

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

JUN 30 2017

WV Department of
Environmental Protection

API 47-91 - 01288 - 04287 County Taylor District Courthouse
Quad Grafton Pad Name Coaltrain Field/Pool Name _____
Farm name Patriot Mining Company, Inc Well Number 21H
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 4350155.372 Easting 576714.809
Landing Point of Curve Northing 4349962.170 Easting 576620.573
Bottom Hole Northing 4351942.696 Easting 575940.462

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 12/17/2014⁴ Date drilling ceased 1/14/2015
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 Graynolds
DATE: 8/24/17

Reviewed by:
EC
09/15/2017

API 47- 91 - 01287 Farm name Patriot Mining Company, Inc Well number 21H

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	24"		100'	New	94.00	N/A	Y
Surface	17.5"	13 3/8"	482'	New	54.50	N/A	Y
Coal							
Intermediate 1	12 1/4"	9 5/8"	2846'	New	40.00	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	15356'	New	20.00	N/A	<u>Y</u> <u>N</u>
Tubing							
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	Grout						
Surface	Class A 2% CaCl ₂	500	15.6	1.18	590	Surface	8
Coal							
Intermediate 1	Class A	764	15.6	1.18	901.52	Surface	8
Intermediate 2							
Intermediate 3							
Production	Type 1 4% Gel/Type 1 2% Gel	765/1564	13.8/15.0	1.64/1.32	3319.08	<u>2700'</u>	8
Tubing							

Drillers TD (ft) 15366' Loggers TD (ft) 15366'
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure None

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Kick off depth (ft) 7260' 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 1,400 shots of 22.7gr 0.55" Titan Charges

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

API 47- 91 - 0128/8 Farm name Patriot Mining Company, Inc Well number 21H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	3/2/15	15057	15223	40	Marcellus
2	3/3/15	14866	15024	40	Marcellus
3	3/3/15	14670	14828	40	Marcellus
4	3/4/15	14474	14632	40	Marcellus
5	3/4/15	14278	14436	40	Marcellus
6	3/4/15	14082	14240	40	Marcellus
7	3/4/15	13886	14044	40	Marcellus
8	3/6/15	13690	13848	40	Marcellus
9	3/8/15	13494	13652	40	Marcellus
10	3/8/15	13298	13456	40	Marcellus
11	3/9/15	13102	13260	40	Marcellus
12	3/9/15	12906	13064	40	Marcellus
13	3/9/15	12710	12868	40	Marcellus
14	3/10/15	12514	12672	40	Marcellus
15	3/10/15	12318	12476	40	Marcellus
16	3/10/15	12122	12280	40	Marcellus

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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	55	7599	9500	5025	223690	8078	0
2	3/3/15	59	7775	7020	5379	299440	8747	0
3	3/3/15	67	8007	6212	5661	285480	8961	0
4	3/4/15	64	7638	6266	5311	360460	7832	0
5	3/4/15	71	7976	6309	6258	396480	8351	0
6	3/4/15	71	7851	6434	5951	390460	9012	0
7	3/5/15	64	7732	6294	5722	196920	11249	0
8	3/6/15	61	7600	5997	5744	393720	9049	0
9	3/8/15	69	7625	6641	6040	307000	9767	0
10	3/9/15	69	7913	6652	5536	347080	8404	0
11	3/9/15	69	7949	6659	4706	401900	9420	0
12	3/9/15	66	7538	6248	5035	406400	10531	0
13	3/10/15	76	7826	6166	5811	300160	8681	0
14	3/10/15	78	7881	6981	4606	387120	7853	0
15	3/10/15	68	7934	7292	6094	400250	9018	0
16	3/11/15	78	7619	5804	6394	401640	8741	0

Please insert additional pages as applicable.

