

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

API 47 - 033 - 05914 County Harrison District Clark
Quad Clarksburg Pad Name D'Annunzio HCCP7 Field/Pool Name _____
Farm name A&B Management, LLC Well Number 205
Operator (as registered with the OOG) Arsenal Resources
Address 6031 Wallace Road Ext., Ste. 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 4345288.750 Easting 557269.591
Landing Point of Curve Northing 4345387.69 Easting 557515.54
Bottom Hole Northing 4343096.19 Easting 558267.00

Elevation (ft) 1118.00 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 3/7/2018 Date drilling commenced 11/18/2018 Date drilling ceased 1/1/2019
Date completion activities began 2/5/2019 Date completion activities ceased 4/3/2019
Verbal plugging (Y/N) N Date permission granted NA Granted by NA

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

Freshwater depth(s) ft 190', 310', 445', 485' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2500' Void(s) encountered (Y/N) depths N
Coal depth(s) ft NA Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

RECEIVED
Office of Oil and Gas
MAY 9 2019
WV Department of
Environmental Protection

Reviewed

SPW
8/22/19

Reviewed by:
REL

API 47-033 - 05914

Farm name A&B Management, LLC

Well number 205

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	41	NA	Y
Surface	17.5"	13 3/8"	546'GL	New	54.50	121'	Y
Coal	NA	NA	NA	NA	NA	NA	NA
Intermediate 1	12 1/4"	9 5/8"	2,554'GL	New	40	NA	Y
Intermediate 2	NA	NA	NA	NA	NA	NA	NA
Intermediate 3	NA	NA	NA	NA	NA	NA	NA
Production	8 1/2"	5 1/2"	15,840'GL	New	20	NA	N
Tubing	NA	NA	NA	NA	NA	NA	NA
Packer type and depth set		NA					

Comment Details Cement to surface on Conductor, Surface, and Intermediate. Top of production cement at 1,366'(GL)ft.

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	15.60	1.2	540	Surface	8+
Surface	A	540	15.60	1.2	648	Surface	8+
Coal	NA	NA	NA	NA	NA	NA	NA
Intermediate 1	A	375/470	15.20/15.60	1.26/1.20	472.5/564	Surface	8+
Intermediate 2	NA	NA	NA	NA	NA	NA	NA
Intermediate 3	NA	NA	NA	NA	NA	NA	NA
Production	A	880/1820	13.80/15.0	1.35/1.29	1188/2347.8	1,366'GL	8+
Tubing	NA	NA	NA	NA	NA	NA	NA

Drillers TD (ft) 15,828 (GL)

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 6,651 (GL), 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 24" -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 centralizers on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 2,650';
there will be no centralizers from 2,650' to surface.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS 41 Stages and 1,640 perforations

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS NA

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

RECEIVED
Office of Oil and Gas

MAY 9 2019

WV Department of
Environmental Protection

Perforation Record					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations (s)
41	3/5/2019 23:45	7,593.00	7,755.00	40	Marcellus Shale
40	3/5/2019 15:15	7,793.00	7,955.00	40	Marcellus Shale
39	3/5/2019 3:00	7,993.00	8,155.00	40	Marcellus Shale
38	3/4/2019 20:00	8,193.00	8,355.00	40	Marcellus Shale
37	3/4/2019 0:30	8,393.00	8,555.00	40	Marcellus Shale
36	3/3/2019 18:45	8,593.00	8,755.00	40	Marcellus Shale
35	3/3/2019 10:30	8,793.00	8,955.00	40	Marcellus Shale
34	3/3/2019 2:30	8,993.00	9,155.00	40	Marcellus Shale
33	3/2/2019 21:15	9,193.00	9,355.00	40	Marcellus Shale
32	3/2/2019 11:30	9,393.00	9,555.00	40	Marcellus Shale
31	3/2/2019 4:15	9,593.00	9,755.00	40	Marcellus Shale
30	3/1/2019 19:30	9,793.00	9,955.00	40	Marcellus Shale
29	3/1/2019 11:15	9,993.00	10,155.00	40	Marcellus Shale
28	3/1/2019 4:45	10,193.00	10,355.00	40	Marcellus Shale
27	2/28/2019 20:30	10,393.00	10,555.00	40	Marcellus Shale
26	2/28/2019 13:30	10,593.00	10,755.00	40	Marcellus Shale
25	2/28/2019 7:15	10,793.00	10,955.00	40	Marcellus Shale
24	2/28/2019 1:00	10,993.00	11,155.00	40	Marcellus Shale
23	2/27/2019 18:00	11,193.00	11,355.00	40	Marcellus Shale
22	2/27/2019 11:15	11,393.00	11,555.00	40	Marcellus Shale
21	2/26/2019 23:15	11,593.00	11,755.00	40	Marcellus Shale
20	2/26/2019 6:30	11,793.00	11,955.00	40	Marcellus Shale
19	2/26/2019 0:30	11,993.00	12,155.00	40	Marcellus Shale
18	2/25/2019 15:45	12,193.00	12,355.00	40	Marcellus Shale
17	2/25/2019 0:30	12,393.00	12,555.00	40	Marcellus Shale
16	2/24/2019 11:45	12,593.00	12,755.00	40	Marcellus Shale
15	2/23/2019 17:45	12,793.00	12,955.00	40	Marcellus Shale
14	2/23/2019 2:30	12,993.00	13,155.00	40	Marcellus Shale
13	2/22/2019 15:15	13,193.00	13,355.00	40	Marcellus Shale
12	2/21/2019 14:15	13,393.00	13,555.00	40	Marcellus Shale
11	2/20/2019 19:45	13,593.00	13,755.00	40	Marcellus Shale
10	2/20/2019 1:00	13,793.00	13,955.00	40	Marcellus Shale
9	2/19/2019 11:45	13,993.00	14,155.00	40	Marcellus Shale
8	2/19/2019 0:00	14,193.00	14,355.00	40	Marcellus Shale
7	2/18/2019 7:15	14,393.00	14,555.00	40	Marcellus Shale
6	2/18/2019 2:00	14,593.00	14,755.00	40	Marcellus Shale
5	2/17/2019 11:00	14,793.00	14,955.00	40	Marcellus Shale
4	2/15/2019 15:45	14,993.00	15,155.00	40	Marcellus Shale
3	2/15/2019 6:00	15,193.00	15,355.00	40	Marcellus Shale
2	2/14/2019 14:00	15,393.00	15,555.00	40	Marcellus Shale
1	2/8/2019 20:00	15,593.00	15,753.00	40	Marcellus Shale

