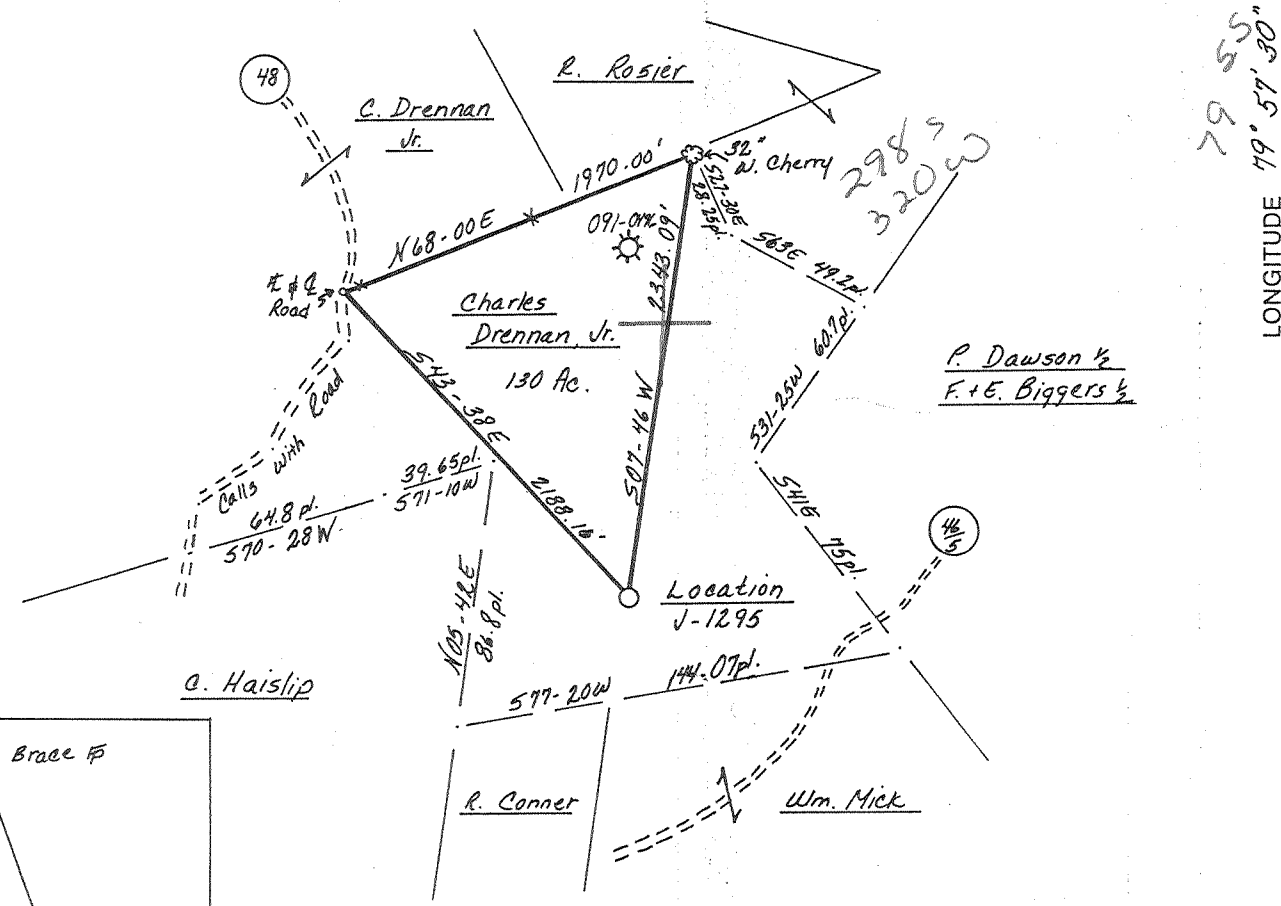


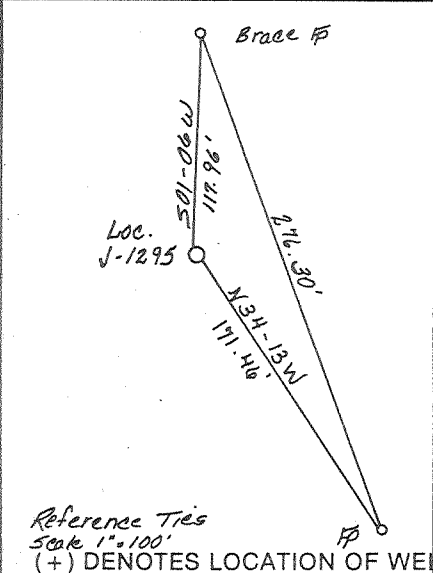
AS 7/31/86

5,175' 39.20
LATITUDE 39° 17' 30"
7.5' Topo.

