



FILE NO. BK 95 P 36
 DRAWING NO. _____
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY 1:2500
 PROVEN SOURCE OF ELEVATION USGS BM X-60
As shown El 3803

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. J. Valley Jr.
 R.P.E. _____ L.L.S. 92

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE JULY 27, 1985
 OPERATOR'S WELL NO. 2193-4A
 API WELL NO. _____
47-083-1047
 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 ___ STORAGE ___ DEEP X SHALLOW ___
 LOCATION: ELEVATION 3817.08 WATER SHED LAMBERT RUN OF SHAVERS FORK
 DISTRICT HUTTONSVILLE 3 COUNTY RANDOLPH
 QUADRANGLE SNYDER KNOB 614 035 WC4 Durbin
 SURFACE OWNER MOWER LUMBER CO ACREAGE 62,606.30
 OIL & GAS ROYALTY OWNER MOWER LUMBER CO. LEASE ACREAGE 62,606.30
 LEASE NO. AMOCO 509310
 PROPOSED WORK: DRILL X 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 ORISKANY ESTIMATED DEPTH 8500'
 WELL OPERATOR UNION DRILLING INC. DESIGNATED AGENT JOSEPH C. PETEY
 ADDRESS PO DRAWER 40 ADDRESS PO DRAWER 40
893 BUCKHANNON WY 26201 BUCKHANNON WY 26201

AUG 26 1985

RECEIVED
JUN 10 1987
W. VA. OIL & GAS
CONSERVATION COMMISSION



State of West Virginia
Department of Mines
Oil and Gas Division

Date June 8, 1987
Operator's
Well No. 4A - 2193
Farm Mower Lumber Co. #4A
API No. 47 - 083 - 1047

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

TO BE HELD CONFIDENTIAL

WELL TYPE: Oil / Gas X / Liquid Injection / Waste Disposal /
(If "Gas," Production / Underground Storage / Deep XX / Shallow /)

LOCATION: Elevation: 3817' Watershed Lambert Run of Shavers Fork
District: Huttonsville County Randolph Quadrangle Snyder Knob

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 Mower Limited Partnership
ADDRESS P.O. Box 27, Durbin, WV 26264
MINERAL RIGHTS OWNER same as surface
ADDRESS
OIL AND GAS INSPECTOR FOR THIS WORK
Phil Tracy ADDRESS P.O. Box 2536, Elkins, WV 26241
PERMIT ISSUED 8/19/85
DRILLING COMMENCED 11/19/86
DRILLING COMPLETED 12/11/86
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"	38.00'	38.00'	
9 5/8	1809.85'	1809.85'	749 cf
8 5/8			
7			
5 1/2		8594.66'	656 cf
4 1/2			
3			
2 3/8"		8317.69'	
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Depth 8388/8427 feet
Depth of completed well 8604' feet Rotary XXX / Cable Tools
Water strata depth: Fresh 50' feet; Salt 1540' feet
Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Oriskany Pay zone depth 8388/8427 feet
Gas: Initial open flow 67 Mcf/d Oil: Initial open flow Bbl/d
Final open flow 413 Mcf/d Final open flow Bbl/d
Time of open flow between initial and final tests 2 hours
Static rock pressure 1980# 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

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

Halliburton - 1 stage Frac - 3/18/87

8388, 8392, 8393, 8394, 8395, 8396, 8397, 8398, 8399, 8406, 8407, 8408, 8410, 8413, 8423, 8424
8425, 8426, 8427

Oriskany - 303,000# sand, 2615 bbls fluid and 30 ton Co2

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Shale			0	55	1/2" stream fresh water @50'
Sand			55	75	
Sand & Shale			75	320	
Red Rock			320	340	
Sand & Shale			340	815	
Sand			815	840	
Sand, Shale & Red Rock			840	1176	
Little Lime			1176	1201	
Blue Monday			1268	1300	
Big Lime			1304	1522	
Injun			1522	1715	1" stream salt water @1540'
Squaw			1724	1754	
Elizabeth			2564	2634	
Warren			2719	2768	
Speechly			2894	2983	
Balltown Horizon			3166	3178	
Bradford			3356	3406	
Riley			3721	3764	
Benson			3890	3933	
Benson Stray			4064	4102	
Alexander			4686	4693	
Lower Alexander			4911	4934	
Elk			5152	5247	
Sycamore Grit 443			6903	6974	
Harrell Shale 438			7625	7799	
Tully Limestone 848			7799	7814	
Upper Marcellus 856			7955	7998	
Purcell Limestone 859			7998	8022	
Lower Marcellus 857			8022	8058	
Onondaga Limestone 461			8058	8095	
Huntersville Chert 463			8095	8248	
Needmore Shale 465			8248	8267	
Oriskany 475			8267	8443	
✓ Helderberg 485			8443	8604	Gas check @TD = 67 mcf

(Attach separate sheets as necessary)

Union Drilling, Inc.

Well Operator

By: Joseph C. Pettey

Date: Joseph C. Pettey, Vice President of Production

6/8/87

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 coal, encountered in the drilling of a well."

NOV 10 1988.



TO BE HELD CONFIDENTIAL

1) Date: August 1, 19 85
2) Operator's Well No. 2193
3) API Well No. 47-083-1047
State County Permit

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

RECEIVED
AUG 12 1985

- 4) WELL TYPE: A Oil / Gas XX
DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY
Elevation: 3817.08
District: Huttonsville
County: Randolph
Quadrangle: Snyder Knob
6) WELL OPERATOR Union Drilling, Inc. CODE: 50550
Address Post Office Drawer 40 (893) Buckhannon, WV 26201
7) DESIGNATED AGENT Joseph C. Pettey
Address Post Office Drawer 40 Buckhannon, WV 26201
8) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Phillip Tracy
Address Post Office Box 2536 Elkins, WV 26241
9) DRILLING CONTRACTOR:
Name Union Drilling, Inc.
Address Post Office Drawer 40 Buckhannon, WV 26201
10) PROPOSED WELL WORK: Drill XX / Drill deeper / Redrill / Stimulate XX
Plug off old formation / Perforate new formation
Other physical change in well (specify)
11) GEOLOGICAL TARGET FORMATION, Oriskany (475)
12) Estimated depth of completed well, 8500 feet
13) Approximate trata depths: Fresh, ? feet; salt, ? feet.
14) Approximate coal seam depths: ? Is coal being mined in the area? Yes / No XX

Table with columns: CASING OR TUBING TYPE, SPECIFICATIONS (Size, Grade, Weight per ft., New, Used), FOOTAGE INTERVALS (For drilling, Left in well), CEMENT FILL-UP OR SACKS (Cubic feet), PACKERS (Kinds, Sizes, Perforations: Top, Bottom). Rows include Conductor, Fresh water, Coal, Intermediate, Production, Tubing, Liners.

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-083-1047 Date August 19 19 85

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 August 19, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Table with columns: Bond, Agent (A.B.), Plat (MN), Casing (MU), Fee (34864), WPCP, S&E, Other.

Signature of Director, Division of Oil and Gas
File

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