June 19, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101644, issued to NOBLE ENERGY, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: SHL13GHS
Farm Name: HEMSLEY, PAUL H. & ANNETTE
API Well Number: 47-5101644
Permit Type: Horizontal 6A Well
Date Issued: 06/19/2013

Promoting a healthy environment.
PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

2. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the fill material shall be within plus or minus 2% (unless soil test results show a greater range of moisture content is appropriate and 95% compaction can still be achieved) of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95% compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

3. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

4. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled Water Well Regulations, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

5. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION


2) Operator’s Well Number: SHL13GHS Well Pad Name: SHL13HS

3) Elevation, current ground: 1289.59 Elevation, proposed post-construction: 1283’

4) Well Type: (a) Gas Oil Underground Storage (b) If Gas: Shallow Deep Horizontal

5) Existing Pad? Yes or No: Yes

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
   Target - Marcellus, Depth - 6741’, Thickness - 50’, Pressure - 2912#

7) Proposed Total Vertical Depth: 6781’

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 12064’

10) Approximate Fresh Water Strata Depths: 561’, 763’

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

12) Approximate Saltwater Depths: 1600’

13) Approximate Coal Seam Depths: Mahoning - 1266.74’ - 1269.77’, Pittsburgh 763’ - 785.04 (drilling into pillar)

14) Approximate Depth to Possible Void (coal mine, karst, other): Pittsburgh 779.29 - 785.04 (Drilling into Pillar)

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: Yes, Shoemaker Mine see attached mine map

16) Describe proposed well work: Drill the vertical depth to the estimated KOP of 6,781 feet. Drill Horizontal Well in Marcellus Formation to an estimated length including the curve of 7114 feet. Total measured depth of 12064 feet.

**If an unanticipated void is encountered we will set place baskets at least 30’ but not more than 50’ below bottom of void 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. Stiffwater 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): 18.6 acres

19) Area to be disturbed for well pad only, less access road (acres): 10 acres
### CASING AND TUBING PROGRAM

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Size</th>
<th>New or Used</th>
<th>Grade</th>
<th>Weight per ft.</th>
<th>FOOTAGE: For Drilling</th>
<th>INTERVALS: Left in Well</th>
<th>CEMENT: Fill-up (Cu. Ft.)</th>
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<tbody>
<tr>
<td>Conductor</td>
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<td>N</td>
<td>J55</td>
<td>94.0</td>
<td>40'</td>
<td>40'</td>
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<tr>
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<td>20&quot;</td>
<td>N</td>
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<td>400'</td>
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<tr>
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<tr>
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<tr>
<td>Production</td>
<td>5 1/2&quot;</td>
<td>N</td>
<td>P110</td>
<td>20.0</td>
<td>12064'</td>
<td>12064'</td>
<td>TOC 200' above 9.625&quot; shoe</td>
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</tbody>
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**Type: Tubing**

**Type: Liners**

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### OFH 4-25-13

<table>
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<th>TYPE</th>
<th>Size</th>
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<th>Burst Pressure</th>
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**Type: Tubing**

**Type: Liners**

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### PACKERS

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<tr>
<th>Kind:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sizes:</td>
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</tbody>
</table>

**Depths Set:**
21) Describe centralizer placement for each casing string. 
Conductor - No centralizers used. Fresh Water & Coal - Bow spring centralizers on first 2 joints then every third joint to 100 feet from surface. Intermediate - Bow spring centralizers one per joint to approximately 200 feet from gas storage zone, then every third joint to 100 feet from surface. Production - Rigid bow spring centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve up to approximately 2450 feet.

22) Describe all cement additives associated with each cement type. 
Conductor - 1.15% CaCl2. Fresh Water - 1.15% CaCl2. Coal - 1.15% CaCl2, 0.6% Gas migration control additive, 0.5% fluid loss additive, 0.4% Salt tolerant dispersant, and 0.3% defoamer. Intermediate - 10.0% BWOW NaCl, 0.2% BWOB Anti-foam, 0.3% BWOW Dispersant, 0.4% BWOB Cement retarder. Production: 2.6% Cement extender, 0.7% Fluid Loss additive, 0.5% high temperature retarder, 0.2% friction reducer.

23) Proposed borehole conditioning procedures. 
Conductor - The hole is drilled w/ air and casing is run in air. Apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedures. Fresh Water -The hole is drilled w/air and casing is run in air. Once casing is on bottom, the hole is filled w/ KCl water and a minimum of one hole volume is circulated prior to pumping cement. Coal - The hole is drilled w/air and casing is run in air. Once casing is at setting depth, the hole is filled w/ KCl water and a minimum of one hole volume is circulated prior to pumping cement. Intermediate - The hole is drilled w/ air and filled w/ KCl water once drilled to TD. The well is conditioned with KCl circulation prior to running casing. Once casing is at setting depth, the well is circulated drilled to TD. The well is conditioned with KCl circulation prior to running casing. Once casing is at setting depth, the well is circulated a minimum of one hole volume prior to pumping cement.

*Note: Attach additional sheets as needed.
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name   Noble Energy, Inc.  OP Code  494501907

Watershed (HUC 10): Turkey Run  Quadrangle Valley Grove

Elevation 1289.59  County  Marshall  District  Sand Hill

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work?  Yes X No

Will a pit be used for drill cuttings?  Yes X No

If so, please describe anticipated pit waste:  None - Closed Loop System

Will a synthetic liner be used in the pit?  Yes X No

If so, what ml.?____________________

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection  (UIC Permit Number
- Reuse (at API Number ____________)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain)____________________

Will closed loop system be used?  Yes

Drilling medium anticipated for this well?  Air, freshwater, oil based, etc. Top hole Air and Freshwater / lateral SOBM

- If oil based, what type?  Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium?  Bactericide, polymers and weighing agents

Drill cuttings disposal method?  Leave in pit, landfill, removed offsite, etc. All cuttings will be taken to an off site approved facility.

- If left in pit and plan to solidify what medium will be used?  (cement, lime, sawdust)

- Landfill or offsite name/permit number?  See attached - Site Water/Cuttings Disposal

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto 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. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature  [Signature]

Company Official (Typed Name)  Dee Swiger

Company Official Title  Regulatory Analyst

Subscribed and sworn before me this ______ day of May, 2013.

Notary Public

My commission expires 5-4-15

06/21/2013
Noble Energy, Inc.

Proposed Revegetation Treatment:  Acres Disturbed ___________________________  Prevegetation pH ___________________________

Lime __________ Tons/acre or to correct to pH ___________________________

Fertilizer (10-20-20 or equivalent) __________ lbs/acre (500 lbs minimum)

Mulch __________ Tons/acre

Hay or straw at 2 tons

Seed Mixtures

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<tr>
<th>Seed Type</th>
<th>Area I</th>
<th>lbs/acre</th>
<th>Seed Type</th>
<th>Area II</th>
<th>lbs/acre</th>
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<td>Tall Fescue</td>
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<td>Ladino Clover</td>
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<td>Ladino Clover</td>
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Attach:
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: ____________________________________________

Oil and Gas Inspector

Title: ____________________________________________ Date: 4-25-13

Field Reviewed?  (__) Yes  (______) No
Site Water/Cuttings Disposal

Cuttings
Haul off Company:

Eap Industries, Inc.  DOT # 0876278
1575 Smith Twp State Rd. Atlasburg PA 15004
1-888-294-5227

Disposal Locations:

Apex Environmental, LLC  Permit # 06-08438
11 County Road 78
Amsterdam, OH 43903
740-543-4389

Westmoreland Waste, LLC  Permit # 100277
111 Conner Lane
Belle Vernon, PA 15012
724-929-7694

Water
Haul off Company:

Dynamic Structures, Clear Creek  DOT # 720485
3790 State Route 7
New Waterford, OH 44445
330-892-0164

Disposal Location:

Solidification
Waste Management, Arden Landfill  Permit # 100172
200 Rangos Lane
Washington, PA 15301
724-225-1589

