DOCUMENTATION OF INTERIM CORRECTIVE MEASURES (ICM) FOR EXPLOSIVES DYNO-NOBEL FACILITY PORT EWEN, NEW YORK

Prepared for:

Hercules Inc.
Hercules Plaza
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Wilmington, Delaware 19894

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Salt Lake City, UT 84144

Prepared by:

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Mahwah, New Jersey 07430

UXB International
21641 Beaumeade Circle
Ashburn, Virginia 22011

January 1997

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1.0 INTRODUCTION

Interim Corrective Measures (ICM) were conducted at the DYNO Nobel Port Ewen Facility to address identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) which potentially contained explosive materials. This work was undertaken in accordance with approved Work Plans titled "Interim Corrective Measures, DYNO Nobel, Inc. Port Ewen, New York," (UXB International, February 1995) and "Determination of Explosive Material in Sediment of the Detonation Pond," (UXB International, June 1996). The objective of this work was to screen those SWMUs and AOCs which handled explosive materials for primary and secondary explosives which may be present at reactive concentrations. If reactive concentrations were found, the impacted soils were excavated until the testing results were negative.

This work was conducted to address the health and safety concerns associated with the area prior to further investigation associated with the RCRA Facility Investigation (RFI). The ICM field work was completed during the period July 24, 1996 through October 7, 1996. Explosives material handling was conducted by personnel from UXB International who are specifically trained in the excavation, handling, and disposal of explosive materials. SWMUs addressed under the ICM Work Plans were identified from the Resource Conservation and Recovery Act (RCRA) Facilities Assessment Report (RFA Report) (A.T. Kearney Inc. October, 1993; Revised by ECKENFELDER INC. December 1994). Site maps, aerial photographs and photographs of the SWMUs taken during the RFA Visual Inspection were used to locate the various units. These photographs were obtained from the New York State Department of Environmental Conservation (NYSDEC) and copies are also filed at the DYNO Nobel facility in Port Ewen, New York.

A total of 17 SWMUs were screened by UXB for primary and secondary explosives. Primary explosives are defined as materials used to initiate a detonation reaction. At this DYNO Nobel site, these include Lead azide, Mercury fulminate, Lead styphnate and Diazodinitrophenol (DDNP). Secondary explosives do not initiate a detonation reaction on their own and are thus less sensitive to heat, impact and friction as compared to the primary explosives. Secondary explosives addressed at the DYNO site include Tetryl, RDX, and PETN.

2.0 FIELD METHODS

The sampling locations at each SWMU were chosen based on the operational history of that unit. At each SWMU, individual point source locations suspected of containing explosive materials were identified and sampled first. Sampling consisted of one set of surface samples taken approximately 0-2 inches and, in the same location, a set of subsurface samples collected from approximately 2-8 inches. These samples are distinguished with an "S" prefix for surface samples and an "SS" prefix for the deeper subsurface samples. This sampling strategy was used as explosives have a tendency to decompose in direct sunlight. The deeper sample at each location would better address this reactive issue. The number of sampling locations varied depending upon the size of each SWMU and the operational history. Sample locations at each SWMU/AOC were selected and locations surveyed by UXB for horizontal control.

Before sampling took place, the area was completely saturated with water to desensitize it. Sampling personnel wore cotton lab coats and face shields during sampling. Small garden trowels, which were also wetted down, were used to scoop the soil samples into laboratory cleaned glass jars. The samples were then brought to DYNO's on-site laboratory annex which was designated for use by UXB/ECKENFELDER INC. during the project. A small amount of soil was removed from the sample jar and placed in an aluminum dish (any debris, such as rocks or metal were removed). The sample was then dried in an oven for no less than 6 hours at 82°C. The drying of the samples prior to testing was employed to increase the sensitivity of the laboratory testing. Once dried, the samples were subjected to friction, impact, and calorimeter testing as described below.

The friction test was conducted in accordance with the Manual of Tests and Criteria for The Transportation of Dangerous Goods (49 CFR, para. 173.57) and consisted of a platform and swinging metal arm. At one end of the arm is a friction wheel and a 4,000 gram test weight. A small amount of sample was placed on a narrow friction plate which lays flat on the platform. The arm was then cocked in an upright position then released. The arm slid down and the wheel strikes the sample creating friction. If explosives were present a spark and a loud bang were detected. This procedure is repeated six times for each sample. The presence of explosives is confirmed only if all six repetitions initiate a reaction.

The impact test was also conducted in accordance with the above Manual of Tests and Criteria and consisted of an upright tower-like device with a one kilogram sliding test weight. A small amount of sample was placed in a metal cup and placed at the base of the impact tester. The weight was then raised to a height of 100 cm and dropped onto the sample cup. If explosives were present, a muffled bang was heard along with a distinct gunpowder like smell. This procedure is similar to the friction test in that it is repeated six times for each sample to confirm the presence of explosives.

The friction and impact testing on the dried samples provided a conservative evaluation as to the presence of explosives in reactive concentrations in the soil. The methodology calls for all six test runs to initiate a reaction for the presence of explosive quantities of materials to be confirmed. These tests, however, only indicate the presence of explosive material and do not identify the specific compound. Therefore, a Differential Scanning Calorimeter (DSC-7) was used to confirm the friction and impact test results and identify the specific explosive compound when present.

The Differential Scanning Calorimeter compares the samples thermal energy potential to a standard using platinum resistive heaters and thermometers. Each of the explosive compounds has a unique energy signature which is compared to the sample results for identification. Samples subjected to calorimeter testing included composite samples (identified by a prefix COMP) and individual samples identified by the sample number only. Composite samples from a given SWMU were run when the friction and impact tests for the individual samples were negative and there was no other indication that explosives were present. Individual samples were tested on the calorimeter when friction and impact testing suggested the presence of explosives or there were other indications (i.e., visual) that explosives were present. In general, this resulted in composite samples run on the surface samples and individual analyses conducted on the subsurface samples.

The effectiveness and accuracy of the three test methods (friction, impact, and calorimeter) were evaluated and confirmed by testing small samples of Lead styphnate, Lead azide, and PETN which were provided by DYNO Nobel.

If a positive result was found on a surface or subsurface sample from any of the SWMU/AOCs, the following procedure was implemented: The area was resampled in a one-foot radius, or to the limit of visual contamination, around the area where explosives were detected. If these samples were positive, then the process was repeated until the sample results were negative for explosives. The soils within the defined area were then excavated after saturating the soils with water. The excavated material was placed in either a 55 gallon poly drum or 5 gallon pail, both used with static proof liners, (drums and liners were provided by DYNO Nobel). The excavated soil was then blended with inert material to a concentration of no more than 1 percent by volume of primary explosive or no more than 10 percent by volume of secondary explosives. Confirmation sampling was performed on each drum to ensure explosives were sufficiently blended with the inert materials. Drums were placed in one of DYNO Nobel's hazardous waste storage magazines for later disposal.

The above procedures pertain to all SWMU/AOCs except SWMUs 38N and 38S, which are the suspected north and south grenade disposal areas. At these SWMUs, the area was divided into specific measured grids. Once each grid was marked, a geophysical survey was performed by sweeping each grid with a magnetometer. Each detected anomaly was dug up, identified, and potentially explosive material placed in 5 gallon pails.

3.0 ICM DOCUMENTATION

Documentation of the ICM activities at each individual SWMU or AOC are presented in the following Appendices and are summarized in Table 1. Appendix A presents several calorimeter graphs showing peaks of known explosives. These were used as standards to compare to samples collected during this project. Each SWMU/AOC addressed during the Interim Corrective measures is then presented in numerical order in the subsequent appendices. Each appendix begins with a cover page identifying the SWMU/AOC location, including a sketch of the SWMU/AOC with the sample locations identified. This is followed by a brief summary of the work performed at that location. The next page presents selected photos showing sample locations of that particular SWMU/AOC. Original photographs are maintained by DYNO Nobel, ECKENFELDER INC., and UXB International. The remainder of the data included for each SWMU are the calorimeter, friction, and impact test work sheets. The first pages are the results from calorimetric testing. Sample dates and ID numbers are included, followed by the abbreviations of the explosives. If a specific explosive was present, it is indicated by a "Y" (yes) or a "N" (no). This is followed by the actual DSC graphs showing the actual peaks if explosives were present. Following the graphs are the friction/impact results. Positive or negative results are indicated by either a yes or no.

TABLE 1

SUMMARY OF INTERIM CORRECTIVE MEASURES
DYNO-NOBEL FACILITY
PORT EWEN, NEW YORK

SWMU/AOC	Date Completed	No. of Samples Analyzed	Primary Explosives Present (Y/N)	Secondary Explosives Present (Y/N)	Approximate Volume of Explosives Removed	Comments
1 - Former Detonation Pond	9/26/96	30	N	Y	See Comments	Caps and related debris were placed in two-5 gallon pails combined with similar material from SWMU 38N and 38S
9 - Waste Powder Catch Basin Building 2037	8/13/96	8	N	N	NA	
10 - Waste Powder Catch Basin Building 2048	8/19/96	25	N	N	NA	
11 - Waste Powder Catch Basin Building 2049	8/14/96	32	N	N	NA	
13 - Former Waste Powder Catch Basin Building 3001	8/19/96	17	N	N	NA	
29 - Drainage Ditch Downgrade of Building 2049	8/19/96	20	N	N	NA	
33 - Mercury Fulminate Tanks Area	8/14/96	16	N	N	NA	
36 - Pellet House Septic Tank	8/20/96	10	N	Y	See Comments	Explosive powders are removed periodically by DYNO Nobel
38N - Suspected Grenade Disposal Area (North)	8/2/96	NA	N	N	See Comments for SWMU 1	

TABLE 1 (CONTINUED)

SUMMARY OF INTERIM CORRECTIVE MEASURES
DYNO-NOBEL FACILITY
PORT EWEN, NEW YORK

SWMU/AOC	Date Completed	No. of Samples Analyzed	Primary Explosives Present (Y/N)	Secondary Explosives Present (Y/N)	Approximate Volume of Explosives Removed	Comments
38S - Suspected Grenade Disposal Area (South)	10/4/96	NA	N	N	See Comments for SWMU 1	
39 - Former Wastewater Discharge Area Building 2009	8/19/96	22	N	N	NA	
40 - Pilot Line Condensate Collection Sump Building 2062 (Destroyed)	8/16/96	19	N	N	NA	
41 - Detonator Production Building Condensate Collection Sumps	9/8/96	75	Y	Y	Nineteen- 55 gallon poly drums and 14-5 gallon metal pails containing explosives/inert material were removed	
42 - Steam Collection Containers Building 2026	8/15/96	12	N	N	NA	
46 - Vacuum Line Condensate Collection Sump Building 2059 (Destroyed)	8/16/96	6	N	N	NA	
47 - Lead Scrubber and Loading Rooms Building 2058	8/15/96	12	N	N	NA	
48 - Mercury Fulminate Area	9/23/96	167	Y	Y	Four- 5 gallon pails containing explosives/inert material were removed	

TABLE 1 (CONTINUED)

SUMMARY OF INTERIM CORRECTIVE MEASURES
DYNO-NOBEL FACILITY
PORT EWEN, NEW YORK

SWMU/AOC	Date Completed	No. of Samples Analyzed	Primary Explosives Present (Y/N)	Secondary Explosives Present (Y/N)	Approximate Volume of Explosives Removed	Comments
AOC-C - Open Detonation Test Pit	8/14/96	18	N	N	NA	
AOC-D - Detonation Test Building	8/14/96	18	N	N	NA	

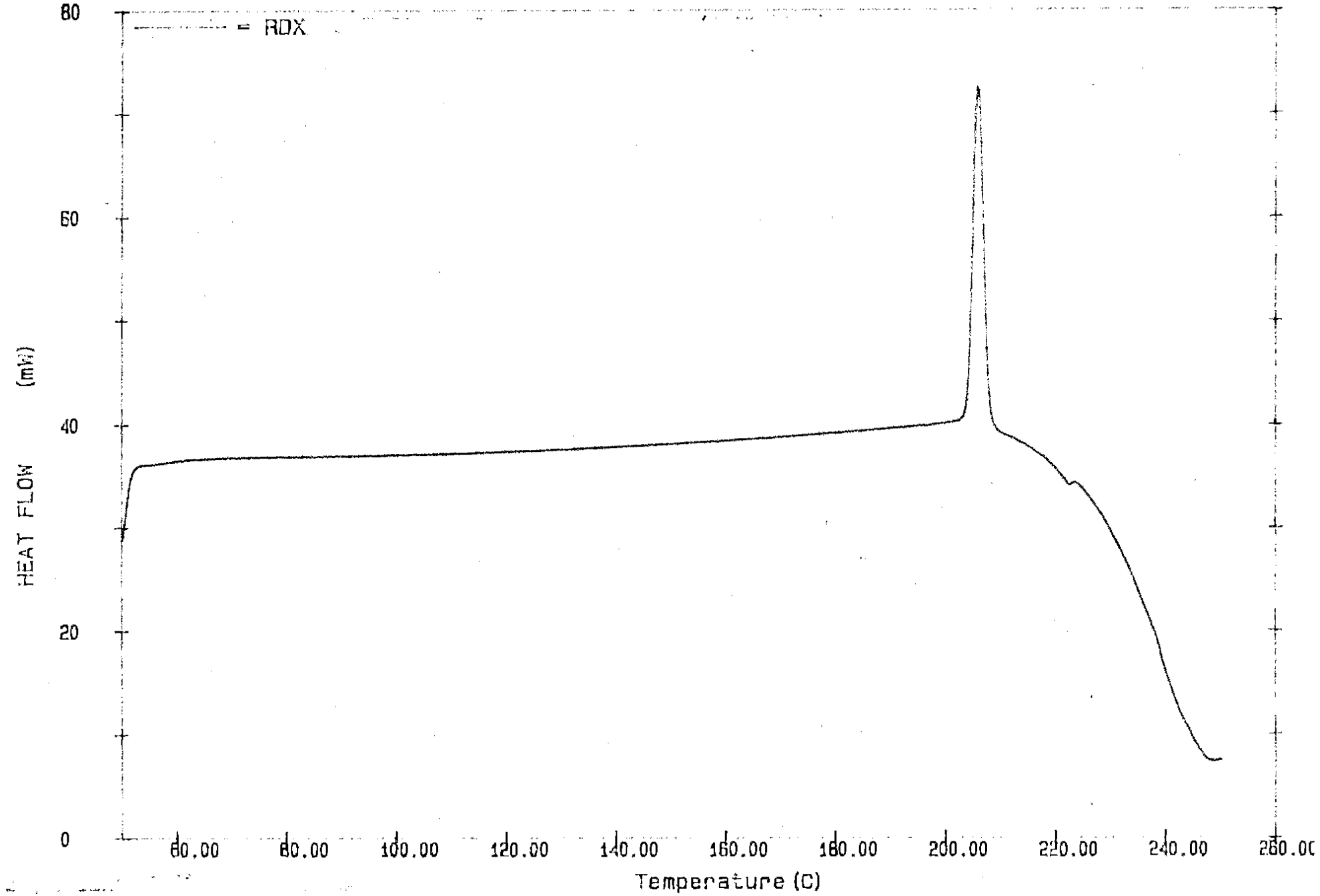
NA - Not Applicable

4.0 CONCLUSIONS

The objectives of the Interim Corrective Measures Work Plan were met for the specific SWMU/AOCs. These areas are now safe for additional investigation activities. However, standard safety practices for working on an explosives site should be followed by those performing additional work in these areas.

APPENDIX A

CALORIMETER STANDARDS



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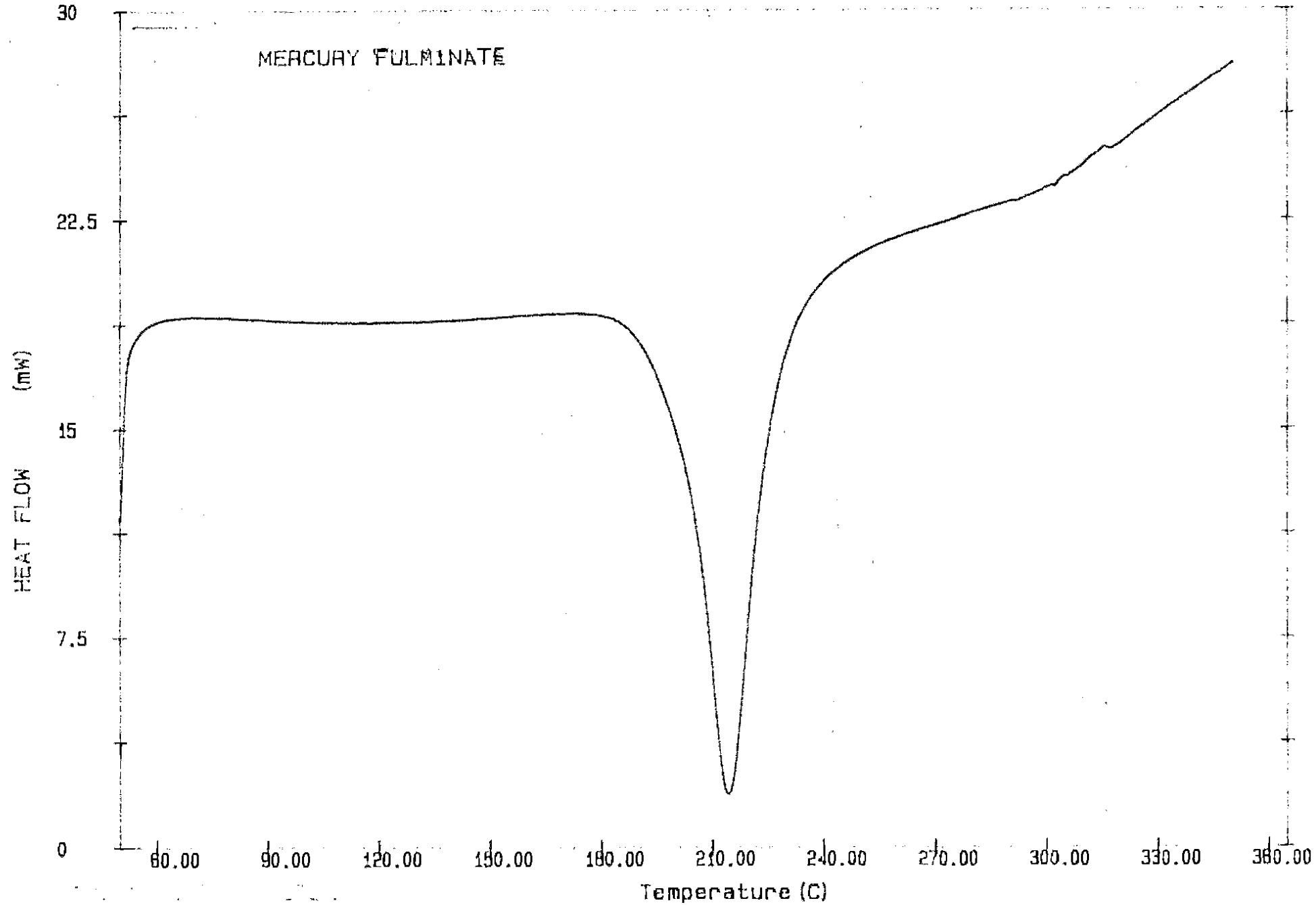
PERKIN-ELMER DSC7



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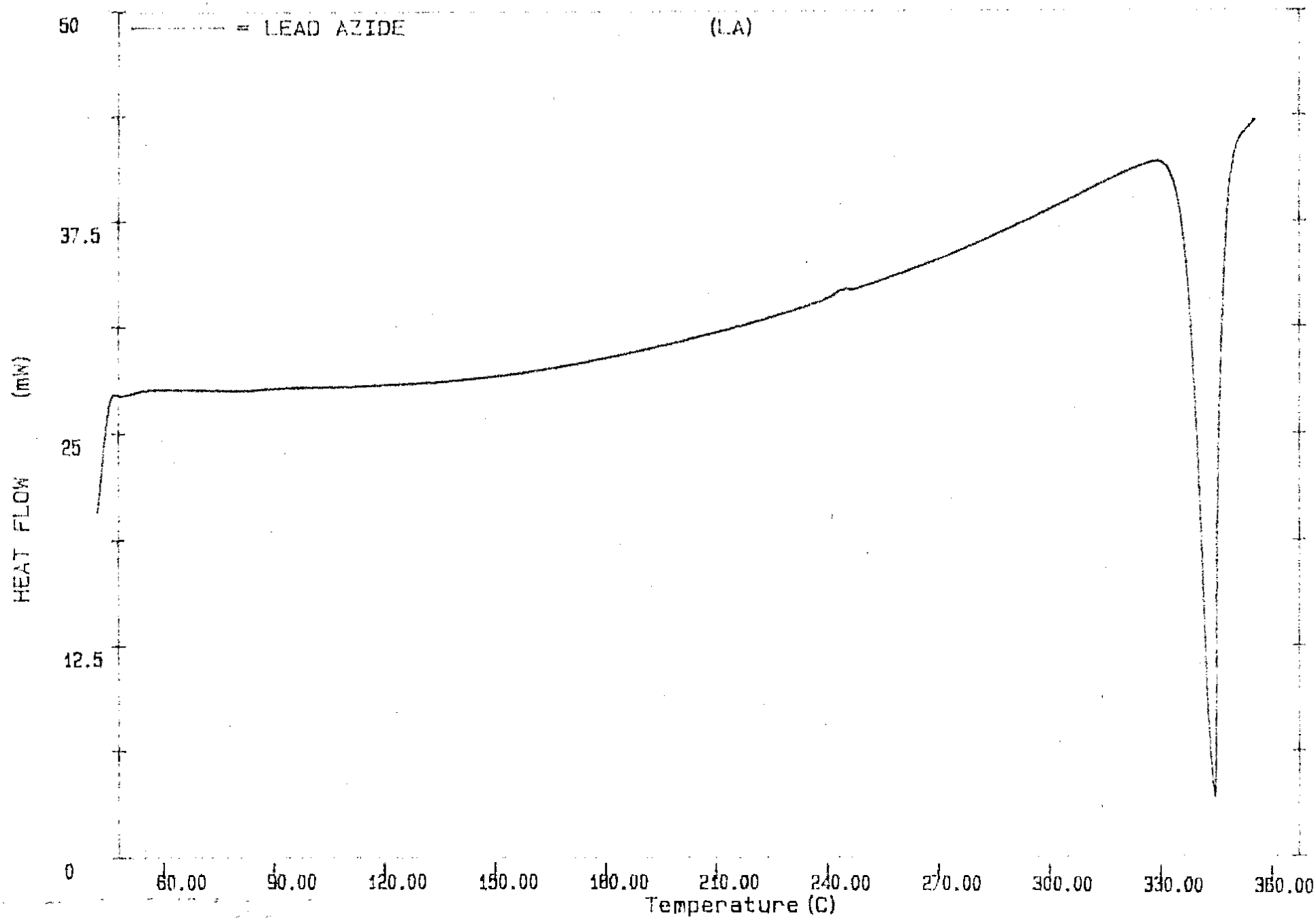

