



west virginia department of environmental protection

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

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

Friday, February 7, 2020
WELL WORK PERMIT
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for ANTONIO 1206 N-5H
47-033-05982-00-00

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

A blue ink signature of James A. Martin, written in a cursive style.

Operator's Well Number: ANTONIO 1206 N-5H
Farm Name: CHARLES R. & FRANKLIN I₄
U.S. WELL NUMBER: 47-033-05982-00-00
Horizontal 6A New Drill
Date Issued: 2/7/2020

Promoting a healthy environment.

PERMIT CONDITIONS

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

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

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

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

1) Well Operator: HG Energy II Appalachia, LLC 494519932 Harrison Grant West Milford 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Antonio 1206 N-5H Well Pad Name: Antonio 1206

3) Farm Name/Surface Owner: HG Energy II Appalachia, LLC Public Road Access: Hackers Creek Rd @ SR 19

4) Elevation, current ground: 1364' Elevation, proposed post-construction: 1350'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus at 7081'/7260' and 179' in thickness. Anticipated pressure at 4314#.

8) Proposed Total Vertical Depth: 7252'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 20,980'

11) Proposed Horizontal Leg Length: 12,131'

12) Approximate Fresh Water Strata Depths: 135', 480', 637', 731'

13) Method to Determine Fresh Water Depths: Nearest offset well data

14) Approximate Saltwater Depths: No SW depths found on WR-35 for offset wells, salt water expected to be below elevation

15) Approximate Coal Seam Depths: 623', 1010' to 1015'

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

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

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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SDW
10/31/2019

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Depth: _____
Seam: _____
Owner: _____

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18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	New	LS	157.5	120'	120'	Drilled In
Fresh Water/Coal	20"	NEW	J-55	94	1100'	1100'	40% excess, CTS
Intermediate 1	13 3/8"	NEW	J-55	68	2200'	2200'	40% excess, CTS
Intermediate 2	9 5/8"	NEW	J-55	40	3000'	3000'	40% excess tail, CTS
Production	5 1/2"	NEW	P-110	23	20980'	20980'	20% excess tail, CTS
Tubing							
Liners							

*SDW
10/31/2019*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	.500				Drilled In
Fresh Water/Coal	20"	24"	.438	2110	1200	Type 1, Class A	40% excess yield = 1.20, CTS
Intermediate 1	13 3/8"	17 1/2"	.480	3450		Type 1/Class A	Lead 40% excess, Tail 0% excess
Intermediate 2	9 5/8"	12 1/4"	.395	3950		Type 1/Class A	Lead 40% excess, Tail 0% Excess
Production	5 1/2"	8 1/2"	.415	16240	12500	Type 1/Class A	20% excess yield = 1.19, tail yield 1.3
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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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 7252 feet. Drill horizontal leg to estimated 12,131' lateral length, 20,980' TMD. Hydraulically fracture stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface. We plan to run an ECP above the Gantz/Dominion Storage interval to aid in sealing off and isolating the storage interval.

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

The stimulation will be completed with multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list. Maximum pressure not to exceed 12,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 68.187 acres

22) Area to be disturbed for well pad only, less access road (acres): 11.058 acres

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing.
Freshwater - centralized every 3 joints to surface.
Coal - Bow Spring on every joint, will also be running ACP for isolating storage zone
Intermediate - Bow Spring on first 2 joints then every third joint to 100' from surface.
Production - Run 1 spiral centralizer every 5 joints from the top of the curve to surface. Run 1 spiral centralizer every 3 joints from the 1st 5.5' long joint to the top of the curve.

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

Conductor - N/A. Casing to be drilled in w/ Dual Rotary Rig.
Fresh Water - 15.8 ppg PNE-1 + 3% bwoc CaCl₂ 40% Excess Yield = 1.20. CTS
Intermediate 1 - *Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS*
Intermediate 2 - *Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl zero% Excess. CTS*
Production - *Lead: 14.5 ppg POZ.PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020% ExcessLead Yield=1.19Tail Yield=1.94CTS*

25) Proposed borehole conditioning procedures:

Conductor - Ensure the hole is clean at TD.
Fresh Water - Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.
Coal - Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.
Intermediate - Once casing is at setting depth, Circulate and condition mud at TD. Circulate a minimum of one hole volume prior to pumping cement.
Production - 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.

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*Note: Attach additional sheets as needed.

Antonio 1206 Well Pad (N-1H, N-2H, N-3H, N-4H, N-5H)
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>Calcium magnesium oxide</td> <td>90 - 100</td> <td>37247-91-9</td> </tr> </tbody> </table>	Ingredient name	%	CAS number	Calcium magnesium oxide	90 - 100	37247-91-9												
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MPA-170	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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List of Frac Additives by Chemical Name and CAS #**Antonio 1206 Well Pad (N-1H to N-5H)**

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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1206 N-5H
Marcellus Shale Horizontal
Harrison County, WV

Ground Elevation		1206 N-5H SHL		1206 N-5H LP		1206 N-5H BHL		1206 N-5H SHL		1206 N-5H LP		1206 N-5H BHL	
Azim		1350'		340.539'		1350'		340.539'		1350'		340.539'	
WELLBORE DIAGRAM	HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS			
X	30"	30" 157.5# LS	Conductor	0	120	AIR	N/A, Casing to be drilled in w/ Dual Rotary Rig	N/A	Ensure the hole is clean at TD.	Conductor casing = 0.5" wall thickness			
X	24"	20" 94# J-55	Fresh Water	0	135, 480, 637, 731	AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS	Centralized every 3 joints to surface	Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.	Surface casing = 0.438" wall thickness Burst=2110 psi			
X	17.5"	13-3/8" 68# J-55 BTC	Coal	1010	1015	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 Spring on every joint <i>*will also be running ACP for isolating storage zone*</i>	Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.480" wall thickness Burst=3450 psi			
X	12.25"	9-5/8" 40# J-55 BTC	Little/Big Lime Injun / Gantz (Storage) Intermediate 1	1555 / 1596 1658 / 1985 0	1575 / 1658 1770 / 2050 2200	AIR / KCL-Salt Polymer	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 Spring on first 2 joints then every third joint to 100' form surface	Once casing is at setting depth, Circulate and condition mud at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.395" wall thickness Burst=3950 psi			
X	8.5" Vertical	5-1/2" 23# P-110 HP CDC HTQ	Fifty / Thirty Foot Gordon Stray / Gordon 5th Sand Bayard / Warren Intermediate 2 Speechley Balltown Benson	2095 / 2182 2232 / 2272 2515 2591 / 2891 0 3204 3438 4505	2157 / 2200 2272 / 2385 2527 2601 / 2891 3000 3224 3448 4525	AIR / KCL-Salt Polymer	Lead: 14.5 ppg POZ:PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/sk FP13L + 0.3% bwoc MPA170 Tail: 14.8 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA170 20% Excess Lead Yield=1.19 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=16240 psi Note: Actual centralizer schedules may be changed due to hole conditions			
X	8.5" Curve	5-1/2" 23# P-110 HP CDC HTQ	Rhinestreet Cashaqua Middlesex West River Burkett Tully Limestone Hamilton Marcellus	6395 6651 6751 6783 6854 6864 6864 6972 7081	6651 6751 6783 6854 6864 6972 7081	11.5ppg-12.5ppg SOBM	Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve.	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=16240 psi Note: Actual centralizer schedules may be changed due to hole conditions				
X	8.5" Lateral	5-1/2" 23# P-110 HP CDC HTQ	TMD / TVD (Production) Onondaga	7081 7260 20980 7260	7260 7260 7252 7260	11.5ppg-12.5ppg SOBM	Lead Yield=1.19 Tail Yield=1.94 CTS	Run 1 spiral centralizer every 3 joints from the 1st 5.5" long joint to the top of the curve.	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=16240 psi Note: Actual centralizer schedules may be changed due to hole conditions			

LP @ 7252' TVD / 8849' MD
8.5" Hole - Cemented Long String
5-1/2" 23# P-110 HP CDC HTQ
+/-12131' ft Lateral
TD @ +/-7252' TVD +/-20980' MD
X=centralizers

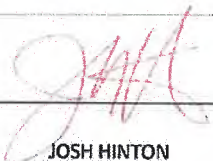
PROPOSAL TO DRILL WITHIN DOMINION TRANSMISSION STORAGE FIELD

FIELD/ZONES: DOMINION FINK/KENNEDY/LOST CREEK -GANTZ SAND


WELL NAME: Antonio 1206 N-5H

Well # Antonio 1206 N-5H


DISTRICT/COUNTY/STATE: Grant/Harrison/WV

Submitted 
JOSH HINTON
HG ENERGY, LLC

DATE 11-13-19

Approved 
Dominion Energy Transmission

DATE 11/14/19

Approved 
Dominion Energy Transmission

DATE 11/15/19

Comments:

HG Energy has submitted this Casing & Cementing diagram and Drilling Plan to Dominion Transmission for Review. This signed document acknowledges that Dominion has reviewed the proposed casing program and the well's location within the Fink/Kennedy/Lost Creek storage field. This acknowledgement also confirms the proposed casing program is accurate to the proper storage zone as provided by HG Energy, LLC

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4703105982

WW-6B
(04/15)

API NO. 47- _____
OPERATOR WELL NO. Antonio 1206 N-5H
Well Pad Name: Antonio 1206

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

- 1) Well Operator: HG Energy II Appalachia, LLC 494519932 Harrison Grant West Milford 7.5'
Operator ID County District Quadrangle
- 2) Operator's Well Number: Antonio 1206 N-5H Well Pad Name: Antonio 1206
- 3) Farm Name/Surface Owner: HG Energy II Appalachia, LLC Public Road Access: Hackers Creek Rd @ SR 19
- 4) Elevation, current ground: 1364' Elevation, proposed post-construction: 1350'
- 5) Well Type (a) Gas Oil _____ Underground Storage _____
Other _____
(b) If Gas Shallow Deep _____
Horizontal *SDW*
- 6) Existing Pad: Yes or No No *10/31/2019*
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus at 7081'/7260' and 179' in thickness. Anticipated pressure at 4314#.
- 8) Proposed Total Vertical Depth: 7252'
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 20,980'
- 11) Proposed Horizontal Leg Length: 12,131'
- 12) Approximate Fresh Water Strata Depths: 135', 480', 637', 731'
- 13) Method to Determine Fresh Water Depths: Nearest offset well data
- 14) Approximate Saltwater Depths: NA
- 15) Approximate Coal Seam Depths: 623', 1010' to 1015'
- 16) Approximate Depth to Possible Void (coal mine, karst, other): None
- 17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No
- (a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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WW-6B
(04/15)

API NO. 47-
OPERATOR WELL NO. Antonio 1206 N-5H
Well Pad Name: Antonio 1206

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	New	LS	157.5	120'	120'	Drilled in
Fresh Water/Coal	20"	NEW	J-55	94	1100'	1100'	40% excess, CTS
Intermediate 1	13 3/8"	NEW	J-55	68	2200'	2200'	40% excess, CTS
Intermediate 2	9 5/8"	NEW	J-55	40	3000'	3000'	40% excess tail, CTS
Production	5 1/2"	NEW	P-110	23	20980'	20980'	20% excess tail, CTS
Tubing							
Liners							

SDW
10/31/2019

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	.500				Drilled In
Fresh Water/Coal	20"	24"	.438	2110	1200	Type 1, Class A	40% excess yield = 1.20, CTS
Intermediate 1	13 3/8"	17 1/2"	.480	3450		Type 1/Class A	Load 40% excess, Tail 5% excess
Intermediate 2	9 5/8"	12 1/4"	.395	3950		Type 1/Class A	Load 40% excess, Tail 5% excess
Production	5 1/2"	8 1/2"	.415	16240	12500	Type 1/Class A	30% excess yield = 1.18, tail yield
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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Environmental Protection

WW-6B
(10/14)

API NO. 47- _____ -
OPERATOR WELL NO. Antonio 1206 N-5H
Well Pad Name: Antonio 1206

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 7252 feet. Drill horizontal leg to estimated 12,131' lateral length, 20,980' TMD. Hydraulically fracture stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface. We plan to run an ECP above the Gantz/Dominion Storage interval to aid in sealing off and isolating the storage interval.

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

The stimulation will be completed with multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list. Maximum pressure not to exceed 12,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 68.187 acres

22) Area to be disturbed for well pad only, less access road (acres): 11.058 acres

23) Describe centralizer placement for each casing string:

No centralizers will be used with annular casing.
Fracturing - conventional every 3 joints in section.
Case - Run casing on every 3rd joint, 1st joint for every ACP for landing string case.
Intermediate - Run casing on first 2 joints then every 2nd joint to 100' from surface.
Production - Run 1 open conductor every 5 joints from the top of the case to surface. Run 1 open conductor every 3 joints from the 1st 5.5' long joint to the top of the case.

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

Conductor - 95% Casing to be cemented in at least 100' from the top.
Fresh Water - 15.0 gpp PMS-1 + 0.5% base CMC 49% Base Water = 1.5% CTR
Intermediate 1 - 1.5% base PMS-1 + 2.5% base CMC49% Base Water / FW: 15.0 gpp PMS-1 + 2.5% base CMC 49% Base Water, 0.5%
Intermediate 2 - 1.5% base PMS-1 + 2.5% base CMC49% Base Water / FW: 15.0 gpp PMS-1 + 2.5% base CMC 49% Base Water, 0.5%
Production - 1.5% base PMS-1 + 2.5% base CMC49% Base Water / FW: 15.0 gpp PMS-1 + 2.5% base CMC 49% Base Water, 0.5%
Production - 1.5% base PMS-1 + 2.5% base CMC49% Base Water / FW: 15.0 gpp PMS-1 + 2.5% base CMC 49% Base Water, 0.5%

25) Proposed borehole conditioning procedures:

Drillwater - Ensure the hole is clean at TD.
Fresh Water - Once casing is at desired depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.
Case - Once casing is at desired depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.
Intermediate - Once casing is at desired depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.
Production - Once on backfilled well casing, circulate at maximum pump rate for at least 24 hours before well, or until casing and pump pressures indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.

*Note: Attach additional sheets as needed.

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			1206 N-5H Marcellus Shale Horizontal Harrison County, WV								
Ground Elevation	1350'		1206 N-5H SHL 1206 N-5H LP 1206 N-5H BHL								
Azim											
WELLBORE DIAGRAM											
HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS		
30"	30" 157.5# LS	Conductor	0	120	AIR	N/A, Casing to be drilled in w/ Dual Rotary Rig	N/A	Ensure the hole is clean at TD.	Conductor casing = 0.5" wall thickness		
24"	20" 94# J-55	Fresh Water Coal	0 1010	135, 490, 637, 731 1015	AIR	15.6 ppg PNE-1 + 3% bwoc CaCl 40% Excess Yield=1.20 / CTS	Centralizes every 3 joints to surface	Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.	Surface casing = 0.430" wall thickness Burst=2110 psi		
17.5"	13-3/8" 66# J-55 BTC	LittleBig Lime Injun / Gambel (Storage)	1555 / 1598 1658 / 1685	1676 / 1686 1770 / 2000	AIR / KCL Salt Polymer	Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl 200% Excess, CTS	Bow Spring on every joint. *Will also be turning ACP for Isolating storage zone*	Once casing is at setting depth, Circulate and condition at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.480" wall thickness Burst=3450 psi		
12.25"	8.50" 40# J-55 BTC	Flinty / Thinly Foot Gordon Slaty / Gordon Shl Sand Bayard / Warren Intermediate 2	2086 / 2182 2232 / 2272 2515 2591 / 2691 0	2167 / 2200 2272 / 2385 2527 2681 / 2691 3000	AIR / KCL Salt Polymer	Lead: 16.4 ppg PNE-1 + 2.5% bwoc CaCl 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl 200% Excess, CTS	Bow Spring on first 2 joints then every third joint to 100' from surface	Once casing is at setting depth, Circulate and condition mud at TD. Circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.385" wall thickness Burst=3950 psi		
8.5" Vertical		Speechley Bulltown Benson	3204 3438 4505	3224 3418 4525	8.0ppg SOBIM	Lead: 14.5 ppg POZ-PNE-1 + 0.3% bwoc R3 + 1% bwoc EC1 + 0.75 gal/ksk FFP3L + 0.3% bwoc MPA170 Tail: 14.3 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/ksk FFP3L + 50% bwoc ASCA1 + 0.5% bwoc MPA170 Lead Yield=1.13 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=16200 psi Note: Actual centralizer schedules may be changed due to hole conditions		
8.5" Curve 5-12" 23# P-110 HP CDC HTQ		Rhamestreat Cashagua Middlesex West River Burkett Tully Limestone Hamilton Marcelus	6385 6661 6751 6783 6854 6864 6864 6972 7061 7260	6651 6751 6783 6854 6864 6972 7061 7260	11.5ppg-12.5ppg SOBIM		Run 1 spiral centralizer every 3 joints from the top of the curve to surface.				
8.5" Lateral		TMD / TVD (Production) Onondaga	20980 7260	7282 7260	11.5ppg-12.5ppg SOBIM						
LP @ 7252' TVD / 6649' MD						6.5" Hole - Cemented Long Siding 5-12" 23# P-110 HP CDC HTQ					
4-12' 13" Lateral						TD @ 47552' TVD 47-20980' MD X=Centralizers					

HG Energy II Appalachia, LLC
Well No. 1206 N-5H


Page 1 of 4

2,099' to Top Hole

BTM LATITUDE 39 - 12 - 30
TOP LATITUDE 39 - 10 - 00

3,269' to Bottom Hole

LONGITUDE 80 - 22 - 30 to Top Hole
3,147' to Top Hole
5,786' to Bottom Hole



Legend

- ⊙ Proposed gas well
- ⊙ Well Reference, as noted
- ⊙ Monument, as noted
- ⊙ Existing Well, as noted
- ⊙ Existing Plugged Well, as noted
- ⊙ Digitized Well, as noted
- Surface boundary (approx.)
- Interior surface tracts (approx.)
- Creek or Drain
- Existing Road

Notes:

Well No. 1206 N-5H
UTM NAD 1983 (USSF)
Top Hole Coordinates
N: 14,220,788.57'
E: 1,815,934.19'
Landing Point Coordinates
N: 14,221,878.10'
E: 1,818,317.46'
Bottom Hole Coordinates
N: 14,233,312.11'
E: 1,814,277.11'

Well Location References

5/8" Iron rebar
47-033-00775
Proposed Well 1206 N-5H
Not to Scale 1206 Pad
5/8" Iron rebar

Notes: Well No. 1206 N-5H
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Top Hole coordinates
Latitude: 39°09'28.89"
Longitude: 80°22'56.65"
UTM Zone 17, NAD 1983
Bottom Hole coordinates
Latitude: 39°11'32.80"
Longitude: 80°23'11.54"
UTM Zone 17, NAD 1983
Top Hole Coordinates
N: 4,334,606.028m
E: 653,375.928m
Bottom Hole Coordinates
N: 4,336,322.208m
E: 652,992.789m

Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Wellhead Layout (Not to Scale)

Proposed Well 1206 N-5H
1206 N-4H
1206 N-3H
1206 N-2H
1206 N-1H
S 07°23' E 287'
N 82°03' E 18'
1206 S-10H
1206 S-9H
1206 S-8H
1206 S-7H
1206 S-6H

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 rules issued and prescribed by the Department of Environmental Protection.

