


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

Date: 11/4/2013
API: 47-051-01465

Revised 

Farm Name: Riggle, Patrick Shane _____ Operator Well No: SHL-3H-HS

LOCATION: Sand Hill Elevation: 1,289.18' Quadrangle: Majorsville

District: SAND HILL County: MARSHALL
Latitude: _____ Feet South of Deg. Min. Sec. 39.97101000
Longitude: _____ Feet South of Deg. Min. Sec. -80.55688000

Pilot Hole


Company: CNX Gas Company LLC	Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. Ft.
Address: 200 Evergreene Drive Waynesburg, PA 15370	20	40	40	Grouted In
Agent: Ryan Morgan	13 3/8	1001	1001	Cement to surface 618 sxs (22bbls return)
Inspector: Bill Hendershot	9 5/8	3104	3104	1012 sxs (No Returns)
Date Permit Issued: 6/13/2011	5 1/2	10944	10944	1754 sxs (407 bbls) Class A
Date Well Work Commenced: 6/24/2011				
Date Well Work 8/1/2012				
Verbal Plugging:				
Date Permission granted on: 6/24/2011				
Rotary Cable Rig X				
Total Vertical Depth (ft): Original Hole - 6,688.1				
Total Measured Depth (ft): 10,982.0				
Fresh Water Depth (ft): N/A				
Salt Water Depth (ft): N/A				
Is coal being mined in the area (N/Y)? Y				
Coal Depths (ft.): 660' - 665'				
Void(s) encountered (N/Y) Depth(s) N/A				

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

Producing formation Marcellus Pay zone depth (ft) 6666'
Gas: Initial open flow 3736 MCF/d Oil: Initial open flow 59 Bbl/d
Final open flow 3947 MCF/d Final open flow 55 Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 1120 psig (surface pressure) after 24 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.

 _____
Signature Date 1/9/14

05/02/2014

Were core samples taken? Yes No

Were cuttings caught during drilling? Yes No

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Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list: MWD Gamma Ray _____

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: Please See Attached

Plug Back Details including Plug Type and Depth(s): Please See Attached

Surface: _____

Formations Encountered: Please See Attached

05/02/2014

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CNX SHL-3H-HS ST01 Gyro+MWD 5308' MD to 10982' MD Survey Report

(Def Survey)

Report Date: December 15, 2011 - 10:50 AM
 Client: CNX
 Field: WV Marshall County (NAD 27)
 Structure / Slot: CNX SHL-3Pad / CNX SHL-3H-HS
 Well: SHL-3H-HS
 Borehole: ST01
 UWI / API#: Unknown / Unknown
 Survey Name: CNX SHL-3H-HS ST01 Gyro+MWD 5308' MD to 10982' MD
 Survey Date: July 04 2011
 Tort / AHD / DDI / ERD Ratio: 184 010' / 4960.494 ft / 6.176 / 0.742
 Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
 Location Lat / Long: N 39° 58' 15.85968", W 80° 33' 24.98761"
 Location Grid N/E Y/X: N 537527.760 AUS, E 1703770.320 IUS
 CRS Grid Convergence Angle: -0.67468941 °
 Grid Scale Factor: 0.99995864

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 153.078 ° (Grid North)
 Vertical Section Origin: 0.000 R, 0.000 R
 TVD Reference Datum: KB
 TVD Reference Elevation: 1311.570 ft above Unknown
 Seabed / Ground Elevation: 1280.180 ft above Unknown
 Magnetic Declination: -8.740 °
 Total Field Strength: 52940.812 nT
 Magnetic Dip Angle: 67.603 °
 Declination Date: July 04, 2011
 Magnetic Declination Model: BGMN 2011
 North Reference: Grid North
 Grid Convergence Used: -0.674 °
 Total Corr Mag North->Grid North: -8.086 °

Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (1/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Projected-Up	0.00	0.00	0.00	0.00	-1311.57	0.00	0.00	0.00	N/A	537527.76	1703770.32	N 39 58 15.66	W 80 33 24.99
SFIL	8.00	0.00	0.00	8.00	-1303.57	0.00	0.00	0.00	0.00	537527.78	1703770.32	N 39 58 15.66	W 80 33 24.99
	108.00	0.14	329.81	108.00	-1203.57	-0.12	0.11	-0.06	0.14	537527.80	1703770.26	N 39 58 15.66	W 80 33 24.99
	208.00	0.05	279.65	208.00	-1103.57	-0.27	0.22	-0.17	0.11	537528.01	1703770.15	N 39 58 15.66	W 80 33 24.99
	308.00	0.20	148.58	308.00	-1003.57	-0.12	0.08	-0.12	0.24	537527.87	1703770.20	N 39 58 15.66	W 80 33 24.99
	408.00	0.09	181.33	408.00	-903.57	0.12	-0.15	-0.03	0.13	537527.84	1703770.29	N 39 58 15.66	W 80 33 24.99
	508.00	0.04	202.90	508.00	-803.57	0.21	-0.26	-0.04	0.05	537527.53	1703770.28	N 39 58 15.66	W 80 33 24.99
	608.00	0.09	111.41	608.00	-703.57	0.20	-0.32	0.02	0.10	537527.47	1703770.34	N 39 58 15.66	W 80 33 24.99
	708.00	0.17	106.84	708.00	-603.57	0.46	-0.49	0.05	0.10	537527.30	1703770.37	N 39 58 15.66	W 80 33 24.99
	808.00	0.13	332.32	808.00	-503.57	0.45	-0.53	-0.05	0.28	537527.28	1703770.27	N 39 58 15.65	W 80 33 24.60
	908.00	0.14	211.14	908.00	-403.57	0.40	-0.54	-0.17	0.24	537527.25	1703770.16	N 39 58 15.65	W 80 33 24.99
	1008.00	0.16	0.93	1008.00	-303.57	0.35	-0.60	-0.23	0.29	537527.20	1703770.09	N 39 58 15.65	W 80 33 24.99
	1108.00	0.18	46.25	1108.00	-203.57	0.18	-0.26	-0.11	0.13	537527.53	1703770.21	N 39 58 15.66	W 80 33 24.99
	1208.00	0.27	297.44	1208.00	-103.57	-0.08	-0.04	-0.21	0.37	537527.75	1703770.11	N 39 58 15.66	W 80 33 24.99
	1308.00	0.15	278.08	1308.00	-3.57	-0.32	0.08	-0.55	0.14	537527.87	1703769.77	N 39 58 15.60	W 80 33 24.99
	1408.00	0.23	274.36	1408.00	96.43	-0.50	0.11	-0.88	0.08	537527.95	1703769.44	N 39 58 15.66	W 80 33 25.00
	1508.00	0.45	304.41	1507.99	195.42	-0.95	0.35	-1.40	0.28	537528.14	1703768.92	N 39 58 15.66	W 80 33 25.01
	1608.00	0.48	325.86	1607.99	290.42	-1.71	0.92	-1.86	0.17	537528.71	1703768.26	N 39 58 15.67	W 80 33 25.01
	1708.00	1.04	320.36	1707.98	396.41	-3.01	1.06	-2.78	0.66	537529.75	1703767.54	N 39 58 15.66	W 80 33 25.02
	1808.00	1.11	313.37	1807.96	496.39	-4.80	3.33	-4.06	0.15	537531.12	1703766.26	N 39 58 15.69	W 80 33 25.04
	1908.00	0.82	281.01	1907.95	596.38	-8.16	4.13	-5.47	0.61	537531.92	1703764.85	N 39 58 15.70	W 80 33 25.06
	2008.00	0.82	283.28	2007.94	696.37	-7.06	4.43	-6.80	0.03	537532.22	1703763.46	N 39 58 15.70	W 80 33 25.08
	2108.00	0.52	292.89	2107.93	796.36	-7.87	4.77	-7.98	0.32	537532.58	1703762.31	N 39 58 15.71	W 80 33 25.00
	2208.00	0.55	202.14	2207.93	896.36	-8.52	5.05	-8.87	0.10	537532.84	1703761.45	N 39 58 15.71	W 80 33 25.10
	2308.00	0.37	271.40	2307.93	996.36	-6.87	5.16	-9.66	0.20	537532.95	1703760.66	N 39 58 15.71	W 80 33 25.11
	2408.00	0.34	266.39	2407.92	1096.35	-9.24	5.15	-10.28	0.04	537532.94	1703760.04	N 39 58 15.71	W 80 33 25.12
	2508.00	0.23	227.47	2507.92	1196.35	-8.31	4.99	-10.72	0.22	537532.78	1703759.60	N 39 58 15.71	W 80 33 25.13
	2608.00	0.43	238.52	2607.92	1296.35	-9.22	4.66	-11.19	0.21	537532.45	1703759.13	N 39 58 15.70	W 80 33 25.14
	2708.00	0.31	239.11	2707.92	1396.35	-9.17	4.33	-11.74	0.12	537532.12	1703758.58	N 39 58 15.70	W 80 33 25.14
	2808.00	0.33	253.56	2807.92	1496.35	-9.21	4.10	-12.25	0.08	537531.89	1703758.07	N 39 58 15.70	W 80 33 25.15
	2908.00	0.20	255.42	2907.92	1596.35	-9.31	3.96	-12.77	0.04	537531.75	1703757.55	N 39 58 15.70	W 80 33 25.15
