



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Tuesday, September 8, 2020
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for ROBERT BONE BRK 10H
47-009-00287-00-00

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: ROBERT BONE BRK 10H
Farm Name: ROBERT BONE
U.S. WELL NUMBER: 47-009-00287-00-00
Horizontal 6A New Drill
Date Modification Issued: September 8, 2020

Promoting a healthy environment.

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-Brook 01-Buffal 247-Bethany
Operator ID County District Quadrangle

2) Operator's Well Number: Robert Bone BRK 10H Well Pad Name: Robert Bone BRK Pad

3) Farm Name/Surface Owner: Robert Bone Public Road Access: Hukill Run Road

4) Elevation, current ground: 1148' Elevation, proposed post-construction: 1148'

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

(b) If Gas Shallow Deep _____
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip Well to the South, Target Top TVD- 6087', Target Base TVD- 6139', Anticipated Thickness- 52', Associated Pressure- 3390

8) Proposed Total Vertical Depth: 6125'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 27220'

11) Proposed Horizontal Leg Length: 20627.79

12) Approximate Fresh Water Strata Depths: 344'

13) Method to Determine Fresh Water Depths: Salinity Profile

14) Approximate Saltwater Depths: 627' Salinity Profile

15) Approximate Coal Seam Depths: 309'

16) Approximate Depth to Possible Void (coal mine, karst, other): Possible Void 309'

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: _____

C. J. RO 12-23-19

Page 1 of 3
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WW-6B
(04/15)

API NO. 47-009 - **00287 MOD**
 OPERATOR WELL NO. Robert Bone BRK 10H
 Well Pad Name: Robert Bone 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# | 420' | 420' | 410 sx/CTS |
| Coal | See | Surface | Casing | | | | |
| Intermediate | 9 5/8" | New | J-55 | 36# | 1643' | 1643' | 637 sx/CTS |
| Production | 5 1/2" | New | HCP-110 | 20# | 27220' | 27220' | use 110psi/204 4972cu 100' needs 110psi |
| Tubing | | | | | | | |
| Liners | | | | | | | |

C. BLO 12-23-19

| TYPE | Size (in) | Wellbore Diameter (in) | Wall Thickness (in) | Burst Pressure (psi) | Anticipated Max. Internal 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 | See | Surface | Casing | | | | |
| Intermediate | 9 5/8" | 12 1/4" | 0.395 | 3950 | 1768 | Class A | 1.19/50% Excess |
| Production | 5 1/2" | 8 3/4" | 0.361 | 12360 | 9500 | Class A | 1.20/50% Excess |
| Tubing | | | | | | | |
| Liners | | | | | | | |

PACKERS

| | | | | |
|-------------|--|--|--|--|
| Kind: | | | | |
| Sizes: | | | | |
| Depths Set: | | | | |

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

Drill and stimulate any potential zones between and including the Benson to Marcellus. **If we should encounter a void place basket above and below void area- balance cement to bottom of void and grout from basket to surface or run external casing packer/cementing stage tool above void interval and perform 2 stage cementing operation dependent upon depth of void. Run casing not less than 20' below void nor more than 75' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' below and cts.)

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

Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface. The well is produced through surface facilities consisting of high pressure production unites, horizontal separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 100 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 15.30

22) Area to be disturbed for well pad only, less access road (acres): 5.97

23) Describe centralizer placement for each casing string:

All casing strings will be ran with a centralizer at a minimum of 1 per every 3 joints of casing.

