

file

51-01369

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: 11/4/2013
API: 47-051-01369

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

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

District: SAND HILL County: MARSHALL
Latitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec. 39.97109200
Longitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec. -80.55697800

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	1022	1022	230 sxs to surface
Inspector: Bill Hendershot	9 5/8	3122	3122	1010 sxs to surface
Date Permit Issued: 11/1/2010	5 1/2	12591	12591	1597 sxs (379 bbls) Class A
Date Well Work Commenced: 6/11/2011				
Date Well Work Completed: 6/25/12				
Verbal Plugging:				
Date Permission granted on: 6/11/2011				
Rotary Cable Rig X				
Total Vertical Depth (ft): 6588.07'				
Total Measured Depth (ft): 12,605.0				
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) 6589
Gas: Initial open flow 2901 MCF/d Oil: Initial open flow 62 Bbl/d
Final open flow 4021 MCF/d Final open flow 56 Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 1500 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.

Handwritten signature
Signature Date

Handwritten notes and stamps: "1/27/14", "1/20/14", "E..."

James J. Watkins, Noble Energy, One, 1/20/14

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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 _____

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

[Faint, illegible handwritten notes or signatures]

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Stage #	Plug Type	Plug Depth
1	No Plug	No Plug
2	Composite Frac Plug	12,243
3	Composite Frac Plug	11,943
4	Composite Frac Plug	11,643
5	Composite Frac Plug	11,343
6	Composite Frac Plug	11,043
7	Composite Frac Plug	10,743
8	Composite Frac Plug	10,443
9	Composite Frac Plug	10,243
10	Composite Frac Plug	10,043
11	Composite Frac Plug	9,843
12	Composite Frac Plug	9,543
13	Composite Frac Plug	9,213
14	Composite Frac Plug	8,943
15	Composite Frac Plug	8,643
16	Composite Frac Plug	8,343
17	Composite Frac Plug	8,043
18	Composite Frac Plug	7,743
19	Composite Frac Plug	7,443
20	Composite Frac Plug	7,143

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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)
6/11/2012	1	Marcellus	Slickwater	12,268	12,470	48	8,300	7,666	67.5	3,790	1.01	226,887	2,000	310,086
6/12/2012	2	Marcellus	Slickwater	11,968	12,220	40	5,240	7,541	70.6	3,850	1.02	180,510	2,000	210,000
6/12/2012	3	Marcellus	Slickwater	11,668	11,920	40	5,273	7,710	74.7	4,018	1.04	305,227	2,000	336,798
6/12/2012	4	Marcellus	Slickwater	11,368	11,620	40	5,620	7,683	79.7	3,950	1.03	284,947	2,000	271,866
6/12/2012	5	Marcellus	Slickwater	11,068	11,320	40	5,503	7,431	71.4	4,135	1.06	242,139	2,000	278,460
6/13/2012	6	Marcellus	Slickwater	10,768	11,020	40	5,739	7,491	74.7	3,879	1.02	284,064	2,000	256,536
6/17/2013	7	Marcellus	Slickwater	10,468	10,720	40	6,010	8,091	61.2	6,180	1.05	77,185	2,000	169,974
6/20/2012	8	Marcellus	Slickwater	10,268	10,420	36	6,819	7,908	73.6	4,259	1.08	305,375	2,000	286,230
6/20/2012	9	Marcellus	Slickwater	10,068	10,220	36	5,810	7,691	78.0	4,420	1.10	297,575	2,000	280,308
6/20/2012	10	Marcellus	Slickwater	9,868	10,020	36	5,416	7,873	79.4	4,330	1.09	296,144	2,000	278,922
6/21/2012	11	Marcellus	Slickwater	9,568	9,820	40	5,200	7,810	80.1	3,940	1.03	319,491	3,400	309,918
6/21/2012	12	Marcellus	Slickwater	9,268	9,520	40	5,545	7,213	55.7	7,147	1.51	260,886	3,500	291,900
6/22/2012	12 Pump In	Marcellus	Slickwater	N/A	N/A	N/A	3,129	7,397	4.1	1,565	0.67	0	2,000	55,104
6/22/2012	13	Marcellus	Slickwater	8,968	9,220	40	5,342	7,888	76.8	3,995	1.04	300,678	2,000	293,244
6/22/2012	14	Marcellus	Slickwater	8,668	8,920	40	5,303	6,932	79.0	4,075	1.05	300,920	2,000	287,532
6/23/2012	15	Marcellus	Slickwater	8,368	8,620	40	5,185	7,291	85.5	4,004	1.04	292,761	2,000	277,032
6/23/2012	16	Marcellus	Slickwater	8,068	8,320	40	5,431	7,336	82.3	4,287	1.08	294,923	2,000	281,442
6/23/2012	17	Marcellus	Slickwater	7,768	8,020	40	6,447	6,978	77.8	4,024	1.04	300,062	2,000	303,534
6/23/2012	18	Marcellus	Slickwater	7,468	7,720	40	5,802	7,635	68.2	4,298	1.08	297,249	2,000	280,392
6/24/2012	19	Marcellus	Slickwater	7,168	7,420	40	6,050	7,136	84.0	4,074	1.05	301,550	2,000	282,912
6/25/2012	20	Marcellus	Slickwater	6,868	7,120	40	5,920	7,388	72.0	3,719	1.00	300,808	2,000	281,736

