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**west virginia** department of environmental protection

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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

July 17, 2014

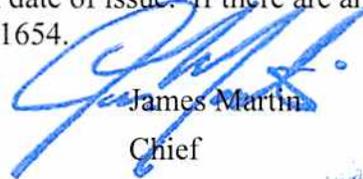
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-2900141, issued to CHESAPEAKE APPALACHIA, L.L.C., 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 all 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: 834412 (ALLISON HNK 3H M)

Farm Name: ALLISON, CAROLYN

**API Well Number: 47-2900141**

**Permit Type: Plugging**

Date Issued: 07/17/2014

**Promoting a healthy environment.**

## PERMIT CONDITIONS

West Virginia Code §22-6-11 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

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. During reclamation apply 4 tons of lime per acre.
5. During reclamation use straw instead mulch.

OK  
JMM

29 00141 P

5817 Wylie Ridge  
New Cumberland, WV 26047  
May 22, 2014

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

To Whom It May Concern,

I am writing these two comments concerning the Plugging Permit for Allison HNK 4H M well in Hancock County, WV.

Upon reclaiming the area, we want 4 tons of lime per acre and the use of straw only for the mulch. The reasoning for straw only is that hay produces weeds when used as mulch.

Thank you.

Sincerely,



Carolyn Allison  
Land Owner

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MAY 27 2014

WV Department of  
Environmental Protection

2900141P

WW-4B  
Rev. 2/01

1) Date May 12, 2014  
2) Operator's  
Well No. 834412  
3) API Well No. 47-029 - 00141

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil \_\_\_ / Gas X / Liquid injection \_\_\_ / Waste disposal \_\_\_ /  
(If "Gas, Production \_\_\_ or Underground storage \_\_\_) Deep \_\_\_ / Shallow X
- 5) Location: Elevation 1275' Watershed Upper Ohio South  
District Clay County Hancock Quadrangle East Liverpool South
- 6) Well Operator Chesapeake Appalachia, LLC 7) Designated Agent Eric B. Gillespie  
Address P.O. Box 1300 Address P.O. Box 6070  
Jane Lew, WV 26378 Charleston, WV 25301
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Gayne Knitowski Name R & J Well Service  
Address PO Box #2 Address P.O. Box 37  
Moundsville, WV 26041 Hueysville, KY 41640

10) Work Order: The work order for the manner of plugging this well is as follows:

MIRU service rig & snubbing unit. NOTE: Blow down well to pit or tank. Load hole w/ 9.7 ppg brine (calculated 110 bbls). Observe well for 30 min to establish well is dead.

Release 5 1/2" x 2 3/8" AS-IX Packer. SOOH w/ 2 3/8" production tubing, gas lift valves and packer set at 4,141'. RU wireline unit and TIH w/ gauge ring & junk basket to KOP at 4,000'.

TOOH and lay down GR & JB. TIH w/ 5 1/2" 20 lb/ft 8K CIBP and set at 4,000'. (Check CCL log to ensure there is not a collar present at set depth). RIH w/ 2 3/8" tubing to 8K CIBP located at 4,000'. Circulate hole with 89 bbls of 6% gelled water or break surface with circulation. RU & Pump 12 sks of Class A cement (spot 100' cement on top of CIBP).

Flush tubing w/ 16 bbls of 6% gelled water. TOOH + 300' with 2 3/8" tubing. SD & WOC for 8 hours. TIH w/ 2 3/8" tubing and tag plug @ 3,900'. Plug must be at 3,900' or higher;

Add additional cement if needed. TOOH w/ 2 3/8" tubing to 1,325' and pump 12 sks of Class A cement (spot 100' for elevation plug - 1,225' to 1,325'). Flush tubing w/ 6 bbls of 6% gelled water.

TOOH + 300' with 2 3/8" tubing. SD & WOC for 8 hours. TIH w/ 2 3/8" tubing and tag plug @ 1,225'. Plug must be at 1,225' or higher; Add additional cement if needed.

TOOH w/ 2 3/8" tubing to 100' Pump 6 bbl of 6% gelled water or break circulation. Pump 12 sks of Class A cement for 100' surface cement plug. TOOH w/ tubing. Top off well with required Class A cement as needed. Install a 36 inch casing monument w/ 2" vent. Install a Aluminum plat monument with ALL required WV dates and WV API number.

RDMO all service equipment providers and reclaim location to WV State requirements.

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Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

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Work order approved by inspector Gayne Knitowski

Date 5/14/2014

**Driving Directions**

Intersection of Filmore Street and W V 2 South Take W Virginia South for 1.5 miles. Turn Left onto Ballantyne Road for 1.2 miles turn Left onto Shady Glen Rd for 0.7 miles. Turn Right onto Bell Hill Road for 1.6 miles Bell Hill Road turns into Chapman Road. Access road will be located on the left. 40.521413, -80.917164.

**SCOPE OF OPERATION**

1. Safety is the highest priority. Control costs and avoid unnecessary expenditures.
2. TOOH with 2-3/8" tubing & packer.
3. Run in hole with wireline set 8K CIBP.
3. Pump required cement and gel plugs per WV DEP state requirements
4. Plant a well monument with WV State API number.

**Procedure**

1. **Contact the WV State Inspector 48 hours prior to operations.**
2. **Safety is the highest priority.** Hold wellsite safety meetings prior to each significant operation. Review critical parameters and objectives as well as emergency action plans.
3. MIRU service rig & snubbing unit. **NOTE: Blow down well to pit or tank.**
4. Load hole w/ 9.7 ppg brine (calculated 110 bbls). Observe well for 30 min to establish well is dead.
5. Release 5 1/2" x 2 3/8" AS-IX Packer. SOOH w/ 2 3/8" production tubing, gas lift valves and packer set at 4,141'.
6. RU wireline unit and TIH w/ gauge ring & junk basket to KOP at 4,000'. TOOH and lay down GR & JB. TIH w/ 5 1/2" 20 lb/ft 8K CIBP and set at 4,000'. (Check CCL log to ensure there is not a collar present at set depth).
7. RIH w/ 2 3/8" tubing to 8K CIBP located at 4,000'. Circulate hole with 89 bbls of 6% gelled water or break surface with circulation.
8. RU & Pump 12 sks of Class A cement (spot 100' cement @ 100' of CIBP). Flush tubing w/ 16 bbls of 6% gelled water.
9. TOOH  $\pm$  300' with 2 3/8" tubing. SD & WOC for 8 hours.
10. TIH w/ 2 3/8" tubing and tag plug @ 3,900'. Plug must be set at 3,900' or higher. Add additional cement if needed.

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11. TOOH w/ 2 3/8" tubing to 1,325' and pump 12 sks of Class A cement (spot 100' for elevation plug - 1,225' to 1,325'). Flush tubing w/ 6 bbls of 6% gelled water.
12. TOOH  $\pm$  300' with 2 3/8" tubing. SD & WOC for 8 hours.
13. TIH w/ 2 3/8" tubing and tag plug @ 1,225'. Plug must be at 1,225' or higher; Add additional cement if needed.
14. TOOH w/ 2 3/8" tubing to 100' Pump 6 bbl of 6% gelled water or break circulation. Pump 12 sks of Class A cement for 100' surface cement plug, TOOH w/ tubing. 23. Top off well with required Class A cement as needed.
15. Install a 36 inch casing monument w/ 2" vent. Install a Aluminum plat monument with **ALL required WV dates and WV API number.**
16. RDMO all service equipment providers and reclaim location to WV State requirements.

