



CERTIFICATE

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Minimum degree of accuracy is one part in 200
 Signed William S. Smully L.L.S. No. 116
 (N.B. 118 & 26)

COMPANY CITIES SERVICE COMPANY
 ADDRESS P.O. Box 873 CHARLESTON, W. VA. 25323
 FARM LEWIS MAXWELL
 MAP ACRES 2654.00 LEASE NO. 1-11-47 00904
 WELL (FARM) NO. A-77 SERIAL NO. GW-1889
 ELEVATION (SPIRIT LEVEL) 936.25
 QUADRANGLE OXFORD (N.E. HOLBROOK - 1:62,500)
 COUNTY DODDRIDGE DISTRICT WEST UNION
 POINT OF PROVEN ELEVATION U.S.G.S. DATUM - BM-8U
 FILE NO. _____ DRAWING NO. W-3-81
 DATE JANUARY 20, 1981 SCALE 1" = 300'

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON
WELL LOCATION MAP
 FILE NO. 47-017-2969
 + DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. SCALE 1 TO 24,000 LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN.
 - DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING.

66 2/6 Plot Card 205 11
 STRAIGHT FR - BLUESTONE CK 133 MAR 9 1981



IV-35
(Rev 8-81)

Date November 16, 1981
Operator's
Well No. "A" #77 (GW-1889)
Farm Lewis B. Maxwell
API No. 47 - 017 - 2969

RECEIVED

State of West Virginia
Department of Mines
Oil and Gas Division

DEC 4 1981

OIL AND GAS DIVISION
WV DEPARTMENT OF MINES

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: 936.25' Watershed Left Fork of Arnold's Creek
District: West Union County Doddridge Quadrangle Oxford

COMPANY Cities Service Company

ADDRESS P.O. Box 873, Charleston, WV 25323-0873

DESIGNATED AGENT Paul D. Phillips

ADDRESS same

SURFACE OWNER Mrs. Everett Maxwell

ADDRESS West Union, WV 26456

MINERAL RIGHTS OWNER Lewis Maxwell, et ux

ADDRESS Rob't. Holland, Agent; West Union, WV 26436

OIL AND GAS INSPECTOR FOR THIS WORK Steve

Casey ADDRESS Jane Lew, WV 26301

PERMIT ISSUED February 9, 1981

DRILLING COMMENCED April 17, 1981

DRILLING COMPLETED November 7, 1981

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 Cond.			
11-3/4" 13-1/8"	41'	41'	surface
9 5/8			
8 5/8	1677'	1677'	surface
7			
5 1/2			(600 sx)
4 1/2	5010'	5010'	908 cu. ft.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Alexander-Weir Depth 4825, 1875 feet

Depth of completed well 5002 feet Rotary XX / Cable Tools _____

Water strata depth: Fresh 180 feet; Salt - feet

Coal seam depths: - Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Alexander Pay zone depth 4890 feet

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

Final open flow 119 Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests 88 hours

Static rock pressure 1200 psig (surface measurement) after 60 hours shut in

(If applicable due to multiple completion--)

Second producing formation Weir Pay zone depth 1886 feet

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

Final open flow 119 Mcf/d Oil: Final open flow _____ Bbl/d

Time of open flow between initial and final tests 90 hours

Static rock pressure 240 psig (surface measurement) after 24 hours shut in

ABOVE ZONES COMMINGLED: Initial open flow 880 MCF/D

Final open flow 298 MCF/D after blowing 24 hours

Static rock pressure 1100 psig after 28 days shut in

(Continue on reverse side)

DEC 23 1981

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

ALEXANDER - Perforated interval 4904'-4929' (26 shots).
Broke down formation with 1000 gal. 15% HCl. Fraced with 15,000#
80/100 sand and 105,000# 20/40 sand suspended in crosslinked gel.

