



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

Wednesday, August 08, 2018
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for RAYLE COAL OHI 206H
47-069-00270-00-00

Lateral Extension TMD 22,509'

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: RAYLE COAL OHI 206H
Farm Name: RAYLE COAL COMPANY
U.S. WELL NUMBER: 47-069-00270-00-00
Horizontal 6A New Drill
Date Modification Issued: August 8, 2018

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 069-Ohio 5- Richland 641- Tiltonsville
Operator ID County District Quadrangle

2) Operator's Well Number: Rayle Coal OHI 206H Well Pad Name: Rayle Coal OHI PAD

3) Farm Name/Surface Owner: Rayle Coal Company Public Road Access: Huffs Run Road

4) Elevation, current ground: 1064' Elevation, proposed post-construction: 1064'

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No Yes

C. Del 5.7.18

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- 5935', Target Base TVD- 5981', Anticipated Thickness- 46', Associated Pressure- 3888

8) Proposed Total Vertical Depth: 5957'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22,509'

11) Proposed Horizontal Leg Length: 15,816.32'

12) Approximate Fresh Water Strata Depths: 291'

13) Method to Determine Fresh Water Depths: Nearby Water Well

14) Approximate Saltwater Depths: 556' Salinity Profile Analysis

15) Approximate Coal Seam Depths: 237'

16) Approximate Depth to Possible Void (coal mine, karst, other): Possible Void 237'


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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WV Department of
Environmental Protection

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'	349 sx/CTS
Coal							
Intermediate	9 5/8"	New	J-55	36#	1731'	1731'	673 sx/CTS
Production	5 1/2"	New	HCP-110	20#	22,509'	22,509'	lead 883 sx Tail 3728 sx/ 100 inside in 
Tubing							
Liners							

C. B. O. 5-7-14

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	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	1.20/50% 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:				

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 units, vertical 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): 15.81

22) Area to be disturbed for well pad only, less access road (acres): 3.40

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.

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MAY 24 2018
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Environmental Protection

*Note: Attach additional sheets as needed.

Southwestern Energy Company

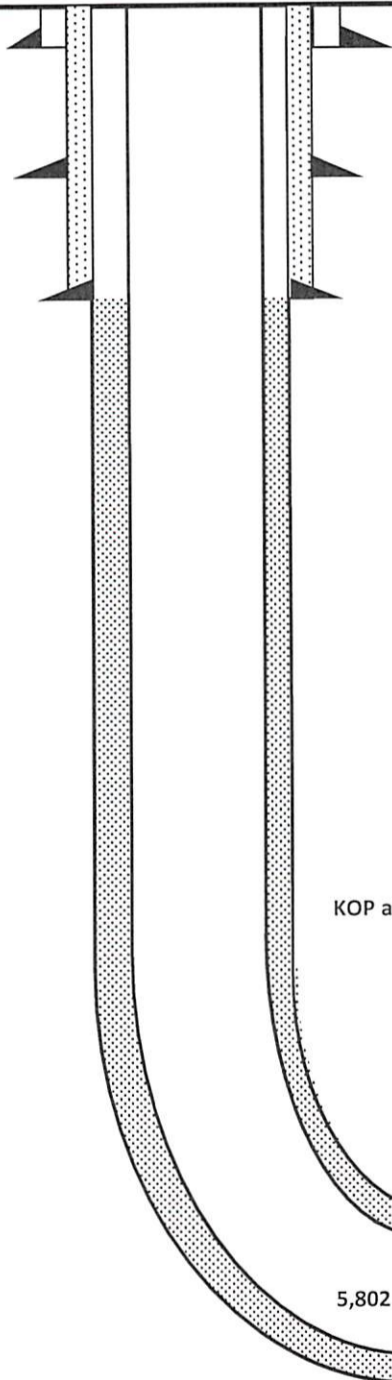
Proposed Drilling Program

Well: RAYLE COAL OHI 206
 Field: PANHANDLE FIELD \\
 County: OHIO
 SHL: 40.1615 Latitude -80.6269 Longitude
 BHL: 40.1169 Latitude -80.6207 Longitude
 KB Elev: 1,091 ft MSL KB: 26 ft AGL

Re-entry Rig: TBD
 Prospect: PANHANDLE
 State: WV



GL Elev: 1,064 ft MSL



Coal Void @ 237'

TOC Lead at 1,751' MD
 TOC Tail at 5,702' MD

C. Bell
 5-7-18

Tubular Detail

	Size (in)	Weight	Grade	From	To
Conductor	20	94.0 #	H-40	0'	100'
Surface	13.375	48.0 #	H-40	0'	350'
Intermediate	9.625	36.0 #	J-55	0'	1,731'
Production	5.5	20.0 #	HCP-110	0'	22,509'