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API 47- 91 - 0128 ⁸ Farm name Patriot Mining Company, Inc Well number 21H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	3/11/15	11926	12084	40	Marcellus
18	3/11/15	11730	11888	40	Marcellus
19	3/11/15	11534	11692	40	Marcellus
20	3/12/15	11338	11496	40	Marcellus
21	3/12/15	11142	11300	40	Marcellus
22	3/12/15	10946	11104	40	Marcellus
23	3/13/15	10750	10908	40	Marcellus
24	3/13/15	10554	10712	40	Marcellus
25	3/13/15	10358	10516	40	Marcellus
26	3/14/15	10162	10320	40	Marcellus
27	3/15/15	9966	10124	40	Marcellus
28	3/15/15	9770	9928	40	Marcellus
29	3/15/15	9574	9732	40	Marcellus
30	3/16/15	9378	9536	40	Marcellus
31	3/16/15	9182	9340	40	Marcellus
32	3/17/15	8986	9144	40	Marcellus

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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	69	7844	6216	6076	403660	8504	0
18	3/11/15	68	7657	6151	6326	298100	8278	0
19	3/11/15	70	7675	5815	4159	401320	10593	0
20	3/12/15	73	7844	7020	5189	297680	9465	0
21	3/12/15	58	7708	6802	4613	260220	10747	0
22	3/13/15	70	7577	6691	5579	273465	11928	0
23	3/13/15	60	7294	7124	5153	400040	8731	0
24	3/13/15	61	7263	6509	5354	389040	8072	0
25	3/14/15	69	7681	6952	5372	247900	9639	0
26	3/14/15	68	7597	6419	6298	403435	10512	0
27	3/15/15	73	7725	6942	6130	401620	10864	0
28	3/15/15	74	7875	6334	4542	404500	13130	0
29	3/15/15	79	7598	6663	5168	102220	9876	0
30	3/16/15	80	7753	6230	5300	405880	11149	0
31	3/16/15	80	7584	6745	5043	399550	9276	0
32	3/17/15	76	7660	6895	4656	401120	8932	0

Please insert additional pages as applicable.

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Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
33	3/17/15	8790	8948	40	Marcellus
34	3/17/15	8594	8752	40	Marcellus
35	3/18/15	8398	8556	40	Marcellus

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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	3/17/15	80	7515	6537	5243	400140	8271	0
34	3/17/15	84	7658	6126	5225	402860	8952	0
35	3/18/15	80	7670	6427	4646	400840	8524	0

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PRODUCING FORMATION(S)	DEPTHS	TVD	MD
Marcellus			

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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 DEPTH IN FT NAME	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- Costrain 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	7447	7472	7690	7722	Shale
Tully	7472	7536	7722	7807	Limestone
Mahantango	7536	7692	7807	8061	Shale- Gas show at 7885' MD
Marcellus	7692	7790	8061	15366	Shale- Gas show through lateral
Purcell	7761	7763	8165	8168	Limestone
Onondaga	7790				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 JANE LEW State WV Zip 26378

Please insert additional pages as applicable.

Completed by EDDIE CARROLL Telephone 724-940-1204
Signature _____ Title PERMITTING MANAGER Date 4-19-17

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:	47-091-01288-00-00
Operator Name:	Mountaineer Keystone, LLC
Well Name and Number:	Coaltrain 21H
Longitude:	-80.11053000
Latitude:	39.29728900
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,732
Total Base Water Volume (gal):	14,103,460
Total Base Non Water Volume:	676,900

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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	89.85867	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	9.45822	
HCL Acid (3% to 7.5%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	97.00000	0.44453	
			Hydrogen Chloride	7647-01-0	7.50000	0.03991	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			Anionic Polyacrylamide	Proprietary	40.00000	0.04231	
			Water	7732-18-5	40.00000	0.04231	
			Sodium Chloride	7647-14-5	20.00000	0.02116	
			Petroleum Distillates	64742-47-8	20.00000	0.01703	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00529	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.02785	
			Hydrogen Chloride	7647-01-0	18.00000	0.00665	
SI-1100	U.S. Well Services, LLC	Scale Inhibitor					

