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

API 47 - 091 - 01346 County Taylor District Courthouse
Quad Grafton Pad Name Coalquest 2 Field/Pool Name
Farm name Coalquest Development LLC Well Number 213
Operator (as registered with the OOG) Arsenal Resources
Address 6031 Wallace Rd. Ext 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 4350309.225 Easting 576708.160
Landing Point of Curve Northing 4350693.285 Easting 577040.714
Bottom Hole Northing 4352759.462 Easting 576332.445

Elevation (ft) 1265 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 muds

Date permit issued 9/19/2017 Date drilling commenced 11/15/2017 Date drilling ceased 11/27/2017
Date completion activities began 12/24/2017 Date completion activities ceased 01/31/2018
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 400' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1110' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 552', 630', 712', 753', 847', 881', 910' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

Reviewed
07/20/2018
Jen Sheppard 6-11-18

API 47- 091 - 01346 Farm name Coalquest Development LLC Well number 213

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"	80'	New	94.00	NA	Y
Surface	17.5"	13 3/8"	683' GL	New	54.50	120'	Y
Coal	NA	NA	NA	NA	NA	NA	NA
Intermediate 1	12 1/4"	9 5/8"	1,609' GL	New	40.00	NA	Y
Intermediate 2	NA	NA	NA	NA	NA	NA	NA
Intermediate 3	NA	NA	NA	NA	NA	NA	NA
Production	8 1/2"-8 3/4"	5.5"	16,728' GL	New	20.00	NA	N
Tubing	NA	NA	NA	NA	NA	NA	NA
Packer type and depth set	NA						

Comment Details Cement to surface on Conductor, Surface, Intermediate. Top of Cement Production 1059' GL.

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	A	450	15.6	1.2	540	Surface	8+
Surface	A	640	15.6	1.2	768	Surface	8+
Coal	NA	NA	NA	NA	NA	NA	NA
Intermediate 1	A	205/320	15.2/15.7	1.26/1.28	258/410	Surface	8+
Intermediate 2	NA	NA	NA	NA	NA	NA	NA
Intermediate 3	NA	NA	NA	NA	NA	NA	NA
Production	A	1219/1866	13.8/15.0	1.34/1.29	1633/2407	1086'	8+
Tubing	NA	NA	NA	NA	NA	NA	NA

Drillers TD (ft) 16,785 ft Loggers TD (ft) NA

Deepest formation penetrated Marcellus Plug back to (ft) NA

Plug back procedure NA

Kick off depth (ft) KOP of Curve at 7329 ft, No Plug

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 20" - No centralizers 13 3/8" - one bow spring centralizer on every other joint 9 5/8" - one bow spring centralizer every third joint from TD to surface 5 1/2" - one semi rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 1,400'; there will be no centralizers from 1,400' to surface.

WAS WELL COMPLETED AS SHOT HOLE ■ Yes ☐ No DETAILS 42 Stages and 1,680 perforations

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ■ No DETAILS NA

WERE TRACERS USED ☐ Yes ■ No TYPE OF TRACER(S) USED NA

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API 47- 091 - 01346 Farm name Coalquest Development LLC Well number 213

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
		See Attached			

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)
			See Attached					

Please insert additional pages as applicable.

