NTS 92-I-2

JAMES BALL, P.ENG.
PRESIDENT

IMPERIAL METALS & POWER LTD. Bus.: 688-9294
3060-200 Granville Street, Vancouver, B.C. V6C 1S4 RES.: 594-0531
1758 W 8th
738-3144
574 9809

MERRITT COAL

SUMICOL REPORT

APRIL 1970

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IMPERIAL METALS & POWER LTD. 200-1050 W. PENDER ST., VANCOUVER, B.C. V6E 2K7 TELEX 04-508688

Ph. 604-738-3144
P.O. Box 34183, Stn. "D",
Vancouver, B.C. V6J 4N1.

March 18, 1977.

Mr. Paul R. Vogt,
Exploration Supervisor,
Imperial Oil Limited
500 Sixth Ave. S.W.
Calgary, Alta. T2P 0S1

Dear Sir:

Merritt Coal

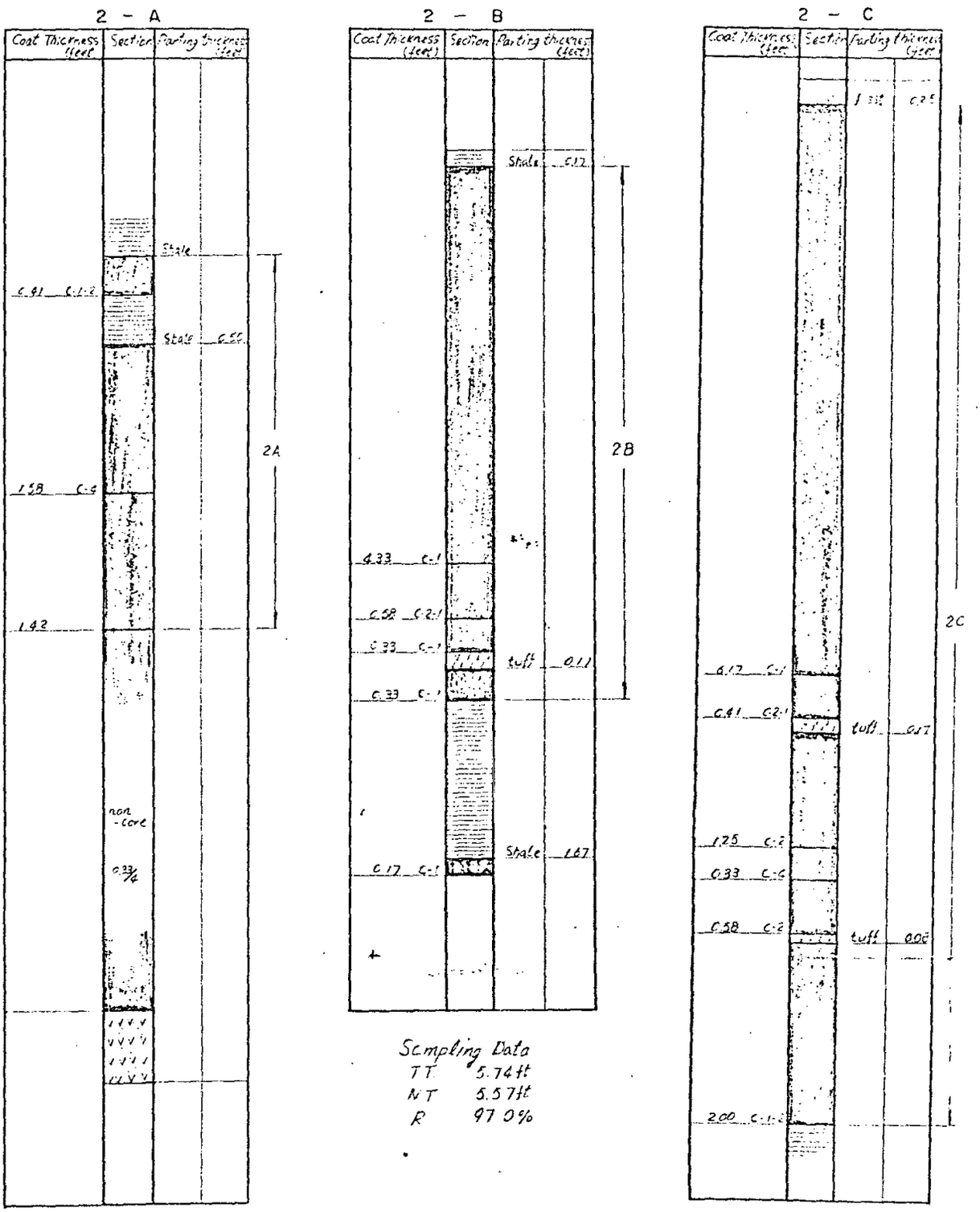
Enclosed is a copy of Figure 2 of the Columnar Section of the coal sampled from No. 2 Drilling which may have been omitted from the copy of the Sumicol report which you received.

Yours truly,

James Ball

James Ball, President.

FIG. 2 COLUMNAR SECTION OF COAL SAMPLED FROM



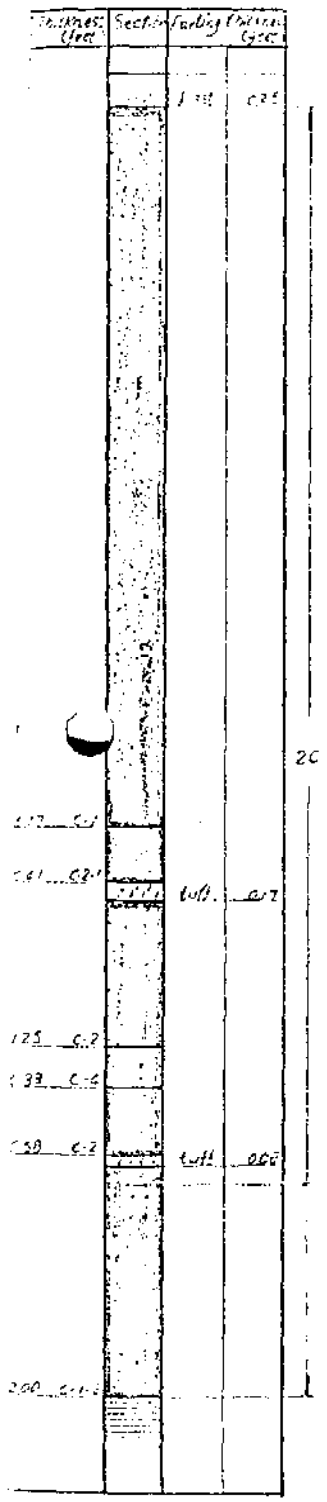
Sampling Data
T.T. 3.91 ft
N.T 3.41 ft
R 87.3 %

Sampling Data
T.T. 5.74 ft
N.T 5.57 ft
R 97.0 %

Sampling Data
T.T. 10.99 ft
N.T 10.74 ft
R 97.8 %

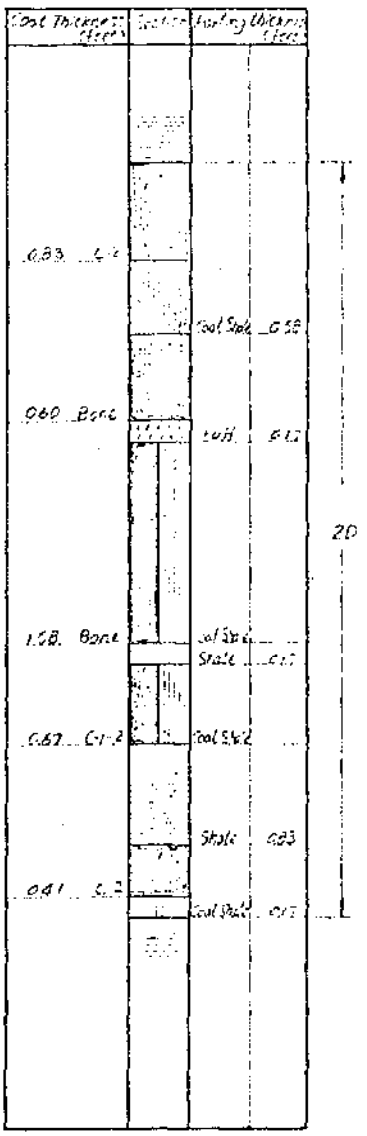
AL SAMPLED FROM NO.2 DRILLING CORE SCALE 1 INCH = 1 FEET

2 - C



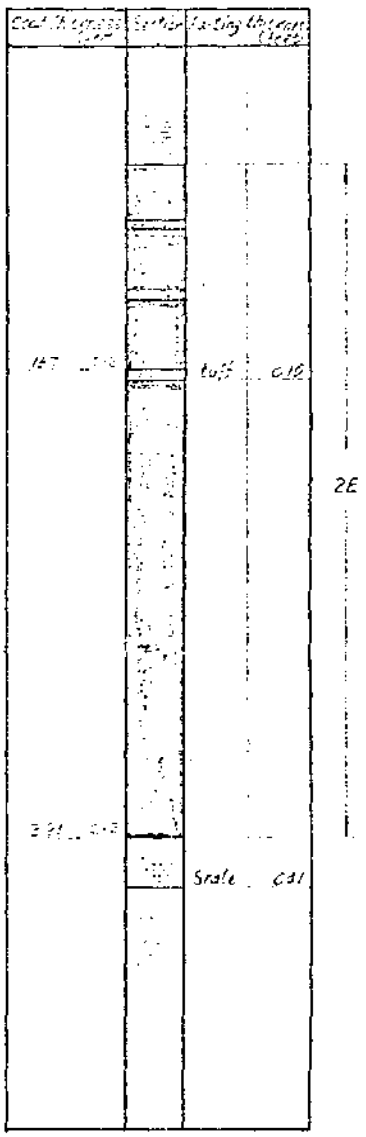
Sampling Data
TT 10.99ft
NT 10.76ft
R 97.8%

2 - D



Sampling Data
TT 6.01ft
NT 6.09ft
R 66.1%

2 - E



Sampling Data
TT 9.99ft
NT 5.56ft
R 91.6%

IMPERIAL METALS & POWER LTD.

Ph. 604-738-3144

P.O. Box 34183, Stn. "D",
Vancouver, B.C. V6J 4N1.
February 19th, 1977.

DESCRIPTION OF PROPERTIES

The Company holds two iron properties with large reserves and two coal properties with substantial reserves of good quality thermal coal. It also retains an interest in a limestone property which is well located with respect to transportation and future market growth.

TULAMEEN COAL

The Tulameen coal deposit, also known as Blakeburn Coal, is favourably located within seven miles by existing road from the railway at Coalmont. Rail distance to Vancouver is 270 miles (less than one half the rail distance of competing coals). Road distance to Vancouver is less than 200 miles. Several million tons of the coal can be mined from surface with quite favourable stripping ratios. The coal is ranked as high-volatile bituminous "B" (Hughes, 1954) and a high-volatile bituminous "C" by most previous examiners. It may be handled and stock-piled by normal methods without slacking or danger of self-ignition.

The sulphur content of the Tulameen coal is 0.4 to 0.5% which is well below that of most bunker oils. The heating value of the Tulameen coal is about 8,000 BTU's per pound for run-of-mine material or 10,500 BTU's per pound for coal which may be either a selectively mined product or washed run-of-mine material.

LODESTONE IRON

The Lodestone iron deposit, which contains the largest proven iron reserve in British Columbia is about 8 miles further along the existing road which serves the Tulameen coal. The main proven reserves are at an elevation of about 6,000 ft. while the Tulameen coal and the railway at Coalmont are at 4,500 ft. and 2,500 ft. respectively. The iron mineralization occurs in the form of magnetite contained in a large

ultra-basic intrusive. The intrusive is zoned with a dunite core surrounded by shells of clinopyroxenite. The outer shell of hornblende clinopyroxenite contains the higher percentage of iron which varies from 5 to 25% and also contains about 0.1% vanadium. The iron may be magnetically separated to provide a 68 - 69% Fe concentrate which contains about 0.26% vanadium. The present value of the contained vanadium is uncertain but may in the future contribute to earnings.

Recent work on the Lodestone property carried out by Cleveland-Cliffs Iron Company under the direction of Dofasco has established that proven and probable reserves within the proposed pit limits are 91,171,000 tons (2,000 lbs.) with a soluble iron content of 17.3% and a very low stripping ratio of 0.05 cubic yards of waste per ton.

Metallurgical tests have established that this reserve can produce 17,587,000 tons of 68% + Fe dry concentrate. This quantity of concentrates can furnish 1.17 million tons of dry concentrate per year for a period of fifteen years. Alternatively, these concentrates can be processed to yield 900,000 tons per year of 91% Fe sponge iron for a period of fifteen years.

The Tulameen coalfield may be utilized to furnish the coal to reduce the iron concentrates to sponge iron. The relationship of the two deposits in distance and elevation makes it possible to convey both the iron and coal in slurry form by gravity pipelines to a processing plant at the railway near Coalmont.

MERRITT COAL

The Company holds by Crown Grant the coal rights previously held by Middlesboro Collieries on the outskirts of the town of Merritt. The railway skirts the minesite. Water, power and all other services are immediately available. Rail distance to Vancouver is 230 miles.

The coal is of similar but somewhat higher quality than the Tulameen coal. It is clearly ranked as high volatile bituminous "B". At least one of the seams has fairly good coking properties but the reserve contained in this seam does not warrant development as a source of coking coal only. In the same period of time (from about 1900 to 1950) that several million tons of coal were mined by underground methods from the Tulameen deposit, an approximately equal amount of coal was mined by underground methods at Merritt.

A preliminary study of the Merritt Coal by Sumicol Consultants in 1970 estimated that the mineable reserves are sufficient to furnish about 500,000 tons (2,000#) of clean coal per year for a period of fifteen years. All mining would be underground. Direct mining and washing cost was estimated at $4.75 per ton with a total capital cost of $5,700,000. A rough updating of the 1970 estimates indicates a mining and washing cost of $12 to $14 per ton and a total capital cost in the order of $12,000,000 to $15,000,000.

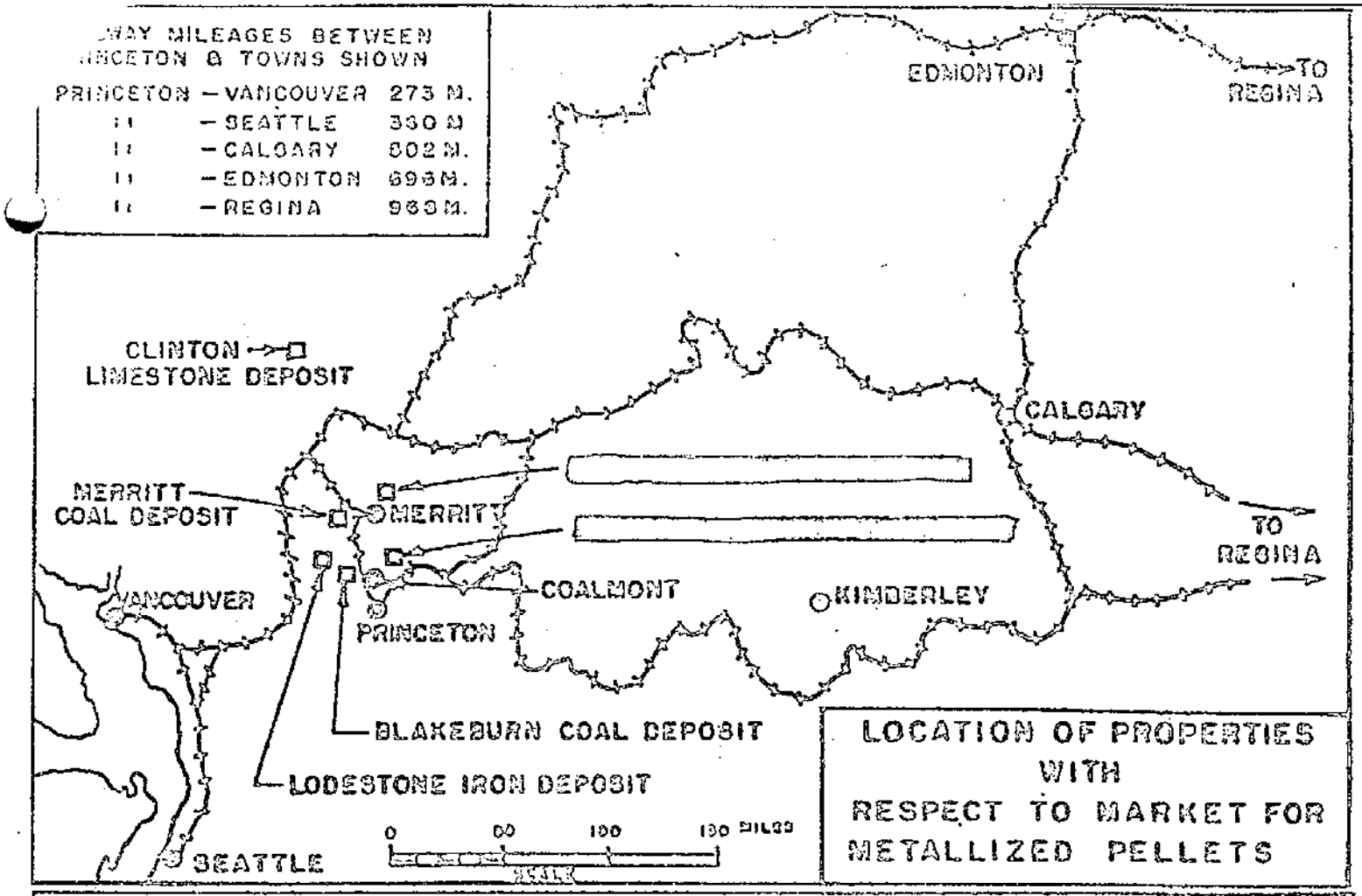
It should be mentioned in connection with the development of the Tulameen, Lodestone, and Merritt properties that all are in an area with a well developed infrastructure, a pleasant climate, within easy reach of major metropolitan centres, and favourably located with respect to distance to markets.

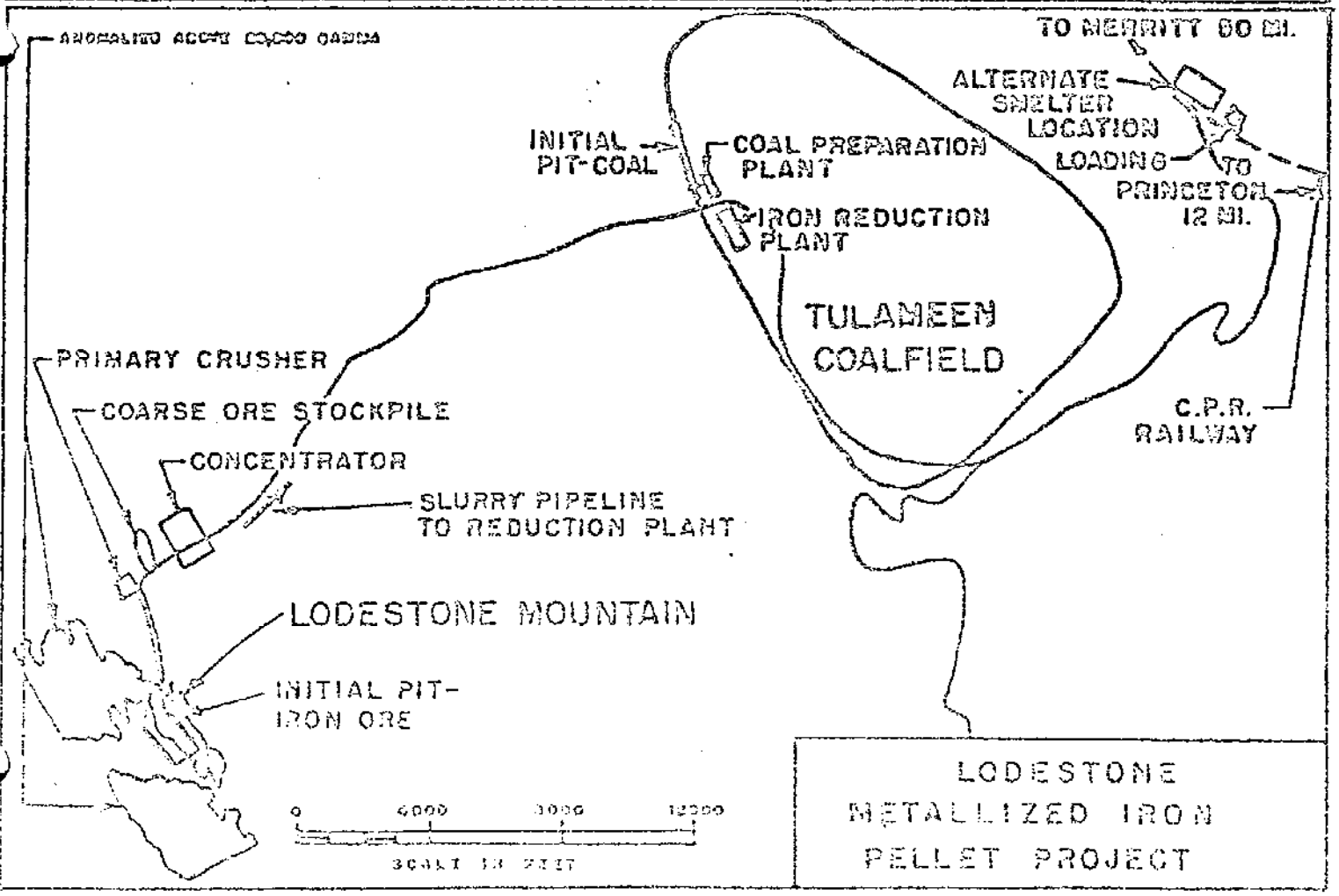
PEACE RIVER IRON

The Company holds a 90% interest in two iron leases covering 9,804.5 acres in the Clear Hills district of Northern Alberta about 300 miles northwest of Edmonton. The properties are leased from the Province of Alberta at an annual lease rental of $9,804.50. The Toronto-Dominion Bank retains a 10% carried interest. Proven reserves are 201,000,000 tons grading 34% Fe mainly in the form of weakly magnetic iron minerals such as goethite ($Fe_2O_3H_2O$) contained in flat lying beds of oolitic sandstone. Probable additional reserves are about 100,000,000 tons of approximately the same grade. The deposits may be readily mined by surface methods. Over-burden consists of glacial till strippable by drag line with a strip ratio of 3 cubic yards of waste per ton of ore. Much test work has been done by previous holders to develop an economic method of upgrading the iron bearing material to a form suitable for steel-making. The material is inherently difficult to beneficiate and so far no practical method has been proven.

