

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

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Office of Oil and Gas

JUN 30 2017

WV Department of
Environmental Protection

API 47-91-01287 County Taylor District Courthouse
Quad Grafton Pad Name Coaltrain Field/Pool Name _____
Farm name Patriot Mining Company Well Number 20H
Operator (as registered with the OOG) PDC Mountaineer, LLC
Address 6031 Wallace Road Extension, Suite 300 City Wexford State PA Zip 15090

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,350,152.904 Easting 576,710.962
Landing Point of Curve Northing 4,349,863.197 Easting 576,332.375
Bottom Hole Northing 4351543.723 Easting 575,652.263

Elevation (ft) 1268' 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)
Synthetic Oil-based Mud

Date permit issued 4/02/2014 Date drilling commenced 1/14/2015 Date drilling ceased 1/31/2015
Date completion activities began 2/16/15 Date completion activities ceased 4/21/15
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 163',387' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Void(s) encountered (Y/N) depths N
Coal depth(s) ft 688',754',855',1088' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

NAME: Ken Grunolds
DATE: 8/24/17

Reviewed by:

EC

09/15/2017

API 47-91 - 01287 Farm name Patriot Mining Company Well number 20H

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	30"	24"	100'	New	94.00	N/A	Y
Surface	17.5"	13 3/8"	475'	New	54.50	N/A	Y
Coal							
Intermediate 1	12 1/4"	9 5/8"	2852'	New	40.00	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	17578'	New	20.00	N/A	Y N
Tubing							
Packer type and depth set							

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Comment Details _____

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WV Department of
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Cement
Top (MD)

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	WOC (hrs)
Conductor	Grout					
Surface	Class A 2% CaCl ₂	520	15.6	1.18	613	8
Coal						
Intermediate 1	Class A	764	15.6	1.18	901.52	8
Intermediate 2						
Intermediate 3						
Production	Type 1 4% Gel/Type 1 2% Gel	821/1950	13.8/15.0	1.64/1.32	3920.44	8
Tubing						

Drillers TD (ft) 17585' Loggers TD (ft) 17585'

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure None

Kick off depth (ft) 7404' MD

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 3/8": 1 bow spring centralizer placed on every joint

9 5/8": 1 bow spring centralizer placed on every third joint

5 1/2": 1 rigid poly centralizer every joint in the lateral, 1 rigid poly centralizer every other joint through the curve, 1 rigid poly centralizer every third joint from kick off point to estimated TOC

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS 1,800 shots of 22.7gr 0.56" Titan Charges

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

API 47- 91 - 01287 Farm name Patriot Mining Company Well number 20H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	3/2/15	17280	17446	40	Marcellus
2	3/2/15	17085	17247	40	Marcellus
3	3/3/15	16885	17047	40	Marcellus
4	3/3/15	16685	16847	40	Marcellus
5	3/4/15	16485	16647	40	Marcellus
6	3/4/15	16285	16447	40	Marcellus
7	3/4/15	16085	16247	40	Marcellus
8	3/5/15	15885	16047	40	Marcellus
9	3/9/15	15685	15847	40	Marcellus
10	3/9/15	15485	15647	40	Marcellus
11	3/9/15	15285	15447	40	Marcellus
12	3/9/15	15085	15247	40	Marcellus
13	3/9/15	14885	15047	40	Marcellus
14	3/10/15	14685	14847	40	Marcellus
15	3/10/15	14485	14647	40	Marcellus
16	3/10/15	14285	14447	40	Marcellus

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

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Complete a separate record for each stimulation stage.

WV Department of
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Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	3/2/15	58	8088	9500	5010	210340	7580	0
2	3/3/15	65	8099	6233	5025	229520	7236	0
3	3/3/15	69	8060	5983	5032	234500	7930	0
4	3/4/15	71	8084	6105	6498	105000	4878	0
5	3/4/15	67	8177	6129	6148	232540	8885	0
6	3/4/15	69	8096	6033	5454	310260	8335	0
7	3/4/15	70	7783	5958	6012	406720	10891	0
8	3/5/15	68	7865	6273	5782	392880	9604	0
9	3/8/15	68	7937	6691	5836	334480	7868	0
10	3/8/15	66	7497	6008	5529	396140	9210	0
11	3/9/15	64	7821	6140	5629	403440	10815	0
12	3/9/15	63	7784	6545	6044	403940	10630	0
13	3/9/15	65	7798	6233	4964	404920	9241	0
14	3/10/15	74	7970	6026	5944	395800	9294	0
15	3/10/15	75	7801	6355	5858	399580	9254	0
16	3/10/15	72	7755	6334	5921	404240	9742	0

Please insert additional pages as applicable.