Solidification/Incineration
Soil Remediation, Inc.  Permit # 02-20753
6065 Arrel-Smith Road
Lowelville, OH 44436
330-536-6825
Chemical List Including CAS#’s

Type: Friction Reducer (DWP-612)
Chemical Component as listed on MSDS: Long Chain Polyacrylamide
CAS: N/A

Type: Biocide (DWP-944)
1st Chemical Component as listed on MSDS: 2,2-Dibromo-3-nitrilopropionamide
CAS: 10222-01-2
2nd Chemical Component as listed on MSDS: Polyethylene Glycol Mixture
CAS: 25322-68-3

Type: Scale Inhibitor (DAP-901)
1st Chemical Component as listed on MSDS: Methanol
CAS: 67-56-1
2nd Chemical Component as listed on MSDS: Phosphoric Acid Ammonium Salt
CAS: Trade Secret
3rd Chemical Component as listed on MSDS: Ammonium Chloride
CAS: 12125-02-9
4th Chemical Component as listed on MSDS: Organic Phosphonate
CAS: Trade Secret
5th Chemical Component as listed on MSDS: Amine Salt
CAS: Trade Secret
6th Chemical Component as listed on MSDS: Oxyalkylated Polyamine
CAS: Trade Secret

Type: Surfactant (DWP-938)
Chemical Component as listed on MSDS: Soap
CAS: N/A

Type: Hydrochloric Acid
Chemical Component as listed on MSDS: Hydrochloric Acid
CAS: 7647-01-0

Type: PA Breaker (DWP-690)
Chemical Component as listed on MSDS: Hydrogen Peroxide
CAS: Trade Secret

Type: Gel Slurry (DWP-111)
Chemical Component as listed on MSDS: Viscosifier
CAS: N/A

Type: Oxidizer Breaker (DWP-901)
Chemical Component as listed on MSDS: Ammonium Persulfate
CAS: 7727-54-0

Type: Buffer (DWP-204)
Chemical Component as listed on MSDS: Formic Acid
CAS: 64-18-6
Important:
For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP’s assessment is based on the following considerations:

• Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
• Identification of sensitive aquatic life (endangered species, mussels, etc.);
• Quantification of known existing demands on the water supply (Large Quantity Users);
• Minimum flows required by the Army Corps of Engineers; and
• Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator’s responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.
### Source Summary

<table>
<thead>
<tr>
<th>WMP</th>
<th>API Number</th>
<th>Operator</th>
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<tbody>
<tr>
<td>01238</td>
<td>047-051-01644</td>
<td>Noble Energy, Inc</td>
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<tr>
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<td>SHL13GHS</td>
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</table>

### Stream/River

#### Source: Wheeling Creek Pump Station 1 @ CNX Land Resources

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Total Volume (gal)</th>
<th>Max. daily purchase (gal)</th>
<th>Intake Latitude</th>
<th>Intake Longitude</th>
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<tbody>
<tr>
<td>5/20/2013</td>
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- **Regulated Stream?**
- **Ref. Gauge ID:** 3111955
- **Stream:** Wheeling Creek near Majorsville, WV

<table>
<thead>
<tr>
<th>Max. Pump rate (gpm)</th>
<th>Min. Gauge Reading (cfs)</th>
<th>Min. Passby (cfs)</th>
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<tbody>
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<td>1,000</td>
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#### Source: Wheeling Creek Pump Station 2 @ CNX Land Resources

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- **Regulated Stream?**
- **Ref. Gauge ID:** 3111955
- **Stream:** Wheeling Creek near Majorsville, WV

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DEP Comments:
# Source Summary

**WMP:** 01238  
**API Number:** 047-051-01644  
**Operator:** Noble Energy, Inc

## Purchased Water

### West Virginia American Water - Weston Water Treatment Plant

<table>
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<th>Source</th>
<th>Total Volume (gal)</th>
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- **Regulated Stream?** Stonewall Jackson Dam  
- **Ref. Gauge ID:** 3061000  
- **Location:** WEST FORK RIVER AT ENTERPRISE, WV

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### Bethlehem Water Department

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- **Regulated Stream?** Ohio River Min. Flow  
- **Ref. Gauge ID:** 9999999  
- **Location:** Ohio River Station: Willow Island Lock & Dam

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<tbody>
<tr>
<td>6,468.00</td>
<td></td>
<td></td>
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</tbody>
</table>

- **DEP Comments:** Bethlehem Water Department purchases all its water from the City of Wheeling. Thresholds are set based on the location of the City of Wheeling's raw water intake.

### Wellsburg Water Department

<table>
<thead>
<tr>
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<th>Max. daily purchase (gal)</th>
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- **Regulated Stream?** Ohio River Min. Flow  
- **Ref. Gauge ID:** 9999999  
- **Location:** Ohio River Station: Willow Island Lock & Dam

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</table>

- **DEP Comments:** This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. [http://www.erh.noaa.gov/er/ohrfc/flows.shtml](http://www.erh.noaa.gov/er/ohrfc/flows.shtml)

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06/21/2013

west virginia department of environmental protection  
6/12/2013 12:27:29 PM
Moundsville Water Board

Start Date: 5/20/2013
End Date: 5/20/2014
Total Volume (gal): 3,000,000
Max. daily purchase (gal): 2,000,000
Intake Latitude: -
Intake Longitude: -

Regulated Stream? Yes
Ohio River Min. Flow: 9999999
Ref. Gauge ID: 9999999
Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm):
Min. Gauge Reading (cfs): 6,468.00
Min. Passby (cfs):

DEP Comments: This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. http://www.erh.noaa.gov/er/ohrfc/flows.shtml

Dean's Water Service

Start Date: 5/20/2013
End Date: 5/20/2014
Total Volume (gal): 3,000,000
Max. daily purchase (gal): 600,000
Intake Latitude: -
Intake Longitude: -

Regulated Stream? Yes
Ohio River Min. Flow: 9999999
Ref. Gauge ID: 9999999
Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm):
Min. Gauge Reading (cfs): 6,468.00
Min. Passby (cfs):

DEP Comments:

Wheeling Water Department

Start Date: 5/20/2013
End Date: 5/20/2014
Total Volume (gal): 5,400,000
Max. daily purchase (gal): 17,500
Intake Latitude: -
Intake Longitude: -

Regulated Stream? Yes
Ohio River Min. Flow: 9999999
Ref. Gauge ID: 9999999
Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm):
Min. Gauge Reading (cfs): 6,468.00
Min. Passby (cfs):

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website: http://www.erh.noaa.gov/ohrfc/flows.shtml
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<th>Total Volume (gal)</th>
<th>Max. daily purchase (gal)</th>
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- **Regulated Stream?** Ohio River Min. Flow  
- **Ref. Gauge ID:** 9999999  
- **Ohio River Station:** Willow Island Lock & Dam

**Max. Pump rate (gpm):**

**Min. Gauge Reading (cfs):** 6,468.00  
**Min. Passby (cfs):**

**DEP Comments:** Refer to the specified station on the National Weather Service's Ohio River forecast website: http://www.erh.noaa.gov/ohrfc//flows.shtml
# Ground Water

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<th>Ref. Gauge ID</th>
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<td>Ohio River Min. Flow</td>
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<td>Ohio River Min. Flow</td>
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<td>Ohio River Min. Flow</td>
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<td>Ohio River Min. Flow</td>
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**Max. Pump rate (gpm):** 800

**Min. Gauge Reading (cfs):** 6,468.00

**Min. Passby (cfs):**
**Shoemaker Groundwater Well #6**

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<th>Start Date</th>
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<th>Total Volume (gal)</th>
<th>Max. daily purchase (gal)</th>
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<th>Intake Longitude</th>
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<tr>
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</table>


Max. Pump rate (gpm): 800  Min. Gauge Reading (cfs): 6,468.00  Min. Passby (cfs)

DEP Comments: This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. [http://www.erh.noaa.gov/er/ohrfc/flows.shtml](http://www.erh.noaa.gov/er/ohrfc/flows.shtml)
Source Detail

Source ID: 18039  Source Name: Shoemaker Groundwater Well #3
Consol Energy

HUC-8 Code: 5030106  Drainage Area (sq. mi.): 25000  County: Marshall

☐ Trout Stream?  ☐ Tier 3?  ☐ Proximate PSD?
☐ Gauged Stream?