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Sam Wt: 0.710 mg

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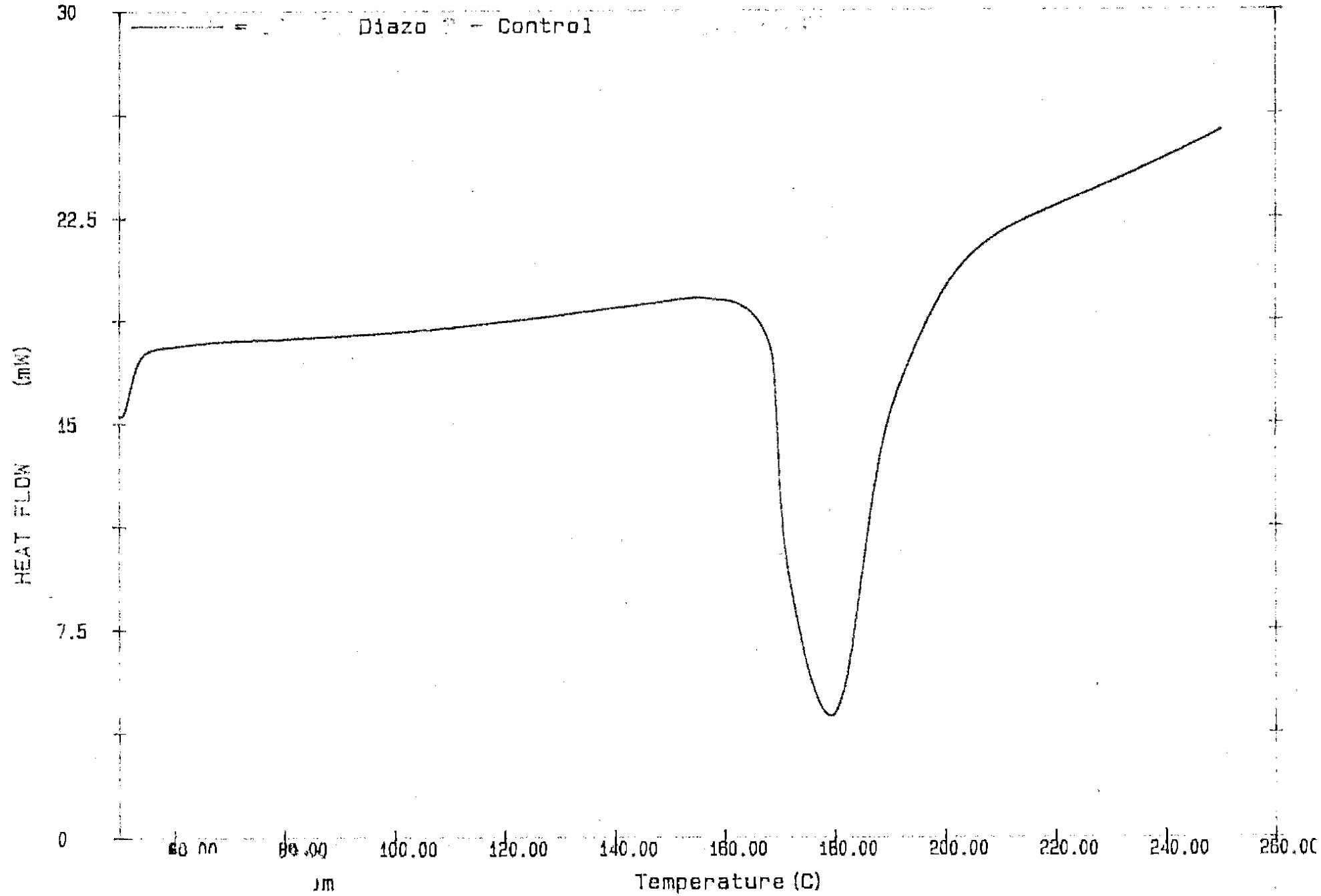

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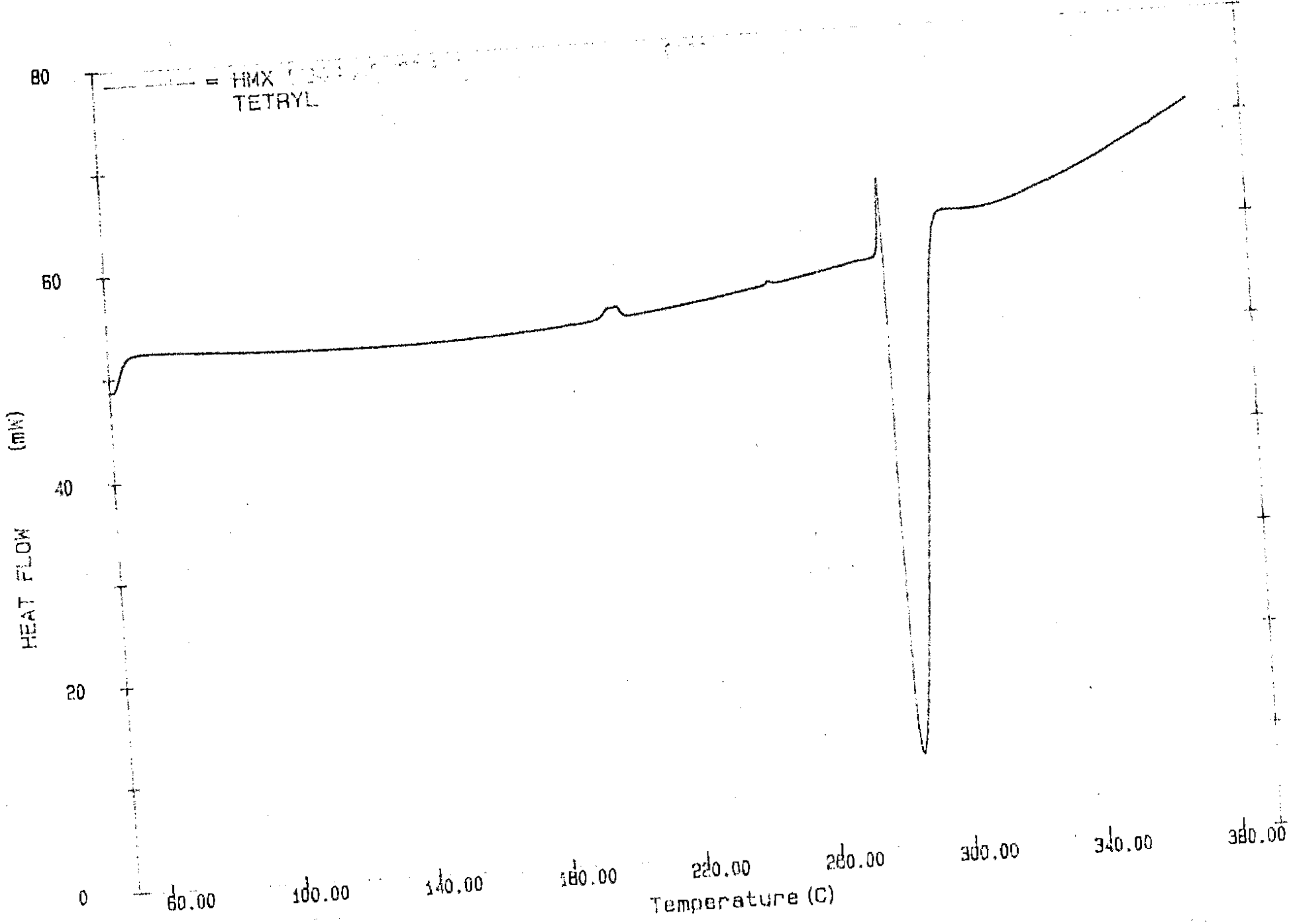

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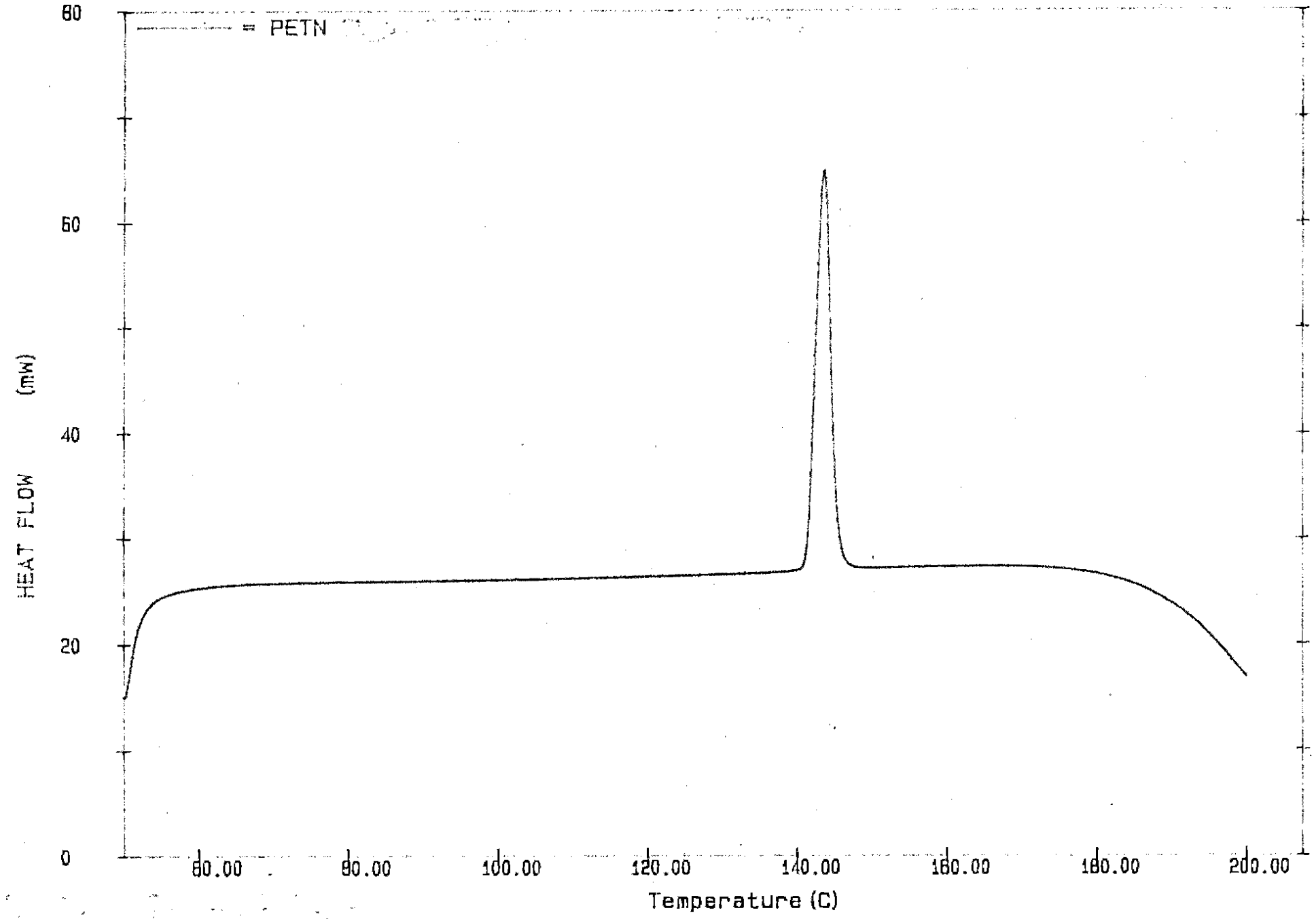


Scanning Rate: 20.0 C/min
Sample Wt: 0.100 mg

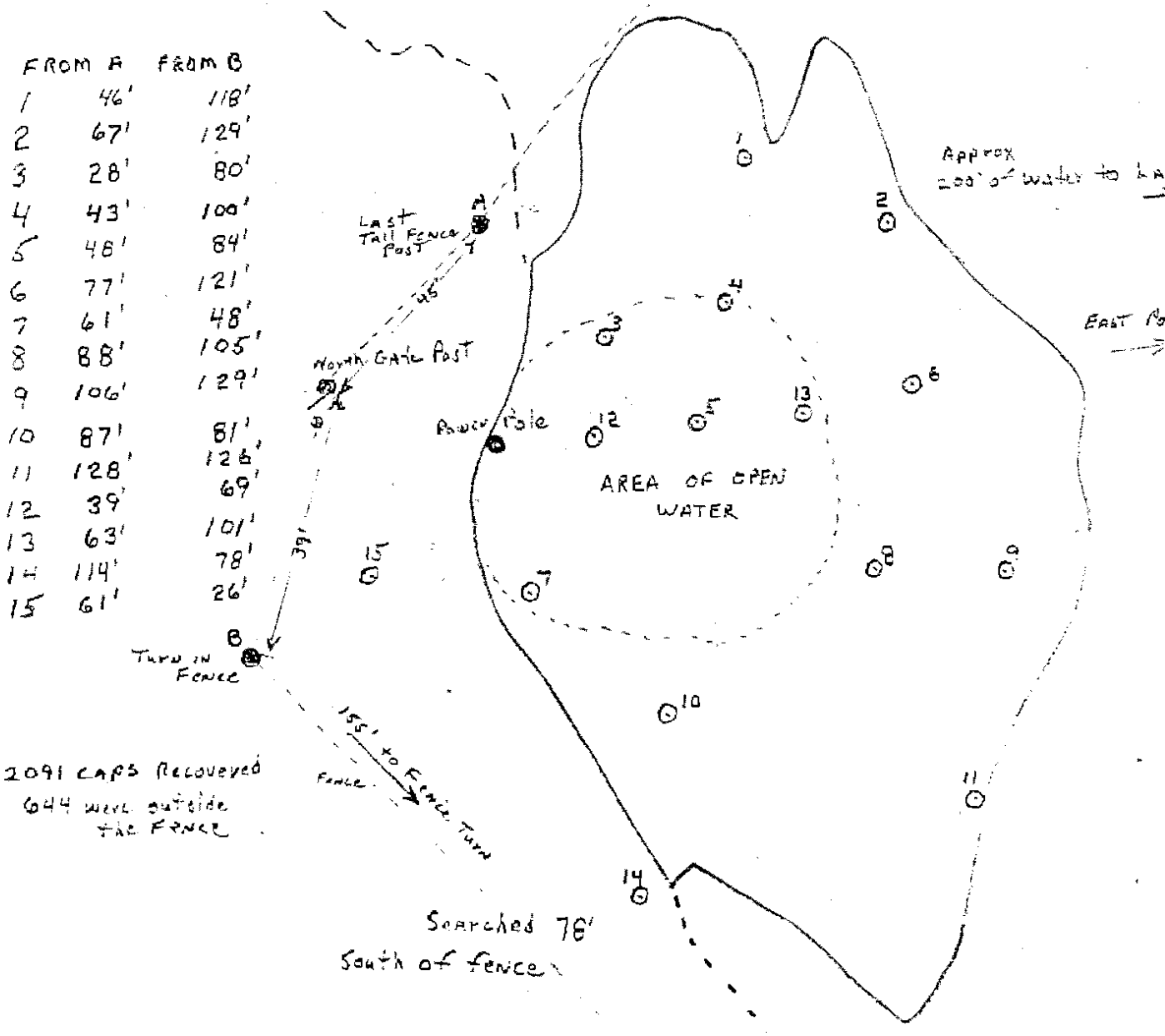
PET IN-ELMER DSC7

APPENDIX B

SWMU 1 - FORMER DETONATION POND (CLOSED)

SWMU 1

DETONATION POND, LOCATED DUE EAST OF THE MAIN GATE IN CLOSE PROXIMITY OF PLANTASIE CREEK. REACTIVE HAZARDOUS WASTES GENERATED AT THE FACILITY, WHICH INCLUDE OFF-SPECIFICATION EXPLOSIVES AND PROCESS WASTE, WERE DETONATED UNDERWATER IN THE POND. THE UNIT IS PART OF A PHASE II INVESTIGATION CONDUCTED BY NYSDEC.



SUMMARY OF ACTIVITIES FOR SWMU 1

Implementation of the ICM work plan for SWMU 1 consisted of taking surface (0-6") and subsurface (1.5-2.0') samples at 14 locations (see map). The first set of 13 samples were of the pond sediment, while the 14th set was collected from the shoreline. An additional sample, 15, consisted of gray powder also found along the shoreline. Samples of the pond sediment were collected by a UXB technician working from a small boat. A 3/4" PVC tube was pushed into the sediment a minimum of two feet and then removed with the sediment core intact, and corked at both ends. Sampling points were marked with a piece of 1/2" PVC for future reference. The sample collected from the shoreline (Sample Location 14) was obtained with a hand auger, while Sample 15 was collected from the surface with a trowel.

The collected samples were first passed under a metal detector to check for small detonators or caps which were removed by UXB as required. Representative samples of the sediment were then jarred for explosives testing at the on-site laboratory. In addition, sediment/soil corresponding to the 0-6" and 1.5-2.0' intervals, at sampling locations one through ten and fourteen, were placed separately into laboratory cleaned glass jars for metals analysis. These samples were sent to ECKENFELDER INC. laboratory in Nashville, Tennessee. These analytical results will be used to guide future remedial activities and will be reported under separate cover.

Explosives testing for individual samples collected at locations 1 through 14 were negative using all three test methods. Sample 15 (gray powder along the shoreline), however, tested negative for friction and impact but positive for secondary explosives on the calorimeter. Dyno-Nobel was informed of these results and their personnel removed the powder.

Additional work at SWMU 1 included a geophysical survey around the perimeter of the pond. Using metal detectors, the survey extended 78 feet beyond the fence on the south side of the pond and to a distance of approximately 15 feet inland along the western shoreline. UXB recovered approximately 2,000 blasting caps and related material. These items were placed into two-5 gallon pails mixed with water, and turned over to Dyno-Nobel for storage pending disposal.

UXB INTERNATIONAL

PORT EWEN/DYNO-NOBEL EXPLOSIVE SAMPLING CALORMETRIC TESTING

DATE	SAMPLE #	RDX 205C	PETN 141C	LA 327-331C	LS 330C	MF 210C	DDNP 180C	TET 280C
9-18-96	SWMU 15							
	1							
	2	N	N	N	N	N	N	N
	3	N	N	N	N	N	N	N
	4	N	N	N	N	N	N	N
	5	N	N	N	N	N	N	N
	6	N	N	N	N	N	N	N
	7	N	N	N	N	N	N	N
	8	N	N	N	N	N	N	N
	9	N	N	N	N	N	N	N
	10	N	N	N	N	N	N	N
9-19-96	11	N	N	N	N	N	N	N
	12	N	N	N	N	N	N	N
	13	N	N	N	N	N	N	N
	14	N	N	N	N	N	N	N

LEGEND

C=CENTIGRADE

RDX=

PETN=

LA= LEAD AZIDE

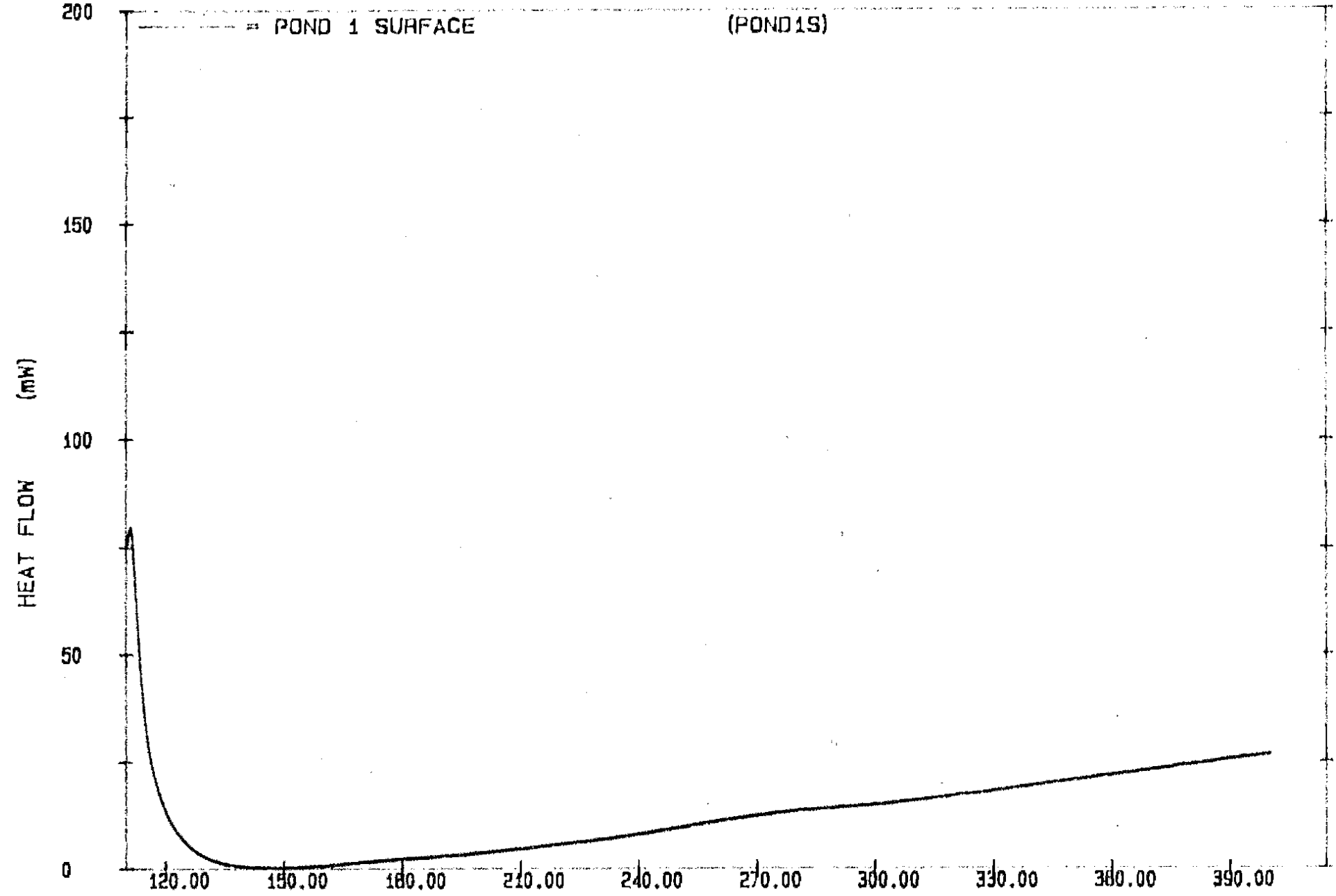
LS= LEAD STYPHYNATE

TET= TETRYL

DDNP= DIAZODINITROPHENOL

Y= YES

N= NO



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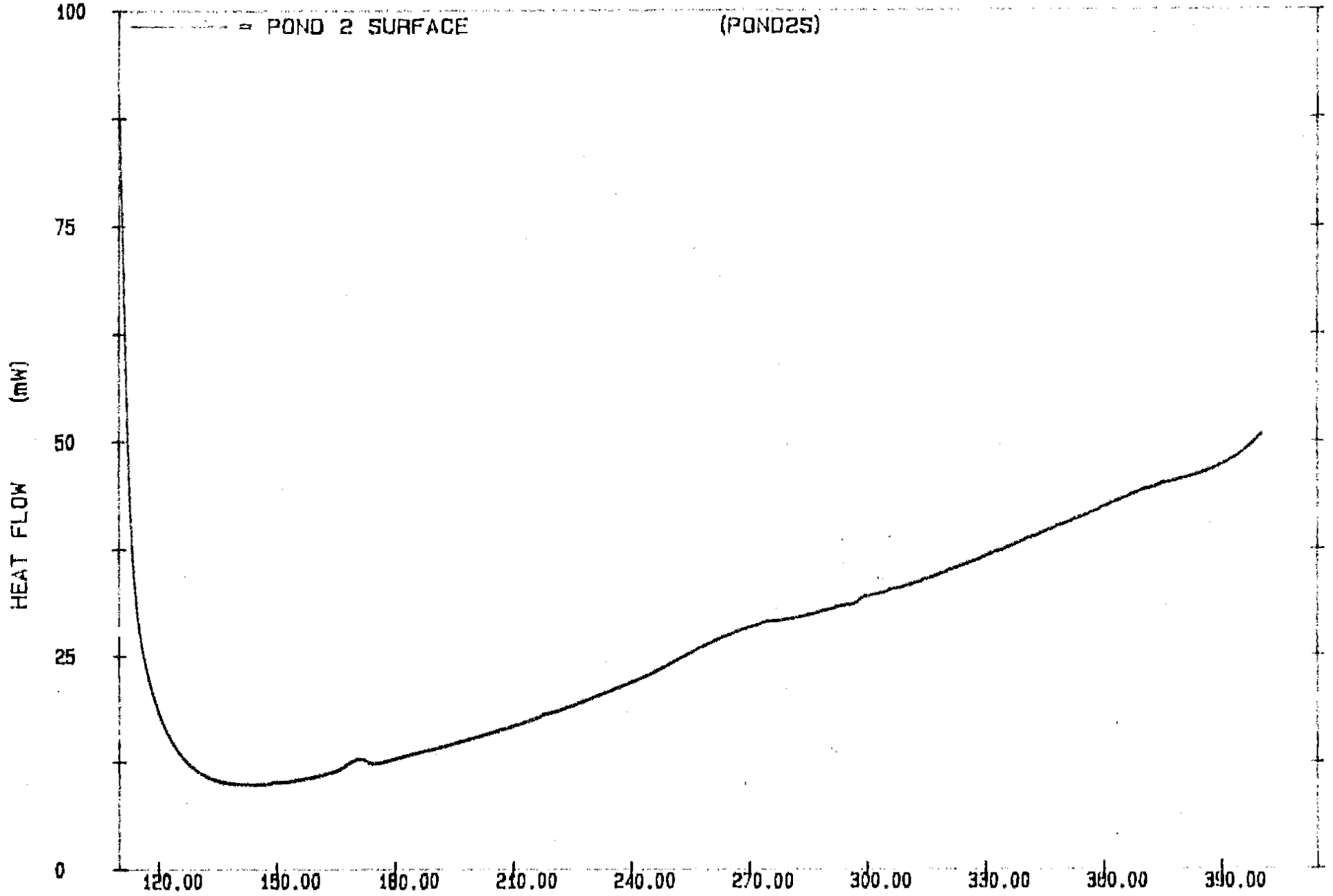
PERKIN-ELMER DSC7



