

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 23, 2013
API #: 47-103-2645

Farm name: LS Hoyt

Operator Well No.: 402 5H

Received

LOCATION: Elevation: 1,428'

Quadrangle: Pine Grove 7.5'

JUL 29 2013

District: Grant County: Wetzel
Latitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec.
Longitude _____ Feet West of _____ Deg. _____ Min. _____ Sec.

Office of Oil and Gas
WV Dept. of Environmental Protection

Company: HG Energy, LLC

| | | | | | |
|---|------------------------------|-----------------------|------------------|----------------|--------------------------|
| Address: | <u>5260 Dupont Road</u> | Casing & Tubing | Used in drilling | Left in well | Cement fill up Cu. Ft: |
| | <u>Parkersburg, WV 26101</u> | <u>20" Casing</u> | <u>40'</u> | <u>40'</u> | <u>N/A -</u> |
| Agent: | <u>Mike Kirsch</u> | <u>94#, H-40</u> | | | <u>Drilled In</u> |
| Inspector: | <u>Derek Haught</u> | | | | |
| Date Permit Issued: | <u>5/26/2011</u> | <u>13 3/8" Casing</u> | <u>1,383'</u> | <u>1,383'</u> | <u>Cement to Surface</u> |
| Date Well Work Commenced: | <u>9/02/2011</u> | <u>54.5#, J-55</u> | | | <u>1,172 sacks</u> |
| Date Well Work Completed: | <u>12/07/2012</u> | | | | |
| Verbal Plugging: | | <u>9 5/8" Casing</u> | <u>3,415'</u> | <u>3,415'</u> | <u>Cement to Surface</u> |
| Date Permission granted on: | | <u>40#, J-55</u> | | | <u>1,140 sacks</u> |
| Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/> | | | | | |
| Total Vertical Depth (ft): | <u>7,453' ? 7487'</u> | <u>5 1/2" Casing</u> | <u>13,878'</u> | <u>13,878'</u> | <u>Cement to Surface</u> |
| Total Measured Depth (ft): | <u>13,915'</u> | <u>20#, P-110</u> | | | <u>2,240 sacks</u> |
| Fresh Water Depth (ft.): | <u>160', 440'</u> | | | | |
| Salt Water Depth (ft.): | <u>1,940'</u> | <u>2 3/8" Tubing</u> | <u>N/A</u> | <u>7,475'</u> | <u>N/A</u> |
| Is coal being mined in area (N/Y)? | <u>N</u> | <u>4.7#, L-80</u> | | | |
| Coal Depths (ft.): | <u>936', 1,033', 1,172'</u> | | | | |
| Void(s) encountered (N/Y) Depth(s) | <u>N, 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) 7,453'
Gas: Initial open flow 8,600 MCF/d Oil: Initial open flow 192 Bbl/d
Final open flow 7,800 MCF/d Final open flow 96 Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 3,800 psig (surface pressure) after 24 Hours

Second producing formation N/A 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.

Diane White
Signature

2-27-13
Date

09/27/2013

103-02645

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 _____
Real time Gamma Ray logs while drilling via the MWD tool. Also, mud logs.

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 Sheet —

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Plug Back Details Including Plug Type and Depth(s):

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Formations Encountered: _____ Top Depth _____ / _____ Bottom Depth _____
Surface:

| TVD Tops | Bottom |
|---------------------|--------|
| Big Lime - 2420 | 2490 |
| Big Injun - 2490 | 2712 |
| Gordon Stray - 3276 | 3307 |
| Gordon - 3307 | 3328 |
| Tully - 7417 | 7441 |
| Hamilton - 7441 | 7512 |
| Marcellus - 7512 | 7564 7 |

