



west virginia department of environmental protection

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

Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Wednesday, February 28, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for SHL 27 MHS
47-051-01990-00-00

This well work permit 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 any additional specific 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 of 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.

Per 35 CSR 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- 0450.

James A. Martin
Chief

Operator's Well Number: SHL 27 MHS
Farm Name: STEVE WARD AND ED WARD
U.S. WELL NUMBER: 47-051-01990-00-00
Horizontal 6A / New Drill
Date Issued: 2/28/2018

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. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. 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 one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. 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.
4. 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.
5. 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.
6. 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.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

API Number: 51-01990

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

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

1) Well Operator: HG Energy II Appalachia, L.P.

<u>494519932</u>	<u>Marshall</u>	<u>Webster</u>	<u>Majorsville</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: SHL27 MHS Well Pad Name: SHL27

3) Farm Name/Surface Owner: Steve and Ed Ward Public Road Access: Irish Ridge Road

4) Elevation, current ground: 1154' Elevation, proposed post-construction: 1154'

5) Well Type (a) Gas Oil Underground Storage
Other _____
(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus at 6166'/6217' and 51' in thickness. Anticipated pressure at 4314#.

8) Proposed Total Vertical Depth: 6203'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13,756'

11) Proposed Horizontal Leg Length: 6,861'

12) Approximate Fresh Water Strata Depths: 349'

13) Method to Determine Fresh Water Depths: Offset well data

14) Approximate Saltwater Depths: None noted in offsets

15) Approximate Coal Seam Depths: 634' to 644'

16) Approximate Depth to Possible Void (coal mine, karst, other): None - drilling into an interior barrier

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No

(a) If Yes, provide Mine Info: Name: Same as Above
Depth: 634' to 644' - drilling into an interior barrier 934' from proposed mining
Seam: Pittsburgh No. 8
Owner: Consolidation Coal Company (Murray American Energy, Inc.)

Jan 11/20/17

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WW-6B
(04/15)

API NO. 47- _____ - _____
 OPERATOR WELL NO. SHL27 MHS
 Well Pad Name: SHL27

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	New	LS	157.5	40'	40'	CTS
Fresh Water	20"	NEW	J-55	94	450'	450'	CTS 30% excess yield = 1.20, CTS
Coal	13 3/8"	NEW	J-55	54.5	1050'	1050'	30% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	3032' or 250' below 5th Sand	3032'	30% excess yield = 1.27, CTS
Production	5 1/2"	NEW	P-110	23	13756'	13756'	20% excess yield = 1.19, tail yield = 1.19 <input checked="" type="checkbox"/>
Tubing							
Liners							

JW
11/20/17

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	.500				CTS
Fresh Water	20"	24"	.438	2110	1200	Type 1, Class A	30% excess yield = 1.20, CTS
Coal	13 3/8"	17 1/2"	.380	2730		Type 1/Class A	30% excess yield = 1.20, CTS
Intermediate	9 5/8"	12 3/8" to 12 1/4"	.395	3950		Type 1/Class A	30% excess yield = 1.27, CTS
Production	5 1/2"	8 1/2"	.361	12640	10000	Type 1/Class A	20% excess yield = 1.19, tail yield = 1.19 <input checked="" type="checkbox"/>
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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Environmental Protection

WW-6B
(10/14)

API NO. 47- _____
OPERATOR WELL NO. SHL27 MHS
Well Pad Name: SHL27

Handwritten signature and date: 11/20/17

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6203 feet. Drill horizontal leg - stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

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. See attached list. Maximum pressure not to exceed 10,000 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 19.325 acres (this is a built pad)

22) Area to be disturbed for well pad only, less access road (acres): 10.228 acres

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing. Freshwater every 3 joints to surface. Coal - Bow Spring on first 2 joints then every third joint to 100' from surface. Intermediate - Bow Spring on first 2 joints then every third joint to 100' from surface. Production - Run 1 spiral centralizer every 5 joints from the top of the curve to surface. Run 1 spiral centralizer every 3 joints from the 1st 5.0' long joint to the top of the curve.

24) Describe all cement additives associated with each cement type:

Conductor - N/A. Casing to be cased in w/ Dual Rotary Rig
Fresh Water - 115.6 ppg PNE-1 + 2.5% bwoc CaCl₂ 30% Excess Yield = 1.20 / CTS"
Coal - 113.6 ppg PNE-1 + 2.5% bwoc CaCl₂ 30% Excess Yield = 1.20 / CTS"
Intermediate - 115.2 ppg PNE-1 + 2.5% bwoc CaCl₂ 30% Excess Yield = 1.27 CTS"
Production - Load: 14.5 ppg POZPNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170, Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA170, 20% Excess, Lead Yield = 1.13, Tail Yield = 1.94, CTS"

25) Proposed borehole conditioning procedures:

Conductor - Ensure the hole is clean at TD.
Fresh Water - Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.
Coal - Once casing is at setting depth, Circulate and condition at TD. Calculate a minimum of one hole volume prior to pumping cement.
Intermediate - Once casing is at setting depth, Circulate and condition muc at TD. Calculate a minimum of one hole volume prior to pumping cement.
Production - Once on bottom TD with casing, calculate at max allowable pump rate for at least 2x returns up, or until returns and pump pressures indicate the hole is clean. Calculate a minimum of one hole volume prior to pumping cement.

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*Note: Attach additional sheets as needed.

HG Energy II Appalachia, LLC
SHL27 AHS, BHS, CHS, DHS, EHS, HHS, JHS, KHS, LHS, MHS, NHS, OHS
Cement Additives

Material Name	Material Type	Material Description	CAS #																		
Premium NE-1	Portland Cement	Premium NE-1 is a portland cement with early compressive strength properties.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Portland cement</td> <td>90 - 100</td> <td>65997-15-1</td> </tr> <tr> <td>Calcium oxide</td> <td>1 - 5</td> <td>1305-78-8</td> </tr> <tr> <td>Magnesium oxide</td> <td>1 - 5</td> <td>1309-48-4</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>0.1 - 1</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Portland cement	90 - 100	65997-15-1	Calcium oxide	1 - 5	1305-78-8	Magnesium oxide	1 - 5	1309-48-4	Crystalline silica: Quartz (SiO2)	0.1 - 1	14808-60-7			
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Bentonite	Extender	Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>bentonite</td> <td>90 - 100</td> <td>1302-78-9</td> </tr> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	bentonite	90 - 100	1302-78-9	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7									
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Calcium Chloride	Accelerator	A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Calcium chloride</td> <td>90 - 100</td> <td>10043-52-4</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium chloride	90 - 100	10043-52-4												
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Cello Flake	Lost Circulation	Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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FP-13L	Foam Preventer	FP-13L is a clear liquid organic phosphate antifoaming agent used in cementing operations. It is very effective minimizing air entrapment and preventing foaming tendencies of latex systems.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Tributyl phosphate</td> <td>90 - 100</td> <td>126-73-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Tributyl phosphate	90 - 100	126-73-8												
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Granulated Sugar	Retarder	Used to retard cement returns at surface. A proprietary product that provides expansive properties and improves bonding at low to moderate temperatures.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Sucrose</td> <td>90 - 100</td> <td>57-50-1</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Sucrose	90 - 100	57-50-1												
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EC-1	Gas Migration	Multi-purpose polymer additive used to control free fluid, fluid loss, rheology, and gas migration.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>No hazardous ingredient</td> <td></td> <td></td> </tr> </tbody> </table>	Ingredient name	%	CAS number	No hazardous ingredient														
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Poz (Fly Ash)	Base	A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Crystalline silica: Quartz (SiO2)</td> <td>5 - 10</td> <td>14808-60-7</td> </tr> <tr> <td>Calcium oxide</td> <td>1 - 5</td> <td>1305-78-8</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7	Calcium oxide	1 - 5	1305-78-8									
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R-3	Retarder	A low temperature retarder used in a wide range of slurry formulations to extend the slurry thickening time.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>Organic acid salt</td> <td>40 - 50</td> <td>Trade secret.</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Organic acid salt	40 - 50	Trade secret.												
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S-5	Surfactant	Used to water wet casing and formation to facilitate cement bonding.	<table border="1"> <thead> <tr> <th>Ingredient name</th> <th>%</th> <th>CAS number</th> </tr> </thead> <tbody> <tr> <td>2-Butoxyethanol</td> <td>20 - 30</td> <td>111-76-2</td> </tr> <tr> <td>Proprietary surfactant</td> <td>10 - 20</td> <td>Trade secret.</td> </tr> <tr> <td>D-Glucopyranose, oligomeric, C10-16-alkyl glycosides</td> <td>5 - 10</td> <td>110615-47-9</td> </tr> <tr> <td>Alkylarylsulfonate amine salt</td> <td>1 - 5</td> <td>Trade secret.</td> </tr> <tr> <td>Polyoxyalkylenes</td> <td>0.1 - 1</td> <td>Trade secret.</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	2-Butoxyethanol	20 - 30	111-76-2	Proprietary surfactant	10 - 20	Trade secret.	D-Glucopyranose, oligomeric, C10-16-alkyl glycosides	5 - 10	110615-47-9	Alkylarylsulfonate amine salt	1 - 5	Trade secret.	Polyoxyalkylenes	0.1 - 1	Trade secret.
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SHL 27M
Marcellus Shale Horizontal
Marshall County, WV

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SHL 27M SHL
SHL 27M LP
SHL 27M BHL

532981.3N 1695628.7E
532978.9N 1696160.7E
539340.2N 1693590.6E

Ground Elevation

1154'

Azm

338°

WELBORE DIAGRAM

HOLE

CASING

GEOLOGY

TOP

BASE

MUD

CEMENT

CENTRALIZERS

CONDITIONING

COMMENTS

30"

30" 157.5# LS

Conductor

0

40

AIR

N/A, Casing to be drilled in w/ Dual Rotary Rig

N/A

Ensure the hole is clean at TD.

