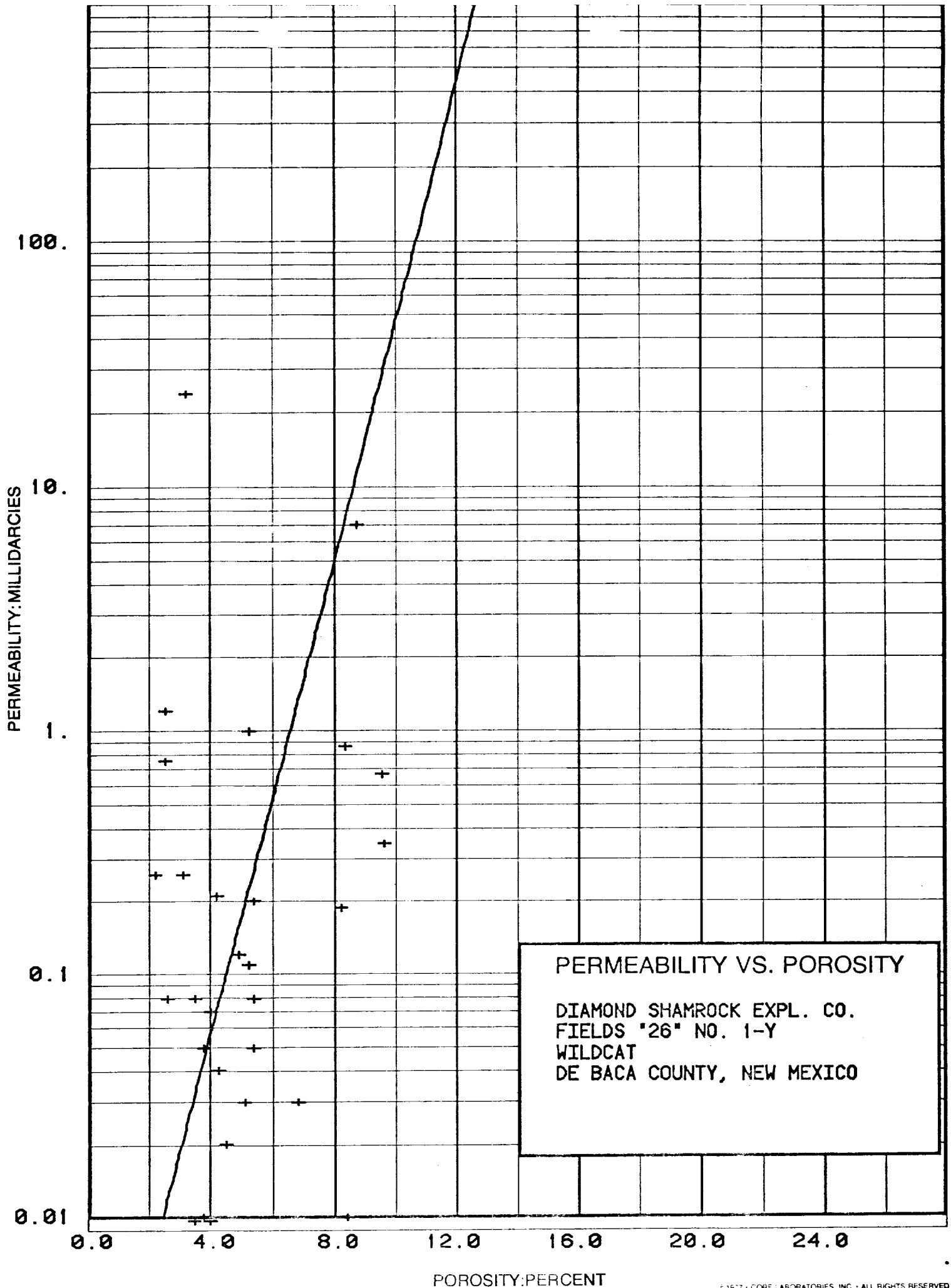
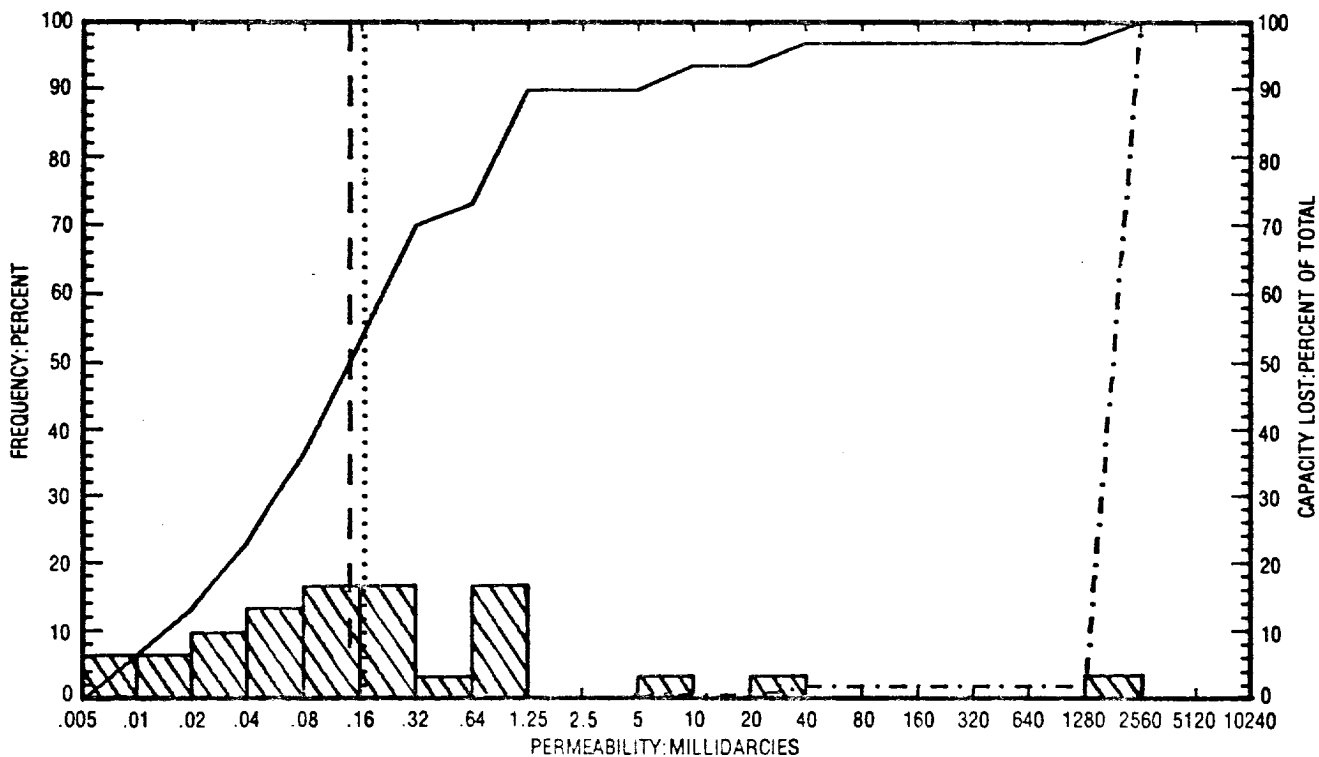