Cement Detail

	Sacks	Class	Density
Conductor	151	A	19.3
Surface	349	A	15.6
Intermediate	673	A	15.6
Production Lead	883	A	15.6
Production Tail	3728	A	15.6

KOP at 5,802' MD

Water Depth - 291' TVD
 Coal Depth (VOID) - 237' TVD
 TVD - 5,957'
 TMD - 22,509'

5,802' Target Center

TD at 22,509' MD
 5,957' TVD

EOB at 5,802' TVD

SHL Onondaga 5,826' TVD

Onondaga 5,981' TVD

6,693' to 22,509'
 12.0 - 12.5 ppg

0' to 370'
 Air / Mist
 370' to 1,751'
 Air / Mist
 1,751' to 5,802'
 Air / Mist

Air
 TD at 5,802'
 5,802' to 6,693'
 12.0 - 12.5 ppg

RECEIVED
 Office of Oil and Gas

MAY 24 2018

WV Department of
 Environmental Protection

August 7, 2018

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

RE: Proposed New Well Rayle Coal OHI 206H

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 Rayle Coal's property, in Richlad District, Ohio County, West Virginia.

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

Thank you.

Sincerely,

Brittany Woody

Brittany Woody
Regulatory Analyst
Southwestern Energy Production Company, LLC



69-00270
meh

WW-6A1
(5/13)

Operator's Well No. Rayle Coal OHI 206H

**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
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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

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 Company, LLC.

By:

Its:

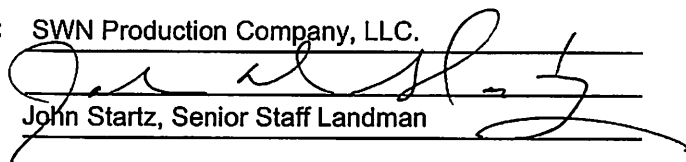

John Startz, Senior Staff Landman

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, L.L.C., Operator
 Rayle Coal OHI 206H
 Ohio County, West Virginia

#	TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
1)	4-R6-17.4	728448-000	Rayle Coal Company, an Ohio Corporation	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	808/335 883/403
2)	4-R6-17	728446-000	Rayle Coal Company, an Ohio Corporation	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	808/336 883/403
3)	4-R6-37	730059-000	Marc and Kristen Seamon, husband and wife	Great Lakes Energy Partners, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	781/534 808/455 884/169
4)	4-R6-19.4	736107-000	Luke A Sisarcick, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	826/791 884/717
5)	4-R6-37.1	730059-000	Marc and Kristen Seamon, husband and wife	Great Lakes Energy Partners, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	781/534 808/455 884/169
6)	4-R9-22.2	730381-000	David M Ziegler, a married man dealing in his sole and separate property; and Danny J Ziegler, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	814/710 884/193
7)	4-R9-9	727678-000	Jordan Weber and Gayle Weber, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	14.00%	804/175 883/451
		18-01965	Sue A. Callow by Troy J. Callow as POA, a widow	SWN Production Company, LLC	16.00%	939/66
8)	4-R9-12	736111-000	Nicholas P Klamut, a single man	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	826/779 884/717
		18-01965	Sue A. Callow by Troy J. Callow as POA, a widow	SWN Production Company, LLC	16.00%	939/66
9)	4-R9-5.1	736144-000	Mark W Kettler and Deborah L Kettler, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	826/132 884/717
10)	4-R9-7	736144-000	Mark W Kettler and Deborah L Kettler, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	826/132 884/717

69-00270 MDW

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Rayle Coal OHI 206H
Ohio County, West Virginia

11)	4-R9-5.2	737598-000	Monroe Racing, Inc., A West Virginia Corporation	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	841/174 885/13
12)	4-R9-3.5	731403-001	The LaDonna Martin-Evans Living Trust, by LaDonna Martin-Evans, Trustee	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	814/265 884/469
		745444-001	Robert O. Rogers, married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	902/502
		745444-002	Ohio Valley Medical Center, Inc.; The Parks System Trust Fund of Wheeling; Children's Home of Wheeling, Inc.; Elmhurst, the House of Friendship, Inc., Vance Memorial Presbyterian Church; Young Women's Christian Association of Wheeling, W. Va., Inc.	SWN Production Company, LLC	18.00%	908/708
		745444-004	Wheeling Young Men's Christian Association	SWN Production Company, LLC	18.00%	926/700
13)	4-R9-3.4	745444-001	Robert O. Rogers, married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	902/502
		745444-002	Ohio Valley Medical Center, Inc.; The Parks System Trust Fund of Wheeling; Children's Home of Wheeling, Inc.; Elmhurst, the House of Friendship, Inc., Vance Memorial Presbyterian Church; Young Women's Christian Association of Wheeling, W. Va., Inc.	SWN Production Company, LLC	18.00%	908/708
		745444-004	Wheeling Young Men's Christian Association	SWN Production Company, LLC	18.00%	926/700
		17-17726	Beth Anne Ross, dealing in her own and separate property	SWN Production Company, LLC	16.00%	931/60
14)	4-R9-27	724889-001	Sybil P Friedrichs, acting as Trustee of the Howard W Friedrichs Revocable Trust Agreement dated 5th of August, 1995	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	792/572 885/776