RECEIVED
Office of Oil and Gas

MAY 9 2019

WV Department of
Environmental Protection

Stimulation Information Per Stage							
Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (psi)	Amount of Proppant (lbs)	Amount of Water (bbls)
1	2/14/2019	72	8,229	6,495	6,622	466,400	9,619
2	2/14/2019	79	8,652	6,638	5,137	500,400	9,761
3	2/15/2019	75	8,204	6,118	7,960	500,030	9,098
4	2/16/2019	81	8,041	7,326	5,885	500,760	9,171
5	2/17/2019	79	8,114	6,205	5,342	493,000	9,635
6	2/18/2019	80	8,269	7,833	6,565	439,960	9,697
7	2/18/2019	84	8,022	7,401	5,044	500,440	9,207
8	2/19/2019	85	8,592	7,510	5,697	503,640	9,511
9	2/19/2019	83	8,357	7,780	5,724	476,980	9,918
10	2/20/2019	81	8,396	7,812	5,438	499,820	9,754
11	2/21/2019	78	8,260	7,466	5,582	356,160	9,759
12	2/22/2019	84	8,358	8,473	5,466	500,080	9,286
13	2/23/2019	80	8,367	7,963	5,016	500,400	9,224
14	2/23/2019	83	8,424	8,055	5,434	500,200	9,077
15	2/24/2019	74	8,492	7,446	5,180	386,360	9,962
16	2/24/2019	80	8,045	7,815	4,990	500,200	9,083
17	2/25/2019	81	8,086	7,622	5,778	500,200	9,047
18	2/25/2019	81	8,484	8,028	5,159	462,320	9,382
19	2/26/2019	80	8,363	8,445	5,320	471,460	8,972
20	2/26/2019	83	8,219	7,168	5,344	484,580	9,115
21	2/27/2019	75	8,179	7,720	5,968	369,340	9,800
22	2/27/2019	80	8,168	7,732	4,538	408,320	9,892
23	2/27/2019	82	8,118	6,748	4,877	500,480	9,153
24	2/28/2019	84	8,192	7,252	4,984	500,440	8,998
25	2/28/2019	84	7,986	7,375	5,261	500,040	9,005
26	2/28/2019	82	8,025	7,302	4,802	503,540	9,597
27	3/1/2019	80	8,166	7,335	4,764	500,580	9,241
28	3/1/2019	82	7,920	7,717	5,289	501,760	9,077
29	3/1/2019	80	7,922	7,333	5,137	482,640	9,751
30	3/2/2019	79	7,859	7,450	5,499	459,686	9,818
31	3/2/2019	85	7,756	6,335	5,028	500,220	8,909
32	3/2/2019	86	7,654	6,957	5,564	500,360	9,082
33	3/3/2019	79	8,111	6,518	5,084	332,540	9,889
34	3/3/2019	85	7,478	7,013	5,408	500,020	8,862
35	3/3/2019	85	7,660	7,598	5,893	500,080	8,845
36	3/3/2019	81	7,813	7,599	5,515	500,600	9,285
37	3/4/2019	74	7,882	7,306	5,145	303,840	7,690
38	3/5/2019	82	7,706	6,243	5,630	500,580	9,492
39	3/5/2019	85	8,577	8,824	5,893	419,640	8,845
40	3/5/2019	83	7,699	8,013	5,906	505,020	9,195
41	3/6/2019	72	8,407	8,719	4,468	496,700	9,281