Source Latitude: 40.0222  Source Longitude: -80.73389

Anticipated withdrawal start date: 5/20/2013  Anticipated withdrawal end date: 5/20/2014
Total Volume from Source (gal): 288,000
Max. Pump rate (gpm): 800
Max. Simultaneous Trucks: 
Max. Truck pump rate (gpm):

Reference Gaug 9999999  Ohio River Station: Willow Island Lock & Dam
Drainage Area (sq. mi.) 25,000.00  Gauge Threshold (cfs): 6468

Water Availability Profile

How on this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

Water Availability Assessment of Location

Base Threshold (cfs): -
Upstream Demand (cfs): 0.00
Downstream Demand (cfs): 0.00
Pump rate (cfs): 1.78
Headwater Safety (cfs): 0.00
Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -
Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

06/21/2013
Source ID: 18040  Source Name: Shoemaker Groundwater Well #4
Consol Energy

HUC-8 Code: 5030106  Drainage Area (sq. mi.): 25000  County: Marshall

☐ Endangered Species?  ☑ Mussel Stream?
☐ Trout Stream?  ☐ Tier 3?
☑ Regulated Stream?  Ohio River Min. Flow
☐ Proximate PSD?
☑ Gauged Stream?

Source Latitude: 40.022293  Source Longitude: -80.733586

Anticipated withdrawal start date: 5/20/2013  Anticipated withdrawal end date: 5/20/2014
Total Volume from Source (gal): 288,000
Max. Pump rate (gpm): 800

Max. Simultaneous Trucks: -
Max. Truck pump rate (gpm): -

Reference Gaug 9999999  Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.) 25,000.00  Gauge Threshold (cfs): 6468

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<tr>
<th>Month</th>
<th>Median monthly flow (cfs)</th>
<th>Threshold (+ pump)</th>
<th>Estimated Available water (cfs)</th>
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<td>1</td>
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<td>2</td>
<td>49,200.00</td>
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</tr>
<tr>
<td>3</td>
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<tr>
<td>4</td>
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<td>9</td>
<td>12,800.00</td>
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<td>15,500.00</td>
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<td>11</td>
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<tr>
<td>12</td>
<td>41,300.00</td>
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</table>

Water Availability Profile

How this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

Water Availability Assessment of Location

Base Threshold (cfs): -
Upstream Demand (cfs): 0.00
Downstream Demand (cfs): 0.00
Pump rate (cfs): 1.78
Headwater Safety (cfs): 0.00
Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -
Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

06/21/2013
Source ID: 18041  Source Name: Shoemaker Groundwater Well #5
Consol Energy

HUC-8 Code: 5030106
Drainage Area (sq. mi.): 25000  County: Marshall

☐ Endangered Species?  ☐ Trout Stream?
☐ Regulated Stream?  ☐ Tier 3?
☐ Gauged Stream?

Source Latitude: 40.021256
Source Longitude: -80.734568

Anticipated withdrawal start date: 5/20/2013
Anticipated withdrawal end date: 5/20/2014
Total Volume from Source (gal): 288,000
Max. Pump rate (gpm): 800

Reference Gaug Ohio River Station: Willow Island Lock & Dam
Drainage Area (sq. mi.) 25,000.00  Gauge Threshold (cfs): 6468

<table>
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<tr>
<th>Month</th>
<th>Median monthly flow (cfs)</th>
<th>Threshold (+ pump)</th>
<th>Estimated Available water (cfs)</th>
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<td>49,200.00</td>
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<td>3</td>
<td>65,700.00</td>
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<tr>
<td>4</td>
<td>56,100.00</td>
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<td>38,700.00</td>
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<td>6</td>
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<td>12,800.00</td>
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<td>15,500.00</td>
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Water Availability Profile

How this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

Water Availability Assessment of Location

Base Threshold (cfs): -
Upstream Demand (cfs): 0.00
Downstream Demand (cfs): 0.00
Pump rate (cfs): 1.78
Headwater Safety (cfs): 0.00
Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -
Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.
Source ID: 18042  Source Name: Shoemaker Groundwater Well #6  Consol Energy  
HUC-8 Code: 5030106  
Drainage Area (sq. mi.): 25000  County: Marshall  

- Endangered Species?  - Mussel Stream?  
- Trout Stream?  - Tier 3?  
✓ Regulated Stream?  Ohio River Min. Flow  
- Proximate PSD?  
✓ Gauged Stream?  

Source Latitude: 40.02076  Source Longitude: -80.73397  
Anticipated withdrawal start date: 5/20/2013  Anticipated withdrawal end date: 5/20/2014  
Total Volume from Source (gal): 288,000  
Max. Pump rate (gpm): 800  
Max. Simultaneous Trucks:  
Max. Truck pump rate (gpm):  

Reference Gaug 9999999  Ohio River Station: Willow Island Lock & Dam  
Drainage Area (sq. mi.) 25,000.00  Gauge Threshold (cfs): 6468  

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<th>Threshold Available water (cfs)</th>
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</table>

Water Availability Profile

"Threshold", as depicted in the chart above, is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.
Source Detail

WMP: 01238
API/ID Number: 047-051-01644
Operator: Noble Energy, Inc

SHL13GHS

Source ID: 18043  Source Name: West Virginia American Water - Weston Water Treat
West Virginia American Water

HUC-8 Code: 5020002
Drainage Area (sq. mi.): 104.83
County: Lewis

Endangered Species? ☑ Mussel Stream?
Trout Stream? ☑ Tier 3?
☑ Regulated Stream?
☑ Proximate PSD?
☑ Gauged Stream?

Anticipated withdrawal start date: 5/20/2013
Anticipated withdrawal end date: 5/20/2014
Total Volume from Source (gal): 7,000,000
Max. Pump rate (gpm): -
Max. Simultaneous Trucks: -
Max. Truck pump rate (gpm): -

Reference Gaug: 3061000
WEST FORK RIVER AT ENTERPRISE, WV
Drainage Area: 759.00
Gauge Threshold (cfs): 234

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Water Availability Profile

Flow on this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.
**Source Detail**

- **Source ID:** 18044
- **Source Name:** Bethlehem Water Department
- **HUC-8 Code:** 5030106
- **Drainage Area (sq. mi.):** 25000
- **County:** Ohio
- **Source Latitude:** -
- **Source Longitude:** -
- **Anticipated withdrawal start date:** 5/20/2013
- **Anticipated withdrawal end date:** 5/20/2014
- **Total Volume from Source (gal):** 3,000,000
- **Max. Pump rate (gpm):** -
- **Max. Simultaneous Trucks:** -
- **Max. Truck pump rate (gpm):** -

**Reference Gaug**

- **Drainage Area (sq. mi.)**
- **Ohio River Station: Willow Island Lock & Dam**

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<tr>
<th>Month</th>
<th>Median monthly flow (cfs)</th>
<th>Threshold (+ pump)</th>
<th>Estimated Available water (cfs)</th>
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</tr>
</tbody>
</table>

**Water Availability Profile**

Flow on this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.
Source ID: 18045  Source Name: Wellsburg Water Department

Wellsburg Water Department

HUC-8 Code: 5030106
Drainage Area (sq. mi.): 25000  County: Brooke

Endangered Species?  Mussel Stream?
Trout Stream?  Tier 3?
Regulated Stream?  Ohio River Min. Flow
Proximate PSD?  Wellsburg Water Department
Gauged Stream?