	3008.00	0.35	250.57	3007.91	1696.34	-9.41	3.79	-13.30	0.07	537531.58	1703757.02	N 39 58 15.70	W 80 33 25.16
	3108.00	0.24	267.77	3107.91	1796.34	-8.53	3.88	-13.80	0.14	537531.47	1703756.52	N 39 58 15.69	W 80 33 25.17
	3208.00	0.41	258.27	3207.91	1896.34	-9.70	3.59	-14.38	0.18	537531.38	1703755.96	N 39 58 15.69	W 80 33 25.17
	3308.00	0.41	257.43	3307.91	1996.34	-9.87	3.43	-15.05	0.01	537531.22	1703755.27	N 39 58 15.69	W 80 33 25.18
	3408.00	0.20	265.00	3407.91	2096.34	-10.03	3.34	-15.58	0.21	537531.13	1703754.74	N 39 58 15.69	W 80 33 25.19
	3508.00	0.31	235.11	3507.91	2196.34	-10.08	3.17	-15.97	0.17	537530.96	1703754.25	N 39 58 15.69	W 80 33 25.19
	3608.00	0.22	263.13	3607.91	2296.34	-10.08	2.99	-16.39	0.18	537530.78	1703753.93	N 39 58 15.69	W 80 33 25.20
	3708.00	0.13	311.60	3707.91	2396.34	-10.26	3.04	-16.69	0.17	537530.83	1703753.66	N 39 58 15.69	W 80 33 25.20
	3808.00	0.19	333.39	3807.91	2496.34	-10.53	3.28	-16.82	0.08	537531.05	1703753.50	N 39 58 15.69	W 80 33 25.20
	3908.00	0.26	7.88	3907.00	2596.33	-10.88	3.64	-16.80	0.15	537531.43	1703753.46	N 39 58 15.69	W 80 33 25.20
	4008.00	0.38	2.35	4007.90	2696.33	-11.35	4.19	-16.82	0.12	537531.08	1703753.50	N 39 58 15.70	W 80 33 25.20
	4108.00	0.46	355.33	4107.90	2796.33	-12.03	4.84	-16.84	0.11	537532.73	1703753.48	N 39 58 15.71	W 80 33 25.20
	4208.00	0.59	377.78	4207.80	2896.33	-12.64	5.77	-16.66	0.40	537533.58	1703753.76	N 39 58 15.71	W 80 33 25.20
	4308.00	0.45	13.67	4307.89	2996.32	-13.16	6.58	-16.15	0.26	537534.35	1703754.17	N 39 58 15.72	W 80 33 25.20
	4408.00	0.72	1.14	4407.89	3096.32	-14.01	7.57	-16.04	0.30	537535.35	1703754.26	N 39 58 15.73	W 80 33 25.19
	4508.00	0.41	18.02	4507.88	3196.31	-14.82	8.53	-15.92	0.35	537536.32	1703754.40	N 39 58 15.74	W 80 33 25.19
	4608.00	0.33	347.81	4607.88	3296.31	-15.35	9.16	-15.87	0.21	537536.94	1703754.45	N 39 58 15.75	W 80 33 25.19
	4708.00	0.44	7.13	4707.88	3396.31	-15.86	9.82	-15.88	0.17	537537.61	1703754.44	N 39 58 15.78	W 80 33 25.19
	4808.00	0.47	353.77	4807.67	3496.30	-16.65	10.61	-15.88	0.11	537538.40	1703754.44	N 39 58 15.78	W 80 33 25.19
	4908.00	0.43	356.01	4907.87	3596.30	-17.38	11.39	-15.95	0.04	537539.18	1703754.37	N 39 58 15.77	W 80 33 25.19
	5008.00	0.75	8.85	5007.87	3696.30	-18.27	12.41	-15.90	0.34	537540.20	1703754.42	N 39 58 15.78	W 80 33 25.19
	5108.00	0.77	358.17	5107.96	3796.29	-19.42	13.73	-15.85	0.12	537541.52	1703754.47	N 39 58 15.79	W 80 33 25.19
	5208.00	0.26	10.32	5207.85	3896.28	-20.21	14.63	-15.83	0.52	537542.42	1703754.49	N 39 58 15.80	W 80 33 25.19
	5308.00	0.50	352.58	5307.85	3996.28	-20.85	15.34	-15.85	0.32	537543.13	1703754.47	N 39 58 15.81	W 80 33 25.19
	5347.00	2.62	221.89	5346.84	4035.27	-20.71	14.00	-16.47	7.73	537542.65	1703753.85	N 39 58 15.80	W 80 33 25.20
	5394.00	6.25	223.80	5393.60	4082.12	-10.48	12.22	-18.96	7.73	537540.01	1703751.36	N 39 58 15.73	W 80 33 25.20
	5441.00	10.20	225.73	5440.20	4128.83	-17.30	7.47	-23.71	0.42	537535.25	1703748.61	N 39 58 15.79	W 80 33 25.20
	5488.00	12.49	226.39	5486.28	4174.71	-14.89	1.05	-30.37	4.88	537528.84	1703739.96	N 39 58 15.67	W 80 33 25.58
	5535.00	13.67	224.75	5532.06	4220.49	-11.49	-6.40	-37.97	2.63	537621.30	1703732.30	N 39 58 15.50	W 80 33 25.47
	5583.00	16.14	223.32	5578.44	4268.87	-7.45	-15.28	-46.54	5.20	537512.51	1703723.79	N 39 58 15.50	W 80 33 25.58
	5630.00	17.29	224.59	5623.45	4311.88	-3.03	-25.00	-55.02	2.56	537502.79	1703714.40	N 39 58 15.41	W 80 33 26.70
	5678.00	16.92	225.08	5668.99	4357.42								

