

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

Jim Justice, Governor Austin Caperton , Cabinet Secretary www.dep.wv.gov

Tuesday, September 19, 2017 WELL WORK PERMIT Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC POST OFFICE BOX 12359

SPRING, TX 773914954

Re:

Permit approval for RAYLE COAL OHI 401H

47-069-00246-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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 401H Farm Name: SHORT CREEK COAL COMPANY U.S. WELL NUMBER: 47-069-00246-00-00

Horizontal 6A / New Drill

Date Issued: 9/19/2017

Promoting a healthy environment.

API Number:	

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

- This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
- 2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
- 3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
- 4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
- 5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
- 6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
- 7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
- 8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
- 9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
- 10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

API Number:	

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

WW-6B (04/15)

API NO. 47-069	
OPERATOR WELL NO.	Rayle Coal OHI 401H
Well Pad Name: Rayle	Coal OHI PAD

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

1) Well Operator: SV	WN Production Co., LL0	494512924	069-Ohio	5- Richla	641- Tiltonsville
_		Operator ID	County	District (Quadrangle
2) Operator's Well No	umber: Rayle Coal OHI	401H Well P	ad Name: Ray	e Coal OHI F	AD
3) Farm Name/Surfac	e Owner: Short Creek Coal	Company Public Re	oad Access: Gir	tys Point Roa	ad
4) Elevation, current g	ground: 106 4	Elevation, propose	d post-construct	tion: 10641	
5) Well Type (a) Go Other		Un	derground Stora	ige	
(b)If	Gas Shallow X Horizontal X	Deep		100	
6) Existing Pad: Yes	or No Yes		_ <; !	KXV.	7.1.17
	ormation(s), Depth(s), Anticellus, Target Top TVD- 5794', T				ited Pressure- 3475
8) Proposed Total Ver	rtical Depth: 5791'				
9) Formation at Total	A STATE OF THE STA	us			
10) Proposed Total M	easured Depth: 15773'				
11) Proposed Horizon	ital Leg Length: 8873.3	3'	8,5		
12) Approximate Fres	sh Water Strata Depths:	306'	*29bs		
13) Method to Determ	nine Fresh Water Depths:	Offset wells; WF	R-35	0.	
14) Approximate Salt	water Depths: 1110'			¥-1	9
15) Approximate Coa	I Seam Depths: 237'				
16) Approximate Dep	th to Possible Void (coal	mine, karst, other):	None that we	are aware o	f. RECEIVED Office of Oil and Gas
	ell location contain coal sendjacent to an active mine		N	o X	JUL 17 2017
(a) If Yes, provide N	Mine Info: Name:				WV Department of Environmental Protection
	Depth:				
	Seam:				
	Owner:				

API NO. 47- 069

OPERATOR WELL NO. Rayle Coal OHI 401H
Well Pad Name: Rayle Coal OHI PAD

18)

CASING AND TUBING PROGRAM

ТҮРЕ	Size (in)	New or Used	<u>Grade</u>	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#	356'	356'	354 sx/CTS
Coal	9 5/8"	New	J-55	36#	1383'	1383'	535 sx/CTS
Intermediate	7"	New	J-55	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	15773'	15773'	lead 1139sx Tail 2058x inside infarmed by
Tubing	2 3/8"	New	HCP-110	4.7#	Approx. 5791'	Approx. 5791'	
Liners							

C 500 7.7.17

ТҮРЕ	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	2 3/8"	4.778"	0.190	Approx 8193'	Approx 8193'		
Liners							

PACKERS

Kind:	10K Arrowset AS-1X	RECEIVED Office of Oil and Gas
Sizes:	5 1/2"	JUL 1 7 2017
Depths Set:		WV Department of Environmental Protection

470 000

WW-6B
(10/14)

API NO. 47- 069 OPERATOR WELL NO. Rayle Coal OHI 401H
Well Pad Name: Rayle Coal OHI PAD

19	Describe r	proposed we	Il work.	including th	e drilling and	gniggulg b	back of an	v pilot hole:
	Describe	DIODOGGG ITO	II TO CALL	THE TOTAL THE	o ciririniti ciri		Otton of the	brior mon

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. Run casing not less than 20' below void nor more than 50' 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, vertical separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 80 barrels a minute.

- 21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres):
- 22) Area to be disturbed for well pad only, less access road (acres):
- 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 ***

18

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.

Office of Oil and Gas

JUL 17 2017

^{*}Note: Attach additional sheets as needed.





P O Box 12359 Spring, Texas 77391-2359 www.swn.com

June 28, 2017

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

RE: Proposed New Well Rayle Coal OHI 401H

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 Richland District, Ohio County, West Virginia.

