



FILE NO. BK 82 P 15
 DRAWING NO. _____
 SCALE 1" = 500
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION USGS BM E-118
E1 558

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) C S Valley Jr.
 R.P.E. _____ L.S. 92

PLACE SEAL HERE

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

FORM IV-6 (8-78)



DATE FEB 11, 1984
 OPERATOR'S WELL NO. 2021-4
 API WELL NO. _____
47 - 053 - 0342
 STATE COUNTY PERMIT

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 733.53 WATERSHED FLATFOOT CREEK
 DISTRICT CLENDENIN COUNTY MASON 051
 QUADRANGLE APPLE GROVE 7.5' Glenwood 15' NC
 SURFACE OWNER W.H. WOODS ACREAGE 91.53
 OIL & GAS ROYALTY OWNER W.H. WOODS LEASE ACREAGE 504
 LEASE NO. C-2-585

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 DEVONIAN SHALE ESTIMATED DEPTH 3500
 WELL OPERATOR UNION DRILLING INC DESIGNATED AGENT JOSEPH VANZANT
 ADDRESS P.O. DRAWER 40 ADDRESS P.O. DRAWER 40
BUCKHANNON WV 26201 BUCKHANNON WV 26201

APR 2 1984

IV-35
(Rev 8-81)

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NOV 13 1984



OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date November 12, 1984
Operator's
Well No. 4 - 2021
Farm William Woods, Jr. #4
API No. 47 - 053 - 0342

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 ___ / Underground Storage ___ / Deep ___ / Shallow x /)

LOCATION: Elevation: 733' Watershed Flatfoot Creek
District: Clendenin County Mason Quadrangle Apple Grove

COMPANY UNION DRILLING, INC.

ADDRESS P.O. Drawer 40, Buckhannon, WV 26201

DESIGNATED AGENT Joseph C. Vanzant, Jr.

ADDRESS P.O. Drawer 40, Buckhannon, WV 26201

SURFACE OWNER William Woods, Jr.

ADDRESS Gallipolis Ferry, WV 25515

MINERAL RIGHTS OWNER same

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK _____

Jerry Tephabock ADDRESS Rt#1, Box 101A, Ripley, WV

PERMIT ISSUED 3/26/84 25271

DRILLING COMMENCED 10/22/84

DRILLING COMPLETED 10/28/84

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 Cord.			
13-10"			
9 5/8	636.69'	636.69'	251 cf
8 5/8			
7	2039.85'	718.95'	58 cf
5 1/2			
4 1/2		3248.20'	159 cf
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 3500' feet

Depth of completed well 3330' feet Rotary xx / Cable Tools _____

Water strata depth: Fresh 400' 770' feet; Salt 1278, 1530' feet

Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Upper & Lower Huron Pay zone depth 3147' feet

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

Final open flow 239 Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests 3 days ~~hours~~

Static rock pressure 550 psig (surface measurement) after 3 days ~~hours~~ shut in

(If applicable due to multiple completion--)

Second producing formation _____ Pay zone depth _____ 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.

Newsco - 1 stage Foam Frac - 11/4/84

2832/3147 - Upper Huron - 60,000# sand, 420 Bbbs water and 830,000 scf nitrogen
Lower Huron

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Sand & Shale			0	1967	1/2" stream water @400'
Berea			1967	1995	1/2" stream water @770'
Top of Devonian			1995		1" stream salt water @1278'
Upper Huron Shale			2830	2841	1" stream salt water @1530'
Lower Huron Shale			2877	3154	
Angola Shale			3154	3270	
				3330'	T.D. gas show

from SR log of well 128
2830-3154
810' depth

(Attach separate sheets as necessary)

UNION DRILLING, INC.
Well Operator

By: *Joseph C. Pettey*

Date: Joseph C. Pettey, Vice President of Production

11/12/84

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: February 24, 19 84
 2) Operator's Well No. 2021 - 4
 3) API Well No. 47 - 053 - 0342
 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: 733.53' Watershed: Flatfoot Creek
 District: Clendenin County: Mason Quadrangle: Apple Grove
- 6) WELL OPERATOR Union Drilling, Inc.
 Address Post Office Drawer 40
Buckhannon, WV 26201
- 7) DESIGNATED AGENT Joseph C. Vanzant, Jr.
 Address Post Office Drawer 40
Buckhannon, WV 26201
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED
 Name Jerry Tephabock
 Address Route 1, Box 101-A
Ripley, WV 25271
- 9) DRILLING CONTRACTOR:
 Name Union Drilling, Inc.
 Address Post Office Drawer 40
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, 3500 feet
- 13) Approximate trata depths: Fresh, ? feet; salt, ? feet.
- 14) Approximate coal seam depths: ? Is coal being mined in the area? Yes
- 15) CASING AND TUBING PROGRAM

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 OIL & GAS DIVISION
 DEPT. OF MINES

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		32	X		30'	30'		Kinds
Fresh water									
Coal						<u>933'</u>	<u>933'</u>		Sizes
Intermediate	8-5/8		23	X		<u>1000'</u>	<u>1000'</u>		<u>WEAT</u>
Production	4-1/2	J	10 1/2	X		3500'	3500'	to surface as required	Depths set
Tubing								<u>by rule</u>	
Liners								<u>15.01</u>	Perforations:
									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-053-0342 March 26, 19 84
 Date

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 26, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>BLANKET</u>	Agent: <u>BLANKET</u>	Plat: <u>MU</u>	Casing: <u>MU</u>	Fee: <u>014-537</u>
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[Signature]
 Administrator, Office of Oil and Gas

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