An alternative steelmaking method has been extensively tested. Five thousand tons of ore was upgraded to a 90% Fe sponge iron by reduction in the R-N (now SL/RN) coal fired rotary kiln followed by regrinding and magnetic concentration. The 90% Fe product was melted and refined in a standard electric furnace to produce good quality steel. This sponge iron - electric furnace method is more adaptable to small scale production - 500,000 tons per year or less. The kiln process works best employing low-quality sub-bituminous coal as opposed to high-quality coking coal required for the blast furnace. Large reserves of sub-bituminous coal mineable by surface methods are available within a relatively short distance of a suitable plant site at the town of Peace River. It is possible that steel can be made from the Peace River ores with the advantage of low-cost fuels at a delivered cost competitive with steel produced outside the Province of Alberta.

Test work to determine the feasibility of developing this resource has been continued during the past two years by Alberta Research in Edmonton and by Energy Mines & Resources in Ottawa. A progress report on this work will be available early in 1977.


WAY MILEAGES BETWEEN
NCETON & TOWNS SHOWN
PRINCETON — VANCOUVER 273 M.
" — SEATTLE 330 M
" — CALGARY 802 M.
" — EDMONTON 698 M.
" — REGINA 969 M.
EDMONTON
TO REGINA
CLINTON
LIMESTONE DEPOSIT
CALGARY
MERRITT
COAL DEPOSIT
MERRITT
TO REGINA
VANCOUVER
COALMONT
KINDERLEY
PRINCETON
BLAKEBURN COAL DEPOSIT
LODESTONE IRON DEPOSIT
0 50 100 150 MILES
SCALE
SEATTLE
LOCATION OF PROPERTIES WITH RESPECT TO MARKET FOR METALLIZED PELLETS


TO MERRITT 60 MI.
ALTERNATE SHELTER LOCATION
LOADING
TO PRINCETON 12 MI.
INITIAL PIT-COAL
COAL PREPARATION PLANT
IRON REDUCTION PLANT
TULAMEEN COALFIELD
PRIMARY CRUSHER
COARSE ORE STOCKPILE
CONCENTRATOR
SLURRY PIPELINE TO REDUCTION PLANT
C.P.R. RAILWAY
LODESTONE MOUNTAIN
INITIAL PIT-IRON ORE
0 4000 8000 12000
SCALE IN FEET
LODESTONE METALLIZED IRON PELLET PROJECT

Rough planning of
Coal Mine Development
on Merritt Lease
B C, Canada

Vol. 1

April 1970

Sumicol Consultants Co., Ltd.

C O N T E N T S

1. Introduction

We carried the field survey on Merritt Lease, BC, Canada, in July 1969, and had obtained the conclusion in outline in our previous report (August 20, 1969; Coal Survey Report on Merritt Lease, BC, Canada). But we must survey moreover to put forward the plan of coal mine development.

Therefore, in previous report we recommended to do 3 drillings in No. 2, No. 3 and No. 4. Lately the drillings were completed and the core samples were sent to Japan.

In this report, we will look again at the coal reserve and quality in Merritt Lease from the result of 3 drillings, and devise the developing plan of this mining area, and attempt the trial calculation on the production cost.

2. Logging Data of No. 2, No. 3 and No. 4 Drill

At the 3 specified positions which had been appointed by us in our previous report, the 3 drillings have been done as follows, and shown in Fig. 1.

No. 2 Drill

Dip	90°
Lat.	7300
Dep.	9100
Elev.	2160 ft
# 8	128.0 - 135.0 ft
# 4	——
# 5	399.5 - 405.0 ft
# 1	543.5 - 576.0 ft
Final depth	592.0 ft

No. 3 Drill

Dip	90°
Lat.	5200
Dep.	9700
Elev.	2215 ft
# 6	199.0 - 203.5 ft
# 8	335.0 - 352.0 ft
no name	389.0 - 393.0 ft
# 4	490.0 - 500.0 ft
no name	671.0 - 680.0 ft
Final depth	691.0 ft

No. 4 Drill

Dip	90°
Lat.	6600
Dep.	11300
Elev.	2025 ft

# 6	185.0 - 186.0 ft
no name	194.0 - 194.5 ft
# 8	278.5 - 284.0 ft
no name	339.0 - 343.0 ft
# 4	462.0 - 471.0 ft
no name	550.0 - 556.0 ft
Final depth	564. 0 ft

3. Planning Area in This Report

In the previous report we divided the planning area into two areas of monoclinal low dipped A area and synclinal steep dipped B area. We concluded that it would be difficult to work the coal mine in B area for its complicated geological structure.

Consequently we will take A area for evaluation alone in this report.

4. Coal Seams

The coal seams confirmed by these 3 drills, No. 2, No. 3 and No. 4 have been correlated with each other as the following table according to the geological structure, distance and rock character of the interval beds of coal seams, and thickness of coal seams, etc.

Name of Coal Seam	Middlesboro Mine Gr. Th. in feet	No. 1 Drill			No. 2 Drill			No. 3 Drill			No. 4 Drill		
		Net Th in ft.	Gr. Th in ft.	Ratio %	Net Th	Gr. Th	Ratio	Net Th	Gr. Th	Ratio	Net Th	Gr. Th	Ratio
# 8	8.0				7.2	7.7	93.5	16.1	17.7	91.0	5.7	6.0	95.0
# 4	28.0	4.07	5.67	71.8				6.7	9.6	69.9	6.5	8.9	73.0
# 5	5.0	3.26	4.50	72.5	5.6	7.5	74.7	21.4	28.2	75.8			
# 1	30.0	5.63	6.25	94.4	19.8	22.4	88.4						

From the above mentioned table we have estimated the thickness of each coal seam as follows:

Name of Coal	Average Gross Thickness in feet (meter)	Ratio %	Average ~~Gross~~ Net Thickness in feet (meter)
# 8	10.5 (3.21)	92	9.67 (2.95)
# 4	9.25 (2.82)	72	6.65 (2.03)
# 5	17.8 (5.43)	73	13.00 (3.97)
# 1	22.4 (6,83)	93	20.80 (6.35)

5. Collecting of Coal Samples

Under consideration of mining condition we collected the coal samples from the cores of No. 2 No. 3 and No. 4 drill by the method shown in Fig. 2 - Fig. 4 and sampling data are shown as follows:

No. 2 Drill

Sample No.	Seam No.	Gross Th.(ft)	Net Th. (ft)	Ratio %
2 - A	# 8	3.91	3.41	87.3
2 - B	# 5	5.74	5.57	97.0
2 - C	# 1 Upper8	10.99	10.74	97.8
2 - D	# 1 Middle	6.01	4.09	68.1
2 - E	# 1 Lower	6.09	5.58	91.6

No. 3 Drill

Sample No.	Seam No.	Gross Th. (ft)	Net Th. (ft)	Ratio %
3 - A	# 8	18.31	16.66	90.9
3 - B	no name	5.74	5.17	89.9
3 - C	# 4	9.93	6.89	69.1
3 - D	# 5	17.18	14.08	81.9

No. 4 Drill

Sample No.	Seam No.	Gross Th (ft.)	Net Th. (ft)	Ratio %
4 - A	# 8	6.24	5.91	94.6
4 - B	# 4	9.28	6.70	72.3

6. Quality

On all samples the float sink test (Fig. 5 - Fig. 15), proximate analysis (Table 1), coke button index test (Table 1) and fluidity test (Fig. 16 - Fig. 26) have been conducted. However, the samples used for analysis, C. B. I and fluidity test, were skimmed as the floats by 1.4 specific gravity liquid mixed CCl_4 in benzine.

For reference 2 samples, 3-B and 3-D, have been treated through the microscopic analysis of coal petrography (Table 2).

TABLE 1

CHEMCAL ANALYSIS OF MERRITT COAL

SAMPLED FROM NO.2, NO.3 AND NO.4 DRILLING

NO. of COAL SEAM	SAMPLE NO.	PROXIMATE ANALYSIS				CAL.	D.A.F CAL.	FUEL	C.B.I.	TOTAL SULP.	FLUIDITY	
		MOIS %	ASH %	VOLT. %	CARB. %	Kcal/kg	Kcal/kg	RATIO		%	MAX. FLUID.	MAX. TEMP.°C
8#	2 ~ A	4.0	7.3	37.6	51.1	7,170	8.090	1.36	1 1/2	0.64	2.1	417
5#	2 ~ B	3.6	7.9	38.1	50.4	7.220	8.160	1.32	3	0.58	2.5	425
1#	2 ~ C	2.9	8.3	37.7	51.1	7.270	8.190	1.36	3 1/2	0.57	5.4	430
1#	2 ~ D	2.8	8.6	38.4	50.2	7.260	8.200	1.31	3 1/2	0.69	6.1	425
1#	2 ~ E	2.9	7.3	37.3	52.5	7.370	8.210	1.41	3	0.83	7.0	430
8#	3 ~ A	3.3	7.5	38.1	51.1	7.280	8.170	1.34	2 1/2	0.49	2.6	430
8#	3 ~ B	3.2	6.1	38.5	52.2	7.430	8.190	1.36	2	0.78	2.7	428
4#	3 ~ C	2.8	6.4	39.5	51.3	7.500	8.150	1.30	3	0.71	8.0	429
5#	3 ~ D	2.5	7.7	36.5	53.3	7.430	8.270	1.46	2 1/2	0.69	9.7	432
8#	4 ~ A	2.3	6.9	34.9	55.9	7.600	8.370	1.60	3	0.61	68.0	440
4#	4 ~ B	2.0	9.0	34.2	54.8	7.270	8.170	1.60	7 1/2	0.64	478	442

All samples were prepared for the floats under 1.4 specific grauity.

Table 2 Petrographic Analysis

o Sample 3 - B

Reactive

V_7	V_8	V_9	E	R	1/3SF	Total
5.6	68.9	9.0	109	0.4	0.1	95.2%

Inerts

2/3SF	M	F	M-M	Total
0.3	1.1	0.4	3.0	4.8%

Composition Blance Index = 0.14
Strength Index = 2.6
Stability factor = 0 - 10

o Sample 3 - D

Reactive

V_4	V_5	V_6	V_7	V_8	E	R	1/3SF	Total
4.0	8.1	24.1	36.1	4.0	15.7	2.8	-	94.8%

Inerts

2/3SF	M	F	M-M	Total
-	1.1	1.1	3.0	5.2%

Composition Blance Index = 0.17
Strength Index = 2.3
Stability factor = 0.10

Fig.10 FLOAT SINK TEST

Name	3 - A	Remark	MERRITT COAL	Page	/
Date	1970. 2. 23.			Size	65~0.5"

Sp.Gr.	Observed W%	Observed A%	Observed ΣWn / ½Wn	Float WA	Float ↓ΣWA	Float ↓ΣW	Float ↓ΣWA / ↓ΣW	Sink 100 - ↓ΣW	Sink ↑ΣWA / ↑ΣW	±0.1 Distribution
~1.25	05	2.8		14	14	05	28	99.5	32.0	
1.25~1.3	41.8	4.8		202.6	202.0	42.3	4.7	57.7	51.7	59.6
1.3~1.4	17.3	12.7		219.7	421.7	59.6	7.1	40.4	68.9	22.6
1.4~1.5	5.3	26.5		135.2	556.9	64.9	8.6	35.1	74.9	9.1
1.5~1.6	3.8	37.6		142.9	699.8	68.7	10.2	31.3	77.4	6.0
1.6~1.7	2.2	48.4		99.9	799.7	70.9	11.3	29.1	81.9	3.9
1.7~1.8	1.7	54.2		92.1	891.8	72.6	12.3	27.4	83.7	
1.8~	27.4	83.7		2293.4	3185.2	100.0	31.9			
~										
~				mm	Wt%	Ash%				
TOTAL	100.0	31.9		65~0.5	98.0	31.9				
				-0.5	2.0	24.9				
				TOTAL	100.0	31.8				

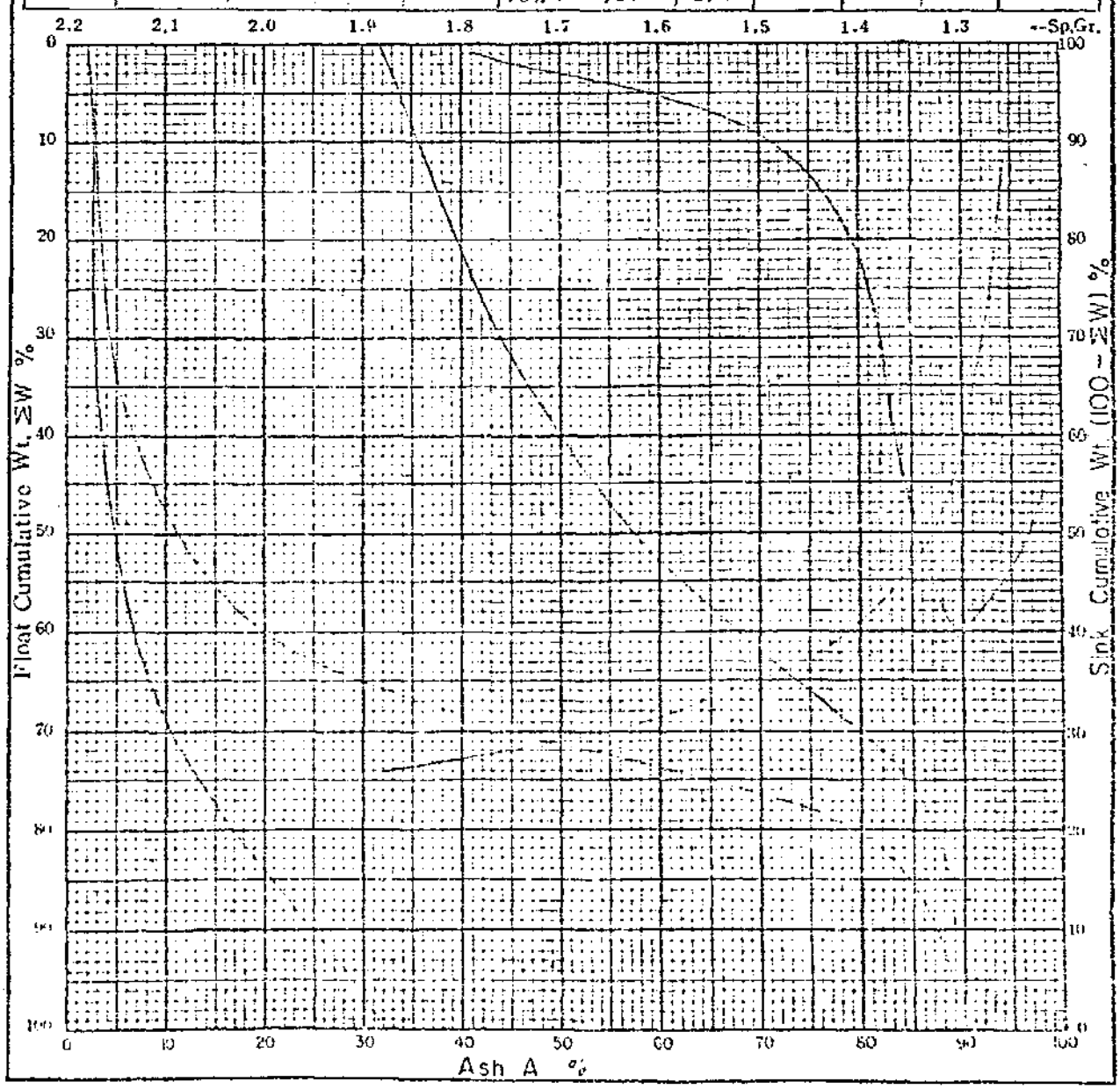


Fig. 11

Name		Remark	MERRITT COAL	Page	/
Date	1970. 2. 28.			Size	65 ~ 05 mm

Sp.Gr.	Observed W%	Observed A%	Observed ΣWn ↓ +½Wn	Float WA	Float ↓ΣWA	Float ↓ΣW	Float ↓ΣWA / ↓ΣW	Sink 100 -↓ΣW	Sink ↑ΣWA / ↑ΣW	±0.1 Distribution
~1.25	4.4	2.3		10.1	10.1	4.4	2.3	95.6	22.5	
1.25~1.3	37.8	4.3		227.0	237.1	57.2	4.2	42.8	45.0	24.8
1.3 ~1.4	17.6	11.9		209.4	446.5	74.8	6.0	25.2	68.1	19.4
1.4 ~1.5	1.8	25.0		45.0	491.5	76.6	6.4	23.4	71.4	5.9
1.5 ~1.6	3.6	43.1		155.2	646.7	80.2	8.1	19.8	78.4	9.9
1.6 ~1.7	0.8	45.6		36.5	683.2	81.0	8.4	19.0	77.8	3.3
1.7 ~1.8	2.5	51.4		135.3	818.5	83.5	9.8	16.5	81.4	
1.8 ~	16.5	81.4		1323.1	2161.6	100.0	21.6			
~										
~				mm	Wt%	Ash%				
TOTAL	100.0	21.6		65~05	96.2	21.6				
				-0.5	3.8	23.6				
				TOTAL	100.0	21.7				

