

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

Austin Caperton, Cabinet Secretary www.dep.wv.gov

Wednesday, October 16, 2019
WELL WORK PLUGGING PERMIT
Vertical Plugging

BRC OPERATING COMPANY, LLC 200 CRESCENT COURT, SUITE 1900

DALLAS, TX 75201

Re: Permit approval for BLAIR 1 47-067-00873-00-00

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.

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. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, 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: BLAIR 1

Farm Name: PARDEE&CURTIN REALTY

U.S. WELL NUMBER: 47-067-00873-00-00

Vertical Plugging
Date Issued: 10/16/2019

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

- 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.

WW-4B Rev. 2/01

 Date August 5 	, 20 19
2) Operator's	
Well No. Blair 1	
3) API Well No.	47 - 067 - 00873

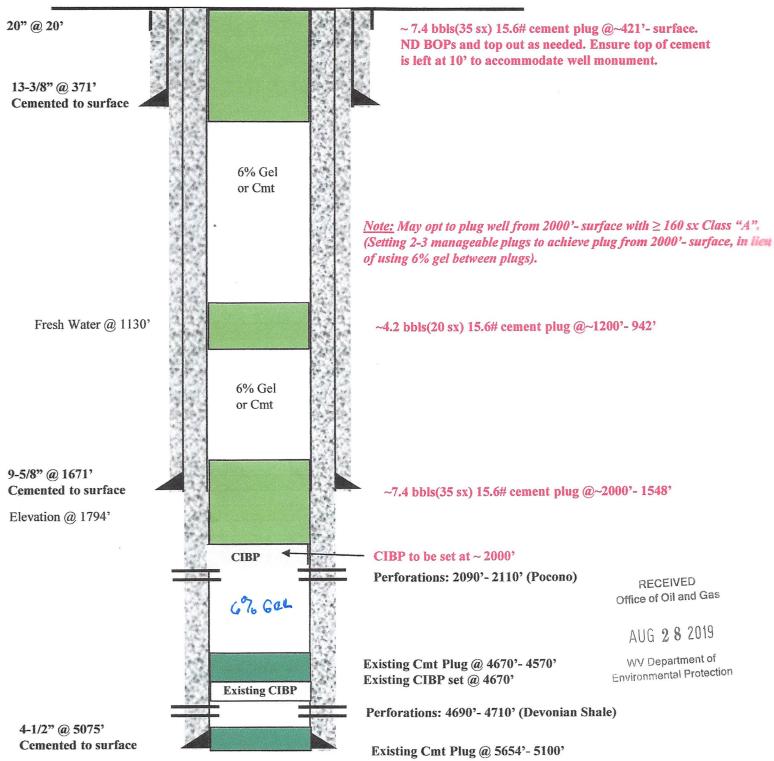
STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4)	Well Type: Oil/ Gas X/ Liquid	d injection/	′ Waste disp	osal/			
	(If "Gas, Production or Und	derground storage) Deep	/ Shallow_X			
5)	Location: Elevation_1,794'	Watershed Rich Fo	ork of Powell (Creek			
	District Hamilton	County Nicholas	Quadrangl	.e Widen 7.5'			
6)	Well Operator BRC Operating Company, LLC	7)Designated Age	ent Charles Bi	rightman			
- /	Address 200 Crescent Court, Suite 1900	Addre	286 Sunda	ay Rd.			
	Dallas, TX 75201		Hico, WV 2				
0.1	Oil and Gas Inspector to be notified	9)Plugging Contr	ractor				
8)	Name Jeremy James						
	Address P.O. Box 36	Name Halliburton Address 4999 East Pointe Dr.					
		Zanesville, OH 43701					
	Clendenin, WV 25045		ariesville, Ori 40	7701			
				RECEIVED Office of Oil and Gas			
				Office of Oil and Gas			
				AUG 28 2019			
	ification must be given to the district o $arkappa$ can commence.	il and gas inspec	tor 24 hours	WV Department of Environmental Protection s before permitted			
Worl	k order approved by inspector	2	Date _	8-28-19			

BRC Operating Company, LLC Blair #1 API No. 47-067-00873 Proposed Wellbore Schematic

