



west virginia department of environmental protection

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

PERMIT MODIFICATION APPROVAL

October 22, 2013

NOBLE ENERGY, INC.
333 TECHNOLOGY DRIVE, SUITE 110
CANONSBURG, PA 15317

Re: Permit Modification Approval for API Number 9502111 , Well #: SHR 1 CHS

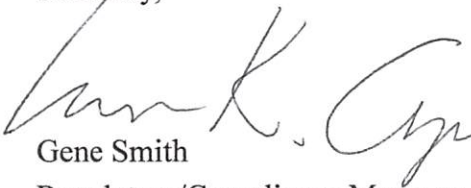
Drilling pilot hole

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,

for 
Gene Smith
Regulatory/Compliance Manager
Office of Oil and Gas

95-2111 MOD I



RECEIVED
Office of Oil and Gas

AUG 29 2013

WV Department of
Environmental Protection

August 26, 2013

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304-2345


Re: Modification #2 for the SHR 1 CHS API# 95-02111

Dear Laura,

Enclosed please find a revised WW-6B. We would like to drill the well 99' into the Onondaga and then plug back with solid cement to the Kick off Point and complete the Marcellus formation for production. The casing program will not be changing for this modification.

If you have any questions, or need any additional information, please do not hesitate to get in touch with me office 724-820-3061 cell 412-310-8967 or email me at dswiger@nobleenergyinc.com.

Sincerely,



Dee Swiger,
Regulatory Analyst

Enclosures:

/DS

10/25/2013

Api 95-02111

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: Noble Energy, Inc. 494501907 Tyler Centerville Shirley
Operator ID County District Quadrangle

2) Operator's Well Number: SHR 1 CHS Well Pad Name: SHR 1

3 Elevation, current ground: 1018.27 Elevation, proposed post-construction: 994.5'

4) Well Type: (a) Gas Oil
Other

(b) If Gas: Shallow Deep
Horizontal

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Office of Oil and Gas

AUG 29 2013

WV Department of
Environmental Protection

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s)
Target - Marcellus, Depth - 6570', Thickness - 61', Pressure - 4376#

7) Proposed Total Vertical Depth: 6730'

8) Formation at Total Vertical Depth: Onondaga (99' into Onondaga formation, Plug back to KOP and Produce from Marcellus)

9) Proposed Total Measured Depth: 15964'

10) Approximate Fresh Water Strata Depths: 321, 351, 599'

11) Method to Determine Fresh Water Depth: Offset well data - Seneca Technology data base

12) Approximate Saltwater Depths: 1501'

13) Approximate Coal Seam Depths: No Coal

14) Approximate Depth to Possible Void (coal mine, karst, other): None

15) Does land contain coal seams tributary or adjacent to, active mine? No

16) Describe proposed well work: Drill the vertical depth to the Onondaga at an estimated total vertical depth of approximately 6,730 feet. Plug back with solid cement plug to KOP. Drill Horizontal leg - stimulate and produce the Marcellus Formation.
**If we should encounter an unanticipated void we will install casing at a minimum of 20' below the void but not more than 50' below the void, set a basket and grout to surface.