07/20/2018

Perforation Record					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations (s)
#42 of 42	1/31/2018 3:07	8,323	8,485	40	Marcellus Shale
#41 of 42	1/30/2018 5:00	8,523	8,685	40	Marcellus Shale
#40 of 42	1/29/2018 2:10	8,723	8,885	40	Marcellus Shale
#39 of 42	1/29/2018 5:00	8,923	9,085	40	Marcellus Shale
#38 of 42	1/28/2018 15:56	9,123	9,285	40	Marcellus Shale
#37 of 42	1/28/2018 5:43	9,323	9,485	40	Marcellus Shale
#36 of 42	1/27/2018 14:18	9,523	9,685	40	Marcellus Shale
#35 of 42	1/27/2018 3:08	9,723	9,885	40	Marcellus Shale
#34 of 42	1/26/2018 15:27	9,923	10,085	40	Marcellus Shale
#33 of 42	1/26/2018 3:52	10,123	10,285	40	Marcellus Shale
#32 of 42	1/25/2018 16:24	10,323	10,485	40	Marcellus Shale
#31 of 42	1/25/2018 3:26	10,523	10,685	40	Marcellus Shale
#30 of 42	1/24/2018 4:20	10,723	10,885	40	Marcellus Shale
#29 of 42	1/23/2018 3:27	10,923	11,085	40	Marcellus Shale
#28 of 42	1/22/2018 16:02	11,123	11,285	40	Marcellus Shale
#27 of 42	1/13/2018 18:25	11,323	11,485	40	Marcellus Shale
#26 of 42	1/13/2018 6:30	11,523	11,685	40	Marcellus Shale
#25 of 42	1/12/2018 16:22	11,723	11,885	40	Marcellus Shale
#24 of 42	1/12/2018 5:23	11,923	12,085	40	Marcellus Shale
#23 of 42	1/12/2018 15:18	12,123	12,285	40	Marcellus Shale
#22 of 42	1/11/2018 5:22	12,323	12,485	40	Marcellus Shale
#21 of 42	1/10/2018 15:40	12,523	12,685	40	Marcellus Shale
#20 of 42	1/10/2018 5:01	12,723	12,885	40	Marcellus Shale
#19 of 42	1/9/2018 21:09	12,923	13,085	40	Marcellus Shale
#18 of 42	1/9/2018 8:09	13,123	13,285	40	Marcellus Shale
#17 of 42	1/2/2018 23:11	13,323	13,485	40	Marcellus Shale
#16 of 42	1/1/2018 11:29	13,523	13,685	40	Marcellus Shale
#15 of 42	1/1/2018 2:44	13,723	13,885	40	Marcellus Shale
#14 of 42	12/31/2017 17:16	13,923	14,085	40	Marcellus Shale
#13 of 42	12/31/2017 6:44	14,123	14,285	40	Marcellus Shale
#12 of 42	12/30/2017 2:34	14,323	14,485	40	Marcellus Shale
#11 of 42	12/29/2017 16:22	14,523	14,685	40	Marcellus Shale
#10 of 42	12/29/2017 8:29	14,723	14,885	40	Marcellus Shale
#9 of 42	12/28/2017 23:23	14,923	15,085	40	Marcellus Shale
#8 of 42	12/28/2017 14:17	15,123	15,285	40	Marcellus Shale
#7 of 42	12/28/2017 5:46	15,323	15,485	40	Marcellus Shale
#6 of 42	12/27/2017 17:11	15,523	15,685	40	Marcellus Shale
#5 of 42	12/27/2017 9:09	15,723	15,885	40	Marcellus Shale
#4 of 42	12/26/2017 23:09	15,923	16,085	40	Marcellus Shale
#3 of 42	12/24/2017 15:34	16,123	16,285	40	Marcellus Shale
#2 of 42	12/24/2017 7:33	16,323	16,485	40	Marcellus Shale
#1 of 42	12/21/2017 20:00	16,523	16,684	40	Marcellus Shale

