

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

RECEIVED
Office of Oil and Gas

APR 26 2023

API 47-051-02406 County Marshall District Franklin
Quad Powhatan Point, WV/OH Pad Name MND11 Field/Pool Name Moundsville
Farm name Consol/HG Energy II Appalachia, LLC Well Number MND11 N-2H
Operator (as registered with the OOG) HG Energy II Appalachia, LLC
Address 5260 Dupont Rd. City Parkersburg State WV Zip 26101

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4407497.2 Easting 520295.2
Landing Point of Curve Northing 4407877.3 Easting 520951.2
Bottom Hole Northing 4409774.2 Easting 519573.2

Elevation (ft) 1234 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air/ OBM
Barite, Lime, CaCL, base oil, Gilsonite, Asphalt, clay, Emulsifier, sulfatone, safevert FLG, safevert WA

Date permit issued 9/13/2021 Date drilling commenced 7/18/2022 Date drilling ceased 10/9/2022
Date completion activities began 10/10/2022 Date completion activities ceased 12/22/2022
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 25' Open mine(s) (Y/N) depths 865-870
Salt water depth(s) ft Not observed Void(s) encountered (Y/N) depths N
Coal depth(s) ft 865,921 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) Y

APPROVED

Reviewed by:
[Signature]
09/15/2023

API 47-051 - 02406 Farm name Consol/HG Energy II Appalachia, LLC Well number MND11 N-2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	Drilled in	20"	40'	New	94 lbs/ft J-55		Yes
Surface	18.5"	13.375"	1153	New	54.5 lbs/ft J-55		Yes
Coal							
Intermediate 1	12.25"	9.625"	3242	New	40 lbs/ft J55		Yes
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	14945	New	20 lbs/ft P-110		Yes
Tubing	4.67	2.375	7403	New	4.7 lbs/ft J55		not cemented
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Drilled in					Surface	8
Surface	Class A	1123	15.6	1.18	1325	Surface	8
Coal							
Intermediate 1	Class A	1020	15.6	1.23	1255	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A	457/3225	16.0/16.0	1.23/1.13	562/3624	Surface	8
Tubing							

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Drillers TD (ft) 14972 Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____
 WV Department of Environmental Protection

Kick off depth (ft) 6287

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

13.375" casing: centralizer run on first 2 joints then placed every 3 joints to 100' from surface
 9.625" casing: Centralizers run every joint for first 12 joints then placed every 3 joints to 100' from surface
 5.5" casing: Centralizer run every 3 joints from the 1st long joint to the top of the curve (KOP) Centralizer run every 5 joints from the top of curve (KOP) to surface

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

09/15/2023

HG Energy II Appalachia, LLC

MND11 N-4H

Perforation Record

Stage #	Perforation Date	Perforation from Depth	Perforation to Depth	Number of Perforations	Formation
Sleeve/1	11/16/2022	14896	14873	2	Marcellus
2	11/17/2022	14839	14671	28	Marcellus
3	11/17/2022	14643	14475	28	Marcellus
4	11/17/2022	14447	14279	28	Marcellus
5	11/17/2022	14251	14083	28	Marcellus
6	11/18/2022	14055	13887	28	Marcellus
7	11/18/2022	13859	13691	28	Marcellus
8	11/18/2022	13663	13495	28	Marcellus
9	11/19/2022	13467	13299	28	Marcellus
10	11/19/2022	13271	13103	28	Marcellus
11a	11/19/2022	13075	12907	28	Marcellus
11b	11/20/2022	13075	12877	53	Marcellus
12	11/20/2022	12879	12711	28	Marcellus
13	11/20/2022	12683	12515	28	Marcellus
14	11/20/2022	12487	12319	28	Marcellus
15	11/21/2022	12291	12123	28	Marcellus
16	11/21/2022	12095	11927	28	Marcellus
17	11/21/2022	11899	11731	28	Marcellus
18	11/22/2022	11703	11535	28	Marcellus
19	11/22/2022	11507	11339	28	Marcellus
20	11/22/2022	11311	11143	28	Marcellus
21	11/22/2022	11115	10947	28	Marcellus
22	11/23/2022	10919	10751	28	Marcellus
23	11/23/2022	10723	10555	28	Marcellus
24	11/23/2022	10527	10359	28	Marcellus
25	11/23/2022	10331	10163	28	Marcellus
26	11/23/2022	10135	9967	28	Marcellus
27	11/24/2022	9939	9771	28	Marcellus
28	11/24/2022	9743	9575	28	Marcellus
29	11/25/2022	9547	9379	28	Marcellus
30	11/25/2022	9351	9183	28	Marcellus
31a	11/25/2022	9155	8987	28	Marcellus
31b	11/25/2022	9155	8957	53	Marcellus
32	11/26/2022	8930	8776	28	Marcellus
33	11/26/2022	8749	8595	28	Marcellus
34	11/26/2022	8568	8400	28	Marcellus
35	11/26/2022	8374	8206	28	Marcellus
36	11/27/2022	8180	8012	28	Marcellus
37	11/27/2022	7986	7818	28	Marcellus
38	11/28/2022	7792	7624	28	Marcellus
39	11/28/2022	7598	7430	25	Marcellus

09/15/2023

HG Energy II Appalachia, LLC
MND11 N-4H
Stimulation Information

Stage #	Date	Ave pump rate (BPM)	Ave Treatment Press (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Proppant (LBS)	Water (BBLs)
Sleeve/1	11/16/2022	91.0	7268	2398	4336	270000	7,569
2	11/17/2022	98.9	7,547	5,477	3,872	635000	13,693
3	11/17/2022	93.9	7,437	5,786	4,044	642000	11,893
4	11/17/2022	93.0	7,287	5,470	4,468	663300	11,906
5	11/17/2022	97.0	7,650	5,377	4,466	663250	11,659
6	11/18/2022	103.0	7,545	3,763	4,931	659000	10,166
7	11/18/2022	103.0	7,489	5,172	5,178	620000	11,146
8	11/18/2022	100.0	7,429	5,722	5,148	644700	9,413
9	11/19/2022	99.5	7,634	4,185	4,563	640375	10,832
10	11/19/2022	94.0	7,564	5,201	4,548	640400	11,298
11a	11/19/2022	54.0	7,662	4,492	4,586	5000	3,046
11b	11/20/2022	96.0	7,387	5,167	4,182	640000	10,481
12	11/20/2022	91.0	7,479	3,334	4,755	640375	11,028
13	11/20/2022	98.0	7,420	3,767	4,732	640400	9,852
14	11/20/2022	102.0	7,402	4,353	5,111	640400	9,363
15	11/21/2022	91.7	7,574	5,848	5,280	640375	9,575
16	11/21/2022	100.0	7,470	3,916	4,738	620000	9,254
17	11/21/2022	99.1	7,423	5,790	4,926	620050	9,147
18	11/22/2022	94.1	7,163	3,774	5,158	620000	9,124
19	11/22/2022	93.0	7,073	4,173	5,862	620000	9,217
20	11/22/2022	101.0	7,381	5,802	5,094	620100	9,143
21	11/22/2022	98.0	7,183	4,535	4,540	620050	11,184
22	11/23/2022	99.7	7,116	3,309	5,153	612008	9,629
23	11/23/2022	100.0	7,343	5,125	5,156	610000	9,282
24	11/23/2022	100.0	7,411	4,630	4,777	610000	9,169
25	11/23/2022	104.0	7,372	6,161	5,441	610806	9,185
26	11/23/2022	97.0	7,239	3,655	4,925	564800	9,583
27	11/24/2022	96.0	7,095	5,131	5,191	610000	9,295
28	11/24/2022	104.0	7,382	4,492	5,191	610000	9,531
29	11/25/2022	95.0	7,672	5,788	5,332	610300	10,730
30	11/25/2022	109.0	7,622	4,141	4,562	610400	9,480
31a	11/25/2022	18.0	8,460	5,183	4,562	4200	2,189
31b	11/25/2022	104.0	7,130	4,769	4,525	610450	9,856
32	11/26/2022	107.0	7,692	5,420	5,350	585946	10,801
33	11/26/2022	93.0	7,456	5,663	4,863	610000	13,366
34	11/26/2022	104.0	6,952	4,347	5,505	610000	9,666
35	11/26/2022	92.0	6,716	5,037	5,433	611364	9,956
36	11/27/2022	109.0	6,701	5,224	4,951	610000	10,185
37	11/27/2022	108.0	6,844	5,102	5,260	610000	9,352
38	11/28/2022	108.0	6,847	6,197	5,607	610860	9,469
39	11/28/2022	104.0	9,840	5,484	5,501	610000	8,893

09/15/2023

API 47- 051 - 02406 Farm name Consol/HG Energy II Appalachia, LLC Well number MND11 N-2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus	6409-6495	TVD 7355-14972 MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

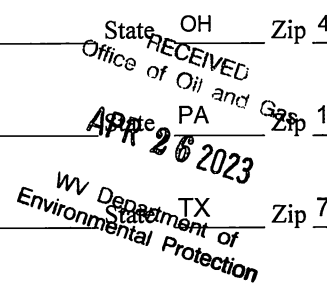
Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs
 OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY
 Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
			See Attached		

Please insert additional pages as applicable.

Drilling Contractor Patterson -UTI
 Address 67090 Executive Drive City St. Clairsville State OH Zip 43950
 Logging Company Renegade Wireline Services
 Address 191 Earnhardt Rd. City Hunker State PA Zip 15639
 Cementing Company Schlumberger
 Address 300 Schlumberger Dr. City Sugar Land State TX Zip 77478
 Stimulating Company Nextier
 Address 8300 Route 119 North City Black Lick State PA Zip 15716



Please insert additional pages as applicable.

Completed by Diane White Telephone 304-420-1119
 Signature _____ Title Sr Staff Regulatory Agent Date 3/01/2023

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

09/15/2023

HG Energy II Appalachia, LLC

MND11 N-4H

Lithology Record

Actual tops MND-11 N-4H						
Ground Elevation W	1261					
Patterson 577 27'						
water shows	25'					
	Top			Base		
	MD	TVD		MD	TVD	
Pittsburgh Coal	865	865		870	870	
Coal	921	921		926	926	
Big lime	1957	1951		2052	2045	
Big Injun	2052	2045		2123	2113	
Pocono Big Injun	2134	2124		2252	2236	
5th Sand	2412	2387		2455	2427	
berea	2623	2582		2670	2625	
gordon	2895	2831		2912	2847	
50'	3009	2933		3049	2968	
speechley	3705	3527		3788	3597	
Benson	5351	4948		5367	4962	
Alexander	5808	5347		5718	5366	
Air TD	6297					
Rhinestreet	6525	5956		6855	6215	
Cashaqua	6855	6215		6990	6310	
Middlesex	6990	6310		7044	6344	
West River	7044	6344		7135	6398	
Burket	7135	6398		7153	6408	
Tully	7153	6408		7234	6448	
Hamilton	7234	6448		7355	6495	
Marcellus	7355	6495			6409	

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 WV Department of
 Environmental Protection

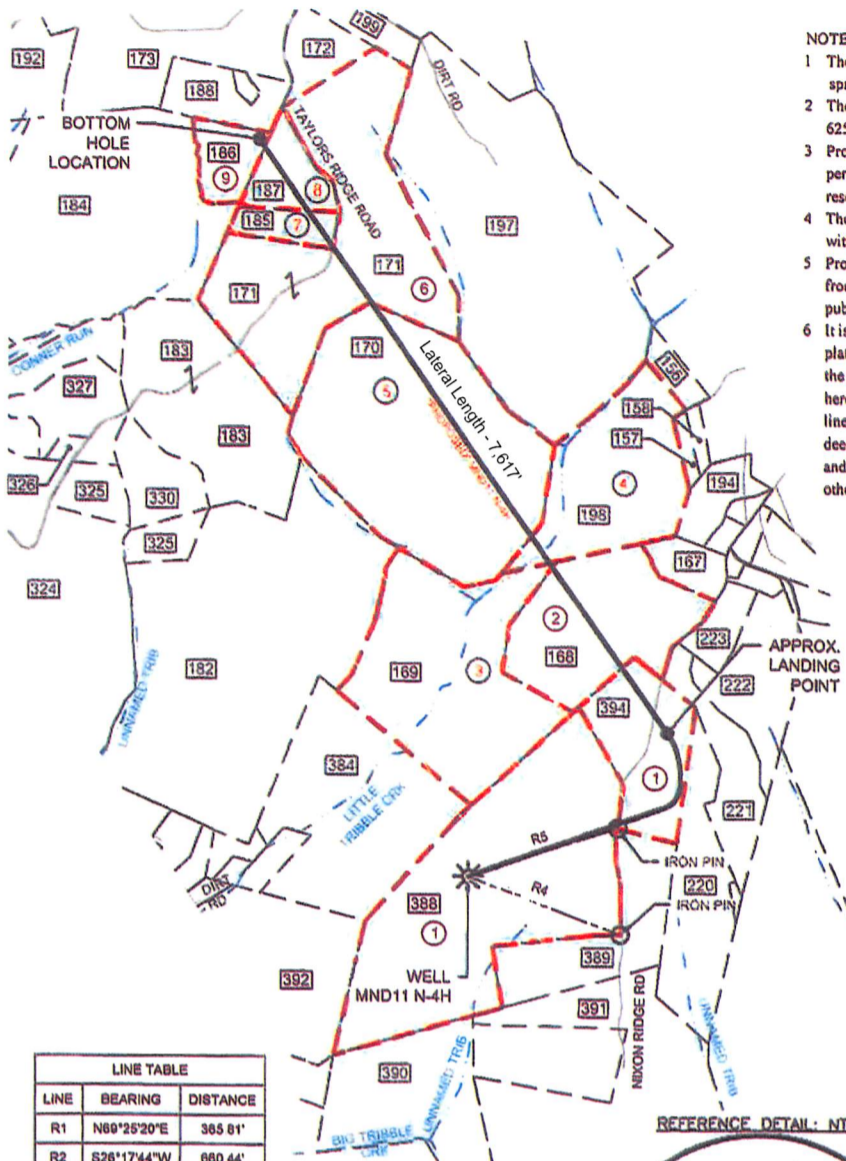
09/15/2023

AS DRILLED PLAT

3,667' to Top Hole
 6,016' to Bottom Hole
 39° 50' 00"

80° 45' 00"
 5,898' to Top Hole

13,595' to Bottom Hole
 (Referenced to 39°52'30")



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

LEGEND

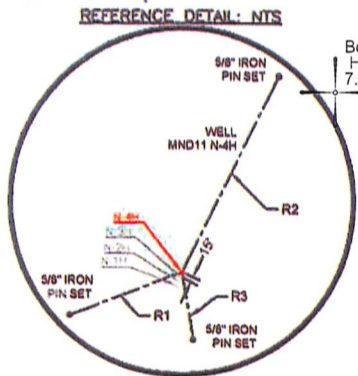
- ☼ PROPOSED WELL
- ⊙ WATER SOURCE
- 100 REFERENCE NUMBER FOR SURFACE PARCEL OWNERSHIP
- ① REFERENCE NUMBER FOR MINERAL OWNERSHIP
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- - - PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/WATERWAY
- ROAD
- BUFFER LINE
- ⊙ EXISTING GAS WELL

LINE TABLE

LINE	BEARING	DISTANCE
R1	N69°25'20"E	365.81'
R2	S26°17'44"W	660.44'
R3	N00°36'56"W	200.04'
R4	N69°33'51"W	1693.23'
R5	S72°06'22"W	1635.10'

AS DRILLED COORDINATES

UTM 17 NAD83 (USSF)	
Surface	N 14,460,263.63 E 1,707,001.94
Landing Point	N 14,461,511 E 1,709,154
Bottom Hole	N 14,467,734 E 1,704,633
UTM 17 NAD83 (m.)	
Surface	N 4,407,497.2 E 520,295.2
Landing Point	N 4,407,877.3 E 520,951.2
Bottom Hole	N 4,409,774.2 E 519,573.2
Lat/Lon NAD83	
Surface	N 39.817216 E 80.762870
Landing Point	N 39.820625 E 80.755194
Bottom Hole	N 39.837748 E 80.771238



- NOTES ON PLAT**
- The purpose of this plat is to show coordinates for the subject well as drilled.
 - The drawing shown hereon is from the original drilling permit application plat dated 6/12/19 prepared by Adam J. Westfall, W.Va. PS #2269.
 - As drilled Landing Point, Bottom Hole Location and lateral length are calculated from gyro measurements taken while drilling the well.
 - Latitude/Longitude offset measurements are referenced to NAD 1927.



(SIGNED) *[Signature]*
TIMOTHY P. ROUSH PS 793

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.

FILE NO. _____
 SCALE: 1" = 2,000'
 MINIMUM DEGREE OF ACCURACY: Sub-Meter
 PROVEN SOURCE OF ELEVATION: DGPS Survey



WEST VIRGINIA
 Department of Environmental Protection
 Office of Oil and Gas
 601 57th Street
 Charleston, West Virginia 25301

DATE: November 11, 2022
 WELL NAME: MND11 N-4H
 API WELL NO.: 47 - 051 - 02406
 State County Permit

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

LOCATION: ELEVATION 1,234' WATERSHED Big Tribble Creek
 DISTRICT: Franklin COUNTY: Marshall QUADRANGLE: Powhatan Point 7.5'
 SURFACE OWNER: HG Energy II, Appalachia ACREAGE: 126.6 Ac.
 OIL & GAS ROYALTY OWNER: Charles W. Miller et al. LEASE ACREAGE: 190.4 Ac. LEASE NO. _____
 PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___
 PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Show As Drilled Coordinates and Lateral Length
 PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ TARGET FORMATION Marcellus Shale ESTIMATED DEPTH 6,409' TVD 14,972' TMD

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

09/15/2023