

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 47-91-01303 County Taylor District Fetterman
Quad Gladesville Pad Name Pysell Field/Pool Name _____
Farm name Orthodox Education Society/Charles & Laverne Macdonald, ET AL Well Number 1HM
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 4,365,334.2 Easting 589,765.2
Landing Point of Curve Northing 4,365,507.8 Easting 589,503.7
Bottom Hole Northing 4,367,703.6 Easting 588,749.5

Elevation (ft) 1,886.25' 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 9/19/2014 Date drilling commenced 4/12/2015 Date drilling ceased 4/25/2015
Date completion activities began 8/18/2015 Date completion activities ceased 12/12/2015
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 300' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 910' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 96', 278', 339', 401', 446', 478' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

NAME: Donald Sheywell
DATE: 7-26-17

Reviewed by:
EC

09/15/2017

API 47-91 - 01303 Farm name Orthodox Education Society/Charles & Levene Macdonald, ET AL Well number 1HM

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"	20"	70'	New	94	N/A	Y
Surface	17.5"	13 3/8"	588'	New	54.5	N/A	Y
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,538.2'	New	40	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	16,995.0	New	20	N/A	N
Tubing							
Packer type and depth set							

Comment Details Top of cement for production string brought to 2,350'MD

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	8
Surface	Class A 2% CaCl ₂	544	15.6	1.2	652.8	Surface	8
Coal							
Intermediate 1	Class A	510/175	14.50/15.70	1.55/1.29	1016.25	Surface	8
Intermediate 2							
Intermediate 3							
Production	Type 1 4% Gel/Type 1 2% Gel	836/1,846	13.8/15.0	1.64/1.32	3,807.76	2350'	8
Tubing							

Drillers TD (ft) 17,009' Loggers TD (ft) 17,009'
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure None

Kick off depth (ft) 7,393' 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 Well was completed in 43 stages utilizing 1720 .45 entry hole 22.7 gram perforating charges

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED Protechnics fluid chemical tracers.

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/19/2015	16909	16747	40	Marcellus
2	8/21/2015	16711	16539	40	Marcellus
3	8/22/2015	16509	16347	40	Marcellus
4	8/22/2015	16309	16147	40	Marcellus
5	8/22/2015	16109	15947	40	Marcellus
6	8/23/2015	15909	15747	40	Marcellus
7	8/23/2015	15709	15547	40	Marcellus
8	8/23/2015	15509	15347	40	Marcellus
9	8/23/2015	15309	15147	40	Marcellus
10	8/24/2015	15109	14947	40	Marcellus
11	8/24/2015	14909	14747	40	Marcellus
12	8/25/2015	14709	14547	40	Marcellus
13	8/25/2015	14509	14347	40	Marcellus
14	8/25/2015	14309	14147	40	Marcellus
15	8/25/2015	14109	13947	40	Marcellus
16	8/26/2015	13909	13747	40	Marcellus

Please insert additional pages as applicable.

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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	8/21/15	62	7607	7560	5443	401941	11267	0
2	8/22/15	63	8495	7199	5550	323920	12280	0
3	8/22/15	70	8565	6652	5465	243587	8553	0
4	8/22/15	74	8401	6487	5722	332988	10681	0
5	8/23/15	80	8249	6262	5404	405941	8472	0
6	8/23/15	73	7915	6191	6055	400421	8979	0
7	8/23/15	77	7758	6022	6076	401121	8020	0
8	8/23/15	80	8185	6191	6055	400801	7705	0
9	8/24/15	79	8224	6212	5561	400761	8791	0
10	8/24/15	76	8008	6731	5429	405141	8246	0
11	8/25/15	81	8469	6636	5548	400861	7875	0
12	8/25/15	77	8301	6339	5520	400661	9722	0
13	8/25/15	73	7908	6428	5684	400581	8266	0
14	8/25/15	80	8186	6214	5867	403901	7987	0
15	8/26/15	79	8108	6013	5749	402461	7919	0
16	8/26/15	76	7953	6335	5530	400681	8472	0

Please insert additional pages as applicable.