Dwayne D. Matheny
Dwayne D. Matheny, P.S. 2070

47-033-00621
Note: 1 Pond and Zero water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 825' of the center of the well pad.

47-033-00578
47-033-01215
47-033-00629
47-033-00595
47-033-00635
47-033-00743

Proposed Well 1206 N-5H Top Hole
3000'

Tag	Bearing	Dist.	Description
L1	N 75°43' W	3,458.7'	5/8" Rebar
L2	N 63°34' E	1,563.4'	47-033-00629
L3	S 89°06' E	2,935.4'	1" Iron pipe
L4	S 71°42' E	1,563.5'	47-033-01215
L5	N 68°37' E	2,988.8'	Landing point

FILE NO: 09-36-12-G-H-19
DRAWING NO: 1206 N-5H Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Bridgeport, WV

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

DATE: October 16 20 19
OPERATOR'S WELL NO. 1206 N-5H
API WELL NO
47 - 033 -
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek
DISTRICT: Grant
SURFACE OWNER: Charles R. & Franklin L. Sutton
ROYALTY OWNER: Charles R. Sutton LEASE NO: ACREAGE: 30.00
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,252' TVD 20,980' MD

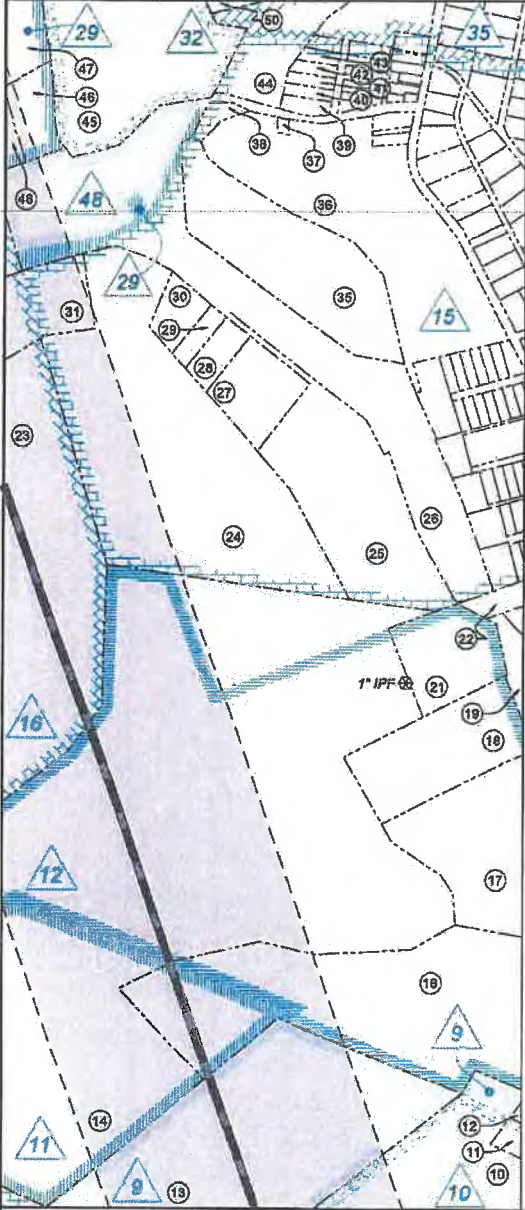
WELL OPERATOR: HG Energy II Appalachia, LLC
ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

DESIGNATED AGENT: Diane C. White
ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

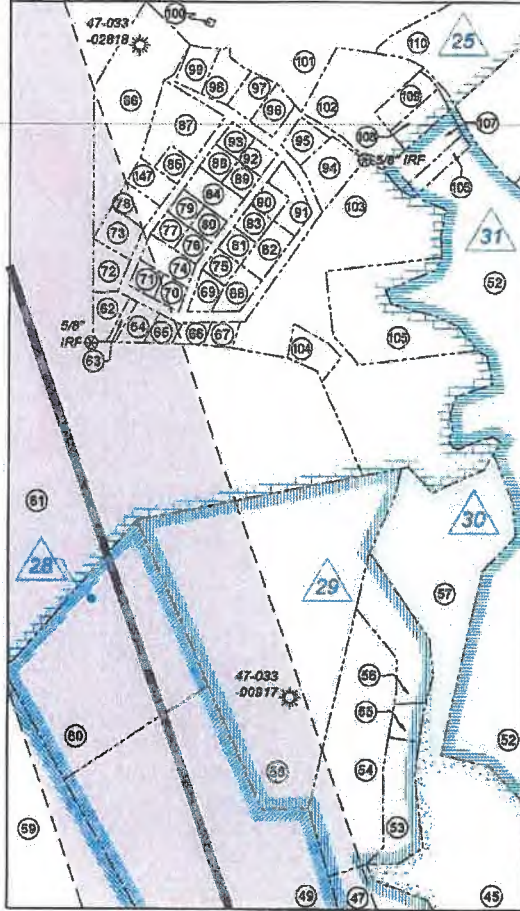
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Detail 1 - 1" = 500'



Detail 2 - 1" = 500'



FILE NO: 06-36-12-G-H-19
DRAWING NO: 1206 N-5H Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Bridgeport, WV

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

DATE: October 16 20 19
OPERATOR'S WELL NO. 1206 N-5H
API WELL NO
47 - 033 -
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek
DISTRICT: Grant

QUADRANGLE: West Milford
COUNTY: Harrison
ACREAGE: 30.00

SURFACE OWNER: Charles R. & Franklin L. Sutton

ROYALTY OWNER: Charles R. Sutton

LEASE NO: ACREAGE: 30.00

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,252' TVD 20,980' MD

WELL OPERATOR: HG Energy II Appalachia, LLC

DESIGNATED AGENT: Diane C. White

ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

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4705 03092



No.	TM / Par	Owner	Bk / Pg	Ac.	No.	TM / Par	Owner	Bk / Pg	Ac.
1	426 / 72	Charles R. & Franklin L. Sutton	1301 / 98	30.00	64	406A / 32	Patrick & Amanda Gaughan	1391 / 1240	0.30
2	426 / 71	Antonio P., LLC	1503 / 291	233.35	65	406A / 31	Patrick & Amanda Gaughan	1391 / 1240	0.21
3	446 / 3	Antonio P., LLC	1503 / 291	200.00	66	406A / 40	Earl Layton	1519 / 1151	0.21
4	446 / 4	Bob R. Blankenship	1310 / 740	27.87	67	406A / 41	Earl Layton	1519 / 1151	0.21
5	426 / 74	Harriet June Ferree	1514 / 430	60.30	68	406A / 42	Torne Crane	1296 / 323	0.35
6	426 / 76	Francis Phares, et al	W165 / 606	7.09	69	406A / 26	Louis & Lena Romano	1068 / 830	0.27
7	426 / 77	Kenneth E. Rigdon	1569 / 903	28.29	70	406A / 27	Diana Swiger	1270 / 842	0.21
8	426 / 84	Eugene Aikins, Jr.	1271 / 1183	2.00	71	406A / 30	Diana Swiger	1270 / 842	0.21
9	426 / 66	G. Thomas Smith	1277 / 1174	29.79	72	406A / 37	Brian Rowe	1445 / 1006	0.43
10	426 / 42	Cathleen Spiller	1405 / 449	11.69	73	406A / 39	Bacel L. & Alma S. Rowe	1262 / 1133	0.43
11	426 / 42.1	Timothy M. & Minnie C. Hyde	1281 / 908	0.57	74	406A / 28	John & Erin Slout	1480 / 430	0.43
12	426 / 43.1	Timothy M. & Minnie C. Hyde	1281 / 908	0.62	76	406A / 25	Vincent & Amber Olivario	1600 / 678	0.22
13	426 / 41	Charles R. & Franklin L. Sutton	1301 / 98	15.00	77	406A / 8	Mary Sue Calvert	1348 / 380	0.22
14	426 / 40	Charles R. & Franklin L. Sutton	1332 / 28	67.67	77	406A / 10	Mary Sue Haas	1255 / 35	0.23
15	426 / 63	Charles R. & Franklin L. Sutton	1301 / 98	51.33	78	406A / 16	Bacel L. & Alma S. Rowe	1099 / 493	0.33
16	426 / 44	Charles R. & Franklin L. Sutton	1332 / 28	17.73	79	406A / 11	David & Brenda Morrison	1456 / 1093	0.23
17	426 / 45	Constance & Gary I. Saunders, II	1591 / 100	12.43	80	406A / 8	David & Brenda Morrison	1456 / 1093	0.22
18	426 / 46	Constance & Gary I. Saunders, II	1591 / 100	4.00	81	406A / 24	Vincent & Amber Olivario	1670 / 408	0.23
19	426 / 47	Constance & Gary I. Saunders, II	1591 / 100	1.00	82	406A / 33	James M. & Megan E. Kennedy	1694 / 1121	0.43
20	426 / 75	Dale & Lapha Ables, et al	F119 / 585	3.00	83	406A / 23	Timothy P. Ross	1349 / 303	0.23
21	426 / 28	Constance & Gary I. Saunders, II	1591 / 100	2.32	84	406A / 7	Charles & Naomi Burkhammer	1506 / 1150	0.46
22	426 / 30	Daniel R. & Lana M. Messenger	1176 / 1001	0.62	85	406A / 17	Maxine N. Kendall	1242 / 385	0.23
23	426 / 13	Antonio P., LLC	1503 / 291	149.74	86	406A / 21.3	Thomas J. & Marsha L. Romine	1510 / 304	3.17
24	426 / 23	Antonio P., LLC	1503 / 291	14.89	87	406A / 19	Kathryn M. Fittro	1191 / 555	1.27
25	426 / 26	David L. Bowles	1518 / 1298	6.05	88	406A / 13	James T. & Nancy L. Karis	1174 / 835	0.23
26	426 / 27	Antonio P., LLC	1503 / 291	6.53	89	406A / 6	Jerry M. Hughes	1086 / 649	0.23
27	426 / 24	Ronald H. & Katherine R. Dever	1436 / 1133	1.76	90	406A / 22	James S. Skinner	1515 / 1063	0.47
28	426 / 23	Virginia M. Davison	1349 / 61	0.62	91	406A / 21	James S. Skinner	1515 / 1063	0.47
29	426 / 22	Virginia M. Davison	1349 / 61	0.37	92	406A / 5	Jerry Hughes	1095 / 940	0.23
30	426 / 21	Virginia M. Davison	1349 / 61	0.75	93	406A / 14	James & Nancy Karis	1089 / 939	0.23
31	426 / 17	Antonio P., LLC	740 / 435	2.42	94	406A / 35	Harley R. & Linda L. Coberly	1229 / 315	0.79
32	426 / 16	Antonio P., LLC	1503 / 291	3.02	95	406A / 20	Stephen C. & Shiela M. Nelson	1258 / 1097	0.35
33	426 / 15	Antonio P., LLC	1503 / 291	3.22	96	406A / 1	Ernie & Linda Morgan	1286 / 35	0.35
34	426 / 2	Antonio P., LLC	1503 / 291	26.13	97	406A / 2	Ernie & Linda Morgan	1286 / 35	0.35
35	426 / 20	Grafton Coal Company	1016 / 223	6.09	98	406A / 3	David C. & Nancy C. Nester	1079 / 620	0.44
36	426 / 34.1	Jacob D. & Nancy L. Post	1023 / 150	9.27	99	406A / 4	David C. & Nancy C. Nester	1079 / 620	0.42
37	426 / 34.4	Grant Union Public Service	1170 / 132	0.03	100	406 / 21.6	Grant Union Public Service District	1166 / 601	0.91
38	426 / 34.3	Judith A. Eaton	1400 / 929	0.24	101	406 / 21.8	Brian K. & Jayme E. Lowther	1506 / 806	65.66
39	2005 / 46	Fleasie B. Cogg	W176 / 144	0.17	102	406 / 21.7	Eva L. Scranage	1427 / 685	2.26
40	2005 / 48	Donald J. & Sherry A. Cavalier	1433 / 646	0.12	103	406 / 21.1	John & Josh Harris	1564 / 1033	9.66
41	2005 / 38	Robert M. Tangari	1193 / 686	0.40	104	406 / 21.5	Monongahela Power Company	1083 / 210	0.45
42	2005 / 24	Robert M. Tangari	1193 / 686	0.10	105	406 / 21.4	Monongahela Power Company	1083 / 210	2.76
43	2005 / 13	Robert M. Tangari	1193 / 686	0.09	106	406 / 24.2	Steven & Shanna Bolyard	1568 / 892	0.32
44	426 / 10	Judith A. Eaton	1400 / 929	2.73	107	406 / 24.1	Steven & Shanna Bolyard	1568 / 892	0.72
45	426 / 8	Antonio P., LLC	1503 / 291	19.46	108	406 / 22	David L. & Eva L. Scranage	952 / 204	0.38
46	426 / 7	Antonio P., LLC	1503 / 289	1.10	109	406 / 22.1	David L. & Eva L. Scranage	912 / 274	0.46
47	426 / 5	Antonio P., LLC	1503 / 281	5.13	110	406 / 21	Robert K. Lowther	1427 / 555	17.44
48	426 / 6	Antonio P., LLC	1503 / 289	0.80	111	406 / 8	Maxson Helen Louise, et al	1314 / 102	176.16
49	426 / 4	Antonio P., LLC	1503 / 291	22.04	112	406 / 20	Seventh Day Baptist Church	15 / 312	1.00
50	426 / 9	Antonio P., LLC	1586 / 26	5.88	113	406 / 19	Antonio P., LLC	1503 / 291	23.49
51	406 / 37	Gregory & Jacqueline Abraham	1301 / 236	3.79	114	406 / 19.1	Harrison County BOE	1240 / 27	13.91
52	406 / 24	Connie Ferguson & Clarence H. Woodford, II	W163 / 1145	180.49	115	406 / 16.5	Bridgette A. & Richard L. Ward	1338 / 137	0.17
53	406 / 35	Banish Carl Estate	667 / 426	1.27	116	406 / 18.2	Bridgette A. & Richard L. Ward	1217 / 862	2.05
54	406 / 32	Antonio P., LLC	1503 / 309	4.38	117	406 / 16	Bridgette A. & Richard L. Ward	1338 / 137	1.58
55	406 / 34	Antonio P., LLC	1421 / 1185	0.26	118	406 / 18.4	Bridgette A. & Richard L. Ward	1338 / 137	0.75
56	406 / 33	Antonio P., LLC	1426 / 35	1.52	119	406 / 18.3	Harrison County BOE	1230 / 1024	5.90
57	426 / 8	Antonio P., LLC	1503 / 291	19.48	120	406 / 18.1	Bridgette A. & Richard L. Ward	1217 / 862	0.94
58	406 / 31	Antonio P., LLC	1503 / 291	14.65	121	406 / 8.1	Criss L. Bragg	1399 / 1240	0.91
59	406 / 29	Antonio P., LLC	1503 / 291	19.43	122	406 / 7.2	Richard A. & Wilma D. Fenstermacher	1075 / 1031	1.00
60	406 / 30	Antonio P., LLC	1503 / 291	8.42	123	406 / 7.1	Michael L. & Clenta V. Bond	1087 / 304	1.00
61	406 / 28	Antonio P., LLC	1503 / 291	176.82	124	406 / 7.8	Michael L. & Clenta V. Bond	1331 / 616	0.36
62	406A / 38	Brian Rowe	1445 / 1006	0.21	125	406 / 7.11	Michael L. & Clenta V. Bond	1366 / 584	0.05
63	406A / 39	Patrick & Amanda Gaughan	1391 / 1240	0.12	126	406 / 7.14	Mark A. Bond	1388 / 587	2.68

FILE NO: 08-36-12-G-H-19
 DRAWING NO: 1206 N-5H Well Plat
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: CORS, Bridgeport, WV



DATE: October 16, 2019
 OPERATOR'S WELL NO. 1206 N-5H
 API WELL NO
 47 - 033 -
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek
 DISTRICT: Grant QUADRANGLE: West Millford
 COUNTY: Harrison
 SURFACE OWNER: Charles R. & Franklin L. Sutton ACREAGE: 30.00
 ROYALTY OWNER: Charles R. Sutton LEASE NO: ACREAGE: 30.00
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 7,262' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 20,980' MD

