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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Monday, July 1, 2019  
WELL WORK PERMIT  
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC  
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for MND23 N-1H  
47-051-02229-00-00

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: MND23 N-1H  
Farm Name: HG ENERGY II APPALACHIA  
U.S. WELL NUMBER: 47-051-02229-00-00  
Horizontal 6A New Drill  
Date Issued: 7/1/2019

# 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.

## 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](mailto:DEPOOGNotify@wv.gov).



WW-6B  
(04/15)

API NO. 47- \_\_\_\_\_ - \_\_\_\_\_  
 OPERATOR WELL NO. MND23 N-1H  
 Well Pad Name: MND23

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	20"	New	J-55	94	100'	100'	Drilled In
Fresh Water	13 3/8"	New	J-55	54.5	1075'	1075'	CTS
Coal							
Intermediate	9 5/8"	New	J-55	40	3150'	3150'	CTS
Production	5 1/2"	New	P-110	23	15014'	15014'	CTS
Tubing							
Liners							

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
Conductor	20"	20"	0.438	2110		Type 1, Class A	
Fresh Water	13 3/8"	17.5"	0.380	2730		Type 1, Class A	40% excess, yield = 1.20, CTS
Coal							
Intermediate	9 5/8"	12 1/4"	0.395	3950		Type 1, Class A	40% excess, yield = 1.20, CTS
Production	5 1/2"	8 1/2"	0.415	14520	11500	Type 1, Class A	20% excess, lead yield = 1.15, CTS
Tubing							
Liners							

*JM* 4/17/19

**PACKERS**

Kind:				
Sizes:				
Depths Set:				<b>RECEIVED</b> Office of Oil and Gas

MAY 30 2019  
 WV Department of  
 Environmental Protection

WW-6B  
(10/14)

API NO. 47- \_\_\_\_\_ - \_\_\_\_\_  
OPERATOR WELL NO. MND23 N-1H  
Well Pad Name: MND23

*M*  
*4/17/19*

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 6,535 feet. Drill to estimated 15,014 TMD, stimulate and be capable of producing the Marcellus Formation. Should an unanticipated void be encountered 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 expected to exceed 11,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 10.557 acres

22) Area to be disturbed for well pad only, less access road (acres): 8.498 acres

23) Describe centralizer placement for each casing string:

Conductor - N/A  
Surface Casing - Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface  
Intermediate Casing - Bow Springs (over collars) on first 12 joints, then every third joint to 100' from surface  
Production Casing - 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 5.5' long joint to the top of the curve.

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

Conductor - Already grouted in  
Surface Casing - "15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS"  
Intermediate Casing - "Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS  
Production Casing - "Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA17020 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020 ExcessLead Yield=1.19Tail Yield=1.94CTS"  
Office of Oil and Gas

MAY 30 2019

25) Proposed borehole conditioning procedures:

Conductor - Once at casing setting depth, ensure hole is clean at TD  
Surface Casing - Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.  
Intermediate Casing - Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.  
Production Casing - 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.

WV Department of  
Environmental Protection

\*Note: Attach additional sheets as needed.

**MND23 Well Pad (N-1H to N-6H)**  
**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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MND23 N-1H  
Marcellus Shale Horizontal  
Marshall County, WV

Ground Elevation		1240'	(RKB) 25'	MND23 N-1H SHL				14459358.08N 1706155.7E		
Azm		323.643°		MND23 N-1H LP				14458464.28N 1703092.01E		
WELLBORE DIAGRAM		323.643°		MND23 N-1H BHL				14464301N 1698795.5E		

HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
20"	20" 94# J-55	Conductor	0	100	AIR	Drilled in via Dual Rotary (no annular space)	N/A	Once at casing setting depth, ensure hole is clean at TD	Conductor casing = 0.438" wall thickness Burst=2110 psi
17.5"	13-3/8" 54.5# J-55 BTC	Fresh Water	538', 801', 898', 947'		AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS	Bow Springs (over collars) on first 2 joints then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.	Surface casing = 0.380" wall thickness Burst=2730 psi
		Surface Casing	0	1075					
		Coal(s)	847' - 852'						
12.25"	9-5/8" 40# J-55 BTC	Big Lime / Big Injun	2154 / 2258	2258 / 2300	AIR	Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS	Bow Springs (over collars) on first 12 joints, then every third joint to 100' from surface	Circulate & condition @ TD w/ Air. RIH w/ casing & fill w/ Fresh Water. Circulate a minimum of 1 hole volume, plus 30 bbls of 6% bentonite Gel/50# of poly flake, then clear casing w/ Fresh Water prior to pumping cement.	Intermediate casing = 0.395" wall thickness Burst=3950 psi
		Pocono	2464						
		5th Sand	2624						
		Gordon	3036						
		Intermediate Casing	0	3150					
8.5" Vertical	5-1/2" 23# P-110 HC CDC HTQ	Rhinestreet	5946	6238	AIR and/or 9.0ppg SOBMs	Lead: 14.6 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/ak FP13L + 0.3% bwoc MPA170 Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/ak FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA170 20% Excess Lead Yield=1.19 Tail Yield=1.94 CTS	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 = 0.415" wall thickness Burst=14520 psi Note:Actual centralizer schedules may be changed due to hole conditions
Cashaqua		6236	6302						
Middloxax		6302	6325						
West River		6325	6392						
Burkett		6392	6410						
Tully		6410	6439						
Hamilton		6439	6474						
Marcellus		6474	6540						
8.5" Curve	11.5ppg-12.5ppg SOBMs	LP TMD / TVD	16014	6535	11.5ppg-12.5ppg SOBMs	Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve.			
8.5" Lateral		Onondaga	6540						

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8.5" Hole - Cemented Long String  
5-1/2" 23# P-110 HC CDC HTQ  
+/-7250' ft Lateral  
TD @ +/-6535' TVD +/-15014' MD

4/17/19

4705102229



**List of Frac Additives by Chemical Name and CAS #**

**MND23 Well Pad (N-1H to N-6H)**

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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Environmental Protection

WW-9  
(4/16)

API Number 47 - \_\_\_\_\_ - \_\_\_\_\_  
Operator's Well No. MND23 N-1H

**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 494501907

Watershed (HUC 10) Short Creek - Ohio River Quadrangle Powhatan Point 7.5'

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: NA

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 \_\_\_\_\_ )
- Reuse (at API Number TBD - 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, cuttings and fluids will be collected in a closed loop system, re-used or hauled to an approved disposal site or landfill.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Vertical - Air, Horizontal - SOB

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

Additives to be used in drilling medium? Water, Soap, KCl, Barite, Base Oil, Wetting Agents

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? See Attached

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.

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Office of Oil and Gas

Company Official Signature Diane White

MAY 30 2019

Company Official (Typed Name) Diane White

WV Department of  
Environmental Protection

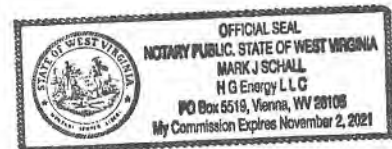
Company Official Title Agent

Subscribed and sworn before me this 17th day of April, 2019

[Signature]

Notary Public

My commission expires 11/2/2021



**HG Energy II Appalachia, LLC**

Proposed Revegetation Treatment: Acres Disturbed 10.5 Acres Prevegetation pH \_\_\_\_\_

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay 2 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Maintain E&S controls through the drilling and completion process

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: *Jim Anderson*

Comments: Pre-seed/mulch as soon as reasonably possible per regulation.

Upgrade E&S if needed per WV DEP E&S manual.

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Title: Oil & Gas Inspector

Date: 4/17/19

Field Reviewed?  Yes  No

**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 # 06-08488  
 11 County Road 78  
 Amsterdam, OH 43903  
 740-543-4889

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-103-87 / 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

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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 15880

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  
Garrattsville, OH  
713-275-4816

Kembla 1-D Well  
Permit # 8780  
7675 East Pike  
Norwich, Oh 43767  
614-648-8898  
740-786-6495

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

Mozena #1 Well (SWIW # 13)  
Permit # 34-157-2-5511-00-00  
5367 E. State Street  
Newcomerstown, OH 43882  
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, OH 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 Bu keya 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

Chapin #7 UIC (SWIW #7)  
Permit # 34-083-2-4187-00-00  
Elkhead Gas & Oil Company  
12163 Marne Rd. NE  
Newark, OH 43055  
740-763-3966

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Environmental Protection

# HG Energy II Appalachia, LLC

## Site Safety Plan

MND 23 Well Pad  
1931 Nixon Ridge Lane  
Moundsville, Marshall County, WV 26041

March 2019: Version 1

*4/17/19*

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

HG Energy II Appalachia, LLC.