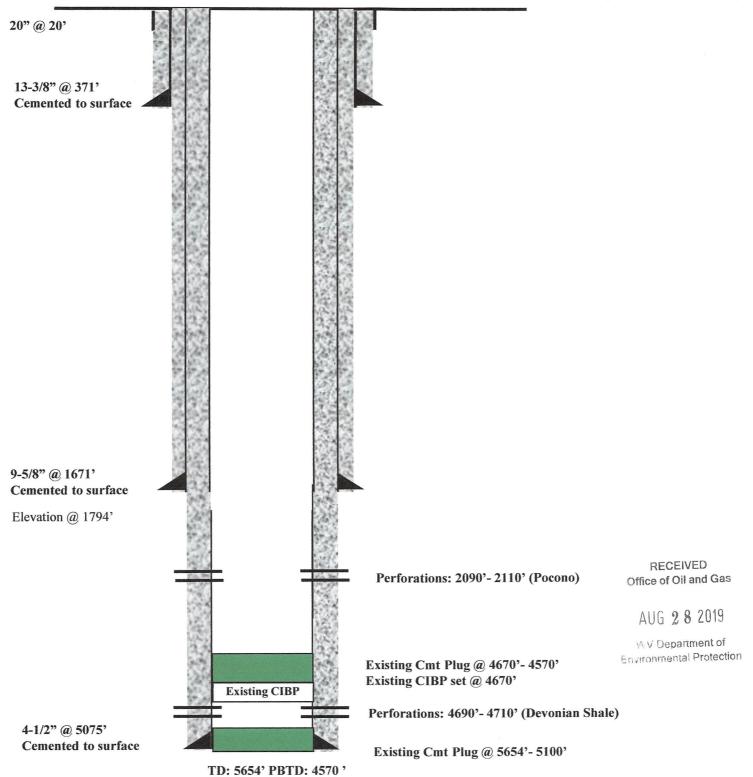
Prepared by: Tim McGilvray



TD: 5654' PBTD: 4570'

BRC Operating Company, LLC Blair #1 API No. 47-067-00873 Present Wellbore Schematic

Prepared by: Tim McGilvray



Procedure

- 1. MIRU. Conduct pre-job safety meeting and discuss JSA with everyone on location. JSA should cover: heavy lifts, pinch points, location hazards, pressure hazards, and proper PPE. Make sure everyone knows they have the right to stop the job. Notify DEP (304-951-2596) 24 hours prior to plugging operations.
- 2. Check tubing and casing strings for pressure and record. Test lines to 250 psi low and HASP (Highest Anticipated Surface Pressure plus 250 psi). Prior to the start of any pumping operation, P&A supervisor and pump operator shall verify that the valves and lines involved in the operation, are aligned properly, and are rated to the maximum pressure to be applied.
- 3. Bleed off any existing pressure. Fill tubing & casing as needed. NU BOPs. Function test same.
- 4. POOH with any exiting tubing.
- 5. RU E-line. RIH with gauge ring/junk basket to ~ 2000'. POOH
- MAKE SURE GEL IS BELOW CIBP. 6. RIH and set CIBP for 4-1/2" casing at ~ 2000 '. POOH
- 7. RIH with 2-3/8" to ~ 2000 ' and circulate well with FW. Prepare to cement.
- 8. Mix/Pump 35 sx (~7.4- bbl. slurry) Class "A", 15.6# Cement. Displace plug with \sim 5.6 bbls to position 452' cement plug @ 2000'- 1548'.

Note: 6% gel water to be positioned between all plugs.

- 9. LD tubing to 1200'. Prepare to cement.
- 10. Mix/Pump 20 sx (4.2- bbl. slurry) Class "A", 15.6# Cement. Displace plug with ~ 3.4 bbls to position 258' cement plug @ 1200'- 942'.

Note: 6% gel water to be positioned between all plugs.

- 11. LD tubing to 421'. Prepare to cement.
- 12. Mix/Pump 35 sx (~7.4- bbl. slurry) Class "A", 15.6# Cement from 421'- surface.
- 13. POOH, ND, and top out as needed leaving top of cement at 10' to accommodate well monument.