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2900141P



Allison HNK 3H M  
 Hancock County West Virginia  
 API# 47-029-00141  
 Plugging Procedure

**Well Data**

Location (Surface)	40.501514 Lat. -80.547351 Long.
TD	8,309'
PBTD	8,221'
Elevation	KB 1,275' GL 1,293'

**Casing and Tubular Data**

STRING	SIZE	WEIGHT/GRADE	DEPTH	ID	TOC
Surface	13 3/8"	54.5#	662'	12.615	Surface
Intermediate	9 5/8"	40# J-55	1,525'	8.835	Surface
Production	5 1/2"	20# P 110	8,309'	4.778	90'

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**Capacities**

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SIZE	WEIGHT	CAPACITY (CU FT/FT.)	CAPACITY (BBL/FT.)
5.5"	20#	0.1245	0.0222
2-3/8"	4.7#	0.1623	0.0038

2900141 P

### Current Wellbore Schematic

WELL (PN): ALLISON HNK 3H M (834412)  
 FIELD OFFICE: CANTON  
 FIELD:  
 STATE / COUNTY: WEST VIRGINIA / HANCOCK  
 LOCATION: T/D CLAY, Q-EAST LIVERPOOL SOUTH  
 ROUTE: OH-CAN-RT 002 - OH  
 ELEVATION: GL: 1,275.0 KB: 1,293.0 KB Height: 18.0  
 DEPTHS: TD: 8,309.0

*MOK*  
*5/14/2014*

API #: 4702900141  
 Serial #: 141  
 SPUD DATE: 4/29/2012  
 RIG RELEASE: 5/16/2012  
 1ST SALES GAS:  
 1ST SALES OIL:  
 CURRENT STATUS: W/O PIPELINE

HORIZONTAL - Lateral, 5/8/2014 10:55:16 AM			Surface Casing; Set @ 662.0 ftKB; Original Hole - Pilot																																																																																																																																																																																																																																																																	
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<td></td> <td>4,096.6</td> <td>4,097.7</td> <td>1.17</td> <td>1</td> </tr> <tr> <td>Tubing</td> <td>2 7/8</td> <td>2.441</td> <td>2.347</td> <td>6.50</td> <td>L-80</td> <td>4,097.7</td> <td>4,129.6</td> <td>31.86</td> <td>1</td> </tr> <tr> <td>On-Off Tool w/ X Profile</td> <td>4 1/2</td> <td>2.310</td> <td></td> <td></td> <td></td> <td>4,129.6</td> <td>4,131.1</td> <td>1.45</td> <td>1</td> </tr> <tr> <td>Packer: AS-IX</td> <td>4 1/2</td> <td>2.440</td> <td></td> <td></td> <td></td> <td>4,131.1</td> <td>4,138.0</td> <td>6.89</td> <td>1</td> </tr> <tr> <td>Profile Nipple: XN</td> <td>3 1/4</td> <td>2.250</td> <td></td> <td></td> <td></td> <td>4,138.0</td> <td>4,139.3</td> <td>1.27</td> <td>1</td> </tr> <tr> <td>Pup Joint</td> <td>2 7/8</td> <td>2.440</td> <td></td> <td></td> <td>12.95</td> <td>P-110</td> <td>4,139.3</td> <td>4,141.4</td> <td>2.08</td> <td>1</td> </tr> <tr> <td>Pump-Off Sub</td> <td>3.68</td> <td>2.440</td> <td></td> <td></td> <td></td> <td>4,141.4</td> <td>4,141.4</td> <td>0.05</td> <td>1</td> </tr> </tbody> </table>								Item Des	OD (in)	ID (in)	Drift (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)	Len (ft)	Jts	Tubing Hanger	8 7/8					18.0	18.4	0.45	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	18.4	976.2	957.79	30	Gas Lift Valve	2 7/8	2.441				976.2	980.3	4.10	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	980.3	1,586.3	605.96	19	Gas Lift Valve	2 7/8	2.441				1,586.3	1,590.4	4.10	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	1,590.4	2,004.1	413.70	13	Gas Lift Valve	2 7/8	2.441				2,004.1	2,008.2	4.10	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	2,008.2	2,422.7	414.57	13	Gas Lift Valve	2 7/8	2.440				2,422.7	2,426.8	4.10	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	2,426.8	2,840.7	413.90	13	Gas Lift Valve	2 7/8	2.440				2,840.7	2,844.8	4.10	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	2,844.8	3,259.0	414.22	13	Gas Lift Valve	2 7/8	2.440				3,259.0	3,263.1	4.10	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	3,263.1	3,676.9	413.77	13	Gas Lift Valve	2 7/8	2.440				3,676.9	3,681.0	4.10	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	3,681.0	4,092.5	411.46	13	Gas Lift Valve	2 7/8	2.440				4,092.5	4,096.6	4.10	1	Profile Nipple: X	3 1/4	2.310				4,096.6	4,097.7	1.17	1	Tubing	2 7/8	2.441	2.347	6.50	L-80	4,097.7	4,129.6	31.86	1	On-Off Tool w/ X Profile	4 1/2	2.310				4,129.6	4,131.1	1.45	1	Packer: AS-IX	4 1/2	2.440				4,131.1	4,138.0	6.89	1	Profile Nipple: XN	3 1/4	2.250				4,138.0	4,139.3	1.27	1	Pup Joint	2 7/8	2.440			12.95	P-110	4,139.3	4,141.4	2.08	1	Pump-Off Sub	3.68	2.440				4,141.4	4,141.4	0.05	1
Item Des	OD (in)	ID (in)	Drift (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)	Len (ft)	Jts																																																																																																																																																																																																																																																											
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5 1/2 in; 20.00 lb/ft; P-110; 18.0 -8,309.0 ftKB

RECEIVED  
 DEPARTMENT OF  
 ENVIRONMENTAL PROTECTION  
 MAY 19 2014

2900141P

### Current Wellbore Schematic

WELL (PN): ALLISON HNK 3H M (834412)  
 FIELD OFFICE: CANTON  
 FIELD:  
 STATE / COUNTY: WEST VIRGINIA / HANCOCK  
 LOCATION: T/D CLAY, Q-EAST LIVERPOOL SOUTH  
 ROUTE: OH-CAN-RT 002 - OH  
 ELEVATION: GL: 1,275.0 KB: 1,293.0 KB Height: 18.0  
 DEPTHS: TD: 8,309.0

API #: 4702900141  
 Serial #: 141  
 SPUD DATE: 4/29/2012  
 RIG RELEASE: 5/16/2012  
 1ST SALES GAS:  
 1ST SALES OIL:  
**CURRENT STATUS: W/O PIPELINE**