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

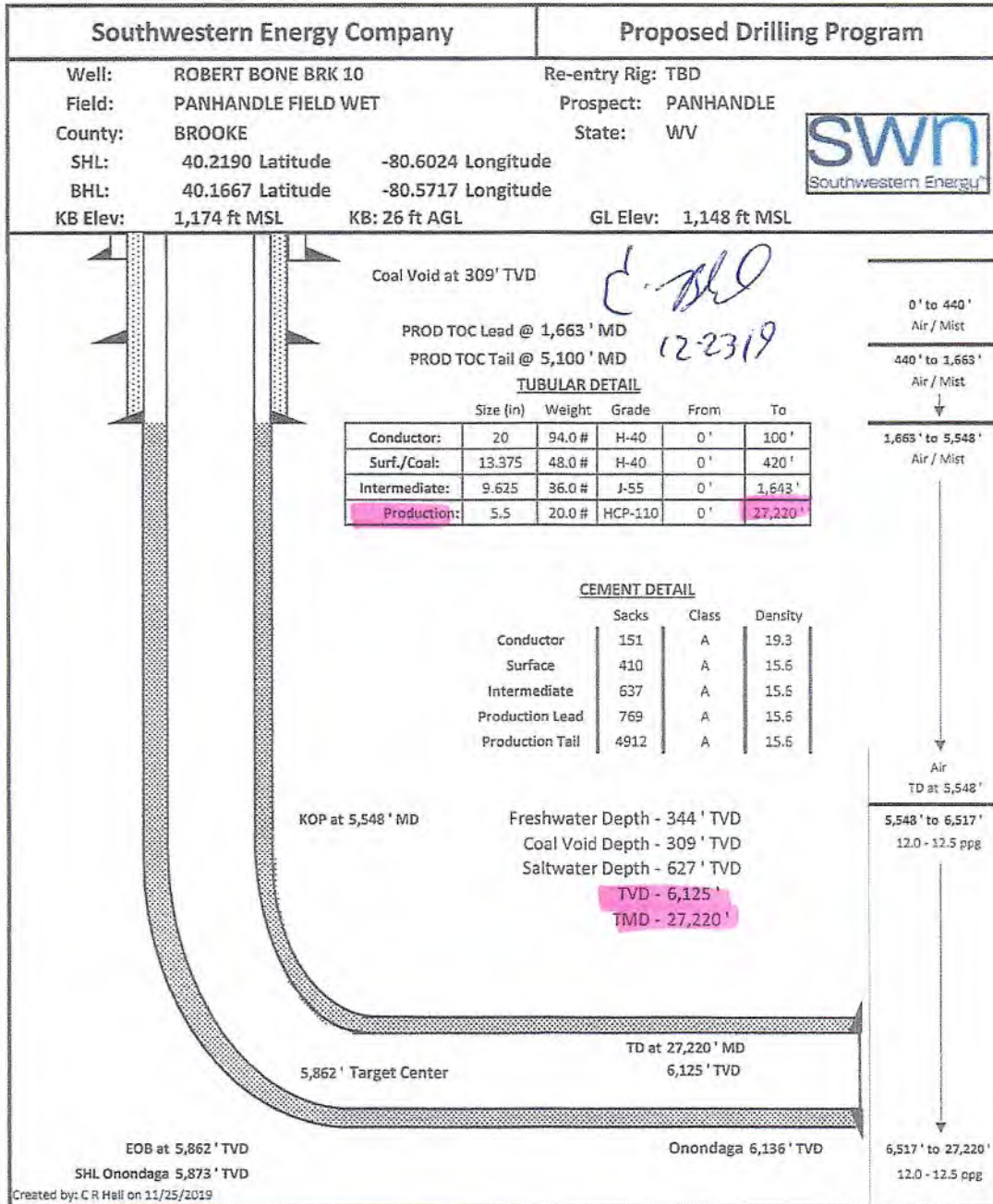
See Attachment ***

25) Proposed borehole conditioning procedures:

All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

*Note: Attach additional sheets as needed.

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WW-6A1
(5/13)

Robert Bone
BRK 10H
Operator's Well No. _____

**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 |
|----------------------|-----------------------|-----------------------|---------|-----------|
|----------------------|-----------------------|-----------------------|---------|-----------|

See Exhibit A

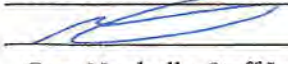
**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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

