

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

API 47 - 033 - 05918 County Harrison District Clark  
Quad Clarksburg Pad Name D'Annunzio HCCP7 Field/Pool Name \_\_\_\_\_  
Farm name A&B Management, LLC Well Number 207  
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 4345285.086 Easting 557274.411  
Landing Point of Curve Northing 4345595.94 Easting 557926.73  
Bottom Hole Northing 4343096.19 Easting 558737.68

Elevation (ft) 1117.40 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 3/7/2018 Date drilling commenced 1/14/2019 Date drilling ceased 1/26/2019  
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

**Reviewed**

*SPW*  
*8/22/19*

Reviewed by:  
*Z&L*

API 47-033 - 05918 Farm name A&B Management, LLC Well number 207

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"	24"	80'	New	41.0	NA	Y
Surface	17 1/2"	13 3/8"	552'GL	New	54.50	120'	Y
Coal	NA	NA	NA	NA	NA	NA	NA
Intermediate 1	12 1/4"	9 5/8"	2,551'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"	5 1/2"	15,632'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, and Intermediate. Top of production cement at 892(GL)ft.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	450	15.60	1.20	540	Surface	8+
Surface	Class A	545	15.60	1.20	654	Surface	8+
Coal	NA	NA	NA	NA	NA	NA	NA
Intermediate 1	Class A	470/375	15.20/15.60	1.26/1.30	592.2/487.5	Surface	8+
Intermediate 2	NA	NA	NA	NA	NA	NA	NA
Intermediate 3	NA	NA	NA	NA	NA	NA	NA
Production	Class A	955/1,720	13.80/15.00	1.35/1.29	1,289.25/2,218.8	892(GL)'	8+
Tubing	NA	NA	NA	NA	NA	NA	NA

Drillers TD (ft) 15,632(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 7,025 (GL)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 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 centralizer 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 38 stages and 1,520 perforations

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS NA

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



Perforation Record					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations (s)
38	3/5/2019 18:15	7,985	8,147	40	Marcellus Shale
37	3/5/2019 11:45	8,185	8,347	40	Marcellus Shale
36	3/4/2019 22:30	8,385	8,547	40	Marcellus Shale
35	3/4/2019 6:00	8,585	8,747	40	Marcellus Shale
34	3/3/2019 21:00	8,785	8,947	40	Marcellus Shale
33	3/3/2019 13:15	8,985	9,147	40	Marcellus Shale
32	3/3/2019 6:00	9,185	9,347	40	Marcellus Shale
31	3/3/2019 0:15	9,385	9,547	40	Marcellus Shale
30	3/2/2019 16:45	9,585	9,747	40	Marcellus Shale
29	3/2/2019 8:30	9,785	9,947	40	Marcellus Shale
28	3/2/2019 0:15	9,985	10,147	40	Marcellus Shale
27	3/1/2019 14:00	10,185	10,347	40	Marcellus Shale
26	3/1/2019 8:30	10,385	10,547	40	Marcellus Shale
25	2/28/2019 23:45	10,585	10,747	40	Marcellus Shale
24	2/28/2019 16:15	10,785	10,947	40	Marcellus Shale
23	2/28/2019 10:15	10,985	11,147	40	Marcellus Shale
22	2/28/2019 3:00	11,185	11,347	40	Marcellus Shale
21	2/27/2019 21:00	11,385	11,547	40	Marcellus Shale
20	2/27/2019 14:30	11,585	11,747	40	Marcellus Shale
19	2/27/2019 6:00	11,785	11,947	40	Marcellus Shale
18	2/26/2019 13:30	11,985	12,147	40	Marcellus Shale
17	2/25/2019 7:30	12,185	12,347	40	Marcellus Shale
16	2/24/2019 17:30	12,385	12,547	40	Marcellus Shale
15	2/24/2019 1:00	12,585	12,747	40	Marcellus Shale
14	2/23/2019 8:45	12,785	12,947	40	Marcellus Shale
13	2/22/2019 21:00	12,985	13,147	40	Marcellus Shale
12	2/22/2019 7:00	13,185	13,347	40	Marcellus Shale
11	2/21/2019 1:15	13,385	13,547	40	Marcellus Shale
10	2/20/2019 7:15	13,585	13,747	40	Marcellus Shale
9	2/19/2019 18:00	13,785	13,947	40	Marcellus Shale
8	2/19/2019 6:00	13,985	14,147	40	Marcellus Shale
7	2/18/2019 15:45	14,185	14,347	40	Marcellus Shale
6	2/18/2019 8:00	14,385	14,547	40	Marcellus Shale
5	2/17/2019 6:00	14,585	14,747	40	Marcellus Shale
4	2/15/2019 23:30	14,785	14,947	40	Marcellus Shale
3	2/15/2019 8:00	14,985	15,147	40	Marcellus Shale
2	2/14/2019 22:30	15,185	15,347	40	Marcellus Shale
1	2/9/2019 12:00	15,385	15,545	40	Marcellus Shale

