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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

November 10, 2014

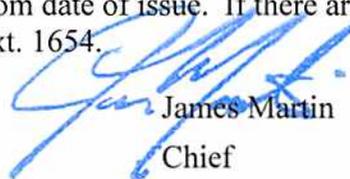
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-3901249, issued to CABOT OIL & GAS CORPORATION, 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: CANNELTON COAL #15 (15-1471)

Farm Name: CANNELTON C & C

**API Well Number: 47-3901249**

**Permit Type: Plugging**

Date Issued: 11/10/2014

**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.

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### 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.

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 X or Underground storage \_\_\_) Deep \_\_\_ / Shallow X

5) Location: Elevation 1,316' Watershed Staten Run  
District Cabin Creek County Kanawha Quadrangle Montgomery

6) Well Operator Cabot Oil & Gas Corporation 7) Designated Agent Whitney Johnson  
Address Five Penn Center West, Ste. 401 Address P.O. Box 450  
Pittsburgh, PA 15276 Glasgow, WV 25086

8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Terry Urban Name Shreve's Well Service  
Address P.O. Box 1207 Address 3473 Triplett Road  
Clendenin, WV 25045 Spencer, WV 25275

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

*SEE Drawn Diagram  
for Changes to Prog  
Operator will cement  
ALL O.I.E GAS PAYS  
Pull all frack pipe*

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

Work order approved by inspector *[Signature]* Date 9-18-14

## Cannelton Coal #15 API # 47 – 039 – 01249 PLUGGING PROCEDURE

### Current Configuration

PBSD @ 3002'  
 10-3/4" conductor @ 8'  
 8-5/8" casing @ 830'  
 7" casing @ 2297'  
 2" tubing @ 3000'  
 2" X 6-5/8" anchor packer @ 585'  
 Coal @ 668' – 674' & 783' – 787'  
 Water @ 300', 670', 1446', 1505', & 2180'  
 Berea @ 2958' – 2995', shot from 2962' – 2990'  
 Weir @ 2591' – 2629', shot from 2600' – 2620'  
 Big Lime @ 2307' – 2558' w/ gas shows @ 2415' & 2455'  
 Maxton @ 2136' – 2199' w/ water @ 2180'  
 2<sup>nd</sup> Salt Sand @ 1435' – 1588' w/ water @ 1446' & 1505' & gas @ 1587'  
 1<sup>st</sup> Salt Sand @ 1265' – 1430'

### PROCEDURE

1. Contact Glasgow Office a minimum of 48 hours prior to starting work.
2. Contact State Inspector a minimum of 24 hours prior to starting work.
3. MIRU service rig and blow down well.
4. Lay 2" line from wellhead to pit/tank and stake down securely.
5. Have vacuum truck available to catch any fluids circulated from well.
6. Unpack wellhead.
7. TIH with sand line to check TD.
8. Pull 2" tubing:
9. If unable to pull tubing, run freepoint, cut above freepoint, and POOH.
10. TIH with 2-3/8" work string to TD.
11. MIRU Cement Company and pump 20 bbls 6% gel followed by 35 sks of Class A cement for plug 1 from TD to 2850'.
12. Displace w/ 11 bbls of 6% gel.
13. Pull work string up to 2650' and pump 10 bbls 6% gel followed 70 sacks Class A cement for plug 2 from 2650' to 2300'.
14. Displace w/ 9 bbls of 6% gel.
15. TOOH with 2-3/8" work string. Let cement plug set for a minimum of eight hours.
16. MIRU wireline company and check setting of cement plug 2.
17. Pull 7" casing string.
18. TIH with work string to 2200' and pump 10 bbls 6% gel followed by 55 sks of Class A cement for plug 3 from 2200' to 2000'.
19. Displace w/ 7 1/2 bbls of 6% gel.
20. Pull work string up to 1550' and pump 10 bbls 6% gel followed 110 sacks Class A cement for plug 4 from 1550' to 1150'.
21. Displace w/ 4 1/2 bbls of 6% gel.
22. TOOH with 2-3/8" work string.
23. Pull 8-5/8" casing and 10-3/4" conductor.
24. TIH with 2-3/8" tubing to 800' and pump 10 bbls 6% gel followed 135 cubic feet of expanding cement (115 sacks Class A cement with 10 % salt added) for plug 5 from 800' to 550'.
25. Displace w/ 2 bbls of 6% gel.

