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west virginia department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

September 05, 2014

HAUGHT ENERGY CORPORATION  
12864 STAUNTON TURNPIKE  
SMITHVILLE, WV 26178

Re: Permit Modification Approval for API Number 8510113 , Well #: W-1646

**DRILL NO MORE THAN 100' INTO ONONDAGA FOR LOGGING PURPOSES**

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

Gene Smith  
Assistant Chief of Permitting  
Office of Oil and Gas

SEP 4 2014

WW - 2B  
(Rev. 8/10)

WV Department of  
Environmental Protection

STATE OF WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

1) Well Operator: Haught Energy Corporation

|             |         |          |            |
|-------------|---------|----------|------------|
| 494494463   | Ritchie | Murphy   | Smithville |
| Operator ID | County  | District | Quadrangle |

2) Operator's Well Number: W-1646      3) Elevation: 891'

4) Well Type: (a) Oil  or Gas   
(b) If Gas: Production  / Underground Storage \_\_\_\_\_  
Deep \_\_\_\_\_ / Shallow

5) Proposed Target Formation(s): Lower Devonian/Marcellus Proposed Target Depth: 6000'

6) Proposed Total Depth: 6050' Feet Formation at Proposed Total Depth: Onandoga Lime

7) Approximate fresh water strata depths: 50'

8) Approximate salt water depths: None Noted in Offset Wells

9) Approximate coal seam depths: None Noted in Offset Wells

10) Approximate void depths,(coal, Karst, other): None Noted in Offset Wells

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Drill new Oil & Gas Well. Stimulate with Nitrogen and/or Slick Water fracturing methods including approximately 700,000 SCF Nitrogen Per Stage and/or approximately 9500 Barrels water. (Fraq pit not to exceed 5,000 Bbls, will supplement with tanks)

13) **CASING AND TUBING PROGRAM**

| TYPE         | SPECIFICATIONS |       |               | FOOTAGE      | INTERVALS    | CEMENT                  |
|--------------|----------------|-------|---------------|--------------|--------------|-------------------------|
|              | Size           | Grade | Weight per ft | For Drilling | Left in Well | Fill -up (Cu. Ft.)      |
| Conductor    | 13-3/8"        | R-2   | 43.6#         | 30'          | 30'          | Grout to Surface        |
| Fresh Water  | 9-5/8"         | R-3   | 26#           | 300'         | 300'         | To Surface              |
| Coal         | NA             | NA    | NA            | NA           | NA           | NA                      |
| Intermediate | 7"             | R-3   | 17#           | 2100'        | 2100'        | To Surface              |
| Production   | 4-1/2"         | R-3   | 10.5#         | 6050'        | 6050'        | 250 Sacks, 3000' Fillup |
| Tubing       | NA             | NA    | NA            | NA           | NA           | NA                      |
| Liners       | NA             | NA    | NA            | NA           | NA           | NA                      |

Packers: Kind: NA  
Sizes: NA  
Depths Set NA

Per WVDEP Guidelines, it is the intention of Haught Energy Corporation to drill no further than one hundred feet into the Onandoga Limestone during the drilling of this well.

09/05/2014