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Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (NWS ° ' ")	Longitude (EWS ° ' ")
	6293.00	47.70	217.57	6160.14	4884.57	64.95	-248.65	-276.01	7.95	537251.15	17034694.32	N 39 58 13.15	W 80 33 28.50
	6341.00	48.71	212.60	6228.14	4910.57	111.74	-275.92	-290.50	8.00	537251.88	17034713.77	N 39 58 12.00	W 80 33 28.75
	6388.00	48.70	207.25	6259.17	4947.60	131.04	-306.51	-314.17	8.55	537221.30	17034561.17	N 39 58 12.59	W 80 33 28.66
	6435.00	49.62	203.65	6296.94	4978.37	152.73	-338.50	-329.42	6.05	537189.22	1703440.91	N 39 58 12.28	W 80 33 28.17
	6482.00	61.44	198.91	6319.98	5009.29	176.90	-372.35	-347.55	8.79	537165.45	1703427.78	N 39 58 11.94	W 80 33 29.33
	6530.00	61.97	193.81	6349.81	5038.04	204.31	-408.48	-353.15	8.41	537110.33	1703417.18	N 39 58 11.58	W 80 33 29.46
	6577.00	53.02	189.54	6378.24	5060.07	233.45	-444.08	-380.69	7.54	537082.83	1703408.65	N 39 58 11.22	W 80 33 28.55
	6624.00	53.69	188.62	6408.29	5094.72	263.05	-482.22	-396.03	2.12	537045.99	1703403.70	N 39 58 10.85	W 80 33 29.62
	6671.00	55.38	184.13	6433.57	5122.00	295.94	-520.25	-370.87	8.57	537007.57	1703390.47	N 39 58 10.48	W 80 33 29.67
	6718.00	57.35	181.84	6460.16	5148.59	330.57	-560.15	-372.97	5.59	536967.67	1703397.36	N 39 58 10.08	W 80 33 29.60
	6766.00	58.14	177.48	6485.25	5173.88	368.00	-599.88	-372.78	8.23	536927.84	1703397.58	N 39 58 9.89	W 80 33 29.68
	6814.00	60.33	173.34	6509.81	5198.24	404.24	-640.97	-369.44	8.87	536888.84	1703400.80	N 39 58 9.28	W 80 33 29.64
	6861.00	62.65	170.23	6532.28	5220.71	443.35	-681.82	-303.53	7.49	536848.00	1703406.81	N 39 58 8.88	W 80 33 20.55
	6908.00	66.00	167.28	6557.88	5241.11	484.09	-723.33	-355.25	9.29	536804.49	1703415.08	N 39 58 8.47	W 80 33 26.44
	6955.00	69.71	164.46	6570.78	5259.21	526.38	-765.38	-394.65	7.07	536762.44	1703425.89	N 39 58 8.06	W 80 33 26.30
	7003.00	71.05	161.07	6587.29	5275.72	570.80	-808.42	-331.29	8.23	536719.41	1703439.05	N 39 58 7.83	W 80 33 29.12
	7096.00	75.26	156.70	6614.25	5302.88	619.32	-891.39	-299.20	8.38	536686.44	1703471.13	N 39 58 6.82	W 80 33 28.70
	7143.00	77.30	153.25	6625.37	5313.80	704.95	-932.76	-279.88	8.44	536595.07	1703450.45	N 39 58 6.41	W 80 33 28.44
	7191.00	79.37	149.87	6635.04	5323.47	751.94	-974.09	-257.49	8.05	536553.74	1703512.84	N 39 58 6.00	W 80 33 28.15
	7244.00	80.53	146.78	6644.29	5332.72	803.94	-1018.50	-230.09	6.14	536509.34	1703540.24	N 39 58 5.57	W 80 33 27.79