14. RDMO.

Date: 10-12-2019 Prepared by: Tim McGilvray

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OCT 1 5 2019

WV Department of Environmental Protection

BRC Operating Company, LLC

Blair Well No. 1 API No. 47-067-00873 Nicholas County, WV

Plug and Abandonment Procedure

TD:

5,654'

PBTD:

4,570°

Conductor Casing:

20" @ 20'

Surface Casing:

13-3/8" @ 371'. Cmt'd to surface

Intermediate Casing: 9-5/8" @ 1671'. Cmt'd to surface

Production Casing:

4-1/2" set @ 5,075'. Cmt'd to surface

Tubing:

Undetermined. Records unavailable

Packer:

Undetermined

Perforations:

2090'- 2110'

Elevation:

1,794

Location:

Lat: 38.451037° Long: -80.751295°

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OCT 1 5 2019

WV Department of **Environmental Protection**

Tubular Data and Hole Capacities

	Dimens	ions, Streng	ths, and	Depths						
Casing Liner Tubing	Grade	Weight lb/ft	Conn.	ID in.	Drift in.	Collaps psi	е	Burst psi	Jt. Strength (K#)	Depth feet
20"										20'
13-3/8"										371'
9-5/8"										1671'
4-1/2"	J-55	No report		4.090	3.965	3,310		4,380	101,000	5,075'
2-3/8"		4.7#	EUE	1.995	1.901	9980		9840	60,300	Workstring
	Capaciti	es	bbls/	ft.			C	u.ft./ft.		
2-3/8" w	orkstring		0.00387	bbls/ft			0.02171 cu.ft./ft.			
4-1/2" ca	sing		0.01625 bbls/ft			0.0912 cu.ft./ft.				
2-3/8"x 4	-1/2" annı	ulus	0.0101 bbls/ft			0.0565 cu. ft/ft.				
Well cap	acity to plu	ıg depth								

Plug Data

Plug	Sacks	Mix Water BBLS	Plug Depth	Displ BBLS 2-3/8" Tbg	Tag
#1			CIBP @ 2000'		
#2	35	4.3	2000'- 1548'	~5.6	
#3	20	~2.5	1200'- 942'	~3.4	
#4	35	~4.3	421'- surface Circ hole clean at 10' to accommodate well monument		

^{*}Cement to be Class "A" and Mixed to 15.6#, 5.2 gal/sk

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OCT 1 5 2019

WV Department of Environmental Protection

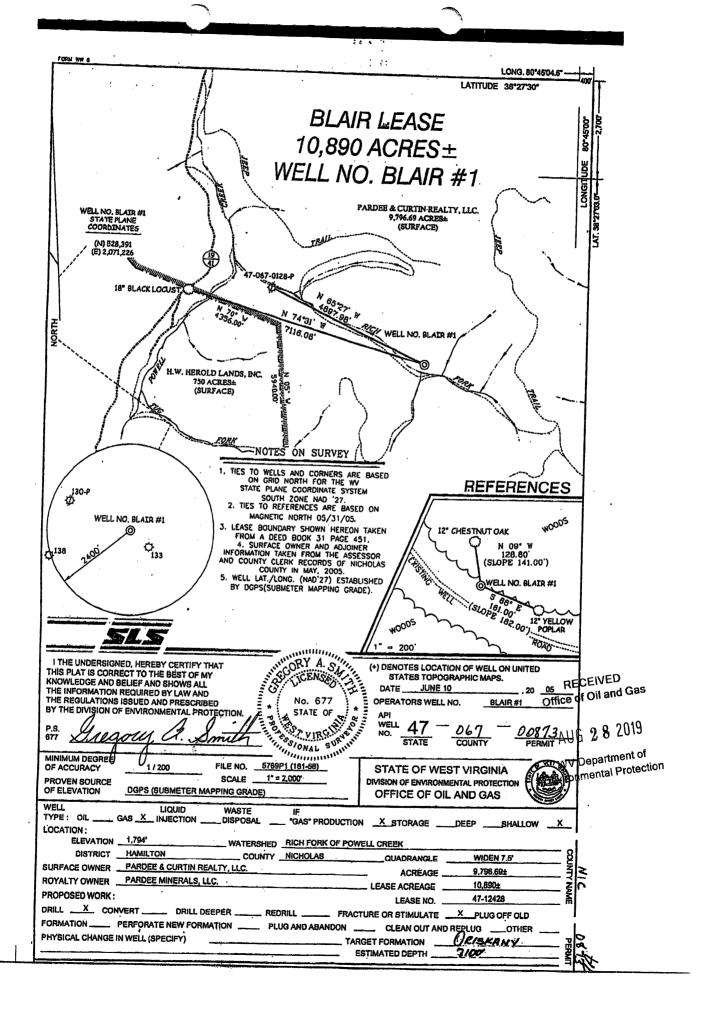
^{* 6%} Gel water to be positioned between plugs