RECEIVED
Office of Oil and Gas
MAY 9 2019
WV Department of
Environmental Protection

API 47- 033 - 05914 Farm name A&B Management, LLC Well number 205

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Marcellus Shale	7,283'	TVD	15,855' 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 ₂ S, ETC)
Sand/Silt	0	1525	0	1530	Freshwater @ 190', 310', 445', 485'
Big Lime	1525	1730	1530	1740	Limestone - Saltwater @ 2500'
Balltown	3134	3185	3170	3221	Sandstone
Elk Siltstone	4864	4914	4980	5030	Siltstone
Burkett	6961	6982	7132	7155	Shale
Tully	6982	7038	7155	7222	Limestone
Mahantango	7038	7162	7222	7387	Shale
Marcellus	7162	7227	7387	7506	Shale
Purcell	7227	7232	7506	7520	Limestone
Lower Marcellus	7232	7264*	7520	15855	Shale - Gas shows through lateral
Onondaga	7264*				*Onondaga not penetrated - top estimated based on 4703305741 thickness

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 ProFrac
Address 333 Shops Boulevard City Willow Park State TX Zip 76087

Please insert additional pages as applicable.

Completed by Arsenal Resources Telephone 304-629-6309
Signature [Signature] Title Permitting Manager Date 5-6-19 RECEIVED Office of Oil and Gas

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry
MAY 9 2019 WV Department of Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/14/2019
Job End Date:	3/6/2019
State:	West Virginia
County:	Harrison
API Number:	47-033-05914-00-00
Operator Name:	Arsenal Resources
Well Name and Number:	D'Annunzio HCCP-7 205
Latitude:	39.25503610
Longitude:	-80.33623889
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,251
Total Base Water Volume (gal):	16,111,512
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	Arsenal Resources	Carrier/Base Fluid	Water	7732-18-5	100.00000	54.54945	None
Sand (100 Mesh Proppant)	ProFrac	Proppant					
Sand (40/70 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	38.98735	None
Sand (30/50 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	5.36799	None
Hydrochloric Acid (7.5%)	Cooper	Acidizing	Silica Substrate	14808-60-7	100.00000	0.71120	None
Hydrochloric Acid (7.5%)	Cooper	Acidizing	Water	7732-18-5	85.00000	0.24525	None
ProSlick 710	ProFrac	Friction Reducer	Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	36.00000	0.10387	None
			copolymer of 2-propenamide	59418-26-4	30.00000	0.01724	None

MAY 9 2019
 WV Department of Environmental Protection and Gas

				Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01149	None
				Ammonium chloride ((NH4)Cl)	12125-02-9	8.00000	0.00460	None
				Oleic Acid Diethanolamide	93-83-4	2.00000	0.00115	None
Hydrochloric Acid (15%)	Cooper		Acidizing					
				Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	36.00000	0.00667	None
ProChek 100	ProFrac		Scale Inhibitor					
				Ethylene Glycol	107-21-1	40.00000	0.00346	None
Plexicide G15	Chemplex Solvay Group		Glut/Quat Combo Biocide					
				Glutaraldehyde	111-30-8	12.40000	0.00109	None
				Didecyl dimethyl ammonium chloride	7173-51-5	2.00000	0.00018	None
				Alkyl dimethyl benzyl ammonium chloride (C 12-16)	88424-85-1	1.30000	0.00011	None
				Ethanol	64-17-5	1.00000	0.00009	None
ProFE 105	ProFrac		Iron Control					
				Citric Acid	77-92-9	100.00000	0.00113	None
ProHib 100	ProFrac		Acid Inhibitor					
				2-Propyn-1-ol compound w/ methylloxirane	38172-91-7	15.00000	0.00014	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						
				Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01149	
				Ammonium chloride ((NH4)Cl)	12125-02-9	8.00000	0.00460	
				Oleic Acid Diethanolamide	93-83-4	2.00000	0.00115	
				Didecyl dimethyl ammonium chloride	7173-51-5	2.00000	0.00018	
				Alkyl dimethyl benzyl ammonium chloride (C 12-16)	88424-85-1	1.30000	0.00011	
				Ethanol	64-17-5	1.00000	0.00009	

* 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)

RECEIVED
Office of Oil and Gas

MAY 9 2019

WV Department of
Environmental Protection

BHL is located on topo map **5,391** feet south of Latitude: **39° 15' 00"**

SHL is located on topo map **13,342** feet south of Latitude: **39° 17' 30"**

THRASHER

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

NOTES ON SURVEY

- COORDINATES SYSTEM IS WEST VIRGINIA STATE PLANE NORTH, NAD 83 DATUM, 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.