Stimulation Information Per 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)
1	12/24/2017	76.00	7,551		4,386	493,280	11,658
2	12/24/2017	77.00	8,360	7,260	5,291	483,380	13,870
3	12/26/2017	76.00	8,776	6,641	5,751	358,000	10,686
4	12/27/2017	78.00	8,173	5,934	5,143	500,060	12,303
5	12/27/2017	80.00	8,251	6,604	4,619	506,000	10,404
6	12/27/2017	78.00	7,923	5,951	4,742	502,500	11,224
7	12/28/2017	76.00	8,337	6,434	4,860	501,900	11,513
8	12/28/2017	76.00	8,096	5,734	5,523	499,280	11,888
9	12/29/2017	80.00	8,043	5,792	5,533	497,840	10,988
10	12/29/2017	80.00	8,071	6,162	5,215	500,360	9,793
11	12/29/2017	77.00	8,109	6,474	4,465	500,360	12,692
12	12/31/2017	76.00	7,911	6,403	4,621	507,040	10,698
13	12/31/2017	80.00	7,839	6,963	5,701	496,700	9,432
14	12/31/2017	77.00	7,880	6,704	4,946	497,680	10,859
15	01/01/2018	69.00	8,315	6,326	4,617	445,820	13,912
16	01/08/2018	77.00	7,949	6,333	5,217	502,120	11,522
17	01/09/2018	76.00	8,087	6,295	5,394	508,220	11,902
18	01/09/2018	77.00	8,068	6,760	4,863	501,760	12,798
19	01/10/2018	80.00	8,050	6,558	6,271	503,420	9,920
20	01/10/2018	75.00	8,252	6,902	6,085	489,220	10,825
21	01/10/2018	62.00	8,354	6,691	5,297	414,920	14,667
22	01/11/2018	79.00	8,161	7,127	5,030	502,140	11,954
23	01/11/2018	72.00	7,387	6,563	4,595	434,680	14,606
24	01/12/2018	70.00	8,117	6,618	5,212	498,640	14,010
25	01/12/2018	70.00	7,886	6,327	4,913	502,020	14,778
26	01/13/2018	80.00	7,432	6,688	5,152	502,780	9,633
27	01/22/2018	74.00	8,258	6,783	6,126	461,600	13,922
28	01/22/2018	66.00	8,188	6,370	5,973	500,080	13,287
29	01/23/2018	68.00	8,036	6,422	5,403	485,980	13,022
30	01/24/2018	64.10	8,284	5,781	4,569	412,980	14,157
31	01/25/2018	67.00	8,277	5,988	5,726	411,540	13,863
32	01/25/2018	63.00	8,181	6,060	6,518	406,300	14,668
33	01/26/2018	57.00	8,202	6,563	5,178	376,400	13,955
34	01/26/2018	54.00	8,098	6,086	5,056	273,100	11,958
35	01/27/2018	70.00	7,823	6,020	5,876	501,000	14,918
36	01/27/2018	60.00	8,085	6,095	5,299	304,700	14,345
37	01/28/2018	69.00	7,683	6,037	6,424	477,320	14,347
38	01/28/2018	57.00	7,901	5,971	6,485	287,400	10,539
39	01/29/2018	73.00	7,465	6,088	5,576	498,520	14,248
40	01/29/2018	56.00	8,208	6,210	4,667	399,920	14,093
41	01/30/2018	66.00	7,570	6,238	4,827	498,040	13,564
42	01/31/2018	72.00	7,338	6,852	5,094	506,480	12,335

WR-35
Rev. 8/23/13

API 47- 091 - 01346 Farm name Coalquest Development LLC Well number 213

PRODUCING FORMATION(S)	DEPTHS			
Marcellus Shale	7,811'	TVD	16,785'	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 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_2S, ETC)
Sand/Silt	0	552	0	552	Freshwater @ 400'
Sand/Silt/Coal	552	711	552	712	Bakerstown Coal @ 552' TVD, Brush Creek Coal @ 630'TVD
Sand/Silt/Coal	711	846	712	847	Upper Freeport @ 711' TVD, Lower Freeport @ 753' TVD
Sand/Silt/Coal	846	1662	847	1665	Upper Kittanning @ 846' TVD, Middle Kittanning @ 880' TVD, Lower Kittanning @ 909' TVD, Saltwater @ 1,100'
Big Lime	1662	1777	1665	1780	Limestone
Balltown	3265	3315	3320	3370	Sandstone
Elk Siltstone	4830	4883	4970	5023	Siltstone
Burkett	7436	7470	7722	7760	Shale
Tully	7470	7531	7760	7831	Limestone
Mahantango	7531	7703	7831	8101	Shale
Marcellus	7703	7771	8101	8319	Shale
Purcell	7767	7771	8319	8343	Limestone
Lower Marcellus	7771	7804*	8343	16785	Shale - Gas shows through lateral
Onondaga	7804*				*Onondaga not penetrated - top estimated based on 4709101108thickness

Please insert additional pages as applicable.

Drilling Contractor H&P
Address 1437 South Boulder Ave. City Tulsa State OK Zip 74119

Logging Company NA
Address _____ City _____ State _____ Zip _____

Cementing Company C&J Energy Services, Inc.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company Keane Group
Address 2121 Sage Road City Houston State TX Zip 77056
Please insert additional pages as applicable.