Anticipated withdrawal start date: 5/20/2013
Anticipated withdrawal end date: 5/20/2014
Total Volume from Source (gal): 3,000,000
Max. Pump rate (gpm):
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm):

Reference Gaug 9999999  Ohio River Station: Willow Island Lock & Dam
Drainage Area (sq. mi.) 25,000.00  Gauge Threshold (cfs): 6468

<table>
<thead>
<tr>
<th>Month</th>
<th>Median monthly flow (cfs)</th>
<th>Threshold (+ pump)</th>
<th>Estimated Available water (cfs)</th>
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<tbody>
<tr>
<td>1</td>
<td>45,700.00</td>
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<tr>
<td>12</td>
<td>41,300.00</td>
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</tbody>
</table>

Water Availability Assessment of Location
Base Threshold (cfs): -
Upstream Demand (cfs):
Downstream Demand (cfs):
Pump rate (cfs):
Headwater Safety (cfs): 0.00
Ungauged Stream Safety (cfs): 0.00
Min. Gauge Reading (cfs): -
Passby at Location (cfs): -

“Threshold”, as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.
Source ID: 18046  Source Name: Moundsville Water Board  Moundsville Water Treatment Plant  

HUC-8 Code: 5030106  Drainage Area (sq. mi.): 25000  County: Marshall  


Reference Gaug: 9999999  Ohio River Station: Willow Island Lock & Dam  Drainage Area (sq. mi.): 25,000.00  

Gauge Threshold (cfs): 6468

**Median monthly flow (cfs)** | **Threshold (+ pump)** | **Estimated Available water (cfs)**
--- | --- | ---
1 | 45,700.00 | -
2 | 49,200.00 | -
3 | 65,700.00 | -
4 | 56,100.00 | -
5 | 38,700.00 | -
6 | 24,300.00 | -
7 | 16,000.00 | -
8 | 13,400.00 | -
9 | 12,800.00 | -
10 | 15,500.00 | -
11 | 26,300.00 | -
12 | 41,300.00 | -

**Water Availability Profile**

Flow on this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

"Threshold", as depicted in the chart above, is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

**Water Availability Assessment of Location**

- Base Threshold (cfs): -
- Upstream Demand (cfs): -
- Downstream Demand (cfs): -
- Pump rate (cfs): -
- Headwater Safety (cfs): 0.00
- Ungauged Stream Safety (cfs): 0.00
- Min. Gauge Reading (cfs): -
- Passby at Location (cfs): -
Source ID: 18047  Source Name: Dean’s Water Service

HUC-8 Code: 5030106
Drainage Area (sq. mi.): 25000  County: Ohio

☐ Endangered Species?  ✓ Mussel Stream?
☐ Trout Stream?  ☐ Tier 3?
☑ Regulated Stream?  Ohio River Min. Flow
☐ Proximate PSD?
☑ Gauged Stream?

Anticipated withdrawal start date: 5/20/2013
Anticipated withdrawal end date: 5/20/2014
Total Volume from Source (gal): 3,000,000

Max. Pump rate (gpm): -
Max. Simultaneous Trucks: -
Max. Truck pump rate (gpm): -

Reference Gaug 9999999  Ohio River Station: Willow Island Lock & Dam
Drainage Area (sq. mi.) 25,000.00  Gauge Threshold (cfs): 6468

<table>
<thead>
<tr>
<th>Month</th>
<th>Median monthly flow (+ pump)</th>
<th>Threshold Available water (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45,700.00</td>
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<tr>
<td>2</td>
<td>49,200.00</td>
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<tr>
<td>12</td>
<td>41,300.00</td>
<td>-</td>
</tr>
</tbody>
</table>

Water Availability Profile

Flow on this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

Water Availability Assessment of Location

Base Threshold (cfs): -
Upstream Demand (cfs): 0.00
Downstream Demand (cfs): 0.00
Pump rate (cfs): -
Headwater Safety (cfs): 0.00
Ungauged Stream Safety (cfs): 0.00
Min. Gauge Reading (cfs): -
Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

06/21/2013
**Source Detail**

**Source ID:** 18049  
**Source Name:** Wheeling Water Department  
**HUC-8 Code:** 5030106  
**Drainage Area (sq. mi.):** 25000  
**County:** Ohio

- **Endangered Species?** ☑ Mussel Stream?  
- **Trout Stream?**  
- **Regulated Stream?** Ohio River Min. Flow  
- **Proximate PSD?** Wheeling Water Department  
- **Gauged Stream?**

**Source Latitude:** -  
**Source Longitude:** -  
**Anticipated withdrawal start date:** 5/20/2013  
**Anticipated withdrawal end date:** 5/20/2014  
**Total Volume from Source (gal):** 5,400,000  
**Max. Pump rate (gpm):**  
**Max. Simultaneous Trucks:**  
**Max. Truck pump rate (gpm):**

**Reference Gaug:** 9999999  
**Ohio River Station: Willow Island Lock & Dam**  
**Drainage Area (sq. mi.):** 25,000.00  
**Gauge Threshold (cfs):** 6468

### Median monthly flow (cfs)

<table>
<thead>
<tr>
<th>Month</th>
<th>Median monthly flow (cfs)</th>
<th>Threshold (+ pump)</th>
<th>Estimated Available water (cfs)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>45,700.00</td>
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<td>2</td>
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<td>3</td>
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<td>26,300.00</td>
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<tr>
<td>12</td>
<td>41,300.00</td>
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</tbody>
</table>

### Water Availability Profile

*Flow on this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.*

**Water Availability Assessment of Location**

- **Base Threshold (cfs):** -
- **Upstream Demand (cfs):**
- **Downstream Demand (cfs):**
- **Pump rate (cfs):**
- **Headwater Safety (cfs):** 0.00
- **Ungauged Stream Safety (cfs):** 0.00
- **Min. Gauge Reading (cfs):** -
- **Passby at Location (cfs):** -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.
Source Detail

Source ID: 18050  Source Name: Ohio County PSD
Ohio county PSD

HUC-8 Code: 5030106
Drainage Area (sq. mi.): 25000  County: Ohio

☑ Endangered Species? ☑ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☑ Regulated Stream? Ohio River Min. Flow
☑ Proximate PSD? Wheeling Water Department
☑ Gauged Stream?

Reference Gaug 9999999  Ohio River Station: Willow Island Lock & Dam
Drainage Area (sq. mi.) 25,000.00  Gauge Threshold (cfs): 6468

<table>
<thead>
<tr>
<th>Month</th>
<th>Median monthly flow (cfs)</th>
<th>Threshold (+ pump)</th>
<th>Estimated Available water (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>45,700.00</td>
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<tr>
<td>2</td>
<td>49,200.00</td>
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<tr>
<td>3</td>
<td>65,700.00</td>
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<td>4</td>
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<tr>
<td>12</td>
<td>41,300.00</td>
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</tbody>
</table>

Water Availability Profile

How on this stream is regulated by the Army Corps of Engineers. Please adhere to the stated thresholds to maintain the minimum guaranteed flow requirements.

Water Availability Assessment of Location

Base Threshold (cfs): -
Upstream Demand (cfs):
Downstream Demand (cfs):
Pump rate (cfs):
Headwater Safety (cfs): 0.00
Ungauged Stream Safety (cfs): 0.00
Min. Gauge Reading (cfs):
Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

06/21/2013
Source Detail

WMP: 01238  API/ID Number: 047-051-01644  Operator: Noble Energy, Inc

SHL13GHS

Source ID: 18037  Source Name: Wheeling Creek Pump Station 1 @ CNX Land Resour
Consol Energy

HUC-8 Code: 5030106  Drainage Area (sq. mi.): 156.06  County: Marshall

☐ Endangered Species?  ☑ Mussel Stream?
☐ Trout Stream?  ☐ Tier 3?
☐ Regulated Stream?  ☐ Proximate PSD?
☑ Gauged Stream?