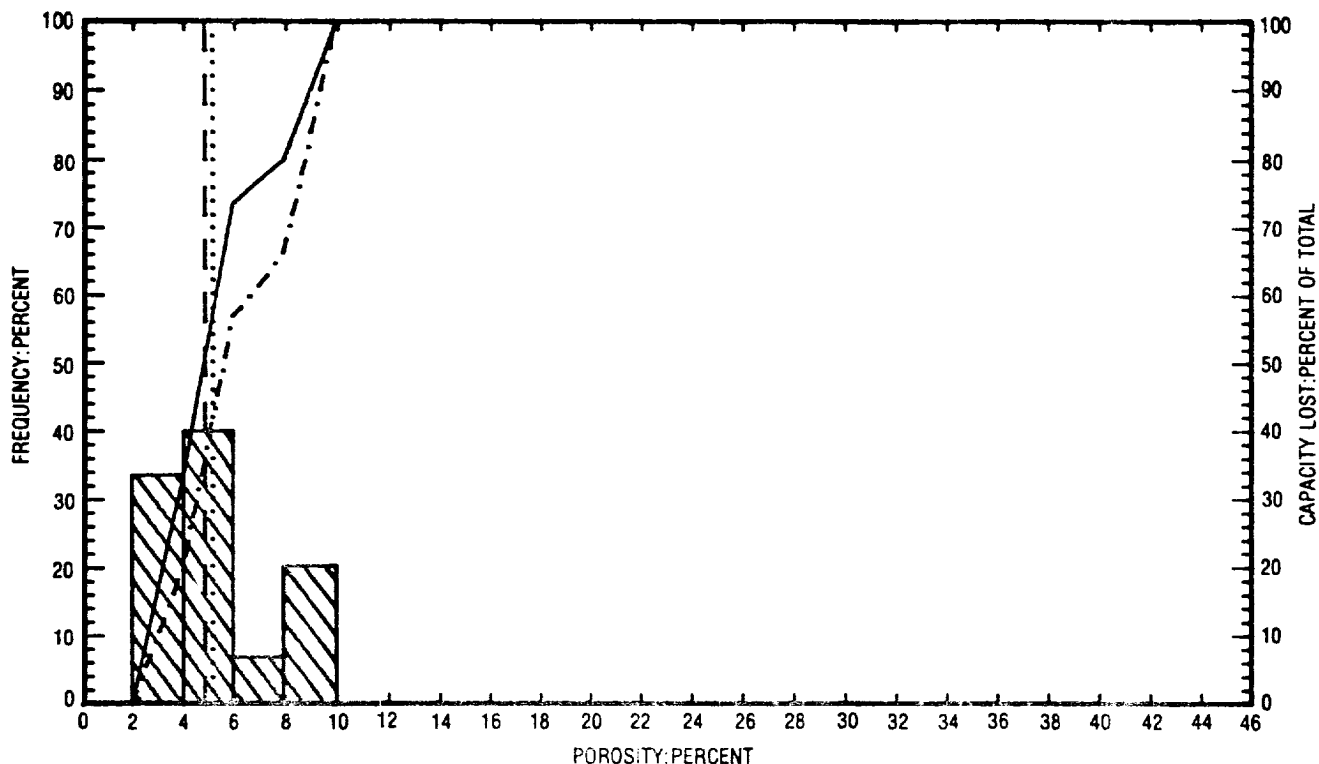






