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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

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

January 3, 2017  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / Horizontal 6A Well - 1

SWN PRODUCTION COMPANY, LLC  
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for JAMES SEABRIGHT BRK 8H  
47-009-00177-00-00

**Modified Surface and Bottom Hole Locations.**

SWN PRODUCTION COMPANY, LLC

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: JAMES SEABRIGHT BRK 8H  
Farm Name: SEABRIGHT, JAMES K. & MARTHA MAY  
U.S. WELL NUMBER: 47-009-00177-00-00  
Horizontal 6A / Horizontal 6A Well - 1  
Date Issued: January 3, 2016

Promoting a healthy environment.

01/06/2017

WW-6B  
(10/14)

~~47-009-00132~~ ~~Canceled~~  
API NO. 47-~~9~~ - ~~00177M08~~ ~~2014~~  
OPERATOR WELL NO. James Seabright BRK 8H  
Well Pad Name: James Seabright BRK Pad

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

- 1) Well Operator: SWN Production Co., LLC 494512924 009-Brooke 1-Buffalo 247-Bethany  
Operator ID County District Quadrangle
- 2) Operator's Well Number: James Seabright BRK 8H Well Pad Name: James Seabright BRK Pad
- 3) Farm Name/Surface Owner: James E. Madra Seabright, Lin Eliza & James H. Seabright Public Road Access: Bealls Ridge Road
- 4) Elevation, current ground: 1129' Elevation, proposed post-construction: 1129'
- 5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_  
(b) If Gas Shallow  Deep \_\_\_\_\_  
Horizontal
- 6) Existing Pad: Yes or No yes *E. Madra 10-17-16*
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):  
Target Formation- Marcellus, Target Top TVD- 6037', Target Base TVD- 6077' Anticipated Thickness- 40', Associated Pressure- 3634
- 8) Proposed Total Vertical Depth: 6062'
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 15405'
- 11) Proposed Horizontal Leg Length: 8999.01'
- 12) Approximate Fresh Water Strata Depths: 250'
- 13) Method to Determine Fresh Water Depths: from nearby water wells
- 14) Approximate Saltwater Depths: 868'
- 15) Approximate Coal Seam Depths: 311'
- 16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.
- 17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes \_\_\_\_\_ No
- (a) If Yes, provide Mine Info: Name: \_\_\_\_\_  
Depth: \_\_\_\_\_  
Seam: \_\_\_\_\_  
Owner: \_\_\_\_\_

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01/06/2017

WW-6B  
(10/14)

API NO. 47- 9 - 00177 Moy  
 OPERATOR WELL NO. James Seabright BRK 01  
 Well Pad Name: James Seabright BRK Pad

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft./CTS)
Conductor	20"	New	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	350'	350'	331 sx/CTS
Coal	9 5/8"	New	J-55	36#	1718'	1718'	666 sx/CTS
Intermediate	7"	New	J-55	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	15,405'	15,405'	Lead 807 on 10/20/17 and 10/27/17
Tubing	2 3/8"	New	P-110	4.7#	Approx. 6094'	Approx. 6094'	
Liners							

*C. J. [Signature]* 10.17.16

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

**PACKERS**

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:				

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**RETTEW Associates, Inc.**  
 27 Travato Street, Suite 101  
 Bridgeport, WV 26330  
 Phone (800) 738-8395  
 Email: rettew@rettew.com  
 Website: www.rettew.com