API 47- 91 - 01303

Farm name Orthodox Education Society/Charles & Laverne Macdonald, ET AL

Well number 1HM

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	8/26/2015	13709	13547	40	Marcellus
18	8/26/2015	13509	13347	40	Marcellus
19	8/27/2015	13309	13147	40	Marcellus
20	8/27/2015	13109	13947	40	Marcellus
21	8/28/2015	12909	12747	40	Marcellus
22	8/28/2015	12709	12547	40	Marcellus
23	8/29/2015	12509	12347	40	Marcellus
24	8/29/2015	12309	12147	40	Marcellus
25	8/29/2015	12109	11947	40	Marcellus
26	8/30/2015	11909	11747	40	Marcellus
27	8/31/2015	11709	11547	40	Marcellus
28	9/1/2015	11509	11347	40	Marcellus
29	9/1/2015	11309	11147	40	Marcellus
30	9/2/2015	11109	10947	40	Marcellus
31	9/2/2015	10909	10747	40	Marcellus
32	9/2/2015	10709	10547	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)
17	8/26/15	77	8055	6653	5555	405301	7759	0
18	8/27/15	80	8373	6459	5205	226420	7864	0
19	8/27/15	75	8298	6870	5071	402501	10232	0
20	8/28/15	77	8019	6276	6527	400641	10325	0
21	8/28/15	81	8427	6534	6523	397761	7466	0
22	8/28/15	81	8299	6791	6326	400581	7854	0
23	8/29/15	75	8125	6706	5472	401781	12826	0
24	8/29/15	65	7916	6929	4787	400541	15605	0
25	8/30/15	71	8190	6831	5203	400161	10162	0
26	8/31/15	71	8210	7170	6233	403661	11490	0
27	9/1/15	70	8024	8096	6595	402901	12495	0
28	9/1/15	77	8042	7403	6448	400441	9788	0
29	9/1/15	77	7856	8633	6391	401421	9314	0
30	9/2/15	81	7826	7002	6584	402521	8393	0
31	9/2/15	77	8225	6788	5940	401021	10049	0
32	9/3/15	79	8123	6974	6140	402201	7910	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	9/3/2015	10509	10347	40	Marcellus
34	9/3/2015	10309	10147	40	Marcellus
35	9/3/2015	10109	9947	40	Marcellus
36	9/5/2015	9909	9747	40	Marcellus
37	9/5/2015	9709	9547	40	Marcellus
38	9/5/2015	9509	9347	40	Marcellus
39	9/6/2015	9309	9147	40	Marcellus
40	9/6/2015	9109	8947	40	Marcellus
41	9/7/2015	8909	8747	40	Marcellus
42	9/7/2015	8709	8547	40	Marcellus
43	9/8/2015	8509	8347	40	Marcellus

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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	9/3/15	82	8235	6942	5894	405861	7876	0
34	9/3/15	80	8161	7060	5804	409881	8914	0
35	9/5/15	78	7992	6659	6026	401361	9452	0
36	9/5/15	77	8155	6487	5550	400441	8580	0
37	9/5/15	83	7906	7499	6073	404941	8111	0
38	9/6/15	80	8055	7263	5965	403001	7824	0
39	9/6/15	80	8027	7313	5736	402761	8357	0
40	9/7/15	77	7723	7167	5926	400080	7286	0
41	9/7/15	76	8055	7603	5919	400081	9297	0
42	9/8/15	77	8115	7557	4939	401201	8958	0
43	9/8/15	74	8224	7453	5028	414600	9426	0

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS	
	TVD	MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

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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	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	
Sands, Silts, and Coals	0	1042	0	1042	Sand, Silt, and Coal
Big Lime	1042	2778	1042	2779	Sandstone
Balltown	2778	2848	2779	2849	Sandstone
Bradford	3508	3558	3509	3559	Sandstone
Benson	4197	4267	4199	4269	Sandstone
Elk	4543	4593	4544	4594	Siltstone
Burkett	7503	7518	7637	7654	Shale- Gas Show at 7640' MD
Tully	7518	7637	7654	7797	Limestone
Mahantango	7637	7793	7797	8086	Shale
Marcellus	7793	7884	8086	17009	Shale-Gas shows through lateral
Purcell	7848	7851	8291	8295	Limestone
Onondaga	7884		N/A*		Limestone
					*Onondaga MD not listed-lateral drilled in Marcellus**Onondaga top estimated from 4709101126 thickness
					**Big Lime through Elk from 47091201126, Burkett to Purcell taken from mudlog.