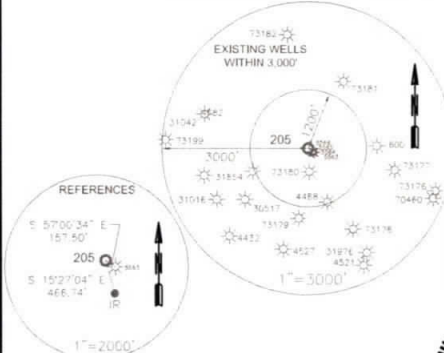
TAXPAYER	SURFACE OWNER	TAX PARCEL	ACRES
1	A & B MANAGEMENT, LLC	04-802-170	33.89
2	DARLENE MARLISSE ET AL	04-802-171	33.89
3	DARLENE MARLISSE ET AL	01-321-21	72.573
4	MARY ADAM SAKUR	01-347-12	1.45
5	MARY ADAM SAKUR	01-347-12-1	1.45
6	AMERICAN INC.	01-347-11	6.00
7	WV DIVISION OF NATURAL RESOURCES (WATER RESOURCES)	01-347-25	378.52
8	DAVIS, L. & MARY SUSAN NUTTER	01-347-34	53.13
9	WETLEY, S. EDWARD, JR. & MICHAEL W. FLEMING	01-347-35	17.81
10	WETLEY, S. EDWARD, JR. & MICHAEL W. FLEMING	01-347-31	12.83

TAXPAYER	SUBDIVISION	TAX PARCEL
A	CHARITABLE FOUNDATION	04-802-170
B	EDWARD L. & CONNIE E. COOK	04-802-170
C	VELMA T. HERBE	04-802-170
D	POOP REVOCABLE TRUST	04-802-174
E	BANK OF AMERICA	04-802-176
F	ERIC D. MACLEAN	04-802-176
G	LOPEZ ERIC TYLER & MARY ERIC & SHARON	04-802-177
H	GERTRUDE HANNIGAN	04-802-178
I	GERTRUDE HANNIGAN	04-802-179
J	JEFFREY S. BASS	04-802-180
K	ROBERT W. SHANK	04-802-181
L	MARY E. LOPEZ	04-802-182
M	BRYAN SQUARES	04-802-183
N	LEON W. & AMBERLY F. LOPEZ	04-802-184
O	JOSEPH LEON MICHAEL & BROOKE LYNN LOPEZ	04-802-185
P	SEARFAS HERB MICHELLE R. & RANDY A. PEBBE	01-347-30-1

AS DRILLED LANDING POINT LOCATION (LPL)
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,345,387.69
EASTING: 557,515.54

AS DRILLED BOTTOM HOLE LOCATION (BHL)
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,343,096.19
EASTING: 558,267.00

PERMITTED BOTTOM HOLE LOCATION (BHL)
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,343,094.736
EASTING: 558,322.754



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. 2000 *George D. Six*



AS DRILLED PLAT

SHL is located on topo map **9,222** feet west of Longitude: **80° 17' 30"**

RECEIVED
Office of Oil and Gas

MAY 9 2019

WV Department of Environmental Protection

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: <u>1/200</u></p> <p>PROVEN SURVEY SOURCE OF GRADE GPS (NAVD 88, US FT)</p>	<p>OPERATOR'S WELL #: <u>D'ANNUNZIO HCCP-7</u></p> <p>API WELL #: <u>47 33 05714</u></p> <p>STATE COUNTY PERMIT</p>
	<p>WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/></p> <p>WATERSHED: <u>WEST FORK</u> ELEVATION: <u>1117.8' (DESIGN)</u></p> <p>DISTRICT: <u>CLARK-CLARKSBURG CORP</u> COUNTY: <u>HARRISON</u> QUADRANGLE: <u>CLARKSBURG/MOUNT CLARE</u></p> <p>SURFACE OWNER: <u>A. & B. MANAGEMENT, LLC.</u> ACREAGE: <u>199.03</u></p> <p>OIL & GAS ROYALTY OWNER: <u>A. & B. MANAGEMENT, LLC.</u> ACREAGE: <u>199.03</u></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 <input type="checkbox"/></p> <p>CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) <u>AS-DRILLED PLAT</u></p> <p>TARGET FORMATION: <u>MARCELLUS</u> ESTIMATED DEPTH: <u>7,249 TVD 15,864 TMD</u></p>	
<p>WELL OPERATOR: <u>ARSENAL RESOURCES</u> DESIGNATED AGENT: <u>WILLIAM VEIGEL</u></p> <p>ADDRESS: <u>6031 WALLACE ROAD EXTENSION #300</u> ADDRESS: <u>65 PROFESSIONAL PLACE, SUITE 200</u></p> <p>CITY: <u>WEXFORD</u> STATE: <u>PA</u> ZIP CODE: <u>15090</u> CITY: <u>BRIDGEPORT</u> STATE: <u>WV</u> ZIP CODE: <u>26330</u></p>	<p>LEGEND:</p> <ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ○ EXISTING / PRODUCING WELLHEAD LPLx LANDING POINT LOCATION ○ EXISTING WATER WELL ○ EXISTING SPRING --- SURVEYED BOUNDARY --- DRILLING UNIT --- LEASE BOUNDARY --- PROPOSED PATH --- AS DRILLED --- 500' BUFFER 	<p>REVISIONS:</p> <p>△ REVISED XXX MM-DD-YYYY</p> <p>DATE: <u>05-03-2019</u></p> <p>FILE NO: <u>XXXXX</u></p> <p>DRAWN BY: <u>R.DOERR</u></p> <p>SCALE: <u>1" = 2000'</u></p> <p>DRAWING NO: <u>030-3250</u></p> <p>WELL LOCATION PLAT 3</p>