Source Latitude: 39.95205  Source Longitude: -80.56189

Anticipated withdrawal start date: 5/20/2013  Anticipated withdrawal end date: 5/20/2014

Total Volume from Source (gal): 5,000,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm)

Reference Gaug 3111955  Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.) 152.00

Gauge Threshold (cfs): 16

Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs)
---|---|---|---
1 | 0.00 | 18.66 | -
2 | 0.00 | 18.66 | -
3 | 0.00 | 18.66 | -
4 | 0.00 | 18.66 | -
5 | 0.00 | 18.66 | -
6 | 0.00 | 18.66 | -
7 | 0.00 | 18.66 | -
8 | 0.00 | 18.66 | -
9 | 0.00 | 18.66 | -
10 | 0.00 | 18.66 | -
11 | 0.00 | 18.66 | -
12 | 0.00 | 18.66 | -

Water Availability Profile

**Water Availability Assessment of Location**

Base Threshold (cfs): 16.43

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 18.23

Passby at Location (cfs): 16.43

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

06/21/2013
Source Detail

WMP: 01238  API/ID Number: 047-051-01644  Operator: Noble Energy, Inc

Source ID: 18038  Source Name: Wheeling Creek Pump Station 2 @ CNX Land Resour
CNX Land Resources, Inc.

HUC-8 Code: 5030106  Drainage Area (sq. mi.): 152.4  County: Marshall

□ Endangered Species?  □ Trout Stream?
□ Regulated Stream?  □ Proximate PSD?
☑ Gauged Stream?

Source Latitude: 39.949578  Source Longitude: -80.531256

Anticipated withdrawal start date: 5/20/2013  Anticipated withdrawal end date: 5/20/2014
Total Volume from Source (gal): 4,000,000
Max. Pump rate (gpm): 1,000
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm)

Reference Gaug  3111955  Wheeling Creek near Majorsville, WV
Drainage Area (sq. mi.) 152.00  Gauge Threshold (cfs): 16

<table>
<thead>
<tr>
<th>Month</th>
<th>Median monthly flow (cfs)</th>
<th>Threshold (+ pump)</th>
<th>Estimated Available water (cfs)</th>
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</thead>
<tbody>
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</table>

Water Availability Profile

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Availability Assessment of Location

Base Threshold (cfs): 16.04
Upstream Demand (cfs): 0.00
Downstream Demand (cfs): 0.00
Pump rate (cfs): 2.23
Headwater Safety (cfs): 0.00
Ungauged Stream Safety (cfs): 0.00
Min. Gauge Reading (cfs): 18.23
Passby at Location (cfs): 16.04

06/21/2013

west virginia department of environmental protection
6/12/2013 12:27:31 PM
Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

### Multi-site impoundment

<table>
<thead>
<tr>
<th>Source ID</th>
<th>Source Name</th>
<th>SHL #1 Impoundment</th>
<th>Source start date</th>
<th>Source end date</th>
</tr>
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<tbody>
<tr>
<td>18051</td>
<td>SHL13GHS</td>
<td></td>
<td>5/20/2013</td>
<td>5/20/2014</td>
</tr>
</tbody>
</table>

**Source Lat:** 39.979696  
**Source Long:** -80.579465  
**County:** Marshall  
**Max. Daily Purchase (gal):**  
**Total Volume from Source (gal):** 3,400,000

**DEP Comments:**

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.  

**Reference:** WMP-200
Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

---

**Source ID:** 18052  **Source Name:** SHL #2 Impoundment (WV51-WPC-00001)  **Source start date:** 5/20/2013  **Source end date:** 5/20/2014

- **Source Lat:** 39.966973  **Source Long:** -80.561377  **County:** Marshall
- **Max. Daily Purchase (gal):**  **Total Volume from Source (gal):** 4,100,000

**DEP Comments:**

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.  **Reference:** WMP-201

---

**Source ID:** 18053  **Source Name:** SHL #3 Impoundment (WV51-WPC-00002)  **Source start date:** 5/20/2013  **Source end date:** 5/20/2014

- **Source Lat:** 39.974133  **Source Long:** -80.55527  **County:** Marshall
- **Max. Daily Purchase (gal):**  **Total Volume from Source (gal):** 4,300,000

**DEP Comments:**

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.  **Reference:** WMP-202

---

*west virginia department of environmental protection*

06/21/2013
Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

• For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

• For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 18054  Source Name: SHL #4 Impoundment (WV51-WPC-00003)  Source start date: 5/20/2013
Source end date: 5/20/2014
Source Lat: 39.963284  Source Long: -80.562743  County: Marshall
Max. Daily Purchase (gal): 4,100,000
Total Volume from Source (gal): 4,100,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-204

Purchased Water

Source ID: 18048  Source Name: Bridgeport Ohio Water Department
Public Water Provider  Source start date: 5/20/2013
Source end date: 5/20/2014
Source Lat: 40.08348  Source Long: -80.736488  County
Max. Daily Purchase (gal): 200,000
Total Volume from Source (gal): 3,000,000

DEP Comments: Please ensure that purchases from this source are approved by, and completed in accordance with, requirements set forth by the State of Ohio Department of Environmental Protection.
Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

• For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

• For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

<table>
<thead>
<tr>
<th>Source ID</th>
<th>Source Name</th>
<th>Source start date</th>
<th>Source end date</th>
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</thead>
<tbody>
<tr>
<td>18055</td>
<td>SHL3 Centralized Pit</td>
<td>5/20/2013</td>
<td>5/20/2014</td>
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<table>
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<th>Source Long:</th>
<th>County</th>
<th>Total Volume from Source (gal):</th>
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<tbody>
<tr>
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<td></td>
<td>1,000,000</td>
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</tbody>
</table>

DEP Comments:
Site Safety Plan

Noble Energy, Inc.
Sandhill 13HS

April 2013: Version 1

For Submission to
West Virginia Department of Environmental Protection,
Office of Oil and Gas

Noble Energy, Inc.
Appalachia Offices
333 Technology Drive, Suite 116
Canonsburg, PA 15317-9504
## Preface

### REVISION RECORD

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### DISTRIBUTION

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<td>Operations Trailer</td>
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<td>2</td>
<td>State of West Virginia Department of Environmental Protection (Permit Submission)</td>
<td>601 - 57th Street Charleston, WV 25304</td>
</tr>
<tr>
<td>3</td>
<td>Marshall County LEPC</td>
<td>PO Drawer B Moundsville, WV 26041</td>
</tr>
</tbody>
</table>
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1. Introduction

Noble Energy, Inc. (Noble) strives to meet all regulatory requirements and follow industry best practices in all of its operations. As such, this Site Safety Plan (SSP) has been developed to meet the requirements set forth by the West Virginia Department of Environmental Protection (hereafter referred to as the “Department”), Office of Oil and Gas (hereafter referred to as the “Office”). Well Site Safety Plan Standards for sites with three (3) acres or greater of surface disturbance involved in drilling and producing oil or natural gas in the State of West Virginia.

In the case of a horizontal well, the SSP will be submitted with each well application. The approved SSP will be maintained and available on location at all times. The SSP will also be provided to the local emergency planning committee (LEPC) for the emergency planning district in which the well work will occur or to the county office of emergency services at least seven (7) days prior to commencement of well work or site preparation work that involves any disturbance of land. In all cases, the SSP, once approved, may only be modified upon the approval of the Office.

2. Siting

Mapping and plot diagrams demonstrating the well location, access road, pits, flare lines, dwellings, and noting the north and prevailing wind directions, as well as a topographical map showing the well site location, can be found in Appendix A, Mapping, Plots, and Siting.

3. Safety Plan

3.1 Safety Meetings
Safety meetings will be held onsite weekly, at a minimum. Safety meetings will specifically be held at the beginning of drilling, completion, and workover operations. Meeting attendance will be logged. A sample attendance log can be found in Appendix B, Forms.

3.2 Pre-Spud Safety Meeting
A pre-spud safety meeting must be held prior to beginning drilling operations and include personnel to be employed and involved in the drilling operations. The pre-spud safety meeting should also include the district oil and gas inspector or other designated Office of Oil and Gas representative. All personnel in attendance at the pre-spud meeting will be listed. This list will be filled out on the appropriate page of Appendix B, Forms at the time of the pre-spud safety meeting.