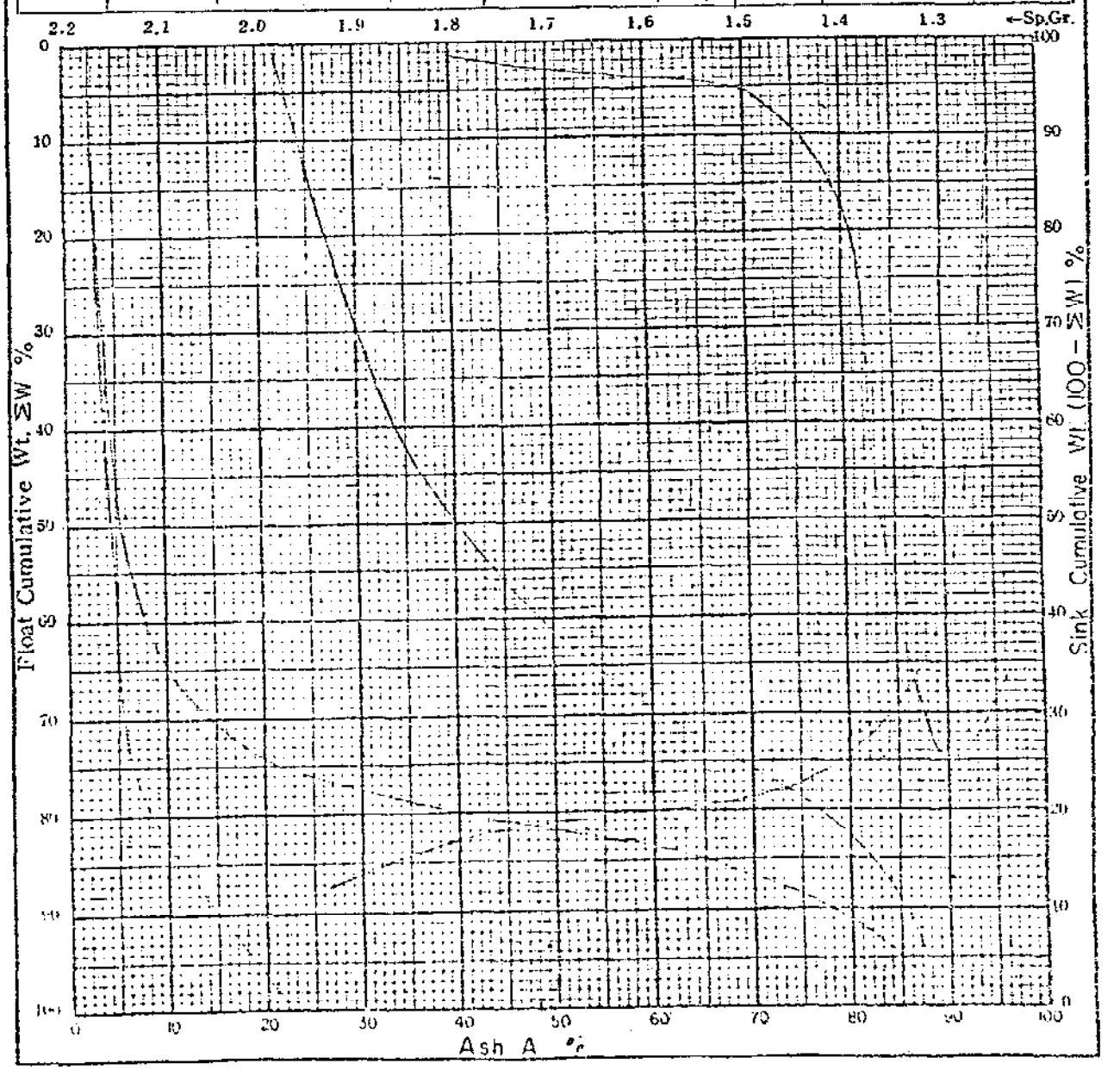


Fig. 12 FLOAT SINK TEST

Name		Remark	MERRITT COAL	Page	/
Date	1970. 2. 23.			Size	5 ~ 65

Observed				Float				Sink		±0.1
Sp.Gr.	W%	A%	ΣWn ↓ +½Wn	WA	↓ΣWA	↓ΣW	↓ΣWA / ΣW	100 -↓ΣW	↑ΣWA / ↑ΣW	Distribu -tion
~1.25	7.4	3.1		27.3	22.9	7.4	3.1	92.6	25.2	
1.25~1.3	51.0	4.6		297.6	257.5	58.4	4.4	41.6	50.4	71.9
1.3 ~1.4	13.5	13.5		182.3	439.8	71.9	6.1	28.1	68.1	17.4
1.4 ~1.5	3.9	27.8		108.4	548.2	75.8	7.2	24.2	74.6	5.5
1.5 ~1.6	1.6	40.1		64.2	612.4	77.4	7.9	22.6	77.0	3.7
1.6 ~1.7	2.1	50.6		106.3	718.7	79.5	9.0	20.5	79.8	2.9
1.7 ~1.8	0.8	55.7		44.6	763.3	80.3	9.5	19.7	80.7	
1.8 ~	19.7	80.7		1589.8	2353.1	100.0	23.5			
~										
~				mm	Wt%	Ash%				
TOTAL	100.0	23.5		65~0.5	96.2	23.5				
				-0.5	3.8	33.4				
				TOTAL	100.0	23.9				

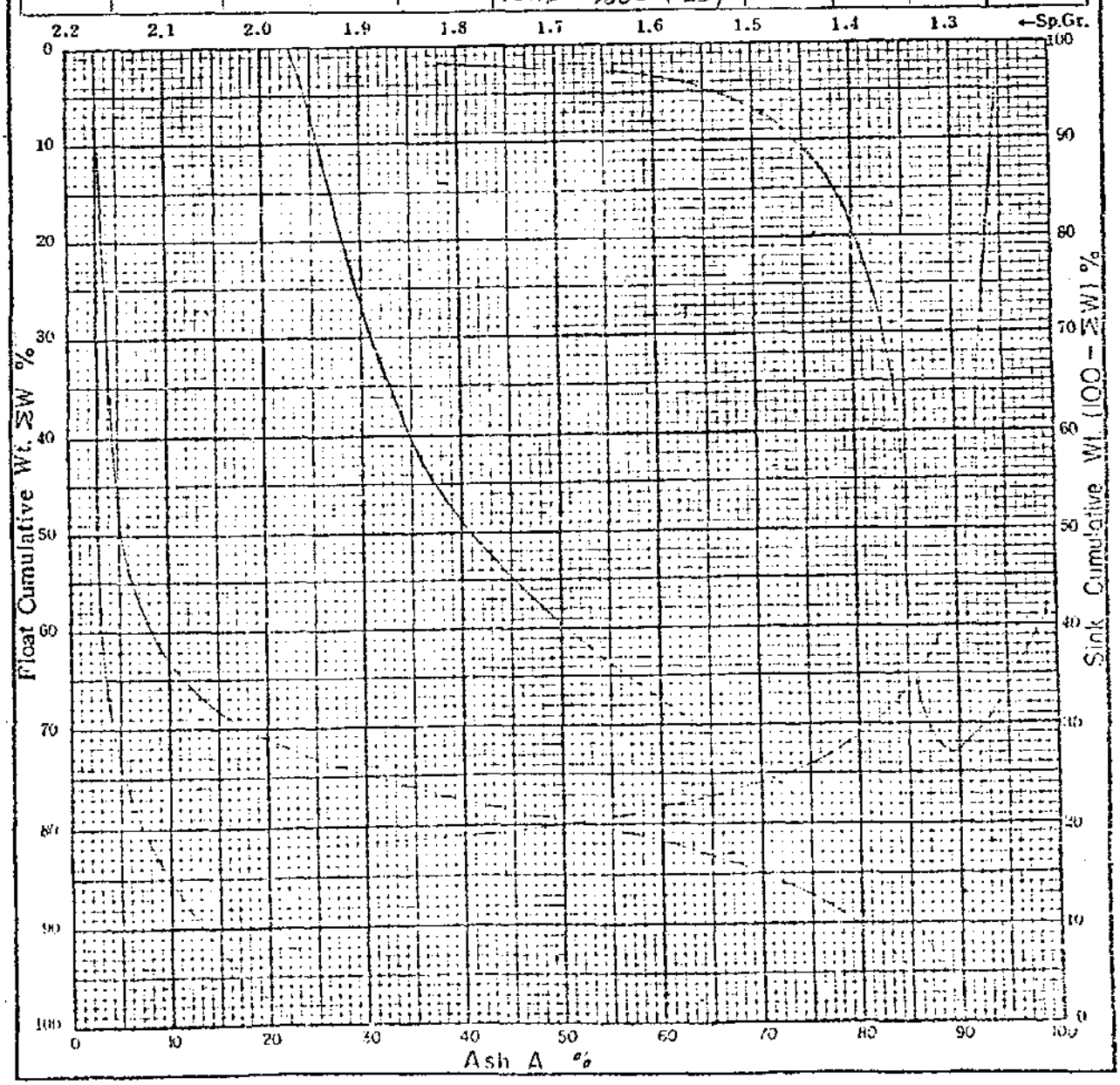
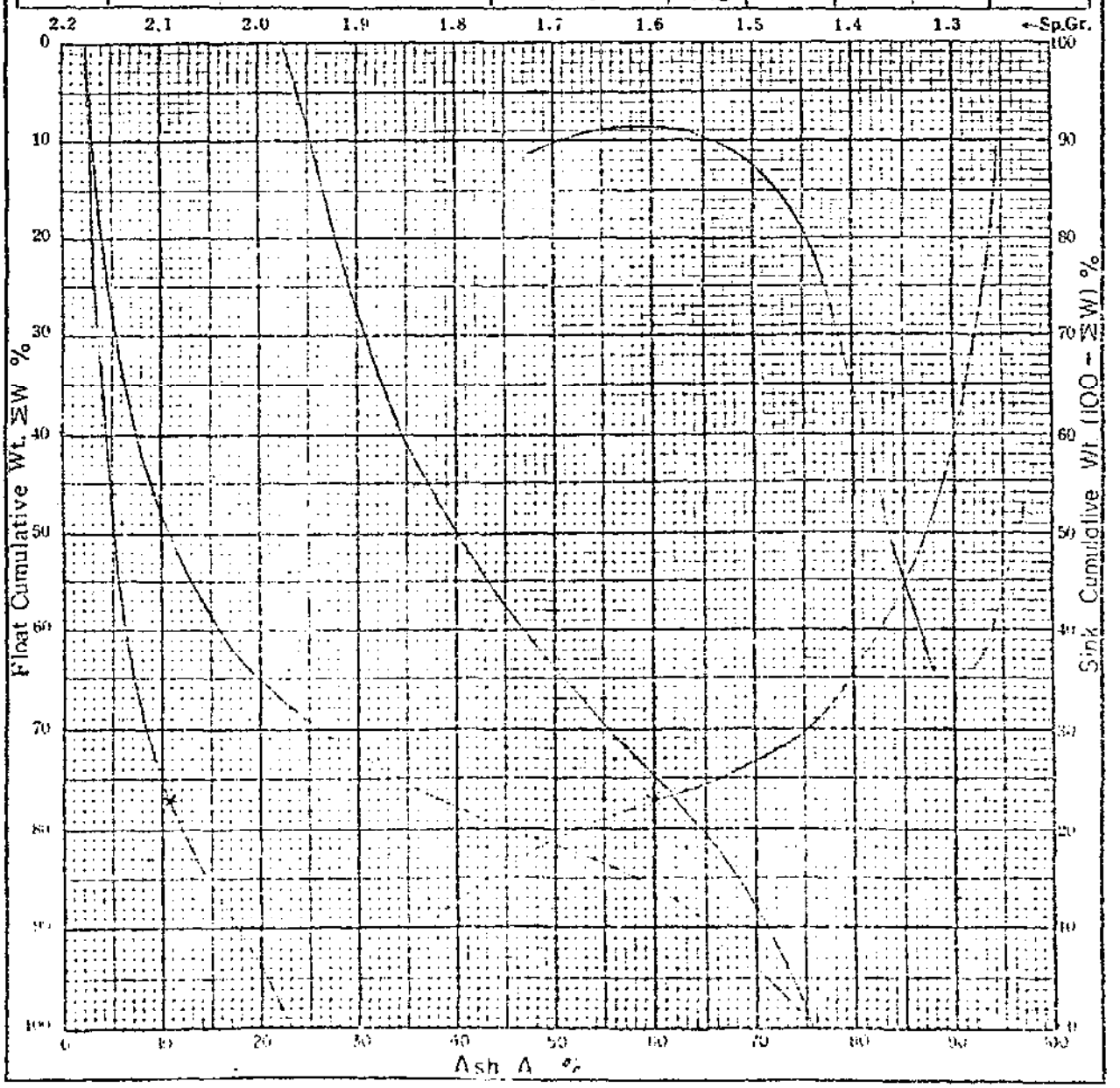


Fig 13 FLOAT SINK TEST

Name	A - D	Remark	MERRITT COAL	Page	/
Date	1970. 2. 23.			Size	0.5 ~ 0.5"

Sp.Gr.	Observed W%	Observed A%	Observed ΣWn / ΣAWn	Float WA	Float ↓ΣWA	Float ↓ΣW	Float ↓ΣWA / ↓ΣW	Sink 100 −↓ΣW	Sink ↑ΣWA / ↑ΣW	±0.1 Distribution
~1.25	1.6	2.3		3.7	3.7	1.6	2.3	98.4	23.2	
1.25~1.3	35.9	4.1		147.2	150.9	37.5	4.0	62.5	34.1	64.6
1.3~1.4	27.1	11.8		319.8	470.7	64.6	7.3	35.4	51.2	37.2
1.4~1.5	7.6	24.5		186.2	656.9	72.2	9.1	27.8	58.5	11.5
1.5~1.6	3.9	35.8		139.6	796.5	76.1	10.5	23.9	62.2	7.3
1.6~1.7	3.4	42.7		145.2	941.7	79.5	11.8	20.5	65.1	10.0
1.7~1.8	6.6	56.5		372.7	1314.6	86.1	15.3	13.9	69.7	
1.8~	13.9	69.7		968.8	2283.4	100.0	22.8			
~										
~										
TOTAL	100.0	22.8								

mm	Wt%	Ash%
6.5-0.5	98.2	22.8
-0.5	1.8	25.0
TOTAL	100.0	22.8



Name	4 - A	Remark	MERRITT COAL	Page	
Date	1970. 2. 23.			Size	6.5 ~ 0.6

Sp.Gr.	Observed W%	Observed A%	Observed ΣWn ↓ ↑ ΣWn	Float WA	Float ΣWA	Float ↓ΣW	Float ↓ΣWA / ↓ΣW	Sink 100 -↓ΣW	Sink ↑ΣWA / ↑ΣW	±0.1 Distribution
~1.25	4.2	4.1		17.2	17.2	4.2	4.1	95.8	15.7	
1.25~1.3	57.4	4.3		246.8	264.0	61.6	4.3	38.4	32.8	8.8
1.3 ~1.4	20.1	13.9		279.4	543.4	81.7	6.7	18.3	48.0	25.2
1.4 ~1.5	5.1	28.3		144.3	687.7	86.8	7.9	13.2	63.2	9.6
1.5 ~1.6	4.5	37.9		170.6	858.3	91.3	9.4	8.7	76.2	4.9
1.6 ~1.7	0.4	46.6		18.6	876.9	91.7	9.6	8.3	77.8	0.8
1.7 ~1.8	0.4	56.1		22.4	899.3	92.1	9.8	7.9	78.8	
1.8 ~	7.9	78.8		622.5	1521.8	100.0	15.2			
~										
~				min	Wt%	Ash%				
TOTAL	100.0	15.2		65~0.5	96.1	15.2				
				-0.5	3.9	17.8				
				TOTAL	100.0	15.3				

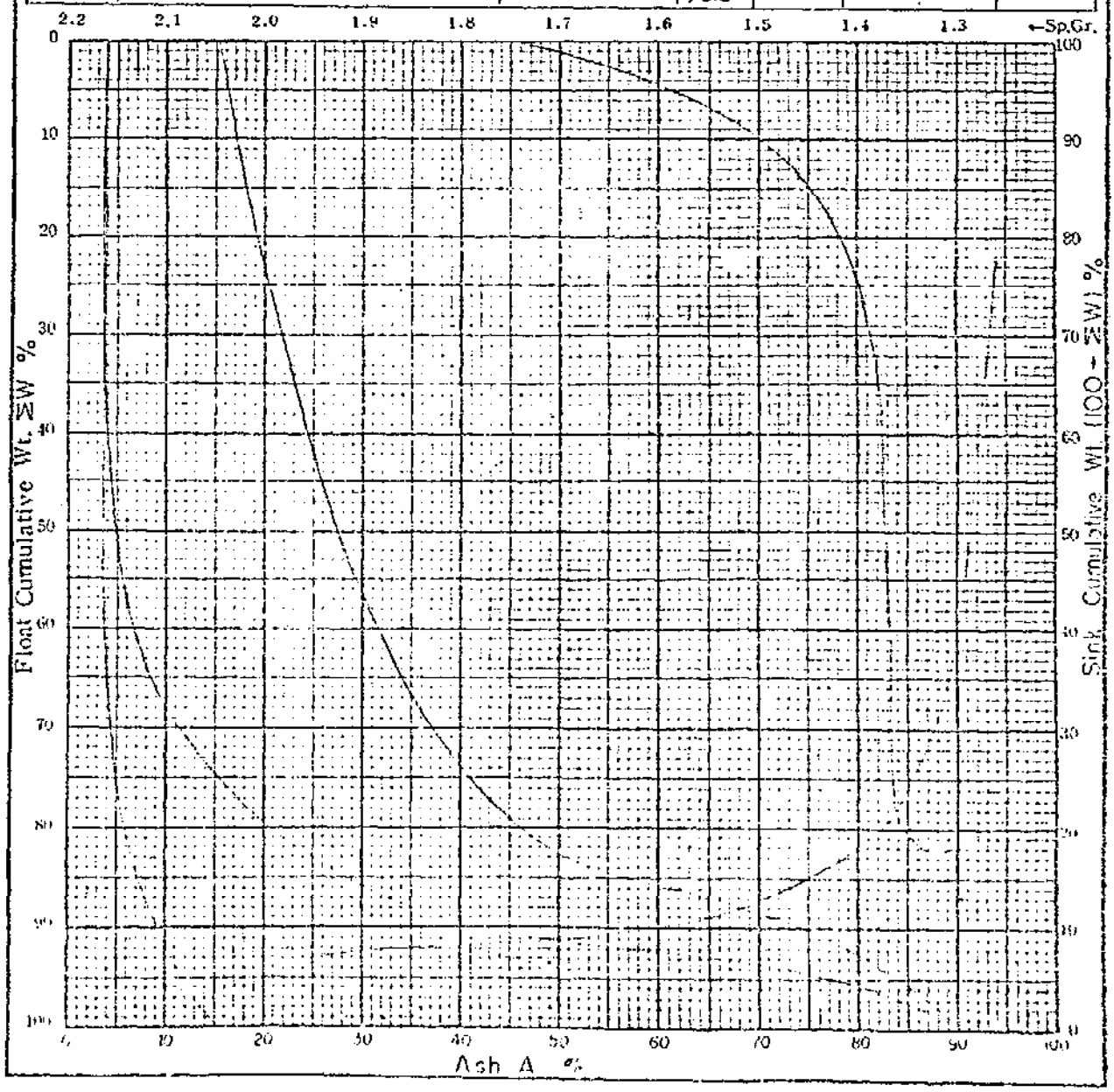


Fig. 13 FLOAT SINK TEST

Name	4 - H	Remark	MERRITT COAL	Page	/
Date	[illegible]			Size	6.5 ~ 0.5

Sp.Gr.	Observed W%	Observed A%	Observed ΣWn / ΣWn	Float WA	Float ↓ΣWA	Float ↓ΣW	Float ↓ΣWA / ↓ΣW	Sink 100 − ↓ΣW	Sink ↑ΣWA / ↑ΣW	±0.1 Distribution
~1.25	0.1	4.2		0.4	0.4	0.1	4.2	99.9	9.1.4	
1.25~1.3	23.5	5.5		129.3	129.7	23.6	5.5	76.4	5.32	37.8
1.3 ~1.4	14.2	14.4		209.5	339.2	37.8	8.9	62.2	6.20	20.2
1.4 ~1.5	6.0	28.1		168.6	502.8	43.8	11.5	56.2	6.56	11.2
1.5 ~1.6	5.7	38.9		221.7	724.5	49.5	14.7	50.5	6.86	7.5
1.6 ~1.7	2.1	44.7		93.9	818.4	51.6	15.8	48.4	6.97	3.3
1.7 ~1.8	1.2	56.4		67.7	886.1	52.8	16.8	47.2	7.0.0	
1.8 ~	47.2	70.0		3309.0	4190.1	100.0	41.9			
~										
~				mm	Wt%	Ash%				
TOTAL	100.0	41.9		65~0.5	99.5	41.9				
				-0.5	0.5	26.3				
				TOTAL	100.0	41.8				