Conductor casing = 0.5" wall thickness

24"

20" 94# J-55

Fresh Water
Water String

0

450

AIR

15.6 ppg PNE-1 + 2.5% bwoc CaCl
30% Excess
Yield = 1.20 / CTS

Centralized every 3 joints to surface

Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.

Surface casing = 0.438" wall thickness
Burst=2110 psi

17.5"

13-3/8" 54.5# J-55 BTC

Pittsburgh Coal
Int. Casing

634

644

AIR / KCL Salt Polymer

15.6 ppg PNE-1 + 2.5% bwoc CaCl
30% Excess
Yield=1.20 / CTS

Bow Spring on first 2 joints then every third joint to 100' form surface

Once casing is at setting depth, circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.

Intermediate casing = 0.380" wall thickness
Burst=2730 psi

12.375" - 12.25"

5-5/8" 40# J-55 BTC

Big Lime
Gordon
Fifth Sand
Int. Casing

1639

1719

AIR / KCL Salt Polymer

15.2 ppg PNE-1 + 2.5% bwoc CaCl
30% Excess
Yield=1.27 CTS

Bow Spring on first 2 joints then every third joint to 100' form surface

Once casing is at setting depth, circulate and condition mud at TD. Circulate a minimum of one hole volume prior to pumping cement.

Casing to be ran 250' below the 5th Sand. Intermediate casing = 0.395" wall thickness
Burst=3550 psi

8.5" Vertical

5-1/2" 23# P-110 HC CDC HTQ

Warren Sand
Java Shale
Angola Shale
Rhinestreet
Cashagua
Middlesex
West River
Burkett
Tully Limestone
Henilton
Marcellus

3904

3913

9.0ppg SOBM

Lead: 14.5 ppg
FOZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170

Run 1 spiral centralizer every 5 joints from the top of the curve to surface.

Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.

Production casing = 0.361" wall thickness
Burst=12640 psi
Note: Actual centralizer schedules may be changed due to hole conditions

8.5" Curve

8.5" Lateral

Onondaga

6217

6203

11.5ppg-12.5ppg SOBM

Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA170
20% Excess
Lead Yield=1.19
Tail Yield=1.94 CTS

Run 1 spiral centralizer every 3 joints from the top of the curve.

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LP @ 6203' TVD / 6895'

MD

8.5" Hole - Cemented Long String

5-1/2" 23# P-110 HC CDC HTQ

6217

6203

11.5ppg-12.5ppg SOBM

Run 1 spiral centralizer every 5 joints from the top of the curve to surface.

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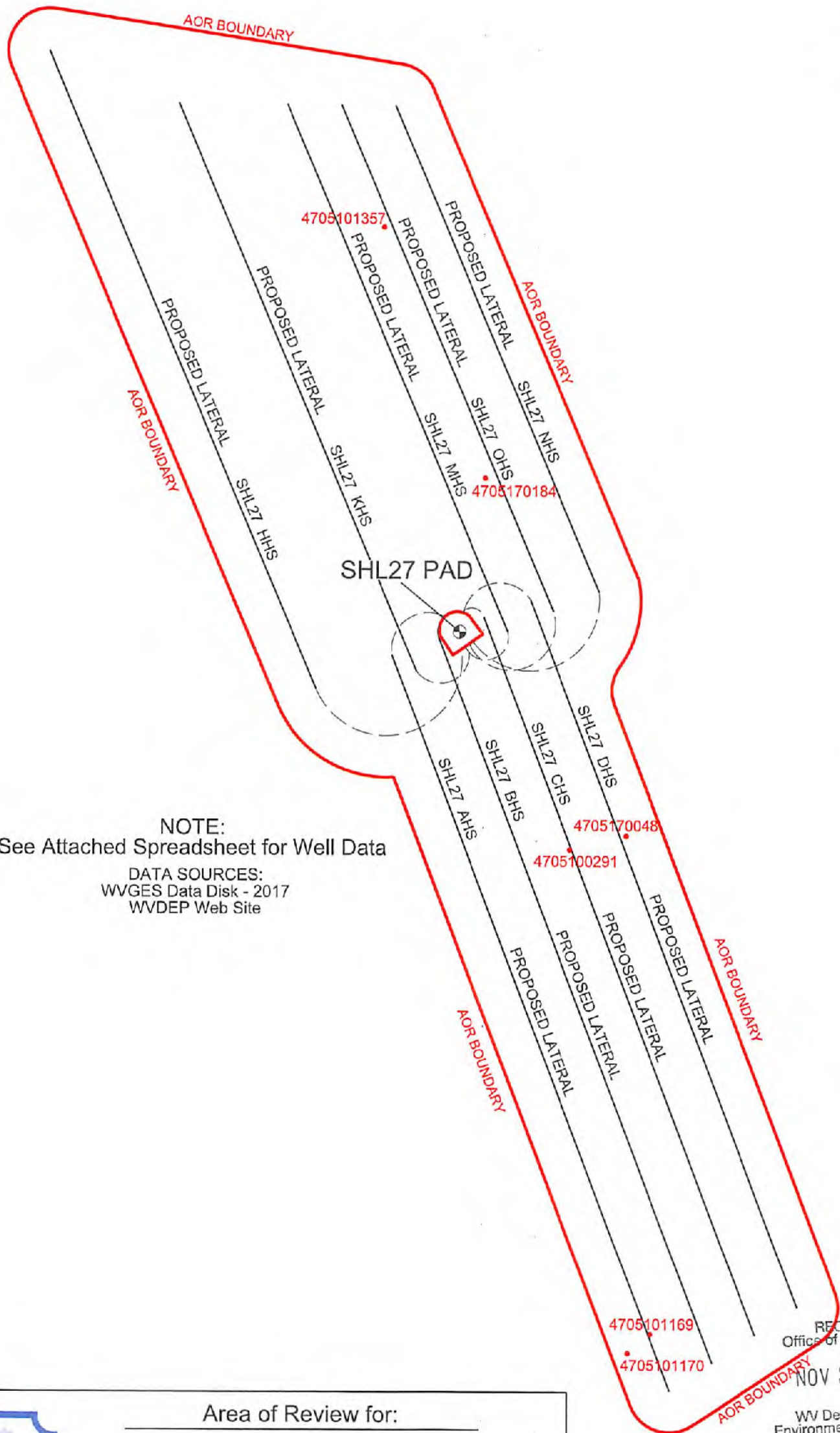
6203

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Run 1 spiral centralizer every 5 joints from the top of the curve to surface.

Once on bottom/TD with casing, circulate at max allowable pump rate for at least 2x bottoms up, or until returns and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.

Production casing = 0.361" wall thickness
Burst=12640 psi
Note: Actual centralizer schedules may be changed due to hole conditions



NOTE:
See Attached Spreadsheet for Well Data

DATA SOURCES:
WVGES Data Disk - 2017
WVDEP Web Site

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Area of Review for:

SHL27 PAD

- | | |
|--------------------|--------------------|
| SHL27 AHS Wellbore | SHL27 HHS Wellbore |
| SHL27 BHS Wellbore | SHL27 KHS Wellbore |
| SHL27 CHS Wellbore | SHL27 MHS Wellbore |
| SHL27 DHS Wellbore | SHL27 NHS Wellbore |
| SHL27 OHS Wellbore | |

Webster District, Marshall County, W.Va.

0 1,500'



SCALE: 1" = 1,500'

11/13/2017

EXISTING WELLS LOCATED WITHIN THE AREA OF REVIEW FOR:

SHL27 PAD AND PROPOSED WELLS AHS, BHS, CHS, DHS, HHS, KHS, MHS, NHS & OHS

CT	API	COUNTY	FARM	OPERATOR NAME	FORMATION NAME	WELL TYPE	TVD	STATUS	LATITUDE	LONGITUDE
1	4705100291	MARSHALL	Wesley C Fisher No.4360	Columbia Natural Resources, LLC	Hampshire Grip	Observation	2,331	Plugged	39.951159	80.581027
2	4705101169	MARSHALL	Donna Russell & Craig Strope MC1.14	Consolidation Coal Company	Pittsburgh Coal	Horizontal CBM	1,010	Active	39.935204	80.577598
3	4705101170	MARSHALL	Donna Russell & Craig Strope MC1.14A	Consolidation Coal Company	Pittsburgh Coal	Horizontal CBM	1,133	Abandoned	39.934570	80.578576
4	4705101357	MARSHALL	Consol Land Development	Consolidation Coal Company	Berea	Gas Production	2,175	Plugged	39.971661	80.588953
5	4705170048	MARSHALL	William Dague No.1	South Penn Oil Company	Big Injun	Gas Production	1,385	Abandoned	39.951594	80.578578
6	4705170184	MARSHALL	W L Dague 1	UNKNOWN	Unknown	Unknown	NA	Abandoned	39.963390	80.584639
7										
8										
9										
10										

SOURCE: WVGES DATASET (2017) and WVDEP WEBSITE

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HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

51-01990

November 15, 2017

Consolidated Coal
Attn: Alex O'Neill
46226 National Road
St. Clairsville, OH 43950

RE: Area of Review – SHL27 Well Pad – SHL27 AHS
Hydraulic Fracturing Notice

Dear Mr. O'Neill:

HG Energy II Appalachia, LLC, has developed a Marcellus pad (SHL27 pad) located in Marshall County, WV. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6400' TVD) and existing conventional natural gas wells.

HG Energy anticipates conducting hydraulic fracturing of the SHL27 Pad during the third quarter of 2018. We have identified a conventional natural gas well operated by your company within 500' of one of the newly planned laterals (SHL27 AHS). A plat for the well is attached.

We recommend conventional well operators conduct the following activities before, during and after the fracturing operation.

1. Inspect surface equipment prior to fracturing to establish integrity and well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in gas, water or pressure.
3. Inspect or install master valves rated at 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and HG Energy if any changes in water, gas production, pressure or other anomalies are identified.

