

Company Cabot Oil & Gas 1.49

Address Three Gateway Center, Suite 2000 Pittsburgh Penn.

Farm BULL CREEK COAL LAND CO.

Tract _____ Acres 4000 Lease No. 16

Well (Farm) No. 21 Serial No. 655

Elevation (Spirit Level) 980.7

Quadrangle PEYTONA 15/Racine 7.5

County BOONE District PEYTONA

Engineer T.S. Flournoy

Engineer's Registration No. 269

File No. _____ Drawing No. _____

Date 2-7-43 Scale 1" = 1000 FT.

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION
15222-1011 CHARLESTON

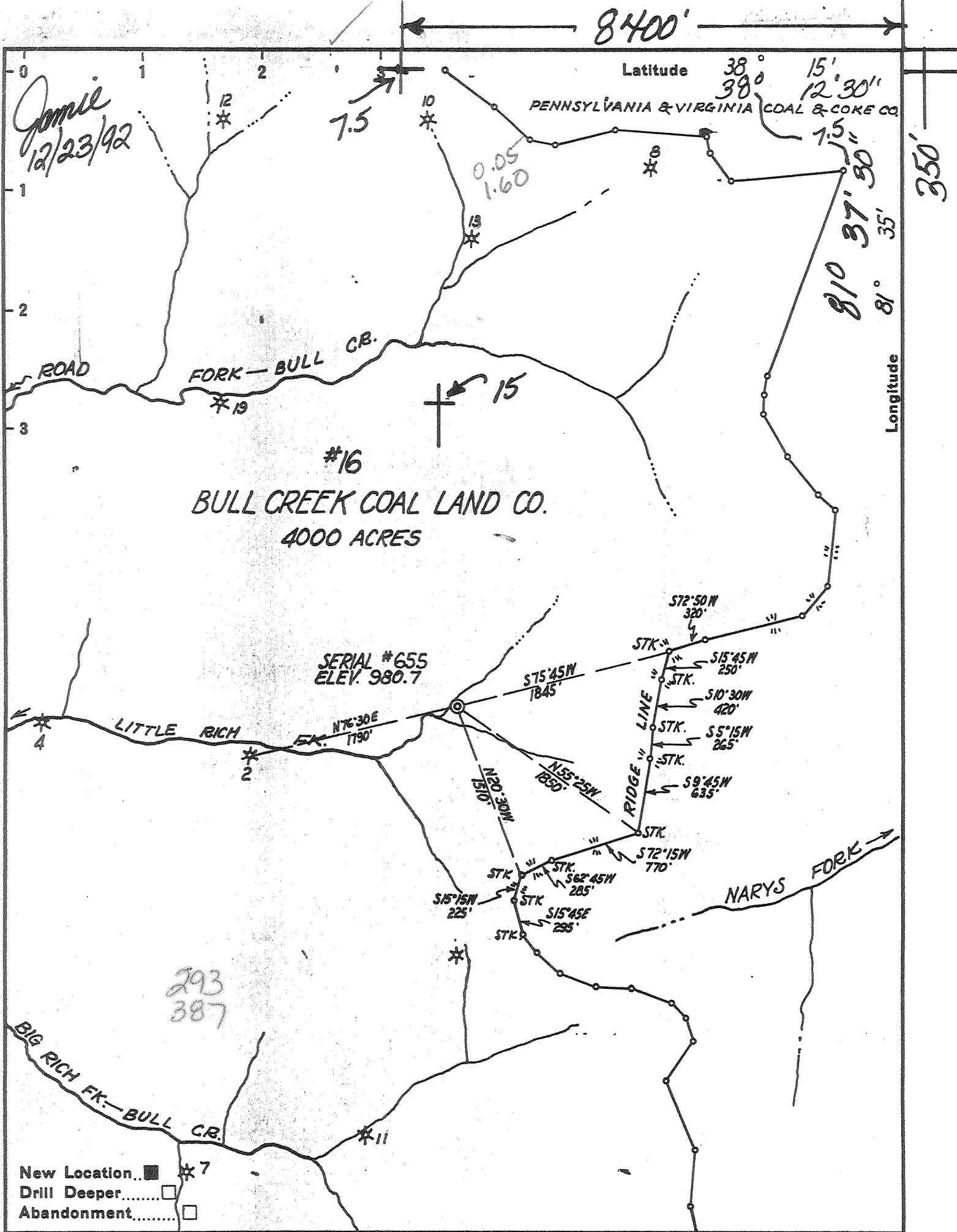
WELL LOCATION MAP
APL. Well No. 47-005-05677

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

— Denotes one inch spaces on border line of original tracing.