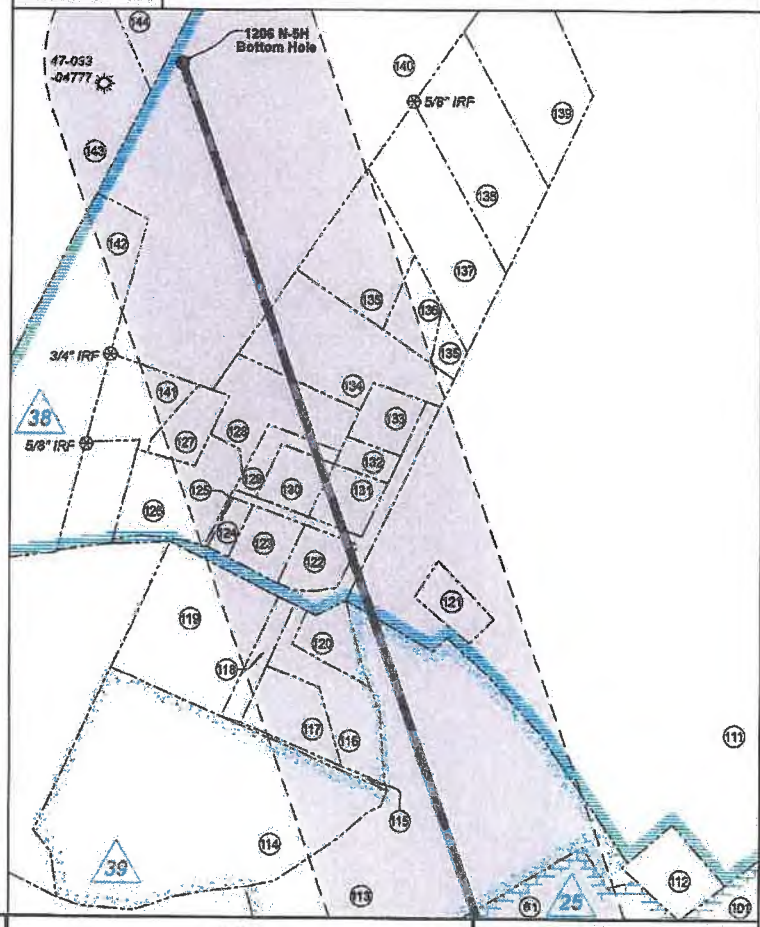
WELL OPERATOR: HG Energy II Appalachia, LLC DESIGNATED AGENT: Diane C. White
 ADDRESS: 5280 Dupont Road ADDRESS: 5280 Dupont Road
 Parkersburg, WV 26101 Parkersburg, WV 26101

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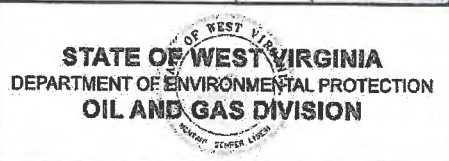
No.	TM / Par	Owner	Bk / Pg	Ac.	No.	TM / Par	Owner	Bk / Pg	Ac.
127	406 / 7.10	Jose A. & Lori E. Moreno	1361 / 616	1.00	137	406 / 7.18	Brent C. & Julia S. Fenstermacher	1391 / 582	4.26
128	406 / 7.18	Jose A. & Lori E. Moreno	1369 / 619	2.60	138	406 / 7.15	Michael L. & C. Vanessa Bond	1393 / 1095	4.27
129	406 / 7.6	Larry F. & Cynthia B. Lawrence	1317 / 167	0.70	139	406 / 7.13	Michael L. & C. Vanessa Bond	1368 / 876	4.26
130	1081 / 530	Larry F. & Cynthia B. Lawrence	1081 / 530	1.00	140	406 / 6	Richard K. Williams	1344 / 966	40.00
131	406 / 7.4	David L. & Margaret L. Stout	1428 / 135	1.00	141	406 / 7	Jose A. & Lori E. Moreno	1368 / 627	1.82
132	406 / 7.9	Kim & Aaron Campbell	1362 / 1269	0.50	142	406 / 5	Richard K. Williams	1344 / 966	10.97
133	406 / 7.7	Brian E. & Shawna M. Hathaway	1385 / 425	1.00	143	406 / 2	Arden L. & Wendy D. Skidmore	1599 / 779	60.00
134	406 / 7.17	Brian E. & Shawna M. Hathaway	1386 / 425	4.26	144	406 / 1	John L. Slenger	1308 / 676	11.29
135	406 / 7.12	Richard A. & Wilma D. Fenstermacher	1360 / 571	4.27	145	386 / 109	John L. Slenger	1308 / 668	7.44
136	406 / 7.19	Carrie L. & Peter F. Sagun	1376 / 750	1.00	146	406 / 8	John L. & Mary E. Slenger	1560 / 205	309.00
					147	406A / 16	Becel L. & Alma S. Rowe	1099 / 493	0.36

Detail 3 - 1" = 500'



ID	Lease
3	C. Earl Snider, et al
4	Allan Bak, et al
5	Allan Bak
6	Marcella R. Bond, et al
7	Mary E. Kennedy, et al
8	Lillie Gifford, et al
9	Orpha G. Davis, et al
10	Allan Bell
11	Hugh C. Davis, et al
12	Hugh C. Davis, et al
13	HG Energy II Appalachia, LLC
14	UNLEASED
15	A.W. Smith
16	Lewis M. Stout, et al
20	Porter Maxwell, et al
26	Marcella R. Bond, et al
27	H.D. Smith, et al
28	Hattie Cummings, et al
29	Dorothy Sinclair, et al
30	H.D. Smith, et al
31	C.H. Woodford, et al
32	Hattie B. Cummins, et al
34	J.O. Butcher, et al
35	E.S. Swisher, et al
37	Loie C. Stout, et al
38	M.H. Vanhorn, et al
39	HG Energy II Appalachia, LLC
40	UNLEASED
48	Hattie B. Cummins
55	Lloyd Stout
56	Lillie D. Gifford, et al
57	M.C. McWhorter, et al

FILE NO: 06-36-12-G-H-19
DRAWING NO: 1206 N-5H Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY:
Submeter
PROVEN SOURCE OF ELEVATION:
CORS, Bridgeport, WV



DATE: October 16 20 19
OPERATOR'S WELL NO. 1206 N-5H
API WELL NO
47 - 033 -
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek
DISTRICT: Grant QUADRANGLE: West Millford
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ROYALTY OWNER: Charles R. Sutton LEASE NO: ACREAGE: 30.00
ACREAGE: 30.00

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,252' TVD
20,980' MD

WELL OPERATOR: HG Energy II Appalachia, LLC DESIGNATED AGENT: Diane C. White
ADDRESS: 5260 Dupont Road ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101

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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) Middle West Fork Creek Quadrangle West Milford 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 _____)

SDW
10/31/2019

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, Air/KCL, SOB.M, Horizontal - SOB.M

-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.

Company Official Signature *Diane White*

Company Official (Typed Name) Diane White

Company Official Title Agent

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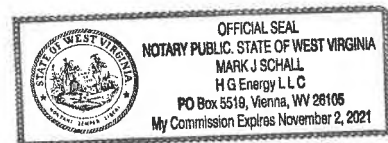
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Subscribed and sworn before me this 27th day of September, 2019

Mark J Schall Notary Public

My commission expires 11/2/2021

WV Department of
Environmental Protection



HG Energy II Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 68.187 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	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	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: [Signature]

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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WV Department of Environmental Protection

Title: Oil & Gas Inspector Date: 10/31/2019

Field Reviewed? (X) 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 (ECSR)
8287 US Highway 19
Cochranston, PA 16314
814-425-7778

Disposal Locations:

Apex Environmental, LLC Permit # 06-08488
11 County Road 78
Amsterdam, OH 43908
740-548-4888

Westmoreland Waste, LLC Permit # 100277
1111 Conner Lane
Belle Vernon, PA 15012
724-929-7694

Sycamore Landfill Inc. Permit #880-079001 05-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2611

Max Environmental Technologies, Inc. Facility Permit # PAD004885146 / 301071
233 Max Lane
Vulcan, 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 # 100668
1901 Park Side Drive
Elizabeth, PA 15087
412-384-7569

Waste Management South Hills (Arnoni) Permit # 100592
3100 Hill Road
Library, PA 15129
724-348-7018
412-384-7569

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

Waste Management Meadowfill Permit # 1082
1488 Dawson Drive
Bridgeport, WV 26330

Brooke County Landfill Permit # SWF-108-87 / 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
804-455-3800

Energy Solutions, LLC Permit # UT 2300249
428 West 800 South
Suite 200
Salt Lake City, UT 84101

Energy Solutions Services, Inc. Permit # R-73006-124
1560 Bear Creek Road
Oak Ridge, TN 37830

Northern A-1 Environmental Services Permit ID MID020906814
8947 US 131, North, PO Box 1030
Kalkaska, MI 49646
231-258-9961

Water Haul off Companies:

Dynamic Structures, Clear Creek DOT # 720488
8790 State Route 7
New Waterford, OH 44445
330-882-0184

Nabors Completion & Production Services Co.
PO Box 875682
Dallas, TX 75287-5682

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

Nuvarra 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 # 84-031-2-7177
23988 Airport Road
Casshockton, OH 43812
740-575-4484
612-478-6545

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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

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

Nichols 1-A (SWIW #13)
Permit # 8862
300 Charrington Pkwy, Suite 200
Coraopolis, PA 15108
412-829-7275

Grosella (SWIW #24)
Permit # 4096
Rt. 88
Garrattsville, OH
713-275-4816

Ramble 1-D Well
Permit # 8780
7675 East Pike
Norwich, OH 43767
614-648-8898
740-786-6485

Adams #2 (Buckeye Brine, LLC)
2205 Westover Road
Austin TX 78708
Permit # 84-031-2-7178
740-575-4484
612-478-6545

OH UIC #1, Bu keya UIC Barnesville 1 & 2
CNX Gas Company, LLC
1000 Consof Energy Drive
Permit # 84-013-2-0605-00-00
Permit # 84-013-2-0614-00-00
804-823-6568

Adams #3 (Buckeye Brine, LLC)
Permit # 84-031-2-7241-00-00
2550 Exposition, Suite 117
Austin, TX 78703
612-478-6545

US Steele 11385
Permit # 47-001-00561
200 Evergreen Drive
Waynesburg, PA 15780
804-823-6568

Mozena #1 Well (SWIW # 13)
Permit # 84-157-2-5511-00-00
5857 E. State Street
Newcomerstown, OH 43882
740-763-3966

Chapin #7 UIC (SWIW #7)
Permit # 84-083-2-4187-00-00
Elkhead Gas & Oil Company
12188 Marne Rd. NE
Newark, OH 43055
740-763-3966

Goff SWD #1 (SWIW # 27)
Permit # 84-119-2-8776-000
300 Cherrington Pkwy, Suite 200
Coraopolls, PA 15108
412-829-7275

SCS D#1 (SWIW #12)
Permit # 84-059-2-4202-00-00
Silcor Oilfield Services, Inc.
2939 Hubbard Road
Youngstown, OH 44505

Dudley #1 UIC (SWIW #1)
Permit # 84-121-2-2459-00-00
Select Energy Services, LLC
7894 S. Pleasants Hwy
St. Marys, WV 26170
804-665-2652

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[Handwritten signatures and notes]

HG Energy II Appalachia, LLC

Site Safety Plan

**Antonio 1206 Well Pad
5279 Duck Creek Road Lost Creek
Harrison County, WV 26385**

September 2019: Version 1

**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

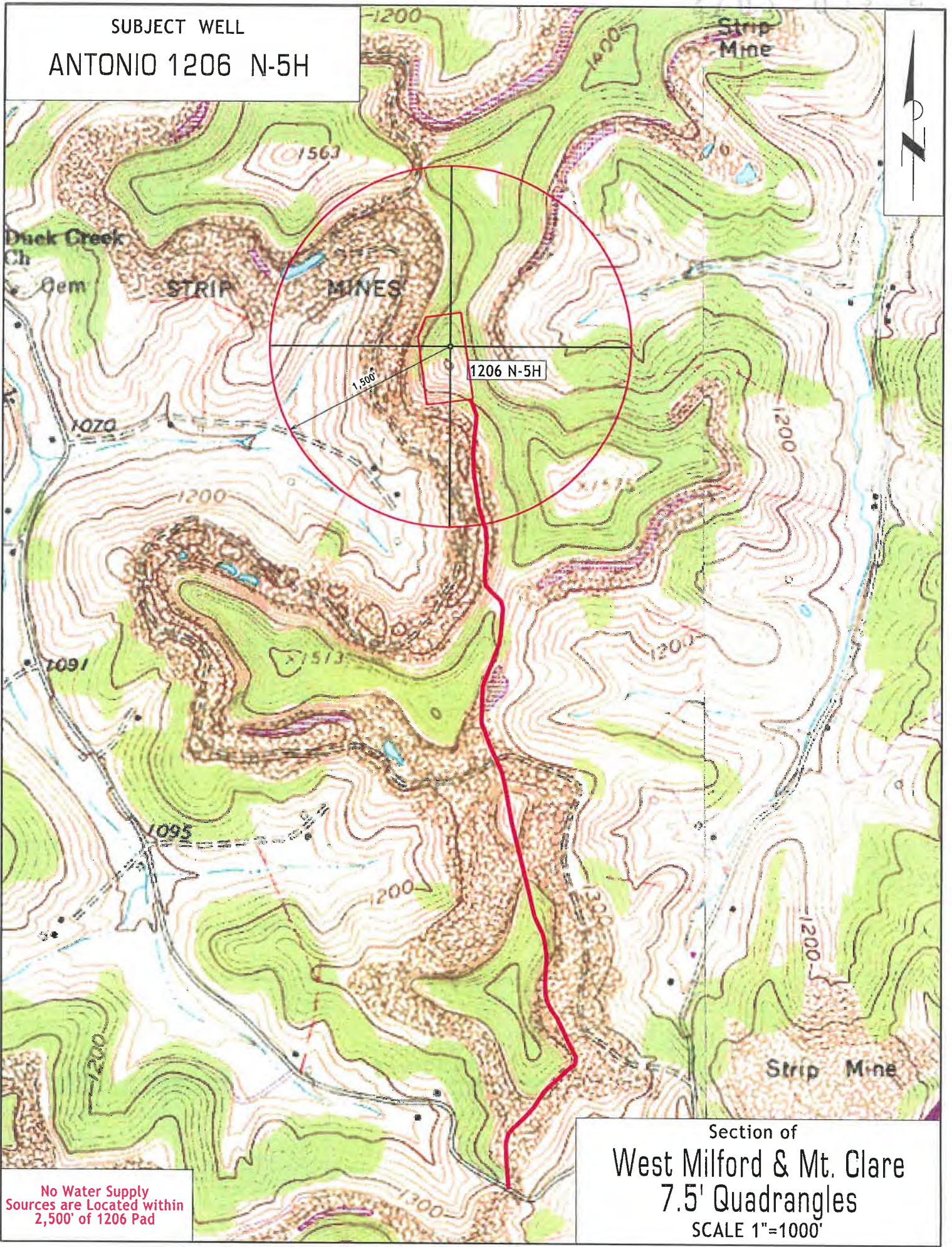
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SUBJECT WELL
ANTONIO 1206 N-5H



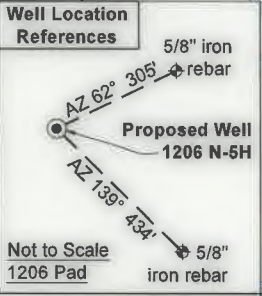
No Water Supply
Sources are Located within
2,500' of 1206 Pad

Section of
West Milford & Mt. Clare
7.5' Quadrangles
SCALE 1"=1000'



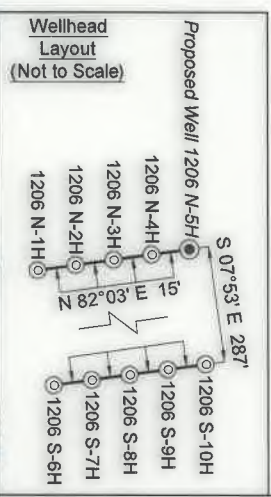
- Legend**
- ⊙ Proposed gas well
 - ⊕ Well Reference, as noted
 - ⊗ Monument, as noted
 - ☀ Existing Well, as noted
 - ☀ Existing Plugged Well, as noted
 - ☀ Digitized Well, as noted
 - Surface boundary (approx.)
 - - - Interior surface tracts (approx.)
 - - - Creek or Drain
 - Existing Road

Notes:
Well No. 1206 N-5H
UTM NAD 1983 (USSF)
Top Hole Coordinates
N: 14,220,788.57'
E: 1,815,534.19'
Landing Point Coordinates
N: 14,221,878.10'
E: 1,818,317.46'
Bottom Hole Coordinates
N: 14,233,312.11'
E: 1,814,277.11'



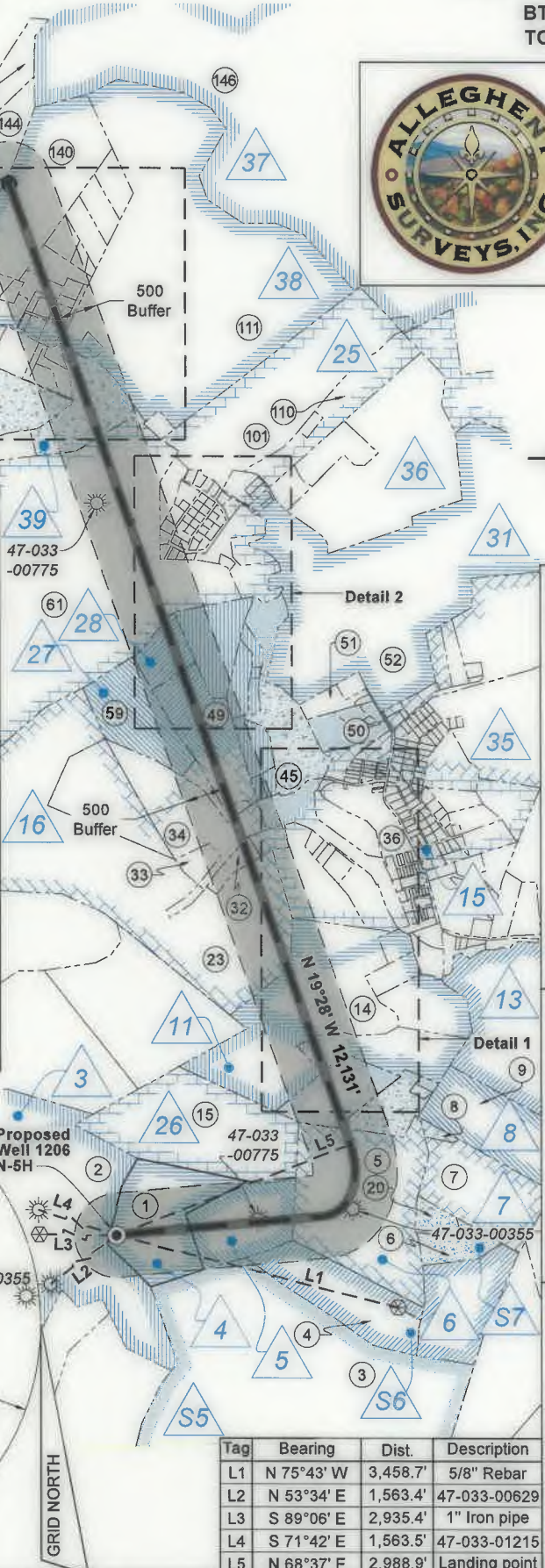
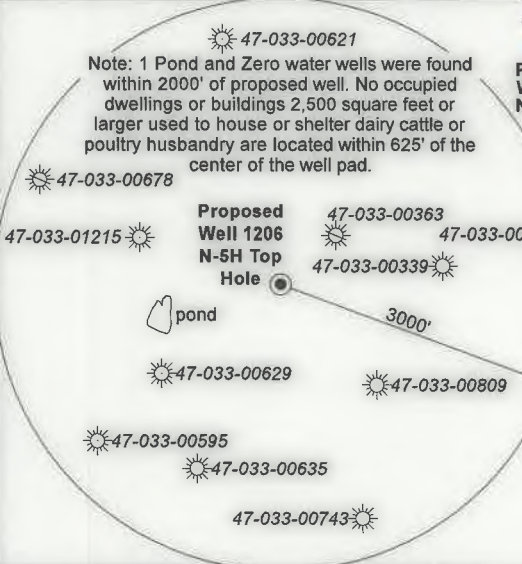
Notes: Well No. 1206 N-5H
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Top Hole coordinates
Latitude: 39°09'28.89"
Longitude: 80°22'56.65"
UTM Zone 17, NAD 1983
Bottom Hole coordinates
Latitude: 39°11'32.80"
Longitude: 80°23'11.54"
UTM Zone 17, NAD 1983
Top Hole Coordinates
N: 4,334,505.025m
E: 553,375.928m
Bottom Hole Coordinates
N: 4,338,322.208m
E: 552,992.769m

Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.