PERMEABILITY AND POROSITY HISTOGRAMS

DIAMOND SHAMROCK EXPL. CO.
FIELDS "26" NO. 1-Y
WILDCAT
DE BACA COUNTY, NEW MEXICO

LEGEND
ARITHMETIC MEAN POROSITY
GEOMETRIC MEAN PERMEABILITY
MEDIAN VALUE
CUMULATIVE FREQUENCY
CUMULATIVE CAPACITY LOST

PERMEABILITY VS POROSITY

COMPANY: DIAMOND SHAMROCK EXPL. CO. WELL : FIELDS '26" NO. 1-Y
FIELD : WILDCAT COUNTY, STATE: DE BACA COUNTY, NEW MEXICO

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY MINIMUM MAXIMUM	POROSITY MIN. MAX.	POROSITY AVERAGE	PERMEABILITY AVERAGES ARITHMETIC HARMONIC GEOMETRIC
1260.0 - 1290.0	1 (+)	0.010 5000.0	0.0 40.0	5.3	82. 0.06 0.24

EQUATION OF REDUCED LINE RELATING PERMEABILITY(K) TO POROSITY :
 $\text{LOG}(K) = (\text{SLOPE})(\text{POROSITY}) + \text{LOG OF INTERCEPT}$
 $K = \text{ANTILOG}((\text{SLOPE})(\text{POROSITY}) + \text{LOG OF INTERCEPT})$

RANGE EQUATION OF THE LINE

1 PERM = ANTILOG((0.4900)(POROSITY) + -3.2147)

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CORE LABORATORIES, INC.,
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: DIAMOND SHAMROCK EXPL. CO. WELL : FIELDS "26" NO. 1-Y
FIELD : WILDCAT COUNTY, STATE: DE BACA COUNTY, NEW MEXICO

AIR PERMEABILITY : MD. (HORIZONTAL) RANGE USED 0.000 TO 2245.
POROSITY : PERCENT (HELIUM) RANGE USED 0.0 TO 46.0

(PERMEABILITY UNCORRECTED FOR SLIPPAGE)

DEPTH LIMITS : 1260.0 - 1290.0 INTERVAL LENGTH : 30.0
FEET ANALYZED IN ZONE : 30.0 LITHOLOGY EXCLUDED : NONE

DATA SUMMARY

POROSITY	PERMEABILITY AVERAGES	
AVERAGE	ARITHMETIC	HARMONIC GEOMETRIC
5.2	76.	0.01 0.16

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: DIAMOND SHAMROCK EXPL. CO. WELL : FIELDS "26" NO. 1-Y
FIELD : WILDCAT COUNTY, STATE: DE BACA COUNTY, NEW MEXICO