**SURFACE HOLE LOCATION (SHL):**

UTM (NAD83, ZONE 17, METERS):  
 NORTHING: 4,452,330.785  
 EASTING: 539,873.172

**KICKOFF POINT LOCATION (KOP):**

UTM (NAD83, ZONE 17, METERS):  
 NORTHING: 4,452,342.745  
 EASTING: 539,763.386

**LANDING POINT LOCATION (LPL):**

UTM (NAD83, ZONE 17, METERS):  
 NORTHING: 4,452,176.720  
 EASTING: 539,818.799

**BOTTOM HOLE LOCATION (BHL):**

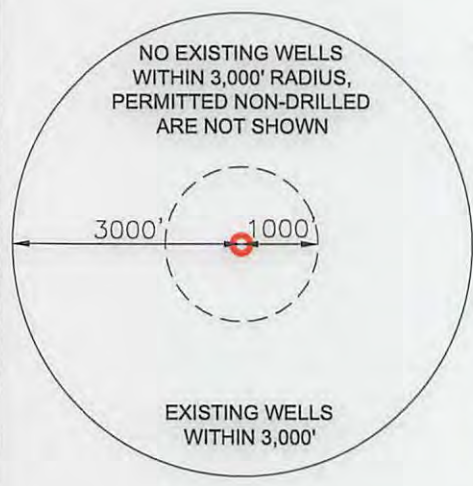
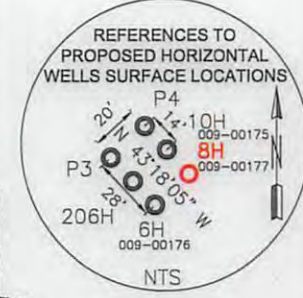
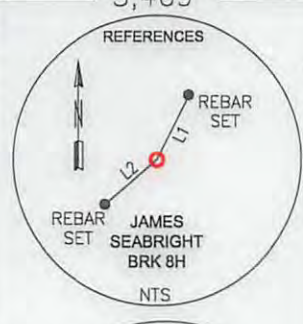
UTM (NAD83, ZONE 17, METERS):  
 NORTHING: 4,449,651.865  
 EASTING: 540,890.536

GRID NORTH  
 UTM, NAD83 DATUM, ZONE 17, US FT

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 26°28'25" E	274.91'	SHL TO REF. PNT.	1/2"Ø REBAR SET
L2	S 49°52'19" W	283.90'	SHL TO REF. PNT.	1/2"Ø REBAR SET
L3	S 42°16'37" E	752.96'	SHL TO GIS CORNER	
L4	S 75°07'20" W	1496.74'	SHL TO GIS CORNER	
L5	S 19°26'21" W	536.02'	SHL TO LP	
L6	S 23°00'00" E	8999.01'	LP TO BHL	

TRACT	SURFACE OWNERS	TAX PARCEL	ACRES
1	JAMES K. SEABRIGHT AND MARTHA MAY SEABRIGHT, HUSBAND AND WIFE, LIFE INTEREST, JAMES H. SEABRIGHT, REMAINDER	03-B39-0008-0000	173.00±
2	JAMES K. AND MARTHA MAE SEABRIGHT, LE, JAMES H. SEABRIGHT AND CECELIA M. SEABRIGHT, REMAINDER	03-B39-0010-0000	160.04±
3	RAYMOND L. TREDWAY AND LINDSEY G. TREDWAY, JOINT TENANTS WITH RIGHT OF SURVIVORSHIP	03-B39-0011-0000	170.38±
4	LINDA REEVES GREATHOUSE AND JAMES RUSSELL, GREATHOUSE, HER HUSBAND	03-B39-0012-0000	202.41±
5	VICKI G. HAMILTON AND SHAWN P. HAMILTON, HER HUSBAND	03-B44-0001-0000	13.60±
6	LINDA REEVES GREATHOUSE AND JAMES RUSSELL, GREATHOUSE, HER HUSBAND	03-B44-0003-0000	73.57±
7	MILDRED MAIN	03-B44-0004-0000	19.58±
8	FORNEY AND SONS HOLDING CO., LLC	03-B44-0005-0000	180.00±

