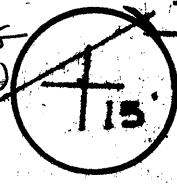


Latitude 39° 20'

2850' SOUTH
2800' WEST

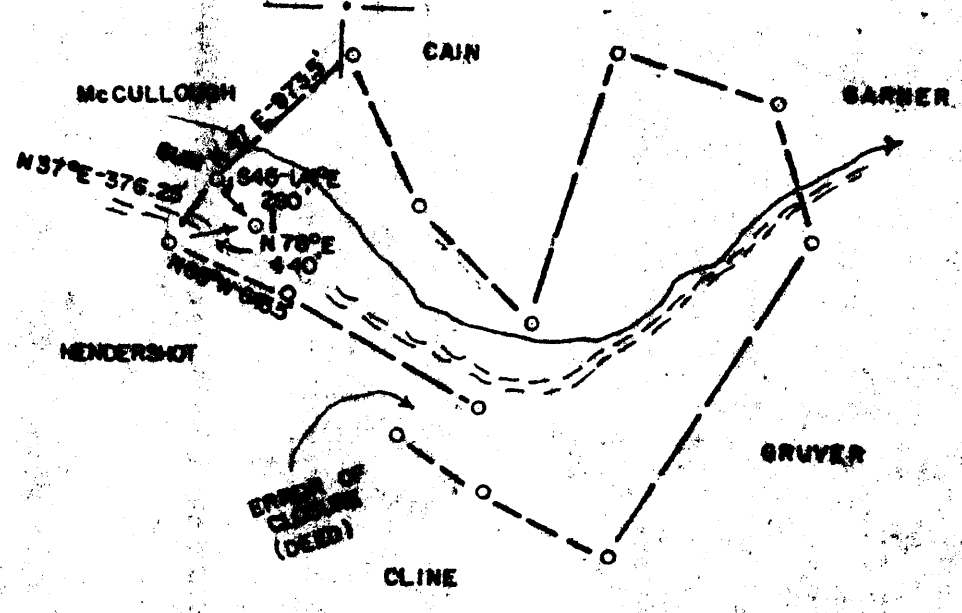
1.05 S 113 S
1.84 W 161 W



103.61 ACRES

SURFACE: C.K. McCULLOUGH
MINERALS: C.K. McCULLOUGH 1/2
L.H. JAMES HRS. 1/2

39 19 00
80 52 05



ACCURACY: 1" / 200'

Source of Elevation LONG RUN (766')

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 8 of the rules and regulations of the oil and gas section of the mining laws of West Virginia.

WEIR 2800'

- Well Location GAS
- Well Depth
- Abandonment
- Fracture
- Repair

Company INDUSTRIAL GAS ASSOCIATES
 Address GREENMCH, COVA
 Farm C.K. McCULLOUGH
 Tract _____ Acres 103.61 Lease No. _____
 Well (Farm) No. 1 Serial No. _____
 Elevation (Spirit Level) 1100' *SC*
 Quadrangle WEST UNION (7.5') (15')
 County TYLER District CENTERVILLE
 Engineer CHET WATERMAN
 Engineer's Registration No. 2788
 File No. 72-100 Drawing No. _____
 Date 3/14/79 Scale 1" = 1000'

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION
CHARLESTON

WELL LOCATION MAP
FILE NO. 47-095-0731

+ Denotes location of well on United States Topographic Maps, scale 1 to 25,000 latitude and longitude lines being represented by border lines as shown.
- Denotes one inch space on border line of original tracing.

6-6 STANLEY 90

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION

Date January 10, 19 80

FORM IV-35
(Obverse)

Operator's
Well No. McCullough #1

[08-78]

WELL OPERATOR'S REPORT
OF

API Well No. 47 - 095 - 0731
County Putnam

DRILLING, PRODUCE AND/OR STIMULATING, OR OTHER WELL CHANGE

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

LOCATION: Elevation: 1100 Watershed: Long Run
District: Centerville County: Tyler Quadrangle: West Union 7 1/2

WELL OPERATOR Industrial Gas Associates DESIGNATED AGENT Dallas Frederick
Address Box 1610 Address Box 13
Greenwich, CT 06830 Nobe, WV

PERMITTED WORK: Drill / Convert / Drill deeper / Re-drill / Fracture or stimulate
Plug off old formation / Perforate new formation /
Other physical change in well (specify) _____

PERMIT ISSUED ON September 21, 19 79 OIL & GAS INSPECTOR FOR THIS WORK:
Name Phillip Tracey
Address Rt. 23
Alma, WV 26320

GEOLOGICAL TARGET FORMATION: Berea Depth 2500-2506 feet
Depth of completed well, 2520 feet Rotary / Cable Tools
Water strata depth: Fresh, 80 feet; salt, N/A feet.
Coal seam depths: N/A Is coal being mined in the area?
Work was commenced December 20, 19 79, and completed December 29, 19 79