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| Stage | # of Ports | Total Add (lbs) | Total Water (lbs) | Total Sand (lbs) | Total Slurry (lbs) | Prod Vol (bbl) | 100 Mesh (lbs) | 40/70 Mesh (lbs) | 40/70 Mesh RC (lbs) | BDP (gal) | SIP (gal) | 5 Min SIP (gal) | 10 Min SIP (gal) | 15 Min SIP (gal) | ATP (gal) | Avg Rate (bbl/min) | PLUMP DOWN (bbl) |
|-----------|------------|-----------------|-------------------|------------------|--------------------|----------------|----------------|------------------|---------------------|-----------|-----------|-----------------|------------------|------------------|-----------|--------------------|------------------|
| Stage 1 | 1 | 3,000 | 8,389 | 420,000 | 8,745 | 832 | 70,000 | 330,000 | 20,000 | N/A | 3,599 | 2,981 | 2,870 | 2,819 | 6,839 | 78 | 504 |
| 2 | 60 | 1,500 | 8,247 | 420,000 | 8,738 | 944 | 70,000 | 330,000 | 20,000 | 5,475 | 4,375 | 3,868 | 3,167 | 3,057 | 6,944 | 71 | 451 |
| 3 | 60 | 2,000 | 8,088 | 410,000 | 8,589 | 1,227 | 70,000 | 320,000 | 20,000 | 5,601 | N/A | N/A | N/A | 3,057 | 6,292 | 70 | 405 |
| 4 | 60 | 2,000 | 7,780 | 391,100 | 8,256 | 796 | 73,700 | 287,200 | 20,200 | NA | 4,437 | 4,152 | 3,850 | 3,610 | 6,359 | 80 | 340 |
| 5 | 60 | 1,000 | 7,219 | 391,100 | 7,734 | 808 | 73,700 | 289,200 | 20,200 | 5,600 | 4,724 | 4,262 | 4,016 | 3,558 | 7,439 | 80 | 320 |
| 6 | 60 | 1,000 | 6,639 | 340,400 | 7,051 | 829 | 72,200 | 289,200 | - | 5,695 | 4,613 | 4,077 | 3,690 | 3,558 | 7,379 | 81 | 312 |
| 7 | 60 | 1,000 | 6,186 | 379,600 | 7,298 | 815 | 72,200 | 289,900 | 7,500 | 5,915 | 4,926 | 4,397 | 4,137 | 3,781 | 7,462 | 81 | 274 |
| 8 | 60 | 1,000 | 5,885 | 371,700 | 6,526 | 813 | 72,200 | 282,500 | 5,000 | 5,644 | 4,796 | 4,360 | 4,108 | 3,725 | 7,077 | 80 | 218 |
| 9 | 60 | 1,000 | 5,386 | 354,700 | 6,595 | 811 | 72,200 | 282,100 | - | 5,690 | 4,725 | 4,285 | 3,981 | 3,609 | 6,993 | 80 | 218 |
| 10 | 60 | 1,000 | 4,887 | 354,300 | 7,185 | 827 | 73,700 | 289,700 | 20,200 | 5,050 | 4,416 | 4,005 | 3,871 | 3,545 | 6,822 | 81 | 205 |
| 11 | 60 | 1,000 | 4,388 | 339,900 | 7,694 | 827 | 73,700 | 289,700 | - | 5,051 | 4,300 | 3,797 | 3,574 | 3,318 | 6,593 | 80 | 182 |
| 12 | 60 | 1,000 | 3,889 | 329,700 | 8,044 | 830 | 73,700 | 289,700 | 20,200 | 4,995 | 4,144 | 3,574 | 3,318 | 3,050 | 6,360 | 81 | 145 |
| 13 | 60 | 1,000 | 3,390 | 329,700 | 8,383 | 832 | 73,700 | 289,700 | 20,200 | 5,190 | 3,996 | 3,796 | 3,597 | 3,350 | 6,130 | 81 | 132 |
| 14 | 60 | 1,000 | 2,891 | 329,700 | 8,713 | 833 | 73,700 | 289,700 | 20,200 | 5,304 | 4,226 | 3,865 | 3,712 | 3,514 | 5,888 | 80 | 115 |
| 15 | 60 | 1,000 | 2,392 | 329,700 | 9,044 | 833 | 73,700 | 289,700 | 20,200 | 5,556 | 4,477 | 4,136 | 3,997 | 3,885 | 5,645 | 79 | 108 |
| 16 | 60 | 1,000 | 1,893 | 329,700 | 9,374 | 833 | 73,700 | 289,700 | 20,200 | 5,808 | 4,609 | 4,268 | 4,125 | 3,979 | 5,397 | 79 | 97 |
| 17 | 60 | 1,000 | 1,394 | 329,700 | 9,704 | 833 | 73,700 | 289,700 | 20,200 | 6,060 | 4,861 | 4,520 | 4,379 | 4,236 | 5,150 | 79 | 88 |
| 18 | 60 | 1,000 | 8,321 | 339,600 | 8,544 | 1,432 | 73,700 | 224,400 | - | 5,388 | 5,037 | 4,204 | 3,894 | 3,565 | 6,924 | 80 | 78 |
| 19 | 60 | 1,000 | 7,820 | 339,600 | 8,933 | 1,436 | 73,700 | 229,700 | 20,200 | 5,410 | 4,052 | 3,673 | 3,552 | 3,376 | 6,610 | 81 | 70 |
| 20 | 60 | 1,000 | 7,319 | 339,600 | 9,322 | 1,432 | 73,700 | 229,700 | 20,200 | 5,274 | 4,026 | 3,758 | 3,596 | 3,419 | 6,388 | 81 | 70 |
| 21 | 60 | 1,000 | 6,818 | 339,600 | 9,711 | 1,432 | 73,700 | 229,700 | 20,200 | 5,418 | 4,380 | 3,948 | 3,749 | 3,498 | 6,156 | 81 | 70 |
| TOTAL AVG | 1,200 | 23,500 | 155,335 | 7,994,900 | 174,232 | 26,582 | 1,529,100 | 6,106,500 | 296,000 | 5,418 | 4,380 | 3,948 | 3,749 | 3,498 | 6,888 | 79 | 4,955 |