3.3 Personnel Accountability
A check-in and check-out list of all personnel will be maintained during the drilling and completion phases of the operation. During drilling operations check-in and check-out will be handled at the guard shack upon arrival to and departure from the site. This procedure ensures an accurate headcount of personnel onsite at all times.

3.4 Evacuation Plan
3.4.1 Onsite Personnel:
The Drilling Supervisor will establish two muster points at which all persons will assemble for personnel safety and verification that all personnel are accounted for. The muster points will be located a sufficient distance from the well so that all personnel assembling there are out

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of immediate danger. They will also be located sufficiently distant from each other, and presumably in opposite directions from the well, to facilitate evacuation to a safe location in any situation regardless of wind or weather conditions.

3.4.2 Residents of Surrounding Area
In the event that local residents from the surrounding area have the potential to be affected by an emergency at the site, they will be notified according to Section 9 of this SSP. Upon notification they will be informed of the potential hazards and evacuated to a safe distance along with onsite personnel. When possible, local first responder agencies will coordinate the evacuation of residents.

3.5 Contact Information
Contact information for the operator, contractors of the operator, the Department, the Office, the local oil and gas inspector, and local emergency response units can be found in Appendix C, Contacts of this SSP.

3.6 Schools and Public Facilities
A list of all schools and public facilities within a one (1) mile radius of the site can be found in Appendix C, Contacts of this SSP.

3.7 Material Safety Data Sheets
Material Safety Data Sheets (MSDS) for all materials and chemicals will be readily available and maintained in the operations trailer on the well site. It is the responsibility of onsite safety personnel to ensure that the MSDS for each material that is delivered to the facility is on file at the location. Should a material for which there is not an MSDS on file be brought onto the site a copy of the MSDS that accompanies the shipment will be filed with the rest of the sites MSDS.

MSDS may additionally be sourced through Noble’s subscription to the 3E Company’s online database. The URL and login for this database can be found in the table below:

<table>
<thead>
<tr>
<th>3E COMPANY ONLINE MSDS DATABASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL</td>
</tr>
<tr>
<td>Login</td>
</tr>
<tr>
<td>Password</td>
</tr>
</tbody>
</table>

Additionally, the 3E company may be contacted at 1 (800) 360-3220.

3.7 Relationship with Local First Responders
Noble will work closely with local first responders to familiarize them with potential incidents that are related to oil and gas development so that those agencies have the capability to provide the support necessary for the implementation of this SSP. This may include:

- Providing first responder agencies with a copy of this SSP
- Arranging tours of sites in the area
- Hosting or facilitating outreach events to educate first responders on the operations at a drilling site
- Remaining available at all times to answer questions from first responders

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4. Wellbore Casing and Cementing

4.1 Anticipated Depths
A list of anticipated freshwater, saltwater, oil and gas, hydrogen sulfide, thief zones, and high pressure and high volume zones and their expected depths can be found Appendix D, Wellbore Casing and Cementing Program.

4.2 Casing and Cementing Program
A detailed casing and cementing program is provided in Appendix D, Wellbore Casing and Cementing program.

While the cement may not meet the appropriate API standard, it meets the industry standard as an approved alternate in common use across the exploration and production field. Casing and cement will at all times be of sufficient weight, quantity, and quality to ensure well control and integrity. Furthermore, casing setting depths and cement quantities will be sufficient to address all zones identified in Section 4.1, Anticipated Depths

5. Well Control and Blow-Out Preventer (BOP)

5.1 BOP Equipment
A list of all BOP equipment and casing heads, including the relevant specifications for each, utilized and available during drilling, completion, and workover can be found in the table below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Size</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whip stock 24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellhead</td>
<td>MBU</td>
<td>13 5/8&quot;</td>
<td>5,000 lbs</td>
</tr>
<tr>
<td>Double BOP</td>
<td>Shaffer</td>
<td>13 5/8&quot;</td>
<td>3,000 lbs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Size</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annular</td>
<td>GK</td>
<td>13 5/8&quot;</td>
<td>3,000 lbs</td>
</tr>
<tr>
<td>Choke Manifold</td>
<td>Cameron</td>
<td>2&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nabors M59</td>
</tr>
<tr>
<td>Wellhead</td>
<td>MBU</td>
<td>13 5/8&quot;</td>
<td>5,000 lbs</td>
</tr>
<tr>
<td>Double BOP</td>
<td>Cameron Type U</td>
<td>11&quot;</td>
<td>5,000 lbs</td>
</tr>
<tr>
<td>Annular</td>
<td>Hydriil Type VK</td>
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<td>5,000 lbs</td>
</tr>
<tr>
<td>Choke Manifold</td>
<td>Cameron</td>
<td>4 1/16&quot;</td>
<td>5,000 lbs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
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</thead>
<tbody>
<tr>
<td>Wellhead</td>
<td>Weatherford</td>
<td>7 1/16&quot;</td>
<td>10,000 lbs</td>
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<tr>
<td>Double BOP</td>
<td>TBD</td>
<td>7 1/16&quot;</td>
<td>5,000 lbs</td>
</tr>
<tr>
<td>Frac Valves</td>
<td>TBD</td>
<td>5 1/8&quot;</td>
<td>10,000 lbs</td>
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<tr>
<td>Frac Valves</td>
<td>TBD</td>
<td>7 1/16&quot;</td>
<td>10,000 lbs</td>
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<tr>
<td>Choke Manifold</td>
<td>TBD</td>
<td>2&quot;</td>
<td>10,000 lbs</td>
</tr>
</tbody>
</table>

5.2 BOP Testing
All BOP testing will be conducted in accordance with the American Petroleum Institute’s (API) Recommended Practice 53 (RP 53), Recommended Practices for Blowout Prevention Equipment

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Site Safety Plan, SHL13HS Well

Systems for Drilling Wells. This is the industry standard for the installation and testing of BOP systems on land and marine drilling rigs.

5.3 BOP Equipment Installation Schedule
The BOP will be installed after running the intermediate casing. It will be installed on the innermost casing string.

5.4 Well Control Training
The following personnel will have approved well control training and current certification recognized by the International Association of Drilling Contractors (IADC):

<table>
<thead>
<tr>
<th>Personnel with Well Control Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling Manager (Operator)</td>
</tr>
<tr>
<td>Drilling Engineer (Operator)</td>
</tr>
<tr>
<td>Drilling Superintendent (Operator)</td>
</tr>
<tr>
<td>Operator Representatives (Well site supervisors)</td>
</tr>
<tr>
<td>Rig Manager (Contractor tool pusher)</td>
</tr>
<tr>
<td><strong>Completions and Workover</strong></td>
</tr>
<tr>
<td>Completions Superintendent</td>
</tr>
<tr>
<td>Rig Supervisor</td>
</tr>
</tbody>
</table>

5.5 Record of Significant Events
A detailed record of significant events including, but not limited to, lost circulation, the presence of hydrogen sulfide gas, fluid entry, kicks, and abnormal pressures, will be maintained through the use of a daily log. This log will be kept in the “doghouse” of the drilling platform. These records are periodically uploaded and retained electronically at Noble’s offices in Canonsburg, PA.

The Office will be immediately notified of the presence of hydrogen sulfide gas, as well as the occurrence of any blowout or significant kick. The contact information for the Office can be found in Appendix C, Contacts.

5.6 Wellhead Assembly
Below is a diagram of the wellhead to be installed upon completion of fracturing operations:
6. Well Flaring Operations

6.1 Size, Construction and Length of Flare Line
The flare line will be a minimum of a 2” diameter steel line that extends a minimum of 100’ from the well. The end of the kill line will also be at the terminus of the flow line. The flare stack will be stationed at least 100’ from any well head and/or equipment at all times.

The line may be anchored in a variety of ways, depending on conditions at the site. This could include, but is not limited to, metal staking topped with safety cones, cross pinning, concrete weights, or any combination therein.