HORIZONTAL - Lateral, 5/8/2014 10:55:16 AM			Perforations					
MD (ftKB)	TVD (ftKB)	Vertical schematic (actual)	Date	Zone	Top (ftKB)	Btm (ftKB)	Shot Dens (shots/ft)	Current Status
3.052.0	3.051.6		7/29/2012	WEST FALLS, Lateral	5,417.0	5,418.0	4.0	
3.259.2	3.258.7		7/29/2012	WEST FALLS, Lateral	5,468.0	5,469.0	4.0	
3.261.2	3.260.7		7/29/2012	WEST FALLS, Lateral	5,520.0	5,521.0	4.0	
3.263.1	3.262.7		7/29/2012	WEST FALLS, Lateral	5,572.0	5,573.0	4.0	
3.470.0	3.469.5		7/29/2012	WEST FALLS, Lateral	5,624.0	5,625.0	4.0	
3.676.8	3.676.3		7/28/2012	WEST FALLS, Lateral	5,675.0	5,676.0	4.0	
3.679.0	3.678.4		7/28/2012	WEST FALLS, Lateral	5,727.0	5,728.0	4.0	
3.681.1	3.680.5		7/28/2012	WEST FALLS, Lateral	5,779.0	5,780.0	4.0	
3.744.1	3.743.5		7/28/2012	WEST FALLS, Lateral	5,831.0	5,832.0	4.0	
3.807.1	3.806.5		7/28/2012	WEST FALLS, Lateral	5,882.0	5,883.0	4.0	
3.949.8	3.949.2		7/28/2012	WEST FALLS, Lateral	5,934.0	5,935.0	4.0	
4.092.5	4.091.3		7/28/2012	WEST FALLS, Lateral	5,986.0	5,987.0	4.0	
4.094.5	4.093.2		7/28/2012	WEST FALLS, Lateral	6,038.0	6,039.0	4.0	
4.096.5	4.095.2		7/28/2012	WEST FALLS, Lateral	6,089.0	6,090.0	4.0	
4.097.1	4.095.8		7/28/2012	WEST FALLS, Lateral	6,141.0	6,142.0	4.0	
4.097.8	4.096.5		7/28/2012	WEST FALLS, Lateral	6,193.0	6,194.0	4.0	
4.103.8	4.102.3		7/28/2012	WEST FALLS, Lateral	6,245.0	6,247.0	4.0	
4.109.9	4.108.2		7/28/2012	WEST FALLS, Lateral	6,296.0	6,297.0	4.0	
4.110.9	4.109.2		7/28/2012	WEST FALLS, Lateral	6,348.0	6,349.0	4.0	
4.111.9	4.110.1		7/28/2012	WEST FALLS, Lateral	6,400.0	6,401.0	4.0	
4.120.7	4.118.7		7/28/2012	WEST FALLS, Lateral	6,452.0	6,453.0	4.0	
4.129.6	4.127.3		7/28/2012	WEST FALLS, Lateral	6,503.0	6,504.0	4.0	
4.130.2	4.127.9		7/28/2012	WEST FALLS, Lateral	6,555.0	6,556.0	4.0	
4.130.9	4.128.5		7/28/2012	WEST FALLS, Lateral	6,607.0	6,608.0	4.0	
4.134.5	4.131.9		7/28/2012	WEST FALLS, Lateral	6,659.0	6,660.0	4.0	
4.138.1	4.135.4		7/28/2012	WEST FALLS, Lateral	6,710.0	6,711.0	4.0	
4.138.6	4.135.8		7/28/2012	WEST FALLS, Lateral	6,762.0	6,763.0	4.0	
4.139.1	4.136.3		7/28/2012	WEST FALLS, Lateral	6,814.0	6,815.0	4.0	
4.140.3	4.137.4		7/28/2012	WEST FALLS, Lateral	6,866.0	6,867.0	4.0	
4.141.4	4.138.5		7/28/2012	WEST FALLS, Lateral	6,917.0	6,918.0	4.0	
4.546.3	4.478.6		7/28/2012	WEST FALLS, Lateral	6,969.0	6,970.0	4.0	
4.951.1	4.668.2		7/27/2012	WEST FALLS, Lateral	7,021.0	7,022.0	4.0	
4.951.6	4.668.2		7/27/2012	WEST FALLS, Lateral	7,073.0	7,074.0	4.0	
4.952.1	4.668.3		7/27/2012	WEST FALLS, Lateral	7,124.0	7,125.0	4.0	
4.977.5	4.671.8		7/27/2012	WEST FALLS, Lateral	7,176.0	7,177.0	4.0	
5.003.0	4.674.3		7/27/2012	WEST FALLS, Lateral	7,228.0	7,229.0	4.0	
5.003.4	4.674.3		7/27/2012	WEST FALLS, Lateral	7,280.0	7,281.0	4.0	
5.003.9	4.674.3		7/27/2012	WEST FALLS, Lateral	7,331.0	7,332.0	4.0	
5.029.0	4.675.6		7/27/2012	WEST FALLS, Lateral	7,383.0	7,384.0	4.0	
			7/27/2012	WEST FALLS, Lateral	7,435.0	7,436.0	4.0	
		7/27/2012	WEST FALLS, Lateral	7,487.0	7,488.0	4.0		
		7/27/2012	WEST FALLS, Lateral	7,537.0	7,538.0	4.0		
		7/27/2012	WEST FALLS, Lateral	7,590.0	7,591.0	4.0		
		7/27/2012	WEST FALLS, Lateral	7,642.0	7,643.0	4.0		
		7/27/2012	WEST FALLS, Lateral	7,694.0	7,695.0	4.0		
		7/27/2012	WEST FALLS, Lateral	7,745.0	7,746.0	4.0		
		7/27/2012	WEST FALLS, Lateral	7,797.0	7,798.0	4.0		
		7/26/2012	WEST FALLS, Lateral	7,849.0	7,850.0	4.0		
		7/26/2012	WEST FALLS, Lateral	7,901.0	7,902.0	4.0		
		7/26/2012	WEST FALLS, Lateral	7,952.0	7,953.0	4.0		
		7/26/2012	WEST FALLS, Lateral	8,004.0	8,005.0	4.0		
		7/26/2012	WEST FALLS, Lateral	8,056.0	8,057.0	4.0		
		7/26/2012	WEST FALLS, Lateral	8,108.0	8,109.0	4.0		
		7/26/2012	WEST FALLS, Lateral	8,159.0	8,160.0	4.0		
		5/25/2012	WEST FALLS, Lateral	8,211.0	8,212.0	4.0		

Stimulations					
WEST FALLS, Stage 8, Slickwater Frac, 7/30/2012					
Min Top Depth	Max Btm Dept.	Total Clean Vol.	Q Treat Avg (b)	Avg Treat Pres	Post ISIP (psi)
4,951.0	5,314.0	7069.00	86.00	5,404.0	2,516.0
Type	Sand Size	Amount	Units		
100 Mesh Sand	100 Mesh	2,745.0	lb		
100 Mesh Sand	100 Mesh	4,474.0	lb		
100 Mesh Sand	100 Mesh	8,059.0	lb		
100 Mesh Sand	100 Mesh	10,771.0	lb		
100 Mesh Sand	100 Mesh	20,819.0	lb		
Northern White Sand	20/40	42,330.0	lb		
Northern White Sand	20/40	15,568.0	lb		
Northern White Sand	20/40	241,295.0	lb		

5 1/2 in; 20.00 lb/ft; P-110; 18.0 -8,309.0 ftKB

**RECEIVED**  
 Office of Oil and Gas  
 May 18 2014  
 West Virginia Department of Environmental Protection

### Current Wellbore Schematic

WELL (PN): ALLISON HNK 3H M (834412)  
 FIELD OFFICE: CANTON  
 FIELD:  
 STATE / COUNTY: WEST VIRGINIA / HANCOCK  
 LOCATION: T/D CLAY Q-EAST LIVERPOOL SOUTH  
 ROUTE: OH-CAN-RT 002 - OH  
 ELEVATION: GL: 1,275.0 KB: 1,293.0 KB Height: 18.0  
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 1ST SALES GAS:  
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 CURRENT STATUS: W/O PIPELINE