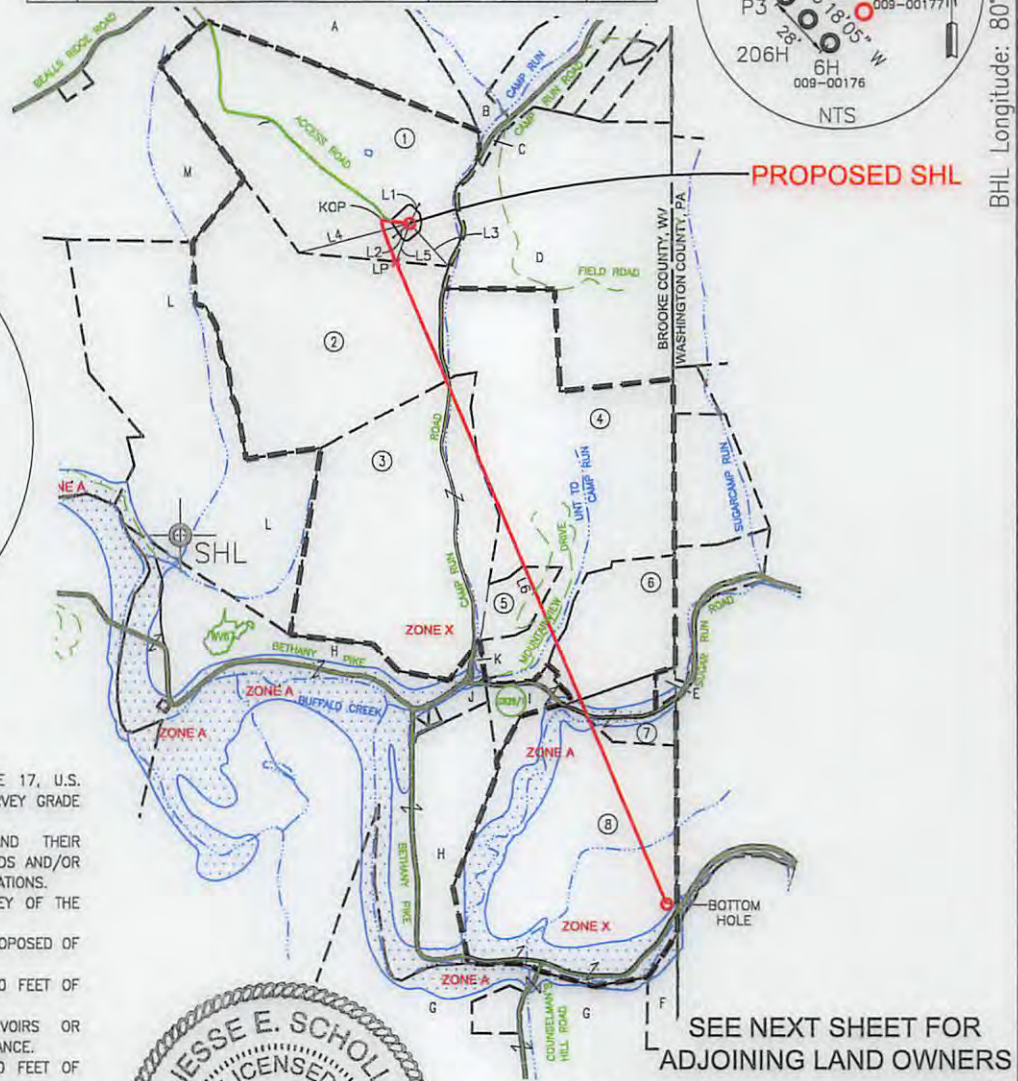


**NOTES ON SURVEY**

- 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.

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. 2313



SEE NEXT SHEET FOR ADJOINING LAND OWNERS

GRAPHIC SCALE IN FEET

COMPANY: **SWN** Production Company, LLC

(+) 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 SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)	COMPANY: <b>SWN</b> Production Company, LLC OPERATOR'S WELL #: 8H API WELL #: 47 900177M09 STATE COUNTY PERMIT
	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"/>	WATERSHED: SUGARCAMP RUN, BUFFALO CREEK DISTRICT: BUFFALO COUNTY: BROOKE SURFACE OWNER: JAMES K. & MARTHA MAY SEABRIGHT; LIFE INTEREST & JAMES H. SEABRIGHT OIL & GAS ROYALTY OWNER: MARTHA MAY SEABRIGHT, LE, & JAMES H. SEABRIGHT

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

CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY) \_\_\_\_\_

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,062' TVD 15,405' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378

DESIGNATED AGENT: DEE SOUTHALL ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:	REVISIONS:	DATE: 10-14-2016
○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR	--- TIE LINE --- LEASE BOUNDARY --- MARCELLUS DHP --- ABANDONED PATH	DRAWN BY: B. HERMAN SCALE: 1" = 2500' DRAWING NO: 087569036 WELL LOCATION PLAT



RETTEW Associates, Inc.  
 27 Travato Street, Suite 101  
 Bridgeport, WV 26330  
 Phone (800) 738-8395  
 Email: rettew@rettew.com  
 Website: www.rettew.com

