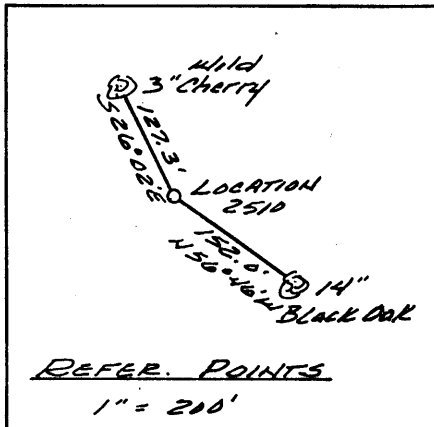


1.705  
1.06W

4.585  
1.06W



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. UDI 4-55  
 DRAWING NO. 86-26  
 SCALE 1" = 400'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION Spot Elev - 1088' 3600' S.W. of Location.

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 ENERGY.  
 (SIGNED) Raymond L. Ostrander  
 R.P.E. \_\_\_\_\_ L.L.S. 555  
Buckhannon, WV

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 OIL AND GAS DIVISION  
 PLACE SEAL HERE

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



DATE 15-January, 19 87  
 OPERATOR'S WELL NO. 2510  
 API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
 LOCATION: ELEVATION 948' WATER SHED Middle Island Creek  
 DISTRICT Centerville COUNTY Tyler  
 QUADRANGLE West Union 671 133 C5  
 SURFACE OWNER Mattie Dotson Flint, et al ACREAGE 25  
 OIL & GAS ROYALTY OWNER Mattie Dotson Flint, et al LEASE ACREAGE 25  
 LEASE NO. 575-2160

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 Alexander ESTIMATED DEPTH 5400'  
 WELL OPERATOR UNION DRILLING, INC. DESIGNATED AGENT JOSEPH C. PETTEY  
 ADDRESS P.O. DRAWER 40 ADDRESS -SAME-  
BUCKHANNON, WV 26201 993

FORM WW-6  
 H.T. HALL 48673

COUNTY NAME  
 PERMIT



**RECEIVED**  
MAY 26 1987

State of West Virginia  
Department of Mines  
Oil and Gas Division

Date 5/20/87  
Operator's Well No. JK-1302  
Farm Mattie Dotson Flint  
API No. 47 - 095 - 1171

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: 948 REF 1052 Watershed Short Run  
District: Centerville County Tyler Quadrangle West Union 7.5

COMPANY J & J Enterprises, Inc.

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

DESIGNATED AGENT Oliver L. Hawkins, III

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

SURFACE OWNER Mattie Dotson Flint, etal

ADDRESS 7113 Falcon St., Annandale, Va. 22003

MINERAL RIGHTS OWNER Same as surface

ADDRESS   

OIL AND GAS INSPECTOR FOR THIS WORK Robert Gen. Delivery Lowther  
ADDRESS Middlebourne, WV 26140

PERMIT ISSUED 2/9/87

DRILLING COMMENCED 2/12/87

DRILLING COMPLETED 2/18/87

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
9 5/8			
8 5/8	1184	1184	265 sks.
7			
5 1/2			
4 1/2	5333	5333	280 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander Depth 5167-84 feet

Depth of completed well 5469 feet Rotary x / Cable Tools   

Water strata depth: Fresh 110,1770 feet; Salt 0 feet

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

OPEN FLOW DATA

Producing formation Alexander Pay zone depth 5167-84 feet

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

Final open flow 852 Mcf/d Final open flow    Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1450 psig (surface measurement) after 96 hours shut in

(If applicable due to multiple completion--)

Second producing formation Benson & Riley Pay zone depth 4461-92 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.

Alexander: Perforations: 5167-84 (13 holes)  
 Fracturing: 400 sks. 20/40 sand: Foam frac.  
Benson: Perforations: 4869-71 (13 hoels)  
 Fracturing: 300 sks. 20/40 sand: 500 gal. acid.  
Riley: Perforations: 4461-92 (14 holes)  
 Fracturing: 400 sks. 20/40 sand: 500 gal. acid.