NOV 28 1993

BOONE 05677 F



Company Cabot Oil & Gas 149
 Address Three Gateway Center; Suite 2000 Pittsburgh Penn.
 Farm BULL CREEK COAL LAND CO.
 Tract _____ Acres 4000 Lease No. 16
 Well (Farm) No. 21 Serial No. 655
 Elevation (Spirit Level) 980.7
 Quadrangle PEYTONA 15/Raine 7.5
 County BOONE District PEYTONA 2
 Engineer T.S. Flournoy
 Engineer's Registration No. 269
 File No. _____ Drawing No. _____
 Date 2-7-43 Scale 1" = 1000 FT.

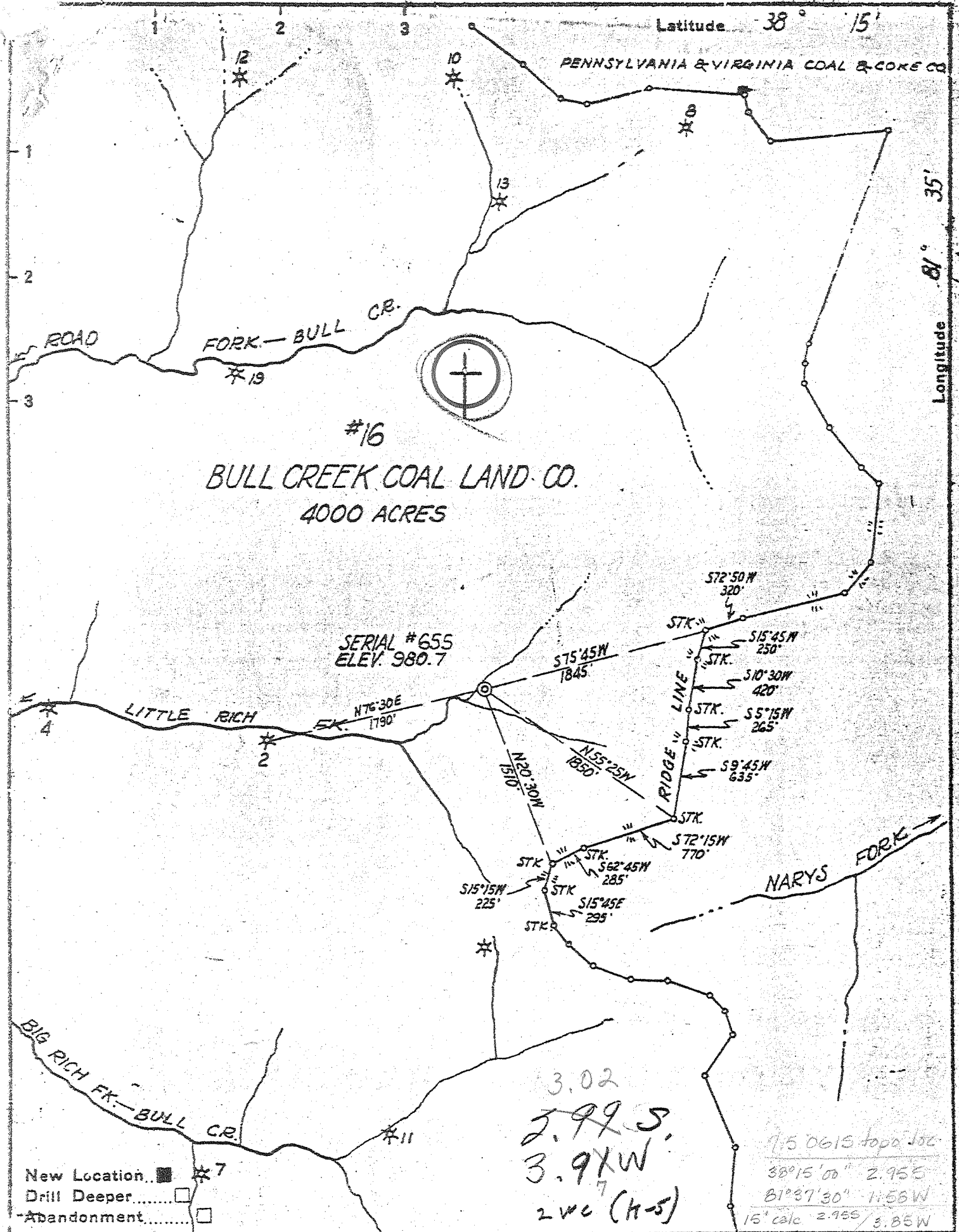
STATE OF WEST VIRGINIA
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 15222-1011 CHARLESTON

