

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

July 01, 2014

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-5901366, 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 penalities 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.

Operator's Well No: 24007

Farm Name: HALL, SARAH

API Well Number: 47-5901366

Permit Type: Plugging
Date Issued: 07/01/2014

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

- 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. This well is under a consent order and must be plugged within two years of the date of issuance of this permit.

WW-4B Rev. 2/01

1) Date		5/1	05/2	014		
2) Oper	ator	's		-		
Well	No.	8	2400	7		
3) API	Well	No.	47-	059	-	01366

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

	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 X or Underground storage) Deep / Shallow X							
5)	5) Location: Elevation 1100' Watershed Hensley big Branch of Tug Fork River District Hardee County Mingo Quadrangle Myrtle, WV 7.5'							
6)	Well Operator Address Oklahoma City, OK 73154-0496 Chesapeake Appalachia. L.L.C.7) Designated Agent Eric B. Gilespie P. O. Box 18496 Oklahoma City, OK 73154-0496 Charleston, WV 25362							
8)	Oil and Gas Inspector to be notified 9)Plugging Contractor Name Jeremy James Name Address P. O. Box 147 Address Ona, WV 25545							
	(SEE ATTACHED PLUGGING PROCEDURE)							
	RECEIVED							

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

WV Department of

Environmental Protection

Work order approved by inspector ______ Date _______Date

47-059-01366

824007 P&A PROCEDURE

- 1) Prepare road and location, MIRU Service Rig
- 2) Pull 2 3/8" tubing (if still in well)
- 3) Either
 - A) Set CIBP at 3600', spot 100' cement plug 3600'-3500' Get Betow C18f.
 - B) a) TIH with W.S. to 3800', load hole with gel, pull W.S. to 3700'
 - b) Spot 200' cement plug 3700'-3500'
- 4) Pull W.S. to 3000', load hole with gel
- 5) Spot 150' cement plug 3000'-2850', pull W.S.
- 6) Cut 4 1/2" casing at free-point (approximately 2550') and pull
- 7) Run W.S. to 2550', load hole with gel
 - 8) Spot 100' cement plug 2550'-2450', pull W.S. to 2190'
 - 9) Spot 100' cement plug 2190'-2090', pull W.S. to 1875'
 - 10) Spot 100' cement plug 1875'-1775', pull W.S. to 1050'
 - 11) Spot 100' cement plug 1050'-950', pull W.S. to 450'
 - 12) Spot 100' cement plug 450'-350', pull W.S. to 275'
 - 13) Spot 100' cement plug 275'-175', pull W.S. to 100' TOP ALUC COURCE FARSH WATER @ 135'
- 14) Spot 100' cement plug 100' surface
- 15) Pull W.S. and top off with cement
- 16) Erect monument and reclaim as prescribed by law

9min 6/26/14

RECEIVED
Office of Oil and Gas
MAY 0 8 2014

10/23/2000 Date 47-59-1366 API#

State of West Virginia Division of Environmental Protection Section of Oil and Gas Well Operator's Report of Well Work

Mingo Oil & Gas Farm Name:

24007 Operator Well No.:

LOCATION

Elevation: 1100' Quadrangle:

Myrtle

District:

Hardee

County:

Mingo

Latitude:

405 ft South of 37°

Longitude:

80 ft West of 82 ° 12 4 30 "

Company: Columbia Natural Resources

PO Box 6070

Charleston, WV 25362-000

Agent: W.A. Jack Watson, Jr.

Inspector: Ofie Helmick Date Permit Issued: 6/1/2000

Date Well work commenced: 6/26/2000 Date Well Work completed: 8/23/2000

Verbai Plugging Permission

Granted on / /

Rotary

Cable

Rig Total Depth (ft):4147' KB Fresh Water Depth (ft):19', 135'

Salt Water Depth (ft.):1197'

Is coal being mined in area (Yes No 1)

Coal Depths (ft): 222', 396'

Casing &	Used in	Left in	Cement Fill-Up
Tubing	Drilling	Well	Cu.Ft.
13 3/8"	30	30	Driven
9 5/8"	532	532	212
7"	2140	2140	384
4 1/2"	4111	4111	175
	<u>.</u>		
			RECEIVED
			Office of Oll & Gas Permitting

