



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL

September 02, 2014

CHESAPEAKE APPALACHIA, L.L.C.
POST OFFICE BOX 6070
CHARLESTON, WV 25362

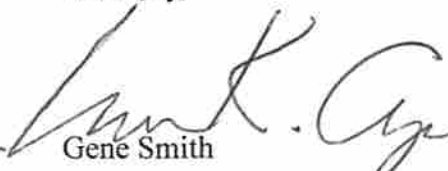
Re: Permit Modification Approval for API Number 900146 , Well #: VIOLET COSS BRK 8H
Modified casing

Oil and Gas Operator:

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.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

for 
Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

9-00146 MOD



Danielle Southall
Regulatory Analyst II

August 28, 2014

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

Re: Modification to Violet Coss BRK 8H API# 47-009-00146

Dear Laura:

Enclosed please find a modification for the above captioned well. We would like to modify all the casing except for the 5 ½" which will remain the same. This well is situated on the Coss' property, in Buffalo District, Brooke County, West Virginia.

If you have any questions or require additional information, please contact me at 304-517-1416 ext 86017.

Sincerely,



Dee Southall

Enclosure(s)

Received

AUG 29 2014

Office of Oil and Gas
WV Dept. of Environmental Protection

09/05/2014

WW - 6B
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.V.A. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: Chesapeake Appalachia, LLC 494477657 09-Brooke 1-Buffalo Steubenville E
Operator ID County District Quadrangle

2) Operator's Well Number: Violet Coss BRK 8H Well Pad Name: Violet Coss BRK Pad

3 Elevation, current ground: 1180' Elevation, proposed post-construction: 1171'

4) Well Type: (a) Gas Oil
Other
(b) If Gas: Shallow Deep
Horizontal

JM 8/28/14

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target Formation-Marcellus, Anticipated Marcellus top- 5670', Anticipated Marcellus Base 5729', Thickness-59', Pressure 3458

7) Proposed Total Vertical Depth: 5700'

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 12,500'

10) Approximate Fresh Water Strata Depths: 289'

11) Method to Determine Fresh Water Depth: Data was gathered from e-logs, drillers logs and from wells within a 2500' radius

12) Approximate Saltwater Depths: 645'

13) Approximate Coal Seam Depths: 192'

14) Approximate Depth to Possible Void (coal mine, karst, other): 192' abandoned mine

15) Does land contain coal seams tributary or adjacent to, active mine? No

16) Describe proposed well work:
Drill and stimulate any potential zones between and including the Benson to the 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)

17) Describe fracturing/stimulating methods in detail:
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.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 12.34

19) Area to be disturbed for well pad only, less access road (acres): 7.56

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AUG 29 2014

WW - 6B
(1/12)

20)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	26"	New	J-55	94#	100'	100'	CTS
Fresh Water	20"	New	J-55	94#	242'	242'	355SX/CTS
Coal	13 3/8"	New	J-55	54.5 ppl	342'	342'	If Needed /CTS
Intermediate	9 5/8"	New	J-55	40#	1617'	1617'	718 SX/CTS
Production	5 1/2"	New	P-110	20#	12,500'	12,500'	Lead 960 sx Tail 1250 sx/100' inside intermediate
Tubing	2 3/8"	New	N-80	4.7#	Approx. 6027'	Approx. 6027'	
Liners							