GROUPING BY POROSITY RANGES

POROSITY RANGE	FEET IN RANGE	AVERAGE POROSITY	AVERAGE PERM. (GEOM.)	(ARITH)	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
2.0 - 4.0	10.0	3.1	0.172	2.7	33.3	33.3
4.0 - 6.0	12.0	4.8	0.072	0.161	40.0	73.3
6.0 - 8.0	2.0	7.3	8.2	1123.	6.7	80.0
8.0 - 10.0	6.0	8.8	0.373	1.5	20.0	100.0

TOTAL NUMBER OF FEET = 30.0

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STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: DIAMOND SHAMROCK EXPL. CO. WELL : FIELDS "26" NO. 1-Y
 FIELD : WILDCAT COUNTY, STATE: DE BACA COUNTY, NEW MEXICO

GROUPING BY PERMEABILITY RANGES

PERMEABILITY RANGE	FEET IN RANGE	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	AVERAGE POROSITY	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.005 - 0.010	2.0	0.005	0.005	3.7	6.7	6.7
0.010 - 0.020	2.0	0.010	0.010	6.1	6.7	13.3
0.020 - 0.039	3.0	0.026	0.027	5.5	10.0	23.3
0.039 - 0.078	4.0	0.051	0.052	4.4	13.3	36.7
0.078 - 0.156	5.0	0.092	0.094	4.3	16.7	53.3
0.156 - 0.312	5.0	0.222	0.224	4.6	16.7	70.0
0.312 - 0.625	1.0	0.350	0.350	9.6	3.3	73.3
0.625 - 1.250	5.0	0.879	0.898	5.6	16.7	90.0
5.- 10.	1.0	7.0	7.0	8.7	3.3	93.3
20.- 40.	1.0	24.	24.	3.2	3.3	96.7
1280.- 2560.	1.0	2245.	2245.	7.7	3.3	100.0

TOTAL NUMBER OF FEET = 30.0

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: DIAMOND SHAMROCK EXPL. CO. WELL : FIELDS "26" NO. 1-Y
FIELD : WILDCAT COUNTY, STATE: DE RACA COUNTY, NEW MEXICO

POROSITY--FEET OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

POROSITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	ARITH MEAN	MEDIAN
0.0	0.0	0.0	30.0	100.0	5.2	4.8
2.0	0.0	0.0	30.0	100.0	5.2	4.8
4.0	10.0	19.7	20.0	80.3	6.2	5.7
6.0	22.0	56.8	8.0	43.2	8.4	8.7
8.0	24.0	66.1	6.0	33.9	8.8	9.0
10.0	30.0	100.0	0.0	0.0		

TOTAL STORAGE CAPACITY IN POROSITY--FEET = 155.5

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STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: DIAMOND SHAMROCK EXPL. CO. WELL : FIELDS "26" NO. 1-Y
FIELD : WILDCAT COUNTY, STATE: DE BACA COUNTY, NEW MEXICO

MILLIDARCY-FEET OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

PERMEABILITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	GEOM MEAN	MEDIAN
0.005	0.0	0.0	30.0	100.0	0.16	0.14
0.010	2.0	0.0	28.0	100.0	0.24	0.16
0.020	4.0	0.0	26.0	100.0	0.30	0.18
0.039	7.0	0.0	23.0	100.0	0.42	0.22
0.078	11.0	0.0	19.0	100.0	0.65	0.29
0.156	16.0	0.0	14.0	100.0	1.30	0.72
0.312	21.0	0.1	9.0	99.9	3.45	1.02
0.625	22.0	0.1	8.0	99.9	4.59	1.09
1.250	27.0	0.3	3.0	99.7	72.25	28.28
2.500	27.0	0.3	3.0	99.7	72.25	28.28
5.	27.0	0.3	3.0	99.7	72.25	28.28
10.	28.0	0.6	2.0	99.4	232.12	40.00
20.	28.0	0.6	2.0	99.4	232.12	40.00
40.	29.0	1.7	1.0	98.3	2245.00	1810.19
80.	29.0	1.7	1.0	98.3	2245.00	1810.19
160.	29.0	1.7	1.0	98.3	2245.00	1810.19
320.	29.0	1.7	1.0	98.3	2245.00	1810.19
640.	29.0	1.7	1.0	98.3	2245.00	1810.19
1280.	29.0	1.7	1.0	98.3	2245.00	1810.19
2560.	30.0	100.0	0.0	0.0	2245.00	1810.19

TOTAL FLOW CAPACITY IN MILLIDARCY-FEET (ARITHMETIC) = 2282.74