Should you have any questions or desire further information, please contact me at 304-420-1119 or dwhite@hgenergyllc.com. You may also contact the WV Office of Oil and Gas at 304-926-044.

Sincerely,

Diane White

Diane White

Enclosure

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WW-9
(4/16)

API Number 47 - 51 - 01990

Operator's Well No. SHL27 MHS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name HG Energy II Appalachia, LLC OP Code 494519932

Watershed (HUC 10) Wheeling Creek Quadrangle Majorsville

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

Will a pit be used? Yes No

If so, please describe anticipated pit waste: Closed loop - no utilization of a pit

Will a synthetic liner be used in the pit? Yes No If so, what ml.?

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number See Attached Sheet)
- Reuse (at API Number At next anticipated well)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air/water based mud through intermediate string then SOBIM

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

Additives to be used in drilling medium? Water, soap, KCl, barite

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Approved landfill

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

-Landfill or offsite name/permit number? Please see attached sheet

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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 Diane White

Company Official (Typed Name) Diane White

Company Official Title Accountant

Subscribed and sworn before me this 15th day of November, 20 17

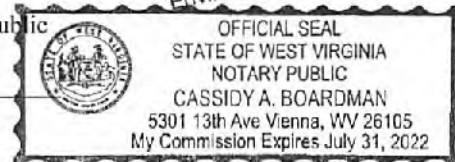
Cassidy A. Boardman

Notary Public

My commission expires 7/31/2022

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51-01990

Form WW-9

Operator's Well No. SHL27 MHS

HG Energy II Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 19.325 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 or equal

Fertilizer amount 500 lbs/acre

Mulch Hay or Straw @ 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

Pre-seed and mulch all cut area, maintain E&S standards during entire operation.

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Justin Underwood*

Comments: _____

Title: *Oil & Gas Inspector*

Date: *11/20/17*

Field Reviewed? Yes No

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Cuttings Disposal/Site Water

Cuttings -Haul off Company:

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

Waste Management
200 Rangos Lane
Washington, PA 15301
724-222-3272

Environmental Coordination Services & Recycling (ECS&R)
3237 US Highway 19
Cochranon, PA 16314
814-425-7773

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

Sycamore Landfill Inc. Permit #R30-079001 05-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2611

Max Environmental Technologies, Inc. Facility Permit # PAD004835146 / 301071
233 Max Lane
Yukon, PA 25968
724-722-3500

Max Environmental Technologies, Inc. Facility Permit # PAD05087072 / 301359
200 Max Drive
Bulger, PA 15019
724-796-1571

Waste Management Kelly Run Permit # 100663
1901 Park Side Drive
Elizabeth, PA 15037
412-384-7569

Waste Management South Hills (Arnoni) Permit # 100592
3100 Hill Road
Library, PA 15129
724-348-7013
412-384-7569

Waste Management Arden Permit # 100172
200 Rangos Lane
Washington, PA 15301
724-222-3272

Waste Management Meadowfill Permit # 1032
1488 Dawson Drive
Bridgeport, WV 26330

Brooke County Landfill Permit # SWF-103-97 / WV 0109029
Rd 2 Box 410
Colliers, WV 26035
304-748-0014

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Wetzel County Landfill Permit # SWF-1021-97 / WV 0109185
 Rt 1 Box 156A
 New Martinsville, WV 26035
 304-455-3800

Energy Solutions, LLC Permit # UT 2300249
 423 West 300 South
 Suite 200
 Salt Lake City, UT 84101

Energy Solutions Services, Inc. Permit # R-73006-L24
 1560 Bear Creek Road
 Oak Ridge, TN 37830

Northern A-1 Environmental Services Permit ID MID020906814
 3947 US 131 North, PO Box 1030
 Kalkaska, MI 49646
 231-258-9961

Water Haul off Companies:

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

Nabors Completion & Production Services Co.
 PO Box 975682
 Dallas, TX 75397-5682

Select Energy Services, LLC
 PO Box 203997
 Dallas, TX 75320-3997

Nuverra Environmental Solutions
 11942 Veterans Memorial Highway
 Masontown, WV 26542

Mustang Oilfield Services LLC
 PO Box 739
 St. Clairsville, OH 43950

Wilson's Outdoor Services, LLC
 456 Cracraft Road
 Washington, PA 15301

Disposal Locations:

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

Adams #1 (Buckeye Brine, LLC)
 Permit # 34-031-2-7177
 23986 Airport Road
 Coshocton, OH 43812
 740-575-4484
 512-478-6545

CMS of Delaware Inc. DBA CMS Oilfield Serv
 301 Commerce Drive
 Moorestown, NJ 08057

Force, Inc.
 1380 Rte. 286 Hwy. E, Suite 303
 Indiana, PA 15701

Solo Construction
 P.O. Box 544
 St. Mary's, WV 26170

Equipment Transport
 1 Tyler Court
 Carlisle, PA 17015

Myers Well Service, -----
 2001 Ballpark Court
 Export, PA 15632

Burns Drilling & Excavating
 618 Crabapple Road P.O. Box
 Wind Ridge, PA 15380

Nichols 1-A (SWIW #13)
 Permit # 3862
 300 Cherrington Pkwy, Suite 200
 Coraopolis, PA 15108
 412-329-7275

Groselle (SWIW #34)
 Permit # 4096
 Rt. 88
 Garrettsville, OH
 713-275-4816

Kemble 1-D Well
 Permit # 8780
 7675 East Pike
 Norwlich, Oh 43767
 614-648-8898
 740-796-6495

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Adams #2 (Buckeye Brine, LLC)
2205 Westover Road
Austin Tx 78703
Permit # 34-031-2-7178
740-575-4484
512-478-6545

Adams #3 (Buckeye Brine, LLC)
Permit #34-031-2-7241-00-00
2630 Exposition, Suite 117
Austin, TX 78703
512-478-6545

Mozana #1 Well (SWIW # 13)
Permit # 34-157-2-5511-00-00
5367 E. State Street
Newcomerstown, OH 43832
740-763-3966

Goff SWD #1 (SWIW # 27)
Permit # 34-119-2-8776-000
300 Cherrington Pkwy, Suite 200
Coraopolis, PA 15108
412-329-7275

SOS D#1 (SWIW #12)
Permit # 34-059-2-4202-00-00
Silcor Oilfield Services, Inc.
2939 Hubbard Road
Youngstown, PH 44505

Dudley #1 UIC (SWIW #1)
Permit # 34-121-2-2459-00-00
Select Energy Services, LLC
7994 S. Pleasants Hwy
St. Marys, WV 26170
304-665-2652

OH UIC #1 Buckeye UIC Barnesville 1 & 2
CNX Gas Company, LLC
1000 Consol Energy Drive
Permit # 34-013-2-0609-00-00
Permit # 34-013-2-0614-00-00
304-323-6568

US Steele 11385
Permit # 47-001-00561
200 Evergreen Drive
Waynesburg, PA 15730
304-323-6568

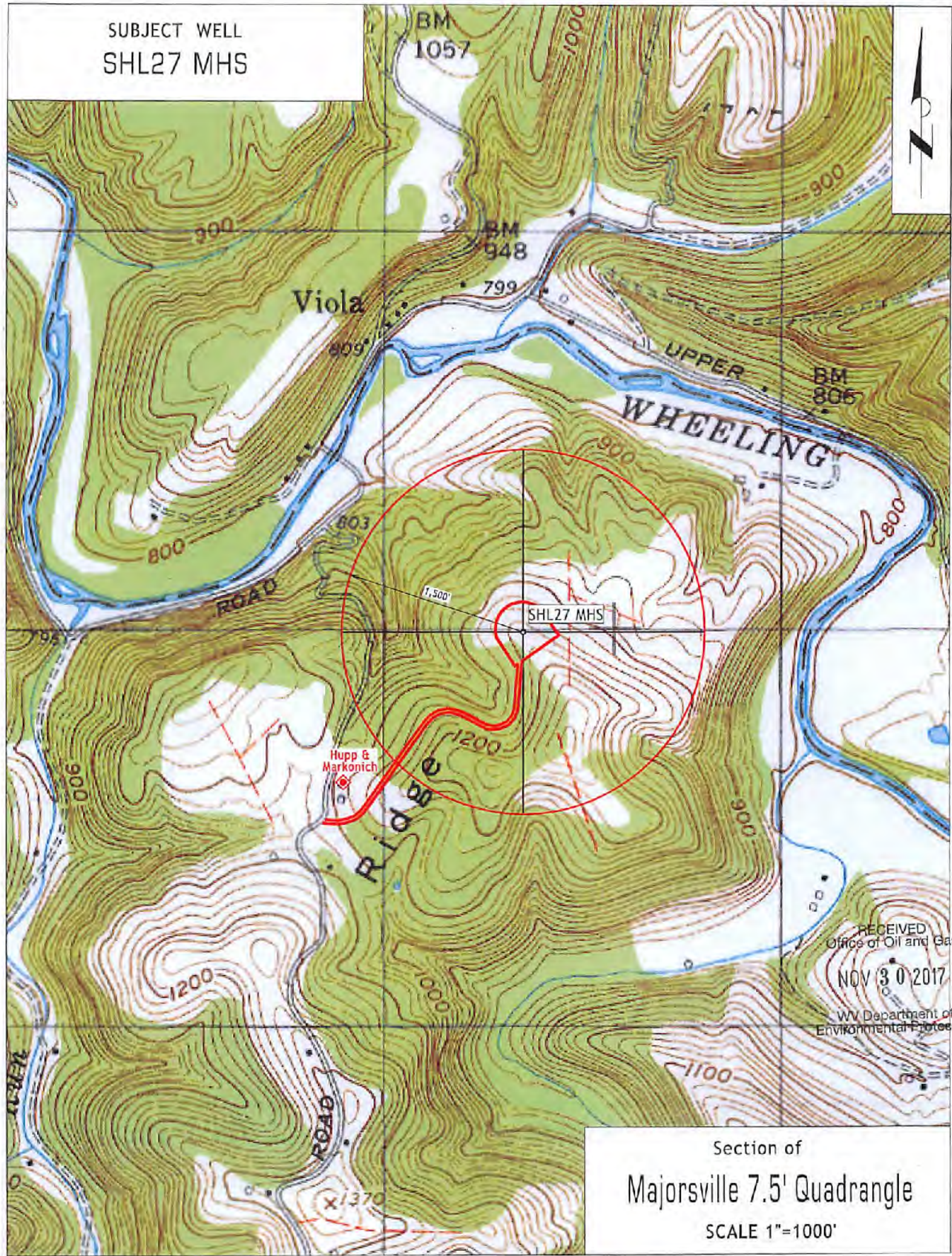
Chapln #7 UIC (SWIW #7)
Permit # 34-083-2-4137-00-00
Elkhead Gas & Oil Company
12163 Marne Rd. NE
Newark, OH 43055
740-763-3966