WR-36
Rev. 5/08

Date: 4/22/19
Operators Well Number: D'Annunzio HCCP 7 205
API Well No: 47-033 - 05914

**State of West Virginia
Department of Environmental Protection
Office of Oil and Gas**

**Well Operator's Report of
Initial Gas-Oil Ratio**

Well Operator Arsenal Resources LLC
Address 6031 Wallace Road Ext. Suite 300
Wexford, PA 15090

Designated Agent William Veigel
Address 65 Professional Place, Suite 200
Bridgeport, WV 26330

Geological Target Formation: Marcellus Depth 7387 feet
Perforation Interval 7593' - 15753' feet

Guidelines for testing:

1. A minimum of gas vented or flared.
2. A 24 hour pre-flow into pipelines or tanks.
3. Uniform producing rate during the 24 hour test per test period.
4. Measurement standards as for Form WR-39, "Report of Annual Production" (see 35CSR4-15)
5. Separate Form WR-36 for each producing formation in a multiple completion.

TEST DATA

Start of Test Date 4/1/19		Time 8:00 AM		End of Test Date 4/2/19		Time 8:00 AM		Duration of Test 24 Hrs	
Tubing Pressure NA		Casing Pressure 1535		Separator Pressure 501		Separator Temperature 70			
Oil Production During Test 0		Gas Production During Test 9991		Water Production During Test 817		79,160			
Oil Gravity NA		BBLs		MCF		BBLs		-Salinity	
API		Producing Method (flowing, pumping, gas lift etc.) Flowing							

GAS PRODUCTION

Measurement Method Flange Tap <input checked="" type="checkbox"/> Pipe Tap <input type="checkbox"/> L-10 <input type="checkbox"/>			Positive Choke <input type="checkbox"/>			Positive flow prover <input checked="" type="checkbox"/>		
Orifice diameter		Pipe Diameter (inside)		Nominal Choke Size inches 42/64"				
Differential Pressure range		Max. Static pressure range		Prover and Orifice diameter - inches 3.826" run with 2.75" orifice				
Differential 69.9" H2O			Static			RECEIVED Office of Oil and Gas		
Gas Gravity (Air = 1.0) Measured .5737 Estimated		Flowing Temperature 70		Gas Temperature 60		MAY 9 2019		
24 Hour Coefficient		24 Hour coefficient pressure PSIA WV Department of Environmental Protection						

TEST RESULTS

Daily Oil 0		Daily Water 817 BBLs		Daily Gas 9991 MCF		Gas-Oil Ratio NA	
-----------------------	--	--------------------------------	--	------------------------------	--	----------------------------	--

Arsenal Resources LLC
Well Operator
BY _____
ITS: Designated Agent

BHL is located on topo map 5,391 feet south of Latitude: 39° 15' 00"

SHL is located on topo map 13,342 feet south of Latitude: 39° 17' 30"

THRASHER

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

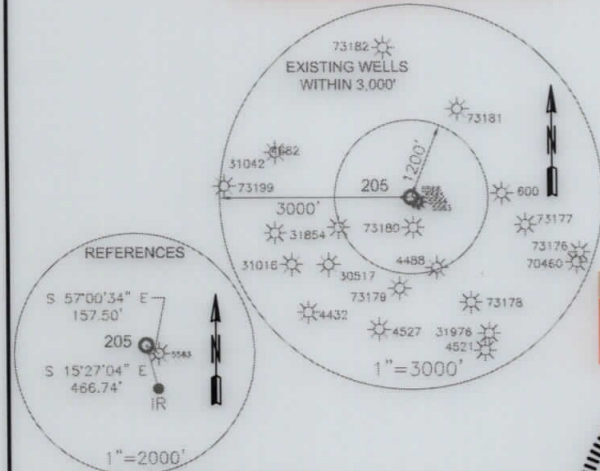
NOTES ON SURVEY

- COORDINATES SYSTEM IS WEST VIRGINIA STATE PLANE NORTH, NAD 83 DATUM, 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.