DEC 15 2000

WV Division of **Environmental Protection**

Open Flow Data

lu	Producing	Formation	All Zones	Comingled
•		Initial Open	Flow	0 Mcf/day

Pay Zone Depth 2971 ft to 3988 ft

Oil: Initial Open Flow Final Open Flow

bbl/day 0 0 bbl/day

Final Open Flow 207 Mcf/day hours Time of Open Flow between Initial and Final Tests 96

hours Static Rock Pressure 72

300 psig after

2rd Producing Formation

Pay Zone Depth ft to

Oil: bbl/day Initial Open Flow Mcf/day Gas: Initial Open Flow bbl/day Mcf/day Final Open Flow Final Open Flow

Time of Open Flow between Initial and Final Tests hours hours Static Rock Pressure psig after

3rd Producing Formation

Pay Zone Depth

ft to

Gas: Initial Open Flow Mcf/day Final Open Flow Mctday

Initial Open Flow Oil:

Final Open Figure Of Oil and Gas bbl/day

ft

Time of Open Flow between Initial and Final Tests Static Rock Pressure psig after

MAY 0 8 NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: I). DETAILS OF PERFORATED INTERVALS, PROPERTY OR NOTE: ON BACK OF THIS PURM FOR THE STATE OF A STATE OF A STATE OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE. Environmental Protection NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1), DETAILS OF TELESCOPE TAILED GEOLOGICAL RECORD STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIVE DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE. Environmental of

IATURAL RESOURCES, INC.

07/04/2014

Columbia Natural Resources

Well No.: 24007

Perforated Intervals

Ist Stage Huron Shale 20 holes from 3652 ft to 3988 ft Cleveland Shale 20 holes from 2971 ft to 3122 ft holes from ft to ft

Fracturing / Stimulation

I" Stage Huron Shale Type of Treatment Nitrogen Frac

Total Acid 250 Gal of 7 1/2% HCl Breakdown Pressure 1721 psi
Average Rate 81,160 scf/min ⋈ or bpm ∴ ATP 3277 psi MTP 4001 psi

Total Fluid 6 bbl Total Nitrogen 824,200 scf Total Sand 0 lb of

ISIP 2059 psi 5 min 938 psi

2rd Stage Cleveland Shale Type of Treatment Nitrogen Frac

Total Acid 250 Gal of 7 1/2% HCl Breakdown Pressure 1790 psi
Average Rate 60,280 scf/min ⊠ or bpm ☐ ATP 2636 psi MTP 3584 psi

Total Fluid 6 bbl Total Nitrogen 659,000 scf Total Sand 0 lb of

ISIP 1713 psi 5 min 1002 psi

3rd Stage Type of Treatment

Total Acid Gal of % HCl Breakdown Pressure ATP Average Rate scf/min or bpm psi MTP psi Total Fluid lb of Total Nitrogen scf Total Sand bbl

ISIP psi min psi

Well Log

Formation Name	Тор	Bottom	Comments
KB-GL	0	10	
Fill	10	15	
Sand / Shale	15	135	
White Sand	135	. 222	
Coal	222	225	
Sand / Shale	225	396	
Coal	396	399	
Sand / Shale	399	408	
Sand	408	615	
Sand / Shale	615	925	
Shale	925	1022	
Sand / Shale	1022	1026	•
Salt Sand	1026	1768	
Sand / Shale	1768	1860	
Maxon Sand	1860	1926	
Sand / Shale	1926	1996	
Bradley Sand	1996	2030	· -
Sand / Shale	2030	2040	
Little Lime	2040	2082	
Big Lime	2082	2294	
Sand / Shale	2294	2878	
Coffee Shale	2878	2910	
Berea Sand	2910	2982	
Cleveland Shale	2982	3028	
Huron Shale	3028_	3986	•
Java Shale	3986	4147	

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Office of Oil and Gas
MAY 0 8 2014

WV Department of Environmental Protection

07/04/2014

01366

WW-4A	
Revised	6-07

1)	Date:	5/5/2014	
2)	Operator'	s Well Number 824007	
-/	Operator	5 Well Mandel 02 100	