6.2 Flare Lighting
The system for lighting the flare will be an electronic igniter. Notification to the local fire department prior to lighting the flare will be given immediately if practicable and as soon as possible thereafter.

6.3 Flaring Operations
All gas diverted through the manifold will be burned. The local fire department will be notified immediately prior to lighting the flare if at all possible. In the rare circumstance that such notification is not possible, the local fire department will be notified as soon after lighting the flare as is reasonably possible.

6.4 Minimum Clear Distance
All flammable material beyond the end of the flare line will be cleared to a minimum distance of 50 feet.

6.5 Flaring Duration
Upon ignition, flaring operations will last approximately 14 continuous days per well.

7. Well Kill

7.1 Mud Inventory
A contracted drilling mud service will maintain all required components for the mixing of mud for well kill operations in compliance with API RP 53. The contractor will keep the appropriate inventory of those components, and a copy of the inventory will be kept in an onsite office.

7.2 Mixing Units
The contracted drilling mud service that maintains the components named in Section 7.1, Mud Inventory, will maintain the appropriate number and type of mixing units for the mixing of drilling mud in sufficient quantities for well kill operations at the site.

7.3 Kill Procedures
In the event that the BOP must be activated, a hard closure method will be utilized. Should this not be sufficient, an IADC preferred methodology will be utilized. These include the following:

- Wait and Weight Method
- Driller’s Method
- Volumetric Control
- Lubricate and Bleed
8. Hydrogen Sulfide Operations

8.1 Monitoring Equipment
Depending on the known threat of the presence of hydrogen sulfide, monitors may be utilized onsite. Should a basic monitoring system be utilized, it will be positioned in the shaker area.

Areas that have a known threat for the presence of hydrogen sulfide will be monitored according to a separate contingency plan specific to hydrogen sulfide operations.

8.2 Training
Personnel on all Noble sites will be trained on the sites alarm system, evacuation procedures, and awareness of the basic hazards associated with hydrogen sulfide gas.

In the event that operations are being conducted in an area known to hold the threat of hydrogen sulfide, or if there is reason to believe that the threat is present, all personnel onsite will have additional training on personal protective equipment (PPE), respiratory protection, and will be fit tested. In all circumstances a portion of the personnel onsite will have hydrogen sulfide training.

8.3 Personal Protective Equipment
In the event that operations involve a known threat of hydrogen sulfide release or exposure, the following PPE will be maintained on the wellsite:
- Personal hydrogen sulfide monitors
- A full rig hydrogen sulfide monitoring system
- SCBA escape packs

Additional consideration may be given to the use of supplied working air if the situation warrants.

8.4 Notification of the Presence of Hydrogen Sulfide
In the event that the presence of hydrogen sulfide is detected on the wellsite, the Office will be notified by calling the Pollution and Emergency Spills hotline and/or the appropriate District Inspector. Numbers for each can be found in Appendix C, Contacts.

8.5 Access Control
In the event that the presence of hydrogen sulfide is detected on the wellsite, site personnel, local residents, and other personnel affected by the incident will assemble according to Section 3, Safety Plan, at the upwind, uphill muster point. Each muster point will be established outside of the potential hazard zone.

Should access need to be further limited, local law enforcement personnel may be utilized to limit or prevent roadway traffic from entering a hazard zone.

9. Notification and Protection Zones

9.1 Notification Method
Should an event occur, including but not limited to the presence of hydrogen sulfide, blowouts, and flaring occur, residents and/or emergency response personnel must be notified. In the event that they must be notified the preferred method is by telephone. Contact information for the various residents, agencies, and emergency response personnel can be found in Appendix C, Contacts.
Site Safety Plan, SHL13HS Well

9.2 Protection Zones
Should the need for designated protection zones arise as a result of certain events, they will be established as appropriate. These protection zones will be established by evaluating the hazard, conditions, circumstances, potential impacts, and available guidance (such as the DOT Emergency Response Guidebook, available MSDS, etc.) to determine the best course of action.
Appendix A: Mapping, Plots, and Siting
Exit well site heading North from the the pad site on the access road. Turn right at intersection of Limestone & Dallas Rd / Stone Church Rd. Head East ~1.1Mi to the Dallas Rd intersection. Turn Right and proceed ~1/4Mi to Dallas United Methodist Church.
Directions to Limestone and Dallas Rd/Stone Church Rd  
36.1 mi – about 50 mins

<table>
<thead>
<tr>
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<th>Instruction</th>
<th>Distance</th>
<th>Total Distance</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Head southwest on Technology Dr toward Hillpointe Dr</td>
<td>go 407 ft</td>
<td>total 407 ft</td>
</tr>
</tbody>
</table>
| 2.   | Turn left to stay on Technology Dr  
About 48 secs | go 0.3 mi | total 0.4 mi |
| 3.   | Turn right onto Town Center Blvd  
About 2 mins | go 0.6 mi | total 0.9 mi |
| 4.   | At the traffic circle, take the 2nd exit onto Town Center Way | go 0.1 mi | total 1.1 mi |
| 5.   | Turn right onto Southpointe Blvd | go 0.2 mi | total 1.3 mi |
| 6.   | Turn right onto Morganza Rd  
About 2 mins | go 1.0 mi | total 2.3 mi |
| 7.   | Turn left onto Weavertown Rd  
About 48 secs | go 0.2 mi | total 2.5 mi |
| 8.   | Turn right to merge onto I-79 S toward Washington Pa  
About 9 mins | go 6.8 mi | total 9.3 mi |
| 9.   | Take exit 38 to merge onto I-70 W toward Wheeling  
Entering West Virginia  
About 22 mins | go 20.7 mi | total 30.0 mi |
| 10.  | Take exit 11 for County Highway 41/Dallas Pike | go 0.1 mi | total 30.2 mi |
| 11.  | Turn left onto Dallas Pike  
About 4 mins | go 1.8 mi | total 32.0 mi |
| 12.  | Slight left onto Middle Wheeling Creek Rd/Old Co 39  
About 1 min | go 0.4 mi | total 32.4 mi |
| 13.  | Continue onto Dallas Pike  
About 5 mins | go 2.8 mi | total 35.2 mi |
| 14.  | Turn right onto Dallas Rd/Stone Church Rd  
Continue to follow Stone Church Rd  
Destination will be on the left  
About 2 mins | go 0.9 mi | total 36.1 mi |

Limestone and Dallas Rd/Stone Church Rd

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2012 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.
Appendix B: Forms

B.1 Sample Pre-Spud Safety Meeting Attendance Log

<table>
<thead>
<tr>
<th>Print Name</th>
<th>Company/Title</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

This document shall be turned into the EHS Safety Person and the original shall be kept for department records and review. These documents should be retained for 1 year. A copy of this document shall be maintained with the Site Safety Plan.

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**B.2 Sample Safety Meeting Sign-in**

---

**DAILY PRE-SHIFT SAFETY MEETING**

<table>
<thead>
<tr>
<th>SAFETY TOPICS</th>
<th>DISCUSSION LEADERS</th>
<th>COMMENTS or SIGNIFICANT POINTS DISCUSSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction and Opening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Third Party Contractors (Current or Expected at Worksite)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Review of Inspections, Visits, Assessments or Audits</td>
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<tr>
<td>4. Review of Safety Alerts, Technical Advisories or Weather Warnings</td>
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<tr>
<td>5. Review and Discussion of the Last 24 hrs. of Operations (what has been done)</td>
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<tr>
<td>6. Work that has been Completed</td>
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<tr>
<td>7. Review of Near Misses, Incidents, Accidents or Illnesses</td>
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<tr>
<td>8. Review of Equipment that is Inoperative, out of Service, Locked Out, or By-passed</td>
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<tr>
<td>9. Discussion of Operations for this Shift</td>
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<tr>
<td>10. Prepare and Complete JSA/JRA For all Significant Tasks (List)</td>
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<tr>
<td>11. Discuss Operations Currently Underway, Issues, Concerns, etc (as the shift begins)</td>
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<tr>
<td>12. Planned Equipment Maintenance</td>
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<tr>
<td>13. Key Work Planned (work critical to operations)</td>
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<tr>
<td>14. Upcoming Training, Weekly Safety Meetings, etc.</td>
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<tr>
<td>15. Wrap up and Feedback (group discussion everyone must participate)</td>
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<tr>
<td>16. Ask everyone to share the Main Focus for the shift</td>
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</tbody>
</table>

This document shall be turned into the EHS Safety Person and the original shall be kept for department records and review. These documents should be retained for 1 year.