	7286.00	82.22	146.12	6650.59	5339.02	845.18	-1053.10	-207.14	4.31	536474.73	1703563.19	N 39 58 5.23	W 80 33 27.40
	7333.00	84.97	144.49	6655.85	5344.28	891.45	-1091.50	-180.56	6.70	536436.34	1703589.77	N 39 58 4.65	W 80 33 27.14
	7380.00	88.60	142.56	6658.51	5349.94	937.71	-1129.22	-152.67	8.84	536398.82	1703617.66	N 39 58 4.48	W 80 33 26.78
	7424.00	89.21	141.19	6659.35	5347.78	980.87	-1163.83	-125.51	3.41	536364.01	1703644.82	N 39 58 4.14	W 80 33 26.42
	7519.00	90.45	140.48	6659.63	5348.06	1073.70	-1237.47	-65.50	1.51	536320.37	1703704.82	N 39 58 3.42	W 80 33 25.84
	7513.00	89.97	142.94	6659.29	5347.72	1165.84	-1311.23	-7.25	2.60	536216.61	1703763.07	N 39 58 2.70	W 80 33 24.88
	7708.00	89.80	141.84	6659.43	5347.86	1269.10	-1368.38	50.88	1.37	536141.46	1703821.18	N 39 58 1.97	W 80 33 24.12
	7802.00	89.03	143.19	6659.90	5348.03	1351.64	-1460.87	108.19	1.65	536068.68	1703878.51	N 39 58 1.24	W 80 33 23.36
	7897.00	89.93	143.91	6659.72	5348.15	1445.23	-1537.29	164.03	0.76	535990.57	1703934.56	N 39 58 0.49	W 80 33 22.64
	7992.00	89.62	143.24	6660.09	5348.52	1538.92	-1613.73	221.04	0.78	535911.13	1703991.35	N 39 58 0.74	W 80 33 21.91
	8086.00	89.78	143.13	6660.60	5349.03	1631.52	-1688.99	277.37	0.19	535838.88	1704047.68	N 39 57 58.00	W 80 33 21.17
	8181.00	89.90	143.78	6660.88	5349.31	1725.19	-1765.29	333.95	0.68	535762.57	1704104.25	N 39 57 58.25	W 80 33 20.43
	8276.00	89.55	143.14	6661.34	5349.77	1818.84	-1841.61	390.52	0.75	535688.26	1704160.83	N 39 57 57.51	W 80 33 19.69
	8370.00	89.24	142.18	6662.33	5350.76	1911.29	-1918.34	447.53	1.07	535611.53	1704217.83	N 39 57 56.77	W 80 33 18.95
	8465.00	89.80	141.51	6663.24	5351.87	2004.46	-1991.04	506.72	0.83	535538.84	1704276.52	N 39 57 56.04	W 80 33 18.19
	8560.00	89.89	140.59	6663.78	5352.21	2097.37	-2064.92	565.94	0.97	535462.96	1704336.24	N 39 57 55.32	W 80 33 17.41
	8654.00	89.68	140.00	6664.31	5352.74	2189.04	-2137.23	625.99	0.83	535390.85	1704396.28	N 39 57 54.61	W 80 33 16.63
	8749.00	90.10	140.12	6664.61	5352.94	2281.80	-2210.07	686.98	0.48	535317.82	1704457.27	N 39 57 53.90	W 80 33 15.83
	8844.00	90.21	140.30	6664.25	5352.88	2374.21	-2283.07	747.77	0.22	535244.82	1704518.06	N 39 57 53.19	W 80 33 15.04
	8938.00	90.17	139.32	6663.94	5352.37	2465.70	-2354.87	808.43	1.04	535173.02	1704578.72	N 39 57 52.48	W 80 33 14.26
	9033.00	89.73	140.45	6664.03	5352.46	2558.19	-2427.52	869.64	1.28	535100.37	1704639.83	N 39 57 51.77	W 80 33 13.45