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SUBJECT WELL
SHL27 MHS



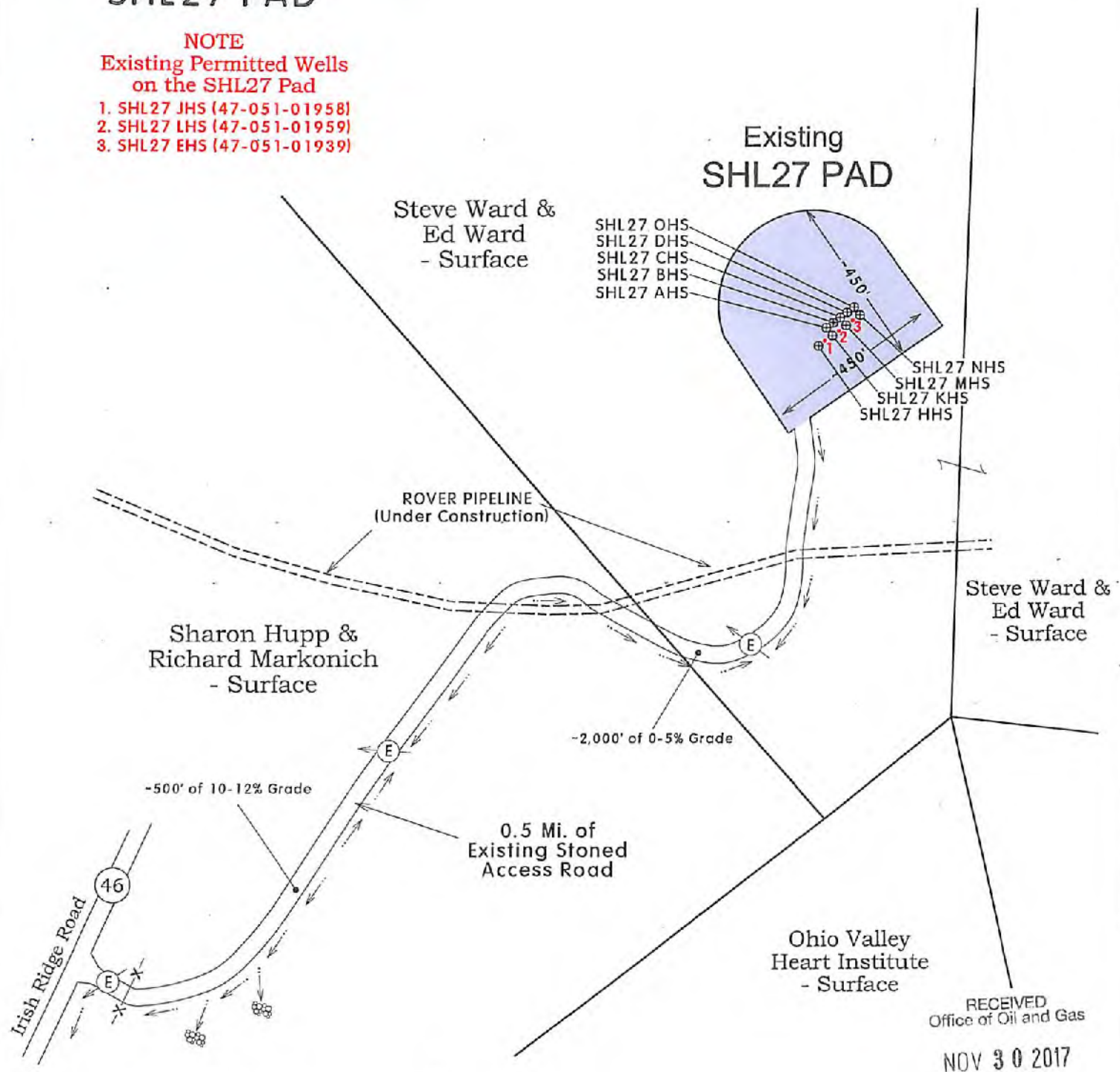
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Section of
Majorsville 7.5' Quadrangle
SCALE 1"=1000'

Reclamation Plan For:

SHL27 PAD

- NOTE**
Existing Permitted Wells on the SHL27 Pad
1. SHL27 JHS (47-051-01958)
 2. SHL27 LHS (47-051-01959)
 3. SHL27 EHS (47-051-01939)



Notes:

- REQUESTED PERMIT IS FOR DRILLING NEW HORIZONTAL WELL.
- ALL ACCESS ROADS ARE EXISTING AND WILL BE MAINTAINED TO WVDEP STANDARDS.
- ONLY MINIMAL EARTHWORK WILL BE REQUIRED TO COMPLETE PROPOSED WELL WORK. SEE ENGINEERED DRAWING THAT ACCOMPANIES THIS PERMIT PACKAGE FOR ADDITIONAL DETAIL.
- ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
- MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
- ALL ROAD GRADES <5% EXCEPT AS NOTED.
- NO DRILL PIT WILL BE CONSTRUCTED AND A CLOSED LOOP SYSTEM WILL BE UTILIZED TO HANDLE DRILL CUTTINGS.
- DRAWING NOT TO SCALE.

NOTE
 REFER TO THE WVDEP
 EROSION AND SEDIMENT CONTROL
 FIELD MANUAL VER. MAY 2012 FOR
 BMPs CONTROLLING EROSION AND
 SEDIMENT FROM SOIL-DISTURBING
 OPERATIONS.

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HG Energy II Appalachia, LLC