			DI Water	7732-18-5	80.00000	0.01046
			Ethylene Glycol	107-21-1	40.00000	0.00591
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	10.00000	0.00177
			2-Phosphonobutane 1,2,4 tricarboxylic salt	37971-36-1	10.00000	0.00169
			hexamethylenediamine tetra (methylene phosphonic acid)	38820-59-6	10.00000	0.00164
			Copolymer of Maleic and Acrylic acid	26677-99-6	10.00000	0.00154
			bis (hexamethylene) tramine penta (methylene phosphonic acid) - phosphate acid	40623-75-4	10.00000	0.00150
			Acrylic polymer	52255-49-9	5.00000	0.00065
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00665
			Deionized Water	7732-18-5	28.00000	0.00380
AI-301	U.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Diethylene Glycol	111-46-6	30.00000	0.00018
			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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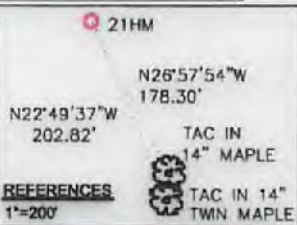
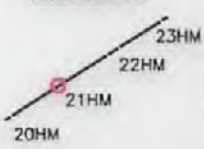
THRASHER

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.

WELL LAYOUT



AS-DRILLED COORDINATES:

SURFACE HOLE LOCATION (SHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,350,155.77
EASTING: 575,714.86

LANDING POINT LOCATION (LPL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,350,003.90
EASTING: 575,611.38

BOTTOM HOLE LOCATION (BHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,351,080.62
EASTING: 575,932.92

PROPOSED COORDINATES:

SURFACE HOLE LOCATION (SHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,350,155.37
EASTING: 575,714.81

LANDING POINT LOCATION (LPL):

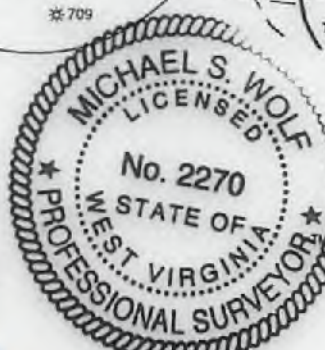
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,349,982.17
EASTING: 575,620.57

BOTTOM HOLE LOCATION (BHL):

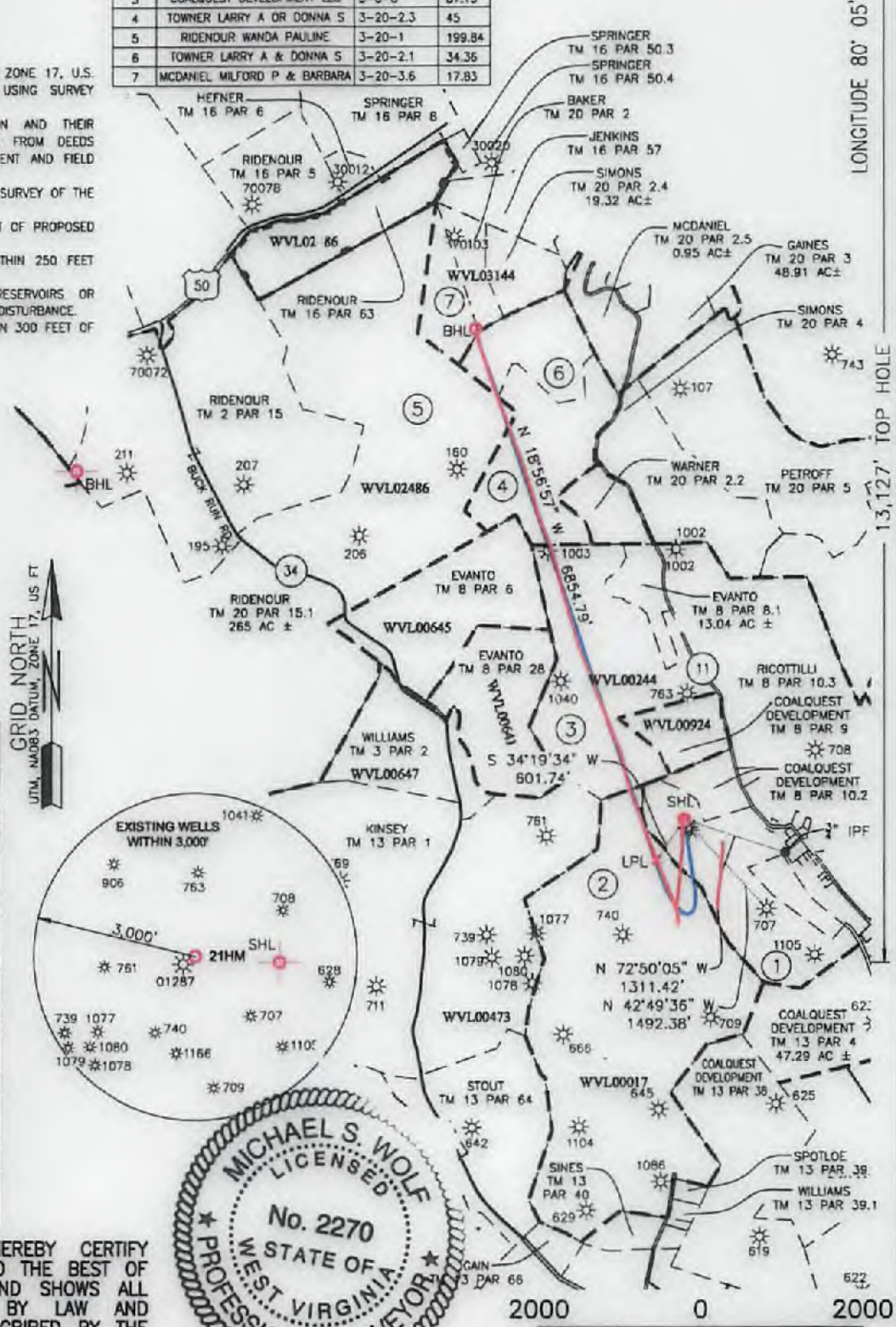
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,351,942.70
EASTING: 575,940.46