09/15/2017

API 47- 91 - 01287 Farm name Patriot Mining Company Well number 20H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	3/11/15	14085	14247	40	Marcellus
18	3/11/15	13885	14047	40	Marcellus
19	3/11/15	13685	13847	40	Marcellus
20	3/11/15	13485	13647	40	Marcellus
21	3/12/15	13285	13447	40	Marcellus
22	3/12/15	13085	13247	40	Marcellus
23	3/13/15	12885	13047	40	Marcellus
24	3/13/15	12685	12847	40	Marcellus
25	3/13/15	12485	12647	40	Marcellus
26	3/14/15	12285	12447	40	Marcellus
27	3/14/15	12085	12247	40	Marcellus
28	3/14/15	11885	12047	40	Marcellus
29	3/14/15	11685	11847	40	Marcellus
30	3/15/15	11485	11647	40	Marcellus
31	3/15/15	11285	11447	40	Marcellus
32	3/15/15	11085	11247	40	Marcellus

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

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Complete a separate record for each stimulation stage.

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Environmental Protection

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
17	3/11/15	72	7786	5844	5729	406480	10163	0
18	3/11/15	69	7696	6241	6248	401440	9547	0
19	3/11/15	70	7523	6233	5915	402240	8563	0
20	3/12/15	74	7648	5625	5772	393000	9063	0
21	3/12/15	75	7726	6255	6269	402060	8890	0
22	3/12/15	76	7902	6894	5618	401280	11363	0
23	3/13/15	81	7924	5990	5325	400760	9362	0
24	3/13/15	70	7452	6241	6241	405460	8711	0
25	3/13/15	67	7529	5919	5872	400840	8767	0
26	3/14/15	62	7376	6148	5729	401400	11504	0
27	3/14/15	66	7555	6713	5980	313600	9456	0
28	3/14/15	64	7863	6373	5018	401500	15557	0
29	3/15/15	71	7822	6598	6140	400600	10444	0
30	3/15/15	77	8137	6380	6412	405020	10278	0
31	3/15/15	71	7605	6752	4878	402100	11371	0
32	3/15/15	81	7948	6108	5246	400620	10534	0

Please insert additional pages as applicable.

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
33	3/16/15	10885	11047	40	Marcellus
34	3/16/15	10685	10847	40	Marcellus
35	3/16/15	10485	10647	40	Marcellus
36	3/16/15	10285	10447	40	Marcellus
37	3/17/15	10085	10247	40	Marcellus
38	3/17/15	9885	10047	40	Marcellus
39	3/17/15	9685	9847	40	Marcellus
40	3/17/15	9485	9647	40	Marcellus
41	3/18/15	9285	9447	40	Marcellus
42	3/18/15	9085	9247	40	Marcellus
43	3/18/15	8885	9047	40	Marcellus
44	3/18/15	8685	8847	40	Marcellus
45	3/18/15	8485	8647	40	Marcellus

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Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
33	3/16/15	75	7735	6158	5111	398920	9674	0
34	3/16/15	80	7926	6391	4731	400800	10726	0
35	3/16/15	77	7838	6659	4985	401020	9771	0
36	3/17/15	79	7720	6258	5261	400420	9383	0
37	3/17/15	78	7740	6276	6286	399600	9273	0
38	3/17/15	77	7759	6294	5997	402320	10401	0
39	3/17/15	72	7428	6237	5025	401980	9154	0
40	3/17/15	74	7791	6906	5236	400880	8985	0
41	3/18/15	79	7699	6230	5336	402640	8807	0
42	3/18/15	80	8042	6142	4896	402000	8833	0
43	3/18/15	82	7546	6638	5182	400220	8080	0
44	3/18/15	83	7673	7188	5786	405400	8767	0
45	3/18/15	78	7675	7020	5100	400120	8310	0

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PRODUCING FORMATION(S)	DEPTHS	
	TVD	MD
Marcellus		

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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 DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	0		0		Big Lime to Elk-offset 4709101116, Burkett to Purcell- Coaltrain 20HM Mudlog, Onondaga TVD estimated from offset 4709101116
Big Lime	1576	3181	1576	3181	Sandstone
Balltown	3181	3231	3181	3231	Sandstone
Bradford	3854	3879	3854	3879	Sandstone
Benson	4510	4580	4510	4580	Sandstone
Elk	4879	4929	4879	4929	Siltstone
Burkett	7438	7458	7826	7851	Shale
Tully	7458	7517	7851	7924	Limestone
Mahantango	7517	7680	7924	8178	Shale- Gas show at 8020' MD
Marcellus	7680	7778	8178	17585	Shale- Gas show through lateral
Purcell	7749	7751	8360	8365	Limestone
Onondaga	7778				Limestone

Please insert additional pages as applicable.

