



west virginia department of environmental protection

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

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

Monday, October 16, 2017
WELL WORK PERMIT
Coal Bed Methane Well / Plugging

ARP MOUNTAINEER PRODUCTION, LLC
425 HOUSTON, STE 300

FORT WORTH, TX 76102

Re: Permit approval for BCC-001B
47-081-01366-00-00

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

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

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief



Operator's Well Number: BCC-001B
Farm Name: BEAVER COAL COMPANY
U.S. WELL NUMBER: 47-081-01366-00-00
Coal Bed Methane Well / Plugging
Date Issued: 10/16/2017

Promoting a healthy environment.

10/20/2017

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.

8101366CP

WW-4B
Rev. 2/01

1) Date 8-31-, 2017
2) Operator's
Well No. BCC-001AB
3) API Well No. 47-81 - 01366

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON A CBA WELL,

4) Well Type: Oil ___/ Gas X/ Liquid injection ___/ Waste disposal ___/
(If "Gas, Production ___ or Underground storage ___) Deep ___/ Shallow ___

5) Location: Elevation 2440' Watershed Burnt Branch of Slab Fork
District Slab Fork County Raleigh Quadrangle Lester
ARP Mountaineer Production, LLC

6) Well Operator 425 Huston Street 7) Designated Agent CT Corporations Systems
Address Suite 300 Address 5400 D Big Tyler Road
Fort Worth Texas 76102 Charleston WV 25313

8) Oil and Gas Inspector to be notified Name Gary Kenedy
Address 252 Circle Ave.
Rainelle WV 25962
9) Plugging Contractor Name _____
Address _____

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

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Environmental Protection

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

Work order approved by inspector  Date 9/18/17

10/20/2017

BCC 001B
API# 47-081-01366

ARP Mountaineer Production, LLC proposes the following procedures for plugging:

