SUS
404

SUSITNA HYDROELECTRIC PROJECT

INSTREAM ICE SIMULATION STUDY

Report by
Harza-Ebasco Susitna Joint Venture

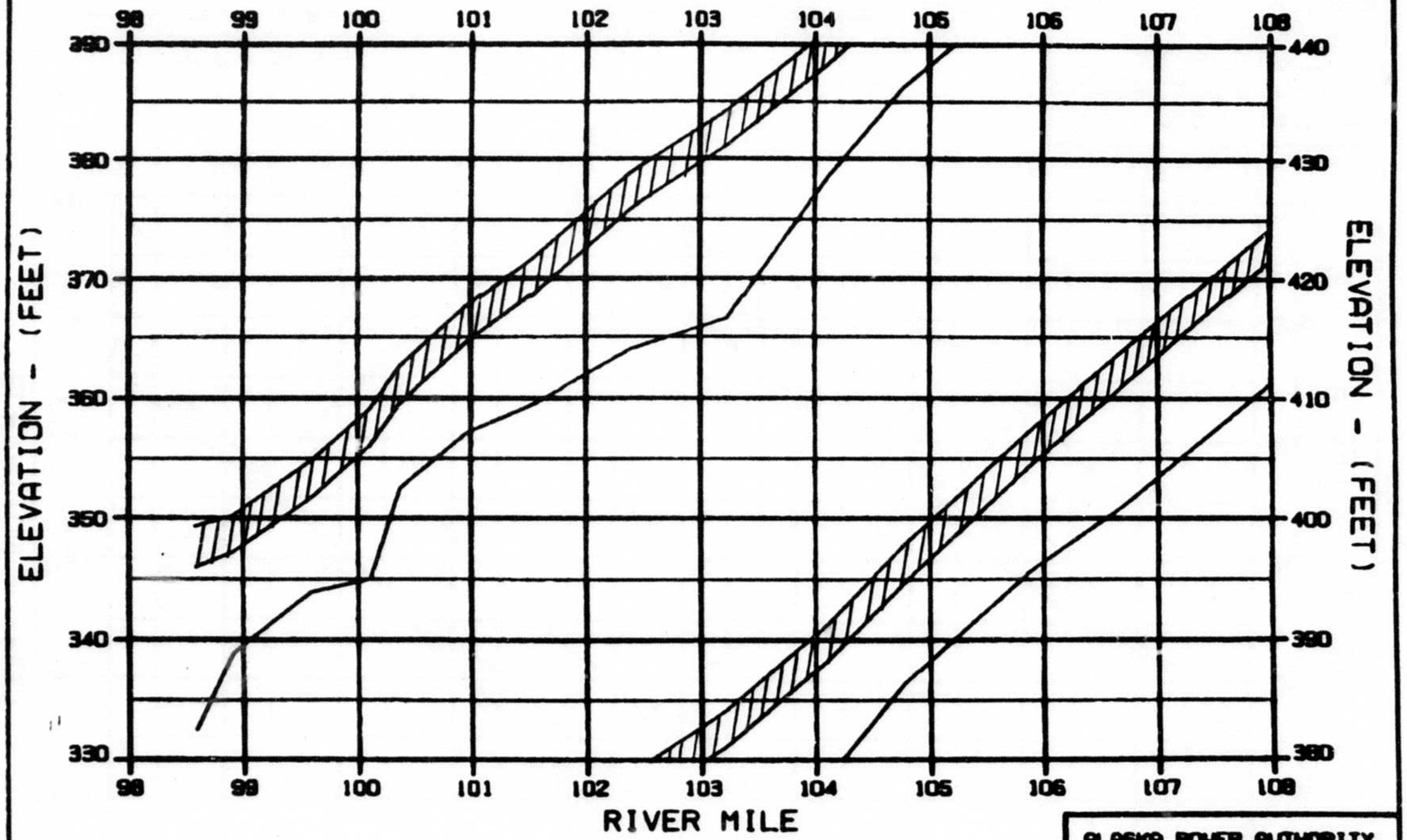
Prepared for
Alaska Power Authoirty

Draft Report
September 1984

SECTION
2

EXHIBIT I

C



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY

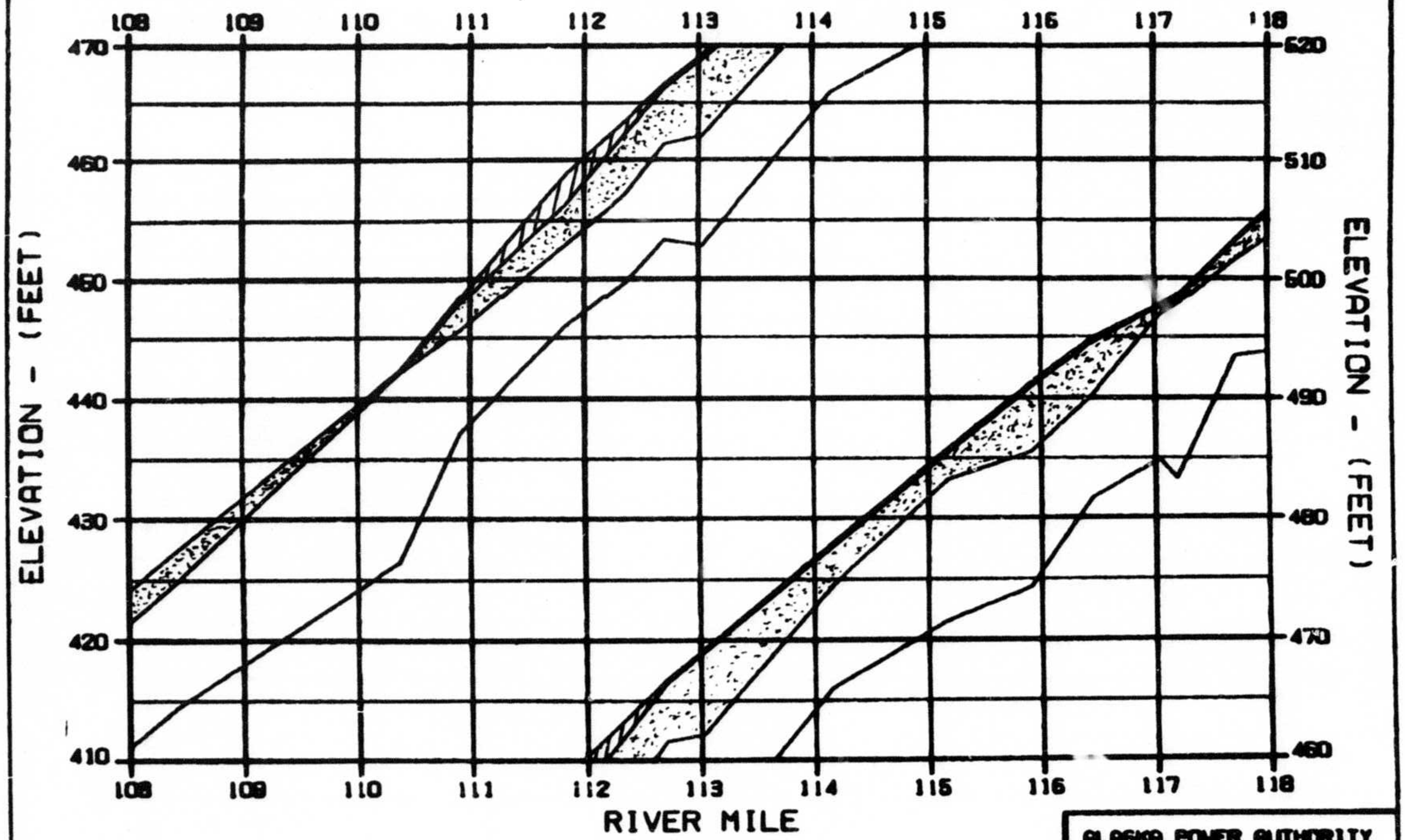
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

c



LEGEND:

TOP OF SOLID ICE
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ALASKA POWER AUTHORITY

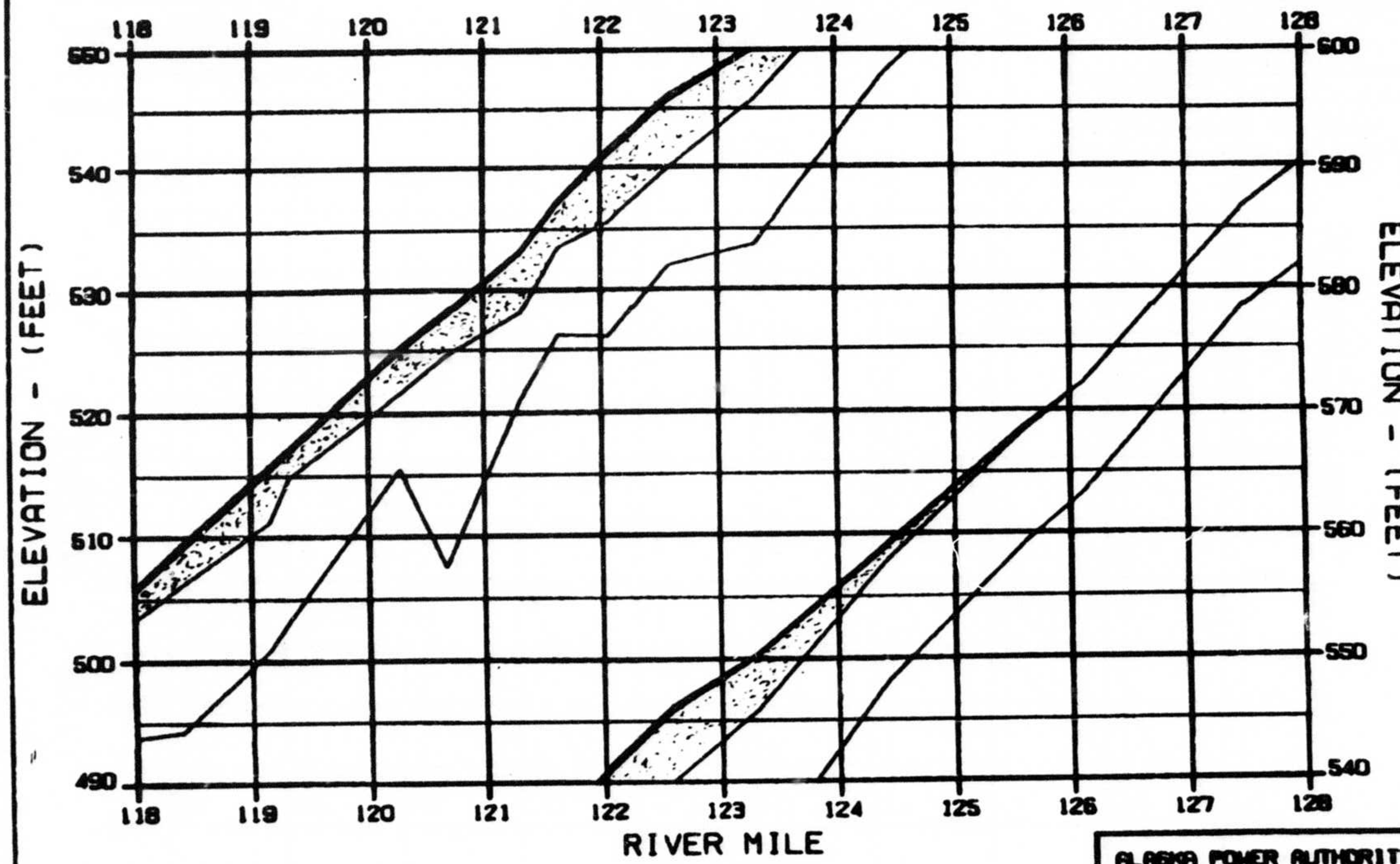
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

C



LEGEND:

- TOP OF SOLID ICE
- SLUSH/SOLID ICE INTERFACE
- BOTTOM OF SLUSH ICE
- RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
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ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION7

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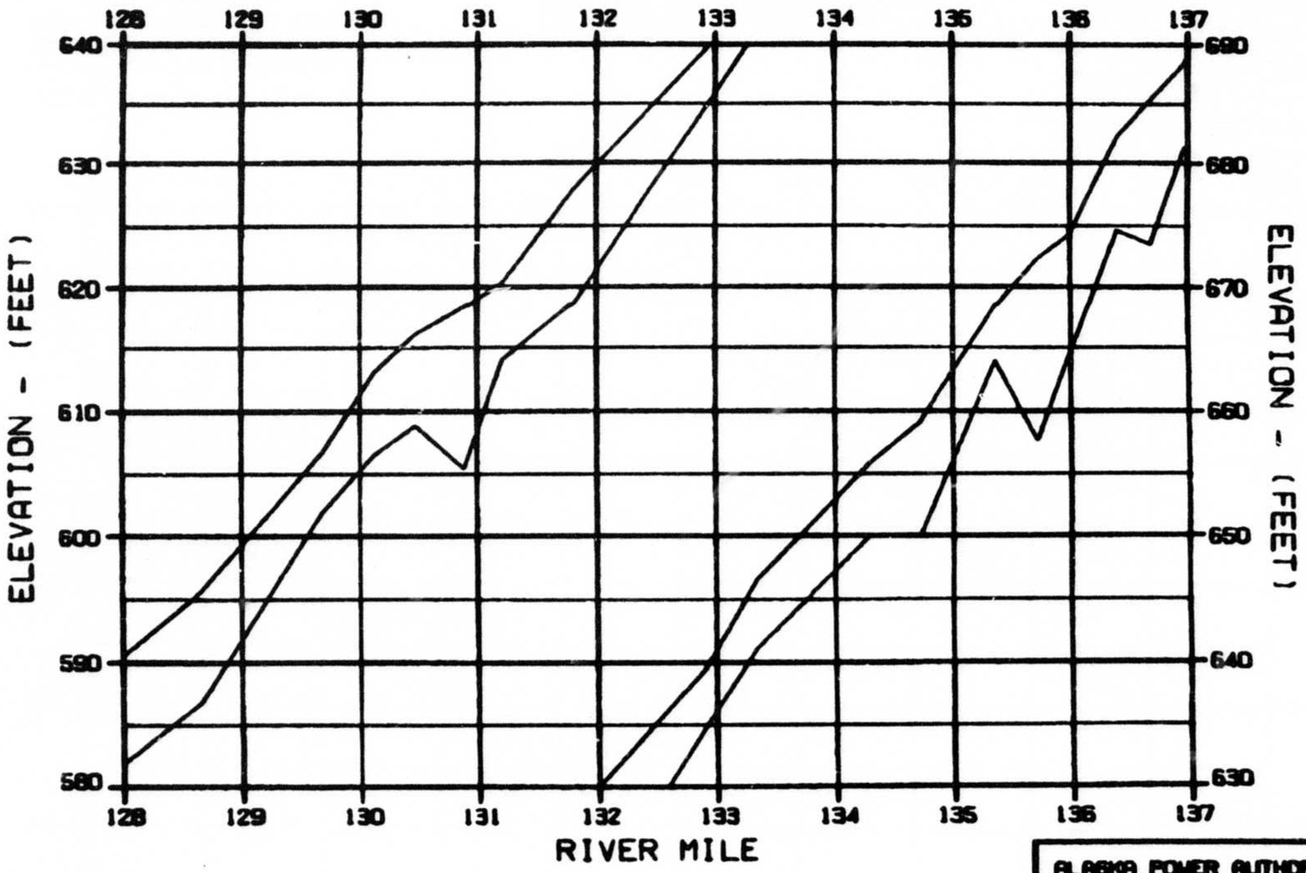


LEGEND:

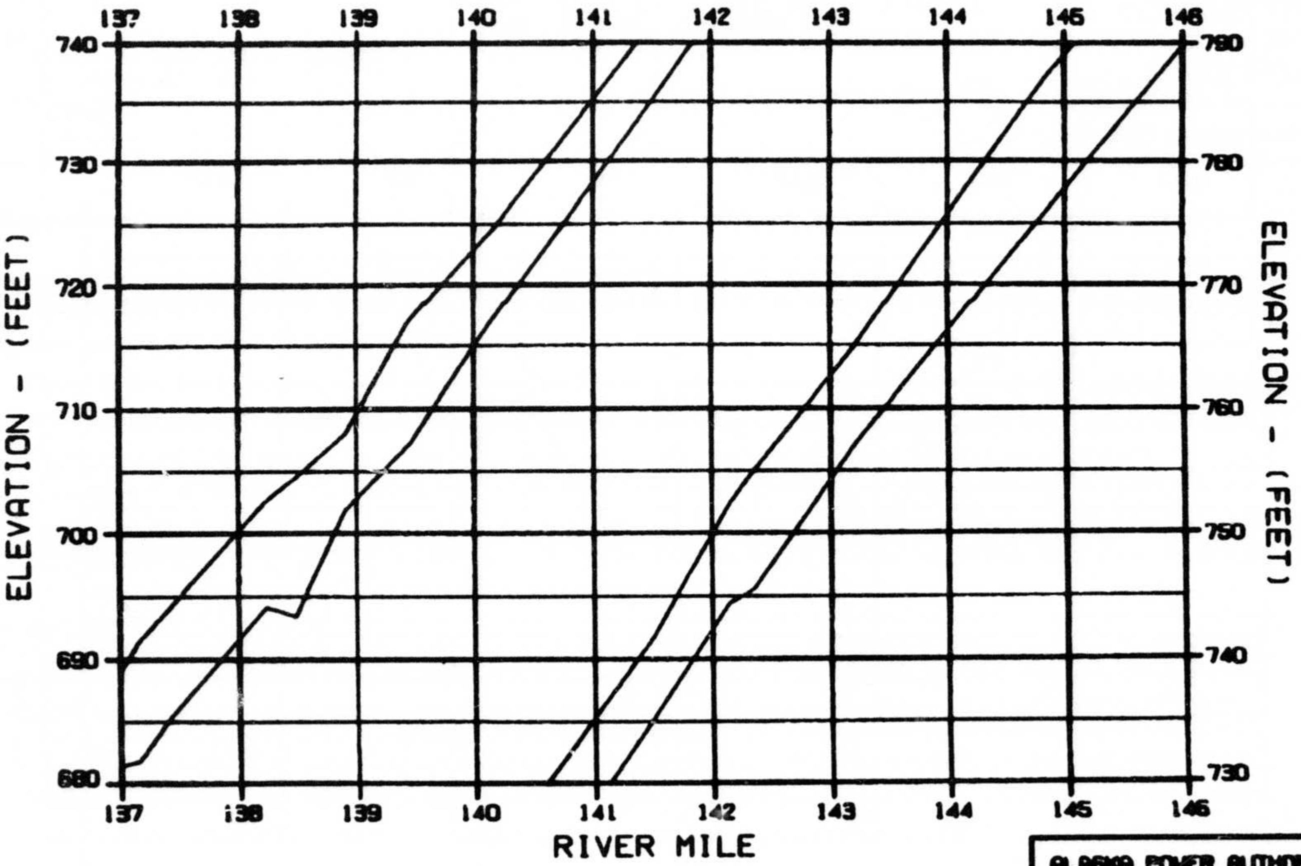
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES	
HARZA-EBASCO JOINT VENTURE	

OPTION?

C



LEGEND:

TOP OF SOLID ICE
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BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
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FLOW CASE : C TEMP RULE : 4 DEG. C
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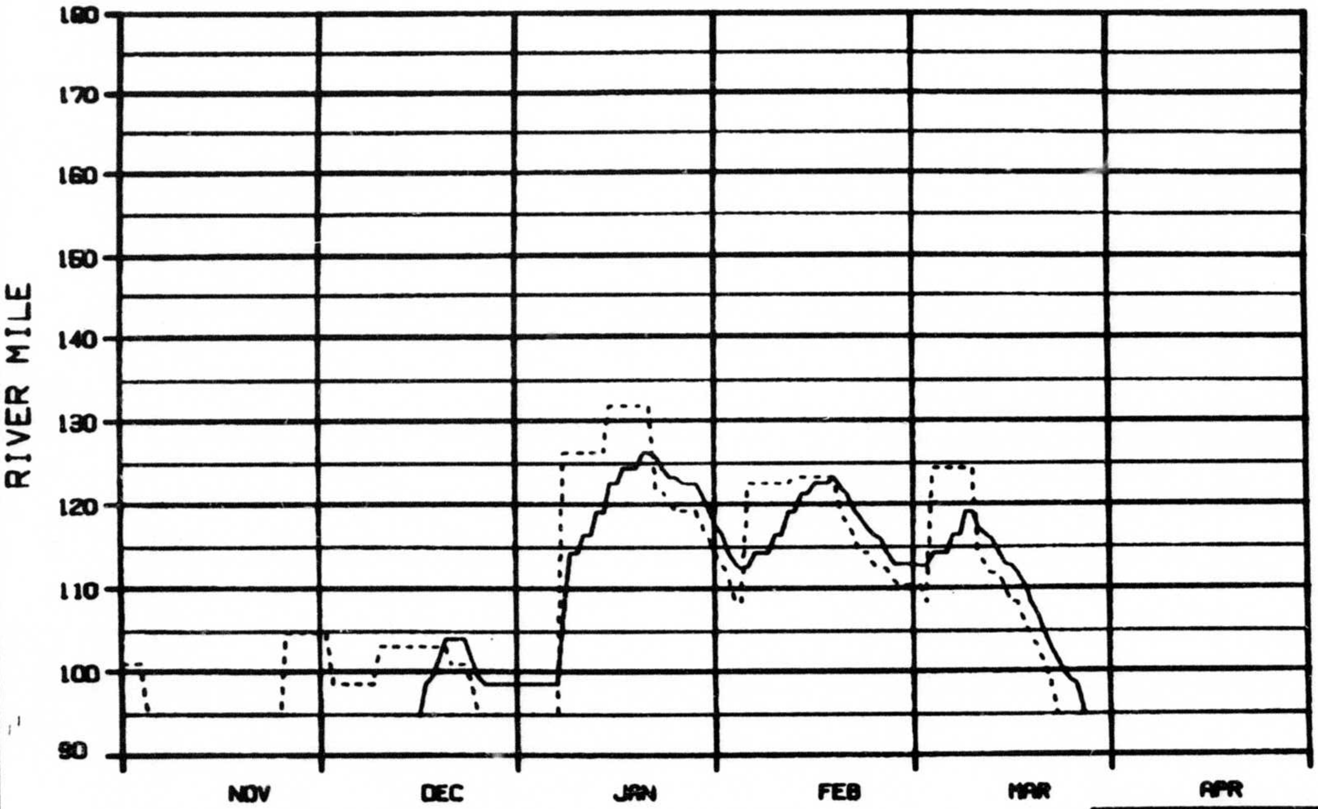
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?



LEGEND:

ICE FRONT

ZERO DEGREE ISOTHERM

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7198C4A

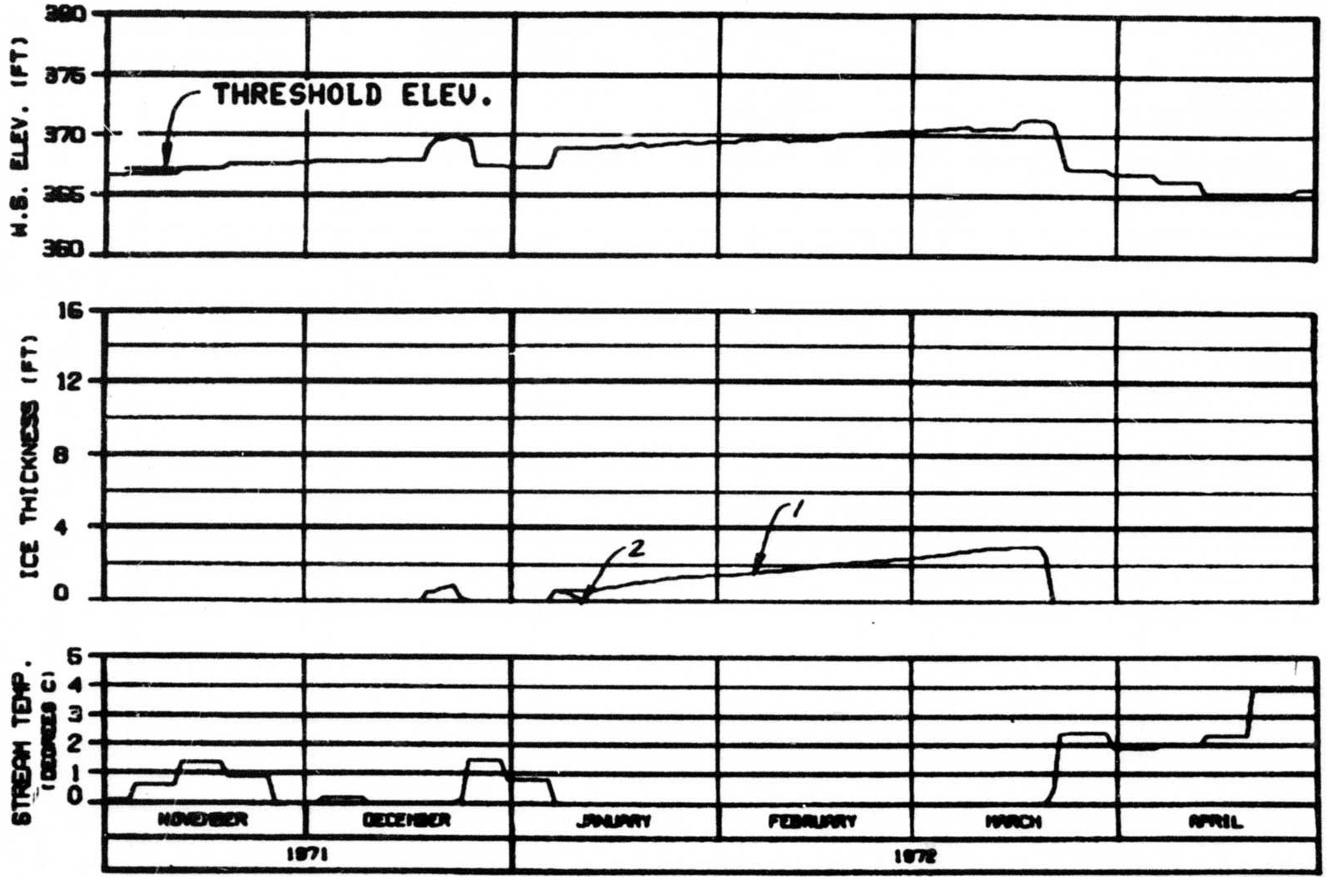
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM

HARZA-EBASCO JOINT VENTURE

OPTION2



HEAD OF WHISKERS SLOUGH

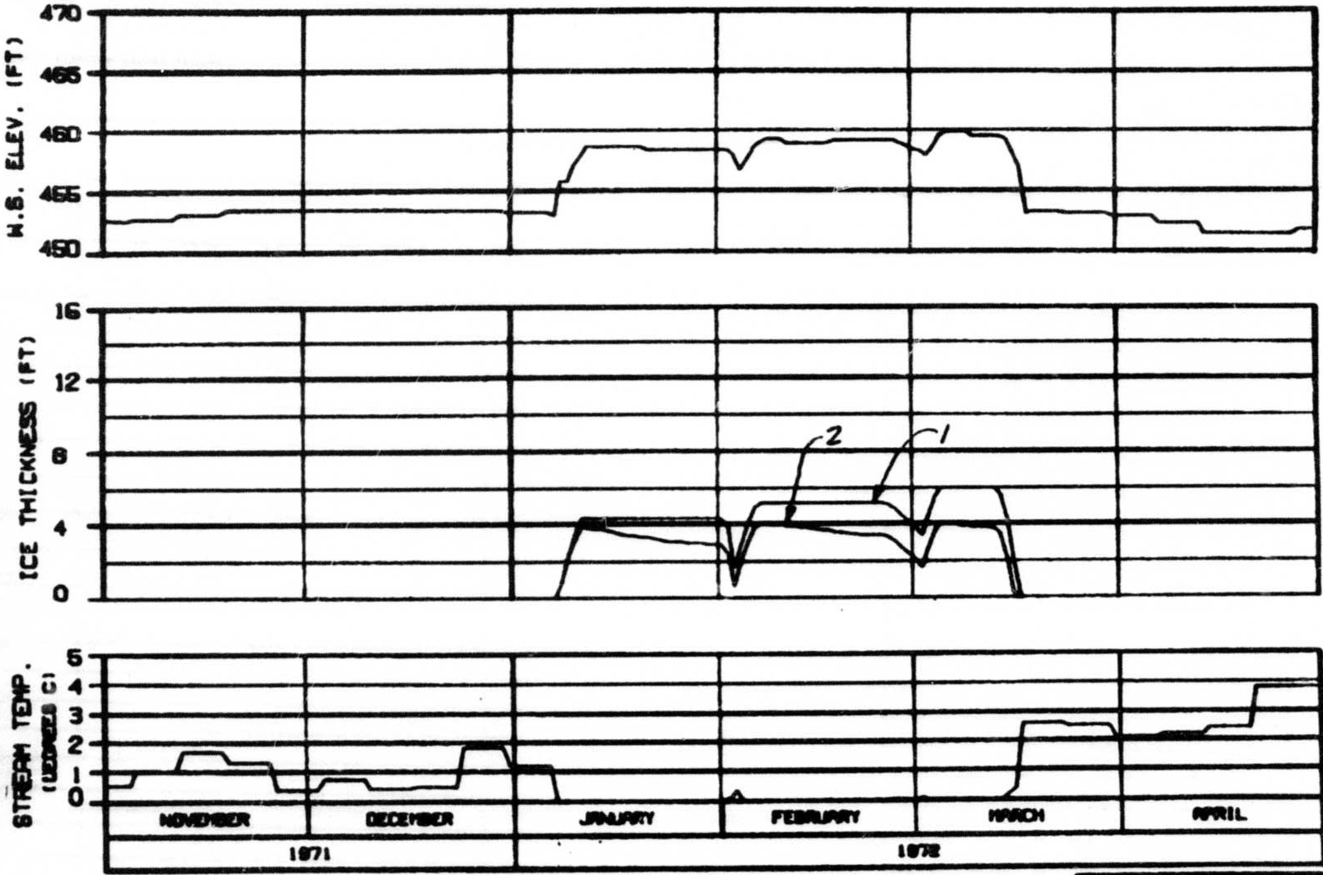
RIVER MILE : 101.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

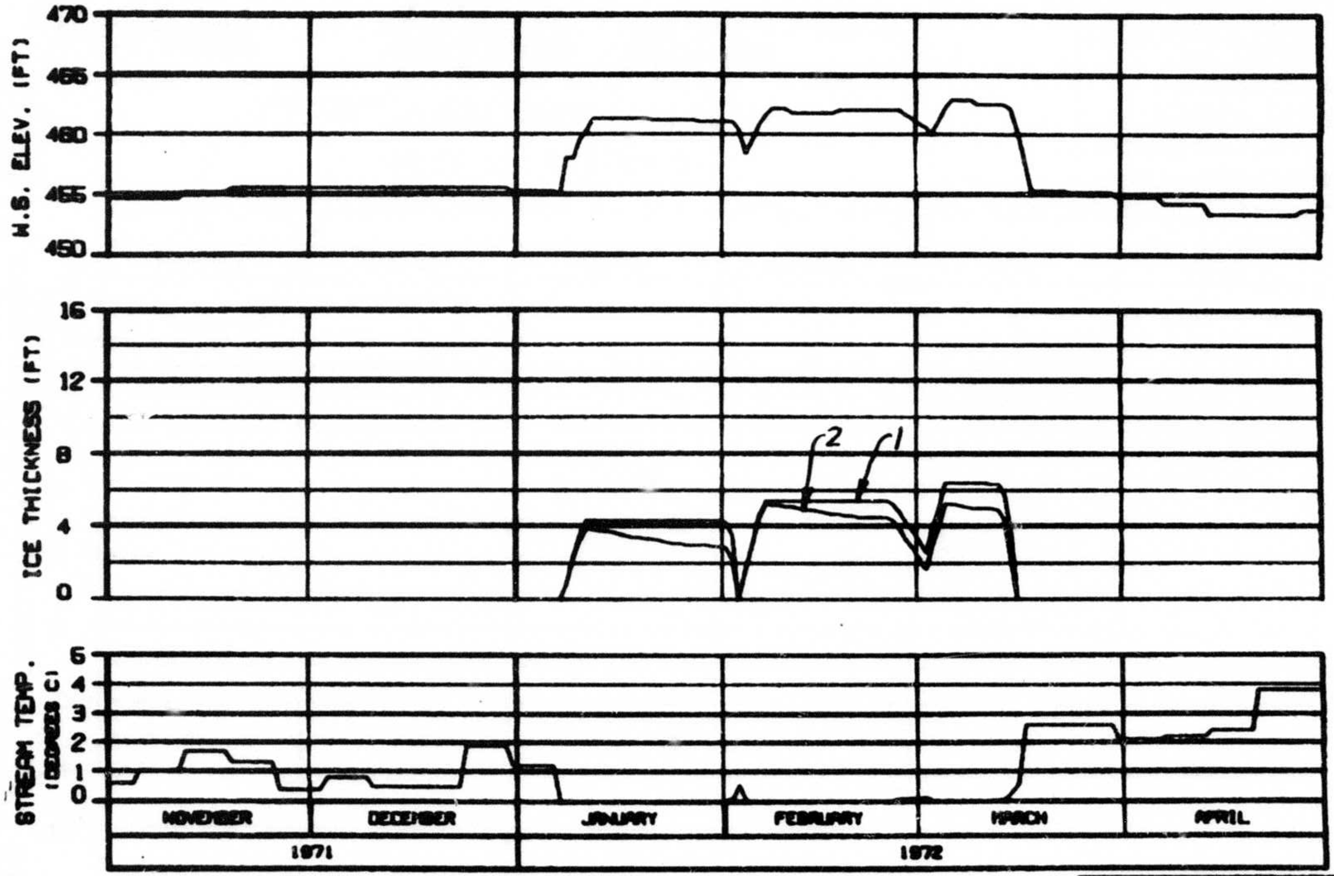
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

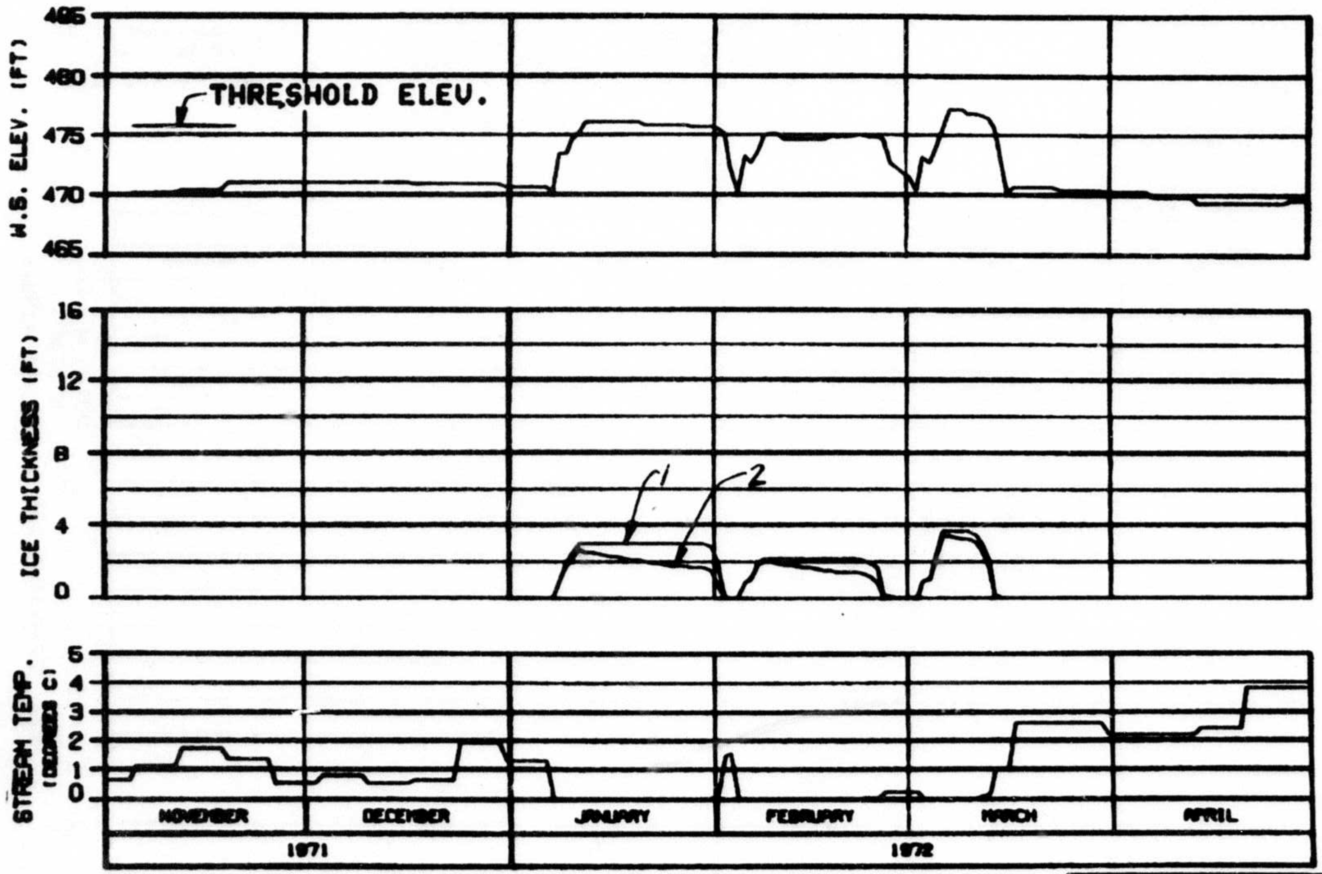
RIVER MILE : 112.34

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 8

RIVER MILE : 114.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

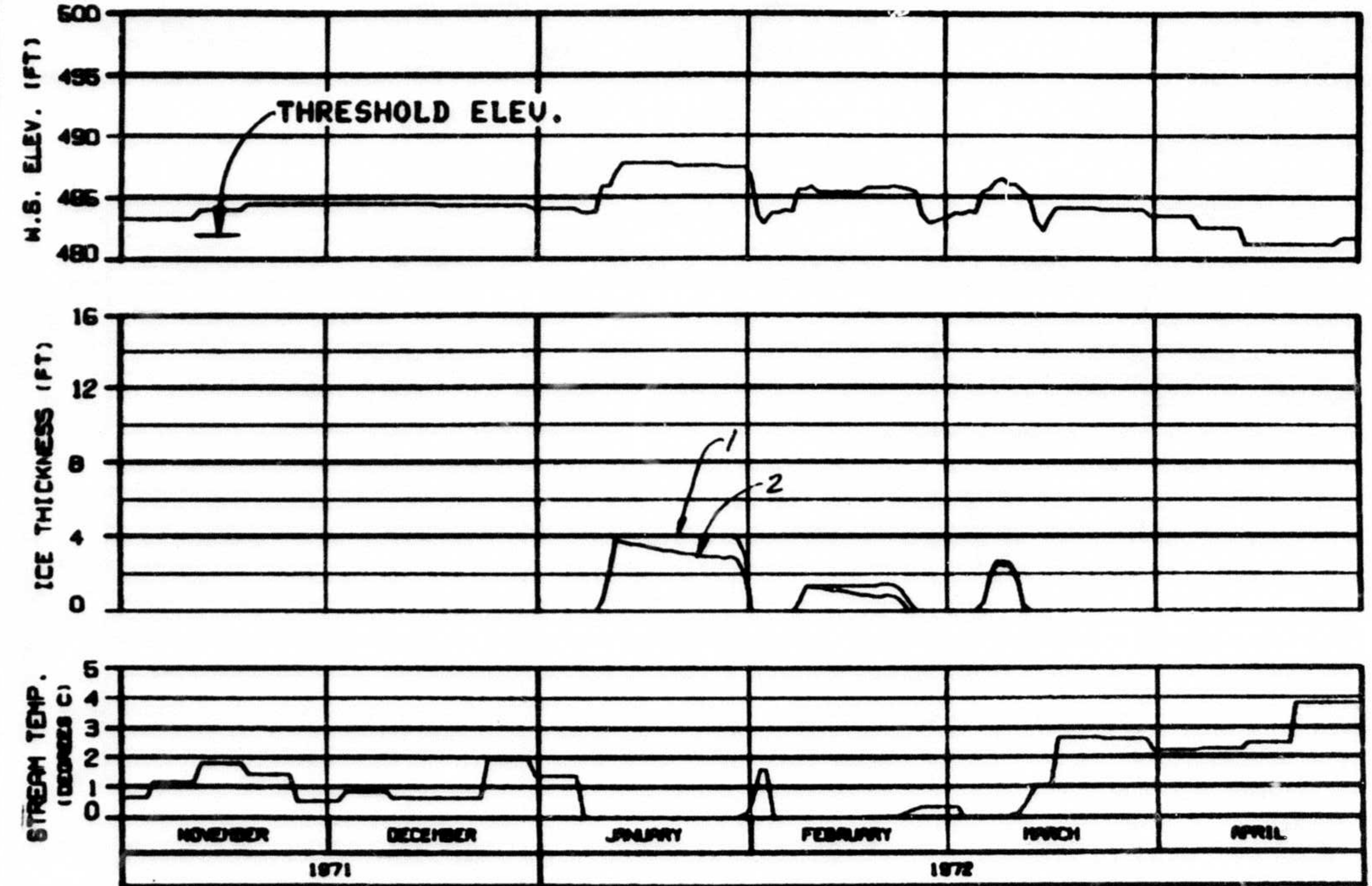
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL MSII

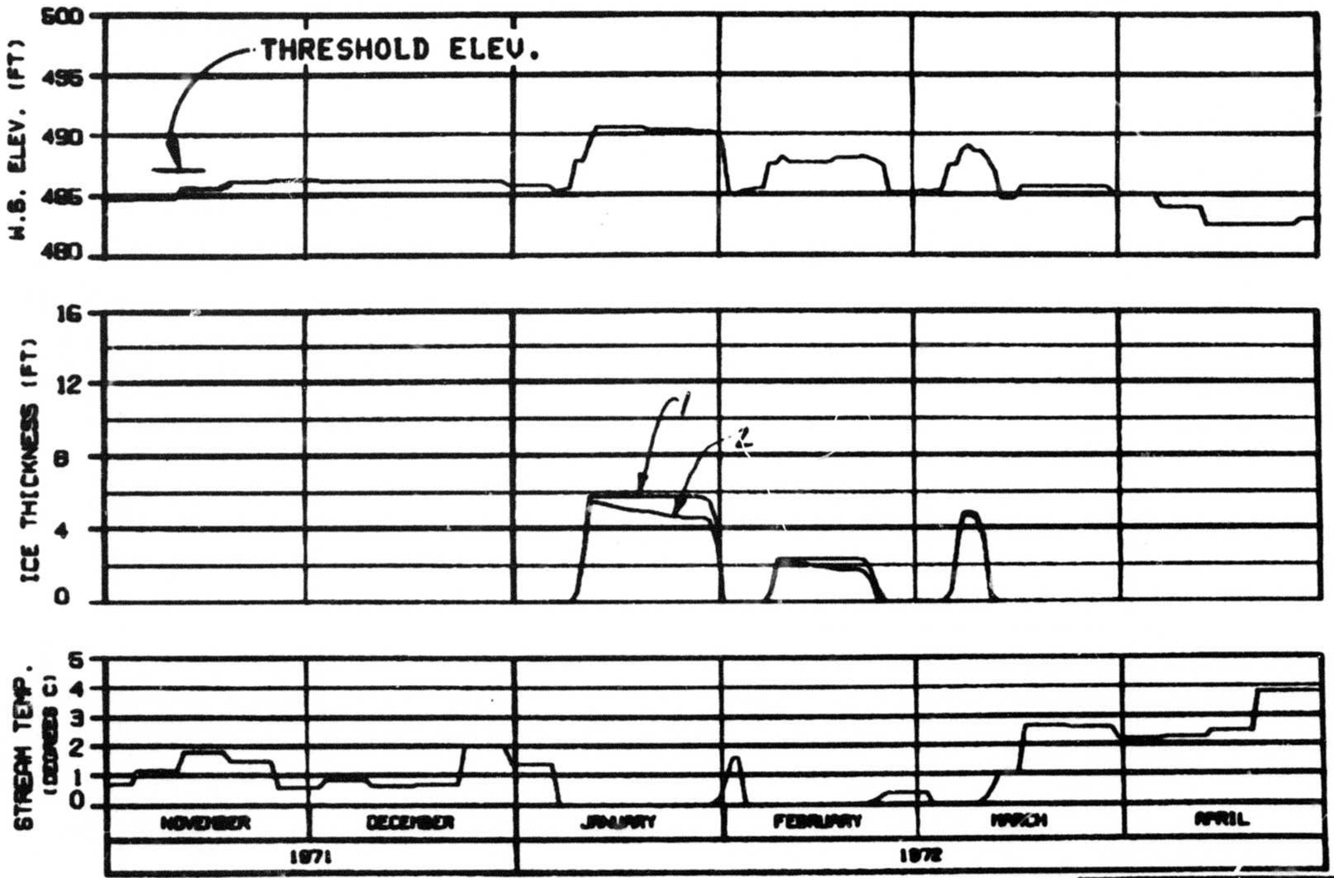
RIVER MILE : 115.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SIDE CHANNEL MSII

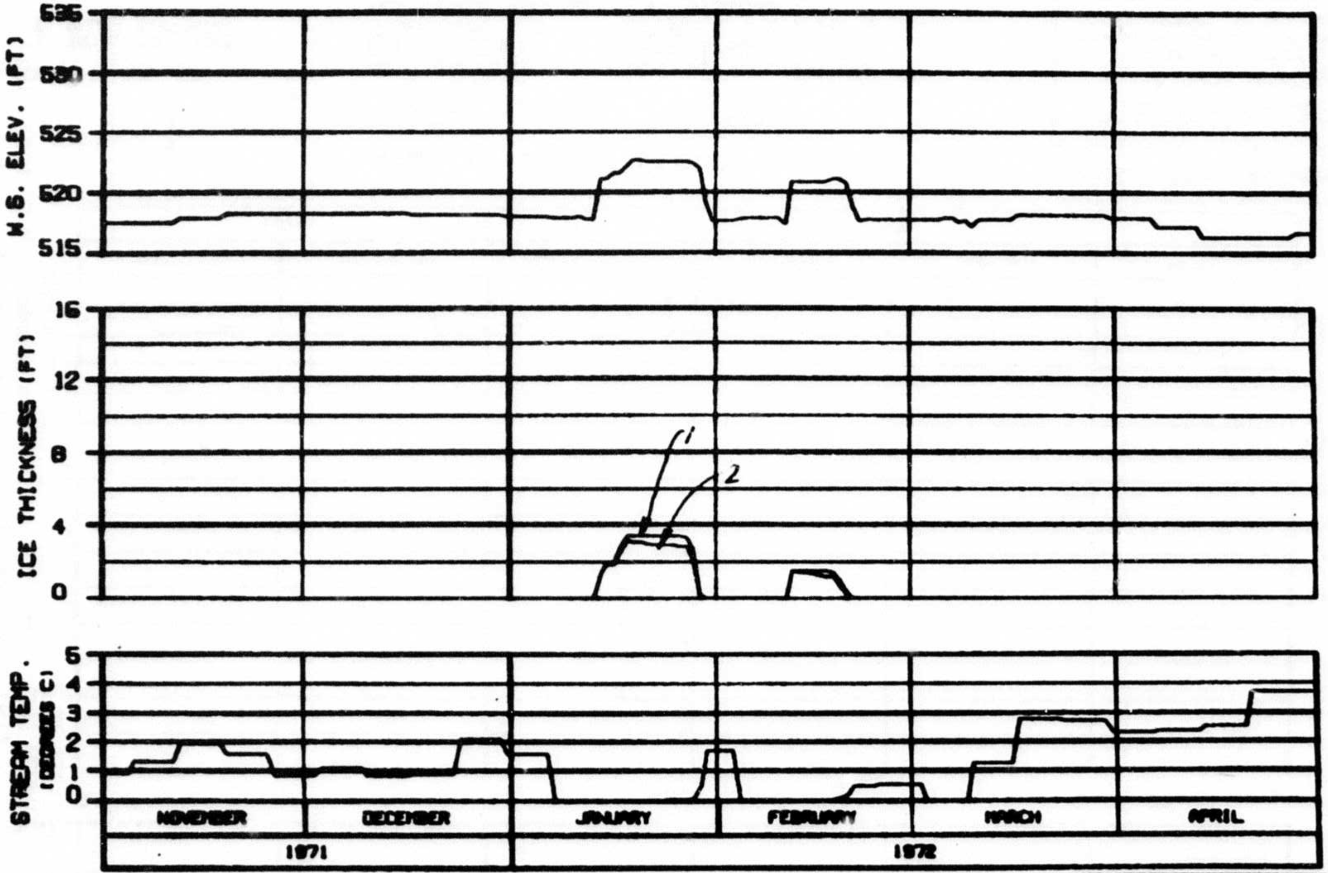
RIVER MILE : 115.90

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7198C4A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



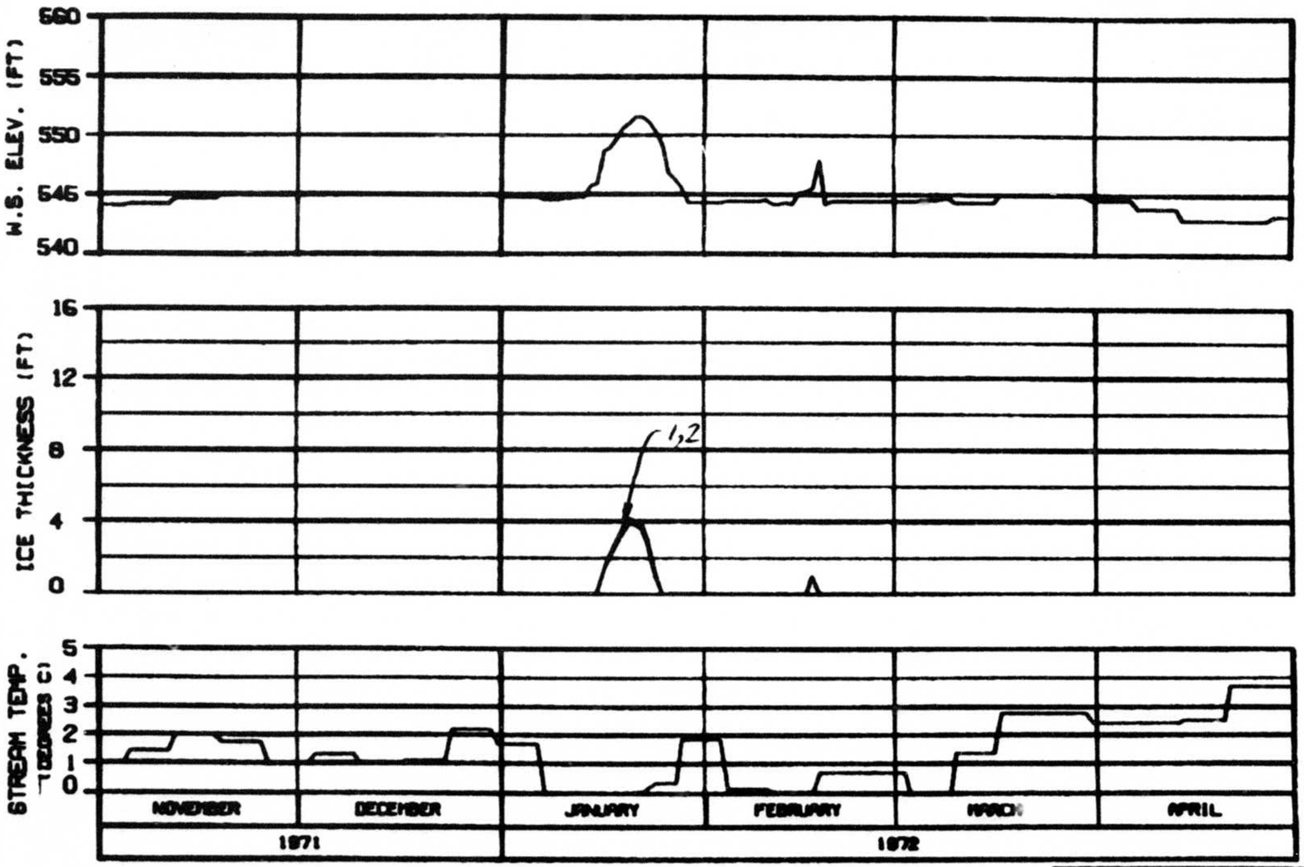
RIVER MILE : 120.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF MOOSE SLOUGH

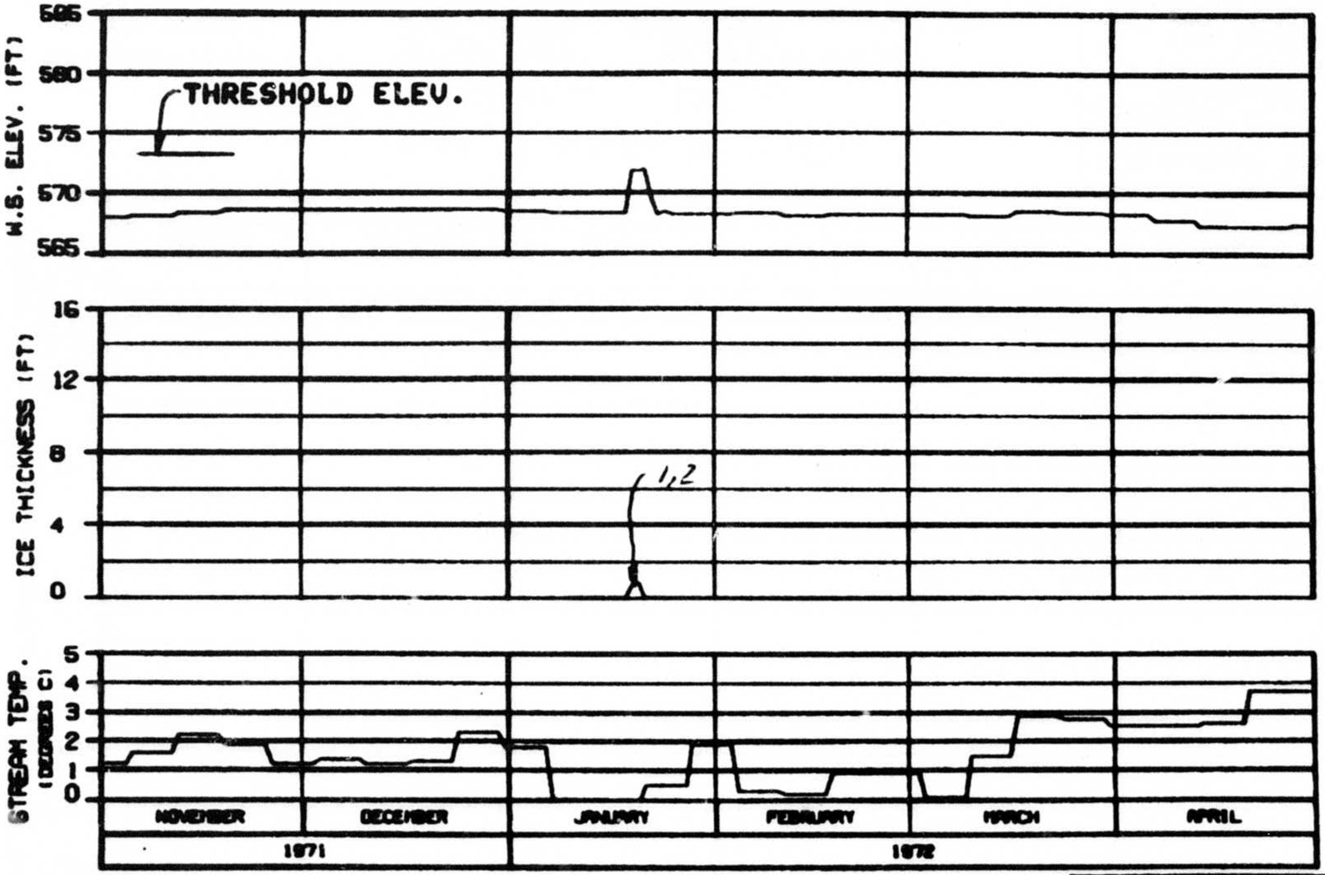
RIVER MILE : 123.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (WEST)

