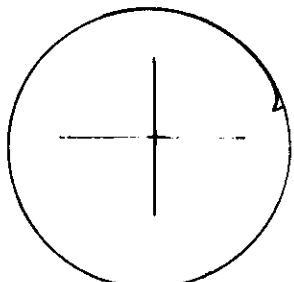


Jamie 1/30/89

LATITUDE 37° 57' 30"

81° 35' 00" 2250'



0.425  
0.75W

FEDERAL COAL CO.  
18348 Ac.

005-810  
7645

005-0161  
7646

3.30  
0.75

NORTH

LONGITUDE

GEORGE JARRELL

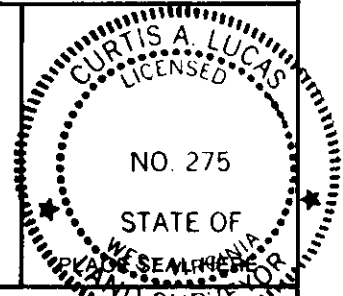
COLE & CRANE

NOTE: PLAT REDRAWN FROM  
HOPE NATURAL GAS CO.  
PLAT OF JAN. 1, 1935

FILE NO. \_\_\_\_\_  
MAP \_\_\_\_\_ SQS \_\_\_\_\_  
SCALE 1" = 800'  
MINIMUM DEGREE OF  
ACCURACY 1 in 200  
PROVEN SOURCE OF  
ELEVATION HOPE NAT. GAS CO.  
RECORDS

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 REGU-  
LATIONS ISSUED AND PRESCRIBED BY THE DEPART-  
MENT OF MINES.

(SIGNED) Curtis A. Lucas  
CURTIS A. LUCAS LLS 275



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION



DATE JAN. 23  
FARM FEDERAL COAL CO NO. 7646  
API WELL NO.

47 - 005 - 0161-00  
STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
LOCATION: ELEVATION 1785 WATER SHED BIG JARRELL'S CREEK  
DISTRICT SHERMAN 4 COUNTY BOONE  
QUADRANGLE WHITESVILLE 75' 677 0062  
SURFACE OWNER Federal Coal Co. ACREAGE \_\_\_\_\_  
OIL & GAS ROYALTY OWNER Federal Coal Co. LEASE ACREAGE 18348

PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER X REDRILL \_\_\_ FRACTURE OR  
STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW  
FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
TARGET FORMATION Berea ESTIMATED DEPTH 3634'  
WELL OPERATOR JACKSON GAS CO DESIGNATED AGENT LLOYD JACKSON  
ADDRESS P. O. BOX 498 ADDRESS P. O. BOX 498  
HAMLIN WV 25523 HAMLIN WV 25523

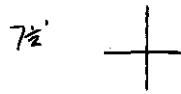
FEB 3 1989

2050  
owoo 6-6 Hopkins Fork-Jarrolds Valley (2017)

FORM IV-6 (8-78) H. T. HALL



(15) 38° 00'  
LATITUDE (75) 37° 57' 30"



(75) 81° 35'

LONGITUDE

7.5 OGIS topo location

7.5' 10C	<u>.438</u>	15' 10C	<u>3.31</u>
	<u>.76w</u>	(calc.)	<u>.76</u>

Company Godfrey L. Cabot, Inc.

Farm FEDERAL COAL Co. 47 (742)

Quad Whitesville 7.5' / Bald Knob 15'  
NC

County BOONE

District SHERMAN

WELL LOCATION MAP

File No. 005-161

BOONE





IV-35  
(Rev 8-81)

Date 2/27/89  
Operator's  
Well No. 93-5-7646  
Farm Federal Coal Co. #47  
API No. 47-005-0161 DD  
Company Tools

**RECEIVED**  
APR 05 1989

State of West Virginia  
Department of Mines  
Oil and Gas Division

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

WELL OPERATOR'S REPORT  
OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil \_\_\_ / Gas x / Liquid Injection \_\_\_ / Waste Disposal \_\_\_ /  
(If "Gas," Production x / Underground Storage \_\_\_ / Deep \_\_\_ / Shallow x /)

LOCATION: Elevation: 1785' Watershed Big Jarrel Fork  
District: Sherman County Boone Quadrangle Whitesville

Originally Drilled By Godfrey L. Cabot, Inc. in 1931

COMPANY Jackson Gas Co.

