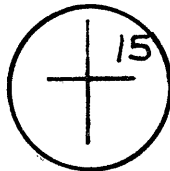


LATITUDE 39° 25'

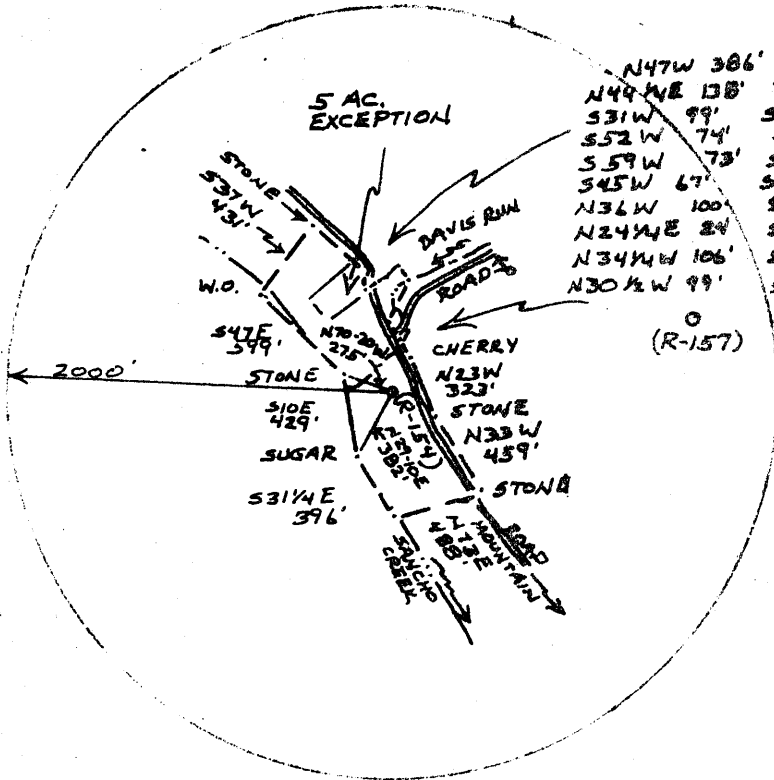
3630 SOUTH
10980 WEST



(R-160)

4.33W
0.70S
~~4.12W~~
(R-159)

15' 80° 50'
80° 52 1/2'



392425
805440

FILE NO. _____
DRAWING NO. _____
SCALE 1"=1000'
MINIMUM DEGREE OF ACCURACY 1/200
PROVEN SOURCE OF ELEVATION B.M. EL. 839

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) William R. Mosser
R.P.E. _____ L.L.S. 561

PLACE SEAL HERE

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



DATE 15 JUNE 1979
OPERATOR'S WELL NO R-154
API WELL NO 47-095-0716
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 790' WATER SHED SANGHO CREEK
DISTRICT CENTERVILLE COUNTY TYLER
QUADRANGLE MIDDLEBOURNE, W.VA. 7 1/2' QUAD. West Union
SURFACE OWNER E.O. McCULLOUGH ACREAGE 1934
OIL & GAS ROYALTY OWNER SAME LEASE NO. _____ LEASE ACREAGE _____

PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE _____ PLUS OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUS AND ABANDON _____ CLEAN OUT AND REPLUS _____
TARGET FORMATION UPPER DEVONIAN ESTIMATED DEPTH 2900' AUG 10 1979
WELL OPERATOR C.W. RIGGS, INC. DESIGNATED AGENT C.W. RIGGS
ADDRESS Box 358, ST. MARYS, W.VA. ADDRESS Box 358, ST. MARYS, W.VA.

6-6 ~~33~~ Bearsville (366)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED
FEB 22 1980

Oil and Gas Division
WELL RECORD 87

OIL & GAS DIVISION
DEPT. OF MINES
Rotary Oil _____
Cable _____ Gas _____
Recycling _____ Comb.
Water Flood _____ Storage _____
Disposal _____ (Kind) _____

Quadrangle MIDDLEBOURNE
Permit No. 47-095-0716

Company P. W. Riggs, Inc.
Address Box 358, St. Marys, W. Va.
Farm McCullough Acres 19.75
Location (waters) SANCHO CREEK
Well No. R-154 Elev. 790'
District CENTERVILLE County TYLER
The surface of tract is owned in fee by _____
Paul McCullough
Address BEARVILLE, W. VA.
Mineral rights are owned by SAME
Address SAME
Drilling Commenced 11-10-79
Drilling Completed 11-17-79
Initial open flow _____ cu. ft. _____ bbls.
Final production 40,000 cu. ft. per day _____ bbls.
Well open _____ hrs. before test 800* RP.
Well treatment details:

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13/10" MIN.	250'	250'	
9 5/8			
8 5/8			
7	1020	1020	
5 1/2			
4 1/2			
3			
2			
Liners Used			

Attach copy of cementing record.