WELL LOCATION MAP
APL Well No. 47-005-05677

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DEC 29 1997



Company THE OWENS LIBBEY-OWENS GAS DEPT.
 Address BOX 2111 CHARLESTON, W. VA.
 Farm BULL CREEK COAL LAND CO.
 Tract _____ Acres 4000 Lease No. 16
 Well (Farm) No. 21 Serial No. 655
 Elevation (Spirit Level) 980.7
 Quadrangle PEYTONA - NC
 County BOONE District PEYTONA
 Engineer T.S. Flournoy
 Engineer's Registration No. 269
 File No. _____ Drawing No. _____
 Date 2-7-43 Scale 1" = 1000 FT.

KANAWHA Forest
 STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

WELL LOCATION MAP
 FILE NO. 300-567

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

6-6 238 Deep Well

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

Permit No. Boo 567
Peytona Quad.

Gas Well
CASING & TUBING

Company	The Owens, Libbey-Owens Gas Dept.			
Address	P.O. Box 2111, Charleston 28, W.Va.	13	45	45
Farm	Bull Creek Coal Land Co. Acres 4,000	10	170	170
Location	Little Rich Fork Bull Creek	8½	1274	1274
Well No.	655 Elev. 980.7	6 5/8	4495	4495
District	Peytona Boone County			
Surface	Bull Creek Coal Land Co., 806 Ellicott Sq. Buffalo, New York			Anchor Packer Size 3"
Mineral	Same			Depth 5200'
Commenced	March 18, 1943			Perf. top 5343
Completed	July 25, 1943			
Not shot				
Volume	195,000 C.F.			Coal at 53' 48"
Rock Pressure	1915 lbs. 48 hrs.			
Fresh Water	20' 5 bails pr.hr.; 84' 5 bails pr.hr.			
Sulphur Water	5101-03			