	9128.00	89.76	140.71	6664.45	5352.88	2650.04	-2500.91	929.97	0.28	535028.99	1704700.25	N 39 57 51.05	W 80 33 12.67
	9222.00	89.90	142.92	6664.73	5353.16	2743.12	-2574.79	998.07	1.72	534953.11	1704758.35	N 39 57 50.33	W 80 33 11.91
	9317.00	89.83	144.75	6664.95	5353.38	2836.89	-2651.48	1044.13	1.93	534876.42	1704814.41	N 39 57 49.58	W 80 33 11.18
	9412.00	89.89	145.54	6665.35	5353.78	2930.98	-2729.44	1098.42	0.84	534798.47	1704868.70	N 39 57 48.82	W 80 33 10.47
	9506.00	89.31	145.71	6666.17	5354.80	3024.18	-2807.02	1151.60	0.44	534720.89	1704921.77	N 39 57 48.05	W 80 33 9.79
	9601.00	89.35	148.75	6667.28	5355.71	3118.49	-2885.90	1204.30	1.10	534641.83	1704974.57	N 39 57 47.28	W 80 33 9.09
	9696.00	89.28	146.06	6668.42	5356.85	3212.03	-2965.52	1258.24	0.23	534562.40	1705026.50	N 39 57 46.50	W 80 33 8.41
	9790.00	88.24	147.44	6669.63	5358.06	3306.42	-3044.53	1307.15	0.51	534483.90	1705077.42	N 39 57 45.73	W 80 33 7.74
	9884.00	89.28	147.90	6670.84	5359.27	3400.00	-3123.95	1357.42	0.49	534403.97	1705127.68	N 39 57 44.95	W 80 33 7.08
	9979.00	89.28	147.78	6672.04	5360.47	3494.59	-3204.37	1407.98	0.13	534323.68	1705178.24	N 39 57 44.16	W 80 33 6.42
	10074.00	89.55	148.37	6673.01	5361.44	3590.22	-3284.99	1458.22	0.68	534242.94	1705228.47	N 39 57 43.37	W 80 33 5.77
	10168.00	89.66	147.02	6674.18	5362.91	3682.80	-3364.43	1508.44	1.72	534163.50	1705278.70	N 39 57 42.59	W 80 33 5.11
	10263.00	88.86	142.94	6676.70	5365.13	3778.80	-3442.19	1552.93	4.29	534085.74	1705333.19	N 39 57 41.83	W 80 33 4.40
	10357.00	89.07	141.53	6678.56	5368.99	3869.10	-3516.48	1620.49	1.56	534011.45	1705390.74	N 39 57 41.10	W 80 33 3.85
	10452.00	89.18	141.55	6680.01	5368.44	3962.17	-3590.87	1670.57	0.12	533937.08	1705449.82	N 39 57 40.37	W 80 33 2.88
	10547.00	89.07	140.81	6681.46	5368.80	4055.14	-3664.93	1739.05	0.68	533863.02	1705509.39	N 39 57 39.65	W 80 33 2.10
	10641.00	89.24	140.40	6682.85	5371.28	4146.63	-3737.81	1798.64	0.57	533790.34	1705568.88	N 39 57 38.93	W 80 33 1.33
	10735.00	89.21	139.57	6684.12	5372.55	4238.47	-3809.60	1859.07	0.88	533718.26	1705628.31	N 39 57 38.23	W 80 33 0.54
	10830.00	89.04	139.82	6685.57	5374.00	4330.84	-3881.93	1920.84	0.19	533646.83	1705688.88	N 39 57 37.52	W 80 32 59.74
Firial Survey 9-Dec-11	10920.00	89.11	137.83	6688.73	5375.16	4420.59	-3936.03	1988.13	2.49	533591.83	1705738.37	N 39 57 36.99	W 80 32 56.12
Projection to Bit	10982.00	89.11	137.83	6687.98	5376.41	4477.78	-3995.32	2021.83	9.00	533532.84	1705792.07	N 39 57 36.41	W 80 32 58.42