47000000

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

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JUL 17 2017

WV Department of Environmental Protection

R2 wV+°

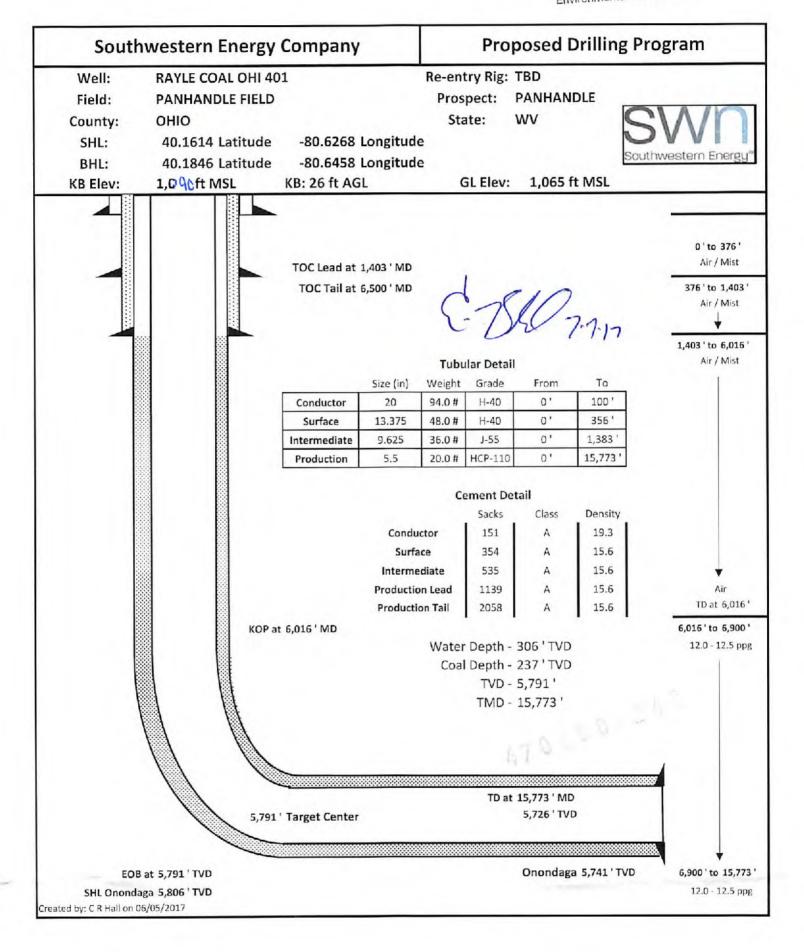
Schlumberger Cement Additives

	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride	10043-52-4
Intermediate Surface	S001	accelerator	calcium chloride	10043-52-4
Ť	D080	dispersant	sodium polynaphthalene sulfonate	9008-63-3
ğ "	D801	retarder	aromatic polymer derivative	propriatary
Kick Off Plug	D047	antifoam	polypropylene glycol	25322-69-4
	D167	fluid loss	aliphatic amide polymer	propriatary
	D154	extender	non-crystalline silica	7631-86-9
	D400	gas migration	boric acid	10043-35-3
			polypropylene glycol	25322-69-4
bä	D046	antifoam	fullers earth (attapulgite)	8031-18-3
Production-Lead			chrystalline silica	14808-60-7
ફ	D201	retarder	metal oxide	propriatary
ğ			sulphonated synthetic polymer	propriatary
Pro	D202	dispersant	formaldehyde (impurity)	propriatary
			polypropylene glycol	25322-69-4
	D046	antifoam	fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	propriatary
=			sodium polynaphthalene sulfonate	9008-63-3
Production-Tail	D065	dispersant	sodium sulfate	7757-82-6
왉			chrystalline silica	14808-60-7
ğ	D201	retarder	metal oxide	propriatary
Pro	D153	anti-settling	chrystalline silica	14808-60-7

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API Number 47 - 6	69	-
Operator's	Well No.	Rayle Coal OHI 401H

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

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FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

....

FLUIDS/ CUTTINGS DISP	POSAL & RECLAMATION PLAN	JUL 1 7 2017
Operator Name SWN Production Company, LLC	OP Code 494512924	
Watershed (HUC 10) Upper Ohio South	Quadrangle Tiltonsville	WV Department of Environmental Protection
Do you anticipate using more than 5,000 bbls of water to comp	plete the proposed well work? Yes 🗸 ገ	No
Will a pit be used? Yes No _✓		
If so, please describe anticipated pit waste:closed loc	op system in place at this time- cuttings will be taken to a	a permitted landfill
Will a synthetic liner be used in the pit? Yes	No If so, what ml.?	
Proposed Disposal Method For Treated Pit Wastes:		
Land Application		
Underground Injection (UIC Permi	it Number)
	ated well, API # will be included with the WR-34/DDMR &/or perm	it addendum)
Off Site Disposal (Supply form WW	W-9 for disposal location) be put in steel tanks and reused or taken to a permitted	d disposal facility
Other (Explain_flow back fluids will be	ie put in steel tanks and reused or taken to a permitter	1 disposal facility
Will alread from the bound of the described VOS		
Will closed loop system be used? If so, describe: yes	10.11.0.1	
Drilling medium anticipated for this well (vertical and horizont		dru with SOBM from KOP to 10
-If oil based, what type? Synthetic, petroleum, etcsy	ynthetic oil base	7.4
Additives to be used in drilling medium? see attached sheets		
Drill cuttings disposal method? Leave in pit, landfill, removed	I offsite, etc. landfill	
-If left in pit and plan to solidify what medium will be	used? (cement, lime, sawdust)	
-Landfill or offsite name/permit number? meadow SWF-1002.8	SS grading SWE-4902, Northwestern SWE-1025, Short Creek 1034/WV0109517/CID28/26, C	artion Limeston 28726-CID26726
Arden Landtill 10072, American 02-12954, Cou		
Permittee shall provide written notice to the Office of Oil and O West Virginia solid waste facility. The notice shall be provided where it was properly disposed.		
I certify that I understand and agree to the terms and on August 1, 2005, by the Office of Oil and Gas of the West Vi provisions of the permit are enforceable by law. Violations of law or regulation can lead to enforcement action. I certify under penalty of law that I have personally application form and all attachments thereto and that, base obtaining the information, I believe that the information is to penalties for submitting false information, including the possible Company Official Signature Company Official Title Regulatory Supervisor	Triginia Department of Environmental Protection of any term or condition of the general permit any examined and am familiar with the informated on my inquiry of those individuals immediate, accurate, and complete. I am aware that	a. I understand that the and/or other applicable tion submitted on this diately responsible for at there are significant
Subscribed and sworn before me this day of	June , 20 17	OFFICIAL SEAL
Britany R Whody	Notary Public	BRITTANY K WOOD
/ III min		Buckhannon, WV 20701 Ny commission expires November 27, 2022
My commission expires U \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	يالىدارى سالىدارى	09/22/201