HORIZONTAL - Lateral, 5/8/2014 10:55:16 AM		Stimulations										
MD (ft)	TVD (ft)	Vertical schematic (actual)		WEST FALLS, Stage 7, Slickwater Frac, 7/29/2012								
3,052.0	3,051.6			Min Top Depth	Max Btm Dept.	Total Clean Vo.	Q Treat Avg (b)	Avg Treat Pres.	Post ISIP (psi)	Comment		
3,259.2	3,258.7			5,365.0	5,728.0	6749.00	87.00	5,248.0	2,353.0			
3,261.2	3,260.7			Type	Sand Size	Amount	Units					
3,263.1	3,262.7			100 Mesh Sand	100 Mesh	1,694.0	lb					
3,470.0	3,469.5			100 Mesh Sand	100 Mesh	5,075.0	lb					
3,676.8	3,676.3			100 Mesh Sand	100 Mesh	8,373.0	lb					
3,679.0	3,678.4			100 Mesh Sand	100 Mesh	10,210.0	lb					
3,681.1	3,680.5			100 Mesh Sand	100 Mesh	20,715.0	lb					
3,744.1	3,743.5			Northern White Sand	20/40	40,973.0	lb					
3,807.1	3,806.5			Northern White Sand	20/40	103,544.0	lb					
3,949.8	3,949.2			Northern White Sand	20/40	153,938.0	lb					
4,092.5	4,091.3			Northern White Sand	20/40	189,324.0	lb					
4,094.5	4,093.2			WEST FALLS, Stage 6, Slickwater Frac, 7/29/2012								
4,096.5	4,095.2			Min Top Depth	Max Btm Dept.	Total Clean Vo.	Q Treat Avg (b)	Avg Treat Pres.	Post ISIP (psi)	Comment		
4,097.1	4,095.8			6,193.0	6,142.0	7123.00	86.00	5,443.0	2,401.0			
4,097.8	4,096.5			Type	Sand Size	Amount	Units					
4,103.8	4,102.3			100 Mesh Sand	100 Mesh	2,039.0	lb					
4,109.9	4,108.2			100 Mesh Sand	100 Mesh	5,421.0	lb					
4,110.9	4,109.2			100 Mesh Sand	100 Mesh	10,121.0	lb					
4,111.9	4,110.1			100 Mesh Sand	100 Mesh	10,451.0	lb					
4,120.7	4,118.7			100 Mesh Sand	100 Mesh	18,915.0	lb					
4,129.6	4,127.3			Northern White Sand	20/40	40,629.0	lb					
4,130.2	4,127.9			Northern White Sand	20/40	104,342.0	lb					
4,130.9	4,128.5			Northern White Sand	20/40	153,920.0	lb					
4,134.5	4,131.9			Northern White Sand	20/40	181,540.0	lb					
4,138.1	4,135.4			WEST FALLS, Stage 5, Slickwater Frac, 7/28/2012								
4,138.6	4,135.8			Min Top Depth	Max Btm Dept.	Total Clean Vo.	Q Treat Avg (b)	Avg Treat Pres.	Post ISIP (psi)	Comment		
4,139.1	4,136.3			6,193.0	6,556.0	7697.00	83.00	6,948.0	2,527.0			
4,140.3	4,137.4	Type	Sand Size	Amount	Units							
4,141.4	4,138.5	100 Mesh Sand	100 Mesh	2,309.0	lb							
4,546.3	4,478.8	100 Mesh Sand	100 Mesh	5,472.0	lb							
4,951.1	4,868.2	100 Mesh Sand	100 Mesh	8,689.0	lb							
4,951.6	4,868.2	100 Mesh Sand	100 Mesh	9,836.0	lb							
4,952.1	4,868.3	100 Mesh Sand	100 Mesh	20,461.0	lb							
4,977.5	4,871.8	100 Mesh Sand	100 Mesh	20,461.0	lb							
5,003.0	4,874.3	Northern White Sand	20/40	42,121.0	lb							
5,003.4	4,874.3	Northern White Sand	20/40	105,582.0	lb							
5,003.9	4,874.3	Northern White Sand	20/40	63,540.0	lb							
5,029.0	4,875.6	Northern White Sand	20/40	68,969.0	lb							
		Northern White Sand	20/40	190,020.0	lb							
		WEST FALLS, Stage 4, Slickwater Frac, 7/28/2012										
		Min Top Depth	Max Btm Dept.	Total Clean Vo.	Q Treat Avg (b)	Avg Treat Pres.	Post ISIP (psi)	Comment				
		6,607.0	6,970.0	7207.00	87.00	6,427.0	2,366.0					
		Type	Sand Size	Amount	Units							
		100 Mesh Sand	100 Mesh	1,306.0	lb							
		100 Mesh Sand	100 Mesh	6,020.0	lb							
		100 Mesh Sand	100 Mesh	7,835.0	lb							
		100 Mesh Sand	100 Mesh	11,035.0	lb							
		100 Mesh Sand	100 Mesh	20,169.0	lb							
		Northern White Sand	20/40	39,745.0	lb							
		Northern White Sand	20/40	105,889.0	lb							
		Northern White Sand	20/40	153,353.0	lb							
		Northern White Sand	20/40	184,778.0	lb							
		WEST FALLS, Stage 3, Slickwater Frac, 7/28/2012										
		Min Top Depth	Max Btm Dept.	Total Clean Vo.	Q Treat Avg (b)	Avg Treat Pres.	Post ISIP (psi)	Comment				
		7,022.0	7,384.0	6739.00	86.00	6,209.0	2,239.0					
		Type	Sand Size	Amount	Units							
		100 Mesh Sand	100 Mesh	1,785.0	lb							
		100 Mesh Sand	100 Mesh	5,582.0	lb							
		100 Mesh Sand	100 Mesh	8,211.0	lb							
		100 Mesh Sand	100 Mesh	10,153.0	lb							
		100 Mesh Sand	100 Mesh	20,648.0	lb							
		Northern White Sand	20/40	41,230.0	lb							
		Northern White Sand	20/40	108,099.0	lb							
		Northern White Sand	20/40	20,441.0	lb							
		Northern White Sand	20/40	75,859.0	lb							
		Northern White Sand	20/40	188,409.0	lb							
		WEST FALLS, Stage 2, Slickwater Frac, 7/27/2012										
		Min Top Depth	Max Btm Dept.	Total Clean Vo.	Q Treat Avg (b)	Avg Treat Pres.	Post ISIP (psi)	Comment				
		7,435.0	7,798.0	6759.00	87.00	4,912.0	1,941.0					
		Type	Sand Size	Amount	Units							
		100 Mesh Sand	100 Mesh	1,850.0	lb							
		100 Mesh Sand	100 Mesh	5,002.0	lb							
		100 Mesh Sand	100 Mesh	8,199.0	lb							
		100 Mesh Sand	100 Mesh	10,995.0	lb							