Site Safety Plan

**SHL 27 Well Pad
672 Irish Ridge Road
Cameron, WV**

July 2017: Version 2

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

*WV 8/1/2017
JW*

HG Energy II Appalachia, LLC

5260 Dupont Road

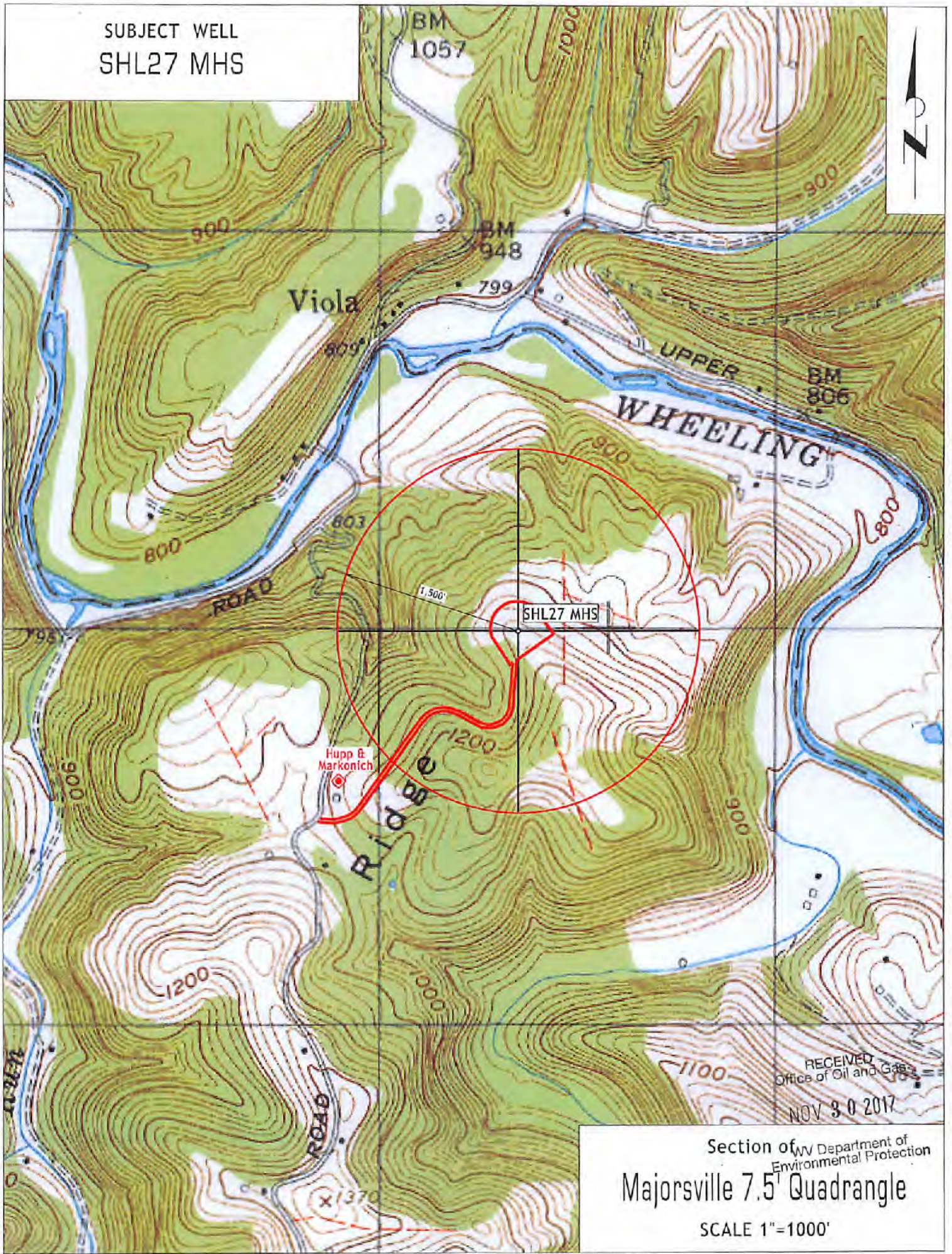
Parkersburg, WV 26101

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SUBJECT WELL
SHL27 MHS



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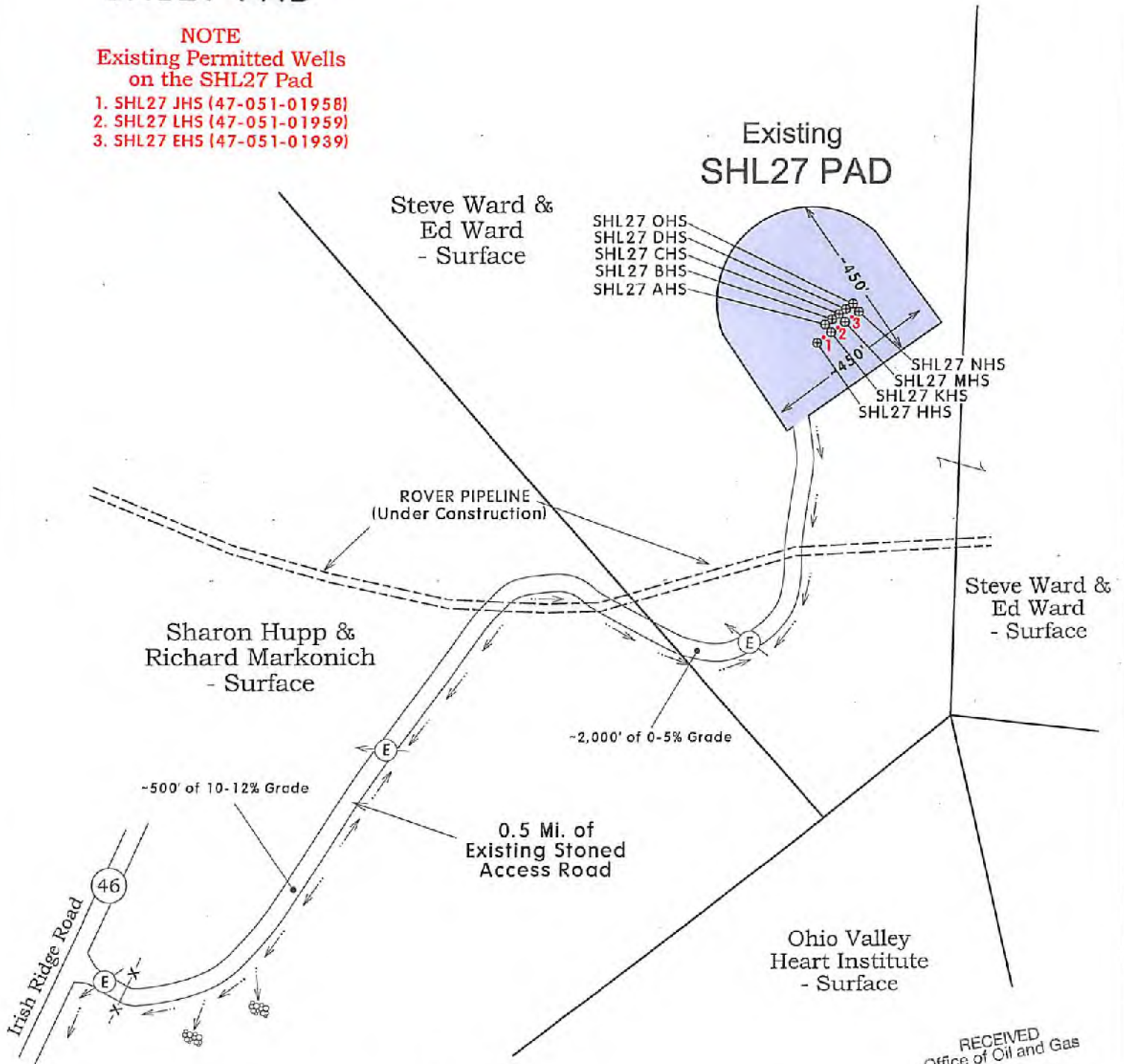
Section of WV Department of
Environmental Protection
Majorsville 7.5' Quadrangle
SCALE 1"=1000'

Reclamation Plan For:

SHL27 PAD

NOTE
Existing Permitted Wells
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NOTE
REFER TO THE WVDEP
EROSION AND SEDIMENT CONTROL
FIELD MANUAL VER. MAY 2012 FOR
BMPs CONTROLLING EROSION AND
SEDIMENT FROM SOIL-DISTURBING
OPERATIONS.

Well is located on topo map 15,173 feet south of Latitude: 40° 00' 00"

Well is located on topo map 632 feet west of Longitude: 80° 35' 00"

SURFACE HOLE LOCATION (SHL)
 PVD CENTER EL. = 1153.60
 UTM 17 - NAD83
 N: 4423216.155
 E: 535395.557
 NAD27, WY NORTH
 N: 532981.280
 E: 1695628.719
 LAT/LON DATUM-NAD83
 LAT: 39.958345
 LON: -80.585589

APPROX. LANDING POINT
 UTM 17 - NAD83
 N: 4423216.145
 E: 535557.845
 NAD27, WY NORTH
 N: 532978.907
 E: 1696160.706
 LAT/LON DATUM-NAD83
 LAT: 39.958356
 LON: -80.583691

BOTTOM HOLE LOCATION
 UTM 17 - NAD83
 N: 4425143.005
 E: 534742.236
 NAD27, WY NORTH
 N: 539340.189
 E: 1693590.579
 LAT/LON DATUM-NAD83
 LAT: 39.975732
 LON: -80.593135

- 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.
 6. 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, and based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

LEGEND

- SURFACE HOLE LOCATION
- PROPOSED WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WMA#1 ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/WATERWAY
- ROAD

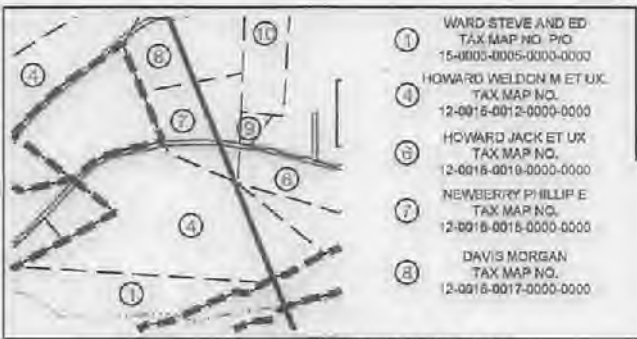
WELLS WITHIN 3000'

- EXISTING GAS WELL
- RECORD GAS WELL



LINE TABLE

LINE	BEARING	DISTANCE
R1	N21°41'32"W	292.72'
R2	N34°25'44"W	417.57'
R3	S80°34'11"W	369.42'
R4	N16°15'12"W	1001.48'
R5	S70°12'18"W	350.28'



NORTH BONNIE J & GEORGE K GRAY TAX MAP NO. 12-0016-0014-0000-0000
 NORTH BONNIE J & GEORGE K GRAY TAX MAP NO. 12-0016-0013-0000-0000



FILE #: SHL 27 MHS
 DRAWING #: SHL 27 MHS
 SCALE: 1"=2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE USGS MONUMENT OF ELEVATION: U 124: 951.16'

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:
 R.P.E.: L.L.S.: P.S. NO.



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

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

WATERSHED: WHEELING CREEK
 COUNTY/DISTRICT: MARSHALL / WEBSTER
 SURFACE OWNER: STEVE WARD AND ED WARD
 OIL & GAS ROYALTY OWNER: BOUNTY MINERALS, LLC

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

TARGET FORMATION: MARCELLUS
 WELL OPERATOR: HG ENERGY II APPALACHIA, LLC
 Address: 5260 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101

DATE: NOVEMBER 18, 2014 - REV. JULY 20, 2017
 OPERATOR'S WELL #: SHL 27 MHS
 API WELL # 47 051 01990
 STATE COUNTY PERMIT
 H10A

ELEVATION: 1,153.60'
 QUADRANGLE: MAJORSVILLE, W VA
 ACREAGE: 122.47

ESTIMATED DEPTH TVD: 6,203' ± TMD: 13,756' ±
 DESIGNATED AGENT: DIANE C. WHITE
 Address: 5260 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101



SHEET 1 OF 2

Bottom hole is located on topo map 8842 feet south of Latitude: 40° 00' 00"

Bottom hole is located on topo map 2750 Feet west of Longitude: 80° 35' 00"