69-66270400

69-0027040D

EXHIBIT "A"

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 Rayle Coal OHI 206H
 Ohio County, West Virginia

		745444-001	Robert O. Rogers, married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	902/502
		745444-004	Wheeling Young Men's Christian Association	SWN Production Company, LLC	18.00%	926/700
		745444-002	Ohio Valley Medical Center, Inc.; The Parks System Trust Fund of Wheeling; Children's Home of Wheeling, Inc.; Elmhurst, the House of Friendship, Inc., Vance Memorial Presbyterian Church; Young Women's Christian Association of Wheeling, W. Va., Inc.	SWN Production Company, LLC	18.00%	908/708
15)	4-R9-1	724889-001	Sybil P Friedrichs, acting as Trustee of the Howard W Friedrichs Revocable Trust Agreement dated 5th of August, 1995	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	792/572 885/776
		745444-001	Robert O. Rogers, married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	902/502
		745444-004	Wheeling Young Men's Christian Association	SWN Production Company, LLC	18.00%	926/299
		745444-002	Ohio Valley Medical Center, Inc.; The Parks System Trust Fund of Wheeling; Children's Home of Wheeling, Inc.; Elmhurst, the House of Friendship, Inc., Vance Memorial Presbyterian Church; Young Women's Christian Association of Wheeling, W. Va., Inc.	SWN Production Company, LLC	18.00%	908/708
16)	4-R9-2	731191-000	William H Reuther and Carol L Reuther, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	814/259 884/445
17)	4-R9-1.3	73796-0000	Charles J Heinlein and Ellen L Heinlen, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	821/689 884/693
18)	4-R12-19.34	18-00117	Resource Minerals Headwater II, LP	SWN Production Company, LLC	18.00%	937/295

69-00270 Mod

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Rayle Coal OHI 206H
Ohio County, West Virginia

19)	4-R12-19	735735-000	Frank Fedorka, Co-Trustee of the Frank Fedorka Trust of 1993	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	818/362 884/693
20)	4-R12-19.35	16-02737	Dennis E. Lawther and Anna Marie Lawther, his wife	SWN Production Company, LLC	16.00%	931/126
21)	4-R12-20	729400-000	Ruth Ann Henry, a widow	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	810/313 884/121
22)	4-R12-21	729399-000	Ruth Ann Henry, a widow	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	810/689 884/121
23)	4-R12-21.1	747268-000	Edward A. Woods and Kathy L. Woods, husband and wife	SWN Production Company, LLC	14.00%	924/28
24)	4-R12-22	747366-000	Lawrence William Witzberger, III and Jacquelyn Main Witzberger, his wife	SWN Production Company, LLC	17.00%	930/510
25)	4-R12-23.8	16-02720	Michael L. Baron and Kathy D. Baron, his wife	SWN Production Company, LLC	16.00%	929/315
26)	4-R12-23.15	735179-000	Harry A. Rumis, Jr. and Edith J. Rumis, Trustees of the Rumis Revocable Trust	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	867/664 884/669
27)	4-R12-35	731351-000	John P. Welty, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	813/441 884/457
28)	4-R12-35.1	16-02726	David Boyce Gano and Mary Ellen Gano, husband and wife	SWN Production Company, LLC	18.00%	932/409
29)	4-R12-32	16-02735	Beverly J. Kalø, a/k/a Beverly Jean Luzader, a married woman deal in her own and separate property	SWN Production Company, LLC	14.00%	929/213
30)	4-R12-33	746285-000	Christopher L. Harto & Cory Leah Harto, husband and wife	SWN Production Company, LLC	14.00%	917/234
31)	4-R12-34	746284-000	Andrew J. Peklinsky & Jennifer Peklinsky, husband and wife	SWN Production Company, LLC	14.00%	917/249
32)	4-R12-44	746309-000	Kathleen E. Taylor, a married woman dealing in her sole separate property & Kevin J. Taylor, a single man	SWN Production Company, LLC	14.00%	918/239

69-00270
H00

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Rayle Coal OHI 206H
Ohio County, West Virginia