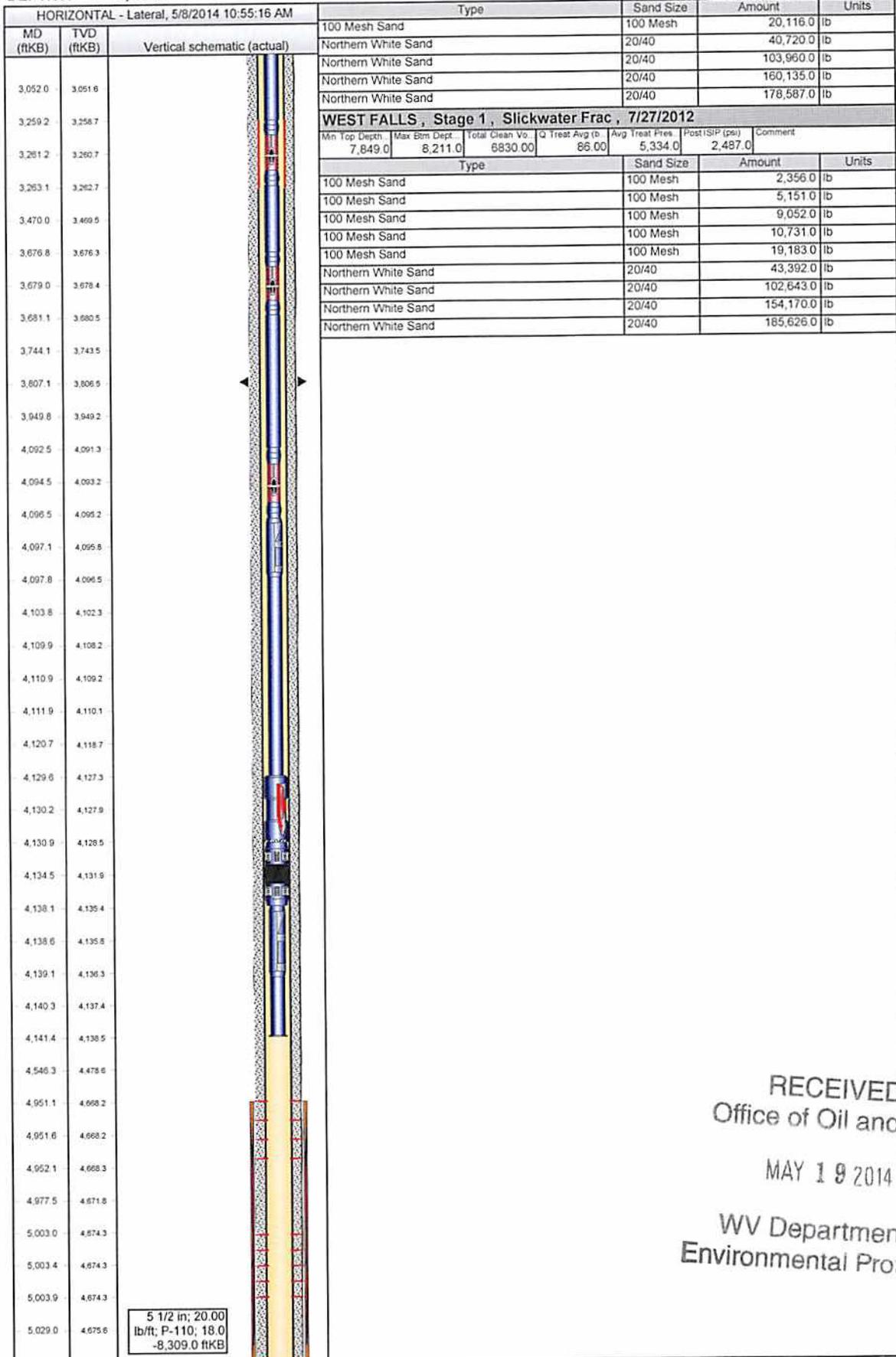
5 1/2 in; 20.00 lb/ft; P-110; 18.0 -8,309.0 ftKB

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### Current Wellbore Schematic

WELL (PN): ALLISON HNK 3H M (834412)  
 FIELD OFFICE: CANTON  
 FIELD:  
 STATE / COUNTY: WEST VIRGINIA / HANCOCK  
 LOCATION: T/D CLAY, Q-EAST LIVERPOOL SOUTH  
 ROUTE: OH-CAN-RT 002 - OH  
 ELEVATION: GL: 1,275.0 KB: 1,293.0 KB Height: 18.0  
 DEPTHS: TD: 8,309.0

API #: 4702900141  
 Serial #: 141  
 SPUD DATE: 4/29/2012  
 RIG RELEASE: 5/16/2012  
 1ST SALES GAS:  
 1ST SALES OIL:  
**CURRENT STATUS: W/O PIPELINE**



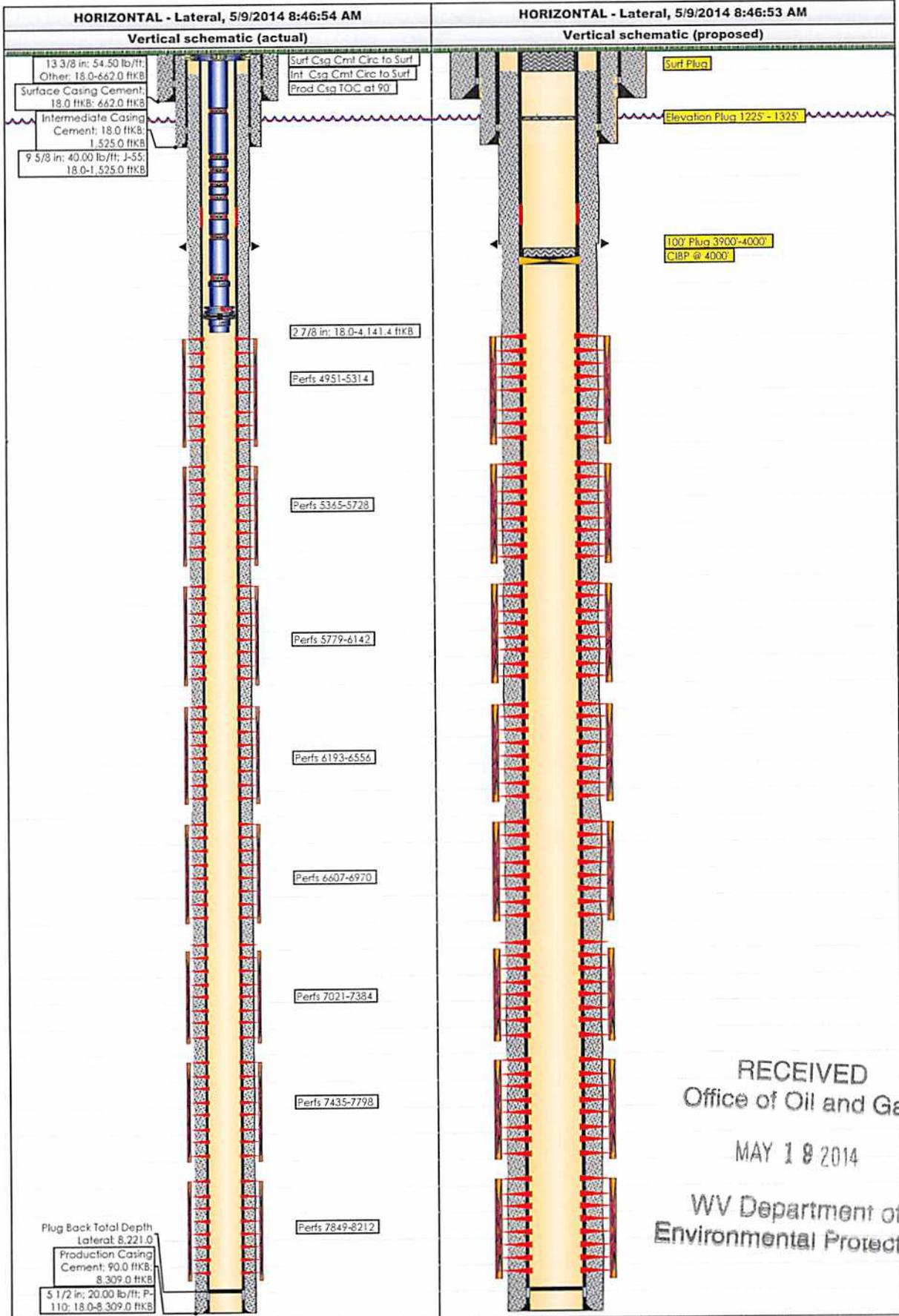
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 MAY 19 2014  
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# Proposed Plugging Wellbore Schematic

