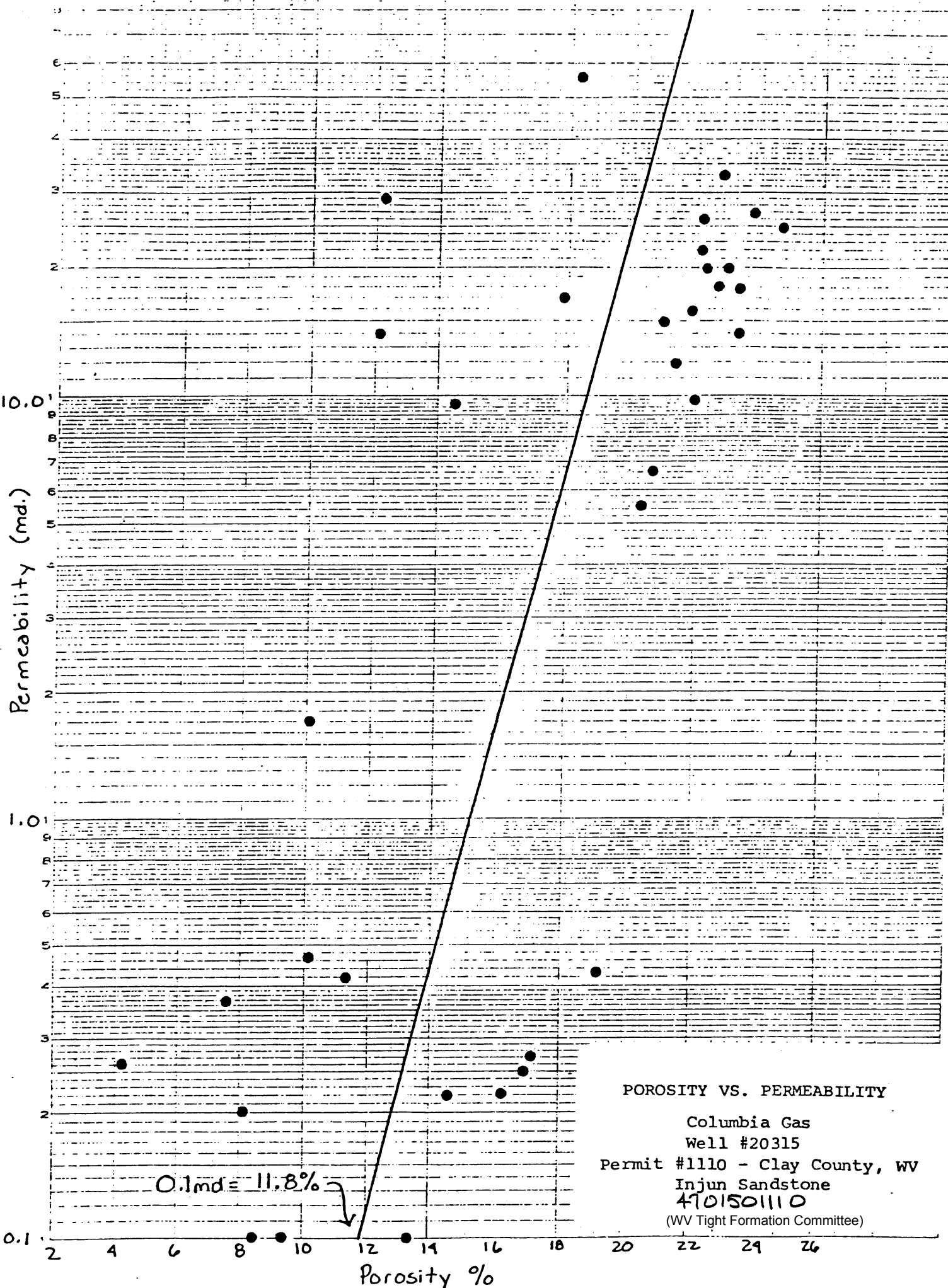


RIETZGEN CORPORATION
MADE IN U.S.A.

NO. 1400P-1310 RIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 INCHES X 10 INCHES PER 1000



POROSITY VS. PERMEABILITY

Columbia Gas
Well #20315
Permit #1110 - Clay County, WV
Injun Sandstone
4701501110
(WV Tight Formation Committee)

42-54

Clay-1110



OILFIELD RESEARCH, INC.