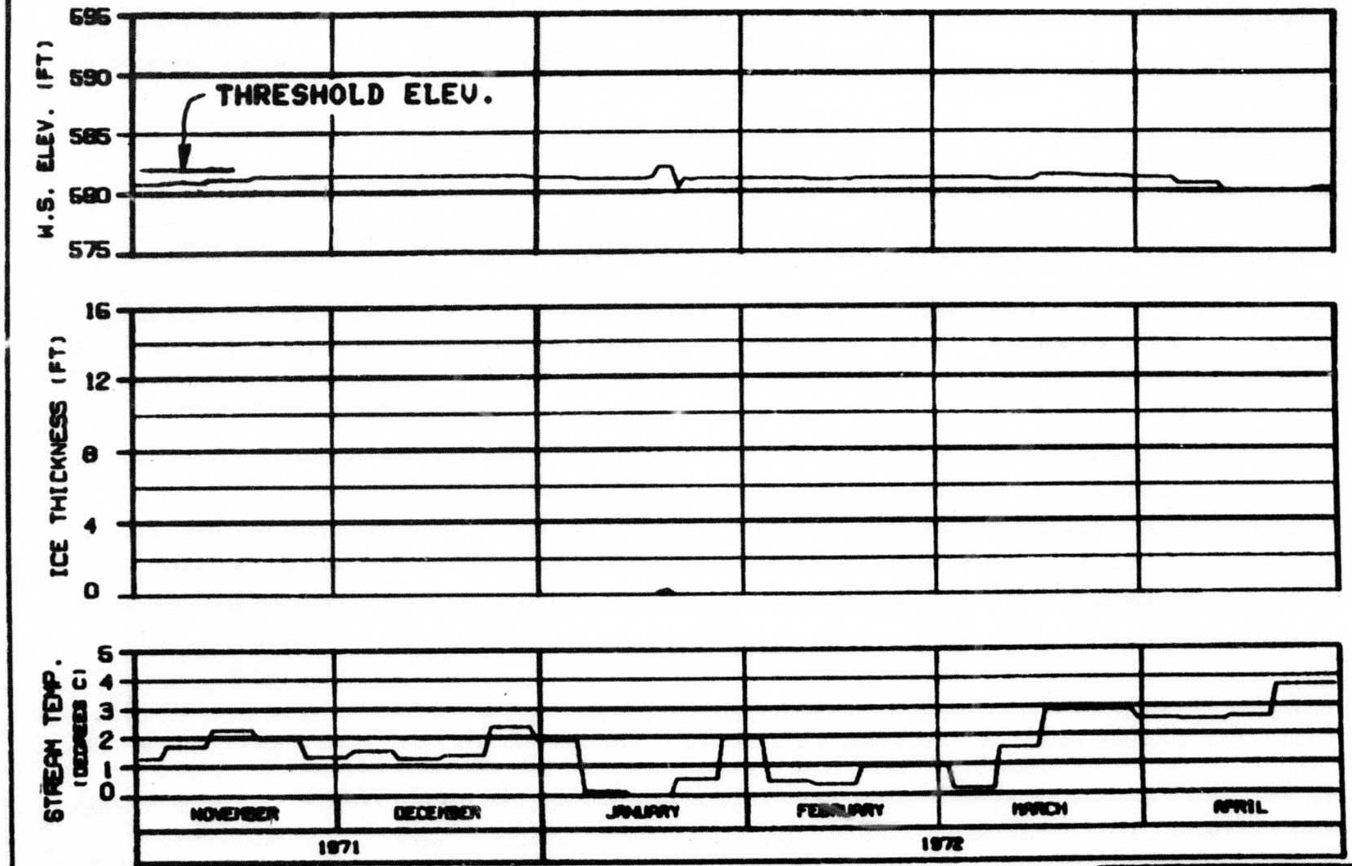
RIVER MILE : 126.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE

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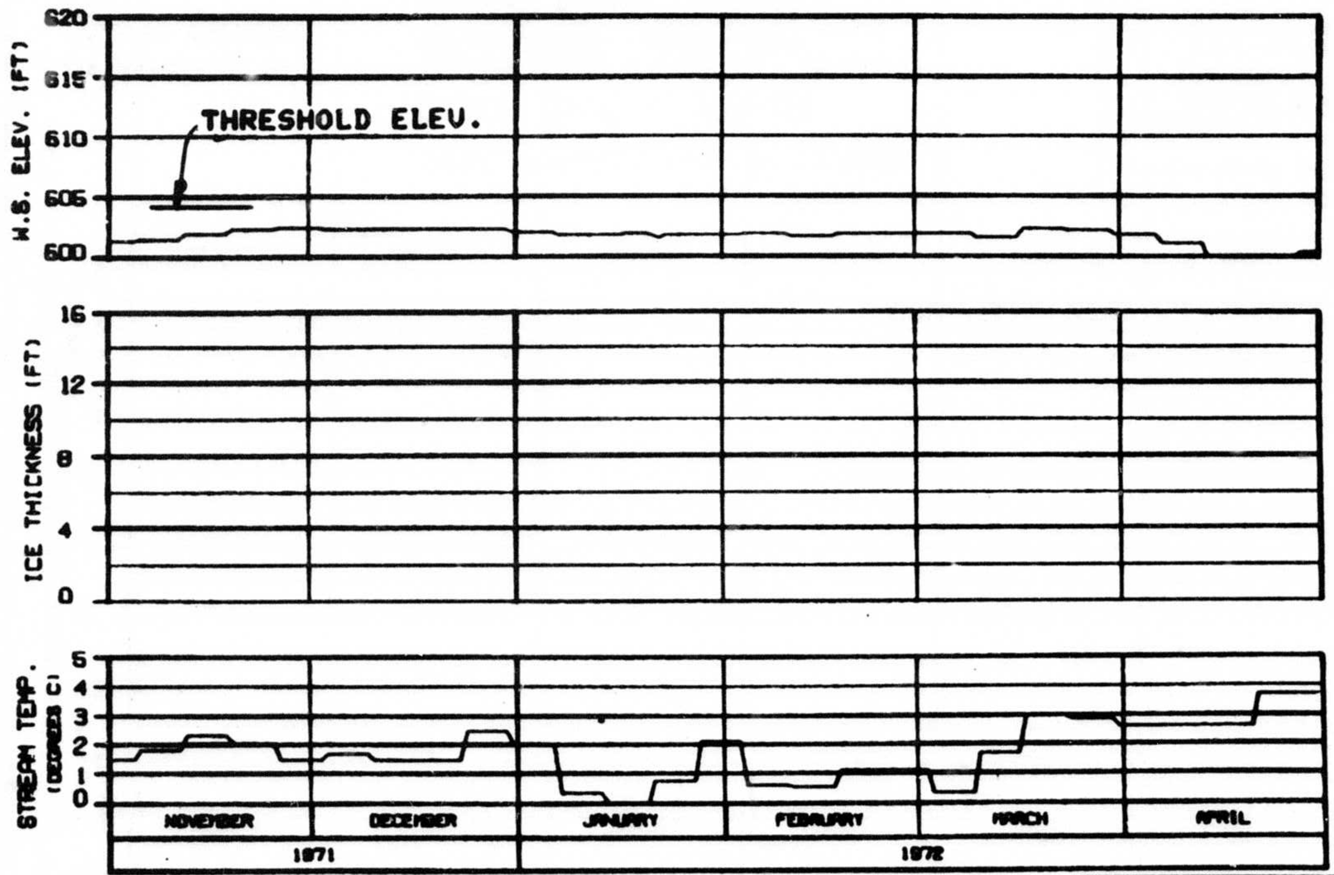


HEAD OF SLOUGH 9

RIVER MILE : 129.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

OPTION?

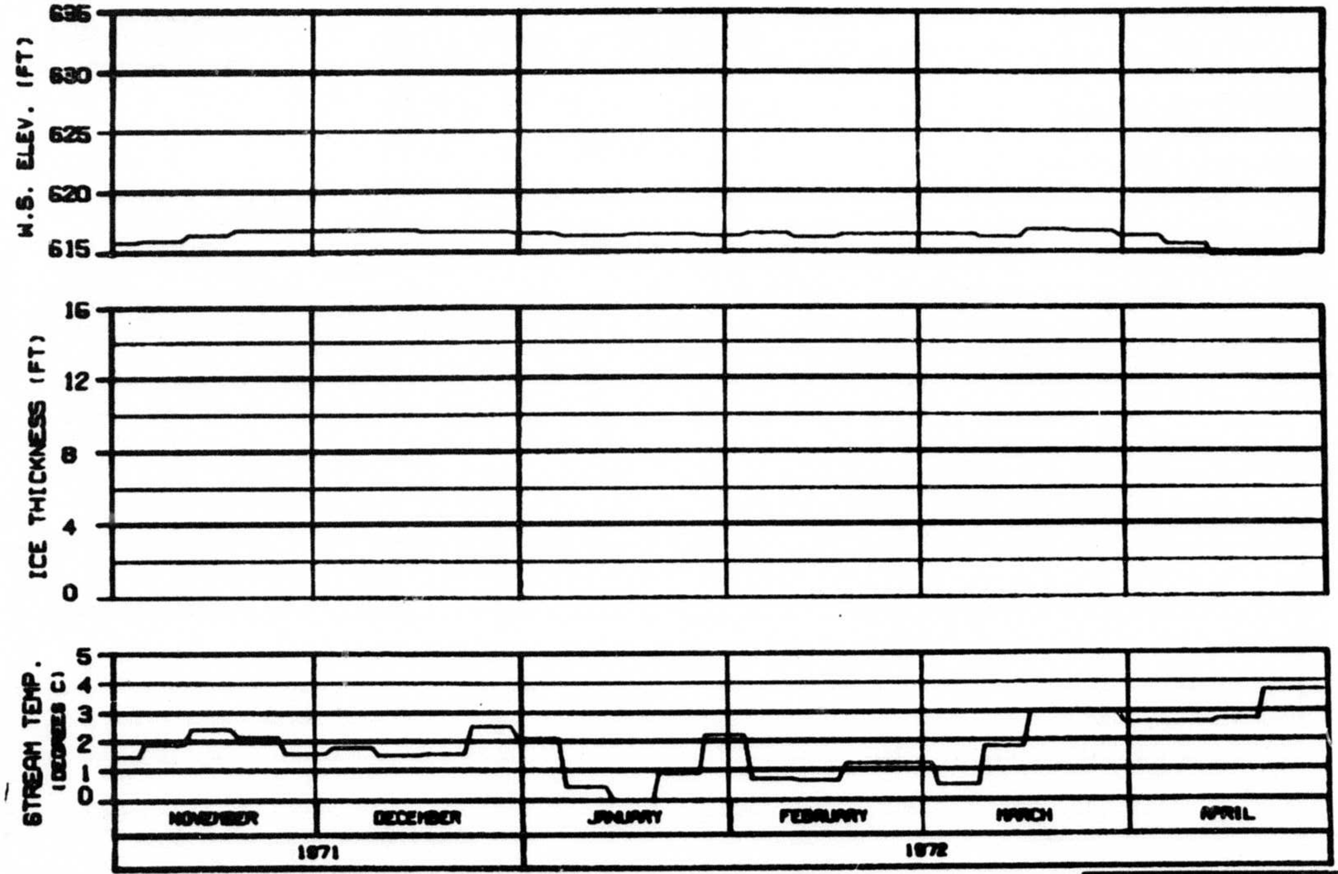
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

RIVER MILE : 130.60

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

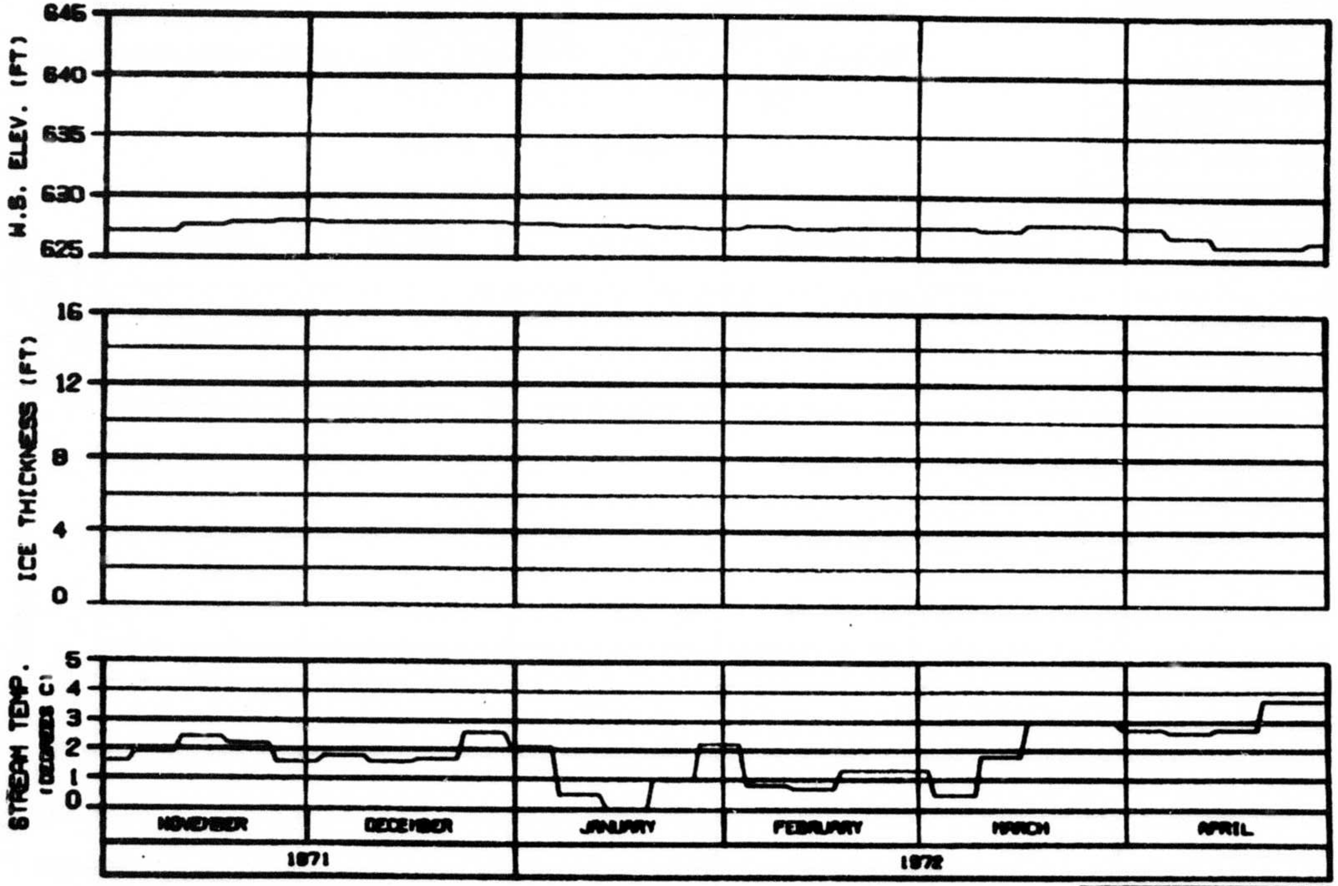
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

RIVER MILE : 131.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

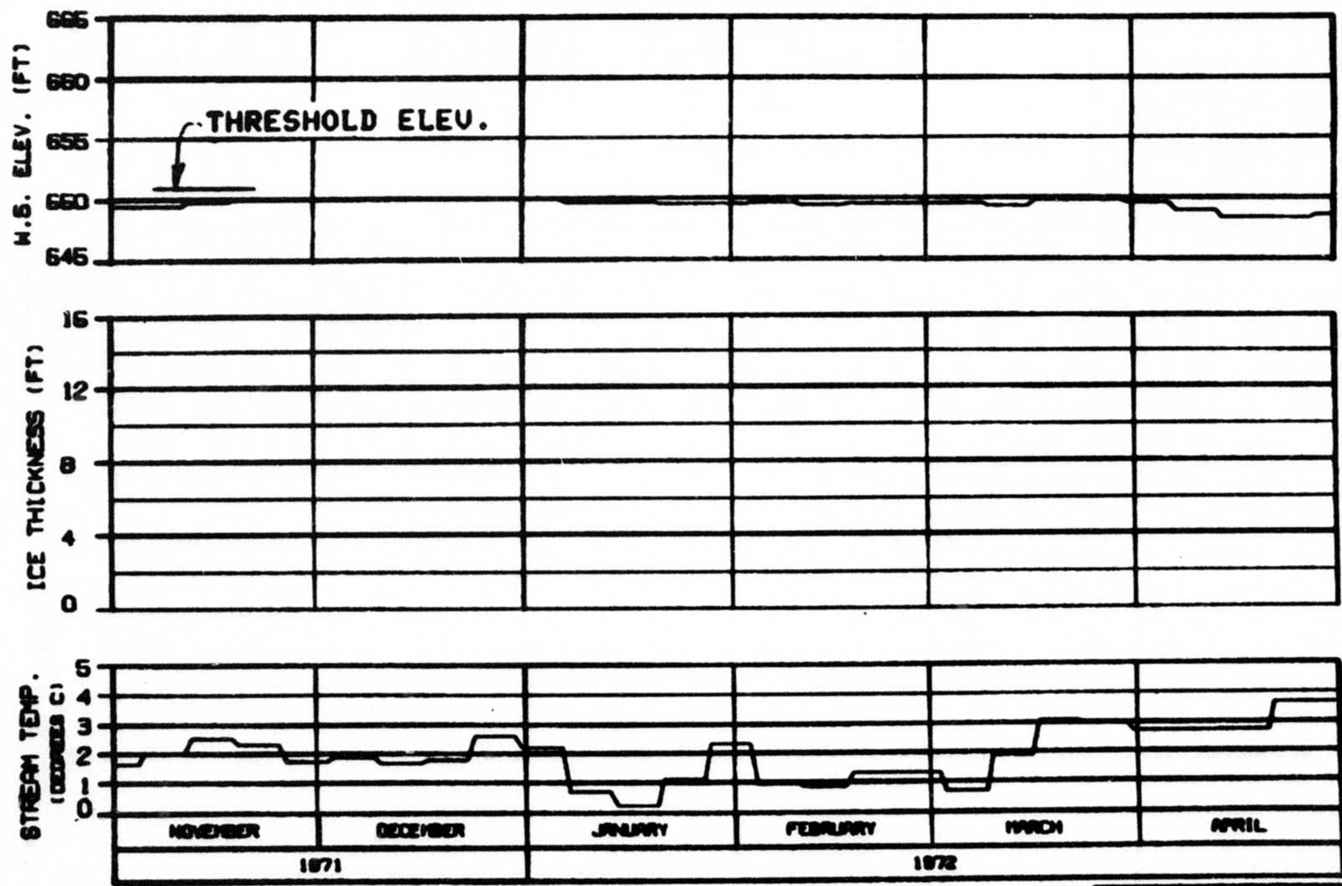
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9A

RIVER MILE : 133.70

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

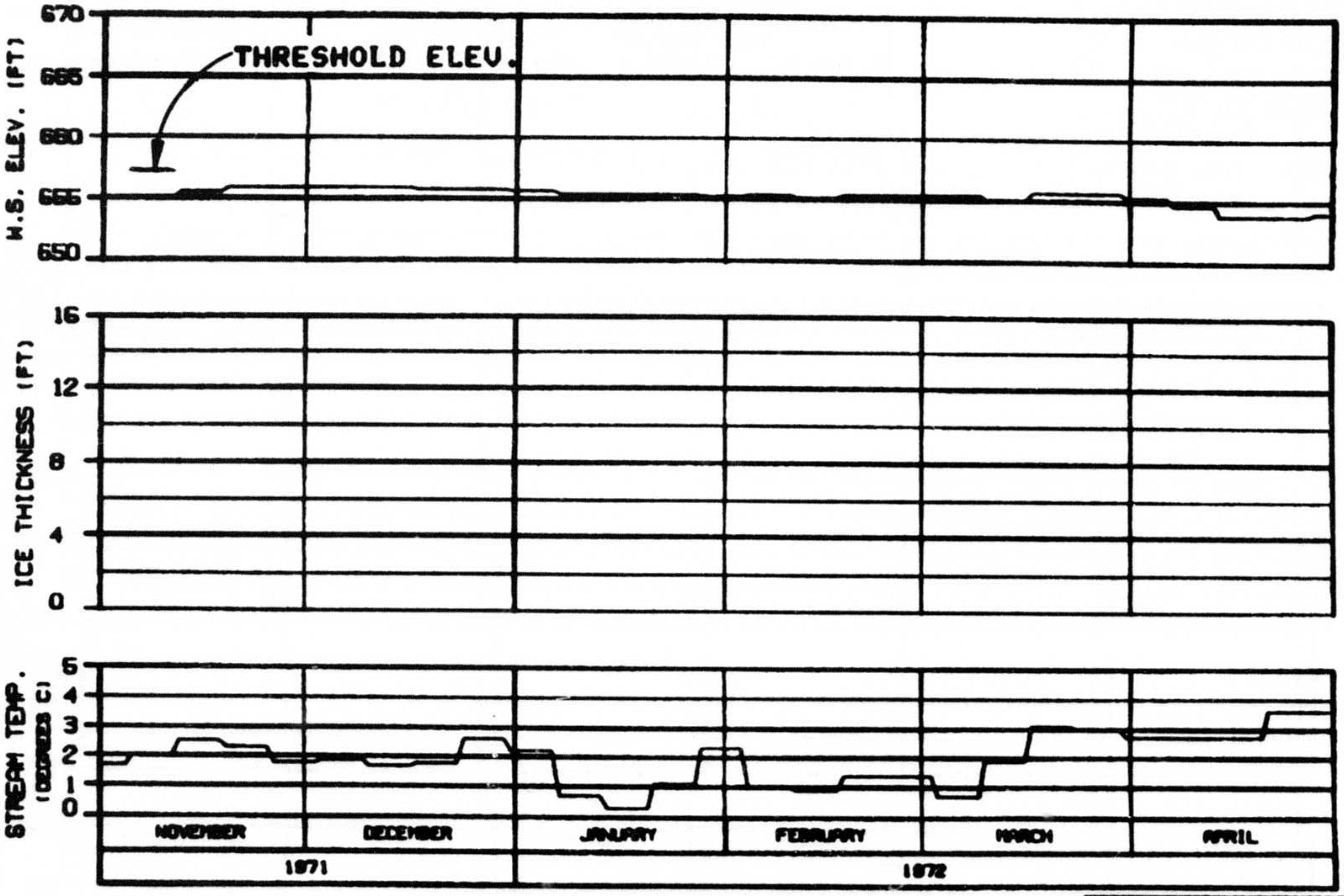
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C   TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

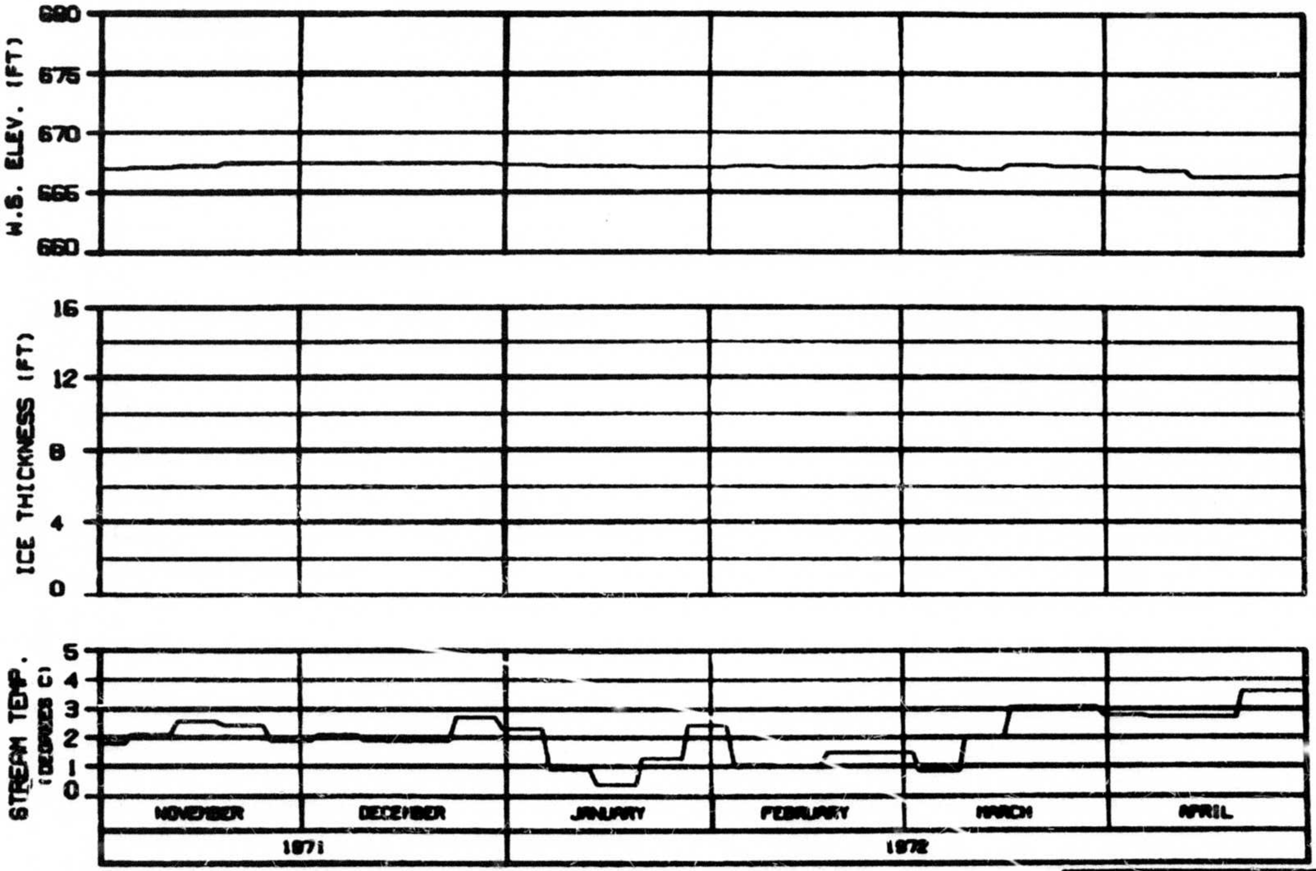
RIVER MILE : 134.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