5260 Dupont Road

Parkersburg, WV 26101

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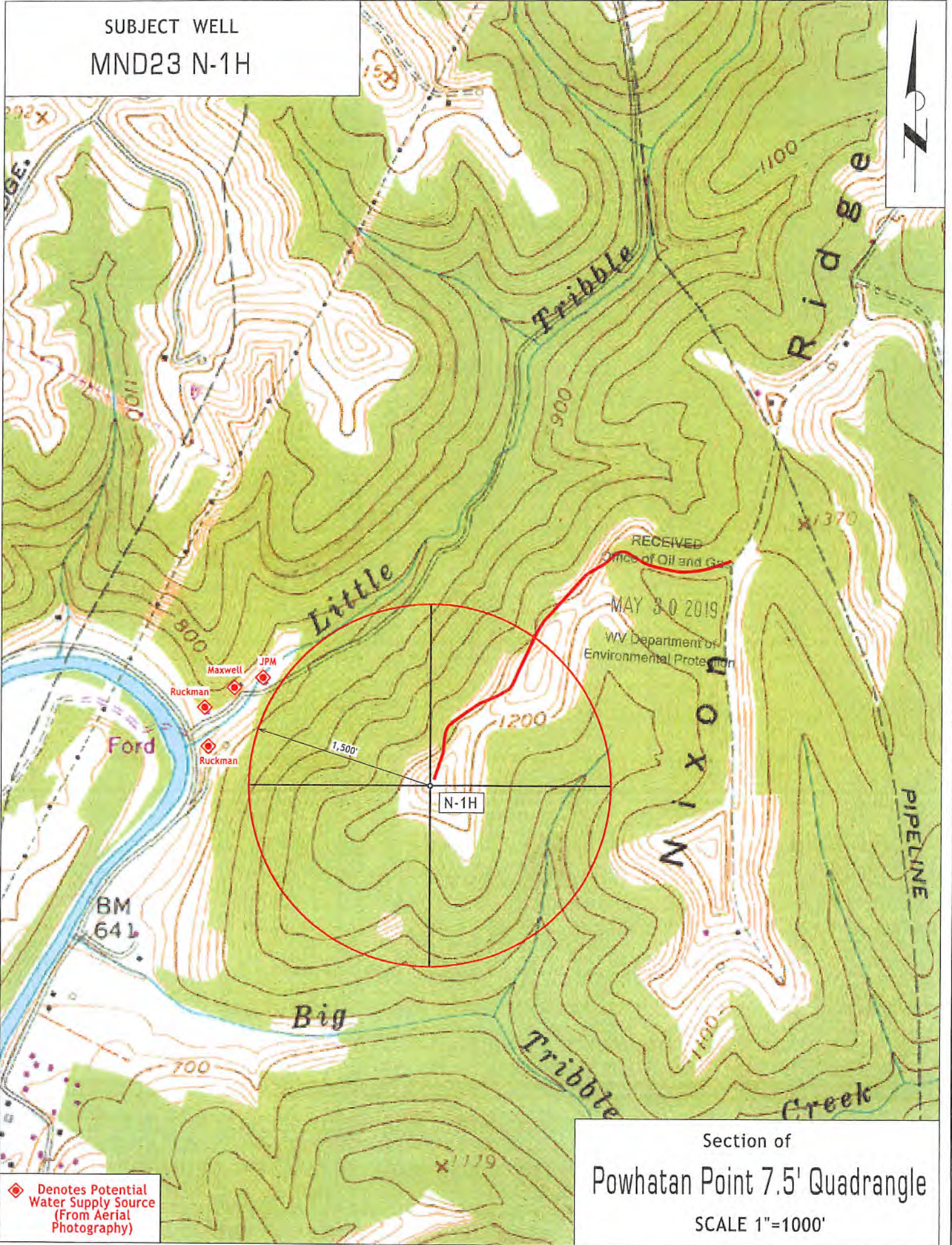
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SUBJECT WELL  
MND23 N-1H



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◆ Denotes Potential  
Water Supply Source  
(From Aerial  
Photography)

Section of  
Powhatan Point 7.5' Quadrangle  
SCALE 1"=1000'



Reclamation Plan For:

MND11 PAD &  
MND 23 Pad

Proposed Wells:

MND11 N-1H; MND11 N-2H  
MND11 N-3H; MND11 N-4H

MND23 N-1H; MND23 N-2H  
MND23 N-3H; MND23 N-4H  
MND23 N-5H; MND23 N-6H

AEP Generation Resources, Inc.  
TM 4, Parcel 15

HG ENERGY II, APPALACHIA, LLC  
TM 4, Parcel 14

~1,900' of  
Proposed  
Access Road  
to MND 11 Pad  
(See Construction  
Plan for Detail)

Topsoil Stockpile  
Areas

HG ENERGY II, APPALACHIA, LLC  
TM 4, Parcel 14

Fill Area

Cut Areas

NIXON RIDGE ROAD

21  
1

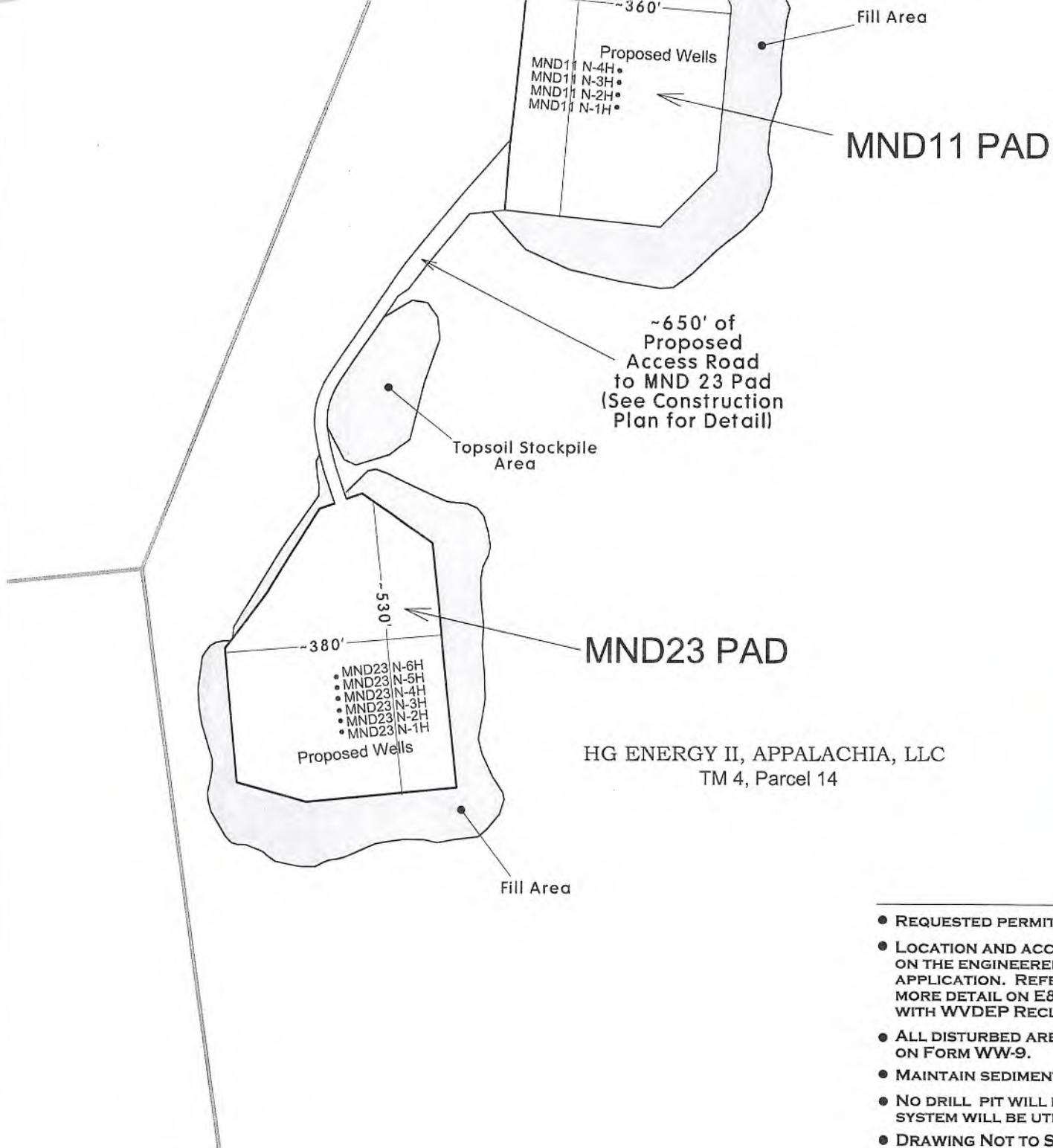


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MAY 30 2019  
WV Department of  
Environmental Protection