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 rules issued and prescribed by the Department of Environmental Protection.

Dwayne D. Matheny
Dwayne D. Matheny, P.S. 2070



Tag	Bearing	Dist.	Description
L1	N 75°43' W	3,458.7'	5/8" Rebar
L2	N 53°34' E	1,563.4'	47-033-00629
L3	S 89°06' E	2,935.4'	1" Iron pipe
L4	S 71°42' E	1,563.5'	47-033-01215
L5	N 68°37' E	2,988.9'	Landing point

FILE NO: 06-36-12-G-H-19
DRAWING NO: 1206 N-5H Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Bridgeport, WV

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

DATE: October 16 2019
OPERATOR'S WELL NO. 1206 N-5H
API WELL NO
47 - 033 - 05982
STATE COUNTY PERMIT

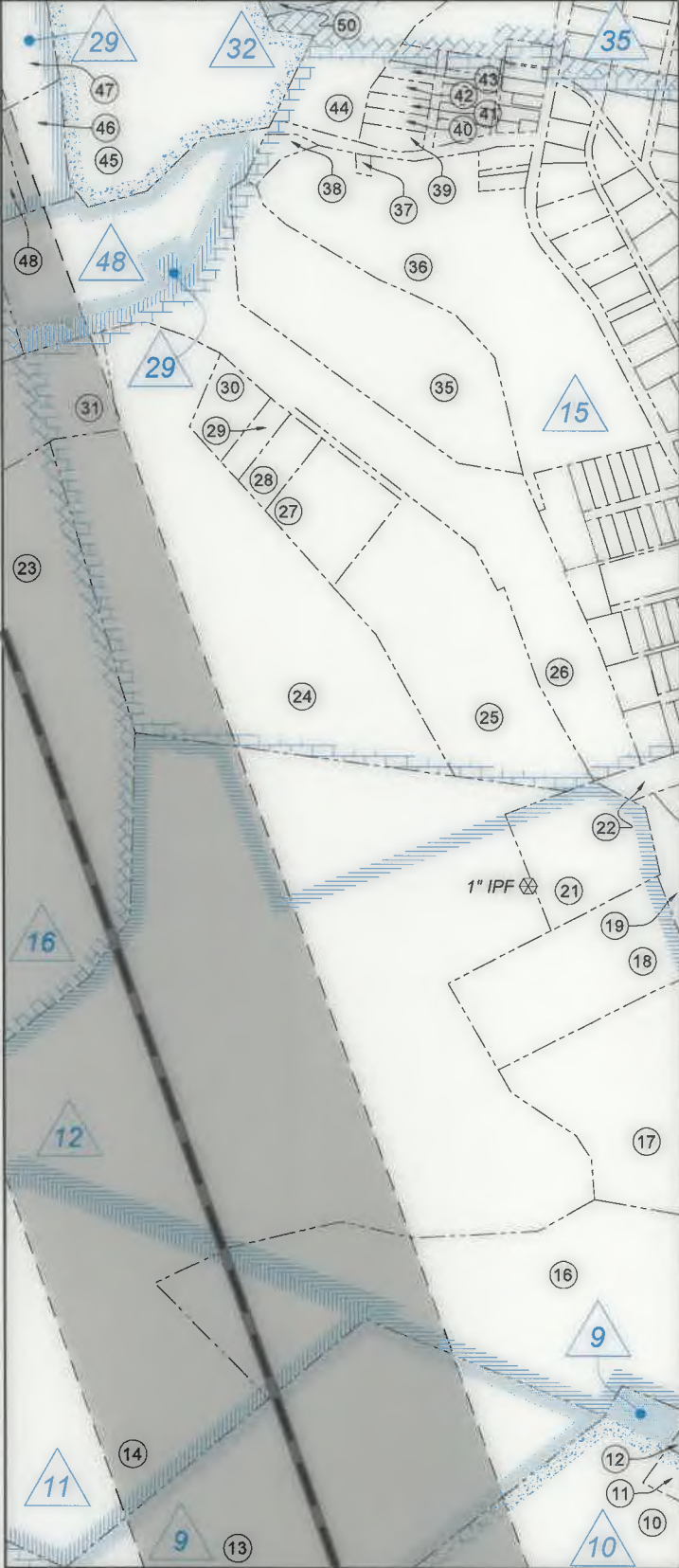
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek
DISTRICT: Grant QUADRANGLE: West Milford
SURFACE OWNER: Charles R. & Franklin L. Sutton COUNTY: Harrison
ROYALTY OWNER: Charles R. Sutton LEASE NO: ACREAGE: 30.00
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 7,252' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 20,980' MD

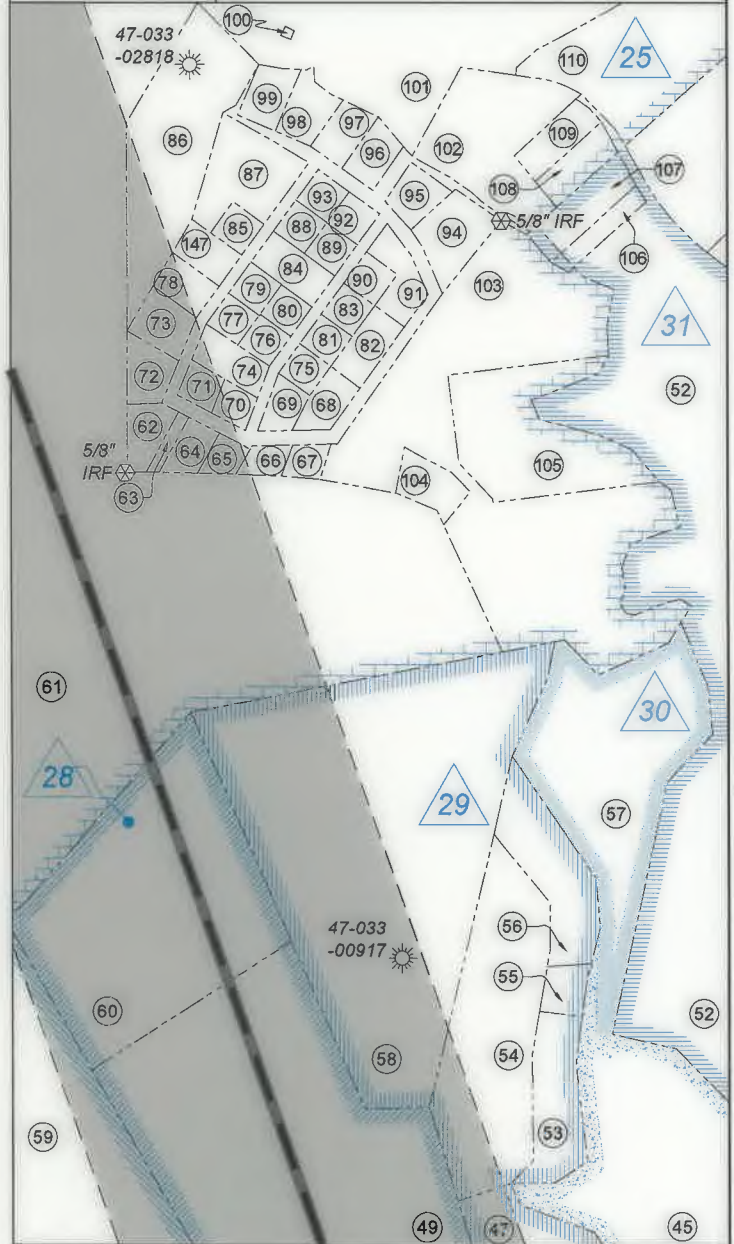
WELL OPERATOR: HG Energy II Appalachia, LLC DESIGNATED AGENT: Diane C. White
ADDRESS: 5260 Dupont Road ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101



Detail 1 - 1" = 500'



Detail 2 - 1" = 500'



FILE NO: 06-36-12-G-H-19
DRAWING NO: 1206 N-5H Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY:
Submeter
PROVEN SOURCE OF ELEVATION:
CORS, Bridgeport, WV

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



DATE: October 16 20 19
OPERATOR'S WELL NO. 1206 N-5H
API WELL NO
47 — 033 — 05182
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek
DISTRICT: Grant

QUADRANGLE: West Milford
COUNTY: Harrison
ACREAGE: 30.00

SURFACE OWNER: Charles R. & Franklin L. Sutton
ROYALTY OWNER: Charles R. Sutton

LEASE NO: _____ ACREAGE: 30.00

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,252' TVD
20,980' MD

WELL OPERATOR: HG Energy II Appalachia, LLC
ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

DESIGNATED AGENT: Diane C. White
ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101



No.	TM / Par	Owner	Bk / Pg	Ac.	No.	TM / Par	Owner	Bk / Pg	Ac.
1	426 / 72	Charles R. & Franklin L. Sutton	1301 / 98	30.00	64	406A / 32	Patrick & Amanda Gaughan	1391 / 1240	0.30
2	426 / 71	Antonio P., LLC	1503 / 291	233.35	65	406A / 31	Patrick & Amanda Gaughan	1391 / 1240	0.21
3	446 / 3	Antonio P., LLC	1503 / 291	200.00	66	406A / 40	Earl Layton	1519 / 1151	0.21
4	446 / 4	Bob R. Blankenship	1310 / 740	27.67	67	406A / 41	Earl Layton	1519 / 1151	0.21
5	426 / 74	Harriet June Ferree	1514 / 480	60.30	68	406A / 42	Tome Crane	1296 / 323	0.35
6	426 / 76	Frances Phares, et al	W166 / 606	7.00	69	406A / 26	Louis & Lena Romano	1068 / 830	0.27
7	426 / 77	Kenneth E. Rigdon	1569 / 903	28.26	70	406A / 27	Diana Swiger	1270 / 842	0.21
8	426 / 64	Eugene Alkire, Jr.	1271 / 1183	2.00	71	406A / 30	Diana Swiger	1270 / 842	0.23
9	426 / 65	G. Thomas Smith	1277 / 1174	29.79	72	406A / 37	Brian Rowe	1445 / 1006	0.41
10	426 / 42	Cathleen Spittler	1405 / 449	11.69	73	406A / 36	Bacel L. & Alma S. Rowe	1252 / 1133	0.43
11	426 / 42.1	Timothy M. & Minnie C. Hyde	1281 / 908	0.57	74	406A / 28	John & Erin Stout	1480 / 439	0.43
12	426 / 43.1	Timothy M. & Minnie C. Hyde	1281 / 908	0.62	75	406A / 25	Vincent & Amber Olliverio	1600 / 576	0.22
13	426 / 41	Charles R. & Franklin L. Sutton	1301 / 98	15.00	76	406A / 9	Mary Sue Calvert	1348 / 389	0.22
14	426 / 40	Charles R. & Franklin L. Sutton	1332 / 28	57.97	77	406A / 10	Mary Sue Haas	1259 / 35	0.23
15	426 / 63	Charles R. & Franklin L. Sutton	1301 / 98	51.33	78	406A / 15	Bacel L. & Alma S. Rowe	1099 / 493	0.33
16	426 / 44	Charles R. & Franklin L. Sutton	1332 / 28	17.73	79	406A / 11	David & Brenda Morrison	1456 / 1083	0.23
17	426 / 45	Constance & Gary I. Saunders, II	1591 / 100	12.43	80	406A / 8	David & Brenda Morrison	1456 / 1083	0.22
18	426 / 46	Constance & Gary I. Saunders, II	1591 / 100	4.00	81	406A / 24	Vincent & Amber Olliverio	1570 / 408	0.23
19	426 / 47	Constance & Gary I. Saunders, II	1591 / 100	1.00	82	406A / 33	James M. & Megan E. Kennedy	1594 / 1121	0.43
20	426 / 75	Dale & Lepha Ables, et al	F119 / 565	3.00	83	406A / 23	Timothy P. Ross	1349 / 303	0.23
21	426 / 28	Constance & Gary I. Saunders, II	1591 / 100	2.32	84	406A / 7	Charles & Naomi Burkhammer	1506 / 1150	0.46
22	426 / 30	Daniel R. & Lana M. Messenger	1176 / 1001	0.82	85	406A / 17	Maxine N. Kendall	1242 / 365	0.23
23	426 / 13	Antonio P., LLC	1503 / 291	149.74	86	406A / 21.3	Thomas J. & Marsha L. Romine	1510 / 304	3.17
24	426 / 25	Antonio P., LLC	1503 / 291	14.89	87	406A / 19	Kathryn M. Fittro	1191 / 555	1.27
25	426 / 26	David L. Bowles	1518 / 1298	6.05	88	406A / 13	James T. & Nancy L. Karis	1174 / 835	0.23
26	426 / 27	Antonio P., LLC	1503 / 291	6.53	89	406A / 6	Jerry M. Hughes	1095 / 649	0.23
27	426 / 24	Ronald H. & Katherine R. Dever	1436 / 1133	1.76	90	406A / 22	James S. Skinner	1515 / 519	0.23
28	426 / 23	Virginia M. Davisson	1349 / 61	0.62	91	406A / 21	James S. Skinner	1515 / 1053	0.47
29	426 / 22	Virginia M. Davisson	1349 / 61	0.37	92	406A / 5	Jerry Hughes	1095 / 649	0.23
30	426 / 21	Virginia M. Davisson	1349 / 61	0.75	93	406A / 14	James & Nancy Karis	1068 / 939	0.23
31	426 / 17	Antonio P., LLC	740 / 435	2.42	94	406A / 35	Harley R. & Linda L. Coberly	1229 / 315	0.79
32	426 / 16	Antonio P., LLC	1503 / 291	3.02	95	406A / 20	Stephen C. & Shiela M. Nelson	1266 / 1097	0.36
33	426 / 15	Antonio P., LLC	1503 / 291	3.22	96	406A / 1	Ernie & Linda Morgan	1266 / 35	0.35
34	426 / 2	Antonio P., LLC	1503 / 291	26.13	97	406A / 2	Ernie & Linda Morgan	1266 / 35	0.35
35	426 / 20	Grafton Coal Company	1016 / 223	6.00	98	406A / 3	David C. & Nancy C. Nester	1079 / 620	0.44
36	426 / 34.1	Jacob D. & Nancy L. Post	1023 / 150	9.27	99	406A / 4	David C. & Nancy C. Nester	1079 / 620	0.42
37	426 / 34.4	Grant Union Public Service	1170 / 132	0.03	100	406 / 21.6	Grant Union Public Service District	1165 / 901	0.01
38	426 / 34.3	Judith A. Eaton	1400 / 929	0.24	101	406 / 21.8	Brian K. & Jayme E. Lowther	1506 / 806	55.56
39	2005 / 46	Flossie B. Cogis	W175 / 144	0.17	102	406 / 21.7	Eva L. Scranage	1427 / 565	2.26
40	2005 / 48	Donald J. & Sherry A. Cavalier	1433 / 646	0.12	103	406 / 21.1	John & Josh Harris	1564 / 1039	9.66
41	2005 / 36	Robert M. Tangari	1193 / 686	0.40	104	406 / 21.5	Monongahela Power Company	1083 / 210	0.45
42	2005 / 24	Robert M. Tangari	1193 / 686	0.10	105	406 / 21.4	Monongahela Power Company	1083 / 210	2.76
43	2005 / 13	Robert M. Tangari	1193 / 686	0.09	106	406 / 24.2	Steven & Shanna Bolyard	1558 / 892	0.32
44	426 / 10	Judith A. Eaton	1400 / 929	2.73	107	406 / 24.1	Steven & Shanna Bolyard	1558 / 892	0.72
45	426 / 8	Antonio P., LLC	1503 / 291	19.46	108	406 / 22	David L. & Eva L. Scranage	952 / 204	0.38
46	426 / 7	Antonio P., LLC	1503 / 288	1.10	109	406 / 22.1	David L. & Eva L. Scranage	912 / 274	0.46
47	426 / 5	Antonio P., LLC	1503 / 291	5.13	110	406 / 21	Robert K. Lowther	1427 / 565	17.44
48	426 / 6	Antonio P., LLC	1503 / 288	0.80	111	406 / 8	Maxson Helen Louise, et al	1314 / 102	176.16
49	426 / 4	Antonio P., LLC	1503 / 291	22.04	112	406 / 20	Seventh Day Baptist Church	15 / 312	1.00
50	426 / 9	Antonio P., LLC	1596 / 26	5.68	113	406 / 19	Antonio P., LLC	1503 / 291	23.49
51	406 / 37	Gregory & Jacqueline Abraham	1301 / 236	3.79	114	406 / 19.1	Harrison County BOE	1240 / 27	13.91
52	406 / 24	Connie Ferguson & Clarence H. Woodford, II	W163 / 1145	160.49	115	406 / 18.5	Bridgette A. & Richard L. Ward	1338 / 137	0.17
53	406 / 35	Banish Carl Estate	667 / 426	1.27	116	406 / 18.2	Bridgette A. & Richard L. Ward	1217 / 862	2.05
54	406 / 32	Antonio P., LLC	1503 / 309	4.36	117	406 / 18	Bridgette A. & Richard L. Ward	1338 / 137	1.56
55	406 / 34	Antonio P., LLC	1421 / 1185	0.26	118	406 / 18.4	Bridgette A. & Richard L. Ward	1338 / 137	0.75
56	406 / 33	Antonio P., LLC	1426 / 36	1.52	119	406 / 18.3	Harrison County BOE	1230 / 1024	5.00
57	426 / 8	Antonio P., LLC	1503 / 291	19.46	120	406 / 18.1	Bridgette A. & Richard L. Ward	1217 / 862	0.94
58	406 / 31	Antonio P., LLC	1503 / 291	14.65	121	406 / 8.1	Criss L. Bragg	1399 / 1240	0.91
59	406 / 29	Antonio P., LLC	1503 / 291	19.43	122	406 / 7.2	Richard A. & Wilma D. Fenstermacher	1075 / 1031	1.00
60	406 / 30	Antonio P., LLC	1503 / 291	8.42	123	406 / 7.1	Michael L. & Clenta V. Bond	1087 / 304	1.00
61	406 / 28	Antonio P., LLC	1503 / 291	176.82	124	406 / 7.8	Michael L. & Clenta V. Bond	1331 / 616	0.36
62	406A / 38	Brian Rowe	1445 / 1006	0.21	125	406 / 7.11	Michael L. & Clenta V. Bond	1368 / 564	0.06
63	406A / 39	Patrick & Amanda Gaughan	1391 / 1240	0.12	126	406 / 7.14	Mark A. Bond	1368 / 587	2.68