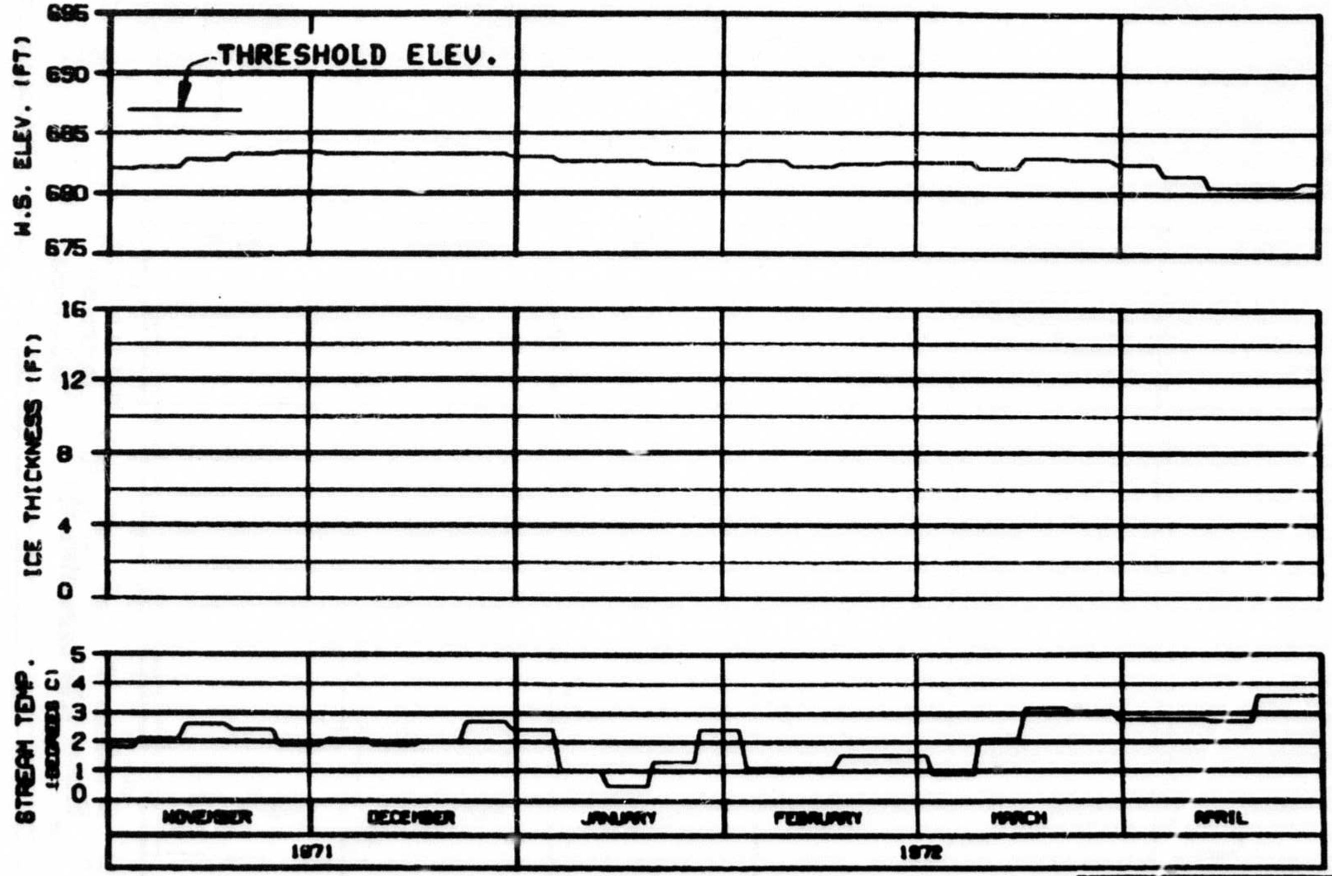
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 11

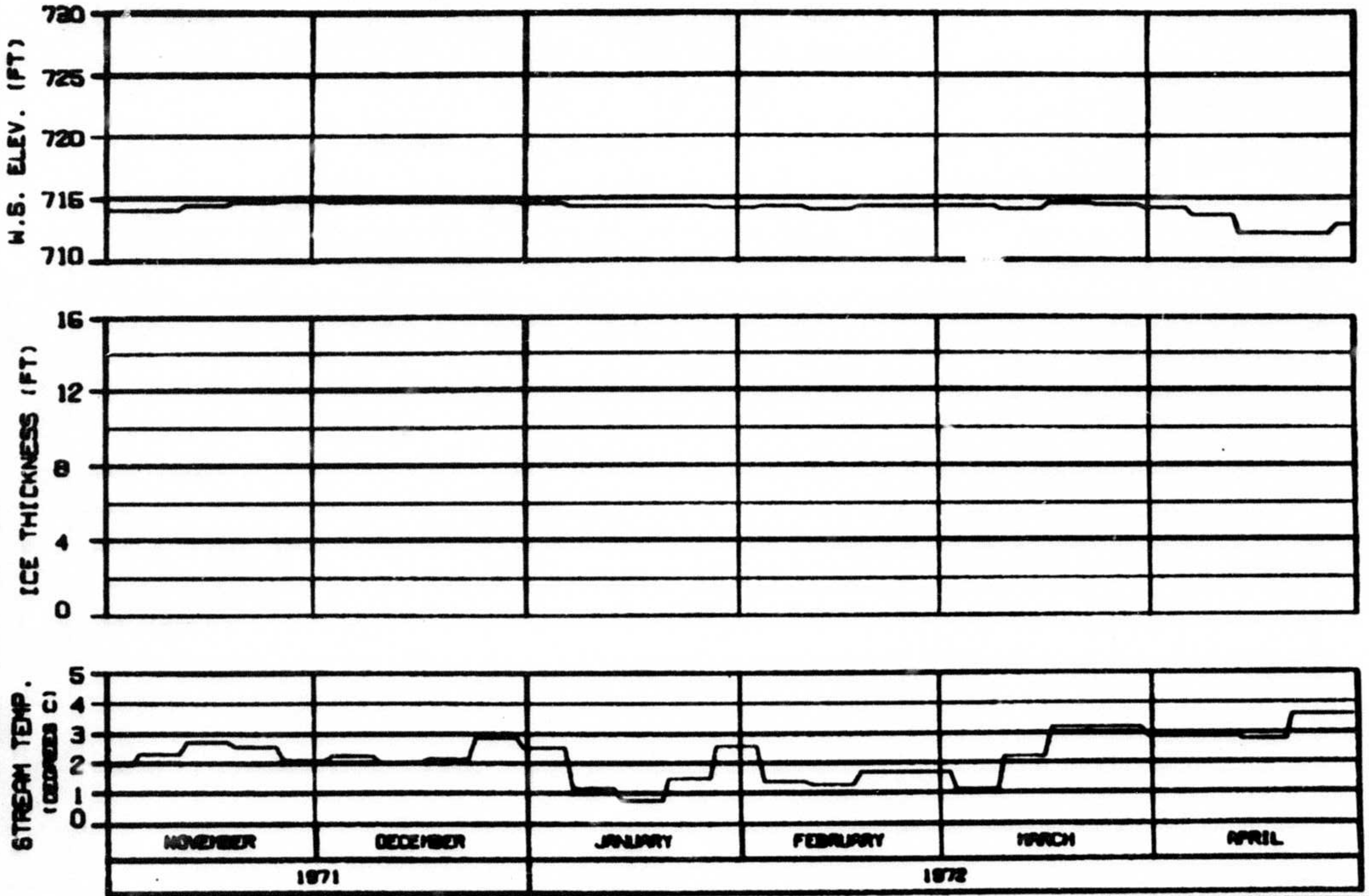
RIVER MILE : 136.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:

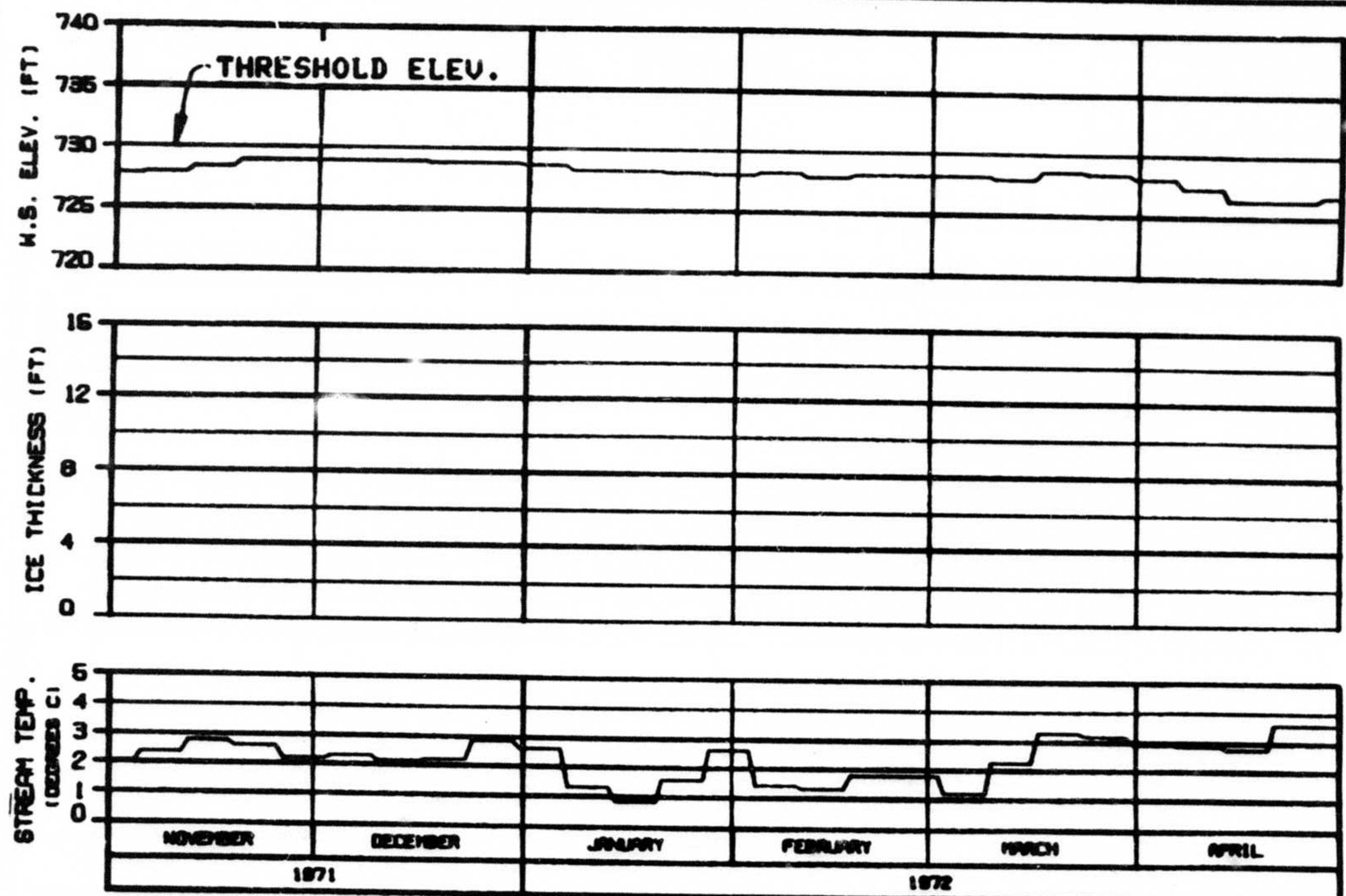
1. TOTAL THICKNESS
2. SLUSH COMPONENT

HEAD OF SLOUGH 17

RIVER MILE : 139.30

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7198C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY



HEAD OF SLOUGH 20

RIVER MILE : 140.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
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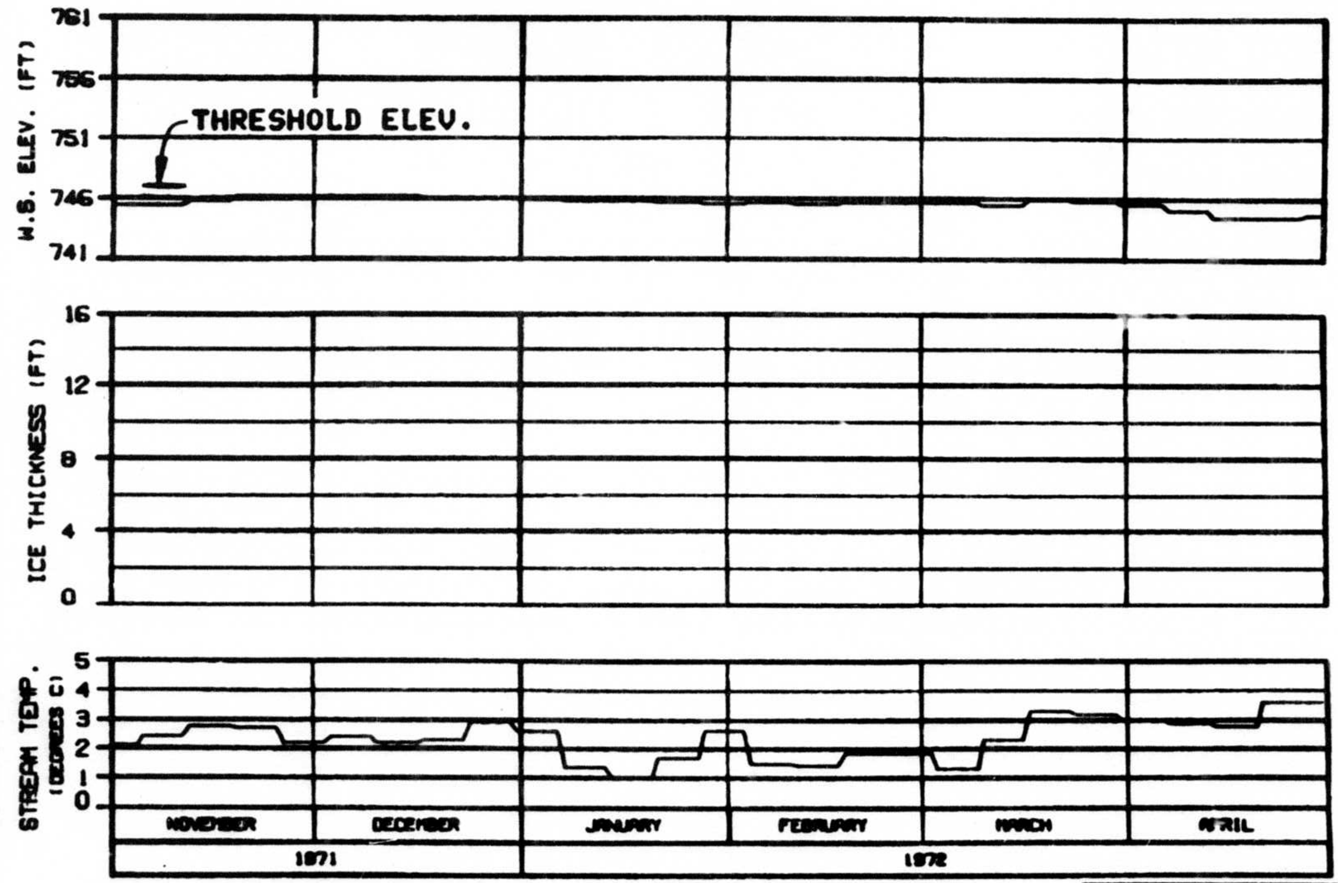


SLOUGH 21 (ENTRANCE A6)

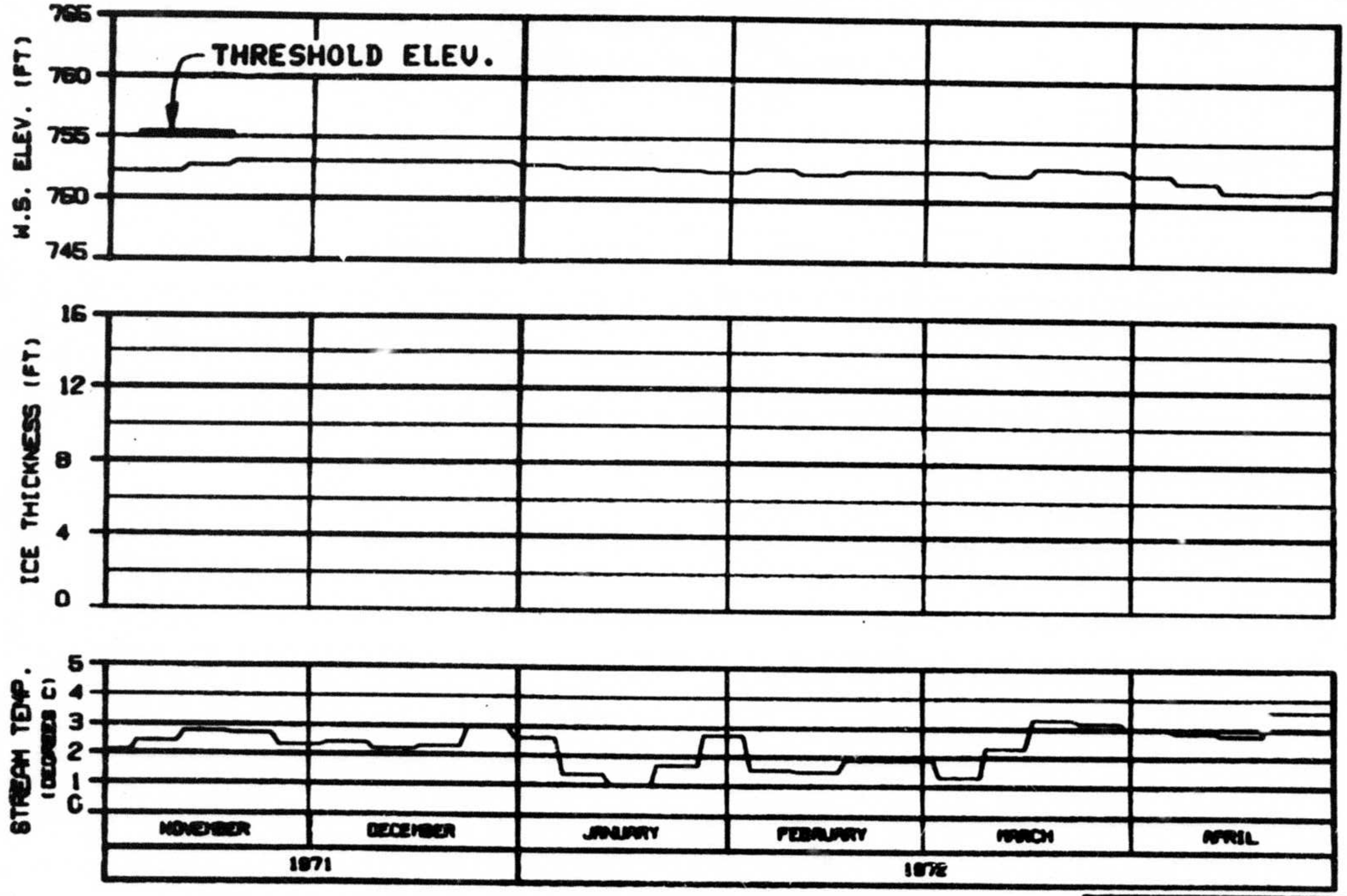
RIVER MILE : 141.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 21

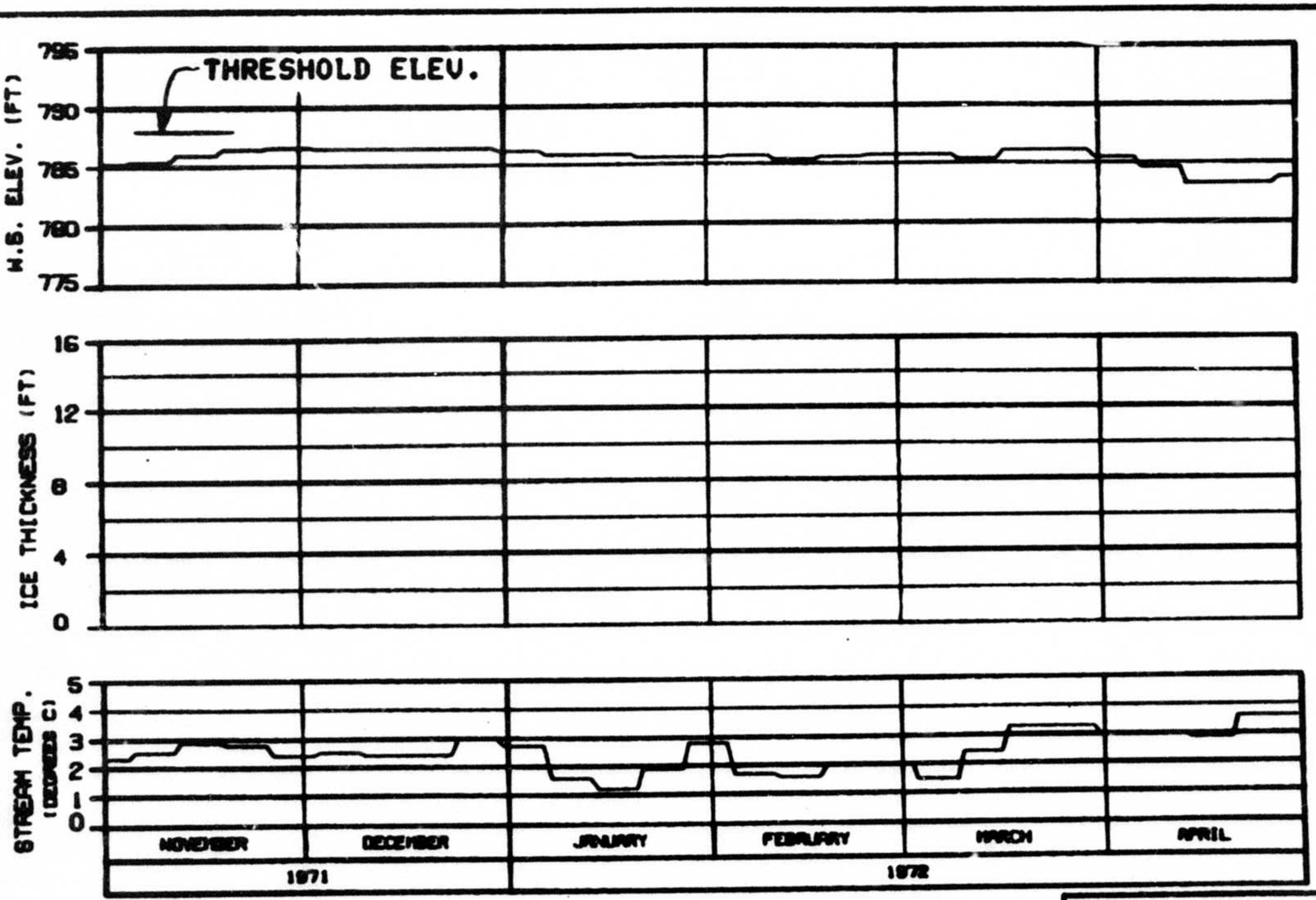
RIVER MILE : 142.20

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 1996
FLOW CASE : C TEMP RULE : 4 DEG. C
REFERENCE RUN NO. : 7196C4A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	

OPTION?