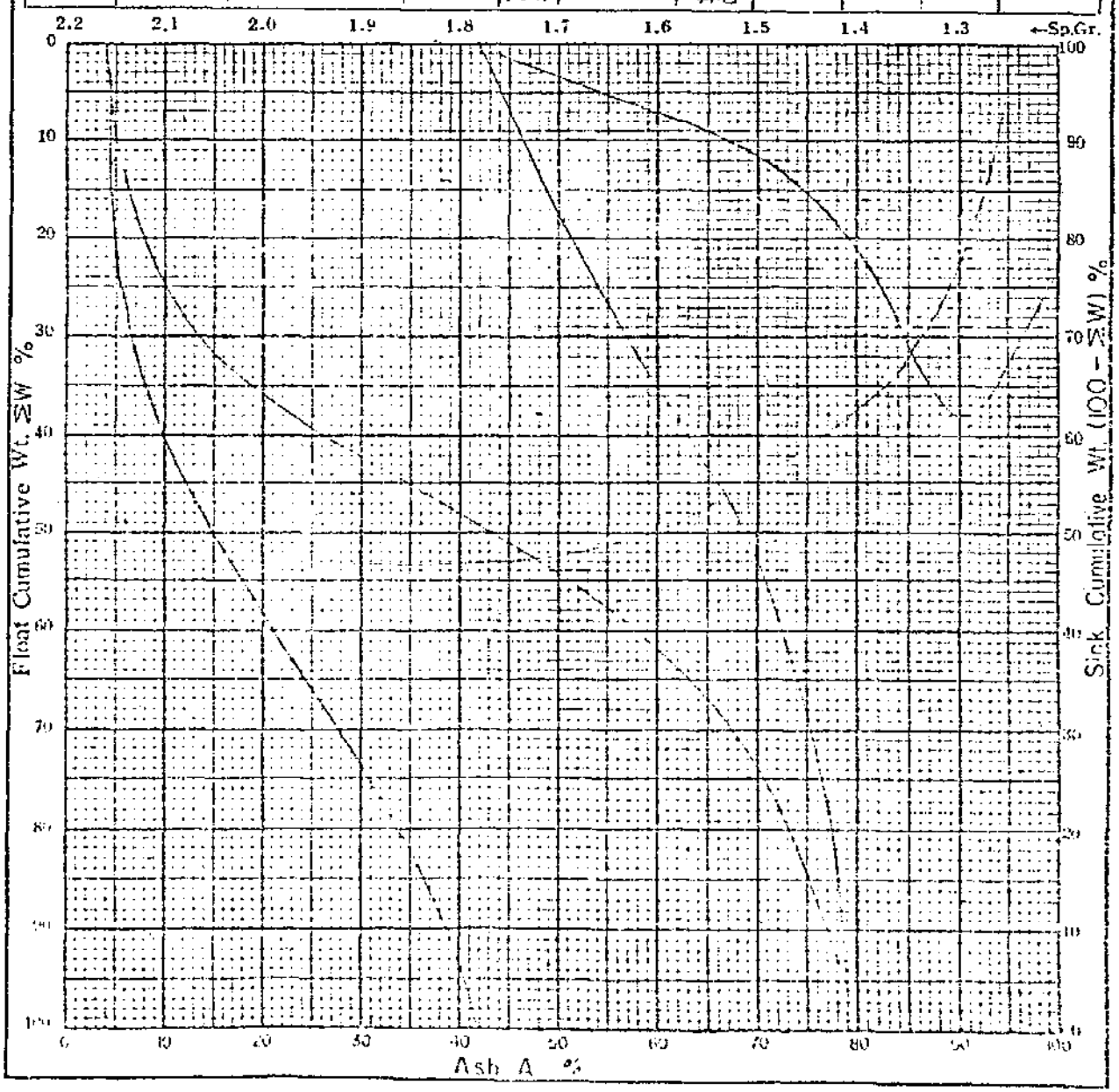


Fig. 16. Fluidity Curve of Sample Z-A measured by Automatic Gieseler plastometer

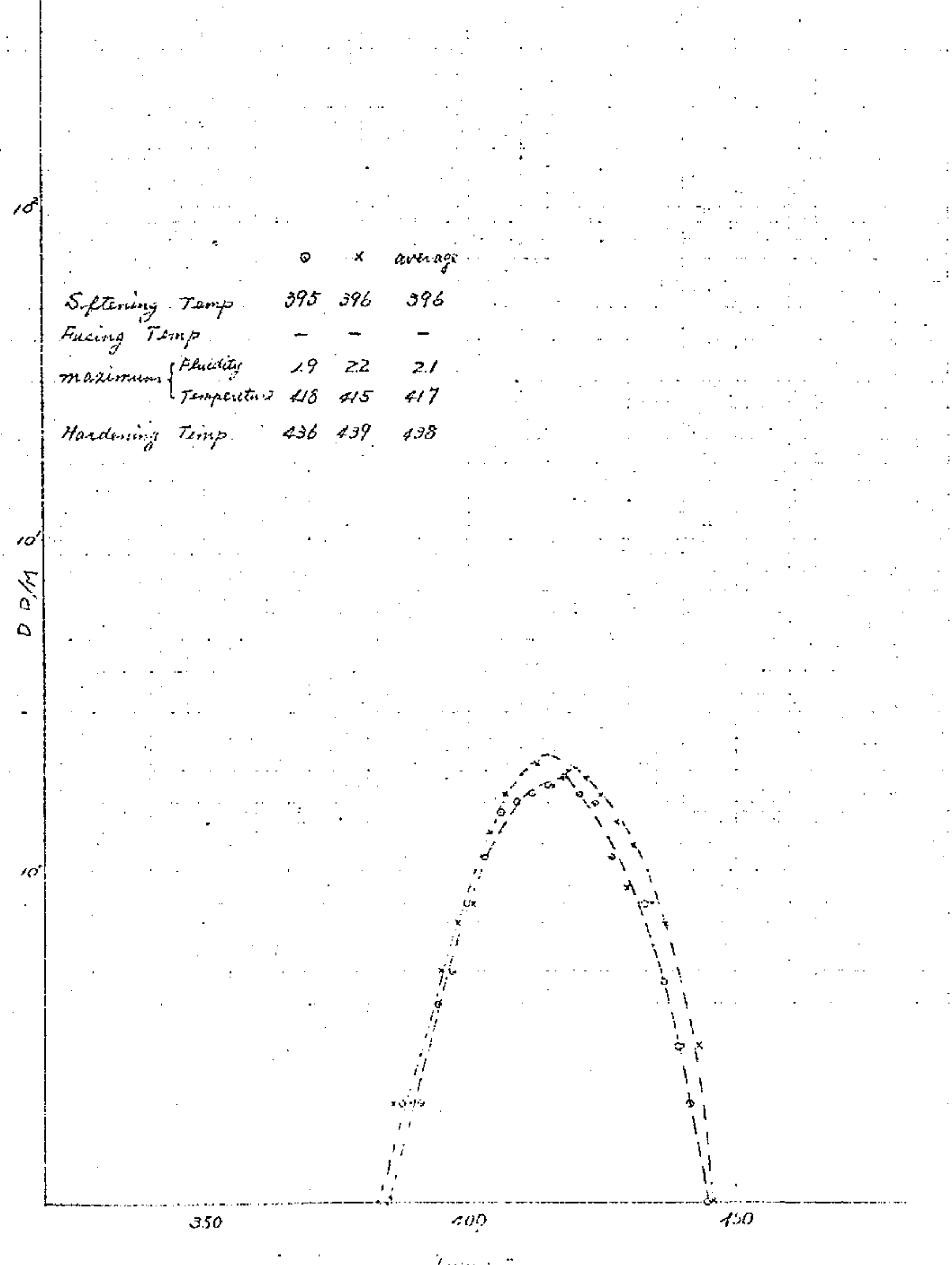


Fig. 17 Fluidity Curve of Sample 2-B
measured by Automatic Viscoelastic
plastometer

	⊙	△	average
Softening Temp	392	396	394
Fusing Temp	—	—	—
maximum Fluidity	2.6	2.4	2.5
maximum temperature	424	426	425
Hardening Temp	442	444	443

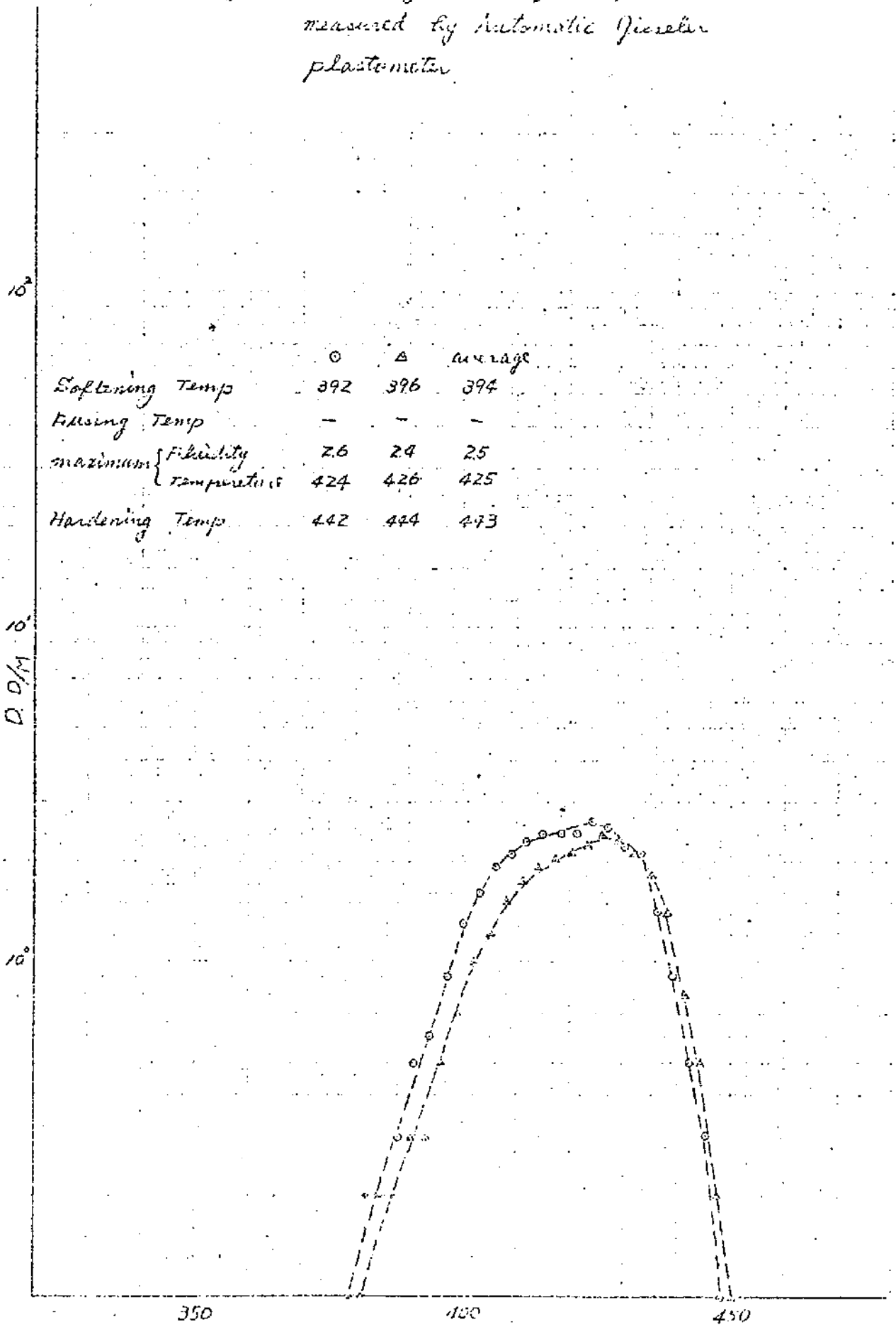
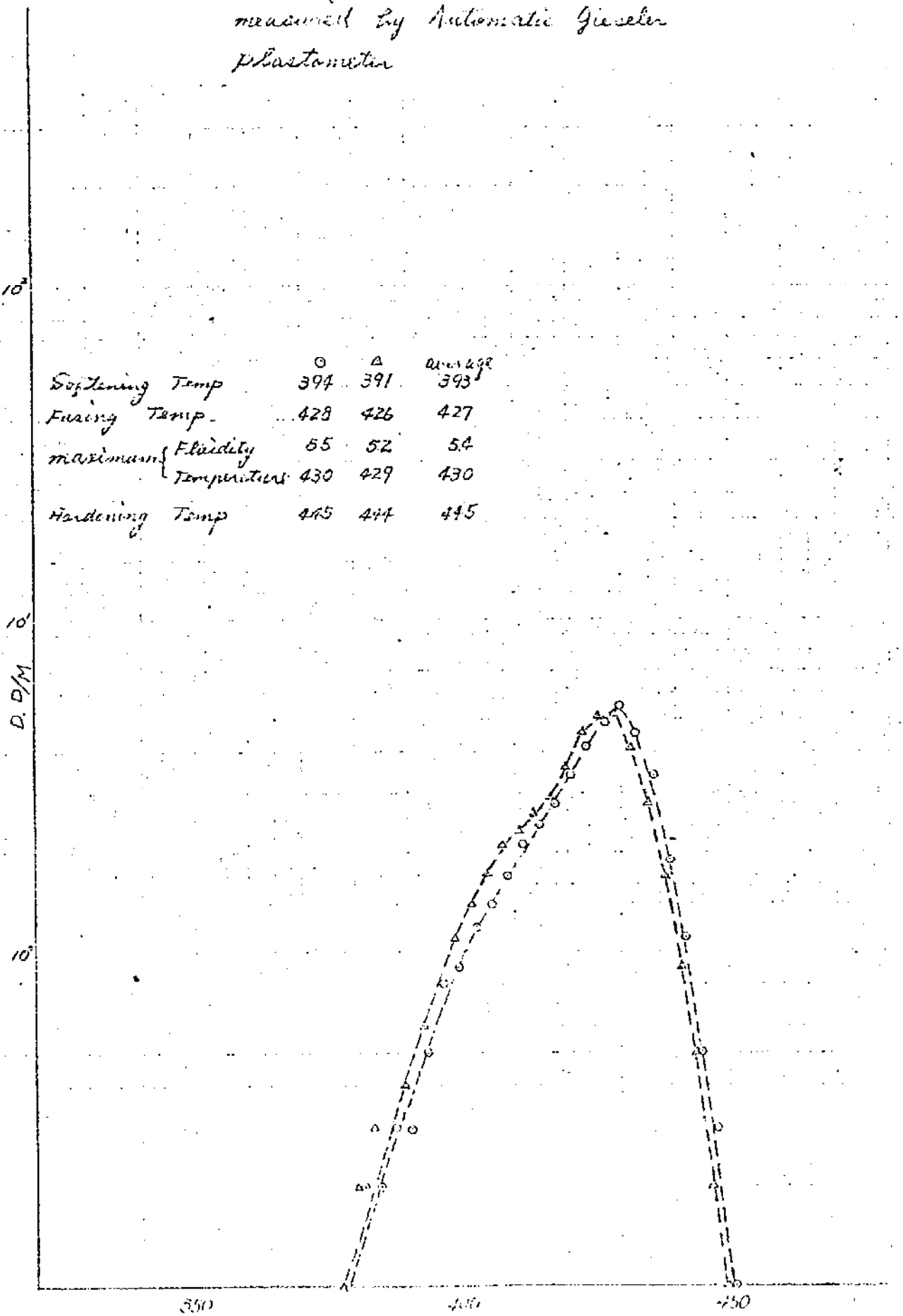


Fig. 18 Fluidity Curve of Sample E-C measured by Automatic Gieseler plastometer

	○	△	Average
Softening Temp	394	391	393
Fusing Temp.	428	426	427
maximum Fluidity	65	52	54
maximum Temperature	430	429	430
Hardening Temp	445	444	445



Temp. °C

Fig. 19. Fluidity Curve of Sample 2-D measured by Automatic Glazebrook Plastometer

	⊙	△	average
Softening Temp	387	390	389
Fusing Temp	420	422	421
Maximum { Fluidity	64	58	61
Maximum { Temperature	424	425	425
Hardening Temp	444	444	444

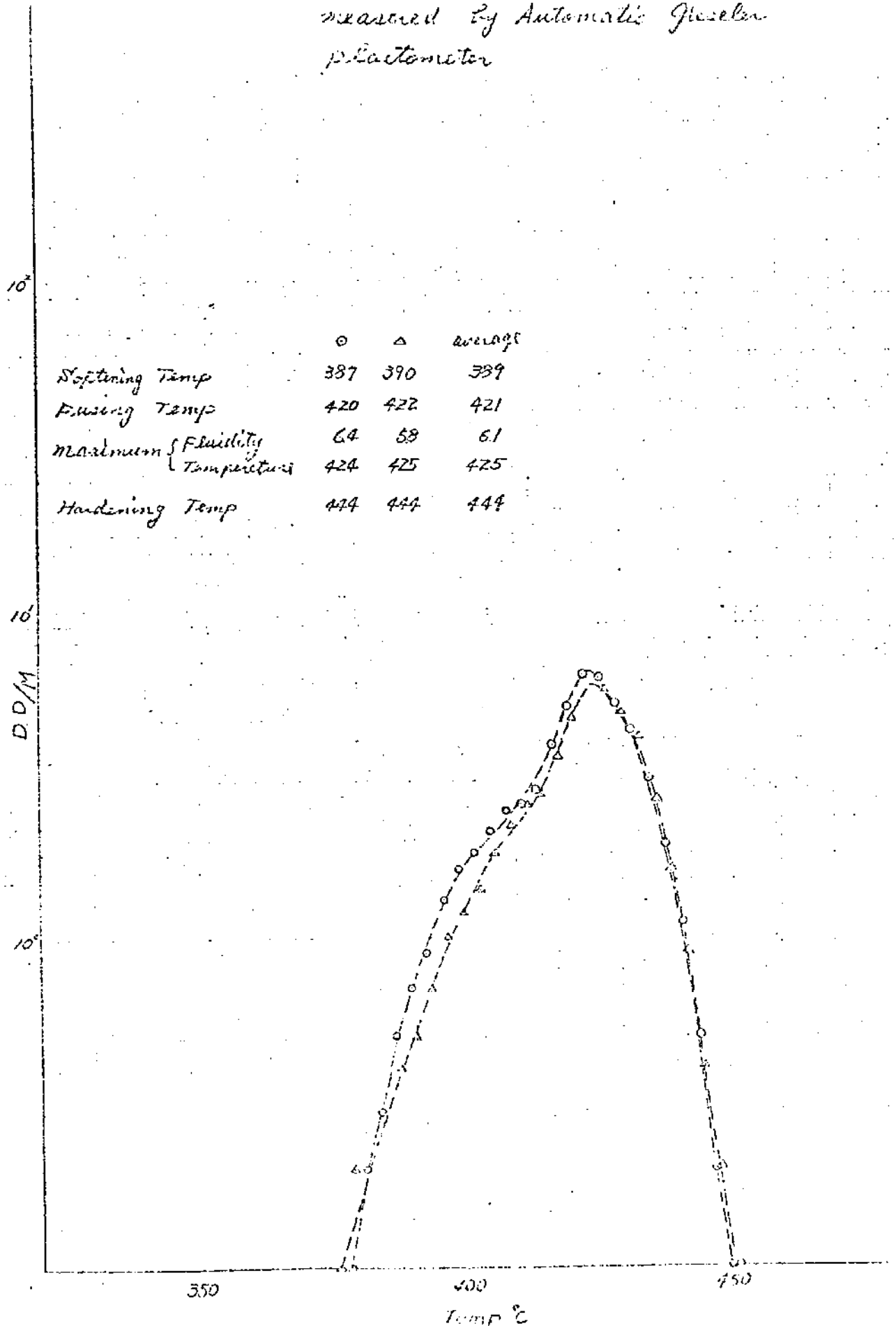


Fig. 21. Fluidity Curve of Sample 3-A measured by Automatic Gieseler plastometer

	○	△	Average
Softening Temp	399	398	399
Fusing Temp	—	—	—
Maximum Fluidity	2.6	25	2.6
Maximum Temperature	431	428	430
Hardening Temp	445	442	444