059

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

3) API Well No.: 47 -

4)	Surface Ow	ner(s) to be served:	5) (a) Coal Opera	tor
	(a) Name Gail Hall		Name	Delbarton Mining Co.
	Address	RT 1 Box 512	Address	P. O. Box 714
		Williamson, WV 25661		Matewan, WV 25678
			(b) Coal Owr	ner with Declaration
			Name	Laurel Run Mining Co.
			Address	1000 Consol Energy DR
				Canonsburg, PA 15317
	(b) Name		(c) Coal Lessee	With Declaration
	Address		Name	Consol of KY, Inc.
				P. O. Box 76
			Address	Naugatuck, WV 25685
6) 1	nspector	Jeremy James	Coal Lesses	e with Declaration
	Address	P. O. Box 147	Name	
		Ona, WV 25545	Address	
19	Telephone	(304) 951-2596		
		To be a second of the second o		

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, L.L.C.
	By:	Chief the David Stumbo
	Its:	Production Superintendent- Appalachian South BU, Northern Division
	Address	P. O. Box 18496
		Oklahoma City, OK 73154-0496
	Telephone	(606) 298-3400
		RECEIVED
		Office of Oil and Gas
Subscribed and sworn before me t	his 5th da	y of May 2014
A SAME AND A SAME A SAME A SAME AS A SAME A	There	Notary Publicary 0 8 2014

WW-4A Revised 6-07

1) Date: <u>5</u>	/05/2014				
2) Operator's Wel	l Number 8	824007			
17, 17, 11, 11, 11, 11, 11, 11, 11, 11, 					
3) API Well No.: 4	7 -	059	-	01366	

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

4) Surface owners to be served:

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Office of Oil and Gas

MAY 082014

SURFACE OWNER WAIVER

 Operator's Well
 824007

 Number
 47-059-01366

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.
WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

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

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have FIVE (5) 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.

<u>Comments must be in writing.</u> Your comments must 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.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation...".

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application For A Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

and Application For A Permit 10 P	ing And Abandon on For	HIS 44 44 -4	A and ww-4b, and a s	survey plat.
I further state that I hav objection to a permit being issued of FOR EXECUTION BY A NATURA	on those materials.	anned wor		materials, and I have no
Dail Sall	_{Date} 5-12-14	∠ _{Name}		·
Signature		By Its		Date
mold ha			Signature	07/04/2014





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MAY 0 8 2014

WW-9 Rev. 02/01

Page1	of _	2	
API Number 47	059	·_	01366
Operator's Well No.	82400	7	

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

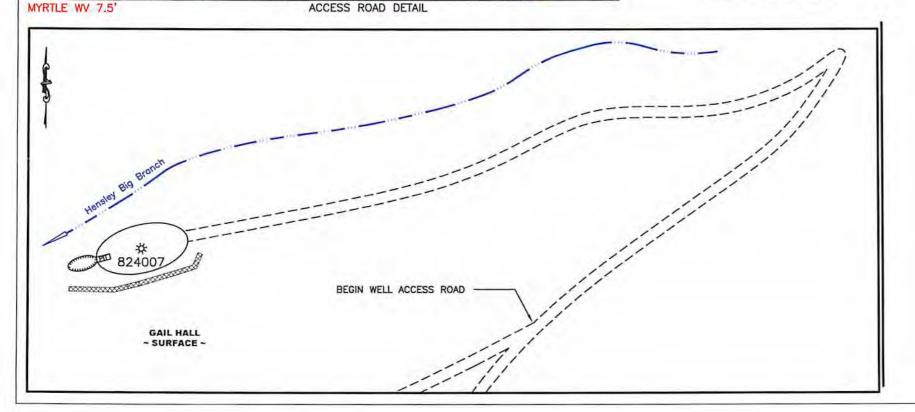
Operator N	ame <u>Chesapeake A</u>	ppalachia, L.L.C.	OP Code	494477557	
Watershed ₋	Hensley Big Bra	nch of Tug Fork River	Quadrangle	Myrtle, WV 7.5'	
Elevation _	1100'	County_Mingo	Distri	ict <u>Hardee</u>	
Description	of anticipated Pit	Waste: <u>Plugging returr</u>	as		
Will a syntl	hetic liner be used	in the pit? <u>Yes</u>			
Proposed D	X Land A Under Reuse Off Sit		WW-9 for disposal loc	ation)	<u></u>
Proposed W	Vork For Which Pit Drillin Worko Other	g	Swabb _X Pluggi	ing ing	
PERMIT is Environme term or con I co submitted commediatel I am aware imprisonme Company C	ssued on December ntal Protection. Indition of the general ertify under penal on this application by responsible for one that there are signent. Official Signature_ Official (Typed Nat	er 31, 1999, by the Offunderstand that the proving all permit and/or other apply ty of law that I have proving and all attachment betaining the information, unificant penalties for subsection of the control of the co	ice of Oil and Gas sions of the permit are plicable law or regulative ersonally examined as thereto and that, bas I believe that the information of the property of the proper	the GENERAL WATER POL of the West Virginia Depar e enforceable by law. Violatio ion can lead to enforcement acted am familiar with the infesed on my inquiry of those in mation is true, accurate, and etion, including the possibility the hern Division	tment of any tion. Cormation dividuals complete.
Subscribed	and sworn before		of May	, 20_14 Notary Public	
My commis	ecion ovnirac	5/24/2017			