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 _____ City Buckhannon State WV Zip 26201

Stimulating Company US Well Services
Address 770 South Post Oak Lane Suite 410 City Houston State TX Zip 77056

Please insert additional pages as applicable.

Completed by LEANE CARTER Telephone 1-724-940-1204
Signature [Signature] Title PERMITTING MANAGER Date SEP 9-17-17

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

Hydraulic Fracturing Fluid Product Component Information Disclosure

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 Office of Oil and Gas
 JUN 9 2017
 WV Department of Environmental Protection

Job Start Date:	8/21/2015
Job End Date:	9/8/2015
State:	West Virginia
County:	Taylor
API Number:	47-091-01303-00-00
Operator Name:	Arsenal Resources
Well Name and Number:	Pysell 1HM
Latitude:	39.43280000
Longitude:	-79.95718000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,689
Total Base Water Volume (gal):	16,667,826
Total Base Non Water Volume:	



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
HCL Acid (12.6%-18.0%)	U.S. Well Services, Inc.	Bulk Acid					
				Listed Below			
Water	Arsenal Resources	Base Fluid					
				Listed Below			

HCL Acid (3%-7.5%)	U.S. Well Services, Inc.	Bulk Acid					
				Listed Below			
K-BAC 1020	U.S. Well Services, Inc.	Anti-Bacterial Agent					
				Listed Below			
WFRA-1000	U.S. Well Services, Inc.	Friction Reducer					
				Listed Below			
Sand	U.S. Well Services, Inc.	Proppant					
				Listed Below			
SI-1100	U.S. Well Services, Inc.	Scale Inhibitor					
				Listed Below			
HCL Acid (28%)	U.S. Well Services, Inc.	Bulk Acid					
				Listed Below			
AI-302	U.S. Well Services, Inc.	Acid Corrosion Inhibitors					
				Listed Below			

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Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			H2O	7732-18-5	100.00000	86.05649	
			Crystalline Silica, Quartz	14808-60-7	100.00000	13.32186	
			Water	7732-18-5	97.00000	0.44658	
			Hydrogen Chloride	7647-01-0	7.50000	0.04009	
			Water	7732-18-5	87.50000	0.03525	

			Water	7732-18-5	60.00000	0.03239	
			2-Propenoic acid, polymer with propenamide	9003-06-9	30.00000	0.01620	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01328	
			Water	7732-18-5	80.00000	0.00983	
			Hydrogen Chloride	7647-01-0	18.00000	0.00842	
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00426	
			Ethylene Glycol	107-21-1	25.00000	0.00347	
			Water	7732-18-5	72.00000	0.00290	
			Deionized Water	7732-18-5	28.00000	0.00244	
			Copolymer of Maleic and Acrylic Acid	52255-49-9	10.00000	0.00145	
			Hydrogen Chloride	7647-01-0	28.00000	0.00131	
			Potassium Salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00124	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00080	
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00080	
			Water	7732-18-5	95.00000	0.00053	
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00032	
			2-Propyn-1-olcompound with methyloxirane	38172-91-7	15.00000	0.00008	

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* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%
 *** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)

THRASHER

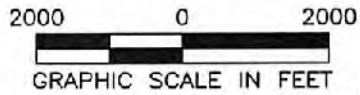
THE THRASHER GROUP, INC.
500 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108
NOTES ON SURVEY

- 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.