EXHIBIT J

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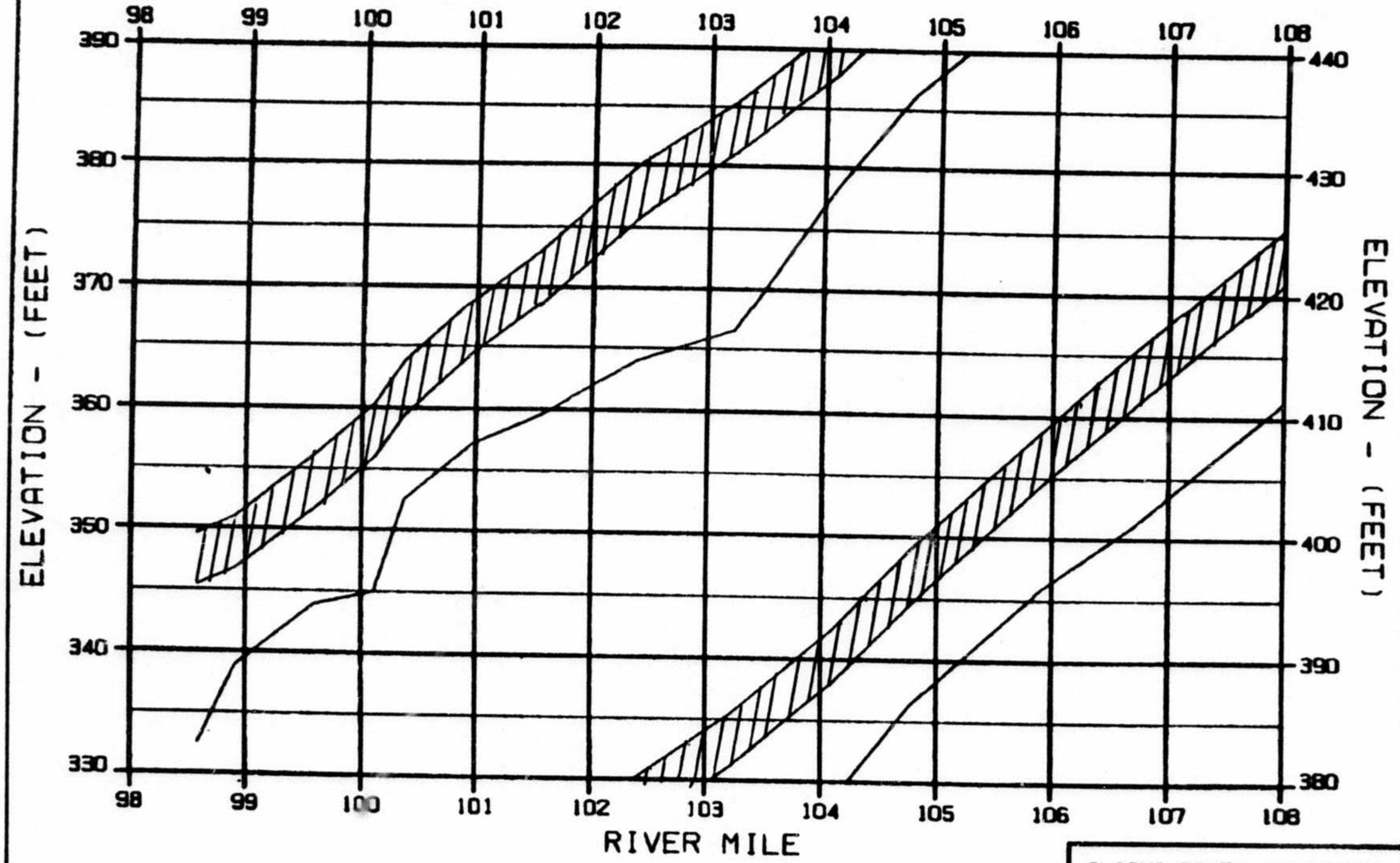

LEGEND:

- TOP OF SOLID ICE
- SLUSH/SOLID ICE INTERFACE
- BOTTOM OF SLUSH ICE
- RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

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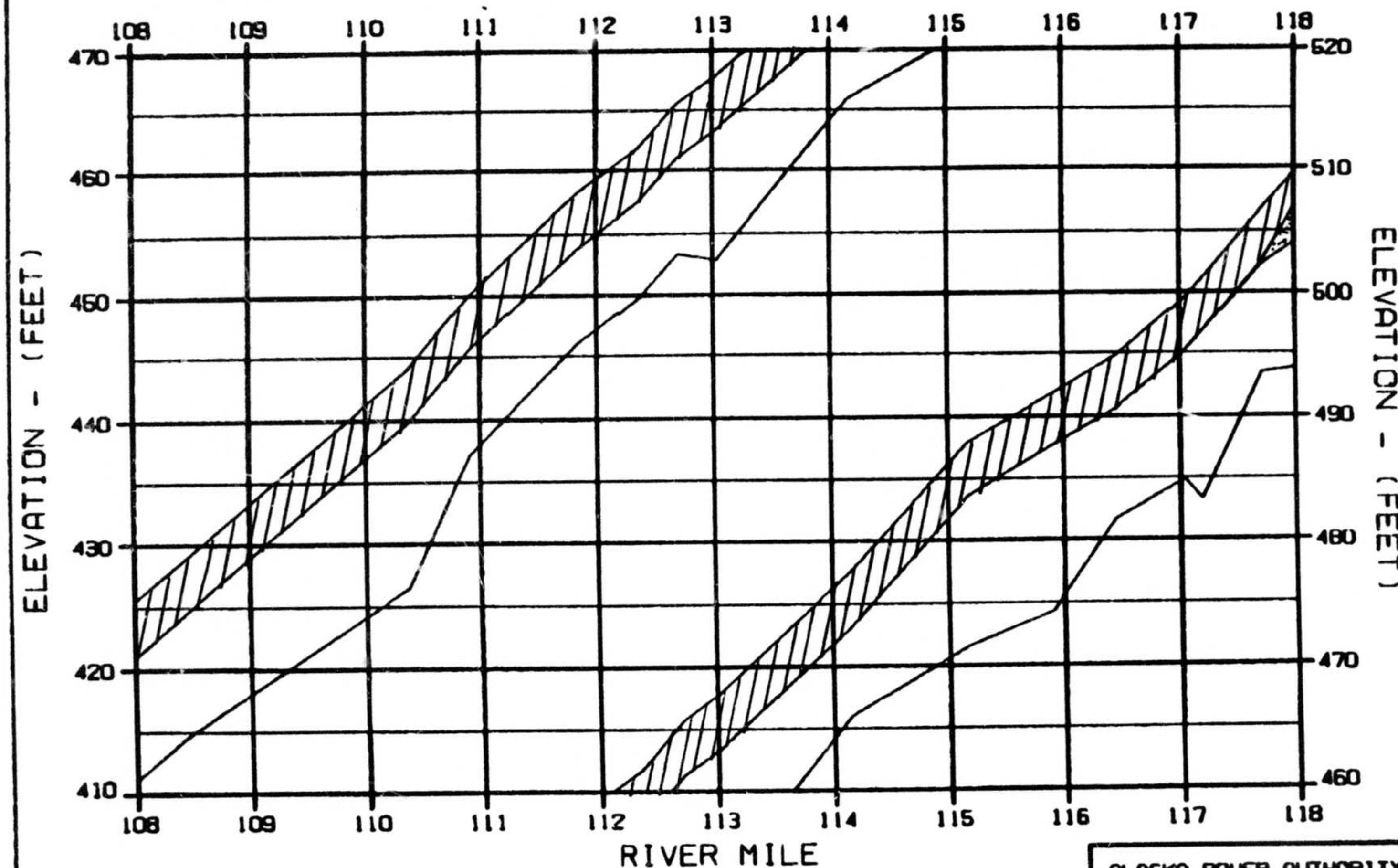

LEGEND:

- TOP OF SOLID ICE
- SLUSH/SOLID ICE INTERFACE
- BOTTOM OF SLUSH ICE
- RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

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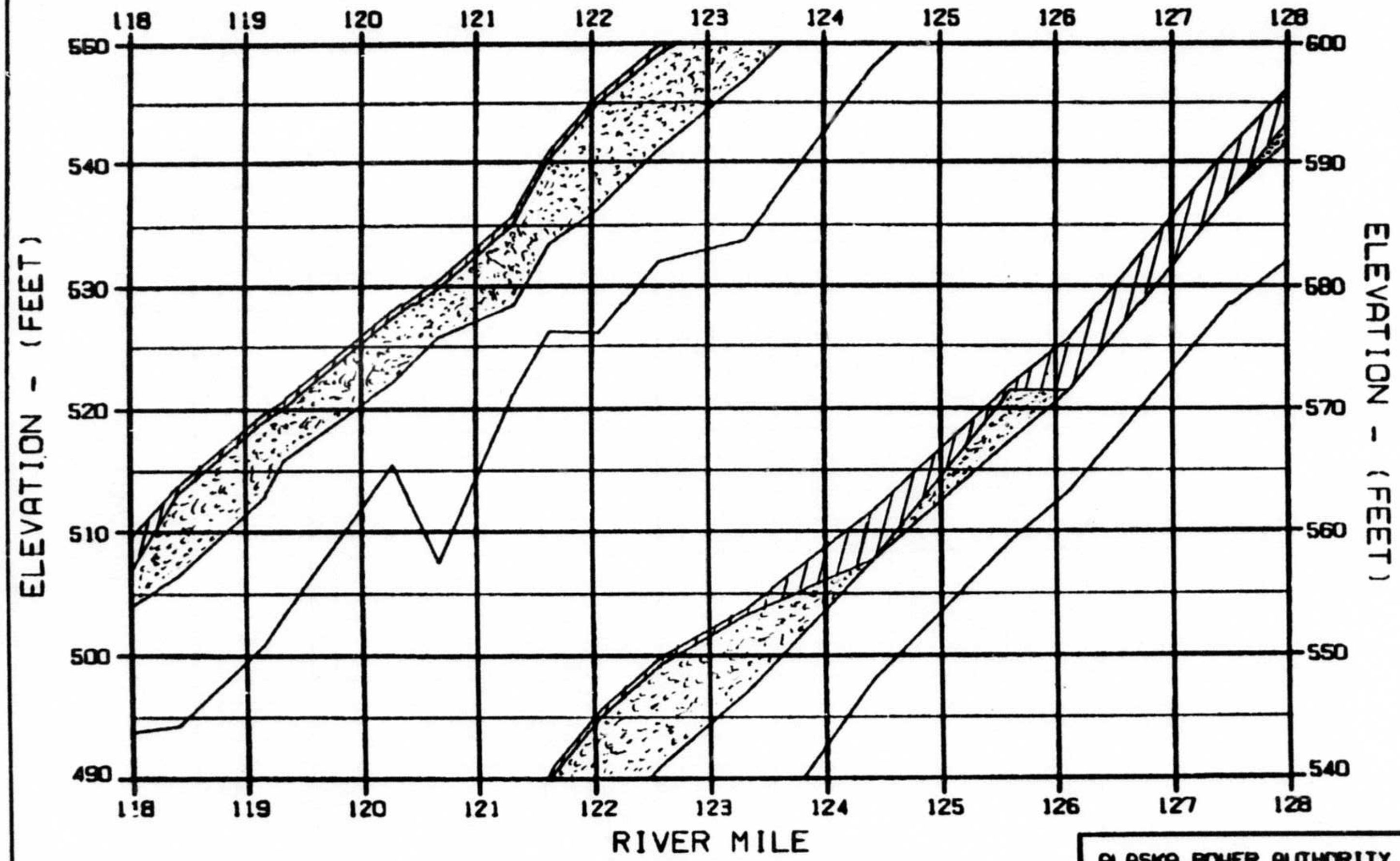
HARZA-EBASCO JOINT VENTURE

OPTION?

C



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

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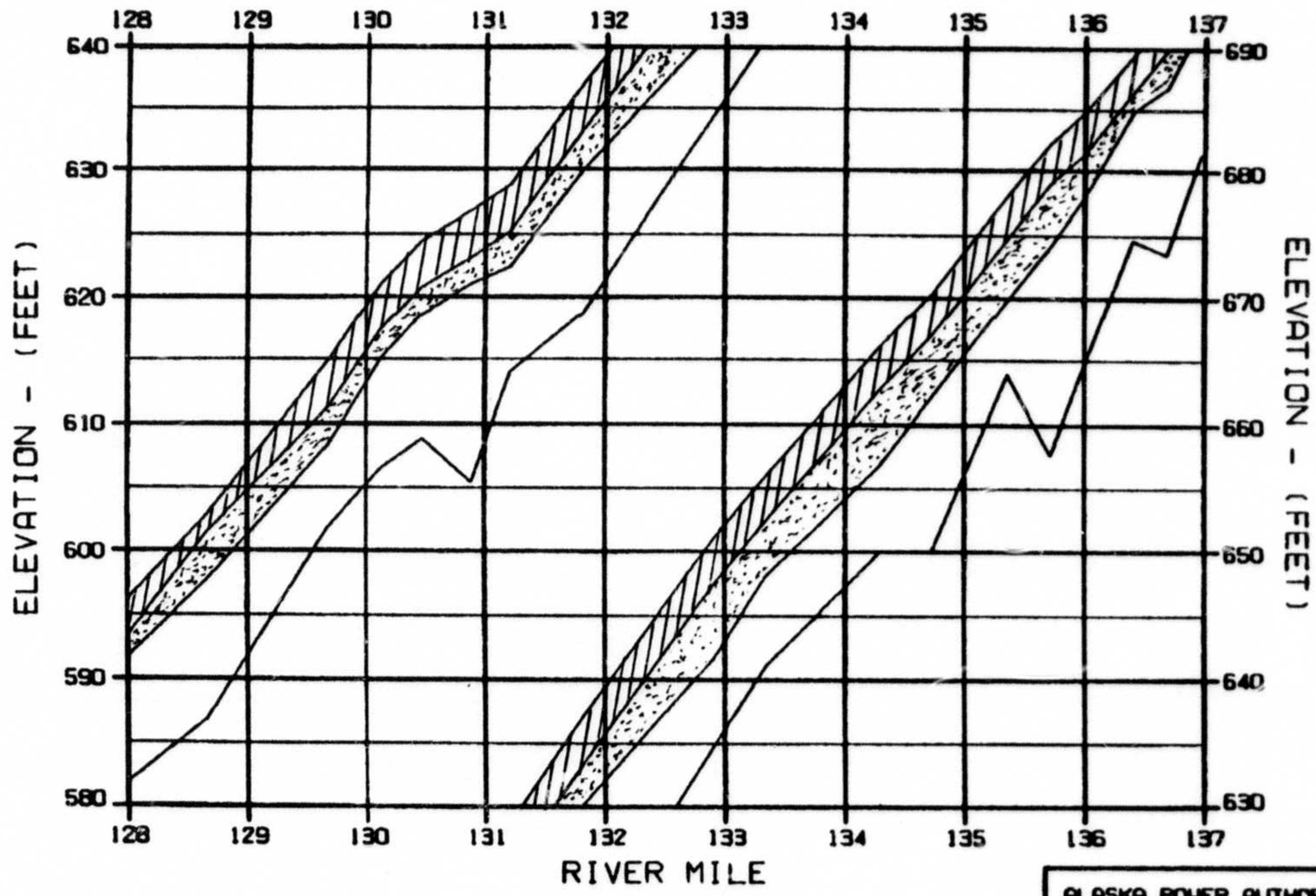
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES		
HARZA-EBASCO JOINT VENTURE		
CHICAGO, ILLINOIS	27 JUN 84	1000.142

OPTION?

c



LEGEND:

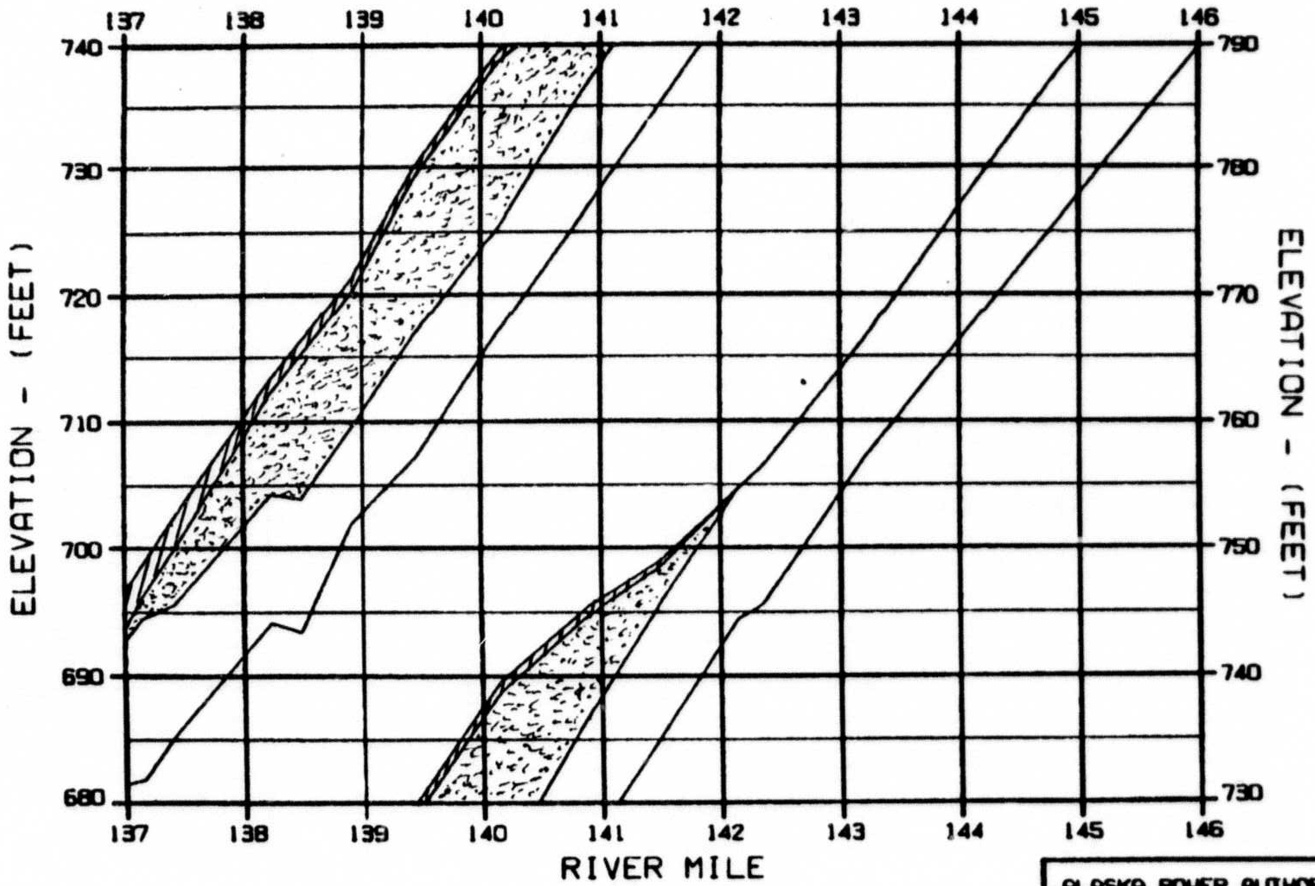
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RLLE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

c



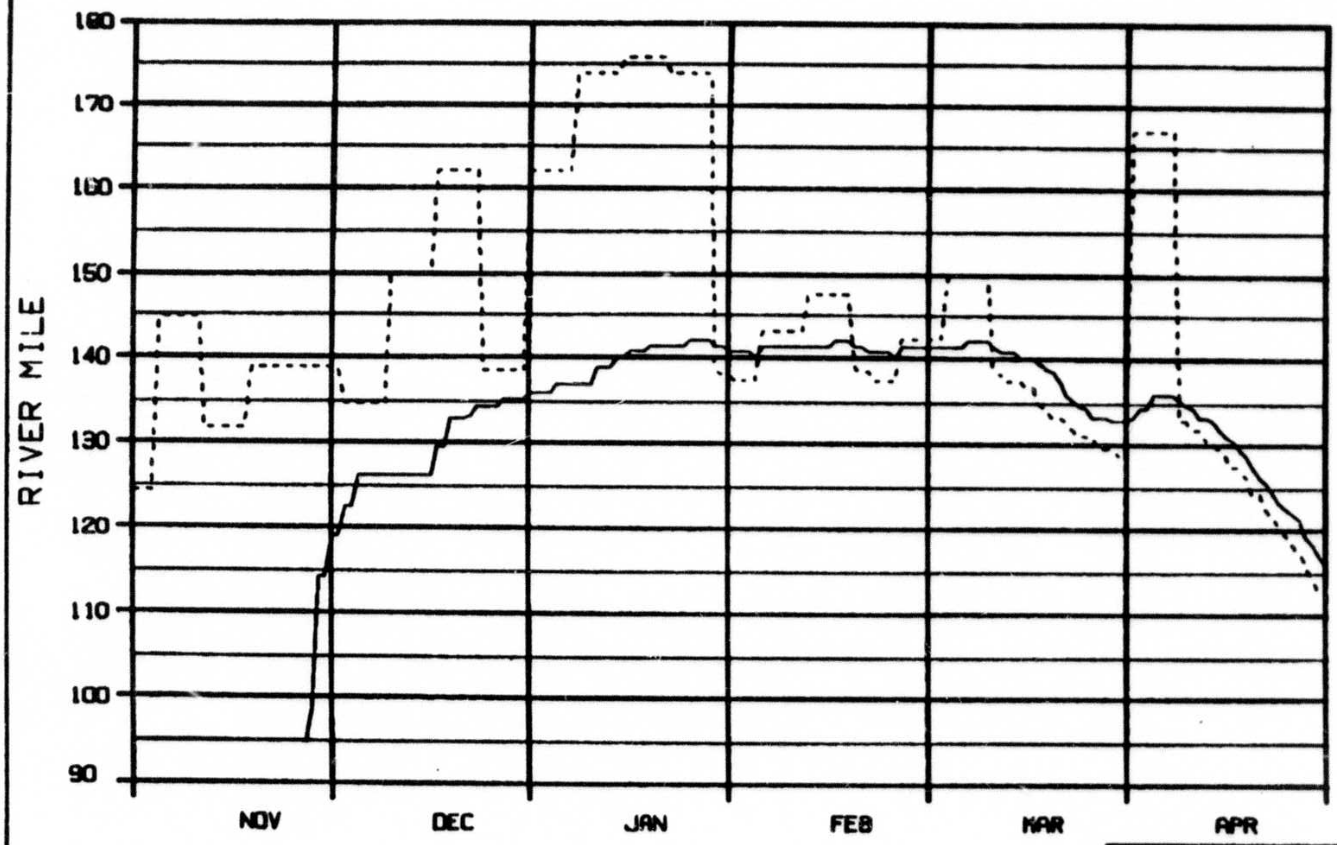
LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?



LEGEND:

———— ICE FRONT

- - - - - ZERO DEGREE ISOTHERM

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

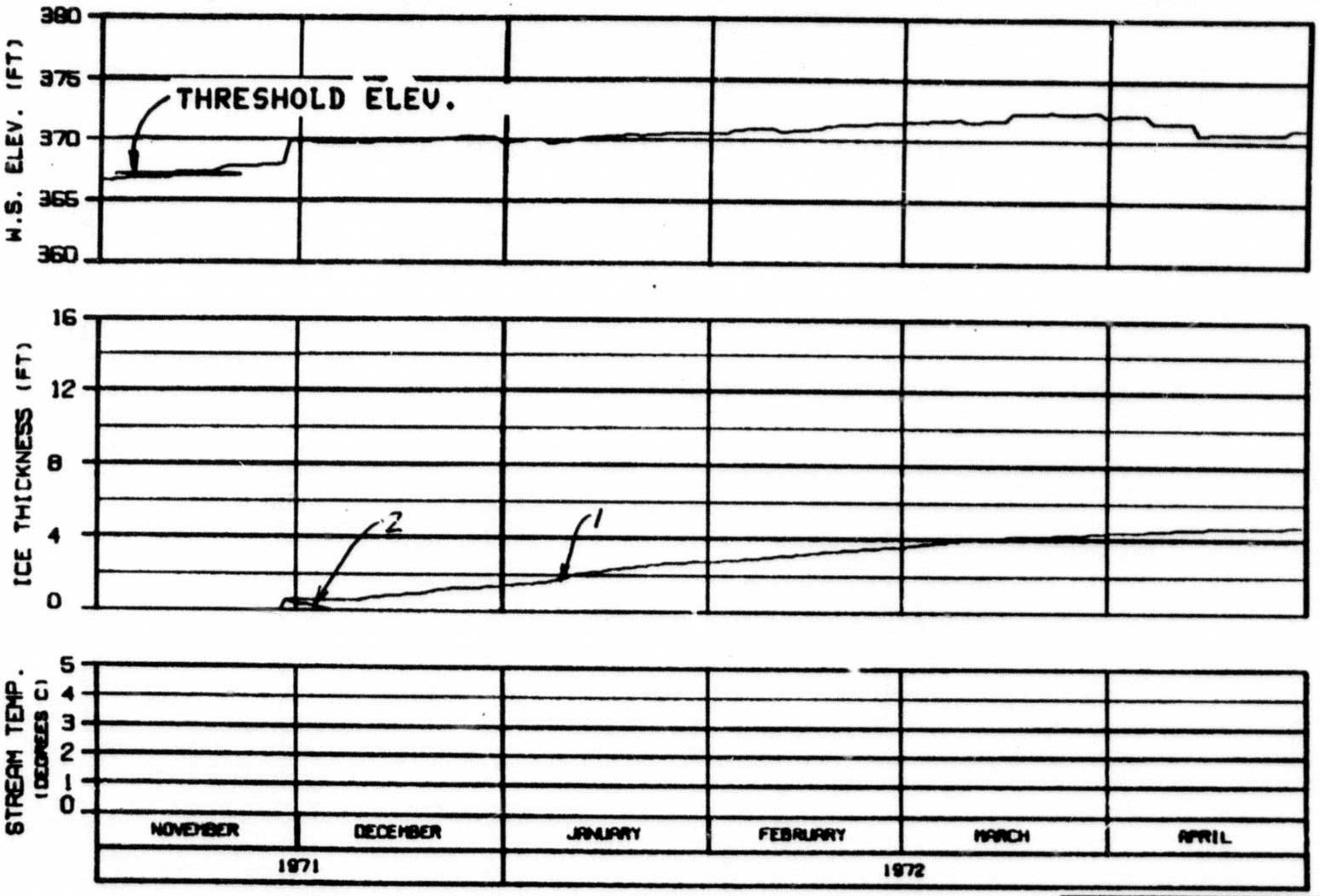
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM

HARZA-EBASCO JOINT VENTURE

OPTION2



HEAD OF WHISKERS SLOUGH

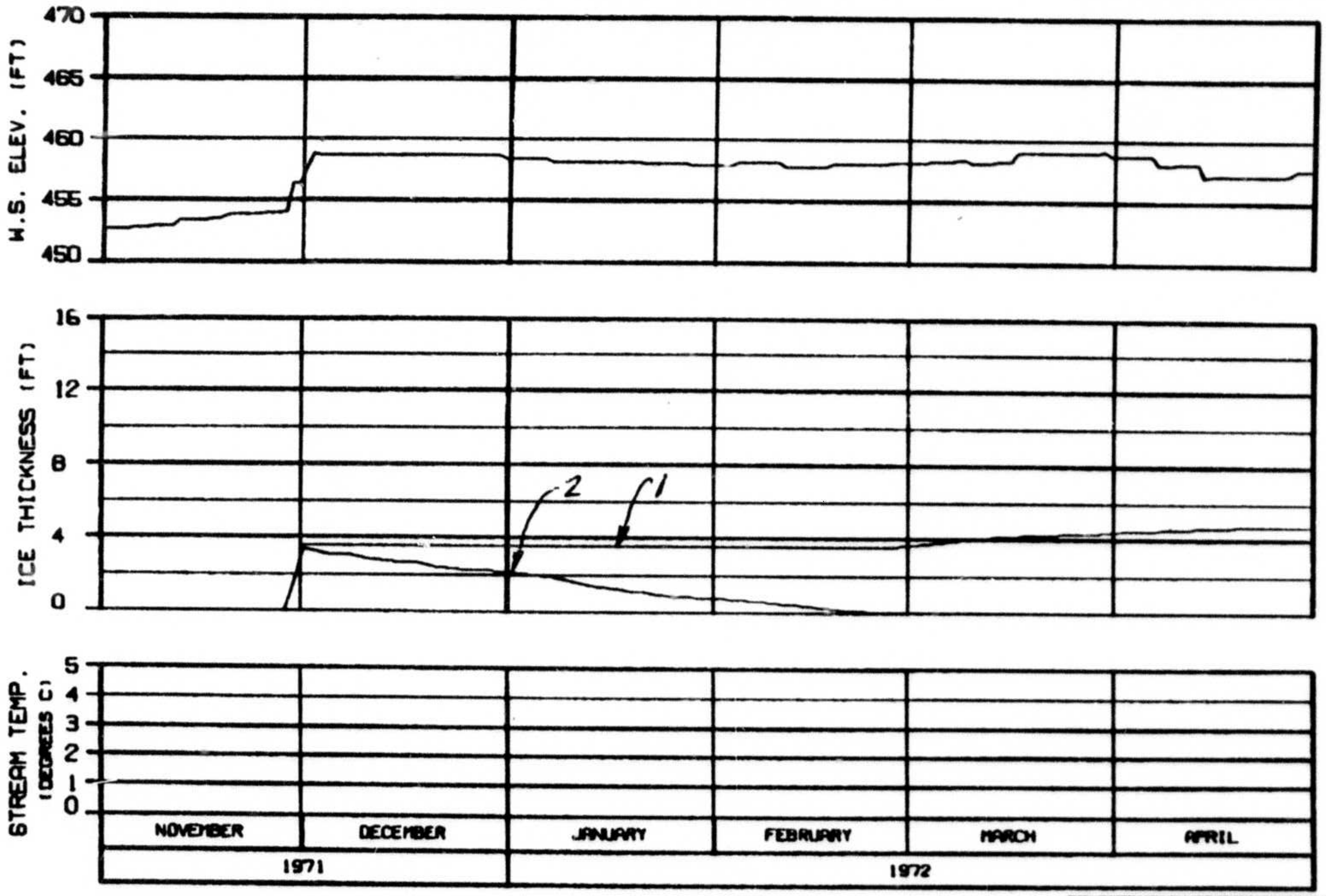
RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
[illegible] 1983.142



