



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

Thursday, March 28, 2019
WELL WORK PERMIT
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for 1209 S-12H
47-033-05948-00-00

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

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

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: 1209 S-12H
Farm Name: HG ENERGY II APPALACHIA
U.S. WELL NUMBER: 47-033-05948-00-00
Horizontal 6A New Drill
Date Issued: 3/28/2019

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: 4703305948

~~03/29/2019~~

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

03/29/2019

1) Well Operator: HG Energy II Appalachia, L

<u>494519932</u>	<u>Harrison</u>	<u>Union</u>	<u>West Milford 7.5'</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: Nays 1209 S-12H Well Pad Name: Nays 1209

3) Farm Name/Surface Owner: Nays / HG Energy II Appalachia Public Road Access: Kincheloe Run Rd/SLS 35

4) Elevation, current ground: 1002' Elevation, proposed post-construction: 1007'

5) Well Type (a) Gas Oil _____ Underground Storage _____
Other _____
(b) If Gas Shallow Deep _____
Horizontal *SOW*
1/28/2019

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus at 6863/6914' and 51' in thickness. Anticipated pressure at 4314#.

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23,730'

11) Proposed Horizontal Leg Length: 15571'

12) Approximate Fresh Water Strata Depths: 135', 500'

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

14) Approximate Saltwater Depths: None noted in offsets

15) Approximate Coal Seam Depths: 660' to 665'

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: _____

WW-6B
(04/15)

API NO. 47- _____
OPERATOR WELL NO. Nays 1209 S-12H
Well Pad Name: Nays 1209

18)

CASING AND TUBING PROGRAM

03/29/2019

Storage

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	100'	100'	Drilled In
Fresh Water	20"	NEW	J-55	94	600'	600'	40% excess yield = 1.20, CTS
Coal	13 3/8"	NEW	J-55	68	1735'	1735'	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	2500'	2500'	40% excess yield Lead/ 0% Excess Tail
Production	5 1/2"	NEW	P-110	23	23730'	23730'	20% excess yield = 1.10, tail yield = 1.20
Tubing							
Liners							

Storage

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	.500				CTS
Fresh Water	20"	24"	.438	2110	1200	Type 1, Class A	30 % excess yield = 1.20, CTS
Coal	13 3/8"	17 1/2"	.480	3450		Type 1/Class A	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	12 1/4"	.395	3950		Type 1/Class A	40% excess yield = 0% Excess Lead
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield = 1.10, tail yield = 1.20
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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 6900 feet. Drill horizontal leg to estimated 15571 TMD, 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.

03/29/2019

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): 16.148 acres

22) Area to be disturbed for well pad only, less access road (acres): 10.834 acres

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing.
Packer - centralized every 3 joints to surface.
Casing - Base string on every joint.
Intermediate - Base string on every third joint to 100' from surface.
Production - Run 1 spool centralizer every 3 joints from the top of the curve to surface. Run 1 spool centralizer every 3 joints from the 1st 5.1" 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 - 61.8 ppg PWD-1 + 3% Incon C-201, 40% Barium Yield = 1.03, CTS
Cement - Lead 18.4 ppg PWD-1 + 2.0% Incon C-201, 40% Barium Yield = 15.0 ppg PWD-1 + 2.0% Incon C-201, 40% Barium Yield = 1.03, CTS
Intermediate - Lead 18.4 ppg PWD-1 + 2.0% Incon C-201, 40% Barium Yield = 15.0 ppg PWD-1 + 2.0% Incon C-201, 40% Barium Yield = 1.03, CTS
Production - Lead 14.8 ppg PWD-1 + 1.2% Incon R3 + 1% Incon EC1 + 0.7% galact PP13L + 0.3% Incon MPAS70, TB: 14.8 ppg PWD-1 + 0.35% Incon R3 + 0.7% galact PP13L + 0% Incon AOCV1 + 0.5% Incon MPA178205 Exactacid Yield = 1.07 of Yield = 1.04, CTS

25) Proposed borehole conditioning procedures:

Conductor - Ensure the hole is clean at TD.
Fresh Water - Once casing is at setting depth, circulate a minimum of one hole volume with Fresh Water prior to pumping cement.
Casing - 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 at TD. Circulate a minimum of one hole volume prior to pumping cement.
Production - Once on bottom TD with casing, circulate at one allowable pump rate for at least 24 hours up, or well returns and pump procedure indicate the hole is clean. Circulate a minimum of one hole volume prior to pumping cement.

*Note: Attach additional sheets as needed.



1209 S-12H
Marcellus Shale Horizontal
Harrison County, WV

Ground Elevation		1007'		1209 S-12H SHL				237439.06N 1732700.54E							
Azm		160.751°		1209 S-12H LP				237990.66N 1735445.39E							
WELLBORE DIAGRAM		160.751°		1209 S-12H BHL				223290.77N 1740578.43E							
HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS						
30"	30" 157.5# LS	Conductor	0	100	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						
		Fresh Water	0	135	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						
24"	20" 94# J-55	Fresh Water	0	600	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 every joint <i>*will also be running ECP 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						
		Kittaning Coal	660	665											
		Little/Big Lime	1126 / 1167	1151 / 1243											
		Injun / Gantz (Storage)	1243 / 1535	1349 / 1585											
17.5"	13-3/8" 68# J-55 BTC	Intermediate 1	0	1735	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						
		Fifty / Thrity Foot	1650 / 1730	1697 / 1742											
		Gordon Stray / Gordon	1785 / 1850	1850 / 1940											
		5th Sand	2035	2070											
		Bayard Sand	2125	2160											
8.5" Vertical	5-1/2" 23# P-110 HC CDC HTQ	Speechley	2745	2763	9.0ppg SOBM	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=14520 psi Note:Actual centralizer schedules may be changed due to hole conditions						
		Bailtown	2985	3005											
		Benson	4050	4083											
		West Falls	4620	5865											
		8.5" Curve	5-1/2" 23# P-110 HC CDC HTQ	Rhinstreet	5865		6140			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.				
				Cashaqua	6140		6341								
				Middlesex	6341		6421								
				West River	6421		6514								
				Burkett	6514		6540								
				Tully Limestone	6540		6644								
				Hamilton	6644		6863								
				Marcellus	6863		6914								
				8.5" Lateral	5-1/2" 23# P-110 HC CDC HTQ		TMD / TVD (Production)					23730	6900	11.5ppg-12.5ppg SOBM	
							Onondaga					6914			

LP @ 6900' TVD / 8159' MD

8.5" Hole - Cemented Long String
5-1/2" 23# P-110 HC CDC HTQ

+/-15571' ft Lateral

TD @ +/-6900' TVD
+/-23730' MD

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WV Department of
Environmental Protection

X=centralizers

BHL is located on topo map 5,633 feet south of Latitude: 39° 07' 30"
 SHL is located on topo map 6,743 feet south of Latitude: 39° 10' 00"

BHL is located on topo map 11,073 feet west of Longitude: 80° 22' 30"
 SHL is located on topo map 7,272 feet west of Longitude: 80° 25' 00"

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL
SEE PAGE 3 FOR SURFACE OWNERS

03/29/2019

	LESSOR	LEASE NO.	DIST-TM/PAR
A	J. B. GUSMAN ET AL	FK020606	20-444/11.2 12-444/13 12-444/21.1 12-444/21.2 12-444/21 12-444/22
B	W. L. HUGHES ET AL	FK020607	12-445/16 12-445/17 12-445/18.1
C	HOWARD NEELY	FK014008	12-445/30.3 12-445/30.1 12-445/30.2 12-445/44 12-465/2 12-445/30.5 12-465/1
D	H. S. BAILEY ET AL	FK013035	12-465/1
E	ISAAC JACKSON	LC009807	4-8B/4 4-8B/5 4-8C/29 4-8C/33.2 4-8C/34 4-10/67 4-10/23 P/O 4-8C/87 5-2/2



SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M)
 N:4333365.45
 E:548190.82
UTM 17-NAD83(FT)
 N:14217049.80
 E:1798522.70
LAT/LON DATUM-NAD83
 LAT:39.148152
 LON:-80.442308

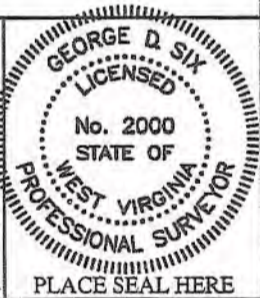
APPROX. LANDING POINT
UTM 17-NAD83(M)
 N:4333547.42
 E:549024.25
UTM 17-NAD83(FT)
 N:14217646.81
 E:1801257.05
LAT/LON DATUM-NAD83
 LAT:39.149745
 LON:-80.432650

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
 N:4329095.10
 E:550662.58
UTM 17-NAD83(FT)
 N:14203039.52
 E:1806632.16
LAT/LON DATUM-NAD83
 LAT:39.109533
 LON:-80.414024



FILE #: 1209 S-12H
 DRAWING #: 1209 S-12H
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 Signed: George D. Six
 R.P.E.: _____ L.L.S.: P.S. No. 2000



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



DATE: JANUARY 25, 2019
 OPERATOR'S WELL #: 1209 S-12H
 API WELL #: 47 33
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE WEST FORK CREEK ELEVATION: 1,007'±
 COUNTY/DISTRICT: HARRISON / UNION QUADRANGLE: WEST MILFORD, WV 7.5'
 SURFACE OWNER: HG ENERGY II APPALACHIA, LLC ACREAGE: 95.06±
 OIL & GAS ROYALTY OWNER: ANN COVINGTON, ET AL ACREAGE: 1103.116±
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,900'± TMD: 23,731'±
 WELL OPERATOR HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT DIANE C. WHITE
 Address 5260 DUPONT ROAD Address 5260 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

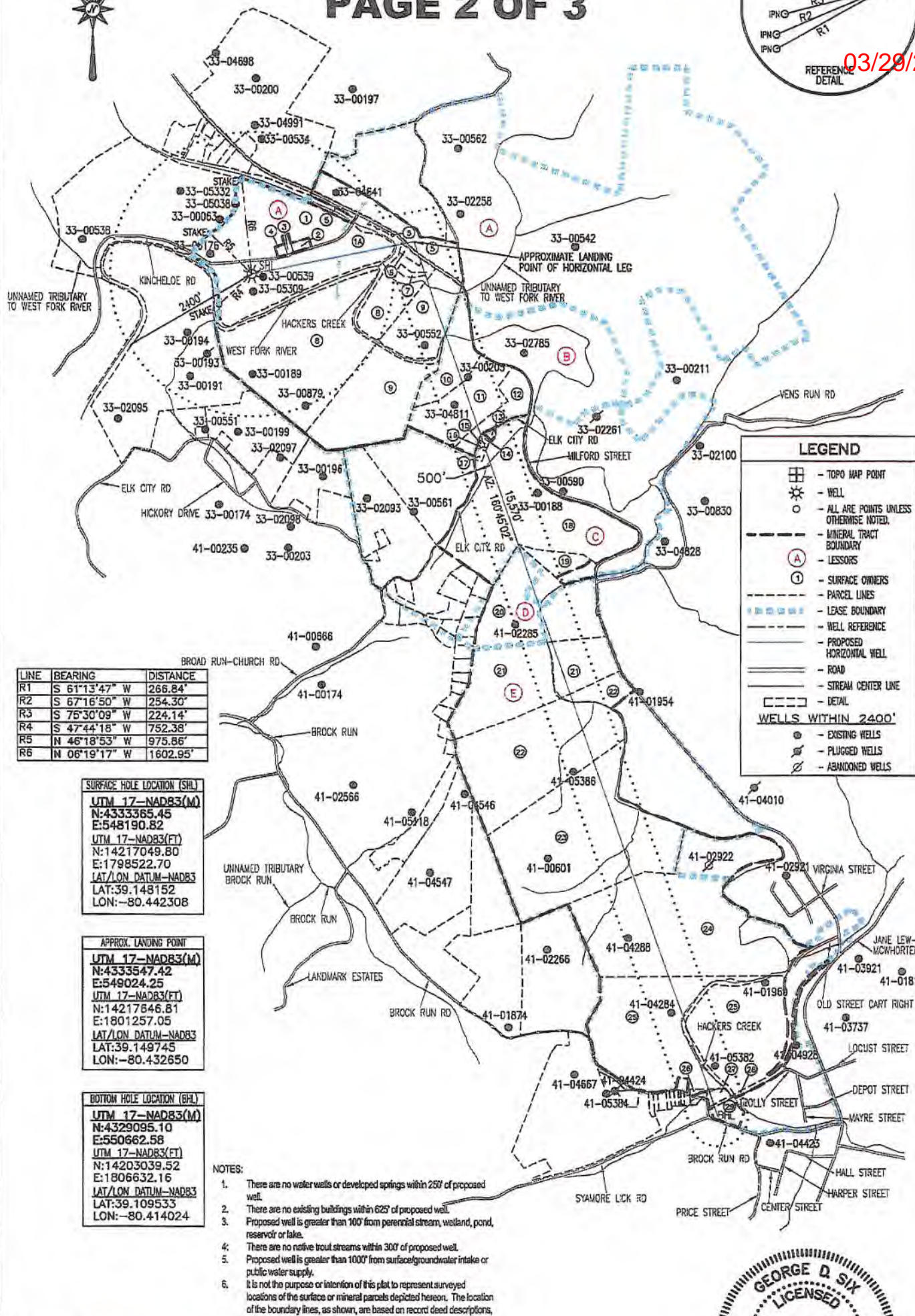
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1209 S-12H PAGE 2 OF 3



03/28/2019



LINE	BEARING	DISTANCE
R1	S 61°13'47" W	266.84'
R2	S 67°16'50" W	254.30'
R3	S 75°30'09" W	224.14'
R4	S 47°44'18" W	752.38'
R5	N 46°18'53" W	975.86'
R6	N 06°19'17" W	1602.95'

SURFACE HOLE LOCATION (SHL)

UTM 17-NAD83(M)	
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E:	548190.82
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LAT/LON DATUM-NAD83	
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LON:	-80.432650

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E:	1806632.16
LAT/LON DATUM-NAD83	
LAT:	39.109533
LON:	-80.414024

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

API WELL #: 47 33
STATE COUNTY PERMIT

JANUARY 25, 2019



Blue Mountain
11023 MASON DIXON HIGHWAY
BURTON, WV 28562
PHONE: (304) 682-6486

George D. Six

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1209 S-12H

PAGE 3 OF 3

03/29/2019

	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA A. STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	WILLIAM BRUCE, JR. & CONNIE C. FERRELL	12-444/13
6	ERIC K. & SUSIE G. DECKER	12-444/21.1
7	ERIC K. & SUSIE G. DECKER	12-444/21.2
8	ERIC K. & SUSIE G. DECKER	12-444/21
9	ERIC K. & SUSIE G. DECKER	12-444/22
10	JOSEPH E. LAYMAN	12-445/16
11	JOSEPH E. LAYMAN	12-445/17
12	CHARLES B. JACOB	12-445/18.1
13	WILLIAM & MARA WATSON	12-445/30.4
14	WILLIAM & MARA WATSON	12-445/30.3
15	*WILLIAM E. & MARA WATSON	12-445/30.1
16	CHARLES D. & JANET L. UTT	12-445/30.5
17	CHARLES D. & JANET L. UTT	12-445/30.2
18	DANNY K. & KATHERINE SNYDER	12-445/44
19	WILLIAM C. WHITE	12-465/2
20	WILLIAM C. WHITE	12-465/1
21	THOMAS E. & TERRI E. HAWKINS	4-8B/4
22	THOMAS E. & TERRIE HAWKINS	4-8B/5
23	C. D. COLE II	4-8C/29
24	C. D. COLE	4-8C/33.2
25	CHARLES D. COLE II	4-8C/34
26	CHARLES D. COLE II	4-10/67
27	CHARLES D. COLE II	4-10/23
28	MIKE ROSS INC.	P/O 4-8C/87
29	SNIDER CONSTRUCTION & DEVEL LLC	5-2/2

* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

SURFACE HOLE LOCATION (SHL)	APPROX. LANDING POINT	BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M) N:4333365.45 E:548190.82 UTM 17-NAD83(FT) N:14217049.80 E:1798522.70 LAT/LON DATUM-NAD83 LAT:39.148152 LON:-80.442308	UTM 17-NAD83(M) N:4333547.42 E:549024.25 UTM 17-NAD83(FT) N:14217646.81 E:1801257.05 LAT/LON DATUM-NAD83 LAT:39.149745 LON:-80.432650	UTM 17-NAD83(M) N:4329095.10 E:550662.58 UTM 17-NAD83(FT) N:14203039.52 E:1806632.16 LAT/LON DATUM-NAD83 LAT:39.109533 LON:-80.414024

JANUARY 25, 2019

API WELL #: 47 33
 STATE COUNTY PERMIT



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 WV Department of
 Environmental Protection

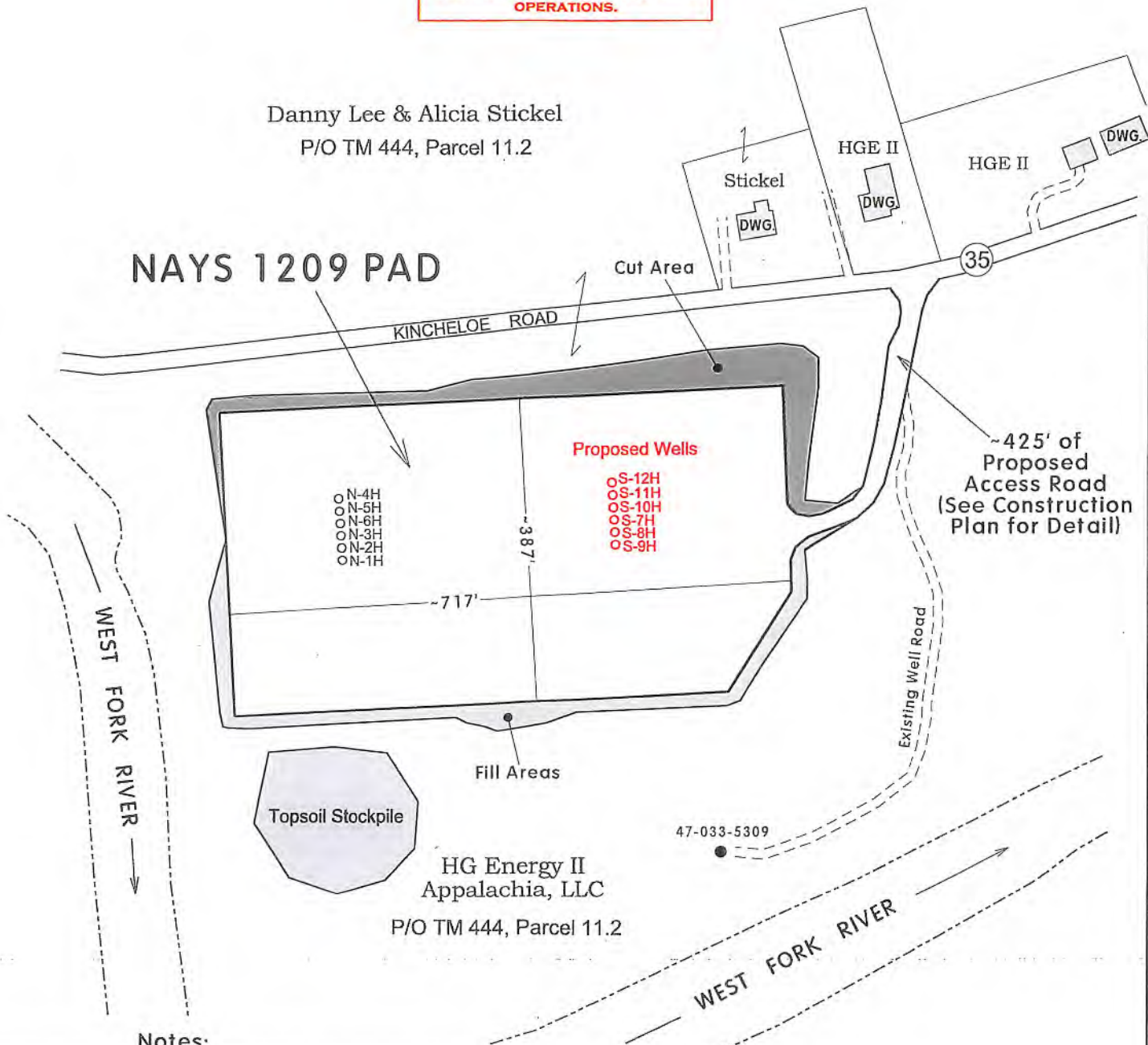
Reclamation Plan For: NAYS 1209 PAD

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



Danny Lee & Alicia Stickel
P/O TM 444, Parcel 11.2

NAYS 1209 PAD



Notes:

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

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FEB - 6 2019
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Environmental Protection



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

03/29/2019

January 24, 2019

EnerVest Operating Company
300 Capitol Street, Suite 200
Charleston, WV 25301

RE: Area of Review – Nays 1209 Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

Dear Sir:

HG Energy II Appalachia, LLC, has developed a Marcellus pad (Nays 1209 well pad) located in Harrison County, WV. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6900' TVD) and existing conventional natural gas wells.

HG Energy anticipates conducting hydraulic fracturing of the Nays 1209 Pad during the fourth quarter of 2019. We have identified conventional natural gas wells operated by your company within 500' of one of the newly planned laterals (Nays 1209 S laterals). A plat for the wells is attached.

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

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

Should you have any questions or desire further information, please contact me at 304-420-1119 or dwhite@hgenergyllc.com. You may also contact the WV Office of Oil and Gas at 304-926-0444.

Sincerely,

Diane White

Diane White

Enclosure

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Environmental Protection



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

03/29/2019

January 24, 2019

EQT Production Company
115 Professional Place
Bridgeport, WV 26330

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HG Energy anticipates conducting hydraulic fracturing of the Nays 1208 Pad during the fourth quarter of 2019. We have identified conventional natural gas wells operated by your company within 500' of one of the newly planned laterals (Nays 1209 S Well Pad). A plat for the wells is attached.

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Diane White

Diane White

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Environmental Protection



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

03/29/2019

January 24, 2019

Alliance Petroleum Corporation
67 Collins Run Road
Glenville, WV 26351

RE: Area of Review – Nays 1209 South Laterals/Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

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Sincerely,

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Diane White

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

03/29/2019

January 24, 2019

Ross & Wharton Gas Company
29 Morton Avenue
Buckhannon, WV 26201

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Hydraulic Fracturing Notice

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Diane White

Diane White

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

03/29/2019

January 24, 2019

Dominion Energy Transmission
Attn: Charles Cunningham
2397 Davisson Run Road
Clarksburg, WV 26301

RE: Area of Review – Nays 1209 Well Pad (S-7H to S-12H)
Hydraulic Fracturing Notice

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Office of Oil and Gas

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

03/29/2019

January 24, 2019

Key Oil Company, Inc.
4225 Nashville Road
Franklin, KY 42134

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Diane White

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

03/29/2019

January 24, 2019

Alliance Petroleum Corporation
67 Collins Run Road
Glennville, WV 26351

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Enclosure

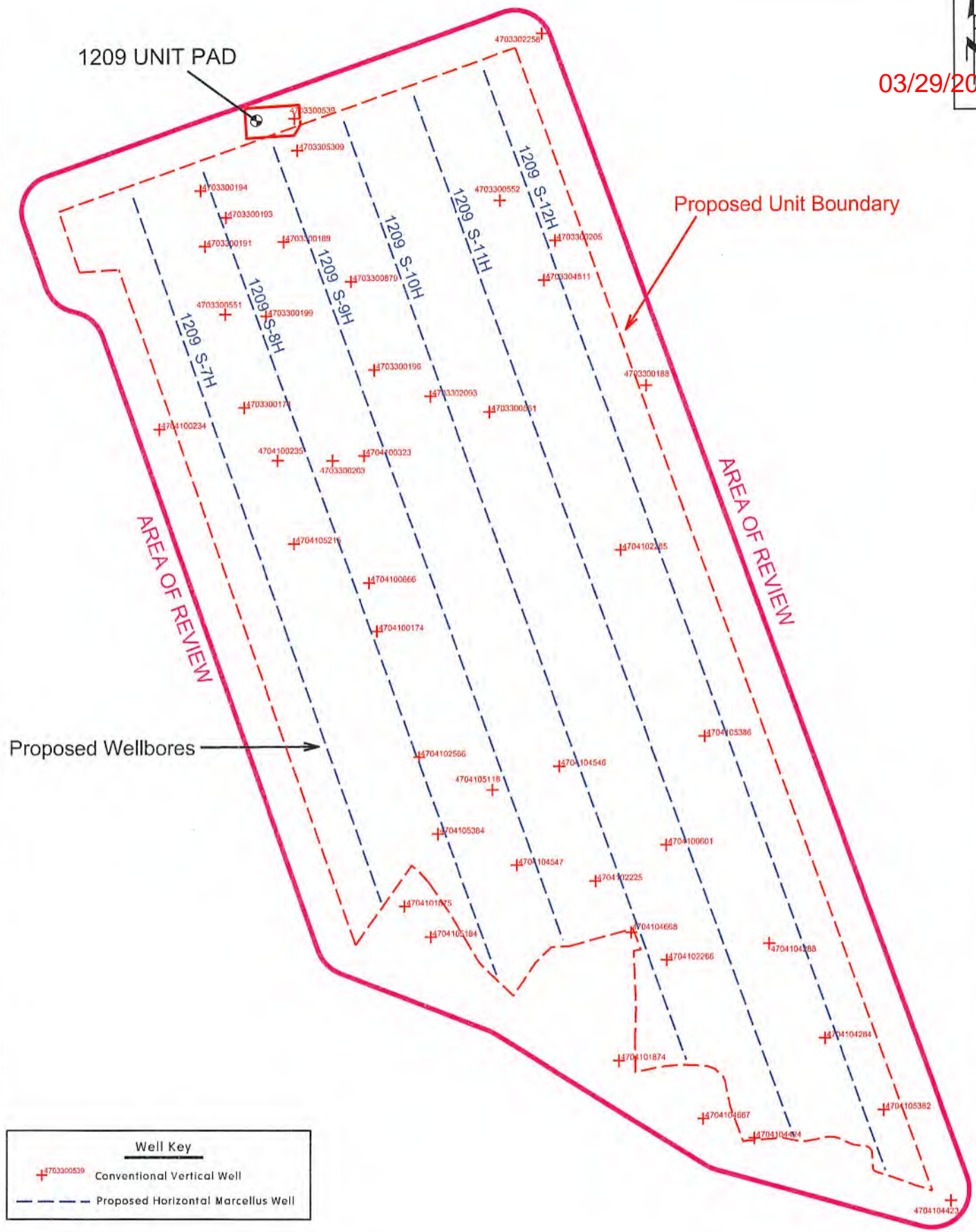
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03/29/2019



Well Key	
	Conventional Vertical Well
	Proposed Horizontal Marcellus Well

NOTE:
See Attached Spreadsheet for Well Data
DATA SOURCE
WVGES Data Set - 2017; WVDEP Website

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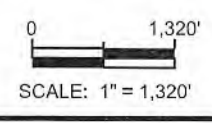
Area of Review for:

1209 UNIT PAD

- Proposed 1209 S-7H
- Proposed 1209 S-8H
- Proposed 1209 S-9H
- Proposed 1209 S-10H
- Proposed 1209 S-11H
- Proposed 1209 S-12H

Union District, Harrison County, W.Va.
Hackers Creek District, Lewis County, W.Va.

HG ENERGY, II APPALACHIA, LLC
5260 DuPont Road, Parkersburg, WV 26101



1/24/2019

WV Department of
Environmental Protection



EXISTING WELLS 4,500' IN DEPTH OR GREATER:

1209 UNIT SOUTH PAD AND PROPOSED WELLS S-7H, S-8H, S-9H, S-10H, S-11H & S-12H

CT	API	COUNTY	FARM	OPERATOR NAME	FORMATION NAME	WELL TYPE	TVD	STATUS	LATITUDE	LONGITUDE
1	4703304811	Harrison	Elizabeth Layman	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4499	ACTIVE	39.142105	-80.429888
2	4703300879	Harrison	Eric K & Susie G Decker	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4520	ACTIVE	39.142085	-80.439027
3	4704104547	Lewis	Ruth Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4569	ACTIVE	39.120742	-80.431373
4	4704105382	Lewis	Charles D Cole II	Dominion Energy Transmission, Inc.	Brallier	Gas	4573	ACTIVE	39.111751	-80.414088
5	4704104546	Lewis	Ruth E Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4609	ACTIVE	39.124367	-80.429326
6	4704104668	Lewis	John H Neely	Key Oil Co.	Elk	Gas w/ Oil Show	4870	ACTIVE	39.118277	-80.425974
7	4704104667	Lewis	James B/C Sumpter	Key Oil Co.	Greenland Gap Fm	Gas w/ Oil Show	4906	ACTIVE	39.111461	-80.422622

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33	4704102285	Lewis	H Bailey	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4140	ACTIVE	39.132244	-80.426348
34	4704102566	Lewis	J H Bailey	Enervest Operating, LLC	Benson	Gas	4254	ACTIVE	39.12472	-80.435962
35	4704104284	Lewis	Charles D Cole 1	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4322	ACTIVE	39.114361	-80.416852
36	4704104288	Lewis	Charles D Cole II 2	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4473	ACTIVE	39.117842	-80.419458
37	4704104423	Lewis	James Winemiller	Ross & Wharton Gas Co.	UNKNOWN	UNKNOWN	-	PLUGGED	39.108416	-80.410922
38	4704104424	Lewis	Roy C Bargerhuff	Ross & Wharton Gas Co.	UNKNOWN	UNKNOWN	4085	PLUGGED	39.110736	-80.420202
39	4704104546	Lewis	Ruth E Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4609	ACTIVE	39.124367	-80.429326
40	4704104547	Lewis	Ruth Turner	Alliance Petroleum Corp.	Greenland Gap Fm	Gas	4569	ACTIVE	39.120742	-80.431373
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42	4704104668	Lewis	John H Neely	Key Oil Co.	Elk	Gas w/ Oil Show	4870	ACTIVE	39.118277	-80.425974
43	4704105118	Lewis	Kevin B/Sherri K Jerden	Berry Energy, Inc.	Benson	Gas	4389	ACTIVE	39.123497	-80.432491
44	4704105184	Lewis	Donald E & Glenna Linger	Berry Energy, Inc.	Greenland Gap Fm	Gas	4409	ACTIVE	39.118132	-80.435468
45	4704105215	Lewis	Lee Stalnaker	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	4309	ACTIVE	39.132534	-80.441803
46	4704105382	Lewis	Charles D Cole II	Dominion Energy Transmission, Inc.	Brallier	Gas	4573	ACTIVE	39.111751	-80.414088
47	4704105384	Lewis	Kevin B & Sherri K Jerden	Berry Energy, Inc.	Benson	Gas	4390	ACTIVE	39.121902	-80.435097
48	4704105386	Lewis	Walter Neely Jr Trust	Dominion Energy Transmission, Inc.	Greenland Gap Fm	Gas	3442	ACTIVE	39.125428	-80.422437

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WW-6A1
(5/13)

Operator's Well No. Nays 1209 S-12H

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

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

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

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

"See Attached 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: Agent

4.03-05948

WW-6B
(04/15)

API NO. 47- _____ - 03/29/2019
OPERATOR WELL NO. Nays 1209 S-12H
Well Pad Name: Nays 1209

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

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

<u>494519932</u>	<u>Harrison</u>	<u>Union</u>	<u>West Milford 7.5'</u>
------------------	-----------------	--------------	--------------------------

Operator ID County District Quadrangle

2) Operator's Well Number: Nays 1209 S-12H Well Pad Name: Nays 1209

3) Farm Name/Surface Owner: Nays / HG Energy II Appalachia Public Road Access: Kincheloe Run Rd/SLS 35

4) Elevation, current ground: 1002' Elevation, proposed post-construction: 1007'

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

*SOW
1/28/2019*

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus at 6863'/6914' and 51' in thickness. Anticipated pressure at 4314#.