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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	2398	
Shale	1443	1535	1443	2595	
1st Salt Sand	1535	1559	1535	2597	
Shale	1559	1568	1559	2650	
2nd Salt Sand	1568	1613	1568	2659	
Shale	1613	1696	1613	2701	
Maxton Sand	1696	1708	1696	2716	
Shale	1708	1751	1708	2752	
Big Lime	1751	1831	1751	2765	
Big Injun	1831	2025	1831	2861	
Price	2025	2383	2025	3302	
Murrysville	2383	2397	2384	3330	
Shale	2397	2594	2398	4338	
50' Sand	2594	2596	2595	2597	
Shale	2596	2649	2597	2650	
30' Sand	2649	2658	2650	2659	
Shale	2658	2700	2659	2701	
Gordon Stray	2700	2715	2701	2716	
Shale	2715	2751	2716	2752	
Gordon	2751	2764	2752	2765	
Shale	2764	2860	2765	2861	
Fifth Sand	2860	2894	2861	2895	
Shale	2894	3300	2895	3302	
Speechley Sand	3300	3328	3302	3330	
Shale	3328	4336	3330	4338	
Warren Sand	4336	4345	4338	4347	
Shale	4345	5003	4347	5005	
Java Shale	5003	5174	5005	5176	
Pipe Creek Shale	5174	5231	5176	5233	
Angola Shale	5231	5856	5233	5956	
Rhinestreet	5856	6272	5956	6588	
Cashaqua	6272	6363	6588	6724	
Middlesex	6363	6398	6724	6779	
West River	6398	6450	6779	6863	
Burkett	6450	6473	6863	6903	
Tully Limestone	6473	6503	6903	6963	
Hamilton	6503	6614	6963	7288	
Marcellus	6614	6664	7288	not encountered	Gas
Onondaga	6664	not encountered	not encountered	not encountered	

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Noble Energy SHL-3F-HS Gyros+MWD Off to update Survey Report
(Non-Def Survey)

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Noble Energy

Report Date: March 02, 2012 - 01:40 AM
 Client: Noble Energy
 Field: WV Marshall County (NAD 27)
 Structure / Slot: CNX/Noble Energy SHL-3 Pad / Noble Energy SHL-3F-HS
 Well: SHL-3F-HS
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Noble Energy SHL-3F-HS Gyros+MWD Off to update
 Survey Date: November 07, 2011
 Tort / AHD / DDI / ERD Ratio: 151.090 * / 6437.608 ft / 6.266 / 0.969
 Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
 Location Lat / Long: N 39° 58' 15.93533", W 80° 33' 23.10747"
 Location Grid N/E Y/X: N 537555.587 ftUS, E 1703761.315 ftUS
 CRS Grid Convergence Angle: -0.67410965 *
 Grid Scale Factor: 0.99995884