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	A & B MANAGEMENT, LLC	03-327-17	198.03
2	DARLENE MANCISO ET AL	04-604-7	53.68
3	DARLENE MANCISO ET AL	01-327-27	72.573
4	MARK ADAM SKASIK	01-347-12	29.25
5	MARK ADAM & CASHIN SKASIK	01-347-12.1	0.45
6	AMERICAL INC.	01-347-11	9.00
7	WV DIVISION OF NATURAL RESOURCES (WILDLIFE RESOURCES)	01-347-35	378.32
8	ORIAN L & MARY SUSAN NEITER	01-347-34	53.15
9	WESLEY G COMISKY & MICHAEL W PLANAGAN	01-347-52	1.40
10	RONALD A. FRAGMAN	01-347-51	12.83

TRACT	ADJOINER	TAX PARCEL
A	JONATHAN ROWH	04-602-170
B	EDWARD L & CONNIE S COX	04-602-172
C	VELMA E HERES	04-602-173
D	POMP RENTALS LLC	04-602-174
E	BANK OF AMERICA	04-602-175
F	ERIC D McCLAIN	04-602-176
G	LOPEZ ERIC TYLER & MARK ERIC & SHANNON	04-602-177
H	GERTRUDE HANRIGAN	04-602-178
I	GERTRUDE HANRIGAN	04-602-179
J	JEFFREY S BASS	04-602-180
K	ROBERT W. SMALL	04-602-181
L	MARK E LOPEZ	04-602-182
M	BRYAN SQUIRES	04-602-183
N	LOUIS M & KIMBERLY A LOPEZ	04-602-184
O	JOSEPH MICHAEL & BROCKIE LYNN LOPEZ	04-602-145
P	SEAFASS HIBBS MICHELLE R & RANDY A HIBBS	01-347-35.1

AS DRILLED LANDING POINT LOCATION (LPL)
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,345,387.69
EASTING: 557,515.54



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. 2000 *George D. Six*



AS DRILLED PLAT

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: <u>1/200</u></p> <p>PROVEN SOURCE OF ELEVATION: <u>SURVEY GRADE GPS (NAVD 88, US FT)</u></p>	<p>D'ANNUNZIO HCCP-7</p> <p>OPERATOR'S WELL #: <u>205 - AS DRILLED</u></p> <p>API WELL #: <u>47</u> <u>33</u> <u>05914</u> ^{46A}</p> <p>STATE COUNTY PERMIT</p>
	<p>WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/></p> <p>WATERSHED: <u>WEST FORK</u> ELEVATION: <u>1117.8' (DESIGN)</u></p> <p>DISTRICT: <u>CLARK-CLARKSBURG CORP</u> COUNTY: <u>HARRISON</u> QUADRANGLE: <u>CLARKSBURG/MOUNT CLARE</u></p> <p>SURFACE OWNER: <u>A. & B. MANAGEMENT, LLC.</u> ACREAGE: <u>199.03</u></p> <p>OIL & GAS ROYALTY OWNER: <u>A. & B. MANAGEMENT, LLC.</u> ACREAGE: <u>199.03</u></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 <input type="checkbox"/></p> <p>CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) <u>AS-DRILLED PLAT</u></p> <p>TARGET FORMATION: <u>MARCELLUS</u> ESTIMATED DEPTH: <u>7,249 TVD 15,864 TMD</u></p>	<p>WELL OPERATOR: <u>ARSENAL RESOURCES</u> DESIGNATED AGENT: <u>WILLIAM VEIGEL</u></p> <p>ADDRESS: <u>6031 WALLACE ROAD EXTENSION #300</u> ADDRESS: <u>65 PROFESSIONAL PLACE, SUITE 200</u></p> <p>CITY: <u>WEXFORD</u> STATE: <u>PA</u> ZIP CODE: <u>15090</u> CITY: <u>BRIDGEPORT</u> STATE: <u>WV</u> ZIP CODE: <u>26330</u></p>
<p>LEGEND:</p> <ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD LPL* LANDING POINT LOCATION ⊙ EXISTING WATER WELL ⊙ EXISTING SPRING --- SURVEYED BOUNDARY - - - DRILLING UNIT - - - LEASE BOUNDARY --- PROPOSED PATH --- AS DRILLED --- 500' BUFFER 	<p>REVISIONS:</p> <p>△ REVISED XXX MM-DD-YYYY</p>	<p>DATE: <u>05-03-2019</u></p> <p>FILE NO: <u>XXXXX</u></p> <p>DRAWN BY: <u>R.DOERR</u></p> <p>SCALE: <u>1" = 2000'</u></p> <p>DRAWING NO: <u>030-3250</u></p> <p>WELL LOCATION PLAT 3</p>

