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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Tuesday, July 9, 2019  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

JAY-BEE OIL & GAS, INC.  
1720 RT. 22 E

UNION, NJ 070830000

Re: Permit Modification Approval for P5N3  
47-073-02586-00-00

**Directional Change, 6B, 6A-1, Plat, AOR, Anti-collision.**

JAY-BEE OIL & GAS, INC.

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief

Operator's Well Number: P5N3  
Farm Name: BB LAND LLC  
U.S. WELL NUMBER: 47-073-02586-00-00  
Horizontal 6A New Drill  
Date Modification Issued: July 7, 2019

Promoting a healthy environment.

Directorial Change

WW-6B  
(04/15)

API NO. 47-073 - 02586  
OPERATOR WELL NO. P5N3  
Well Pad Name: P5

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

1) Well Operator: Jay-Bee Oil & Gas, Inc. 24610 Pleasants Union Ben's Run 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: P5N3 Well Pad Name: P5

3) Farm Name/Surface Owner: Jay-Bee Oil & Gas, Inc. Public Road Access: Arvilla Rd (CR7)

4) Elevation, current ground: 896.1' Elevation, proposed post-construction: 868.1'

5) Well Type (a) Gas X Oil Underground Storage  
Other

(b) If Gas Shallow X Deep  
Horizontal X

6) Existing Pad: Yes or No No

GTB 7/9/19

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus, Target Depth 5900', 41-60' thick, 3500# pressure

8) Proposed Total Vertical Depth: 5,900'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16,155'

11) Proposed Horizontal Leg Length: 8,953.5'

12) Approximate Fresh Water Strata Depths: 127'

13) Method to Determine Fresh Water Depths: API 47-073-00798 Freshwater, 47-073-00636 Saltwater, 47-073-00099 Coal

14) Approximate Saltwater Depths: 1,756.1'

15) Approximate Coal Seam Depths: 456.1-461.1'

16) Approximate Depth to Possible Void (coal mine, karst, other): N/A

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No X

(a) If Yes, provide Mine Info: Name: Depth: Seam: Owner:

WW-6B  
(04/15)

API NO. 47- 073 - 02586  
 OPERATOR WELL NO. P5N3  
 Well Pad Name: P5

18)

**CASING AND TUBING PROGRAM**

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	16	New	J55	40	30'	30'	8.22 CTS
Fresh Water	11 3/4	New	J55	32	300'	300'	142.25 CTS
Coal							
Intermediate	8 5/8	New	J55	24	1,800'	1,800'	458 CTS
Production	5 1/2	New	P110	17	16,155'	16,155'	2,626' CF1000' from surface
Tubing	N/A						
Liners	N/A						

*CTB 7/19/19*

<u>TYPE</u>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	16	17 1/2	.495	3,000#	50	Class A	1.19
Fresh Water	11 3/4	15	.333	1,500#	1,000	Class A	1.26
Coal							
Intermediate	8 5/8	11	.264	2,950#	1,500	Class A	1.45
Production	5 1/2	7 7/8	.304	15,000#	2,500	Type 1 Cement	1.34
Tubing	N/A						
Liners	N/A						

**PACKERS**

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

WW-6B  
(10/14)

CTB 7/9/19

API NO. 47-073 - 02586  
OPERATOR WELL NO. P5N3  
Well Pad Name: P5

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and Stimulate a new Horizontal Well. Using a top hole rig, we will drill top hole to kick off point by drilling the conductor, freshwater and intermediate holes. Using a directional rig we will drill the production holes.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

300-350' per stage 8,500bbls of water, 150,000-400,000lbs of sand, friction reducer, 1# per gallon, scale inhibitor and bacteria prevention 1/4# per gallon 2000 gallons 15% vol acid. 77bpm @ 6500# pressure.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 21.60

22) Area to be disturbed for well pad only, less access road (acres): 10.67

23) Describe centralizer placement for each casing string:

Vertical - Every 500' Bow Centralizer, and 50' from top of ground. Horizontal every 42' Spiral Centralizer, Curve - Every 84' Spiral Centralizer.

