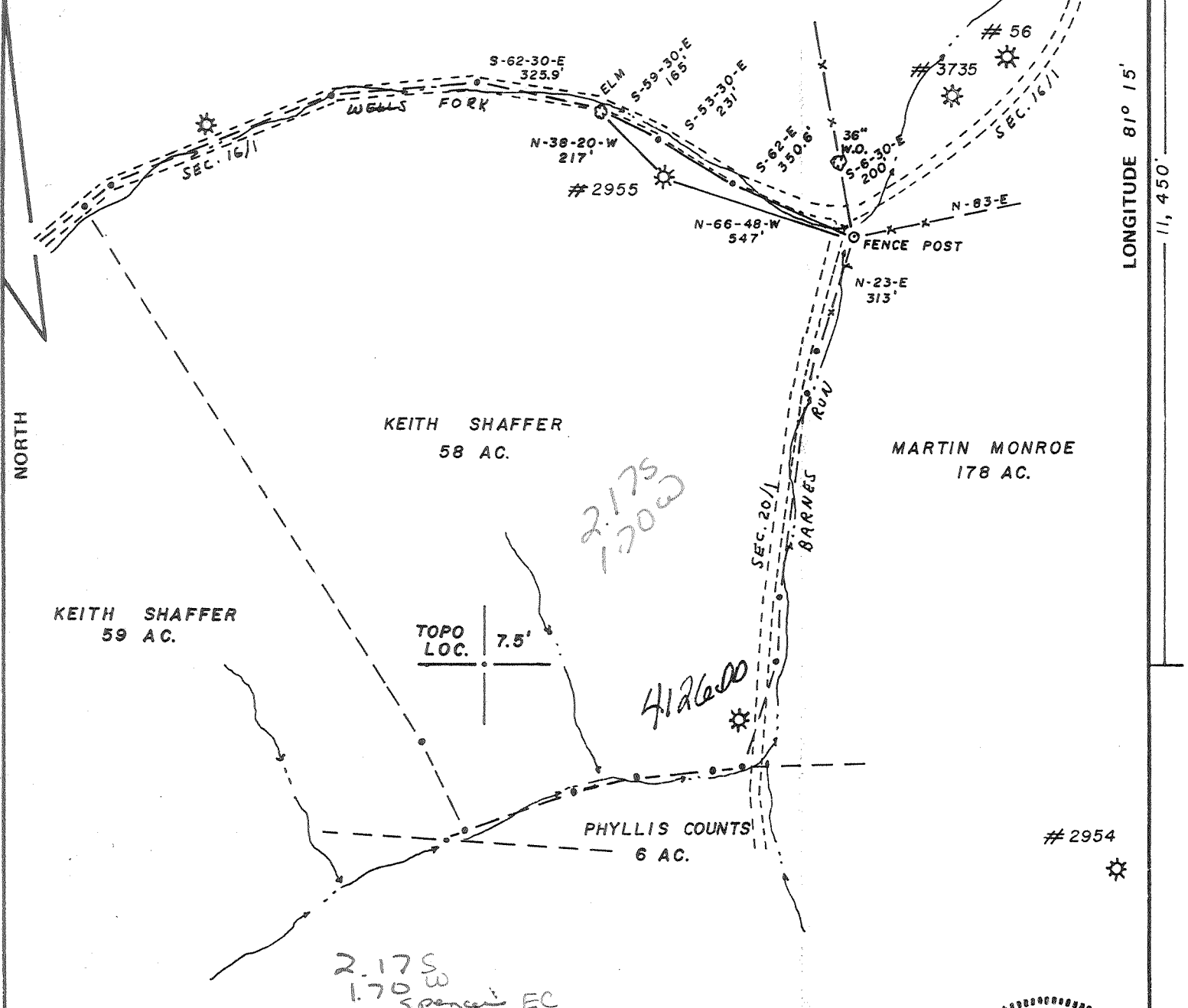


Jamie 7/27/90

9,000' LATITUDE 38° 55'

KENT PROUSE
79 AC.