Stimulation Information Per Stage							
Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)
1	2/14/2019 16:20	75	7,663	6,564	4,579	500,330	9,610
2	2/15/2019 2:42	80	8,213	7,837	5,107	499,820	9,221
3	2/15/2019 20:55	74	8,344	7,166	4,933	376,220	9,755
4	2/16/2019 7:55	82	8,222	7,494	4,165	477,025	9,009
5	2/17/2019 12:37	82	8,651	6,833	5,385	497,415	9,166
6	2/18/2019 13:26	78	8,276	8,041	6,116	494,067	9,547
7	2/19/2019 3:28	83	8,271	7,741	5,307	500,120	9,251
8	2/19/2019 15:30	82	8,188	7,002	5,863	500,760	9,534
9	2/20/2019 4:52	80	8,245	7,479	5,858	403,500	9,832
10	2/20/2019 23:09	84	8,248	7,179	5,422	500,640	9,317
11	2/22/2019 4:46	84	8,521	7,234	5,848	500,720	9,257
12	2/22/2019 18:46	85	8,298	7,528	5,298	500,500	9,228
13	2/23/2019 6:37	82	8,229	7,651	5,938	500,360	9,147
14	2/23/2019 22:32	82	8,496	6,106	5,013	426,920	9,813
15	2/24/2019 15:12	81	7,903	7,453	3,525	500,360	9,089
16	2/25/2019 5:18	83	8,663	7,785	5,487	500,280	8,970
17	2/26/2019 11:03	77	8,053	8,042	5,087	437,980	10,023
18	2/27/2019 3:00	83	8,174	8,130	4,880	494,980	9,293
19	2/27/2019 12:02	74	7,943	8,039	5,585	360,620	10,053
20	2/27/2019 18:52	83	8,073	7,794	5,638	500,640	9,162
21	2/28/2019 1:10	84	8,138	7,722	5,621	500,680	9,064
22	2/28/2019 8:15	84	8,076	7,278	5,990	500,120	9,460
23	2/28/2019 14:15	85	8,053	7,430	5,701	500,740	8,935
24	2/28/2019 21:36	83	7,986	7,420	5,014	501,120	9,285
25	3/1/2019 6:32	83	8,040	7,709	5,735	500,960	8,670
26	3/1/2019 12:00	81	8,029	7,443	6,602	500,940	8,867
27	3/1/2019 21:50	80	8,091	7,657	4,927	501,300	9,386
28	3/2/2019 6:31	84	7,666	7,589	6,190	500,460	8,976
29	3/2/2019 14:31	84	7,708	7,189	5,651	500,160	9,561
30	3/2/2019 21:17	86	7,739	7,190	4,985	501,300	9,024
31	3/3/2019 3:14	84	7,656	7,392	5,805	500,780	9,255
32	3/3/2019 10:52	81	7,863	6,602	6,321	492,640	9,913
33	3/3/2019 18:44	82	7,715	7,093	5,982	500,980	9,005
34	3/4/2019 3:35	83	7,898	7,768	5,362	500,800	8,980
35	3/4/2019 20:16	83	7,460	7,296	5,529	500,980	9,844
36	3/5/2019 9:17	85	7,544	7,343	5,546	500,280	8,829
37	3/5/2019 16:22	85	7,744	7,211	5,671	354,980	7,779
38	3/6/2019 0:51	79	7,623	8,215	5,363	500,760	9,507