8) Proposed Total Vertical Depth: 6900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23,730'

11) Proposed Horizontal Leg Length: 15571'

12) Approximate Fresh Water Strata Depths: 135', 500'

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

14) Approximate Saltwater Depths: None noted in offsets

15) Approximate Coal Seam Depths: 660' to 665'

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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03/29/2019

WW-6B
(04/15)

API NO. 47- _____
OPERATOR WELL NO. Nays 1209 S-12H
Well Pad Name: Nays 1209

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	100'	100'	Drilled In
Fresh Water	20"	NEW	J-55	94	600'	600'	40% excess yield = 1.20, CTS
Coal	13 3/8"	NEW	J-55	68	1735'	1735'	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	NEW	J-55	40	2500'	2500'	40% excess yield Lead/ 0% Excess Yield
Production	5 1/2"	NEW	P-110	23	23730'	23730'	20% excess yield = 1.19, 1st yield = 1.54
Tubing							
Liners							

SDeo
2/1/2019

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				CTS
Fresh Water	20"	24"	.438	2110	1200	Type 1, Class A	30% excess yield = 1.20, CTS
Coal	13 3/8"	17 1/2"	.480	3450		Type 1/Class A	40% excess yield = 1.20, CTS
Intermediate	9 5/8"	12 1/4"	.395	3950		Type 1/Class A	40% excess yield = 0% Excess Lead, 40% Excess Yield
Production	5 1/2"	8 1/2"	.415	14520	12500	Type 1/Class A	20% excess yield = 1.19, 1st yield = 1.54
Tubing							
Liners							

PACKERS

Kind:					RECEIVED Office of Oil and Gas
Sizes:					FEB - 6 2019
Depths Set:					WV Department of Environmental Protection

WW-6B
(10/14)

API NO. 47- _____ - 03/29/2019
 OPERATOR WELL NO. Nays 1209 S-12H
 Well Pad Name: Nays 1209

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 6900 feet. Drill horizontal leg to estimated 15571 TMD, stimulate and be capable of producing from the Marcellus Formation. Should we encounter an unanticipated void in the coal, we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

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

The stimulation will be 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): 16.148 acres

22) Area to be disturbed for well pad only, less access road (acres): 10.834 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.
 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 - 15.6 ppg PNE-1 + 3% bwoc CaCl₂ 40% Excess Yield = 1.20, CTS
 Coal - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess / Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl₂ zero% Excess, CTS
 Intermediate - Lead: 15.4 ppg PNE-1 + 2.5% bwoc CaCl₂ 40% Excess, Tail: 15.9 ppg PNE-1 + 2.5% bwoc CaCl₂ 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 MPA170, Tail: 14.6 ppg PNE-1 + 0.35% bwoc R3 + 0.75 gal/sk FP13L + 50% bwoc ASCA1 + 0.5% bwoc MPA17020% Excess Lead Yield=1.19 Tail Yield=1.94, CTS

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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.

5948



1209 S-12H
Marcellus Shale Horizontal
Harrison County, WV

5			1209 S-12H SHL	237439.06N 1732700.54E
0	Ground Elevation	1007'	1209 S-12H LP	237990.66N 1735445.39E
3	Azm	160.751°	1209 S-12H BHL	223290.77N 1740578.43E

WELLBORE DIAGRAM	HOLE	CASING	GEOLOGY	TOP	BASE	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS	
	30"	30" 157.5# LS	Conductor	0	100	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	0	135	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	
			Fresh Water	0	600						
	17.5"	13-3/8" 68# J-55 BTC	Kittanning Coal	660	665	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 every joint <i>*will also be running ECP 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	
			Little/Big Lime	1126 / 1167	1151 / 1243						
			Injun / Gantz (Storage)	1243 / 1535	1349 / 1585						
			Intermediate 1	0	1735						
	12.25"	9-5/8" 40# J-55 BTC	Fifty / Thirty Foot	1650 / 1730	1697 / 1742	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	
			Gordon Stray / Gordon	1785 / 1850	1850 / 1940						
			5th Sand	2035	2070						
			Bayard Sand	2125	2160						
			Intermediate 2	0	2500						
	8.5" Vertical	5-1/2" 23# P-110 HC CDC HTQ	Speechley	2745	2763	9.0ppg SOB M	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=14520 psi Note:Actual centralizer schedules may be changed due to hole conditions	
			Balltown	2965	3005						
			Benson	4050	4083						
			West Falls	4620	5865						
			8.5" Curve	5-1/2" 23# P-110 HC CDC HTQ	Rhinestreet	5865		6140			11.5ppg-12.5ppg SOB M
					Cashaqua	6140		6341			
					Middlesex	6341		6421			
					West River	6421		6514			
Burkett					6514	6540					
Tully Limestone					6540	6644					
8.5" Lateral	5-1/2" 23# P-110 HC CDC HTQ	Hamilton	6644	6863	11.5ppg-12.5ppg SOB M						
		Marcellus	6863	6914							
		TMD / TVD (Production)	23730	6900							
			Onondaga	6914							

LP @ 6900' TVD / 8159' MD

8.5" Hole - Cemented Long String
5-1/2" 23# P-110 HC CDC HTQ

+/-15571' ft Lateral

TD @ +/-6900' TVD
+/-23730' MD

X=centralizers

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HG ENERGY

Location: Harrison County, WV
 Field: Harrison (NAD27 SP Northern Zone 4701)
 Facility: 1209 Pad

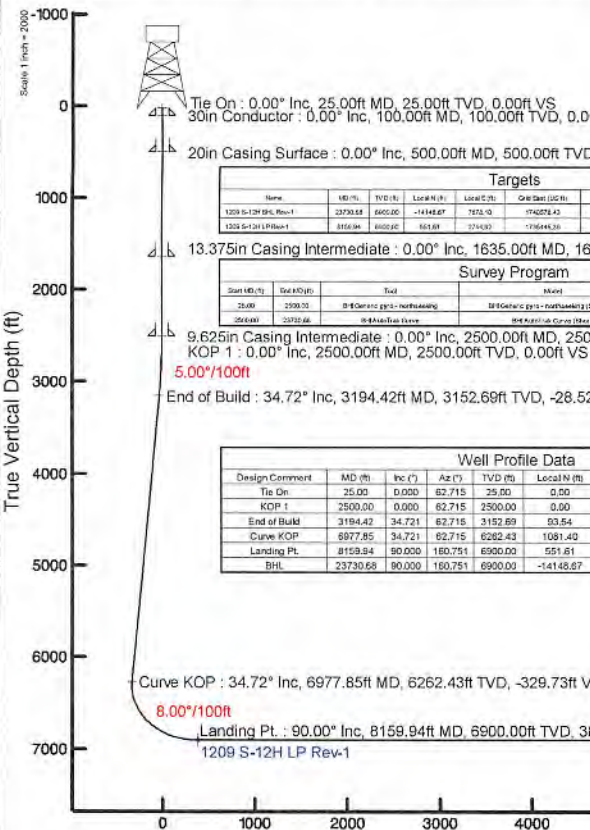
Slot: Slot #12
 Well: 1209 S-12H
 Wellbore: 1209 S-12H PWB



Field reference wellbore is 1209 S-12H PWB Ex-00	Grid System: NAD27 (Lambert West/Hogza SP, Northern Zone, 4701), US feet
True vertical depth (e.g. referenced to Padon 347 (RKB))	North Reference: Grid north
Measured depths are referenced to Patterson 347 (RKB)	Scale: True distance
Patterson 347 (RKB) to Mean Sea Level: 1032 feet	Depth area in feet
Mean Sea Level to Mudline (At Slot Slot #12): -1007 feet	Created by: dshannon on 2016-10-09
Coordinates are in feet referenced to GCS	Database: VQA_MPD_Facilities Parts

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
1209 Pad	1732374.000	237349.950	39°08'52.102" N	80°26'37.112" W	
Slot	Local E (ft)	Local N (ft)	Latitude	Longitude	
Slot #12	326.55	1732720.540	39°08'53.016" N	80°26'32.875" W	
Patterson 347 (RKB) to Mudline (At Slot: Slot #12)	25ft				
Mean Sea Level to Mudline (At Slot: Slot #12)	-1007ft				
Patterson 347 (RKB) to Mean Sea Level	1032ft				

Hole and Casing Sections										
Name	Start MD (ft)	End MD (ft)	Interval (ft)	Start TVD (ft)	End TVD (ft)	Start Local E (ft)	End Local E (ft)	Start Local N (ft)	End Local N (ft)	Wellbore
20in Open Hole	25.00	180.00	155.00	25.00	180.00	0.00	0.00	0.00	0.00	1209 S-12H PWB
13.375in Casing Intermediate	25.00	180.00	155.00	25.00	180.00	0.00	0.00	0.00	0.00	1209 S-12H PWB
9.625in Casing Intermediate	25.00	180.00	155.00	25.00	180.00	0.00	0.00	0.00	0.00	1209 S-12H PWB
5.5in Open Hole	2500.00	23730.60	23500.00	2500.00	23730.60	0.00	0.00	0.00	0.00	1209 S-12H PWB



Targets						
Name	MD (ft)	TVD (ft)	Local E (ft)	Local N (ft)	Grid East (US ft)	Grid North (US ft)
1209 S-12H PWB Rev-1	23730.60	1607.00	-14148.67	7878.10	23730.60	1607.00
1209 S-12H PWB	23730.60	1607.00	-14148.67	7878.10	23730.60	1607.00

Survey Program					
Start MD (ft)	End MD (ft)	Tool	Mount	Log Interval (ft)	Wellbore
25.00	2500.00	B-Generic (p11 - north-south)	B-Generic (p11 - north-south) (Standard)	10.00	1209 S-12H PWB
2500.00	23730.60	B-Generic (p11 - north-south)	B-Generic (p11 - north-south) (Standard)	10.00	1209 S-12H PWB

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	DLS (°/100ft)	VS (ft)
Tie On	25.00	0.00	82.715	25.00	0.00	0.00	0.00
KOP 1	2500.00	0.00	82.715	2500.00	0.00	0.00	0.00
End of Build	3194.42	34.721	82.715	3152.69	83.54	181.34	-28.52
Curve KOP	6977.85	34.721	82.715	6262.43	1081.40	2096.54	-329.73
Landing Pt	8159.94	90.000	160.751	6900.00	551.61	2744.92	384.20
BHL	23730.60	80.000	160.751	6900.00	-14148.67	7878.10	15954.86

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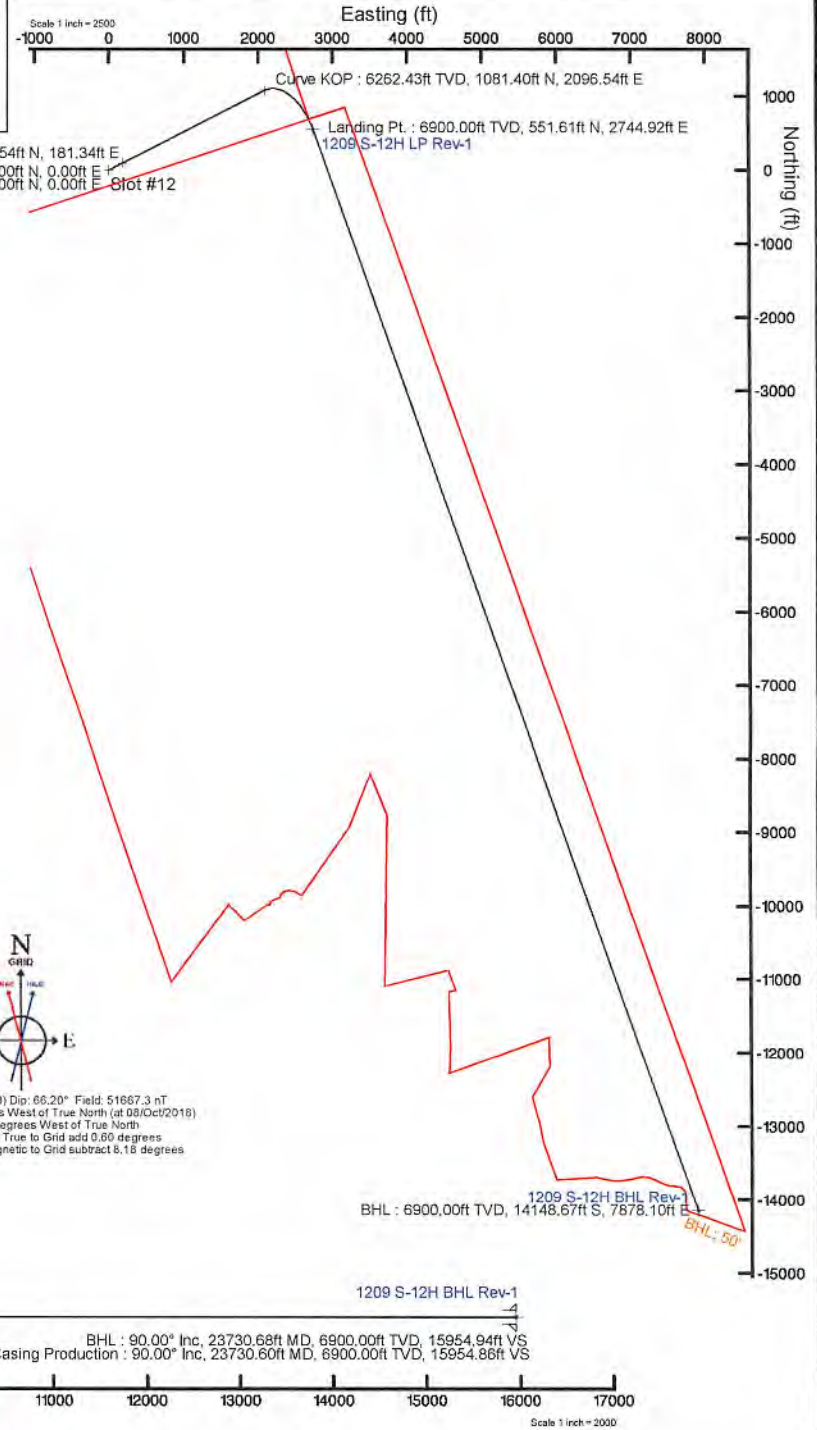
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BGGM (1900.0 to 2020.0) Dip: 66.20° Field: 51667.3 nT
 Magnetic North is 8.78 degrees West of True North (at 08/Oct/2016)
 Grid North is 0.60 degrees West of True North
 To correct azimuth from True to Grid add 0.60 degrees
 To correct azimuth from Magnetic to Grid subtract 8.18 degrees