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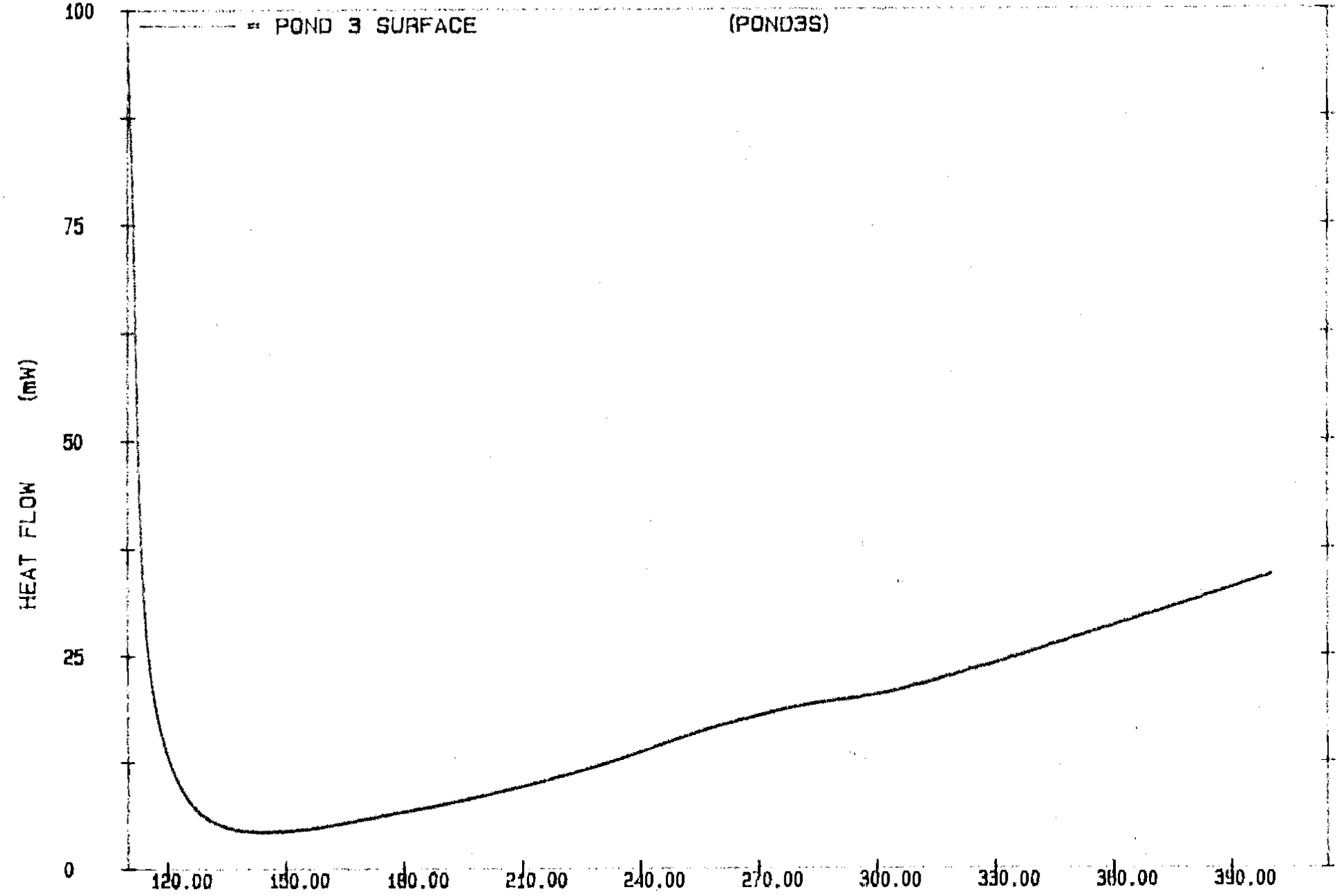

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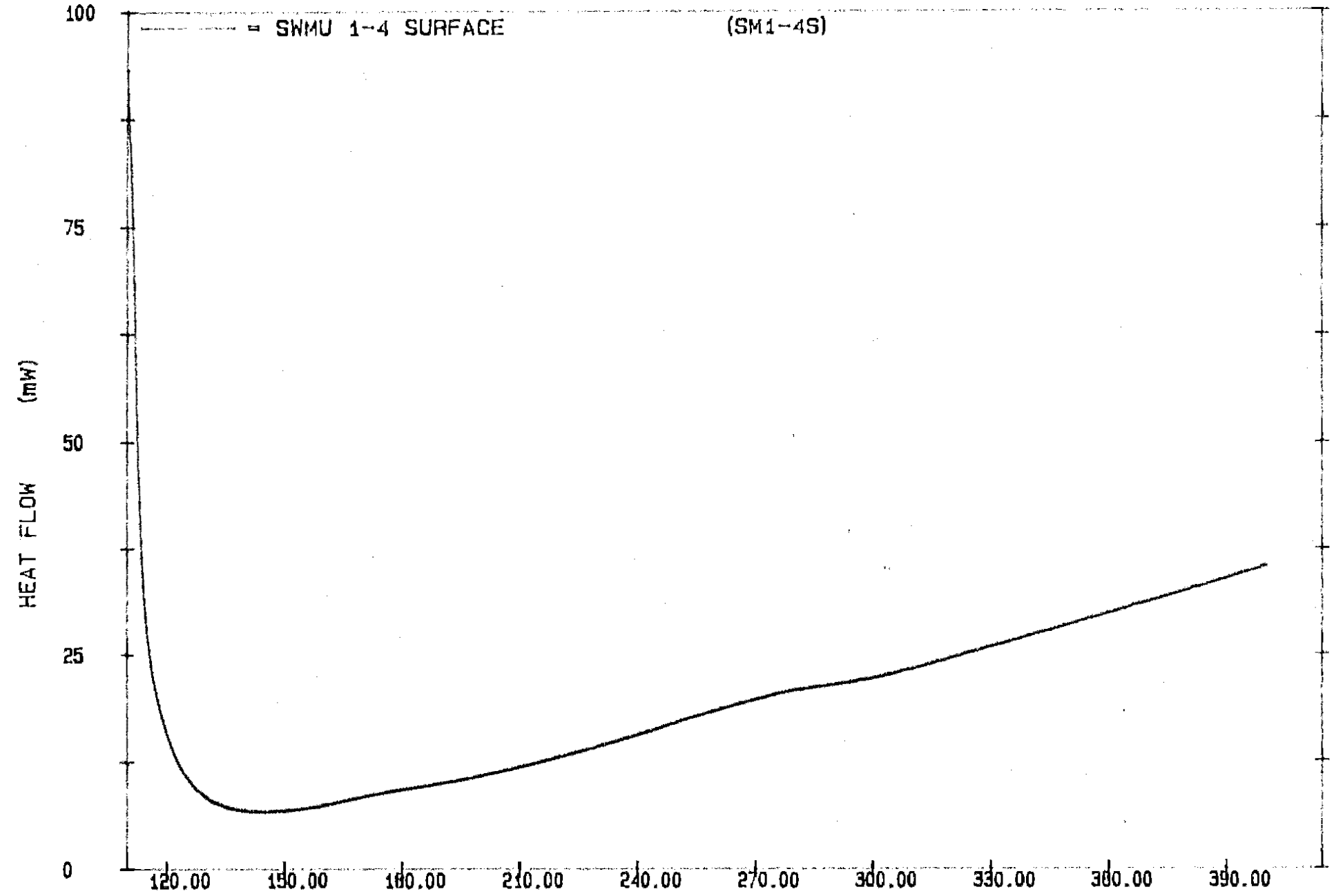

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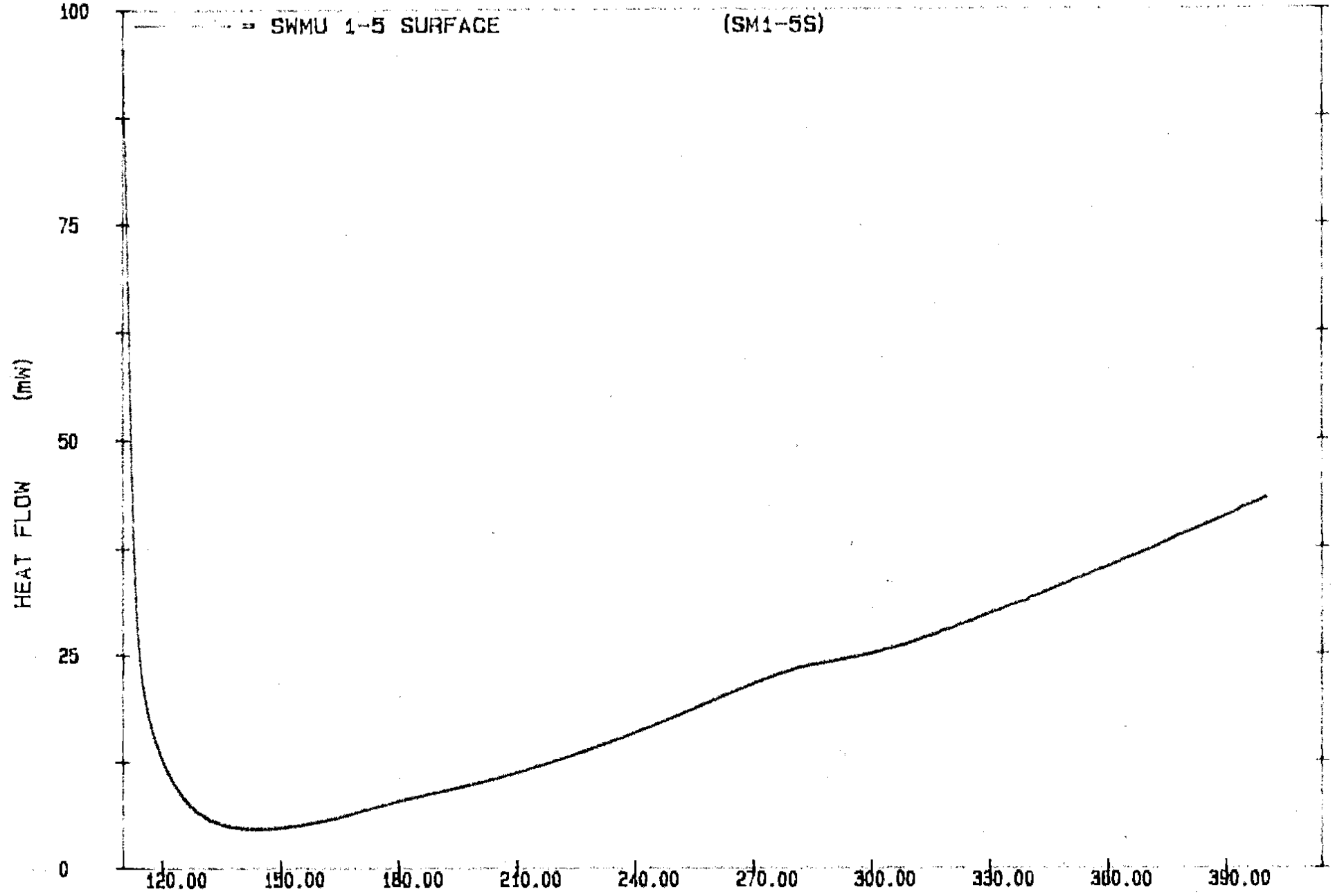

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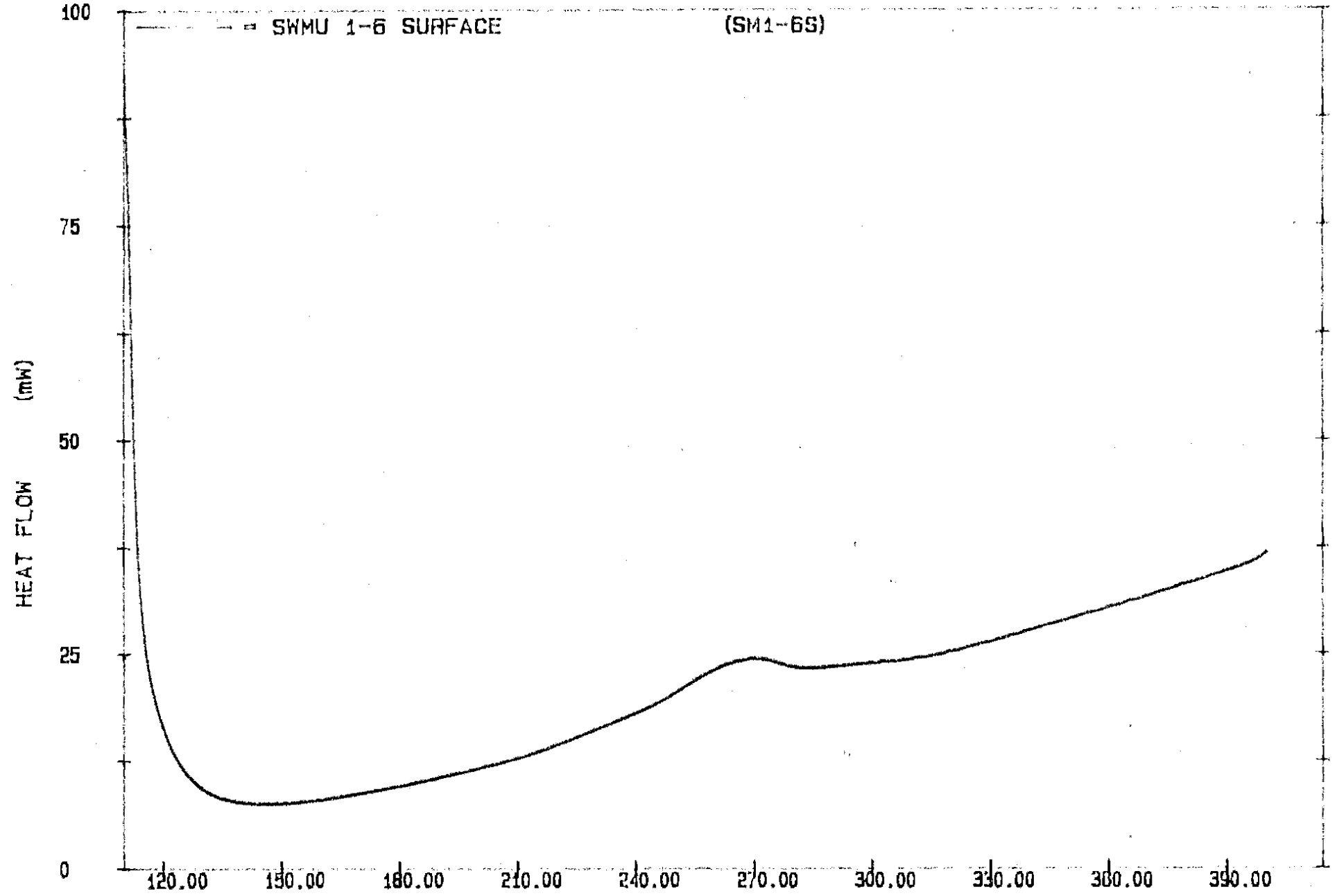

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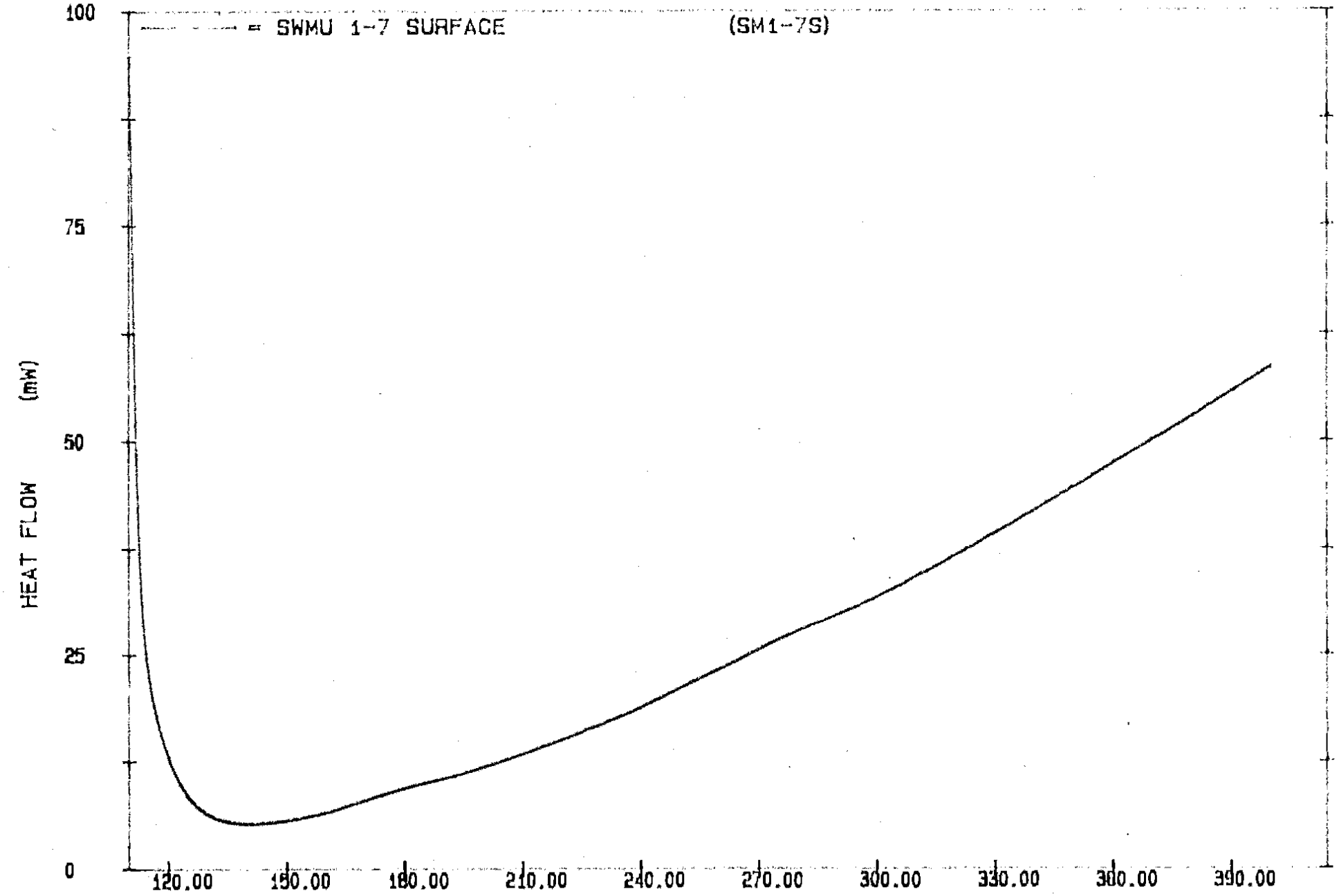