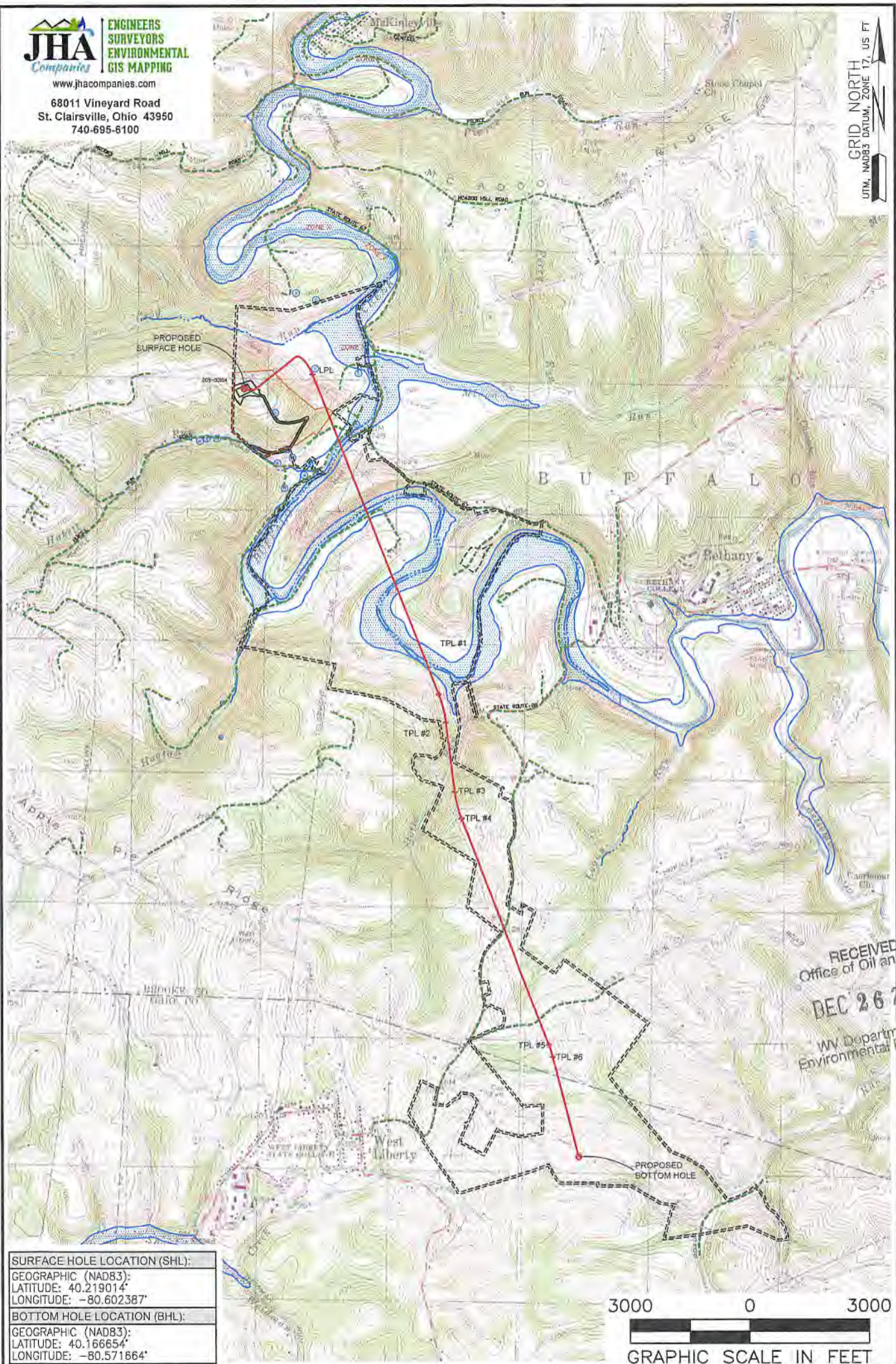
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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired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

Well Operator: SWN Production Co., LLC
By: 
Its: Gary Nuckolls, Staff Landman

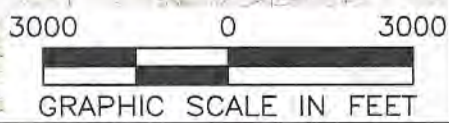
JHA
Companies
ENGINEERS
SURVEYORS
ENVIRONMENTAL
GIS MAPPING
www.jhacompanies.com
68011 Vineyard Road
St. Clairsville, Ohio 43950
740-695-6100