JPM Properties, LLC  
TM 4, Parcel 16

099-

47 05 102229



MND11 PAD

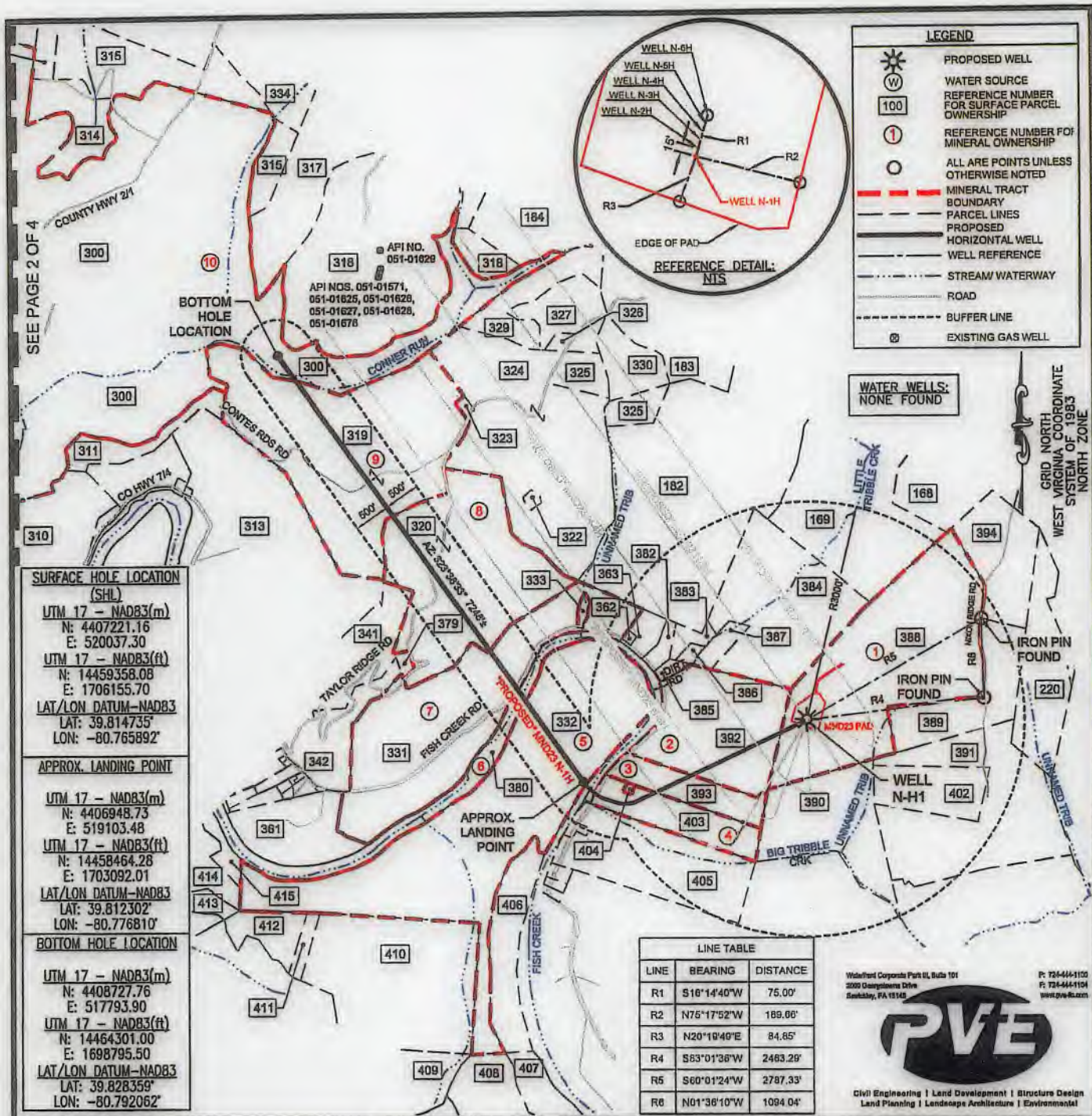
MND23 PAD

HG ENERGY II, APPALACHIA, LLC  
TM 4, Parcel 14

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

Notes:

- REQUESTED PERMIT IS FOR DRILLING NEW HORIZONTAL WELLS.
- LOCATION AND ACCESS ROADS WILL BE CONSTRUCTED AS SHOWN ON THE ENGINEERED DRAWINGS WHICH ACCOMPANY THIS PERMIT APPLICATION. REFERENCE IS HEREBY MADE TO THOSE PLANS FOR MORE DETAIL ON E&S MEASURES TO BE TAKEN TO ENSURE COMPLIANCE WITH WVDEP RECLAMATION STANDARDS.
- ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
- MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
- NO DRILL PIT WILL BE CONSTRUCTED AND A CLOSED LOOP SYSTEM WILL BE UTILIZED TO HANDLE DRILL CUTTINGS.
- DRAWING NOT TO SCALE.



FILE #: MND23 N-1H

DRAWING #: MND23 N-1H

SCALE: 1"=2000'

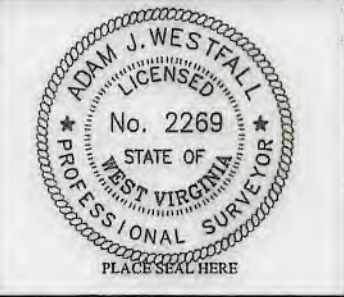
MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT H 138: 638.58'

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. 2269



(+) 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: BIG TRIBBLE CREEK-OHIO RIVER  
 COUNTY/DISTRICT: MARSHALL / FRANKLIN  
 SURFACE OWNER: HG Energy II, Appalachia LLC.  
 OIL & GAS ROYALTY OWNER: CNX GAS COMPANY

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



DATE: FEBRUARY 26, 2019

OPERATOR'S WELL #: MND23 N-1H

API WELL # 47 51 02229 16A  
 STATE COUNTY PERMIT

ACREAGE: 126.6

ESTIMATED DEPTH: TVD: 6,535' ± TMD: 15,014' ±

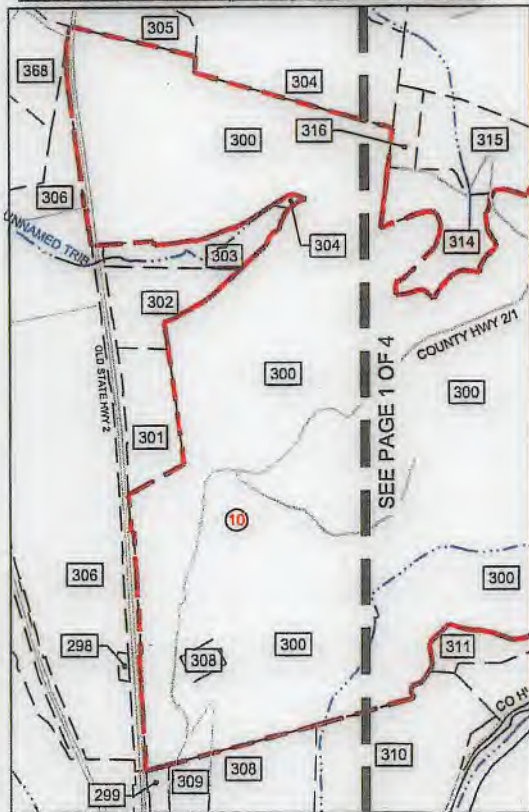
DESIGNATED AGENT: DIANE C. WHITE  
 Address: 5260 DUPONT ROAD  
 City PARKERSBURG State WV Zip Code 26101

Bottom Hole is located on topo map 1,812 feet south of Latitude: 39° 50' 00"  
 Well is located on topo map 6,775 feet south of Latitude: 39° 50' 00"

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

Bottom Hole is located on topo map 111 feet west of Longitude: 80° 47' 30"  
 Well is located on topo map 4,464 feet west of Longitude: 80° 45' 00"

DETAIL (REMAINDER OF AFFECTED PARCEL REFERENCE # 300) SCALE: 1"=2,000'



GRID NORTH  
WEST VIRGINIA COORDINATE  
SYSTEM OF 1983  
NORTH ZONE

<b>SURFACE HOLE LOCATION (SHL)</b>	
UTM 17 - NAD83(m)	N: 4407221.16 E: 520037.30
UTM 17 - NAD83(ft)	N: 14459358.08 E: 1706155.70
LAT/LON DATUM-NAD83	LAT: 39.814735° LON: -80.765892°
<b>APPROX. LANDING POINT</b>	
UTM 17 - NAD83(m)	N: 4406948.73 E: 519103.48
UTM 17 - NAD83(ft)	N: 14458464.28 E: 1703092.01
LAT/LON DATUM-NAD83	LAT: 39.812302° LON: -80.776810°
<b>BOTTOM HOLE LOCATION</b>	
UTM 17 - NAD83(m)	N: 4408727.76 E: 517793.90
UTM 17 - NAD83(ft)	N: 14464301.00 E: 1698795.50
LAT/LON DATUM-NAD83	LAT: 39.828359° LON: -80.792062°

Waterford Corporate Park II, Suite 101  
2000 Georgetown Edge  
Dunwoody, PA 15110

P: 724-444-1100  
F: 724-444-1151  
www.pve-va.com

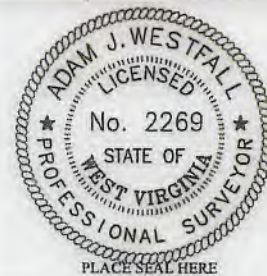
Civil Engineering | Land Development | Structure Design  
Land Planning | Landscape Architecture | Environmental

LEGEND	
	PROPOSED SURFACE HOLE LOCATION ON 7.5' TOPOGRAPHIC MAP
	PROPOSED BOTTOM HOLE LOCATION ON 7.5' TOPOGRAPHIC MAP

FILE #: MND23 N-1H  
 DRAWING #: MND23 N-1H  
 SCALE: 1"=2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE: U.S.G.S. MONUMENT  
 OF ELEVATION: H 138: 638.58'

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SIGNED:   
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. NO. 2269



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



DATE: FEBRUARY 26, 2019  
 OPERATOR'S WELL #: MND23 N-1H  
 API WELL # 47 51 02229 H&A  
 STATE COUNTY PERMIT

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

PAGE: 2 OF 4

WATERSHED: BIG TRIBBLE CREEK-OHIO RIVER ELEVATION: 1,240'

COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO

SURFACE OWNER: HG ENERGY II, APPALACHIA LLC. ACREAGE: 126.6

OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 126.6

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: POINT PLEASANT / MARCELLUS ESTIMATED DEPTH: TVD: 6,535' ± TMD: 15,014' ±

WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE

Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD

City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

168	MCCLINTOCK DALE ET. UX	TAX MAP NO. 05-0004-0013-0000-0000
169	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0004-0015-0000-0000
182	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0012-0000-0000
183	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0011-0000-0000
184	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0012-0000-0000
220	MORRIS FRED H ET UX	TAX MAP NO. 05-0004-0009-0000-0000
298	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0008-0011-0000-0000
299	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0003-0000-0000
300	OHIO POWER CO.	TAX MAP NO. 05-0006-0003-0000-0000
301	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0005-0000-0000
302	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0006-0000-0000
303	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0006-0001-0000-0000
304	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0010-0000-0000
305	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0001-0013-0000-0000
306	OHIO POWER CO.	TAX MAP NO. 05-0008-0010-0000-0000
307	CNX GAS COMPANY LLC.	TAX MAP NO. 05-0007-0005-0000-0000
308	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0002-0000-0000
309	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0003-0000-0000
310	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0007-0004-0000-0000
311	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0008-0004-0000-0000
313	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0008-0002-0000-0000
314	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0008-0002-0000-0000
315	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0002-0000-0000
316	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0001-0000-0000
317	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0001-0000-0000
318	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0005-0002-0000-0000
319	OHIO POWER CO.	TAX MAP NO. 05-0005-0003-0000-0000
320	SANCHEZ GENEVA BASSETT	TAX MAP NO. 05-0005-0004-0000-0000
322	ROBBINS JAMES E & DIANA C	TAX MAP NO. 05-0005-0005-0000-0000
323	MCGINNIS TIMOTHY L SR ET UX	TAX MAP NO. 05-0003-0003-0001-0000
324	OHIO POWER CO.	TAX MAP NO. 05-0005-0008-0000-0000
325	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0007-0000-0000
326	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0008-0000-0000
327	FRANKLIN REAL ESTATE CO.	TAX MAP NO. 05-0005-0009-0000-0000
329	MCELROY COAL COMPANY	TAX MAP NO. 05-0005-0009-0001-0000
330	HEATHERINGTON ARDEN RAY	TAX MAP NO. 05-0002-0013-0001-0000
331	GATTS RICHARD L. - LIFE	TAX MAP NO. 05-0009-0005-0000-0000
332	MILLER EDWIN C.	TAX MAP NO. 05-0008-0007-0000-0000
333	GATTS RICHARD L.	TAX MAP NO. 05-0008-0006-0000-0000
334	CONSOLIDATION COAL COMPANY	TAX MAP NO. 05-0002-0003-0000-0000
341	DELBURGGE EMERALD H JR.	TAX MAP NO. 05-0008-0003-0000-0000
342	BERISFORD BESSIE M. EST.	TAX MAP NO. 05-0008-0004-0000-0000
361	NIEMAN FRANCES E.	TAX MAP NO. 05-0008-0004-0001-0000
362	CLARK BEVERLY E.	TAX MAP NO. 05-0009-0001-0001-0000
363	RUCKMAN SHELDON R. ET. AL.	TAX MAP NO. 05-0009-0001-0004-0000
368	OHIO POWER COMPANY	TAX MAP NO. 05-0001-0022-0000-0000
379	ARRUDA JOHN F. ET. UX.	TAX MAP NO. 05-0005-0004-0001-0000
380	WV DIVISION OF NATURAL RESOURCES	NO ASSIGNED TRACT #
382	RUCKMAN MARVIN E. ET. UX.	TAX MAP NO. 05-0009-0001-0003-0000
383	MAXWELL WILLIAM L. SR. ET. UX.	TAX MAP NO. 05-0004-0019-0000-0000
384	HOLMAN TERRY L.	TAX MAP NO. 05-0004-0016-0000-0000
385	RUCKMAN MARVIN E.	TAX MAP NO. 05-0009-0001-0002-0000
386	MAXWELL WILLIAM JR.	TAX MAP NO. 05-0004-0019-0000-0000
387	HOLMAN TERRY L.	TAX MAP NO. 05-0004-0017-0000-0000

388	HOLSTINE BERNARD W. & ROXANN L
389	HOLSTINE BERNARD W. & ROXANN L
390	LEGG JAMES R. EST.
391	MCCLINTOCK DALE EDWARD
392	RUCKMAN JESSIE GLADYS - LIFE
393	LEGG JEFFERY L.
394	ANDERSON RHONDA MARIE
402	MCCLINTOCK DALE EDWARD
403	LEGG JAMES R EST
404	WHITE KENNETH E ET UX
405	ARNOLD LLOYD C & JUDITH C
406	FRANCIS JAMES EDWARD ET UX
407	DALLISON LUMBER CO
408	ARRICK DAVID H ET UX
409	RINE WALTER C
410	JACKSON JAMES B JR ET UX
411	WHITT PAUL
412	MOORE RANDYLYN ET AL
413	YOHO RONALD G ET AL
414	ROUPE WILLIAM N ET UX
415	CAMPBELL BRUCE S

TAX MAP NO. 05-0004-0014-0000-0000
TAX MAP NO. 05-0004-0014-0002-0000
TAX MAP NO. 05-0009-0003-0000-0000
TAX MAP NO. 05-0009-0006-0000-0000
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TAX MAP NO. 05-0007-0031-0000-0000
TAX MAP NO. 05-0007-0031-0001-0000

Waterford Corporate Park II, Suite 101  
2000 Georgetown Drive  
Pottsville, PA 17125

P: 717-444-1100  
F: 717-444-1100  
www.pve.com



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Land Planning | Landscape Architecture | Environmental

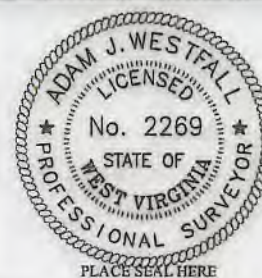
LEGEND

100	REFERENCE NUMBER FOR SURFACE PARCEL OWNERSHIP
1	REFERENCE NUMBER FOR MINERAL OWNERSHIP

FILE #: MND23 N-1H  
DRAWING #: MND23 N-1H  
SCALE: 1"=2000'  
MINIMUM DEGREE OF ACCURACY: 1/2500  
PROVEN SOURCE U.S.G.S. MONUMENT  
OF ELEVATION: H 138: 638.58'

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

SIGNED: [Signature]  
R.P.E.: \_\_\_\_\_ L.L.S.: \_\_\_\_\_ P.S. NO. 2269



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



DATE: FEBRUARY 26, 2019  
OPERATOR'S WELL #: MND23 N-1H  
API WELL # 47 51 02229 HGA  
STATE COUNTY PERMIT

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

PAGE: 3 OF 4

WATERSHED: BIG TRIBBLE CREEK-OHIO RIVER ELEVATION: 1,240'  
COUNTY/DISTRICT: MARSHALL / FRANKLIN QUADRANGLE: POWHATAN POINT, W. VA./OHIO  
SURFACE OWNER: HG ENERGY II, APPALACHIA LLC. ACREAGE: 126.6  
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY ACREAGE: 126.6

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: POINT PLEASANT / MARCELLUS ESTIMATED DEPTH: TVD: 6,535' ± TMD: 15,014' ±  
WELL OPERATOR: HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT: DIANE C. WHITE  
Address: 5260 DUPONT ROAD Address: 5260 DUPONT ROAD  
City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

HG Plat Number	MPI#	Original Lessee	Original Lessee	Surface Parcel Code
1	05-0004-0014-0000-0000	MILLER CHARLES W	CHEVRON USA INC	388
		PARSONS PAUL ET UX	CHEVRON USA INC	
		RUSSELL SHARON LYN	CHEVRON USA INC	
		HUFF TIMOTHY ET UX	CHEVRON USA INC	
		ARNOLD LLOYD C ET UX	CHEVRON USA INC	
		CRONIN MARY JO	CHEVRON USA INC	
		KURPIL RICHARD ET UX	CHEVRON USA INC	
		CLIFTON CLARA MAE	CHEVRON USA INC	
		EDWARDS GEORGE ET UX	CHEVRON USA INC	
		KYLE DONNA FAE	CHEVRON USA INC	
		CONNER JUDITH MAY	CHEVRON USA INC	
		SCHIBELHOOD PAUL ET AL	AB RESOURCES LLC	
		AB RESOURCES LLC	NPAR LLC	
		NPAR LLC	Chevron USA INC	
		Chevron USA INC	HG ENERGY II APPALACHIA, LLC	
2	05-0009-0001-0000-0000, 05-0009-0001-0001-0000, 05-0009-0001-0002-0000, 05-0009-0001-0003-0000, 05-0009-0001-0004-0000	Jessi Gladys Ruckman Et Al	Noble Energy, Inc.	392, 362, 385, 382, 363
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
3	05-0009-0002-0001-0000	Jeffrey L. Legg	Noble Energy, Inc.	393
		Noble Energy, Inc.	CNX Gas Company, LLC	
		CNX Gas Company, LLC	Noble Energy, Inc.	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
4	05-0009-0002-0000-0000	James Redman Legg II ET AL	Noble Energy, Inc.	403
		Noble Energy, Inc.	CNX Gas Company, LLC	
		CNX Gas Company, LLC	Noble Energy, Inc.	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
5	05-0008-0007-0000-0000	Edwin C. Miller and Klumberly Ann Miller	Noble Energy, Inc.	332
		Noble Energy, Inc.	CNX Gas Company, LLC	
		CNX Gas Company, LLC	Noble Energy, Inc.	
		Noble Energy, Inc.	HG ENERGY II APPALACHIA, LLC	
6	NO ASSIGNED TRACT #	WV Division of Natural Resources	Noble Energy, Inc.	380