FILE NO: 06-36-12-G-H-19

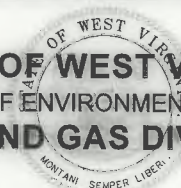
DRAWING NO: 1206 N-5H Well Plat

SCALE: 1" = 2000'

MINIMUM DEGREE OF ACCURACY:
Submeter

PROVEN SOURCE OF ELEVATION:
CORS, Bridgeport, WV

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



DATE: October 16 20 19

OPERATOR'S WELL NO. 1206 N-5H

API WELL NO

47 — 033 —
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek

QUADRANGLE: West Milford

DISTRICT: Grant

COUNTY: Harrison

SURFACE OWNER: Charles R. & Franklin L. Sutton

ACREAGE: 30.00

ROYALTY OWNER: Charles R. Sutton

LEASE NO: ACREAGE: 30.00

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,252' TVD
20,980' MD

WELL OPERATOR: HG Energy II Appalachia, LLC

DESIGNATED AGENT: Diane C. White

ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

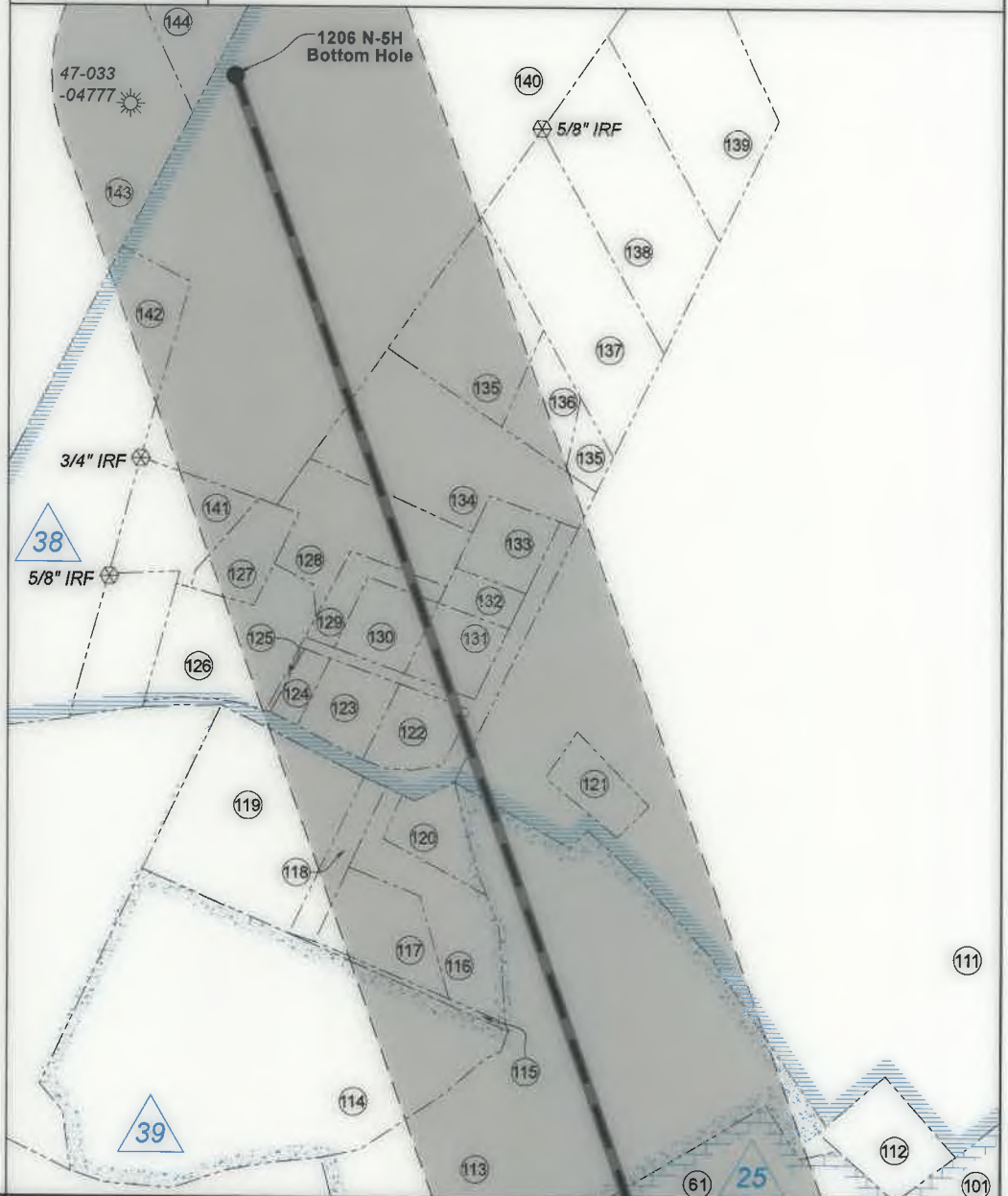
ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101



No.	TM / Par	Owner	Bk / Pg	Ac.
127	406 / 7.10	Jose A. & Lori E. Moreno	1361 / 616	1.00
128	406 / 7.18	Jose A. & Lori E. Moreno	1368 / 619	2.50
129	406 / 7.6	Larry F. & Cynthia B. Lawrence	1317 / 167	0.70
130	1081 / 530	Larry F. & Cynthia B. Lawrence	1081 / 530	1.00
131	406 / 7.4	David L. & Margaret L. Stout	1428 / 135	1.00
132	406 / 7.9	Kim & Aaron Campbell	1382 / 1269	0.50
133	406 / 7.7	Brian E. & Shawna M. Hathaway	1385 / 425	1.00
134	406 / 7.17	Brian E. & Shawna M. Hathaway	1385 / 425	4.26
135	406 / 7.12	Richard A. & Wilma D. Fenstermacher	1368 / 571	4.27
136	406 / 7.19	Carrie L. & Peter F. Seguin	1376 / 750	1.00

No.	TM / Par	Owner	Bk / Pg	Ac.
137	406 / 7.16	Brent C. & Julie S. Fenstermacher	1391 / 592	4.26
138	406 / 7.15	Michael L. & C. Vanessa Bond	1393 / 1095	4.27
139	406 / 7.13	Michael L. & C. Vanessa Bond	1368 / 579	4.26
140	406 / 6	Richard K. Williams	1344 / 966	40.00
141	406 / 7	Jose A. & Lori E. Moreno	1368 / 627	1.82
142	406 / 5	Richard K. Williams	1344 / 966	10.97
143	406 / 2	Arden L. & Wendy D. Skidmore	1599 / 779	66.00
144	406 / 1	John L. Stenger	1309 / 675	11.29
145	386 / 108	John L. Stenger	1309 / 666	7.44
146	406 / 9	John L. & Mary E. Stenger	1580 / 205	309.00
147	406A / 16	Bacel L. & Alma S. Rowe	1099 / 493	0.36

Detail 3 - 1" = 500'



ID	Lease
3	C. Earl Snider, et al
4	Alton Bell, et al
5	Alton Bell
6	Marcella R. Bond, et al
7	Mary E. Kennedy, et al
8	Lillie Gifford, et al
9	Orpha G. Davis, et al
10	Alton Bell
11	Hugh C. Davis, et al
12	Hugh C. Davis, et al
13	HG Energy II Appalachia, LLC
14	UNLEASED
15	A.W. Smith
16	Lewis M. Stout, et al
25	Porter Maxwell, et al
26	Marcella R. Bond, et al
27	H.D. Smith, et al
28	Hattie Cummings, et al
29	Dorothy Sinclair, et al
30	H.D. Smith, et al
31	C.H. Woodford, et al
32	Hattie B. Cummins, et al
34	J.O. Butcher, et al
35	E.S. Swisher, et al
37	Locie C. Stout, et al
38	M.H. Vanhorn, et ux
39	HG Energy II Appalachia, LLC
40	UNLEASED
48	Hattie B. Cummins
S5	Lloyd Stout
S6	Lillie D. Gifford, et al
S7	M.C. McWhorter, et al

FILE NO: 06-36-12-G-H-19

DRAWING NO: 1206 N-5H Well Plat

SCALE: 1" = 2000'

MINIMUM DEGREE OF ACCURACY:
Submeter

PROVEN SOURCE OF ELEVATION:
CORS, Bridgeport, WV

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



DATE: October 16 20 19

OPERATOR'S WELL NO. 1206 N-5H

API WELL NO

47 — 033 —
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1,350' WATERSHED: Middle West Fork Creek

DISTRICT: Grant

QUADRANGLE: West Milford

COUNTY: Harrison

SURFACE OWNER: Charles R. & Franklin L. Sutton

ACREAGE: 30.00

ROYALTY OWNER: Charles R. Sutton

LEASE NO: _____ ACREAGE: 30.00

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
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PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,252' TVD
20,980' MD

WELL OPERATOR: HG Energy II Appalachia, LLC

DESIGNATED AGENT: Diane C. White

ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

ADDRESS: 5260 Dupont Road
Parkersburg, WV 26101

DEC 04 2019

**EXISTING WELLS LOCATED WITHIN THE AREA OF REVIEW FOR:
ANTONIO 1206 NORTH UNIT AND PROPOSED WELLS N-1H, N-2H, N-3H, N-4H, N-5H and N-6H**

WV Department of Environmental Protection	COUNTY	FARM	OPERATOR NAME	FORMATION NAME	WELL TYPE	TVD	STATUS	LATITUDE	LONGITUDE
1	HARRISON	C H Gaston 2 CW136	Dominion Energy Transmission Inc.	Fifty-foot	Storage	2050	PLUGGED	39.169238	-80.399969
2	HARRISON	Alton Bell CW-333	Dominion Energy Transmission Inc.	Gantz	Storage	1959	ACTIVE	39.158620	-80.376279
3	HARRISON	Fred H Smith	Dominion Energy Transmission Inc.	Greenland Gap Fm	Storage	4290	ACTIVE	39.158947	-80.372289
4	HARRISON	A J Randolph	Dominion Energy Transmission Inc.	Thirty-foot	Dry w/ Gas Show	2210	PLUGGED	39.163566	-80.376303
5	HARRISON	A Bell	Dominion Energy Transmission Inc.	Thirty-foot	Storage	2150	PLUGGED	39.158029	-80.381243
6	HARRISON	Pettito Brothers Inc	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4461	ACTIVE	39.167358	-80.398451
7	HARRISON	C E Snider	Dominion Energy Transmission Inc.	Benson	Gas	4620	ACTIVE	39.153667	-80.389064
8	HARRISON	Carl Smith 2	Antero Resources Corporation	Benson	Gas	4538	ACTIVE	39.178483	-80.401302
9	HARRISON	Young & Smith	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4575	ACTIVE	39.165178	-80.384332
10	HARRISON	Carl Smith 2	Antero Resources Corporation	Big Injun (Grnbr)	Gas	2010	ACTIVE	39.178420	-80.401465
11	HARRISON	C Earl Snider	Dominion Energy Transmission Inc.	Thirty-foot	Storage	-	ACTIVE	39.155591	-80.386677
12	HARRISON	R Bartlett CW628	Dominion Energy Transmission Inc.	Fifty-foot	Storage	2140	PLUGGED	39.157187	-80.394798
13	HARRISON	G W Conley CW652	Dominion Energy Transmission Inc.	Fifty-foot	Storage	2301	ACTIVE	39.159653	-80.391075
14	HARRISON	C E Snider CW238	Dominion Energy Transmission Inc.	Greenland Gap Fm	Storage	2264	ACTIVE	39.161099	-80.389720
15	HARRISON	R S Hersey CW242	Dominion Energy Transmission Inc.	Greenland Gap Fm	Storage	2297	ACTIVE	39.171410	-80.391133
16	HARRISON	Rachel S Hershey	Dominion Energy Transmission Inc.	Benson	Gas	4585	ACTIVE	39.172871	-80.393813
17	HARRISON	Mary A Lowther	Dominion Energy Transmission Inc.	Benson	Gas	4510	ACTIVE	39.180897	-80.392280
18	HARRISON	A C Thrash CW235	Dominion Energy Transmission Inc.	Fifty-foot	Storage	1910	PLUGGED	39.158092	-80.395928
19	HARRISON	Pettito Brothers	Dominion Energy Transmission Inc.	Hampshire Grp	Observation	2080	ACTIVE	39.169307	-80.378760
20	HARRISON	W B & P Maxwell	Dominion Energy Transmission Inc.	Benson	Gas	4600	ACTIVE	39.182072	-80.382784
21	HARRISON	L M Stout CW243	Dominion Energy Transmission Inc.	Greenland Gap Fm	Storage	2250	PLUGGED	39.171363	-80.387390
22	HARRISON	Lloyd Stout CW234	Dominion Energy Transmission Inc.	Mid Devonian	not available	4793	PLUGGED	39.155225	-80.378750
23	HARRISON	Lewis M Stout	Dominion Energy Transmission Inc.	Benson	Gas	4553	ACTIVE	39.169821	-80.381490
24	HARRISON	H T Edwards CW236	Dominion Energy Transmission Inc.	Fifty-foot	Storage	1881	ACTIVE	39.159502	-80.394379
25	HARRISON	A W Smith	Dominion Energy Transmission Inc.	Benson	Gas	4660	ACTIVE	39.168004	-80.388510
26	HARRISON	A W Smith	Dominion Energy Transmission Inc.	Fourth	Storage	2490	ACTIVE	39.168042	-80.384254
27	HARRISON	Mae Gaston	Dominion Energy Transmission Inc.	Benson	Gas	4364	ACTIVE	39.164846	-80.391702
28	HARRISON	Hiram E Edmonds	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4410	ACTIVE	39.159254	-80.393799
29	HARRISON	Dorothy Sinclair	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4520	ACTIVE	39.176741	-80.377661
30	HARRISON	S S Floyd 3	Mineral Resource Management, LLC	Benson	Gas	4580	ACTIVE	39.185209	-80.400218
31	HARRISON	J West 2	ALAMCO, Inc.	Benson	Dry w/ Gas Show	4526	PLUGGED	39.189992	-80.391397
32	HARRISON	R M Lewis 1	Mineral Resource Management, LLC	Benson	Gas	4420	ACTIVE	39.191805	-80.401080
33	HARRISON	C E Snider	Dominion Energy Transmission Inc.	Benson	Gas	4661	ACTIVE	39.159492	-80.387444
34	HARRISON	T Pettito CW-244	Dominion Energy Transmission Inc.	Fifth	Storage	2714	ACTIVE	39.175019	-80.388015
35	HARRISON	Dane Williams	Dominion Energy Transmission Inc.	Hampshire Grp	House Gas	2346	ACTIVE	39.188717	-80.387797
36	HARRISON	P Maxwell CW-245	Dominion Energy Transmission Inc.	Hampshire Grp	Storage	2132	PLUGGED	39.177871	-80.382055
37	HARRISON	R S Hershey	Dominion Energy Transmission Inc.	Gantz	Observation	2000	ACTIVE	39.171549	-80.397385
38	HARRISON	Mary A Lowther (CW-257)	Spencer Enterprises	UNKNOWN	not available	-	PLUGGED	39.187832	-80.387111
39	HARRISON	J R Richards CW256	Dominion Energy Transmission Inc.	Fifty-foot	Storage	2101	ACTIVE	39.179068	-80.395987
40	HARRISON	P Maxwell CW-348	Dominion Energy Transmission Inc.	Gantz	Storage	2048	ACTIVE	39.183148	-80.379538
41	HARRISON	John Alvin Smith 1	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	3187	PLUGGED	39.176640	-80.399782
42	HARRISON	Carl Smith (CW-150)	Dominion Energy Transmission Inc.	UNKNOWN	not available	-	PLUGGED	39.179095	-80.399236
43	HARRISON	Dorothy S Sinclair	Dominion Energy Transmission Inc.	UNKNOWN	not available	-	PLUGGED	39.177510	-80.377794
44	HARRISON	Mary A Lowther (CW-260)	Dominion Energy Transmission Inc.	UNKNOWN	not available	-	PLUGGED	39.175796	-80.393167
45	HARRISON	Mary A Lowther (CW-261)	Dominion Energy Transmission Inc.	UNKNOWN	not available	-	PLUGGED	39.180757	-80.395520