WHOLE CORE ANALYSIS REPORT

Company Columbia Gas Transmission Corp. Elevation N.A. File No. 75010036
 Lease _____ Well 20315 Formation See Below Date Cored 10/22/75
 Field Grannys Fork Orig. Fluid FW Gel Date Report 10/30/75
 County Clay State W. Va. Type Of Core Diamond Permit No. _____
 Location (Waters) Summers Fork Remarks Sampled by OR-JCM

LITHOLOGICAL ABBREVIATIONS

SAND-SD DOLOMITE-DOL ANHYDRITE-ANHY SANDY-SDY FINE-FN CRYSTALLINE-XLN BROWN-BRN FRACTURED-FRAC SLIGHTLY-SL/
 SHALE-SH CHERT-CH CONGLOMERATE-CONG SHALEY-SHY MEDIUM-MED GRAIN-GRN GRAY-GY LAMINATION-LAM VERY-W/
 LIME-LM GYPSUM-GYP FOSSILIFEROUS-FOSS LIMY-LMY COARSE-CSE GRANULAR-GRNL VUGGY-VGY STYLOLITIC-STY WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS		POROSITY PERCENT	LITHOLOGY AND REMARKS	
		HORIZONTAL				VERTICAL
		MAX	90°			

					Percent Oil	Percent Water
	INJUN					
1	1885.3-86.4	14.1	12.	12.2	9.3	49.7
2	1886.4-87.6	56.2	52.	18.3	7.5	56.1
3	1887.6-88.9	29.	24.	12.3	9.8	49.0
4	1888.9-90.3	0.22	<0.10	14.6	10.9	54.8
5	1890.3-91.8	0.27	0.27	17.2	23.1	43.5
6	1891.8-93.1	0.42	0.42	11.3	21.3	41.6
7	1893.1-94.8	0.47	0.37	10.1	27.8	47.0
8	1894.8-95.9	<0.10	<0.10	8.6	23.0	53.6
9	1895.9-97.2	0.37	0.34	7.7	22.1	43.2
10	1897.2-98.4	1.7	1.7	10.1	22.5	47.7
11	1898.4-99.9	0.20	0.20	8.2	23.3	41.8
12	1899.9-01.3	0.26	<0.10	4.2	7.3	53.2
13	1901.3-02.8	<0.10	<0.10	9.4	26.1	45.6
14	1902.8-04.2	17.2	15.	17.9	21.6	47.7
15	1904.2-05.4	0.22	0.20	16.3	23.8	55.1
16	1905.4-06.8	9.6	8.2	14.5	18.5	46.0
17	1906.8-08.3	5.5	3.3	20.4	20.3	49.3
18	1908.3-09.5	33.	33.	22.8	18.8	42.3
19	1909.5-10.9	18.	17.	22.7	21.5	42.7
20	1910.9-12.4	20.	20.	22.4	19.0	43.8
21	1912.4-13.8	27.	26.	23.8	18.2	40.7
22	1913.8-14.9	26.	26.	24.6	16.8	39.8
23	1914.9-16.3	26.	26.	22.2	17.2	39.2
24	1916.3-17.6	22.	22.	22.2	19.1	42.2
25	1917.6-18.8	16.	16.	21.9	17.1	42.2
26	1918.8-19.9	14.	14.	23.3	16.6	41.1
27	1919.9-21.2	17.	17.	23.3	17.4	40.6
28	1921.2-22.8	20.	20.	23.0	18.1	40.0

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use this report is made. The interpretations or opinions expressed represent the best judgment of Oilfield Research, Inc. (all errors and omissions excepted) but Oilfield Research, Inc. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or maintenance of the well.

WHOLE CORE ANALYSIS REPORT

Loco _____

Well No. 20315

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS			POROSITY PERCENT	LITHOLOGY AND REMARKS	
		HORIZONTAL		VERTICAL			
		MAX.	90°				

					Percent Oil	Percent Water
29	1922.8-24.0	9.8	9.8	22.0	16.2	44.3
30	1924.0-25.5	12.	11.	21.4	16.0	44.0
31	1925.5-26.5	15.	14.	21.0	16.0	45.9
32	1926.5-27.8	6.7	5.4	20.8	22.3	46.2
33	1927.8-29.2	0.43	0.42	19.2	23.0	49.9
34	1929.2-30.5	0.25	0.22	17.0	21.1	55.7
35	1930.5-31.6	<0.10	<0.10	13.4	9.3	76.3
SQUAW						
36	1965.0-66.0	2.2	2.2	21.3	33.0	34.7
37	1966.0-67.3	2.0	2.0	22.5	32.9	31.2
38	1967.3-68.3	2.0	2.0	22.7	34.6	27.1
39	1968.3-69.7	1.1	0.90	21.8	32.0	26.6
40	1969.7-71.1	1.1	1.1	21.8	30.6	24.1
41	1971.1-72.5	1.4	1.4	22.7	30.1	20.4
42	1972.5-73.8	2.4	2.4	23.0	30.2	25.4

AVERAGES

40.2'	1888.9-1931.6	10.	10.	17.9	20.1	45.2	INJUN
8.8'	1965.0-1973.8	1.7	1.7	22.2	31.8	26.7	SQUAW