Bottom Hole Pressure  $Pf = Pwe^{XGLS}$

$$t = 60 + (0.0075 \times 5333) + 459.7 = 560 \quad X = \frac{1}{53.35} \times \frac{1}{560} = 29860 = 0.000033 \quad Pf = 1450 \times 2.72^{(0.000033)}$$

$$(0.675)(4823)(0.9) = 1450 \times 2.72^{0.097} = 1450 \times 1.1$$

Pf= 1595

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all and salt water, coal, oil and
K..B			0	10	
Sand & shale			10	220	1/2" stream @ 110'
Red rock			220	285	
Shale & sand			285	370	1/2" stream @ 1770'
Sand & shale			370	470	
Sand			470	505	Gas ck @ 1998 No show
Sand & shale			505	550	
Sand			550	600	- Gas ck @ 4474 No show
Shale & red rock			600	685	
Sand			685	730	Gas ck @ 5162 No show
Sand & shale			730	780	
Sand			780	800	
Sand & shale			800	820	
Red rock			820	850	
Sand, shale & red rock			850	930	
Sand & shale			930	1185	
Sand			1185	1200	
Sand & shale			1200	1335	
Sand			1335	1360	
Shale			1360	1420	
Sand			1420	1535	
Sand & shale			1335	1830	
Big Lime & Injun			1830	2000	
Sand & shale			2000	2215	
Sand & shale			2215	4461	
Riley			4461	4492	
Sand & shale			4492	4869	
Benson			4869	4871	
Sand & shale			4871	5167	
Alexander			5167	5184	
Sand & shale			5184	5469	

**RECEIVED**  
MAY 26 1987

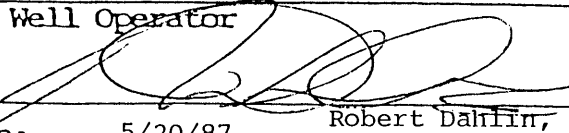
DIVISION OF OIL & GAS  
DEPARTMENT OF ENERGY

T.D.

(Attach separate sheets as necessary)

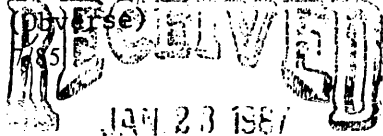
J & J Enterprises, Inc.

Well Operator

By: 

Date: 5/20/87 Robert Dahlin, Geologist

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 sand, encountered in the drilling of a well."



1) Date: January 16, 1987  
 2) Operator's Well No. 2510  
 3) API Well No. 47 095 1171  
State County Permit

STATE OF WEST VIRGINIA  
 DIVISION OF OIL & GAS DEPARTMENT OF ENERGY  
 DEPARTMENT OF ENERGY, 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: 1052' Watershed: Short Run 670  
 District: Centerville / County: Tyler 095 Quadrangle: West Union 7.5'  
 6) WELL OPERATOR Union Drilling CODE: 50550 7) DESIGNATED AGENT Joseph C. Pettey  
 Address Post Office Drawer 40 Address Post Office Drawer 40  
Buckhannon, WV 26201 Buckhannon, WV 26201  
 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:  
 Name Robert Lowther Name S. W. Jack Drilling Co.  
 Address General Delivery Address Post Office Box 48  
Middlebourne, WV 26149 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, Alexander  
 12) Estimated depth of completed well, 5400 feet  
 13) Approximate strata depths: Fresh, \_\_\_\_\_ feet; salt, \_\_\_\_\_ feet.  
 14) Approximate coal seam depths: \_\_\_\_\_ Is coal being mined in the area? Yes  / No

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		25020	25020	CTS Per	15.05
Fresh water									
Coal									
Intermediate	8 5/8	ERW	23	X		1250	1250	CTS PER	15.05
Production	4 1/2	J-55	10.5			5300	5300	530 SKS OR	AS REQUIRED
Tubing									
Liners									

OFFICE USE ONLY  
 DRILLING PERMIT

Permit number 47-095-1171 Date February 9 19 87

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 February 9, 1989 unless well work is commenced prior to that date and prosecuted with due diligence.

9596

Bond: <input checked="" type="checkbox"/>	Agent: <input checked="" type="checkbox"/>	Plat: <input checked="" type="checkbox"/>	Casing: <input checked="" type="checkbox"/>	Fee: <u>1362</u> <u>167</u>	WPCB: <input checked="" type="checkbox"/>	SSE: <input checked="" type="checkbox"/>	Other: <input type="checkbox"/>
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NOTE: Keep one copy of this permit posted at the drilling location. [Signature] Director, Division of Oil and Gas File

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