		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
7	05-0008-0005-0000-0000	Richard J. Gatts	Chevron USA INC	331
		Chevron USA INC	HG ENERGY II APPALACHIA, LLC	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
8	05-0005-0004-0000-0000	Barbara Kay Ewing and Wilber E. Ewing	NOBLE ENERGY INC	320
		Charles Howard Bassett JR and Ruby D. Bassett	NOBLE ENERGY INC	
		Cynthia P. Hopkins, as Trustee of the Cynthia P. Hopkins Revocable Trust	NOBLE ENERGY INC	
		Elizabeth A. Strusbaugh and James R. Strusbaugh	NOBLE ENERGY INC	
		Janet and John Blankenship	NOBLE ENERGY INC	
		Jean C. Thomas	NOBLE ENERGY INC	
		Mary E. Bassett	NOBLE ENERGY INC	
		Robert B. and Violet Thomas	NOBLE ENERGY INC	
		Roger B. and Inken P. Rose	NOBLE ENERGY INC	
		Ruth Ann and Furman F. Wallace	NOBLE ENERGY INC	
		Ruth E. Bassett Meadows and O.W. Meadows Jr	NOBLE ENERGY INC	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
9	05-0005-0003-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	Noble Energy, Inc.	319
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	
10	05-0006-0003-0000-0000	Consolidation Coal Company	CNX Gas Company, LLC	300
		CNX Gas Company, LLC	Noble Energy, Inc.	
		NOBLE ENERGY INC	HG ENERGY II APPALACHIA, LLC	

Waterford Corporate Park III, Suite 101  
2000 Georgianna Drive  
Sewickley, PA 15143

P: 724-444-1100  
F: 724-444-1104  
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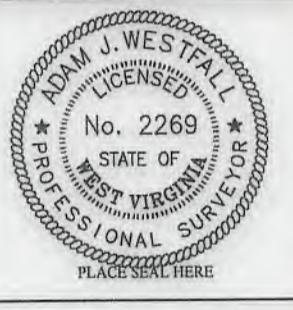
Civil Engineering | Land Development | Structure Design  
Land Planning | Landscape Architecture | Environmental

**LEGEND**  
① REFERENCE NUMBER FOR MINERAL OWNERSHIP

FILE #: MND23 N-1H  
DRAWING #: MND23 N-1H  
SCALE: 1"=2000'  
MINIMUM DEGREE OF ACCURACY: 1/2500  
PROVEN SOURCE U.S.G.S. MONUMENT  
OF ELEVATION: H 138: 638.58'

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

SIGNED: [Signature]  
R.P.E.: \_\_\_\_\_ L.L.S.: P.S. NO. 2269



(+) 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: BIG TRIBBLE CREEK-OHIO RIVER  
COUNTY/DISTRICT: MARSHALL / FRANKLIN  
SURFACE OWNER: HG ENERGY II, APPALACHIA LLC.  
OIL & GAS ROYALTY OWNER: CNX GAS COMPANY

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



DATE: FEBRUARY 26, 2019  
OPERATOR'S WELL #: MND23 N-1H  
API WELL # 47 51 0229 HGA  
STATE COUNTY PERMIT  
PAGE: 4 OF 4  
ELEVATION: 1,240'  
QUADRANGLE: POWHATAN POINT, W. VA./OHIO  
ACREAGE: 126.6  
ACREAGE: 126.6  
ESTIMATED DEPTH: TVD: 6,535' ± TMD: 15,014' ±  
DESIGNATED AGENT: DIANE C. WHITE  
Address: 5260 DUPONT ROAD  
City PARKERSBURG State WV Zip Code 26101

WW-6A1  
(3/13)

Operator's Well No. \_\_\_\_\_

**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:

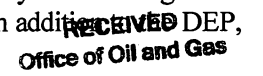
Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
-------------------------	-----------------------	-----------------------	---------	-----------

\*\* See Attached Lease Chain \*\*

**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

  
**MAY 30 2019**  
 WV Department of  
 Environmental Protection

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**  
**MND23 N-1H**  
**Lease Chains**

HG Plat Number	MPID	Original Lessor	Original Lessee	Royalty	Book	Page
1)	05-0004-0014-0000-0000	MILLER CHARLES W	CHEVRON USA INC	Not less than 1/8	853	59
		PARSONS PAUL ET UX	CHEVRON USA INC	Not less than 1/8	853	430
		RUSSELL SHARON LYN	CHEVRON USA INC	Not less than 1/8	853	422
		HUFF TIMOTHY ET UX	CHEVRON USA INC	Not less than 1/8	846	47
		ARNOLD LLOYD C ET UX	CHEVRON USA INC	Not less than 1/8	846	39
		CRONIN MARY JO	CHEVRON USA INC	Not less than 1/8	846	43
		KURPIL RICHARD ET UX	CHEVRON USA INC	Not less than 1/8	863	594
		CLIFTON CLARA MAE	CHEVRON USA INC	Not less than 1/8	853	426
		EDWARDS GEORGE ET UX	CHEVRON USA INC	Not less than 1/8	853	418
		KYLE DONNA FAE	CHEVRON USA INC	Not less than 1/8	853	449
		CONNER JUDITH MAY	CHEVRON USA INC	Not less than 1/8	853	445
		SCHEIBELHOOD PAUL ET AL	AB RESOURCES LLC	Not less than 1/8	695	629
		AB RESOURCES LLC	NPAR LLC		25	484
		NPAR LLC	Chevron USA INC		56	332
		Chevron USA INC	APPALACHIA, LLC			154
2)	05-0009-0001-0000-0000, 05-0009-0001-0001-0000, 05-0009-0001-0002-0000, 05-0009-0001-0003-0000, 05-0009-0001-0004-0000	Jessi Gladys Ruckman Et Al	Noble Energy, Inc. HG ENERGY II	Not less than 1/8	730	646
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
3)	05-0009-0002-0001-0000	Jeffrey L. Legg	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	1041	316
4)	05-0009-0002-0000-0000	James Redman Legg II ET AL	HG ENERGY II APPALACHIA, LLC	Not less than 1/8	1041	313
5)	05-0008-0007-0000-0000	Edwin C. Miller and Kimberly Ann Miller	TH Exploration, LLC HG ENERGY II	Not less than 1/8	957	257
		TH Exploration, LLC	APPALACHIA, LLC		44	63
6)	No tract # assigned	WV Division of Natural Resources	Noble Energy, Inc. HG ENERGY II	Not less than 1/8	865	558
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
7)	05-0008-0005-0000-0000	Richard J. Gatts	Chevron USA INC HG ENERGY II	Not less than 1/8	899	479
		Chevron USA INC	APPALACHIA, LLC HG ENERGY II	Not less than 1/8	41	154
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1
8)	05-0005-0004-0000-0000	Barbara Kay Ewing and Wilber E. Ewing	NOBLE ENERGY INC	Not less than 1/8	842	34
		Charles Howard Bassett JR and Ruby D. Bassett	NOBLE ENERGY INC	Not less than 1/8	842	1
		Cynthia P. Hopkins, as Trustee of the Cynthia P. Hopkins Revocable Trust	NOBLE ENERGY INC	Not less than 1/8	841	366

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		Elizabeth A. Strusbaugh and James R. Strausbaugh	NOBLE ENERGY INC	Not less than 1/8	841	370
		Janet and John Blankenship	NOBLE ENERGY INC	Not less than 1/8	841	368
		Jean C. Thomas	NOBLE ENERGY INC	Not less than 1/8	841	449
		Mary E. Bassett	NOBLE ENERGY INC	Not less than 1/8	841	362
		Robert B. and Violet Thomas	NOBLE ENERGY INC	Not less than 1/8	842	28
		Roger B. and Inken P. Rose	NOBLE ENERGY INC	Not less than 1/8	841	358
		Ruth Ann and Furman F. Wallace Ruth E. Bassett Meadows and O.W. Meadows Jr	NOBLE ENERGY INC NOBLE ENERGY INC HG ENERGY II	Not less than 1/8 1/8	841 842	364 38
		NOBLE ENERGY INC	APPALACHIA, LLC		39	1
9)	05-0005-0003-0000-0000	AEP Generation Resources Inc. and Kentucky Power Company	Noble Energy, Inc. HG ENERGY II NOBLE ENERGY INC	Not less than 1/8	829	157
			APPALACHIA, LLC		39	1
10)	05-0006-0003-0000-0000	Consolidation Coal Company CNX Gas Company, LLC	CNX Gas Company, LLC Noble Energy, Inc. HG ENERGY II	Fee Fee	646 752	493 66
		NOBLE ENERGY INC	APPALACHIA, LLC	Fee	39	1

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Environmental Protection



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

---

April 9, 2019

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

RE: Drilling Under Roads – MND23 N-1H  
Franklin 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](mailto:dwhite@hgenergyllc.com) or 304-420-1119.

Very truly yours,

Diane C. White

Enclosures

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WV Department of  
Environmental Protection

WW-6AC  
(1/12)

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

Date of Notice Certification: 04/09/2019

API No. 47- \_\_\_\_\_ - \_\_\_\_\_  
Operator's Well No. MND23 N-1H  
Well Pad Name: MND23

**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>520037.3</u>
County: <u>Marshall</u>	Northing: <u>4407221.2</u>
District: <u>Franklin</u>	Public Road Access: <u>Nixon Ridge Road (SLS 21/1)</u>
Quadrangle: <u>Powhatan Point</u>	Generally used farm name: <u>CONSOL</u>
Watershed: <u>Little Tribble 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

- 1. NOTICE OF SEISMIC ACTIVITY or  NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- 2. NOTICE OF ENTRY FOR PLAT SURVEY or  NO PLAT SURVEY WAS CONDUCTED
- 3. NOTICE OF INTENT TO DRILL or  NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or  WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)
- 4. NOTICE OF PLANNED OPERATION
- 5. PUBLIC NOTICE
- 6. NOTICE OF APPLICATION

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**MAY 30 2019**  
WV Department of  
Environmental Protection

- OOG OFFICE USE ONLY**
- RECEIVED/ NOT REQUIRED
  - RECEIVED
  - RECEIVED/ NOT REQUIRED
  - RECEIVED
  - RECEIVED
  - RECEIVED

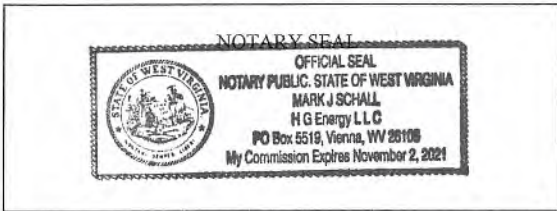
**Required Attachments:**

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, the return receipt card or other postal receipt for certified mailing.