API 47- 033 - 05918 Farm name A&B Management, LLC Well number 207

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Marcellus Shale	7,281'	TVD	15,640' 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 <sub>2</sub> S, ETC)
Sand/Silt	0	1525	0	1538	Freshwater @ 190', 310', 445', 485'
Big Lime	1525	1730	1538	1746	Limestone - Saltwater @ 2500'
Balltown	3134	3185	3191	3247	Sandstone
Elk Siltstone	4864	4914	5076	5130	Siltstone
Burkett	6963	6984	7427	7454	Shale
Tully	6984	7042	7454	7534	Limestone
Mahantango	7042	7162	7534	7725	Shale
Marcellus	7162	7224	7725	7868	Shale
Purcell	7224	7226	7868	7873	Limestone
Lower Marcellus	7226	7258*	7873	15640	Shale - Gas shows through lateral
Onondaga	7258*				*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 1-724-940-1204  
 Signature [Signature] Title PERMITTING MANAGER Date 5-6-19

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



# 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:	47-033-05918-00-00
Operator Name:	Arsenal Resources
Well Name and Number:	DAnnunzio HCCP-7 207
Latitude:	39.25503610
Longitude:	-80.33623500
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,266
Total Base Water Volume (gal):	14,855,639
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Abstract 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	54.24658	None
Sand (100 Mesh Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	39.15423	None
Sand (40/70 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	5.4242	None
Sand (30/50 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	0.81148	None
Hydrochloric Acid (7.5%)	Cooper	Acidizing	Water	7732-18-5	85.00000	0.23919	None
Hydrochloric Acid (7.5%)	Cooper	Acidizing	Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	36.00000	0.10130	None
ProSlick 710	ProFrac	Friction Reducer	copolymer of 2-propenamide	59418-26-4	30.00000	0.01604	None

			Distillates (petroleum), hydrotreated light	54742-47-8	20.00000	0.01070	None
			Ammonium chloride ((NH4)Cl)	12125-02-9	8.00000	0.00428	None
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00107	None
ProChek 100	ProFrac	Scale Inhibitor	Ethylene Glycol	107-21-1	40.00000	0.00344	None
Hydrochloric Acid (15%)	Cooper	Acidizing	Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	36.00000	0.00332	None
Plexicide G15	Chemplex Solvay Group	Glut/Quat Combo Biocide	Glutaraldehyde	111-30-8	12.40000	0.00108	None
			Didecyl dimethyl ammonium chloride	7173-51-5	2.00000	0.00017	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/ methyloxirane	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	54742-47-8	20.00000	0.01070	
			Ammonium chloride ((NH4)Cl)	12125-02-9	8.00000	0.00428	
			Oleic Acid Diethanolamide	93-83-4	2.00000	0.00107	
			Didecyl dimethyl ammonium chloride	7173-51-5	2.00000	0.00017	
			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)



BHL is located on topo map 4,353 feet south of Latitude: 39° 15' 00"

SHL is located on topo map 13,354 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 STATE PLANE, WEST VIRGINIA 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.