JOSEPH BALLARD
61 AC



LONGITUDE 81° 15' 11, 450'

KEITH SHAFFER
59 AC.

KEITH SHAFFER
58 AC.

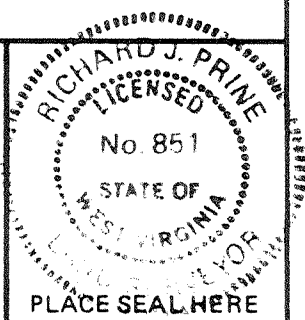
MARTIN MONROE
178 AC.

PHYLLIS COUNTS
6 AC.

2.175
1.70 W
Spencer EC

FILE NO. JENNINGS LEASE
 DRAWING NO. _____
 SCALE 1" = 400'
 MINIMUM DEGREE OF ACCURACY 1 IN 200
 PROVEN SOURCE OF ELEVATION B.M. AT BARNES RUN SCHOOL BLDG. ELV= 696

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 MINES.
 (SIGNED) Richard J. Prine
 R.P.E. _____ L.L.S. 851



STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
OIL AND GAS DIVISION



DATE 7-25, 19 90
 OPERATOR'S WELL NO. 461
 API WELL NO. 47-087-295500
 STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION STORAGE _____ DEEP SHALLOW _____
 LOCATION: ELEVATION 725 WATER SHED BARNES RUN OF WEST FORK OF L. K. R.
 DISTRICT SPENCER COUNTY ROANE
 QUADRANGLE BURNING SPRINGS
 SURFACE OWNER KEITH SHAFFER ACREAGE 58
 OIL & GAS ROYALTY OWNER HARRY C. BOGGS LEASE ACREAGE 955
 LEASE NO. JENNINGS
 PROPOSED WORK: DRILL _____ CONVERT _____ DRILL DEEPER 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 ORISKANY ESTIMATED DEPTH 6000'
 WELL OPERATOR BOGGS NATURAL GAS DESIGNATED AGENT HARRY C. BOGGS
 ADDRESS P.O. BOX 148 ADDRESS P.O. BOX 148
SPENCER, W.V. 25276 103 SPENCER, W.V. 25276

JUL 27 1990

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas

Well Operator's Report of Well Work

Farm name: SHAFFER, KEITH Operator Well No.: JENNINGS #461

LOCATION: Elevation: 725.00 Quadrangle: BURNING SPRINGS

District: SPENCER County: ROANE
Latitude: 11450 Feet South of 38 Deg. 55Min. 0 Sec.
Longitude 9000 Feet West of 81 Deg. 15 Min. 0 Sec.

Company: BOGGS NATURAL GAS CO.
P. O. BOX 148
SPENCER, WV 25276-0000

Agent: HARRY C. BOGGS

Inspector: HOMER DOUGHERTY
Permit Issued: 07/27/90
Well work Commenced: 07/27/90
Well work Completed: 08-01-90
Verbal Plugging
Permission granted on: _____
Rotary ~~xxx~~ Cable _____ Rig
Total Depth (feet) 5592
Fresh water depths (ft) 100
Salt water depths (ft) none

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
13 1/2"	64	64	existing
7"	1998	1998	existing
4 1/2"	5250	5250	2500' linear

Is coal being mined in area (Y/N)? n
Coal Depths (ft): _____

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 5150-2470
Gas: Initial open flow 20 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 200 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests _____ Hours
Static well Pressure 1200 psig (surface pressure) after 48 Hours

Second producing formation Big Injun Pay zone depth (ft) 1740
Gas: Initial open flow 10 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 10 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests _____ Hours
Static well Pressure 30 psig (surface pressure) after 24 Hours

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

For: BOGGS NATURAL GAS CO.

By: Jeffery C. Boggs
Date: 8-27-90

Jeffery C. Boggs

Sept. 10, 1990



SEP 10

087 2955

Drilled existing well down through shale, Big Injun gas now producing through casing head.