24) Describe all cement additives associated with each cement type:

15" hole for the 11 3/4 fresh water case, Class A Cement, 2% Calcium Chloride, 1/4# flake.  
11" hole for the 8 5/8 intermediate base, Class A Cement, 2% Calcium Chloride  
7 7/8" hole for the 5 1/2 production case, Type1 Cement, Fly Ash, Barite, Finetol 300L, R-3 Celio Flake, Sugar, CD-32, FL-62

25) Proposed borehole conditioning procedures:

Air Hole: 15" hole for the 11 3/4 fresh water case - Circulate until clean with air. If soaping, slug then dry.  
Air Hole: 11" hole for the 8 5/8 intermediate base - Circulate until clean with air. If soaping, slug then dry.  
7 7/8" hole for the 5 1/2 production case - Circulate with mud and sweeps for two times bottoms up. If needed weight up mud until no cuttings retrieved, then circulate with mud and sweeps for two times bottoms up.

\*Note: Attach additional sheets as needed.

Directional Change  
47-073 02586

WW-6A1  
(5/13)

Operator's Well No. PSN3

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
P7207	Jay-Bee Royalty, LLC	BB Land, LLC	12.5%	318-674
P7258 (K)	Berry Properties	BB Land, LLC	12.5%	307-465
P7259 (J)	Berry Properties	BB Land, LLC	12.5%	307-465
APCO 511A (U)	Ila Lee Leatherman	BB Land, LLC	12.5%	312-189
APCO 511 F&G	Ila Lee Leatherman	BB Land, LLC	12.5%	316-632
APCO 511C	Ila Lee Leatherman	BB Land, LLC	12.5%	312-189
APCO 120 (Q)	Judith M. Davis	BB Land, LLC	12.5%	316-634
Affidavit	BB Land, LLC	Jay-Bee Oil & Gas, Inc		

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Jay-Bee Oil & Gas, Inc.  
 By: Chris Lindsey  
 Its: Office Manager