NORTH



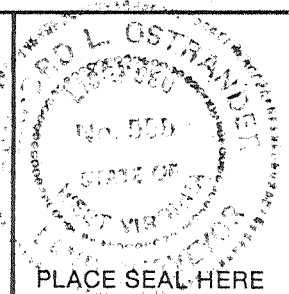
LONGITUDE 79° 57' 30"



Reference Ties
Scale 1"=100'
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. 346.1
 DRAWING NO. 86-14
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1 in 200
 PROVEN SOURCE OF ELEVATION USGS BM Knottsville 1483', USGS Thornton Quad.

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) Rayford S. Ostrander
 R.P.E. _____ L.L.S. 555
Buckhannon, W. Va.



PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
OIL AND GAS DIVISION



DATE July 22, 19 86
 OPERATOR'S WELL NO. J-1295
 API WELL NO. _____

WELL TYPE: OIL _____ GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS,") PRODUCTION STORAGE _____ DEEP _____ SHALLOW

LOCATION: ELEVATION 1665' WATER SHED Swamp Run
 DISTRICT Knottsville COUNTY Taylor
 QUADRANGLE Thornton 638 122 307

SURFACE OWNER Charles Drennan, Jr. ACREAGE 130
 OIL & GAS ROYALTY OWNER Charles Drennan, Jr. LEASE ACREAGE 130
 LEASE NO. JJ 1904

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 Haverty ESTIMATED DEPTH 5850'

WELL OPERATOR J+J Enterprises, Inc. DESIGNATED AGENT Richard Reddecliff
 ADDRESS P.O. Box 48 ADDRESS P.O. Box 48
Buckhannon, W. Va. 26201 Buckhannon, W. Va. 26201

AUG 25 1986

COUNTY NAME PERMIT



Date March 26, 1987
 Operator's Well No. J-1295
 Farm Charles Drennan, Jr.
 API No. 47 - 091 - 0534

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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: 1665 Watershed Swamp Run
 District: Knottsville County Taylor Quadrangle Thornton

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 Charles Drennan, Jr.
 ADDRESS Rt. 3, Box 48, Grafton, WV 26354
 MINERAL RIGHTS OWNER Same as surface
 ADDRESS
 OIL AND GAS INSPECTOR FOR THIS WORK Don Ellis
 ADDRESS 2604 Crab Apple Lane Fairmont, WV 26554

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cord.			
13-10"	21.50	21.50	0sks
9 5/8			
8 5/8	1138.25	1138.25	230 sks.
7			
5 1/2			
4 1/2	5593.5	5593.5	375 sks.
3			
2			
Liners used			

PERMIT ISSUED 8/21/87
 DRILLING COMMENCED 3/5/87
 DRILLING COMPLETED 3/10/87

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

GEOLOGICAL TARGET FORMATION Haverty Depth feet
 Depth of completed well 5940 feet Rotary x / Cable Tools
 Water strata depth: Fresh 180', 907' feet; Salt 0 feet
 Coal seam depths: 50-53, 76-79, 180-83 Is coal being mined in the area? No

OPEN FLOW DATA
 Producing formation 4th Elk Pay zone depth 5387-5459 feet
 Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
 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 900 psig (surface measurement) after 96 hours shut in
 (If applicable due to multiple completion--)
 Second producing formation speechley & 4th Sand Pay zone depth 3446-48 2600-04 2500-02 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

(REVERSE)

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

4th Elk: Perforations: 5387-5459 (14 holes)
 Fracturing: Foam frac: 400 sks. 20/40 sand.
 Speechley: Perforations: 3448-50 (7 holes)
 Fracturing: 375 sks. 20/40 sand: 500 gal. acid:
 4th Sand: perforations: 2504-2608 (9 holes)
 Fracturing: 660 sks. 20/40 sand: 500 gal. acid:

BOTTOM HOLE PRESSURE $P_f = P_{we} XGLS$

$$t = 60 + (0.0075 \times 5594) + 459.7 = 562 \quad X = 53.35 \times 562 = 29964 \quad = 0.000033 \quad P_f = 900 \times 2.72^{(0.000033)}$$

$$(0.670) (2977) (0.9) = 900 \times 2.72^{0.06} = 900 \times 1.06$$

Pf=954

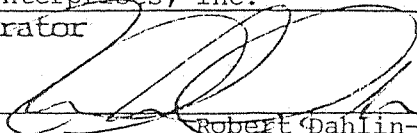
WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fres and salt water, coal, oil and ga
Conductor			0	20	
Sand			20	50	
Coal			50	53	1" @ 180'
Sandy shale			53	76	
Coal			76	79	Gas ck @ 1503 No show
Sandy shale			79	180	
Coal			180	183	Gas ck @ 1724 70/10-2" w/water
Sand, shale & red rock			183	405	353,000 cu.ft.
Sand & shale			405	692	
Sand & sandy shale			692	815	Gas ck @ 1974 90/10-2" w/water
Sand & sandy shae			815	876	400,000 cu.ft.
Sandy, shale & red rock			876	1180	
Sand & shale			1180	1464	Gas ck @ 2569 90/10-2" w/water
Big Lime & Injun			1464	1660	400,000 cu.ft.
Sand & shale			1660	1940	
Sandy shale & sand			1940	2078	Gas ck @ 3010 60/10-2" w/water
Sandy shale & sand			2078	2504	327,000 cu.ft.
4th Sand			2504	2608	
Sandy shale			2608	3448	Gas ck @ 3357 60/10-2" w/water
Speechley			3448	3450	327,000 cu.ft.
Sand & shale			3450	4515	
Benson			4515	4530	Gas ck @ 3705 80/10-2" w/water
Sand & shale			4530	5387	377,000 cu.ft.
4th Elk			5387	5459	
Sand & shale			5459	5940	Gas ck @ 4207 70/10-2" w/water
				P.D.	353,000 cu.ft.
				Brallier @	
				TD	Gas ck @ 4581 50/10-2" w/water
					293,000 cu.ft.
					Gas ck @ 5181 60/10-2" w/water
					327,000 cu.ft.
					Gas ck @ 5807 60/10-2" w/water
					327,000 cu.ft.

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

J & J Enterprises, Inc.
 Well Operator
 By: 
 Robert Dahlin-Geologist
 Date: 3/26/87

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

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1) Date: July 23, 19 86
 2) Operator's Well No. J - 1295
 3) API Well No. 47 State 091 County -0534 Permit

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

- 4) WELL TYPE: A Oil / Gas X /
 B (If "Gas", Production X / Underground storage / Deep / Shallow X /)
- 5) LOCATION: Elevation: 1665' 427 Watershed: Swamp Run
 District: Knottsville 6 County: Taylor Quadrangle: Thornton 637
- 6) WELL OPERATOR J&J Enterprises CODE: 2415D 7) DESIGNATED AGENT Richard Reddecliff
 Address PO Box 48 Address PO Box 48
Buckhannon, WV 26201 Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Donald Ellis
 Address 2604 Crab Apple Lane
Fairmont, WV 26554
- 9) DRILLING CONTRACTOR: Name SW Jack Drilling Co.
 Address PO 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, Haverty 437
- 12) Estimated depth of completed well, 5850' feet
- 13) Approximate strata depths: Fresh, 65 feet; salt, 0 feet.
- 14) Approximate coal seam depths: 120 to 450 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 sks	Kinds	
Fresh water	8 5/8	ERW	23	X		1165	1165	to surface	as required by	
Coal	8 5/8	ERW	23	X		1165	1165	to surface	Sizes rule 15.05	
Intermediate										
Production Tubing	4 1/2	J-55	10.5	X		5900	5900	500 sks	as required by Rule 15.01	
Lin.									Perforations: Top Bottom	

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-091-0534 Date August 21 19 86

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. 3) 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 August 21, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>✓</u>	Agent: <u>ALB</u>	Plat: <u>MS</u>	Casing: <u>MS</u>	Fee: <u>2144</u> <u>134</u>	WPCP: <u>MS</u>	S&E: <u>MS</u>	Other: <u>MS</u>
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