Drilling Contractor Sidewinder Drilling
Address 952 Echo Land, Suite 460 City Houston State TX Zip 77024

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company Universal Well Services
Address HALL RD. City Buckhannon State WV Zip 26201

Stimulating Company U.S. WELL SERVICES
Address 533 INDUSTRIAL PARK RD. City JARVIS LDW State WV Zip 26378

Please insert additional pages as applicable.

Completed by EDDIE CARTER Telephone _____
Signature [Signature] Title PERMITTING MANAGER Date 4-18-17

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

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/2/2015
Job End Date:	3/18/2015
State:	West Virginia
County:	Taylor
API Number:	47-091-01287-00-00
Operator Name:	Mountaineer Keystone, LLC
Well Name and Number:	Coaltrain 20H
Longitude:	-80.11057500
Latitude:	39.29726700
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,645
Total Base Water Volume (gal):	18,160,686
Total Base Non Water Volume:	906,950

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Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Mountaineer Keystone	Base Fluid					
			Water	7732-18-5	100.00000	89.41400	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	9.93275	
HCL Acid (3% to 7.5%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	97.00000	0.41985	
			Hydrogen Chloride	7647-01-0	7.50000	0.03769	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			Water	7732-18-5	40.00000	0.03886	
			Anionic Polyacrylamide	Proprietary	40.00000	0.03886	
			Sodium Chloride	7647-14-5	20.00000	0.01943	
			Petroleum Distillates	64742-47-8	20.00000	0.01564	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00486	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.03443	
			Hydrogen Chloride	7647-01-0	18.00000	0.00822	
SI-1100	U.S. Well Services, LLC	Scale Inhibitor					

			Di Water	7732-18-5	80.00000	0.01037
			Ethylene Glycol	107-21-1	40.00000	0.00586
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	10.00000	0.00175
			2-Phosphonobutane 1,2,4 tricarboxylic salt	37971-36-1	10.00000	0.00167
			hexamethylenediamine tetra (methylene phosphonic acid)	38820-59-6	10.00000	0.00162
			Copolymer of Maleic and Acrylic acid	26677-99-6	10.00000	0.00153
			bis (hexamethylene) tramine penta (methylene phosphonic acid) - phosphate acid	40623-75-4	10.00000	0.00149
			Acrylic polymer	52255-49-9	5.00000	0.00065
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitripropionamide	10222-01-2	20.00000	0.00638
			Deionized Water	7732-18-5	28.00000	0.00364
AI-301	U.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Diethylene Glycol	111-46-6	30.00000	0.00017
			Methenamine	100-97-0	20.00000	0.00014
			Hydrogen Chloride	7647-01-0	10.00000	0.00006
			Polyethylene polyamine	68603-67-8	10.00000	0.00005
			Coco amine	61791-14-8	5.00000	0.00002

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

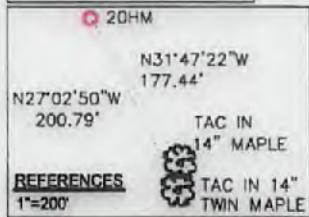
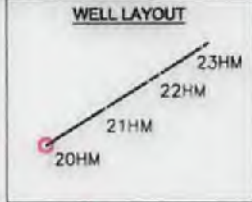
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THRASHER