SIDE CHANNEL AT HEAD OF GASH CREEK

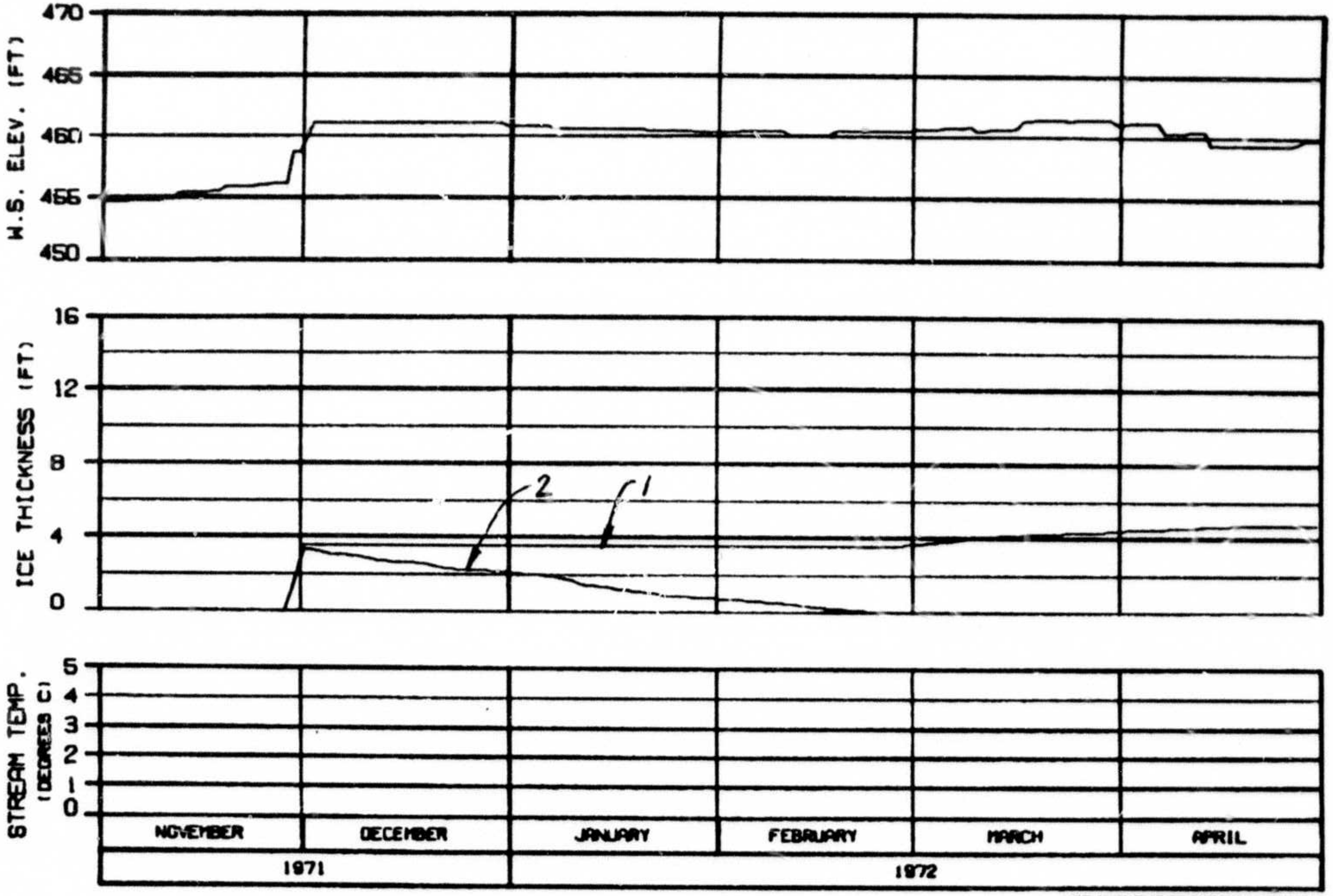
RIVER MILE : 112.00

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ICE THICKNESS LEGEND:

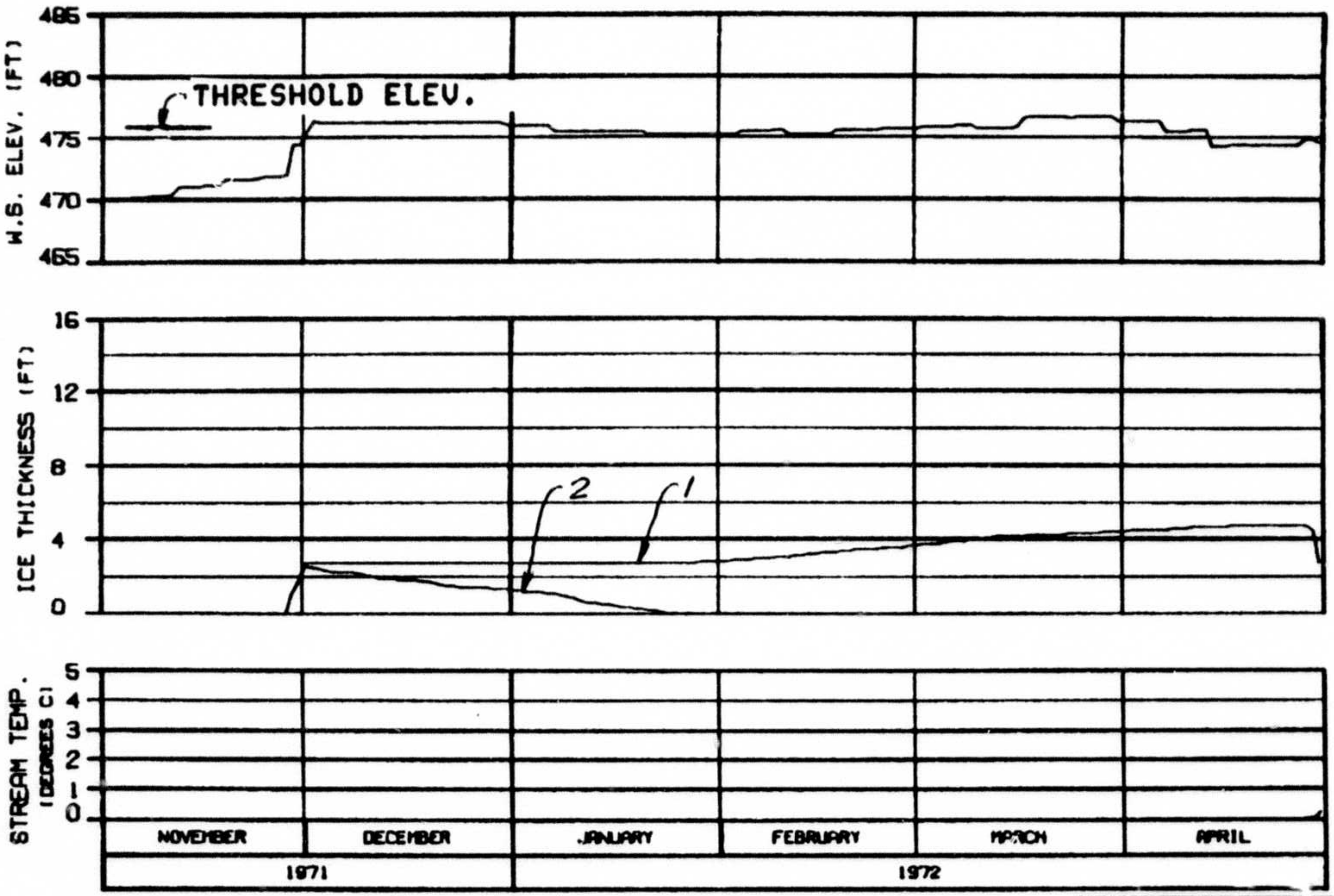
1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8

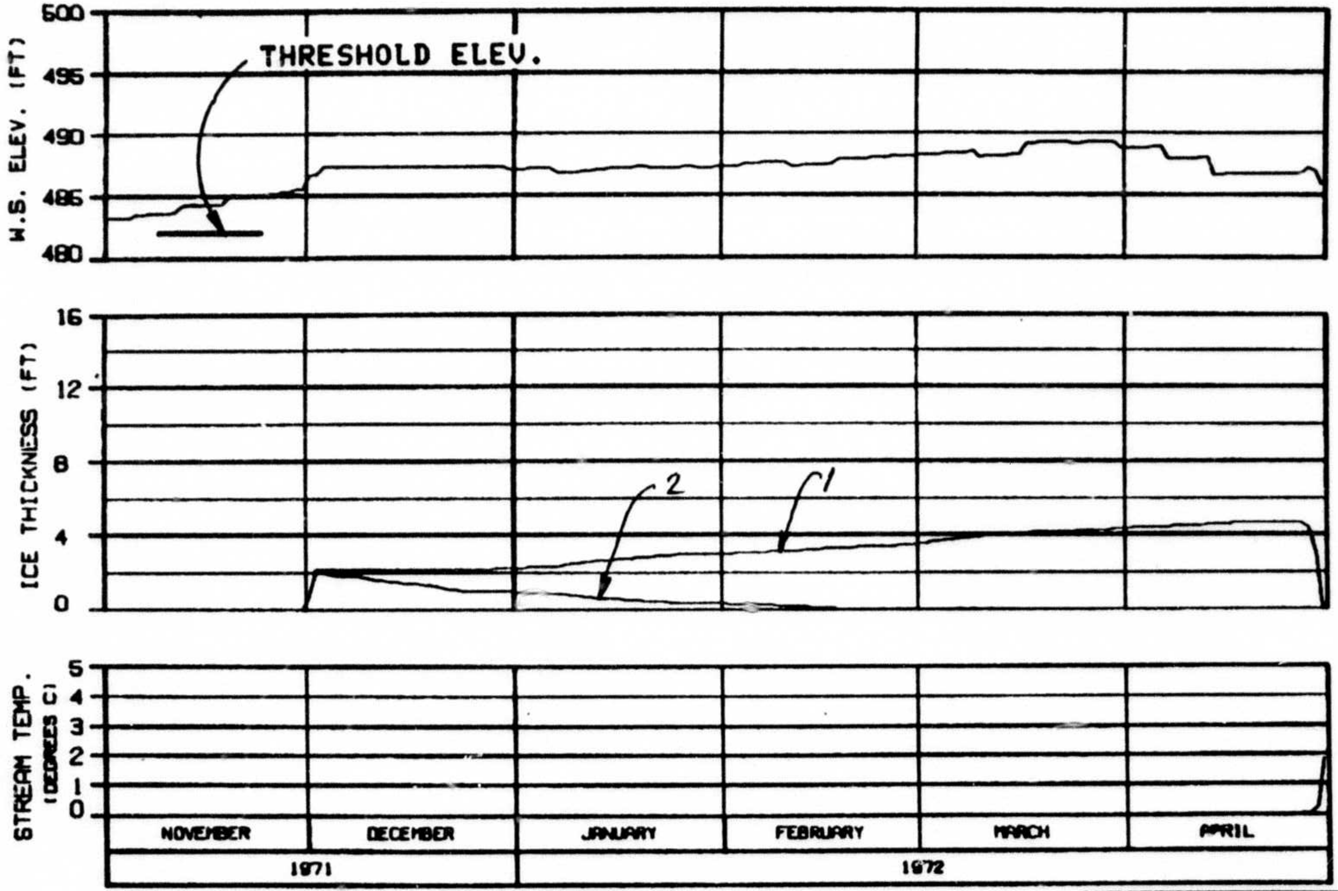
RIVER MILE : 114.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
[illegible]	[illegible]	[illegible]



SIDE CHANNEL MSII

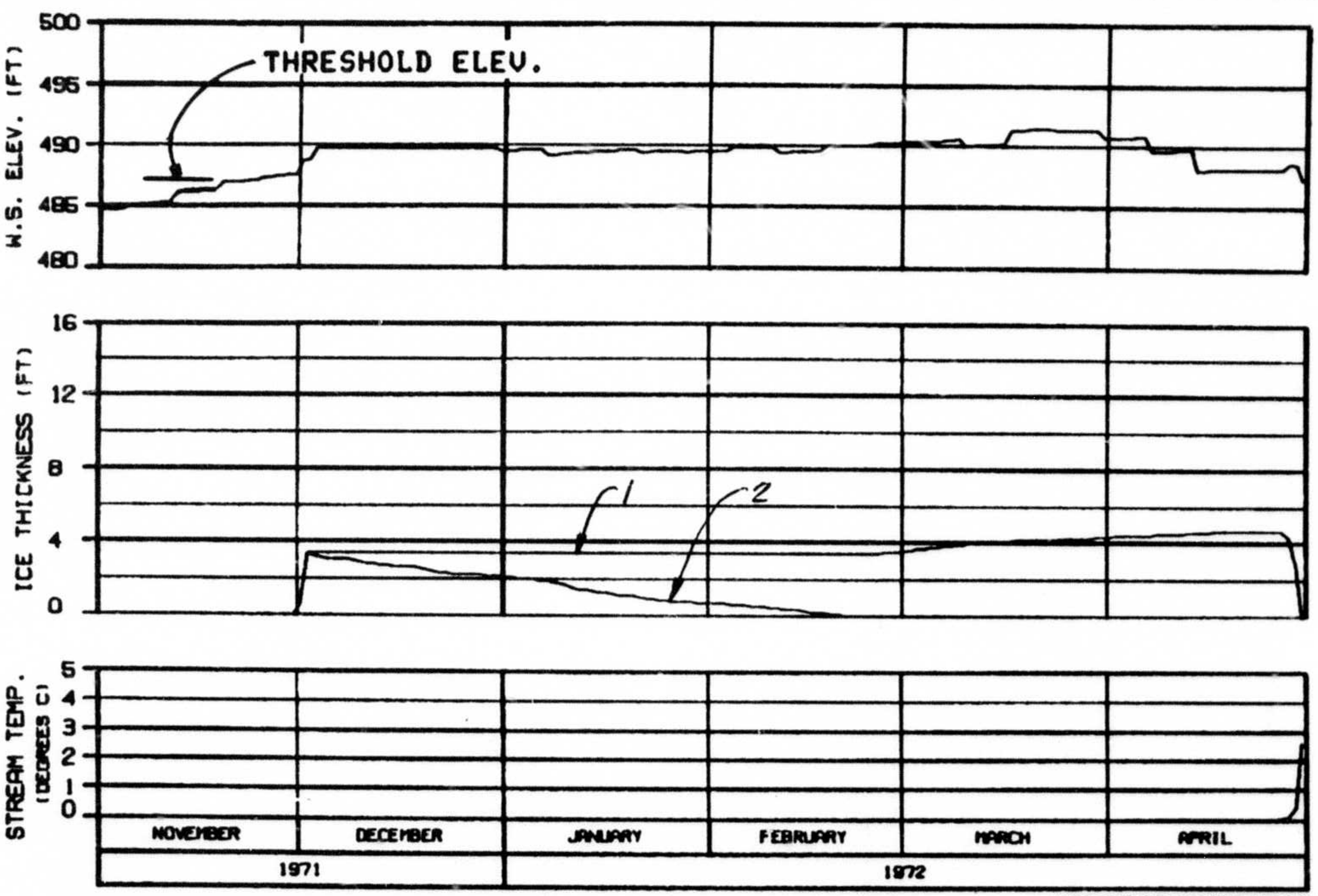
RIVER MILE : 115.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SIDE CHANNEL MSII

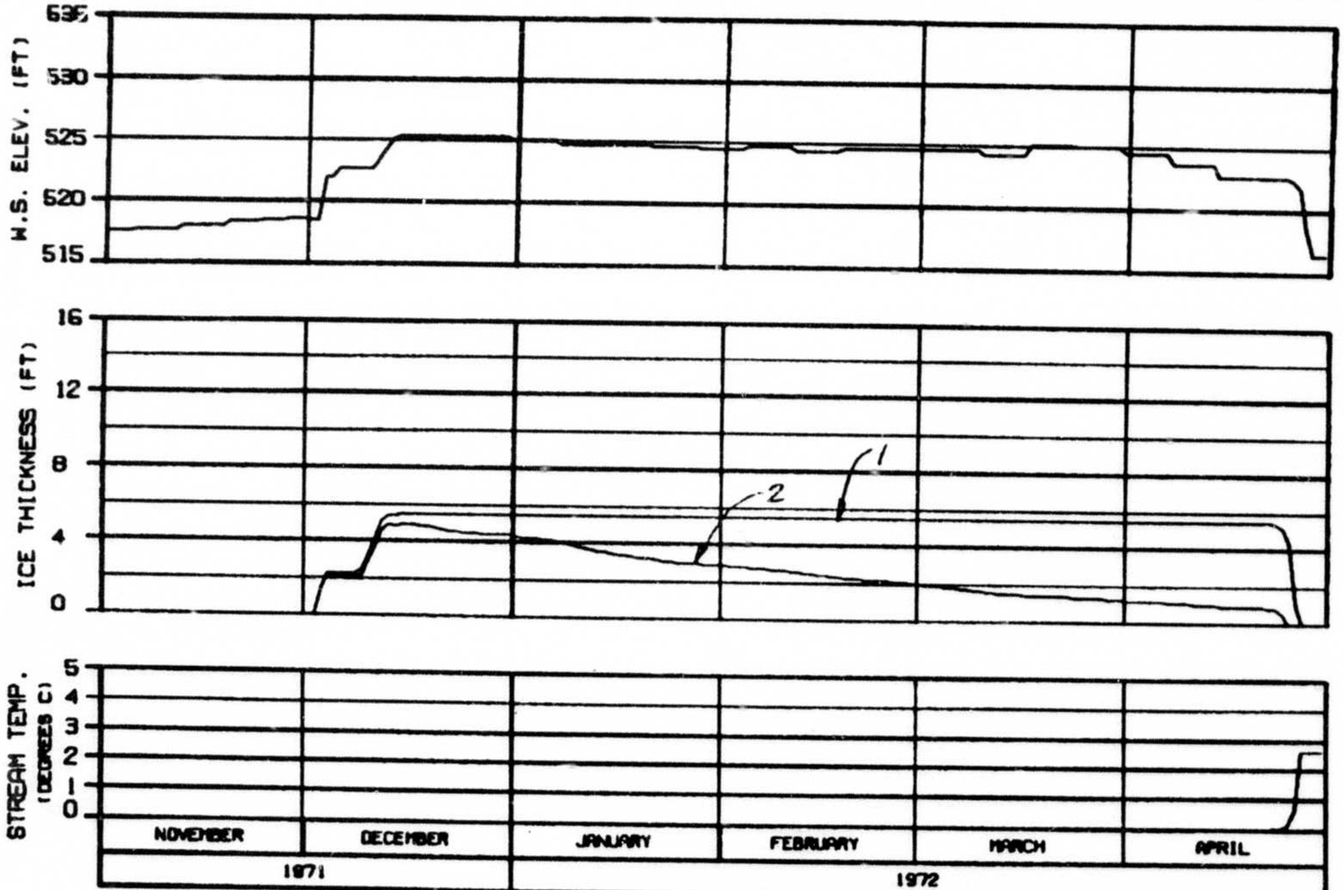
RIVER MILE : 115.90

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



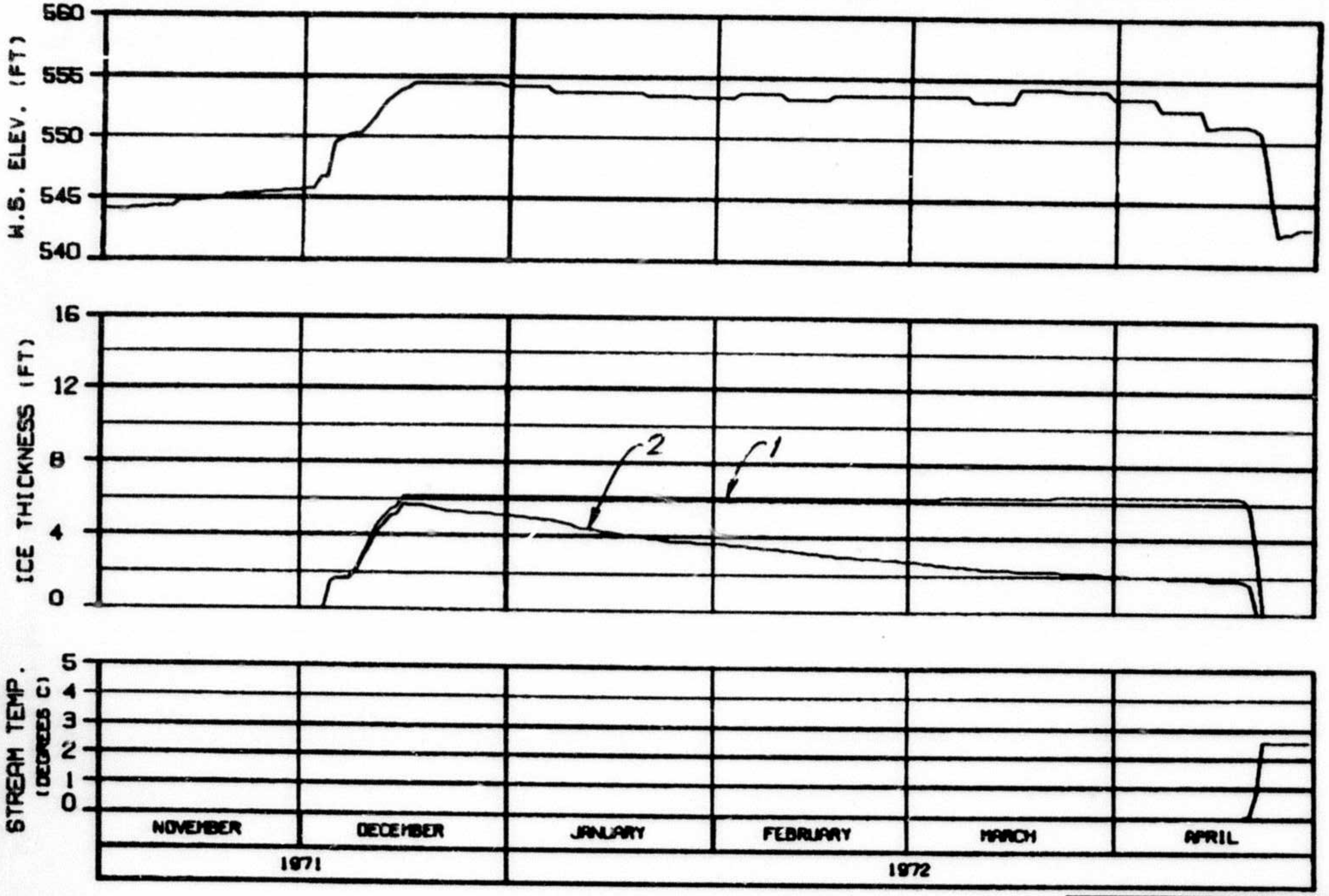
RIVER MILE : 120.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
[illegible]	[illegible]	[illegible]



HEAD OF MOOSE SLOUGH

RIVER MILE : 123.50

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ICE THICKNESS LEGEND:

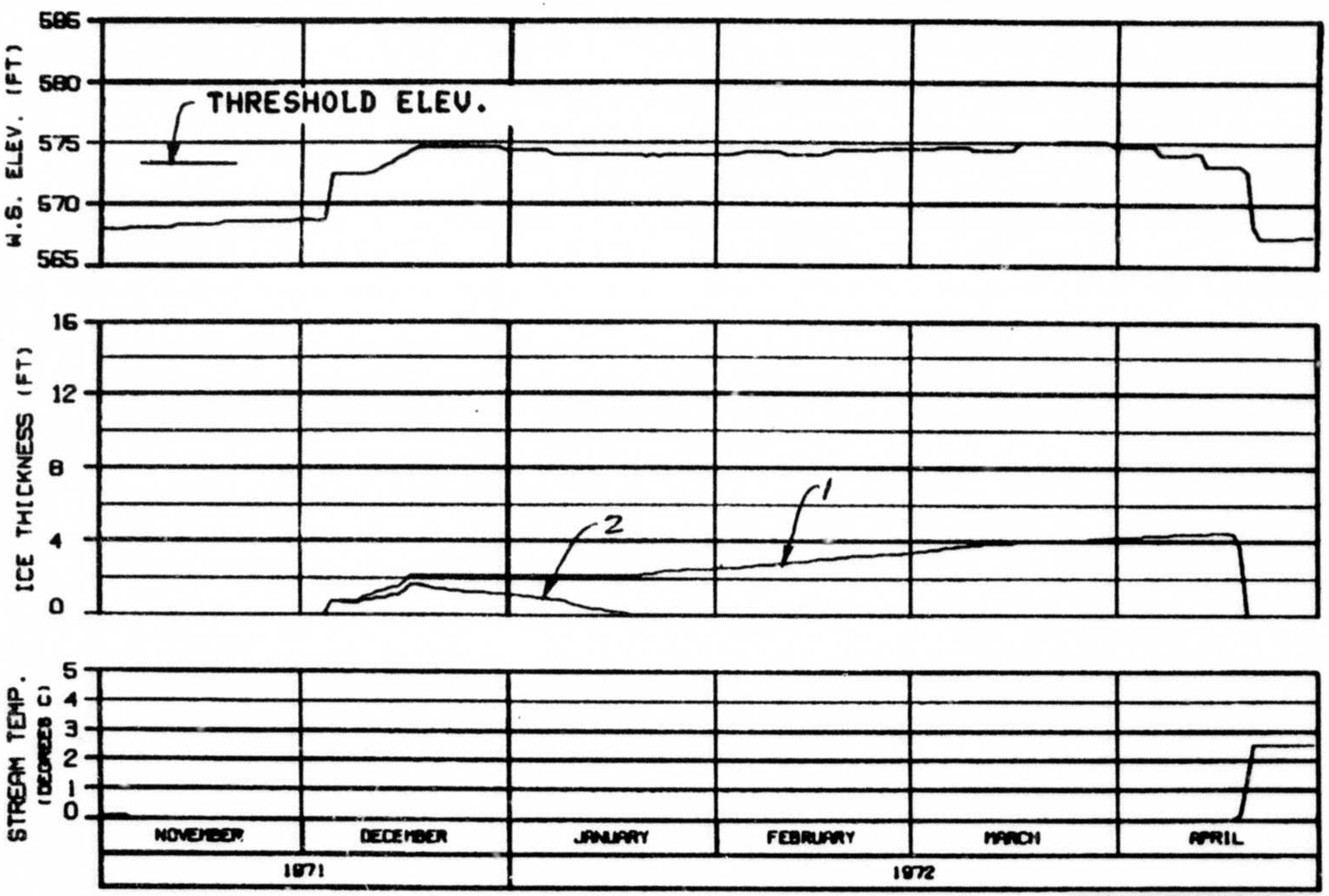
1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (WEST)

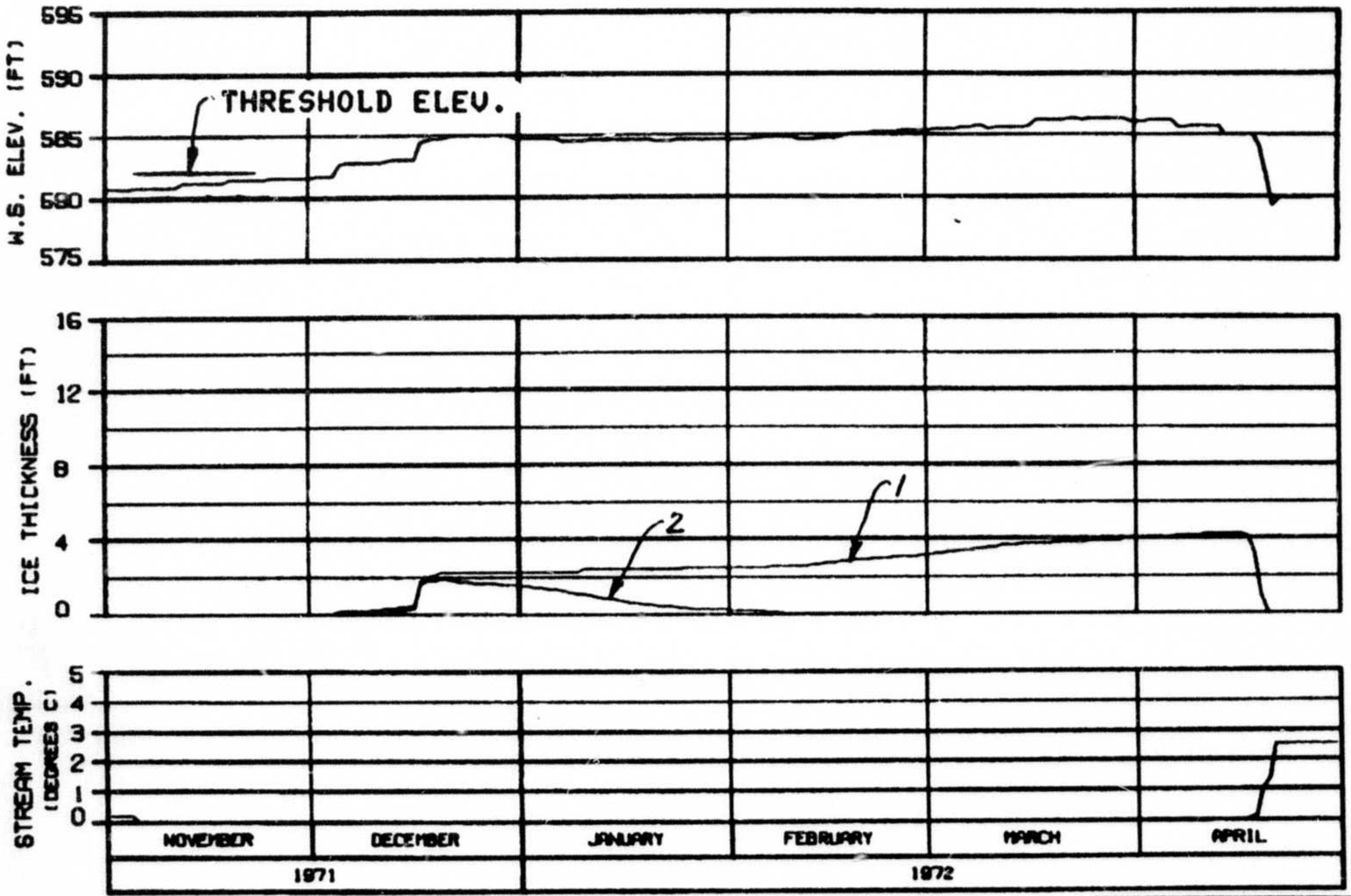
RIVER MILE : 126.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