ADDRESS P.O. Box 498, Hamlin, WV 25523-0498

DESIGNATED AGENT Lloyd Jackson

ADDRESS Same

SURFACE OWNER Federal Coal Co.

ADDRESS \_\_\_\_\_

MINERAL RIGHTS OWNER Same

ADDRESS \_\_\_\_\_

OIL AND GAS INSPECTOR FOR THIS WORK \_\_\_\_\_

ADDRESS \_\_\_\_\_

PERMIT ISSUED 2-03-89

DRILLING COMMENCED 2-03-89

DEEPENING COMPLETED 2/14/89

IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
ON \_\_\_\_\_

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13	42'	42'	
10"	1012'	1012'	
8 5/8	2353	-0-	
7	2932	2932	
5 1/2			
4 1/2		3665'	200 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Berea Depth 3700' feet

Depth of completed well 3692 feet Rotary \_\_\_ / Cable Tools x

Water strata depth: Fresh 43 feet; Salt 1860' feet

Coal seam depths. 100-103, 217-225, 743-745, 886-888, 944-946, 960-962 Is coal being mined in the area? Yes

OPEN FLOW DATA

Producing formation Big Lime, Injun, Weir, Low Weir, Berea Pay zone depth See Perf. Record feet

Gas: Initial open flow --- Mcf/d Oil: Initial open flow --- Bbl/d

Final open flow 300 Mcf/d Final open flow --- Bbl/d

Time of open flow between initial and final tests --- hours

Static rock pressure 300 psig (surface measurement) after 48 hours shut in

(If applicable due to multiple completion--)

Second producing formation \_\_\_\_\_ Pay zone depth \_\_\_\_\_ feet

Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d

Final open flow \_\_\_\_\_ Mcf/d Oil: Final open flow \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests \_\_\_\_\_ hours

Static rock pressure \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

APR 7 1989

(Continue on reverse side)

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

Big Lime 2000 gals. HCl., 300 gals. gel. H2O  
 Injun-Weir 90,000 lbs. 20/40 sd. & 805 MSCF N2, 374 bbls H2O  
 Lower Weir-Berea 30,000 lbs. 20/40 sd. & 476 MSCF N2, 170 bbls H2O

**RECEIVED**  
APR 05 1989

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Weir	Sand		3245	3465'	Perforating Record
Lime	Shells		3465	3487'	
Original Total Depth			--	3487'	Big Lime 3060-3119 18 h
Deepening Record					Injun 3163-3173 11 h
Gamma Ray Log					
Shells			--	3510'	
Shale			3510	3594'	Weir 3264-3300 18 h
Coffee Shale			3594	3622'	and 3419-3429 11 h
Berea			3622	3636'	Berea 3628-2632 9 h
Shells			3636	--	
Total Depth			--	3677'	

*Drill Deepen Record*

3677 new TD  
 3487 old TD  
 ---  
 190 - new ft.

(Attach separate sheets as necessary)

Jackson Gas Co.

Well Operator

By: *[Signature]*

Date: 4/1/89

Note: Regulation 2.02(i) provides as follows:  
 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

APR 7 1989

Boo-161

FEDERAL COAL CO. NO. 47 (742) WELL.

No. 173 O.F.