First stage:	5090-4990 ^{Rh}	25 holes-	600,000 SCF N ₂ -	50,000 # sand
Second Stage:	4150-4080 ^{LH}	25 holes-	600,000 SCF N ₂ -	50,000 # sand
Third Stage:	2430-2420 ^{600?}	15 holes	500,000 SCF N ₂ -	50,000 # sand---

0	1630	Sand/Shale		
1630	1640	Pencil-Cave		
1640	1730	Big Lime	UD	2125
1730	1800	Big Injun	LH	3275
1800	2090	shale	J	4375
2090	2125	Berea	A	4375
2125	5480	Devonian Shale	RH	4875
5480	5520	Marcellus		
5520	5592 TD	Corniferous Lime		

Plugged well back to 5250' with cement only producing only producing from the devonian shale section.

~~087 2955 - Big Injun gas now producing through casing head. Drilled existing well down through shale, Big Injun gas now producing through casing head.~~

5592
5520

72 ft - expl. ftg.

5592 - new TD

1998 old TD? (existing 7" csg)

3594 - DD ftg.

OF END BARRELS 2000

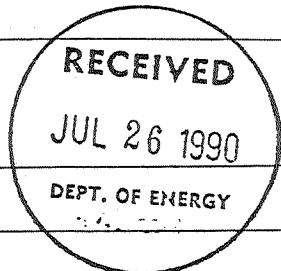
APPROX. TO VERTICAL

SEP 10 1990

47-087-295500
Page 01
Issued 7/23/90
Exp 3/27/92

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

- 1) Well Operator: Boggs Natural Gas Co 6455
- 2) Operator's Well Number: Jennings #.461 3) Elevation: 725'
- 4) Well type: (a) Oil / or Gas /
(b) If Gas: Production / Underground Storage /
Deep Shallow /
- 5) Proposed Target Formation(s): Oriskany
- 6) Proposed Total Depth: ~~6000'~~ 7000' feet
- 7) Approximate fresh water strata depths: 50'
- 8) Approximate salt water depths: Unknown
- 9) Approximate coal seam depths: none
- 10) Does land contain coal seams tributary to active mine? Yes / No
- 11) Proposed Well Work: Drill deeper to app. 6000' to the oriskany and stimulate
- 12)



CASING AND TUBING PROGRAM

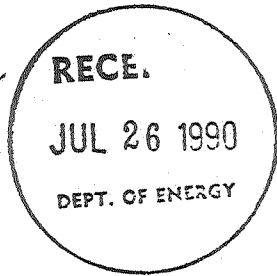
TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEME
	Size	Grade	Weight per ft.	For drilling / Left in well	
Conductor					Existing
Fresh Water	15 1/2"	existing		64' / 64'	none
Coal					
Intermediate	7"	existing		1586' / 1586'	unknown
Production	4 1/2"			6000' 7000' / 6000' 7000'	3000' lin
Tubing					88589-11
Liners					

PACKERS : Kind _____
Size _____
Depth set _____

For Division of Oil and Gas Use Only

16314
21 Fee(s) paid: Well Work Permit Back-sitting Fund
Flat WW-9 WW-2E Bond Blanket letter

Page 1 of
Form WW2-A
(09/87)
File Copy



1) Date: July 25, 1990
2) Operator's well number
Jennings 461
3) API Well No: 47 - 087 - 2455-DD
State - County - Permit

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:	5) (a) Coal Operator:
(a) Name <u>Keith Shaffer</u>	Name <u>none</u>
Address <u>Charleston, WV</u>	Address _____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
(c) Name _____	Address _____
Address _____	Name _____
Address _____	Address _____
6) Inspector <u>Homer Dougherty</u>	(c) Coal Lessee with Declaration
Address <u>Looneyville WV</u>	Name _____
Telephone (304)- _____	Address _____

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
XX 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:
XX 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 Boggs Natural Gas Co
By: Jeffery C. Boggs
Its: Petroleum Engineer
Address P.O. 148
Spencer, WV 25276
Telephone 927 1236

Subscribed and sworn before me this 26th day of July, 1990

Zerelda D. Richards Notary Public
My commission expires July 13, 1992
Commissioned: Zerelda D. Richards