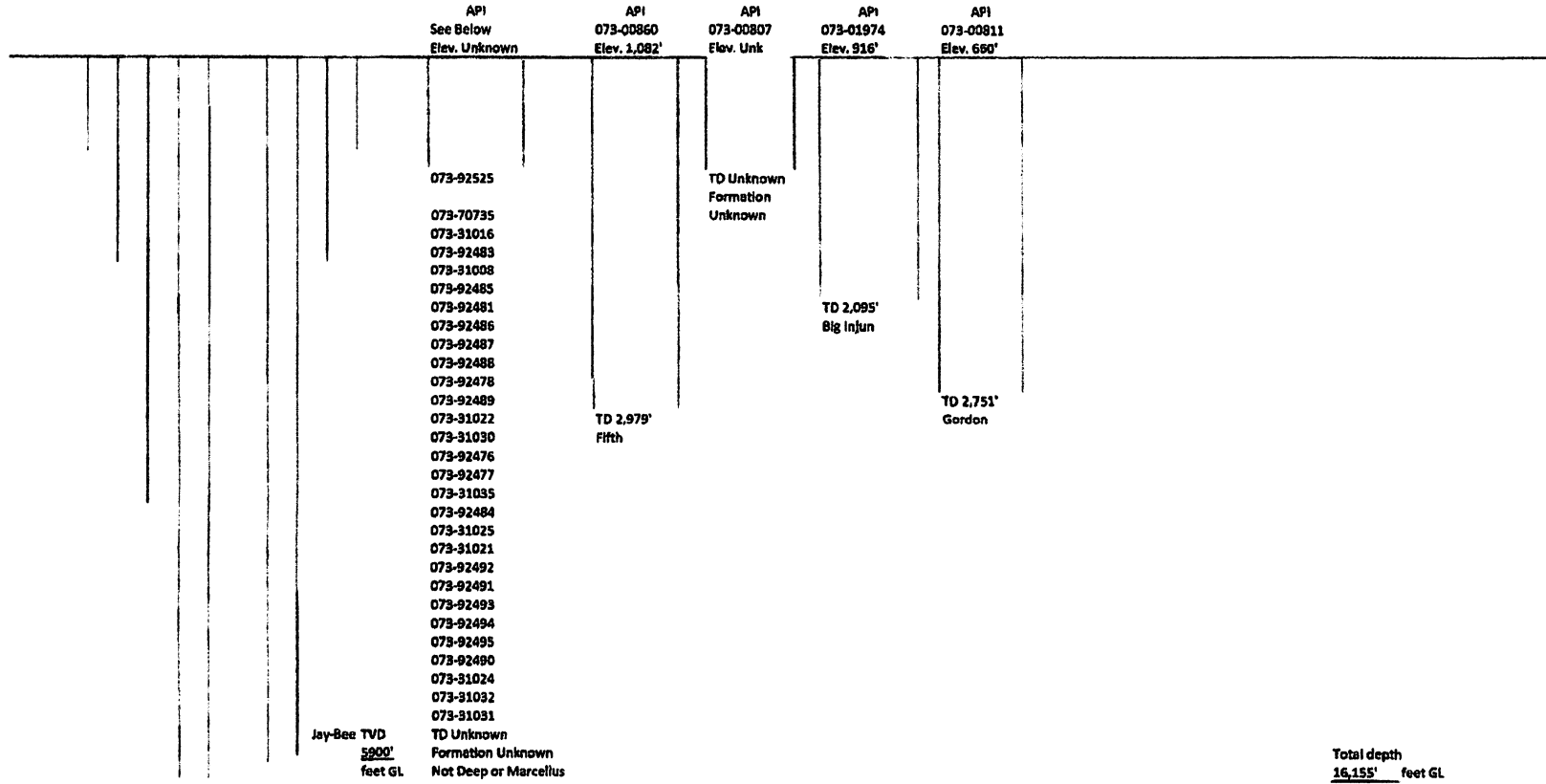
Directional Change  
47-073-02506

Jay-Bee Oil & Gas Inc.