BHL : 90.00° Inc, 23730.60ft MD, 6900.00ft TVD, 15954.94ft VS
 5.5in Casing Production : 90.00° Inc, 23730.60ft MD, 6900.00ft TVD, 15954.86ft VS

Vertical Section (ft)
 Azimuth 160.75° with reference 0.00 N, 0.00 E



Scale 1 inch = 2000

Nays 1209 Well Pad (N-1H to N-6H, S-7H to S-12H)
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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Crystalline silica: Quartz (SiO2)	0.1 - 1	14808-60-7																			
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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bentonite	90 - 100	1302-78-9																			
Crystalline silica: Quartz (SiO2)	5 - 10	14808-60-7																			
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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Tributyl phosphate	90 - 100	126-73-8																			
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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Sucrose	90 - 100	57-50-1																			
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												
Ingredient name			%	CAS number																	
Calcium magnesium oxide	90 - 100	37247-91-9																			
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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Calcium oxide	1 - 5	1305-78-8																			
Poz (Fly Ash)	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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Organic acid salt	40 - 50	Trade secret.																			
R-3	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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Alkylarylsulfonate amine salt	1 - 5	Trade secret.																			
Polyoxyalkylenes	0.1 - 1	Trade secret.																			
S-5																					

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List of Frac Additives by Chemical Name and CAS #**Nays 1209 Well Pad (N-1H to N-6H, S-7H to S-12H)**

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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4703305948

03/29/2019

WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. Nays 1209 S-12H

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) West Fork 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
1/28/2019

Will closed loop system be used? If so, describe: Yes, cuttings and fluids will be collected in a closed loop drilling 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. Air, Freshwater and 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 List

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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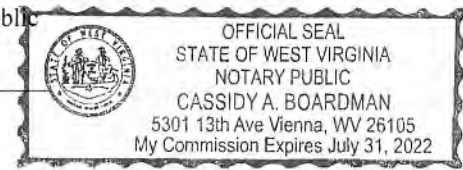
WV Department of
Environmental Protection

Subscribed and sworn before me this 23rd day of January, 2019

Cassidy A. Boardman

Notary Public

My commission expires 7/31/2022



HG Energy II Appalachia, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.148 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay 2 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Maintain E&S controls through the drilling and completion process

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: S. D. Warner

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: Harrison County DEP Oil & Gas Inspector

Date: 1/28/2019

Field Reviewed? Yes No

Cuttings Disposal/Site Water

Cuttings -Haul off Company:

Eap Industries, Inc. DOT # 0876278
1875 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)
8297 US Highway 19
Cochran, PA 16314
814-425-7778

Disposal Locations:

Apex Environmental, LLC Permit # 06-08488
11 County Road 78
Amsterdam, OH 43908
740-548-4889

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

Sycamore Landfill Inc. Permit #R80-079001 05-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2511

Max Environmental Technologies, Inc. Facility Permit # PAD004895146 / 301071
233 Max Lane
Yukon, PA 25968
724-722-8500

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

Waste Management Kelly Run Permit # 100663
1901 Park Side Drive
Elizabeth, PA 15037
412-884-7569

Waste Management South Hills (Arnoni) Permit # 100582
3100 Hill Road
Liberty, PA 15129
724-348-7013
412-884-7569

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

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

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

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Wetzel County Landfill Permit # SWF-1021-97 / WV 0109185
Rt 1 Box 156A
New Martinsville, WV 26035
804-455-3800

03/29/2019

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

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

Northern A-1 Environmental Services Permit ID MID020906814
3947 US 131 North, PO Box 1030
Kalkaska, MI 49646
261-258-9961

Water Haul off Companies:

Dynamic Structures, Clear Creek DOT # 720488
3790 State Route 7
New Waterford, OH 44445
330-892-0184

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

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

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

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

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

Nuverra Environmental Solutions
11942 Veterans Memorial Highway
Masontown, WV 26542

Equipment Transport
1 Tyler Court
Carlisle, PA 17015

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

Myers Well Service,
2001 Ballpark Court
Export, PA 15632

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

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

Disposal Locations:

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

Nichols 1-A (SWIW #18)
Permit # 3862
300 Cherrington Pkwy, Suite 200
Coraopolis, PA 15108
412-829-7275

Solidification/Incineration
Soil Remediation, Inc. Permit # 02-20753
6065 Arrel-Smith Road
Lowellville, OH 44436
330-536-6825

Grosella (SWIW #34)
Permit # 4096
Rt. 88
Garrattsville, OH
715-275-4816

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

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

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Adams #2 (Buckeye Brine, LLC)
2205 Westover Road
Austin TX 78703
Permit # 34-031-2-7178
740-575-4454
512-478-6545

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

Mozena #1 Well (SWIW # 13)
Permit # 34-157-2-5511-00-00
5367 E. State Street
Newcomerstown, OH 43882
740-763-3966

Goff SWD #1 (SWIW # 27)
Permit # 34-119-2-8776-000
300 Cherrington Pkwy, Suite 200
Coraopolis, PA 15108
412-829-7275

SCS D#1 (SWIW #12)
Permit # 34-059-2-4202-00-00
Silcor Oilfield Services, Inc.
2999 Hubbard Road
Youngstown, OH 44505

Dudley #1 UIC (SWIW #1)
Permit # 34-121-2-2459-00-00
Select Energy Services, LLC
7994 S. Pleasants Hwy
St. Marys, WV 26170
304-669-2652

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

US Steele 11385
Permit # 47-001-00561
200 Evergreen Drive
Waynesburg, PA 15730
804-323-6568

Chapin #7 UIC (SWIW #7)
Permit # 34-083-2-4187-00-00
Elkhead Gas & Oil Company
12168 Marne Rd. NE
Newark, OH 43055
740-763-3966

03/29/2019

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Environmental Protection

HG Energy II Appalachia, LLC

Site Safety Plan

**1209 Unit Well Pad
327 Gooseman Rd Jane Lew
Harrison County, WV 26378**

May 2018: Version 2

**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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Office of Oil and Gas

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WV Department of
Environmental Protection

*SOW
1/28/2019*

BHL is located on topo map 5,633 feet south of Latitude: 39° 07' 30"
 SHL is located on topo map 6,743 feet south of Latitude: 39° 10' 00"

SEE PAGE 2 FOR PLAT DLF TO LENGTH OF LATERAL

SEE PAGE 3 FOR SURFACE OWNERS

BHL is located on topo map 11,073 feet west of Longitude: 80° 22' 30"
 SHL is located on topo map 7,272 feet west of Longitude: 80° 25' 00"

	LESSOR	LEASE NO.	DIST-TM/PAR
A	J. B. GUSMAN ET AL	FK020606	20-444/11.2 12-444/13 12-444/21 12-444/22
B	W. L. HUGHES ET AL	FK020607	12-445/16 12-445/17 12-445/18.1
C	HOWARD NEELY	FK014008	12-445/30.3 12-445/30.1 12-445/30.2 12-445/44 12-465/2 12-445/30.5 12-465/1
D	H. S. BAILEY ET AL	FK013035	12-465/1
E	ISAAC JACKSON	LC009807	4-8B/4 4-8B/5 4-8C/29 4-8C/33.2 4-8C/34 4-10/67 4-10/23 P/O 4-8C/87 5-2/2



SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4333365.45
 E:548190.82
 UTM 17-NAD83(FT)
 N:14217049.80
 E:1798522.70
 LAT/LON DATUM-NAD83
 LAT:39.148152
 LON:-80.442308



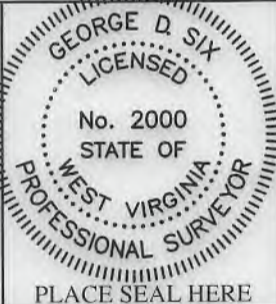
APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4333547.42
 E:549024.25
 UTM 17-NAD83(FT)
 N:14217646.81
 E:1801257.05
 LAT/LON DATUM-NAD83
 LAT:39.149745
 LON:-80.432650

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4329095.10
 E:550662.58
 UTM 17-NAD83(FT)
 N:14203039.52
 E:1806632.16
 LAT/LON DATUM-NAD83
 LAT:39.109533
 LON:-80.414024



FILE #: 1209 S-12H
 DRAWING #: 1209 S-12H
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 Signed: George D. Six
 R.P.E.: _____ L.L.S.: P.S. No. 2000



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



DATE: JANUARY 25, 2019
 OPERATOR'S WELL #: 1209 S-12H
 API WELL #: 47 33 05948
 STATE COUNTY PERMIT

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

WATERSHED: MIDDLE WEST FORK CREEK ELEVATION: 1,007±

COUNTY/DISTRICT: HARRISON / UNION QUADRANGLE: WEST MILFORD, WV 7.5'

SURFACE OWNER: HG ENERGY II APPALACHIA, LLC ACREAGE: 95.06±

OIL & GAS ROYALTY OWNER: ANN COVINGTON, ET AL ACREAGE: 1103.116±

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,900± TMD: 23,731±

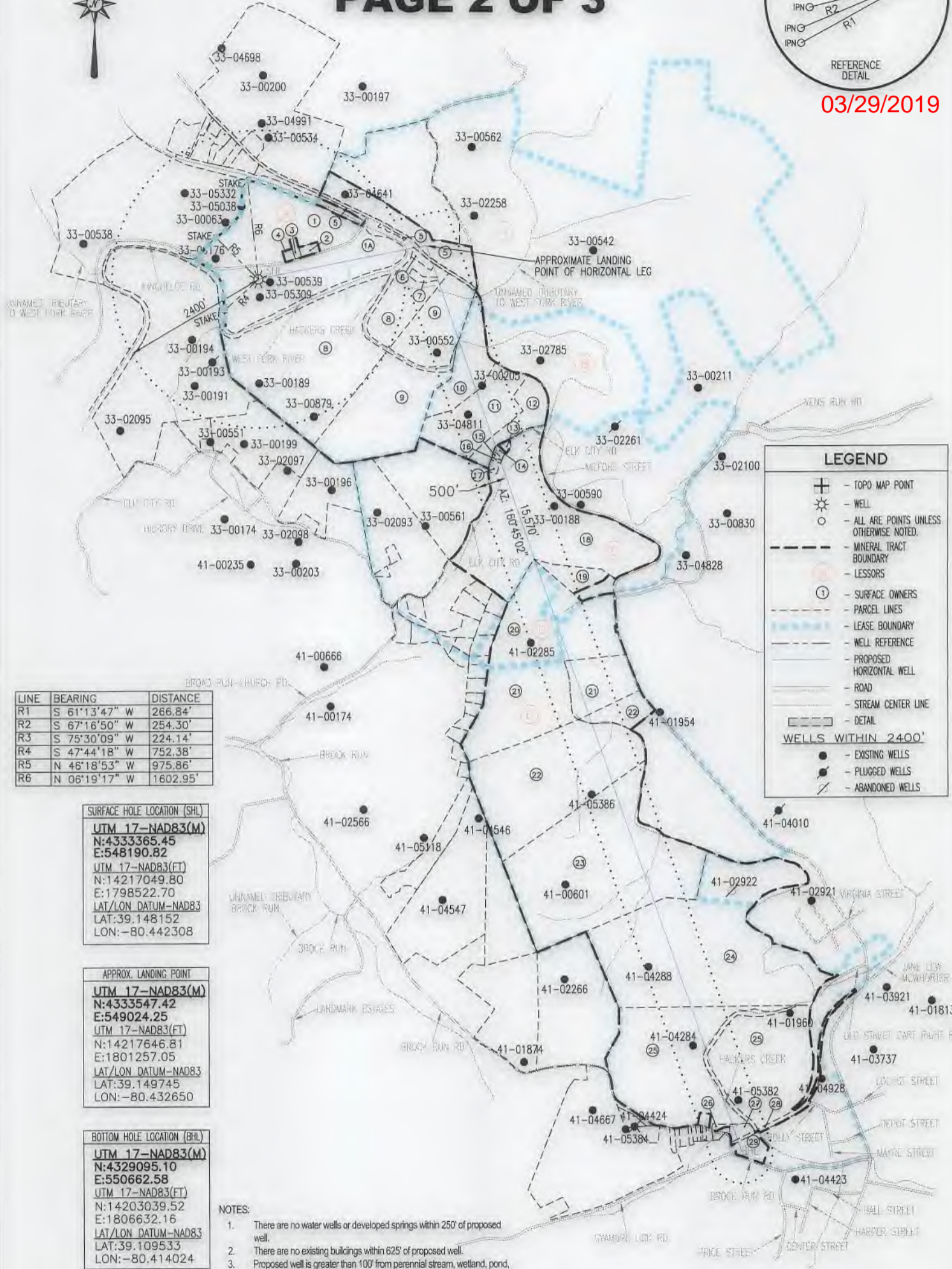
WELL OPERATOR HG ENERGY II APPALACHIA, LLC DESIGNATED AGENT DIANE C. WHITE
 Address 5260 DUPONT ROAD Address 5260 DUPONT ROAD
 City PARKERSBURG State WV Zip Code 26101 City PARKERSBURG State WV Zip Code 26101

1209 S-12H

PAGE 2 OF 3



03/29/2019



LINE	BEARING	DISTANCE
R1	S 61°13'47" W	266.84'
R2	S 67°16'50" W	254.30'
R3	S 75°30'09" W	224.14'
R4	S 47°44'18" W	752.38'
R5	N 46°18'53" W	975.86'
R6	N 06°19'17" W	1602.95'

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M)
 N:4333365.45
 E:548190.82
UTM 17-NAD83(FT)
 N:14217049.80
 E:1798522.70
LAT/LON DATUM-NAD83
 LAT:39.148152
 LON:-80.442308

APPROX. LANDING POINT
UTM 17-NAD83(M)
 N:4333547.42
 E:549024.25
UTM 17-NAD83(FT)
 N:14217646.81
 E:1801257.05
LAT/LON DATUM-NAD83
 LAT:39.149745
 LON:-80.432650

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
 N:4329095.10
 E:550662.58
UTM 17-NAD83(FT)
 N:14203039.52
 E:1806632.16
LAT/LON DATUM-NAD83
 LAT:39.109533
 LON:-80.414024

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

LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- LESSORS
- SURFACE OWNERS
- PARCEL LINES
- LEASE BOUNDARY
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- DETAIL

WELLS WITHIN 2400'