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7855 sigma
 Survey Program:

Description	MD From (ft)	MD To (ft)	EDU Freq (ft)	Survey Tool Type	Borehole / Survey
	0.000	8.000	Act Stns	SLB_NSG+MSHOT-Depth Only	Original Borehole / CNX SHL-3H-HS Gyros (15ft KB) 0ft to 8725ft MD (Projected-Up)
	9.300	22.390	Act St		

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Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	660	0	660	
Pittsburgh Coal	660	665	660	665	
Shale and Sandstone	665	1222	665	1222	
Dunkard Sand	1222	1233	1222	1233	
Shale	1233	1404	1233	1404	
Gas Sand	1404	1443	1404	2397	
Shale	1443	1535	1443	2594	
1st Salt Sand	1535	1559	1535	2596	
Shale	1559	1568	1559	2649	
2nd Salt Sand	1568	1613	1568	2658	
Shale	1613	1696	1613	2700	
Maxton Sand	1696	1708	1696	2715	
Shale	1708	1751	1708	2751	
Big Lime	1751	1831	1751	2764	
Big Injun	1831	2025	1831	2860	
Price	2025	2383	2025	3300	
Murrysville	2383	2397	2383	3328	
Shale	2397	2594	2397	4336	
50' Sand	2594	2596	2594	2596	
Shale	2596	2649	2596	2649	
30' Sand	2649	2658	2649	2658	
Shale	2658	2700	2658	2700	
Gordon Stray	2700	2715	2700	2715	
Shale	2715	2751	2715	2751	
Gordon	2751	2764	2751	2764	
Shale	2764	2860	2764	2860	
Fifth Sand	2860	2894	2860	2894	
Shale	2894	3300	2894	3300	
Speechley Sand	3300	3328	3300	3328	
Shale	3328	4336	3328	4336	
Warren Sand	4336	4345	4336	4345	
Shale	4345	5003	4345	5003	
Java Shale	5003	5174	5003	5174	
Pipe Creek Shale	5174	5231	5174	5231	
Angola Shale	5231	5856	5231	5876	
Rhinestreet	5856	6272	5876	6408	
Cashaqua	6272	6363	6408	6552	
Middlesex	6363	6398	6552	6610	
West River	6398	6450	6610	6701	
Burkett	6450	6473	6701	6743	
Tully Limestone	6473	6503	6743	6801	
Hamilton	6503	6614	6801	7095	
Marcellus	6614	6664	7095	not encountered	Gas
Onondaga	6664	not encountered	not encountered	not encountered	