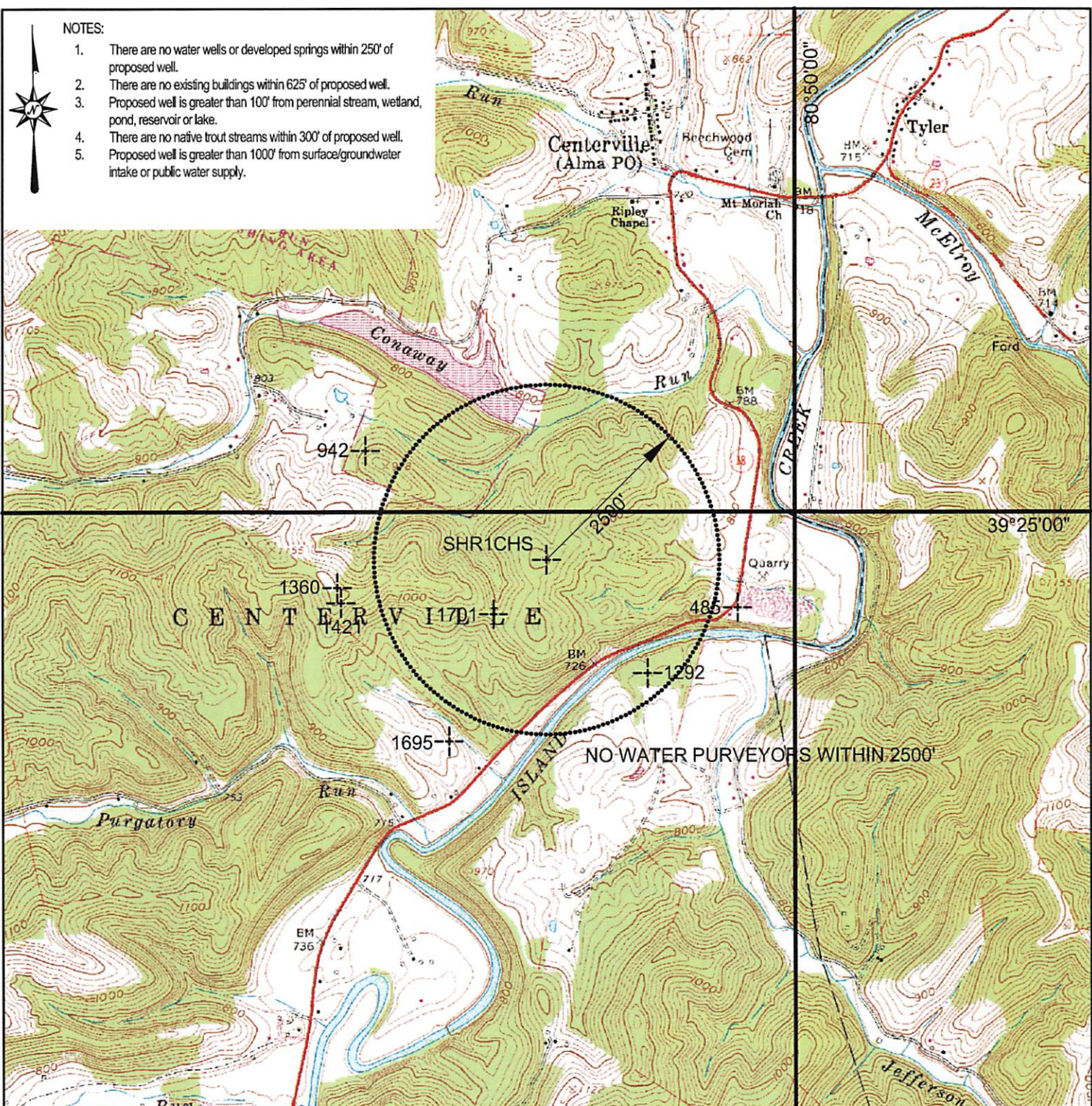
17) Describe fracturing/stimulating methods in detail:
The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 14.36 acres

19) Area to be disturbed for well pad only, less access road (acres): 3.89 acres

NOTES:

1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
4. There are no native trout streams within 300' of proposed well.
5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.



NO WATER PURVEYORS WITHIN 2500'