Completed by Arsenal Resources Telephone 304-629-6309
Signature _____ Title Permitting Manager Date 5/30/18

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

07/20/2018

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/24/2017
Job End Date:	1/31/2018
State:	West Virginia
County:	Taylor
API Number:	47-091-01346-00-00
Operator Name:	Arsenal Resources
Well Name and Number:	Coal Quest II 213H
Latitude:	39.29876800
Longitude:	-80.11039400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,720
Total Base Water Volume (gal):	22,716,204
Total Base Non Water Volume:	0

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	Ascent	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	90.16364	None
Sand (Proppant)	Keane	Proppant					
			Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	9.25171	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor					
			Water	7732-18-5	92.50000	0.41722	None
			Hydrochloric Acid	7647-01-0	7.50000	0.03383	None
KFR-16FW	Keane	Friction Reducer					
			Water	7732-18-5	60.00000	0.06551	None
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.02184	None
			ammonium chloride	12125-02-9	1.50000	0.00164	None
			oleic acid diethanolamide	93-83-4	1.50000	0.00164	None
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00109	None
MBC-516	Keane	Biocide					
			Water	7732-18-5	56.70000	0.00521	None
			Glutaral	111-30-8	26.70000	0.00245	None

			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00073	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00049	None
			ethonal	64-17-5	2.80000	0.00026	None
KLSI-21	Keane	Scale Inhibitor					
			polyphosphoric acids, esters with triethanolamine, sodium salts	68131-72-6	30.00000	0.00396	None
KAI-12	Keane	Acid Inhibitor					
			Ethylene glycol	107-21-1	40.00000	0.00082	None
			dipropylene gylcol, monomethyl ether	34590-94-8	20.00000	0.00041	None
			Ethoxylated alcohol	68131-39-5	10.00000	0.00020	None
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00020	None
			formic acid	64-18-6	10.00000	0.00020	None
			Cinnamaldehyde	104-55-2	10.00000	0.00020	None
			Isoproyl alcohol	67-63-0	5.00000	0.00010	None
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.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	92.50000	0.41722	
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.02184	
			Glutaral	111-30-8	26.70000	0.00245	
			oleic acid diethanolamide	93-83-4	1.50000	0.00164	
			ammonium chloride	12125-02-9	1.50000	0.00164	
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00109	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00073	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00049	
			dipropylene gylcol, monomethyl ether	34590-94-8	20.00000	0.00041	
			ethonal	64-17-5	2.80000	0.00026	
			Cinnamaldehyde	104-55-2	10.00000	0.00020	
			Ethoxylated alcohol	68131-39-5	10.00000	0.00020	
			formic acid	64-18-6	10.00000	0.00020	
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00020	
			isoproyl alcohol	67-63-0	5.00000	0.00010	
			Water	7732-18-5	85.00000	0.00001	

* 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)

THRASHER

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

07/20/2018

NOTES ON SURVEY

1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES [illegible] WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL [illegible] PROVIDED BY CLIENT AND FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF 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 NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

TRACT	ADJOINER	TAX PARCEL
A	GERARD	5-13A-13
B	McDANIEL	5-13A-12
C	FOWLER	5-13-11
D	FOWLER	5-13-10
E	BARTLETT	5-13-9
F	COOK	5-13-17
G	ZBOSNIK	5-13-7.2
H	ZBOSNIK	5-13-7.1
I	AUVIL	5-13-5
J	AUVIL	5-13-5.3
K	FELTON	5-8-11.2
L	POLING	5-8-11.1
M	POLING	5-8-11
N	LIPSCOMB	5-8A-3
O	CAMPBELL	5-8A-2
P	COALQUEST DEV, LLC	5-8-26
Q	WALKER & RALPH	3-16-58
R	GAINES	3-16-56.1
S	MALONE	3-16-54

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	COALQUEST DEVELOPMENT LLC	5-8-10.2	10.0
2	RICOTTILLI C & P & SURV 1/2 IN& T CORROTHERS & R RAGER	5-8-10.3	214.97
3	PDC MOUNTAINEER, LLC	5-8-30.1	3.53
4	PETROFF MELINDA L	3-20-5	58.39
5	MORRIS RALPH & CRYSTAL L SURV	3-20-4	91.62
6	GAINES HOWARD & KRISTA KAY PHILLIPS	3-20-3.1	3.4
7	FELIX SHELIA & MICHAEL G FELIX	3-20-3.4	7.60
8	GAINES ANTOINETTE J	3-20-3	30.06
9	BAKER HARRY E & JAMES E	3-16-66	0.91
10	MCDANIEL MILFORD P & BARBARA E SURV	3-16-67	0.98
11	HARBERT DANNY L	3-16-65	1.61
12	MCDANIEL MILFORD P & BARBARA E	3-16-64	5.98
13	BAKER JOSHUA A	3-16-64.1	1.47
14	GAINES ANTOINETTE J	3-16-56	17.0