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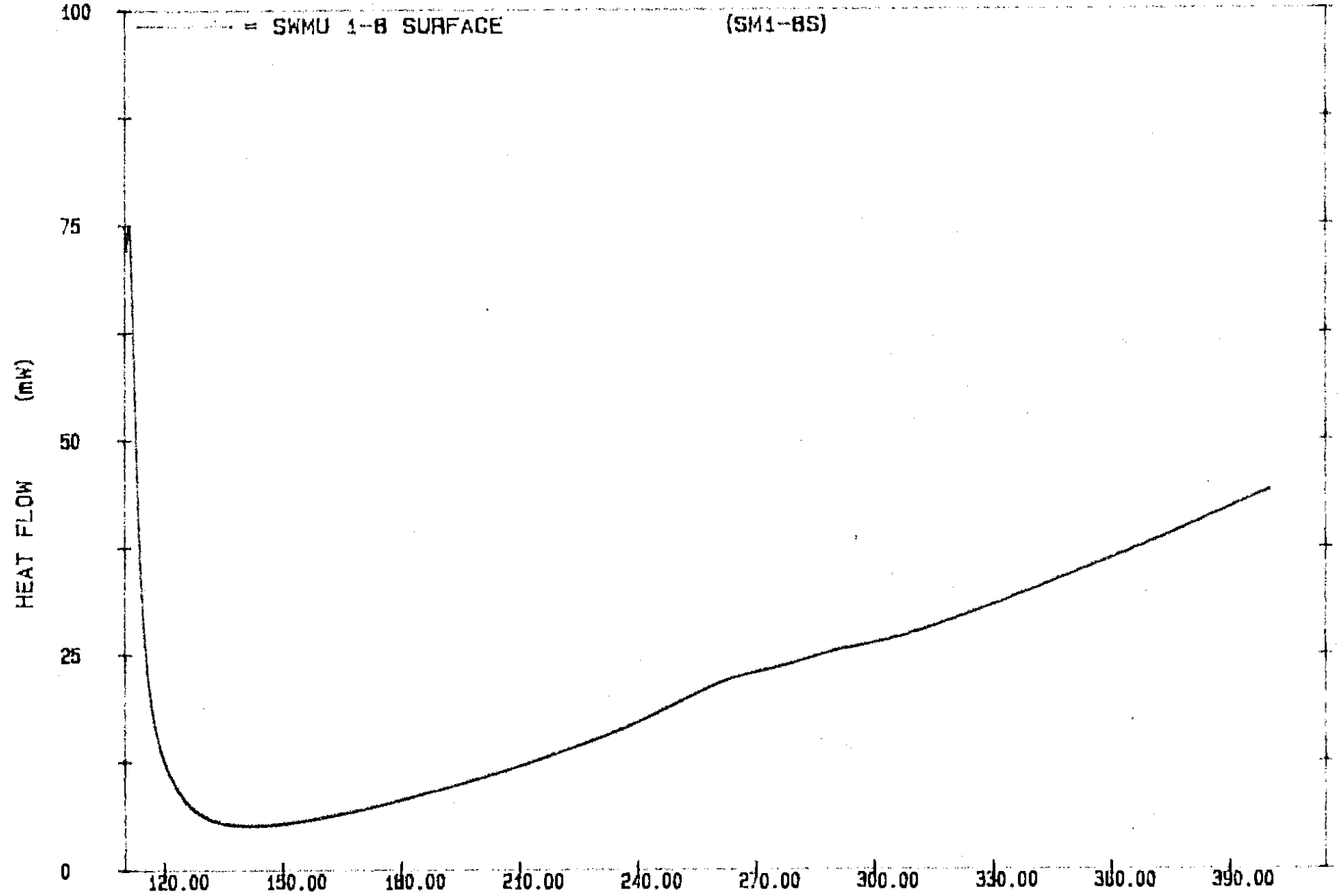

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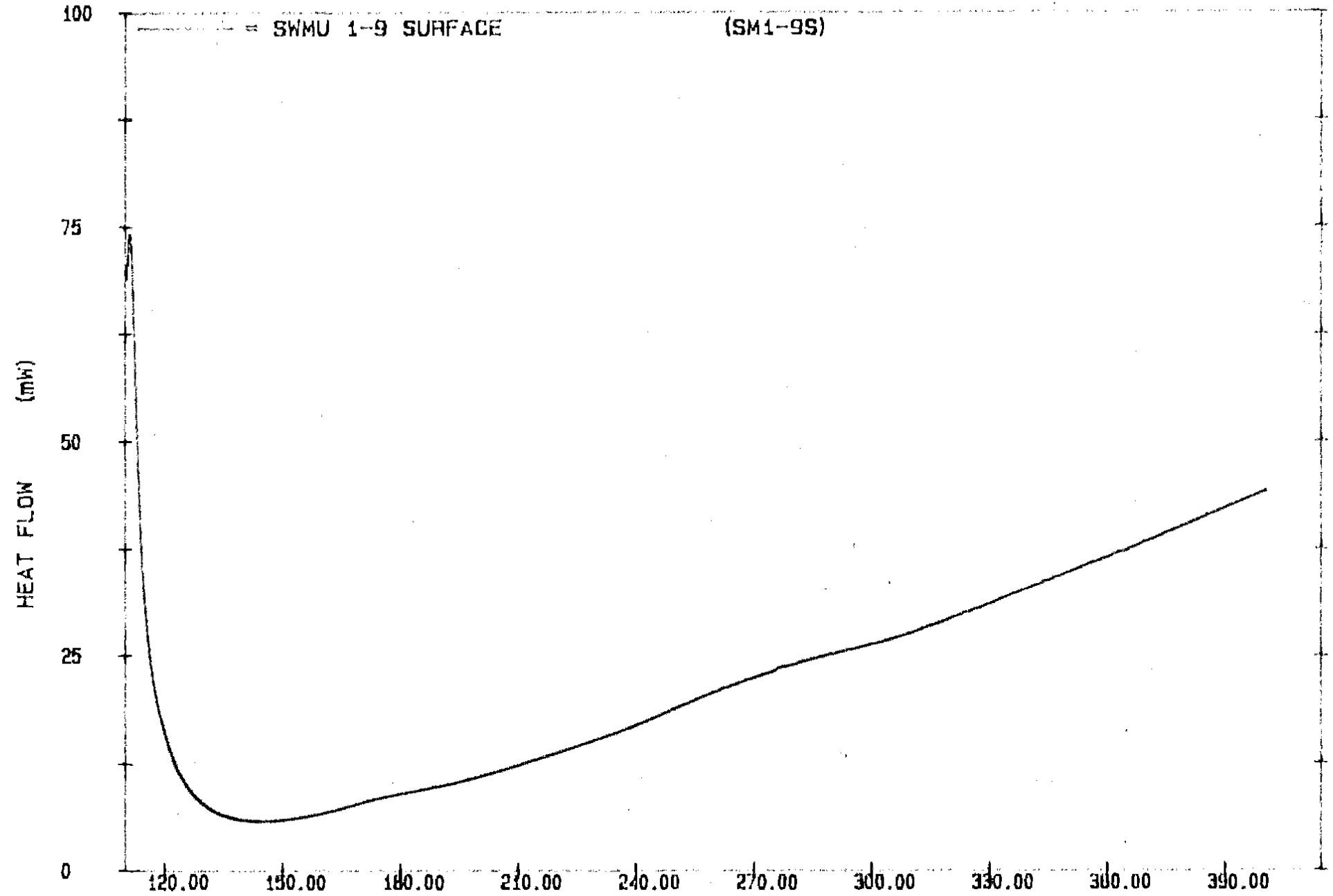

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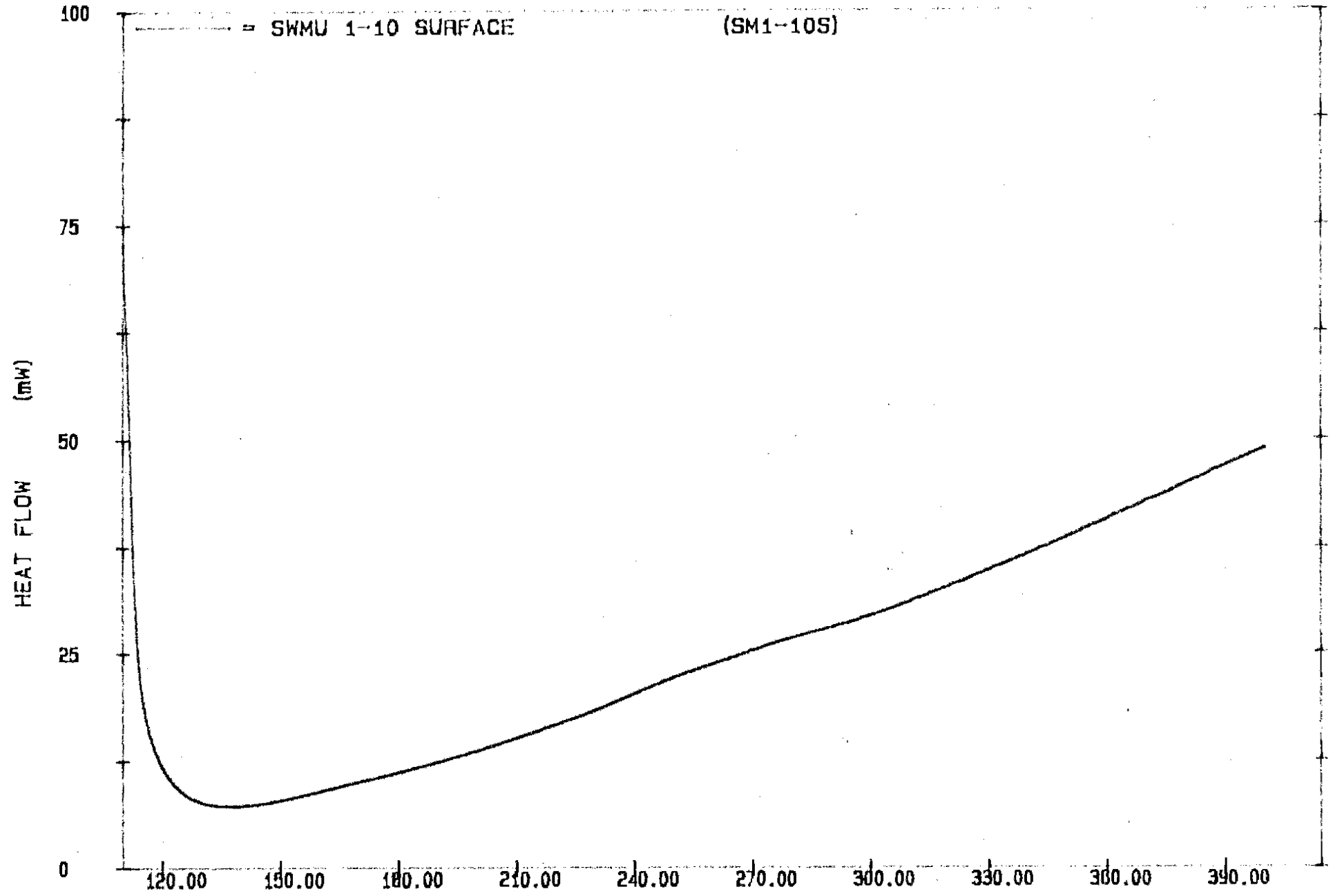

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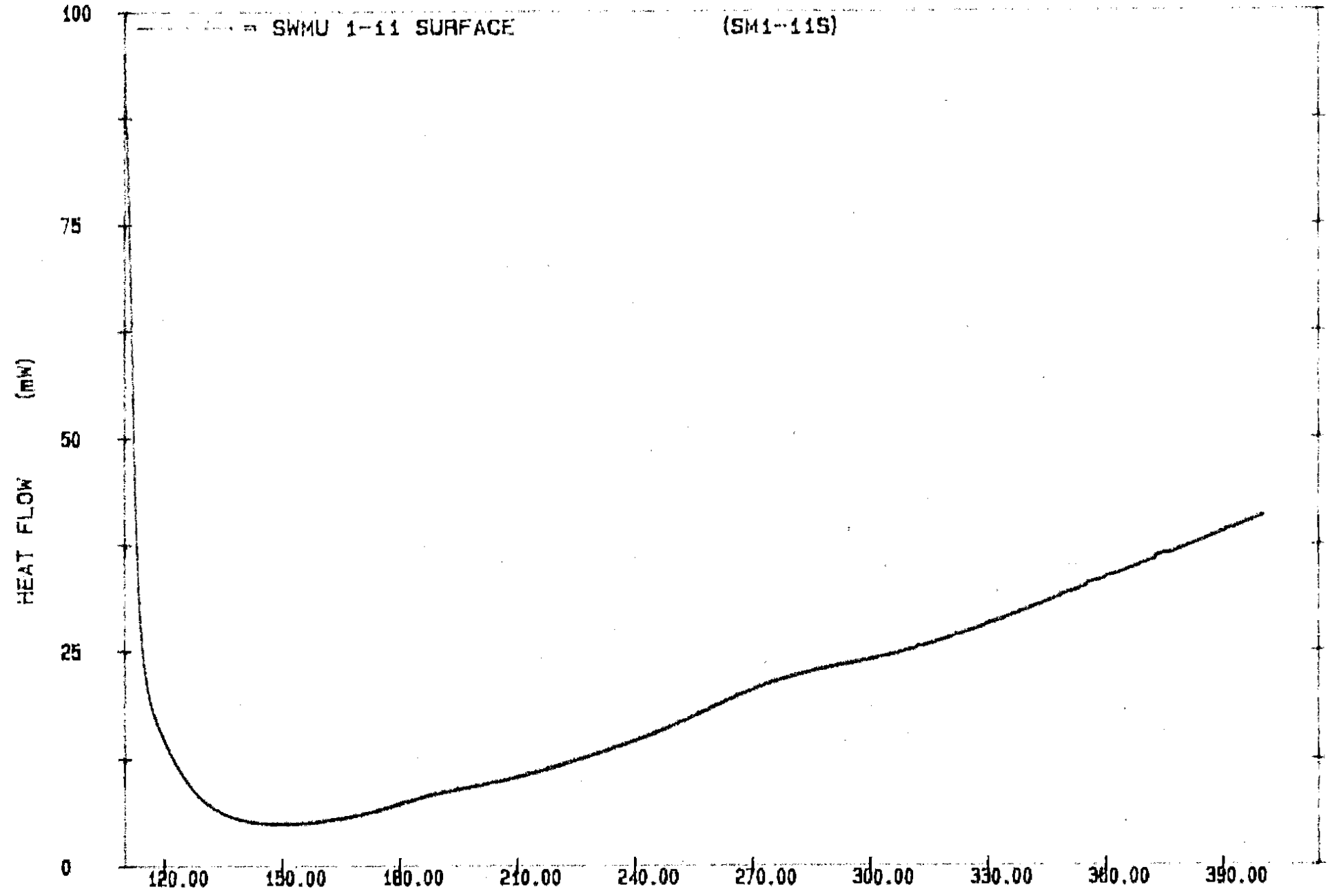

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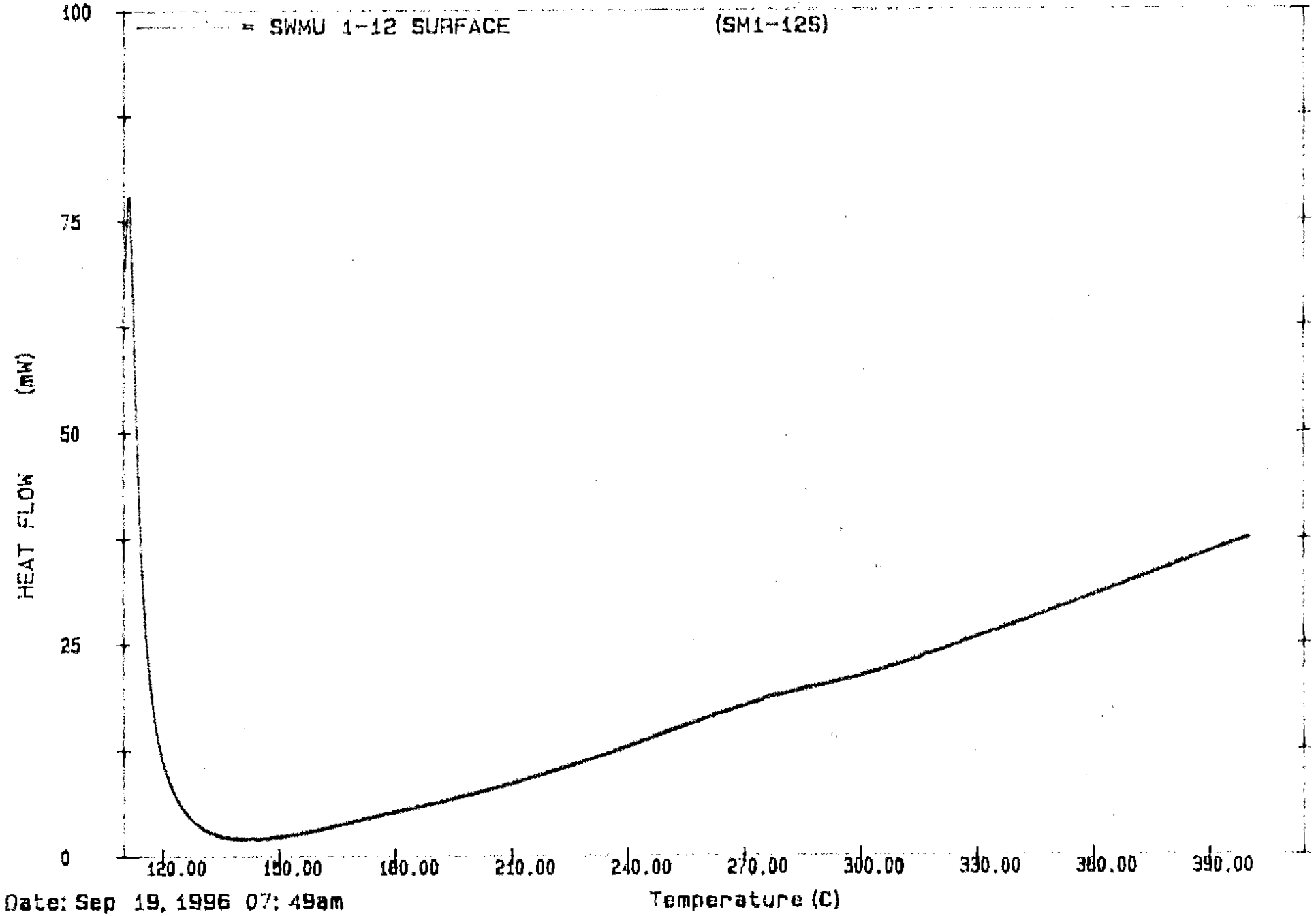

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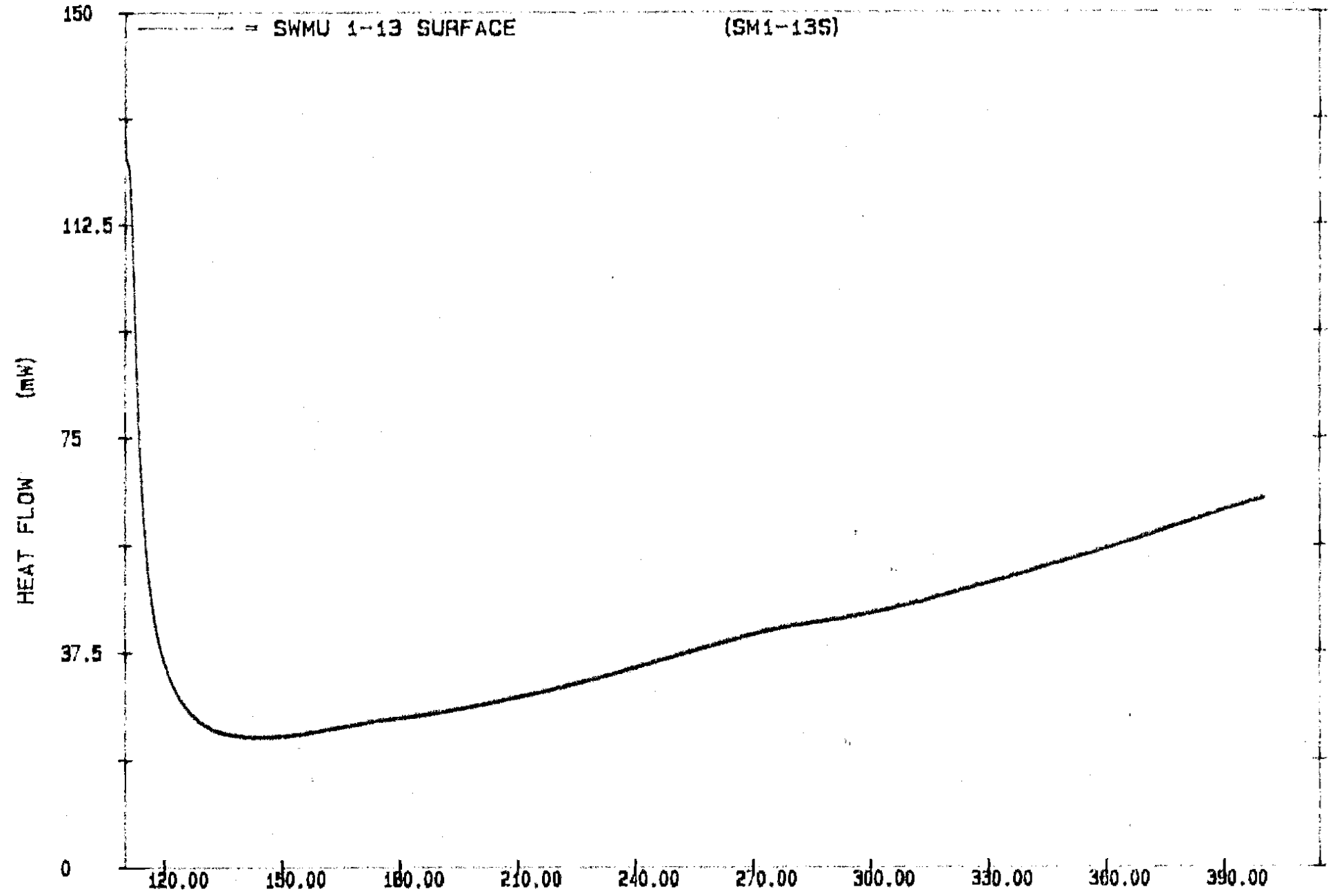