- EXISTING WELLS
- PLUGGED WELLS
- ABANDONED WELLS

API WELL #: 47 33
 STATE COUNTY PERMIT

JANUARY 25, 2019



George D. Six

1209 S-12H

PAGE 3 OF 3

03/29/2019

	SURFACE OWNER	DIST-TM/PAR
1	DANNY LEE & ALICIA A. STICKEL	P/O 20-444/11.2
1A	HG ENERGY II APPALACHIA, LLC	P/O 20-444/11.2
2	HG ENERGY II APPALACHIA, LLC	20-444/11.3
3	AARON C. & CHRISTINA P. MEDINA	20-444/11
4	HG ENERGY II APPALACHIA, LLC	20-444/11.1
5	WILLIAM BRUCE, JR. & CONNIE C. FERRELL	12-444/13
6	ERIC K. & SUSIE G. DECKER	12-444/21.1
7	ERIC K. & SUSIE G. DECKER	12-444/21.2
8	ERIC K. & SUSIE G. DECKER	12-444/21
9	ERIC K. & SUSIE G. DECKER	12-444/22
10	JOSEPH E. LAYMAN	12-445/16
11	JOSEPH E. LAYMAN	12-445/17
12	CHARLES B. JACOB	12-445/18.1
13	WILLIAM & MARA WATSON	12-445/30.4
14	WILLIAM & MARA WATSON	12-445/30.3
15	*WILLIAM E. & MARA WATSON	12-445/30.1
16	CHARLES D. & JANET L. UTT	12-445/30.5
17	CHARLES D. & JANET L. UTT	12-445/30.2
18	DANNY K. & KATHERINE SNYDER	12-445/44
19	WILLIAM C. WHITE	12-465/2
20	WILLIAM C. WHITE	12-465/1
21	THOMAS E. & TERRI E. HAWKINS	4-8B/4
22	THOMAS E. & TERRIE HAWKINS	4-8B/5
23	C. D. COLE II	4-8C/29
24	C. D. COLE	4-8C/33.2
25	CHARLES D. COLE II	4-8C/34
26	CHARLES D. COLE II	4-10/67
27	CHARLES D. COLE II	4-10/23
28	MIKE ROSS INC.	P/O 4-8C/87
29	SNIDER CONSTRUCTION & DEVEL LLC	5-2/2

* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M)
N:4333365.45
E:548190.82
UTM 17-NAD83(FT)
N:14217049.80
E:1798522.70
LAT/LON DATUM-NAD83
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UTM 17-NAD83(FT)
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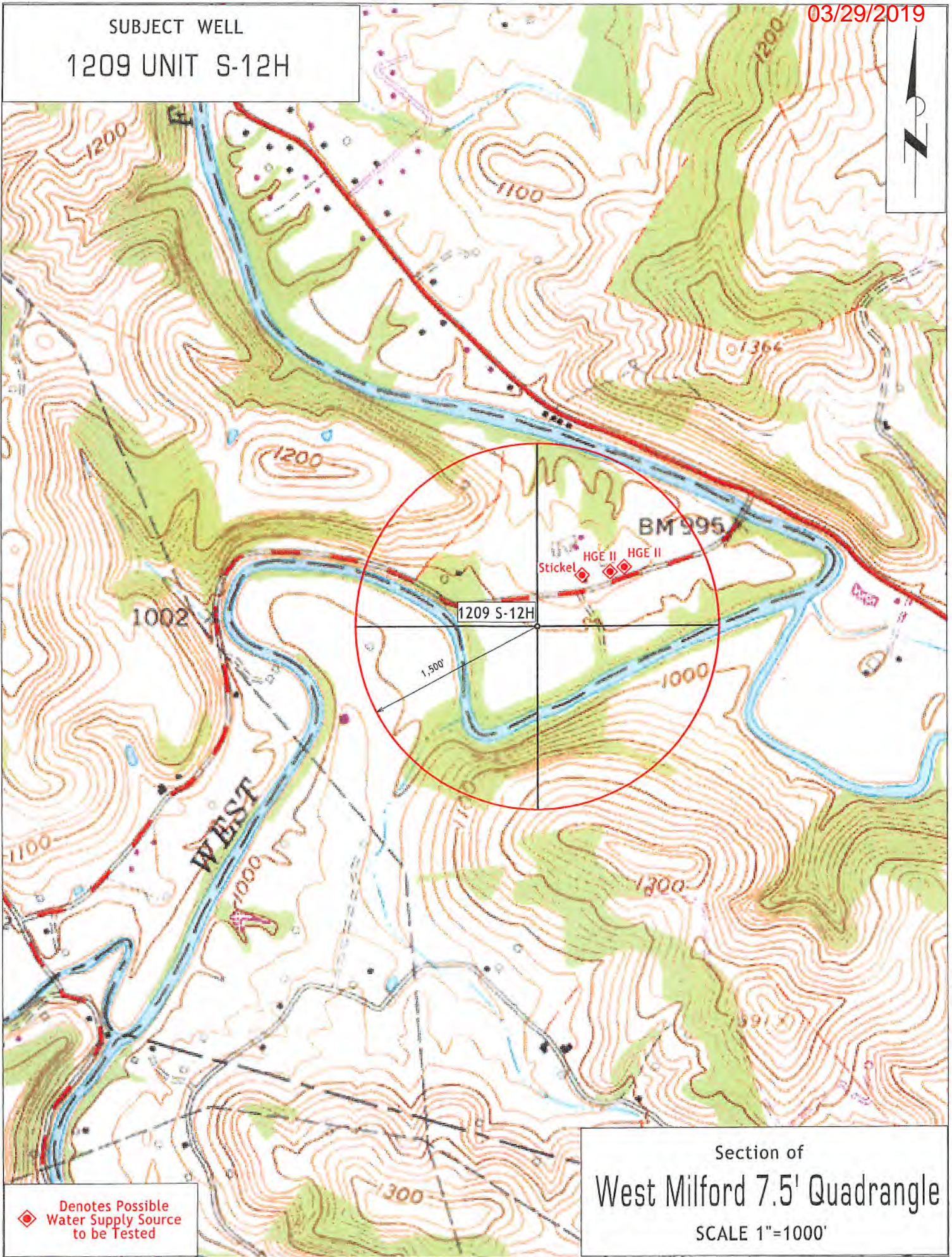
BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
N:4329095.10
E:550662.58
UTM 17-NAD83(FT)
N:14203039.52
E:1806632.16
LAT/LON DATUM-NAD83
LAT:39.109533
LON:-80.414024

JANUARY 25, 2019

API WELL #: 47 33
 STATE COUNTY PERMIT

03/29/2019

SUBJECT WELL
1209 UNIT S-12H



◆ Denotes Possible Water Supply Source to be Tested

Section of
West Milford 7.5' Quadrangle
SCALE 1"=1000'

HG ENERGY

Location: Harrison County, WV Slot: Slot #07
 Field: Harrison (NA027-SP Northern Zone 4701) Well: 1209 S-7H
 Facility: 1209 Pad Wellbore: 1209 S-7H PWB

File reference: KST15H-1209 S-7H PWB Ex-01
 This wellbore profile is referenced to Patterson 347 (1209)
 Measured depths are referenced to Patterson 347 (1209)
 Patterson 347 (1209) Mean Sea Level: 1023 ft
 Mean Sea Level is 1023 ft at 1209 S-7H (Slot #07) -1023 feet
 Coordinates are in feet referenced to State Plane
 Slot System: NA027 (Lambert West Virginia State Plane Zone 17N) UTM
 North Reference: KST15H
 Scale: True distance
 Datum: NAD 83
 Drawn by: drk/klw 01/24/2019

Location Information

Facility Name	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude		
1209 Pad	173274.000	237349.950	39°08'52.102"N	80°26'37.112"W		
Slot Name	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
Slot #07	44.25	328.60	173270.500	237384.200	39°08'52.533"N	80°26'32.947"W
Slot #01	0.00	0.00	1732374.000	237349.950	39°08'52.102"N	80°26'37.112"W
Slot #02	19.02	-0.43	1732373.550	237384.970	39°08'52.290"N	80°26'37.119"W
Slot #03	29.93	-1.11	1732372.890	237379.890	39°08'52.397"N	80°26'37.130"W
Slot #04	74.78	-3.15	1732370.840	237424.740	39°08'52.840"N	80°26'37.182"W
Slot #05	59.77	-2.51	1732371.490	237409.750	39°08'52.533"N	80°26'37.152"W
Slot #06	44.85	-1.74	1732372.240	237394.800	39°08'52.545"N	80°26'37.140"W
Slot #08	28.33	329.35	1732703.340	237376.290	39°08'52.426"N	80°26'32.935"W
Slot #09	14.02	328.70	1732708.890	237363.970	39°08'52.874"N	80°26'32.929"W
Slot #10	59.27	327.95	1732701.840	237409.220	39°08'52.721"N	80°26'32.857"W
Slot #11	74.19	327.20	1732701.190	237424.140	39°08'52.699"N	80°26'32.869"W
Slot #12	89.71	326.55	1732700.540	237439.060	39°08'53.016"N	80°26'32.979"W

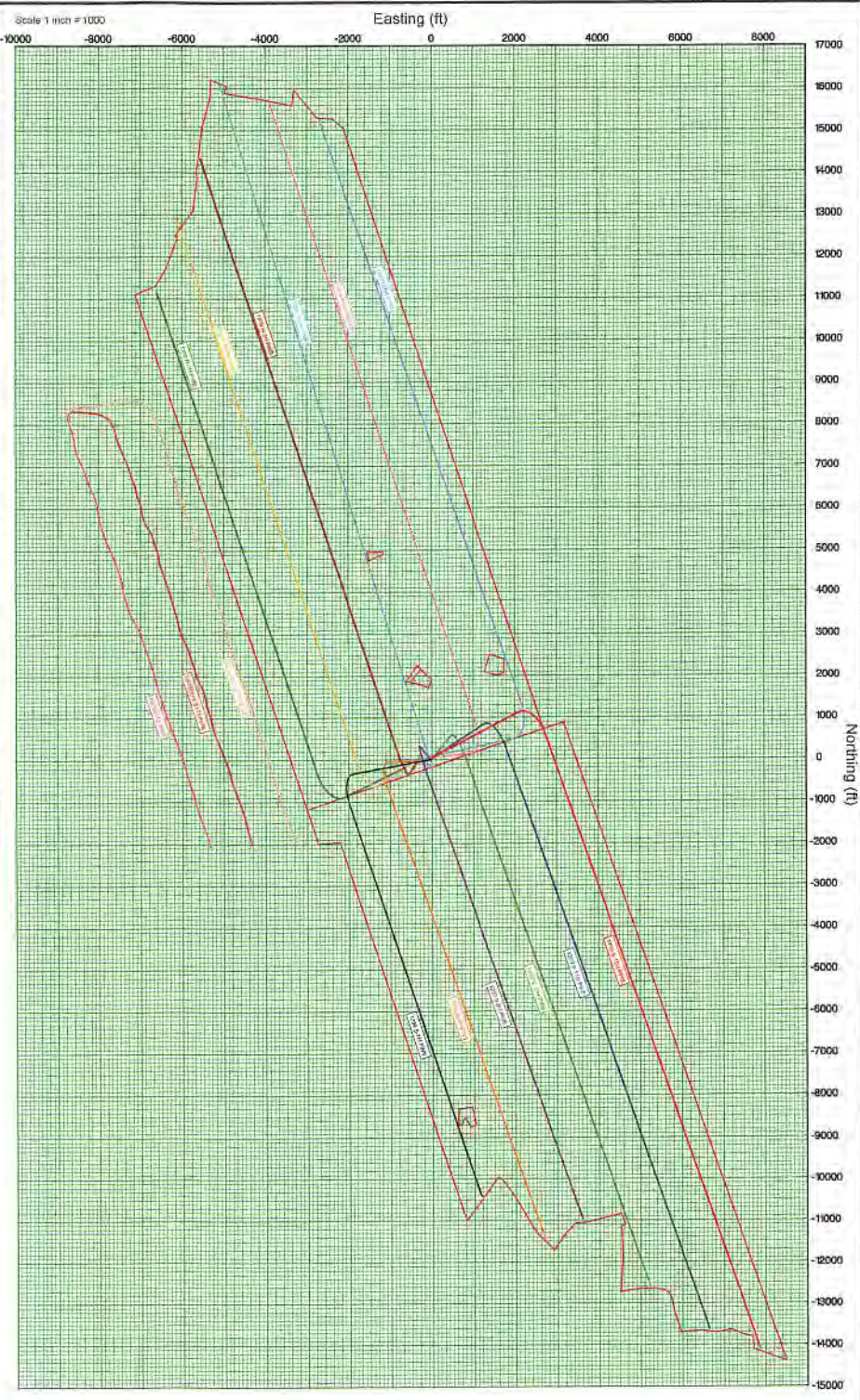
Patterson 347 (RKB) to Mud line (Facility - 1209 Pad) 29ft
 Mean Sea Level to Mud line (Facility - 1209 Pad) -1007ft

Facility Name	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude		
KST15 Pad	1724065.200	245700.800	39°10'13.790"N	80°28'23.720"W		
Slot Name	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
Slot #01	75.80	25.60	1724060.800	245776.400	39°10'14.512"N	80°28'23.405"W

Comment: KST15AHS
 Slot #04 19.00 5.40 1724071.800 245719.800 39°10'13.949"N 80°28'23.641"W
 Comment: KST15BHS
 Slot #05 59.90 19.20 1724084.400 245757.500 39°10'14.325"N 80°28'23.464"W
 Comment: KST15EHS
 Patterson 347 (RKB) to Mud line (Facility - KST15 Pad) 25ft
 Mean Sea Level to Mud line (Facility - KST15 Pad) -1134ft
 Patterson 347 (RKB) to Mean Sea Level 1023ft

Well Data

Slot	Well	Wellbore	Wellpath
Slot #01	1209 N-1H	1209 N-1H PWB	1209 N-1H PWB Ex-01
Slot #01	KST15AHS ST01	KST15AHS ST01 AWP	KST15AHS ST01 AWP Proj: 18211'
Slot #02	1209 N-2H	1209 N-2H PWB	1209 N-2H PWB Ex-01
Slot #03	1209 N-3H	1209 N-3H PWB	1209 N-3H PWB Ex-02
Slot #04	1209 N-4H	1209 N-4H PWB	1209 N-4H PWB Ex-03
Slot #04	KST15DHS	KST15DHS ST01 AWP	KST15DHS ST01 AWP Proj: 18508'
Slot #05	1209 N-5H	1209 N-5H PWB	1209 N-5H PWB Ex-01
Slot #05	KST15EHS	KST15EHS AWP	KST15EHS AWP Proj: 17540'
Slot #06	1209 N-6H	1209 N-6H PWB	1209 N-6H PWB Ex-01
Slot #07	1209 S-7H	1209 S-7H PWB	1209 S-7H PWB Ex-01
Slot #08	1209 S-8H	1209 S-8H PWB	1209 S-8H PWB Ex-01
Slot #09	1209 S-9H	1209 S-9H PWB	1209 S-9H PWB Ex-01
Slot #10	1209 S-10H	1209 S-10H PWB	1209 S-10H PWB Ex-01
Slot #11	1209 S-11H	1209 S-11H PWB	1209 S-11H PWB Ex-02
Slot #12	1209 S-12H	1209 S-12H PWB	1209 S-12H PWB Ex-03