703100982

46	4703303093	HARRISON	Mary A Lowther (CW-262)	Dominion Energy Transmission Inc.	UNKNOWN	not available	-	PLUGGED	39.178462	-80.391401
47	4703303094	HARRISON	Mary A Lowther (CW-259)	Dominion Energy Transmission Inc.	UNKNOWN	not available	-	PLUGGED	39.176248	-80.395739
48	4703303365	HARRISON	Carl V Smith, Jr 4	Antero Resources Corporation	Benson	Gas	4575	ACTIVE	39.181950	-80.405388
49	4703303458	HARRISON	Ted/B Wilfong	Alliance Petroleum Corporation	Greenland Gap Fm	Gas	5018	ACTIVE	39.188870	-80.404970
50	4703303568	HARRISON	Byron Construction Co	Dominion Energy Transmission Inc.	Hampshire Grp	Storage	2292	PLUGGED	39.185657	-80.385247
51	4703303577	HARRISON	Carl Smith	Dominion Energy Transmission Inc.	UNKNOWN	not available	2400	PLUGGED	39.182204	-80.402884
52	4703304776	HARRISON	Carol Daugherty-Skidmore	Ross & Wharton Gas Co. Inc.	Greenland Gap Fm	Gas	5024	ACTIVE	39.188534	-80.392055
53	4703304777	HARRISON	Carol Daugherty-Skidmore	Ross & Wharton Gas Co. Inc.	Greenland Gap Fm	Gas	4813	ACTIVE	39.192332	-80.387963
54	4703304838	HARRISON	Jim K & Betty L Stutler	Dominion Energy Transmission Inc.	UNKNOWN	not available	-	PLUGGED	39.186628	-80.391066
55	4703305031	HARRISON	Robert M Lewis	Dominion Energy Transmission Inc.	Greenland Gap Fm	Gas	4550	ACTIVE	39.186354	-80.407701

SOURCE: WVGES DATASET (2017) and WVDEP WEBSITE

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**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
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See Attached Sheets

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

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

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

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

Well Operator: HG Energy II Appalachia, LLC
 By: Diane White *Diane White*
 Its: Accountant

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HG Energy II Appalachia, LLC
Antonio_1206 N-5H Lease Chains

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1206 Tract	LEGACY LEASE NUMBER	TAX MAP	LEASE NUMBER	GRANTOR/LESSOR	GRANTEE/LESSEE	ROYALTY	DEED BOOK	PAGE
4	LC066828	12-0426-0072-0000	Q100892000	ALTON BELL, SINGLE; MARCELLA R. BOND AND KARLEY D. BOND, HER HUSBAND; MARY E. KENNEDY, WIDOW; DORSEY C. KENNEDY AND VELMA ICE KENNEDY, HIS WIFE; LELA K. RUMBLE, WIDOW; MARTHA F. WILSON, WIDOW; HARRY W. KENNEDY AND LILLIAN KENNEDY, HIS WIFE; JOHN L. KENNEDY AND REVA B. KENNEDY, HIS WIFE; SUE K. SWISHER, WIDOW; KATHRYN BUTLER AND THURMAN BUTLER, HER HUSBAND; EVA WOLFE AND LYNN B. WOLFE, HER HUSBAND; S. G. KENNEDY AND JESSIE L. KENNEDY, HIS WIFE	HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC.	NOT LESS THAN 1/8 CONFIRMATORY DEED ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE MEMORANDUM FARMOUT AGREEMENT LIMITED PARTIAL ASSIGNMENT (50%) PARTIAL ASSIGNMENT (32%) ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	781 903 1136 51 58 1522 1543 1576 1584 1600 WV505	591 179 250 795 362 33 1235 125 942 692
5	LC066627	12-0426-0073-0000	Q100876000	DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. ALTON BELL, SINGLE HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC.	HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC.	NOT LESS THAN 1/8 CONFIRMATORY DEED ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE MEMORANDUM FARMOUT AGREEMENT LIMITED PARTIAL ASSIGNMENT (50%) PARTIAL ASSIGNMENT (32%) ASSIGNMENT ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT NOT LESS THAN 1/8 CONFIRMATORY DEED ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE MEMORANDUM FARMOUT AGREEMENT LIMITED PARTIAL ASSIGNMENT (50%) PARTIAL ASSIGNMENT (32%) ASSIGNMENT ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT NOT LESS THAN 1/8 CONFIRMATORY DEED ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE	1601 1621 775 903 1136 51 58 1522 1543 1576 1584 1600 WV505 1601 1621 775 903 1136 51 58 1522 1543 1576 1584 1600 WV505 1601 1621 776 903 1136 51 58	581 1295 150 179 250 795 362 33 1235 125 942 692 581 1295 150 179 250 795 362 33 1235 125 942 692 581 1295 184 179 250 795 362

11	LC066779	p/o 12-0426-0040-0000 p/o 12-0426-0044-0000	Q101119000	ALTHEA J. RANDOLPH, WIDOW; S. ERLow DAVIS AND ANTHA B. DAVIS, HIS WIFE; HUGH C. DAVIS AND MARTHA DAVIS, HIS WIFE; RUSSELL R. STOUT AND OLIVE M. STOUT, HIS WIFE; GEORGIA A. BARNES, WIDOW; JANE D. POST AND JACOB S. POST, HER HUSBAND; JESSIE S. DAVIS, WIDOW; EVERETT O. DAVIS AND RUTH M. DAVIS, HIS WIFE; AND LEWIS E. DAVIS AND LENORE W. DAVIS, HIS WIFE HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC.	HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/8 CONFIRMATORY DEED	781 903	71 179
12	LC066781	12-0426-0028-0000 p/o 12-0426-0040-0000 p/o 12-0426-0044-0000 12-0426-0045-0000 12-0426-0046-0000	Q100885000	HUGH C. DAVIS AND MARTHA L. DAVIS, HIS WIFE; JANE D. POST AND JACOB S. POST, HER HUSBAND; JESSIE S. DAVIS; GEORGIA A. BARNES; LEWIS E. DAVIS CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC.	CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/8 ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE MEMORANDUM FARMOUT AGREEMENT (50%) LIMITED PARTIAL ASSIGNMENT (32%) ASSIGNMENT ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	983 1136 51 58 1522 1543 1576 1584 1600 WV505 1601	611 250 795 362 33 362 33
13	LC066774	12-0426-0001-0000 p/o 12-0426-0002-0000 12-0426-0003-0000 p/o 12-0426-0004-0000 12-0426-0005-0000	Q101113000	LEWIS M. STOUT AND JANELL D. STOUT, HIS WIFE; KATE STOUT, WIDOW; RAYMOND STOUT AND MABEL STOUT, HIS WIFE; LILLIAN M. NEWLON AND CHARLES NEWLON, HER HUSBAND; JOHN C. STOUT AND JUANITA STOUT, HIS WIFE; JESSE C. STOUT AND LILLIAN E. STOUT, HIS WIFE; AND LLOYD A. STOUT AND RUTH REEDER STOUT, HIS WIFE HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. DOMINION TRANSMISSION, INC.	HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC	NOT LESS THAN 1/8 CONFIRMATORY DEED ASSIGNMENT MERGER/NAME CHANGE MEMORANDUM FARMOUT AGREEMENT	824 142 903 1136 51 58 1522	142 179 250 795 362 33

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32	LC068614	p/o 12-0426-0008-000	Q100815000	DOMINION ENERGY TRANSMISSION, INC. HATTIE B. CUMMINS, SINGLE, H. D. SMITH AND EMMA J. SMITH, HIS WIFE, W. VIRGINIA SMITH, SINGLE, LORELEI S. BUTLER AND HERMAN F. BUTLER, HER HUSBAND HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC CNX GAS COMPANY LLC NOBLE ENERGY, INC. CNX GAS COMPANY LLC AND NOBLE ENERGY, INC. NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC HG ENERGY II APPALACHIA, LLC	THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT NOT LESS THAN 1/8 CONFIRMATORY DEED ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE MEMORANDUM OF FARMOUT AGREEMENT FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT LIMITED PARTIAL ASSIGNMENT (50%) PARTIAL ASSIGNMENT (32%) ASSIGNMENT ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1621 823 903 1136 51 58 1522 1524 1543 1576 1584 1600 WV505 1601 1621	1295 128 179 250 795 362 33 491 1235 125 942 692 581 1295 969 1235 125 942 692 581 1295
25	LC052223	12-0406-0021-0000 12-0406-0021-0001 12-0406-0021-0002 12-0406-0021-0003 12-0406-0021-0004 12-0406-0021-0005 12-0406-0021-0006 12-0406-0021-0007 12-0406-0021-0008 12-0406-0025-0000 12-0406-0028-0000 and 12-406A-0001-0000 through 12-406A-0041-0000	Q101129000	PORTER MAXWELL AND BERTHA B. MAXWELL, HUSBAND AND WIFE; AND W. BRENT MAXWELL AND LILLIE J. MAXWELL, HUSBAND AND WIFE JOHN CHIDESTER THE PHILADELPHIA COMPANY OF WEST VIRGINIA PITTSBURGH AND WEST VIRGINIA GAS COMPANY HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC.	JOHN C. CHIDESTER THE PHILADELPHIA COMPANY OF WEST VIRGINIA PITTSBURGH AND WEST VIRGINIA GAS COMPANY HOPE NATURAL GAS COMPANY CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC CNX GAS COMPANY LLC NOBLE ENERGY, INC. CNX GAS COMPANY LLC AND NOBLE ENERGY, INC. NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/8 ASSIGNMENT ASSIGNMENT ASSIGNMENT CONFIRMATORY DEED ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE MEMORANDUM OF FARMOUT AGREEMENT FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT LIMITED PARTIAL ASSIGNMENT (50%) PARTIAL ASSIGNMENT (32%) ASSIGNMENT ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	175 UNRECORDED 236 504 903 1136 51 58 1522 1524 1543 1576 1584 1600 WV505 1601 1621	450 111 353 179 250 795 362 33 491 1235 125 942 692 581 1295
39	LC090300	12-0406-0019-0000 12-0406-0019-0001	LC090300 FEE	DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. CNX GAS COMPANY LLC CNX GAS COMPANY LLC NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC CNX GAS COMPANY LLC AND NOBLE ENERGY, INC NOBLE ENERGY, INC. NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC HG ENERGY II APPALACHIA, LLC CNX GAS COMPANY LLC AND NOBLE ENERGY, INC NOBLE ENERGY, INC. NOBLE ENERGY, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC HG ENERGY II APPALACHIA, LLC	NOT LESS THAN 1/8 LIMITED PARTIAL ASSIGNMENT (50%) ASSIGNMENT ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT FARMOUT AGREEMENT NOT LESS THAN 1/8 LIMITED PARTIAL ASSIGNMENT (50%) ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1621 1551 1543 1584 1600 WV505 1621 1621 1621 1551 1543 1584 1600 WV505 1601 1621	969 1235 125 942 692 581 1295

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38	LC095044	12-0406-0005-0000 12-0406-0006-0000 12-0406-0007-0000 12-0406-0007-0001 12-0406-0007-0002 12-0406-0007-0003 12-0406-0007-0004 12-0406-0007-0005 12-0406-0007-0006 12-0406-0007-0007 12-0406-0007-0008 12-0406-0007-0009 12-0406-0007-0010 12-0406-0007-0011 12-0406-0007-0012 12-0406-0007-0013 12-0406-0007-0014 12-0406-0007-0015 12-0406-0007-0016 12-0406-0007-0017 12-0406-0007-0018 12-0406-0007-0019 12-0406-0007-0020 12-0406-0008-0000 12-0406-0008-0001	Q100253000	DIVISION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. W. B. VAN HORN AND ELSIE M. VAN HORN, HIS WIFE EASTERN OIL COMPANY WEST VIRGINIA CENTRAL GAS COMPANY WEST VIRGINIA CENTRAL GAS COMPANY CUMBERLAND AND ALLEGHENY GAS COMPANY COLUMBIA GAS TRANSMISSION CORPORATION CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC DOMINION TRANSMISSION, INC. NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. NOBLE ENERGY, INC. DOMINION TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC. DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC HG ENERGY II APPALACHIA, LLC EASTERN OIL COMPANY WEST VIRGINIA CENTRAL GAS COMPANY CONSOLIDATED NATURAL GAS COMPANIES OF WEST VIRGINIA CUMBERLAND AND ALLEGHENY GAS COMPANY COLUMBIA GAS TRANSMISSION CORPORATION CONSOLIDATED GAS SUPPLY CORPORATION CONSOLIDATED GAS TRANSMISSION CORPORATION CNG TRANSMISSION CORPORATION DOMINION TRANSMISSION, INC. CNX GAS COMPANY LLC CNX GAS COMPANY LLC NOBLE ENERGY, INC. CNX GAS COMPANY LLC AND NOBLE ENERGY, INC. NOBLE ENERGY, INC. DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC DOMINION ENERGY TRANSMISSION, INC. HG ENERGY II APPALACHIA, LLC HG ENERGY II APPALACHIA, LLC HG ENERGY II APPALACHIA, LLC	THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT MINERAL DEED NOT LESS THAN 1/8 ASSIGNMENT DEED DEED QUITCLAIM DEED DEED ASSIGNMENT MERGER/NAME CHANGE MERGER/NAME CHANGE MEMORANDUM FARMOUT AGREEMENT FIRST AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT LIMITED PARTIAL ASSIGNMENT (50%) PARTIAL ASSIGNMENT (32%) ASSIGNMENT MERGER/NAME CHANGE ASSIGNMENT MERGER/NAME CHANGE SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT THIRD AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT PARTIAL ASSIGNMENT (68%)	1621 1627 141 140 151 357 990 1046 1136 51 58 1522 1524 1543 1576 1584 WV505 1600 WV505 1601 1621 LEWIS 736	1295 1254 319 155 42 198 656 1003 250 795 362 33 491 1235 125 942 692 581 1295 220
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HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

470310392

October 23, 2019

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

RE: Drilling Under Roads – Antonio 1206 N-5H
Grant District, Harrison 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 along the above referenced lateral as designated on the plats.

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

Very truly yours,

Diane White

Diane C. White

Enclosures

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

Date of Notice Certification: 11/21/2019

API No. 47- _____ - _____

Operator's Well No. Antonio 1206 N-5H

Well Pad Name: Antonio 1206 Well Pad

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: West Virginia
County: Harrison
District: Grant
Quadrangle: West Milford
Watershed: Middle West Fork Creek

UTM NAD 83 Easting: 553375.9
Northing: 4334505.0
Public Road Access: SR 19 / Hackers Creek Road
Generally used farm name: Antonio

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 <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
RECEIVED Office of Oil and Gas DEC 04 2019		

Required Attachments:

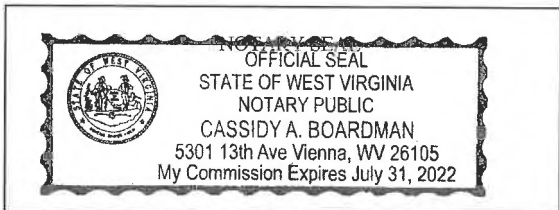
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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 notified 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.

WV Department of
Environmental Protection

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 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 21st day of November, 2019.

Cassidy A. Boardman Notary Public

My Commission Expires 7/31/2022

Oil and Gas Privacy Notice:

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

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Office of Oil and Gas

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WV Department of
Environmental Protection

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47- 47-03901992
OPERATOR WELL NO. 1206 N-5H
Well Pad Name: Antonio 1206

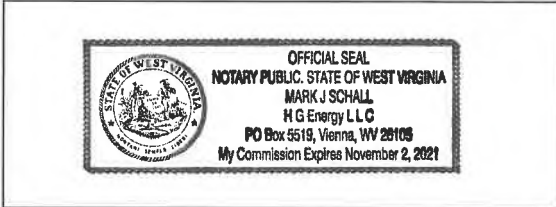
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 9th day of October, 2019.