Boo-161

Sherman District, Boone County, W. Va.  
 Godfrey L. Cabot, Inc., Charleston, W. Va.  
 Cr 18, 348 acres.  
 Rig commenced April 8, 1931; completed, April 13, 1931.  
 Drilling commenced May 12, 1931; completed, Aug 29, 1931.  
 Drilling to cost \$3.00 per foot.  
 Contractor, Everett Ferrell, Seth, W. Va.  
 Drillers, J. E. Ankrom, W. M. Ashby.  
 Elevation, 1785' B.  
 1 1/2" casing, 42'; 10", 1012'; 8 1/2", 2353'. (pulled); 6-5/8", 2932';  
 2" tubing, 3487'.  
 Shut in Aug. 29, 1931, in 6-5/8" casing.  
 Packer, 2 x 6-5/8 x 16, Anchor; amount anchor, 524'; amount above  
 anchor, 2963'; 1st perf. set, top 3290'; 2nd perf. set, top 3473';  
 Bot. 3313'; bot. 3487'.  
 Test before shot, 11/10 Water in 2"; volume, 158,000 cu. ft.  
 Rock pressure, 510 lbs., in 24 hrs.  
 Completion reported to Dept. of Mines Sept. 7, 1931.  
 Preliminary data sheeting missing.

	Top.	Bottom.
Gravel, brown, soft	0	20
Sand, brown, soft (water, 43'; fresh; hole full)	20	42
Slate and shell, gray, soft	42	100
Coal, black, soft	100	103
Slate, gray, soft	103	140
Sand, white, hard	140	180
Slate, blue, soft	180	217
Coal, black, soft	217	225
Slate, blue, soft	225	235
Sand, white, soft	235	300
Slate, black, soft	300	380
Sand, white, hard	380	523
Slate and shell, blue, hard	523	535
Sand, white, hard	535	600
Lime, gray, hard	600	630
Slate and shell, gray, hard and soft	630	687
Lime, white, hard	687	743
Coal, black, soft	743	745
Sand, white, hard	745	802
Slate and shell, blue, hard and soft	802	848
Sand, white, hard	848	886
Coal, black, soft	886	888
Sand, white, hard	888	944
Coal, black, soft	944	946
Lime, white, hard	946	960
Coal, black, soft	960	962
Sand, white, hard	962	1090
Slate and shell, blue, hard and soft	1090	1290
Sand, gray, soft	1290	1370
Slate, black, soft	1370	1380
Sand, white, hard	1380	1435
Slate, white, soft	1435	1445
Sand, white, medium	1445	1525
Grampus Sand, yellow, hard (gas show, 1710')	1525	1793
Slate, blue, soft	1793	1796
Salt Sand, gray, hard (water, 1860'; salt; 1 bailer per hour)	1796	1970

(OVER)

FEDERAL COAL CO. NO. 47 (742) WELL (Continued).

	Top.	Bottom.
Lime, black, medium	1970	1990
Salt Sand, yellow, hard	1990	2100
Sand and lime, dark, medium	2100	2230
Red rock, medium	2230	2235
Lime, blue, medium	2235	2240
Slate and shell, white, hard and soft	2240	2326
Red rock, soft	2326	2330
Lime, black, hard	2330	2355
Sand, gray, hard	2355	2398
Slate, white, soft	2398	2402
Sand, gray, hard (SLM-2411')	2402	2445
Maxton Sand, blue, hard	2445	2485
Slate, white, soft	2485	2493
Sand, gray, hard	2493	2505
Lime, red, medium	2505	2544
Sand, white, hard	2544	2744
Slate and shell, white, hard and soft	2744	2785
Little Lime, white, hard	2785	2920
Big Lime, white, hard (gas, 3063'; 4/10 W. in 1"; gas, 3100-8'; 12/10 W. in 2"; increased to 8/10 W. in 2")		2920 - 3129
Big Injun Sand, red, hard (gas, 3200'; 12/10 W. in 2"; decreased to 11/10 W. in 2")		3129 - 3205
Lime shells, white, hard		3205 - 3245
Weir Sand, white, hard (gas, 3290'; 12/10 W. in 2")		3245 - 3465
Lime shells, black, to bottom		3465 - 3487

Test when tubed, 11/10 W. in 2", Sept. 4, 1931.  
15 sacks of red mud placed on tubing packer.