Attach: Drawing(s) of road, location,pit and proposed area fo Photocopied section of involved 7.5' topographic shee Plan Approved by: Title:	et.
Attach: Drawing(s) of road, location,pit and proposed area fo Photocopied section of involved 7.5' topographic shee	et.
Attach: Drawing(s) of road, location,pit and proposed area fo	
Attach:	r land application.
Cereal Rye 17.5 / 1/8	
Area I Seed Type lbs/acre	Area II Seed Type lbs/acre
s	eed Mixtures
MulchTone	s/acre
Fertilizer (10-20-20 or equivalent)	lbs/acre (500 lbs minimum)
Lime Tons/acre or to correct	to pH
Proposed Revegetation Treatment: Acres Disturbed	1/8 Prevegetation pH
-	
Drill site	
Water wells	Area for Land Application of Pit Waste
Buildings	Pit: compacted fill walls
Rock 686866	Pit: cut walls
Open Ditch	Artificial Filter Strip XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Stream Change Control of the Control	Waterway \longleftrightarrow \longleftrightarrow \longleftrightarrow
Planned Fence///	Drain Pipe with size in inches
	Wet Spot
Existing Fence — X — X — X —	Spring 114
Road = = = = = = = = = = = = = = = = = = =	Spring O
,	Diversion (A. C.

LEGEND

Gas Office of Oil and

NOTE: SURFACE OWNERS SHOWN ON THIS DRAWING ARE TAKEN FROM LOCAL COUNTY ASSESSORS TAX MAPS AND SHOULD NOT BE RELIED UPON FOR SECURING RIGHTS OF WAY OR DAMAGE NEGOTIATIONS.



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RedO Pit: cut walls Pit: Compacted fill walls Areas for Land Application of Pit Wash Road (Existing) Straw Bales

Drawing Legend

General Notes

THIS DRAWING IS A SCHEMATIC REPRESENTATION OF THE PROPOSED WELL SITE AND ACCESS ROAD, PROPOSED STRUCTURES SUCH AS WELL SITE, DRILLING PIT, ROADWAYS, CULVERTS, SEDIMENT BARRIERS ETC. ARE SHOWN IN APPROXIMATE PRE-PLANNING CONFIGURATIONS.

TREES AND SLASH WILL BE CLEARED AS NECESSARY BEFORE ANY PROPOSED ROAD. SITE, OR PIPELINE CONSTRUCTION BEGINS. IF SUFFICIENT RESIDUE MATERIALS ARE AVAILABLE FROM CLEARING, THIS MATERIAL WILL BE WINDROWED BELOW THE ANTICIPATED FILL OUTSLOPE(S) TO INTERCEPT AND RETAIN SEDIMENT FROM DISTURBED AREAS, ALL MARKETABLE TIMBER WILL BE CUT AND STACKED IN AREAS