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



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	COALQUEST DEVELOPMENT LLC	5-8-8	87.15
4	TOWNER LARRY A OR DONNA S	3-20-2.3	45
5	RIDENOUR WANDA PAULINE	3-20-1	199.84
6	TOWNER LARRY A & DONNA S	3-20-2.1	34.36
7	MCDANIEL MILFORD P & BARBARA	3-20-3.6	17.83



GRAPHIC SCALE IN FEET

	(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS	MINIMUM DEGREE OF ACCURACY: 1 IN 2500	OPERATOR'S WELL #: 21HM
	WDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	PROVEN SURVEY GRADE GPS ELEVATION: (NAVD 88, US FT)	API WELL #: 47 091 1288 STATE COUNTY PERMIT
WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> GAS <input type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input type="checkbox"/>		ELEVATION: 1288.0 QUADRANGLE: GRAFTON 7.5 ACREAGE: 212.44 ACREAGE: 972.85 ± (LEASE)	
WATERSHED: SAND LICK RUN OF SIMPSON CREEK DISTRICT: COURTHOUSE COUNTY: TAYLOR		ESTIMATED DEPTH: 7,731 TVD 15,866 TMD	
SURFACE OWNER: COALQUEST DEVELOPMENT LLC. OIL & GAS ROYALTY OWNER: GLENN C, LAREW ET AL		DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/>	
CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED		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	
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ✱ EXISTING / PRODUCING WELLHEAD ✱ ABANDONED WELL ✱ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR		REVISIONS: --- LEASE BOUNDARY --- 500' DHP BUFFER --- AS-DRILLED PATH --- PROPOSED PATH	
		DATE: 06-22-2017 DRAWN BY: K. POTH SCALE: 1" = 2000' DRAWING NO: 030-3239 WELL LOCATION PLAT	