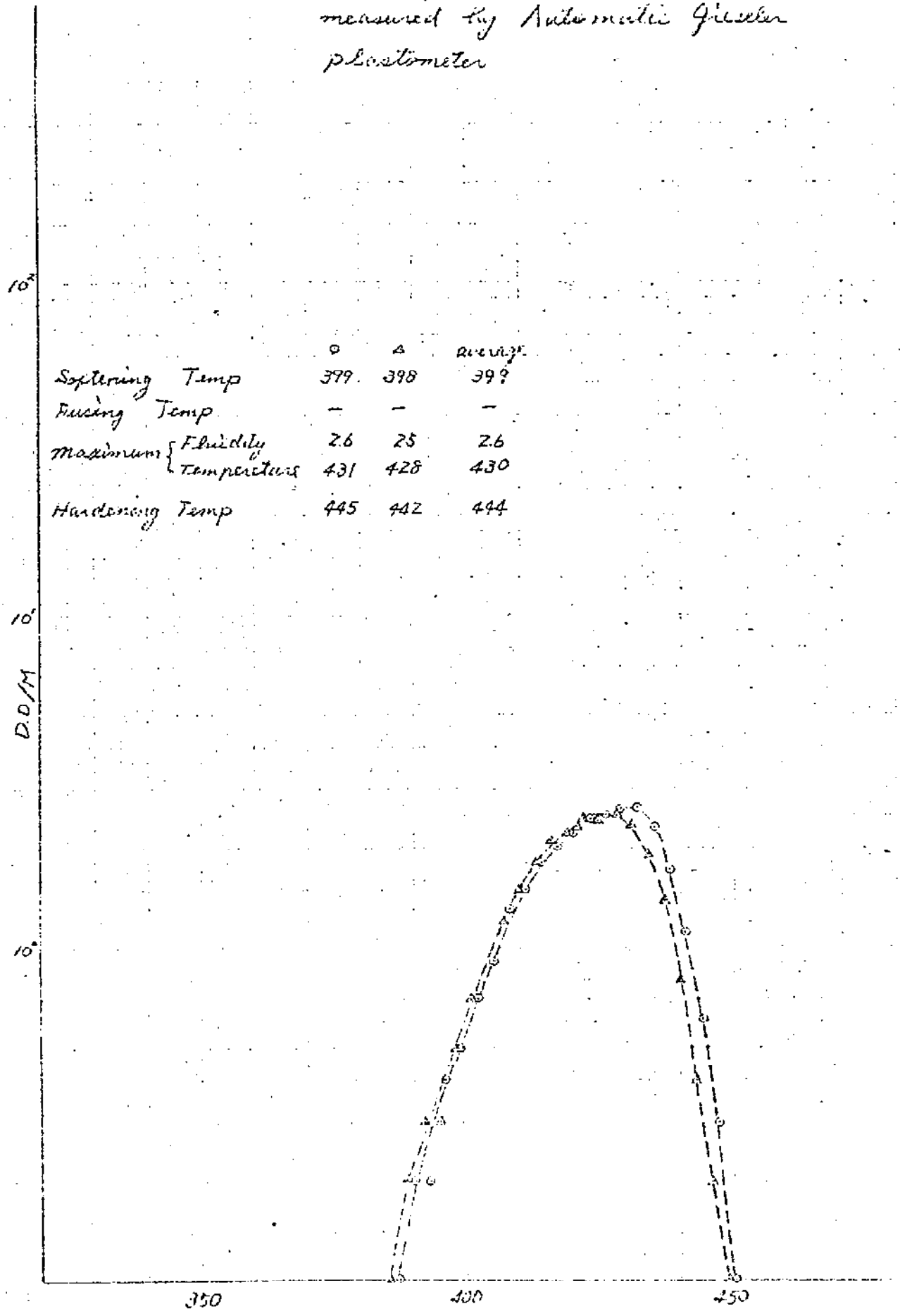
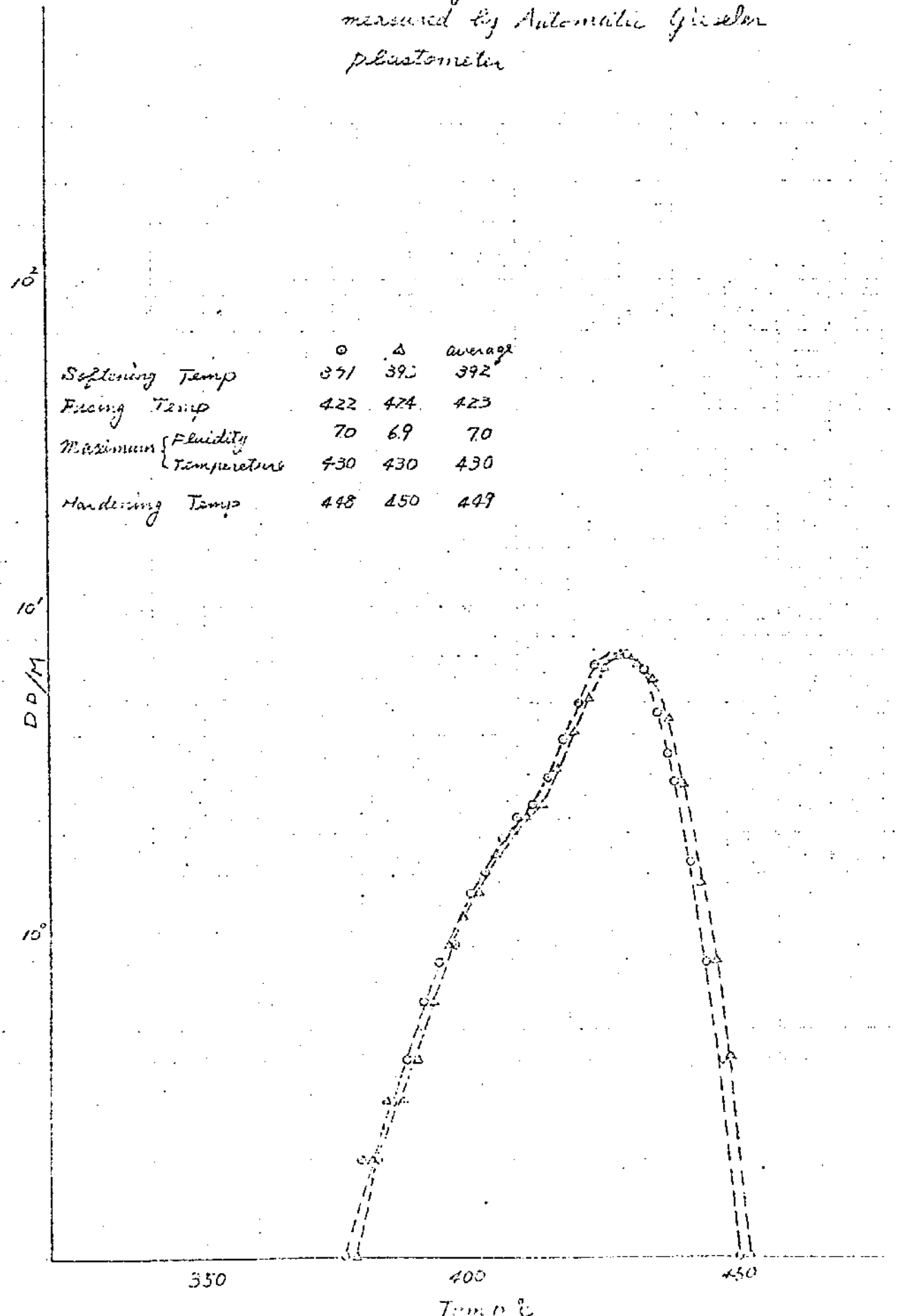
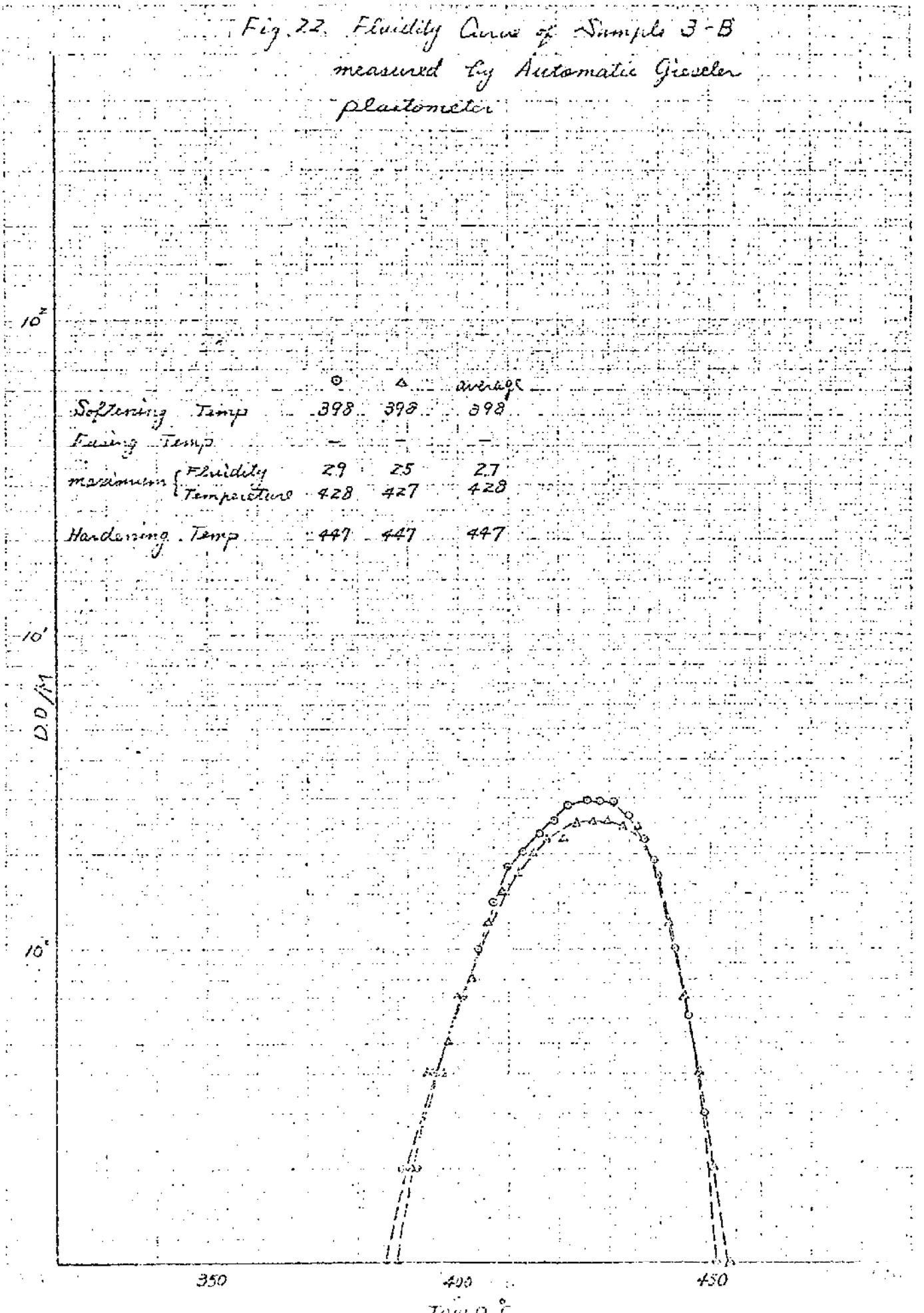


Fig. 20. Fluidity Curve of Sample 2-E measured by Automatic Yiscelon plastometer



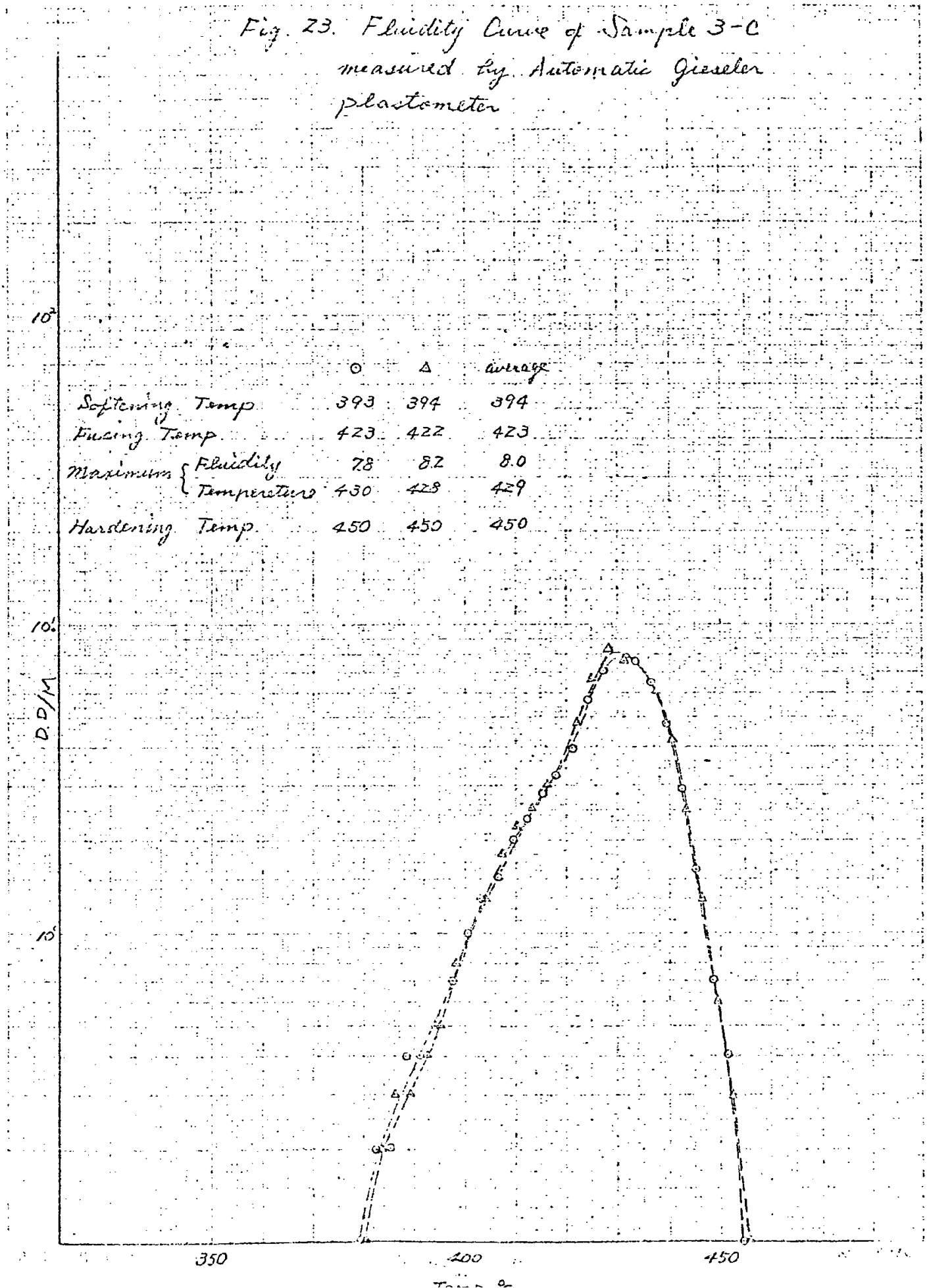
		○	△	average
Softening Temp		391	393	392
Freezing Temp		422	424	423
Maximum	Fluidity	7.0	6.9	7.0
	Temperature	430	430	430
Hardening Temp		448	450	449

Fig. 22. Fluidity Curve of Sample 3-B measured by Automatic Gieseler plastometer



		○	△	average
Softening Temp		398	398	398
Fusing Temp		—	—	—
maximum	Fluidity	29	25	27
	Temperature	428	427	428
Hardening Temp		447	447	447

Fig. 23. Fluidity Curve of Sample 3-C
measured by Automatic Gieseler
plastometer



		○	△	average
Softening Temp		393	394	394
Fusing Temp		423	422	423
Maximum	Fluidity	7.8	8.2	8.0
	Temperature	430	428	429
Hardening Temp		450	450	450

Fig. 24. Fluidity Curve of Sample 3-D measured by Automatic Gieseler plastometer

		○	△	average
Softening Temp.		394	397	396
Fusing Temp.		421	421	421
maximum	Fluidity	94	99	97
	Temperature	431	433	432
Hardening Temp.		451	452	452

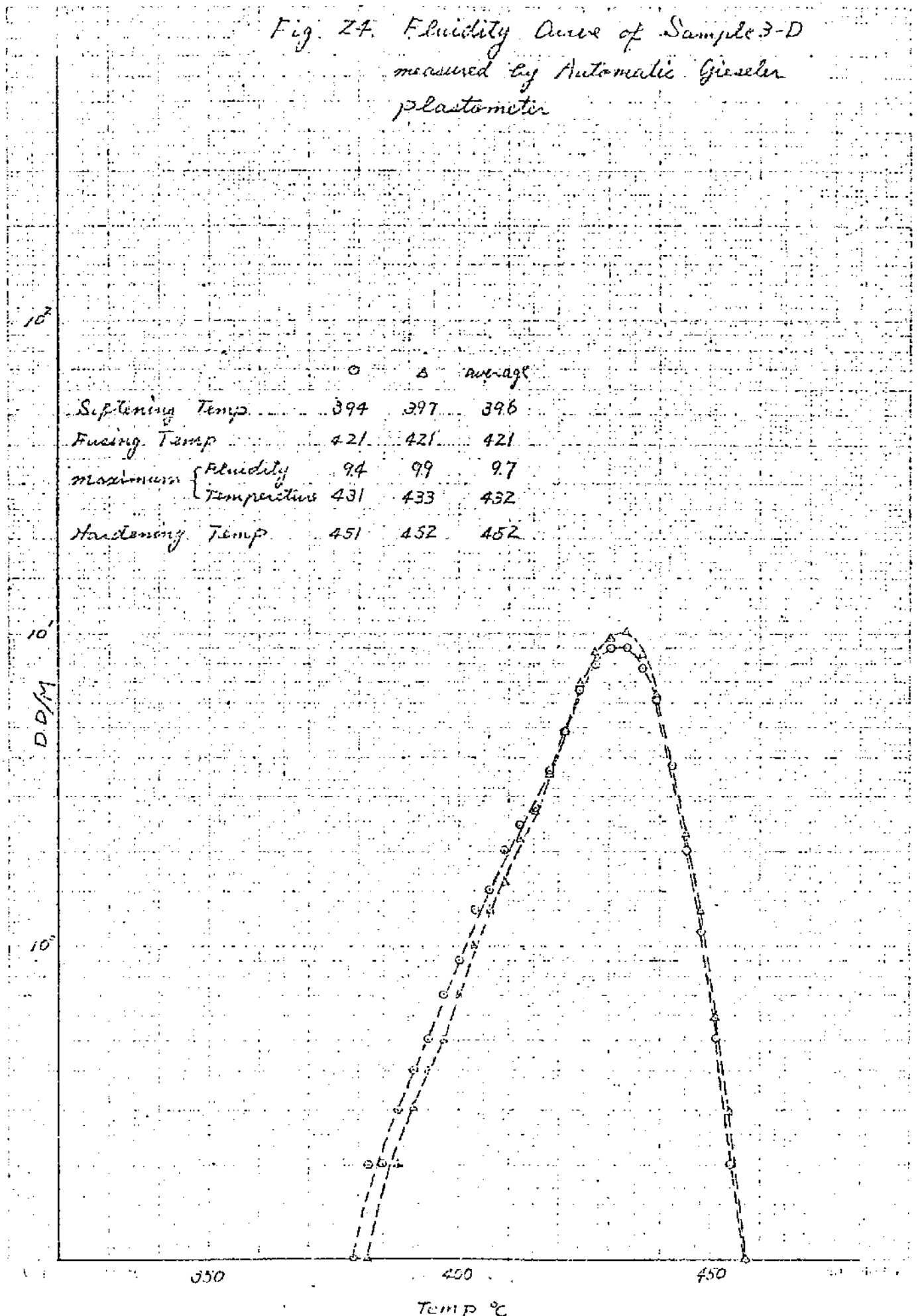
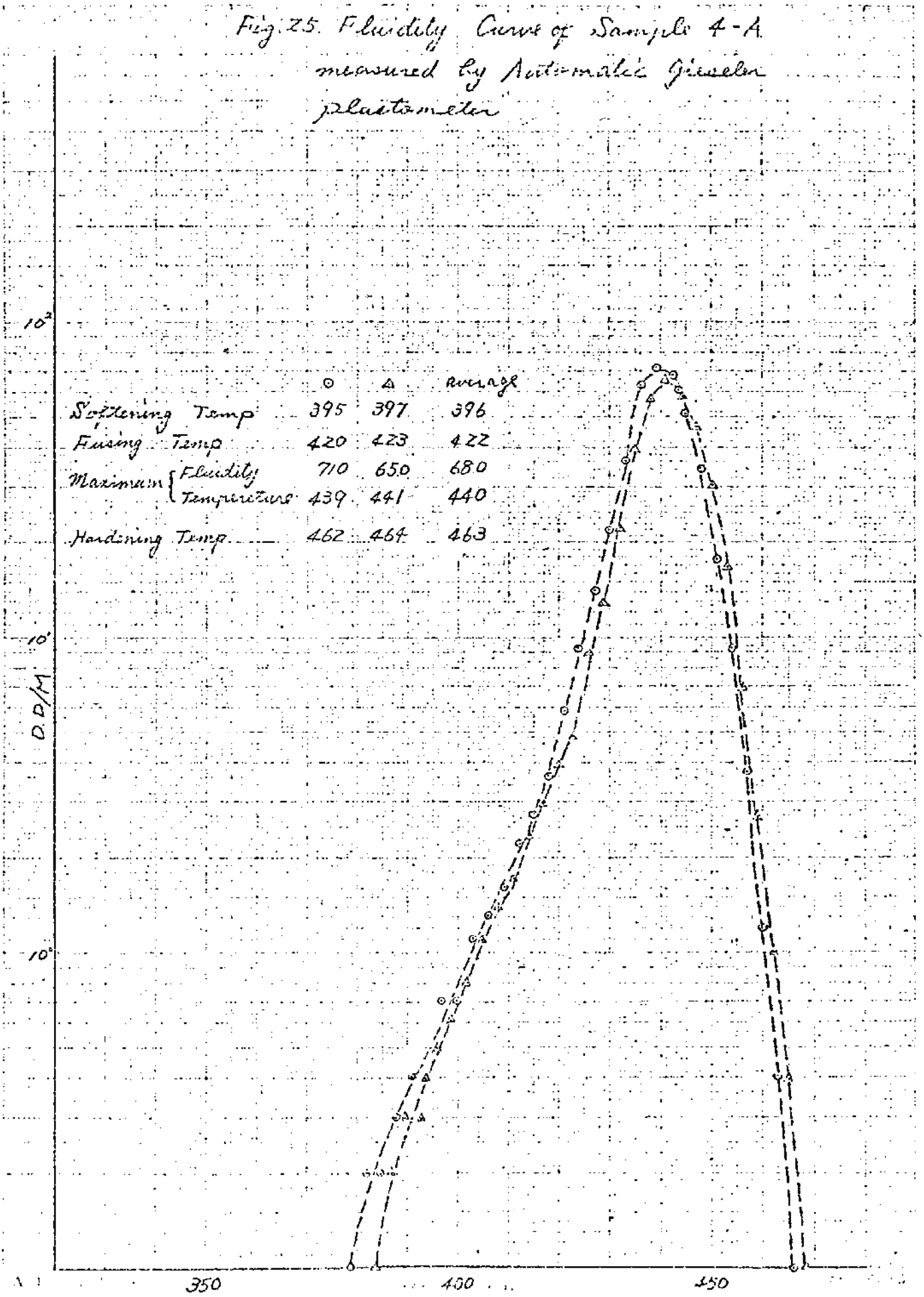
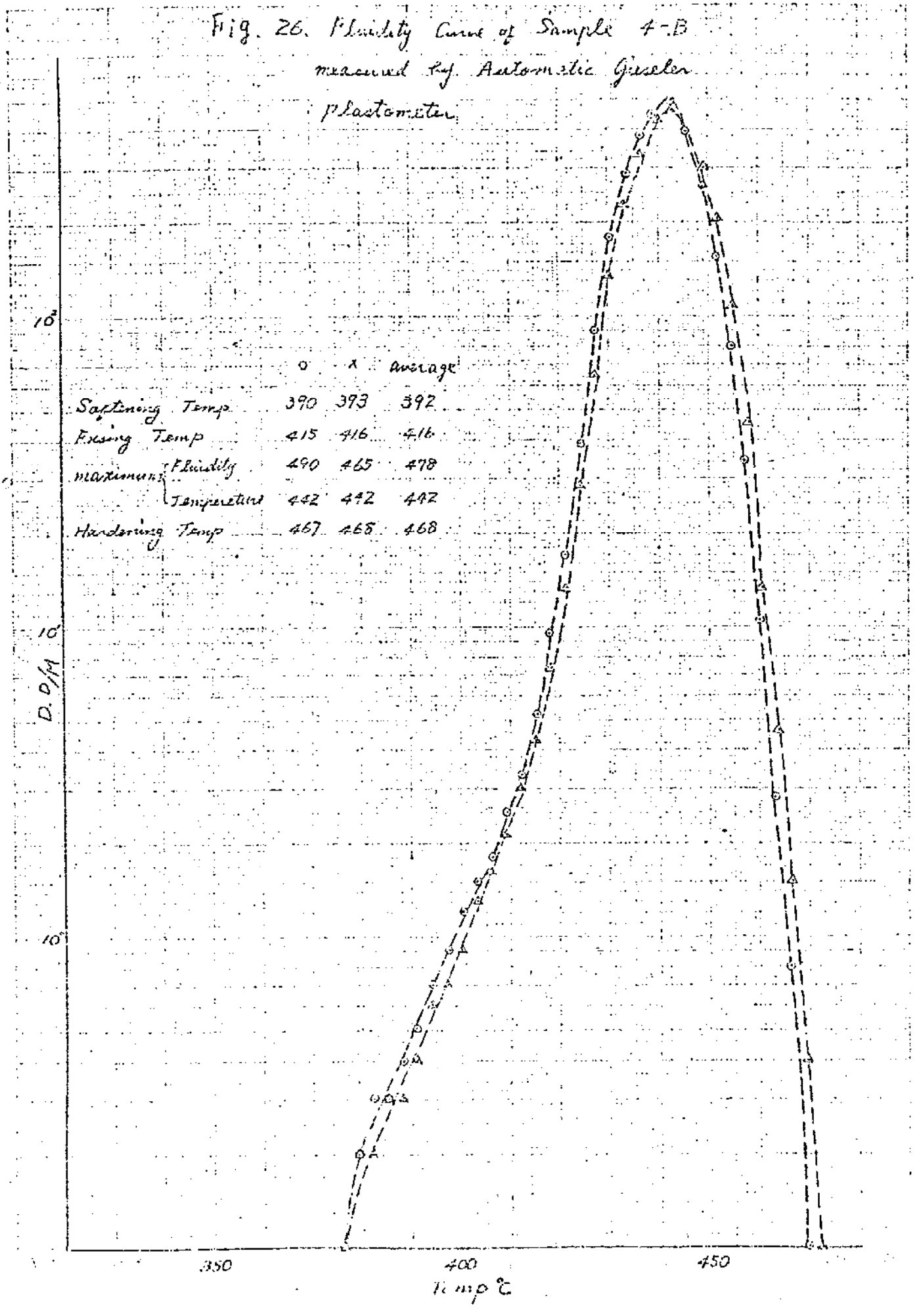


