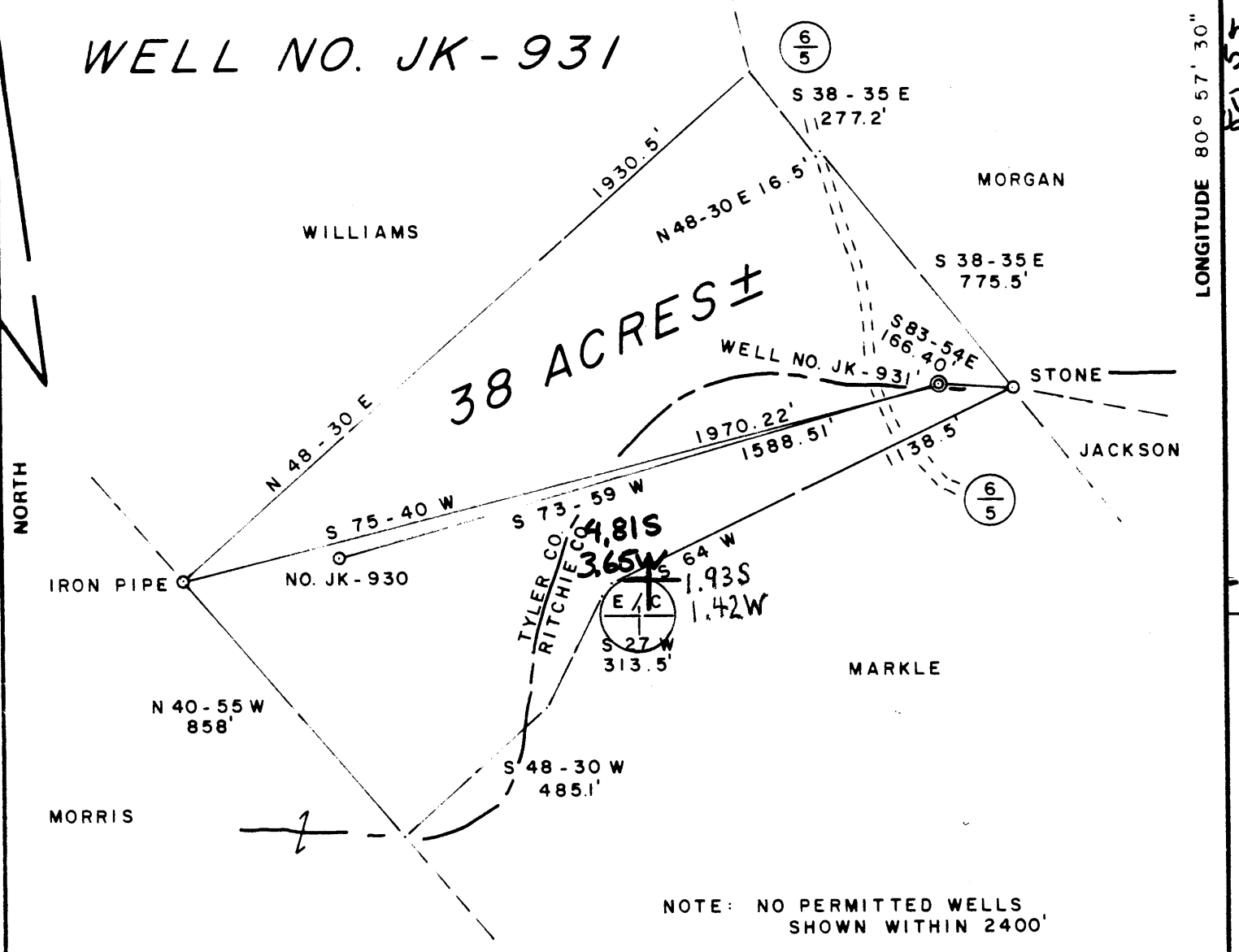


MARKLE LEASE
 WELL NO. JK-931



LONGITUDE 80° 57' 30"
 10,110'

FILE NO. 13-17
 DRAWING NO. _____
 SCALE 1" = 400'
 MINIMUM DEGREE OF ACCURACY 1/200
 PROVEN SOURCE OF ELEVATION TOP OF KNOB
 ELEV. 1225'

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 MARCH 20, 19 84
 OPERATOR'S WELL NO. JK-931
 API WELL NO. _____
47 - 095 - 1061
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 1188' WATER SHED BRUSH RUN
 DISTRICT MEADE 4 COUNTY TYLER
 QUADRANGLE 539 PENNSBORO 7.5' West Union 15' WC 4
 SURFACE OWNER WILLIAM B JULIA A. MARKLE ACREAGE 38
 OIL & GAS ROYALTY OWNER WILLIAM B. MARKLE LEASE ACREAGE 38
 LEASE NO. JJ-1498
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 5990'
 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