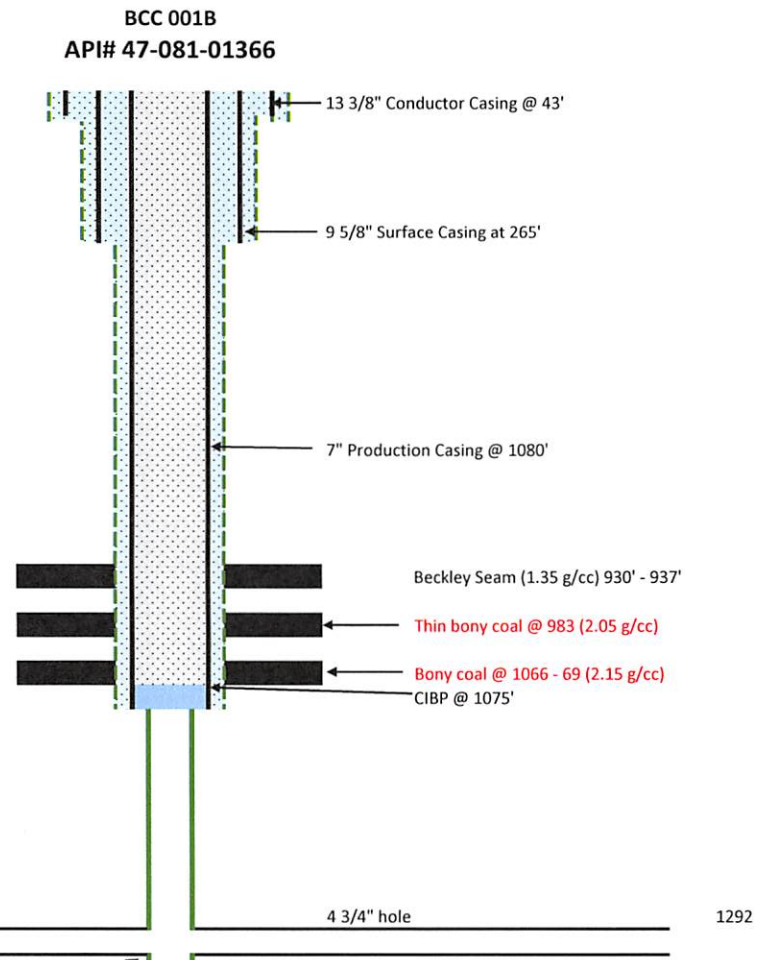
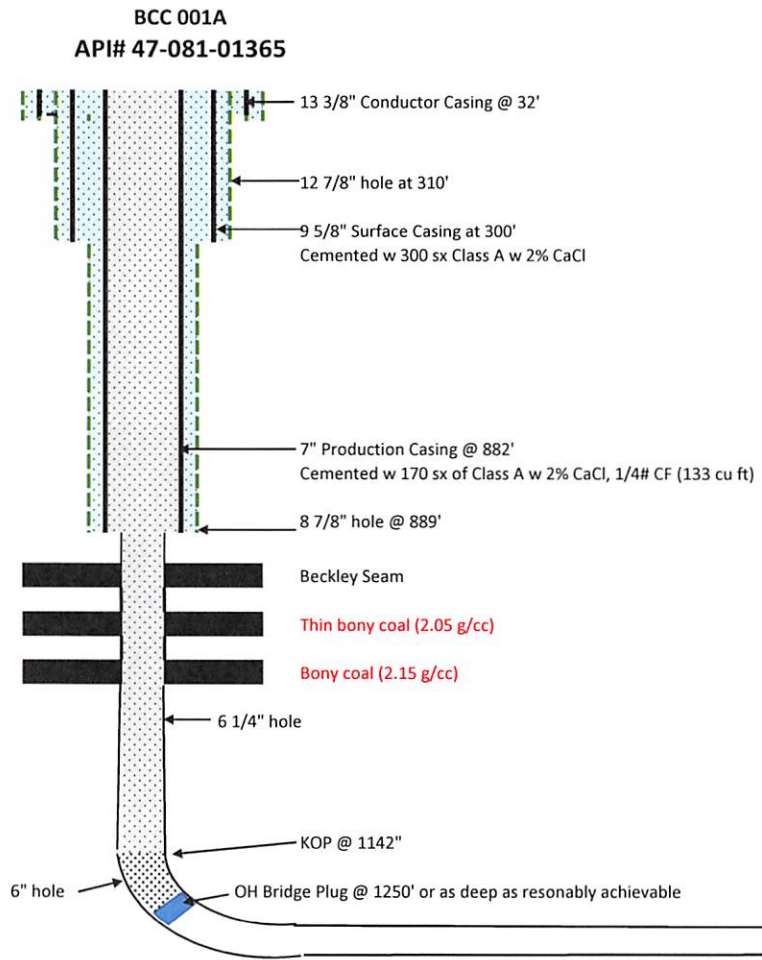
1. MIRU service rig
2. Test tubing to 300 psi
3. POOH w pump and rods
4. RIH w tubing and tag bottom
5. POOH strapping tubing
6. Verify bottom is at least 1300'
7. RIH w bit and scraper to 1080'
8. POOH laying down w bit and scraper
9. RDMO Service Rig to BCC 001A
10. Inject or gravity feed 650 bbls water into BCC 001B
11. MIRU service rig
12. RIH w tubing and hydraulic set bridge plug to 1075'
13. Set and release plug
14. Set 240 cf cement to surface while POOH w 185 sx of expanding cement (1.31 yield)
15. RDMO service rig
16. Install permanent marker and reclaim location to WVDEP specs



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8101366 CP

BCC 001A and BCC 001B Post Plugging Wellbore Schematics



BCC 001A Lateral Measured Depth - 1546'

7" Casing from surface to 882'
 6 1/4" Hole from 882 to 1142 (KOP)
 6" Hole from 1142 - 1546' MD (KOP to Intercept Point)

7" Casing from surface to 882'	35	bbl
6 1/4" Hole from 882 to 1142 (KOP)	10	bbl
6" Hole from 1142 - 1546' MD (KOP to Intercept Point)	14	bbl
Total	59	bbl

7" Casing from surface to 1080'
 6 1/4" hole from 1080' to 1294'
 6 1/4" hole from 1294' to 1357'
 24272' of 4 3/4" lateral