PRACTICAL, OPERATOR WILL HAVE OTHER SEDIMENT CONTROL IN PLACE TO MINIMIZE FROSION AND SEDIMENTATION

TEMPORARY SEEDING: SEE ATTACHMENT #1

CROSS DRAINS, BROAD BASED DIPS, WATER BARS, AND DIVERSION DITCHES WILL BE EMPLOYED DURING THE CONSTRUCTION PHASE. THESE EROSION AND SEDIMENT CONTROL STRUCTURES WILL BE USED TO CONTROL EROSION AND SEDIMENTATION DURING THE CONSTRUCTION PHASE, WHERE APPLICABLE AND AREAS THAT WILL

WATER BARS AND DIVERSION DITCHES WILL BE AN INTEGRAL PART OF THIS RECLAMATION PROCESS AND SHALL BE INSTALLED AND SPACED IN ACCORDANCE WITH THE AS-BUILT ROADWAY SLOPES AND TABLE 11-4 OF THE EROSION SEDIMENT

PERMANENT SEEDING: SEE ATTACHMENT #1

TEMPORARY SEEDING TO BE APPLIED TO ALL SLOPES AFTER CONSTRUCTION.

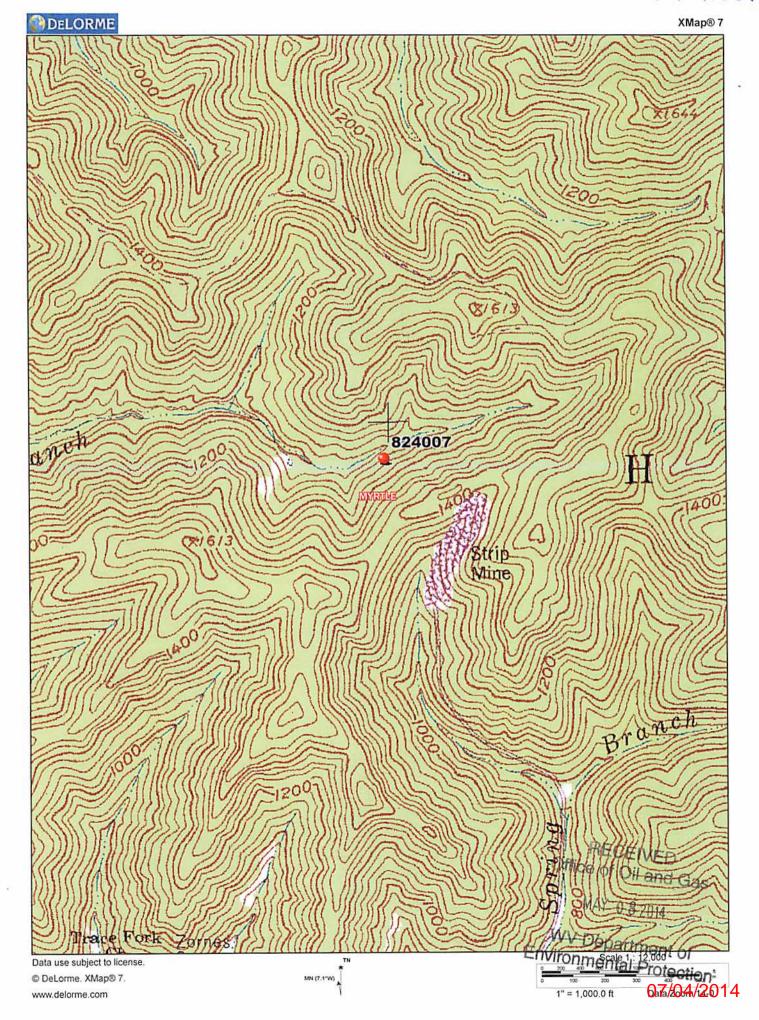


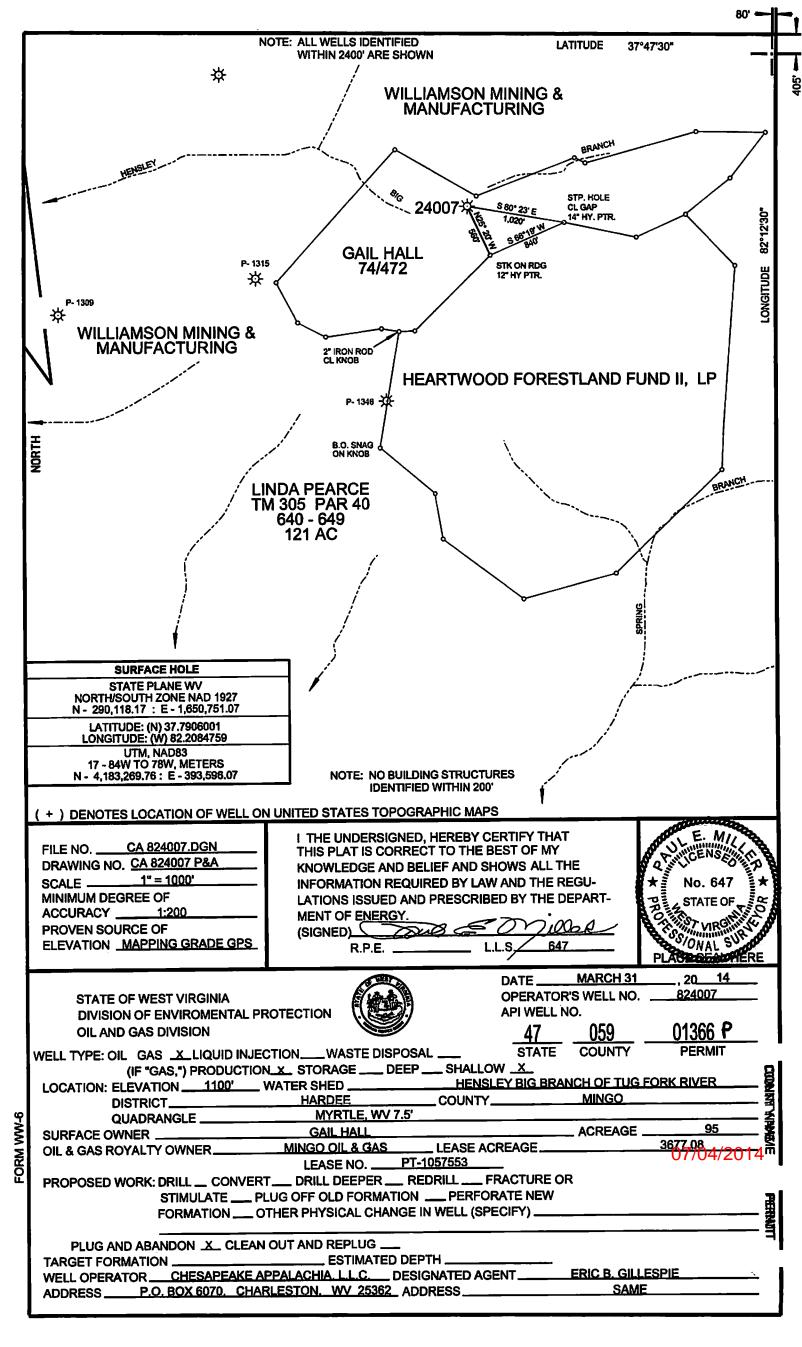
CONSTRUCTION & RECLAMATION SITE PLAN PROPOSED PLUG AND ABANDONMENT WELL 824007

> Located Near The Community Of Trace In The Hardee District Of Mingo county West Virginia.

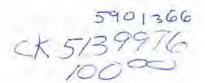
DATE: 4-17-14 DRAWN BY: JDH

SCALE: Not To Scale 824007 P&A Rec Plan.dwg









CERTIFIED MAIL

May 5, 2014

Mr. James Martin Division of Environmental Protection Office of Oil and Gas - Permitting 601 57th Street SE Charleston, WV 25304

Dear Mr. Martin:

Chesapeake Appalachia, L.L.C. proposes to plug and abandon Well 824007, API No. 47-059-01366. Please find attached a check in the amount of \$100.00 for the permit fee and the permit applications to plug and abandon.

If you have any questions, please call our Honey Branch office (606) 298-3400 or email dave.stumbo@chk.com.

Sincerely,

David Stumbo,

Production Superintendent

David Stumbosim

Enclosure: Permit Application Package to Plug and Abandon

C: Jeremy James - Inspector P. O. Box 147 Ona, WV 25545

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Office of Oil and Gas

MAY 0 8 2014