[Signature] Notary Public

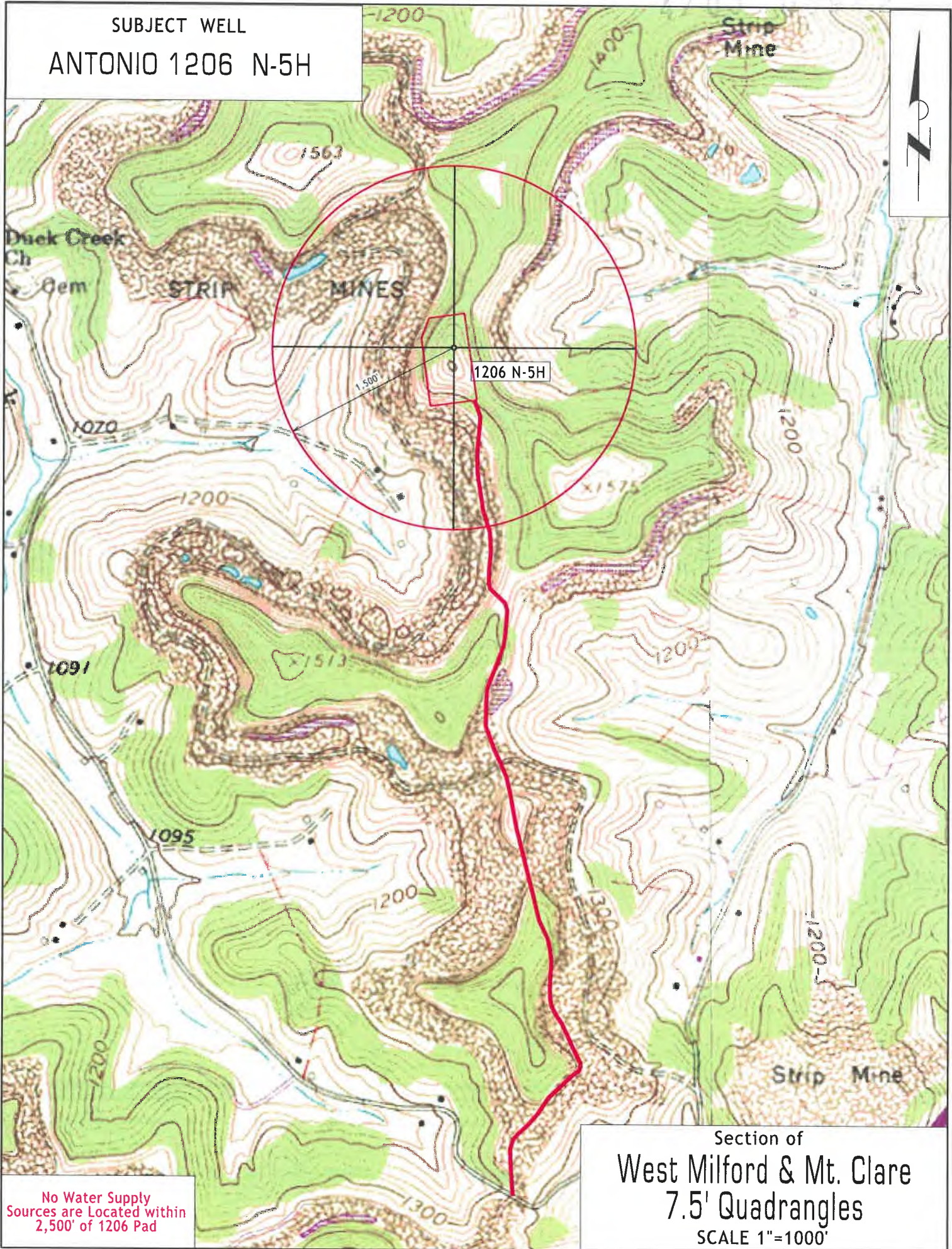
My Commission Expires 11/2/2021

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SUBJECT WELL
ANTONIO 1206 N-5H



No Water Supply
Sources are Located within
2,500' of 1206 Pad

Section of
West Milford & Mt. Clare
7.5' Quadrangles
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: 9/12/19 **Date of Planned Entry:** 9/19/19

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: Antonio PLLC, c/o Mike Ross
Address: P. O. Box 219
Coalton, WV 26257

Name: Charles R. Sutton
Address: 593 Long Run Road
Lost Creek, WV 26385

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Antonio PLLC, c/o Mike Ross
Address: P. O. Box 219
Coalton, WV 26257

MINERAL OWNER(s)

Name: Mineral Owners
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: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.158101 / -80.382374</u>
County: <u>Harrison</u>	Public Road Access: <u>SR 19</u>
District: <u>Grant</u>	Watershed: <u>Middle West Fork Creek</u>
Quadrangle: <u>West Milford WV 7.5'</u>	Generally used farm name: <u>Antonio</u>

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 57th 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.

Notice is hereby given by:

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

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

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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.

HG Energy II Appalachia, LLC

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

4705103082

September 12, 2019

RE: Antonio 1206 N-5H
Grant District, Harrison County
West Virginia

To Whom It May Concern:

Enclosed is a copy of a Department of Environmental Protection "Notice of Entry For Plat Survey" form WW-6A3. This notice is provided to you as a royalty owner to advise you that HG Energy II Appalachia, LLC, is beginning the process of applying for permits to drill a well(s) where you are identified as an owner of minerals underlying such tract in the county tax records. A well work permit application will be filed with the West Virginia Department of Environmental Protection (WVDEP), Office of Oil and Gas.

Pursuant to WV Code Chapter 22B, Article 6, you are receiving copies of this correspondence because you are an owner of mineral rights on one or more of the underlying leases impacted by this well (s). Statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WVDEP at 304-926-0450, located at 601 57th Street, Charleston, WV. Copies of such documents or additional information related to horizontal drilling may also be obtained by visiting the WV DEP online.

No action on your part is required. If you have any questions or comments regarding this permit application, you may call this office at (304) 420-1119. Questions concerning lease issues may be directed to Mark Schall at 304-420-1115. Address inquiries should be directed to Bethanne Wilson at 304-370-3246.

Very truly yours,

Diane White

Diane C. White

Enclosures

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WW-6A3
(1-12)

Antonio 1206 N-5H

Page 1 Continued

Mineral Owners

Antonio PLLC
c/o Mike Ross
PO Box 219
Coalton, WV 26257

Charles R Sutton
593 Long Run Road
Lost Creek, WV 26385

Alice A. Maxwell
44 Shirleen Drive
Hilton, NY 14468

Ann M. Zinn
Berlin K. Zinn, POA
180 Valley Street
Salem, WV 26426

Appalachian Royalty Company
501 Wood Lake Rd
Aledo, TX 76008-4632

Avery F. Gaskins
644 West Virginia Avenue
Morgantown, WV 26501

Barbara Ann Read (Rissew)
18 Bong Ter
Mount Holly, NJ 08060-1115

Betty J. Maxwell
1107 North Bentalou ST
Baltimore, MD 21216-4504

Betty Lee Stout
3711 64th Dr
Lubbock, TX 79413-5311

Black Gold Group, LTD
PO Box 85
Strasburg, OH 44680

Camden Newlon
3211 Simpson Rd
Flemington, WV 26347-9711

Carol L. Stefanik
23164 Foxberry Lane
Bonita Springs, FL 34135

Carole Ann Conaway
132 Main Street, Apt 216
Danbury, CT 06180

Carrie Louise Wagner & Daniel Stout
3954 Saranac Dr
Sharpsville, PA 16150-9678

Charles A. Smith
94 Dogwood Trail
Napier, WV 26631

Charles Lloyd Stout
PO Box 4609
Bridgeport, WV 26330

Charles P and Alice A. Maxwell
44 Shirleen Dr
Hilton, NY 14468

Charles R Sutton
801 Worthington Dr
Bridgeport, WV 26330

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WW-6A3Antonio 1206 N-5H(1-12)Page 1 ContinuedMineral Owners

Christine Porter Maxwell
 P.O. Box 1832
 Battle Ground, WA 98604

Cindy Elizabeth Greynolds
 558 Elizabeth Lane
 Glen Burnie, MD 21061

CNX Gas Company, LLC
 100 Consol Energy Drive, Suite 100
 Cannonsburg, PA 15317-6506

Cynthia Preston
 610 Stealey Ave
 Clarksburg, WV 26301

Dominion Energy Transmission, Inc.
 P. O. Box 26666
 Richmond, VA 23261-6666

Doris C. Stout Irrevocable Trust
 Daniel Stout
 RR 2 Box 488
 Grafton, WV 26354-9655

Dwayne John Bellman
 9 Redbud Lane
 Lovettsville, VA 20180

Eleanor (Barnhart) Tholl Rev Trust
 C/O Emily Dione
 62 Lewis Road
 Vassalboro, ME 04989

Elizabeth MacMillan
 540 Indian Mound ST
 Wayzata, MN 55391

Emily H. Windows Trust
 First National Bank Fort Collins, Trustee
 96 Emerick ST
 Ashland, OR 97520

Emily M. Littlepage
 123 Piqua Circle,
 Berwyn, PA 19312-2072

Franklin L. Sutton
 113 Cimmarron Rd
 Clarksburg, WV 26301

Franklin Maxwell Limited Parnshp 1 & 2
 PO Box 2395
 Buckhannon, WV 26201

Gilbert David Maxwell
 5747 Mountain Valley Road
 Axton, VA 24054-3075

Greta Marceline Young
 Lisa Butler, POA
 2260 Springwood Drive
 Auburn, AL 36830

Hugh Jarvis
 19 Portwine Road
 Willowbrook, IL 60527

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Page 1 Continued

Mineral Owners

Issac H Maxwell III & Betty J Maxwell
PO Box 218
Lost Creek, WV 26385

Janell D. Stout
156 Maple street
Flemington, WV 26347

Joseph Read
18 Bong Ter
Mount Holly, NJ 08060-1115

Julia Francis Lawson
101 North Riverside Drive
New Smyrna Beach, FL 32168

Kathy Sue Culver
124 Roosevelt Avenue
Glen Burnie, MD 21061

Kathy Sullivan
223 McCarty Rd
Fredericksburg, VA 22405

Kemp Littlepage
2906 Waters Edge CT
Beaufort, SC 29902-4357

Kenneth M Snider Sr
5711 Castlebridge Rd
Fredericksburg, VA 22407

Kenneth R. Snider
4820 Old Main St
Richmond, VA 23231

L.E. Sawyer
P O Box 584
MIDLAND, TX 79702

Martha Jean Stout & Barbara Spencer
RR 1 Box 165
Flemington, WV 26347-9720

Mary L. Maxwell
111 Sycamore Street
Clarksburg, WV 26301

Mary Margaret Hood
401 E Olive St
Bridgeport, WV 26330

Middleton Family Trust
P.O. Box 118
Onkama, MI 49675-0118

Murry Eugene Bellman
8715 Cypressbrook Drive
Houston, TX 77095

Nancy Ann Fowler
1155 Park Avenue
New York, NY 10128

Nellie Jo Brissey and Richard R. Bond
156 Valley Street
Salem, WV 26426

Patricia A. Workman
132 Turnip Drive
Roanoke, West Virginia 26447

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Page 1 Continued

Mineral Owners

Patricia Ann Workman
2585 Old Mill Road
Weston, WV 26452

Paul E. Alkire
4203 Hackers Creek Rd
Jane Lew, WV 26378-8305

Peggy Jo Conaway
18 N High Street
Mount Sterling, OH 43143

Richard R. Bond
1720 60th Avenue, # 318
Greeley, CO 80634

Robert H. Maxwell
C/O Christine Porter Maxwell
P.O. Box 1832
Clarksburg WV 26301

Ruth Ann Kniceley
542 Brushy Fork Rd
Bridgeport, WV 26330

Samuel Robert Nutter
711 Waverly Rd
La Porte, IN 46350

Suzanne D. Simmons
301 WV Highway 74
Coxs Mills, WV 26342

John C. Stout Revocable Trust
Thomas Stout, Trustee
321 Pennsylvania Ave
Bridgeport, WV 26330-1543

Lost Creek United Methodist Church Trustee
PO Box 176
Lost Creek, WV 26385-0176

Virginia M. Littlepage
1532 Sussex Drive
Plano, Texas 75075-2719

W.B.M Heirs Properties LLC
Steve Maxwell
P O Box 2395
Buckhannon, WV 26201

William Lee Maxwell
20 Douglas Road
Martinsville, VA 24122-0954

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

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

Notice Time Requirement: Notice shall be provided at least TEN (10) days prior to filing a permit application.
Date of Notice: 11/14/2019 **Date Permit Application Filed:** 11/25/2019

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: Antonio PLLC, c/o Mike Ross
Address: P. O. Box 219
Coalton, WV 26257

Name: Charles R. Sutton
Address: 593 Long Run Road
Lost Creek, WV 26385

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 553375.9
County: Harrison Northing: 4334505.0
District: Grant Public Road Access: SR19/Hackers Creek Road
Quadrangle: West Milford Generally used farm name: Antonio
Watershed: Middle West Fork Creek

This Notice Shall Include:

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

Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. 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.

RECEIVED
Office of Oil and Gas

DEC 04 2019

WV Department of
Environmental Protection

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

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

Date of Notice: 11/15/2019 **Date Permit Application Filed:** 11/25/2019

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

Name: Antonio PLLC, c/o Mike Ross
Address: P. O. Box 219
Coalton, WV 26257

Name: Charles R. Sutton
Address: 593 Long Run Road
Lost Creek, WV 26385

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: West Virginia	UTM NAD 83	Easting: 553375.9
County: Harrison		Northing: 4334505.0
District: Grant	Public Road Access:	SR19/Hackers Creek Road
Quadrangle: West Milford	Generally used farm name:	Antonio
Watershed: Middle West Fork Creek		

This Notice Shall Include:

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

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

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

Oil and Gas Privacy Notice:

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

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Office of Oil and Gas

DEC 04 2019

WV Department of
Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

October 18, 2019

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

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

Subject: DOH Permit for the Antonio 1206 Pad, Harrison County
1206 N-5H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #04-2018-1374 which has been issued to HG Energy II for access to the State Road for a haul road located off Harrison County Route 19/20 SLS. The haul route will cross Harrison County Route 25/6 by permits 04-2019-0930 & 04-2019-0931.

This operator is in compliance with §22-6A-20 of the WV Code. 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 C. White
HG Energy II
CH, OM, D-4
File

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Office of Oil and Gas

DEC 04 2019

WV Department of
Environmental Protection

E.E.O./AFFIRMATIVE ACTION EMPLOYER

List of Frac Additives by Chemical Name and CAS #**Antonio 1206 Well Pad (N-1H to N-5H)**

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	

WV Department of
Environmental Protection

DEC 04 2019

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Office of Oil and Gas

CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG 1206 WELL PAD & IMPOUNDMENTS

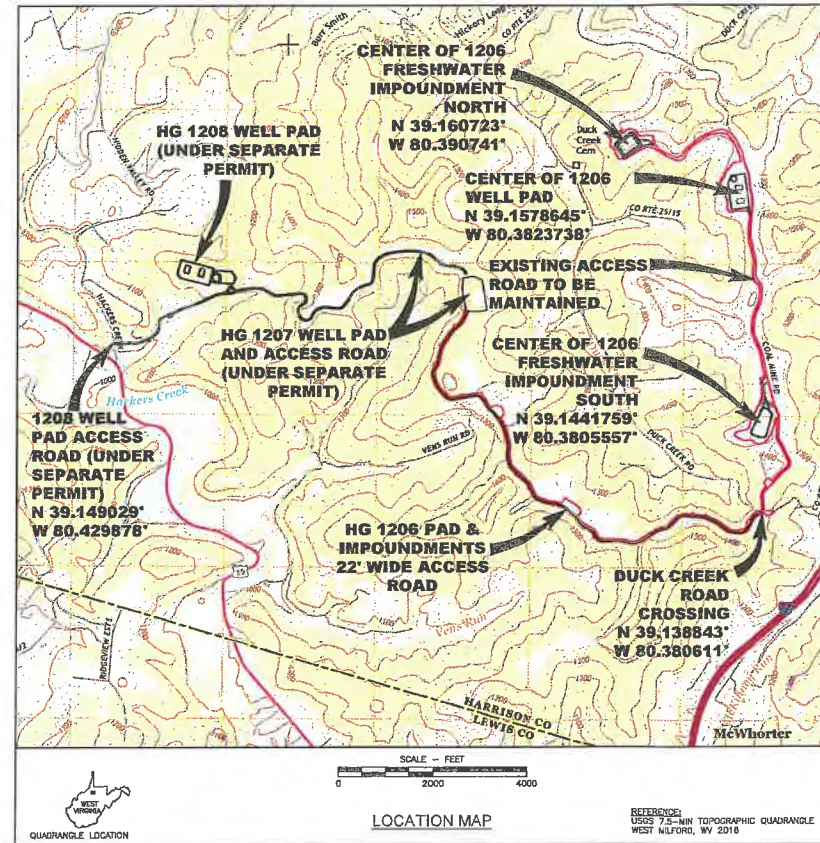
GRANT DISTRICT
HARRISON COUNTY
WEST VIRGINIA



SHT. NO.	SHEET TITLE
1	TITLE SHEET
2A-2Z	SITE DEVELOPMENT PLANS
3A-3B	IMPOUNDMENT SECTIONS
4A-4H	ACCESS ROAD SECTIONS
5A-5G	CONSTRUCTION NOTES & DETAILS
6A-6K	RESTORATION PLAN
7A-7C	PROPERTY MAP

CONSTRUCTION SEQUENCE

- 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.
- 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.
- 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.
- Land Clearing and Grading - Implement clearing and grading only after all downslope E&S BMPs have been constructed and stabilized.
- 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.
- 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.
- Upon completion of pad grading, compact the pad to grade and begin placement of pad soil cement.
- 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.



PREPARED FOR
HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD
PARKERSBURG, WEST VIRGINIA 26101
(304) 420-1100

PREPARED BY
PENN ENVIRONMENTAL & REMEDIATION, INC.
111 RYAN COURT
PITTSBURGH, PA 15205
(412) 722-1222

Estimated Gross Material Balance (CY)			
Final Development - Gravel Option			
	Cut	Fill	Stockpile
1206 Impoundment North & Staging Area	32,865	32,355	510
1206 Impoundment North DC-01 & 02	2,610	20	2,590
1206 Impoundment South & Staging Area	54,705	44,870	9,835
1206 Pad & Impoundments Access Road	4,315	3,970	345
1206 Well Pad & Access	32,760	32,455	305
Coal Mine Rd Sight Distance Improvements	1,200	0	1,200
Totals	128,455	113,670	14,785
Est. Swell Factor (20%)			2,957
Total Site Balance:			17,742
Stripped Topsoil (Limits of Earthwork)			20,738
Est. Swell Factor (20%)			4,147
Est. Topsoil Stockpile Volume (Loose CY)			24,885
Minimum Total Stockpile Capacity Required (CY)			42,627

Notes:
 1. Material balance for est. gross earthwork quantities only.
 2. Topsoil est. volume based on 6 inches average depth.
 3. Material balance and aggregate quantities based on estimates and may not be representative of actual quantities.
 4. Estimates do not reflect contractor pay volumes.