WR-35 Date December 21, 2006 47- 067 - 00873 API# State of West Virginia Division of Environmental Protection Section of Oil and Gas Well Operator's Report of Well Work Farm Name: Pardee & Curtin Realty LLC Operator Well No .: Blair #1 LOCATION: Elevation: 1794 Quadrangle: Widen District: Hamilton County: Nicholas Latitude: 2700 feet South of 380 DEG 27 MIN. 30" SEC. Longitude: 400' feet West of 80° DEG. 45 MIN. 00" SEC Casing & Cement Fill **Tubing Size** Company: Used in Drilling Left In Well Cabot Oil & Gas Corporation Up Cu. Ft. 900 Lee Street East, Suite 500 20" 20' 20' N/A Charleston, WV 25301 13-3/8 371 371 365 Agent: Thomas S. Liberatore Inspector: 9-5/8" Terry Urban 1671" 1671 798 Permit Issued: 7/21/2005 Well Work Commenced: 4-1/2" November 13, 2005 5075 1015 Well Work Completed: April 27, 2006 Verbal Plugging: Squeeze 4-1/2" csg. @ 2658'-2660' 439 Permission granted on: Rotary X Cable 2-3/8" 2088 N/A Total Depth (feet) 5654' / PBTD 4570' Fresh Water Depths (ft) 104', 1130' Salt Water Depths (ft) 1759 Is coal being mined in area (Y / N)? PLUG BACK SHOWN ON BACK PAGE YES Coal Depths (ft) 54'-61' OPEN FLOW DATA Pay Zone **Producing Formation** POCONO Depth (ft) 2090'-2110' Gas: Initial Open Flow **TSTM** MCF/d Oil: Initial Open Flow Final Open Flow Bbl/d 60 MCF/d Final Open Flow 0 Time of open flow between initial and final tests Bbl/d Hours Static rock pressure psig surface pressure after Hours Pay Zone Second Producing Formation Depth (ft) Gas: Initial Open Flow MCF/d Oil: Initial Open Flow Final Open Flow Bbl/d MCF/d Final Open Flow Time of open flow between initial and final tests Bbl/d 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 SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE For: CABOT OIL & GAS CORPORATION Ву: Office of Chief Date: Office of oil and Gas JAN 0 9 2007 8 2019 wy Department of Environmental Protection WV Department of Environmental Protection

STAGE	PERFS	ACID 15% HCI	FOAM	SAND (lbs)	NITROGEN (scf)	BDP	ATP	MTP	ISIP
1-Devonian Shale	4690-4710 (40)	350	75Q	40,600	594,200	2476	2460	2476	1566
2-Pocono	2090-2110 (40)	250	75Q	40,600	252,700	1149	1071	1080	088

FORMATION	TOP	BOTTOM	REMARKS	
Sandstone	Surface	20		11
Shale and Siltstone Coal	20	54		11
	54	61		
Shale and Siltstone	61	556		- 11
Sandstone	556	601		' (
Shale	601	657		
Sandstone	657	702		
Shale and Sandstone	702	1050		
Sandstone	1050	1077		
Shale and Siltstone	1077	1166		
Sandstone	1166	1175		
Shale	1175	1253		
Sandstone	1253	1274		
Shale	1274	1400		
Sandstone	1400	1409		
Shale and Siltstone	1409	1647		
Little Lime	1647	1694		
Shale	1694	1424		
Blue Monday	1424			
Big Lime	1769	1769		
Shale	2033	2033		
Pocono	2038	2038	_	
Shale	2150	2150 4-	-	
Sandstone	2130 2534	2534		
Shale		2539		
Sandstone and Shale	2539	2656		
Shale and Sittstone	2656	2678		RECEIVED
Siltstone and Shale	2678	3070		Office of Oil and Gas
Shale	3070	3382		J.
Siltstone and Shale	.3382 3836	3836		
Shale	3978	3978		AUG 28 2019
Shale and Siltstone	4258	4258		Aud De -
Shale	_ _ _	4460		WV Department of
Shale and Siltstone	4460	4513		Environmental Protection
Shale	4513	4547		Environmental Frotestion
Siltstone and Shale	4547	4715		
Shale	4715	4800		
	4800	5654	TD	