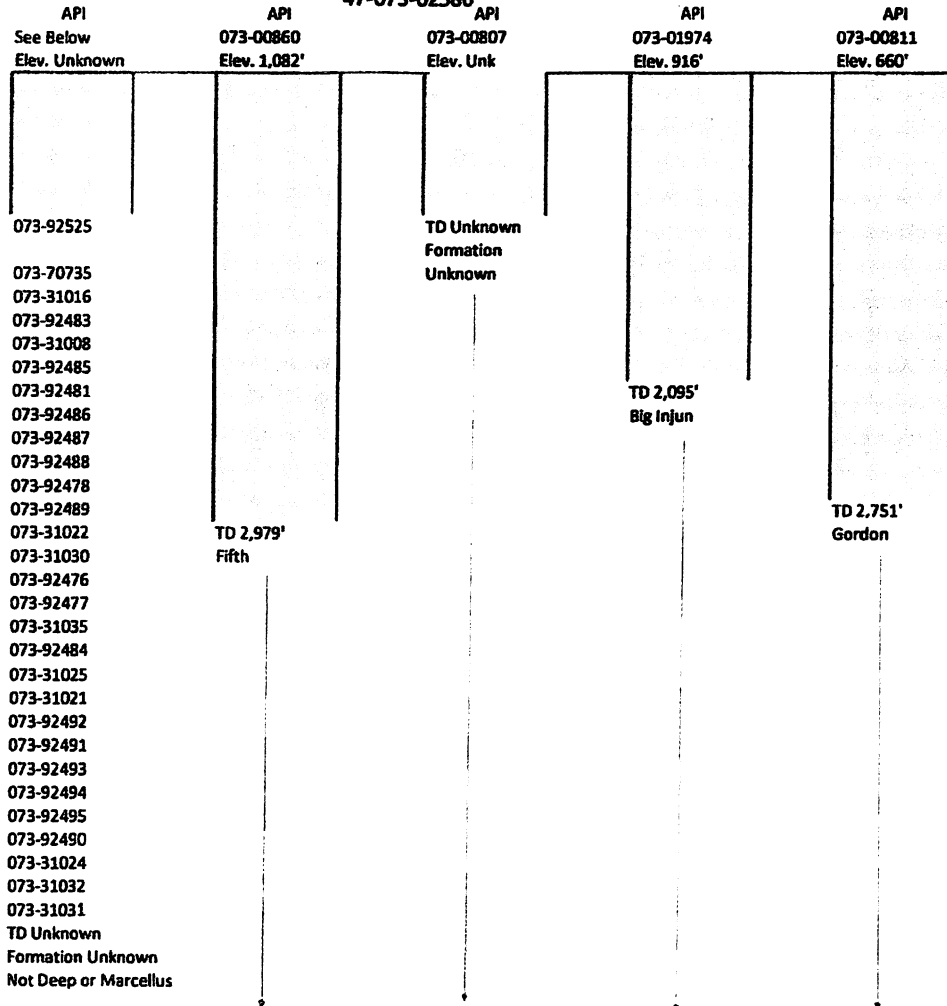
Well Name PSN3

GL Elevation 868.1

Well-Site Safety Plan Anti-Collision Schematic

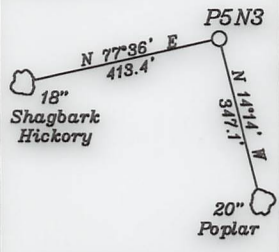


**Area of  
Review PSN3 -  
47-073-02586**



Operator	Unknown	Ecological Energy	L. & M. Petroleum Co.	Ecological Energy	Ecological Energy
Well Name	Multiple	Westvaco 1	7	6	3
Perforated Formations	Unknown	Fifth	Unknown	Big Injun	Gordon
Unperforated Producing Formations	Unknown	Gordon	Unknown	Keener	Gantz
		Gantz		Big Lime	Berea
		Berea		Maxon	Weir
		Weir		Big Dunkard	Big Injun
		Big Injun		Little Dunkard	Keener
		Keener		Cow Run	Big Lime
		Big Lime			Maxon
		Maxon			Big Dunkard
		Big Dunkard			Little Dunkard
		Little Dunkard			Cow Run
		Cow Run			

References:

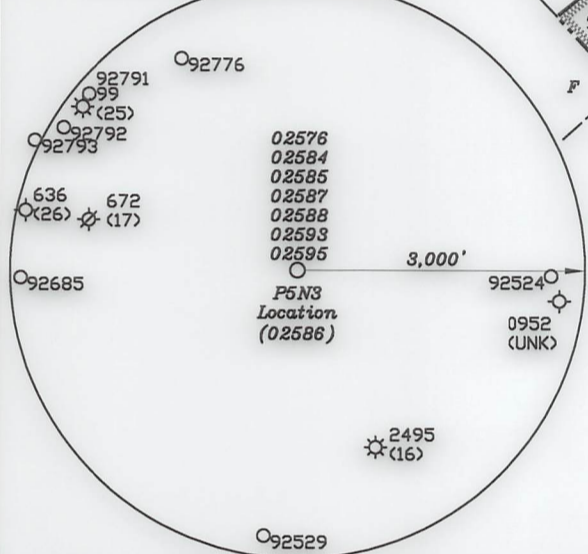
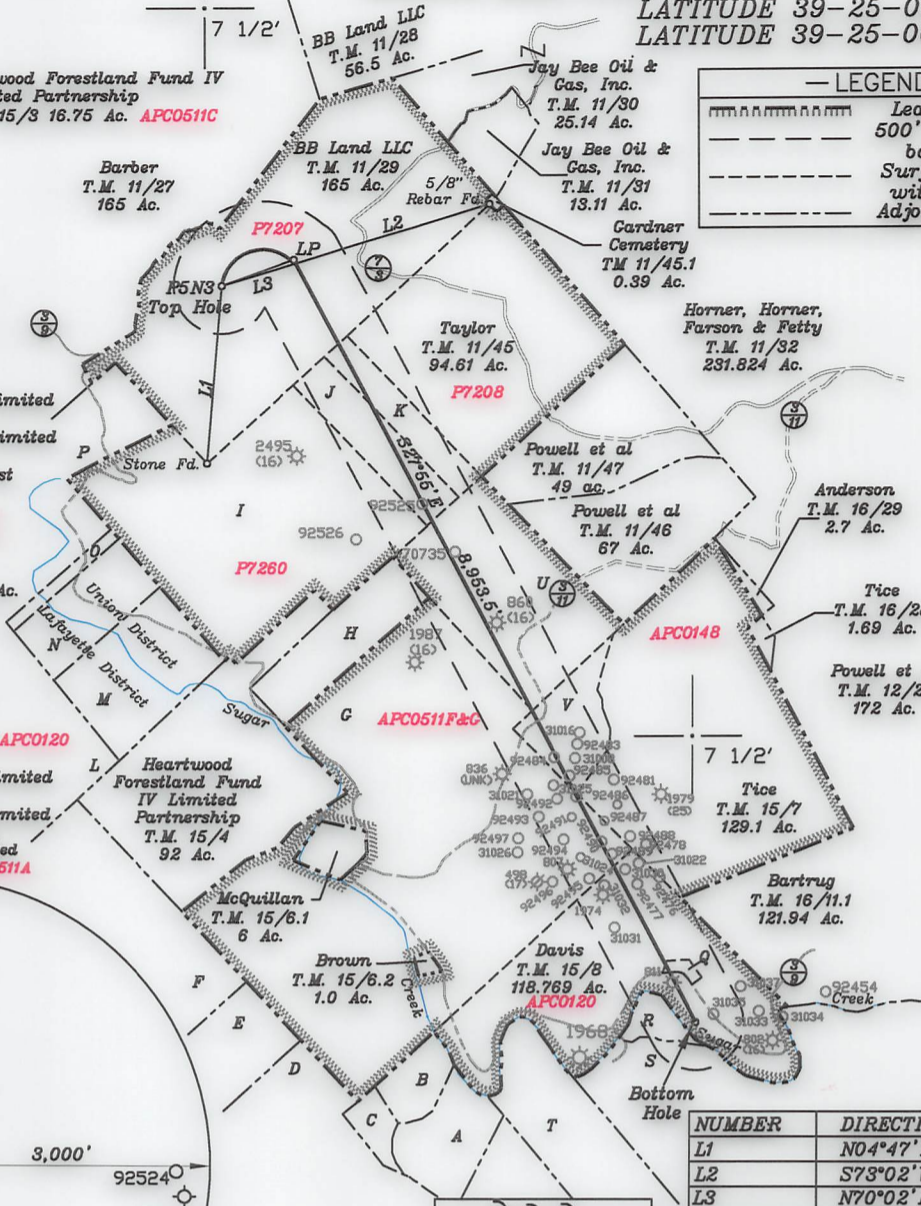


V- Heartwood Forestland Fund IV Limited Partnership  
T.M. 15/3 16.75 Ac. **APC0511C**

— LEGEND —

- Lease lines
- 500' from well bore path
- Surface tracts within lease
- Adjoiner tracts