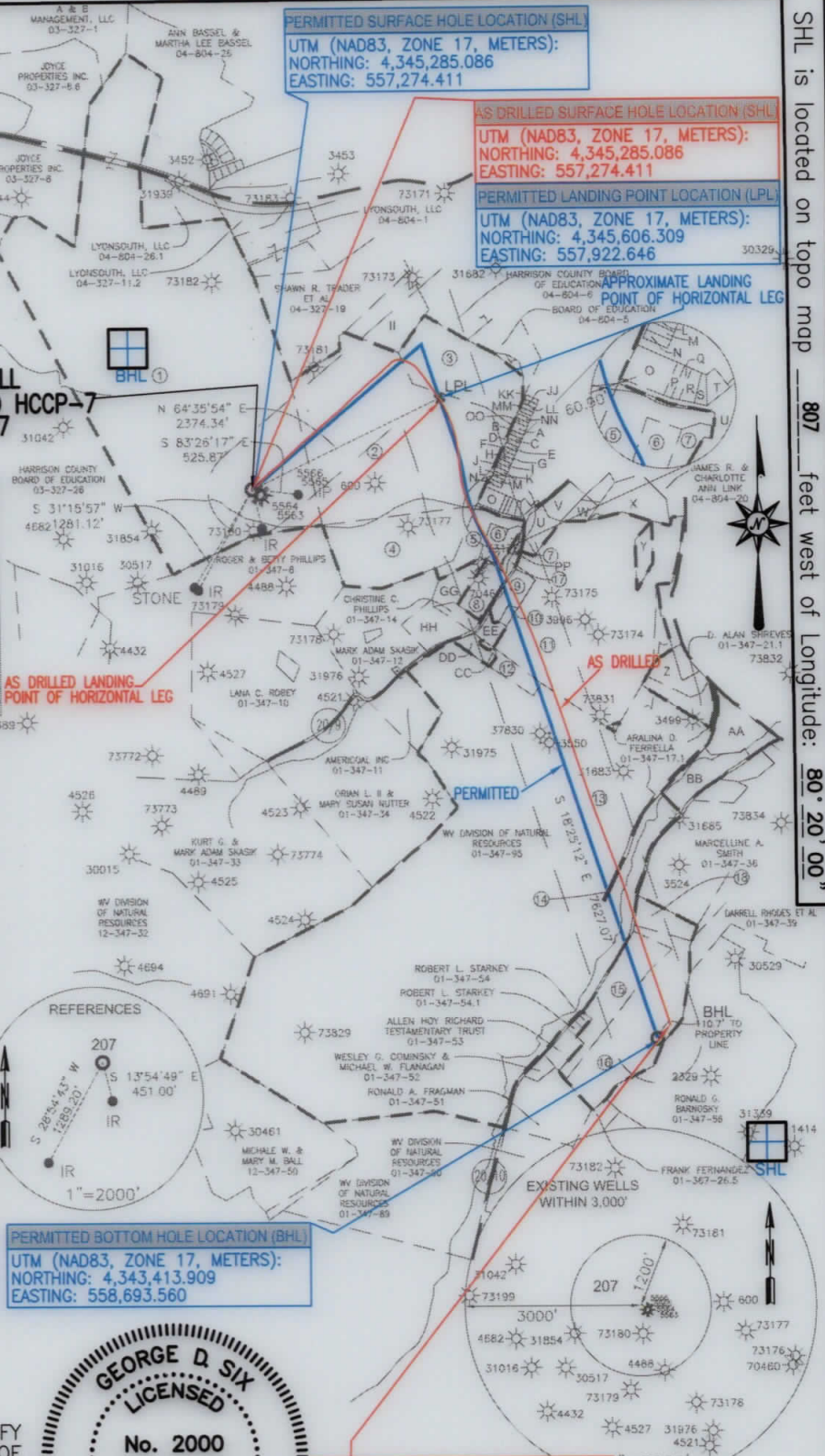
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	A & B MANAGEMENT, LLC	03-327-17	199.03
2	DARLENE MANCUSO ET AL	04-804-7	53.69
3	ANTHONY P. & ABIGAIL A. SPAMENI	04-804-6.2	21.00
4	DARLENE MANCUSO ET AL	01-327-27	72.573
5	JOSEPH SAMUEL MAZIE	01-327-28.4	5.30
6	CHARLES B. & LILLIE HALL	01-327-28.1	2.00
7	CHARLES B. & LILLIE HALL	01-327-28	1.27
8	AGUSTIN ASTACIO	01-327-28.3	4.00
9	NIDDLE VIGLIANCO ROMANO & ROBERT M. VIGLIANCO	04-347-17.2	3.40
10	DALE BROWN	04-347-17.3	0.57
11	ROBERT VIGLIANCO	04-347-17	73.72
12	ROBERT N. PHILLIPS II	01-347-18	2.97
13	WV DIVISION OF NATURAL RESOURCES (WILDLIFE RESOURCES)	01-347-35	378.32
14	WV DIVISION OF NATURAL RESOURCES (WILDLIFE RESOURCES)	01-347-99	7.71
15	JOHN F. & TERRI LYNN CROSS	01-347-95.3	12.12
16	JOHN CROSS	01-347-95.1	24.96
17	ANGEL DAWN OTTOLE & BRUCE DOUGLAS DAVIS	01-327-26.2	0.69
18	ROGER A. & SUSAN L. HOUSE	01-347-55	4.97