200	HICKEY GLENN M	TAX MAP NO. 15-0001-0005-0001-0000
201	HICKEY GLENN M	TAX MAP NO. 12-0010-0008-0000-0000
202	TOLAND DOROTHY J WINNER SANDRA J	TAX MAP NO. 12-0011-0003-0000-0000
203	MILLER DOROTHY T ET AL	TAX MAP NO. 12-0011-0004-0000-0000
204	GRAY DONALD G & DAVID G	TAX MAP NO. 12-0011-0008-0000-0000
205	HILLBERRY PAUL E JR	TAX MAP NO. 12-0011-0009-0003-0000
210	HOWARD WELDON M ET UX	TAX MAP NO. 12-0015-0005-0000-0000
211	HOWARD WELDON M ET UX	TAX MAP NO. 12-0015-0010-0000-0000
213	WHEELING CREEK WATERSHED COMM	TAX MAP NO. 12-0015-0020-0000-0000
214	WHEELING CREEK WATERSHED COMM	TAX MAP NO. 12-0015-0022-0000-0000
220	KELLER ROBERT LEE & MARY KAY	TAX MAP NO. 15-0003-0004-0002-0000
221	ZACHEUS PROPERTIES LLC	TAX MAP NO. 12-0015-0005-0000-0000
222	TERRY JOHN G II	TAX MAP NO. 12-0015-0007-0000-0000
222	HOWARD WELDON M ET UX	TAX MAP NO. 12-0015-0008-0000-0000
224	KUPFER PHILLIP A	TAX MAP NO. 12-0015-0002-0003-0000
227	HOWARD WELDON M ET UX	TAX MAP NO. 12-0015-0011-0000-0000
226	HOWARD WELDON M ET UX	TAX MAP NO. 12-0015-0012-0001-0000
233	HALLER ROY & LISBETH E	TAX MAP NO. 12-0015-0015-0000-0000
234	HALLER ROY & LISBETH E	TAX MAP NO. 12-0015-0021-0000-0000
237	THOMAS K CLARK	TAX MAP NO. 12-0015-0026-0000-0000
241	ISKCON - NEW MATHURA VRINDABAN	TAX MAP NO. 15-0001-0015-0000-0000
242	ISKCON - NEW MATHURA VRINDABAN	TAX MAP NO. 15-0001-0012-0000-0000
243	ISKCON - NEW MATHURA VRINDABAN	TAX MAP NO. 15-0001-0005-0000-0000
244	JAMES L CLEMONS	TAX MAP NO. 12-0015-0029-0000-0000
245	JAMES L CLEMONS	TAX MAP NO. 12-0015-0030-0000-0000
246	JAMES L CLEMONS	TAX MAP NO. 12-0015-0031-0000-0000
247	JAMES L CLEMONS	TAX MAP NO. 12-0015-0032-0000-0000
248	RICHARD E HARTLEY SR ET UX	TAX MAP NO. 12-0015-0028-0000-0000

LEGEND

- SURFACE HOLE LOCATION
- PROPOSED WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WMSA ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/WATERWAY
- ROAD
- BOTTOM HOLE LOCATION

WELLS WITHIN 3000'

- EXISTING GAS WELL
- RECORD GAS WELL

- 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, and based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

Wellbore Company Park 16, Suite 101
2000 Georgetown Drive
Shelley, PA 15143

P: 724-444-1100
F: 724-444-1524
www.pve.com



Civil Engineering | Land Development | Structure Design
Land Planning | Landscape Architecture | Environmental

FILE #: SHL 27 MHS

DRAWING #: SHL 27 MHS

SCALE: 1"=2000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE USGS MONUMENT
OF ELEVATION U 124: 951.18'

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:

R.P.E.: _____ L.L.S.: P.S. NO. _____



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



DATE: NOVEMBER 18, 2014 - REV JULY 20, 2017

OPERATOR'S WELL #: SHL 27 MHS

API WELL # 47 051 01990
STATE COUNTY PERMIT
HGA

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

SHEET: 2 OF 2

WATERSHED: WHEELING CREEK ELEVATION: 1,153.60'
COUNTY/DISTRICT: MARSHALL / WEBSTER QUADRANGLE: MAJORSVILLE, W. VA.
SURFACE OWNER: STEVE WARD AND ED WARD ACREAGE: 122.47
OIL & GAS ROYALTY OWNER: BOUNTY MINERALS, LLC ACREAGE: 122.47

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,203' ± TMD: 13,756' ±
WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE
Address: 5280 DUPONT ROAD
City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

WW-6A1
(5/13)

Operator's Well No. SHL27 MHS

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
-------------------------	-----------------------	-----------------------	---------	-----------

** See Attached Information **

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: HG Energy II Appalachia, LLC

By: Diane White *Diane White*

Its: Agent

HG Energy II Appalachia, LLC
SHL27 MHS Lease Chains

TAX MAP	LEASE NUMBER	GRANTOR/LESSOR	GRANTEE/LESSEE	ROYALTY	DEED BOOK	PAGE
		AMERICAN PREMIER UNDERWRITERS INC	TRIENERGY HOLDINGS LLC	NOT LESS THAN 1/8	709	67
		AMERICAN PREMIER UNDERWRITERS INC	TRIENERGY HOLDINGS LLC		731	36
		TRIENERGY HOLDINGS LLC	CHEVERON U.S.A. INC.		28	356
		CHEVERON U.S.A. INC.	STATOIL USA ONSHORE PROPERTIES INC.		30	494
15-3-5 & 15-3-8	Q086779000	CHEVERON U.S.A. INC.	CHEESAPEAKE APPALACHIA LLC		30	532
		CHEESAPEAKE APPALACHIA LLC AND STATOIL USA ONSHORE PROPERTIES INC.	NOBLE ENERGY INC AND CNX GAS COMPANY LLC		32	526
		BOUNTY MINERALS LLC	NOBLE ENERGY INC AND CNX GAS COMPANY LLC		879	249
		CNX GAS COMPANY LLC	NOBLE ENERGY INC	NOT LESS THAN 1/8	37	169
		NOBLE ENERGY INC	NOBLE ENERGY II APPALACHIA, LLC		39	1
		BOUNTY MINERALS LLC	HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/8	935	457
		J & J REALTY, INC.	CONSOLIDATION COAL COMPANY		499	26
12-16-18.0	Q102011000	CONSOLIDATION COAL COMPANY, CONSOL PENNSYLVANIA COAL COMPANY, CONRHEIN COAL COMPANY, MCELROY COAL COMPANY, AND RESERVE COAL PROPERTIES	MINERALS OWNED BY HG ENERGY II APPALACHIA, LLC IN FEE			
		CNX GAS COMPANY LLC	CNX GAS COMPANY LLC		646	493
		NOBLE ENERGY INC	NOBLE ENERGY INC		909	94
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC		931	43
		WELDON M HOWARD ET UX	TRIENERGY HOLDINGS LLC	NOT LESS THAN 1/8	711	511
		TRIENERGY HOLDINGS LLC	NP&R, LLC		24	430
		NP&R, LLC	CHEVERON U.S.A., INC.		756	332
		CHEVERON U.S.A. INC.	STATOIL USA ONSHORE PROPERTIES INC.		30	494
		CHEVERON U.S.A. INC.	CHEESAPEAKE APPALACHIA LLC		30	532
12-16-12.0, 12-16-11.0, 12-16-10.0, 12-16-8.0	Q098279000	CHEESAPEAKE APPALACHIA LLC	SWN PRODUCTION COMPANY, LLC		33	110
		SWN PRODUCTION COMPANY, LLC AND STATOIL USA ONSHORE PROPERTIES INC.	NOBLE ENERGY INC AND CNX GAS COMPANY LLC		35	426
		CNX GAS COMPANY LLC	NOBLE ENERGY INC		37	169
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC		39	1
		EVELINE J JONES	TRIENERGY HOLDINGS LLC	NOT LESS THAN 1/8	742	13
		TRIENERGY HOLDINGS LLC	NP&R, LLC		26	123
		NP&R, LLC	CHEVERON U.S.A., INC.		26	201

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15-3-6.1	Q088439000	CHEVRON U.S.A. INC. CHEVRON U.S.A. INC. CHESAPEAKE APPALACHIA LLC CHESAPEAKE APPALACHIA LLC AND STATOIL USA ONSHORE PROPERTIES INC. CNX GAS COMPANY LLC NOBLE ENERGY INC RICHARD LEE BARTON THOMAS NOBLE ENERGY INC DEBRA J PACZEWSKI CNX GAS COMPANY LLC NOBLE ENERGY INC Hilda V. Davies, widow CNX GAS COMPANY LLC NOBLE ENERGY INC	STATOIL USA ONSHORE PROPERTIES INC. CHESAPEAKE APPALACHIA LLC SWN PRODUCTION COMPANY, LLC NOBLE ENERGY INC AND CNX GAS COMPANY LLC NOBLE ENERGY INC HG ENERGY II APPALACHIA, LLC NOBLE ENERGY INC HG ENERGY II APPALACHIA, LLC NOBLE ENERGY INC NOBLE ENERGY INC HG ENERGY II APPALACHIA, LLC Noble Energy, Inc. NOBLE ENERGY INC HG ENERGY II APPALACHIA, LLC	30 30 33 32 37 39 842 39 860 37 39 850 37 39 342 422 683 21 685 693 697 26 37 39	494 532 110 526 169 1 22 1 310 169 1 284 169 1 35 204 459 428 136 414 295 225 169 1
12-11-16.0	Q086883000	ELIZABETH WELCH, WIDOW THE MANUFACTURERS LIGHT AND HEAT COMPANY COLUMBIA GAS TRANSMISSION CORPORATION COLUMBIA GAS TRANSMISSION, LLC COLUMBIA GAS TRANSMISSION, LLC NISOURCE ENERGY VENTURES, LLC NISOURCE ENERGY VENTURES, LLC NISOURCE ENERGY VENTURES, LLC NISOURCE ENERGY VENTURES, LLC NISOURCE ENERGY VENTURES, LLC CNX GAS COMPANY, LLC NOBLE ENERGY INC RONALD D JUNKINS JR ET AL TRIENERGY HOLDINGS LLC NPAR, LLC	THE MANUFACTURERS LIGHT AND HEAT COMPANY COLUMBIA GAS TRANSMISSION CORPORATION COLUMBIA GAS TRANSMISSION, LLC NISOURCE ENERGY VENTURES, LLC CNX GAS COMPANY, LLC CNX GAS COMPANY, LLC CNX GAS COMPANY, LLC NOBLE ENERGY, INC. NOBLE ENERGY INC HG ENERGY II APPALACHIA, LLC TRIENERGY HOLDINGS LLC NPAR, LLC CHEVRON U.S.A., INC. STATOIL USA ONSHORE PROPERTIES INC. CHESAPEAKE APPALACHIA LLC SWN PRODUCTION COMPANY, LLC NOBLE ENERGY INC AND CNX GAS COMPANY LLC NOBLE ENERGY INC HG ENERGY II APPALACHIA, LLC	717 26 26 30 30 33 32 37 39	474 123 201 494 532 110 526 169 1
12-16-13.0	Q091933000	NOBLE ENERGY INC	NOBLE ENERGY INC	32	526
12-16-17.0	Q089332000	NOBLE ENERGY INC	NOBLE ENERGY INC	37	169
12-16-20 & 12-16-16	3024625	NOBLE ENERGY INC	NOBLE ENERGY INC	39	1

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p/o 12-11-

SI-01990



HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

November 13, 2017

Laura Adkins
WV DEP
Division of Oil & Gas
601 57th Street
Charleston, WV 25304

RE: Drilling Under Roads - SHL27 MHS
Webster District, Marshall County
West Virginia

Dear Ms. Adkins:

HG Energy II Appalachia, LLC, has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plats.