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



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| |
|-------------------------------------|
| SURFACE HOLE LOCATION (SHL): |
| GEOGRAPHIC (NAD83): |
| LATITUDE: 40.219014° |
| LONGITUDE: -80.602387° |
| BOTTOM HOLE LOCATION (BHL): |
| GEOGRAPHIC (NAD83): |
| LATITUDE: 40.166654° |
| LONGITUDE: -80.571664° |



NOTES ON SURVEY
1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

| | |
|---------------------------------------|---------------------------|
| LEGEND: | NATURAL WATERWAY |
| ● PROPOSED SURFACE HOLE / BOTTOM HOLE | ACCESS ROAD |
| ⊙ EXISTING / PRODUCING WELLHEAD | PUBLIC ROAD |
| LPL LANDING POINT LOCATION | ACCESS ROAD TO PREV. SITE |
| ⊙ FLOOD PLAIN | LEASE BOUNDARY |
| | PROPOSED PATH |

| | | | |
|--|---|----------------------|-----------------------------|
| WELL OPERATOR: SWN PRODUCTION COMPANY, LLC | WELL (FARM) NAME: ROBERT BONE BRK | WELL # 10H | SERIAL # XXXX |
| ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201, MORGANTOWN, WV 26508 | COUNTY: BROOKE | CODE: 009 | DISTRICT: BUFFALO |
| SURFACE OWNER: ROBERT BONE | USGS 7 1/2 QUADRANGLE MAP NAME: BETHANY, WV | | |

LATITUDE: 40°15'00" SURFACE HOLE (2000' SCALE)

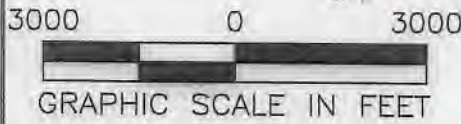
5374'

LATITUDE: 40°12'30" BOTTOM HOLE (2000' SCALE)

8444'



68011 Vineyard Road
St. Clairsville, Ohio 43950
740-695-6100



NOTES ON SURVEY

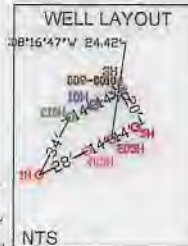
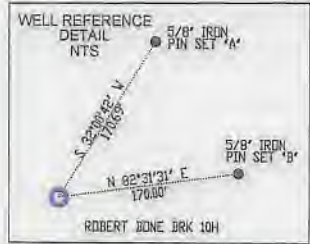
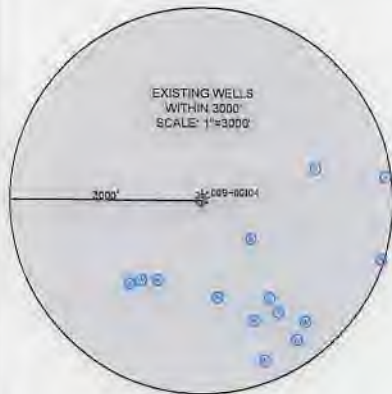
1. COORDINATE SYSTEM IS UTM NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
5. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
6. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF THE LIMITS OF DISTURBANCE.
7. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.

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

LONGITUDE: 80°32'30" BOTTOM HOLE (2000' SCALE)

11298'

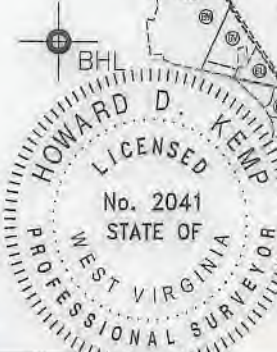
| LINE | BEARING | DISTANCE |
|------|---------------|-----------|
| L1 | N 56°25'13" E | 854.64' |
| L2 | S 77°24'20" E | 2,095.57' |



| |
|---|
| SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4452141.89 EASTING: 533831.48 |
| LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4452261.19 EASTING: 534352.97 |
| BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4446342.44 EASTING: 536473.62 |