Proposed Revegetation Treatment: Acres Disturbed	d	Prevegetation pH	<u> </u>
Lime as determined by pH test min. 2 Tons/acre or to co	orrect to pH		
Fertilizer type 10-20-20			
Fertilizer amount 600	lbs/acre		
Mulch_ Hay/Straw 2.5	Tons/acre		
	Seed Mixtures		
Temporary		Permar	nent
Seed Type lbs/acre **See Attachment		Seed Type	lbs/acre
t			
Maps(s) of road, location, pit and proposed area for provided). If water from the pit will be land applied acreage, of the land application area. Photocopied section of involved 7.5' topographic shapes	l, include dimensions (L x	(W x D) of the pit, and	dimensions (L x W), and
Maps(s) of road, location, pit and proposed area for provided). If water from the pit will be land applied acreage, of the land application area. Photocopied section of involved 7.5' topographic sheet plan Approved by:	l, include dimensions (L x	(W x D) of the pit, and	dimensions (L x W), and
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Attach: Maps(s) of road, location, pit and proposed area for provided). If water from the pit will be land applied acreage, of the land application area. Photocopied section of involved 7.5' topographic she plan Approved by: Comments: Title: oil and gas inspector	l, include dimensions (L x	(W x D) of the pit, and	dimensions (L x W), and

Drilling Mediums

Synthetic Oil
Brine
Barite
Calcium Chloride
Lime
Organophilic Bentonite
Primary and Secondary Emulsifiers
Gilsonite
Calcium Carbonate
Friction Reducers

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WVD Seeding Specification



To Order Seed contact Lyndsi Eddy Flippo office 570-996-4271 cell 501-269-5451 lyndsi_eddy@swn.com

(please allow 7 to 10 days for delivery)

NON-ORGANIC PROPERTIES			
Seed Mixture: ROW Mix	SWI	N Supplied	
Orchardgrass	40%		
Timothy	15%		
Annual Ryegrass	15%		
Brown Top Millet	5%		
Red Top	5%		
Medium Red Clover	5%	All legumes are	
White Clover	5%	innoculated at 5x normal	
Birdsfoot Trefoil	5%	rate	
Rough Bluegrass	5%		
Apply @ 100lbs per acre April 16th- Oct. 14th		Apply @ 200lbs per acre Oct. 15th- April 15th PLUS bs per acre of Winter Wheat	

SOIL AMENDMENTS	
10-20-20 Fertilizer	*Apply @ 500lbs per Acre
Pelletized Lime	Apply @ 2 Tons per Acre
	*unless otherwise dictated by soil test results

Seeding Calculation Information:

1452' of 30' ROW/LOD is One Acre 871' of 50' ROW/LOD is One Acre 622' of 70' ROW/LOD is One Acre

Synopsis:

Every 622 linear feet in a 70' ROW/LOD, you should be using (2) 50lb bags of seed, (4) 50lb bags of fertilizer and (80) 50lb bags of Lime (2x seed in winter months + 50lb Winter Wheat/ac).

Special Considerations:

Landowner Special Considerations including CREP program participants require additional guidance that is not given here. Discuss these requirements with SWN supervision at the beginning of the project to allow time for special seed delivery.

Seed Mixture: SWN Production Or	rganic Mix	SWN Supplied
Organic Timothy	50%	
Organic Red or White Clover	50%	
OR		
Organic Perennial Ryegrass	50%	
Organic Red or White Clover	50%	
Apply @ 100lbs per acre		Apply @ 200lbs per acre
April 16th- Oct. 14th		Oct. 15th- April 15th
Organic Fertilizer @ 200lbs per Ac	re	Pelletized Lime @ 2 Tons per Acre

Seed Mixture: Wetland Mix	SWN Supplied
VA Wild Ryegrass	20%
Annual Ryegrass	20%
Fowl Bluegrass	20%
Cosmos 'Sensation'	10%
Redtop	5%
Golden Tickseed	5%
Maryland Senna	5%
Showy Tickseed	5%
Fox Sedge	2.5%
Soft Rush	二 智 2.5%
Woolgrass	2.5%
Swamp Verbena	2.5%
Apply @ 25lbs per acr	Apply @ 50lbs per acre
April 16th- Oct. 14th	Oct. 15th- April 15th