- A- Napier T.M. 4/28.16 20.524 Ac.
- B- Napier T.M. 4/28.17 17.164 Ac.
- C- Winland T.M. 4/28.18 8.076 Ac.
- D- Hooper T.M. 4/25 23.066 Ac.
- E- Cumn T.M. 4/24 51.0 Ac.
- F- Fleming T.M. 4/15 87.5 Ac.
- G- Heartwood Forestland Fund IV Limited Partnership T.M. 15/6 266 Ac.
- H- Heartwood Forestland Fund IV Limited Partnership T.M. 15/5 50 Ac.
- I- Melanie Jo Manuse Revocable Trust T.M. 11/41 123.27 Ac.
- J- Taylor T.M. 11/44 25.8 Ac. **P7259**
- K- Taylor T.M. 11/43 18.6 Ac. **P7258**
- L- Hall T.M. 4/7 39.5 Ac.
- M- Heartwood Forestland Fund IV Limited Partnership T.M. 15/2 27 Ac.
- N- Golden Eagles Resources LLC & Hummer Properties LLC T.M. 15/12 28.944 Ac.
- O- Hall T.M. 11/49 6.36 Ac.
- P- Golden Eagles Resources LLC & Hummer Properties LLC T.M. 11/40 62.063 Ac.
- Q- Fourqurean T.M. 15/8.1 1.231 Ac. **APC0120**
- R- Hansen T.M. 4/29 3.5 Ac.
- S- Heartwood Forestland Fund IV Limited Partnership T.M. 4/51 114 Ac.
- T- Heartwood Forestland Fund IV Limited Partnership T.M. 15/11 50.00 Ac.
- U- Heartwood Forestland Fund IV Limited Partnership T.M. 15/1 52.5 Ac. **APC0511A**



NUMBER	DIRECTION	DISTANCE
L1	N04°47' E	1,851.9'
L2	S73°02' W	2,919.6'
L3	N70°02' E	801.6'

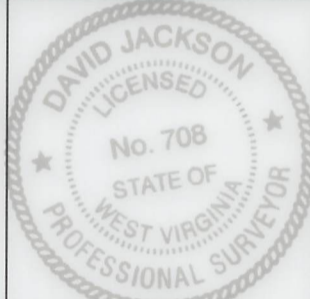
<b>Top Hole</b>	
Geo NAD 83-	39.415462 N, 81.075038 W
UTM NAD 83(Meters)-	4362885.22 N, 493540.48 E
UTM NAD 83(Feet)-	14313899.25 N, 1619224.05 E
<b>Landing Point</b>	
Geo NAD 83-	39.416250 N, 81.072389 W
UTM NAD 83(Meters)-	4362972.47 N, 493768.61 E
UTM NAD 83(Feet)-	14314185.52 N, 1619972.51 E
<b>Bottom Hole</b>	
Geo NAD 83-	39.394733 N, 81.057068 W
UTM NAD 83(Meters)-	4360583.53 N, 495085.93 E
UTM NAD 83(Feet)-	14306347.80 N, 1624294.43 E

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

FILE NO. \_\_\_\_\_  
DRAWING NO. 1  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY 1 in 200  
PROVEN SOURCE OF ELEVATION GPS  
submeter unit

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 THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(SIGNED) David L. Jackson  
R.P.E. \_\_\_\_\_ P.S. 708



STATE OF WEST VIRGINIA  
Division of Environmental Protection  
OFFICE OF OIL AND GAS

DATE June 29, 2018  
Revised July 01, 2019  
OPERATOR'S WELL NO. P5N3  
API WELL NO. 47-073-02586  
STATE COUNTY PERMIT

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X

LOCATION: ELEVATION 868.1' WATER SHED Sugar Creek of Outlet Middle Island Creek (HUC-10)  
DISTRICT Union COUNTY Pleasants  
QUADRANGLE Bens Run 7 1/2'

SURFACE OWNER BB Land, LLC. ACREAGE 165.0 Ac.  
OIL & GAS ROYALTY OWNER Roger Wells, Howard Wells, J.R. Wells, LEASE ACREAGE 165.0 Ac.  
Clint Jones, Beverly Walker, Sara Wells & Thomas Dunsford, Yvonne Shelley LEASE NO. P7207

PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR  
STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW  
FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON CLEAN OUT AND REPLUG  
TARGET FORMATION Marcellus ESTIMATED DEPTH TVD = 5,900'; TMD = 16,155'  
WELL OPERATOR Jay-Bee Oil & Gas, Inc. DESIGNATED AGENT Randy Broda  
ADDRESS 60 Walnut Avenue, Suite 190, Clark NJ 07066 ADDRESS 3570 Shields Hill Rd., Cairo, WV 26337