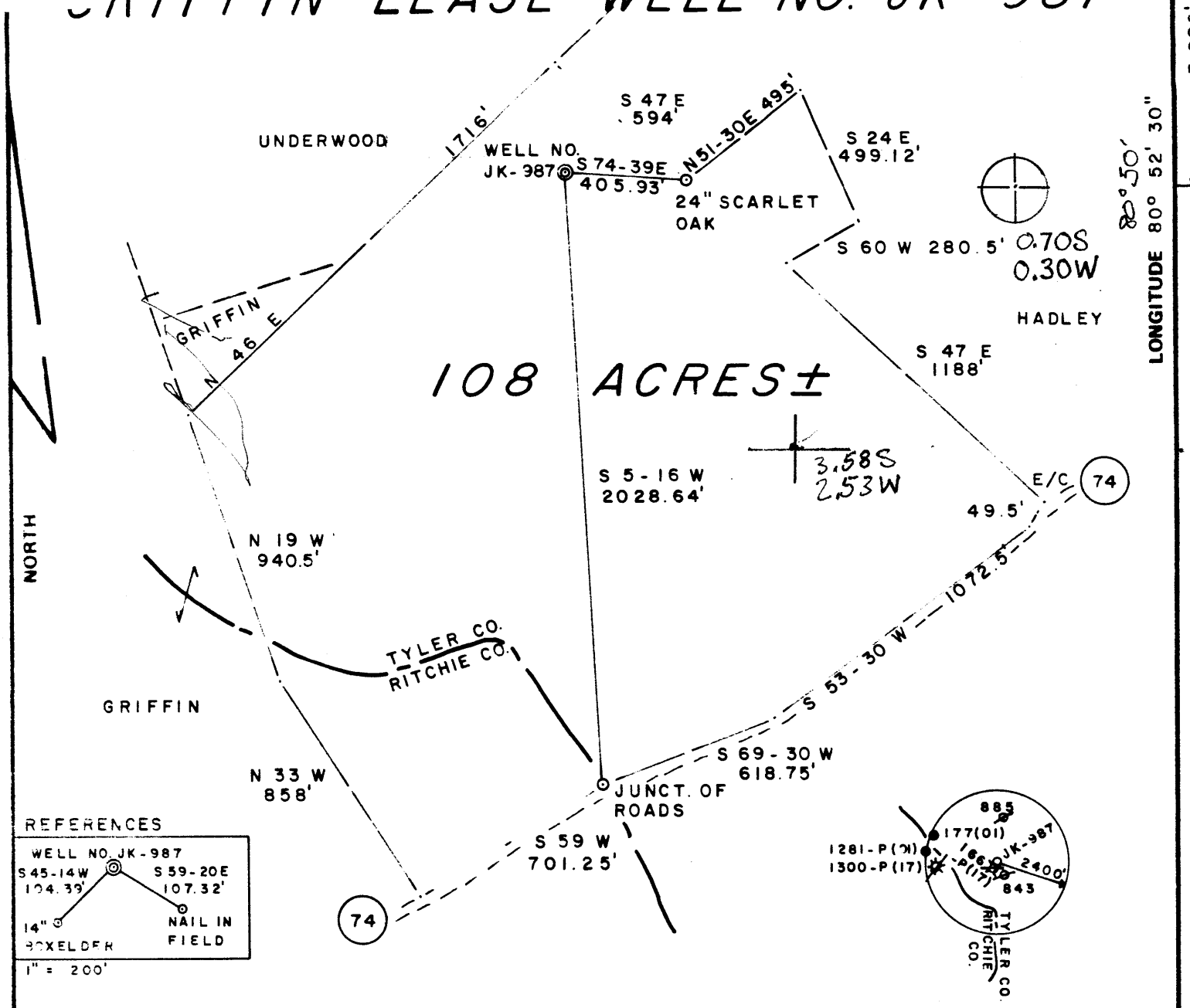


Plot Card CSD

LATITUDE 39° 22' 30"
39° 25'