<ul style="list-style-type: none"> △ СИМВОЛ ✱ ПОВИСОК И ВКОПАНО МЕТ ✱ ВКОПАНО МЕТ ✱ ЕКСИСТИРАЈЌЕ ПРОСТОРИСКО МЕТ ○ ПРОПОЗИРАНО НАПОСЛОЖАВАЊЕ / ДОЛНО НАПОСЛОЖАВАЊЕ 	<ul style="list-style-type: none"> — ПРОПОЗИРАНО ВКОПАВАЊЕ — ВКОПАНО ВКОПАВАЊЕ — ВКОПАНО ВКОПАВАЊЕ — ВКОПАНО ВКОПАВАЊЕ 	МЕТ КОСИЈА НА ДИГИТАЛЕН НО: 020-2528 ШКАЛА: 1" = 500' ОБРАТЕН В: К' БОТ ДАТА: 08-25-2013
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СИТИ: МЕРЛОУД СТАТИ: ММ СИТИ КОДИ: 12080 СИТИ: БРИДСБОРТ СТАТИ: ММ СИТИ КОДИ: 28220
 АДРЕСА: 8021 МАТУСЕ РОУД ЕКСТЕНЗИОН #300 АДРЕСА: 82 ПРОФЕСИОНАЛНА БУЛЕВАРД, СТАТИ 300
 МЕТ ОПЕРАТОР: ВЕШТАЧЕСТВО ДИГИТАЛЕН КОДИ: МИТЛАН АИСТ

ЦЕЛ: КОСИЈА НА СТАТИ: ММ СИТИ КОДИ: 12080 СТАТИ: ММ СИТИ КОДИ: 28220
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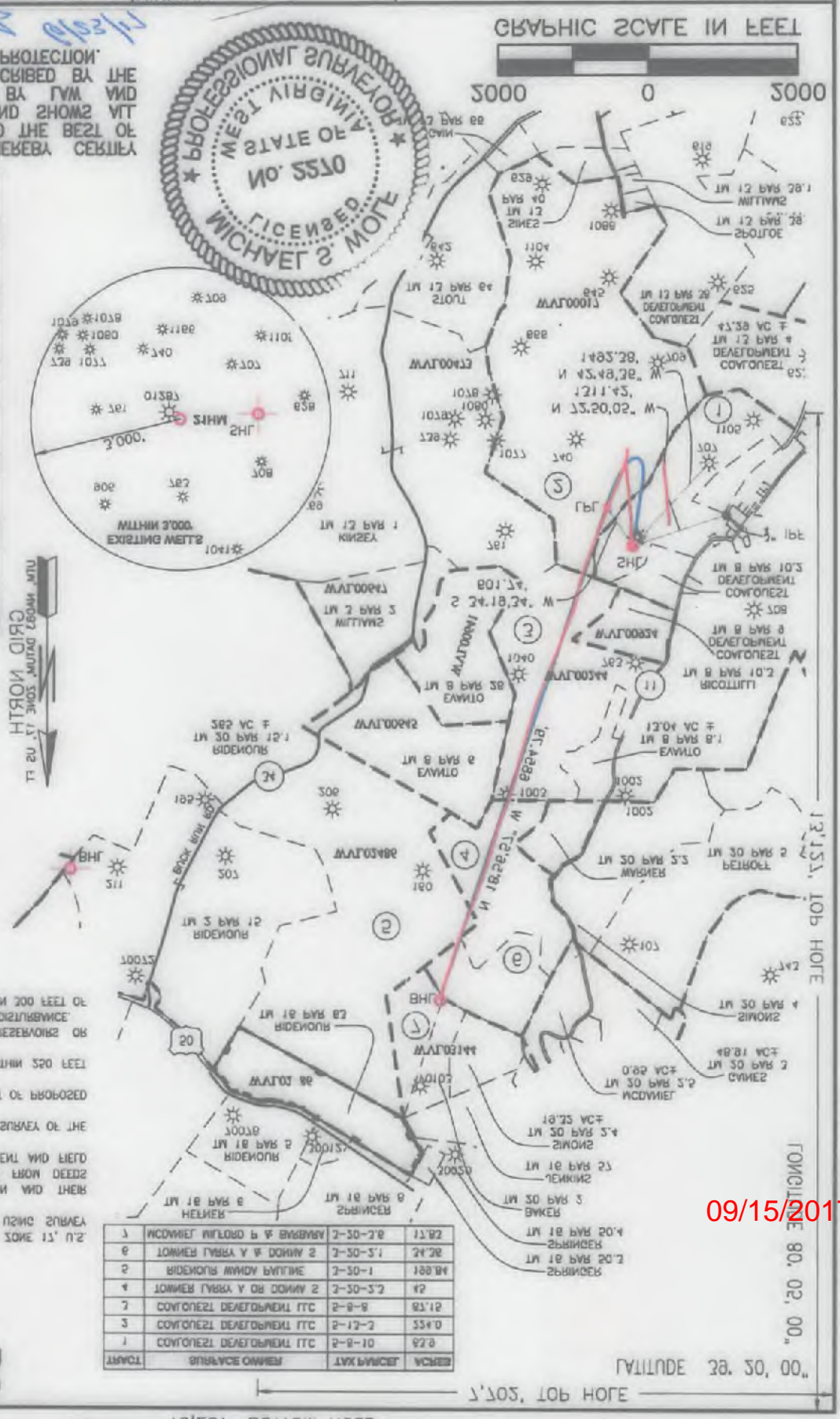
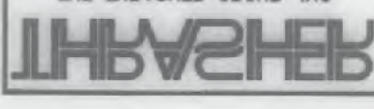
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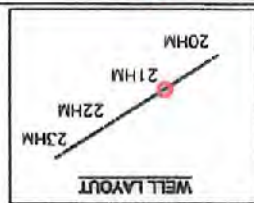
09/15/2017