SEE Drawing  
well

OK  
Sum

[Signature]  
9-18-14

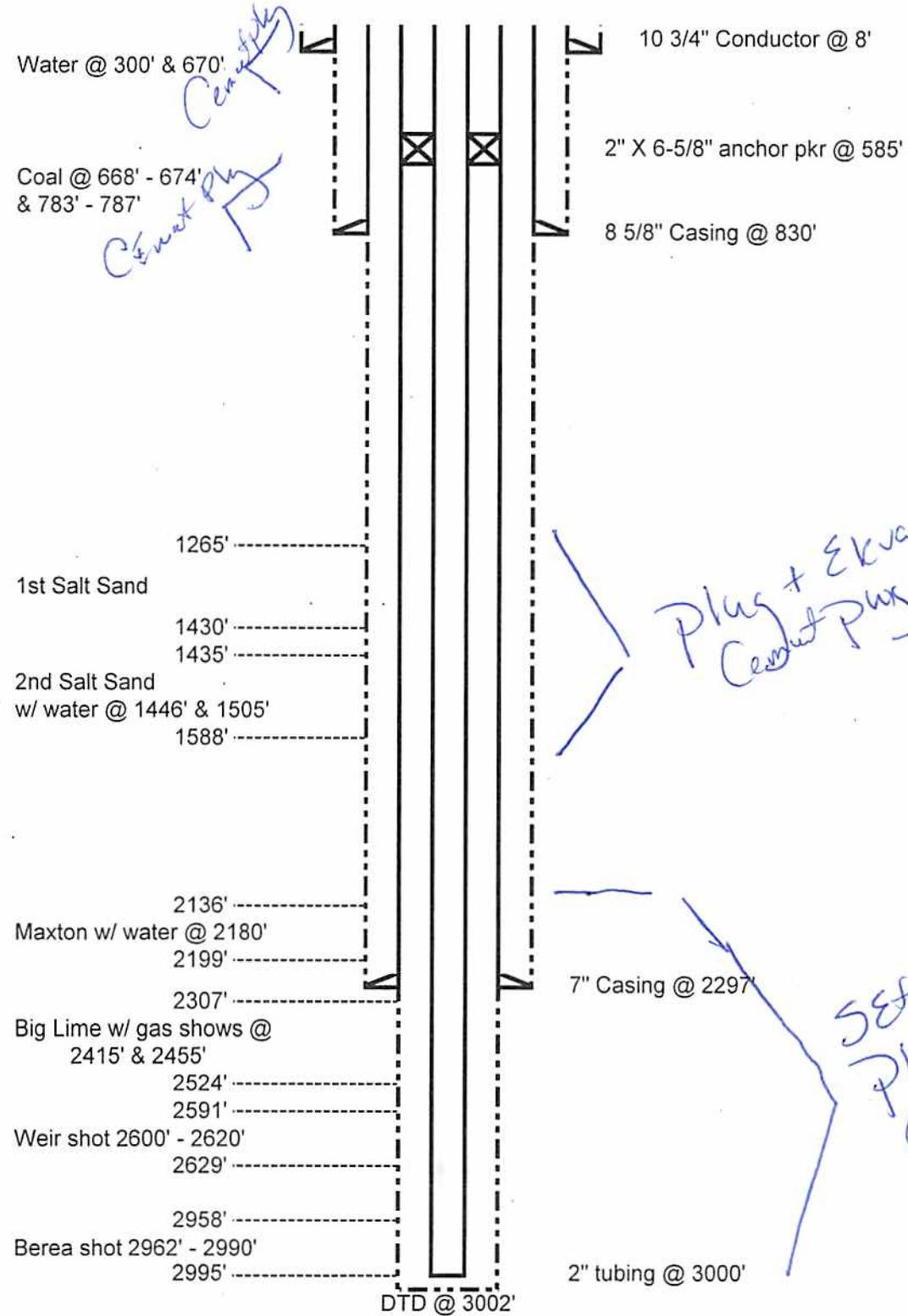
3901249A

26. Pull 2-3/8" tubing up to 350' and pump 190 cubic feet of expanding cement (160 sacks Class A cement with 10 % salt added) for plug 6 from 350' to surface.
27. TOOH with 2-3/8" tubing and lay down.
28. RDMO Cementing Company.
29. Place monument as required by law on top of well bore.
30. Reclaim well site.

OK  
J. M. M.

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Office of Oil and Gas  
SEP 17 2014  
WV Department of  
Environmental Protection

### Cannelton Coal #15 API 47-039-01249 CURRENT CONFIGURATION



*Cement plug*  
*Cement plug*

*Plug + Ekvation*  
*Cement plug*

*SEFASOAE*  
*Plug with*  
*GR HEAD*  
*Displacement*

Schematic is not to scale

T. Ott 04/02/14

*[Signature]*  
9.18.14

WEST VIRGINIA DEPARTMENT OF MINES  
OIL & GAS DIVISION  
W E L L R E C O R D

Permit No. Kan 1249

Montgomery Quad.

Company

Address

Farm

Location

Well No.

District

Surface

Mineral

Commenced

Completed

Date shot

Open flow

Volume

Rock Pressure

Oil

Fresh Water

Salt Water

Cannelton Coal & Coke

Cannelton, W.Va.

Acres 6532

Kanawha River & Smithers Cr.

15 Elev. 1360

Cabin Creek Kanawha County

C.C. & C. Co. Cannelton, W.Va.

Same

Oct. 24, 1945

Jan. 16, 1946

Jan. 17 Depth 2962 to 2990

Jan. 24 Depth 2600 to 2620