1st PLUG BACK (open hole): Class "A" cement from TD @ 5654' to 5100' 2nd PLUG BACK (in 4-1/2" casing): CIBP @ 4670' Class "A" cement from 4670'-4570'



00873

WW-4A Revised 6-07

(a) Name

Oil and Gas Privacy Notice

information, please contact DEP's Chief Privacy Officer at

4) Surface Owner(s) to be served:

Berth Blair Timberlands LLC

1)	Date:	August 5, 2019	
2)	Operator's	Well Number	
Blair	1		

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

5) (a) Coal Operator

Name

3) API Well No.: 47 -

Address	702 Professional Park D	r, Suite 104S	Address			
	Summersville, WV 2665	1				
(b) Name			(b) Coal Ov	wner(s) with De	claration	/
Address			Name	Berth Blair Minera	ls LLC	
			Address	135 Corporate Ce	nter Dr., Suite	510
				Scott Depot, WV 2	25560	
(c) Name			Name			
Address			Address			
6) Inspector	Jeremy James		— (c) Coal Le	essee with Decla	ration	
Address	P.O Box 36		Name			
11441055	Clendenin, WV 25045		Address			
Telephone	304-951-2596					
retophone			-			
Take notic accompany Protection, the Applic	you are not required to take e that under Chapter 22-6 oving documents for a permit with respect to the well at	owing the well location at the location described or mailed by registered a day of mailing or delivered.	ghts regarding the appli de, the undersigned well well with the Chief of to on the attached Applicat I or certified mail or do ery to the Chief.	I operator proposes to the Office of Oil and G tion and depicted on the elivered by hand to the	file or has file das, West Virgue attached Fo	ed this Notice and Application and ginia Department of Environmental orm WW-6. Copies of this Notice, named above (or by publication in
	C OFFICIAL SEAL	_	BRC Operating Com	pany, LLC		
Glanna	I Puuli I	By:	Charles Brightman	Hole!	2	RECEIVED
M 30 00000 8600	Vest Virginia ssion Expires	Its:	Agent			Office of Oil and Gas
In ICR Inniigri	175 2024	Address	286 Sunday Rd.			Ollice of on
740 CHEST	NUT KNOB ND.		Hico, WV 25854			2010
LAYLAND	0, WV 25864	Telephone	304-880-8121			AUG 2 8 2019
Subscribed and	sworn before me th	is 00 d	ay of	Notary	y Public	WV Department of Front Protection
My Commission	1 Expires	muary	000	2024		
Oil and Can Duine	Varian V	1				

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

Berthy Blair Tract

Well:

Blair #1, API 47-067-00873

Surface Owner:

Berth Blair Timberlands LLC 702 Professional Park Drive Suite 104S Summersville, WV 26651

Coal Owners:

Berth Blair Minerals LLC 135 Corporate Center Drive, Suite 510 Scott Depot, WV 25560

(You can send below notices to Berthy Blair Minerals LLC as manager)
J.N. Berthy Heirs
c/o Kay Goodwin
106 Centre Court Road
Charleston, WV 25314

Thomas J. Blair III & Irene Blair 1321 Mt. Vernon Pl. Charleston, West Virginia 25314

Emma C. Bramble 139 Springbrook Court Lancaster PA 17603

Harry E. Curtis Jr. 309 Heathwood Lane Easley SC 29640

Coal Operator/Lessees:

None

Tioga Tract

Wells:

Tioga Lumber 5, API 47-067-00895 Tioga Lumber 6, API 47-067-00896

Surface Owner: Tioga Timberlands LLC 702 Professional Park Drive Suite 104S Summersville, WV 26651