RIFFIN LEASE WELL NO. JK-987



REFERENCES
 WELL NO. JK-987
 S 45-14W 104.39' S 59-20E 107.32'
 14" NAIL IN FIELD
 3" XELDFR
 1" = 200'

FILE NO. 13-36
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1/200
 PROVEN SOURCE OF ELEVATION BM ELEV. 951'

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) Gregory A. Smith
 R.P.E. _____ L.L.S. 677

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE MAY 11, 19 84
 OPERATOR'S WELL NO. JK-987
 API WELL NO. 47-095-1079
 STATE WEST VIRGINIA COUNTY TYLER PERMIT 1079

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION ELEVATION 1004' WATER SHED BIG RUN
 DISTRICT CENTERVILLE COUNTY TYLER
 QUADRANGLE PENNSBORO 7.5 539 West Union 133 C5
 SURFACE OWNER EDITH H. GRIFFIN ACREAGE 108
 OIL & GAS ROYALTY OWNER EDITH H. GRIFFIN LEASE ACREAGE 108
 LEASE NO. JJ-1478
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

JUN 18 1984

PLUG AND ABANDON CLEAN OUT AND REPLUG
 TARGET FORMATION ALEXANDER ESTIMATED DEPTH 5300'
 WELL OPERATOR J & J ENTERPRISES, INC. DESIGNATED AGENT RICHARD M. REDDECLIFF
 ADDRESS P. O. BOX 48 ADDRESS P. O. BOX 48
BUCKHANNON, WV 26201 BUCKHANNON, WV 26201

6-6 Wilbur (92)

RECEIVED
AUG 29 1984

OIL & GAS DIVISION
DEPT. OF MINES



State of West Virginia
Department of Mines
Oil and Gas Division

Date August 27, 1984
Operator's Well No. JK-987
Farm Griffin
API No. 47 - ~~085~~⁰⁹⁵ - 1079

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: 1004 Watershed Big Run
District: Centerville County Tyler Quadrangle Pennsboro 7.5

COMPANY J&J Enterprises, Inc.

ADDRESS P.O. Box 48, Buckhannon, WV 26201

DESIGNATED AGENT Richard Reddecliff

ADDRESS P.O. Box 48, Buckhannon, WV 26201

SURFACE OWNER Edith Hess Griffin

ADDRESS P.O. Box 3025, Parkersburg, WV 26101

MINERAL RIGHTS OWNER Same as surface

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Robert

Lowther ADDRESS Gen. Del, Middlebourgn, WV 26149

PERMIT ISSUED 6/12 /84

DRILLING COMMENCED 8/11/84

DRILLING COMPLETED 8/17/84

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

Casing & Tubing Size	Used in Drilling	Left in Well	Cement fill up Cu. ft.
20-16 Cond.			
13-10"	30	0	0 sks.
9 5/8			
8 5/8	1638.15	1638.15	350 sks.
7			
5 1/2			
4 1/2	5937.75	5937.75	390 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth feet

Depth of completed well 5995 feet Rotary x / Cable Tools

Water strata depth: Fresh 160,560 feet; Salt 0 feet

Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 5802-5916 feet

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

Combined Final open flow 502 Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1800 psig (surface measurement) after 96 hours shut in
(If applicable due to multiple completion--)

Second producing formation Benson & Riley Pay zone depth 4508-31 4894-96 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

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

Rhinestreet

Devonian Shale : Perforations: 5802-08 (10 holes) 5913-16 (6 holes)
Fracturing: 300 sks. 20/40 sand: 630 Bbls. fluid,

Benson: Perforations: 4894-96 (8 holes)

Fracturing: 300 sks. 20/40 sand: 500 gal. acid: 460 Bbls. fluid.

Riley: Perforations: 4508-10 (4 holes) 4518-20 (4 holes) 4530-31 (4 holes):

Fracturing: 250 sks. 20/40 sand: 500 gal. acid: 460 Bbls. fluid.