1st Nitro glycerin 2nd. Hi V Gelatin

13/10ths W in 2"

170,000 C.F.

350 lbs.

Showing oil in Berea

300', 670'

1446, 1505'

Gas Well  
CASING & TUBING

10 8  
8 1/4 830 830  
6 5/8 2297 2297  
2 3000 3000

Oil Well Anchor Packer  
Size 2 x 6 5/8  
Depth 585

Perf. top 2962  
" bot 2970

Coal at 668' 72"  
783' 48"

Sand		0	50
Sand Y		50	73
Flint	Bk H	73	79
Slate		79	100
Sand		100	190
Slate		190	230
Sand		230	260
Sand		260	290
Slate		290	295
Sand		295	325
Slate	Shelly	325	505
Lime		505	545
Slate	Shelly	545	668
Coal	Bk Friable	668	674
Slate & Lime	Sh	674	783
Coal	Bk Friable	783	787
Slate	Shelly	787	1065
Sand		1065	1120
Slate		1120	1140
Grampus Sand		1140	1245
Lime	Bk	1245	1265
Salt Sand , 1st Salt		1265	1430
Slate		1430	1435
Salt Sand 2nd Salt		1435	1588
Slate		1588	1605
Sand		1605	1631
Lime		1631	1688
Slate		1688	1780
Red Rock	S	1780	1928
Sand		1928	1942
Red Rock	Firm	1942	1950
Lime		1950	1990
Sand		1990	2020
Red Rock	Firm	2020	2030
Lime	Shell6	2030	2136
Maxon Sand		2136	2199
Lime		2199	2254
Slate		2254	2259
Lime		2259	2278
Slate		2278	2284
Lime		2284	2304
Pencil Cave light S		2304	2307
Big Lime Light S		2307	2524
Big Injun Red		2524	2558
Lime		2558	2591
Weir Sand	S	2591	2629
Slate	Shelly	2629	2935
Slate		2935	2958
Berea Sand	H	2958	2995
Slate		2995	3002

No. 2 gas

Lost Water Eagle

Gas 1587

Cemented 1780 to 1900

Cemented 2300 to 2320  
Gas 2415 25000 C.F.