PERFORATIONS 2671-78 11shots 40 MCF

FRACTURE TREATMENT

1500 BBL H₂O, 100,000* 20-40 SAND, 130,000 SCF N₂
Coal was encountered at N/A Feet _____ Inches _____
Fresh water N/A Feet _____ Salt Water N/A Feet _____
Producing Sand GEORGEON Depth 2671-2708

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
COW RUN			1100	1148		* TOP LOGGED
2ND SALT			1330	1368		
MAXON			1578	1600		
KEENER			1626	1662		
INSUN			1670	1868		
SQUAW			1886	1903		
WEIR			2034	2070		
WELCH SPRAY STRINGERS			2100	2206		
BEREA			2264	2272		
30 FOOT			2481	2508		

~~2798
1868
930 ft.
Exploratory~~

(over)

* Indicates Electric Log tops in the remarks section.

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
FORDON			2671	2708	GAS	
4th SAND			2790	2798		
						T.D. @ least 2904' - btm. 4 1/2" csg. drlr TD on log 2900

Date 2-1 1950

APPROVED C. W. Riggs, Inc. Owner

By [Signature]



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

OIL & GAS DIVISION
DEPT. OF MINES

RECEIVED
JUL 20 1979

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

DATE 7-6-79

Surface Owner E.O. McCullough

Company C.W. Riggs, Inc.

Address Bearsville, W. Va.

Address Box 358, St. Marys, W. Va.

Mineral Owner E.O. McCullough

Farm E.O. McCullough Acres 193/4

Address Bearsville, W. Va.

Location (waters) Sancho Creek

Coal Owner E.O. McCullough

Well No. R-154 Elevation 790'

Address Bearsville, W. Va.

District Centerville County Tyler

Coal Operator None

Quadrangle Middlebourne

Address _____

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22, of the W. Va. Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 3-23-80.

INSPECTOR

TO BE NOTIFIED Phillip Tracy

ADDRESS Middlebourne, W. Va.

PHONE 758-4573

GENTLEMEN Tyler & Bagley
Deputy Director - Oil & Gas Division

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 June 6 1979 by Paul & Mary McCullough made to Loren Bagley and recorded on the 22nd day of June 1979, in Tyler County, Book 219 Page 437

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.

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND
MORGANTOWN, WEST VIRGINIA 26505
AC-304 - 292-6331

Very truly yours,

(Sign Name) C.W. Riggs

Address of Well Operator

Well Operator
Box 358
St. Marys
City of Town
W. Va.
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.

BLANKET BOND

47-095-0716

PERMIT NUMBER

**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 Little Swiss Drilling NAME C.W. Riggs, Inc.

ADDRESS Buchannon, W.Va. ADDRESS St. Marys, W.Va.

TELEPHONE 472-6396 TELEPHONE 684-3974

ESTIMATED DEPTH OF COMPLETED WELL 2900' ROTARY X CABLE TOOLS

PROPOSED GEOLOGICAL FORMATION Upper Devonian

TYPE OF WELL: OIL GAS COMB X STORAGE DISPOSAL

RECYCLING WATER FLOOD OTHER

TENTATIVE CASING PROGRAM.

CASING AND TUBING SIZE	USED FOR DRILLING	FEET IN WELL	CEMENT SET UP OR SACKS - CUBIC FT
20 - 16			
13 - 10			
9 - 5/8			
8 - 5/8 250'		250'	Cemented Top-Bottom
7			
5 1/2			
4 1/2		2900'	200 sks.
3			Perf. Top
2			Perf. Bottom
Links			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 120 FEET SALT WATER FEET

APPROXIMATE COAL DEPTHS

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