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 301.385 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: KB
 TVD Reference Elevation: 1311.290 ft above Unknown
 Seabed / Ground Elevation: 1289.180 ft above Unknown
 Magnetic Declination: -8.748 *
 Total Field Strength: 52897.700 nT
 Magnetic Dip Angle: 67.569 *
 Declination Date: November 07, 2011
 Magnetic Declination Model: BGM2011
 North Reference: Grid North
 Grid Convergence Used: -0.674 *
 Total Corr Mag North->Grid North: -0.074 *
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (NS ft)	EW (EW ft)	Closure (ft)	Closure Azimuth (°)	DLS (ft/100ft)	TF (°)
SHL	0.00	0.00	0.00	0.00	0.00	N 0.00	E 0.00	0.00	0.00	N/A	130.19M
	115.00	0.65	130.19	115.00	-0.64	S 0.42	E 0.50	0.65	130.19	0.57	175.76M
	215.00	0.82	175.78	214.99	-1.82	S 1.50	E 0.98	1.79	146.73	0.59	164.24M
	315.00	0.69	165.24	314.98	-2.41	S 2.71	E 1.17	2.95	156.69	0.26	139.60M
	415.00	0.50	139.69	414.98	-3.20	S 3.54	E 1.68	3.88	155.83	0.26	183.36M
	515.00	0.22	183.36	514.98	-3.70	S 4.07	E 1.85	4.47	155.49	0.37	357.44M
	615.00	0.09	357.44	614.98	-3.75	S 4.18	E 1.84	4.57	156.24	0.31	87.03M
	715.00	0.05	87.03	714.98	-3.74	S 4.10	E 1.88	4.51	155.36	0.10	208.42M
	815.00	0.22	208.42	814.98	-3.78	S 4.27	E 1.83	4.64	156.76	0.25	288.88M
	915.00	0.17	288.88	914.98	-3.85	S 4.39	E 1.60	4.67	159.98	0.25	244.21M
	1015.00	0.24	244.21	1014.97	-3.39	S 4.43	E 1.27	4.61	164.00	0.17	265M
	1115.00	0.29	265.00	1114.97	-3.07	S 4.54	E 0.93	4.62	169.65	0.11	275.4M
	1215.00	0.52	275.40	1214.97	-2.48	S 4.52	E 0.73	4.52	178.40	0.24	246.25M
	1315.00	0.75	246.24	1314.97	-1.87	S 4.74	W 0.93	4.83	191.08	0.38	288.98M
	1415.00	0.71	288.98	1414.96	-0.89	S 4.79	W 1.12	5.24	203.83	0.53	273.26M
	1515.00	0.57	273.26	1514.95	0.35	S 4.58	W 1.30	5.57	215.04	0.22	291.61M
	1615.00	1.05	291.61	1614.94	1.70	S 4.20	W 1.45	6.19	227.30	0.54	288.13M
	1715.00	0.61	288.13	1714.93	3.03	S 3.89	W 1.53	7.09	236.71	0.56	282.1M
	1815.00	0.34	282.10	1814.93	3.75	S 3.87	W 1.53	7.78	240.19	0.30	298.88M
	1915.00	0.40	298.88	1914.93	4.38	S 3.64	W 1.73	8.20	243.86	0.12	294.38M
	2015.00	0.47	294.38	2014.92	6.13	S 3.30	W 1.83	8.68	247.65	0.08	288.99M
	2115.00	0.81	288.99	2114.92	6.23	S 2.90	W 1.97	9.52	252.27	0.34	299.11M
	2215.00	0.99	299.11	2214.90	7.78	S 2.25	W 10.49	10.73	267.90	0.24	294.02M
	2315.00	0.73	294.02	2314.88	9.28	S 1.57	W 11.83	11.93	282.44	0.27	272.87M
	2415.00	0.70	272.87	2414.88	10.45	S 1.28	W 13.02	13.08	284.38	0.26	290.54M
	2515.00	1.32	290.54	2514.87	12.42	S 0.85	W 14.71	14.73	287.50	0.18	284.25M