Gas 2611 100,000 C.F.

Gas 2978 45,000 C.F.

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WV Department of  
Environmental Protection

WW-4A  
Revised 6-07

1) Date: September 15, 2014  
2) Operator's Well Number  
Cannelton Coal #15  
3) API Well No.: 47 - 039 - 01249

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

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Boone East Development Company</u>	Name <u>Mammoth Coal Company</u>
Address <u>P.O. Box 271</u>	Address <u>P.O. Box 150</u>
<u>Julian, WV 25529</u>	<u>Cannelton, WV 25036</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Boone East Development Company</u>
	Address <u>P.O. Box 271</u>
	<u>Julian, WV 25529</u>
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Terry Urban</u>	(c) Coal Lessee with Declaration
Address <u>P.O. Box 1207</u>	Name <u>None of Record</u>
<u>Clendenin, WV 25045</u>	Address _____
Telephone <u>(304) 549-5915</u>	Address _____

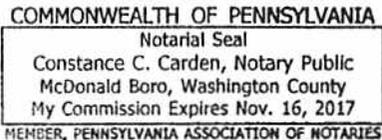
**TO THE PERSONS NAMED ABOVE:** You should have received this Form and the following documents:

- (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.

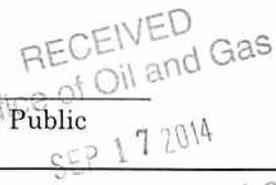
The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

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 Cabot Oil & Gas Corporation  
 By: Kenneth L. Marcum  
 Its: Regulatory Supervisor  
 Address Five Penn Center West, Suite 401  
Pittsburgh, PA 15276  
 Telephone (412) 249-3850

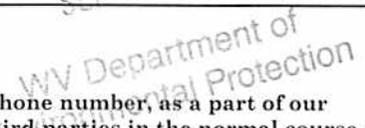


Subscribed and sworn before me this 15th day of September, 2014  
Constance C. Carden Notary Public  
 My Commission Expires November 16, 2017



**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 [depprivacyoffier@wv.gov](mailto:depprivacyoffier@wv.gov).



3901249P

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Sent To **Boone East Development Company**  
 P.O. Box 271  
 Julian, WV 25529

PS Form 3800 Cannelton Coal 15

0409 1480 1000 020E 8040 7013

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Sent To **Terry Urban**  
 P.O. Box 1207  
 Clendenin, WV 25045

PS Form 3800 Cannelton Coal 15

7013 3020 0001 0841 8033

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Sent To **Mammoth Coal Company**  
 P.O. Box 150  
 Cannelton, WV 25036

PS Form 3800 Cannelton Coal 15

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 SEP 17 2014  
 WV Department of  
 Environmental Protection

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Cabot Oil & Gas Corporation OP Code 08145

Watershed (HUC 10) Staten Run Quadrangle Montgomery

Elevation 1,316' County Kanawha District Cabin Creek

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes \_\_\_\_\_ No X

Will a pit be used for drill cuttings? Yes \_\_\_\_\_ No X

If so, please describe anticipated pit waste: \_\_\_\_\_

Will a synthetic liner be used in the pit? Yes \_\_\_\_\_ No X If so, what ml.? \_\_\_\_\_

Proposed Disposal Method For Treated Pit Wastes:

- \_\_\_\_\_ Land Application
- \_\_\_\_\_ Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- \_\_\_\_\_ Reuse (at API Number \_\_\_\_\_ )
- \_\_\_\_\_ Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain No treated pit wastes will be produced)

ANY WELL EFFLUENT MUST BE CONTAINED IN TANKS AND DISPOSED OF PROPERLY.