PROPOSED COORDINATES:	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,355,334.2	
EASTING: 588,765.2	
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,355,507.8	
EASTING: 588,503.7	
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,357,703.6	
EASTING: 588,749.5	

AS-DRILLED COORDINATES:	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,355,334.204	
EASTING: 588,765.228	
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,355,285.325	
EASTING: 588,580.939	
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,357,752.163	
EASTING: 588,724.282	

DRAFT
05-26-2017



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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

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WV DEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: 1 IN 2500</p> <p>PROVEN SURVEY SOURCE OF ELEVATION: GRADE GPS (NAVD 88, US FT)</p>	<p>OPERATOR'S WELL #: PYSELL PAD 1HM</p> <p>API WELL #: 47 091</p> <p>STATE COUNTY PERMIT</p>
	<p>WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW</p> <p>WATERSHED: WHITE DAY CREEK</p> <p>DISTRICT: FETTERMAN COUNTY: TAYLOR</p> <p>SURFACE OWNER: RUTH E. HAUGHT</p> <p>OIL & GAS ROYALTY OWNER: ORTHODOX EDUCATIONAL SOCIETY/CHARLES & LEVERNE MACDONALD/ CHARLES & LEVERNE MACDONALD, ET AL ACREAGE: 946.5 ± (LEASE)</p> <p>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</p> <p>CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED</p> <p>TARGET FORMATION: MARCELLUS SHALE ESTIMATED DEPTH: 7,689 TVD 17,009 TMD</p>	<p>WELL OPERATOR: ARSENAL RESOURCES</p> <p>ADDRESS: 6031 WALLACE ROAD EXTENSION #300</p> <p>CITY: WEXFORD STATE: WV ZIP CODE: 15090</p>
<p>LEGEND:</p> <ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD ⊘ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR --- LEASE BOUNDARY — 500' DHP BUFFER — AS-DRILLED PATH — PROPOSED PATH 	<p>REVISIONS:</p>	<p>DATE: 05-26-2017</p> <p>DRAWN BY: R. DOERR</p> <p>SCALE: 1" = 2000'</p> <p>DRAWING NO: 030-3245</p> <p>WELL LOCATION PLAT</p>

09/15/2017

THRASHER

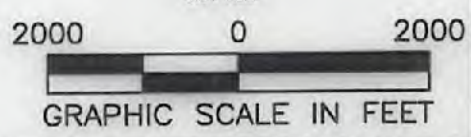
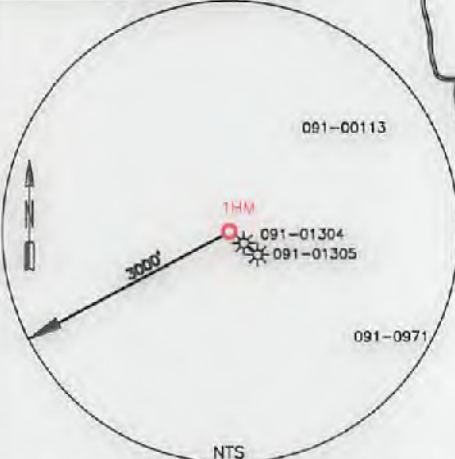
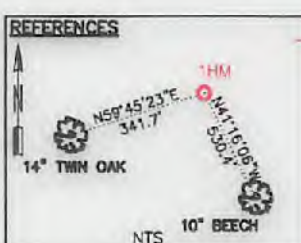
THE THRASHER GROUP, INC.
 600 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE 304-624-4108
 NOTES ON SURVEY

- 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 OF 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.

PROPOSED COORDINATES:	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,365,334.2
	EASTING: 589,765.2
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,365,507.8
	EASTING: 589,503.7
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,367,703.6
	EASTING: 588,749.5

AS-DRILLED COORDINATES:	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,365,334.204
	EASTING: 589,765.228
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,365,285.325
	EASTING: 589,580.939
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,367,752.163
	EASTING: 588,724.262

Latitude: 39°27'30"
 Longitude: 79°55'00"