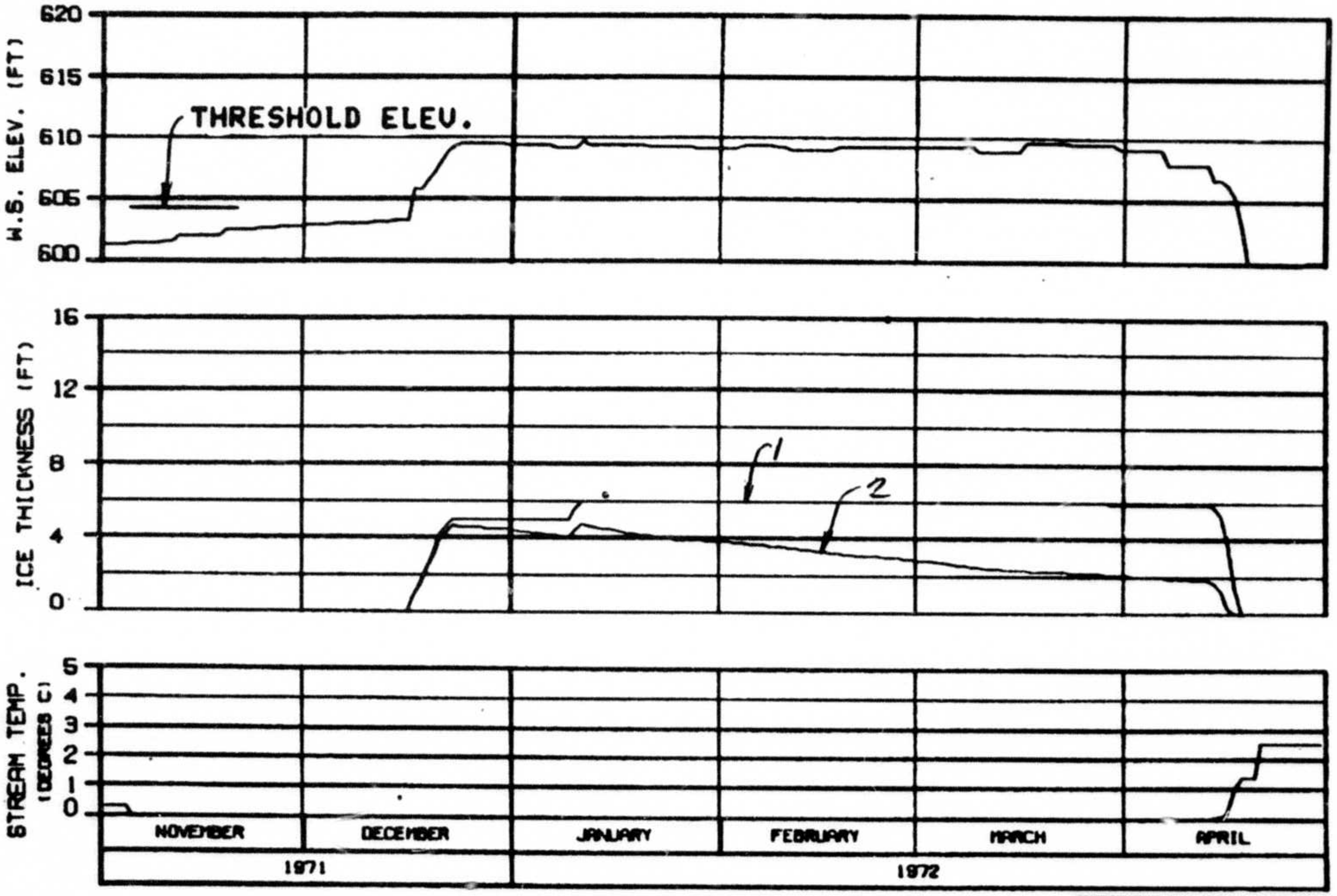
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

C



HEAD OF SLOUGH 9

RIVER MILE : 129.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY

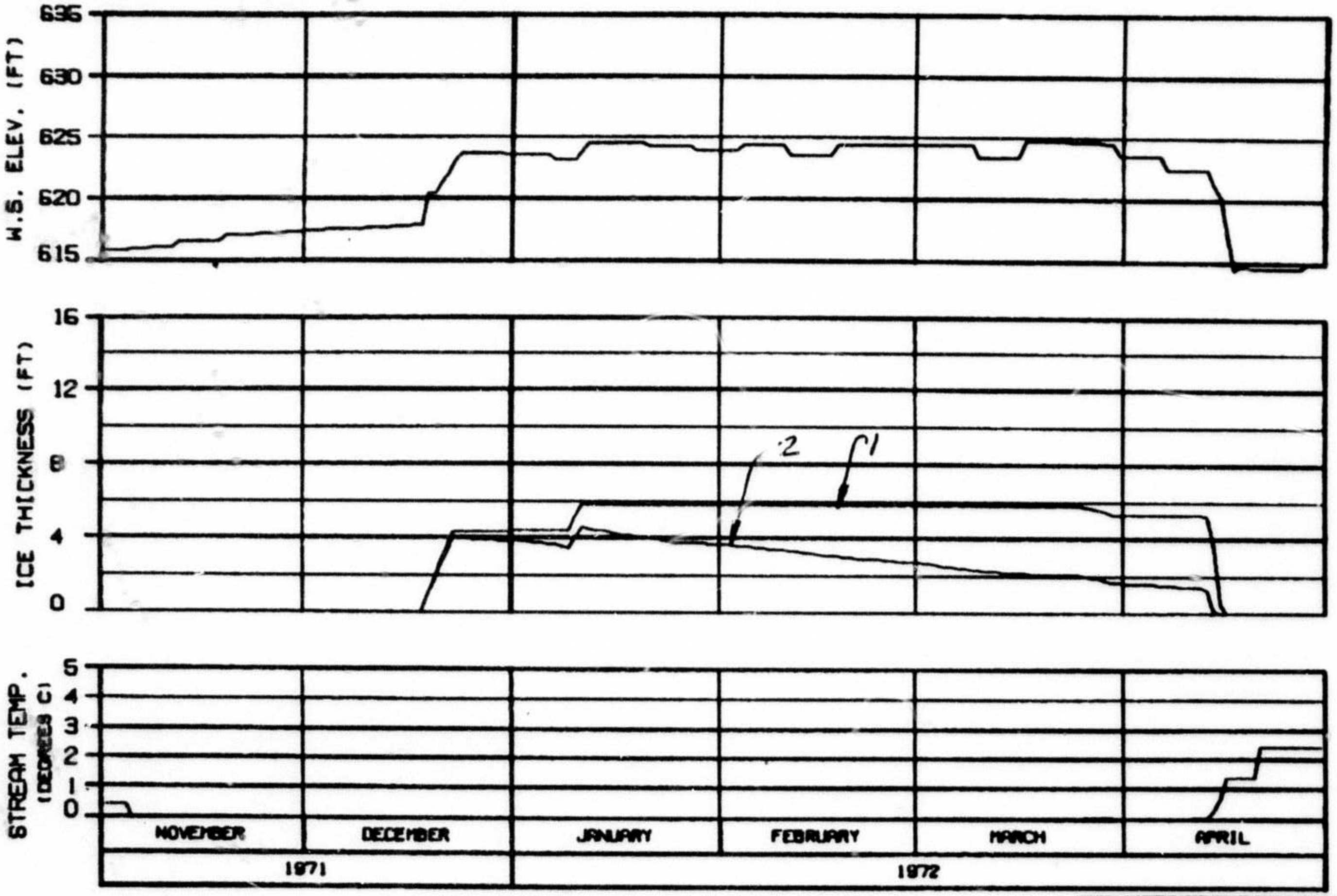
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

RIVER MILE : 130.60

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

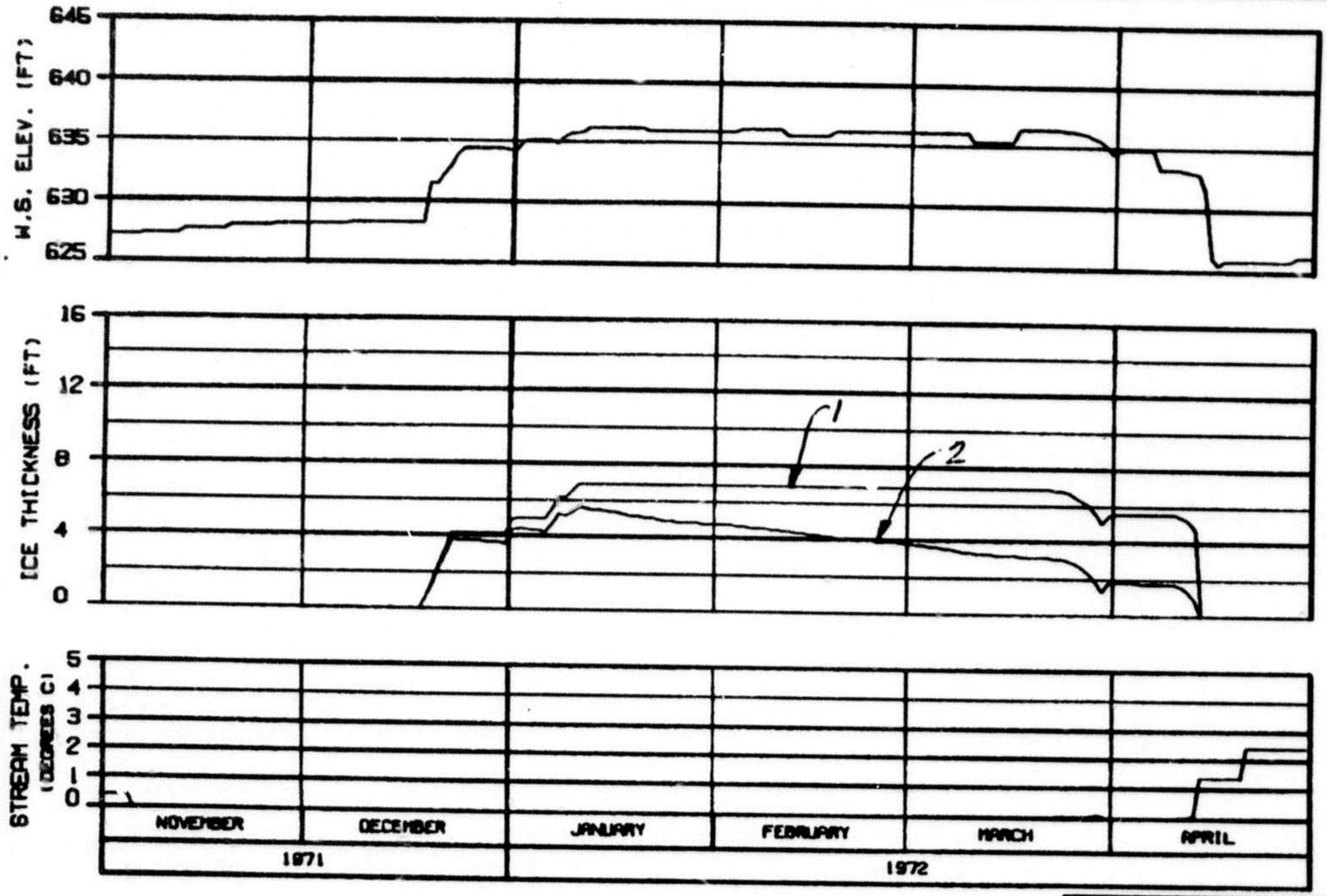
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

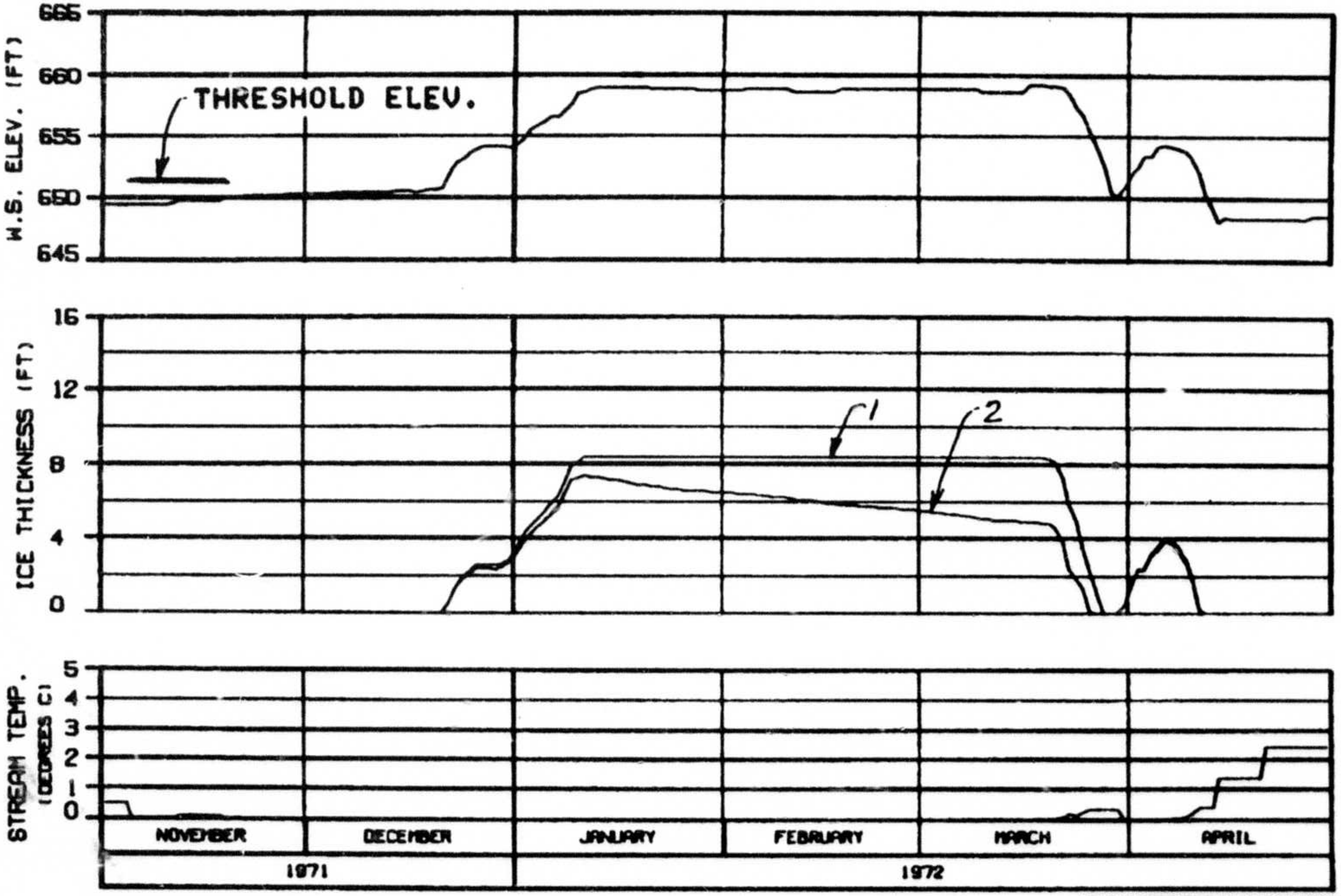
RIVER MILE : 131.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
[illegible]	[illegible]



HEAD OF SLOUGH 9A

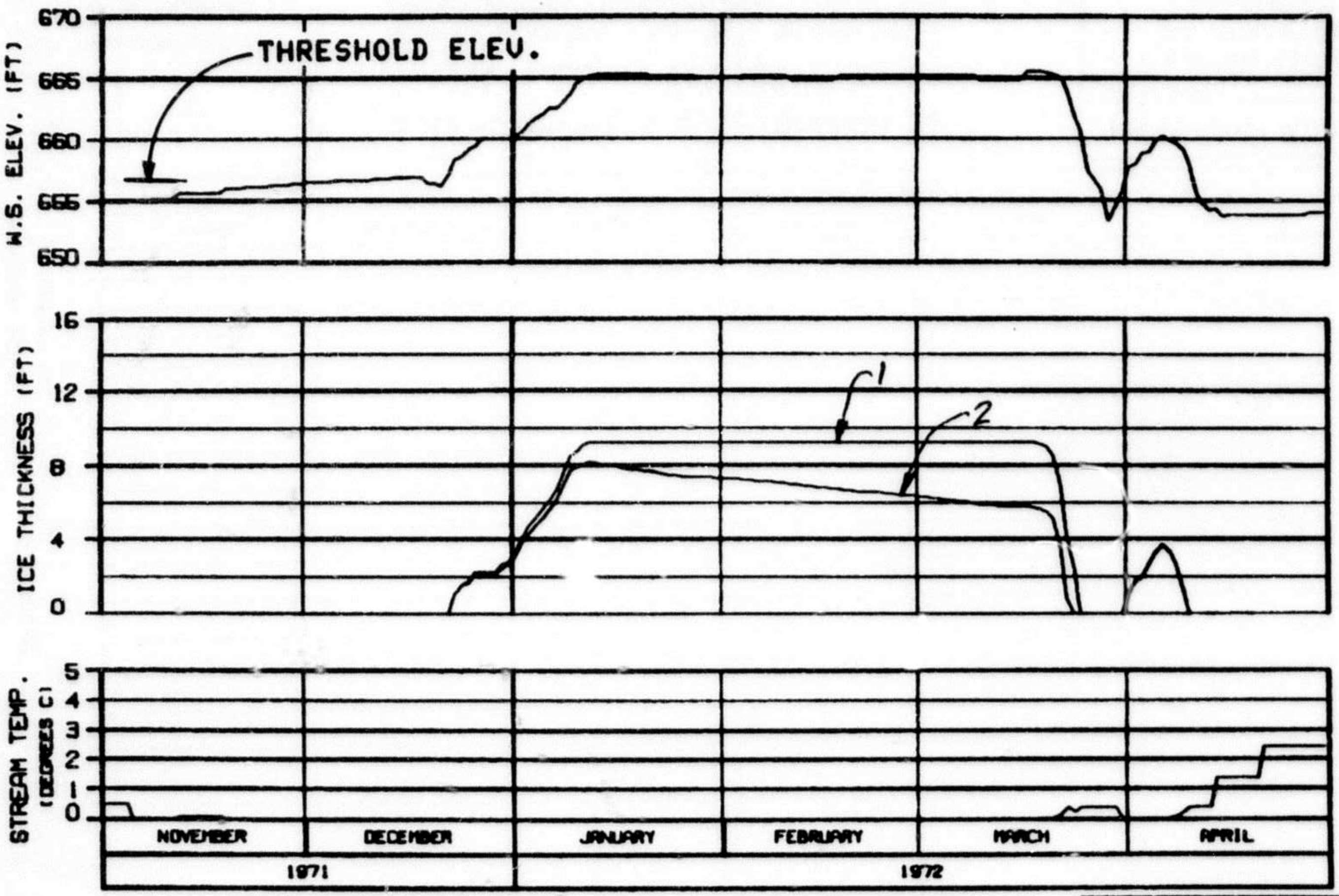
RIVER MILE : 133.70

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

RIVER MILE : 134.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

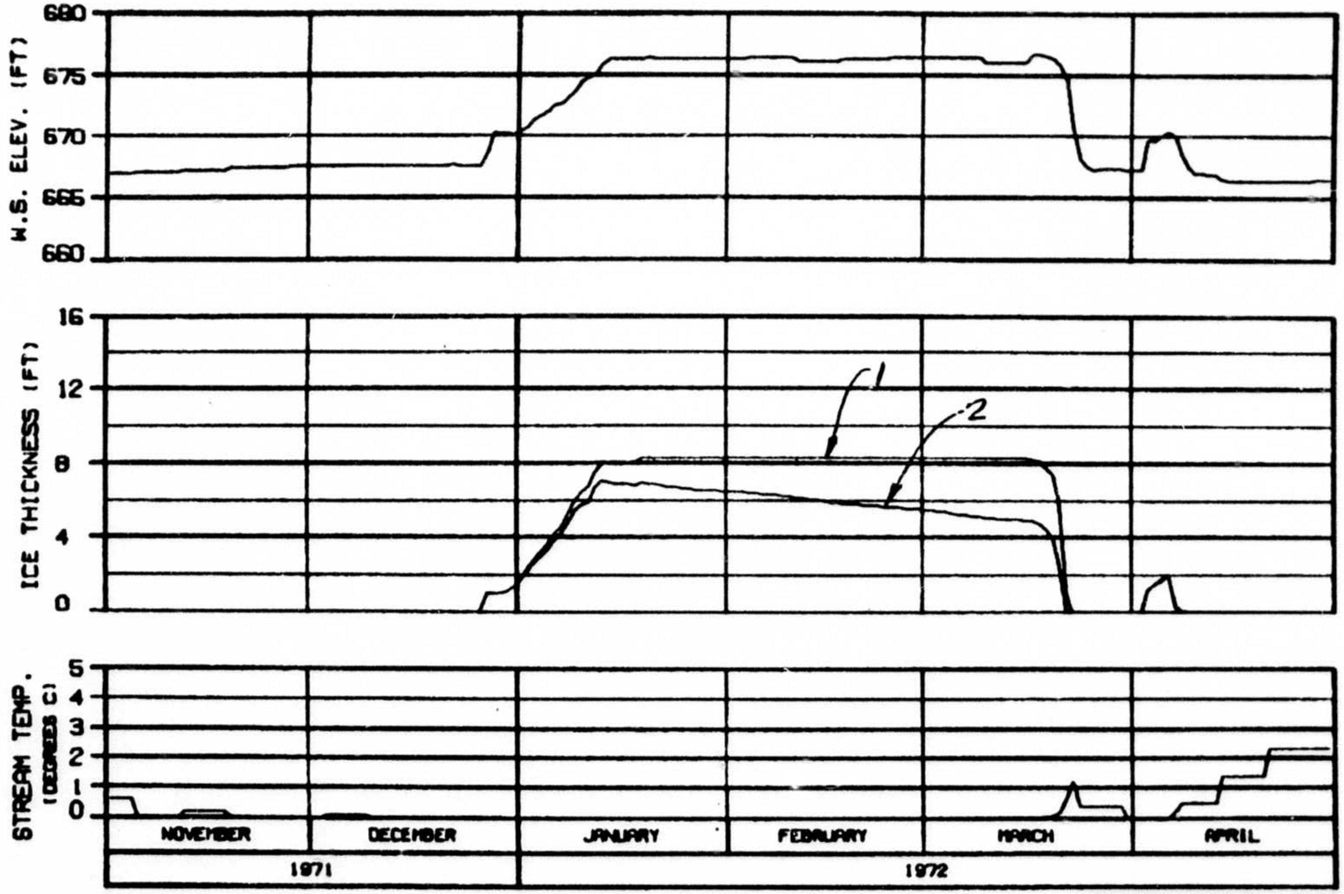
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : [illegible]
REFERENCE [illegible] : 7101CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

[illegible] JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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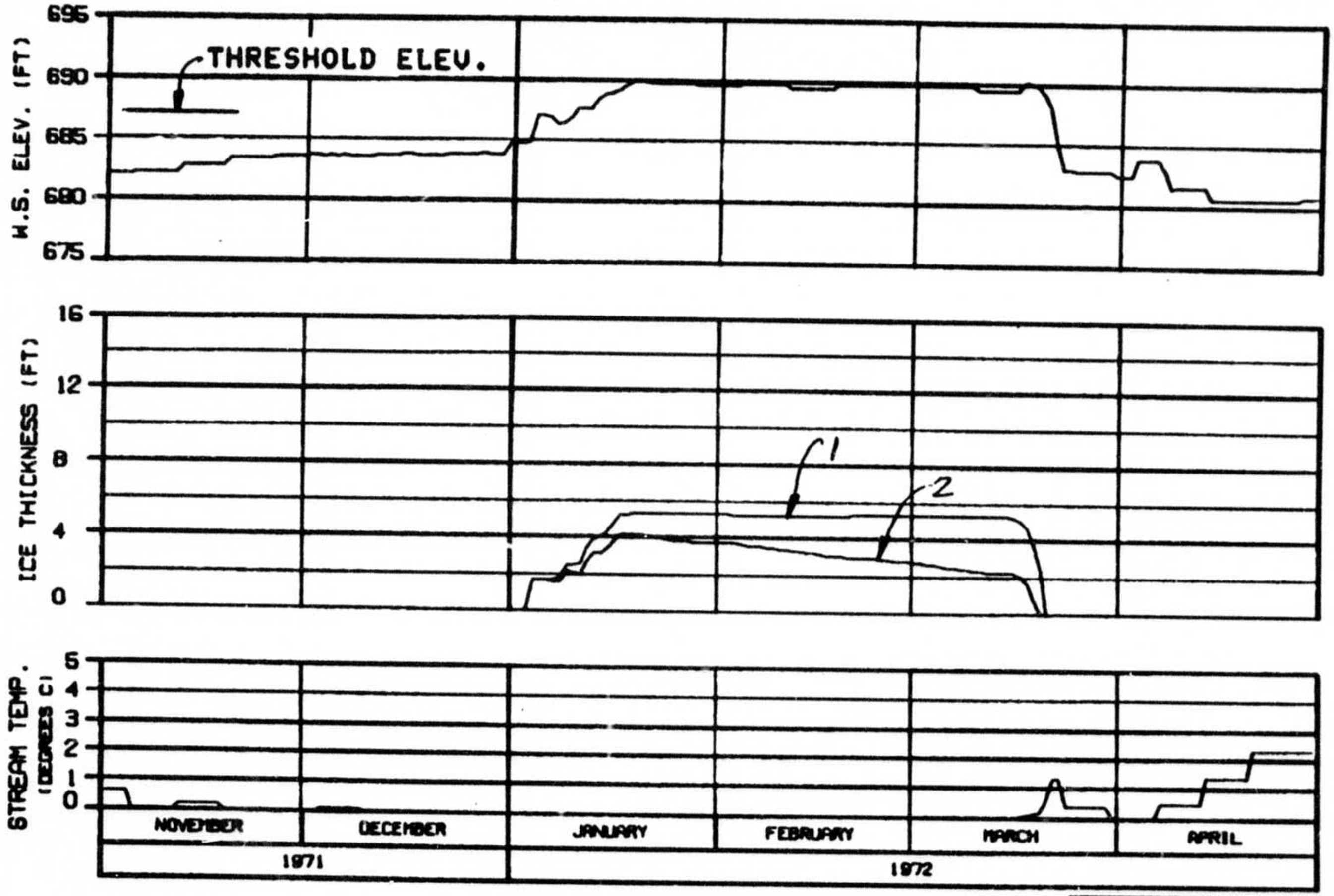