Will closed loop system be used? N/A

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. no drilling proposed

-If oil based, what type? Synthetic, petroleum, etc. \_\_\_\_\_

Additives to be used in drilling medium? N/A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. No cuttings produced during plugging operation

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

-Landfill or offsite name/permit number? \_\_\_\_\_

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 Kenneth L. Marcum  
Company Official (Typed Name) Kenneth L. Marcum  
Company Official Title Regulatory Supervisor

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Office of Oil and Gas  
SEP 17 2014

Subscribed and sworn before me this 15th day of September, 20 14  
Constance C. Carden

WV Department of Environmental Protection  
COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Constance C. Carden, Notary Public  
McDonald Boro, Washington County  
My Commission Expires Nov. 16, 2017  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

My commission expires 11/16/2017

Proposed Revegetation Treatment: Acres Disturbed 0.34 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Pulp Fiber at 1000 to 1500 Tons/acre

Seed Mixtures

Area I			Area II		
Seed Type		lbs/acre	Seed Type		lbs/acre
Grain Rye - 100	Red Clover - 5	Fescue - 40	Grain Rye - 100	Red Clover - 5	Fescue - 40
Annual Rye - 20	White Clover - 5		Annual Rye - 20	White Clover - 5	
Perennial Rye - 10	Alta Sweet Clover - 5		Perennial Rye - 1	Alta Sweet Clover - 5	
Yellow Clover - 5	Birdsfoot Trefoil - 10		Yellow Clover - 5	Birdsfoot Trefoil	

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

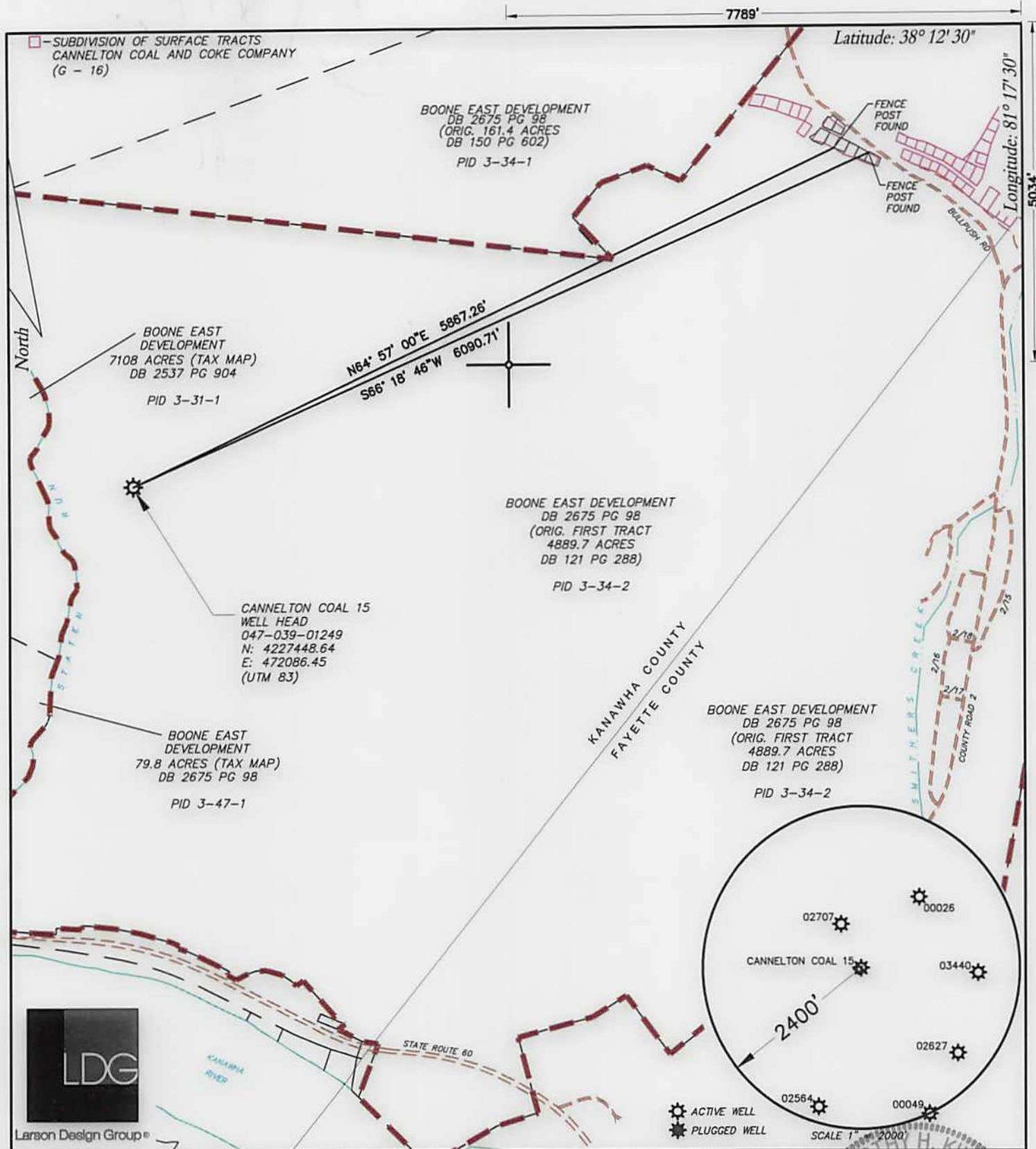
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]  
Comments: \_\_\_\_\_