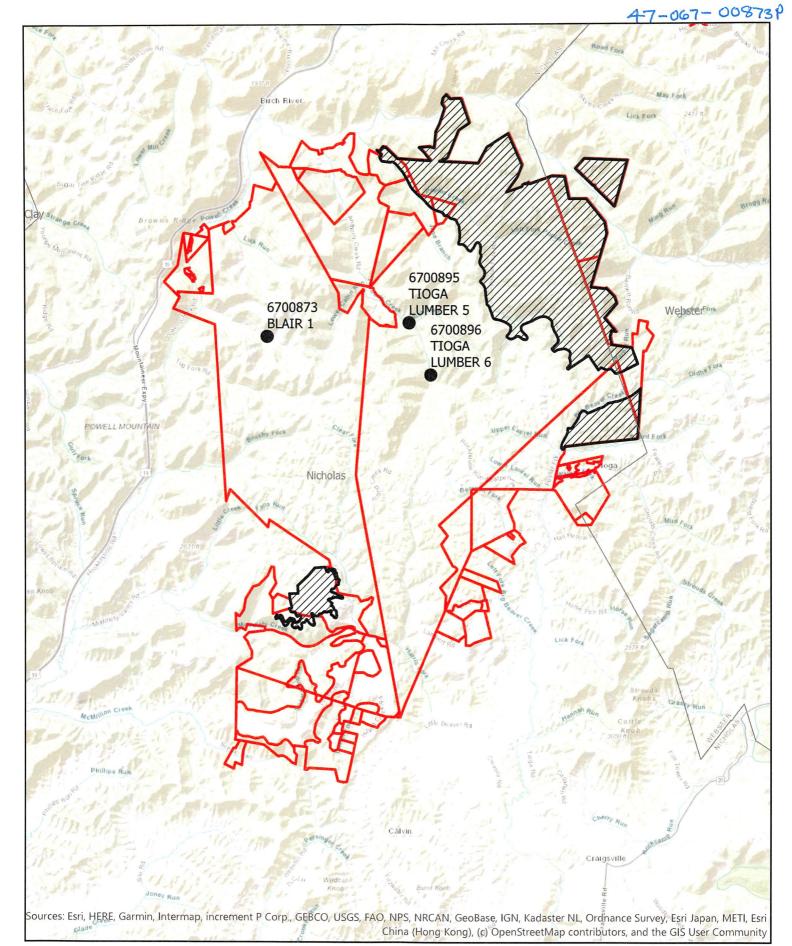
Coal Owner:

Tioga Minerals LLC 135 Corporate Center Drive, Suite 510 Scott Depot, WV 25560

Coal Operator/Lessees:

None

Note: There is a gate on access road to the Blair #1. Let us know and we will leave it open during plugging



1 inch equals 8,000 Feet

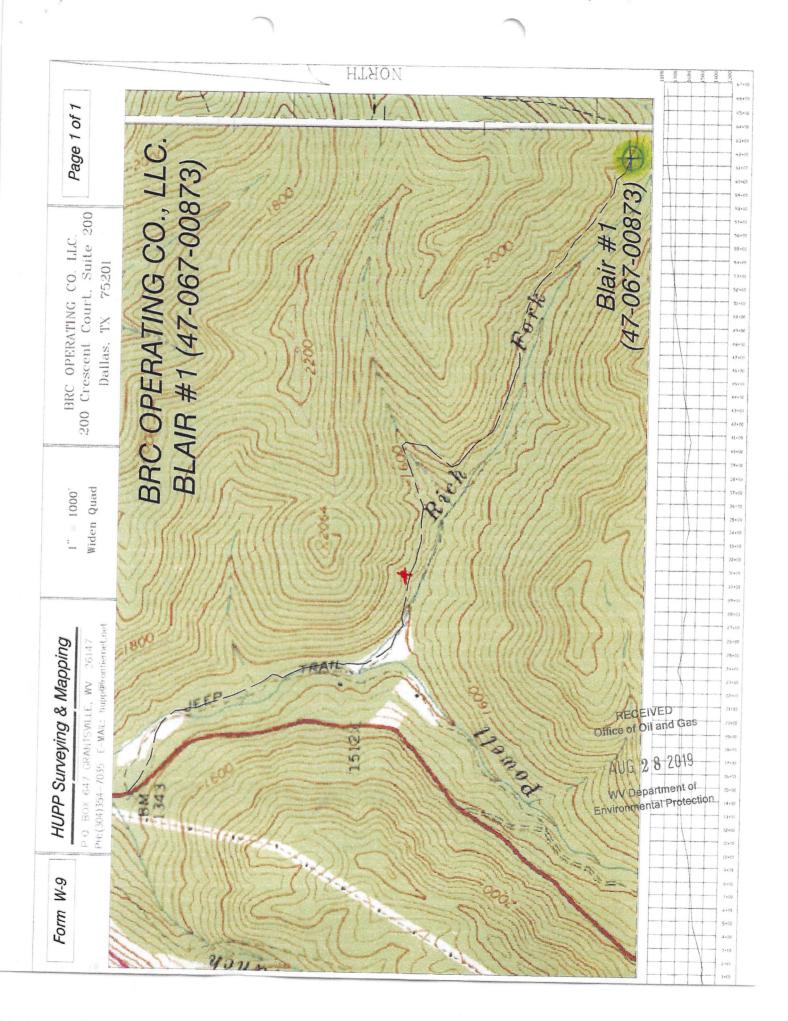
API Number 47 - 06	7 _ 00873
Operator's Well No.	47-067-00873