Fig. 25. Fluidity Curve of Sample 4-A measured by Automatic Jiuselen plastometer



	○	△	Average
Softening Temp	395	397	396
Fusing Temp	420	423	422
Maximum Fluidity	710	650	680
Maximum Temperature	439	441	440
Hardening Temp.	462	464	463

Fig. 26. Fluidity Curve of Sample 4-B
measured by Automatic Gieseler
Plastometer



	o	x	Average
Softening Temp	390	393	392
Fusing Temp	415	416	416
Maximum Fluidity	490	465	478
Maximum Temperature	442	442	442
Hardening Temp	467	468	468

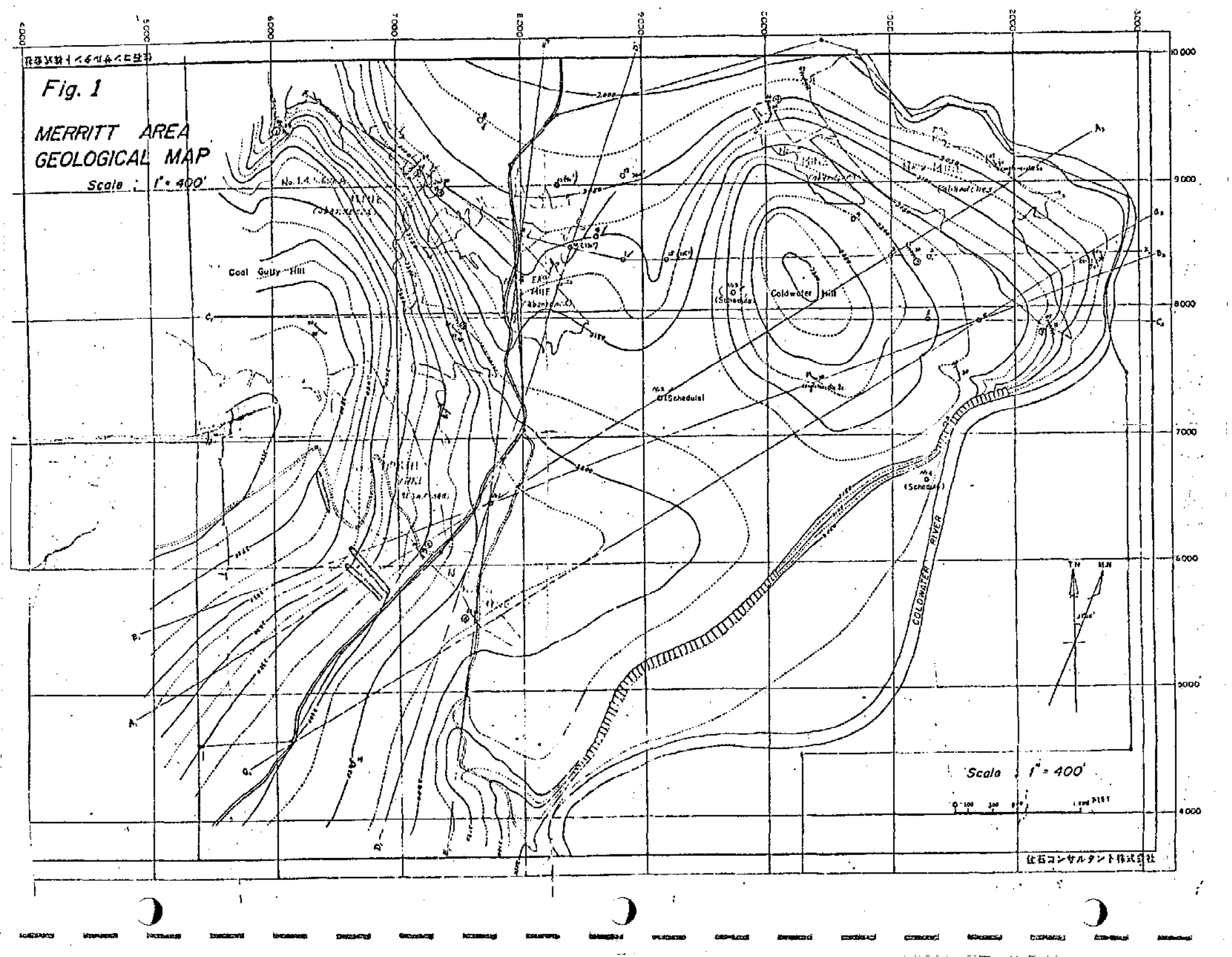
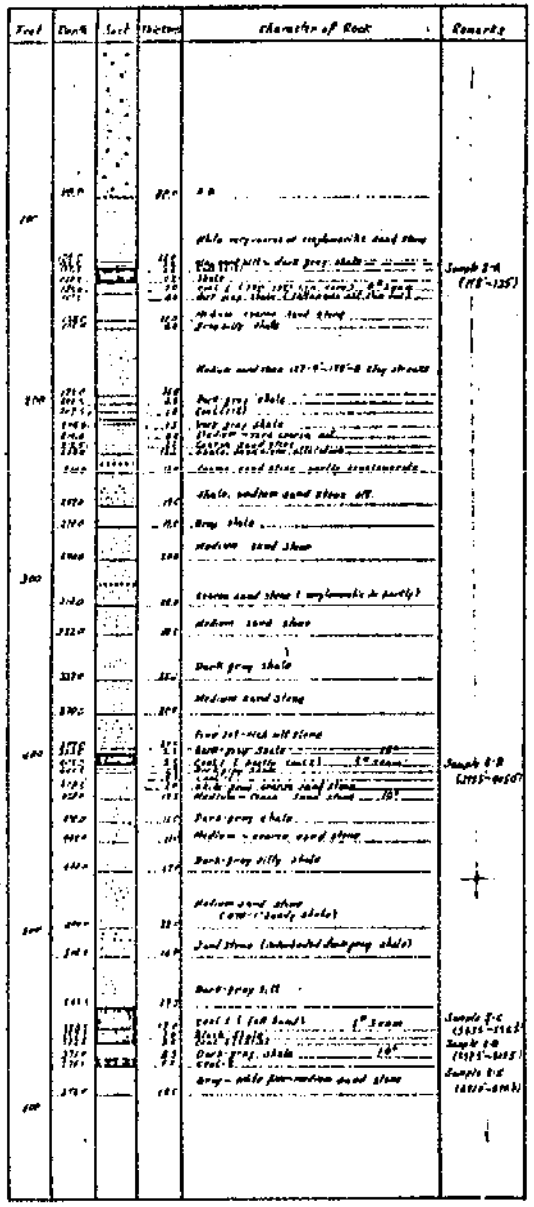


Fig. 1
MERRITT AREA
GEOLOGICAL MAP
Scale : 1" = 400'
Coal Gully Hill
Coldwater Hill
COLDWATER RIVER
Scale 1" = 400'
住石コンサルタント株式会社

Fig. 1

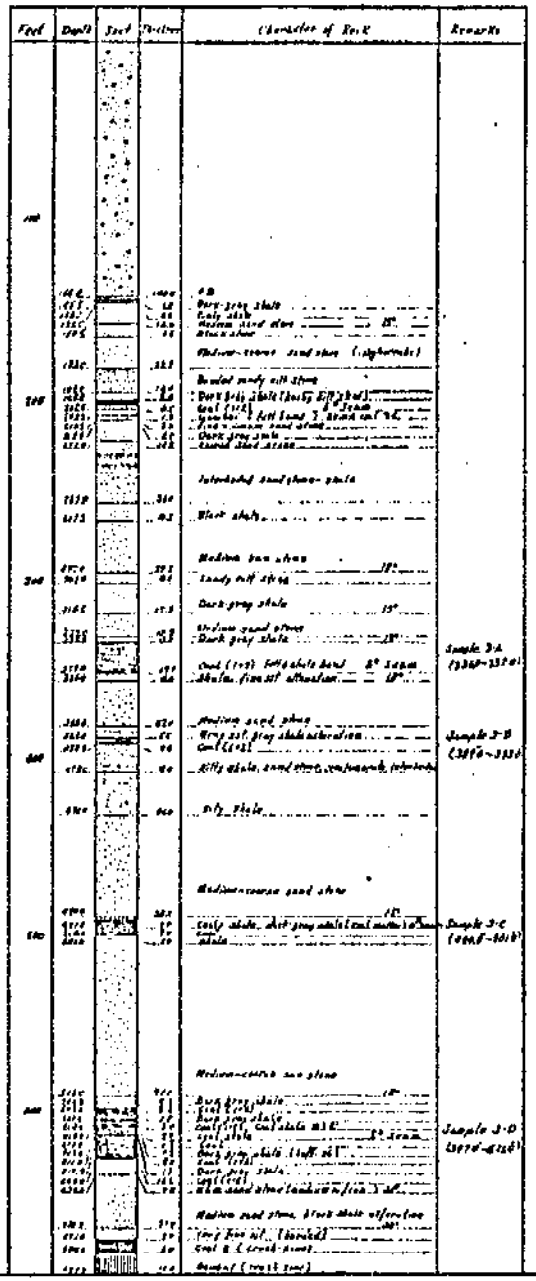
NO. 2 DRILLING COLUMNAR SECTION

SCALE 1 INCH = 50 FEET



NO. 3 DRILLING COLUMNAR SECTION

SCALE 1 INCH = 50 FEET



NO. 4 DRILLING COLUMNAR SECTION

SCALE 1 INCH = 50 FEET

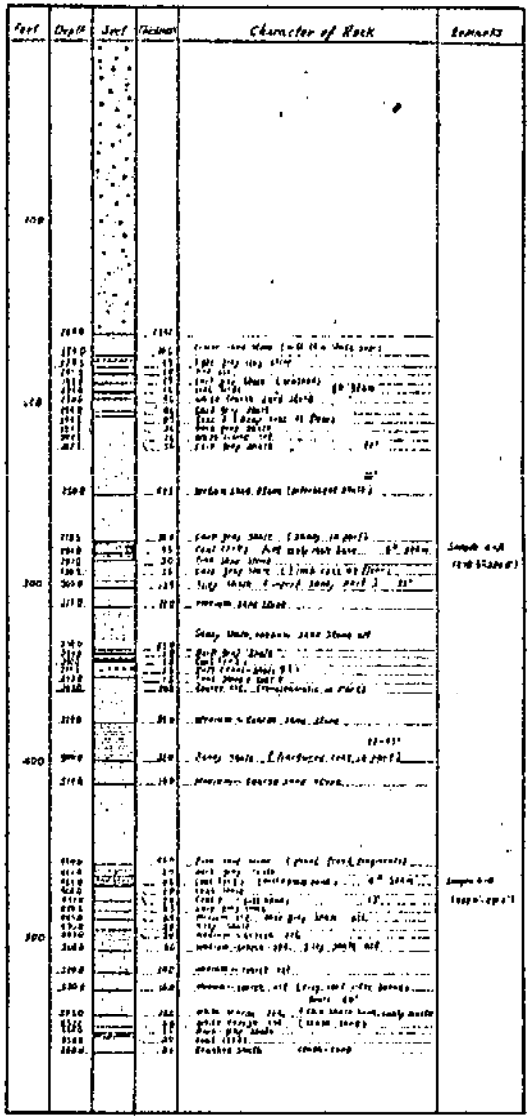


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FIG. 3 COLUMNAR SECTION OF COAL SAMPLED FROM NO.3 DRILLING CORE SCALE 1 INCH = 1 FEET

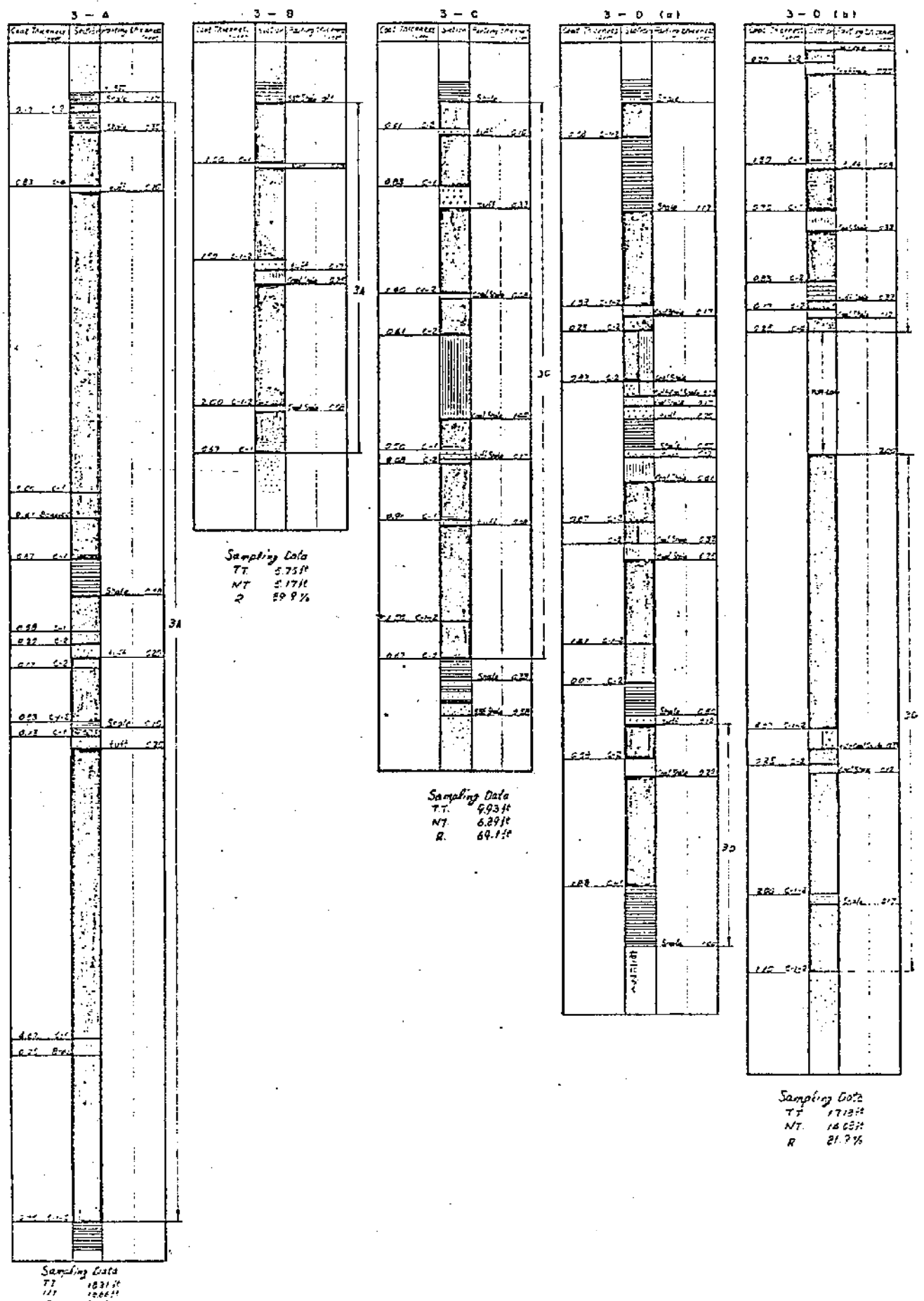
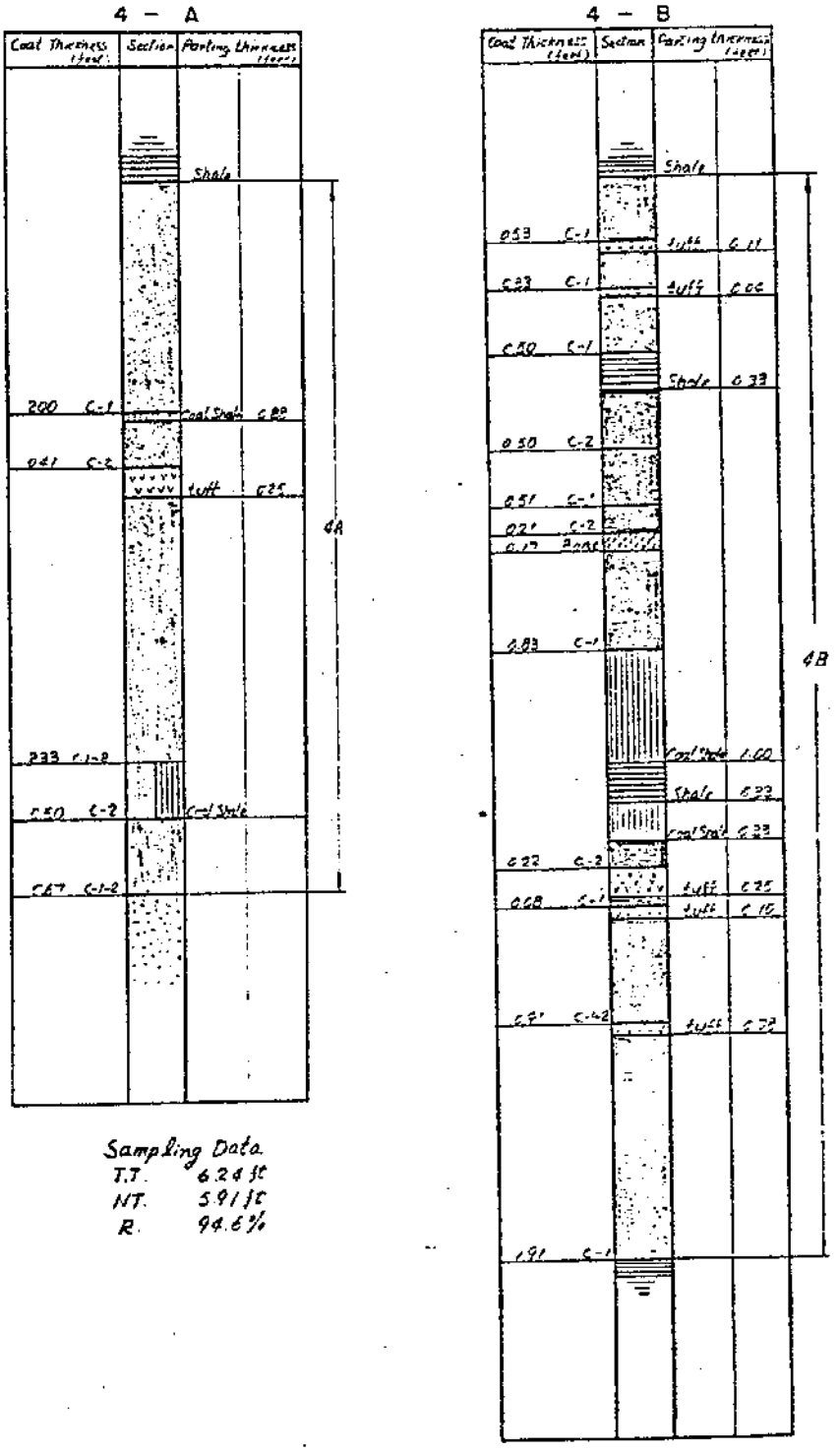