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 6/23/17*

(+) 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 83, US FT)	OPERATOR'S WELL #: PYSELL PAD 1HM API WELL #: 47 091 01303 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"/> WATERSHED: WHITE DAY CREEK DISTRICT: FETTERMAN COUNTY: TAYLOR SURFACE OWNER: RUTH E. HAUGHT OIL & GAS ROYALTY OWNER: ORTHODOX EDUCATIONAL SOCIETY/CHARLES & LEVERNE MACDONALD/ CHARLES & LEVERNE MACDONALD, ET AL ACREAGE: 946.5 ± (LEASE) 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 ESTIMATED DEPTH: 7,689 TVD 17,009 TMD	WELL OPERATOR: ARSENAL RESOURCES ADDRESS: 6031 WALLACE ROAD EXTENSION #300 CITY: WEXFORD STATE: WV ZIP CODE: 15090
LEGEND: ● PROPOSED SURFACE HOLE / BOTTOM HOLE * EXISTING / PRODUCING WELLHEAD X ABANDONED WELL X PLUGGED & ABANDONED WELL △ CUT CONDUCTOR	REVISIONS: --- LEASE BOUNDARY --- 500' DHP BUFFER --- AS-DRILLED PATH --- PROPOSED PATH	DATE: 06-21-2017 DRAWN BY: R. DOERR SCALE: 1" = 2000' DRAWING NO: 030-3245 WELL LOCATION PLAT

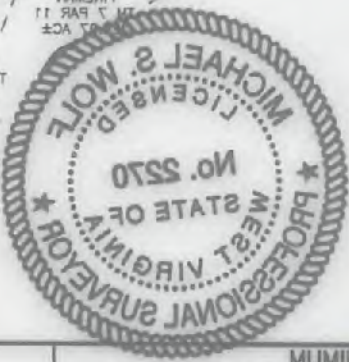
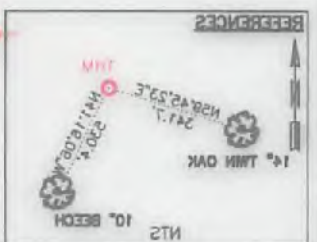
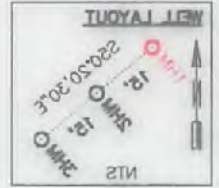
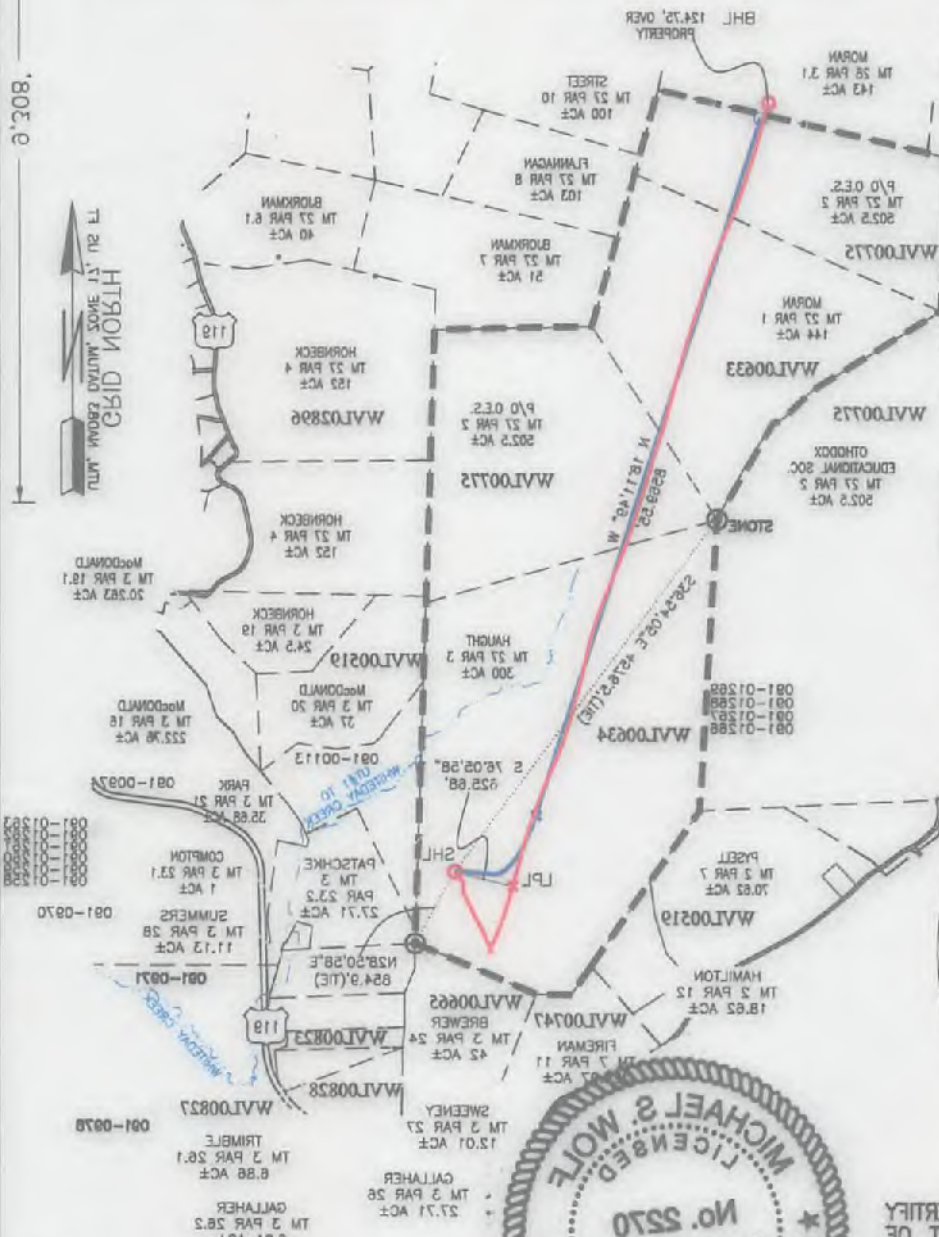
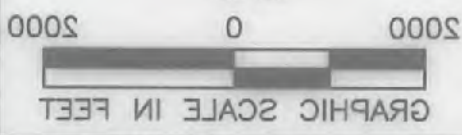
THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 204-824-4108
NOTES ON SURVEY