MAR 26 1984



RECEIVED
JUN 23 1984

State of West Virginia
Department of Mines
Oil and Gas Division
DEPT. OF MINES

Date June 25, 1984
Operator's
Well No. JK-931
Farm William Markle
API No. 47 - 095 - 1061

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: 1188 Watershed Brush Run
District: Meade 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 William B. Markle

ADDRESS P.O. Box 24, Middlebourne, WV 26149

MINERAL RIGHTS OWNER Same As surface

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Robert

Lowther ADDRESS Gen. Del., Middlebourne, WV

PERMIT ISSUED 3/23/84

DRILLING COMMENCED 5/17/84

DRILLING COMPLETED 5/22/84

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.			
13-10"	32	0	0 sks.
9 5/8			
8 5/8	1400.45	1400.45	335 sks.
7			
5 1/2			
4 1/2	5969.80	5969.80	610 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 5822-5916 feet

Depth of completed well 5995 feet Rotary x / Cable Tools

Water strata depth: Fresh 550 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 5822-5916 feet

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

Combined Final open flow 315 Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1400 psig (surface measurement) after 96 hours shut in

(If applicable due to multiple completion--)

Second producing formation Benson Pay zone depth 4889-91 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

JUL 16 1984
(Continue on reverse side)

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

Rhinestreet
Devonian Shale: 5822-26 (5 holes) 5830-35 (7 holes) 5866-69 (3 holes) 5912-16 (5 holes)
Fracturing: 300 sk. 20/40 sand: 115 Bbls. fluid.

Benson: 4889-91 (8 holes)
Fracturing: 350 sks. 20/40 sand: 500 gal. acid: 362 Bbls. fluid.

BOTTOM HOLE PRESSURE Pf = Pwe^{XGLS}

$$t=60 + (0.0075 \times 5970) + 459.7 = 564 \quad x = \frac{1}{53.35} \times 564 = 10.57 \quad = 0.000033 \quad Pf = 1400 \times 2.72^{(0.000033)}$$

$$(0.000033) (0.669) (5403) (0.9) = 1400 \times 2.72^{0.11} = 1400 \times 1.12$$

Pf=1568 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
Fill & shale			0	40	
Sand & shale			40	85	
Sand & shale			85	136	Damp @ 550'
Sand, shale & red rock			136	2020	
Big Lime			2020	2130	Gas ck @ 2244 No show
Big Injun			2130	2200	
Sand & shale			2200	2780	Gas ck @ 2860 No show
Sand & shale			2780	4889	
Benson			4889	4891	Gas ck @ 3108 No show
Sand & shale			4891	5822	
Devonian Shale			5822	5916	Gas ck @ 3745 No show
Sand & shale			5916	<u>5995</u>	Gas ck @ 4340 No show
				T.D. <u>Rhinestreet</u>	Gas ck @ 4801 No show
					Gas ck @ 5138 35/10-1" w/water 44,470 cu.ft.
					Gas ck @ collars 10/10-1" w/water 23,314 cu.ft.

(Attach separate sheets as necessary)

J&J Enterprises, Inc.

Well Operator

By: B.L. [Signature]

Date: 6/25/84

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: MARCH 21, 19 84
 2) Operator's Well No. JK-931
 3) API Well No. 47 - 095 - 1061
 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
 B (If "Gas", Production / Underground storage / Deep / Shallow)
- 5) LOCATION: Elevation: 1188' Watershed: BRUSH RUN
 District: MEADE 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
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 / Drill deeper / Redrill / Stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, DEVONIAN SHALE
- 12) Estimated depth of completed well, 5990' feet
- 13) Approximate trata depths: Fresh, 400' feet; salt, 0 feet.
- 14) Approximate coal seam depths: N/A Is coal being mined in the area? Yes

RECEIVED
 MAR 23 1984
 OIL & GAS DIVISION
 DEPT. OF MINES

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	H40	42	X		30'	0	0	Kinds by rule 15.05	
Fresh water	8 5/8	ERW	23	X		1300	1000	To surface		
Coal									Sizes	
Intermediate										
Production	4 1/2	J55	10.5	X		5990'	5940'	425	Depths set	
Tubing									or as req. by rule 15.01	
Liners									Perforations:	
									Top Bottom	

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-095-1061 Date March 23, 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 March 23, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
BLANKET	LS	MH	MH	1495

Margaret J. Hasse
 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