7" Casing from surface to 1080'	43	bbl
6 1/4" hole from 1080' to 1294'	8	bbl
6 1/4" hole from 1294' to 1357'	2	bbl
24272' of 4 3/4" lateral	532	bbl
Total	585	bbl



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WR-35

API # 47-081-01366

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

Farm name: Beaver Coal Company

Operator Well No: BCC-001B

Location: Elevation: 2440.58'

Quadrangle: Lester

District: Slab Fork

County: Raleigh

Latitude: 7037 Feet South of 37 Deg. 45 Min. 00 Sec.
Longitude: 12840 Feet West of 81 Deg. 20 Min. 00 Sec.

Company: CDX Gas, LLC
P.O. Box 609
Pineville, WV 24874

Agent: JOSEPH A. ZUPANICK

Inspector: Name
Permit Issued: 07/07/2005
Well Work commenced: 7/14/2005
Well Work completed: 8/20/2005
Verbal plugging
Permission granted on:
Rotary x Cable _____ Rig
Total depth (ft) 1339'
Fresh water depths (ft) N/A
Salt water depths (ft) N/A
Is coal being mined in the area (Y/N)? Y
Coal depths (ft): 930,1286.

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill up Cu.ft.
13 3/8"	43	43	30
9 5/8 "	265	265	83
7"	1080	1080	162
2 7/8"	1289	1289	Hanging

OPEN FLOW DATA

Producing formation Poca No.3 Pay zone depth (ft) 1286'
Gas: Initial open flow N/A Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow N/A 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

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

Third 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

Note: ON BACK OF THIS FORM, PUT THE FOLLOWING: 1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2) THE WELL LOG WHICH IS A SYSTEMATICK DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Charles T. Akers
For: CDX Gas, LLC

By: [Signature]

Date: 9/29/2005

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[Handwritten initials]

WV Department of
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10/20/2017

Operator: BCC-001B
 API No. 47- 081- 01366
 Location: Raleigh County

Details of Perforated Intervals, Fracturing or Stimulation, Physical Change, Etc. - N/A

Well Log & Geologic Record - Depths from G.L.

Lithology	Depth in feet	
	Top	Bottom
Casing	0	10
Sandy Shale	10	70
Shale	70	130
Sandy Shale	130	200
Shale	200	240
Sandy Shale	240	300
Shale	300	380
Sandy Shale	380	400
Shale	400	580
Sandy Shale	580	600
Shale	600	620
Sandy Shale	620	720
Shale	720	900
Sandy Shale	900	930
Coal	930	937
Shale	937	1010
Sandy Shale	1010	1090
Shale	1090	1150
Sandy Shale	1150	1260
Shale	1260	1286
Coal	1286	1289
Sandy Shale	1289	1339
End		

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10/20/2017

WW-4A
Revised 6-07

1) Date: 8/31/2017
2) Operator's Well Number
BCC-001B

3) API Well No.: 47 - 81 - 01366

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

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Beaver Coal Company, LTD</u>	Name <u>No operations at this time</u>
Address <u>115-1/2 B South Kanawha St.</u>	Address _____
<u>Beckley, WV 25802</u>	_____
(b) Name <u>Western Pocahontas Properties</u>	(b) Coal Owner(s) with Declaration
Address <u>5260 Irwin Road</u>	Name <u>Beaver Coal Company, LTD</u>
<u>Huntington WV 25705</u>	Address <u>115-1/2 B South Kanawha St.</u>
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Gary Kenedy</u>	(c) Coal Lessee with Declaration
Address <u>252 Circle Ave.</u>	Name <input checked="" type="checkbox"/> <u>(1) Pocahontas Coal Co, 442 Lost Tree Lane, Knoxville, TN 37934-2563 has Poca 3 seam</u>
<u>Rainelle WV 25862</u>	Address _____
Telephone <u>304-382-8402</u>	<input checked="" type="checkbox"/> <u>(2) Grey Flats Development Co., 109 Appalachian Drive, Beckley, WV 25801 has Beckley seam</u>

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

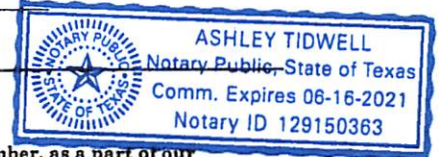
- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

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 ARP MOUNTAINEER PRODUCTION, LLC
 By: Juile Harris *Juile Harris 8/31/17*
 Its: Director, HSE
 Address 425 Houston St, Ste 300, Ft Worth, TX 76102
 Telephone 817-665-8830

Subscribed and sworn before me this 31 day of August 2017
Ashley Tidwell (Ashley Tidwell) Notary Public
 My Commission Expires 6/16/2021



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.