13 3/8" string required - LKC

Ju 8/28/14

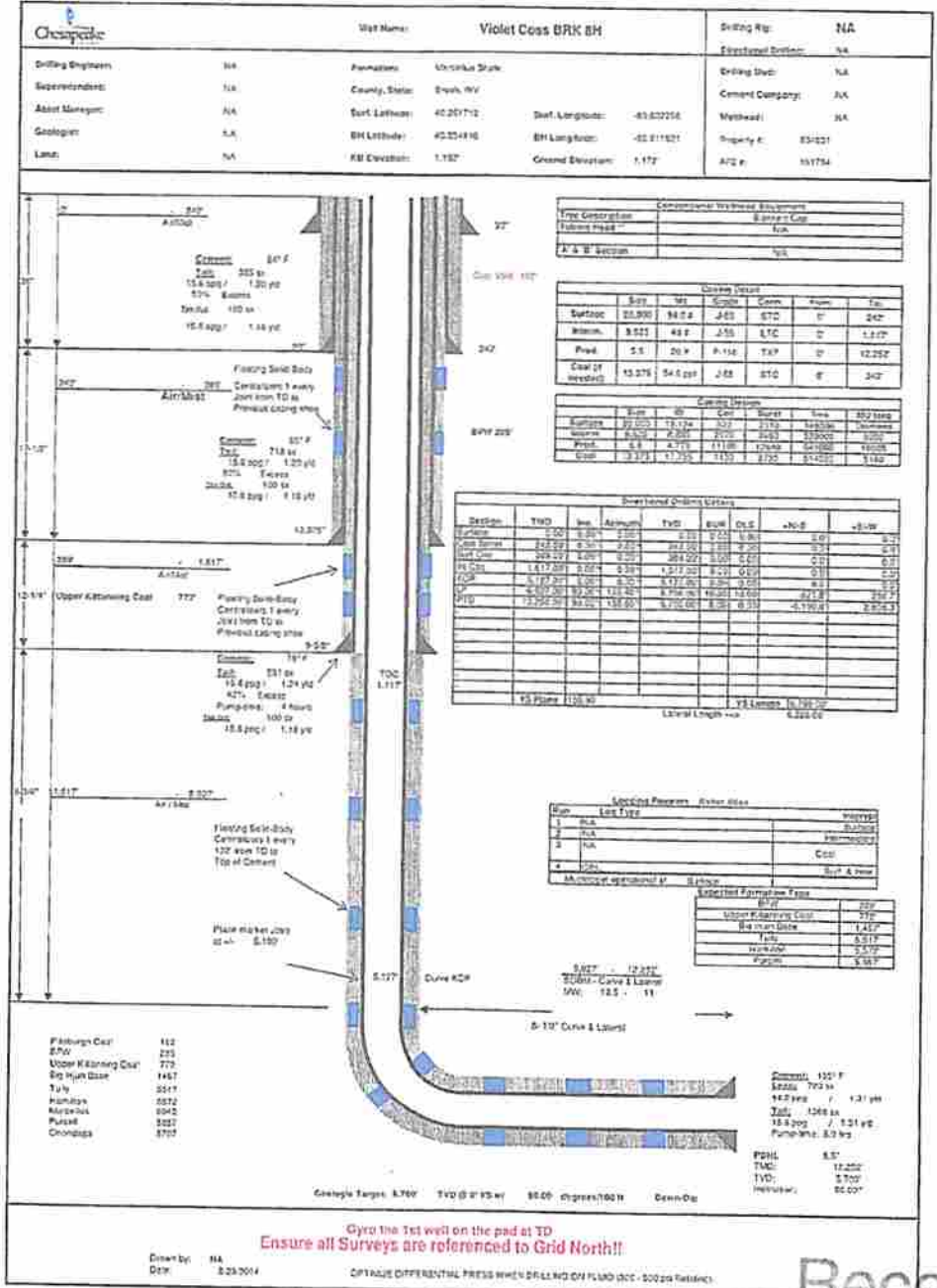
TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	20"			2110	15.6 ppg	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	15.6 ppg	1.19/50% Excess
Coal						
Intermediate	9 5/8"	12 1/4"	0.395	3950	15.6 ppg	1.19/50% Excess
Production	5 1/2"	8 3/4"	0.361	12360	15.6 ppg	1.2015% Excess
Tubing	2 3/8"	4.778"	0.190			
Liners						

PACKERS

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:	Approx. 6,197'			