FIG. 4 COLUMNAR SECTION OF COAL SAMPLED FROM NO.4 DRILLING CORE

SCALE 1 INCH = 1 FEET



Sampling Data

T.T. 6.24 ft

N.T. 5.91 ft

R. 94.6%

Sampling Data

T.T. 9.28 ft

N.T. 6.70 ft

R. 72.3%

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FIG. 3 COLUMNAR SECTION OF COAL SAMPLED FROM NO.3 DRILLING CORE SCALE 1 INCH = 1 FEET

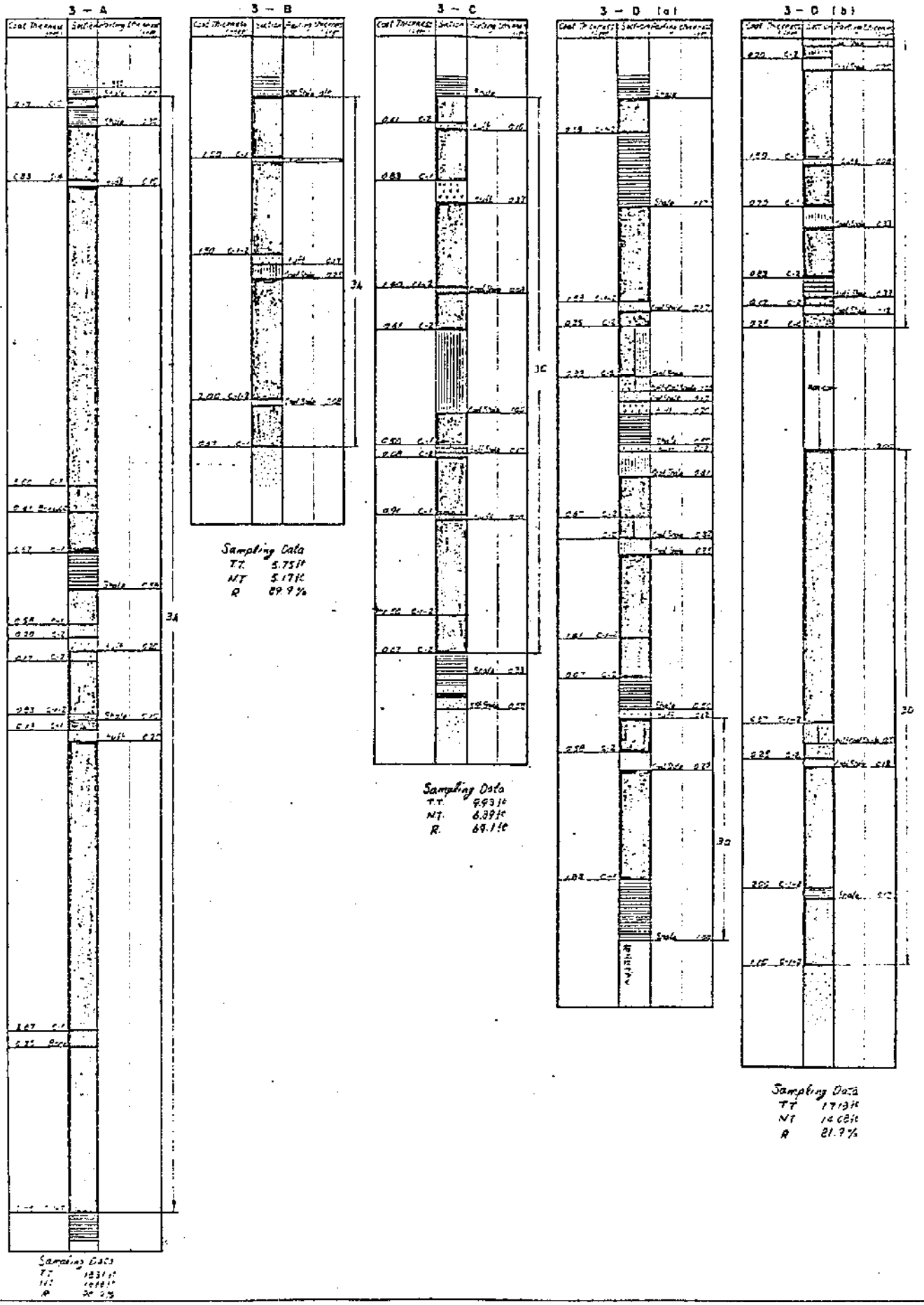
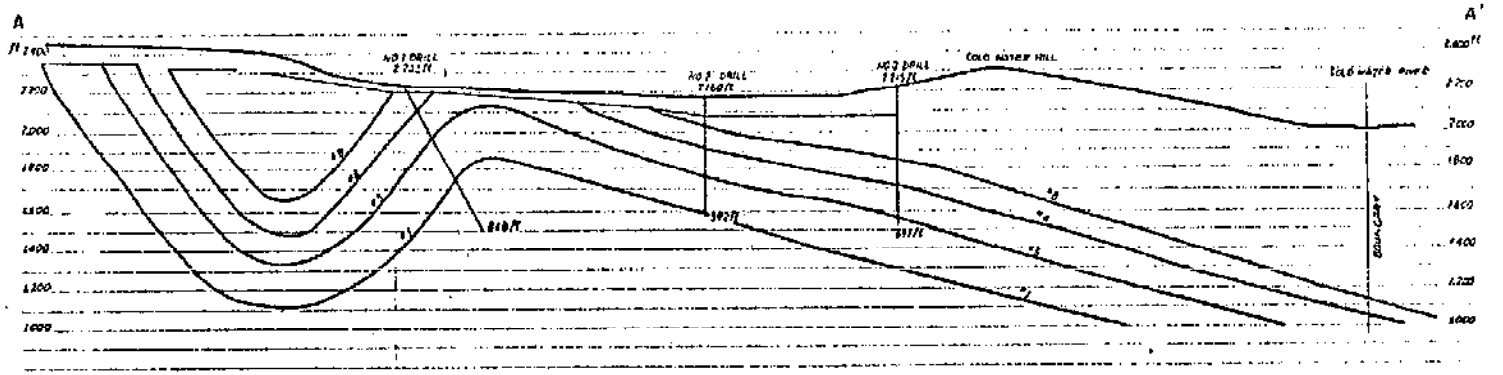


Fig. 27 GEOLOGICAL SECTION SE TO NW

Scale 1" = 400'

A - A' SECTION



B - B' SECTION

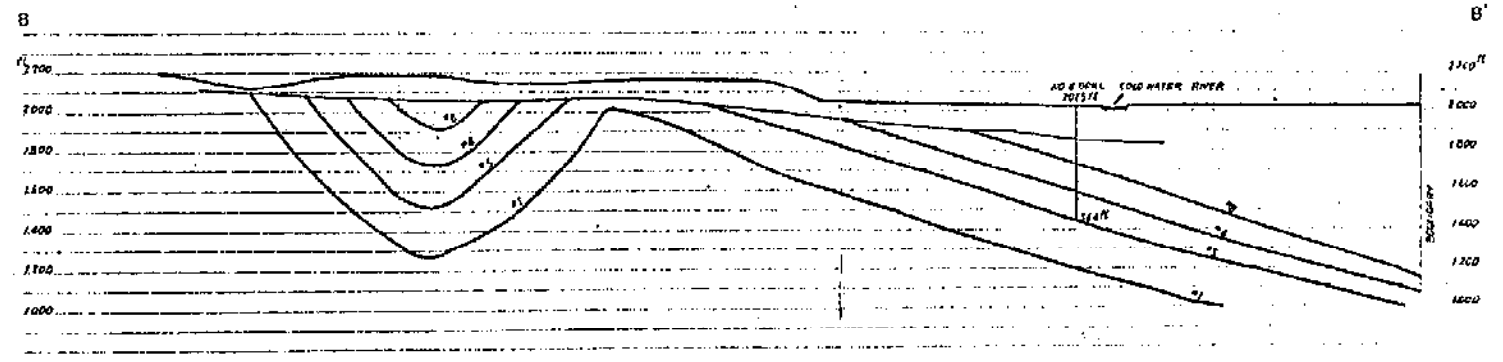


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Fig. 28

NO. 8 COAL SEAM

UNDERGROUND CONTOUR MAP

Scale 1" = 400'

Calculating Area

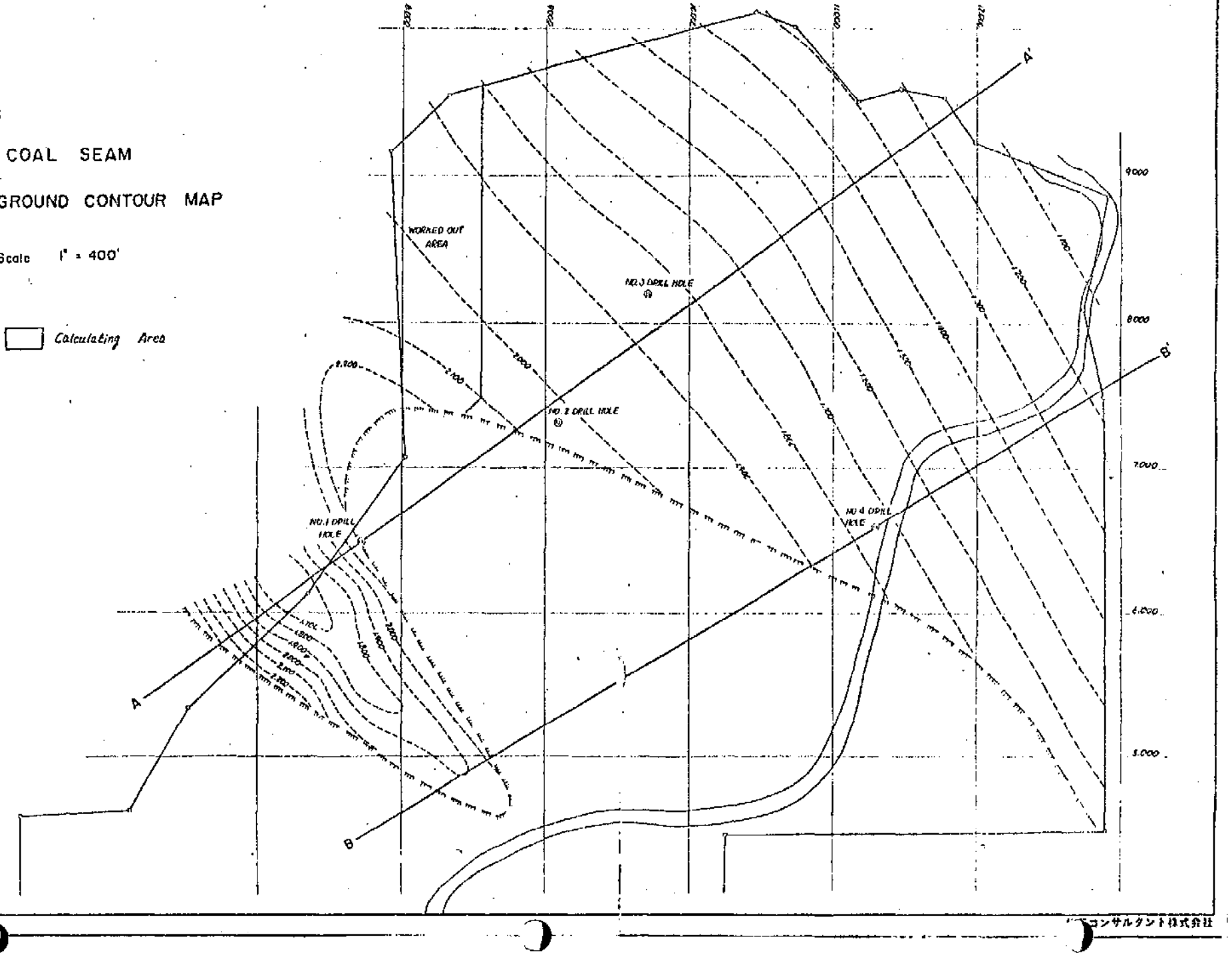


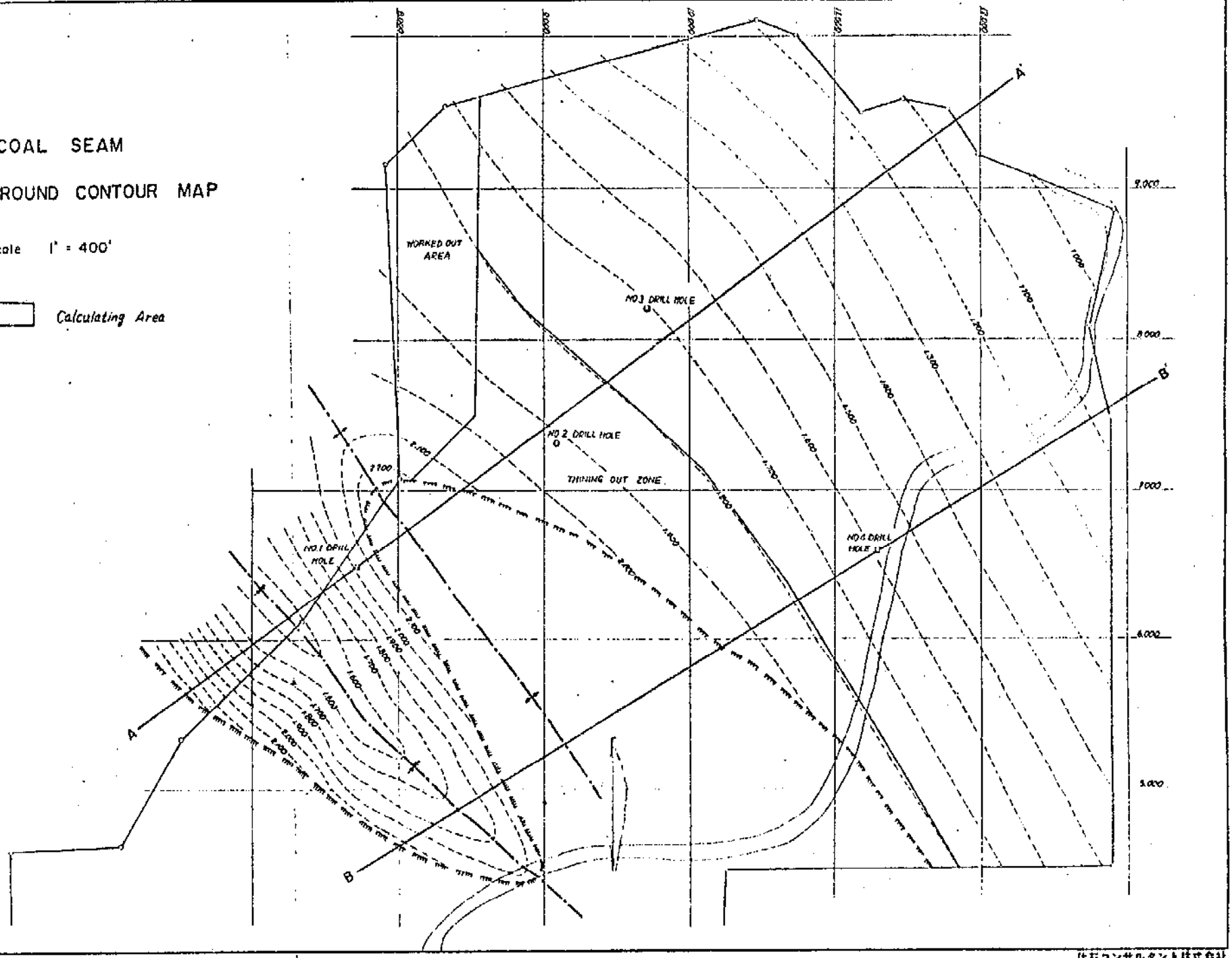
Fig. 29

NO. 4 COAL SEAM

UNDERGROUND CONTOUR MAP

Scale 1" = 400'

Calculating Area



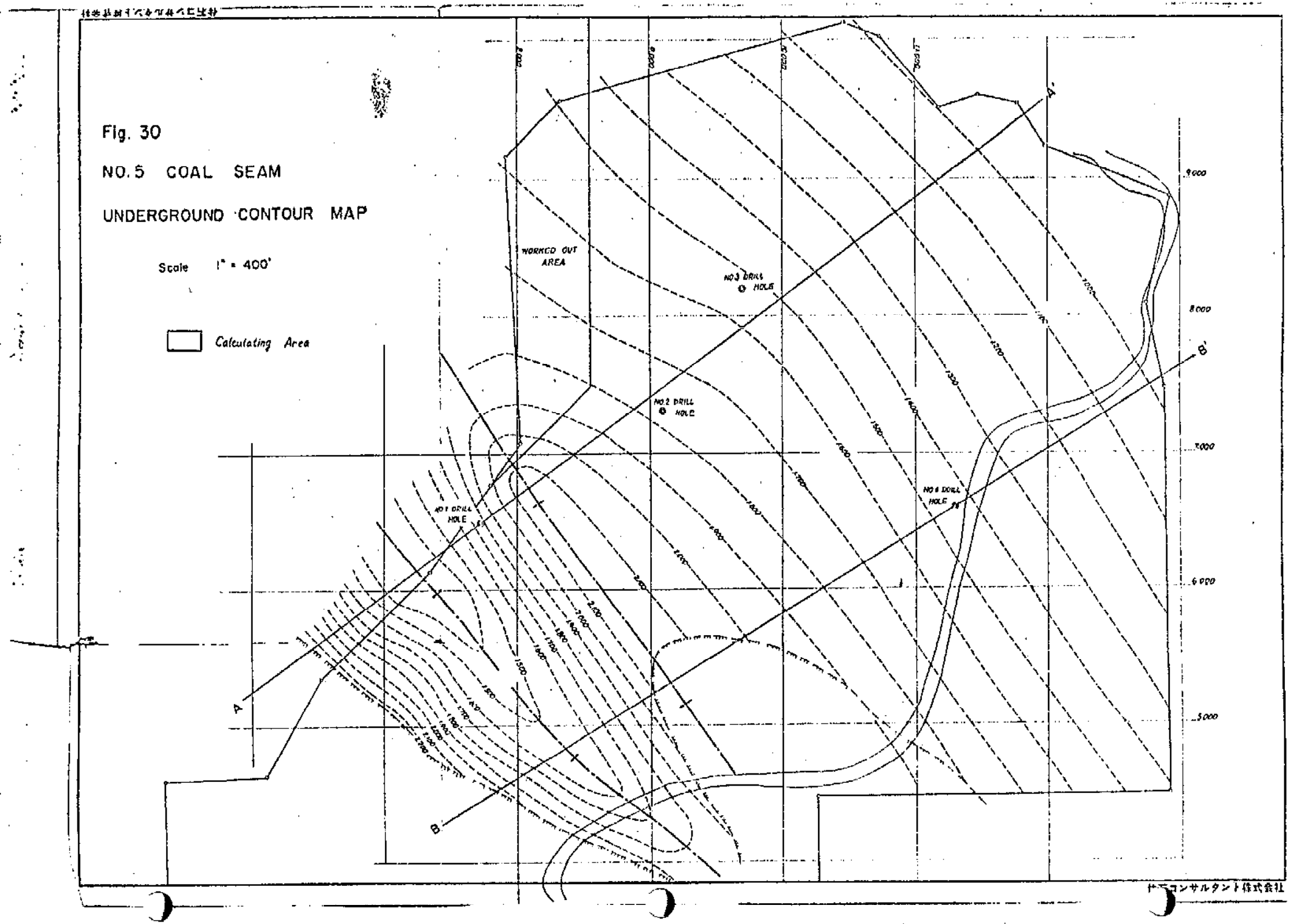


Fig. 30
NO. 5 COAL SEAM
UNDERGROUND CONTOUR MAP
Scale 1" = 400'
Calculating Area
WORKED OUT AREA
NO.1 DRILL HOLE
NO.2 DRILL HOLE
NO.3 DRILL HOLE
NO.4 DRILL HOLE
A
A'
B
B'
9000
8000
7000
6000
5000