33)	4-R12-45	726777-000	John A. Tarr, IV, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	14.00%	799/600 884/217
34)	4-R12-45.11	17-12457	Jessica Ybanez-Morano, a single woman	SWN Production Company, LLC	18.00%	929/434
35)	Bethany Pike	732590-000	West Virginia Department of Transportation, Division of Highways	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15.00%	830/11 883/611

ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303

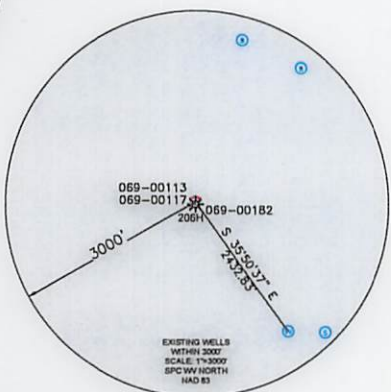
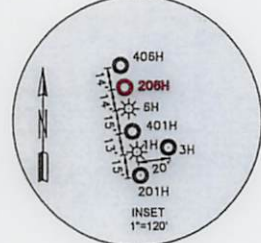
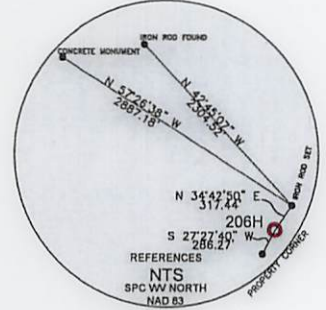
Latitude: 40°07'30"

BOTTOM HOLE 10,457'

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,445,751.65
EASTING: 531,775.88
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,445,492.15
EASTING: 531,222.66
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,440,797.82
EASTING: 532,319.75



Longitude: 80°35'00" BOTTOM HOLE 2,961'
Longitude: 80°37'30" SURFACE HOLE 1,874'

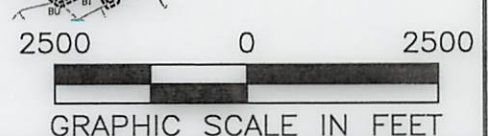


WELL RESTRICTIONS

1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 2433 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS ARE WITHIN THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

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.
 4. WELLBORE PARCELS ARE DESIGNATED WITH UNIQUE LINE TYPES.
- 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.



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 SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

RAYLE COAL OHI
OPERATOR'S WELL #: 206H
API WELL #: 47 69 MOD 00270
STATE COUNTY PERMIT

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1063.8' STAKED

DISTRICT: RICHLAND COUNTY: OHIO COUNTY QUADRANGLE: TILTONSVILLE / VALLEY GROVE

SURFACE OWNER: RAYLE COAL COMPANY ACREAGE: ±61.53

OIL & GAS ROYALTY OWNER: RAYLE COAL COMPANY ACREAGE: ±61.53

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: 5,957' TVD 22,509' TMD

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

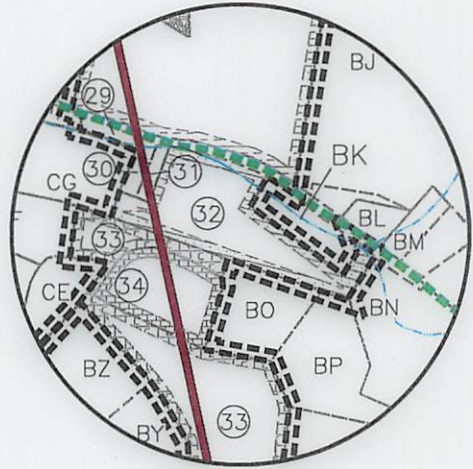
LEGEND:	— SURVEYED BOUNDARY	REVISIONS:	DATE: 05-18-2018
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	--- DRILLING UNIT		FILE NO: 16-76
⊙ EXISTING / PRODUCING WELLHEAD	--- LEASE BOUNDARY		DRAWN BY: N. LASSAK
LPL* LANDING POINT LOCATION	--- PROPOSED PATH		SCALE: 1" = 3000'
⊙ EXISTING WATER WELL			DRAWING NO: 1
⊙ EXISTING SPRING			WELL LOCATION PLAT 1

ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303



INSET A



INSET B

TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	RAYLE COAL COMPANY (S/R)	4-R6-17.4
TRACT	SURFACE OWNER	TAX PARCEL
2	RAYLE COAL COMPANY	4-R6-17
3	SEAMON MARC	4-R6-37
4	SISARCICK LUKE A	4-R6-19.4
5	SEAMON MARC	4-R6-37.1
6	DAVID M ZIEGLER AND DANNY J ZIEGLER	4-R9-22.2
7	WEBER JORDAN & GAYLE	4-R9-9
8	KLAMUT NICHOLAS P	4-R9-12
9	MARK W AND DEBORAH L KETTLER	4-R9-5.1
10	MARK W AND DEBORAH L KETTLER	4-R9-7
11	LOGAN E HOPKINS	4-R9-5.2
12	STACY D EVANS	4-R9-3.5
13	KENNEDY BETH ANNE	4-R9-3.4
14	RCK 2 GROUP LLC	4-R9-27
15	RCK 2 GROUP LLC	4-R9-1
16	WILLIAM H AND CAROL L REUTHER	4-R9-2
17	HARTLEY BRADFORD & NANNETTA	4-R9-1.3
18	COTTRELL DOMINIC J & SHERRIE D	4-R12-19.34
19	FEDORKA DELORES M TRUST OF 1993	4-R12-19
20	LAWTHER DENNIS E & ANNA M	4-R12-19.35
21	ELSWICK CARLEY J. & CHRISTOPHER M.	4-R12-20
22	ELSWICK CARLEY & CHRISTOPHER	4-R12-21
23	EDWARD A. AND KATHY L WOODS,	4-R12-21.1
24	LAWRENCE W. III & JACQUELYN M. WITZBERGER	4-R12-22
25	BARON MICHAEL L AND KATHY D	4-R12-23.15
26	RATCLIFFE MICHAEL T & MICHELLE LYNN	4-R12-35
27	WELTY JOHN P	4-R12-35
28	GAND DAVID BOYCE & MARY ELLEN	4-R12-35.1
29	BEVERLY J. KALD	4-R12-32
30	HARTO CHRISTOPHER L	4-R12-33
31	PEKLIANSKY ANDREW J	4-R12-34
32	TAYLOR KATHLEEN E & KEVIN J	4-R12-44
33	TARR JOHN A IV	4-R12-45
34	YBANEZ-MORANO JESSICA	4-R12-45.11
35	WEST VIRGINIA DEPARTMENT TRANSPORTATION, DIVISION OF HIGHWAYS	BETHANY PIKE