Should you have any questions or desire further information, please contact me at dwhite@hgenergyllc.com or 304-420-1119.

Very truly yours,

Diane White

Diane C. White

Enclosures

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 11/15/2017

API No. 47- SI - 01990
Operator's Well No. SHL27 MHS
Well Pad Name: SHL27

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>535395.557</u>
County: <u>Marshall</u>	Northing: <u>4423216.155</u>
District: <u>Webster</u>	Public Road Access: <u>Irish Ridge Road</u>
Quadrangle: <u>Majorsville</u>	Generally used farm name: <u>Steve and Ed Ward</u>
Watershed: <u>Wheeling Creek</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:		
*PLEASE CHECK ALL THAT APPLY		OOG OFFICE USE ONLY
<input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED		<input type="checkbox"/> RECEIVED/ NOT REQUIRED
<input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input checked="" type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)		<input type="checkbox"/> RECEIVED/ NOT REQUIRED
<input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 5. PUBLIC NOTICE		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<input type="checkbox"/> RECEIVED

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service and Gas the return receipt card or other postal receipt for certified mailing.

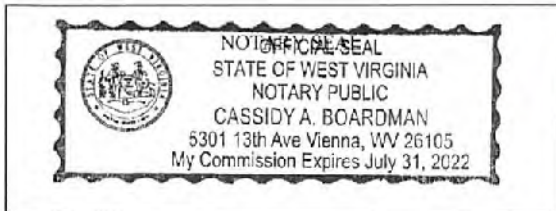
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WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I Diane White, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>HG Energy II Appalachia, LLC</u>	Address:	<u>5260 Dupont Road</u>
By:	<u>Diane White <i>Diane White</i></u>		<u>Parkersburg, WV 26101</u>
Its:	<u>Agent</u>	Facsimile:	<u>304-863-3172</u>
Telephone:	<u>304-420-1119</u>	Email:	<u>dwhite@hgenergyllc.com</u>



Subscribed and sworn before me this 15th day of November, 2017.

Cassidy A. Boardman Notary Public

My Commission Expires 7/31/2022

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.

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WW-6A
(9-13)

API NO. 47- -
OPERATOR WELL NO. SHL27 MHS
Well Pad Name: SHL27

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 11/15/17 Date Permit Application Filed: 11/17/2017

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

SURFACE OWNER(s)
Name: Steve and Ed Ward
Address: 50 California Straet
Farmersville, OH 45325
Name:
Address:

COAL OWNER OR LESSEE
Name: Consolidation Coal Company (Murray Energy) Attn: Alex O'Neil
Address: 46226 National Road
St. Clairsville, OH 43950

COAL OPERATOR
Name: Same as Above
Address:

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Richard Markonich and Sharon Hupp
Address: 614 Irish Ridge Road
Cameron, WV 26033
Name:
Address:

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: None within 1500'
Address:

SURFACE OWNER(s) (Impoundments or Pits)
Name:
Address:

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: None
Address:

*Please attach additional forms if necessary

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Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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(8-13)

API NO. 47- -
OPERATOR WELL NO. SHL27 MHS
Well Pad Name: SHL27

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

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NOV 30 2017

WV Department of
Environmental Protection

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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Environmental Protection

WW-6A
(8-13)

47 05 10 1990

API NO. 47- _____
OPERATOR WELL NO. SHL27 MHS
Well Pad Name: SHL27

Notice is hereby given by:

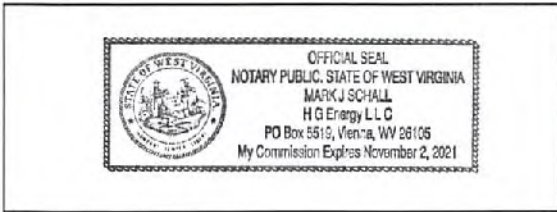
Well Operator: HG Energy II Appalachia, LLC
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com

Address: 5260 Dupont Road
Parkersburg, WV 26101
Facsimile: 304-863-3172

Diane White

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



Subscribed and sworn before me this 15th day of November, 2017.

[Signature]

Notary Public

My Commission Expires 11/2/2021

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WV Department of
Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 11/06/2017 **Date Permit Application Filed:** 11/17/2017

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

HAND DELIVERY CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Steve and Ed Ward
Address: 500 California Street
Farmersville, OH 45325

Name: Sharon Hupp and Richard Markonich
Address: 614 Irish Ridge Road
Cameron, WV 26033

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>535395.557</u>
County: <u>Marshall</u>		Northing: <u>4423216.155</u>
District: <u>Webster</u>	Public Road Access: <u>Irish Ridge Road</u>	
Quadrangle: <u>Majorsville</u>	Generally used farm name: <u>Steve and Ed Ward</u>	
Watershed: <u>Wheeling Creek (HUC 10)</u>		

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: HG Energy II Appalachia, LLC
Address: 5260 Dupont Road
Parkersburg, WV 26101
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com
Facsimile: 304-863-3172

Authorized Representative: Diane White *Diane White*
Address: 5260 Dupont Road
Parkersburg, WV 26101
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com
Facsimile: 304-863-3172

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. **RECEIVED** will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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WV Department of
Environmental Protection

WW-6A4W
(1/12)Operator Well No. 022AR000000000STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL**WAIVER**

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Surface Owner Waiver:

I, Steve Ward, hereby state that I have read the notice provisions listed above and hereby waive the notice requirements under West Virginia Code § 22-6A-16(b) for the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>535,381.8</u>
County:	<u>Marshall</u>		Northing:	<u>4,423,214.4</u>
District:	<u>Webster</u>	Public Road Access:	<u>SLS 48</u>	
Quadrangle:	<u>Majorsville</u>	Generally used farm name:	<u></u>	
Watershed:	<u>Wheeling Creek</u>			

Name: Steve Ward
Address: 50 California St.
Farmersville, OH 45325

Signature: Steve Ward
Date: 7-14-17

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

WAIVER

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Surface Owner Waiver:

I, Rick Markonich, hereby state that I have read the notice provisions listed above and hereby waive the notice requirements under West Virginia Code § 22-6A-16(b) for the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>535,381.8</u>
County:	<u>Marshall</u>		Northing:	<u>4,423,214.4</u>
District:	<u>Webster</u>	Public Road Access:		<u>SLS 46</u>
Quadrangle:	<u>Majorsville</u>	Generally used farm name:		<u></u>
Watershed:	<u>Wheeling Creek</u>			

Name: Rick Markonich
Address: 814 Irish Ridge Rd.
Cameron, WV 26033

Signature: Rick Markonich
Date: 7/13/2017

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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WV Department of
Environmental Protection

WW-6A5
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 11/08/2017 **Date Permit Application Filed:** 11/17/2017

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Steve and Ed Ward
Address: 500 California Street
Farmersville, OH 45325

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>535395.557</u>
County: <u>Marshall</u>	Northing: <u>4423216.155</u>
District: <u>Webster</u>	Public Road Access: <u>Irish Ridge Road</u>
Quadrangle: <u>Majorsville</u>	Generally used farm name: <u>Steve and Ed Ward</u>
Watershed: <u>Wheeling Creek</u>	

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: HG Energy II Appalachia, LLC
Telephone: 304-420-1119
Email: dwhite@hgenergyllc.com

Address: 5260 Dupont Road
Parkersburg, WV 26101
Facsimile: 304-863-3172

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
 Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
 Governor

Paul A. Mattox, Jr., P. E.
 Secretary of Transportation/
 Commissioner of Highways

Reissued April 19, 2017

James A. Martin, Chief
 Office of Oil and Gas
 Department of Environmental Protection
 601 57th Street, SE
 Charleston, WV 25304

Subject: DOH Permit for the SHL-27 and SHL-72 Well Pads, Marshall County

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #06-2014-0641 for the subject site to Noble Energy, Inc. for access to the State Road for the well sites located off of Marshall County Route 48 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton P.E.
 Regional Maintenance Engineer
 Central Office Oil & Gas Coordinator

Cc: James L. McCune
 Noble Energy, Inc.
 CH, OM, D-6
 File

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 Environmental Protection

HG Energy II Appalachia, LLC
List of Frac Additives by Chemical Name and CAS #

SHL27 MHS

Chemical Name	CAS #	Multiple CAS #'s
Pro Shale Slik 405	Mixture	68551-12-2
		7647-14-5
		12125-02-9
		64742-47-8
Pro Hib II	Mixture	68412-54-4
		68607-28-3
		107-21-1
		111-76-2
		67-56-1
		107-19-7
Silica Sand and Ground Sand	Mixture	14808-60-7
		1344-28-1
		1309-37-1
		13463-67-7
Hydrochloric Acid 22 DEG BE	7647-01-0	
PROGEL - 4.5	64742-96-7	
BIO CLEAR 2000	Mixture	25322-68-3
		10222-01-2
SCALE CLEAR SI 112	107-21-1	
PROBREAK 4	Mixture	57-50-1
		107-21-1
Sulfamic Acid	5329-14-6	
PRO - Flow - 102-N	Mixture	67-63-0
		68439-45-2
		2687-96-9
PROGEL - 4	9000-30-0	