- COORDINATES SYSTEM IS UTM AND 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 PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 825 FEET OF PROPOSED CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERMANENT STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING ROOT STREAM WITHIN 200 FEET OF PROPOSED WELL.

AS-DRILLED COORDINATES	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,368,334.504	
EASTING: 888,762,338	
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,368,285.325	
EASTING: 888,580,939	
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,367,523.183	
EASTING: 888,734,282	

PROPOSED COORDINATES	
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,368,334.5	
EASTING: 888,762.2	
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,368,507.8	
EASTING: 889,503.7	
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,367,703.8	
EASTING: 888,749.5	

GRID NORTH
UTM "NAD83" DATUM, ZONE 17, METERS
11,450'



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.

LEGEND: ○ PROPOSED SURFACE HOLE \ BOTTOM HOLE * EXISTING \ PRODUCING WELLS * ABANDONED WELL * PLUGGED & ABANDONED WELL △ CUT CONDUCTOR --- LEASE BOUNDARY --- 200' OHP BUFFER --- AS-DRILLED PATH --- PROPOSED PATH		CITY: WEXFORD STATE: WV ZIP CODE: 15090 ADDRESS: 6031 WALLACE ROAD EXTENSION #300 CITY: BRIDGEPORT STATE: WV ZIP CODE: 26330 ADDRESS: 65 PROFESSIONAL PLACE SUITE 200 DESIGNATED AGENT: WILLIAM VEJEL ESTIMATED DEPTH: 7,689 TMD 17,009 TMD OTHER CHANGE (SPECIFY) AS-DRILLED CLEAN OUT & REPLUG PLUG & ABANDON DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
WELLS: 47 COUNTY: PERMIT STATE: 091 API WELL #: 01303 OPERATOR'S WELL #: 1HM PYSHELL PAD	WELLS: 47 COUNTY: PERMIT STATE: 091 API WELL #: 01303 OPERATOR'S WELL #: 1HM PYSHELL PAD	WELLS: 47 COUNTY: PERMIT STATE: 091 API WELL #: 01303 OPERATOR'S WELL #: 1HM PYSHELL PAD
WELLS: 47 COUNTY: PERMIT STATE: 091 API WELL #: 01303 OPERATOR'S WELL #: 1HM PYSHELL PAD	WELLS: 47 COUNTY: PERMIT STATE: 091 API WELL #: 01303 OPERATOR'S WELL #: 1HM PYSHELL PAD	WELLS: 47 COUNTY: PERMIT STATE: 091 API WELL #: 01303 OPERATOR'S WELL #: 1HM PYSHELL PAD



09/15/2017