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. 2041



COMPANY: **SWN** Production Company, LLC

| | | |
|---|--|---|
| WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034 | (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT) | ROBERT BONE BRK OPERATOR'S WELL #: 10H API WELL #: 47 009 00287 MID STATE COUNTY PERMIT |
|---|--|---|

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

WATERSHED: UPPER OHIO SOUTH DISTRICT: BUFFALO COUNTY: BROOKE ELEVATION: 1,147.6'

SURFACE OWNER: ROBERT BONE QUADRANGLE: BETHANY, WV

OIL & GAS ROYALTY OWNER: ROBERT BONE ACREAGE: ±81.99

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: 6,125' TVD 27,220' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

DESIGNATED AGENT: BRITTANY WOODY ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

| | | |
|--|--|---|
| LEGEND: (●) PROPOSED SURFACE HOLE / BOTTOM HOLE (⊙) EXISTING / PRODUCING WELLHEAD LPL LANDING POINT LOCATION (W) EXISTING WATER WELL (S) EXISTING SPRING | (---) NATURAL WATERWAY (---) SURVEYED BOUNDARY (==) LEASE BOUNDARY (---) PROPOSED PATH (---) PUBLIC ROAD | REVISIONS: DATE: 12-11-2019 API NO: 47-069-XXXX DRAWN BY: R.GRIMES SCALE: 1" = 3000' DRAWING NO: 2017-219 WELL LOCATION PLAT |
|--|--|---|

LONGITUDE: 80°35'00" SURFACE HOLE (2000' SCALE)

9-00287 mod

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator

Robert Bone BRK 10H

Brooke County, West Virginia

| # | TMP | LESSOR | LESSEE | ROYALTY | BK/PG |
|----|------------------------|---|---|---------|---|
| 1) | 03-0B37-0081-0000-0000 | Robert O. Bone, married | Chesapeake Appalachia, LLC SWN Production Company, LLC | 14.00% | 10/424 ✓ 30/480 |
| 2) | 03-0B37-0050-0000-0000 | John L Latimer and Angela Latimer, husband and wife, and Deborah S. Starr, single | Great Lakes Eneqy Partners, LLC Range Resources - Appalachia, LLC Chesapeake Appalachia, LLC SWN Production Company, LLC | 14.00% | 9/713 20/733 10/552 30/480 |
| | | William E. Johnston and Hazel E. Johnston, husband and wife | Chesapeake Appalachia, LLC SWN Production Company, LLC | 18.00% | 12/298 ✓ 30/480 |
| 3) | 03-0B37-0074-0001-0000 | Mary Jane Sanford, widow | Great Lakes Eneqy Partners, LLC | 14.00% | 10/82 ✓ |
| | | | Chesapeake Appalachia, LLC SWN Production Company, LLC | | 10/552 30/480 |
| | | David Morris, widower | Great Lakes Eneqy Partners, LLC Chesapeake Appalachia, LLC SWN Production Company, LLC | 14.00% | 10/79 10/552 30/480 |
| | | Edward Dryden | SWN Production Company, LLC | 15.00% | 32/166 |
| | | Charity M. Harshman & David A Harshman | SWN Production Company, LLC | 15.00% | 31/641 |
| | | Paula L. Berry | SWN Production Company, LLC | 17.00% | 32/365 |
| | | William C. Groom | SWN Production Company, LLC | 15.00% | 31/662 |
| | | Catherine Jane Ballentine | SWN Production Company, LLC | 15.00% | 31/655 |
| | | Jeffery E. Groom | SWN Production Company, LLC | 15.00% | 31/669 |
| | | Priscilla Ann Campbell | SWN Production Company, LLC | 16.00% | 32/513 |
| | | Debra Kay Campbell | SWN Production Company, LLC | 16.00% | 32/503 |
| | | Dorothy Jean Spring | SWN Production Company, LLC | 16.00% | 32/508 |
| | | Sarah J Graham | SWN Production Company, LLC | 17.00% | 32/218 |
| | | Rebecca Welton | SWN Production Company, LLC | 16.00% | 32/547 |