WELL (PN): ALLISON HNK 3H M (834412)  
 STATE / COUNTY: WEST VIRGINIA / HANCOCK  
 FIELD:  
 LOCATION: T/D CLAY, Q-EAST LIVERPOOL SOUTH  
 ELEVATION: GL: 1,275.0 KB: 1,293.0 KB HEIGHT: 18.0  
 DEPTHS: TD: 8,309.0

*MJK*  
*5/14/2014*

API #: 470290014101  
 SPUD DATE: 4/29/2012  
 RIG RELEASE: 5/16/2012  
 1ST SALES GAS:  
 1ST SALES OIL:  
 CURRENT STATUS: W/O PIPELINE



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WR-35  
Rev (9-11)

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas  
Well Operator's Report of Well Work

DATE: 11-28-2012  
API #: 47-029-00141

Farm name: Allison HNK 3H M

Operator Well No.: 834412

LOCATION: Elevation: 1275'

Quadrangle: East Liverpool South

District: Clay County: Hancock  
Latitude: 1520' Feet South of 40 Deg. 32 Min. 30 Sec.  
Longitude: 14800' Feet West of 80 Deg. 32 Min. 30 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
P.O. Box 18496				
Oklahoma City, OK 73154-0496	13 3/8"	662'	662'	735 Cu. Ft.
Agent: Eric Gillespie	9 5/8"	1525'	1525'	696 Cu. Ft.
Inspector: Bill Hendershot	5 1/2"	8309'	8309'	2122 Cu. Ft.
Date Permit Issued: 1-18-2012				
Date Well Work Commenced: 4-29-2012				
Date Well Work Completed: 7-30-2012				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 8175' (cement plug @ 3720'-5175')				
Total Measured Depth (ft): 8309'				
Fresh Water Depth (ft.): 500'				
Salt Water Depth (ft.): 795'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 585'				
Void(s) encountered (N/Y) Depth(s) N				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation West Falls Pay zone depth (ft) 4,850'-5085'

Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 1,161\* MCF/d Final open flow 5 Bbl/d \*Calculated  
Time of open flow between initial and final tests 239 Hours  
Static rock Pressure 3,001\* psig (surface pressure) after \_\_\_\_\_ Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the 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.

Marlene Williams  
Signature

12-3-2012  
Date

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**Vertical**

<b>Formation/Lithology</b>	<b>TVD Top</b>	<b>MD Top</b>	<b>TVD Bottom</b>
Pennsylvanian Unconsolidated	0'	0'	615'
Big Injun SS	615'	615'	690'
Shale	690'	690'	1300'
Berea SS	1300'	1300'	1375'
Shale	1375'	1375'	3800'
Java Shale	3800'	3800'	4200'
West Falls Fm.	4200'	4200'	4950'
Tully Limestone	4950'	4950'	4988'
Hamilton Shale	4988'	4988'	5070'
Marcellus Shale	5070'	5070'	5100'
Onondaga Limestone	5100'	5100'	
<b>Pilot TD</b>			<b>5175'</b>

**Horizontal (from Mudlogs)**

Pennsylvanian Unconsolidated	0'	0'	615'
Big Injun SS	615'	615'	690'
Shale	690'	690'	1300'
Berea SS	1300'	1300'	1375'
Shale	1375'	1375'	3800'
Java Shale	3800'	3800'	4200'
West Falls Fm.	4550'	5096'	
<b>Well TD</b>			<b>4618'</b>
Tully Limestone	Not Penetrated	Not Penetrated	Not Penetrated
Hamilton Shale	Not Penetrated	Not Penetrated	Not Penetrated
Marcellus Shale	Not Penetrated	Not Penetrated	Not Penetrated
Onondaga Limestone	Not Penetrated	Not Penetrated	Not Penetrated

Were core samples taken? Yes  No

Were cuttings caught during drilling? Yes

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list \_\_\_\_\_

**NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.**

Perforated Intervals, Fracturing, or Stimulating:

(See attached)

Plug Back Details Including Plug Type and Depth(s): (cement plug @ 3720'-5175')

Formations Encountered: Surface:	Top Depth	/	Bottom
-------------------------------------	-----------	---	--------

(See attached)



WW-4A  
Revised 6-07

1) Date: May 12, 2014  
2) Operator's Well Number  
834412

3) API Well No.: 47 - 029 - 00141

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL**

<b>4) Surface Owner(s) to be served:</b>	<b>5) (a) Coal Operator</b>
(a) Name <u>Carolyn Allison, Trustee</u>	Name _____
Address <u>5817 Wylie Ridge Road</u>	Address _____
<u>New Cumberland, WV 26047</u>	_____
(b) Name _____	<b>(b) Coal Owner(s) with Declaration</b>
Address _____	Name _____
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
<b>6) Inspector</b> <u>Gayne Knitowski</u>	<b>(c) Coal Lessee with Declaration</b>
Address <u>PO Box #2</u>	Name _____
<u>Moundsville, WV 26041</u>	Address _____
Telephone <u>304-546-8171</u>	_____

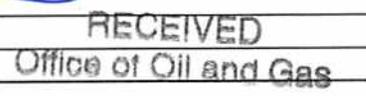
**TO THE PERSONS NAMED ABOVE:** You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator Chesapeake Appalachia, LLC  
 By: Dee Southall  
 Its: Regulatory Analyst II  
 Address P.O. Box 1300  
Jane Lew, wv 26378  
 Telephone 304-517-1416 EXT. 86024



Subscribed and sworn before me this 14th day of May  
Brittany R Woody  
My Commission Expires 11/27/22



**Oil and Gas Privacy Notice**

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a 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 of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

2900141A

0002 7258 3384

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For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$	11.00	05/16
Certified Fee		17.30	18
Return Receipt Fee (Endorsement Required)		\$2.70	
Restricted Delivery Fee (Endorsement Required)		\$0.00	
		17.30	05/16/2014

Postmark  
Here

Carolyn Allison, Trustee  
5817 Wylie Ridge Road  
New Cumberland, WV 26047



PS Form 3800, August 2006

See Reverse for Instructions

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MAY 19 2014  
WV Department of  
Environmental Protection

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

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM  
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name Chesapeake Appalachia, LLC OP Code 494477557

Watershed Upper Ohio South Quadrangle East Liverpool South

Elevation 1275' County Hancock District Clay

Description of anticipated Pit Waste: Water from plugging process

Will a synthetic liner be used in the pit? yes 20 MIL

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 2D0072539/2D0413175/2D0610306/2D0610317 )
- Reuse (at API Number at next anticipated well, API# will be included on the WR34/& or permit addendum )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain flowback will be put in steel tanks and reused or taken to permitted disposal facility)