TRACT	ADJOINER	TAX PARCEL
A	JONATHAN BROWN	04-802-170
B	EDWARD L. & CONNIE S. COX	04-802-172
C	VELMA E. HERES	04-802-173
D	PUMP RENTALS LLC	04-802-174
E	BANK OF AMERICA	04-802-175
F	ERIC D. MACLAIN	04-802-176
G	LOPEZ ERIC TYLER & MARK ERIC & SHANNON	04-802-177
H	GERTRUDE HANHIGAN	04-802-178
I	GERTRUDE HANHIGAN	04-802-179
J	JEFFREY S. BASS	04-802-180
K	ROBERT W. SMALL	04-802-181
L	MARK E. LOPEZ	04-802-182
M	BRYAN SQUIRES	04-802-183
N	LOUIS M. & KIMBERLY A. LOPEZ	04-802-184
O	JOSEPH LOUIS MICHAEL & BROOKE LYNN LOPEZ	04-802-145
P	BENJAMIN K. & APRIL D. GRIFFITH	04-802-144
Q	DAVID A. LEROY	04-802-143
R	TRACEY RAY McCAULEY	04-802-889
S	MARILYN SPATAFORE ET VIR & VIRGINIA CHRISTAFORE	04-802-52
T	MARILYN SPATAFORE ET VIR & VIRGINIA CHRISTAFORE	04-802-51
U	LAUREN E. BENEDEUM & CARL A. SIERS	04-327-53
V	PRIME SPACE LLC	04-327-52
W	SANDRA K. & RODERICK N. SUTTON	04-327-55
X	NEW LIFE CHRISTIAN CENTER	04-327-50
Y	NEW LIFE CHRISTIAN CENTER	04-327-51
Z	D. ALAN SHIREVES	01-347-21
AA	COCA-COLA BOTTLING COMPANY OF WEST VIRGINIA	01-347-26
BB	SEARFASS HIBBS MICHELLE R. & RANDY A. HIBBS	01-347-25.1
CC	ROBERT N. PHILLIPS II	01-347-18.1
DD	JOYCE L. & ALLEN K. MAH	01-347-15
EE	ELIZABETH ANH SEDOUC & J. ASON JOSEPH BANISH	01-347-17.4
GG	CHARLES B. & LILLIE HALL	01-327-28.5
HH	H MARGUERITE WESTFALL	01-347-13
II	SHAWN R. TRADER ET AL	04-327-20
JJ	JOHN CARTER	04-802-164
KK	MARK E. & SHANNON LOPEZ	04-802-165.1
LL	HARRY WILLIAMS	04-802-166
MM	CAMERON D. GOLDEN	04-802-167
NN	BRUNO G. MARTINEZ	04-802-168
OO	JOHN D. & DOROTHY G. CARPENTER	04-802-169
PP	ANGEL DAWN OTTOLE & BRUCE DOUGLAS DAVIS	04-327-28.6

**AS DRILLED LANDING POINT LOCATION (LPL)**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,345,595.94  
EASTING: 557,926.73

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*



<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL &amp; GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: <u>1/200</u></p> <p>PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)</p>	<p>D'ANNUNZIO HCCP-7</p> <p>OPERATOR'S WELL #: <u>207</u></p> <p>API WELL #: <u>47</u> STATE <u>33</u> COUNTY <u>05918</u> PERMIT <u>HMA</u></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'</u> (DESIGN)</p> <p>DISTRICT: <u>CLARK-CLARKSBURG CORP</u> COUNTY: <u>HARRISON</u> QUADRANGLE: <u>CLARKSBURG/MOUNT CLARE</u></p> <p>SURFACE OWNER: <u>A. &amp; B. MANAGEMENT, LLC.</u> ACREAGE: <u>199.03</u></p> <p>OIL &amp; GAS ROYALTY OWNER: <u>A. &amp; 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 &amp; ABANDON <input type="checkbox"/> CLEAN OUT &amp; 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 15,900 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"> <li>○ PROPOSED SURFACE HOLE / BOTTOM HOLE</li> <li>☼ EXISTING / PRODUCING WELLHEAD</li> <li>LPL* LANDING POINT LOCATION</li> <li>⊙ EXISTING WATER WELL</li> <li>⊙ EXISTING SPRING</li> <li>— SURVEYED BOUNDARY</li> <li>— DRILLING UNIT</li> <li>--- LEASE BOUNDARY</li> <li>— PROPOSED PATH</li> <li>— AS DRILLED</li> <li>— 500' BUFFER</li> </ul>	<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>JAM</u></p> <p>SCALE: <u>1" = 2000'</u></p> <p>DRAWING NO: <u>030-3250</u></p> <p>WELL LOCATION PLAT 3</p>

SHL is located on topo map 807 feet west of Longitude: 80° 17' 30"

BHL is located on topo map 7,997 feet west of Longitude: 80° 17' 30"