THE THRASHER GROUP, INC.
600 WHITE OAKS BOULEVARD
BRIDGEPORT, WV 26330
PHONE 304-624-4108

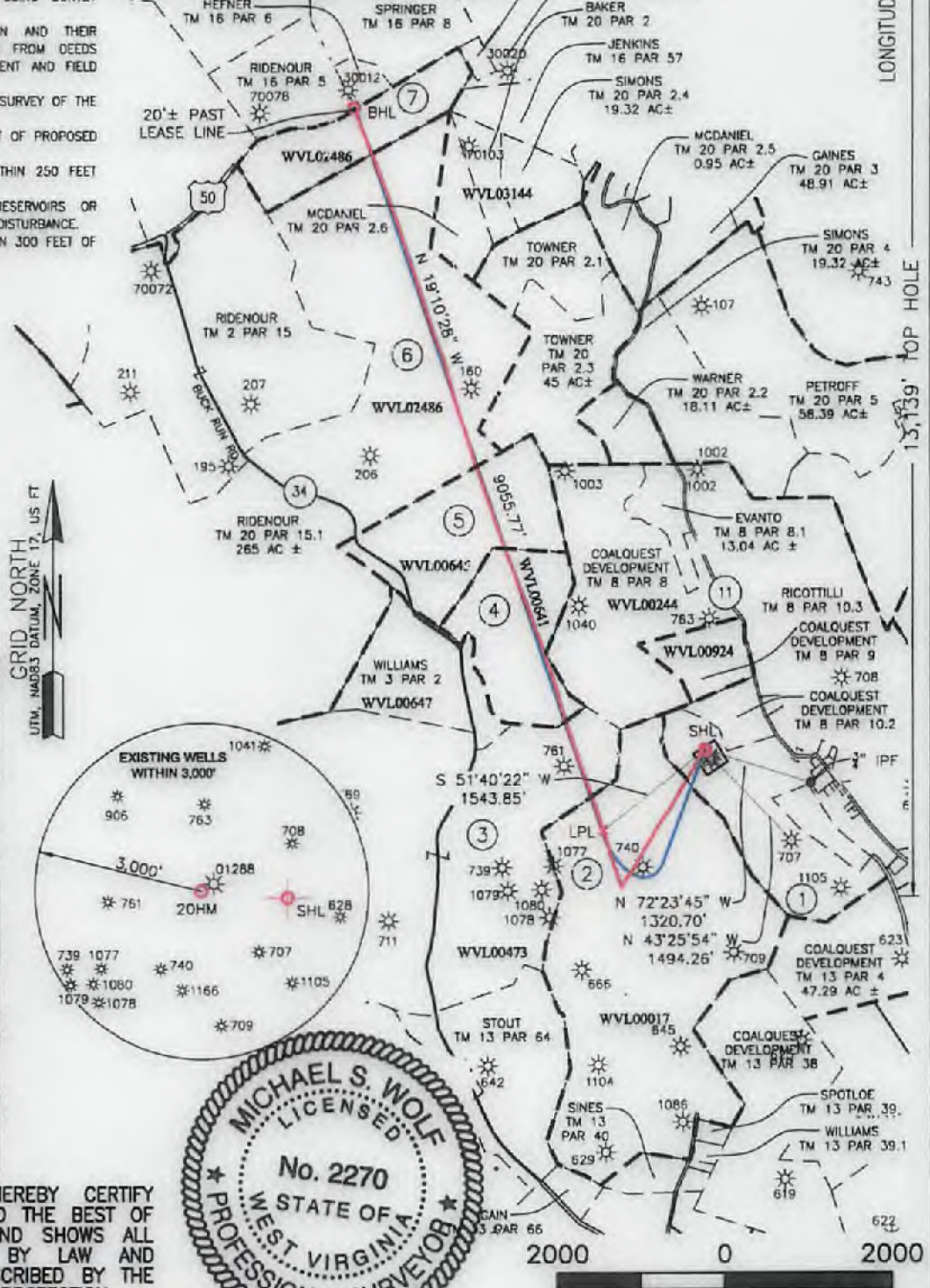
NOTES ON SURVEY

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.



AS-DRILLED COORDINATES:	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,350,150.90
	EASTING: 576,210.96
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,349,861.08
	EASTING: 576,341.81
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,352,468.16
	EASTING: 575,435.24
PROPOSED COORDINATES:	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,350,152.90
	EASTING: 576,210.96
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,349,863.20
	EASTING: 576,332.38
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,352,454.90
	EASTING: 575,445.08

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	COALQUEST DEVELOPMENT LLC	5-8-10	63.9
2	COALQUEST DEVELOPMENT LLC	5-13-3	224.0
3	KINSEY JAMES A OR BEVERLY A	5-13-1	229.69
4	EVANTO KEVIN GUY	5-8-28	42.88
5	EVANTO KEVIN GUY	5-8-6	64.0
6	RIDENOUR WANDA PAULINE	3-20-1	199.84
7	RIDENOUR PAULINE W	3-16-63	39.57



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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2270 *M.S. Wolf 6/25/17*