**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 9th day of April, 2019.

*Mark J Schall* Notary Public

My Commission Expires 11/2/2021

**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](mailto:depprivacyofficer@wv.gov).

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WV Department of  
Environmental Protection

**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:** 04/17/2019 **Date Permit Application Filed:** 04/23/2019

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.

Notice is hereby provided to:

- SURFACE OWNER(s) *\* Not noticed*

Name: HG Energy II Appalachia, LLC  
 Address: 5260 Dupont Road  
Parkersburg, WV 26101

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

- SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: HG Energy II Appalachia, LLC  
 Address: 5260 Dupont Road  
Parkersburg, WV 26101

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

- SURFACE OWNER(s) (Impoundments/Pits)

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

- COAL OWNER OR LESSEE

Name: Murray Energy Corporation  
 Address: 46226 National Road  
St Clairsville, OH 43950

- COAL OPERATOR

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

- WATER PURVEYOR(s)

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

- OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

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MAY 30 2019

WV Department of  
Environmental Protection

\*Please attach additional forms if necessary

**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 also 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.

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

**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.

**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.

**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 wellpad 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 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

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factors, if necessary.

**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 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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.

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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.

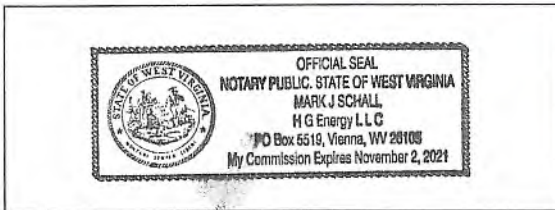
**Notice is hereby given by:**

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

Address: 5260 Dupont Road  
Parkersburg, WV 26101  
Facsimile: 304-863-2172

**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](mailto:deprivacyofficer@wv.gov).

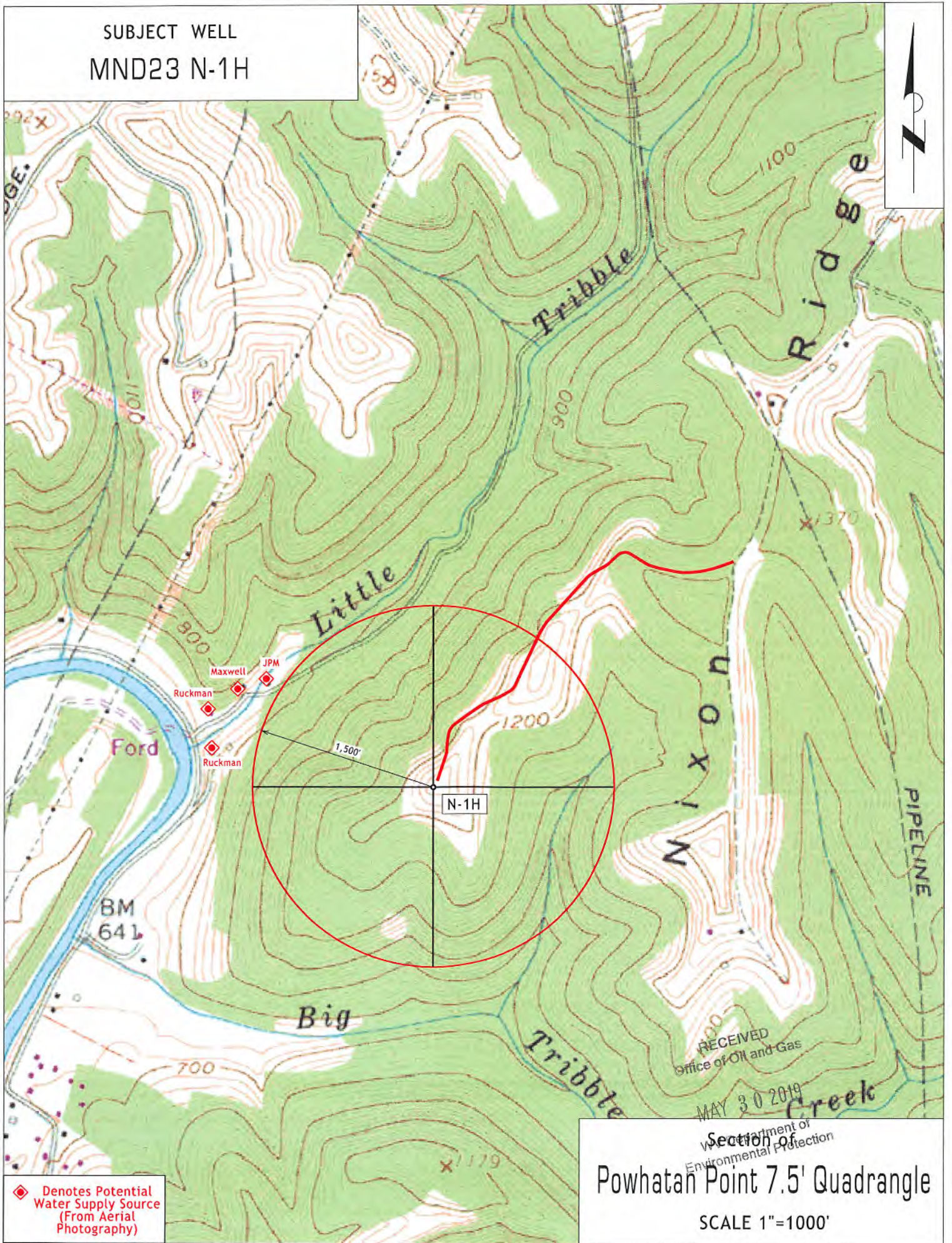


Subscribed and sworn before me this 9<sup>th</sup> day of April, 2019.  
*[Signature]* Notary Public  
My Commission Expires 11/2/2021

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SUBJECT WELL  
MND23 N-1H



◆ Denotes Potential  
Water Supply Source  
(From Aerial  
Photography)

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Section of  
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Powhatan Point 7.5' Quadrangle  
SCALE 1"=1000'

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF ENTRY FOR PLAT SURVEY

**Notice Time Requirement:** Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

**Date of Notice:** 2/25/19 **Date of Planned Entry:** 3/6/19

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: HG Energy II Appalachia, LLC  
Address: 5260 Dupont Road  
Parkersburg, WV 26101

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: Murray Energy Corporation  
Address: 46226 National Road  
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: - See Attached List -  
Address: \_\_\_\_\_

\*please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: West Virginia  
County: Marshall  
District: Franklin  
Quadrangle: Powhatan Point 7.5'

Approx. Latitude & Longitude: 39.814735 / 80.765892  
Public Road Access: Nixon Ridge Road - SLS 21/1  
Watershed: Short Creek - Ohio River  
Generally used farm name: Consol

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**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

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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](mailto:depprivacyofficer@wv.gov).

Page 1 Continued

Mineral Owners

MILLER, CHARLES W  
436 Limerick Drive  
Lynchburg, OH 45142

PARSONS, PAUL ET UX  
780 Fairmont Pike  
Wheeling, WV 26003

RUSSELL, SHARON LYN  
100 North Wabash,  
Wheeling, WV 26003

HUFF, TIMOTHY ET UX  
32 Huff Lane  
Glendale, WV, 26038

ARNOLD, LLOYD C ET UX  
53661 Arman Hill Road,  
Powhatan Point, OH 43942

CRONIN, MARY JO  
67564 North Ray Road  
St. Clairsville, OH 43950

KURPIL, RICHARD ET UX  
20 Sandy Drive  
Benwood, WV 26031

CLIFTON, CLARA MAE  
24 Tear Drop Drive,  
Valley Grove, WV 26060

EDWARDS, GEORGE ET UX  
334 North Front Street  
Wheeling, WV 26003

KYLE, DONNA FAE  
1082 Cherry Hill Road  
Wheeling, WV 26003

CONNER, JUDITH MAY  
P.O. Box 611  
Moon Township, PA 15108

SCHEIBELHOOD, PAUL ET AL  
RR 1 Box 216  
Proctor, WV 26055

Jessi Gladys Ruckman Et Al  
P.O Box 89  
Sewickley, PA 15143

Jeffrey L. Legg  
3444 Fish Creek Road  
Proctor, WV 26055

James Redman Legg II ET AL  
James R Legg  
9 Sandy Avenue  
Moundsville, WV 26041

Edwin C and Kiumberly Ann Miller  
185 Kirkman Lane  
Proctor, WV 26055

WV Division of Natural Resources  
324 Fourth Avenue  
South Charleston, WV 25303

Richard J. Gatts  
2165 Fish Creek Road  
Proctor, WV 26055

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Mineral Owners

Barbara Kay Ewing and Wilber E. Ewing  
12782 Eastchester Road  
Pickerington, OH 43147

Charles H Bassett JR & Ruby D Bassett  
16 Pecan Drive  
Long Beach, MS 39560

Cynthia P. Hopkins, as Trustee of the  
Cynthia P. Hopkins Revocable Trust  
7030 Half Moon Circle, Apt 214  
Hypoluxo, FL 33462