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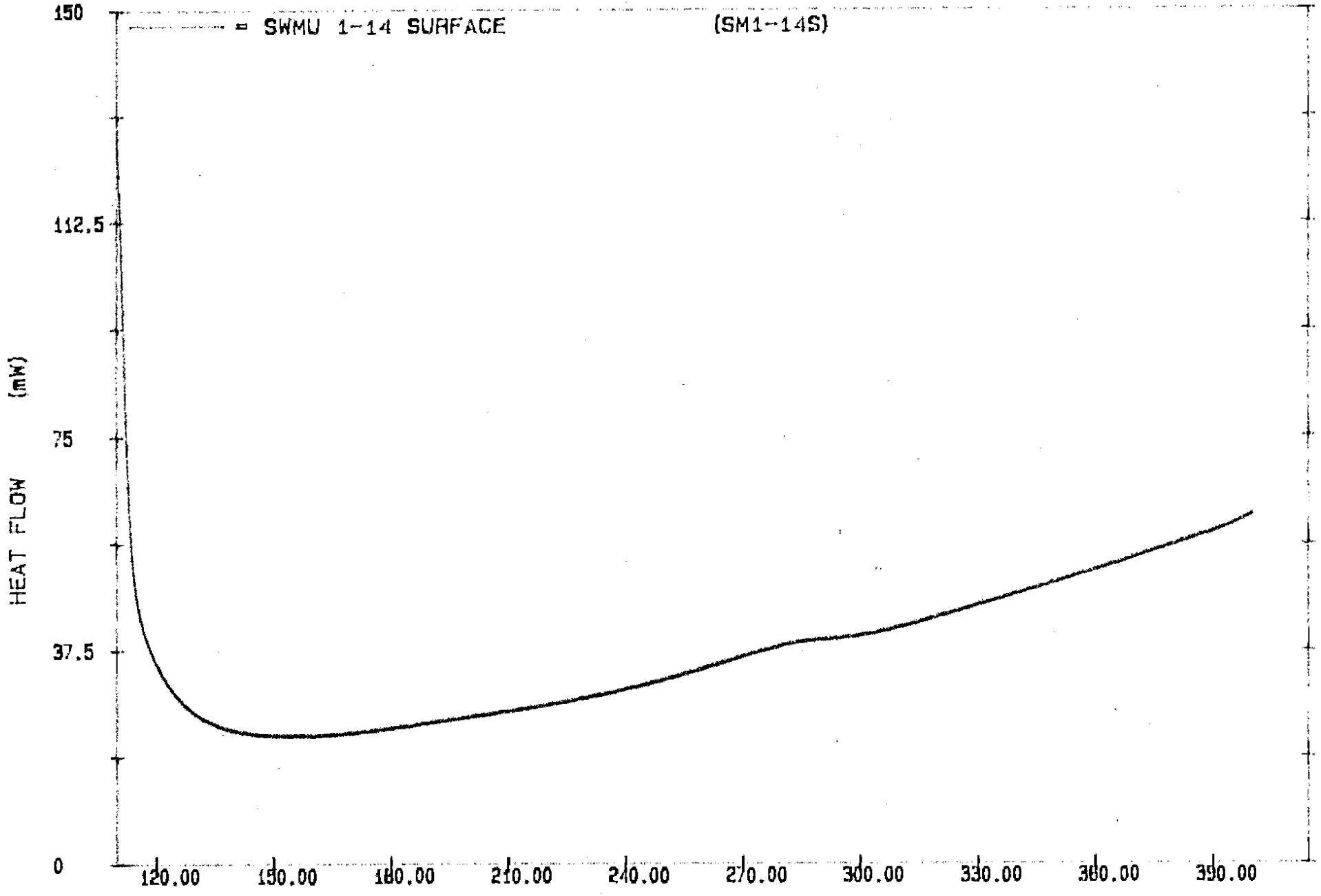
File SM1-13S ST 9-19-96

PERKIN-ELMER DSC7



Date: Sep 19, 1996 08:31am
Scanning Rate: 20.0 C/min
Sample Wt: 0.000 mg Path: C:\PE\
File SM1-14S ST 9-19-96

PERKIN-ELMER DSC7

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9 1896 SAMPLE NO# SS 1

TESTER Cook miller / S Shupt

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	/	1.	✓	1.	1.	Yes
2.	/	2.	✓	2.	2.	
3.	/	3.	✓	3.	3.	
4.	/	4.	✓	4.	4.	
5.	/	5.	✓	5.	5.	
6.	/	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9 18 96 SAMPLE NO# SS 2

TESTER Cook / Miller Ahmt

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	✓	1.	✓	1.	1.	Yes
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 3

TESTER Cook / miller / Schmit

	FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH		CALORIMETRIC TEST: Results
1.		/	1	✓	1.	1.	NES
2.		/	2	✓	2.	2.	
3.		/	3	✓	3.	3.	
4.		/	4	✓	4.	4.	
5.		/	5	/	5.	5.	
6.		/	6	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 4

TESTER Cook / Miller / Schmidt

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	✓	1.	✓	1.	1.	Yes
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# S~~S~~ 5

TESTER Cook / Miller / 8 2hpt

FRICTION TEST: Reactive Yes	No	IMPACT TEST: Reactive Yes	No	DEPTH		CALORIMETRIC TEST: Results
1.	✓	1.	✓	1.	1.	Neg
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 6

TESTER Cook / miller / 1 shift

	FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH		CALORIMETRIC TEST: Results
1.		/		✓	1.	1.	Neg
2.		/		✓	2.	2.	
3.		/		✓	3.	3.	
4.		/		✓	4.	4.	
5.		/		/	5.	5.	
6.		/		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 7

TESTER Cook / Miller / Schupt

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	/	1.	✓	1.	1.	Neg
2.	/	2.	✓	2.	2.	
3.	/	3.	✓	3.	3.	
4.	/	4.	✓	4.	4.	
5.	/	5.	✓	5.	5.	
6.	/	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# S̶S̶ 8

TESTER Cook / miller / 8 [illegible]

FRICTION TEST: Reactive Yes	No	IMPACT TEST: Reactive Yes	No	DEPTH	CALORIMETRIC TEST: Results
1.	✓	1.	✓	1.	1. NEG
2.	✓	2.	✓	2.	2.
3.	✓	3.	✓	3.	3.
4.	✓	4.	✓	4.	4.
5.	✓	5.	✓	5.	5.
6.	✓	6.	✓	6.	6.

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 9

TESTER Cook / miller / schmidt

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			N.S
1.	✓	1.	✓	1.	1.	
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 10

TESTER Cook / miller / o hunt

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	NR
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 11

TESTER Cook / miller / [illegible]

FRICTION TEST: Reactive Yes	No	IMPACT TEST: Reactive Yes	No	DEPTH	CALORIMETRIC TEST: Results
1.	✓	1.	✓	1.	1. Neg
2.	✓	2.	✓	2.	2.
3.	✓	3.	✓	3.	3.
4.	✓	4.	✓	4.	4.
5.	✓	5.	✓	5.	5.
6.	✓	6.	✓	6.	6.

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 12

TESTER Cook / Miller / Light

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓	1.	✓	1.	1.	Neg
2.		✓	2.	✓	2.	2.	
3.		✓	3.	✓	3.	3.	
4.		✓	4.	✓	4.	4.	
5.		✓	5.	✓	5.	5.	
6.		✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 13

TESTER Cook / miller / shift

FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH		CALORIMETRIC TEST: Results
1.	✓	1.	✓	1.	1.	NR
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

~~S--SURFACE~~
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 14

TESTER Cook Miller / Schutt

FRICTION TEST: Reactive Yes	No	IMPACT TEST: Reactive Yes	No	DEPTH		CALORIMETRIC TEST: Results
1.	✓	1	✓	1.	1.	No
2.	✓	2	✓	2.	2.	
3.	✓	3	✓	3	3.	
4.	✓	4	✓	4	4.	
5.	✓	5	✓	5	5.	
6.	✓	6	✓	6	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

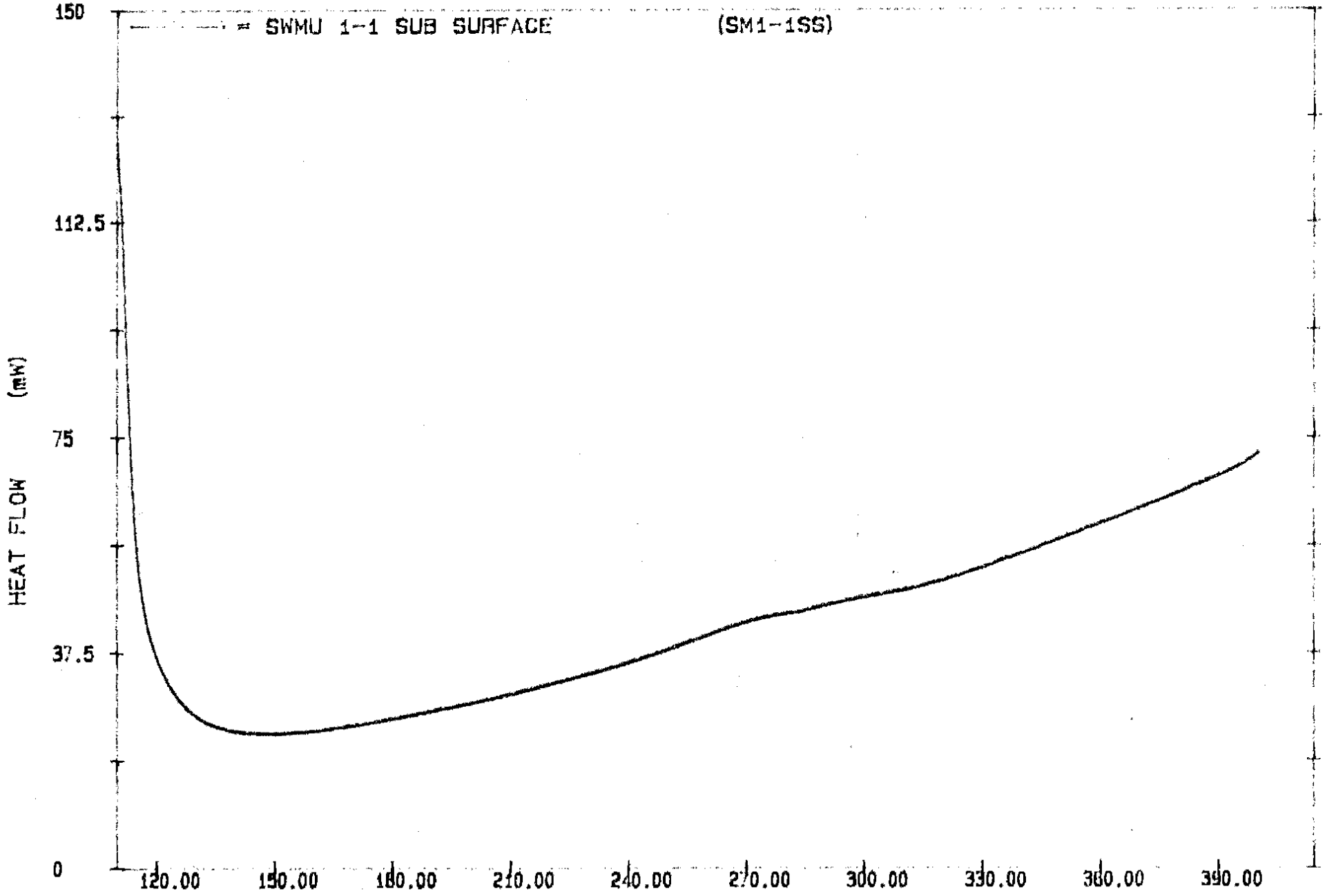
S--SURFACE
SS--SUBSURFACE

UXB INTERNATIONAL

PORT EWEN/DYNO-NOBEL EXPLOSIVE SAMPLING CALORMETRIC TESTING

DATE	SAMPLE #	RDX 205C	PETN 141C	LA 327-331C	LS 330C	MF 210C	DDNP 180C	TET 280C
9-19-96	SWMU 155							
	1	N	N	N	N	N	N	N
	2	N	N	N	N	N	N	N
	3	N	N	N	N	N	N	N
	4	N	N	N	N	N	N	N
	5	N	N	N	N	N	N	N
	6	N	N	N	N	N	N	N
	7	N	N	N	N	N	N	N
	8	N	N	N	N	N	N	N
	9	N	N	N	N	N	N	N
	10	N	N	N	N	N	N	N
	11	N	N	N	N	N	N	N
	12	N	N	N	N	N	N	N
	13	N	N	N	N	N	N	N
	14	N	N	N	N	N	N	N
	15	N	Y	N	N	N	N	N

LEGEND
C=CENTIGRADE
RDX=
PETN=
LA= LEAD AZIDE
LS= LEAD STYPHYNATE
TET= TETRYL
DDNP= DIAZODINITROPHENOL
Y= YES
N= NO



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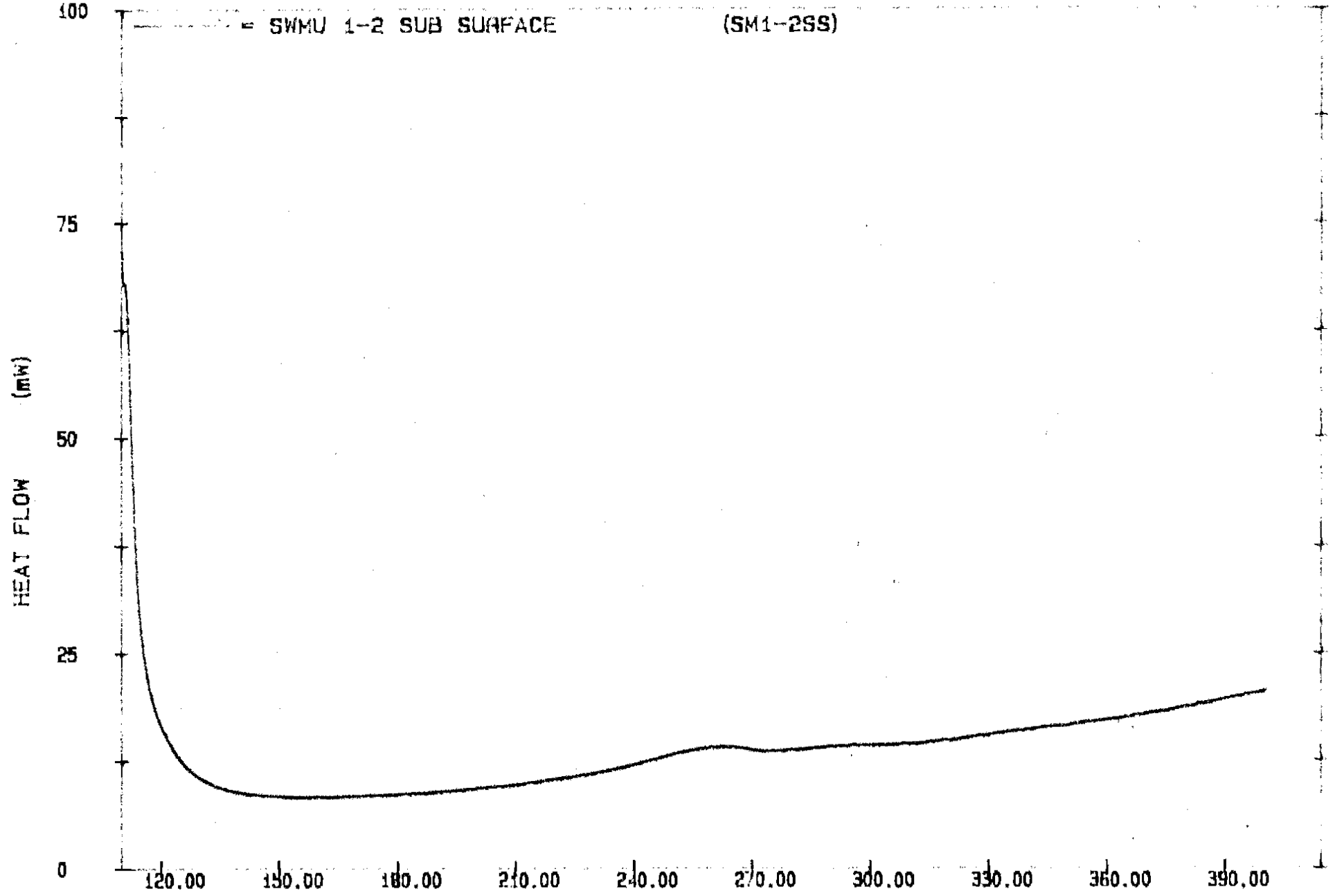
File M1-1SS ST 9-19-96

PERKIN-ELMER DSC7



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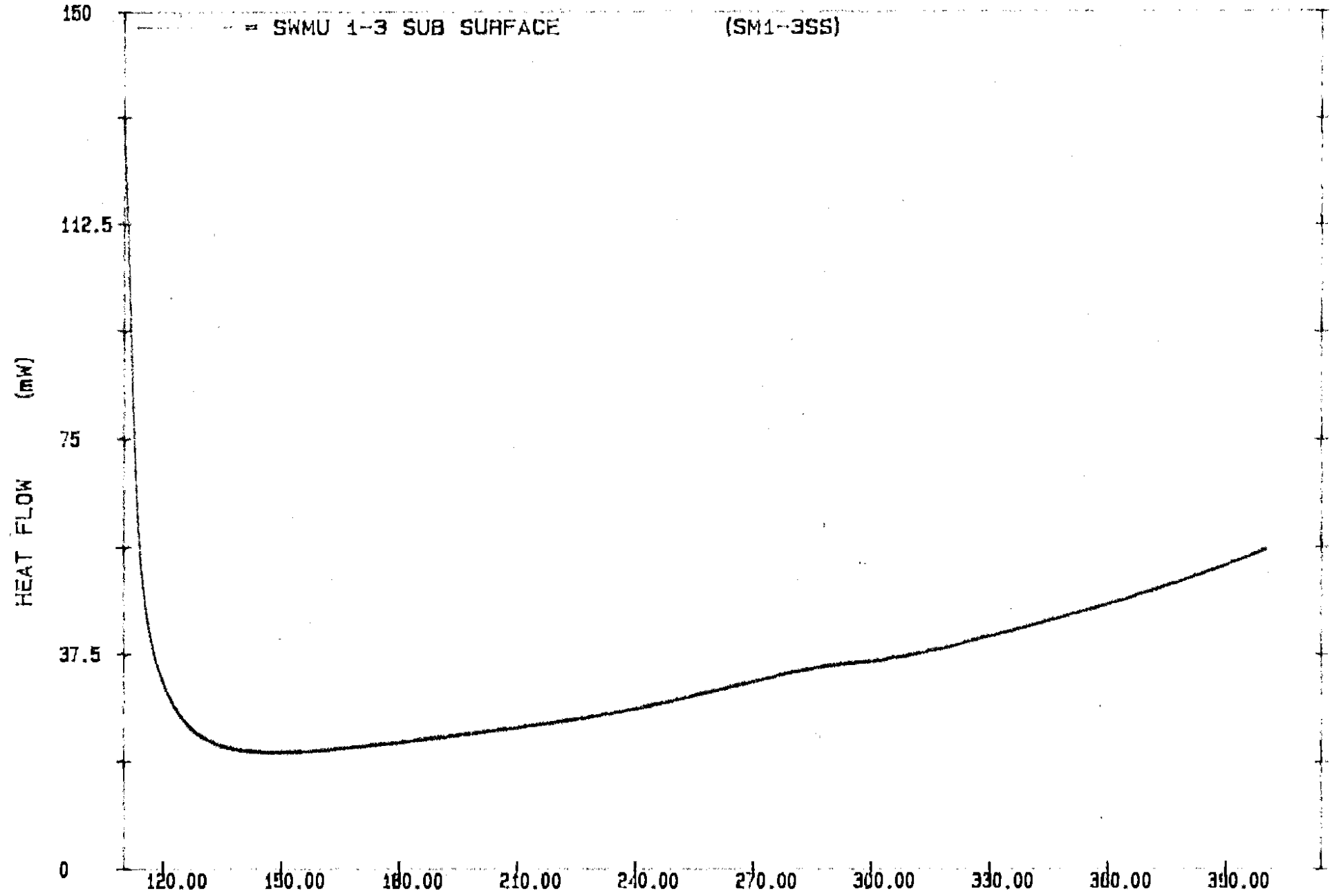
File SM1-2SS ST 9-19-96

PERKIN-ELMER DSC7



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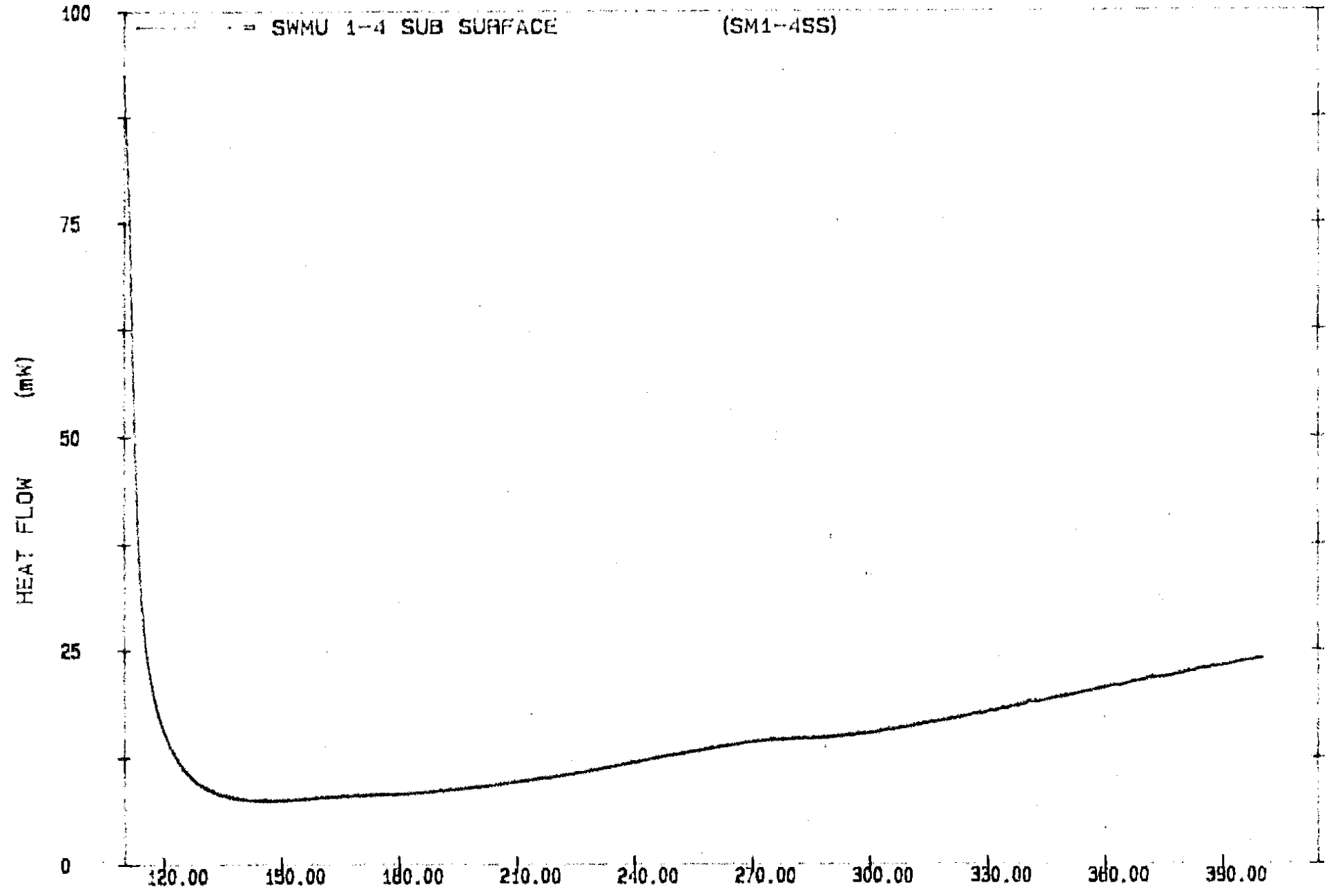
File: SM1-3SS ST 9-19-96