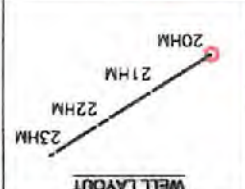
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	MINIMUM DEGREE OF ACCURACY: 1 IN 2500 PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)	COALTRAIN PAD OPERATOR'S WELL #: 20HM API WELL #: 47 091 01287 STATE COUNTY PERMIT
	WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW WATERSHED: SAND LICK RUN OF SIMPSON CREEK DISTRICT: COURTHOUSE COUNTY: TAYLOR SURFACE OWNER: COALQUEST DEVELOPMENT LLC. OIL & GAS ROYALTY OWNER: GLENN C, LAREW ET AL	ELEVATION: 1288.0 QUADRANGLE: GRAFTON 7.5 ACREAGE: 212.44 ACREAGE: 972.85 ± (LEASE)
TARGET FORMATION: MARCELLUS SHALE WELL OPERATOR: ARSENAL RESOURCES ADDRESS: 6031 WALLACE ROAD EXTENSION #300 CITY: WEXFORD STATE: WV ZIP CODE: 15090	DESIGNATED AGENT: WILLIAM VEIGEL ADDRESS: 65 PROFESSIONAL PLACE, SUITE 200 CITY: BRIDGEPORT STATE: WV ZIP CODE: 26330	ESTIMATED DEPTH: 7,645 TVD 17,585 TMD DATE: 06-22-2017 DRAWN BY: K. POTH SCALE: 1" = 2000' DRAWING NO: 030-3239 WELL LOCATION PLAT

THE THRASHER GROUP, INC.
600 WHITE OAKS BOULEVARD
BRIDGEPORT, WV 26330
PHONE 304-624-4108

NOTES ON SURVEY

1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
3. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURAL PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

WELL LAYOUT



REFERENCES

1-200	TWIN MAPLE
14	MAPLE
N27°02'50"W	TAC IN
200.79'	
N31°47'22"W	
177.44'	

AS-DRILLED COORDINATES:

SURFACE HOLE LOCATION (SHL)	NORTHING 4,352,454.90	EASTING 576,272.96
LANDING POINT LOCATION (LPL)	NORTHING 4,350,152.90	EASTING 576,110.96
BOTTOM HOLE LOCATION (BHL)	NORTHING 4,352,454.90	EASTING 576,445.08
UTM (NAD83, ZONE 17, METERS):		
BOTTOM HOLE LOCATION (BHL)	NORTHING 4,352,454.90	EASTING 576,445.08
UTM (NAD83, ZONE 17, METERS):		
SURFACE HOLE LOCATION (SHL)	NORTHING 4,350,152.90	EASTING 576,110.96
LANDING POINT LOCATION (LPL)	NORTHING 4,350,152.90	EASTING 576,110.96
UTM (NAD83, ZONE 17, METERS):		
BOTTOM HOLE LOCATION (BHL)	NORTHING 4,352,454.90	EASTING 576,445.08
UTM (NAD83, ZONE 17, METERS):		
PROPOSED COORDINATES:		
SURFACE HOLE LOCATION (SHL)	NORTHING 4,352,454.90	EASTING 576,445.08
UTM (NAD83, ZONE 17, METERS):		