### ADJOINING SURFACE OWNERS

TRACT	ADJOINING SURFACE OWNER	TAX PARCEL	ACRES
A	MARK WEAVER OWEN AND VIRGINIA K. BEALL	03-B34-0049-0000	243.93±
B	NORMA J. SHIDOCK	03-B34-0050-0000	190.25±
C	JOHN DANA GARNER	03-B39-0003-0000	12.78±
D	JAMES B. CALDWELL	03-B39-0009-0000	182.63±
E	LARRY THOMAS MAIN, II	03-B44-0004-0001	2.11±
F	LARRY AND DEBBIE DOUGLAS	03-B44-0012-0000	11.00±
G	STATE OF WEST VIRGINIA, DEPARTMENT OF COMMERCE, DIVISION OF NATURAL RESOURCES	03-B44-0014-0000	171.67±
H	GENE C. VALENTINE TRUST, DATED NOVEMBER 26, 1986	03-B43-0028-0000	822.26±
I	MILDRED MAIN	03-B44-0006-0000	12.53±
J	CURTIS LEE NEEL AND LOUANN L. NEEL, JOINT TENANTS WITH RIGHT OF SURVIVORSHIP	03-B44-0007-0000	3.97±
K	DONNA M. WEEKLEY	03-B44-0002-0000	1.42±
L	MARK WEAVER OWEN AND VIRGINIA K. BEALL	03-B38-0024-0000	188.00±
M	MARK WEAVER OWEN AND VIRGINIA K. BEALL	03-B38-0019-0000	249.00±