PERKIN-ELMER DSC7



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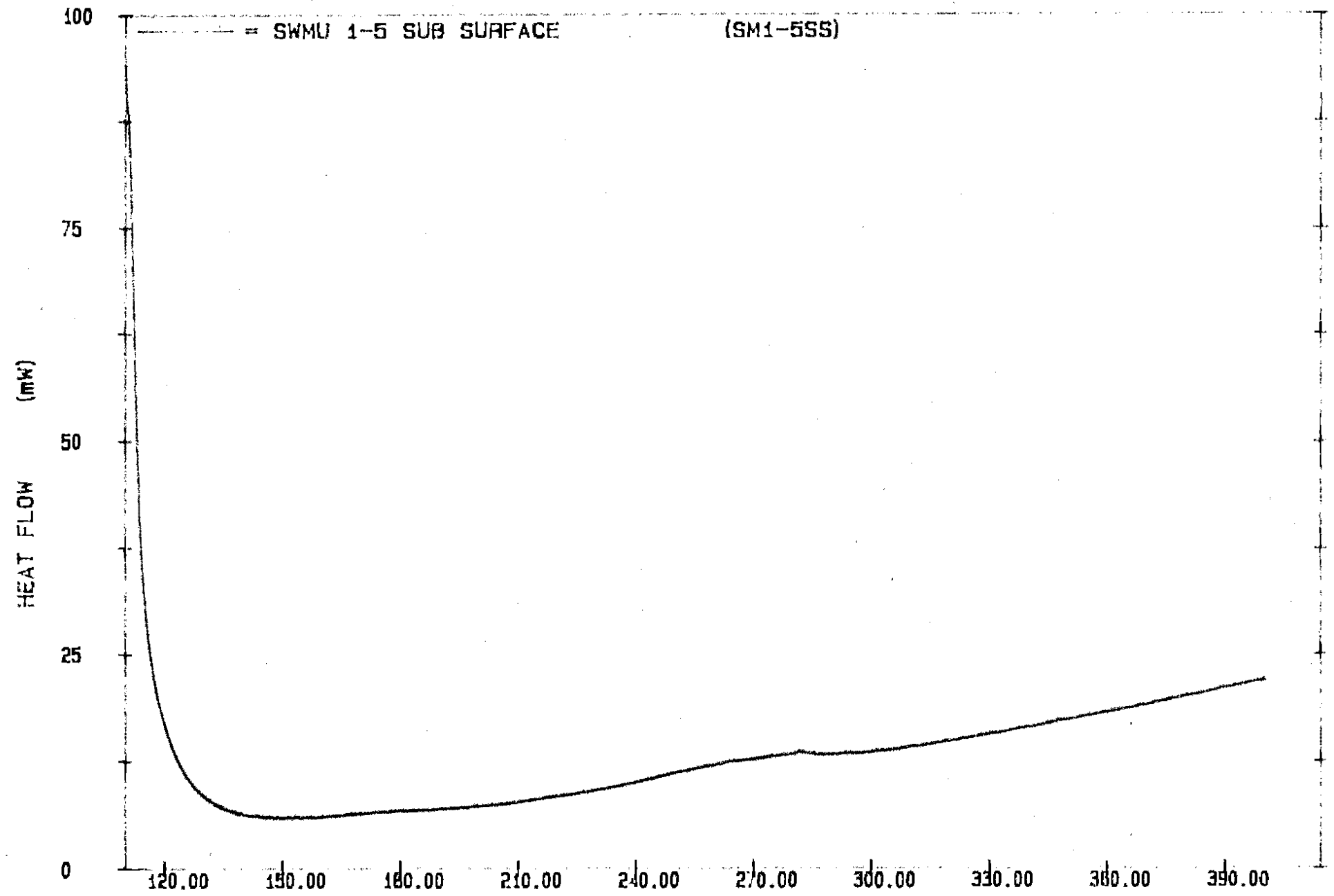
Fi[illegible]: SM1-4SS ST 9-19-96

PERKIN-ELMER DSC7



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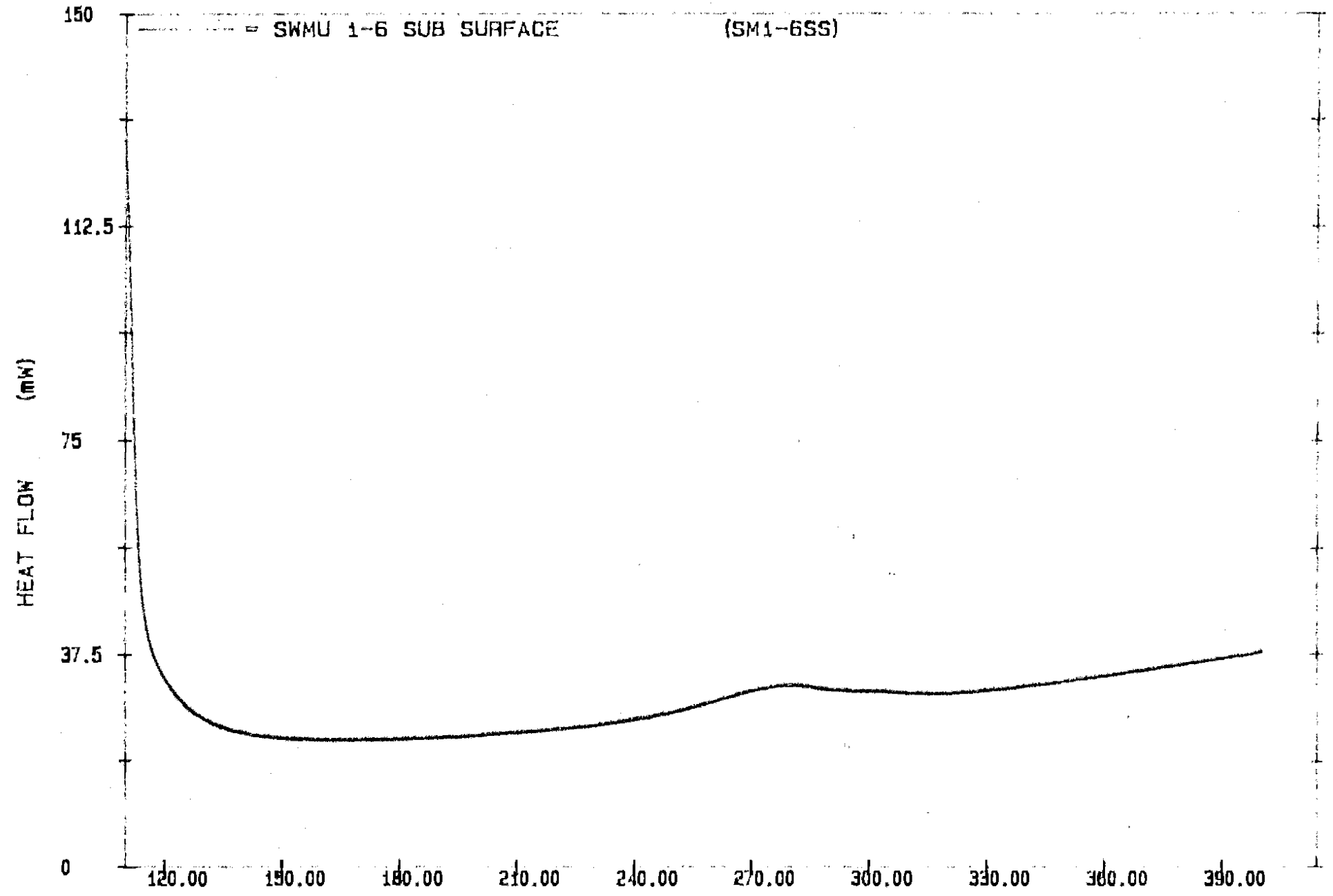
Sample Wt: 0.000 mg Path: C: \PE\
File SM1-5SS ST 9-19-96

PERKIN-ELMER DSC7



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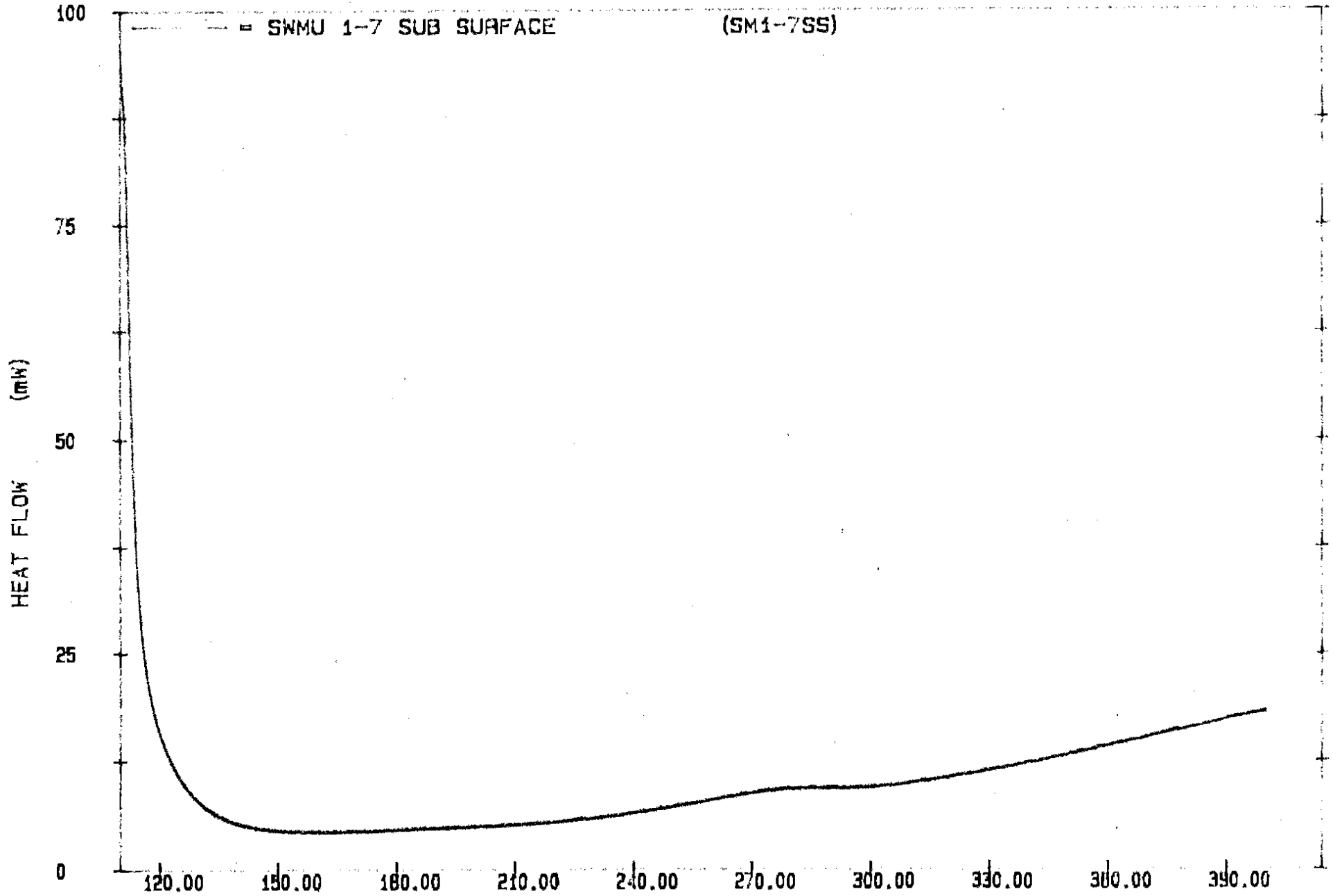
Sample Wt: 0.000 mg Path: C:\PE\
File: M1-6SS ST 9-19-96

PERKIN-ELMER DSC7



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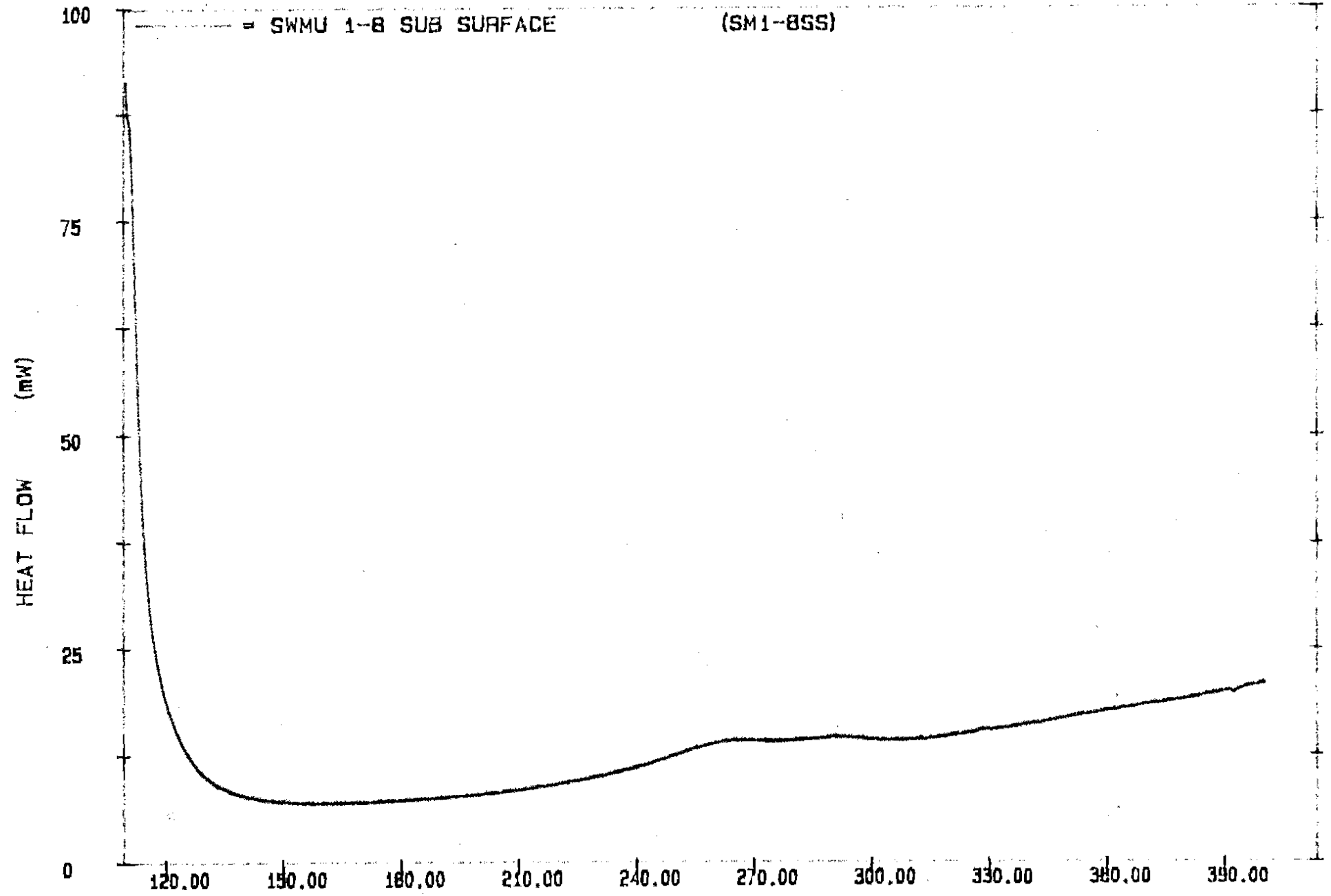
Samp' Wt: 0.000 mg Path: C:\PE\
FII SM1-7SS ST 9-19-96

PE IN-ELMER DSC7



Date: Sep 19, 1996 11:24am
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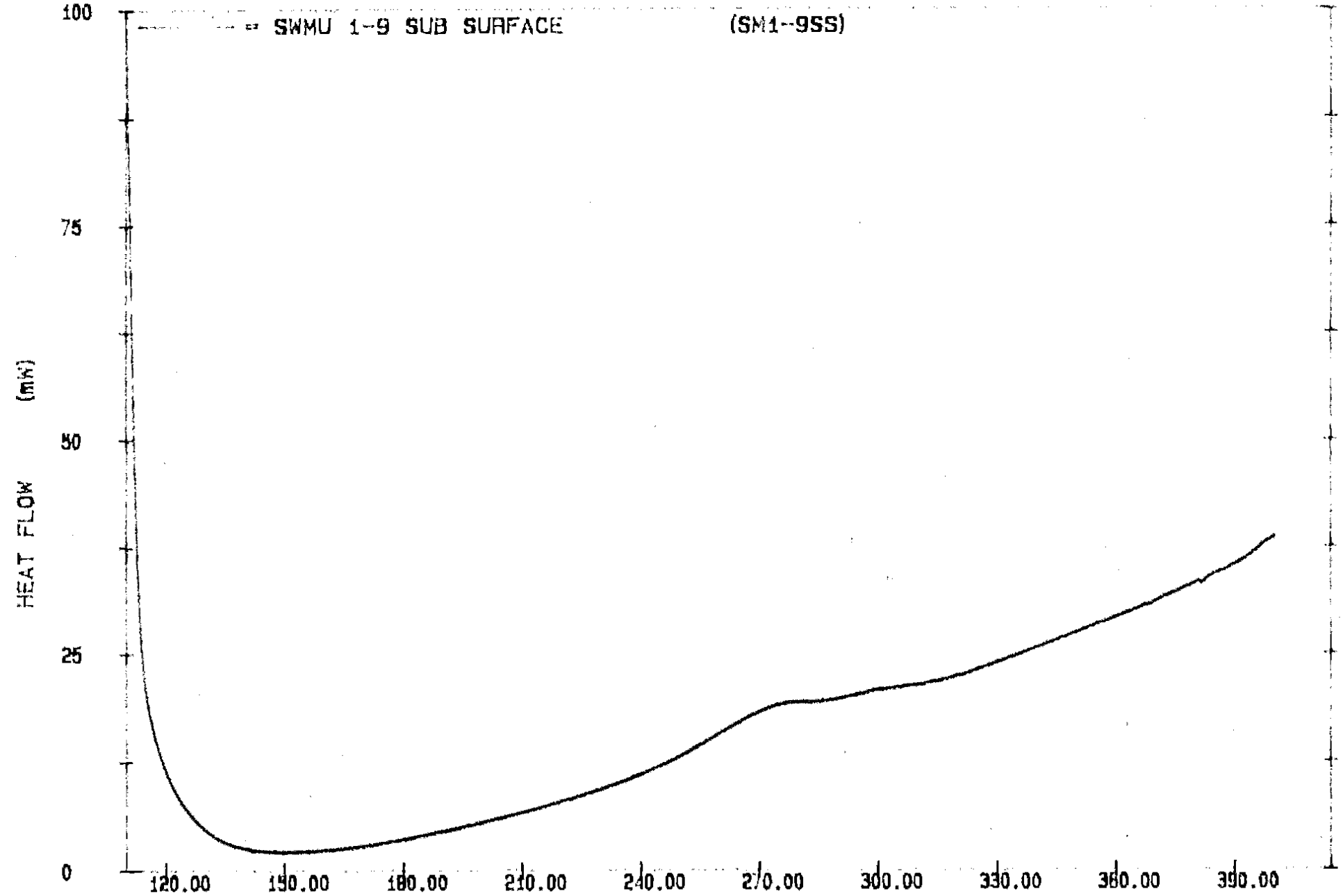
Samp" Wt: 0.000 mg Path: C:\PE\
File .. SM1-8SS ST 9-19-96

PERKIN-ELMER DSC7



Date: Sep 19, 1996 11:46am
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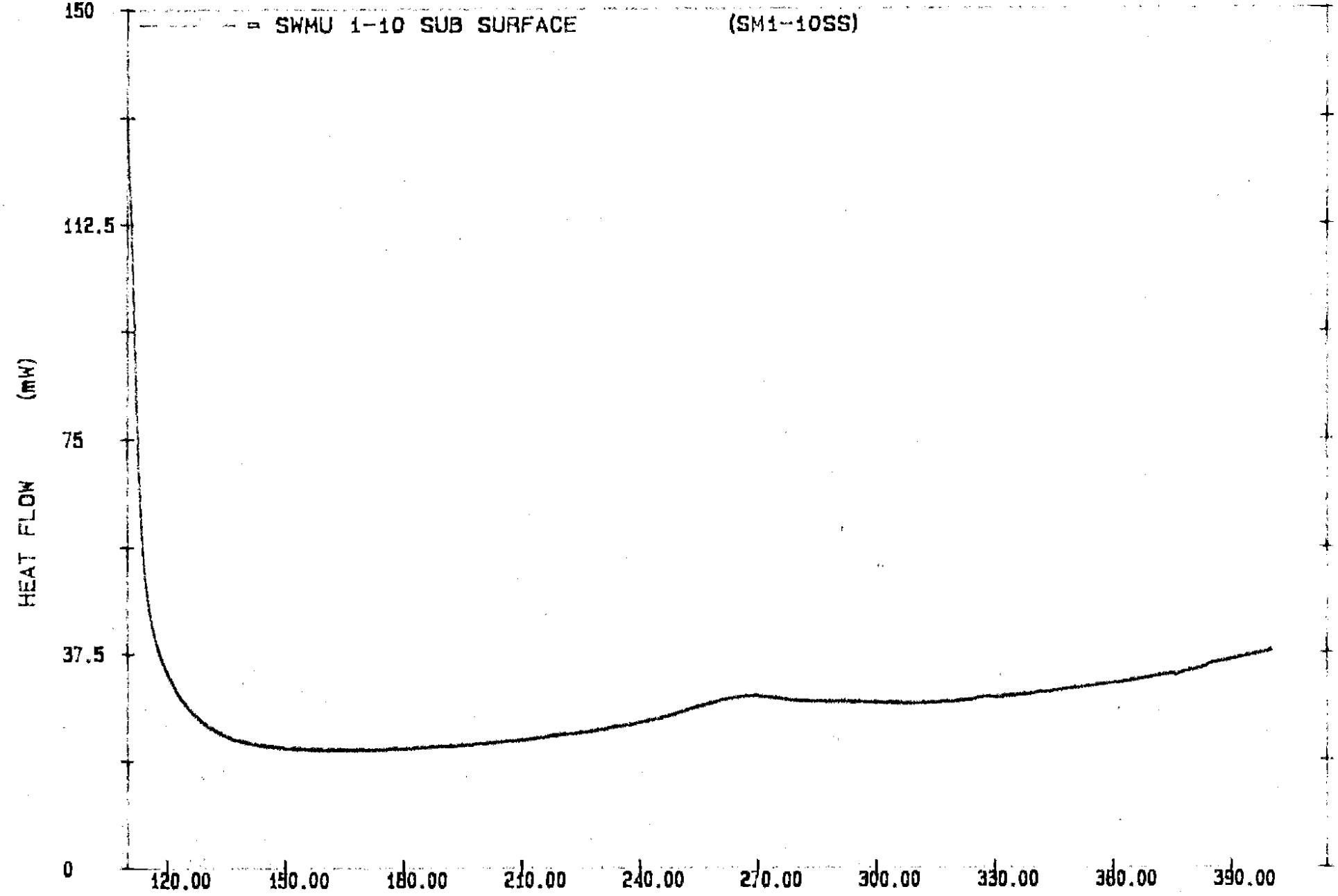
File SM1-9SS ST 9-19-96