NO FERTILIZER OR LIME INSIDE WETLAND LIMITS

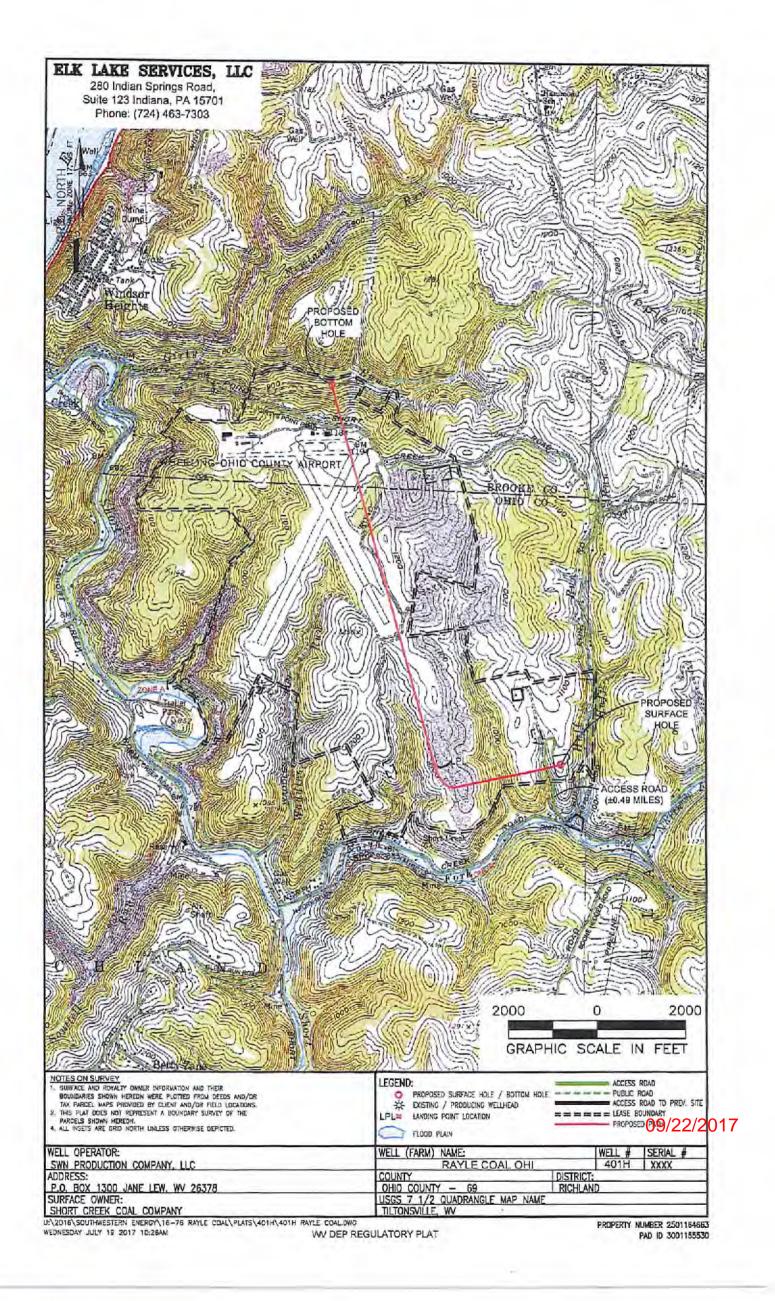
MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN

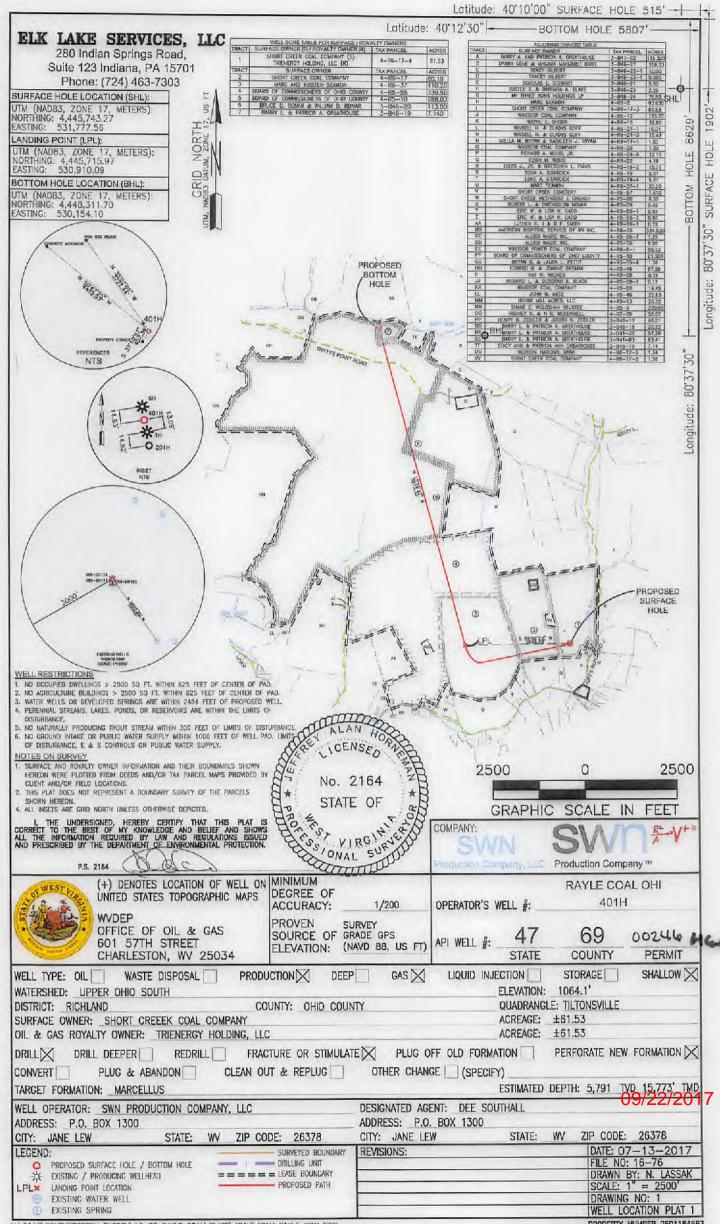


SWN Production Company, LLC 179 Innovation Drive Jane Lew, West Virginia 26378

API NO. 47-XXX-XXXXX
WELL NAME: Rayle Coal OHI 401H
Tiltonsville QUAD
Richland DISTRICT
Ohio COUNTY, WEST VIRGINIA

Submitted by:			
Dee Southall	Date:	6/26/2017	
Title: Regulatory Supervisor	SWN P	roduction Co., LLC	
Approved by: Title: Oil & Go Zuputur Approved by:	Date:	7.7.17	Office of Oil and Gas JUL 17 2017 WV Department of Environmental Protection
	Date:	y	EII
Title:			
		4700000	
SWN PRODUCTION COMPANY,	LLC		F-17