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WW-9
(5/16)

API Number 47 - 81 - 01366
Operator's Well No. _____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name ARP MOUNTAINEER PRODUCTION, LLC OP Code 494509804
Watershed (HUC 10) 0507010101 (Richardson Branch) Quadrangle Tommy Creek-Guyandotte River

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

Will a pit be used? Yes No NO PIT, OPEN TOP TANK

If so, please describe anticipated pit waste: Water and Cement to be collected in open top tank

Will a synthetic liner be used in the pit? Yes No If so, what ml? _____

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: NO

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. _____

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

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. _____

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

-Landfill or offsite name/permit number? _____

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, 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.

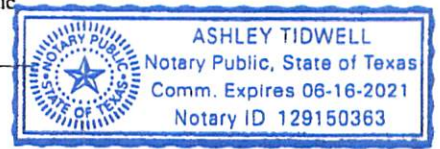
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is 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 *Julie Harris*
Company Official (Typed Name) Julie Harris
Company Official Title Director, HSE

Subscribed and sworn before me this 31 day of August, 20 17

Ashley Tidwell (Ashley Tidwell) Notary Public

My commission expires 6/16/2021



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Proposed Revegetation Treatment: Acres Disturbed 0.5 Prevegetation pH 5-6.5

Lime 2 Tons/acre or to correct to pH 6

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch Hay/Straw Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre

Seed Type lbs/acre

Tall Fescue or Orchard Grass 40

Annual Rye Grass 5

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Greg Kennedy*

Comments: _____

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Title: *Inspector* Date: *9/18/17*

Field Reviewed? Yes No

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

Operator Name: ARP Mountaineer Production, LLC
Watershed (HUC 10): 0507010101 (Richardson Branch) Quad: Tommy Creek-Guyandotte River
Farm Name: _____

- 1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

Waste water that is collected into the portable tank will be treated and ground disbursed using a 2" portable gasoline powered trash pump.

- 2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

While in operation, the portable 2" gasoline powered trash pump will be placed inside containment eliminating chances for potential spillage of gasoline onto the surface.

- 3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Closest Water Body - Richardson Branch
Distance to Closest Water Body 1,200' +/-
Distance from Closest WHPA to Discharge Area - N/A

- 4. Summarize all activities at your facility that are already regulated for groundwater protection.

Not applicable.

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- 5. Discuss any existing groundwater quality data for your facility or an adjacent property.

Not Applicable

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No wastes will be used for deicing, ice control, structural fills, road base or other uses.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

All employees will be trained on their responsibility to ensure groundwater protection. Current job procedures provide direction on how to prevent ground water contamination through proper work practices.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

During the plugging and abandonment activities, the site will be inspected to ensure that all elements and equipment of the sites ground water protection program are in place, properly functioning, and appropriately managed.