LINE	DESCRIPTION	DISTANCE	DESCRIPTION	MONUMENT
L1	S 75°05'59" W	1038.61	SHL TO LANDMARK	FENCE POST CORNER
L2	S 05°43'57" E	596.29	SHL TO LANDMARK	WELL# 1252
L3	N 28°56'00" E	164.83'	SHL TO LANDMARK	REBAR SET
L4	S 29°21'08" E	316.61	SHL TO LANDMARK	REBAR SET

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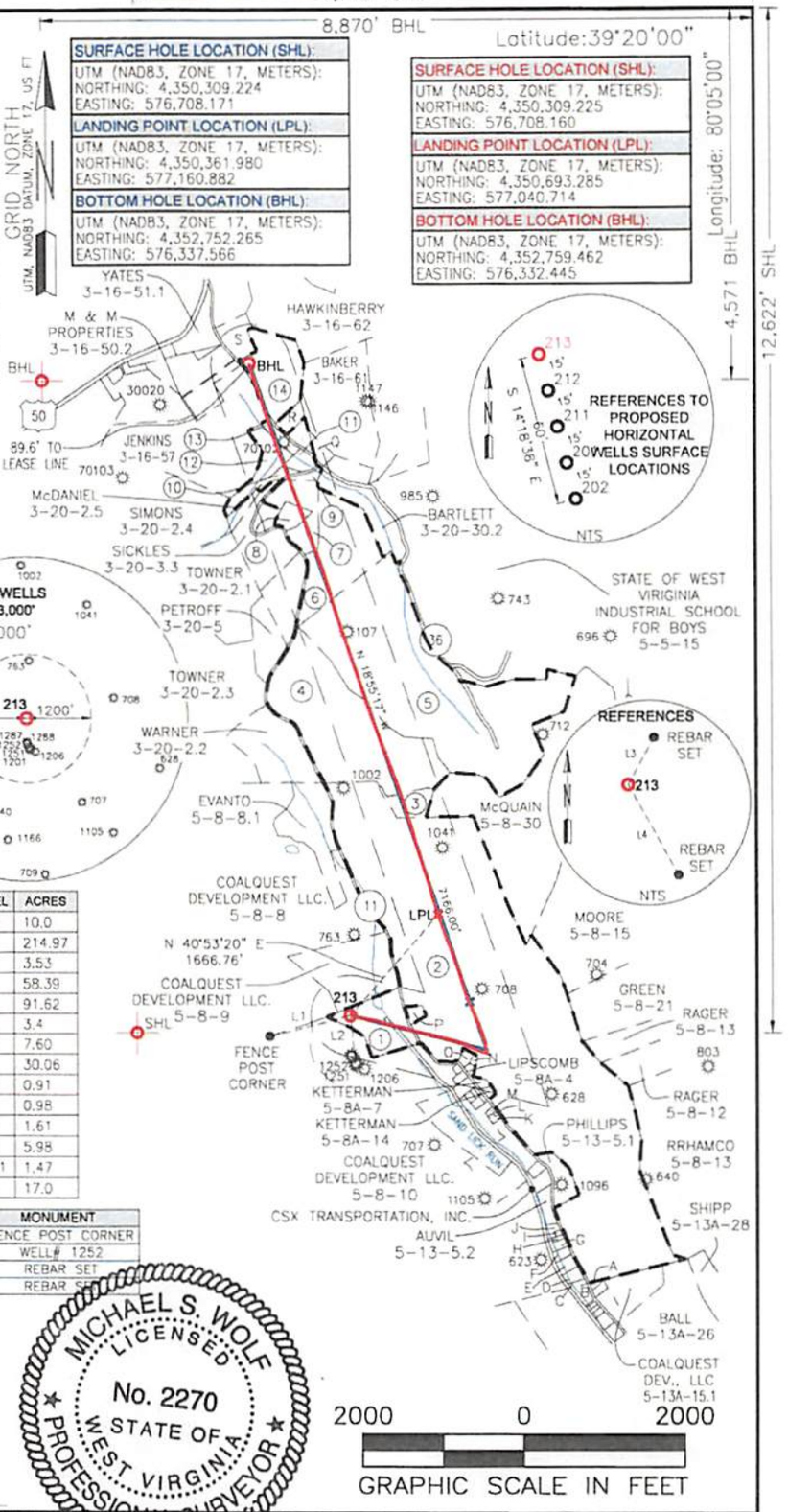
P.S. 2270 1/12/18

