,158.0	89.16	166.18	6,380.1	-3,099.2	-732.2	3,138.6	3.11	-3.10	0.29
9,222.0	89.60	165.96	6,380.8	-3,161.3	-716.8	3,199.6	0.77	0.69	-0.34
9,286.0	90.61	165.22	6,380.7	-3,223.3	-700.8	3,260.5	1.96	1.58	-1.16
9,349.0	91.27	165.11	6,379.7	-3,284.2	-684.7	3,320.3	1.06	1.05	-0.17
9,412.0	90.44	168.20	6,378.7	-3,345.5	-670.2	3,380.5	5.08	-1.32	4.90
9,476.0	88.76	167.27	6,379.2	-3,408.0	-656.6	3,442.1	3.00	-2.63	-1.45
9,540.0	88.83	165.81	6,380.5	-3,470.2	-641.7	3,503.3	2.28	0.11	-2.28
9,603.0	89.97	165.76	6,381.2	-3,531.3	-626.2	3,563.3	1.81	1.81	-0.08
9,667.0	89.09	167.08	6,381.7	-3,593.5	-611.2	3,624.4	2.48	-1.38	2.06
9,731.0	90.60	166.68	6,381.9	-3,655.8	-596.7	3,685.7	2.44	2.36	-0.63
9,794.0	91.61	167.25	6,380.7	-3,717.2	-582.5	3,746.1	1.84	1.60	0.90
9,858.0	90.03	165.79	6,379.8	-3,779.4	-567.5	3,807.3	3.36	-2.47	-2.28
9,922.0	90.44	166.08	6,379.5	-3,841.5	-552.0	3,868.3	0.78	0.64	0.45
9,985.0	89.63	167.41	6,379.5	-3,902.8	-537.5	3,928.6	2.47	-1.29	2.11
10,049.0	90.20	167.97	6,379.6	-3,965.3	-523.9	3,990.2	1.25	0.89	0.88
10,113.0	88.76	168.11	6,380.1	-4,027.9	-510.6	4,051.8	2.26	-2.25	0.22
10,176.0	89.06	168.23	6,381.3	-4,089.6	-497.7	4,112.6	0.51	0.48	0.19
10,240.0	89.63	167.78	6,382.1	-4,152.2	-484.4	4,174.2	1.13	0.89	-0.70
10,303.0	90.37	166.92	6,382.1	-4,213.7	-470.6	4,234.7	1.80	1.17	-1.37
10,366.0	88.99	167.56	6,382.4	-4,275.1	-456.7	4,295.2	2.41	-2.19	1.02
10,430.0	89.73	167.48	6,383.1	-4,337.6	-442.9	4,356.7	1.16	1.16	-0.13
10,493.0	90.87	166.39	6,382.8	-4,398.9	-428.6	4,417.1	2.50	1.81	-1.73
10,556.0	89.83	167.67	6,382.4	-4,460.3	-414.5	4,477.4	2.62	-1.65	2.03
10,620.0	90.57	167.47	6,382.2	-4,522.8	-400.7	4,539.0	1.20	1.16	-0.31
10,684.0	88.69	168.59	6,382.6	-4,585.4	-387.5	4,600.6	3.42	-2.94	1.75
10,747.0	88.86	168.91	6,384.0	-4,647.2	-375.2	4,661.5	0.58	0.27	0.51
10,810.0	88.29	169.37	6,385.5	-4,709.1	-363.3	4,722.5	1.16	-0.90	0.73
10,874.0	89.53	169.76	6,386.7	-4,772.0	-351.7	4,784.6	2.03	1.94	0.61
10,937.0	89.97	169.73	6,387.0	-4,834.0	-340.5	4,845.8	0.70	0.70	-0.05
11,001.0	88.42	170.44	6,387.9	-4,897.0	-329.5	4,908.0	2.66	-2.42	1.11
11,065.0	89.03	171.04	6,389.3	-4,960.2	-319.2	4,970.4	1.34	0.95	0.94
11,128.0	89.77	170.33	6,390.0	-5,022.3	-309.0	5,031.8	1.63	1.17	-1.13
11,192.0	90.77	170.84	6,389.7	-5,085.5	-298.5	5,094.2	1.75	1.56	0.80
11,255.0	90.00	171.36	6,389.3	-5,147.7	-288.8	5,155.7	1.47	-1.22	0.83
11,318.0	90.71	170.85	6,388.9	-5,210.0	-279.0	5,217.2	1.39	1.13	-0.81
11,381.0	90.07	170.13	6,388.5	-5,272.1	-268.6	5,278.6	1.53	-1.02	-1.14
11,445.0	88.69	169.64	6,389.2	-5,335.1	-257.4	5,340.8	2.29	-2.16	-0.77

103.02771



SDI
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Bowyers #2H - Slot Bowyers #2H
Project:	Mary Prospect	TVD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Site:	Bowyers Pad - Wetzel County, West Virginia	MD Reference:	18' RKB - 1156' GL @ 1174.0usft (Saxon 141)
Well:	Bowyers #2H	North Reference:	Grid
Wellbore:	ST01	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)	
11,508.0	89.43	170.40	6,390.2	-5,397.1	-246.5	5,402.0	1.68	1.17	1.21	
11,572.0	90.70	170.76	6,390.1	-5,460.3	-236.0	5,464.4	2.06	1.98	0.56	
11,636.0	88.42	170.29	6,390.6	-5,523.4	-225.5	5,526.7	3.64	-3.56	-0.73	
11,699.0	88.86	170.58	6,392.1	-5,585.5	-215.0	5,588.1	0.84	0.70	0.46	
11,763.0	87.04	169.97	6,394.4	-5,648.5	-204.2	5,650.3	3.00	-2.84	-0.95	
11,827.0	87.66	169.51	6,397.3	-5,711.4	-192.8	5,712.4	1.21	0.97	-0.72	
11,890.0	87.91	169.33	6,399.8	-5,773.3	-181.2	5,773.5	0.49	0.40	-0.29	
11,953.0	88.25	169.23	6,401.9	-5,835.2	-169.5	5,834.5	0.56	0.54	-0.16	
12,016.0	89.60	170.05	6,403.1	-5,897.1	-158.2	5,895.6	2.51	2.14	1.30	
12,080.0	90.23	168.66	6,403.2	-5,960.0	-146.4	5,957.7	2.38	0.98	-2.17	
12,143.0	90.91	169.15	6,402.5	-6,021.9	-134.3	6,018.6	1.33	1.08	0.78	
12,207.0	91.84	168.36	6,401.0	-6,084.6	-121.8	6,080.5	1.91	1.45	-1.23	
12,283.0	91.84	168.36	6,398.6	-6,159.0	-106.5	6,153.8	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Top of Fish	0.00	360.00	2,460.0	6.9	5.7	429,496.86	1,621,596.75	39° 40' 17.193 N	80° 50' 39.580 W	
- actual wellpath misses target center by 4.5usft at 2459.8usft MD (2459.7 TVD, 5.6 N, 1.4 E)										
- Point										

Checked By: _____ Approved By: _____ Date: _____