Elizabeth A and James R Strausbaugh  
11387 County Road 550  
Chillicothe, OH 45601

Janet and John Blankenship  
1 Cheves Creek Court  
North Augusta, SC 29860

Jean C. Thomas  
2573 Starlite Lane  
Port Charlotte, FL 33952

Mary E. Bassett  
35475 County Road 12  
Graysville, OH 45734

Robert B. and Violet Thomas  
6 Ford Street  
Moundsville, WV 26041

Roger B. and Inken P. Rose  
5663 Krystal Court  
Cincinnati, OH 45252

Ruth Ann and Furman F. Wallace  
904 Colonel Anderson Parkway  
Louisville, KY 40222

Ruth E Bassett Meadows  
& OW Meadows Jr  
8109 Maryland Ave  
Marmet, WV 25315

AEP Generation Resources Inc.  
and Kentucky Power Company  
P.O BOX 16428  
Columbus OH 43215

Consolidation Coal Company  
1000 Consol Energy Drive  
Canonsburg, PA 15317

James Redman Legg II ET AL  
Leslie Suzanne White  
90 Leggs Lane  
Proctor, WV 26055

**HG ENERGY II APPALACHIA, LLC NOT NOTICED VIA CERTIFIED MAIL**

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WW-6A4W  
(1/12)

**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, Eric Grayson, for HG Energy II Appalachia, LLC, 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>520037.3</u>
County:	<u>Marshall</u>		Northing:	<u>4407221.2</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Nixon Ridge Road (SLS 21/1)</u>	
Quadrangle:	<u>Powhatan Point</u>	Generally used farm name:	<u>CONSOL</u>	
Watershed:	<u>Little Tribble Creek</u>			

Name: Eric Grayson, VP, HG Energy II Appalachia, LLC  
 Address: 5260 Dupont Road  
Parkersburg, WV 26101

Signature:   
 Date: 04/03/2019

**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](mailto:deprivacyofficer@wv.gov).

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WW-6A5  
(1/12)

Operator Well No. MND23 N-1H

**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:** 04/11/2019      **Date Permit Application Filed:** 04/11/2019

**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)** \* Notice Not Sent  
(at the address listed in the records of the sheriff at the time of notice):

Name: HG Energy II Appalachia, LLC  
Address: 5260 Dupont Road  
Parkersburg, WV 26101

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>520037.3</u>
County:	<u>Marshall</u>		Northing:	<u>4407221.2</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Nixon Ridge Road (SLS 21/1)</u>	
Quadrangle:	<u>Powhatan Point</u>	Generally used farm name:	<u>CONSOL</u>	
Watershed:	<u>Little Tribble 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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://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

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## WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

## Division of Highways

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

Thomas J. Smith, P. E.  
Secretary of Transportation/  
Commissioner of Highways

March 18, 2019

Jill M. Newman  
Deputy Commissioner

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

Subject: DOH Permit for the MND-23 Well Pad, Marshall County  
MND-23 N-1H Well Site

Dear Mr. Martin,

This well site will be accessed from Permit #06-2019-0284 issued to HG Energy II Appalachia for access to the State Road for a well site located off of Marshall County 21/1 SLS.

The operator has signed a STATEWIDE 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 October 1, 2018.

Very Truly Yours,

Gary K. Clayton, P.E.  
Regional Maintenance Engineer  
Central Office O&G Coordinator

Cc: Diane White  
HG Energy II, LLC  
CH, OM, D-6  
File

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**List of Frac Additives by Chemical Name and CAS #****MND23 Well Pad (N-1H to N-6H)**

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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# CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG MND 23 WELL PAD

**APPROVED  
WVDEP OOG**

7/20 6/3/2019

**MOUNDSVILLE  
MARSHALL COUNTY  
WEST VIRGINIA**

### CONSTRUCTION SEQUENCE

1. Prior to commencement of any earth disturbance activity including clearing and grubbing, the registrant shall call West Virginia 811 by dialing 811 or 1-800-245-4848 to identify all utility lines. The registrant also must clearly delineate sensitive areas, riparian forest buffer boundaries, the limits of clearing, and trees that are to be conserved within the project site, and shall install appropriate barriers where equipment may not be parked, staged, operated or located for any purpose.
2. Site access - This is the first land-disturbance activity to take place at the site and should provide BMPs to minimize accelerated erosion and sedimentation from the following areas: entrance to the site, construction routes, and areas designated for equipment or other use at the site including parking, stockpiles.
3. Sediment Barriers - Install perimeter BMPs after the construction site is accessed, keeping associated clearing and grubbing limited to only that amount required for installing perimeter BMPs.
4. Land Clearing and Grading - Implement clearing and grading only after all downslope E&S BMPs have been constructed and stabilized.
5. Surface Stabilization - Apply temporary or permanent stabilization measures immediately to any disturbed areas where work has reached final grade, has been delayed or otherwise temporarily suspended.
6. Construction of Buildings, Utilities, and Paving - During construction, install and maintain any additional erosion and sediment control BMPs, and implement any structural post construction stormwater BMPs that may be required.
7. Upon completion of pad grading, compact the pad to grade and begin placement of pad soil cement.
8. Final Stabilization, Topsoiling, Trees and Shrubs - After construction is completed, install stabilization BMPs including permanent seeding, mulching and riprap, and complete implementation of stormwater BMPs in this last construction phase. Stabilize all open areas, including borrow and spoil areas, and remove all temporary BMPs and stabilize any disturbances associated with the removal of the BMP.



Estimated Gross Material Balance (CY)			
Final Development - Gravel Option			
	Cur	Fill	Stockpile
MND 23 Pad	89,459	66,479	480
Access Road	109	590	-499
Total	89,568	67,069	480
Total Site Balance			490 Cu
Stockpile Volume (Sum of Earthworks)			6,187
Est. Spoil Volume (Less Cr.)			1,033
Est. Topsoil Volume (Less Cr.)			7,406
Est. Topsoil To Be Respread or C&P&H Slopes			1,819
Minimum Total Stockpile Capacity Required (C.Y.)			8,040

- Notes:
1. Material balance for net gross earthwork quantity only.
  2. Topsoil and subsoil listed on 8 inches average depth.
  3. Material volume and aggregate quantities listed on 30 minutes and may not be representative of actual quantities.
  4. Excavates do not reflect contractor pay volumes.

Estimated Gravel Quantities			
	MND 23 Pad	MND 11 Access Road	TOTAL
8" Soil Cement (Plan Ft)	19,600	1,683	21,283
1" Depth of 4" Topsoil (Plan Ft)	3,375	-	3,375
4" Soil Cement (Plan Ft)	-	1,683	1,683

Estimated 12" Compact Filter Rock Length (Lx) (feet)	1,150
Estimated 12" Compact Filter Rock Length (Lx) (feet)	1,852
Estimated Total 12" Compact Filter Rock Length (Lx) (feet)	3,002

Estimated Total Limit of Disturbance (Acres)	16,004
Pad Peak Pre-Construction Elevation (ft)	1572
Well Pad Soil Surface Elevation (Top of Soil Cement) (ft)	1586.83
Well Pad Soil Surface Elevation (ft)	1587.05

SHT. NO.	SHEET TITLE
1	TITLE SHEET
2A-2E	SITE DEVELOPMENT PLANS
3	PAD & STOCKPILE SECTIONS
4A-4B	ACCESS ROAD SECTIONS
5A-5F	CONSTRUCTION NOTES & DETAILS
6A-6C	RESTORATION PLAN
7	PROPERTY MAP

WELL #	LAT.	LONG.
1	N 39.814735	W 80.765892
2	N 39.814774	W 80.765678
3	N 39.814814	W 80.765865
4	N 39.814854	W 80.765851
5	N 39.814894	W 80.765835
6	N 39.814934	W 80.765824

WGS-84 WELL COORDINATES  
WELL ELEVATIONS = 1237.45

	LATITUDE	LONGITUDE
MND 23 WELL PAD ACCESS ROAD ENTRANCE	N 39.816883	W 80.764041
MND 11 WELL PAD ACCESS ROAD ENTRANCE	N 39.819895	W 80.757249

RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LOT
HG ENERGY PROPERTY	TM 4 PARCEL 14	121,531 AC.	18,979 AC.
NIXON RIDGE LN ROW	N/A	N/A	0.025 AC.
TOTAL LIMIT OF DISTURBANCE			19,004 AC.

THE DRAWING IS A CONTRACT DOCUMENT. IT IS THE PROPERTY OF THE ENGINEER AND SHALL BE KEPT IN THE OFFICE OF THE ENGINEER. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER. ANY REPRODUCTION OR TRANSMISSION OF THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER IS PROHIBITED.

REVISION	DATE	DESCRIPTION
1	07/24/2018	REVISED WELL PAD DIMENSIONS
2	02/07/2019	REVISED WELL PAD DIMENSIONS
3	02/05/2019	REVISED CELLAR DETAIL
4	04/29/2019	REVISED TO INCLUDE ACCESS TO PUBLIC ROAD
5	09/17/2019	REVISED TO INCLUDE ACCESS TO PUBLIC ROAD
6	06/29/2019	REVISED PER WVDEP COMMENTS



**TITLE SHEET  
HG MND 23  
MARSHALL COUNTY  
WEST VIRGINIA**

PREPARED FOR  
**HG ENERGY II APPALACHIA, LLC  
PARKERSBURG, WEST VIRGINIA**

**WEST VIRGINIA 811** CALL BEFORE YOU DIG! Dial 811 or 800.245.4848

Service utilities are not shown on the plans. The contractor shall be responsible for locating, marking, and replacing as necessary to ensure continuous service.