PROPOSAL TO DRILL WITHIN DOMINION TRANSMISSION STORAGE FIELD

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

03/29/2019

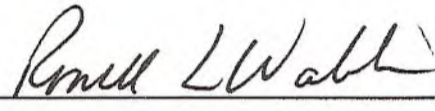
WELL NAME: **Nays 1209 S-12H**

Well # **Nays 1209 S-12H**

DISTRICT/COUNTY/STATE: **Union, Harrison, WV**

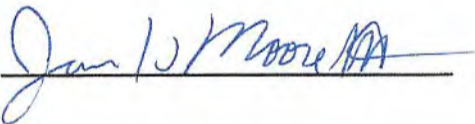
Submitted 
JOSH HINTON
HG ENERGY, LLC

DATE 1-28-19

Approved 

DATE 1/30/2019

Dominion Energy Transmission

Approved 

DATE 1/31/2019

Dominion Energy Transmission

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

RECEIVED
 Office of Oil and Gas
FEB - 6 2019
 WV Department of Environmental Protection

HG Energy II Appalachia, LLC 1209S-12H LEASE CHAIN

TRACT #	LEGACY LEASE NUMBER	TAX MAP	LEASE NUMBER	GRANTOR/LESSOR	GRANTEE/LESSEE	ROYALTY	DEED BOOK #	PAGE				
A	FK020606	17-20-0444-0011-0000, 17-20-0444-0011-0001, 17-20-0444-0011-0002, 17-20-0444-0011-0003, 17-20-0444-0012-0000, 17-12-0444-0013-0000, 17-12-0444-0014-0000, 17-12-0444-0021-0000, 17-12-0444-0021-0001, 17-12-0444-0022-0000, 17-12-0445-0001-0000, 17-12-0445-0002-0000, 17-12-0445-0009-0000, 17-12-0445-0010-0000, 17-12-0445-0011-0000	Q100370000	J.B. GUSMAN AND ADALINE GUSMAN	TREAT AND CRAWFORD	NOT LESS THAN 1/8	158	8				
				TREAT AND CRAWFORD	UNITED FUEL GAS COMPANY	ASSIGNMENT	226	359				
				UNITED FUEL GAS COMPANY	FAYETTE COUNTY GAS COMPANY	ASSIGNMENT	UNRECORDED					
				FAYETTE COUNTY GAS COMPANY	HOPE NATURAL GAS	ASSIGNMENT	201	3				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY COMPANY	MERGER/NAME CHANGE	903	179				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795				
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362				
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1409	680				
				DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1442	356				
				DOMINION EXPLORATION & PRODUCTION, INC.	DOMINION TRANSMISSION, INC.	ASSIGNMENT	1457	978				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692				
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS					
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581				
				B	FK020607	17-12-0445-0008-0000, 17-12-0445-0016-0000, 17-12-0445-0016-0001, 17-12-0445-0017-0000, 17-12-0445-0017-0001, 17-12-0445-0018-0000, 17-12-0445-0018-0001, 17-12-0445-0019-0000, p/o 17-12-0445-0020-0000	Q100749000	W.L. HUGHES AND FLORA HIGHERS	TREAT & CRAWFORD	NOT LESS THAN 1/8	161	90
								HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179
								CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250
CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51					795				
CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58					362				
DOMINION TRANSMISSION, INC.	DOMINION EXPLORATION & PRODUCTION, INC.	ASSIGNMENT	1427					829				
DOMINION EXPLORATION & PRODUCTION, INC.	DOMINION TRANSMISSION, INC.	ASSIGNMENT	1457					978				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522					33				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543					1235				
DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576					125				
CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584					942				
NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600					692				
DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS									
DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601					581				
C	FK014008	17-12-0444-0032-0000, p/o 17-12-0444-0043-0000, p/o 17-12-0445-0020-0000, 17-12-0445-0030-0001, 17-12-0445-0030-0002, 17-12-0445-0030-0003, 17-12-0445-0030-0004, 17-12-0445-0030-0005, 17-12-0445-0032-0000, 17-12-0445-0044-0000, p/o 17-12-0465-0001-0000, 17-12-0465-0002-0000, 17-12-0465-0003-0000, 17-12-0465-0012-0000, n/o 17-04-0088-0001-0000	Q100369000	HOWARD NEELY, A SINGLE MAN	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	174	142				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	903	179				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	1136	250				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	51	795				
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	58	362				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	MEMORANDUM FARMOUT AGREEMENT	1522	33				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	1543	1235				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	1576	125				

1209S LEASE CHAIN

		21-04-008B-0001-0001, 21-04-008B-0001-0005, p/o 21-04-008B-0001-0007, p/o 21-04-008B-0001-0009, p/o 21-04-008B-0004-0000		CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	1584	942				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	660				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	1600	692				
				DOMINION TRANSMISSION, INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS					
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	1601	581				
D	FK013035	p/o 17-12-465-0001-0000; p/o 21-04-008B-0004-0000	Q101150000	H.S. BAILEY, WIDOW; VIEVA BAILEY, SINGLE; JASON J. BAILEY, SINGLE	HOPE NATURAL GAS COMPANY	NOT LESS THAN 1/8	(HARRISON) 180 (LEWIS) 241	304 301				
				HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	(HARRISON) 903 (LEWIS) 294	179 89				
				CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	(HARRISON)1136 (LEWIS) 425	250 127				
				CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	(HARRISON) 51	795				
				CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	(HARRISON) 58	362				
				DOMINION TRANSMISSION INC.	CNX GAS COMPANY LLC	MEMORANDUM OF FARMOUT AGREEMENT	(LEWIS) 672	154				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	(LEWIS) 684	57				
				DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	(LEWIS) 712	848				
				CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	(LEWIS) 717	1				
				NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	(LEWIS) 722	170				
				DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF FARMOUT AGREEMENT	(LEWIS) 723	499				
				E	LC009807	21-04-008B-0004-0000; 21-04-008B-0005-0000, 0001; 21-04-008B-0006-0000; 21-04-008B-0007-0000, 0001, 0002, 0003, 0014, 0015, 0016, 0017; 21-04-008C-0029-0000; 21-04-008C-0030-0000, 0002; 21-04-008C-0031-0000, 0001, 0002, 0003; 21-04-008C-0054-0000; 21-05-0001-0050-0001; 21-05-0001-0048-0000; 21-05-0001-0084-0000; 21-05-0001-0049-0000; 21-04-008C-0086-0000;	Q100620000	ISAAC JACKSON	SOUTH PENN OIL COMPANY	NOT LESS THAN 1/8	58	431
								SOUTH PENN OIL COMPANY	HOPE NATURAL GAS COMPANY	ASSIGNMENT (GAS)	73	272
HOPE NATURAL GAS COMPANY	JANE LEW LIGHT AND HEAT COMPANY	ASSIGNMENT (5 ACRES OF LEASEHOLD)	113					315				
JANE LEW LIGHT AND HEAT COMPANY	STANDARD GAS COMPANY	ASSIGNMENT	113					361				
HOPE NATURAL GAS COMPANY	CONSOLIDATED GAS SUPPLY CORPORATION	MERGER/NAME CHANGE	294					89				
CONSOLIDATED GAS SUPPLY CORPORATION	CONSOLIDATED GAS TRANSMISSION CORPORATION	ASSIGNMENT	425					127				
CONSOLIDATED GAS TRANSMISSION CORPORATION	CNG TRANSMISSION CORPORATION	MERGER/NAME CHANGE	WVSOS									
CNG TRANSMISSION CORPORATION	CNG DEVELOPMENT COMPANY	JOINT VENTURE AGREEMENT	UNRECORDED									
CNG TRANSMISSION CORPORATION	CNG DEVELOPMENT COMPANY	ASSIGNMENT	477					430				
EMAX OIL COMPANY	CABOT OIL AND GAS CORPORATION	FARMOUT AGREEMENT	UNRECORDED									
EMAX OIL COMPANY	CABOT OIL AND GAS CORPORATION	ASSIGNMENT	513					93				
CABOT OIL AND GAS CORPORATIN	ENERVEST APPALACHIA, L.P.	ASSIGNMENT	558					249				
CNG TRANSMISSION CORPORATION	CNG PRODUCING COMPANY	ASSIGNMENT	522					528				
CNG TRANSMISSION CORPORATION	EMAX OIL COMPANY	WELLBORE ASSIGNMENT	522					189				

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21-05-0001-0066-0000, 0002, 0003, 0004, 0005, 0006, 0007, 0008, 0009; 21-04-008C-0058-0000; 21-04-008C-0049-0001; 21-04-008C-0052-0001, 0002; 21-05-0002-0021-0001; 21-04-008C-0033-0001, 0010, 0012, 0009, 0008, 0005, 0006, 0007, 0004, 0003, 0002, 0000; 21-04-008C-0047-0000; 04-0008C-0047- 0001; 04-008C-0047-0002, 0003, 0004; 21-04-008C-0034-0000; 21-04-0008C-0026-0000	CNG TRANSMISSION CORPORATION	GAS EXPLORATION AND DEVELOPMENT COMPANY	ASSIGNMENT	554	605
	CNG TRANSMISSION CORPORATION	DOMINION TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
	DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC	FARMOUT AGREEMENT	672	154
	CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	LIMITED PARTIAL ASSIGNMENT (50%)	684	57
	DOMINION TRANSMISSION, INC.	CNX GAS COMPANY LLC AND NOBLE ENERGY, INC.	PARTIAL ASSIGNMENT (32%)	712	848
	CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	ASSIGNMENT	717	1
	CNX GAS COMPANY LLC	NOBLE ENERGY, INC.	CORRECTIVE ASSIGNMENT TO DB 717-1	725	784
	NOBLE ENERGY, INC.	HG ENERGY II APPALACHIA, LLC	ASSIGNMENT	722	170
	DOMINION TRANSMISSION INC.	DOMINION ENERGY TRANSMISSION, INC.	MERGER/NAME CHANGE	WVSOS	
	DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	SECOND AMENDMENT TO MEMORANDUM OF	723	499
	DOMINION ENERGY TRANSMISSION, INC.	HG ENERGY II APPALACHIA, LLC	AMENDED AND RESTATED PARTIAL ASSIGNMENT	723	527



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

47 0 3 03/29/2019 8

January 29, 2019

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

RE: Drilling Under Roads – Nays 1209 S-12H
Union 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 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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WV Department of
Environmental Protection

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

Date of Notice Certification: 01/25/2019

API No. 47- _____

Operator's Well No. Nays 1209 S-12H

Well Pad Name: Nays 1209

Notice has been given:

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>548190.8</u>
County: <u>Harrison</u>		Northing: <u>4333365.4</u>
District: <u>Union</u>	Public Road Access: <u>Kincheloe Run Road / SR35</u>	
Quadrangle: <u>West Milford 7.5'</u>	Generally used farm name: <u>Nays</u>	
Watershed: <u>West Fork</u>		

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

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><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</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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Required Attachments:

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

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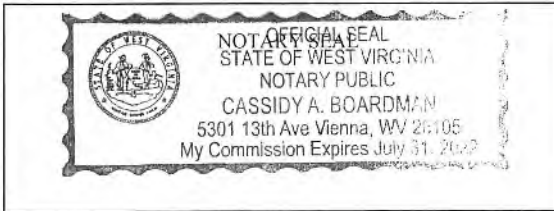
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Certification of Notice is hereby given:

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: HG Energy II Appalachia, LLC
By: Diane White *Diane White*
Its: Agent
Telephone: 304-420-1119

Address: 5260 Dupont Road
Parkersburg, WV 26101
Facsimile: 304-863-3172
Email: dwhite@hgenergyllc.com



Subscribed and sworn before me this 25th day of January, 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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WV Department of
Environmental Protection

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WV Department of
Environmental Protection
WW-9A

API NO. 47- _____ - 03/29/2019
OPERATOR WELL NO. Nays 1209 S-12H
Well Pad Name: Nays 1209

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

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

Date of Notice: 01/23/2019 **Date Permit Application Filed:** 02/08/19

Notice of:

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

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

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

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

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

SURFACE OWNER(s)
Name: HG Energy II Appalachia, LLC
Address: 5260 Dupont Road
Parkersburg, WV 26101

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: HG Energy II Appalachia, LLC
Address: 5260 Dupont Road
Parkersburg, WV 26101

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: HG Energy II Appalachia, LLC
Address: 5260 Dupont Road
Parkersburg, WV 26101

COAL OWNER OR LESSEE
Name: NA
Address: _____

COAL OPERATOR
Name: NA
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: HG Energy II Appalachia, LLC
Address: 5260 Dupont Road
Parkersburg, WV 26101

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: Dominion Energy Transmission - Attn: Ronald Walden
Address: 925 White Oaks Blvd
Bridgeport, WV 26330

*Please attach additional forms if necessary

* HG Energy II Appalachia was not noticed

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Office of Oil and Gas

API NO. 47- - 03/29/2019
OPERATOR WELL NO. Nays 1209 S-12H
Well Pad Name: Nays 1209**Notice is hereby given:**

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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API NO. 47- _____ - 03/29/2019
 OPERATOR WELL NO. Nays 1209 S-12H
 Well Pad Name: Nays 1209

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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

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.**

WV 6A-13-8
FEB - 6 2019

API NO. 47- _____ - **03/29/2019**
OPERATOR WELL NO. Nays 1209 S-12H
Well Pad Name: Nays 1209

Office of Oil and Gas

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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API NO. 47- _____ - **03/29/2019**

OPERATOR WELL NO. Nays 1209 S-12H

Well Pad Name: Nays 1209

Notice is hereby given by:

Well Operator: HG Energy II Appalachia, LLC

Address: 5260 Dupont Road

Telephone: 304-420-1119

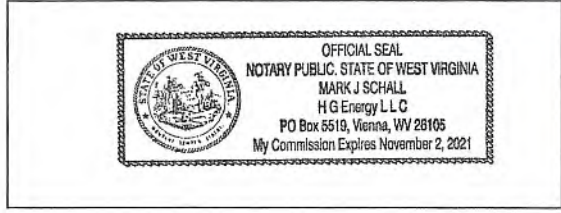
Parkersburg, WV

Email: dwhite@hgenergyllc.com *Diane White*

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 23rd day of January, 2019.

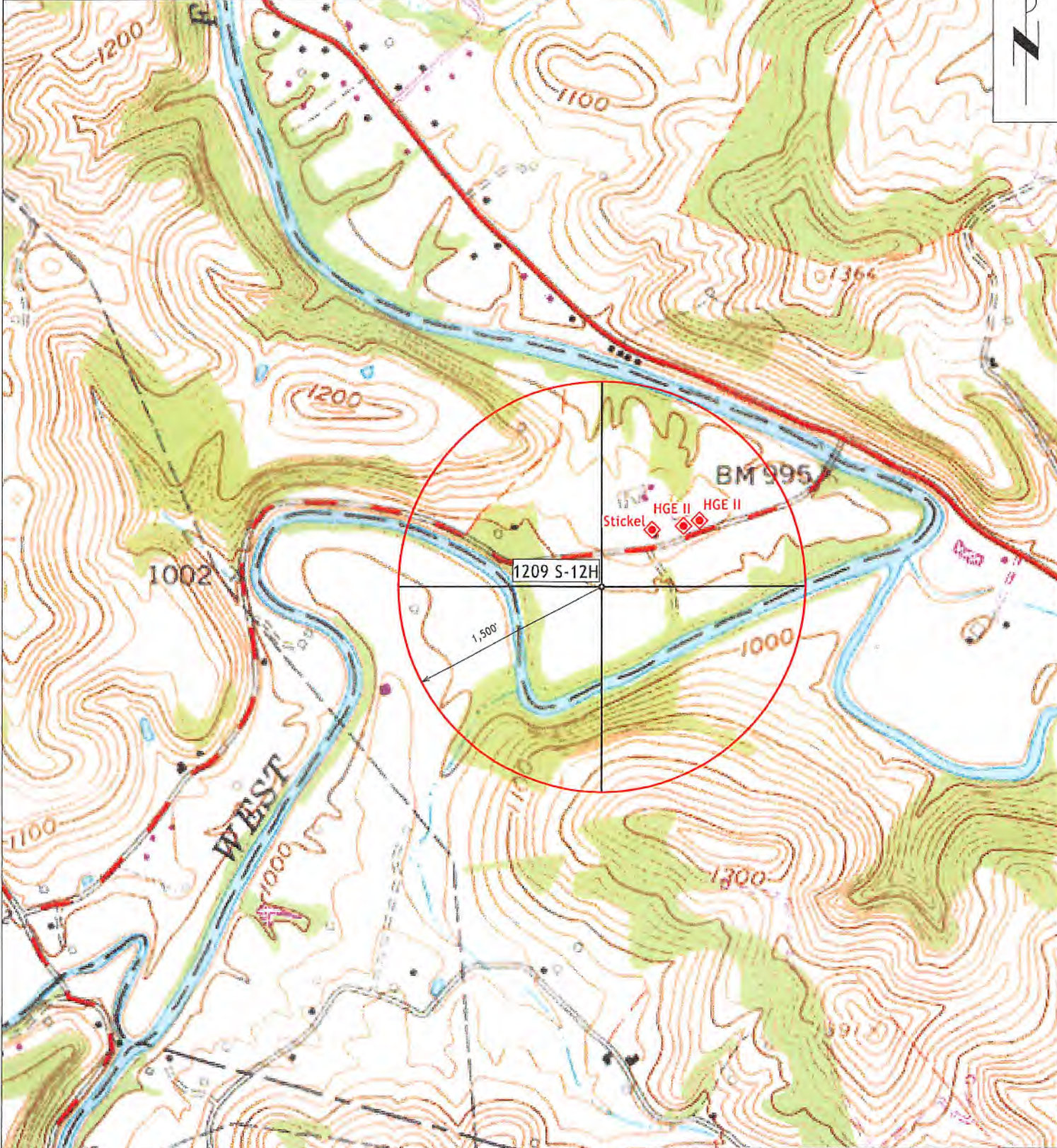
Mark J Schall Notary Public

My Commission Expires 11/2/2021

03/29/2019



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SUBJECT WELL
1209 UNIT S-12H



◆ Denotes Possible Water Supply Source to be Tested

Section of
West Milford 7.5' Quadrangle
SCALE 1"=1000'

MV Department of Environmental Protection

Reclamation Plan For: NAYS 1209 PAD

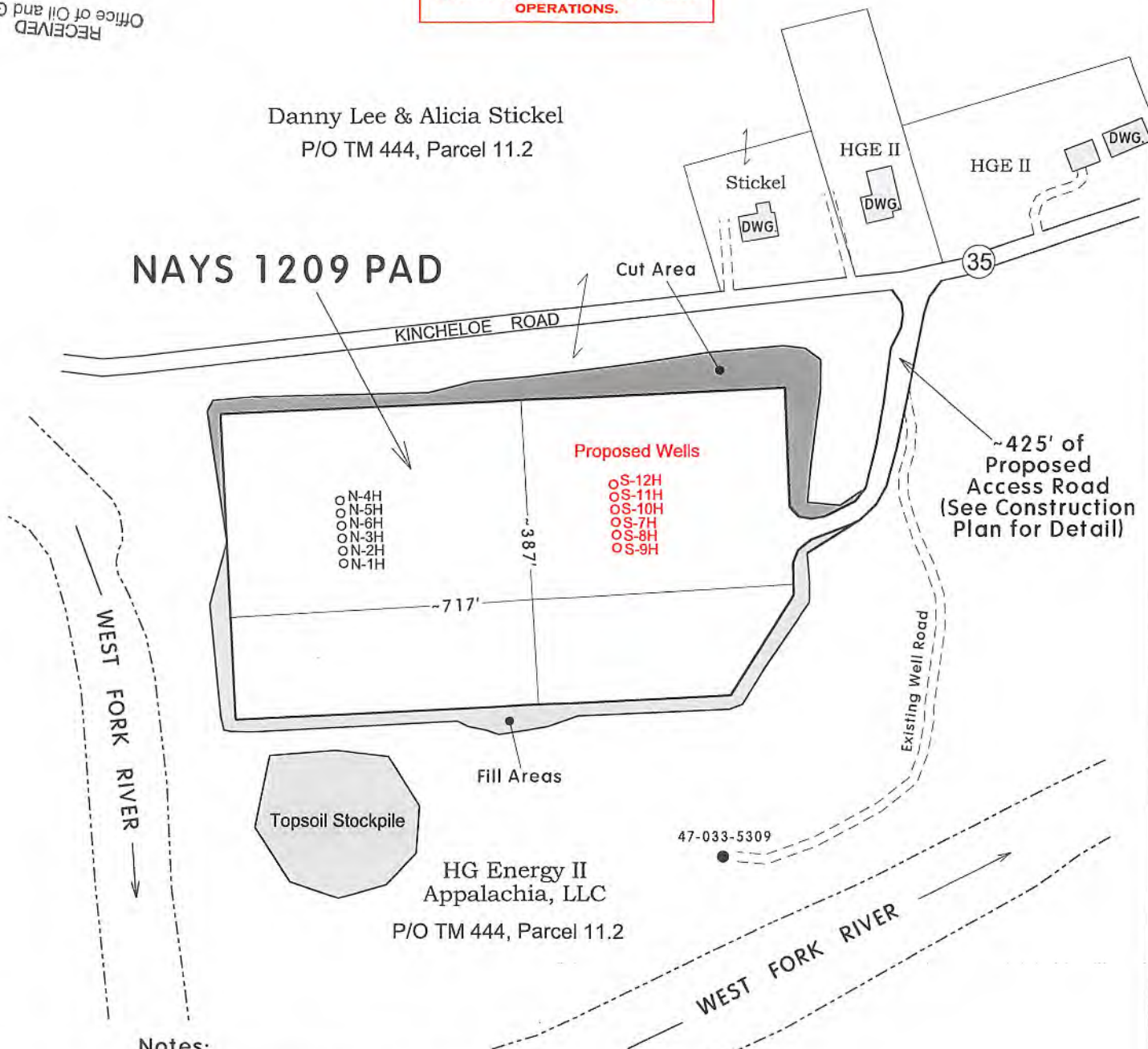
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WV Department of
Environmental Protection

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



Danny Lee & Alicia Stickel
P/O TM 444, Parcel 11.2

NAYS 1209 PAD



Notes:

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

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Environmental Protection
Department of

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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: 1/22/19 Date of Planned Entry: 1/29/19

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

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

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

Notice is hereby provided to:

SURFACE OWNER(s)

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

Name:
Address:

Name:
Address:

COAL OWNER OR LESSEE

Name:
Address:

MINERAL OWNER(s)

Name: **See Attached List**
Address:

*please attach additional forms if necessary

Notice is hereby given:

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

State: West Virginia
County: Harrison
District: Union
Quadrangle: West Milford 7.5'

Approx. Latitude & Longitude: 39.148152 / 80.442308
Public Road Access: SR 19
Watershed: West Fork
Generally used farm name: Nays

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@hgenergyllc.com

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

Oil and Gas Privacy Notice:

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

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Mineral Owners

Ann Covington
1401 Torrey Pines Dr
Columbia, MO 65203-4825

Ann Mason Brashear Fitzgerald
625 Windsor Place
Tyler, TX 75703-5773

AnnaBelle Lawton Family Trust
1228 N. Park Ave
Winter Park, FL 32789-2542

Beverly Mae Street
9062 Water Tupelo Road
Fort Myers, FL 33912

Broad Run Baptist Church
PO Box 542
Jane Lew, WV 26378

Broad Run Baptist Church Cemetery Association
PO Box 504
Jane Lew, WV 26378

Buckner W. Hornor
486 Irish Hill Rd
Hopkinton, NH 03229-2202

C. J. Martin, II
PO Box 788
Buckhannon, WV 26201

Carolyn Louise Street
205 Hidden Meadows Circle
Renfrew, PA 16053

Catherine E Davisson
83 Cameron Rd
Clarksburg, WV 26301

Celia Linn Ferrell Baiker
5958 Chestnut Ct
Virginia Beach, VA 45424

Chandra D. Beam
PO Box 382
Jane Lew, WV 26378

Charles E. Garton Trust
PO Box 1234
Weston, WV 26452

David Neely Thrush
865 Seddon Cove Way
Tampa, FL 33602

Deborah Nay Stutler
9967 WV Route 18S
New Milton, WV 26411

Delores Jean Moats
90 Kincaidville Road
Walkersville, WV 26447

Donald R. Wilson
212 NE 56th St
Oak Island, NC 28465

Donna L. Hutton
828 Tremont Ave
Lexington, KY 40502-2234

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Mineral Owners

Eric R. Smith ✓
PO Box 363 ✓
Jane Lew, WV 26378

Ethel Jane Harman ✓
PO Box 443 ✓
Jane Lew, WV 26378

Frank H. Neely ✓
21 Belmeade Terrace ✓
Uniontown, PA 15401-5237

Freeda Y. Beam ✓
PO Box 362 ✓
Jane Lew, WV 26378

Gary Manford ✓
824 Mullen Road ✓
Los Ranchos, NM 87107

Geneva Bruffey ✓
500 Henrie Lane ✓
Williamstown, WV 26187

Gertrude Bush ✓
1165 South Blue Creek Road ✓
Couer Dalene, ID 83814

Gregory Hurd and Trisha Hurd ✓
PO Box 714 ✓
Jane Lew, WV 26378

Jack Street Testamentary Trust ✓
205 Hidden Meadows Circle ✓
Renfrew, PA 16053

Jackson L. Smith ✓
PO Box 457 ✓
Lost Creek, WV 26385

James R. Kettering Jr. ✓
PO Box 511 ✓
Fairmont, WV 26555-0511

James Y and Jean S Hornor ✓
5002 Esmond Lane ✓
Castle Rock, CO 80108-9027

Jane Elizabeth Horn ✓
958 McCanns Run Road ✓
Jane Lew, WV 26378

Jane Elizabeth Thrush ✓
49 Buckeye Ave ✓
Oakland, CA 94618

Jane Lew Water Commission ✓
PO Box 845 ✓
Jane Lew, WV 26378

Jeffrey Alan Street ✓
6017 Pine Ridge Road Suite 190 ✓
Naples, FL 34119

Jill Lambert ✓
219 Ballantrae St ✓
Valparaiso, IN 46385

John Daniel Justice ✓
1715 Locust Ave ✓
Ashland, KY 41101

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Mineral Owners

John Henry McWhorter
5392 Duck Creek Road
Lost Creek, WV 26385

John M. Zimowski
2437 Buccaneer Blvd
Greenbackville, VA 23356

John P. Hutton
1906 Oak Ridge Dr
Charleston, WV 25311

Joseph E. Layman
431 Barnes St
Fairmont, WV 26554

Larry Robert Street
111 Dale Wood Drive
Lavalette, WV 25535

Lawrence Blair Thrush, Jr
9 Fox Chase Road
Charlestown, WV 25304-2755

Lewis County Board of Education
358 Court Ave
Weston, WV 26452

Lonnie C and Karen L Paugh
PO Box 573
Jane Lew, WV 26378

Lonnie Kincaid
28 Bablin Ingo Road
Ireland, WV 26376

Lucille Davisson
1108 Oakbridge Drive
Hurricane, WV 25526-8838

Lundy H and Deborah H McMillion
101 Locust St
Jane Lew, WV 26378

Mark Fitzpatrick
84 Keith Fork Road
Weston, WV 26452

Mary H. Balmer
619 Ohio Ave
Eustis, FL 32726-5121

Mary Jane Lewis
146 E Main St
Clarksburg, WV 26301

Mary Louise Thrush McDowell
2607 West 16th St
Wilmington, DE 19806

Maryanne Cumberledge
4861 Santa Barbara St
Las Vegas, NV 89121

Matthew William Street
13761 Fieldshire Terrace
Carmel, IN 46074

Mike Ross Inc
RR 5 Box 29
Buckhannon, WV 26201

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Mineral Owners

Mike Ross Inc
PO Box 880
Glenville, WV 26351

Mildred L. Haller
608 Center Ave
Weston, WV 26452

Paul Allen Hornor Jr.
161 Cooing Dove Drive 9
Bridgeport, WV 26330-6749

Peter K. Thrush
1168 Halleck Road
Morgantown, WV 26508-2370

R.L. Roberts
2871 West Virginia HWY 5 W
Glenville, WV 26351

Robert T and Cynthia M Swiger
PO Box 908
Jane Lew, WV 26378

Roger Justice
877 Plymouth Rd NE
Atlanta, GA 30306

Shayne P. Baldwin
PO Box 872
Jane Lew, WV 26378

Sidney Wallace Street
2863 Yajoa Place
Hacienda Hieghts, CA 91745

Stephanie A. Snow-McKisic
PO Box 767
Jane Lew, WV 26378

Suzanne Louise Street
174 Willamette Drive
Bear, DE 19701

Thom William Street
316 Morgan Circle North
Lehigh Acres, FL 33936

Thomas E and Terri E Hawkins
7865 US Highway 19 North
Jane Lew, WV 26378-7931

Thomas Earl Thrush
2300 McFarlin Road
Nolensville, TN 37135

Thomas H. Wilson
1412 Western Ave
Morgantown, WV 26505-2148

Trina Noreene Smallwood
4444 River Forest Road
Marianna, FL 32446

Vivian Dianne Evert
828 Hidden Lake Road
Roberts, WI 54032

Walter Parke Thrush
263 Glen Abbey Lane
Clarksburg, WV 26301

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Mineral Owners

Waymon B. Kincaid
3999 Georgetown Road
Horner, WV 26372

Wesley Crafe Brashear Jr
1205 Creek Point Dr.
Frisco, TX 75703

Wesley Craft Brashear, Jr.
12205 Creek Point Dr
Frisco, TX 75035

Willard H and Judy McWhorter
2042 Elk City Rd
Jane Lew, WV 26378

William C. White
PO Box 770
Jane Lew, WV 26378

William R. Stalnaker
160 Stalnaker Estates
Glenville, WV 26351-7727

Zane Anthony Justice
2706 Algonquin Ave
Ashland, KY 41102

HG Energy II Appalachia, LLC not noticed via certified mail.

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: 10/29/2018 **Date Permit Application Filed:** 11/09/2018

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

Name: _____
Address: _____

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>548190.8</u>
County:	<u>Harrison</u>		Northing:	<u>4333365.4</u>
District:	<u>Union</u>	Public Road Access:	<u>Kincheloe Road/ SR35</u>	
Quadrangle:	<u>West Milford 7.5'</u>	Generally used farm name:	<u>Cone</u>	
Watershed:	<u>West Fork</u>			

This Notice Shall Include:

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

Notice is hereby given by:

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

Authorized Representative: Diane White
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.

* Notice was not sent because HG Energy II Appalachia LLC is the owner of the Surface Property and the Operator submitting the well work application.