Sand & Gravel	Y	S	0	20	Slate	Lt	S	4400	4425
Slate	Dk	S	20	53	Shale	Br	S	4425	4477
Coal	Bk	S	53	57	Corniferous	Lt	H	4477	4500
Slate	Dk	S	57	81	Corniferous	Lt	H	4500	4571
Sand	Lt	M	81	129	Oriskany Sand	Gr	H	4571	4581
Slate	Dk	S	129	155	Lime	Gr	H	4581	5006
Sand	Lt	M	155	200	Lime	Dk	H	5006	5232
Slate	Dk	S	200	221	Newburg" Sand	Wh	H	5232	5248
Sand	Wh	M	221	355	Lime	Dk	H	5248	5358
Slate	Dk	S	355	411	TOTAL DEPTH				5358
Sand	Wh	M	411	637					
Slate	Dk	S	637	640	Gas 4573-79 54,000 C.F. <i>Orisk</i>				
Sand	Wh	H	640	731	Sulphur Water 5101-03				
Slate	Dk	S	731	767	Gas 5101 163,000 C.F.				
Sand	Lt	M	767	933	Gas 5236-42 215,000 C.F. <i>Newburg</i>				
Slate	Lt	S	933	949					
Sand	Wh	H	949	972					
Slate	Lt	S	972	984					
Sand	Wh	H	984	1135					
Slate & Shells	Lt	S	1135	1202					
Lime	Lt	Dk	1202	1270					
Big Lime	Gr	H	1270	1342	Gas 1414' Show-No test				
Big Lime	Wh	H	1342	1435					
Injun Sand	R	S	1435	1439					
Injun Sand	R	H	1439	1484	Gas 1450-62 75,000 C.F.				
Shells	Lt	H	1484	1497					
Slate & Shells	Dk	S	1497	1523					
Shells	Dk	H	1523	1549					
Slate & Shells	Dk	S	1549	1646					
Slate & Shells	S		1646	1890					
Shale	Br	S	1890	1898					
Berea Sand	Lt	H	1898	1903					
Slate & Shells	Lt	S	1903	3045					
Shells	Lt	H	3045	3074					
Slate & Shells	S		3074	3111					
Slate & Shells	Dk	S	3111	3134					
Slate & Shells	Lt	S	3134	3252					
Shell	Lt	H	3252	3262					
Slate & Shells	Lt	S	3262	3368					
Shell	Lt	H	3368	3384					
Slate & Shell	Lt	S	3384	3399					
Brown Shale	Dr	S	3399	3427					
Slate & Shells	Lt	S	3427	3481					
Broken Shale	Br	S	3481	3511					
Slate & Shell	Dk	S	3511	3554					
Shale	Br	S	3554	3666					
Slate & Shell	Lt	S	3666	3921					
Slate	Wh	S	3921	4161					
Shale	Br	S	4161	4400					

MAR 29 1995

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas
Well Operator's Report of Well Work

Permitting
Office of Oil & Gas

Farm name: APPALACHIAN POWER CO. Operator Well No.: BULL CREEK #21

Location: Elevation: 980.70 Quadrangle: RACINE

District: PEYTONA County: BOONE
Latitude: 15787 Feet South of 38 Deg. 15 Min. Sec.
Longitude: 20645 Feet West of 81 Deg. 35 Min. Sec.

Company: CABOT OIL & GAS CORPORATION
400 FAIRWAY DRIVE, SUITE 400
CORAOPOLIS, PA 15108

Agent: DAVID G. MCCLUSKEY

Inspector: RICHARD CAMPBELL
Permit Issued: 11/16/93
Well Work Commenced: 3/14/93
Well Work Completed: 4/18/94
Verbal Plugging
Permission granted on: _____
Rotary X Cable _____ Rig _____
Total Depth (feet) 4630'
Fresh water depths (ft) 20, 84
Salt water depths (ft) n/a
Is coal being mined in area (Y/N)? y
Coal Depths (ft): 53

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
13-3/4"	45'	45'	n/a
10-3/4"	172'	172'	n/a
8-5/8"	1274'	1274'	n/a
7"	4495'	4495'	n/a
4-1/2"	5353'	5353'	n/a
2-3/8"		4582'	n/a

OPEN FLOW DATA

Producing formation ORISKANY Pay zone depth (ft) 4576-4586
Gas: Initial open flow - MCF/d Oil: Initial open flow n/a Bbl/d
Final open flow 310 MCF/d Final open flow n/a Bbl/d
Time of open flow between initial and final tests 4 Hours
Static rock Pressure 380 psig (surface pressure) after 5 days
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

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 SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: CABOT OIL & GAS CORPORATION

By: [Signature] MAR 29 1995

Date: 3/24/95

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Perf Oriskany sand from 4576'-4586'. Break down Oriskany w/750 gals. 28% hcl, displaced w/70,000 SCF N₂; BDP = 4083 psi; Surface ISIP - 2650 psi. foam frac w/10,000# 20/40 mesh sand in 75Q foam. Energized frac w/39,588# 20/40 mesh sand in water frac; ISIP - 1900 psi.

*NOTE: CIBP SET @ 4630' & 5200'.