PERKIN-ELMER DSC7



Date: Sep 19, 1996 12:06am
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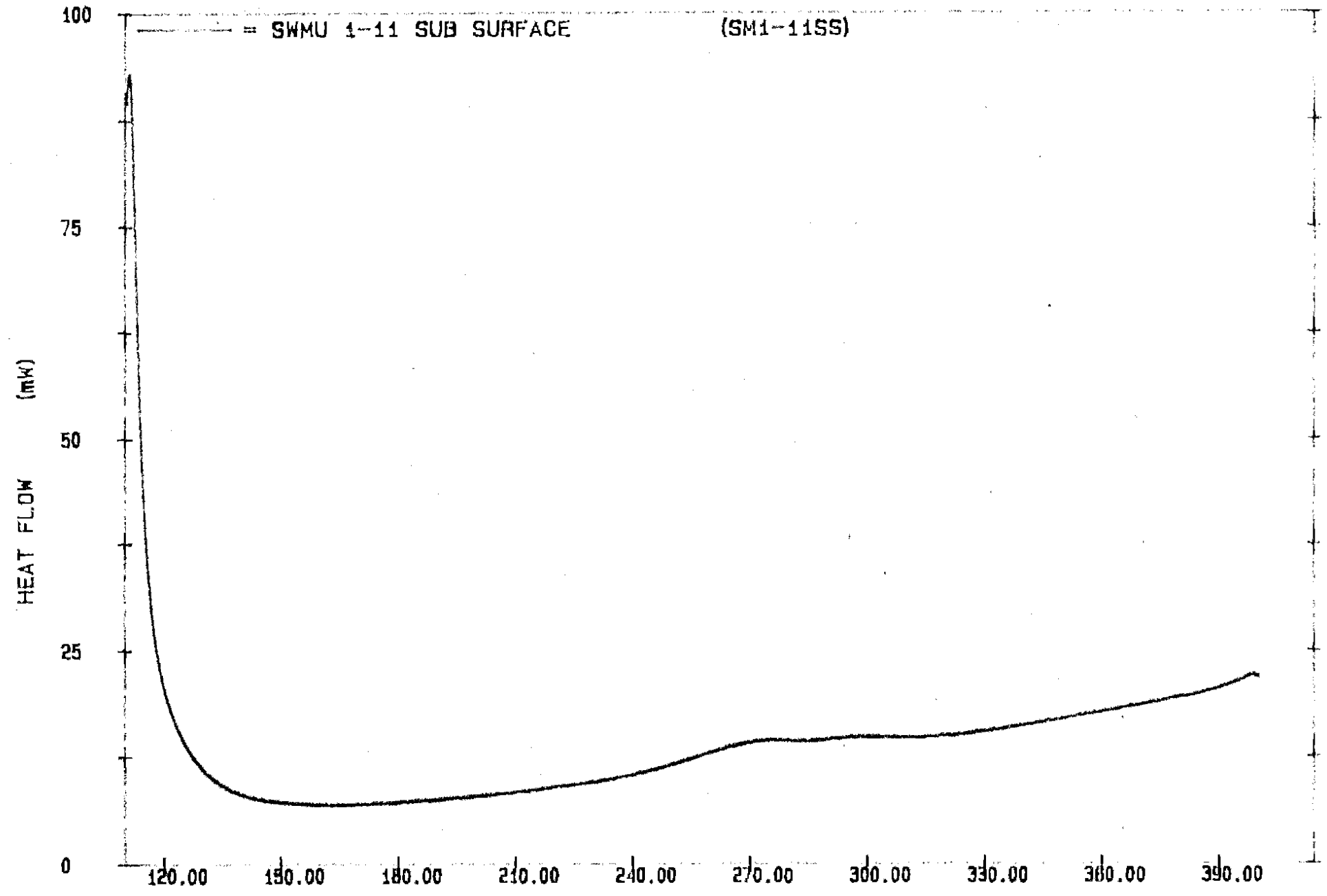
Sample Wt: 0.000 mg Path: C:\PE\
File: SM1-10SS ST 9-19-96

PERKIN-ELMER DSC7



Date: Sep 19, 1996 12:27am
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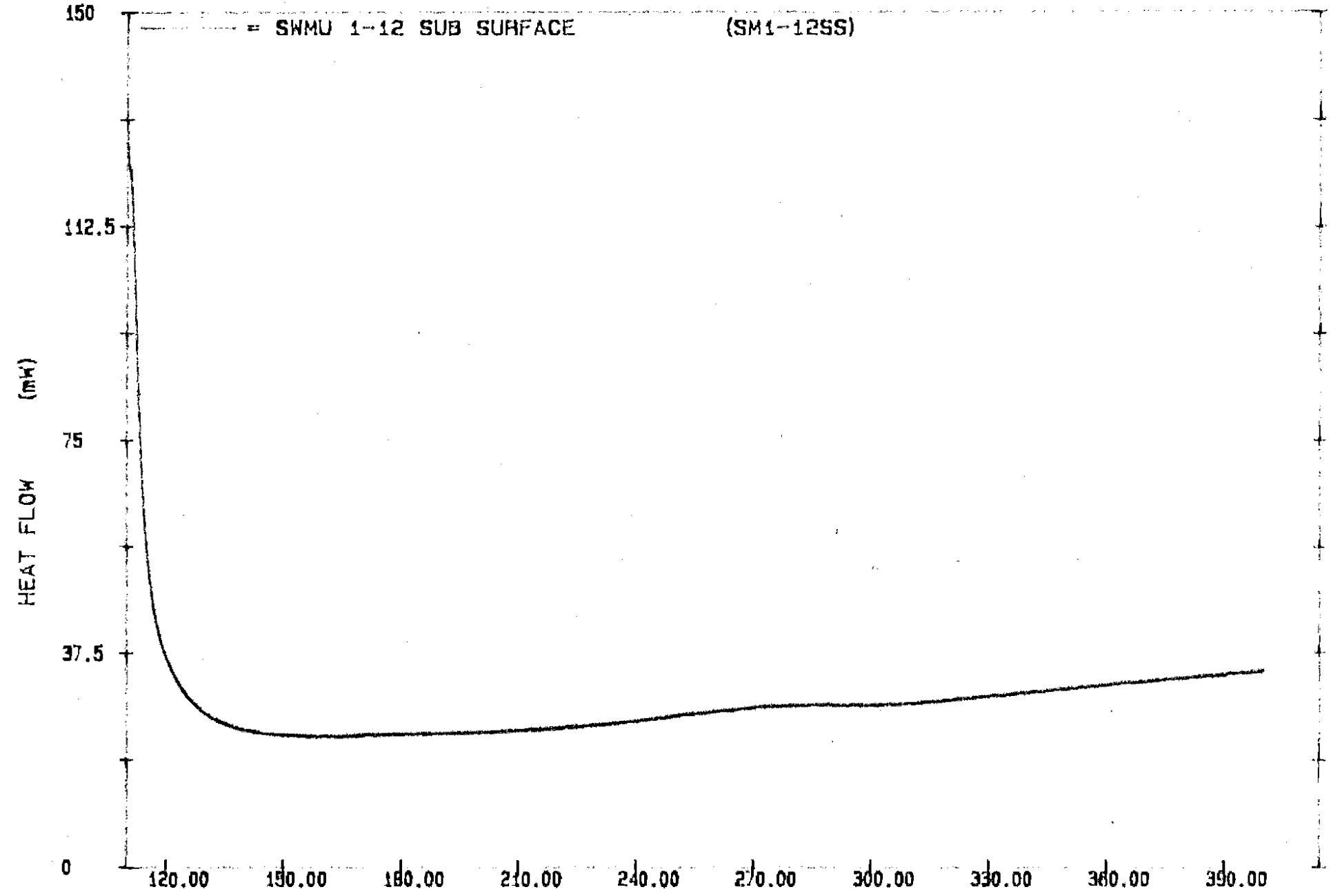
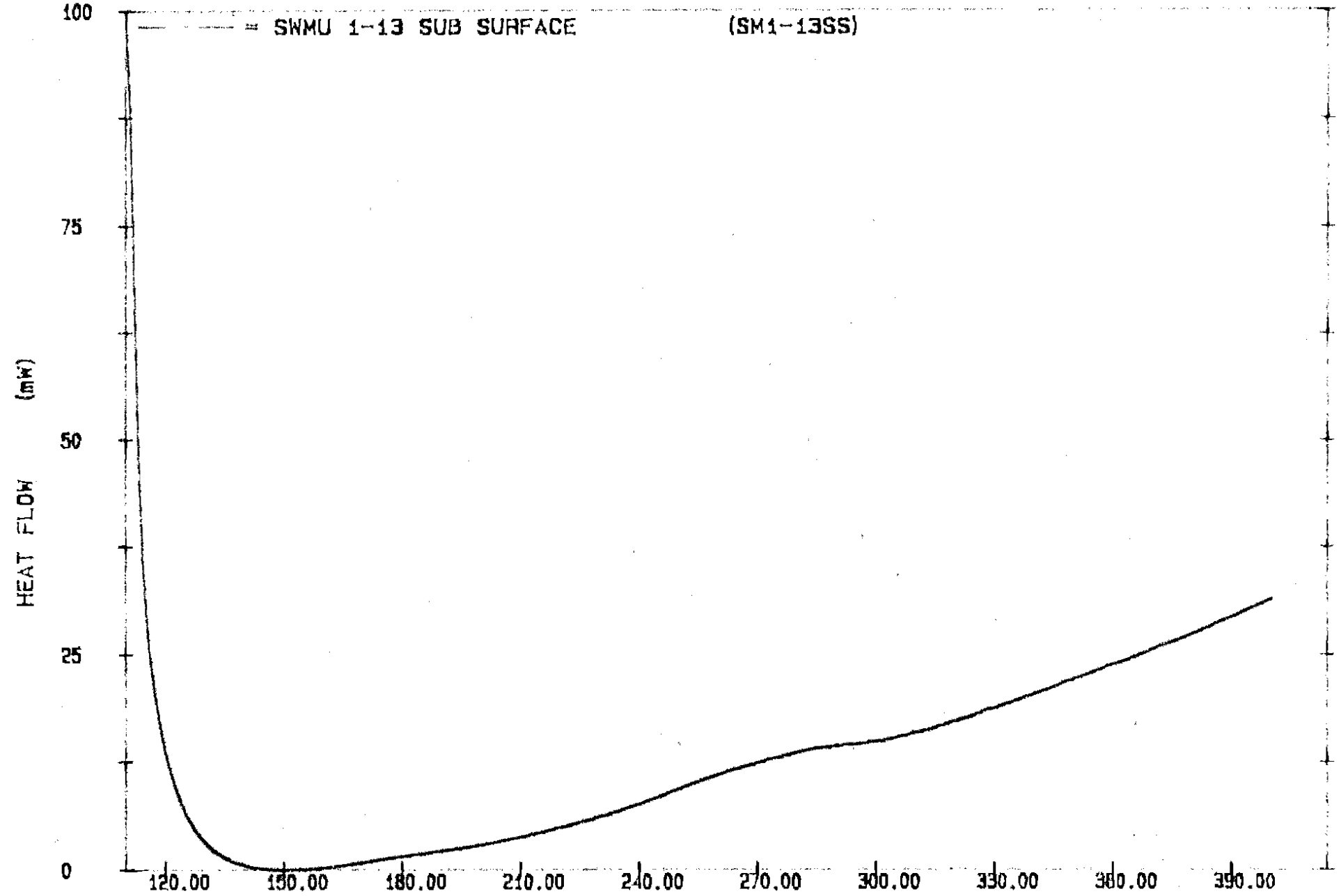
Sample Wt: 0.000 mg Path: C:\PE\
File SM1-11SS ST 9-19-96

PERKIN-ELMER DSC7



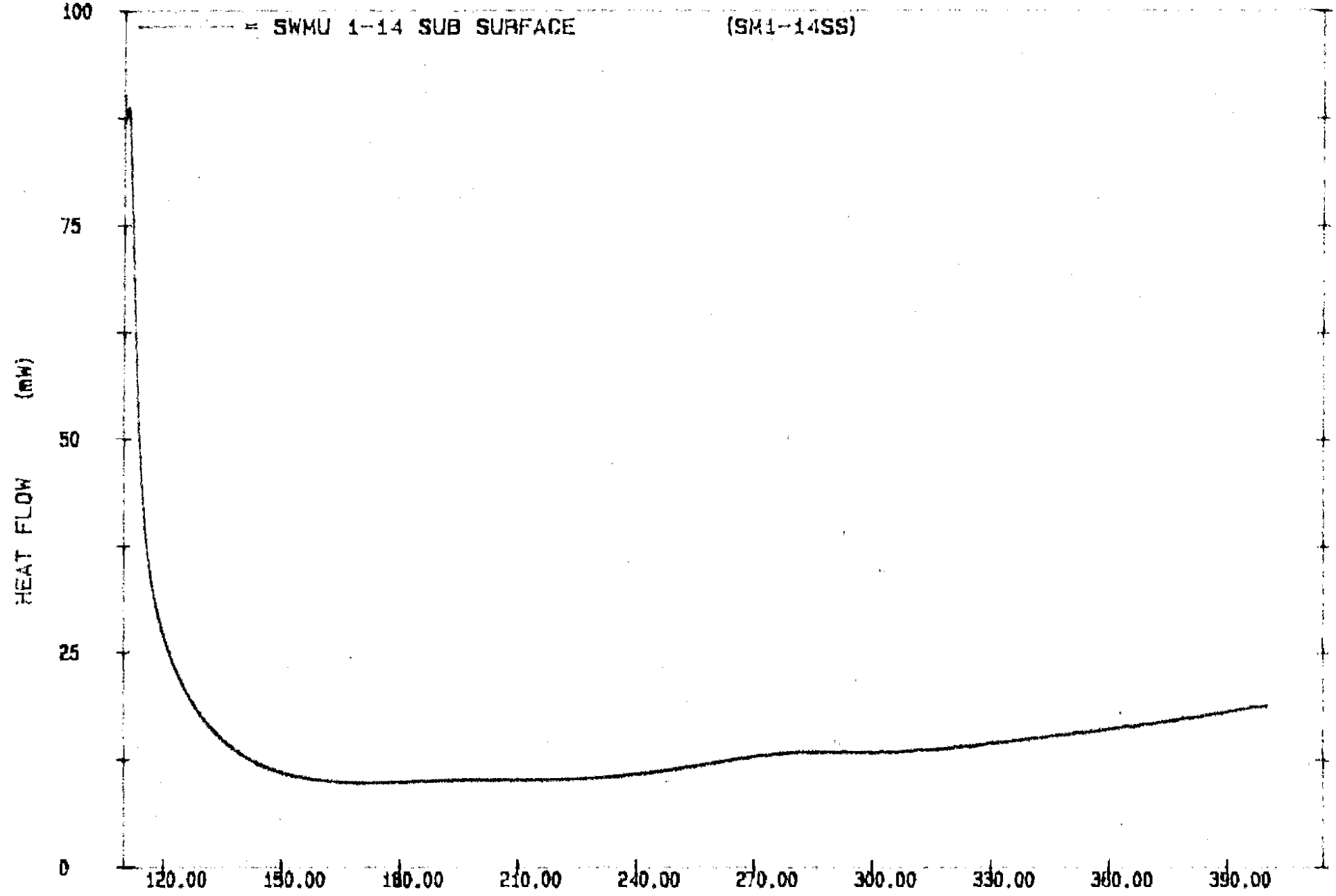
Date: Sep 19, 1996 12: 47am
Scanning Rate: 20.0 C/min
Sample Wt: 0.000 mg Path: C: \PE\
File SM1-12SS ST 9-19-96

PERKIN-ELMER DSC7



Date: Sep 19, 1996 1:08pm
Scanning Rate: 20.0 C/min
Sample Wt: 0.000 mg Path: C:\PE\
File SM1-13SS ST 9-19-96

PERKIN-ELMER DSC7



Date: Sep 19, 1996 1:30pm
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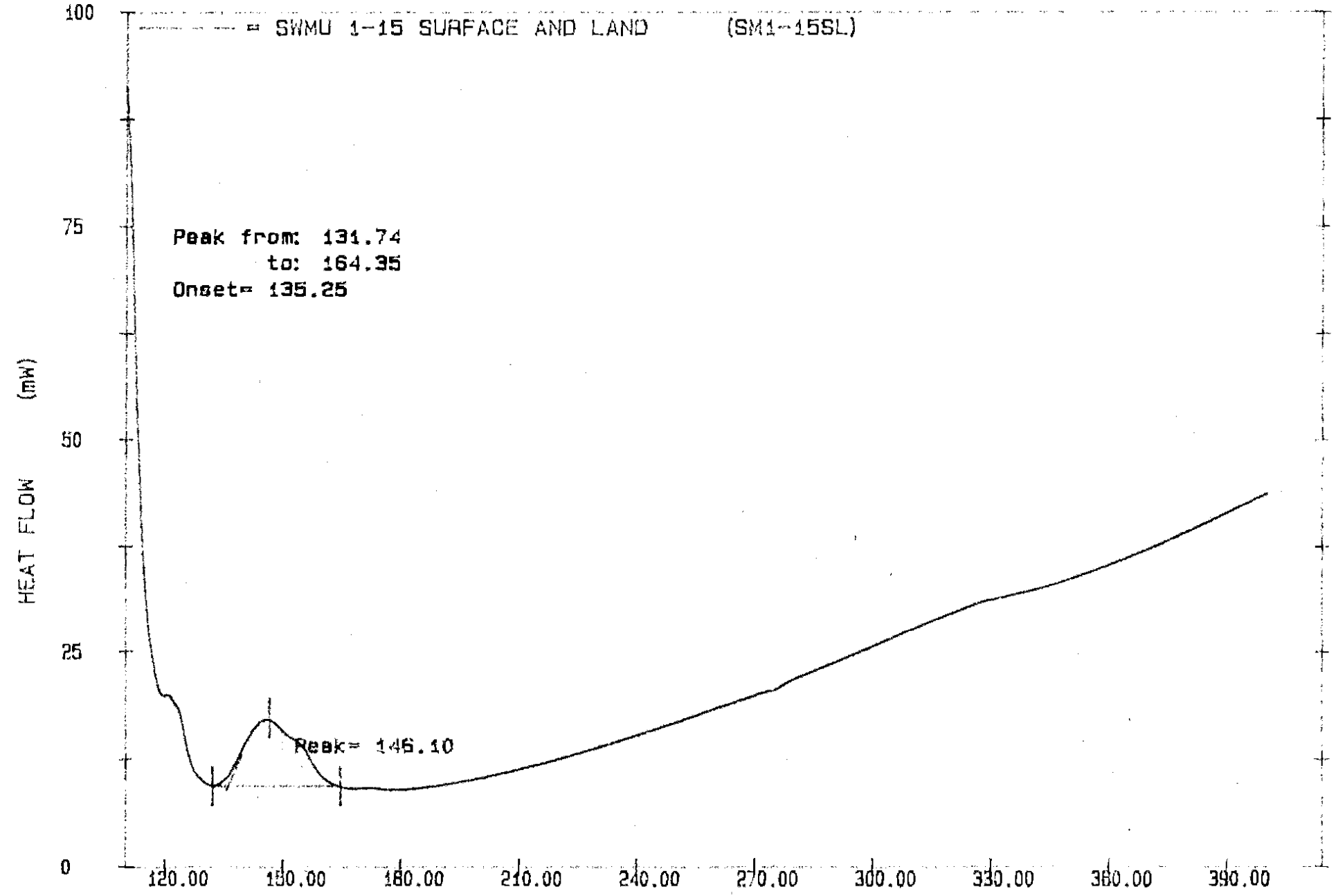
File SM1-14SS ST 9-19-96

PERKIN-ELMER DSC7



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Sample Wt: 0.000 mg Path: C:\PE\
FILE: SM1-15SL ST 9-26-96

PERKIN-ELMER DSC7

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 1

TESTER Cook / Miller / [illegible]

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	yes
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 2

TESTER Cook / Miller / [illegible]

FRICTION TEST: Reactive Yes	No	IMPACT TEST: Reactive Yes	No	DEPTH	CALORIMETRIC TEST: Results
1.	✓	1.	✓	1.	1. Neg
2.	✓	2.	✓	2.	2.
3.	✓	3.	✓	3.	3.
4.	✓	4.	✓	4.	4.
5.	✓	5.	✓	5.	5.
6.	✓	6.	✓	6.	6.

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 3

TESTER Cook / Miller / Shupt

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes / No		Yes / No			
1.	/	1.	✓	1.	1.	1029
2.	/	2.	✓	2.	2.	
3.	/	3.	✓	3.	3.	
4.	/	4.	✓	4.	4.	
5.	/	5.	✓	5.	5.	
6.	/	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 4

TESTER Cook / Miller / S Hart

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	✓	1.	✓	1.	1.	Neg
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 5

TESTER Cook / Miller / S Wright

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	Neg
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 6

TESTER Cook / Miller / Shupp

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	Yes
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 7

TESTER Cook / Miller / Schmidt

	FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH		CALORIMETRIC TEST: Results
1.		✓		✓	1.	1.	Neg
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 8

TESTER Cook / Miller / D 2[illegible]

FRICTION TEST: Reactive Yes	No	IMPACT TEST: Reactive Yes	No	DEPTH	CALORIMETRIC TEST: Results
1.	✓	1.	✓	1.	1. Neg
2.	✓	2.	✓	2.	2.
3.	✓	3.	✓	3.	3.
4.	✓	4.	✓	4.	4.
5.	✓	5.	✓	5.	5.
6.	✓	6.	✓	6.	6.