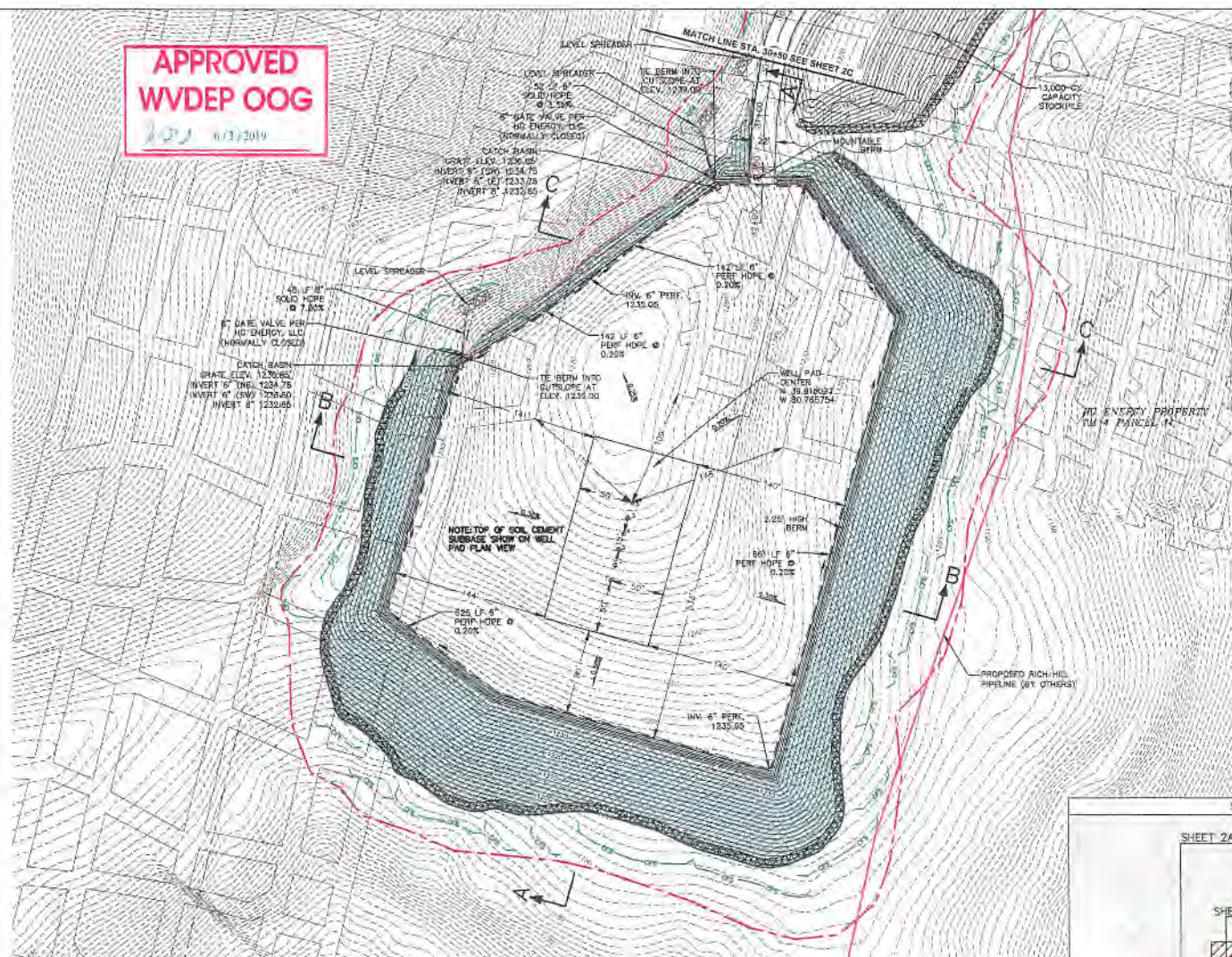
APPROVED SEP 07/18/2019  
CHECKED SEP 01/02/2019  
DRAWN SEP 22/02/2018  
PROJECT NO. 4300-PAD07837

**Penn E&R**  
Environmental & Remediation, Inc.  
111 RYAN COURT, PITTSBURGH, PA 15205  
412-722-1222

DRAWING NUMBER  
PAD07837-01  
SHEET 1

ENVIRONMENTAL & REMEDIATION, INC. MND 23 DRAWING NO. 4300-PAD07837 MND 23 TITLE SHEET DWG. 5/29/2019 11:43 AM

**APPROVED WVDEP OOG**  
 6/13/2019



Estimated Gross Material Balance (CY)  
 Final Development - Groundwater

Item	Qty	Unit	Stockpile
WIND-33 Pad	50,450	50,470	200
Access Road	00	200	-480
Water	80,000	-50,000	190
Sub Soil Balance			-470,014
Proposed Topsoil (Lump or Layer)	2,500		1,147
Est. Soil Stock			1,500
Est. Topsoil (Shovel Volume) (CY)			1,404
Est. Topsoil To Be Processed On C&FRA Stockpile			1,000
Minimum Total Stockpile Capacity Required (CY)			5,000

Estimated Ground Quantities

Item	Amount	Unit	Value
1. Subsoil (Estimated)	19,000	cu yd	1,210.0
2. Topsoil (Estimated)	2,500	cu yd	1,250.0
3. Subsoil (Estimated)	1,000	cu yd	1,000.0
4. Subsoil (Estimated)	1,000	cu yd	1,000.0

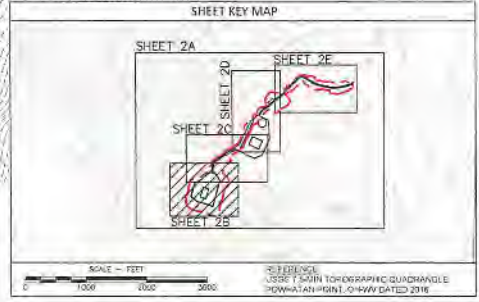
Summary of Construction Items

Item	Quantity	Unit	Value
1. Estimated Construction Items	11.63		1,163.0
2. Estimated Construction Items	1.820		1,820.0
3. Estimated Construction Items	3.670		3,670.0

1. All construction items shall be installed in accordance with the approved plans and specifications.
2. The contractor shall be responsible for obtaining all necessary permits and approvals from the appropriate agencies.
3. The contractor shall be responsible for maintaining accurate records of all construction activities.
4. The contractor shall be responsible for ensuring that all construction work is completed in a timely and efficient manner.
5. The contractor shall be responsible for ensuring that all construction work is completed in a safe and sound manner.
6. The contractor shall be responsible for ensuring that all construction work is completed in a professional and courteous manner.
7. The contractor shall be responsible for ensuring that all construction work is completed in a manner that is consistent with the approved plans and specifications.
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2	N 39.814774	W 80.760878
3	N 39.814818	W 80.760865
4	N 39.814865	W 80.760851
5	N 39.814804	W 80.760838
6	N 39.814934	W 80.760824

WELL ELEVATIONS = 1237.43



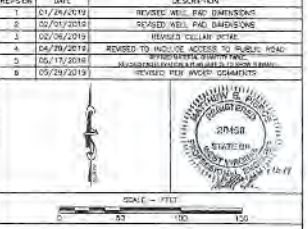
- LEGEND**
- ROCK CHECK DAM
  - EMERALD ASPHEN
  - ACCESS EXISTING CHANNEL
  - CONCRETE FILTER ROCK 12" UNLESS OTHERWISE NOTED
  - STACKED CONCRETE FILTER ROCK 12"
  - AFFIRMATIVE LIMITS OF DISTURBANCE
  - EXISTING UNDERPASS CONDUIT
  - PROPOSED UNDERPASS CONDUIT
  - PROPOSED UNDERPASS WITH UNDERPASS CONDUIT
  - EXISTING MARSHALL MANE WEDGES
  - MURRAY ENERGY PROPOSED MURRAY PIPELINE (BY OTHERS)
  - APPROXIMATE PROPERTY BOUNDARY



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REVISIONS

NO.	DATE	DESCRIPTION
1	02/04/2019	REVISED WELL PAD DIMENSIONS
2	02/07/2019	REVISED WELL PAD DIMENSIONS
3	02/08/2019	REVISED WELL PAD DIMENSIONS
4	04/09/2019	REVISED TO INCLUDE ACCESS TO SUBBASE HEAD
5	05/17/2019	PROPOSED UNDERPASS CONDUIT
6	05/29/2019	PROPOSED UNDERPASS CONDUIT



**SITE DEVELOPMENT PLAN**  
 HG MND 33  
 MARSHALL COUNTY  
 WEST VIRGINIA

PREPARED FOR:  
 HG ENERGY II APPALACHIA, LLC  
 PARKERSBURG, WEST VIRGINIA

APPROVED: MFP 05/16/2019  
 DRAWN: MFP 07/26/2019  
 PROJECT NO: 4500-1002(03)

**Penn E&R**  
 Environmental & Remediation, LLC  
 311 MAIN COURT, PITTSBURGH, PA 15201  
 412-722-1222

**WEST VIRGINIA** **CALL BEFORE YOU DIG!**

Dial 811 or 800.245.4848  
 www.wv.gov/811

DRAWING NUMBER: PADDYB 37-01  
 SHEET 2B

COORDINATES: WEST VIRGINIA STATE PLANES, NAD 83 DATUM, NORTH ZONE

S:\PROJECT FILES\4500-1002(03)\100 MND 33\ENVIRONMENT\45002857.MXD 23. EXAMINED: P.M.D., L.M.C./6/28/2018 1:36 PM