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name BRC Operating Company, LLC OP Code
Watershed (HUC 10)_ Rich Fork of Powell Creek Quadrangle Widen 7.5'
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 V AM WELL EFFLUENT MUST BE CONTAINED IN TANK AND DISPOSED OF SITE PROPERLY,
If so, please describe anticipated pit waste:
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)
Reuse (at API Number) Off Site Disposal (Supply form WW-9 for disposal location)
Other (Explain
Will closed loop systembe used? If so, describe: n/a
Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. n/a
-If oil based, what type? Synthetic, petroleum, etcn/a
Additives to be used in drilling medium? n/a
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)_n/a
-Landfill or offsite name/permit number? n/a
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 AUG 2 8 2019
Company Official (Typed Name) Charles Brightman WV Department of
Company Official Title Designated Agent Environmental Protection
Subscribed and sworm before me this day of State of West Virginia My Commission expires My commission expires My commission expires August 25, 2024 My commission expires August 25, 2024 August 26, 2024 A

Lime 5gals Tons/acre or to correct to pH 6. Fertilizer type 10-20-10 Fertilizer amount 500 lbs/ac Mulch 500lbs Tons/acre		
Fertilizer type	ere	
Mulch 500lbs Tons/acre	ere	
Seed M		
	xtures	
Temporary	Permane	nt
Seed Type lbs/acre	Seed Type Tall fescue blend	lbs/acre
otocopied section of involved 7.5' topographic sheet.	,	
an Approved by: Jeremy James		
an Approved by: Jeremy James (A)		
		RECEIVED
		RECEIVED Office of Oil and Ga
		Office of Oil and Ga



WW-7 8-30-06



West Virginia Department of Environmental Protection Office of Oil and Gas

WELL LOCATION FORM: GPS

	CATION FORM. 015	
_{API:} 47-067-00873	Bla	air 1
FARM NAME:		
RESPONSIBLE PARTY NAME:	BRC Operating Comp	pany, LLC
COUNTY: Nicholas	bistrict: Ham	ilton
\/\/\dan / ')	
SURFACE OWNER: BERT	74 BLAIR TIMBERLANDS	LLC
ROYALTY OWNER: Parded	e Minerals, LLC	
UTM GPS NORTHING: 4255	888.66	
UTM GPS EASTING: 52170	888.66 1.23 GPS ELEVATIO	_{N:} 1794
preparing a new well location plat if above well. The Office of Oil and O the following requirements:	05 meters	I number on the that do not meet
	Time Differential	
	st Processed Differentialeal-Time Differential	RECEIVED
	topography map showing the well	Office of Oil and Gas location.
I the undersigned, hereby certify th	is data is correct to the best of my kr	nowledge and SEP 0.9 2019
prescribed by the Office of Oil and	n required by law and the regulations Gas.	WV Department of Environmental Protection
Signature Signature	OSKUMO ALGIT Title	9/5//5 Date