TRACT	SURFACE OWNER	TAX PARCEL
A	RAYLE COAL COMPANY	4-R6-17.3
B	WINDSOR COAL COMPANY	4-R6-12
C	SHOOK WAYNE E	4-R6-15
D	GLADYS GOFF & WINDELL H. GOFF, II	4-R6-27.1
E	GLADYS GOFF & WINDELL H. GOFF, II	4-R6-24.3
F	BRYAN STELLA M & BRYAN KATHLEEN J	4-R6-17.1
G	WINDSOR COAL COMPANY	4-R6-25
H	WOOD RICHARD A JR	4-R6-24.6
I	WOOD EDITH M	4-R6-22
J	ENNIS LOUIS J JR & GRETCHEN L	4-R6-19.2
K	SISARCICK SEAN A	4-R6-19
L	DUNCIL STEPHEN	4-R6-20
M	CURRY SPENCER & SHERRY	4-R6-19.3
N	LOUGH PAMELA S	4-R6-19.1
O	DUNCIL STEVEN E & S D	4-R9-22.1
P	ZIEGLER DAVID M & MARY H	4-R9-22.22
Q	COTTRELL ALEXANDER S	4-R9-22.3
R	KELLMAN CHARLES R & PHYLLIS J	4-R9-22.10
S	MAN DAVID B & L W	4-R9-10.1
T	MAN DAVID B & L W	4-R9-10
U	CAVENEY CLAIRE M	4-R9-3
V	WESBANKO TRUST & INVESTMENT SERVIC	4-R9-16.1
W	BROWN LILLIAN W TRUST	3-L4-1.1
X	PAJAK CLARK & SHARON L	4-R9-28
Y	JOSEPH JUDY K	4-R9-29
Z	HART MARY ANN	4-R9-29.1
AA	HUGHES DONALD P & M E	4-R9-32
AB	GREATHOUSE WILLIAM J & SUSAN M	4-R12B-10.7
AC	JACKLIN M SEXTON	4-R12B-10.13
AD	FICCA RONALD J & CHAMBERS J L	4-R12B-10.4
AE	GAVIN O RICKETTS	4-R12B-10.3
AF	RODRIGUEZ EUSEBIO ELVESTROM	4-R12B-10.2
AG	HARTLEY BRADFORD & NANNETTA	4-R9-1.4
AH	HARTLEY BRADFORD & NANNETTA	4-R9-1.2
AI	HARTLEY BRADFORD & NANNETTA	4-R9-1.6
AJ	GARRISON MICHELLE	4-R9-1.5
AK	ERIC AND JENNIFER WODESKY	4-R12-19.41
AL	ANDERSON NIKKI ANN & MICHAEL DAVID	4-R12-19.43
AM	JAMES RALPH I & CLARA L. GARCIA	4-R12B-10.14
AN	MOORE MITCHELL & SANDRA	4-R12-19.29
AO	MOORE MITCHELL J & SANDRA	4-R12-19.28
AP	BAKAITIS BRIAN S	4-R12-19.24
AQ	KNIGHT JEFFREY M & KRISTEN M	4-R12-19.25
AR	KUBOVICZ SUSAN K	4-R12-19.23
AS	SHORT LUKE A & KUCERA-SHORT JENNIFER L	4-R12-19.20
AT	SHORT LUKE A & KUCERA-SHORT JENNIFER L	4-R12-19.17
AU	WINE MATTHEW M	4-R12-19.19
AV	GARY ALLEN, JR. AND WHITNEY MARIE NOEL NASH	4-R12-19.36
AW	DANN JEREMIAH & JENNIFER	4-R12-19.11
AX	SPARKS KEVIN T & KELLY L	4-R12-19.7
AY	MARVIN JACK R JR & S L	4-R12-19.14
AZ	LUCAS RICHARD J & KRISTEN L	4-R12-19.4
BA	TIERRA HOME OWNERS ASSOCIATION	4-R12-19.33
BB	WITZBERGER LAWRENCE IV	4-R12-19.5
BC	WITZBERGER NANCY	4-R12-23.2
BD	OHIO COUNTY PUBLIC SERV DIV	4-R12-35.3
BE	RITA A. CASTLE	4-R12B-1.3
BF	MICHAEL JAMES HALL (LIFE ESTATE) CYNTHIA ANN HALL DICKERSON, CHAROLETT SUZANNE HALL (REMAINDER)	3-L7-21.1
BG	MELISSA MEALY & JENNA PETRI	4-R12-39
BH	MCKENZIE RONALD M & DEBORAH	4-R12-39.1
BI	CAIDWELL JEFFREY WAYNE	4-R12-40.1
BJ	JELLEN ELIZABETH M	4-R12-41
BK	LOUGH DONALD E & D A	4-R12-43
BL	DNR PROPERTIES, LLC	4-R12-41.2
BM	RINEHART JAMES R JR	4-R12-41.1
BN	DENT SARA R & DAVID A	4-R12-45.21
BO	TENNAHT JEFFREY AND ANGELA M	4-R12-45.7
BP	SMITH LLOYD DALE II & KAREN L	4-R12-45.10
BQ	MILLER TY E & TEENA Y	4-R12-45.5
BR	PHILLIPS TINA L & PADDEN ELIZABETH A	4-R12-45.8
BS	VINCENT G. AND KRISTEN A. DECARLO	4-R12-45.3
BT	BROWN GILBERT ALLAN & LUCILLE ELIZABETH	4-R12-45.4
BU	BROWN G ALLAN & L E	4-R12-47
BV	ROBERT AND PATRICIA WEISS 2016 IRREVOCABLE TRUST	4-R12-46
BW	WEISENBORN KERRIE	4-R12-45.15
BX	TARR CHRISTOPHER & CHRISTINE	4-R12-45.14
BY	NUGENT JOAN S	4-R12-45.6