DRILLING AND TUBING PROGRAM

DRILLING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR BAGS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		
Drill pipe									Kinds
8 5/2 CW	22	X			246	246	80 sks.	Class A Neat	
Intermediate									
Production	4 1/2 CW	10.5	X			2490	125 sks.	Leather net 2490	
Stringers	1" SML		X			2375			
								Perforations:	
								Top Bottom	

PRODUCING FORMATION DATA

OIL & GAS DIVISION
DEPT. OF MINES
Pay zone depth 2316-2423 feet

Producing formation Weir
Gas: Initial open flow, _____ Mcf/d Oil: Initial open flow, _____ Bbl/d
Final open flow, 300 Mcf/d Final open flow, 1 Bbl/d
Time of open flow between initial and final tests, 4 hours

650 MCF
280

Static rock pressure, _____ psig (surface measurement) after _____ hours shut in

[If applicable due to multiple completion--]

Second producing formation Injun & Keener Pay zone depth 2067-2070 feet

Gas: Initial open flow, _____ Mcf/d Oil: Initial open flow, _____ Bbl/d
Final open flow, 350 Mcf/d Final open flow, 1 Bbl/d

Time of open flow between initial and final tests, 4 hours

Static rock pressure, 800 psig (surface measurement) after 12 hours shut in

FEB 13 1980

[08-78]

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

Weir: Fraced with 346 bbls. water
28,000# sand and 50,000 SCF N²

Perforated Intervals	
2316-2320	2 holes
2332-2346	10 holes
2352-2355	2 holes
2394-2406	8 holes
2416-2423	5 holes

Injun & Keener: Fraced with 305
bbls. water 25,000# sand and 50,000
SCF N²

2067-2070	3 holes
2093-2097	3 holes
2104	1 hole
2109-2116	7 holes
2127-2131	4 holes
2134-2142	7 holes

WELL LOG

FORMATION	Color	Hard- ness	30 Top Feet	Bottom Feet	Includes Infiltration of Oil, Gas and salt water, when applicable
Soil	brown	soft	0	10	
Sand & Shale	black	soft	10	987	
Shale	black	soft	987	1150	
Sand	white	hard	1150	1284	
Shale	black	soft	1284	1330	
Sand	white	hard	1330	1362	
Shale	black	soft	1362	1385	
Sand	white	hard	1385	1425	
Shale	black	soft	1425	1465	
Sand	white	hard	1465	1505	
Shale	black	soft	1505	1525	
Sand	white	hard	1525	1638	
Shale	black	soft	1638	1840	
Sand	white	hard	1840	1919	
Shale	black	soft	1919	1967	
Big Lime	white	hard	1967	2048	
Sand Keener	white	soft	2048	2080	
Sand Injun	brown	soft	2080	2148	
Shale	black	soft	2148	2314	
Sand Weir	black	soft	2314	2434	
Shale	black	soft	2434	2500	
Sand <u>Berea</u>	white	hard	2500	2506	
Shale	black	soft	2506	2520	
T. D.				2520	

(Attach separate sheets to complete as necessary.)

Industrial Gas Associates
Well Operator

By *John Cushing*
Agent

NOTE: Regulation 1.0111 provides as follows:

"The term 'log' or 'well log' shall mean a systematic, detailed geological record of all formations, including soil, encountered in the well from top to bottom."



Petroleum Services
Box 4081
Parkersburg, WV.

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

RECEIVED
SEP 21 1979
OIL & GAS DIVISION
DEPT. OF MINES

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

DATE September 20, 1979
Company Industrial Gas Associates
Address Box 1610, Greenwich, CT
Farm C. K. McCullough Acres 103.61
Location (waters) Long Run
Well No. 1 Elevation 1100
District Centerville County Tyler
Quadrangle West Union 7 1/2

Surface Owner C. K. McCullough
Address Greenwood, WV
Mineral Owner C. K. McCullough
Address Greenwood, WV
Coal Owner N/A
Address N/A
Coal Operator N/A
Address N/A

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All operations 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 5-24-80.

Deputy Director - Oil & Gas Division

INSPECTOR
TO BE NOTIFIED Phillip Tracy
ADDRESS Box 173 Dodd St., Middlebourne, WV
PHONE 758-4573

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 February 2 1979 by C. K. McCullough made to Petroleum Services and recorded on the 13 day of Feb. 1979 in Doddridge County, Book 218 Page 207

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

Address
of
Well Operator

Very truly yours, John Cushing
(Sign Name) Industrial Gas Associates
Well Operator
P.O. Box 1610

Street
Greenwich
City or Town
Connecticut 06830
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.

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 Gene Stalnaker, Inc. NAME Dallas Frederick
 ADDRESS Letter Gap, WV ADDRESS Nobe, WV
 TELEPHONE 462-7092 TELEPHONE 354-7484
 ESTIMATED DEPTH OF COMPLETED WELL: 2700 ROTARY X CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Gordon
 TYPE OF WELL: OIL X 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			
9 - 5/8			
8 - 5/8	240	240	Circ.
7			
5 1/2			
4 1/2		2700	125 sks
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 80 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