Sherman District, Boone County, W. Va.  
 Godfrey L. Cabot, Inc., Charleston, W. Va.  
 Cr. 18, 3/4 acre.  
 Rig commenced April 8, 1931; completed, April 13, 1931.  
 Drilling commenced May 12, 1931; completed, Aug. 29, 1931.  
 Drilling to cost \$3.00 per foot.  
 Contractor, Everett Ferrell, Seth, W. Va.  
 Drillers, J. H. Ankron, W. H. Ashby.  
 Elevation, 1785' B.  
 1 1/2" casing, 42'; 10", 1012'; 8 1/2", 2353' (pulled); 6-5/8", 2932';  
 2" tubing, 3487'.  
 Shut in Aug. 29, 1931, in 6-5/8" casing.  
 Packer, 2 x 6-5/8 x 16, Anchor; cement anchor, 524'; cement above  
 anchor, 2963'; 1st perf. set, top 1710'; 2nd perf. set, top 3474';  
 bot. 3131' bot. 3467'.  
 Test before shut, 11/10 Water in 2"; volume, 150,000 cu. ft.  
 Rock pressure, 510 lbs., in 2" hole.  
 Completion reported to Dept. of Mines Sept. 7, 1931.  
 Preliminary data showing strata:

	Top.	Bottom.
Gravel, brown, soft	0	20
Sand, brown, soft (water, 4 1/2'; fresh; hole full)	20	42
Slate and shell, gray, soft	42	100
Coal, black, soft	100	103
Slate, gray, soft	103	140
Sand, white, hard	140	180
Slate, blue, soft	180	217
Coal, black, soft	217	225
Slate, blue, soft	225	235
Sand, white, soft	235	300
Slate, black, soft	300	380
Sand, white, hard	380	523
Slate and shell, blue, hard	523	535
Sand, white, hard	535	600
Lime, gray, hard	600	630
Slate and shell, gray, hard and soft	630	687
Lime, white, hard	687	743
Coal, black, soft	743	745
Sand, white, hard	745	802
Slate and shell, blue, hard and soft	802	848
Sand, white, hard	848	886
Coal, black, soft	886	888
Sand, white, hard	888	944
Coal, black, soft	944	946
Lime, white, hard	946	960
Coal, black, soft	960	962
Sand, white, hard	962	1090
Slate and shell, blue, hard and soft	1090	1290
Sand, gray, soft	1290	1370
Slate, black, soft	1370	1380
Sand, white, hard	1380	1435
Slate, white, soft	1435	1445
Sand, white, medium	1445	1505
Crumpas Sand, yellow, hard (gas show. 1710')	1505	1793
Slate, blue, soft	1793	1796
Salt Sand, gray, hard (water, 1860'; salt; 1 boiler per hour)	1796	1970

(OVER)

	Top.	Bottom.
Lime, black, medium	1970	- 1990
Salt Sand, yellow, hard	1990	- 2100
Sand and lime, dark, medium	2100	- 2230
Red rock, medium	2230	- 2235
Lime, blue, medium	2235	- 2240
Slate and shell, white, hard and soft	2240	- 2326
Red rock, soft	2326	- 2330
Lime, black, hard	2330	- 2355
Sand, gray, hard	2355	- 2398
Slate, white, soft	2398	- 2402
Sand, gray, hard (221-241A)	2402	- 2445
Hutton Sand, blue, hard	2445	- 2485
Slate, white, soft	2485	- 2493
Sand, gray, hard	2493	- 2505
Lime, red, medium	2505	- 2544
Sand, white, hard	2544	- 2744
Slate and shell, white, hard and soft	2744	- 2785
Little Lime, white, hard	2785	- 2920
Big Lime, white, hard (gas, 3063'; 4/10 W. in 2"; gas, 3100-5'; 12/10 W. in 2"; increased to 4/10 W. in 2")	2920	- 3129
Big Injun Sand, red, hard (gas, 3200'; 12/10 W. in 2"; decreased to 12/10 W. in 2")	3129	- 3205
Lime shells, white, hard	3205	- 3245
Weir Sand, white, hard (gas, 3290'; 12/10 W. in 2")	3245	- 3465
Lime shells, black, to bottom	3465	- 3487