MICHAEL S. WOLF LICENSED No. 2270 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

OPERATOR'S WELL #: COALQUEST 2 213

API WELL #: 47 (STATE) 91 (COUNTY) PERMIT

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

WATERSHED: SAND LICK RUN OF SIMPSON CREEK ELEVATION: 1165.2'

DISTRICT: COURTHOUSE COUNTY: TAYLOR QUADRANGLE: GRAFTON

SURFACE OWNER: COALQUEST DEVELOPMENT LLC ACREAGE: ± 10.00

OIL & GAS ROYALTY OWNER: PATRIOT MINING, INC. ACREAGE: ± 10.00

DRILL ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐

CONVERT ☐ PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐ OTHER CHANGE ☒ (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,814 TVD 16,785 TMD

WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: WILLIAM VEIGEL

ADDRESS: 6031 WALLACE ROAD EXTENSION #300 ADDRESS: 65 PROFESSIONAL PLACE, SUITE 200

CITY: WEXFORD STATE: PA ZIP CODE: 15090 CITY: BRIDGEPORT STATE: WV ZIP CODE: 26330

LEGEND:
- AS-DRILLED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL LANDING POINT LOCATION
- EXISTING WATER WELL
- EXISTING SPRING
- SURVEYED BOUNDARY
- DRILLING UNIT
- LEASE BOUNDARY
- AS-DRILLED PATH
- PROPOSED PATH
- 500' BUFFER

REVISIONS:

DATE: 01-12-2018
DRAWN BY: K. POTH
SCALE: 1" = 2000'
DRAWING NO: 030-3042
WELL LOCATION PLAT

L:\030-3042-COALTRAIN IMPOUNDMENTS-MK-\SURVEY\COALQUEST WELLS\AS-DRILLED\213 AS-DRILLED.DWG
FRIDAY JANUARY 12 2018 01:40PM

THRASHER

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

07/20/2018

NOTES ON SURVEY

1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
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 PLAT 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 NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