BHL is located on topo map 9,222 feet west of Longitude: 80° 17' 30"

SHL is located on topo map 823 feet west of Longitude: 80° 20' 00"

THRASHER

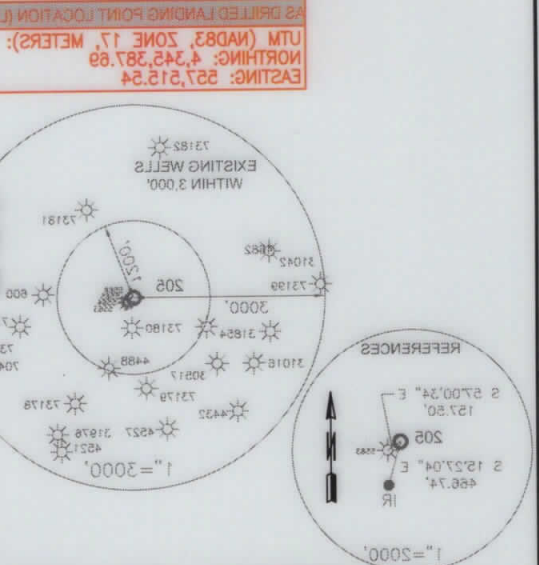
THE THRASHER GROUP, INC.
800 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-824-4108

NOTES ON SURVEY

- COORDINATE SYSTEM IS WEST VIRGINIA STATE PLANE NORTH AND 83 DATUM, 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 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 ROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

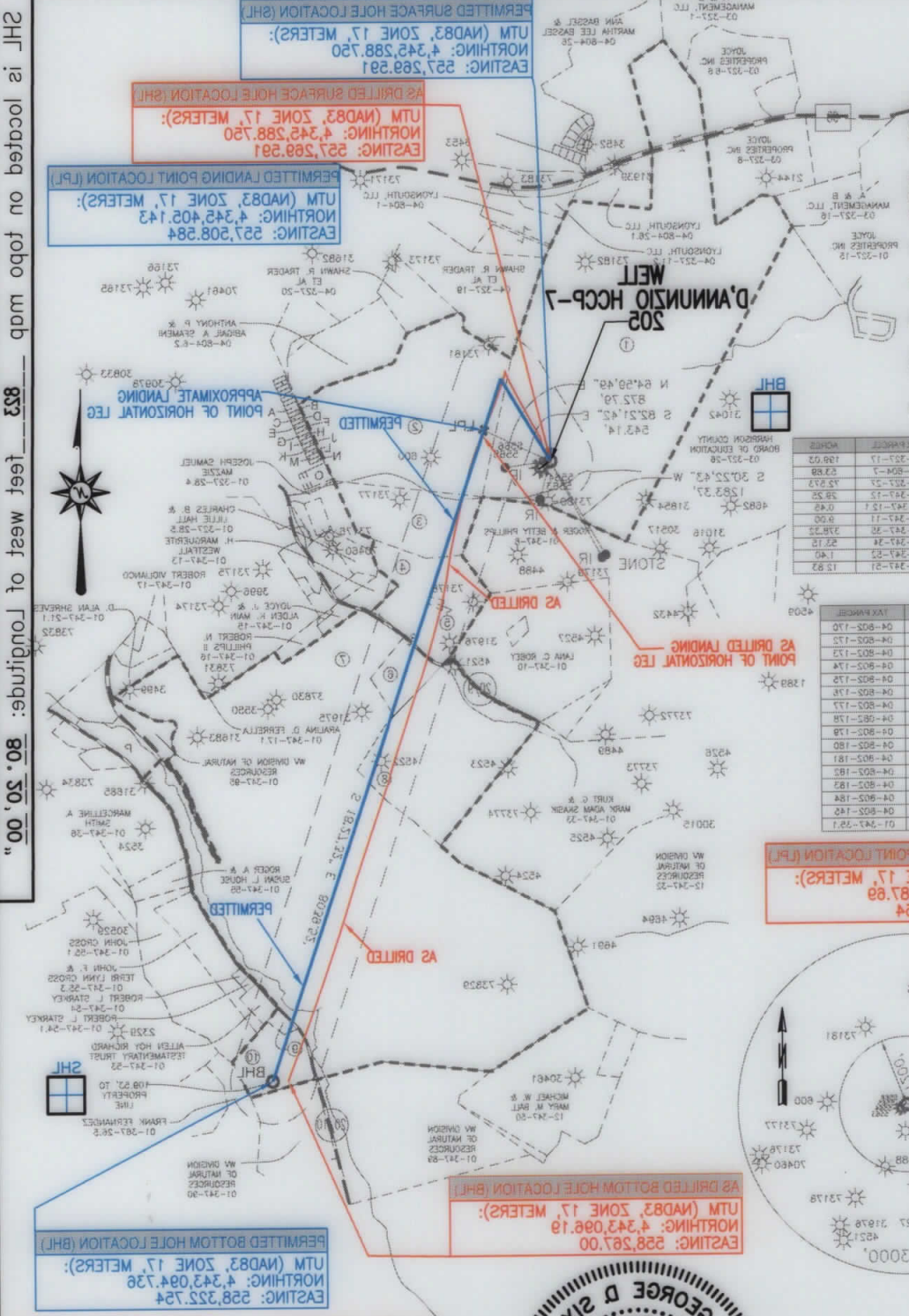
PARCEL	OWNER	TAX PARCEL	ACRES
1	A & B MANAGEMENT, LLC	04-802-17	1.99 02
2	DARLENE MANDUCHO ET AL	04-802-17	23.88
3	DARLENE MANDUCHO ET AL	01-243-12	22.22
4	MARK ADAM SKANSKY	01-243-12	25.25
5	MARK ADAM SKANSKY	01-243-12	0.48
6	MARK ADAM SKANSKY	01-243-12	8.96
7	WM DIVISION OF NATURAL RESOURCES (WETLANDS REDUCED)	01-243-12	28.32
8	JOHN L & MARY SUZANNE WALTER	01-243-12	22.12
9	WELBY C COMBICK & MICHAEL W FLAUGHA	01-243-12	1.40
10	HOWARD A TRAHMAN	01-243-12	12.82

