

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

DATE: 2-8-2012
API #: 47-051-01296

Farm name: Shawn Harlan Operator Well No.: 3H (831189)

LOCATION: Elevation: 1397' Quadrangle: Littleton

District: Liberty County: Marshall
Latitude: 11350' Feet South of 39 Deg. 45 Min. 00 Sec.
Longitude 5840' Feet West of 80 Deg. 37 Min. 30 Sec.

Company: Chesapeake Appalachia, L.L.C.

| Address: | Casing & Tubing | Used in drilling | Left in well | Cement fill up Cu. Ft. |
|--|-----------------|------------------|--------------|------------------------|
| P.O. Box 18496 Oklahoma City, OK 73154-0496 | 13 3/8" | 1242' | 1242' | 1352 cf |
| Agent: Eric Gillespie | 9 5/8" | 2715' | 2715' | 856 cf |
| Inspector: Bill Hatfield | 5 1/2" | 11911' | 11911' | 2838 cf |
| Date Permit Issued: <u>8/25/2009</u> | | | | |
| Date Well Work Commenced: <u>2/13/2011</u> | | | | |
| Date Well Work Completed: <u>4/28/2011</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>7,153'</u> | | | | |
| Total Measured Depth (ft): <u>11,914'</u> | | | | |
| Fresh Water Depth (ft.): <u>395'</u> | | | | |
| Salt Water Depth (ft.): <u>N/A</u> | | | | |
| Is coal being mined in area (N/Y)? <u>N</u> | | | | |
| Coal Depths (ft.): <u>450'</u> | | | | |
| Void(s) encountered (N/Y) Depth(s) <u>N</u> | | | | |

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

Producing formation Marcellus Pay zone depth (ft) 7,444'-11,766'

Gas: Initial open flow 7,724 MCF/d Oil: Initial open flow 22 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 4,649 psig (surface pressure) after _____ 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

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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.

Marlene Williams
Signature

3-19-2012
Date

Were core samples taken? Yes _____ No N

Were cuttings caught during drilling? Yes Y No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list GR, neutron, density, and resistivity
open hole logs run from 0-7014' MD; LWD GR from 6600-11914' MD.

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:

See Attached

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Plug Back Details Including Plug Type and Depth(s): Cement -11,816'

| <u>Formations Encountered:</u> | <u>Top Depth</u> | <u>Bottom Depth</u> |
|--------------------------------|------------------|---------------------|
| <u>Surface:</u> | | |

See Attached

| Formation/Lithology | Top Depth (ft) | Bottom Depth (ft) |
|---------------------|----------------|-------------------|
| SHALE/LS | 0 | 450 |
| SS | 450 | 510 |
| COAL | 510 | 540 |
| SHALE/SS | 540 | 850 |
| LS/SHALE | 850 | 1105 |
| Pittsburg Coal | 1105 | 1125 |
| LS/SHALE | 1125 | 1160 |
| SHALE | 1160 | 1680 |
| COAL | 1680 | 1710 |
| SHALE | 1710 | 2150 |
| SHALE/SS | 2150 | 2236 |
| Big Lime | 2236 | 2268 |
| Big Injun | 2268 | 2506 |
| SHALE/SS | 2506 | 7040 |
| Geneseo | 7040 | 7061 |
| Tully | 7061 | 7170 |
| Hamilton | 7170 | 7268 |
| Marcellus | 7268 | 11914 |

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PERFORATION RECORD ATTACHMENT

Well Name and Number: Shawn Harlan 3H (831189)

| PERFORATION RECORD | | | STIMULATION RECORD | | | | | | | |
|--------------------|---------------------|--------|--------------------|------------------|--------|--------------|--------|-----------------------|---------|-------------------|
| Date | Interval Perforated | | Date | Interval Treated | | <i>Fluid</i> | | <i>Propping Agent</i> | | Average Injection |
| | From | To | | Type | Amount | Type | Amount | | | |
| 4/20/2011 | 7,444 | 7,686 | 4/28/2011 | 7,444 | 7,686 | Slk Wtr | 11,232 | Sand | 483,163 | 83 |
| 4/20/2011 | 7,844 | 8,086 | 4/20/2011 | 7,844 | 8,086 | Slk Wtr | 10,747 | Sand | 484,870 | 82 |
| 4/19/2011 | 8,244 | 8,486 | 4/20/2011 | 8,244 | 8,486 | Slk Wtr | 10,486 | Sand | 488,733 | 86 |
| 4/19/2011 | 8,564 | 8,886 | 4/19/2011 | 8,564 | 8,886 | Slk Wtr | 12,659 | Sand | 486,470 | 85 |
| 4/18/2011 | 8,904 | 9,226 | 4/19/2011 | 8,904 | 9,226 | Slk Wtr | 9,940 | Sand | 425,108 | 85 |
| 4/18/2011 | 9,364 | 9,546 | 4/18/2011 | 9,364 | 9,546 | Slk Wtr | 9,846 | Sand | 276,480 | 84 |
| 4/18/2011 | 9,604 | 9,786 | 4/18/2011 | 9,604 | 9,786 | Slk Wtr | 9,401 | Sand | 387,861 | 85 |
| 4/17/2011 | 9,840 | 10,026 | 4/18/2011 | 9,840 | 10,026 | Slk Wtr | 9,317 | Sand | 390,926 | 84 |
| 4/17/2011 | 10,080 | 10,266 | 4/17/2011 | 10,080 | 10,266 | Slk Wtr | 10,495 | Sand | 356,668 | 74 |
| 4/16/2011 | 10,324 | 10,506 | 4/17/2011 | 10,324 | 10,506 | Slk Wtr | 9,434 | Sand | 389,955 | 79 |
| 4/13/2011 | 10,562 | 10,806 | 4/14/2011 | 10,562 | 10,806 | Slk Wtr | 9,098 | Sand | 385,644 | 75 |
| 4/12/2011 | 10,832 | 11,124 | 4/13/2011 | 10,832 | 11,124 | Slk Wtr | 10,712 | Sand | 401,378 | 74 |
| 4/11/2011 | 11,170 | 11,446 | 4/12/2011 | 11,170 | 11,446 | Slk Wtr | 11,195 | Sand | 384,776 | 78 |
| 4/1/2011 | 11,524 | 11,766 | 4/11/2011 | 11,524 | 11,766 | Slk Wtr | 11,920 | Sand | 398,945 | 77 |
| | | | | | | | | | | |
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