Title: Inspector Date: 9-18-14

Field Reviewed?  Yes  No





FILE #: 8744-011  
 DRAWING #: 1  
 SCALE: 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY: 1 in 2500'  
 PROVEN SOURCE OF ELEVATION: SURVEY 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]*  
 R.P.E.: \_\_\_\_\_ L.L.S.: 1969

RECEIVED  
 TIMOTHY H. KINDER  
 LICENSED PROFESSIONAL SURVEYOR  
 NO. 1969  
 STATE OF WEST VIRGINIA  
 PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: APRIL 21st, 2014  
 OPERATOR'S WELL #: CANNELTON COAL 15  
 API WELL #: 47 039 01249 P  
 STATE COUNTY PERMIT

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

WATERSHED: STATEN RUN ELEVATION: 1316'  
 COUNTY/DISTRICT: KANAWHA / CABIN CREEK QUADRANGLE: MONTGOMERY

SURFACE OWNER: BOONE EAST DEVELOPMENT ACREAGE: 4889.7  
 OIL & GAS ROYALTY OWNER: CANNELTON COAL & COKE ACREAGE: 5,250.90

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

TARGET FORMATION: BEREA ESTIMATED DEPTH: 2,958'  
 WELL OPERATOR CABOT OIL & GAS CORPORATION DESIGNATED AGENT WHITNEY JOHNSON  
 Address FIVE PENN CENTER WEST, SUITE 401 Address CABOT OIL & GAS CORPORATION, P.O. BOX 450  
 City PITTSBURGH State PA Zip Code 15276 City GLASGOW State WV Zip Code 25086

FORM WW-6



3901249 P



September 15, 2014

Chief  
West Virginia Division of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street  
Charleston, WV 25304

RE: Cannelton Coal #15  
Cabin Creek District, Kanawha County, WV  
API # 47-039-01249  
Written Application to plug and abandon wellbore

Dear Chief:

In accordance with Article 22-6-23 of the Code of State Regulations regarding oil and gas operations, please find attached a formal application for the plug and abandonment of the subject well.

Notices of our intention to plug this wellbore have been sent to surface owner, coal owner, and coal operators associated with this well. Copies of the certified mail receipts are attached for your records.

If you have any questions or need additional information, I can be reached at 412-249-3850.

Sincerely,

Kenneth L. Marcum  
Regulatory Supervisor

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