TRACT	SURFACE OWNER	TAX PARCEL
BZ	TARR JOHN A IV & SABRINA M	4-R12-45.13
CA	LECHNER JONATHAN D	4-R12-45.12
CB	MULL W QUAY II TRUST	4-R12-12
CC	RIES RYAN & WASSAM DANIELLE	4-R12-45.20
CD	JOHN A. TARR, III FAMILY TRUST	4-R12-45.9
CE	BAROSSO CARL & GIACOMAZZA MARIE	4-R12-45.19
CF	NOEL KAREN & YOCUM SCOTT R	4-R12-45.17
CG	HENRY LORI J C/O HENRY'S SERVICE STATION	4-R12-31
CH	REAM ANNI E	4-R12-30
CJ	GORNEY MARY M (LIFE ESTATE) & TAGG KATHLEEN G GORNEY	4-R12-24
CI	CIARROCCI GLORIA J	4-R12-23.4
CK	PAUGH LARRY E	4-R12-23.9
CL	JEBBIA E & RUTTENBERG R & O'DELL J	4-R12-23.5
CM	PARÉE MATTHEW J & TISHA L	4-R12-23.6
CN	RUMIS HARRY A JR AND EDITH J	4-R12-23
CO	PAGE BRIAN K & STACEY L	4-R12-23.7
CP	HENRY LORI JEAN	4-R12-23.14
CQ	HENRY LORI JEAN	4-R12-7
CR	DONALDSON KARYL LEE	4-R12-16
CS	DI FRANCO DAVID P & KRISTY A.	4-R12-23.3
CT	DI FRANCO DAVID PATRICK & KRISTY ANN	4-R12-17
CU	SMITH SEAN P & KATIE M	4-R12E-23.28
CV	RELYKS LLC	4-R12-5
CW	JOSEPH ELIAS	4-R12-1
CX	ROBERT E JONES LIVING TRUST	4-R12-18
CY	HARRIMAN DANIEL & M	4-R12-18.2
CZ	HARRIMAN DANIEL & M	4-R12-18.1
DA	KEDING STEPHEN E & DEBORAH E	4-R12-19.21
DB	MARSH BENJAMIN A	4-R12-19.31
DC	RHODE DANIEL D & WENDY L	4-R12-19.45
DD	COLUMBIA GAS TRANSMISSION CORP	4-R12-19
DE	COTTRELL DOMINIC J & SHERRIE D	4-R12-19.30
DF	TAGGART GREGORY	4-R9-50
DG	TUNNEL RIDGE LLC C/O PROPERTY TAX	4-R6-61.4
DH	KNIGHT WILLIAM ISAAC & SERTICH MEREDITH	4-R9-3.7
DI	HOPKINS LEWIS R JR & R F	4-R9-3.3
DJ	LEWIS R AND ROSEANN F HOPKINS	4-R9-4
DK	HOPKINS LEWIS R JR & ROSEANN F	4-R9-5
DL	HOPKINS LEWIS R JR & ROSEANN	4-R9-8
DM	AMERICAN DISPOSAL SERVICES OF WEST VIRGINIA	4-R6-61
DN	AMERICAN DISPOSAL SERVICES	4-R6-15
DO	PERRY HELEN M (LIFE), ET AL	4-R9-14.1
DP	PERRY HELEN M (LIFE), ET AL	4-R9-14.2
DQ	PERRY JAMES W & TERESA L	4-R9-14.5
DR	PERRY JAMES W & TERESA L	4-R9-14.6
DS	PERRY LEWIS A JR AND SHARON	4-R9-14.7
DT	SMITH LUTHER R JR & E L	4-R9-14.4
DU	SMITH LUTHER R JR & E L	4-R6-18.1
DV	SMITH LUTHER R JR & E L	4-R6-18.3
DW	SHORT CREEK METHODIST EPISCOPAL CHURCH	4-R6-60
DX	SHORT CREEK CEMETERY ASSOCIATION TRUSTEES	4-R6-57
DY	BOARD OF COMM OHIO CO	4-R6-55
DZ	WESBANKO BANK INC.	4-R6-17.5
EA	RAYLE COAL COMPANY (S/R)	4-R6-17.2
EB	MEDELSON MATTHEW D & SHARON R	4-R12-23.10
EC	MEDELSON MATTHEW D & SHARON R	4-R12-23.13
ED	MATTHEW D. AND SHARON R. MEDELSON	4-R12-23.12
EE	MEDELSON MATTHEW D & SHARON R	4-R12-23.11
EF	BROADWATER FRANCINE	4-R12-19.44
EG	ELSWICK CARLEY J. & CHRISTOPHER M.	4-R12-19.22
EH	BROADWATER TRAVIS	4-R12-19.25
EI	BROADWATER TRAVIS J & JENNA N	4-R12-19.39
EJ	RICO A COVILLE & TRACY C HIBBS-COVILLE	4-R12-19.38
EK	RICO A COVILLE & TRACY C HIBBS-COVILLE	4-R12-19.27
EL	RICO A COVILLE & TRACY C HIBBS-COVILLE	4-R12-19.37
EM	CARNEY MICHAEL B & KERRY N	4-R12-19.12
EN	CARNEY MICHAEL B & KERRY N	4-R12-19.6
EO	GRUBER ALEX J & AMANDA L	4-R12-19.40
EP	EDGMON DENA M.	4-R12-19.18
EQ	GEORGE KATHLEEN A	4-R12-19.16
ER	BURKEY MICHAEL PAUL & ASHLEE A	4-R12-19.9
ES	MULL RICHARD C & D	4-R12-19.10
ET	LONG BRIAN K & STACEY M	4-R12-19.13
EU	JACKSON HOLE PROPERTIES LLC	4-R12-19.15
EV	YAHN CHRISTOPHER A & JACQUELINE	4-R12-19.2
EW	YAHN CHRISTOPHER A & JACQUELINE	4-R12-19.3
EX	WOLF THOMAS J & JUDITH K	4-R12-19.42
EY	WOLF THOMAS J & JUDITH K	4-R12-19.8
FZ	CAVENEY CLAIRE M	4-R9-10.2

REVISIONS:

SWN
Production Company, LLC

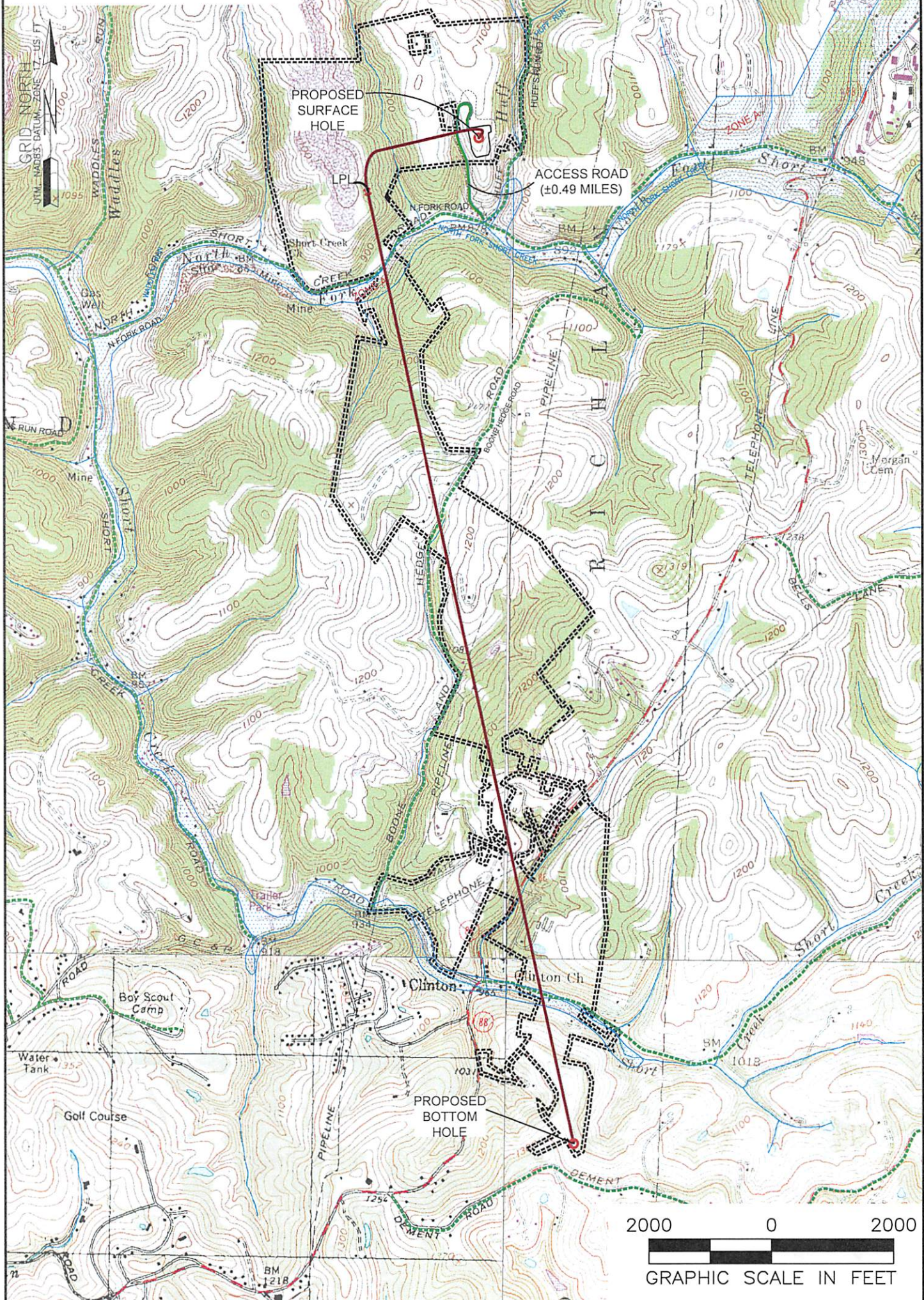
SWN *REVISED*
Production Company™

OPERATOR'S RAYLE COAL
WELL #: 206H
DISTRICT: RICHLAND COUNTY: OHIO COUNTY STATE: WV

DATE: 05-18-2018
FILE NO: 16-76
DRAWN BY: N. LASSAK
SCALE: N/A
DRAWING NO: 1
WELL LOCATION PLAT 1

ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303



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:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- ⊙ EXISTING / PRODUCING WELLHEAD
- ✱ LPL LANDING POINT LOCATION
- FLOOD PLAN
- ACCESS ROAD
- PUBLIC ROAD
- LEASE BOUNDARY
- PROPOSED PATH

WELL OPERATOR:
SWN PRODUCTION COMPANY, LLC
ADDRESS:
P.O. BOX 1300 JANE LEW, WV 26378
SURFACE OWNER:
RAYLE COAL COMPANY

WELL (FARM) NAME: RAYLE COAL OHI	WELL # 206H	SERIAL # XXXX
COUNTY OHIO COUNTY - 69	DISTRICT: RICHLAND	
USGS 7 1/2 QUADRANGLE MAP NAME TILTONVILLE / VALLEY GROVE, WV		