Blue Mountain Engineering
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

PREPARED FOR:
 NOBEL ENERGY, INC.
 333 TECHNOLOGY DRIVE
 SUITE 110
 CANNONBURG, PA 15317

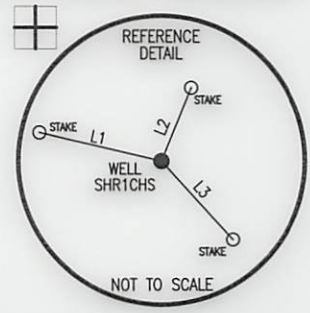
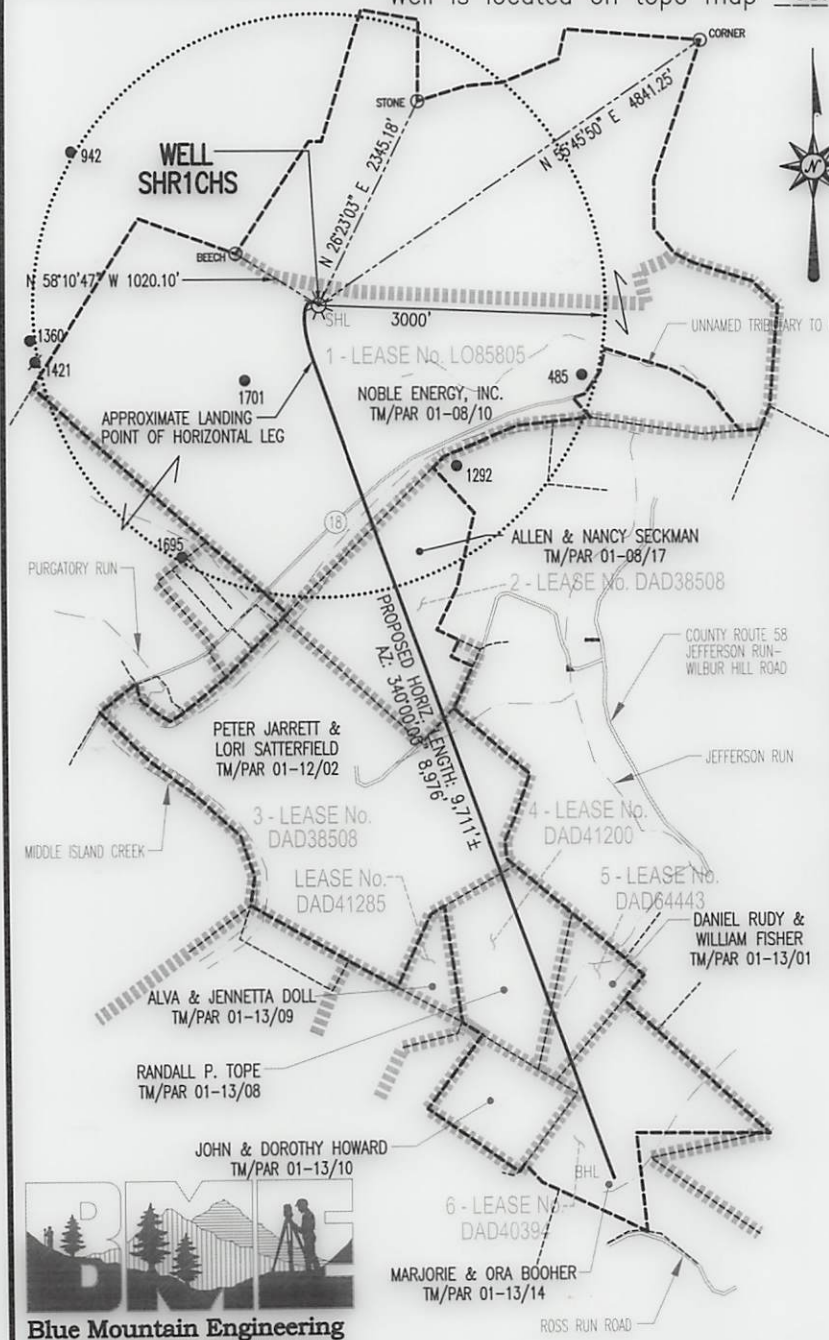
LEGEND
 (W) - WATER PURVEYOR
 + - EXISTING WELLS

SHR1CHS
 LOCATION MAP
 TYLER COUNTY
 CENTERVILLE DISTRICT
 WEST VIRGINIA

TOPO QUAD: SHIRLEY, WV
 SCALE: 1" = 2000'
 DATE: SEPTEMBER 26, 2012

Well is located on topo map 687 feet south of Latitude: 39° 25' 00"

Well is located on topo map 3,589 feet west of Longitude: 80° 50' 00"



LINE	BEARING	DISTANCE
L1	S 76°54'15" E	262.60'
L2	S 22°23'35" W	163.81'
L3	N 42°14'16" W	221.45'

SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83
 N:4362827.997
 E:513254.763
 NAD27, WV NORTH
 N:336034.353
 E:1619669.942

APPROX. LANDING POINT
 UTM 17-NAD83
 N:4362655.39
 E:513239.36
 NAD27, WV NORTH
 N:335468.80
 E:1619609.95

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83
 N:4360101.30
 E:514217.55
 NAD27, WV NORTH
 N:327033.88
 E:1622680.01

LEGEND

- TOPO MAP POINT
- PROPOSED GAS WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- WATER SOURCE
- SURFACE BOUNDARY
- LEASE BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

WELLS WITHIN 3000'

- EXISTING WELLS
- PLUGGED WELLS

- NOTES:**
- There are no water wells or developed springs within 250' of proposed well.
 - There are no existing buildings within 625' of proposed well.
 - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 - There are no native trout streams within 300' of proposed well.
 - Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
 - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

Blue Mountain Engineering
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

FILE #: SHR1CHS
 DRAWING #: SHR1CHS
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: [Signature]
 R.P.E.: _____ L.L.S.: P.S. No. 2000

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: FEBRUARY 21, 2013
 OPERATOR'S WELL #: SHR1CHS
 API WELL #: 47 95 02111 HGA
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep Gas Liquid Injection Storage Shallow

WATERSHED: MIDDLE ISLAND CREEK ELEVATION: 1018.27'

COUNTY/DISTRICT: TYLER COUNTY / CENTERVILLE DISTRICT QUADRANGLE: SHIRLEY, WV 7.5'

SURFACE OWNER: NOBLE ENERGY, INC. ACREAGE: 580.207±

OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 959.407±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,621'± TMD: 15,964'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
 Address 333 TECHNOLOGY DRIVE, SUITE 110 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

10/25/2013