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Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator
 Robert Bone BRK 10H
 Brooke County, West Virginia

| | | | | | | |
|----|------------------------|--|---------------------------------|--------|--------|---|
| | Constance Sue Etzkin | SWN Production Company, LLC | 16.00% | 32/552 | | |
| | Jeffrey Wayne Smith | SWN Production Company, LLC | 15.00% | 31/11 | | |
| | Jennifer Dreher | SWN Production Company, LLC | 15.00% | 32/537 | | |
| | Josh Dryden | SWN Production Company, LLC | 15.00% | 32/156 | | |
| | Nichole Johnson | SWN Production Company, LLC | 15.00% | 32/161 | ✓ | |
| | Jennifer Lynn Host | SWN Production Company, LLC | 15.00% | 31/648 | | |
| 4) | 03-0B37-0074-0000-0000 | Mary Jane Sanford, widow | Great Lakes Enegy Partners, LLC | 14.00% | 10/82 | |
| | | | Chesapeake Appalachia, LLC | | 10/552 | |
| | | | SWN Production Company, LLC | | 30/480 | |
| | | David Morris, widower | Great Lakes Enegy Partners, LLC | 14.00% | 10/79 | |
| | | | Chesapeake Appalachia, LLC | | 10/552 | |
| | | | SWN Production Company, LLC | | 30/480 | |
| | | Edward Dryden | SWN Production Company, LLC | 15.00% | 32/166 | |
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| | | Paula L. Berry | SWN Production Company, LLC | 17.00% | 32/365 | |
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| | | Catherine Jane Ballentine | SWN Production Company, LLC | 15.00% | 31/655 | |
| | | Jeffery E. Groom | SWN Production Company, LLC | 15.00% | 31/669 | |
| | | Priscilla Ann Campbell | SWN Production Company, LLC | 16.00% | 32/513 | |
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| | | Dorothy Jean Spring | SWN Production Company, LLC | 16.00% | 32/508 | |
| | | Sarah J Graham | SWN Production Company, LLC | 17.00% | 32/218 | |
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| | | Jennifer Dreher | SWN Production Company, LLC | 15.00% | 32/537 | |
| | | Josh Dryden | SWN Production Company, LLC | 15.00% | 32/156 | |
| | | Nichole Johnson | SWN Production Company, LLC | 15.00% | 32/161 | |
| | | Jennifer Lynn Host | SWN Production Company, LLC | 15.00% | 31/648 | |
| 5) | 03-0B37-0068-0000-0000 | Theodore W Bunnell, single | Chesapeake Appalachia | 18.00% | 22/602 | ✓ |
| | | | SWN Production Company, LLC | | 30/480 | |

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9-06287MOD

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator
 Robert Bone BRK 10H
 Brooke County, West Virginia

| | | | | | |
|-----|------------------------|--|-------------------------------|--------|--------|
| 6) | 03-0B37-0066-0000-0000 | LPS Investment Partnership | SWN Production Company, LLC | 16.00% | 32/737 |
| 7) | 03-0B37-0076-0000-0000 | Jo Ellen Sanford Haizlett and James Alan Haizlett | Chesapeake Appalachia, LLC | 18.00% | 23/577 |
| | | Ann Sanford Paull and Stephen B. Paull | SWN Production Company, LLC | | 30/480 |
| | | Ellen B. Sanford, widow | Chesapeake Appalachia, LLC | 18.00% | 23/579 |
| | | | SWN Production Company, LLC | | 30/480 |
| | | Harry Estil Sanford, single | Chesapeake Appalachia, LLC | 18.00% | 23/581 |
| | | | SWN Production Company, LLC | | 30/480 |
| | | Evelyn Hill Sanford Chehi and Robert D. Chehi | Chesapeake Appalachia, LLC | 18.00% | 23/583 |
| | | SWN Production Company, LLC | | 30/480 | |
| 8) | 03-0B42-0060-0000-0000 | CHK-MAC, LLC | Chesapeake Appalachia, LLC | 15.00% | 28/641 |
| | | | SWN Production Company, LLC | | 31/288 |
| 9) | 03-0B38-0056-0000-0000 | Robert D. Chehi and Eveleyn Hill Sanford Chehi, husband and wife | Chesapeake Appalachia, L.L.C. | 18.00% | 23/521 |
| | | | SWN Production Company, LLC | | 30/480 |
| | | Stephen B. Paull and Ann Sanford Paull, husband and wife | Chesapeake Appalachia, L.L.C. | 18.00% | 23/579 |
| | | | SWN Production Company, LLC | | 30/480 |
| | | Harry Estil Sanford, Single | Chesapeake Appalachia, L.L.C. | 18.00% | 23/583 |
| | | SWN Production Company, LLC | | 30/480 | |
| | | James Alan Haizlett and Jo Ellen Haizlett, husband and wife | Chesapeake Appalachia, L.L.C. | 18.00% | 26/496 |
| | | | SWN Production Company, LLC | | 30/480 |
| | | Ellen B. Sanford, widow | Chesapeake Appalachia, L.L.C. | 18.00% | 26/498 |
| | | | SWN Production Company, LLC | | 30/480 |
| 10) | 03-0B42-0047-0000-0000 | Bounty Minerals, LLC | SWN Production Company, LLC | 18.00% | 39/582 |
| 11) | 03-0B42-0045-0000-0000 | Thurman O. Speece, Jr., married | Chesapeake Appalachia, LLC | 18.00% | 14/200 |