	2615.00	1.10	284.25	2614.85	14.16	S 0.20	W 16.72	16.72	289.30	0.26	281.27M
	2715.00	1.26	281.27	2714.83	18.11	N 0.25	W 18.73	18.73	270.78	0.17	285.37M
	2815.00	1.33	285.37	2814.80	18.26	N 0.77	W 20.92	20.94	272.11	0.12	289.3M
	2915.00	1.63	289.30	2914.77	20.67	N 1.04	W 23.46	23.49	272.53	0.53	291.49M
	3015.00	1.19	291.49	3014.74	22.78	N 1.37	W 25.85	25.89	273.04	0.71	280.12M
	3115.00	1.84	280.12	3114.70	25.30	N 2.04	W 28.40	28.47	274.10	0.71	294.8M
	3215.00	1.77	294.80	3214.65	28.33	N 2.97	W 31.38	31.52	275.40	0.47	278.2M
	3315.00	0.55	278.20	3314.63	30.31	N 3.69	W 33.20	33.46	276.33	1.25	283.38M
	3415.00	0.45	283.38	3414.63	31.07	N 3.72	W 34.12	34.32	278.23	0.17	274.69M
	3515.00	0.81	274.69	3514.62	32.01	N 3.73	W 35.21	35.41	278.05	0.38	282.72M
	3615.00	0.60	282.72	3614.61	33.13	N 3.91	W 36.43	36.64	278.12	0.23	287.11M
	3715.00	0.57	287.11	3714.61	34.11	N 4.17	W 37.42	37.65	278.36	0.05	276.80M
	3815.00	0.71	276.80	3814.60	35.16	N 4.39	W 38.50	38.76	278.50	0.18	357.48M
	3915.00	0.59	357.48	3914.60	36.01	N 4.88	W 39.14	39.40	277.25	0.85	345.31M
	4015.00	0.78	345.31	4014.59	36.70	N 6.15	W 39.34	39.82	278.89	0.24	9.12M
	4115.00	0.82	9.12	4114.58	37.55	N 7.52	W 39.40	40.11	280.80	0.33	17.21M
	4215.00	0.59	17.21	4214.57	37.95	N 8.71	W 39.13	40.68	282.55	0.25	0.75M
	4315.00	0.72	0.75	4314.57	38.39	N 9.83	W 38.97	40.19	284.16	0.23	8.15M
	4415.00	0.73	8.15	4414.56	38.96	N 11.09	W 38.87	40.43	285.93	0.09	9.38M
	4515.00	0.40	9.38	4514.55	39.35	N 12.07	W 38.73	40.58	287.31	0.33	349.68M
	4615.00	0.98	349.68	4614.55	39.81	N 12.91	W 38.76	40.85	288.42	0.24	359.54M
	4715.00	0.73	359.54	4714.54	40.49	N 14.05	W 38.86	41.32	289.87	0.19	5.52M
	4815.00	0.86	5.52	4814.53	41.15	N 15.43	W 38.79	41.74	291.69	0.15	352.79M
	4915.00	0.58	352.79	4914.53	41.80	N 16.89	W 38.78	42.22	293.28	0.31	352.05M
	5015.00	0.80	352.05	5014.52	42.26	N 17.89	W 38.94	42.85	294.67	0.21	11.85M
	5115.00	0.74	11.85	5114.51	43.22	N 19.21	W 39.00	43.29	296.20	0.27	43.73M
	5215.00	0.55	43.73	5214.50	43.33	N 20.19	W 38.44	43.42	297.71	0.40	35.77M
	5315.00	0.68	35.77	5314.50	43.17	N 21.15	W 37.67	43.20	299.31	0.32	29.68M
	5415.00	0.89	29.68	5414.48	43.14	N 22.43	W 38.85	43.14	301.33	0.10	49.4M
	5515.00	0.64	49.40	5514.48	42.99	N 23.47	W 38.04	43.01	303.07	0.38	42.69M
	5615.00	0.28	42.99	5614.47	42.77	N 24.01	W 36.45	42.82	304.11	0.36	8.02M
Final Gyro	5863.00	0.62	8.02	5852.47	42.83	N 24.28	W 36.36	42.89	304.48	1.11	30.25M