Proposed Work For Which Pit Will Be Used:

- Drilling
- Workover
- Other (Explain \_\_\_\_\_)
- Swabbing
- Plugging

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto 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 or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Analyst II

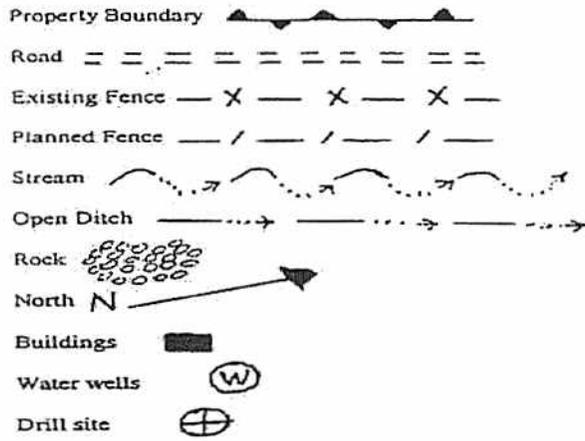
Subscribed and sworn before me this 14th day of May, 2014

Brittany R Woody

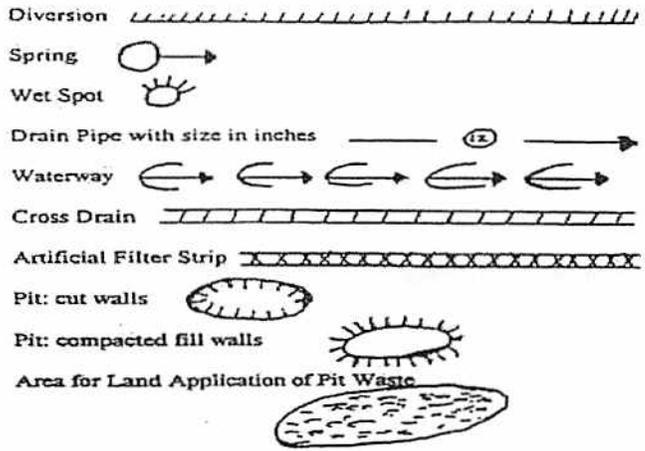
My commission expires 11/27/22

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LEGEND



Proposed Revegetation Treatment: Acres Disturbed \_\_\_\_\_ Prevegetation pH \_\_\_\_\_

Lime <sup>as determined by pH test min. 2</sup> 4 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) <sup>500</sup> \_\_\_\_\_ lbs/acre (500 lbs minimum)

Mulch <sup>Hay/Straw</sup> STRAW ONLY Tons/acre

*JWM*

Seed Mixtures

Seed Type	Area I		Area II	
	Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	Orchard Grass	20	Orchard Grass	20
Red Top	Red Top	15	Red Top	15
White Clover	White Clover	15	White Clover	15

Attach: Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Gayne Knitowski

Comments: \_\_\_\_\_

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Title: Oil and Gas Inspector

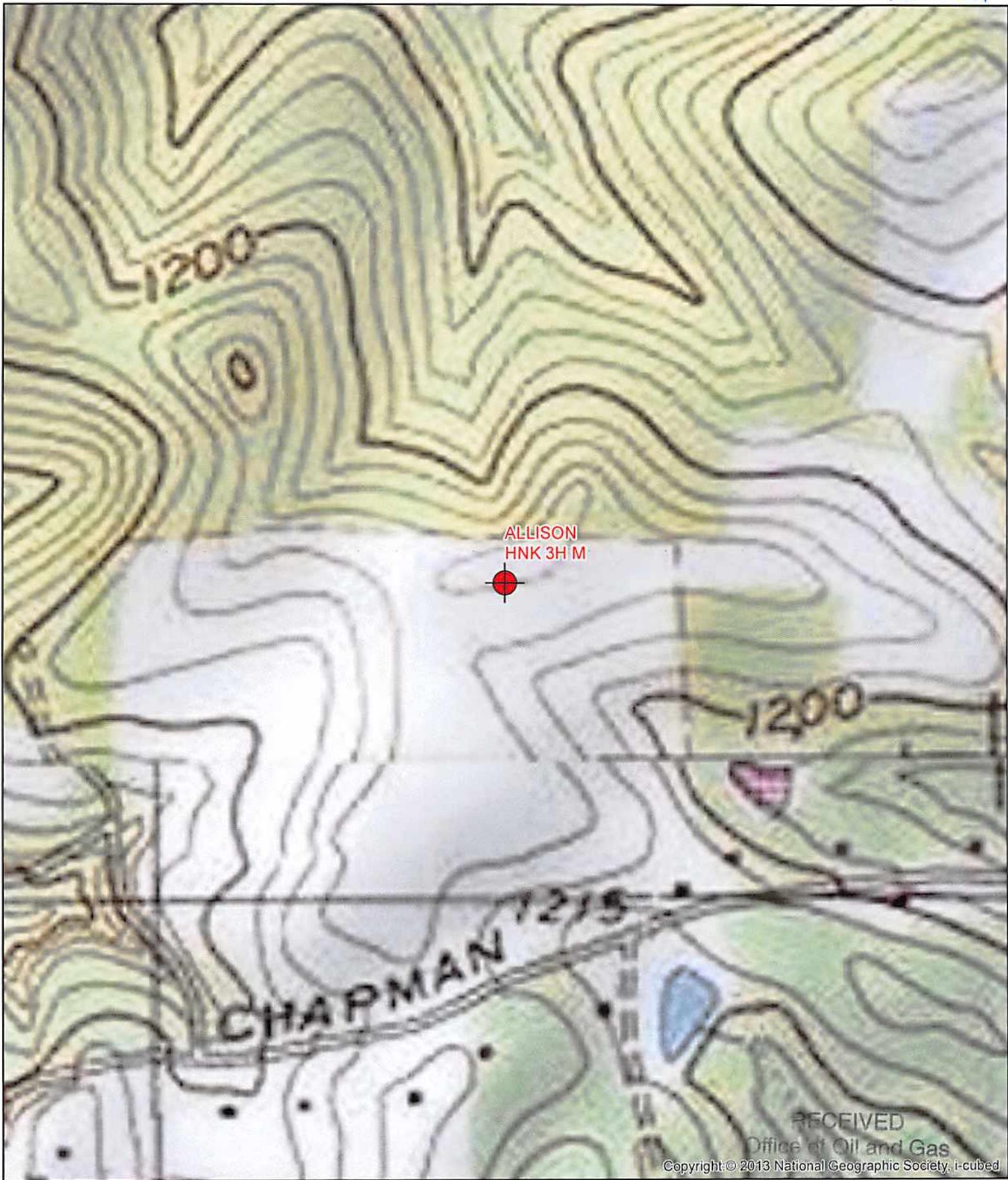
Date: 5/14/2014

MAY 18 2014

Field Reviewed?  Yes  No

WV Department of  
Environmental Protection

2900141P



Well: Allison HNK 3H M  
 Permit : 4702900141  
 Quad: East Liverpool South  
 District: Clay  
 County: Hancock  
 State: WV

Geographic NAD83 UTM 17N  
 Latitidue 40.501580  
 Longitude -80.547143  
UTM NAD83 (Meters)  
 538371.5 E  
 4483528.6 N

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 Copyright © 2013 National Geographic Society, i-cubed