Estimated Gravel Quantities				
	Impoundment North Staging & Access Road	Impoundment South Staging & Access Road	1206 Well Pad & Access	TOTAL
1" Soil Cement (Placed In)	27,390	2,985	3,690	30,530
Top Soil Chip & Seal (Placed In)	27,390	2,985	3,690	34,995
2" Depth of 3/4" Crusher Run (Form)			3,270	3,270
Estimated Pad & Impoundments Access Road 12" Filter Sock Length (LF)				14,510
Estimated Impoundment North 12" Filter Sock Length (LF)				2,901
Estimated Impoundment South 12" Filter Sock Length (LF)				5,450
Estimated Well Pad 12" Filter Sock Length (LF)				1,576
TOTAL Estimated 12" Compost Filter Sock Length (LF)				24,437
Estimated Pad & Impoundments Access Road Limit of Disturbance (Acres)				21,955
Estimated 1206 Impoundment North Limit of Disturbance (Acres)				9,297
Estimated 1206 Impoundment South Limit of Disturbance (Acres)				11,695
Estimated Existing Coal Mine Road Limit of Disturbance (Acres)				14,181
Estimated 1206 Well Pad Limit of Disturbance (Acres)				11,058
TOTAL Estimated Limit of Disturbance (Acres)				68,187
Impoundment North Peak Pre-Construction Elevation (Ft)				1304
Impoundment South Peak Pre-Construction Elevation (Ft)				1454
Well Pad Peak Pre-Construction Elevation (Ft)				1364
Well Area Subbase Elevation (Top of Soil Cement Subbase) (Ft)				1349.50
Well Area Surface Elevation (Ft)				1349.75

WELL #	LAT.	LONG.
N-1H	N 39.158096	W 80.382426
N-2H	N 39.158101	W 80.382374
N-3H	N 39.158107	W 80.382321
N-4H	N 39.158112	W 80.382269
N-5H	N 39.158118	W 80.382216
S-6H	N 39.157314	W 80.382294
S-7H	N 39.157319	W 80.382242
S-8H	N 39.157325	W 80.382189
S-9H	N 39.157330	W 80.382137
S-10H	N 39.157336	W 80.382084

WELL ELEVATIONS 1349.75
UTM83-17F

	LATITUDE	LONGITUDE
DUCK CREEK ROAD CROSSING	N 39.138843	W 80.380611
1207 WELL PAD ACCESS ROAD ENTRANCE	N 39.152061	W 80.420447
1206 WELL PAD ACCESS ROAD ENTRANCE	N 39.149029	W 80.429878

RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	AREA WITHIN LOD
HUBERT E & SANDRA K NEEL	17-12-0445-0005-0000	89.07	0.099
MICKEY PETITO	17-12-0445-0013-0000	132.852	5.952
LELAND J FREEMAN	17-12-0445-0026-0000	15.5506	2.236
CHARLES R SUTTON	17-12-0445-0043-0000	4.655	1.134
FRANKLIN L SUTTON	17-12-0445-0047-0000	72.2783	4.670
RICHARD L HAWKINS, JR	17-12-0446-0031-0000	53.1225	3.425
FRANKLIN L SUTTON	17-12-0446-0039-0001	48.3295	2.713
W JOE & HANNAH M SUTTON	17-12-0446-0040-0000	84.6203	1.709
DUCK CREEK RD	N/A	N/A	0.052
CHARLES NAY	17-12-0446-0039-0000	26.2318	2.168
CHARLES RALPH & TANYA K SUTTON	17-12-0446-0040-0000	84.6203	2.253
JERI L BOOHER	17-12-0446-0031-0001	22.6792	1.811
MARY RICHARDS	17-12-0446-0033-0000	47.9334	6.427
WILLIAM LEROY & VIRGINIA A. JENKINS	17-12-0446-0018-0000	78.5858	2.638
MARY RICHARDS	17-12-0446-0018-0001	0.9075	0.197
MARY RICHARDS	17-12-0446-0019-0000	56.5818	2.028
P ANTONIO, LLC	17-12-0446-0003-0000	180.7720	1.656
P ANTONIO, LLC	17-12-0446-0002-0000	41.0699	0.668
P ANTONIO, LLC	17-12-0426-0071-0000	230.6748	21.146
CHARLES R SUTTON	17-12-0426-0072-0000	31.1173	4.504
JUDITH H RUSSELL	17-12-0425-0021-0000	15.1580	0.701
TOTAL LIMIT OF DISTURBANCE			68.187 AC.

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REVISION	DATE	DESCRIPTION
1	9/18/19	REVISED WELLHEAD LAYOUT
2	10/09/19	WETLAND REVISIONS
3	10/31/19	REVISIONS PER DEP COMMENTS
4	11/05/19	REVISIONS PER DEP COMMENTS



TITLE SHEET
HG 1206 WELL PAD & IMPOUNDMENTS
GRANT DISTRICT
HARRISON COUNTY, WEST VIRGINIA

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

APPROVED MEP 09/05/2019
CHECKED MEP 08/30/2019
DRAWN DJA, MFR 08/30/2019
PROJECT No. 4000-PA007871

DRAWING NUMBER
PA007871-001
SHEET 1

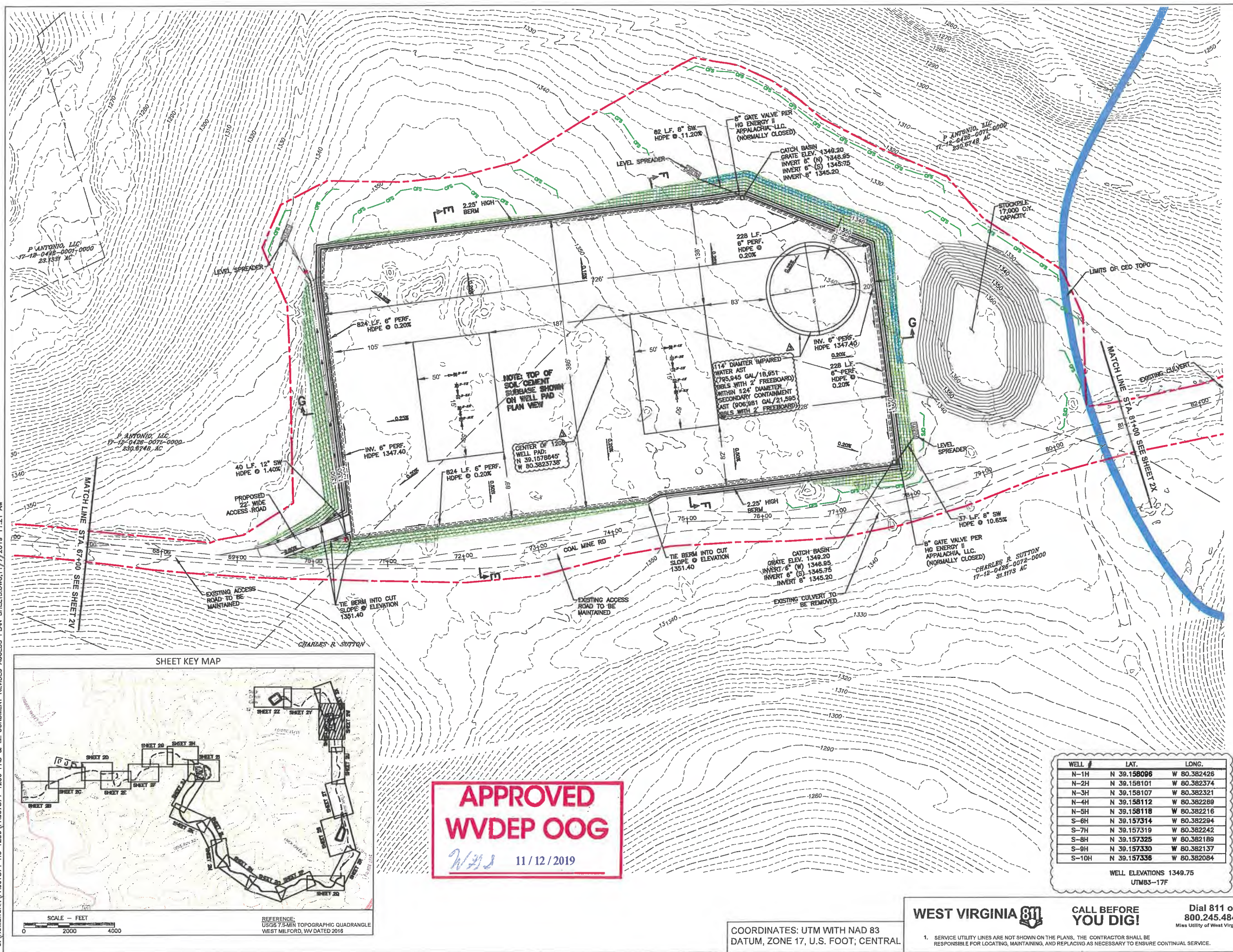


CALL BEFORE YOU DIG!

Dial 811 or
800.245.4848
Miss Utility of West Virginia

1. SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING, AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE.

C:\HOMWORK\PA007871 HG 1206\PA007871 1206 PAD & IMPOUNDMENT REVISED ACCESS PLAN SHEETS.DWG, 11/17/2018 11:21 AM



LEGEND

- ROCK CHECK DAM
- RIPRAP APRON
- ACCESS ROAD/PAD CHANNEL
- COMPOST FILTER SOCK 12" UNLESS OTHERWISE NOTED
- STACKED COMPOST FILTER SOCK 12"
- APPROXIMATE LIMITS OF DISTURBANCE
- APPROXIMATE PROPERTY LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED FINAL GRADE INDEX CONTOUR
- PROPOSED FINAL GRADE INTERMEDIATE CONTOUR
- LIMITS OF BLUE MOUNTAIN MAPPING
- LIMITS OF CEC MAPPING
- EXISTING ACCESS ROAD
- EXISTING OVERHEAD UTILITY LINE
- EXISTING GAS LINE

SECTION

TOE BENCH (SEE FILL BENCH DETAIL)

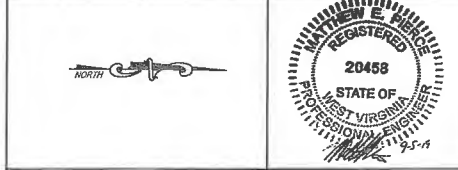
EROSION CONTROL BLANKET

DELINEATED WETLAND

- WEST VIRGINIA GENERAL NOTES:**
- ALL PROPOSED ELEVATIONS SHOWN ON PLAN SHEETS REFLECT PROPOSED SUBBASE ELEVATIONS.
 - REFER TO THIS SHEET WITH THE CONSTRUCTION NOTES AND DETAILS.
 - CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES PROTECTION SERVICES (811) A MINIMUM OF 3 DAYS PRIOR TO EXCAVATION WORK. UTILITIES MUST BE IDENTIFIED AND EITHER RELOCATED OR PROTECTED BY CONTRACTOR PRIOR TO BEGINNING WORK AT THE SITE.
 - THIS SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH WELL DRILLING PERMIT. CONTRACTOR RESPONSIBLE TO OBTAIN ALL OTHER NECESSARY PERMITS/APPROVALS REQUIRED TO CONSTRUCT THIS SITE INCLUDING BUT NOT LIMITED TO FEDERAL, STATE, AND LOCAL REQUIREMENTS.
 - NO GEOTECHNICAL OR SOIL STABILITY ANALYSIS WAS PERFORMED FOR THIS SITE. CONTRACTOR IS RESPONSIBLE TO CONDUCT PROPER TOE AND BONDING BENCHES BASED ON FIELD CONDITIONS TO PREPARE SURFACES FOR FILL PLACEMENT ON STEEP SLOPES. PERM EAR IS NOT RESPONSIBLE FOR SLOPES, SLIDES, OR EARTH MOVEMENT RESULTING FROM CONSTRUCTION.
 - ESTABLISH EROSION AND SEDIMENTATION CONTROL BMPs PRIOR TO EARTHWORK. SITE CONSTRUCTION SHALL FOLLOW WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, DATED MAY 2012.
 - CLEAR AND GRUB WORK AREA, REMOVE AND STOCKPILE AVAILABLE TOPSOIL FROM LIMIT OF DISTURBANCE TO A LOCATION DESIGNATED BY HG ENERGY II APPALACHIA, LLC.
 - NO EMBAZONMENT FILL SHALL BE PLACED ON FROZEN MATERIAL. FILL MATERIAL SHALL BE FREE OF ORGANICALS, LARGE ROCKS, FROZEN SOIL OR OTHER OBJECTIONABLE MATERIAL.
 - CUT/FILL SLOPES SHALL BE CONSTRUCTED TO A MAXIMUM SLOPE OF 3H:1V UNLESS NOTED OTHERWISE.
 - FILL MATERIAL SHALL BE PLACED IN LIFTS OR LAYERS OVER THE LENGTH OF THE FILL. LIFT THICKNESS OF THE SOIL SHALL BE AS THIN AS THE SUITABLE RANDOM EXCAVATED MATERIAL PERMIT, TYPICALLY 6-12 INCHES THICK. THE SIZE OF ROCK LIFTS SHALL NOT EXCEED 36 INCHES. THE ROCK SHALL NOT BE GREATER IN ANY DIMENSION THAN 36 INCHES. COMPACTION SHALL BE OBTAINED BY COMPACTION EQUIPMENT. SOFTEN'S FOOT OR PAD ROLLERS, DEPENDING ON MATERIAL. COMPACTION TO VISIBLE NON-MOVEMENT OF THE EMBANKMENT MATERIAL. COMPACTION EFFORT SHALL NOT EXCEED OPTIMUM MOISTURE LIMITS. EACH LIFT SHALL BE COMPACTION TO A STANDARD PROCTOR DENSITY OF AT LEAST 90% BEFORE BEGINNING THE NEXT LIFT. QC TESTING SHALL BE PERFORMED AT A RATE OF 2 TESTS/ACRE/LIFT.
 - CONTRACTOR SHALL CONSTRUCT ACCESS ROAD IN ACCORDANCE WITH DETAILS PROVIDED. ADDITIONAL COVER MATERIAL PLACEMENT REQUIRED IN AREA OF UTILITY LINES.
 - CONTRACTOR SHALL COORDINATE MATERIAL MANAGEMENT (EXCESS CUT/FILL, TOPSOIL, STOCKPILES, GRAVIL, SOULINGS) WITH HG ENERGY II APPALACHIA, LLC PRIOR TO MOBILIZATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER EROSION AND SEDIMENT CONTROLS, BOTH ON SITE AND OFF SITE.
 - ALL SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS ARE STABILIZED AND THE VEGETATIVE GROUND COVER HAS ACHIEVED A UNIFORM 70% GROWTH. ANY AREAS NOT ACHIEVING A 70% VEGETATIVE COVER SHALL BE RESEEDED AND MULCHED WITHIN 24 HOURS OF DETECTION.
 - SECONDARY CONTAINMENT SHALL BE PROVIDED DURING DRILLING PROCESS. A LNER AND MAT SYSTEM WITH BERM SHALL BE INSTALLED PRIOR TO DRILLING AND WATER INSIDE SECONDARY CONTAINMENT SHALL BE DISPOSED OFFSITE IN ACCORDANCE WITH WV REGULATIONS.
- REFERENCE:**
- TOPOGRAPHY OBTAINED FROM CIVIL & ENVIRONMENTAL CONSULTANTS, INC., BLUE MOUNTAIN, INC. AND NATIONAL ELEVATION DATASET.
 - EXISTING STREAMS AND WETLANDS DELINEATED BY AMY ENVIRONMENTAL, INC.
 - PROPERTY BOUNDARIES & OWNER INFORMATION OBTAINED VIA WV PROPERTY VIEWER WWW.WVPMV.GOV/PARCEL/

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REVISION	DATE	DESCRIPTION
1	9/16/19	REVISED WELHEAD LAYOUT
2	10/09/19	WETLAND REVISIONS
3	10/31/19	REVISIONS PER DEP COMMENTS
4	11/06/19	REVISIONS PER DEP COMMENTS



SCALE - FEET
0 50 100 150

SITE DEVELOPMENT PLAN
WITH EROSION AND SEDIMENTATION CONTROLS
HG 1206 WELL PAD & IMPOUNDMENTS
GRANT DISTRICT
HARRISON COUNTY, WEST VIRGINIA

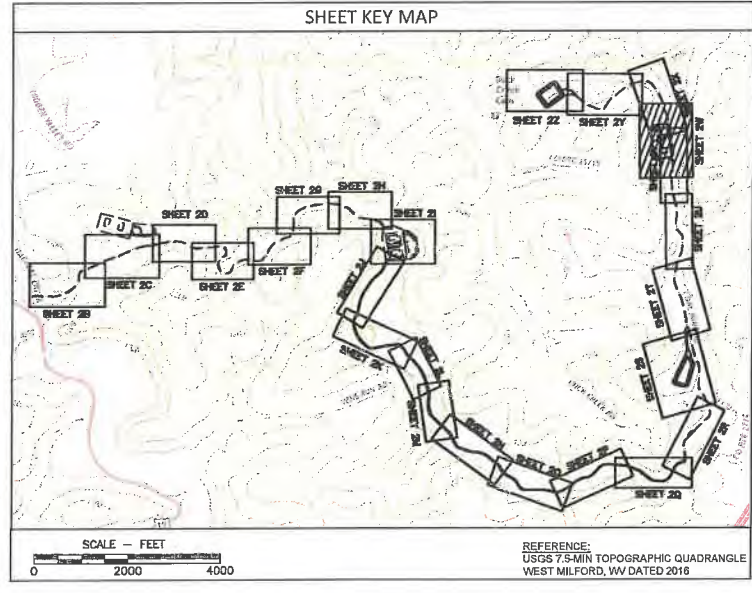
PREPARED FOR
HG ENERGY II APPALACHIA, LLC
PARKERSBURG, WEST VIRGINIA

APPROVED MEP 09/05/2019
CHECKED MEP 08/30/2019
DRAWN DJA, MFR 08/30/2019
PROJECT No. 4000-PA007871

Penn E&R
Environmental & Remediation, Inc.

DRAWING NUMBER
PA007871-001
SHEET 2W

111 RYAN COURT, PITTSBURGH, PA 15205;
412-722-1222



APPROVED
WVDEP OOG
11/12/2019

WELL #	LAT.	LONG.
N-1H	N 39.158096	W 80.382426
N-2H	N 39.158101	W 80.382374
N-3H	N 39.158107	W 80.382321
N-4H	N 39.158112	W 80.382268
N-5H	N 39.158118	W 80.382216
S-6H	N 39.157314	W 80.382294
S-7H	N 39.157319	W 80.382242
S-8H	N 39.157325	W 80.382189
S-9H	N 39.157330	W 80.382137
S-10H	N 39.157336	W 80.382084

WELL ELEVATIONS 1349.75
UTM83-17F

COORDINATES: UTM WITH NAD 83
DATUM, ZONE 17, U.S. FOOT, CENTRAL

WEST VIRGINIA 811 CALL BEFORE YOU DIG!

Dial 811 or 800.245.4848
Miss Utility of West Virginia

1. SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING, AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE.