

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

WV Department of
Environmental Protection
District Franklin

API 47 - 051 - 02405 County Marshall
Quad Powhatan Point, WV/OH Pad Name MND11 Field/Pool Name Moundville
Farm name Consol/HG Energy II Appalachia, LLC Well Number MND11 N-3H
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 4407492.9 Easting 520293.4
Landing Point of Curve Northing 4407651.5 Easting 520847.8
Bottom Hole Northing 4409663.7 Easting 519370.6

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 9/25/2022
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

Reviewed by:
[Signature]
09/15/2023

APPROVED

API 47-051 : 02405 Farm name Consol/HG Energy II Appalachia, LLC Well number MND11 N-3H

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"	1151	New	54.5 lbs/ft J-55		Yes
Coal							
Intermediate 1	12.25"	9.625"	3259	New	40 lbs/ft J55		Yes
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	15354	New	20 lbs/ft P-110		Yes
Tubing	4.67	2.375	7243	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	1183	15.6	1.18	1396	Surface	8
Coal							
Intermediate 1	Class A	1170	15.6	1.23	1439	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A	470/3308	16.0/16.0	1.23/1.13	578/3738	Surface	8
Tubing							

Drillers TD (ft) ¹⁵³⁸¹ _____ Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) ⁶¹¹⁴ _____

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
 Office of Oil and Gas

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

APR 26 2023
 WV Department of Environmental Protection

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-3H
Perforation Record**

Stage #	Perforation Date	Perforation from Depth	Perforation to Depth	Number of Perforations	Formation
Sleeve/1	11/16/2022	15305	15281	2	Marcellus
2	11/16/2022	15247	15079	28	Marcellus
3	11/17/2022	15051	14883	28	Marcellus
4	11/17/2022	14855	14687	28	Marcellus
5	11/17/2022	14659	14491	28	Marcellus
6	11/18/2022	14463	14295	28	Marcellus
7	11/18/2022	14267	14099	28	Marcellus
8	11/18/2022	14071	13903	28	Marcellus
9	11/19/2022	13875	13707	28	Marcellus
10	11/19/2022	13679	13511	28	Marcellus
11	11/19/2022	13483	13315	28	Marcellus
12	11/19/2022	13287	13119	28	Marcellus
13	11/20/2022	13091	12923	28	Marcellus
14	11/20/2022	12895	12727	28	Marcellus
15	11/20/2022	12699	12531	28	Marcellus
16a	11/20/2022	12503	12335	28	Marcellus
16b	11/21/2022	12503	12305	53	Marcellus
17	11/21/2022	12278	12124	28	Marcellus
18	11/21/2022	12097	11943	28	Marcellus
19	11/21/2022	11915	11747	28	Marcellus
20	11/22/2022	11719	11551	28	Marcellus
21	11/22/2022	11523	11355	28	Marcellus
22	11/22/2022	11327	11159	28	Marcellus
23	11/23/2022	11131	10963	28	Marcellus
24	11/23/2022	10935	10767	28	Marcellus
25	11/23/2022	10739	10571	28	Marcellus
26a	11/23/2022	10543	10375	28	Marcellus
26b	11/24/2022	10543	10345	53	Marcellus
27	11/24/2022	10318	10164	28	Marcellus
28	11/24/2022	10137	9983	28	Marcellus
29	11/25/2022	9955	9787	28	Marcellus
30	11/25/2022	9759	9591	28	Marcellus
31	11/25/2022	9563	9395	28	Marcellus
32	11/25/2022	9367	9199	28	Marcellus
33	11/26/2022	9171	9003	28	Marcellus
34	11/26/2022	8976	8808	28	Marcellus
35	11/26/2022	8782	8614	28	Marcellus
36	11/27/2022	8588	8420	28	Marcellus
37	11/27/2022	8394	8226	28	Marcellus
38	11/27/2022	8200	8032	28	Marcellus
39	11/27/2022	8006	7838	28	Marcellus
40	11/27/2022	7812	7644	28	Marcellus
41	11/27/2022	7618	7450	28	Marcellus
42	11/28/2022	7424	7256	28	Marcellus

RECEIVED
Office of Oil and Gas
APP 11/28/2022

09/15/2023

HG Energy II Appalachia, LLC

MND11 N-3H

Stimulation Record

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	88.0	7225	n/a	3805	320000	9,145
2	11/16/2022	94.0	7,551	5,301	4,260	635000	14,156
3	11/17/2022	95.6	7,490	5,097	4,917	620960	12,633
4	11/17/2022	94.1	7,626	5,899	4,748	598700	11,110
5	11/17/2022	96.0	7,661	5,615	4,989	663300	11,701
6	11/18/2022	97.0	7,366	5,687	5,164	620000	9,862
7	11/18/2022	98.2	7,669	5,719	5,130	640900	9,583
8	11/18/2022	100.0	7,376	4,928	5,212	620000	10,794
9	11/19/2022	100.0	7,347	5,777	5,201	640000	9,687
10	11/19/2022	96.0	7,541	5,219	5,445	640375	9,548
11	11/19/2022	95.0	7,418	3,888	5,369	640400	9,448
12	11/19/2022	95.0	7,443	5,213	5,556	640000	9,535
13	11/20/2022	93.0	7,376	5,255	4,874	640375	9,247
14	11/20/2022	98.0	7,491	3,436	5,191	640400	9,431
15	11/20/2022	93.0	7,355	5,318	5,172	640400	10,776
16a	11/20/2022	52.7	7,513	5,376	4,698	1000	2,207
16b	11/21/2022	97.4	7,418	5,376	3,984	641375	9,998
17	11/21/2022	90.0	7,046	3,429	5,030	625000	9,387
18	11/21/2022	90.0	7,296	3,988	5,742	625100	11,232
19	11/21/2022	107.0	7,560	4,324	5,638	625063	9,401
20	11/22/2022	104.0	7,440	4,237	5,254	625000	9,372
21	11/22/2022	101.0	7,408	4,394	5,103	625000	9,290
22	11/22/2022	100.0	7,395	5,712	4,929	625100	9,119
23	11/23/2022	88.0	7,481	4,102	5,028	615100	10,483
24	11/23/2022	94.0	7,904	5,242	4,947	615000	9,970
25	11/23/2022	104.0	7,042	4,347	5,060	615000	9,463
26a	11/23/2022	22.0	6,681	4,883	5,044	615000	945
26b	11/24/2022	100.0	7,014	4,771	4,949	616600	10,078
27	11/24/2022	100.0	7,125	5,147	5,777	615700	9,286
28	11/24/2022	99.0	6,805	5,079	5,150	615000	9,360
29	11/25/2022	103.0	7,258	5,589	5,015	615000	9,313
30	11/25/2022	105.0	7,626	3,481	5,400	616240	8,876
31	11/25/2022	110.0	7,266	3,980	5,423	615700	9,087
32	11/25/2022	104.0	7,239	4,240	5,063	614600	9,727
33	11/26/2022	104.0	6,959	5,615	5,550	615828	10,053
34	11/26/2022	102.0	6,689	3,530	5,070	615400	9,580
35	11/26/2022	105.0	7,046	4,220	5,013	615000	10,182
36	11/27/2022	99.0	6,995	4,687	5,574	615640	9,676
37	11/27/2022	110.0	6,826	5,399	5,605	615440	9,836
38	11/27/2022	104.0	6,870	3,835	5,242	615800	10,037
39	11/27/2022	107.0	7,164	4,773	5,225	615000	9,702
40	11/27/2022	107.0	6,729	5,864	5,248	615000	10,045
41	11/27/2022	109.0	7,060	5,492	5,607	615000	9,655
42	11/28/2022	102.0	6,922	5,491	4,900	604520	9,273

RECEIVED
Office of Oil and Gas
APR 26 2023
615710
615000

09/15/2023

API 47- 051 - 02405 Farm name Consol/HG Energy II Appalachia, LLC Well number MND11 N-3H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6415-6505</u> TVD	<u>7181-15381</u> 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.

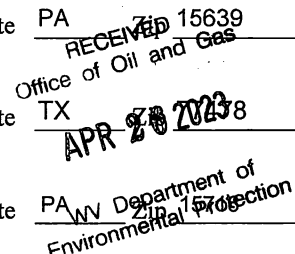
Drilling Contractor Patterson -UTI
Address 67090 Executive Drive City St. Clairsville State OH Zip 43950

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

Stimulating Company Nextier
Address 8300 Route 119 North City Black Lick State PA Zip 17708

Please insert additional pages as applicable.



Completed by Diane White Telephone 304-420-1119
Signature Diane White Title Sr Staff Regulatory Agent Date 2/28/2023

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

09/15/2023

HG Energy II Appalachia, LLC
MND11 N-3H
Lithology Report

Actual tops MND-11 N-3H						
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	1954	1951		2050	2042	
Big Injun	2050	2045		2119	2112	
Pocono Big Injun	2131	2124		2248	2241	
5th Sand	2409	2389		2451	2428	
berea	2615	2580		2667	2629	
gordon	2892	2830		2912	2852	
50'	3006	2932		3045	2970	
speechley	3678	3531		3757	3599	
Benson	5272	4965		5279	4969	
Alexander	5688	5347		5718	5366	
Air TD	5971					
Rhinestreet	6350	5935		6708	6241	
Cashaqua	6708	6241		6813	6318	
Middlesex	6813	6318		6855	6346	
West River	6855	6346		6946	6402	
Burket	6946	6402		6973	6417	
Tully	6973	6417		7056	6458	
Hamilton	7056	6458		7181	6505	
Marcellus	7181	6505		15381	6415	

RECEIVED
Office of Oil and Gas

APR 26 2023

Department of
Environmental Protection

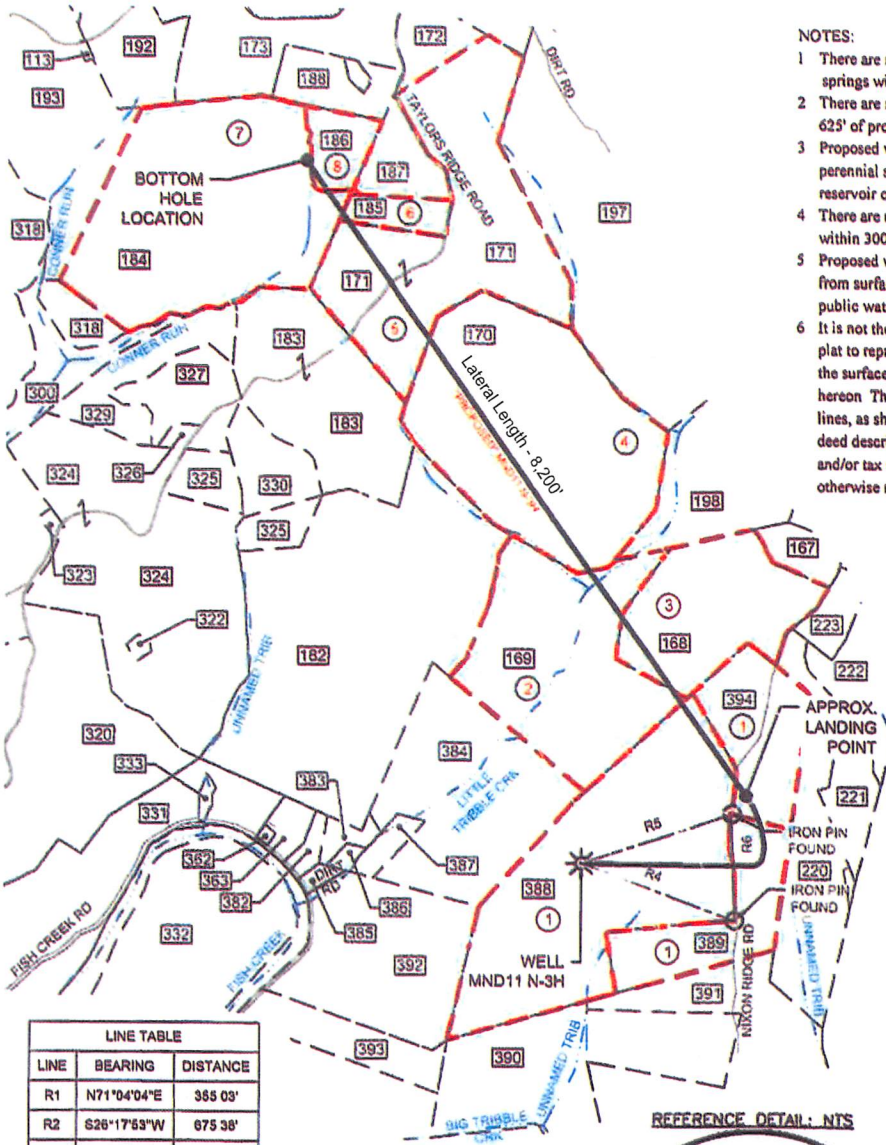
09/15/2023

AS DRILLED PLAT

3,673' to Top Hole

6,682' to Bottom Hole

39° 50' 00"



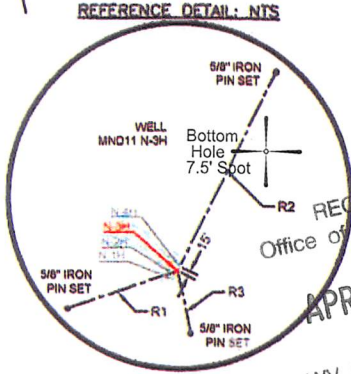
- NOTES:
- There are no water wells or developed springs within 250' of proposed well
 - There are no existing buildings within 625' of proposed well
 - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake
 - There are no native trout streams within 300' of proposed 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	
	PROPOSED WELL
	WATER SOURCE
	REFERENCE NUMBER FOR SURFACE PARCEL OWNERSHIP
	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

Surface 7.5' Spot

AS DRILLED COORDINATES	
UTM 17 NAD83 (USSF)	
Surface - N	14,460,249.72
E	1,706,995.94
Landing - N	14,460,770
Point E	1,708,815
Bottom - N	14,467,372
Hole E	1,703,968
UTM 17 NAD83 (m.)	
Surface - N	4,407,492.9
E	520,293.4
Landing - N	4,407,651.5
Point E	520,847.8
Bottom - N	4,409,663.7
Hole E	519,370.6
Lat/Lon NAD83	
Surface - N	39.817178
E	80.762891
Landing - N	39.818593
Point E	80.756409
Bottom - N	39.836758
Hole E	80.773610

LINE TABLE		
LINE	BEARING	DISTANCE
R1	N71°04'04"E	355.03'
R2	S26°17'53"W	675.38'
R3	N12°12'39"W	194.16'
R4	N70°04'00"W	1694.85'
R5	S71°44'02"W	1645.63'
R6	N01°36'10"W	1094.04'

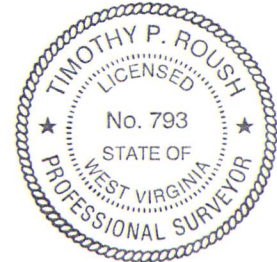


- NOTES ON PLAT
- The purpose of this plat is to show coordinates for the subject well as drilled.
 - The drawing shown hereon is from the original drilling permit application plat dated 6/12/19 prepared by Adam J. Westfall, W.Va. PS #2269.
 - As drilled Landing Point, Bottom Hole Location and lateral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

- DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

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

RECEIVED
Office of Oil and Gas
APR 26 2023
WV Department of Environmental Protection



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-3H
API WELL NO.: 47-051-02405
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 6,415' TVD 15,381' 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

13,956' to Bottom Hole (Referenced to 39°52'30")

80° 45' 00"

5,912' to Top Hole