**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: 10/31/2018 **Date Permit Application Filed:** 11/09/2018

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

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: 548190.8
County: Harrison Northing: 4333365.4
District: Union Public Road Access: Kincheloe Run Road/ SR35
Quadrangle: Audra 7.5' Generally used farm name: Cone
Watershed: Elk 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 Address: 5260 Dupont Road
Telephone: 304-420-1119 Parkersburg, WV 26101
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.

* Notice was not sent because HG Energy II Appalachia is the Owner of the Surface Property and the Operator submitting the well work application. RECEIVED
Office of Oil and Gas
FEB - 6 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

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

November 1, 2018

Jill M. Newman
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 Nays 1209 Well Pad, Harrison County
S-12H Well Site

Dear Mr. Martin,

This well site will be accessed from Permit #04-2018-0673 issued to HG Energy II Appalachia for access to the State Road for a well site located off of Harrison County 35 SLS.

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

Very Truly Yours,

A handwritten signature in blue ink that reads "Gary K. Clayton".

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

Cc: Diane C. White
HG Energy II, LLC
CH, OM, D-4
File

RECEIVED
Office of Oil and Gas

FEB - 6 2019

WV Department of
Environmental Protection

List of Frac Additives by Chemical Name and CAS #**Nays 1209 Well Pad (N-1H to N-6H, S-7H to S-12H)**

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	

RECEIVED
Office of Oil and Gas
FEB - 6 2019
WV Department of
Environmental Protection

CONSTRUCTION IMPROVEMENT PLANS WITH EROSION AND SEDIMENT CONTROLS HG 1209 PAD & IMPOUNDMENT



UNION DISTRICT
HARRISON COUNTY
WEST VIRGINIA

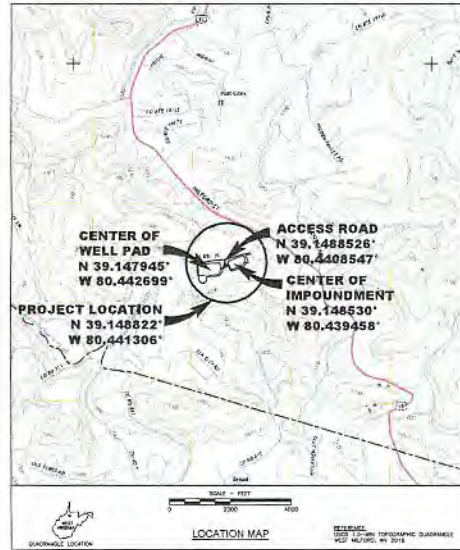
Estimated Gross Material Balance (CY)			
Final Development - Gravel Option			
Item	Exc.	Fill	Stockpile
Final	48,737	3,359	-34,368
Impoundment	47,954	14,737	-33,217
Road	19	984	-818
Totals	96,710	18,080	-68,403
Soil Adjustment for Aggregate Impor.			
Pad			2,338
Total Site Balance			121.02
Striped Topsoil (Limit of Disturbance)			
Est. Swell Factor	(20%)		2,811
Est. Topsoil Stockpile Volume (Loose CY)			18,895
Minimum Total Stockpile Capacity Required (CY)			17,079

Notes:
 1. Material balance for est. gross volumes is estimates 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 buy volumes.

Estimated Gravel Quantities (Placed CY)			
Gravel Quantities	Asphalt Concrete	Pad	TOTAL
8" Sub Base	284	6,261	6,545
3" Counter Base	-	2,391	2,391
Final Coat Chip & Seal (Placed 5%)	1,277 sq. yd.	-	1,277 sq. yd.
Estimated Concrete (Final Road Length 0.5 Ft)	3,468	1,208	4,782
Estimated Total Limit of Disturbance (Acres)			17,426
Estimated Impoundment Limit of Disturbance (Acres)			5,849
Estimated Well Pad & Road Limit of Disturbance (Acres)			11,877
Well Pad Peak Pre-Construction Elevation (Ft)			1093.2

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 Pavement - 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 OLDFONT ROAD
PARKERSBURG, WEST VIRGINIA 26101
(304) 420-1100

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

SHT. NO.	SHEET TITLE
1	TITLE SHEET
2A-2C	SITE LAYOUT PLANS
3	PAD & IMPOUNDMENT SECTIONS
4	ACCESS ROAD SECTIONS
5A-5F	GENERAL NOTES & DETAILS
6	RESTORATION PLAN
7	PROPERTY MAP

RECORD OWNER	RECORD LOT #	RECORD AREA OF LOT	RECORD WITHIN LOT
HG ENERGY II APPALACHIA, LLC	20-444-11.2	95.06 AC.	17,426 AC.
TOTAL LIMIT OF DISTURBANCE			17,426 AC.

1209 PAD & IMPOUNDMENT ENTRANCE	LATITUDE	LONGITUDE
	N 39.1488526	W 80.4408547

WELL #	LAT	LONG
N-1H	N 39.147968	W 80.443426
N-2H	N 39.147930	W 80.443458
N-3H	N 39.147980	W 80.443461
N-4H	N 39.148103	W 80.443470
N-5H	N 39.148052	W 80.443487
N-6H	N 39.148031	W 80.443464
N-7H	N 39.146028	W 80.442399
N-8H	N 39.147955	W 80.442396
N-9H	N 39.147948	W 80.442394
N-10H	N 39.145070	W 80.442352
N-11H	N 39.148111	W 80.442305
N-12H	N 39.148152	W 80.442305

THIS DRAWING IS CONSIDERED TO BE VALID ONLY IF MADE SUBJECT AND NOT SUBJECT TO THE RULES OF THE PROFESSION, FOR WHICH THE BOARD WITHIN WHICH THE PROFESSION IS REGISTERED, IS THE AUTHORITY. IT IS THE RESPONSIBILITY OF THE REGISTERED PROFESSIONAL TO BE AWARE OF ANY CHANGES TO THESE RULES, INCLUDING ANY CHANGES TO THE RULES OF THE PROFESSION, AND TO BE AWARE OF ANY CHANGES TO THE RULES OF THE PROFESSION, AND TO BE AWARE OF ANY CHANGES TO THE RULES OF THE PROFESSION.

REVISION	DATE	DESCRIPTION
1	2/21/15	ADDED PROVISION AND MODIFICATION FOR NEW CONTRACTS
2	6/29/16	ADDED PROVISION, ADDED EXISTING GASLINES ADDED STOCKPILES
3	6/12/16	ADDED PROVISION, ADDED EXISTING GASLINES ADDED STOCKPILES
4	7/22/16	MODIFICATIONS FOR E&S COMMENTS
5	10/01/16	ADDED PROVISION, ADDED EXISTING GASLINES ADDED STOCKPILES
6	10/12/16	MODIFICATIONS TO WORK WITH NEW CONTRACTS, ADDED EXISTING GASLINES

TITLE SHEET
HG 1209 PAD & IMPOUNDMENT
UNION DISTRICT
HARRISON COUNTY, WEST VIRGINIA

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

APPROVED: MEP 05/23/2018
CHECKED: MEP 05/23/2018
DRAWN: JLN 05/28/2018
PROJECT NO.: 4002-14007715

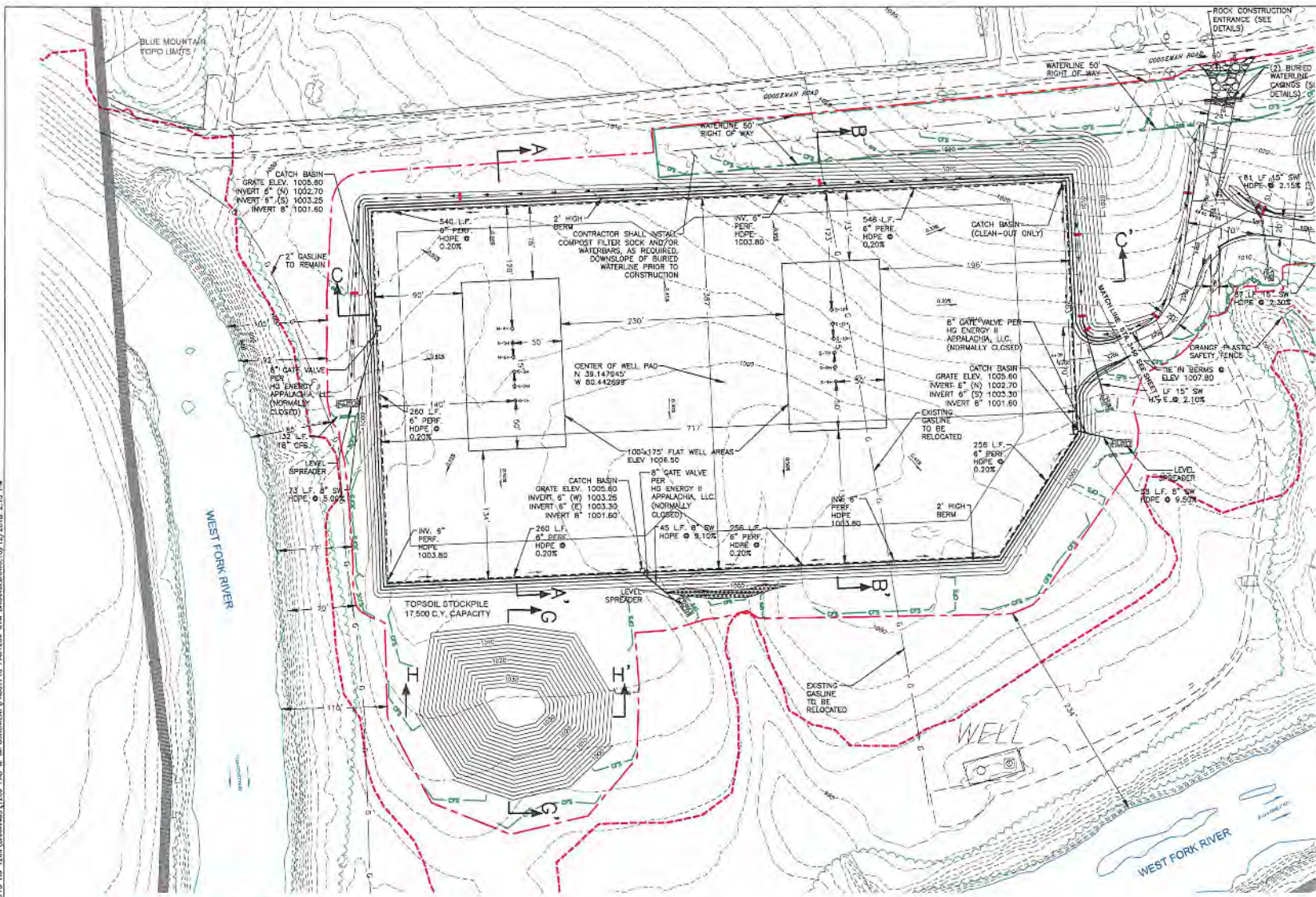
Penn E&R
Environmental & Remediation, Inc.
111 RYAN COURT, PITTSBURGH, PA 15205
412-722-1222

WEST VIRGINIA 811 CALL BEFORE YOU DIG!
Dial 811 or 800.245.4848
West Utility of West Virginia

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

S:\PROJECT FILES\4002-14007715 HG 1209 IMPROVEMENTS\209 PAD & IMPOUNDMENT\W007715 TITLE SHEET.DWG,10/12/2018 1:56 PM

S:\PROJECT FILES\2018\PA007715 HS 1209\DRAWINGS\1209 PAD & IMPOUNDMENT\PA007715 PA02308 UTM BALANCED.WGS_1974_2018_2.13.DWG



LEGEND

- ROCK CHECK DAM
- RIPRAP APRON
- ACCESS ROAD/PAD CHANNEL
- 6" COMPOST FILTER SOCK 8' NOTED
- STACKED COMPOST FILTER SOCK 8'
- APPROXIMATE LIMITS OF DISTURBANCE
- APPROXIMATE 50' WATERLINE RIGHT OF WAY
- APPROXIMATE PROPERTY LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED FINAL GRADE INDEX CONTOUR
- PROPOSED FINAL GRADE INTERMEDIATE CONTOUR
- LIMITS OF BLUE MOUNTAIN MAPPING
- EXISTING TREE LINE
- APPROXIMATE 100' H' FLOODPLAIN BOUNDARY
- CHAIN LINK FENCE WITH SECURITY WALL
- EXISTING GASLINE

WEST VIRGINIA GENERAL NOTES:

1. REFER TO THE SHEET WITH THE CONSTRUCTION NOTES AND DETAILS.
2. CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES REGIONS (WRU) & CONTACT THE REGIONAL OFFICE TO OBTAIN ALL UTILITIES INFORMATION. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AFFECTED AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AFFECTED AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AFFECTED AGENCIES.
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**APPROVED
WVDEP OOG**

10/16/2018

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

WEST VIRGINIA **CALL BEFORE YOU DIG!**

Dial 811 or 800.245.4848
West Virginia Division of Energy, Mineral and Natural Resources

APPROVED: MEP 05/23/2018
CHECKED: MEP 05/23/2018
DRAWN: EIA 05/08/2018
PROJECT NO: 4000-PA007715
DRAWING NUMBER: PA007715-001
SHEET 28

Penn E&R
Environmental & Remediation, Inc.
111 RYAN COURT, PITTSBURGH, PA 15206
412-782-1222

**SITE DEVELOPMENT PLAN
WITH EROSION AND SEDIMENTATION CONTROLS
HG 1209 PAD & IMPOUNDMENT**

UNION DISTRICT
HARRISON COUNTY, WEST VIRGINIA

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

SCALE: FEET
0 20 40 100

REVISIONS

REVISION	DATE	DESCRIPTION
1	5/23/18	ADDED "MATERIALS HANDLING" PER 303-A(4)(D)
2	6/07/18	FINO FINISHES: MASON, ASBESTOS CEMENT, GASTRAC, ASBESTOS CEMENT
3	6/12/18	AMENDMENT: MASON, ASBESTOS CEMENT, GASTRAC, ASBESTOS CEMENT
4	7/20/18	AMENDMENTS PER DEP COMMENTS
5	10/01/18	ADDED "MATERIALS HANDLING" PER 303-A(4)(D)
6	10/12/18	AMENDMENTS TO MATCH PER DEP COMMENTS: 4000-ATLAS-0406

REFERENCES:

1. FLOODPLAIN REGULATIONS DERIVED FROM FEMA NATIONAL FLOOD HAZARD LAYER
2. EXISTING GASLINE INFORMATION FROM WEST VIRGINIA UTILITIES REGIONS (WRU)
3. PUBLIC WATER INTAKE FACILITIES: WEST VIRGINIA UTILITIES REGIONS (WRU)
4. UTILITIES INFORMATION FROM WEST VIRGINIA UTILITIES REGIONS (WRU)

NOTES:

1. CONTRACTOR SHALL CONTACT WEST VIRGINIA UTILITIES REGIONS (WRU) & CONTACT THE REGIONAL OFFICE TO OBTAIN ALL UTILITIES INFORMATION. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL AFFECTED AGENCIES.
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14. THE EXISTING GASLINE IS LOCATED APPROXIMATELY 1.5 FEET DEPTH OF THE 12" GAS LINE AND IS APPROXIMATELY 1.5 FEET DEPTH OF THE 12" GAS LINE. THE EXISTING GASLINE IS LOCATED APPROXIMATELY 1.5 FEET DEPTH OF THE 12" GAS LINE AND IS APPROXIMATELY 1.5 FEET DEPTH OF THE 12" GAS LINE.