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.
- 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.



REFERENCES

N22°49'37"W	178.30'	TAC IN
N26°57'54"W	178.30'	14" MAPLE
202.82'	TAC IN	14" MAPLE
TAC IN 14"	T2M MAPLE	

AS-DRILLED COORDINATES

SURFACE HOLE LOCATION (SHL)	NORTHING: 4,350,155.77	EASTING: 576,214.81
LANDING POINT LOCATION (LPL)	NORTHING: 4,349,962.17	EASTING: 576,820.57
BOTTOM HOLE LOCATION (BHL)	NORTHING: 4,351,942.70	EASTING: 575,940.46

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 PRESERVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2270



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
DEGREE OF ACCURACY: 1 IN 2500
PROVEN SURVEY SOURCE OF GRADE GPS
ELEVATION: (NAVD 88, US FT.)

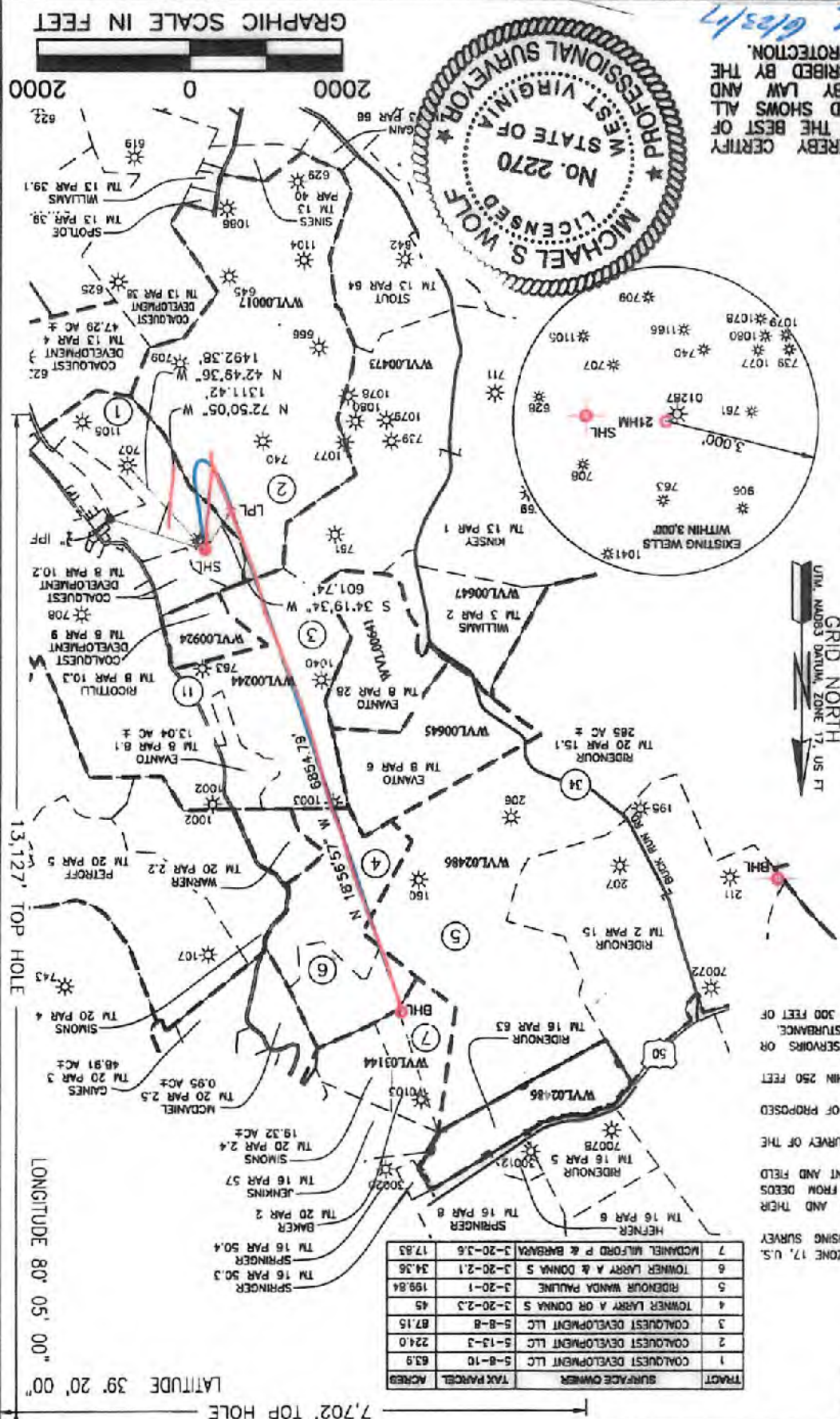
WELL TYPE: OIL
WASTE DISPOSAL
PRODUCTION
DEEP
GAS
LIQUID INJECTION
STORAGE
SHALLOW