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Stimulation Summary

Date	Stage #	Formation	Frac Type	Top Perf	Bottom Perf	# of Perfs	BD Press (psi)	ATP (psi)	Avg Rate (bpm)	ISIP (psi)	Frac Gradient	Sand (lbs)	Acid (gals)	Water (gals)
7/16/2012	1	Marcellus	Slickwater	10,723	10,940	45	5,040	7,143	62.0	3,954	1.02	351,027	2,000	410,508
7/16/2012	2	Marcellus	Slickwater	10,472	10,674	40	5,591	8,431	76.2	4,988	1.18	176,804	2,000	282,786
7/16/2012	3	Marcellus	Slickwater	10,222	10,424	40	5,656	7,677	79.0	4,200	1.06	356,797	2,000	334,446
7/17/2012	4	Marcellus	Slickwater	9,922	10,174	40	6,143	7,356	63.5	4,096	1.05	354,474	2,000	339,738
7/18/2012	5	Marcellus	Slickwater	9,622	9,874	40	6,897	7,511	72.0	4,220	1.07	307,269	2,000	311,682
7/28/2013	6	Marcellus	Slickwater	9,322	9,574	40	5961	7839	60	4153	1.056	349,969	2000	386,358
7/28/2012	6RP	Marcellus	Slickwater	9,292	9,469	32	N/A	N/A	N/A	N/A	N/A	1,009	6,000	100,128
7/28/2012	7	Marcellus	Slickwater	9,025	9,252	40	6,472	7,685	89.0	4,293	1.08	351,419	2,000	325,122
7/28/2012	8	Marcellus	Slickwater	8,722	8,974	40	6,538	7,180	88.0	4,272	1.07	351,616	2,000	327,516
7/29/2012	9	Marcellus	Slickwater	8,422	8,674	40	6,503	7,529	85.7	4,333	1.08	352,163	2,000	327,138
7/30/2012	10	Marcellus	Slickwater	8,098	8,237	34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	70,854
7/29/2012	10B	Marcellus	Slickwater	8,122	8,374	40	7,850	7,432	61.5	4,263	1.07	351,222	5,000	411,936
7/30/2012	11	Marcellus	Slickwater	7,873	8,050	40	6,002	7,241	67.4	4,407	1.10	201,418	2,000	256,956
8/1/2012	12	Marcellus	Slickwater	7,572	7,824	40	4,962	7,759	84.0	4,139	1.06	349,153	2,000	327,726
8/1/2012	13	Marcellus	Slickwater	7,272	7,524	40	5,428	7,249	88.0	4,234	1.07	460,041	2,000	351,456

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Stage #	Plug Type	Plug Depth
1	No Plug	No Plug
2	Composite Frac Plug	10697
3	Composite Frac Plug	10447
4	Composite Frac Plug	10197
5	Composite Frac Plug	9897
6A, 6B	Composite Bridge Plug	9597
7	Composite Frac Plug	9272
8	Composite Frac Plug	8997
9	Composite Frac Plug	8697
10A, 10B	Composite Frac Plug	8,397
11	Composite Frac Plug	8,075
12	Composite Bridge Plug	7,847
13	Composite Frac Plug	7,547

Plug Back Details: 5950' - 5350'; Pumped 80bbl gel pill, 5bbl H2O Spacer; 58bbl slurry, and 5bbl H2O; Used 275 sks Class A, 1.09 yield

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