MAY 18 2014

WV Department of  
 Environmental Protection  
 Chesapeake Energy



WW-7

8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API:47-029-00141

WELL NO.: 834412

FARM NAME: Allison, Carolyn

RESPONSIBLE PARTY NAME: Chesapeake Appalachia, LLC

COUNTY: Hancock DISTRICT: Clay

QUADRANGLE: East Liverpool South

SURFACE OWNER: Carolyn Allison

ROYALTY OWNER: Carolyn Allison

UTM GPS NORTHING: 4483528.6

UTM GPS EASTING: 538371.5

GPS ELEVATION: 1275'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

- Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
- Accuracy to Datum – 3.05 meters
- Data Collection Method:

Survey grade GPS \_\_\_\_ : Post Processed Differential \_\_\_\_  
Real-Time Differential \_\_\_\_

Mapping Grade GPS \_\_\_\_ : Post Processed Differential \_\_\_\_  
Real-Time Differential \_\_\_\_

- Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Signature \_\_\_\_\_  
Date 5/13/14

Regulatory  
Title \_\_\_\_\_

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MAY 19 2014

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Environmental Protection

2906141P



Danielle Southall  
Regulatory Analyst II

CK 5157728  
100-0008

May 16, 2014

Mr. Jeff McLaughlin  
WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street  
Charleston, WV 25304

Re: Plugging Permit for well #834412 Allison HNK 3H M

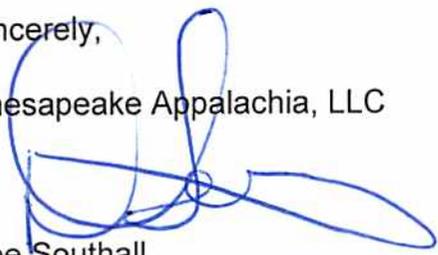
Dear Jeff:

Enclosed please find a Plugging Permit Application for the above captioned well. This well is situated on in Clay District, Hancock County, West Virginia.

If you have any questions or require additional information, please do not hesitate to contact me at (304) 517-1416.

Sincerely,

Chesapeake Appalachia, LLC

  
Dee Southall

Enclosures

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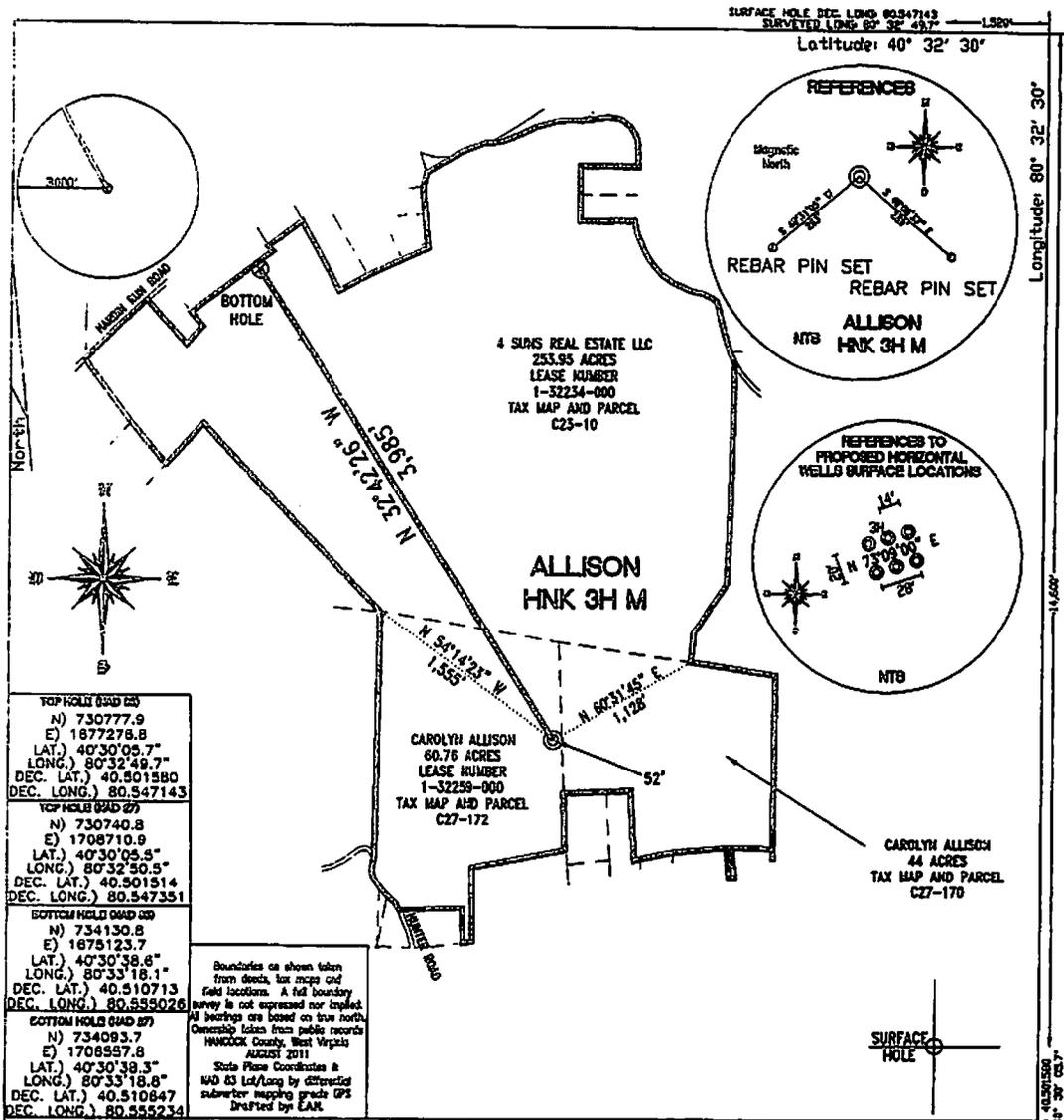
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2900141P



FILE #: CHE 089  
DRAWING #: 1812  
SCALE: 1" = 1000'  
MINIMUM DEGREE OF ACCURACY: 1/200  
PROVEN SOURCE SUBMETER MAPPING OF ELEVATION: GRADE GPS

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 THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *[Signature]*  
L.L.S. #2124 ; Ernest J. Benchek III

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
WVDEP  
OFFICE OF OIL & GAS  
601 5TH STREET  
CHARLESTON, WV 25304

DATE: SEPTEMBER 20, 2011  
OPERATOR'S WELL #: ALLISON HNK 3H M  
API WELL #: 47 29 00141H  
STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1275'  
COUNTY/DISTRICT: HANCOCK / CLAY QUADRANGLE: EAST LIVERPOOL SOUTH  
SURFACE OWNER: CAROLYN ALLISON ACREAGE: 60.76 +/-  
OIL & GAS ROYALTY OWNER: CAROLYN ALLISON ACREAGE: 314.71 +/-  
LEASE NUMBERS:

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY):

TARGET FORMATION: West Falls ESTIMATED DEPTH: TVD: 5,140' TMD: 8,500'  
WELL OPERATOR: CHESAPEAKE APPALACHIA, LLC. DESIGNATED AGENT: ERIC GILLESPIE  
ADDRESS: PO BOX 18496 ADDRESS: PO BOX 6070  
CITY: OKLAHOMA CITY STATE: OK ZIP CODE: 73154-0496 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

RECEIVED  
Office of Oil and Gas  
MAY 19 2014  
Department of Environmental Protection