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9-00287 Mon

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator
 Robert Bone BRK 10H
 Brooke County, West Virginia

| | | | | | |
|-----|---|--------------------------------------|-----------------------------------|--------|--------|
| | | SWN Production Company, LLC | | 30/480 | |
| | Goldie Stanley, married | Chesapeake Appalachia, LLC | 18.00% | 14/198 | |
| | | SWN Production Company, LLC | | 30/480 | |
| | Catherine Esther Schmitz a/k/a Tina Schmitz | SWN Production Company, LLC | 15.00% | 32/85 | |
| | Deborah Niblock | SWN Production Company, LLC | 15.00% | 32/79 | |
| 12) | 03-0B42-0044-0000-0000 | Thurman O. Speece, Jr., married | Chesapeake Appalachia, LLC | 18.00% | 13/472 |
| | | | SWN Production Company, LLC | | 30/480 |
| | | Goldie Stanley, married | Chesapeake Appalachia, LLC | 18.00% | 14/202 |
| | | | SWN Production Company, LLC | | 30/480 |
| 13) | 03-0B43-0021-0000-0000 | John Frederick Douglas | Chesapeake Appalachia, LLC | 18.00% | 17/540 |
| | | | SWN Production Company, LLC | | 30/480 |
| 14) | 03-0B48-0001-0000-0000 | Charles W. Bonar and Charlotte Bonar | Phillips Petroleum Company | 12.50% | 8/641 |
| | | | Great Lakes Energy Partners, LLC | | 9/395 |
| | | | Range Resources - Appalachia, LLC | | 20/733 |
| | | | Chesapeake Appalachia, LLC | | 10/552 |
| | | | SWN Production Company, LLC | | 30/480 |
| 15) | 03-0B48-0044-0000-0000 | Rosemarie Stewart | Fortuna Energy | 12.50% | 10/22 |

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EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator Robert Bone BRK 10H

Brooke County, West Virginia

| | | | | |
|-----|------------------------|-----------------------|-----------------------------------|--------------|
| | | | Range Resources - Appalachia, LLC | 10/465 |
| | | | Chesapeake Appalachia, LLC | 10/552 |
| | | | SWN Production Company, LLC | 30/480 |
| 16) | 03-0B48-0002-0003-0000 | Rosemarie Stewart | Fortuna Energy | 12.50% 10/22 |
| | | | Range Resources - Appalachia, LLC | 10/465 |
| | | | Chesapeake Appalachia, LLC | 10/552 |
| | | | SWN Production Company, LLC | 30/480 |
| 17) | 03-0B48-0002-0002-0000 | Rosemarie Stewart | Fortuna Energy | 12.50% 10/22 |
| | | | Range Resources - Appalachia, LLC | 10/465 |
| | | | Chesapeake Appalachia, LLC | 10/552 |
| | | | SWN Production Company, LLC | 30/480 |
| 18) | 03-0B48-0003-0000-0000 | Melanie Diane Stewart | SWN Production Company, LLC | 18.00% 38/59 |
| 19) | 03-0B48-0002-0001-0000 | Rosemarie Stewart | Fortuna Energy | 12.50% 10/22 |
| | | | Range Resources - Appalachia, LLC | 10/465 |
| | | | Chesapeake Appalachia, LLC | 10/552 |
| | | | SWN Production Company, LLC | 30/480 |