103-02645

Perforating Details

| Stage | 1st Cluster | 2nd Cluster | 3rd Cluster | 4th Cluster | 5th Cluster | Perf Method |
|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Stage 1 | 13791 | N/A | N/A | N/A | N/A | RDV |
| Stage 2 | 13606-08 | 13566-88 | 13521-23 | 13476-78 | 13436-38 | PD |
| Stage 3 | 13390 | 13396-38 | 13351-53 | 13306-08 | 13166-68 | PD |
| Stage 4 | 13066-68 | 13026-28 | 12981-83 | 12936-40 | 12892-00 | PD |
| Stage 5 | 12746 | 12756-58 | 12711-13 | 12666-68 | 12626-28 | PD |
| Stage 6 | 12526-28 | 12486-88 | 12441-43 | 12396-00 | 12356-58 | PD |
| Stage 7 | 12206 | 12216-18 | 12171-73 | 12126-28 | 12086-88 | PD |
| Stage 8 | 11776 | 11689-90 | 11644-46 | 11594-96 | 11552-54 | PD |
| Stage 9 | 11456-58 | 11416-18 | 11371-73 | 11326-28 | 11286-88 | PD |
| Stage 10 | 11196-88 | 11146-48 | 11101-03 | 11054-56 | 11018-20 | PD |
| Stage 11 | 10960 | 10876-78 | 10831-33 | 10786-88 | 10746-48 | PD |
| Stage 12 | 10666 | 10606-08 | 10561-63 | 10516-20 | 10476-78 | PD |
| Stage 13 | 10420 | 10336-38 | 10291-93 | 10246-48 | 10206-08 | PD |
| Stage 14 | 10106-08 | 10056-68 | 10021-23 | 9976-78 | 9936-38 | PD |
| Stage 15 | 9890 | 9796-98 | 9751-53 | 9706-08 | 9666-68 | PD |

| Stage | 1st Cluster | 2nd Cluster | 3rd Cluster | 4th Cluster | 5th Cluster | Perf Method |
|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Stage 16 | 9566-68 | 9526-28 | 9481-83 | 9436-38 | 9396-98 | PD |
| Stage 17 | 9330 | 9296-98 | 9256-58 | 9211-13 | 9166-68 | PD |
| Stage 18 | 9076 | 9026-28 | 8986-88 | 8941-43 | 8896-98 | PD |
| Stage 19 | 8790 | 8756-58 | 8716-18 | 8671-73 | 8626-28 | PD |
| Stage 20 | 8536 | 8486-88 | 8446-48 | 8401-03 | 8356-58 | PD |
| Stage 21 | 8250 | 8196-98 | 8126-28 | 8056-58 | 7987-89 | PD |

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| Gordon | Gordon Base | Tully Top | Tully Base | Hamilton | Hamilton | Marcellus Top | Marcellus Base |
|--------|-------------|-----------|------------|----------|----------|---------------|----------------|
| 3307 | 3328 | 7310 | 7334 | 7334 | 7405 | 7405 | 7457 |
| 3307 | 3328 | 7307 | 7331 | 7331 | 7402 | 7402 | 7454 |
| 3307 | 3328 | 7312 | 7336 | 7336 | 7407 | 7407 | 7459 |
| 3307 | 3328 | 7410 | 7434 | 7434 | 7505 | 7505 | 7557 |
| 3307 | 3328 | 7417 | 7441 | 7441 | 7512 | 7512 | 7564 ← |
| 3307 | 3328 | 7427 | 7451 | 7451 | 7522 | 7522 | 7574 |

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