Signature: Rocky Stibel

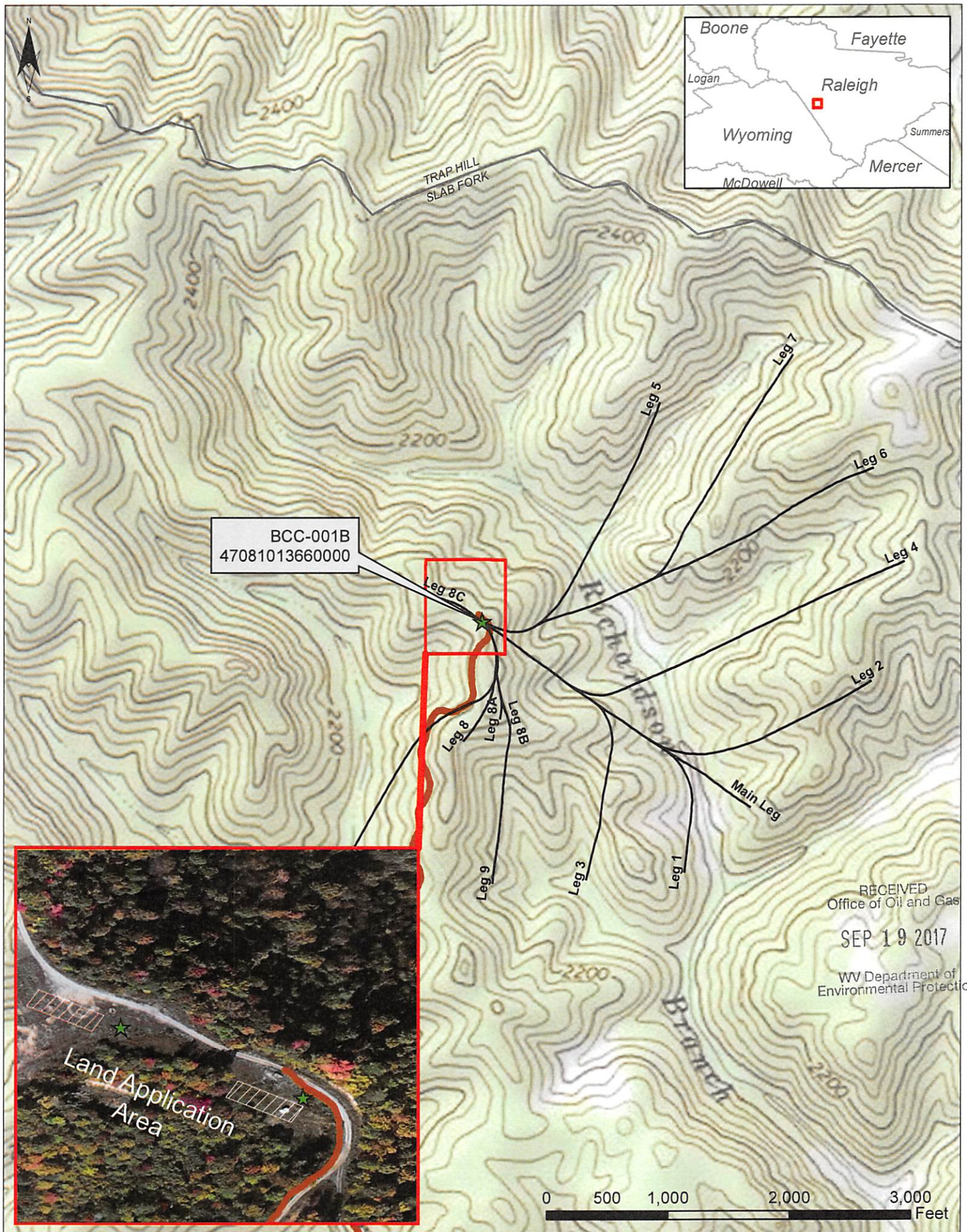
Date: 8-31-2017

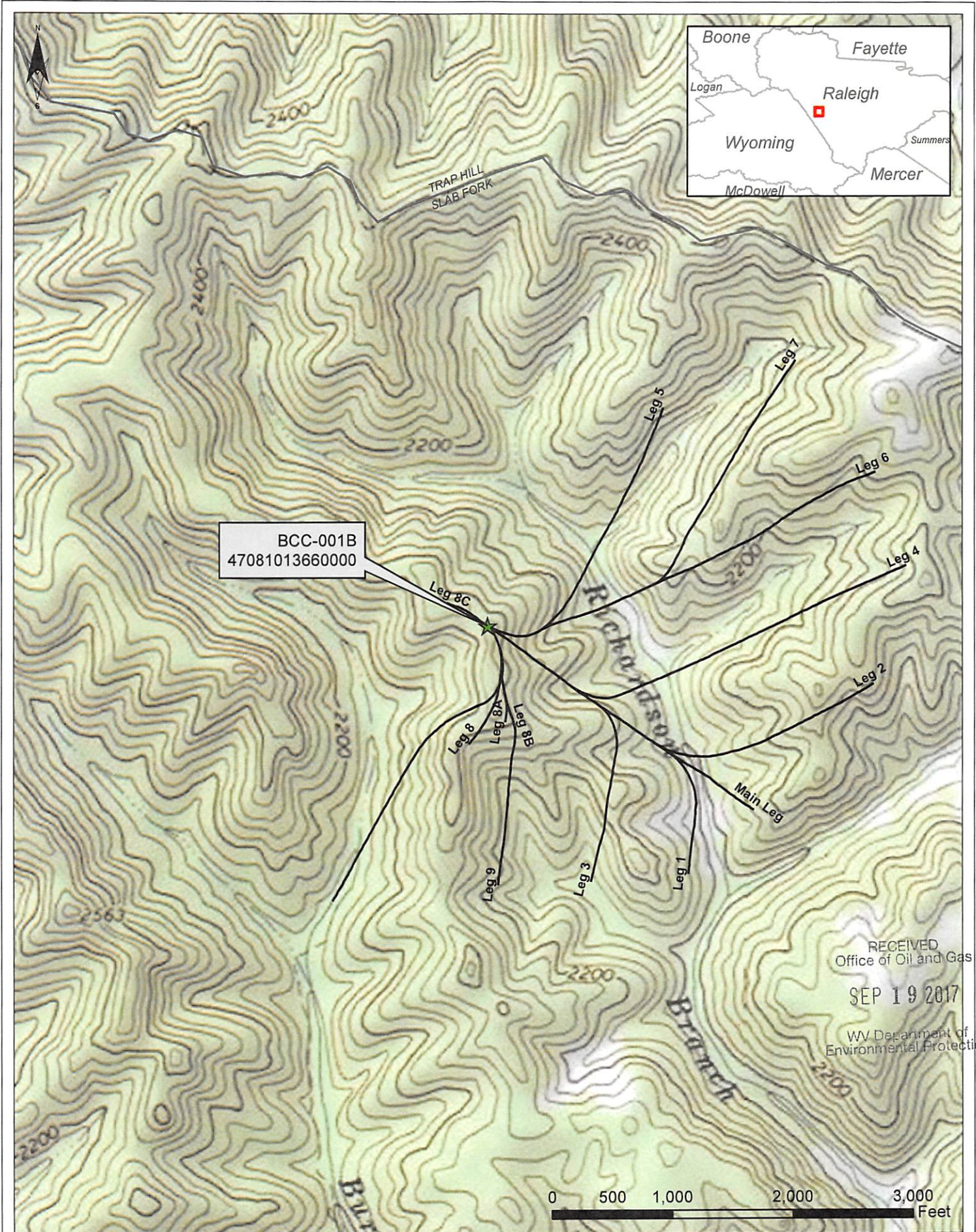
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10/20/2017





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0 500 1,000 2,000 3,000 Feet