	5674.00	0.35	30.25	5673.47	42.88	N 24.45	W 35.31	42.85	304.70	1.54	27.16M
	5721.00	0.34	27.16	5720.47	42.89	N 24.70	W 35.17	42.98	305.08	0.40	327.12M
	5769.00	0.27	327.12	5768.47	43.00	N 24.92	W 35.17	43.10	305.32	0.65	242.62M
	5816.00	3.90	242.62	5815.43	43.93	N 24.28	W 36.65	43.96	303.52	8.26	238.3M
	5903.00	8.90	238.30	5892.12	46.41	N 21.63	W 41.16	48.50	297.72	10.68	3.86L
	5908.00	11.94	237.31	5904.41	46.96	N 17.48	W 47.74	50.84	290.11	7.08	29.82R
	5950.00	15.74	238.01	5954.89	55.37	N 10.84	W 58.25	60.54	280.54	7.37	7.96R
	6005.00	19.95	239.73	5999.82	62.04	N 3.41	W 70.59	70.57	272.77	9.03	29.39R
	6053.00	22.09	242.89	6044.42	70.65	S 4.83	W 85.70	85.83	266.78	5.04	18.62R
	6100.00	24.98	244.91	6087.61	80.74	S 13.06	W 102.55	103.38	282.74	6.34	15.07R
	6148.00	29.42	247.34	6130.20	93.27	S 21.80	W 122.61	124.55	295.87	9.57	3.41R
	6195.00	34.35	247.86	6170.10	107.93	S 31.35	W 145.56	148.80	257.84	10.51	1.1L
	6242.00	35.25	247.83	6209.89	123.87	S 41.47	W 170.40	175.38	256.32	14.92	64.31R
	6289.00	37.79	253.31	6248.47	141.56	S 50.73	W 196.77	203.20	256.64	8.79	60.17R
	6337.00	41.23	259.28	6283.51	163.14	S 57.80	W 226.42	233.70	256.66	10.57	56.1R
	6384.00	43.65	264.26	6319.20	187.67	S 62.40	W 257.70	265.23	256.39	8.81	52.28R
	6432.00	48.00	268.35	6362.25	216.26	S 64.68	W 291.54	299.80	257.51	7.75	76.23R
	6479.00	48.78	272.33	6394.89	244.41	S 64.35	W 325.66	331.85	258.82	6.25	85.16R
	6526.00	49.82	275.22	6418.00	275.46	S 62.02	W 360.51	366.80	260.24	7.58	32.96R
	6573.00	52.90	277.86	6445.42	308.72	S 67.83	W 398.91	401.10	261.71	8.24	68.43R
	6621.00	54.24	281.83	6473.93	344.84	S 81.22	W 434.95	437.95	263.28	7.22	34.52R
	6668.00	57.58	284.51	6500.28	381.60	S 42.33	W 472.83	474.72	284.88	8.60	40.65R
	6716.00	60.75	287.61	6524.89	421.34	S 30.92	W 612.41	613.35	266.55	8.65	27.12R
	6763.00	64.60	289.78	6546.46	462.07	S 17.53	W 651.88	652.23	268.18	9.16	17.32R
	6810.00	67.88	290.81	6568.48	504.24	S 2.62	W 692.26	692.28	269.75	8.81	31.16R
	6857.00	70.69	292.93	6582.07	547.60	N 13.77	W 633.05	633.20	271.25	8.29	80.29R
	6905.00	73.39	297.23	6598.79	593.01	N 33.14	W 674.42	675.24	272.51	7.69	29.82R
	6952.00	75.30	298.38	6609.44	638.77	N 64.25	W 714.46	716.51	274.34	4.58	42.43R
	6999.00	77.13	300.07	6620.84	683.78	N 75.53	W 754.29	758.16	275.79	6.26	-30.72R
	7046.00	78.95	301.35	6630.25	729.78	N 100.02	W 793.84	800.12	277.18	5.24	20.23R
	7094.00	82.21	302.45	6637.99	777.15	N 126.05	W 834.05	843.37	278.53	6.57	23.55R
	7141.00	85.63	303.90	6643.01	823.86	N 150.52	W 873.16	886.05	279.79	7.70	30.4