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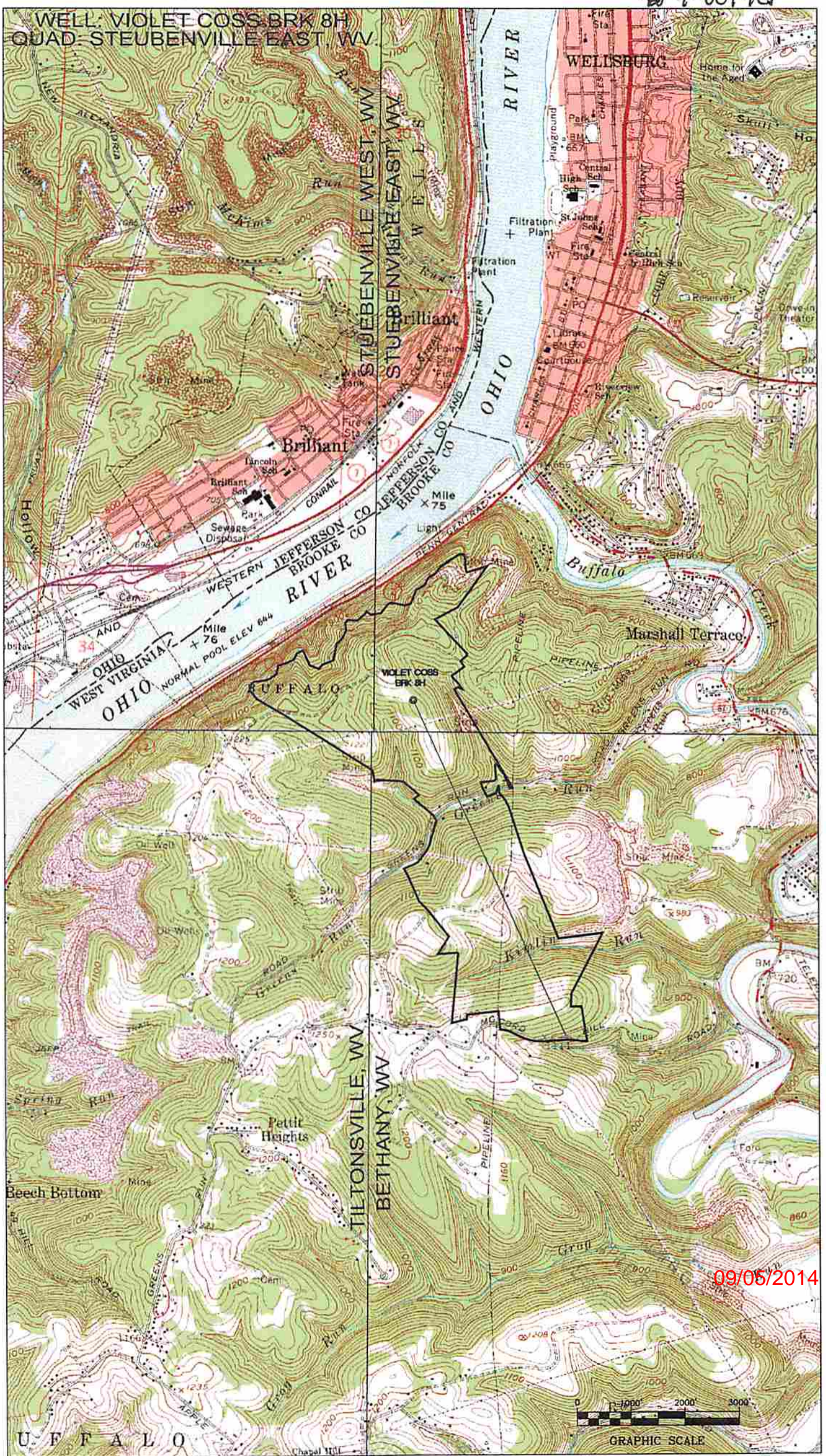
AUG 29 2014

Office of Oil and Gas
WV Dept. of Environmental Protection

09/05/2014

9-0014L

WELL: VIOLET COSS BRK 8H
QUAD: STEUBENVILLE EAST WV.



09/05/2014



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