Test when tubed, 11/10 W. in 2", Sept. 4, 1931.  
15 sacks of red mud placed on tubing packer.

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

- 1) Well Operator: Jackson Development Co. 24235, 4, 676
- 2) Operator's Well Number: #93 Jackson Number old Cabot Number 7646 3) Elevation: 1785
- 4) Well type: (a) Oil \_\_\_ / or Gas  /  
(b) If Gas: Production  / Underground Storage \_\_\_ /  
Deep \_\_\_ / Shallow \_\_\_
- 5) Proposed Target Formation(s): Berea
- 6) Proposed Total Depth: 3634' feet
- 7) Approximate fresh water strata depths: 43'
- 8) Approximate salt water depths: 1860
- 9) Approximate coal seam depths: 101'-103', 217'-225', 743'-745', 886'-888'  
947'-946', 960'-962'
- 10) Does land contain coal seams tributary to active mine? Yes \_\_\_ / No \_\_\_
- 11) Proposed Well Work: Drill Deeper Spontaneous Well.
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	13 1/2"			42'	42'	Existing
Fresh Water	10"			1012'	1012'	Existing
Coal						
Intermediate	6 5/8			2932'	2932'	Existing
Production	4 1/2			3634	3634	250
Tubing						38CSR18-11.1
Liners						

RECEIVED  
JAN 27 1989

PACKERS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

For Division of Oil and Gas Use Only

DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

3472  
 Fee(s) paid:  Well Work Permit  Reclamation Fund  WPCP  
 Plat  WW-9  WW-2B  Bond SB Blanket Agent  
 (Type)



- 1) Date: January 20th, 1989
- 2) Operator's well number #93 Federal # 7646
- 3) API Well No: 47 - 005 - 0161-DD  
State - County - Permit

**DIVISION OF OIL & GAS**  
**DEPARTMENT OF ENERGY**  
**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS**

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- |   |   |
|---|---|
| <p>4) Surface Owner(s) to be served:</p> <p>(a) Name <u>Federal Coal Company</u><br/> Address <u>P.O. Box 5200</u><br/> <u>Charleston, WV 25361</u></p> <p>(b) Name _____<br/> Address _____</p> <p>(c) Name _____<br/> Address _____</p> | <p>5) (a) Coal Operator:</p> <p>Name _____<br/> Address _____</p> <p>(b) Coal Owner(s), with Declaration</p> <p>Name <u>Federal Coal Co.</u><br/> Address <u>P.O. Box 5200</u><br/> <u>Charleston, WV 25361</u></p> <p>Name _____<br/> Address _____</p> <p>(c) Coal Lessee with Declaration</p> <p>Name _____<br/> Address _____</p> |
| <p>6) Inspector _____<br/> Address _____</p> <p>Telephone (304)- _____</p>  |   |

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

\_\_\_\_\_ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR  
\_\_\_\_\_ Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_\_\_ on the above named parties, by:

- \_\_\_\_\_ Personal Service (Affidavit attached)
- Certified Mail (Postmarked postal receipt attached)
- \_\_\_\_\_ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

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, 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 and imprisonment.

Well Operator Jackson Development Co., Inc.  
By: [Signature]  
Its: President  
Address P.O. Box 498  
Hamlin, WV 25523  
Telephone 304-824-3432

Subscribed and sworn before me this 20th day of January, 1989

[Signature] Notary Public  
My commission expires 06-06-94