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State of West Virginia
Department of Mines
Oil and Gas Division

Date July 22, 1987
Operator's Well No. 1 - 2521
Farm Virginia Kuck #1
API No. 47 - 017 - 3487

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 / Underground Storage / Deep / Shallow xx /)

LOCATION: Elevation: 991' Watershed Cabin Run
District: Central County Doddridge Quadrangle Pennsboro

COMPANY Union Drilling, Inc.

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

DESIGNATED AGENT Joseph C. Pettey

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

SURFACE OWNER McCullough-Rogers Funeral Home

ADDRESS 447 West Myles Avenue., Pennsboro, WV 26415

MINERAL RIGHTS OWNER same as surface

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK

Mike Underwood ADDRESS Rt.2, Box 114, Salem, WV 26478

PERMIT ISSUED 1/6/86

DRILLING COMMENCED 4/20/87

DRILLING COMPLETED 4/27/87

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"	41.60	41.60	
9 5/8			
8 5/8	1299.55	1299.55	354 cf
7			
5 1/2			
4 1/2			
3			
2			
Liners used	2,375 Tubing	5122.35	

GEOLOGICAL TARGET FORMATION Rhine Street Depth 5995' feet

Depth of completed well 5505' feet Rotary XXX / Cable Tools

Water strata depth: Fresh feet; Salt 1514 feet

Coal seam depths: none Is coal being mined in the area?N/A

OPEN FLOW DATA

Producing formation Riley, Benson, Alexander Pay zone depth 5151 feet

Gas: Initial open flow 267 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 2 hours

Static rock pressure 1400 psig (surface measurement) after 24 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

(Continue on reverse side)

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

Halliburton - 3 stage foam frac - 5-01-87

4441/43 - Riley - 45,000# sand, 657 Bbls. fluid, 600,000 Scf nitrogen
 4457/60
 4469/71

4845/48 - Benson - 35,000# sand, 395 Bbls. fluid, 60,000 Scf nitrogen

5134/39 - Alexander - 35,000# sand, 395 Bbls. fluid, 60,000 Scf nitrogen
 5149/51

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
Sand & Shale			0	970	Including indication of all fresh and salt water, coal, oil and gas
Red Rock			970	990	
Sand & Shale			990	1840	1" stream water at 1514'
Big Lime			1840	1932	
Big Injun			1936	2026	Gas check at 5228' - 40/10 thru 2" w/ water = 267 Mcf
Weir			2218	2340	
Riley			4430	4485	
Benson			4840	4850	
Alexander			5133	5160	
				5505 TD	

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

(Attach separate sheets as necessary)

Union Drilling, Inc.

Well Operator

By: Joseph C. Petrey
Joseph C. Petrey, Vice President of Production

Date: 7-23-87

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 well, encountered in the drilling of a well."



1) Date: December 6, 1985
 2) Operator's Well No. JK-1250
 3) API Well No. 47 State West Virginia County Putnam Permit 47-017-3487

DEC 5 1985

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

4) WELL TYPE: A Oil Gas
 B (If "Gas", Production 991 / Undergrnd storage Cabin Run / Deep / Shallow /
 5) LOCATION: Elevation: 991 / Watershed: Cabin Run
 District: Central / County: Doddridge / Quadrangle: Pennsboro 7.5'
 6) WELL OPERATOR J&J Enterprises, Inc / 7) DESIGNATED AGENT Richard M. Reddecliff
 Address P.O. Box 48 / Address P.O. Box 48
Buckhannon, WV 26201
 8) OIL & GAS INSPECTOR TO BE NOTIFIED
 Name Mike Underwood / Name S.W. Jack Drilling Co.
 Address Rt. 2 Box 114 / Address P.O. Box 48
Salem, WV 26426 / Buckhannon, WV 26201

10) PROPOSED WELL WORK: Drill / deeper / Redrill / Stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) _____
 11) GEOLOGICAL TARGET FORMATION, Rhine Street / 441 feet
 12) Estimated depth of completed well, 5995 feet
 13) Approximate true depths: Fresh, 125' / salt, N/A feet. 461' feet
 14) Approximate coal seam depths: N/A Is coal being mined in the area? Yes No N/A

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.	For drilling	Left in well		
Conductor	11 3/4	H-40	42	<u>250-30'</u>	<u>350 ft</u>	<u>0 Sacks</u>	Kind: <u>CTS by Rule 15.65</u> Size
Fresh water	8 5/8	ERW	23	1591'	1591'	To Surface	
Coal	8 5/8	ERW	23	1591'	1591'	To Surface	
Intermediate							
Production	4 1/2	J-55	10.5	5995'	5945'	300 Sacks	Depths set Perforations: Top Bottom
Tubing						or as required by rule 15-01	
Lin...							

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-017-3487 Date January 6 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. 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 January 6, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>✓</u>	Agent: <u>APB MS</u>	Plat: <u>MS</u>	Casing: <u>MM</u>	Fee: <u>2110</u>	WFCP: <u>MM</u>	S&E: <u>MM</u>	Other: <u>MM</u>
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NOTE: Keep one copy of this permit posted at the drilling location.

[Signature]
 Director, Division of Oil and Gas

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