PARCEL	OWNER	TAX PARCEL	ACRES
A	JOHANNAN ROMAN	04-802-170	0.48
B	EDWARD L & CONNIE S COY	04-802-170	0.48
C	VELMA E HERZ	04-802-170	0.48
D	POMP ROTARYS LLC	04-802-174	0.48
E	BANK OF AMERICA	04-802-170	0.48
F	ERIC D MCCLAIN	04-802-170	0.48
G	LOPEZ ERIC TYLER & MARK ERIC & SHANNON	04-802-177	0.48
H	GERTRUDE HANSHAW	04-802-178	0.48
I	GERTRUDE HANSHAW	04-802-178	0.48
J	BETTYE E BOSS	04-802-180	0.48
K	ROBERT W SMALL	04-802-181	0.48
L	MARIE E LOPEZ	04-802-182	0.48
M	BRYAN GARDNER	04-802-182	0.48
N	LOUIE M & MARGERY A LOPEZ	04-802-184	0.48
O	JOSEPH LOUIS MICHAEL & BROUEN LYNN LOPEZ	04-802-142	0.48
P	GEORGE HIBBS MICHELLE R & RANDY A HIBBS	01-243-251	0.48



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.

George D. Six
P. 2. 2000



AS DRILLED PLAT

<p>LEGEND:</p> <ul style="list-style-type: none"> PROPOSED SURFACE HOLE / BOTTOM HOLE EXISTING / PRODUCING WELLHEAD LANDING POINT LOCATION EXISTING WATER WELL EXISTING SPRING 300' BUFFER AS DRILLED PROPOSED PATH LEASE BOUNDARY DRILLING UNIT SURVEYED BOUNDARY 	<p>WELL OPERATOR: ARSENAL RESOURCES ADDRESS: 6031 WALLACE ROAD EXTENSION #300 CITY: WEXFORD STATE: PA ZIP CODE: 15090</p> <p>DESIGNATED AGENT: WILLIAM VEIGEL ADDRESS: 65 PROFESSIONAL PLACE SUITE 200 CITY: BRIDGEPORT STATE: WV ZIP CODE: 26330</p> <p>TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,249 TMD 12,884 TMD OTHER CHANGE (SPECIFY) AS-DRILLED PLAT CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/></p> <p>OIL & GAS ROYALTY OWNER: A & B. MANAGEMENT, LLC. SURFACE OWNER: A & B. MANAGEMENT, LLC. DISTRICT: CLARK-CLARKSBURG CORP COUNTY: HARRISON WATERSHED: WEST FORK WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/></p>	<p>APL WELL #: 47 STATE: WV COUNTY: BRIDGEPORT PERMIT NO: 02214</p> <p>OPERATOR'S WELL #: 205 - AS DRILLED D'ANNUNZIO HCCP-7</p> <p>MINIMUM DEGREE OF ACCURACY: 1/500 PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAD 88, US FT)</p>	<p>OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p> <p>WVDEP STATE OF WEST VIRGINIA</p>
---	---	--	---

WELL LOCATION PLAT 3	DRAWING NO: 030-3250
SCALE: 1" = 2000'	DRAWN BY: R. DOERR
FILE NO: XXXXX	DATE: 05-03-2019
REVISIONS:	

SHL is located on top map 13,342 feet south of latitude: 39° 17' 30"

BHL is located on top map 2,301 feet south of latitude: 39° 15' 00"

SHL is located on top map 833 feet west of longitude: 80° 50' 00"

BHL is located on top map 0,333 feet west of longitude: 80° 17' 30"