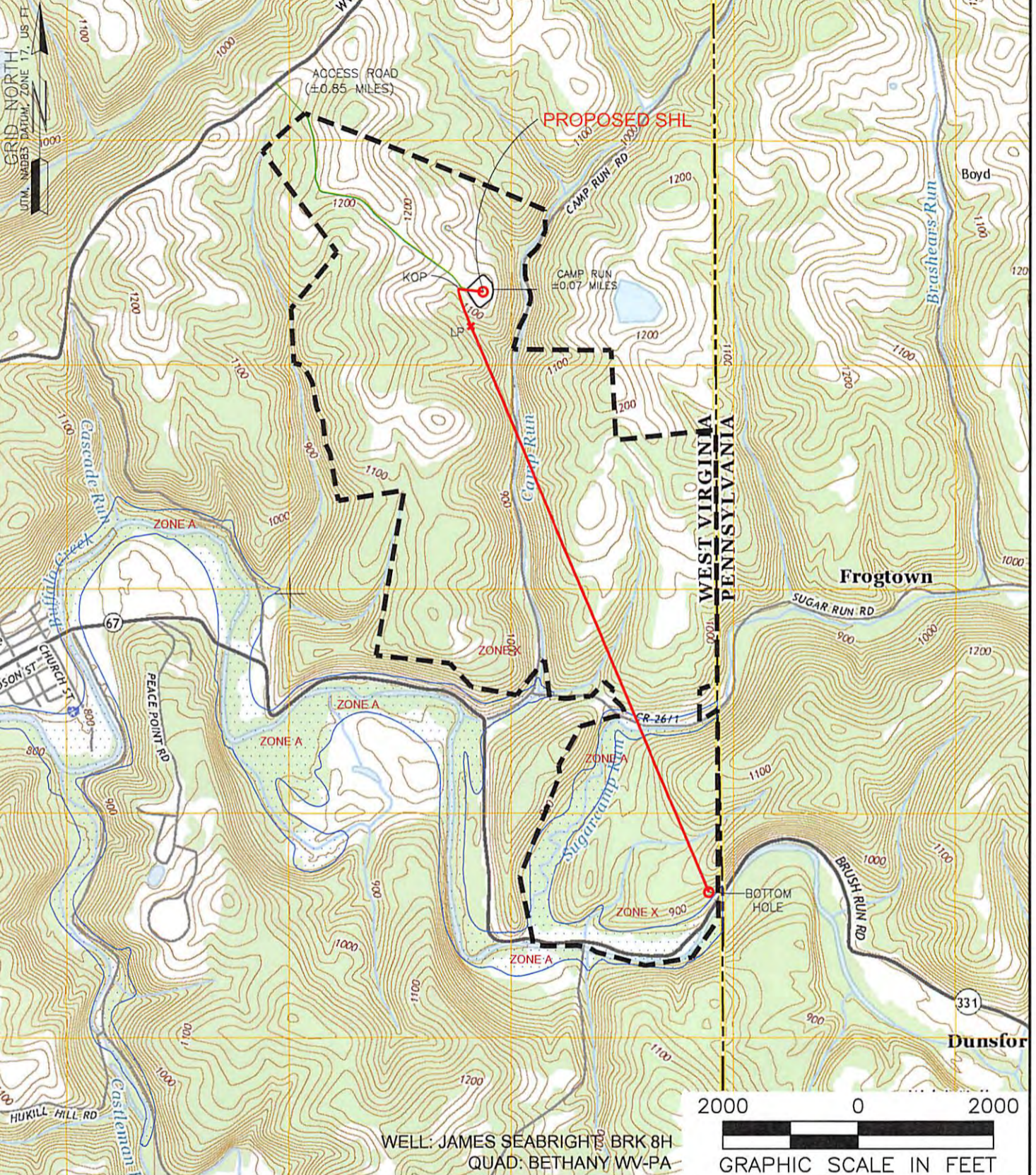
9-00177 MOD

01/06/2017

REVISIONS:	COMPANY:	<b>SWN</b> Production Company, LLC	<b>swN</b> <sup>R<sup>+</sup></sup> / <sub>A</sub> → V <sup>+</sup>	DATE: 10-14-2016
	OPERATOR'S	JAMES SEABRIGHT BRK		DRAWN BY: B. HERMAN
	WELL #:	8H		SCALE: N/A
	LOCATION:	BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA		DRAWING NO: 087569036
				ADJOINING OWNERS

# RETTEW

RETTEW Associates, Inc.  
27 Travato Street, Suite 101  
Bridgeport, WV 26330  
Phone (800) 738-8395  
Email: rette@rette.com  
Website: www.rette.com



WELL: JAMES SEABRIGHT BRK 8H  
QUAD: BETHANY WV-PA



<b>NAME AND DISTANCE TO THE NEAREST STREAM:</b> CAMP RUN IS LOCATED ±0.07 MILES EAST OF THE CENTER OF THE DRILL PAD.		<b>STREAM CROSSING COORDINATES (NAD 83):</b> NO NEW CROSSINGS.		<b>COMPANY:</b> 	
<b>WELL RESTRICTIONS:</b> WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LAGER THAN 2500 SQ FT: >625 FEET		<b>OPERATOR'S</b> JAMES SEABRIGHT BRK		<b>WELL #:</b> 8H <i>9-00177400</i>	
<b>FEMA FLOOD INFORMATION:</b> BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54009C0135D; EFFECTIVE DATE: APRIL 19, 2010.  FLOOD ZONES A & X ARE SITUATED WITHIN THE UNIT.		<b>LOCATION:</b> BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA		<b>SURFACE HOLE LOCATION:</b> GEOGRAPHIC (NAD83): LATITUDE: 40.220450° LONGITUDE: -80.531371° <span style="color: red; font-weight: bold;">01/06/2017</span>	
<b>LEGEND:</b> 		<b>BOTTOM HOLE LOCATION:</b> GEOGRAPHIC (NAD83): LATITUDE: 40.196266° LONGITUDE: -80.519585°		<b>REVISIONS:</b> DATE: 10-14-2016	
				<b>DATE:</b> 10-14-2016	
				<b>DRAWN BY:</b> B. HERMAN <b>SCALE:</b> 1" = 2000' <b>DRAWING NO:</b> 087569036 <b>TOPOGRAPHIC MAP</b>	

October 18, 2016

Ms. Laura Adkins  
Office of Oil & Gas  
601 57<sup>th</sup> Street  
Charleston, WV 25304

**RE:** Proposed New Well James Seabright BRK 6H, James Seabright 8H, & James Seabright 10H

Dear Ms. Adkins

SWN has reviewed the area of the above mentioned well and discovered no shallow wells within 500' of the lateral. This well is situated on the Seabright's property, in Buffalo District, Brooke County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1614

Thank you.

Sincerely,

  
Dee Southall  
Regulatory Supervisor  
Southwestern Energy Production Company, LLC  
PO Box 1300  
Jane Lew, WV 26378

Received  
Office of Oil & Gas  
OCT 20 2016

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