BOTTOM HOLE PRESSURE Pf=Pwe^{XGLS}

$$t=60 + (0.0075 \times 5938) + 459.7 = 564 \quad X=53.35 \times 459.7 = \frac{1}{24636} = t=60 + (0.0075 \times 5938) + 459.7 = 564$$

$$X=53.35 \times 564 = \frac{1}{30089} = 0.000033 \quad Pf= 1800 \times 2.72 (0.000033) (0.735) (.5212) (0.9) = 1800 \times 2.72 = 1800 \times 1.1 \quad Pf=2009 \text{ psi}$$

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Red clay			0	3	
White sand			3	110	Damp @ 135
Sand & shale			110	233	
Sand, shale & red rock			233	500	More water @ 160
Sand, shale & red rock			500	1370	
Gray sand & white sand			1370	1520	½" stream @ 1820
Sand & shale			1520	1860	
Big Lime			1860	1910	Gas ck @ 2080 No show
Big Injun			1910	2015	
Sand & shale			2015	4508	Gas ck @ 3463 No show
Riley			4508	4531	
Sand & shale			4531	4894	Gas ck @ 4631 4/10-1" w/water 15,041 cu.ft.
Benson			4894	4896	
Sand & shale			4896	5802	
Devonian Shale			5802	5916	Gas ck @ collars 2/10-1" w/water 10,650 cu.ft.
Sand & shale			5916	5995	
					T.D. <i>Rhinestreet</i> @T.D. 5995 24 35 95

(Attach separate sheets as necessary)

J&J Enterprises, Inc.

Well Operator

By:  Robert Dahlin-Geologist

Date: 8/27/84

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."



1) Date: MAY 23, 19 84
 2) Operator's Well No. JK-987
 3) API Well No. 47 - 095 - 1079
 State _____ County _____ Permit _____

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES, OIL AND GAS DIVISION
APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil _____ / Gas X /
 B (If "Gas", Production X) / Underground storage _____ / Deep _____ / Shallow X /
- 5) LOCATION: Elevation: 1004' Watershed: BIG RUN (OM:37)
 District: CENTERVILLE County: TYLER Quadrangle: PENNSBORO 7.5'
- 6) WELL OPERATOR J & J ENTERPRISES, INC.
 Address P.O. BOX 48
BUCKHANNON, WV 26201
- 7) DESIGNATED AGENT RICHARD M. REDDECLIFF
 Address P.O. BOX 48
BUCKHANNON, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED
 Name ROBERT A. LOWTHER
 Address GENERAL DELIVERY
MIDDLEBOURNE, WV 26149
- 9) DRILLING CONTRACTOR:
 Name S.W. JACK DRILLING CO.
 Address P.O. BOX 48
BUCKHANNON, WV 26201
- 10) PROPOSED WELL WORK: Drill X / Drill deeper _____ / Redrill _____ / Stimulate X /
 Plug off old formation _____ / Perforate new formation _____ /
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, ALEXANDER
- 12) Estimated depth of completed well, 5300' feet
- 13) Approximate trata depths: Fresh, 80' feet; salt, N/A feet.
- 14) Approximate coal seam depths: 650'-651' Is coal being mined in the area? Yes _____ / No X

15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor	11 3/4	H-40	42	X		30	0	0 Sacks	Kinds <u>NEAT</u> Sizes Depths set Perforations: Top Bottom
Fresh water	8 5/8	ERW	23	X		1104'	1104'	To surface	
Coal	8 5/8	ERW	23	X		1104'	1104'	To surface	
Intermediate									
Production	4 1/2	J-55	10.5	X		5200'	5200'	225 Sacks	
Tubing								or as required by Rule 15-0	
Liners									

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-095-1079 Date June 12, 19 84

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector, (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.
 Permit expires June 12, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>BB</u>	Agent: <input checked="" type="checkbox"/>	Plat: <input checked="" type="checkbox"/>	Casing <u>MH</u>	Fee <u>1557</u>
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[Signature]
 Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

File