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BCC 001A

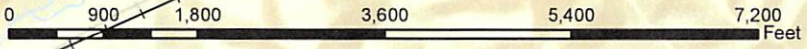
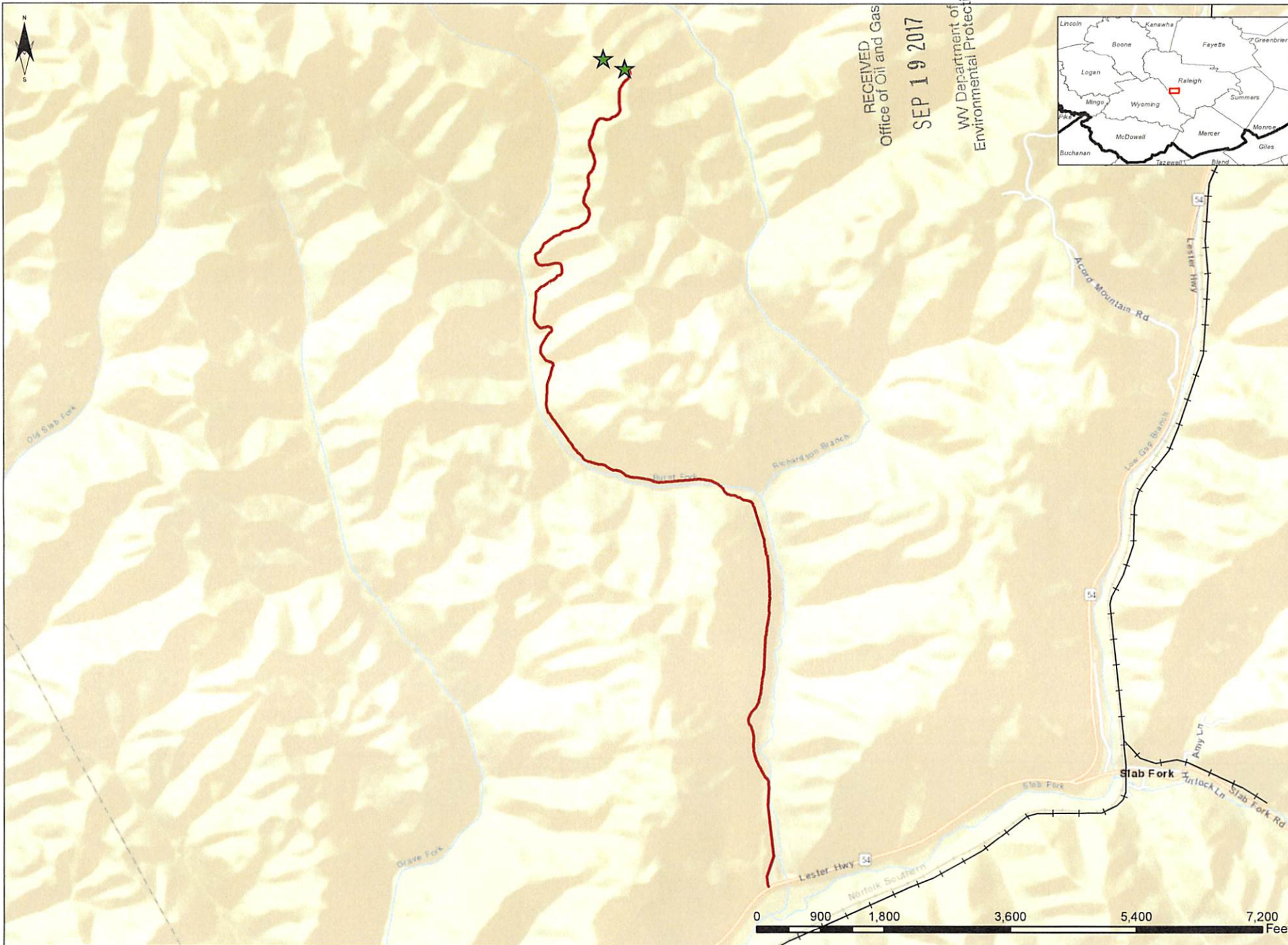
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T Titan Energy

BCC-001A & BCC-001B Access Road

Date: 8/20/2017
1 in = 0.34 miles
Created By: Rocky Reed
Coordinate System: NAD 1983 UTM Zone 17N
Document Path: S:\GIS\Projects\Public_GIS\Users\Ricky Reed\Map\Misc\Location_Map.mxd

[Handwritten signature]

WW-7
8-30-06



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

API: 8101366 WELL NO.: BCC-001B
FARM NAME: BEAVER COAL COMPANY
RESPONSIBLE PARTY NAME: ARP MOUNTAINEER PRODUCTION, LLC
COUNTY: Raleigh DISTRICT: Slab Fork
QUADRANGLE: Lester
SURFACE OWNER: Beaver Coal Company, LTD
ROYALTY OWNER: Beaver Coal Company, LTD
UTM GPS NORTHING: 4174241
UTM GPS EASTING: 468489 GPS ELEVATION: 2440'

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 X: Post Processed Differential ____
Real-Time Differential X

4. **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.

Rocky Stibell HSE 8-31-2017
Signature Title Date

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