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

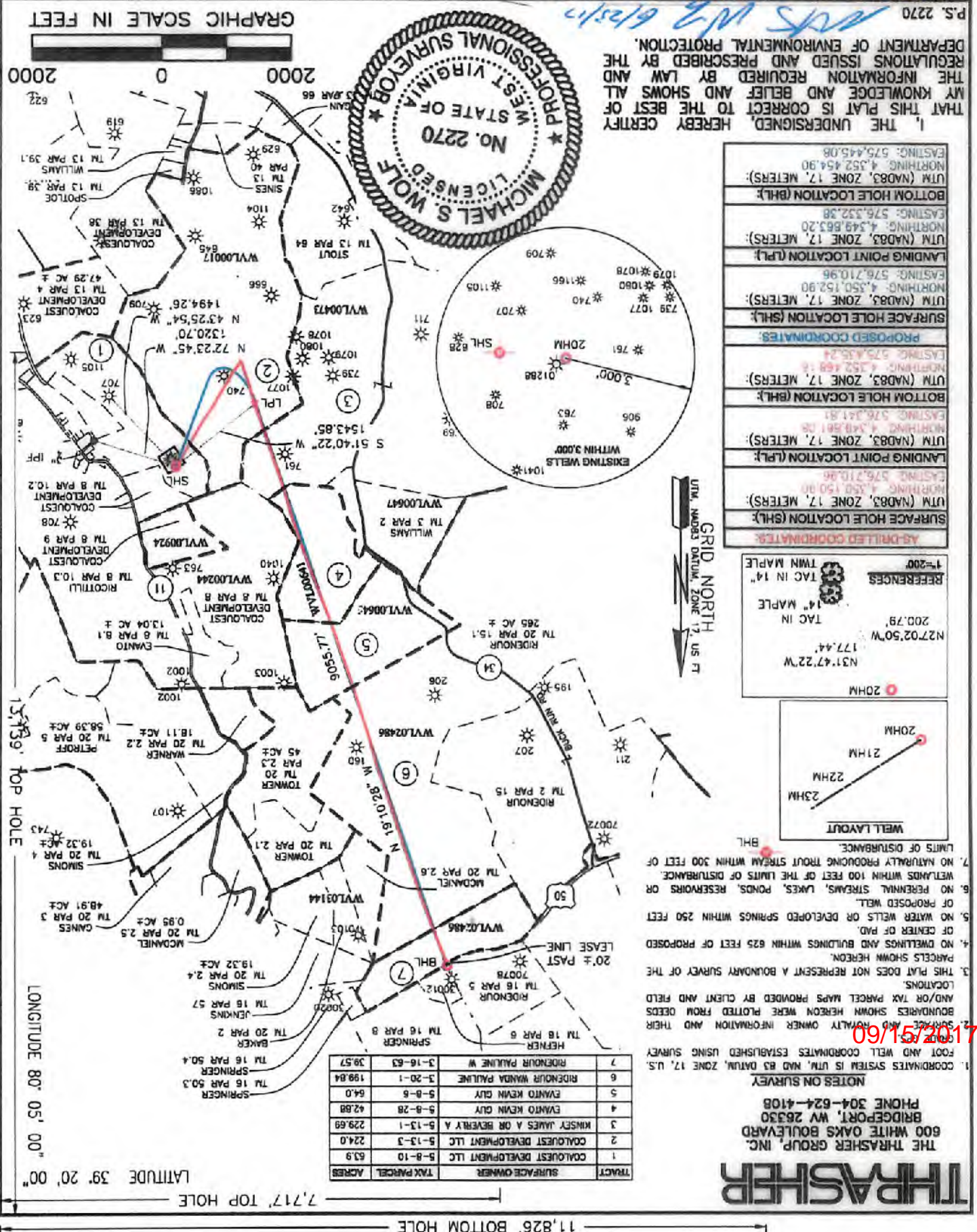
P.S. 2270

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WV DEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034



DEGREE OF ACCURACY: 1 IN 2500
PROVEN SURVEY
SOURCE OF GRADE GPS
ELEVATION: (NAVD 88, US FT)

COALTRAIN PAD
OPERATOR'S WELL #:
STATE #:
COUNTY: 20HM



TRACT	SURFACE OWNER	TAX PARCEL ACRES
1	COALQUEST DEVELOPMENT LLC	5-8-10 63.9
2	COALQUEST DEVELOPMENT LLC	5-13-3 224.0
3	KIMSEY JAMES A OR BEVERLY A	5-13-1 229.69
4	EMANTO KEVIN GUY	5-8-28 42.88
5	EMANTO KEVIN GUY	5-8-6 64.0
6	RIDEHOUR WANDA PAULINE	3-20-1 199.84
7	RIDEHOUR PAULINE W	3-16-63 38.57



GRAPHIC SCALE IN FEET
0 2000 2000

WV Department of Environmental Protection
Office of Oil and Gas
RECEIVED JUN 3 0 2017

DESIGNATED AGENT: WILLIAM VEIGEL
ADDRESS: 65 PROFESSIONAL PLACE, SUITE 200
CITY: BRIDGEPORT WV ZIP CODE: 26330

WELL OPERATOR: ARSENAL RESOURCES
TARGET FORMATION: MARCELLUS SHALE
CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED
DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORMATE NEW FORMATION
WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

DISTRICT: COURTHOUSE
COUNTY: TAYLOR
SURFACE OWNER: COALQUEST DEVELOPMENT LLC
OIL & GAS ROYALTY OWNER: GLENN C, LAREW ET AL
ACREAGE: 212.44
ACREAGE: 972.85 ± (LEASE)

WELL LOCATION PLAN
DRAWING NO. 030-3239
SCALE: 1" = 2000'
DRAWN BY: K. POIH
DATE: 06-22-2017