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"

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JUL 17 2017

WV Department of Environmental Protection

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 D. Startz, Senior Staff Landman

Page 1 of 1

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by Chesapeake Appalachia, L.L.C., Operator Rayle Coal OHI 401H

TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
4-R6-17-4	732582-000	TriEnergy Holdings LLC	Chesapeake Appalachia, L.L.C.	18%	826/432
			SWN Production Company, LLC		884/493
4-R6-17	732582-000	TriEnergy Holdings LLC	Chesapeake Appalachia, L.L.C.	18%	826/432
			SWN Production Company, LLC		884/493
4-R6-37	730059-000	Marc and Kristen Seamon, husband and wife	Great Lakes Energy Partners, LLC	12.5%	781/534
			Chesapeake Appalachia, L.L.C.		808/455
			SWN Production Company, LLC		884/169
4-R5-55	727321-000	Board of Commissioners of the County of Ohio	Chesapeake Appalachia, L.L.C.	18%	802/742
			SWN Production Company, LLC		893/13
	727321-001	The Board of Commissioners of Ohio County a/k/a The	Chesapeake Appalachia, L.L.C.	18%	802/742
4-R5-10		County Comission of Ohio County			
			SWN Production Company, LLC		893/13
3-B46-20	730559-001	Bruce D Bonar and Sandra L Bonar, husband and wife	Chesapeake Appalachia, L.L.C.	18%	12/731
	730559-002	Lee D Bonar and Bonnie Bonar, husband and wife	Chesapeake Appalachia, L.L.C.	18%	12/724
	730559-003	William D Bonar and Gloria A Bonar, husband and wife	Chesapeake Appalachia, L.L.C.	18%	12/555
			SWN Production Company, LLC		30/480
3-B46-19	730101-000	Barry L Greathouse and Patricia A Greathouse	Great Lakes Energy Partners, LLC	14%	26/649
			Chesapeake Appalachia, L.L.C.		10/552
			SWN Production Company, LLC		30/480

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JUL 17 2017
WV Department of
environmental Protection

470890-055



SWN Production Company, LLC P O Box 12359 Spring, Texas 77391-2359 www.swn.com

June 26, 2017

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

JUL 17 2017

WV Department of Environmental Protection

RE: Rayle Coal OHI 401H Drilling Under Girty's Point Road Ohio County, West Virginia

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 Girty's Point Road. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well.

Thank you.

Sincerely,

John D. Startz, CPL Senior Staff Landman RECEIVED Office of Oil and Gas

JUL 17 2017

WV Department of Environmental Protection

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RECEIVED Office of Oil and Gas

JUL 17 2017

STATE OF WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND WAS partment of Environmental Protection NOTICE CERTIFICATION

Date of Notic	e Certification 1317		API No. 4	7- 069	÷.
			Operator's	Well N	o. Rayle Coal OHI 401H
			Well Pad	Name:	Rayle Coal OHI PAD
Notice has l	een given:				A LANGE BURGES
	e provisions in West Virginia Code	e § 22-6A, the Operator has pro	ovided the red	quired pa	arties with the Notice Forms listed
below for the	tract of land as follows:				
	tract of land as follows: West Virginia	LITM NATA PA	Easting:	531777.5	56
below for the State: County:		UTM NAD 83	Easting: Northing:	531777.5	
State:	West Virginia	UTM NAD 83 Public Road Ac	Northing:	4445743	
State: County:	West Virginia 069-Ohio		Northing: cess:	4445743	.27 pint Road

prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY	OOG OFFICE USE ONLY
☐ 1. NOTICE OF SEISMIC ACTIVITY OF ☐ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	RECEIVED/ NOT REQUIRED
☐ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ■ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
■ 3. NOTICE OF INTENT TO DRILL or ☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or	☐ RECEIVED/ NOT REQUIRED
☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	
4. NOTICE OF PLANNED OPERATION	☐ RECEIVED
☐ 5. PUBLIC NOTICE	☐ RECEIVED
☐ 6. NOTICE OF APPLICATION	☐ RECEIVED

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

Certification of Notice is hereby given:

THEREFORE, I_______, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:

SWN Production Co., LL

By:

Dee Southall

Its: Telephone: Regulatory Supervisor 304-884-1614 Address:

P.O. Box 1300

Jane Lew, WV 26378

Facsimile: Email:

ail: Dee_Southall@swn.com

NOTARY SEAL
OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

Subscribed and sworn before me this

190-0

day of

Notary Public

My Commission Expires

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED Office of Oil and Gas

JUL 1 7 2017

WW-6A (9-13) API NO. 47- 069 OPERATOR WELL NO. Rayle Coal OHI 401H
Well Pad Name: Rayle Coal OHI PAD