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EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator
 Robert Bone BRK 10H
 Brooke County, West Virginia

| | | | | | |
|-----------------------------------|-----------------------------|-----------------------------------|-----------------------------------|-----------------------------|---------|
| 20) | 03-0B48-0008-0001-0000 | Glen W. Cox and Mary K. Cox | Chesapeake Appalachia, LLC | 14.00% | 11/552 |
| | | | SWN Production Company, LLC | | 30/480 |
| 21) | 03-0B48-0008-0000-0000 | Glen W. Cox and Mary K. Cox | Chesapeake Appalachia, LLC | 14.00% | 11/552 |
| | | | SWN Production Company, LLC | | 30/480 |
| 22) | 03-0B48-0008-0016-0000 | Joseph T. Hupp and Elizabeth Hupp | Chesapeake Appalachia, LLC | 15.00% | 10/400 |
| | | | SWN Production Company, LLC | | 30/480 |
| | | John W. Hupp and Mary M. Hupp | Chesapeake Appalachia, LLC | 15.00% | 10/396 |
| | | | SWN Production Company, LLC | | 30/480 |
| Robert Double and Linda H. Double | Chesapeake Appalachia, LLC | 15.00% | 10/392 | | |
| | SWN Production Company, LLC | | 30/480 | | |
| 23) | 03-0L2-0002-0000-0000 | Mark Sonda | SWN Production Company, LLC | 17.00% | 913/539 |
| | | | Scott Sonda | SWN Production Company, LLC | 17.00% |
| 24) | 03-0L1-0038-0000-0000 | John D. Cox and Emily L. Cox | Great Lakes Enegrty Partners, LLC | 12.50% | 774/721 |
| | | | Range Resources - Appalachia, LLC | | 20/733 |
| | | | Chesapeake Appalachia, LLC | | 808/528 |
| | | | SWN Production Company, LLC | | 883/527 |

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 Environmental Protection

July 18, 2018

Ms. Laura Adkins
WV DEP Office of Oil & Gas
601 57th St., SE
Charleston, WV 25304

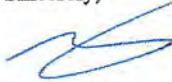
RE: SWN's proposed New Well: Robert Bone BRK 10H in Brooke County, West Virginia, Drilling under Hukill Run Road and State Route 67.

Dear Ms. Adkins:

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under Hukill Run Road and State Route 67. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you.

Sincerely,



Gary Nuckolls
Staff Landman
SWN Production Company, LLC
PO Box 1300
Jane Lew, WV 26378

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SWN Production Company, LLC
1300 Fort Pierpont Dr, Ste 201
Morgantown, WV 26508
Tel: 304 884 1610
Fax: 304 471 2497
www.swn.com

December 23, 2019

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

RE: Proposed Modification: Robert Bone BRK 10H

Dear Ms. Adkins

Enclosed please find the updated 6B, casing, WBD, mylar, and 6A1 for the above captioned well. We are extending the lateral. This well is situated on the Bone's property, in Buffalo District, Brooke County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1613

Thank you.

Sincerely,

A handwritten signature in blue ink that reads "Brittany Woody".

Brittany Woody
Senior Regulatory Analyst
Southwestern Energy Production Company, LLC

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Environmental Protection

A logo consisting of the letters "R", "A", and "V" in a stylized, red font. The "R" and "A" are stacked vertically, and an arrow points from the "A" to the "V". A small registered trademark symbol (®) is to the right of the "V".

The Right People doing the Right Things,
wisely Investing the cash flow from our
underlying Assets, will create Value+®