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 9

TESTER Cook / Miller / Dwight

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	Yes
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 10

TESTER Cook / Miller / Zhu

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	Neg
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 11

TESTER Cook / miller / J Wright

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	No Y
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 12

TESTER Cook / miller / [illegible]

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		✓	1.	1.	Neg
2.		✓		✓	2.	2.	
3.		✓		✓	3.	3.	
4.		✓		✓	4.	4.	
5.		✓		✓	5.	5.	
6.		✓		✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 13

TESTER Cook / Miller / Albright

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	✓	1.	✓	1.	1.	Neg
2. ✓		2. ✓		2.	2.	
3. ✓		3. ✓		3.	3.	
4. ✓		4. ✓		4.	4.	
5. ✓		5. ✓		5.	5.	
6. ✓		6. ✓		6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9/18/96 SAMPLE NO# SS 14

TESTER Cook / Miller / S Knapp

FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH		CALORIMETRIC TEST: Results
1.	✓	1.	✓	1.	1.	Neg
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 1 DATE 9-26-96 SAMPLE NO# SS 4 LanD 15

TESTER B. Thrift / S. Thrift / S Thrift

FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH		CALORIMETRIC TEST: Results
1.	✓	1	✓	1.	1.	Positive
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

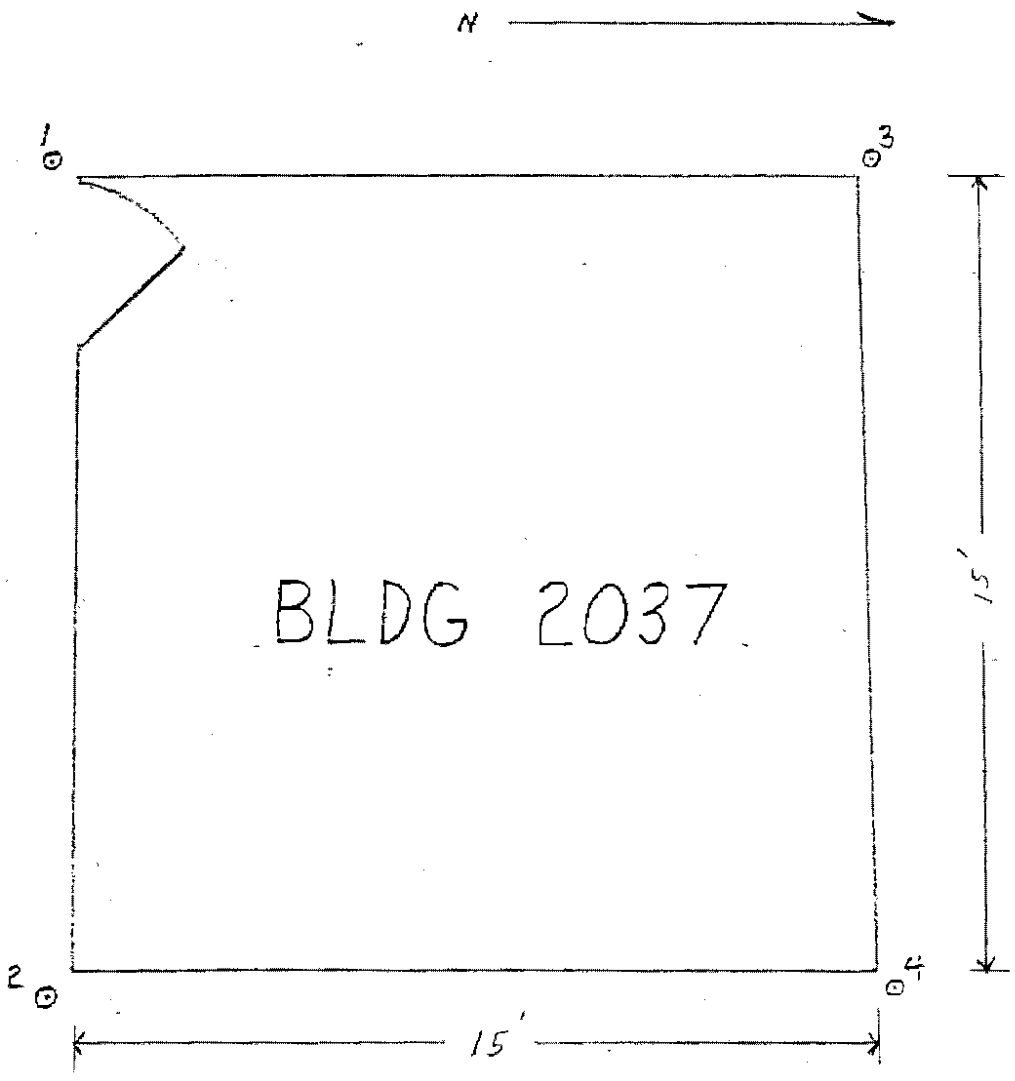
S--SURFACE
SS--SUBSURFACE

APPENDIX C

SWMU 9 - WASTE POWDER CATCH BASINS - BUILDING 2037

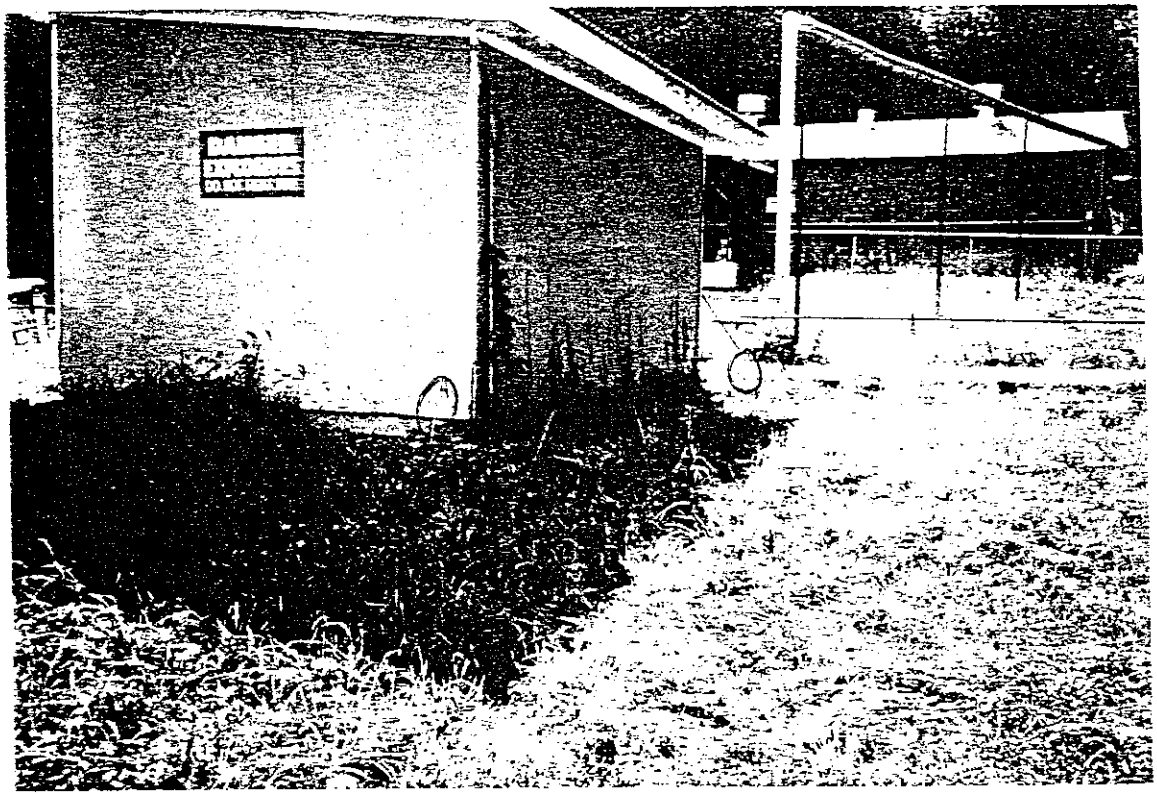
SWMU 9

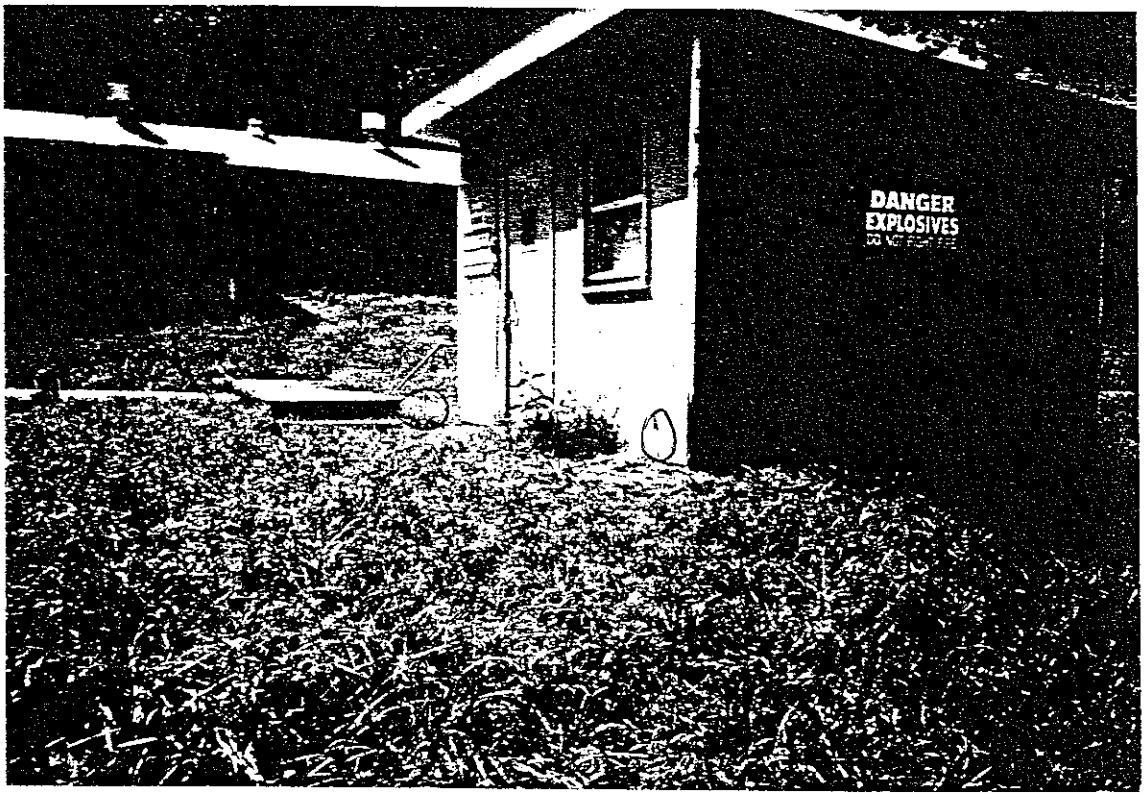
WASTE POWDER CATCH BASIN BLDG 2037, TOOK 4 SURFACE SAMPLES 0-2" AND 4 SUBSURFACE SAMPLES 2-8".



SUMMARY OF ACTIVITIES FOR SWMU 9

Implementation of the ICM work plan for SWMU 9 consisted of taking surface (0-2") and subsurface (2-8") samples in four locations (see map). Calorimeter tests were run on composited samples. Samples tested negative for explosives using all three test methods.



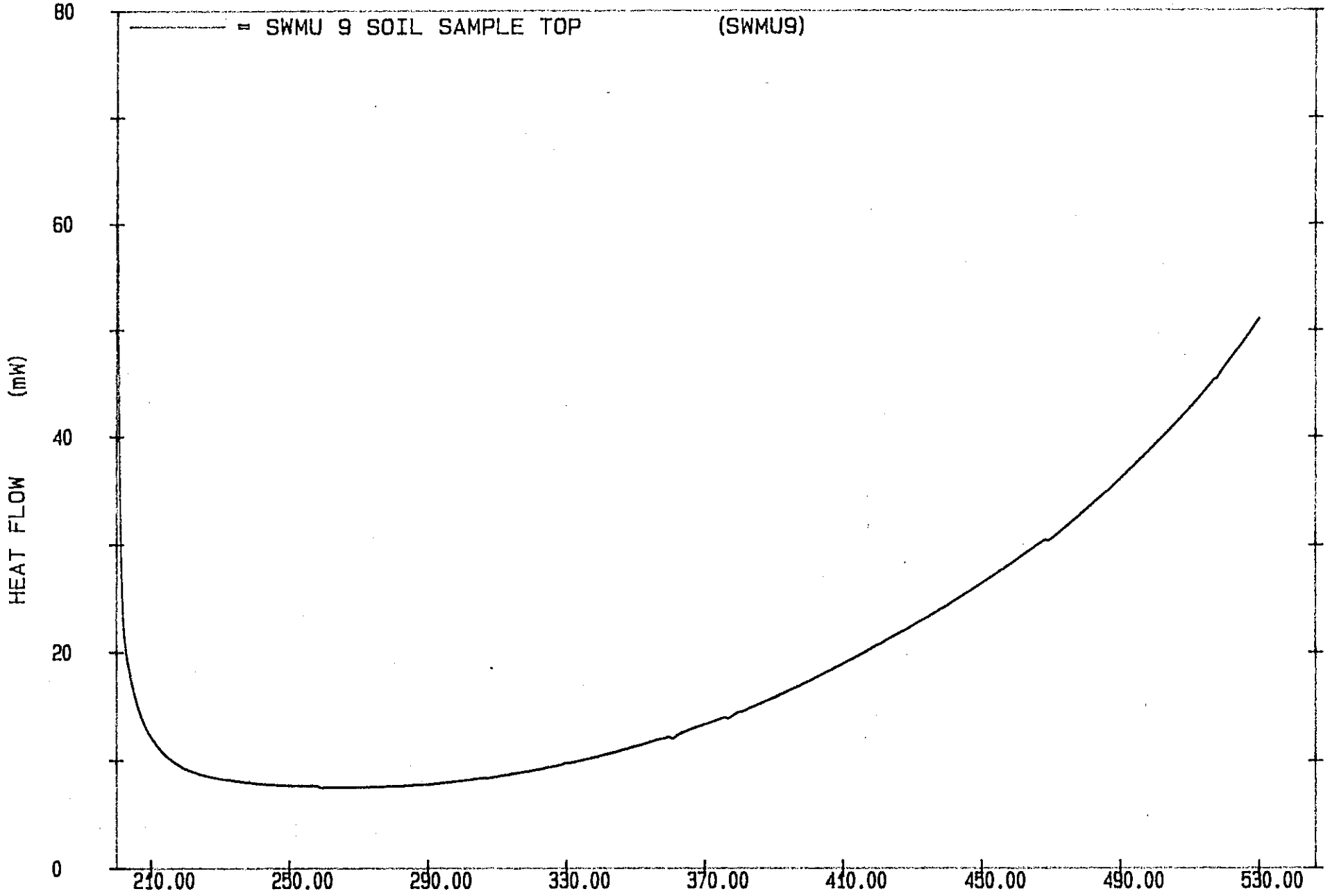

DANGER
EXPLOSIVES

UXB INTERNATIONAL

PORT EWEN/DYNO-NOBEL EXPLOSIVE SAMPLING CALORMETRIC TESTING

DATE	SAMPLE #	RDX 205C	PETN 141C	LA 327-331C	LS 330C	MF 216	DDNP 180C	TET 280C
8-4-96	SWM495	N	N	N	N	N	N	N

LEGEND
C=CENTIGRADE
RDX=
PETN=
LA= LEAD AZIDE
LS= LEAD STYPHYNATE
TET= TETRYL
DDNP= DIAZODINITROPHENOL
Y= YES
N= N0



Date: Jul 08, 1996 6:42pm
Scanning Rate: 20.0 C/min
Sample Wt: 2.500 mg Path: UXB\
File 1 MU9 ST

D IO NOBEL

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 8-12-96 SAMPLE NO# 51

	FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH	CALORIMETRIC TEST: Results
1.				✓		Comp neg
2.		✓		✓		
3.		✓		✓		
4.		✓		✓		
5.		✓		✓		
6.		✓		✓		

TESTER Cook J.S.

Comments:
4000 gram friction weight
At 100 cm

(S)-SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 8-12-96 SAMPLE NO# S2

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH	CALORIMETRIC TEST: Results
Yes	No	Yes	No		
1.	✓	1.	✓	1.	1. Comp Neg
2.	✓	2.	✓	2.	2.
3.	✓	3.	✓	3.	3.
4.	✓	4.	✓	4.	4.
5.	✓	5.	✓	5.	5.
6.	✓	6.	✓	6.	6.

TESTER Cook / A. Thrift

Comments:
4000 gram friction weight

(S)--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 8-12-96 SAMPLE NO# 53

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	✓	1.	✓	1.	1.	Comp Res
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

TESTER Cook / S. Thrift

Comments:
4000 gram friction weight

(S)-SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 8-12-96 SAMPLE NO# 54

FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
Yes	No	Yes	No			
1.	✓	1.	✓	1.	1.	Comp Neg
2.	✓	2.	✓	2.	2.	
3.	✓	3.	✓	3.	3.	
4.	✓	4.	✓	4.	4.	
5.	✓	5.	✓	5.	5.	
6.	✓	6.	✓	6.	6.	

TESTER Cook

Comments:
4000 gram friction weight

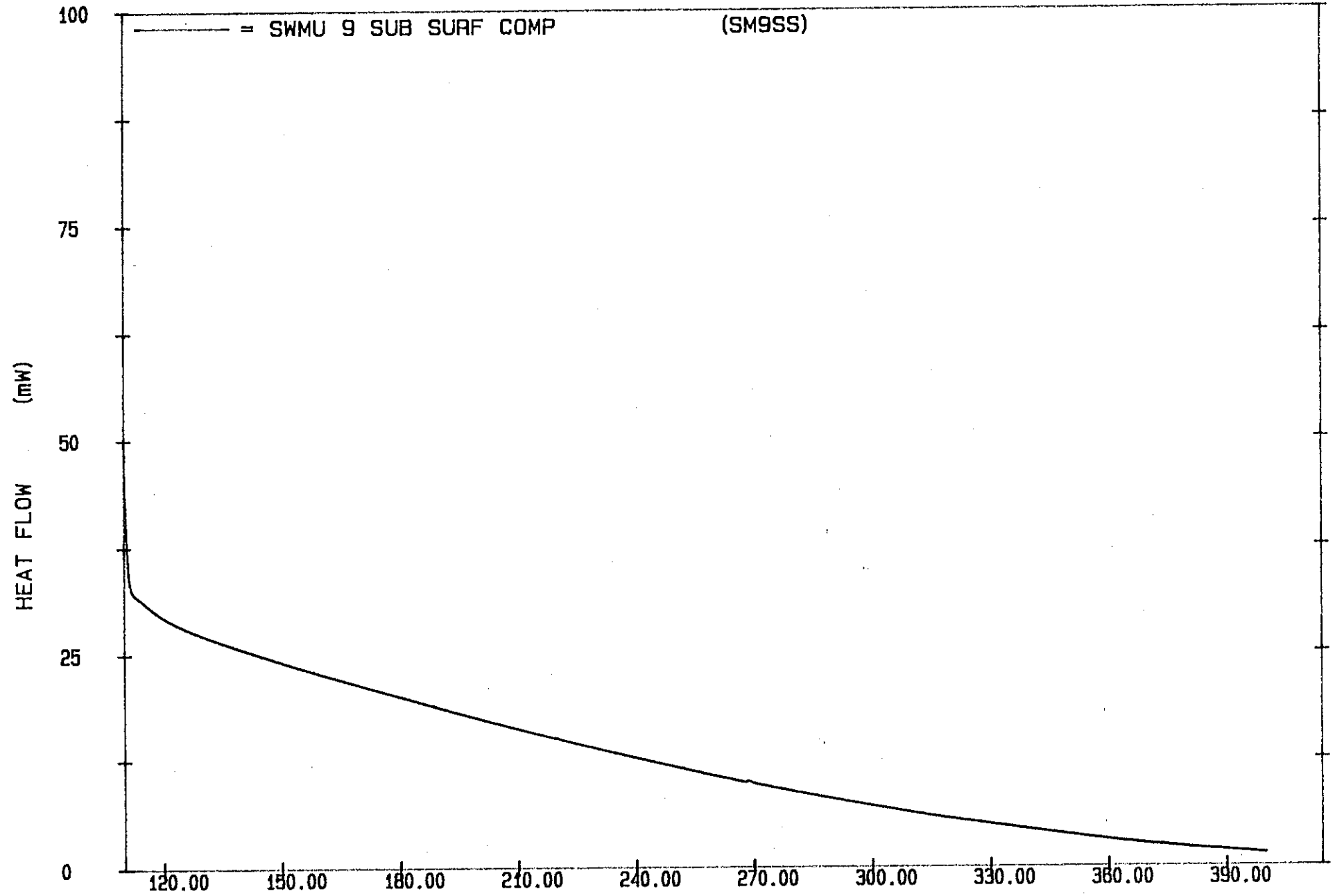
(S)--SURFACE
SS--SUBSURFACE

UXB INTERNATIONAL

PORT EWEN/DYNO-NOBEL EXPLOSIVE SAMPLING CALORMETRIC TESTING

DATE	SAMPLE #	RDX 205C	PETN 141C	LA 327-331C	LS 330C	MF 210C	DDNP 180C	TET 280C
9-3-96	SWMU 955 Comp	N	N	N	N	N	N	N

LEGEND
C=CENTIGRADE
RDX=
PETN=
LA= LEAD AZIDE
LS= LEAD STYPHYNATE
TET= TETRYL
DDNP= DIAZODINITROPHENOL
Y= YES
N= N0



Date: Jul 28, 1996 5:27pm
Scanning Rate: 20.0 C/min
Sample Wt: 0.000 mg Path: C:\PE\
File: SM9SS ST 9-3-96

PERKIN-ELMER DSC7

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 5/14/96 SAMPLE NO# SS 9-1

TESTER LIGON / COOK / 8 hrs

	FRICTION TEST: Reactive Yes	FRICTION TEST: Reactive No	IMPACT TEST: Reactive Yes	IMPACT TEST: Reactive No	DEPTH		CALORIMETRIC TEST: Results
1.		/	1.	X	1.	1.	Comp Neg
2.		/	2.	X	2.	2.	
3.		/	3.	X	3.	3.	
4.		/	4.	X	4.	4.	
5.		/	5.	X	5.	5.	
6.		/	6.	X	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 8/14/96 SAMPLE NO# SS 9-2

TESTER L1 GOW/COOK / S Wright

FRICTION TEST: Reactive Yes	No	IMPACT TEST: Reactive Yes	No	DEPTH		CALORIMETRIC TEST: Results
1.	/	1.	X	1.	1.	Comp Neg
2.	/	2.	X	2.	2.	
3.	/	3.	X	3.	3.	
4.	/	4.	X	4.	4.	
5.	/	5.	X	5.	5.	
6.	/	6.	X	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 8/14/96 SAMPLE NO# SS 9-3

TESTER Wilson / Cook / Shirt

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH		CALORIMETRIC TEST: Results
	Yes	No	Yes	No			
1.		✓		X	1.	1.	Comp Neg
2.		✓		X	2.	2.	
3.		✓		X	3.	3.	
4.		✓		X	4.	4.	
5.		✓		X	5.	5.	
6.		✓		X	6.	6.	

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE

DYNO-NOBEL PORT EWEN LAB SAMPLE REPORTS

ECKENFELDER/UXB INTERNATIONAL

SWMU SOIL SAMPLES DYNO-NOBEL PORT EWEN PLANT NEW YORK

SWMU 9 DATE 8/14/96 SAMPLE NO# SS 9-4

TESTER Owens/Cook

	FRICTION TEST: Reactive		IMPACT TEST: Reactive		DEPTH	CALORIMETRIC TEST: Results
	Yes	No	Yes	No		
1.		✓		X	1.	1.
2.		✓		X	2.	2.
3.		✓		X	3.	3.
4.		✓		X	4.	4.
5.		✓		X	5.	5.
6.		✓		X	6.	6.

Comments:
4000 GRAM TEST WEIGHT ON THE FRICTION TEST
1KG WEIGHT AT 100 CENTIMETERS ON THE IMPACT TEST.

S--SURFACE
SS--SUBSURFACE