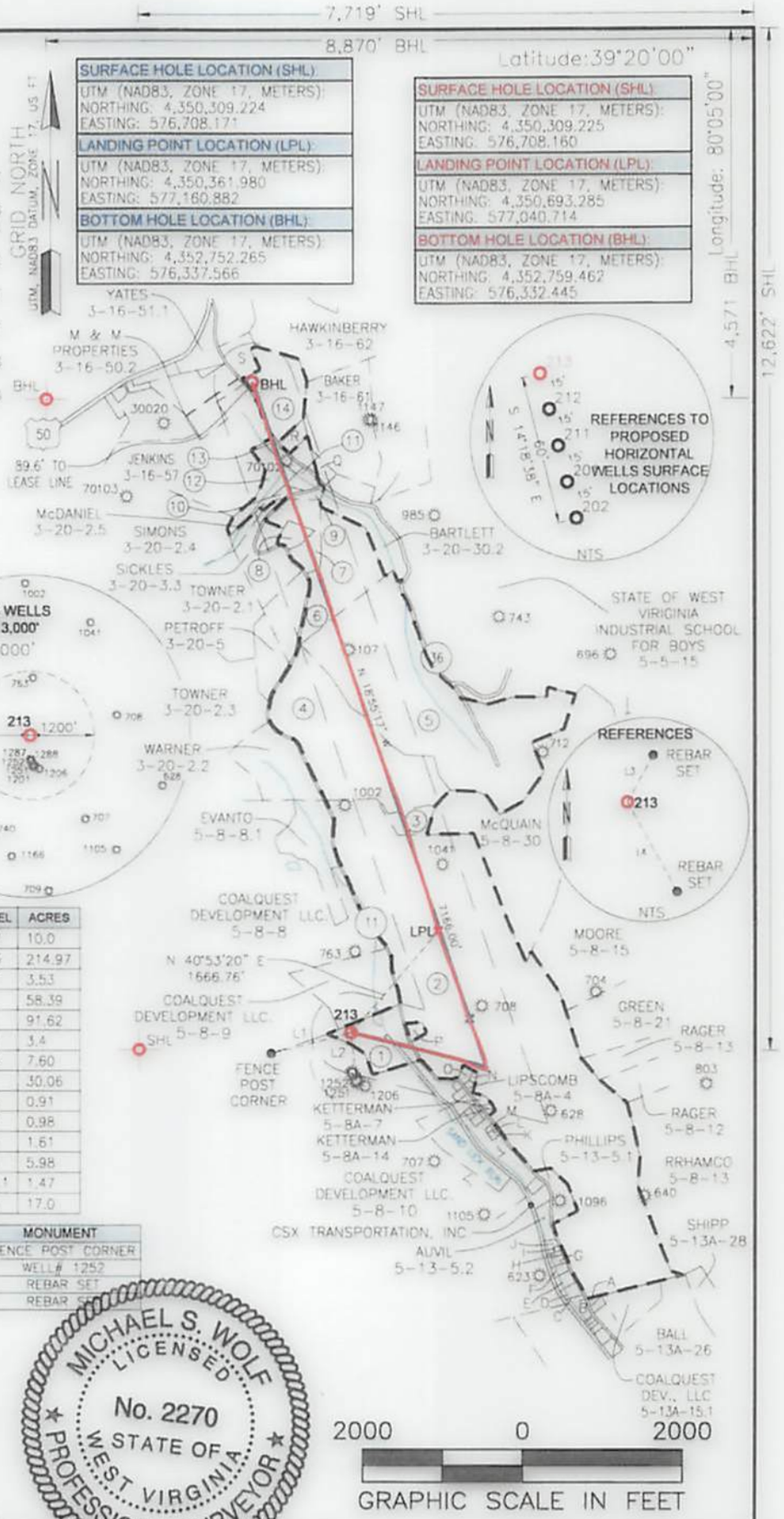
TRACT	ADJOINER	TAX PARCEL
A	GERARD	5-13A-13
B	McDANIEL	5-13A-12
C	FOWLER	5-13-11
D	FOWLER	5-13-10
E	BARTLETT	5-13-9
F	COOK	5-13-17
G	ZBOSNIK	5-13-7.2
H	ZBOSNIK	5-13-7.1
I	AUVIL	5-13-5
J	AUVIL	5-13-5.3
K	FELTON	5-8-11.2
L	POLING	5-8-11.1
M	POLING	5-8-11
N	LIPSCOMB	5-8A-3
O	CAMPBELL	5-8A-2
P	COALQUEST DEV. LLC	5-8-26
Q	WALKER & RALPH	3-16-58
R	GAINES	3-16-56.1
S	MALONE	3-16-54

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	COALQUEST DEVELOPMENT LLC	5-8-10.2	10.0
2	RICOTTILLI C & P & SURV 1/2 INT T CORROTHERS & R RAGER	5-8-10.3	214.97
3	PDC MOUNTAINEER, LLC	5-8-30.1	3.53
4	PETROFF MELINDA L	3-20-5	58.39
5	MORRIS RALPH & CRYSTAL L SURV	3-20-4	91.62
6	GAINES HOWARD & KRISTA KAY PHILLIPS	3-20-3.1	3.4
7	FELIX SHELIA & MICHAEL G FELIX	3-20-3.4	7.60
8	GAINES ANTOINETTE J	3-20-3	30.06
9	BAKER HARRY E & JAMES E	3-16-66	0.91
10	MCDANIEL MILFORD P & BARBARA E SURV	3-16-67	0.98
11	HARBERT DANNY L	3-16-65	1.61
12	MCDANIEL MILFORD P & BARBARA E	3-16-64	5.98
13	BAKER JOSHUA A	3-16-64.1	1.47
14	GAINES ANTOINETTE J	3-16-56	17.0

LINE	DESCRIPTION	DISTANCE	DESCRIPTION	MONUMENT
L1	S 75°05'59" W	1038.61	SHL TO LANDMARK	FENCE POST CORNER
L2	S 05°43'57" E	596.29	SHL TO LANDMARK	WELL# 1252
L3	N 28°56'00" E	164.83'	SHL TO LANDMARK	REBAR SET
L4	S 29°21'08" E	316.61	SHL TO LANDMARK	REBAR SET

SURFACE HOLE LOCATION (SHL)
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,350,309.224
EASTING: 576,708.171
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,350,361.980
EASTING: 577,160.882
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,352,752.265
EASTING: 576,337.566

SURFACE HOLE LOCATION (SHL)
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,350,309.225
EASTING: 576,708.160
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,350,693.285
EASTING: 577,040.714
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,352,759.462
EASTING: 576,332.445



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