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WV Department of
Environmental Protection

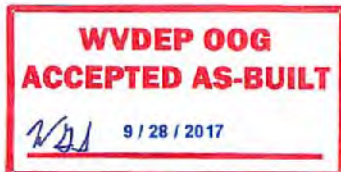


LOCATION MAP
NOT TO SCALE

EXISTING API NUMBERS
47-051-01791

PROPERTY OWNERS

- STEVE AND ED WARD 15-3-5
50 CALIFORNIA ST
FARMERSVILLE, OH 45326
- SHARON HUPP AND RICHARD MARKONICH 15-3-3
614 IRISH RIDGE RD
CAMERON, WV 26035



HG ENERGY II APPALACHIA LLC
5260 DUPONT ROAD
PARKERSBURG, WV 26101
(304) 420-1100 MAIN OFFICE
(304) 863-3172 FAX

SHL27 WELL SITE

WELL SITE LOCATION

NAD 83 - LAT: N 39°57'30.171"; LONG: W 80°35'08.959"
NAD 27 - LAT: N 39°57'29.899"; LONG: W 80°35'09.687"

ENTRANCE LOCATION

NAD 83 - LAT: N 39°57'15.078"; LONG: W 80°35'31.316"
NAD 27 - LAT: N 39°57'14.806"; LONG: W 80°35'32.043"

MAJORSVILLE QUADRANGLE
MARSHALL COUNTY, WEST VIRGINIA

DATE: JULY 28, 2015



Blue Mountain Inc.
Engineers and Land Surveyors
11023 Mason Dixon Hwy.
Burton, WV 26562-9656
(304) 662-6486

NOTE: DRAWING WAS CREATED ON 22x34 PAPER. 11x17 DRAWINGS
ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



LOCATION MAP
MAJORSVILLE 7.5x11 USGS QUADRANGLE
SCALE: 1:2500

SHEET INDEX	
DRAWING NUMBER	DRAWING NAME
1	COVER SHEET
2,3	AS-BUILT CONDITIONS PLAN
4,5	AS-BUILT CONDITIONS PLAN W/ ORTHO
6	ACCESS ROAD PROFILE

JWS 8/11/17



HG ENERGY II APPALACHIA LLC
5260 DUPONT ROAD
PARKERSBURG, WV 26101

SHL27 WELL PAD
AS-BUILT COVER SHEET



REVISIONS

NO.	DATE	DESCRIPTION



William F. Hoot

DATE: 8/11/17
DRAWN BY: JWS
CHECKED BY: JWS
DATE: 8/11/17
SCALE: AS SHOWN
JOB NO.: 15-3-3
PROJECT NO.: 15-3-3-3

SHEET 1 OF 6

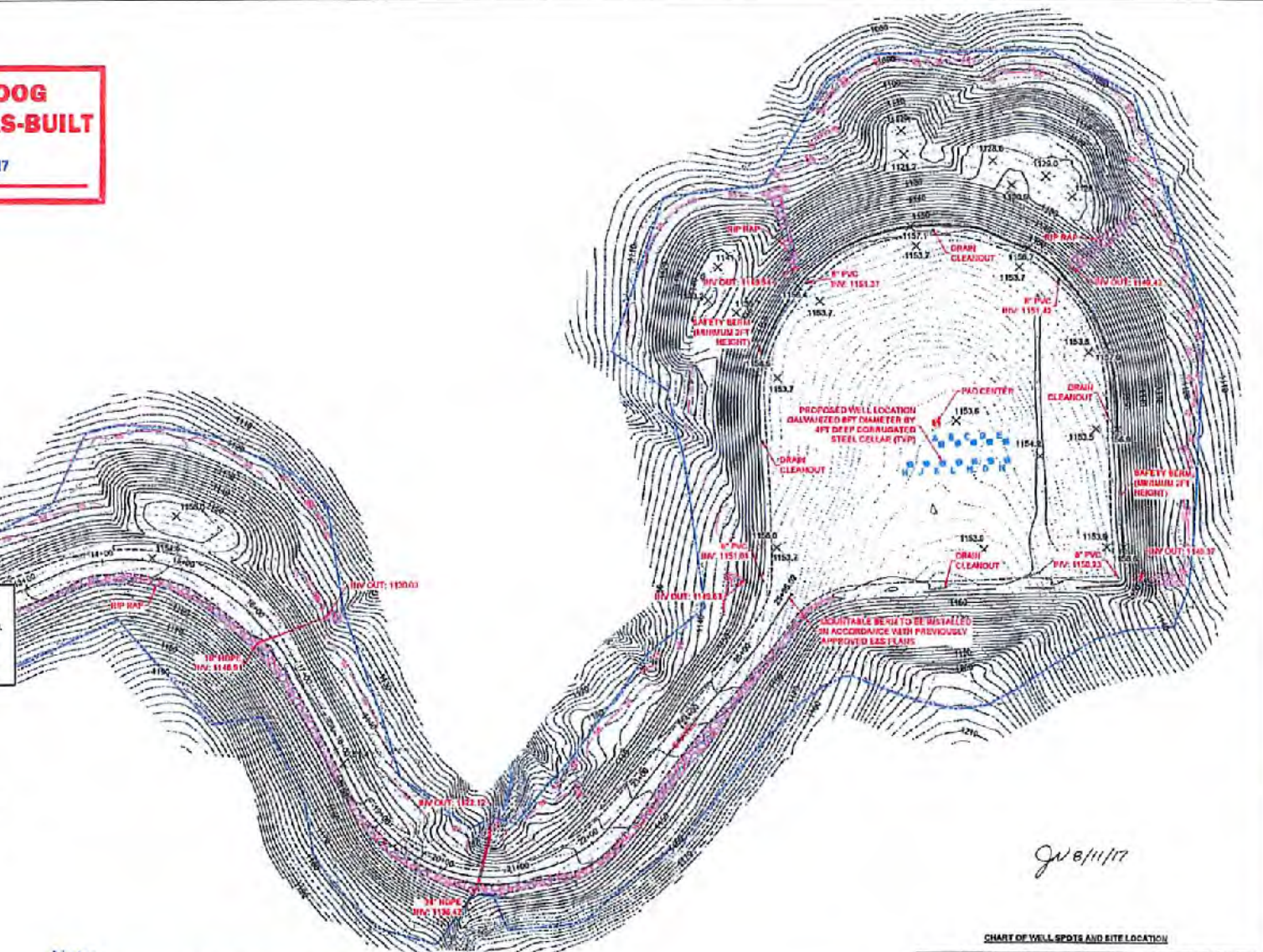
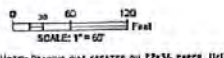
**WVDEP OOG
ACCEPTED AS-BUILT**

9 / 28 / 2017

CONSTRUCTION QUANTITIES:
 AREA BY CUT: 140,811.8 S.F., 3.24 ACRES
 AREA BY FILL: 28,522.8 S.F., 0.65 ACRES
 TOTAL FILLING AREA: 169,334.6 S.F., 3.89 ACRES
 CUT TO FILL RATIO: 1.87
 AVERAGE CUT DEPTH: 9.48'
 AVERAGE FILL DEPTH: 3.20'
 MAX CUT DEPTH: 32.56' MAX FILL DEPTH: 28.28'
 CUT VOLUME: 2,392,441.8 C.Y. FILL VOLUME: 772,147.9 C.Y.
 PAD AND HOOD SLOPE DRAINAGES AT 4" THICK VOLUME: 5.80 C.Y.
 *THIS RATIO INCLUDES BY CUT/FILL VOLUMES

GENERAL NOTES:
 1. DRAINAGE UTILITIES PRESENTED AND POLE LOCATIONS ARE ALL HAPPENS COINCIDENT WITH BATTERY DATA, ALL PRODUCED BY BLUE MOUNTAIN. PRE-EXISTING PHOTOGRAPHY DATE 2015. POST-CONSTRUCTION PHOTOGRAPHY DATE 2/21/17. POST-CONSTRUCTION BATTERY DATE 8/20/15.
 2. COORDINATE SYSTEM: HIGGS WEST VIRGINIA STATE PLANE, NORTH ZONE, 60 FEET.

LEGEND
 - DASH - DRAIN
 - X - POLE LINE
 - DOTTED LINE - RIP RAP
 - DASH - EDGE OF GRAVEL
 - DASH - SALT FENCE
 - DASH - SALT ROCK
 - DASH - STREAM
 - DASH - TREE LINE
 - DASH - INDEX CENTER (POST CENTER)
 - DASH - INDEX CENTER (POST CENTER)
 - DASH - INDEX CENTER (POST CENTER)
 - DASH - DESIGN EOG
 - UTILITY POLE
 - MISCELLANEOUS POLE OR SIGN
 - POLE
 - SIGN



Note:
 Existing sumps will be cleaned and reused.
 There will be no discharge from sumps during drilling activities.

CHART OF WELL SPOTS AND SITE LOCATION

POINT	EASTING (BY NORTH)	NORTHING (BY NORTH)	EASTING (BY NORTH)	NORTHING (BY NORTH)	SPOT NUMBER (BY NORTH)
ENTRANCE	11571.110	11571.110	11571.110	11571.110	11571.110
PAD CENTER	11571.110	11571.110	11571.110	11571.110	11571.110



NO ENERGY APRACHA LLC
 2540 DUPONT ROAD
 PARKERSBURG, WV 26101
**SHL27 WELL PAD
 AS-BUILT**



REVISION	
DATE	DESCRIPTION



DESIGN BY: SEC
 CHECKED BY: JCB
 DATE: 8/28/17
 SCALE: 1" = 60'
 JOB NO.: 1710-0
 PRINTED DATE: 09/27/17 10:41:16
SHEET 3 OF 4