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later	than the filing date of permit application.	
7/2/12	1/12/12	
Date of Notice:	1191)	
Notice of:		
□ DEPARTED AND	DDD OVAL FOR THE	
	PPROVAL FOR THE	
WELL WORK CONSTRUCTION O	F AN IMPOUNDMENT OR PIT	
Delivery method pursuant to West Virginia Code § 22-6A-	-10(b)	
☐ PERSONAL ☑ REGISTERED ☐ MET	THOD OF DELIVERY THAT REQUIRES A	
	CEIPT OR SIGNATURE CONFIRMATION	
Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing d		11
certificate of approval for the construction of an impoundment or registered mail or by any method of delivery that requires a receip sediment control plan required by section seven of this article, and the surface of the tract on which the well is or is proposed to be led oil and gas leasehold being developed by the proposed well work described in the erosion and sediment control plan submitted purpoperator or lessee, in the event the tract of land on which the well more coal seams; (4) The owners of record of the surface tract or well work, if the surface tract is to be used for the placement, come impoundment or pit as described in section nine of this article; (5) have a water well, spring or water supply source located within oprovide water for consumption by humans or domestic animals; a proposed well work activity is to take place. (c)(1) If more than the subsection (b) of this section hold interests in the lands, the application of the sheriff required to be maintained pursuant to section provision of this article to the contrary, notice to a lien holder is a Code R. § 35-8-5.7.a requires, in part, that the operator shall also water purveyor or surface owner subject to notice and water testing	pt or signature confirmation, copies of the application, the did the well plat to each of the following persons: (1) The of coated; (2) The owners of record of the surface tract or tract, if the surface tract is to be used for roads or other land dissuant to subsection (c), section seven of this article; (3) The proposed to be drilled is located [sic] is known to be undertracts overlying the oil and gas leasehold being developed a struction, enlargement, alteration, repair, removal or abartical particles, and (6) The operator of any natural gas storage field within the tenants in common or other co-owners of interests decant may serve the documents required upon the person do no eight, article one, chapter eleven-a of this code. (2) Not not notice to a landowner, unless the lien holder is the land of provide the Well Site Safety Plan ("WSSP") to the surface	erosion and wners of record of acts overlying the isturbance as ne coal owner, lerlain by one or I by the proposed adonment of any the applicant to I which is used to n which the scribed in escribed in the withstanding any downer, W. Va.
☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Noti	ce Well Plat Notice is hereby provided to:	
☑ SURFACE OWNER(s)	☐ COAL OWNER OR LESSEE	Office of Oil and Gas
Name: Short Creek Coal Co. C/O Rayle Coal Co.	Name: Short Creek Coal Co. C/O Rayle Coal Co.,	or on and dag
Address: 67705 Friends Church Road	Address: 66705 Friends Church Road	JUL 17 2017
Saint Clairsville, OH 43950	Saint Clairsville, OH 43950	002 1 1 2011
Name:	☐ COAL OPERATOR	WV Department of
Address:	Name:	Environmental Front Gran
	Address:	The state of the s
☐ SURFACE OWNER(s) (Road and/or Other Disturbance)		
Name:	☑ SURFACE OWNER OF WATER WELL	
Address:	AND/OR WATER PURVEYOR(s)	
	Name: None	
Name:	Address:	
Address:		
Tiddl 655t	☐ OPERATOR OF ANY NATURAL GAS STORA	AGE FIELD
SURFACE OWNER(s) (Impoundments or Pits)		
	Name: Address:	
	Addicess.	
Address:	*Please attach additional forms if necessary	
	riease attach additional forms if necessary	

WW-6A (8-13)

RECEIVED Office of Oil and Gas

JUL 17 2017

API NO. 47-069

OPERATOR WELL NO. Rayle Coal OHI 401H Well Pad Name: Rayle Coal OHI PAD

Notice is hereby given:

WW Department of Environmental Protection

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oiland-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

API NO. 47-069

OPERATOR WELL NO. Rayle Coal OHI 401H

Well Pad Name: Rayle Coal OHI PAD

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

RECEIVED
Office of Oil and Gas**

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

JUL 17 2017

WV Department of Environmental Protection

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

WW-6A (8-13)

API NO. 47-069

OPERATOR WELL NO. Rayle Coal OHI 401H

Well Pad Name: Rayle Coal OHI PAD

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have THIRTY (30) DAYS after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code & 22-6A-11(c)(2). Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site http://www.dep.wv.gov/oil-and-gas/l-lorizontal-Permits/Pages/default.aspx and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

WW-6A (8-13)

API NO. 47- 069 -

OPERATOR WELL NO. Rayle Coal OHI 401H
Well Pad Name: Rayle Coal OHI PAD

Notice is hereby given by:

Well Operator: SWN Production Co. LLC

Telephone: 304-884-1614 Email: Dee_Southall@swn.com Address: P.O. Box 1300 Jane Lew, WV 26378

Facsimile:

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

Subscribed and sworn before me this atth day of June 201

adding A production

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Notary Public

Office of Oil and Gas

JUL 17 2017

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Delivery method pursuant to West Virginia Code § 22-6A-16(b) HAND CERTIFIED MAIL Office of Oil and Gas JUL 1 7 2017	Notice Time Date of Noti		otice shall be provided at	least TEN (10) days price≥to filing a mit Application Filed:	
HAND	Date of Noti		Date Fer	and Application Flied	RECEIVED Office of Oil and Gas
DELIVERY RETURN RECEIPT REQUESTED Westwant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well. Provided. That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner. Provided, however. That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Notice is hereby provided to the SURFACE OWNER(s): Name: Short Cond. Cool Royale Cond. Co. Address: 9708 Financh Church Rd. Sand Claraville. OH 43950 Notice is hereby given: Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows: State: West Virginia Code § 22-6A-16(b). This Note of the purpose of drilling a horizontal well on the tract of land as follows: State: West Virginia Code § 22-6A-16(b). This Note of the purpose of drilling a horizontal well on the tract of land as follows: State: West Virginia Code § 22-6A-16(b). This Note of the purpose of drilling a horizontal well on the tract of land as follows: State: West Virginia Code § 22-6A-16(b). This Note of the purpose of drilling and horizontal well on the tract of land as follows: State: West Virginia Code § 22-6A-16(b). This Note of the purpose of drilling and the operato	Delivery me	thod pursuant to	West Virginia Code § 2	2-6A-16(b)	JUL 1 7 2017
DELIVERY RETURN RECEIPT REQUESTED Who paparament Protectif Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well. Provided. That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner. Provided, however. That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Notice is hereby provided to the SURFACE OWNER(s): Name: Shard Cond Con Co Rayle Cond Co. Address: 97706 Finerica Cond English Cond Co. Address: 9706 Finerica Cond English Cond Co. Name: Address: 9706 Finerica Cond English Cond Co. Notice is hereby given: Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows: State: West Virginia Code § 22-6A-16(b). Online UTM NAD 83 Easting: \$531,777.56 UTM NAD 83 Northing: \$445,743.27 Public Road Access: Huffs Run Road Quadrangle: Tillicus/West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57° Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx	☐ HAND	■ c	ERTIFIED MAIL		
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Address: 67705 Friends Church Rd. Saint Clairsville. OH 43950 Notice is hereby given: Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows: State: West Virginia UTM NAD 83 Easting: 531,777.56 County: Ohio UTM NAD 83 Northing: Northing: Watsinand Public Road Access: Huffs Run Road Quadrangle: Tiltonsville Generally used farm name: Rayle Coal OHI Watershed: Upper Ohio South This Notice Shall Include: Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx. Notice is hereby given by: Well Operator: SWN Production Company, LLC Address: PO Box 1300, 179 Innovation Drive Jane Lew, WV 26376 Telephone: 304-517-6603 Telephone: 304-517-6603 Email: Michael_Yates@swn.com Address: Michael_Yates@swn.com	receipt reque drilling a hor of this subsec- subsection m and if availab	sted or hand delivizontal well: <i>Pro</i> stion as of the date ay be waived in welle, facsimile numbers.	ery, give the surface own wided, That notice given the notice was provided riting by the surface own ber and electronic mail as	pursuant to subsection (a), section to to the surface owner: <i>Provided, how</i> ter. The notice, if required, shall includers of the operator and the operator	ne surface owner's land for the purpose of en of this article satisfies the requirements wever, That the notice requirements of this ude the name, address, telephone number,
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Address: PO Box 1300, 179 Innovation Drive Address: PO Box 1300, 179 Innovation Drive Jane Lew, WV 26378 Jane Lew, WV 26378 Telephone: 304-517-6603 Telephone: 304-517-6603 Email: Michael Yates@swn.com Email: Michael Yates@swn.com	Notice is he	reby given by:			
Jane Lew, WV 26378 Jane Lew, WV 26378 Telephone: 304-517-6603 Telephone: 304-517-6603 Email: Michael_Yates@swn.com Email: Michael_Yates@swn.com	Well Operato	SWN Production (Company, LLC	Authorized Representative:	Mike Yates
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Email: Michael_Yates@swn.com Email: Michael_Yates@swn.com		Jane Lew, WV 263	378		Jane Lew, WV 26378
	Telephone:	304-517-6603		Telephone:	304-517-6603
Facsimile: 304-884-1691 Facsimile: 304-884-1691	Email:	Michael_Yates@s	swn.com	Email:	Michael_Yates@swn.com
	Facsimile:	304-884-1691		Facsimile:	304-884-1691

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF PLANNED OPERATION

Delivery metl	hod pursuant to West Virginia Co	de § 22-6A-16(c)			
CERTIF	FIED MAIL	☐ HAND			
	N RECEIPT REQUESTED	DELIVERY			
return receipt the planned of required to be drilling of a hidden damages to the (d) The notice of notice.	requested or hand delivery, give the peration. The notice required by t provided by subsection (b), section orizontal well; and (3) A proposed e surface affected by oil and gas open	e surface owner whose land this subsection shall include the of this article to a surface use and competerations to the extent the civen to the surface owner twento	nd will be used for ude: (1) A copy face owner who usation agreement lamages are com	cation, an operator shall, by certified mail or the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the nt containing an offer of compensation for pensable under article six-b of this chapter, sted in the records of the sheriff at the time	
	ek Coal Co. C/O Rayle Coal Co.	Name			
Address: 67705 Firends Church Rd.		1	Address:		
		/ Addre	ss:		
Saint Clairsville, O	H 43950	· _		well operator has developed a planned	
Notice is here Pursuant to W operation on t State: County:	eby given: lest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp West Virginia Ohio	otice is hereby given that pose of drilling a horizon UTM NAD	the undersigned al well on the tra 83 Easting: Northing:	531,777.56 4,445,743.27	
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The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED Office of Oil and Gas

JUL 17 2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110

Jim Justice Charleston, West Virginia 25305-0430 • (304) 558-3505

Governor

Thomas J. Smith, P. E. Secretary of Transportation/ Commissioner of Highways

June 27, 2017

James A. Martin, Chief Office of Oil and Gas Department of Environmental Protection 601 57th Street, SE Charleston, WV 25304

Subject: DOH Permit for the Rayle Coal OHI 401H Well Site, Ohio County

47-069-00246

Dear Mr. Martin,

The West Virginia Division of Highways issued Permit #06-2012-0313 for the subject site to Chesapeake Appalachia, LLC for access to the State Road for the well site located off of Ohio County Route 9 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

RECEIVED Office of Oil and Gas

JUL 17 2017

WV Department of Environmental Protection

Very Truly Yours,

Gary K. Clayton

Regional Maintenance Engineer Central Office Oil &Gas Coordinator

Cc: Brittany Woody

Southwestern Energy

CH, OM, D-6

File

RECEIVE: Office of Oil at

JUL 172

WV Departrue Environmental F.