April 2013: Version 1
## Site Safety Plan, SHL13HS Well

<table>
<thead>
<tr>
<th>Name</th>
<th>Sign In</th>
<th>Title</th>
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</tbody>
</table>

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April 2013: Version 1
### B.3 Sample Site Log-in/Log-Out

MUST HAVE: Current Noble Orientation and SafeLand training Prior to Entering NEI Property

MINIMUM PPE REQUIREMENTS: HARDHAT, STEELTOE BOOTS w/ Metatarsal guards, ANSI Z87.1 EYEWEAR

<table>
<thead>
<tr>
<th>Date</th>
<th>Print Name</th>
<th>Company</th>
<th>Current Year Noble Orientation Yes / No</th>
<th>Safe land Certified Yes / No</th>
<th>Reason for Visit</th>
<th>Time in</th>
<th>Time out</th>
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</tbody>
</table>
Appendix C: Contacts

C.1 Public Facility Notifications

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Phone</th>
<th>Distance from Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas Presbyterian Church</td>
<td>704 Provance lane Dallas, WV</td>
<td>304-547-4479</td>
<td>Approx. 9/10 mile</td>
</tr>
<tr>
<td>Dallas Historical School</td>
<td>Calis Majorville Road/Co. Hwy 15</td>
<td>304-845-3692 Marshall County Historical Society</td>
<td>Approx. 9/10 mile</td>
</tr>
<tr>
<td>Mount View Cemetery</td>
<td>Number Two Ridge Road, Dallas, WV</td>
<td>304-845-3692 Marshall County Historical Society</td>
<td>Approx. 9/10 mile</td>
</tr>
<tr>
<td>Dallas Cemetery</td>
<td>State Route 3019 Dallas, WV</td>
<td>304-845-3692 Marshall County Historical Society</td>
<td>Approx. 9/10 mile</td>
</tr>
</tbody>
</table>

C.2 First Responder Notifications

<table>
<thead>
<tr>
<th>Agency</th>
<th>Location</th>
<th>Phone</th>
<th>24 Hour Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powhatan Point Volunteer Fire Department</td>
<td>Powhatan Point, OH</td>
<td>(740) 795-4750</td>
<td>9-1-1</td>
</tr>
<tr>
<td>Washington Lands Volunteer Fire Department</td>
<td>Moundsville, WV</td>
<td>(304) 845-6644</td>
<td>OR (304) 843-1500 (Dispatch Center for all of Marshall County, WV)</td>
</tr>
<tr>
<td>Moundsville Fire Department</td>
<td>Moundsville, WV</td>
<td>(304) 845-2050</td>
<td></td>
</tr>
<tr>
<td>Marshall County Sheriff</td>
<td>Moundsville, WV</td>
<td>(304) 843-1500</td>
<td></td>
</tr>
<tr>
<td>Moundsville Police Department</td>
<td>Moundsville, WV</td>
<td>(304) 845-1611</td>
<td></td>
</tr>
<tr>
<td>Tri-State Ambulance</td>
<td>Moundsville, WV</td>
<td>(304) 845-1141</td>
<td>9-1-1</td>
</tr>
<tr>
<td>West Virginia State Police</td>
<td>Moundsville, WV</td>
<td>(304) 843-4100</td>
<td></td>
</tr>
<tr>
<td>Reynolds Memorial Hospital</td>
<td>Glen Dale, WV</td>
<td>(304) 845-3211</td>
<td></td>
</tr>
<tr>
<td>Belmont Community Hospital</td>
<td>Bellaire, OH</td>
<td>(740) 671-1200</td>
<td></td>
</tr>
<tr>
<td>Wetzel County Hospital</td>
<td>New Martinsville, WV</td>
<td>(304) 455-8000</td>
<td></td>
</tr>
</tbody>
</table>

C.3 Agency Notifications

<table>
<thead>
<tr>
<th>Agency</th>
<th>Location</th>
<th>Phone</th>
<th>24 Hour Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Virginia Department of Environmental Protection (WV DEP)</td>
<td>601 57th Street SE Charleston, WV 25304</td>
<td>(304) 926-0440</td>
<td></td>
</tr>
<tr>
<td>Office of Oil and Gas</td>
<td>601 57th Street, SE Charleston, WV 25304-2345</td>
<td>(304) 926-0499</td>
<td>1 (800) 642-3074 (To Report Pollution and Emergency Spills)</td>
</tr>
</tbody>
</table>

April 2013: Version 1
## Site Safety Plan, SHL13HS Well

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Phone</th>
<th>24 Hour Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill Hendershot</td>
<td>403 James Street Mannington, WV 26582</td>
<td>(304) 206-7750</td>
<td>(304) 206-7750 (24 Hour Voicemail)</td>
</tr>
<tr>
<td>Oil and Gas Inspector – Marshall and Marion Counties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Response Center (NRC)</td>
<td>c/o US Coast Guard (CG-5335) - Stop 7581 2100 2nd Street, SW Washington, DC 2059#</td>
<td>1 (800) 424-8802</td>
<td>1 (800) 424-8802</td>
</tr>
</tbody>
</table>

### C.4 Internal Notifications

#### OPERATOR

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Phone</th>
<th>24 Hour Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noble Energy, Inc.</td>
<td>333 Technology Drive Suite 116 Canonsburg, PA 15317</td>
<td>1 (888) 634-7928 (Noble Energy Incident Reporting Answering Service)</td>
<td>1 (888) 634-7928 (Noble Energy Incident Reporting Answering Service)</td>
</tr>
</tbody>
</table>

#### CONTRACTORS

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Phone</th>
<th>24 Hour Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whipstock Natural Gas Services</td>
<td>1020 Franklin Street Clymer, PA 15728</td>
<td>(724) 254-0500</td>
<td></td>
</tr>
<tr>
<td>Nabors</td>
<td>515 W. Greens Rd Suite 1200 Houston, TX 77067</td>
<td>(281) 874-0035</td>
<td></td>
</tr>
<tr>
<td>Weavertown Environmental</td>
<td>2 Dorrington Rd. Carnegie, PA 15106</td>
<td>(724) 746-4850</td>
<td></td>
</tr>
<tr>
<td>Boots &amp; Coots</td>
<td>79008 N. Sam Houston Pkwy Houston, TX 77064</td>
<td>(724) 743-8100</td>
<td></td>
</tr>
<tr>
<td>Cudd Pressure Control</td>
<td>2828 Technology Forrest Blvd The Woodlands, TX 77381</td>
<td>(713) 849-2769</td>
<td></td>
</tr>
<tr>
<td>Wild Well Control</td>
<td>2202 Oil Center Court Houston, TX 77073</td>
<td>(281) 784-4700</td>
<td></td>
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</tbody>
</table>
Appendix D: Wellbore Casing and Cementing Program
Well is located on topo map 13,669' feet south of Latitude: 40° 02’ 30”

Well is located on topo map 10,02' feet west of Longitude: 90° 30’ 00”

BLUE MOUNTAIN ENGINEERING

FILE #: SHL13GHS
DRAWING #: SHL13GHS
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/2500
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81”
L.L.S.: P.S. No. 2000

(+) LOCATIONS ARE OFFICIAL ON UNITED STATES TOPOGRAPHIC MAPS
WWW.GS.GOV

DATE: APRIL 17, 2013
OPERATOR'S WELL #: SHL13GHS
API WELL #: 47 51
STATE COUNTY PERMIT

06/21/2013

06/21/2013