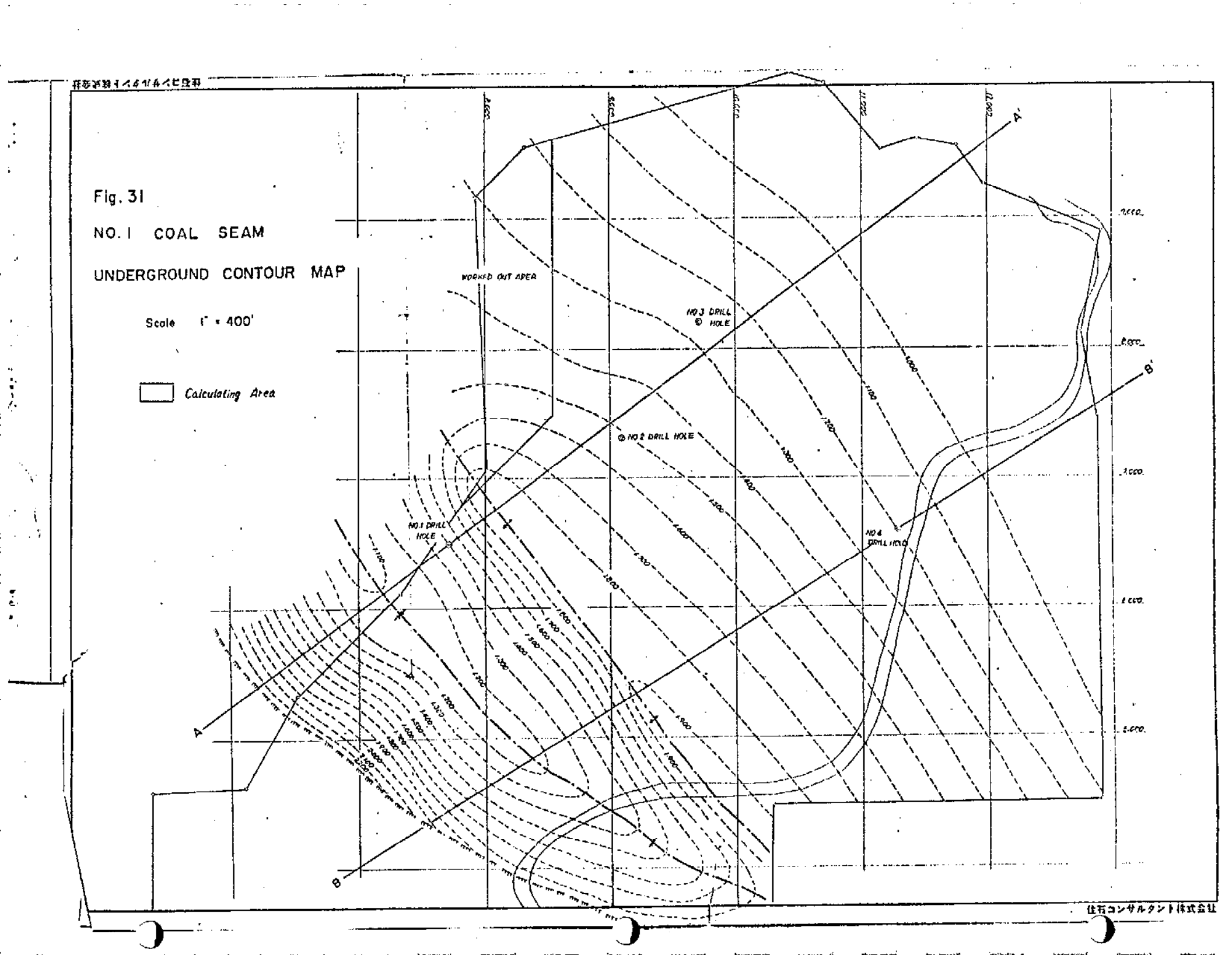
Fig. 31

NO. 1 COAL SEAM

UNDERGROUND CONTOUR MAP

Scale 1" = 400'

Calculating Area



住石コンサルタント株式会社

IMPERIAL METALS & POWER LTD.

MERRITT COAL

SUMICOL REPORT

August 1969

Fig. 2 No.1 Drilling Columnar Section

Scale : 1" = 50'

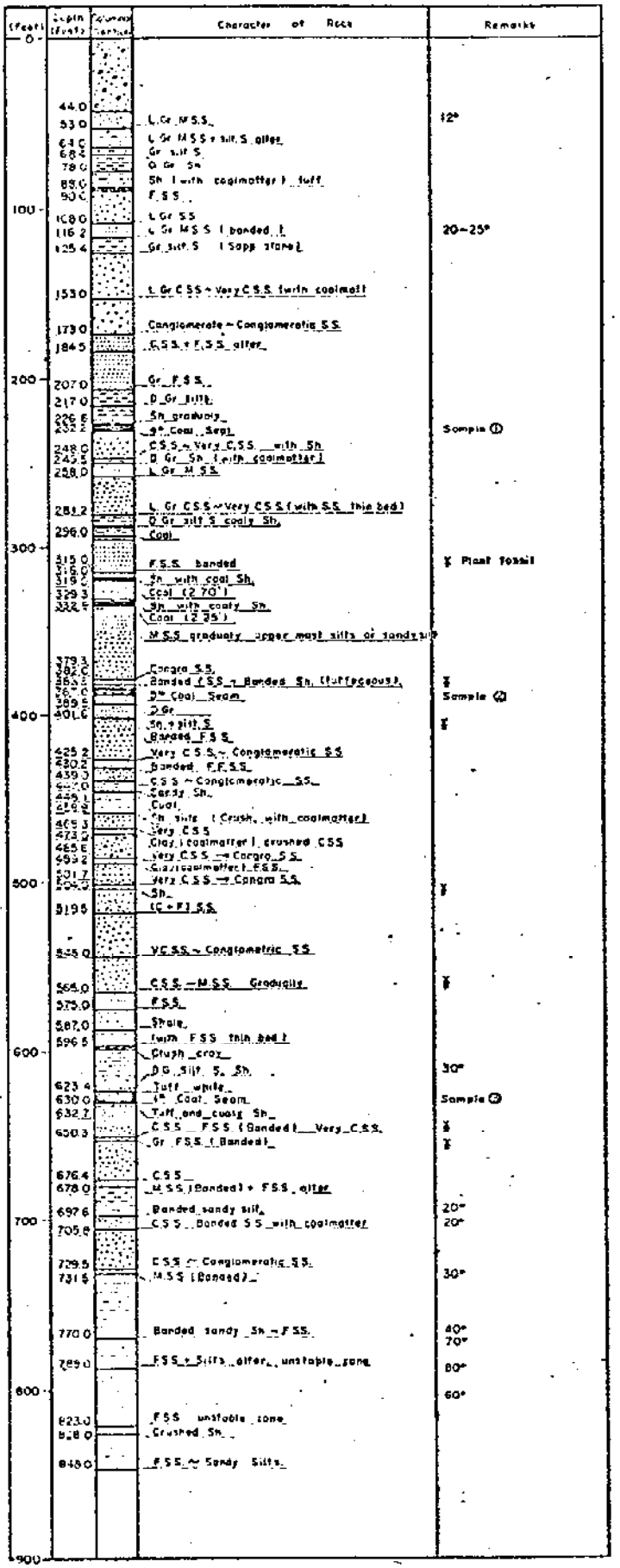
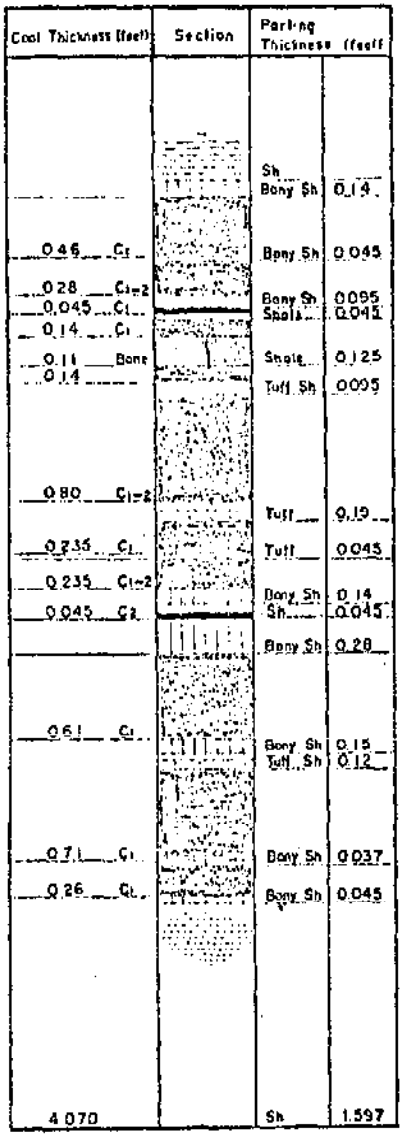


Fig. 3 No. 1 Drilling Columnar Section of Coal Seam

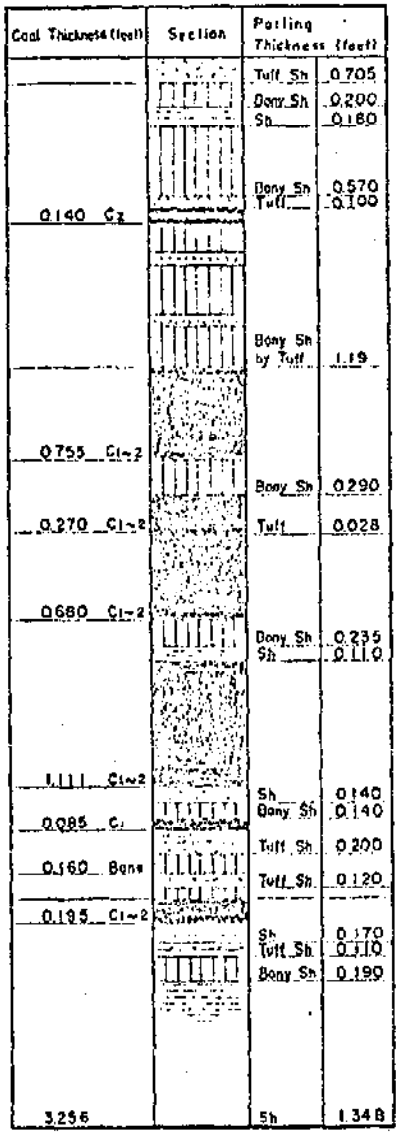
Scale ; 1" = 1'

SEAM – A



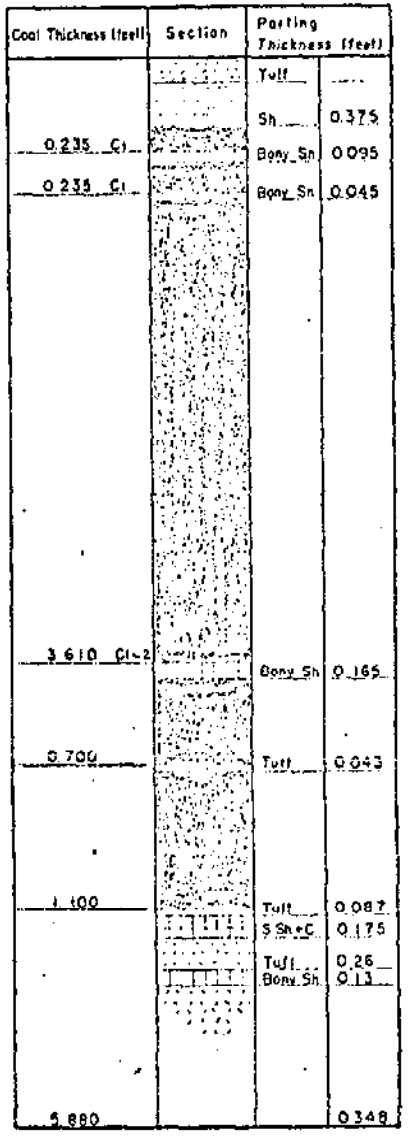
Net Thickness ; 4.070 feet
Gross Thickness ; 5.667 feet

SEAM – B



Net Thickness ; 3.256 feet
Gross Thickness ; 4.504 feet

SEAM – C



Net Thickness ; 5.880 feet
Gross Thickness ; 6.228 feet

Fig. 4 Geological Section of Merritt Area Scale 1"=400'

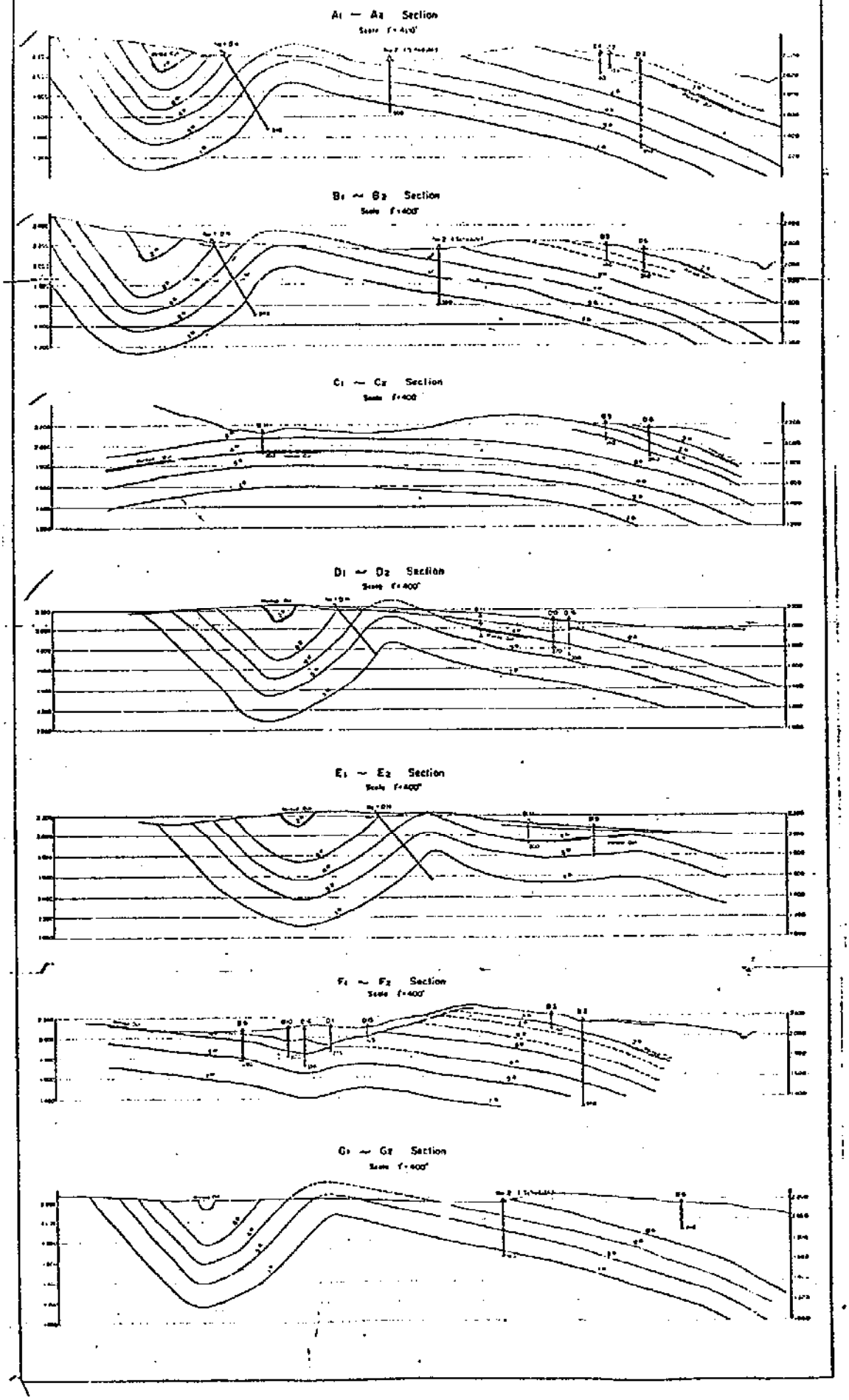


Fig. 5 Old Drilling Columnar Section's

Scale ; 1" = 1' 1" = 50'?
(Unite ; feet)

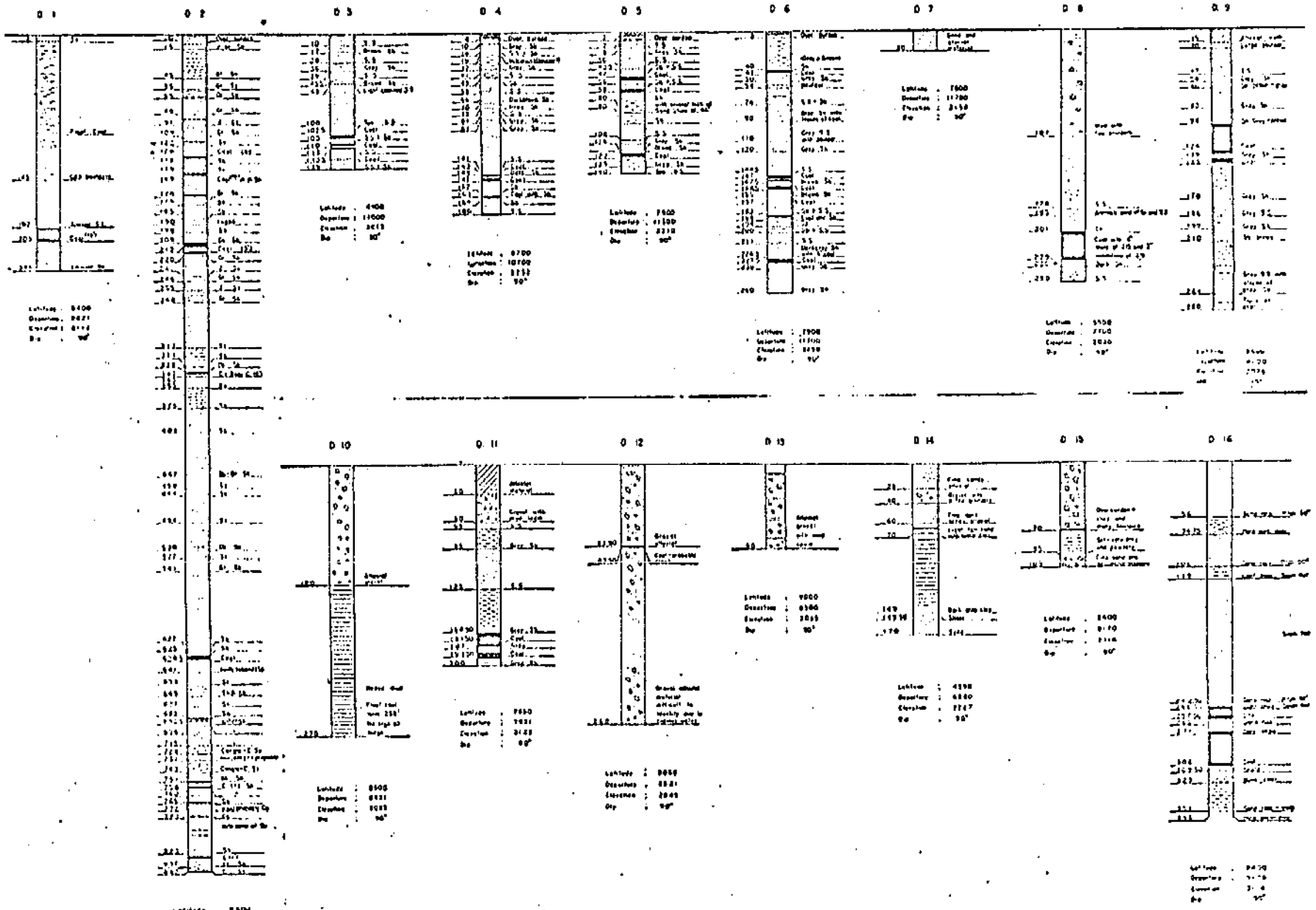


Fig. 6 · Coal Seam Columnar Section's at Old Mines & Out Crops

Scale ; 1" = 1'
(Unite ; feet)