DESIGNATED AGENT: WILLIAM VEIGEL
ADDRESS: 6031 WALLACE ROAD EXTENSION #300
CITY: WEXFORD STATE: WV ZIP CODE: 15090

WELL OPERATOR: ARSENAL RESOURCES
WATERSHED: SAND LICK RUN OF SIMPSON CREEK
DISTRICT: COURTHOUSE
SURFACE OWNER: COALQUEST DEVELOPMENT LLC
OIL & GAS ROYALTY OWNER: GLENN C. LAREW ET AL
DRILL DEEPER
REDRILL
FRACTURE OR STIMULATE
CONVERT
PLUG & ABANDON
CLEAN OUT & REPLUG
OTHER CHANGE (SPECIFY) AS-DRILLED
TARGET FORMATION: MARCELLUS SHALE

LEGEND:
PROPOSED SURFACE HOLE / BOTTOM HOLE
EXISTING / PRODUCING WELLS
ABANDONED WELL
PLUGGED & ABANDONED WELL
CUT CONDUCTOR
LEASE BOUNDARY
500' BHP BUFFER
AS-DRILLED PATH
PROPOSED PATH

REVISIONS:
DATE: 06-22-2017
DRAWN BY: K. POTH
SCALE: 1" = 2000'
DRAWING NO: 030-3236
WELL LOCATION PLAT



TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	COALQUEST DEVELOPMENT LLC	5-B-10	63.9
2	COALQUEST DEVELOPMENT LLC	5-13-3	224.0
3	COALQUEST DEVELOPMENT LLC	5-B-8	87.15
4	TOWNER LARRY A OR DONNA S	3-20-2,3	45
5	RIDENOUR WANDA PAULINE	3-20-1	199.84
6	TOWNER LARRY A & DONNA S	3-20-2,1	34.36
7	MCDANIEL MILFORD P & BARBARA	3-20-3,6	17.83

GRAPHIC SCALE IN FEET

0 2000 2000

LONGITUDE 80° 05' 00"

LATITUDE 39° 20' 00"

7,702' TOP HOLE

10,207' BOTTOM HOLE

7,117' BOTTOM HOLE

13,127' TOP HOLE