WEIR - Perforated interval 1895'-1987' (37 shots).
Broke down formation with 2000 gal. 15% HCl. Fraced with 15,000#
80/100 sand and 105,000# of 20/40 sand suspended in a gel system
and energized with N₂.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Red Rock			0	75	
Sand			75	150	
Red Rock			150	170	
Sand			170	185	Water @ 180
Shale			185	230	
Sand			230	350	
Red Rock/Shale			350	440	
Sand			440	445	
Red Rock/Shale			445	510	
Sand			510	575	
Shale/Red Rock			575	820	
Shale			820	915	
Sand			915	989	
Shale			989	1085	
Sand			1085	1150	
Shale			1150	1530	
Sand			1530	1572	
Shale			1572	1580	
Lime			1580	1655	
Big Injun Sand			1655	1727	
Shale			1727	1825	
Weir Sand			1825	1895	
Shale			1895	2510	
Sand			2510	2560	
Shale			2560	3890	
Sand			3890	3940	
Shale			3940	4850	
Alexander Sand			4850	4880	
Shale			4880	5042 T.D.	

(Attach separate sheets as necessary)

Cities Service Company
Well Operator

By: Paul D. Phillips Paul D. Phillips
Region Operations Manager
Date: December 2, 1981

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."



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED

FEB - 4 1981

Oil and Gas Division

OIL & GAS DIVISION
DEPT. OF MINES

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

DATE February 2, 1981

Surface Owner Mrs. Everett Maxwell
Address West Union, WV 26456
Mineral Owner Lewis Maxwell, et ux
Address Robert Holland, Agent
West Union, WV 26436
Coal Owner _____
Address _____
Coal Operator _____
Address _____

Company Cities Service Company
Address Box 873, Charleston, WV 25323
Farm Lewis Maxwell et ux Acres 2654.88
Location (waters) Left Fork of Arnolds Creek
Well No. "A" #77, GW-1889 Elevation 936.25
District West Union County Dodd.
Quadrangle Oxford

THIS PERMIT MUST BE POSTED AT THE WELL SITE

provisions being in accordance with Chapter 22,
the W. Va. Code, the location is hereby approved
drilling. This permit shall expire if
operations have not commenced by 10-9-81

INSPECTOR
TO BE NOTIFIED Paul Garrett
ADDRESS 321 Beech St., Clarksburg, WV 26301
PHONE 622-3871

[Signature]
Deputy Director - Oil & Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated August 18, 1905 by Lewis Maxwell et ux made to Columbian Carbon (now Cities Service) and recorded on the _____ day of _____ 19____, in Doddridge County, Book 23 Page 69

NEW WELL _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE
_____ OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days. *

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address _____ day _____ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

Very truly yours,
(Sign Name) Paul D. Phillippe
Well Operator

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND
ECONOMIC SURVEY
P. O. BOX 879
MORGANTOWN, WEST VIRGINIA 26505
AC-304 - 292-6331

Address
of
Well Operator

Box 873
Street
Charleston
City or Town
W. Va. 25323
State

*SECTION 3 If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

47-017-2969 PERMIT NUMBER

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 12-b and will carry out the specified requirements."

Signed by _____

BLANKET BOND

THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

PROPOSED WORK ORDER TO X DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) _____ RESPONSIBLE AGENT: _____
 NAME Spencer Enterprises NAME Paul D. Phillips
 ADDRESS West Union, WV ADDRESS Box 873, Charleston, WV 25323
 TELEPHONE _____ TELEPHONE 304-344-8383
 ESTIMATED DEPTH OF COMPLETED WELL: 5025' ROTARY X CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Alexander Sand
 TYPE OF WELL: OIL _____ GAS _____ COMB. _____ STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10 11-3/4" 42#	80	80	48 sack to surface
9 - 5/8			
8 - 5/8 " 24#	1700	1700	400 sacks to surface
7			
5 1/2			
4 1/2 " 10-1/2#	5025	5025	600 sacks to surface
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 150 FEET _____ SALT WATER _____ FEET _____
 APPROXIMATE COAL DEPTHS None
 IS COAL BEING MINED IN THE AREA? No BY WHOM? _____

TO DRILL:
 SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:
 SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND. ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:
 OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.
 OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.
 Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for _____ Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.
 We the _____ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

 For Coal Company

 Official Title