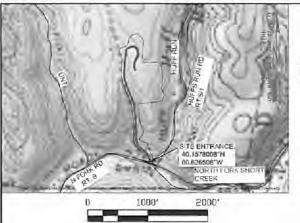
JUL 17 2017

Product Name	Product Use	Chemical Name	CAS Number	
		Hydrogen Peroxide	7722-84-1	1
EC6734A (Champion Technologies)	Biocide	Acetic Acid	64-19-7	E
		Peroxyacetic Acid	79-21-0	1
GYPTRON T-390 (Champion		Methanol	67-56-1	1
Technologies)	Scale Inhibitor	Nonylphenol Ethoxylate	Proprietary	1
		Glutaraldehyde	111-30-8	1
Bactron K-139 (Champion Technologies)	Biocide	Quaternary Ammonium Compounds, Benzyl-C12- 16-Alkyldimethyl, Chlorides	68424-85-1	Env
		Ethanol	64-17-5	ΙĒ
Bactron K-219 (Champion	Biocide	Methanol	67-56-1	Environmental Protection
Technologies)	piociue	Quaternary Ammonium Compounds, Benzyl-C12- 16-Alkyldimethyl, Chlorides	68424-85-1	otection
		Methanol	67-56-1	
A264 (Schlumberger)	Corrosion	Aliphatic Acids	Proprietary	
A204 (Schlumberger)	Inhibitor	Prop-2-yn-1-ol	107-19-7	
	Aliphatic Alcohols, Ethoxylated #1	Proprietary		
Africaido CA OF to	Discide	Water	7732-18-5	1
Myacide GA 25 (Schlumberger)	Biocide	Glutaral	111-30-8	1
	Carla tabibisa	Trisodium Ortho Phosphate	7601-54-9	1
cale Inhibitor B317 (Schlumberger)	Scale Inhibitor	Ethane-1,2-diol	107-21-1	1
H215 (Schlumberger)	Hydrochloric Acid	Hydrochloric Acid	7647-01-0	
J218 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0	
EB-Clean* J475 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0	
Water Gelling Agent J580 (Schlumberger)	Gel	Carbohydrate Polymer	Proprietary	
Friction Reducer J609W	Friction	Ammonium Sulfate	7783-20-2	
(Schlumberger)	Reducer	Urea	57-13-6	
Crosslinker J610 (Schlumberger)	Crosslinker	Potassium Hydroxide	1310-58-3	
Crossifiker Joto (Schlumberger)	Crossilikei	Aliphatic Polyol	Proprietary	
Iron Stabilizer L58 (Schlumberger)	Iron Stabilizer	Sodium Erythorbate	6381-77-7	
40/70-Mesh Sand S012 (Schlumberger)	Sand	Crystalline Silica	14808-60-7	
Sand S100 (Schlumberger)	Sand	Crystalline Silica	14808-60-7	
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary	1
		Ethylene Glycol	107-21-1	
SSA-2 (Halliburton)	Sand	Crystalline Silica	14808-60-7	1
FR-76 (Halliburton)	Friction Reducer	Inorganic salt Hydrotreated light petroleum distillate	64742-47-8	
LCA-1 (Halliburton)		Hydrotreated light petroleum distillate	Proprietary	
SP BREAKER (Halliburton)	Breaker	Sodium Persulfate	7775-27-1	

Product Name	Product Use	Chemical Name	CAS Number
	Corrosion Inhibitor	Methanol	
HAI-150E (Halliburton)		Aliphatic Acids	NA NA
		Prop-2-yn-1-ol	
		Aliphatic Alcohols, Ethoxylated #1	
Hydrochloric Acid 10-30% (Halliburton)		Hydrochloric Acid	7647-01-0
WG-36 Gelling Agent (Halliburton)	Gel	Polysaccharide	9000-30-0
BC-140C (Halliburton)	Crosslinker		NA

RECEIVED Office of Oil and Gas

JUL 17 2017



RAYLE COAL PAD "A" CONSTRUCTION AND RECLAMATION PLAN AS-BUILT RICHLAND DISTRICT OHIO COUNTY, WV

JUNE 2017

SI. TITLE SHEET

EP2.1 EVACUATION ROUTE/PREVAILING WIND EP2.2 EVACUATION ROUTE/PREVAILING WIND

AS3.1 ASBUILT OVERVIEW

AS3.2 ASBUILT AS3.3 ASBUILT

AS3.4 ASBUILT

AS3.5 ASBUILT

ASR4.1 CONSTRUCTION AND RECLAMATION ACCESS ROAD PROFILE

MRD5.1 RECLAMATION PLAN OVERVIEW MRD5.2 RECLAMATION PLAN

MRD5.3 RECLAMATION PLAN MRD5.4 RECLAMATION PLAN

MRD5.5 RECLAMATION PLAN

MRDS 1 RECLAMATION DETAILS

MRD5.2 RECLAMATION DETAILS

MRD8.3 RECLAMATION DETAILS





COORDINATES

SITE ENTRANCE (NADS3) LAT: 40,1578008 LONG: 80.626508

TOTAL DISTURBED AREA: 15.81 ACRES ROAD DISTURBED AREA: 1.44 ACRES.

PAD DISTURBED AREA: 3.40 ACRES

CENTER OF PAD (NAD83) LONG: 80.626808

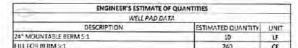
GATHERING AREA (NAD83)

EXISTING WELL 1H (NAD83)

LAT: 40,161412 LONG: 80.526832 API: 069-00182

LONG: 80.626508

EXISTING WELL 6H (NAD83) LAT: 40.161487 LONG: 80.626851 API: 089-00117



WVDEP OOG ACCEPTED AS-BUILT WA | 8/18/2017



MIE TAWYER





ELK LAKE SERVICES, LLC

RAYLE COAL PAD "A"

TITLE SHEET

TSI