FORMATION	TOP	BOTTOM
SAND & GRAVEL	0	20
SLATE	20	53
COAL	53	57
SLATE	57	81
SAND	81	129
SLATE	129	155
SAND	155	200
SLATE	200	221
SAND	221	355
SLATE	355	411
SAND	411	637
SLATE	637	640
SAND	640	731
SLATE	731	767
SAND	767	933
SLATE	933	949
SAND	949	972
SLATE	972	984
SAND	984	1135
SLATE & SHELLS	1135	1202
LIME	1202	1270
BIG LIME	1270	1342
BIG LIME	1342	1435
INJUN SAND	1435	1439
INJUN SAND	1439	1484
SHELLS	1484	1497
SLATE & SHELLS	1497	1523
SHELLS	1523	1549
SLATE & SHELLS	1549	1646
SLATE & SHELLS	1646	1890
SHALE	1890	1898
BEREA SAND	1898	1903
SLATE & SHELLS	1903	3045
SHELLS	3045	3074
SLATE & SHELLS	3074	3111
SLATE & SHELLS	3111	3134
SLATE & SHELLS	3134	3252
SHELL	3252	3262
SLATE & SHELLS	3262	3368
SHELL	3368	3384
SLATE & SHELL	3384	3399
BROWN SHALE	3399	3427
SLATE & SHELLS	3427	3481
BROKEN SHALE	3481	3511
SLATE & SHELL	3511	3554

BULL CREEK #21

FORMATION	TOP	BOTTOM
SHALE	3554	3666
SLATE & SHELL	3666	3921
SLATE	3921	4161
SHALE	4161	4400
SLATE	4400	4425
SHALE	4425	4477
CORNIFEROUS	4477	4500
CORNIFEROUS	4500	4571
ORISKANY SAND	4571	4581
LIME	4581	5006
LIME	5006	5232
NEWBURG	5232	5248
LIME	5248	5358
TD		5358

MAR 3 1955

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS
WELL WORK PERMIT APPLICATION

Issued 11/16/93
Expire 11/16/95

18157

- 1) Well Operator: Cabot Oil & Gas Corporation ¹⁴⁹ 8145 (2) 565
- 2) Operator's Well Number: Bull Creek #21 3) Elevation: 980.7
- 4) Well type: (a) Oil / or Gas x/
- (b) If Gas: Production x/ Underground Storage /
- Deep / Shallow x/
- 5) Proposed Target Formation(s): Newburg 535
- 6) Proposed Total Depth: 5320 feet
- 7) Approximate fresh water strata depths: 20, 84
- 8) Approximate salt water depths: 5101
- 9) Approximate coal seam depths: 53
- 10) Does land contain coal seams tributary to active mine? Yes x/ No /
- 11) Proposed Well Work: Plug Tonoloway and reopen Newburg formation.
- 12) *Existing

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT Fill-up (cu. ft.)
	Size	Grade	Weight per ft.	For drilling	
Conductor	14-3/4"		42		45'
Fresh Water	10-3/4"		32.75		172'
Coal	8-5/8"		24		1286'
Intermediate	7"		22		4495'
Production	4-1/2"		11.6		5354' 120 sks
Tubing					
Liners					

PACKERS : Kind _____
Sizes _____
Depths set _____

For Division of Oil and Gas Use Only

Fee(s) paid: Well Work Permit Reclamation Fund WPCP
 Plat WW-9 WW-2B Bond _____ Agent
(Type)

11319 2.7

8



DEPARTMENT OF COMMERCE, LABOR & ENVIRONMENTAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

10 McJunkin Road
Nitro, WV 25143-2506

November 17, 1993

Gaston Caperton
Governor

John M. Ranson
Cabinet Secretary

David C. Callaghan
Director

Ann A. Spaner
Deputy Director

Cabot Oil & Gas Corporation
Three Gateway Center, Suite 2000
Pittsburgh, Pennsylvania 15222-1011
Attn: Donald R. Laughlin

In Re: Partial Plug - Fracs.

Dear Mr. Laughlin:

We are enclosing Plugging applications to be completed so we can have an affidavit showing how the well was plugged back to produce well in a new formation.

Please complete these plugging application for Partial Pluggings for the following:

- 1) 005-0567-PP - Well # Bull Creek # A-21
- 2) 005-1540-PP - Well # Bull Creek # A-14
- 3) 039-4485-PP - Well # BSA #1

Please complete the plugging applications and return as soon as possible.

Sincerely,

A handwritten signature in cursive script that reads "James Stevens".

James Stevens

JS/chm

Encl: Plugging Applications