HEAD OF SLOUGH 11

RIVER MILE : 136.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C   TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

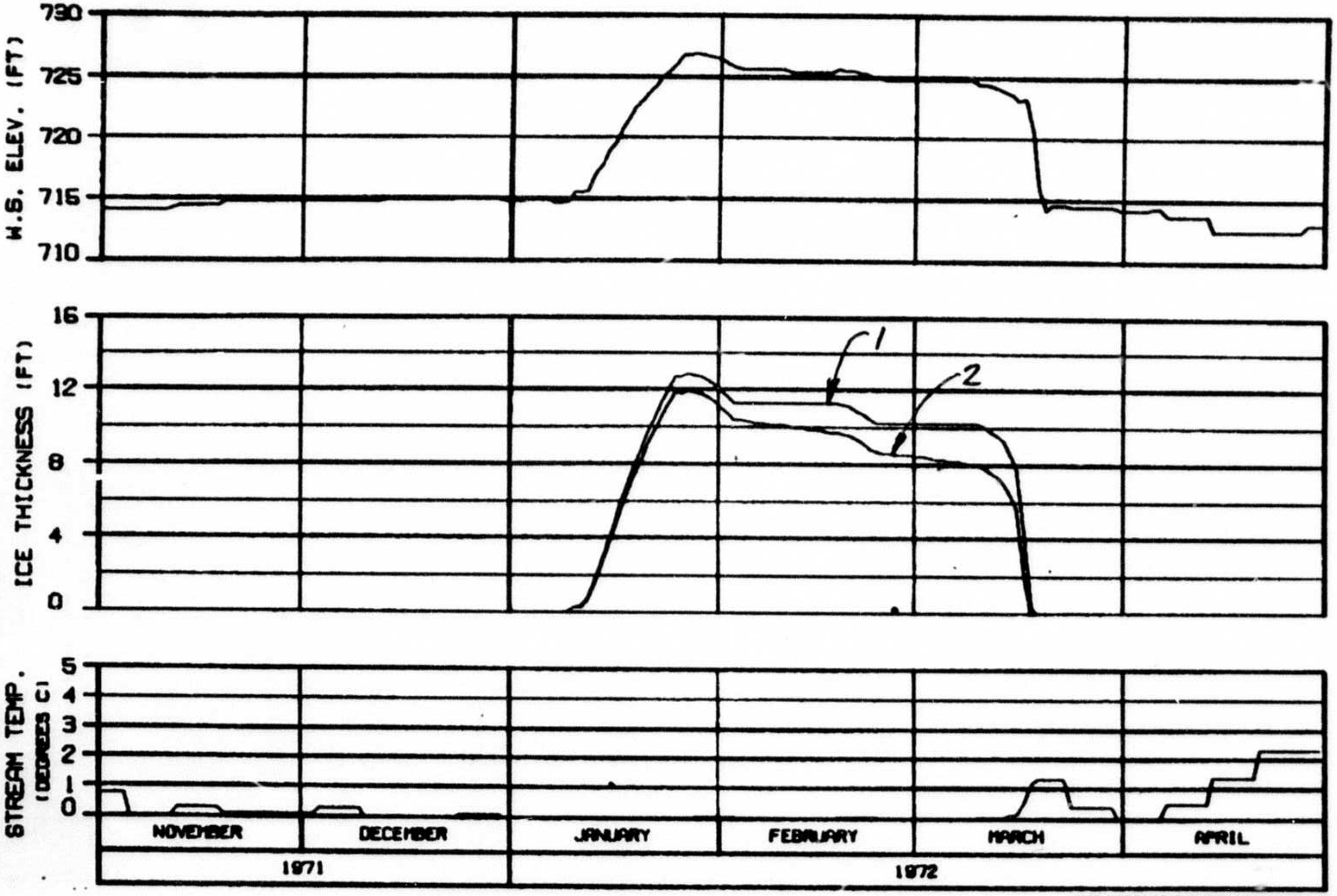
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

[illegible] | [illegible] | [illegible].142



HEAD OF SLOUGH 17

RIVER MILE : 139.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

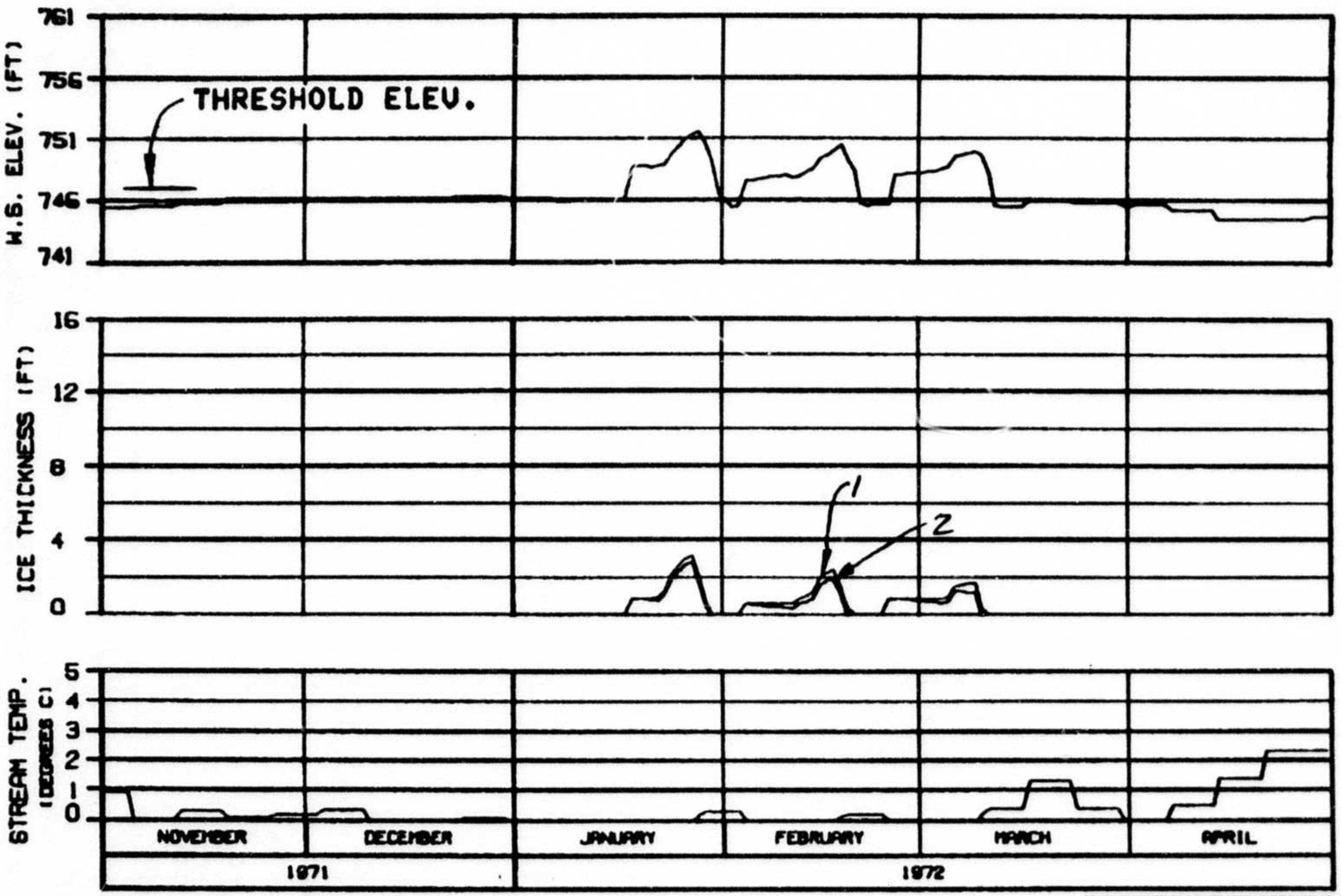
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SLOUGH 21 (ENTRANCE A6)

RIVER MILE : 141.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

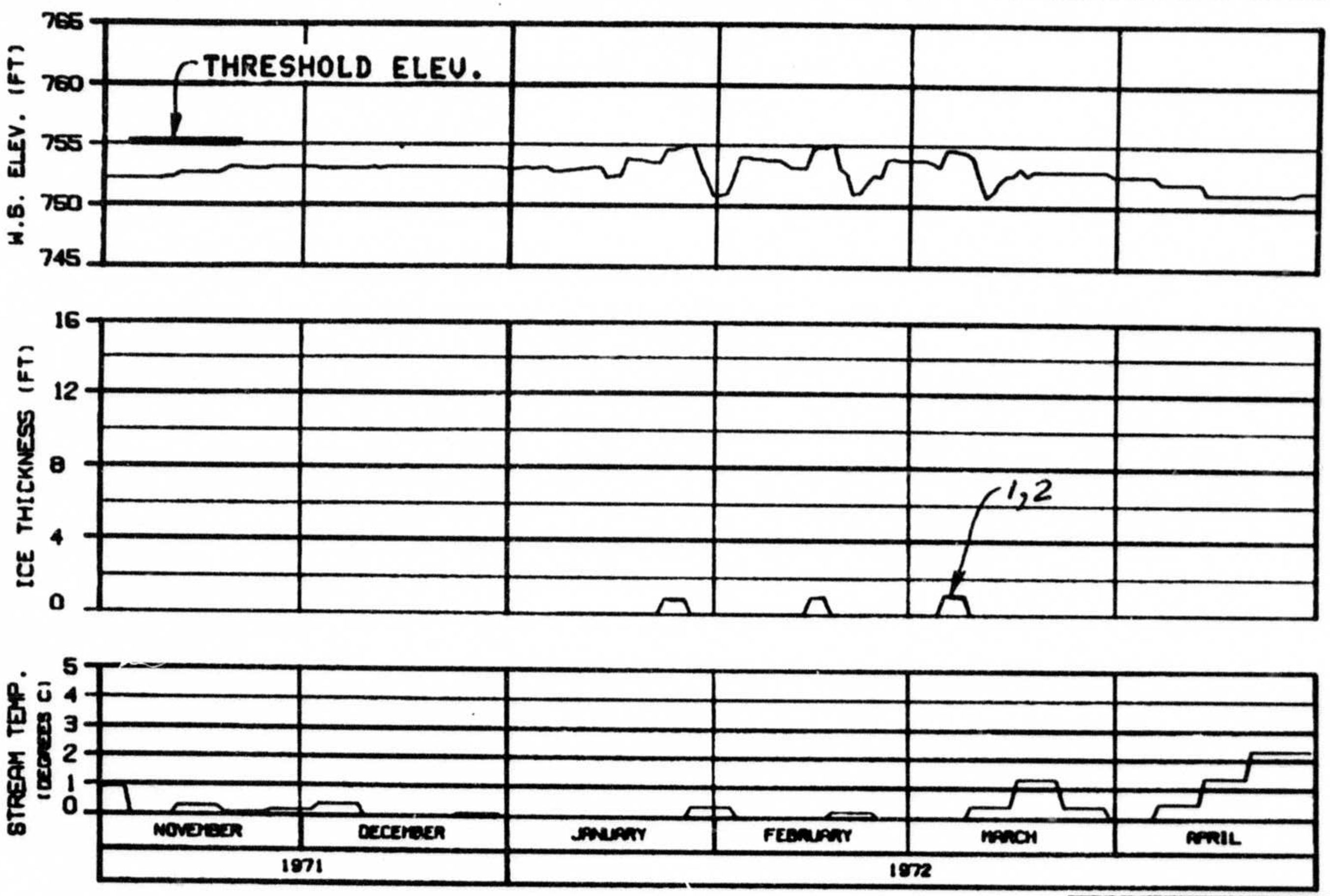
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 21

RIVER MILE : 142.20

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

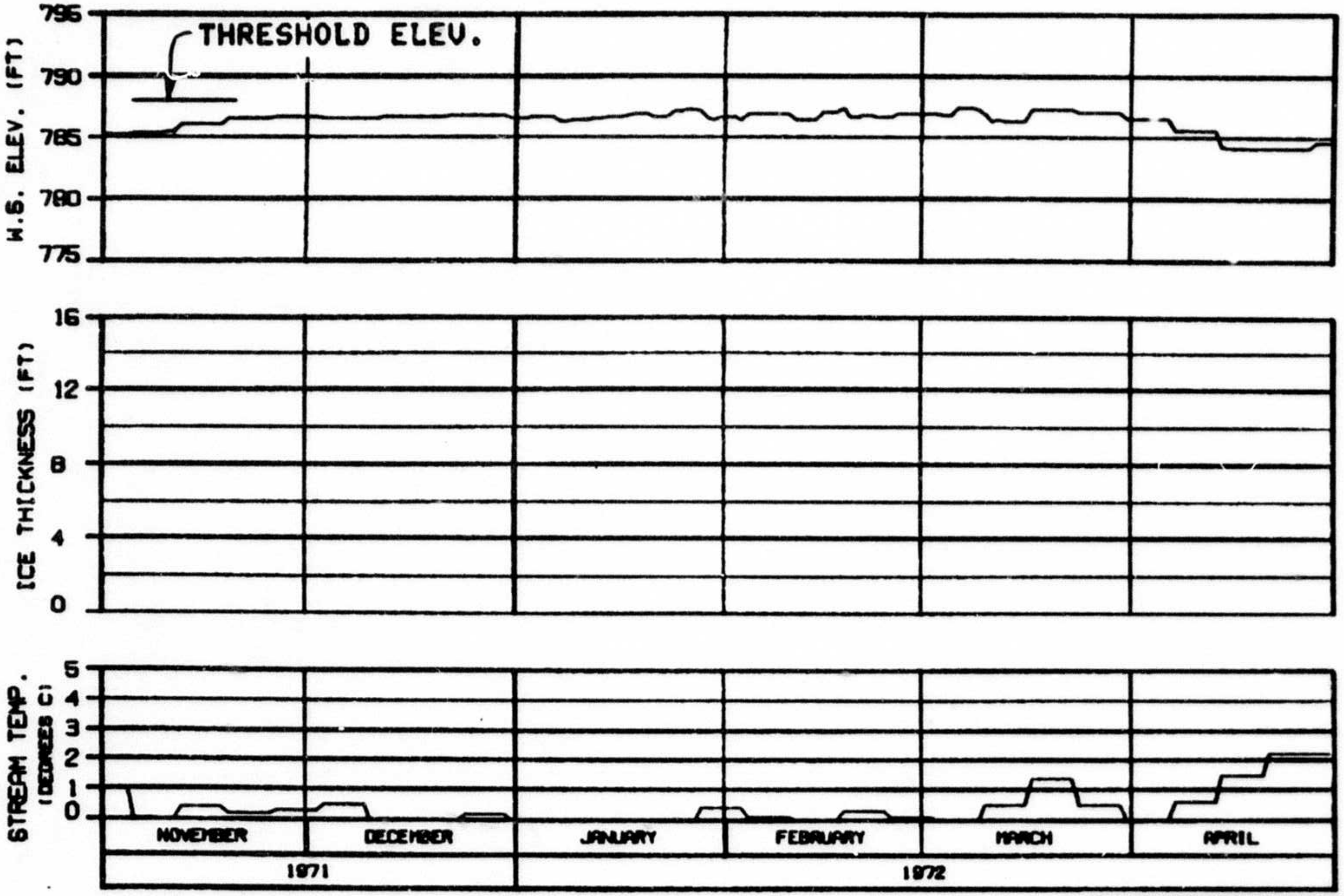
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7101CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
[illegible]	17 JAN 84	1988.142

OPTION?

EXHIBIT K

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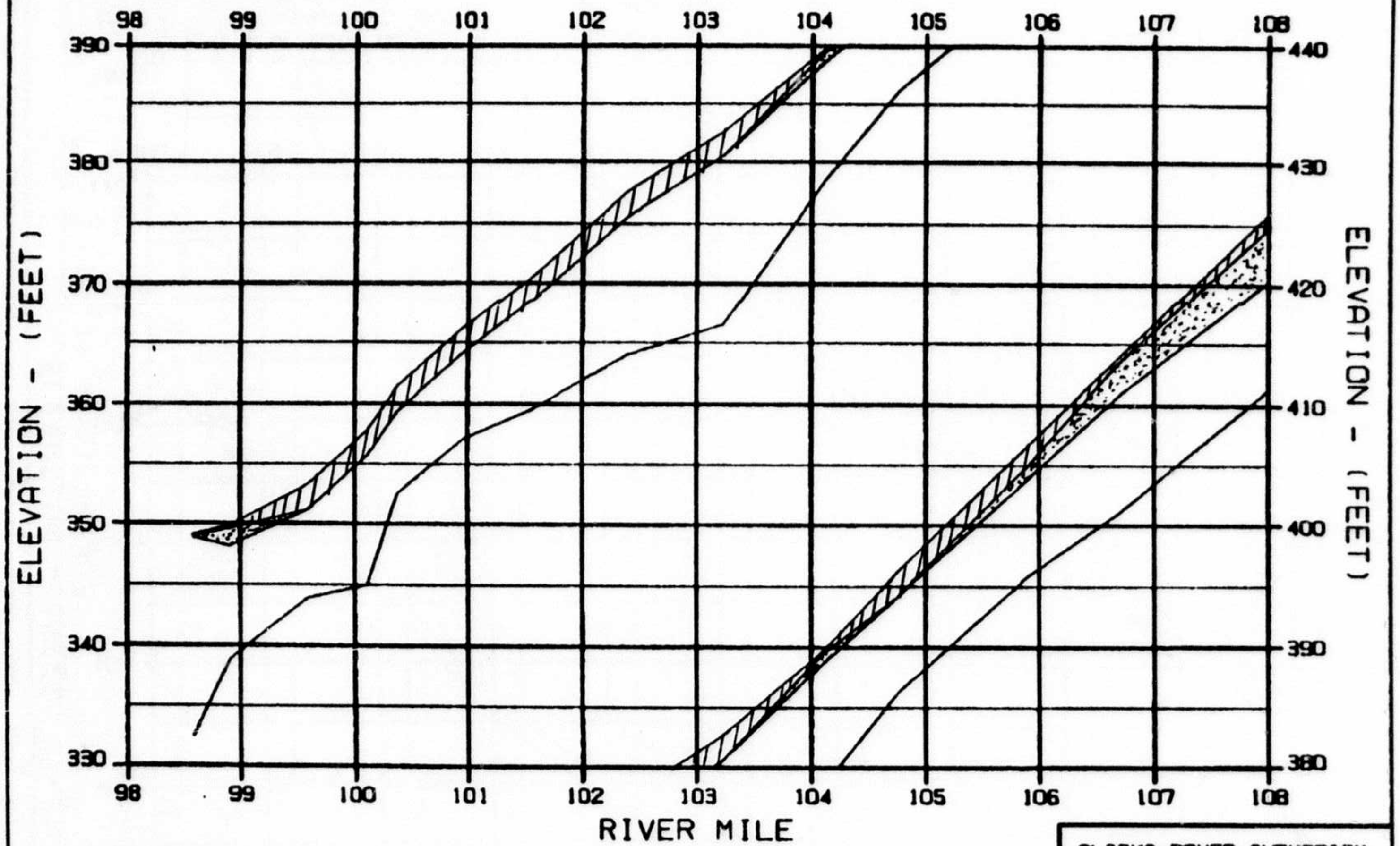

LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

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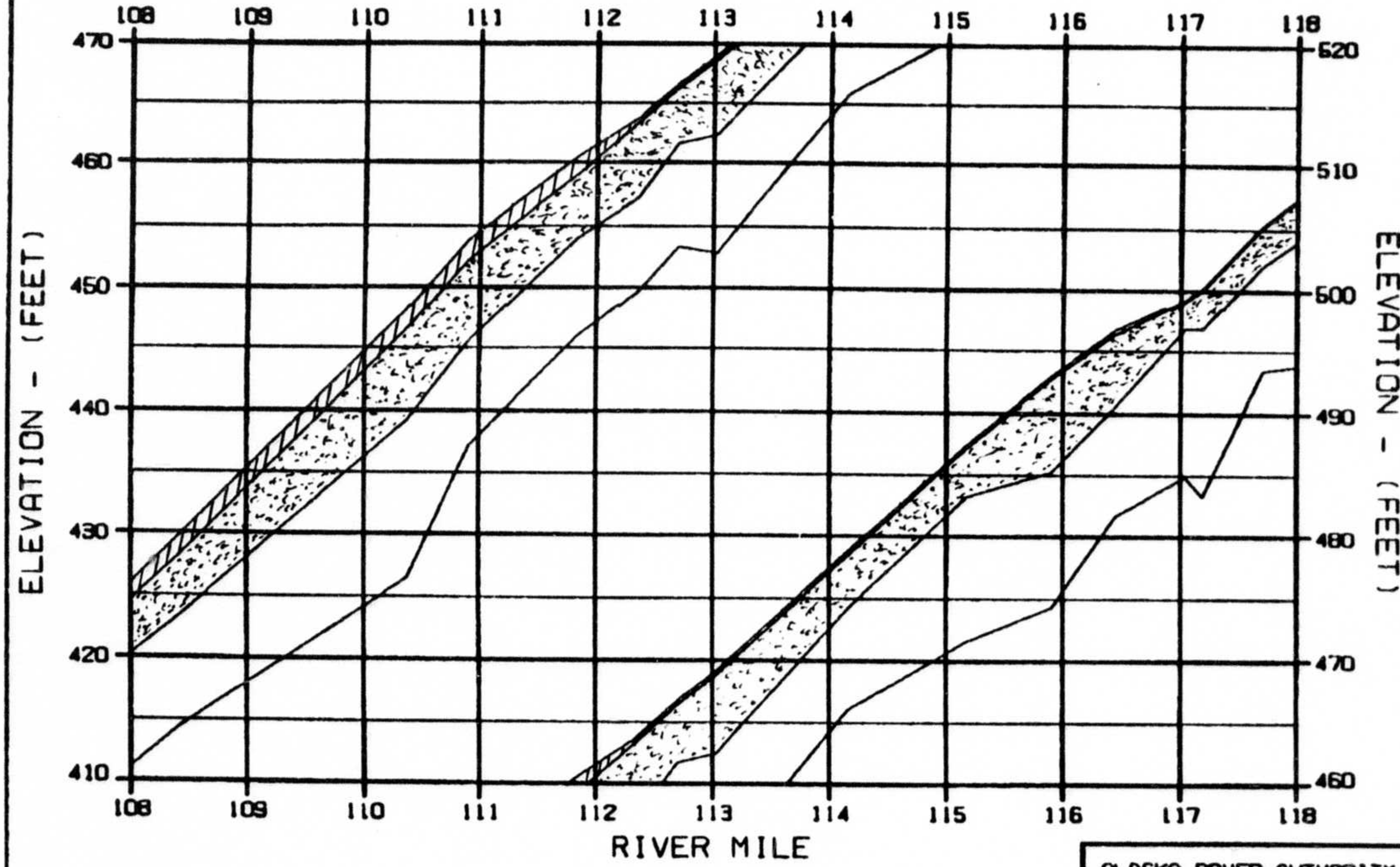


LEGEND:

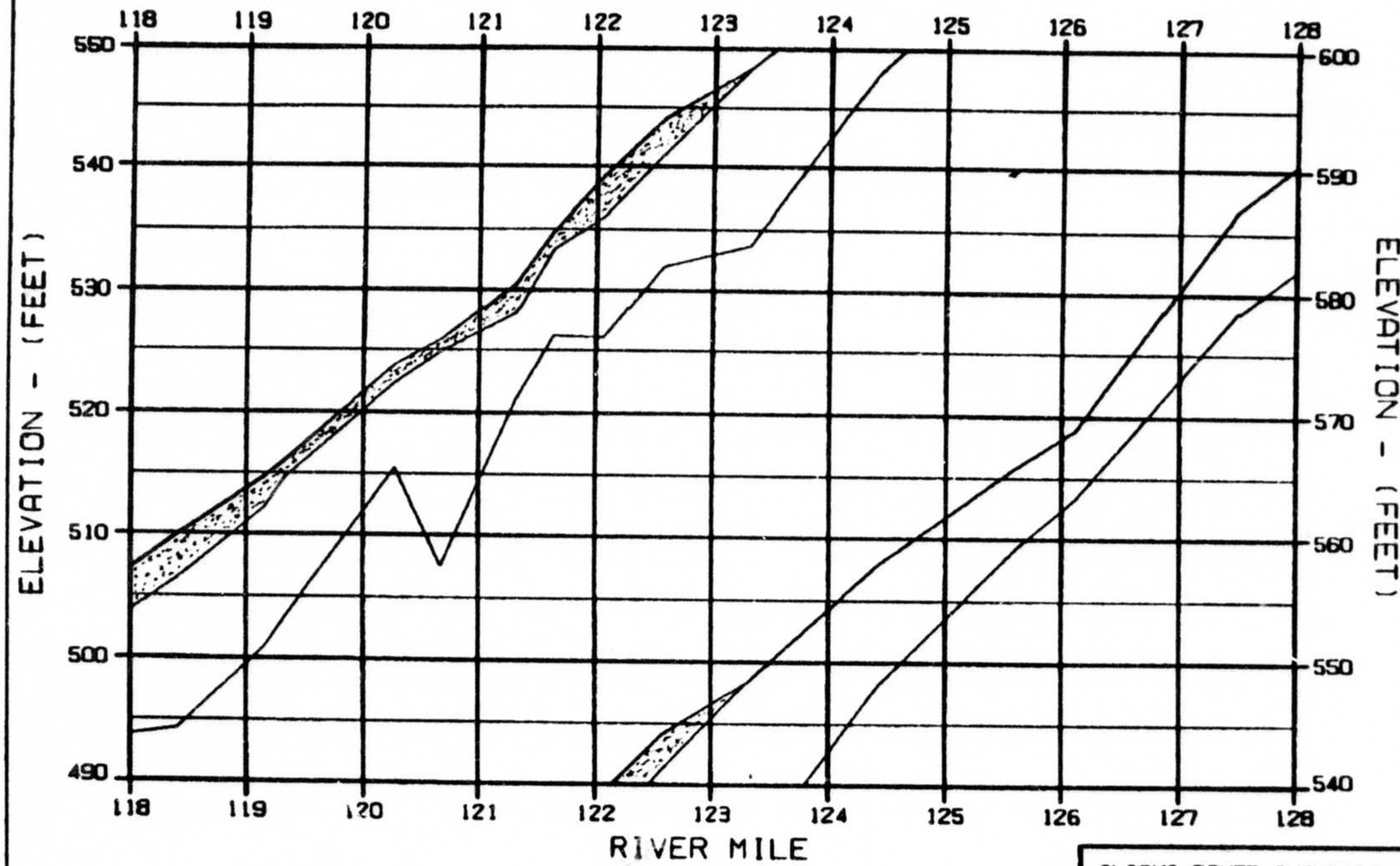
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES	
HARZA-EBASCO JOINT VENTURE	

OPTION?

c



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

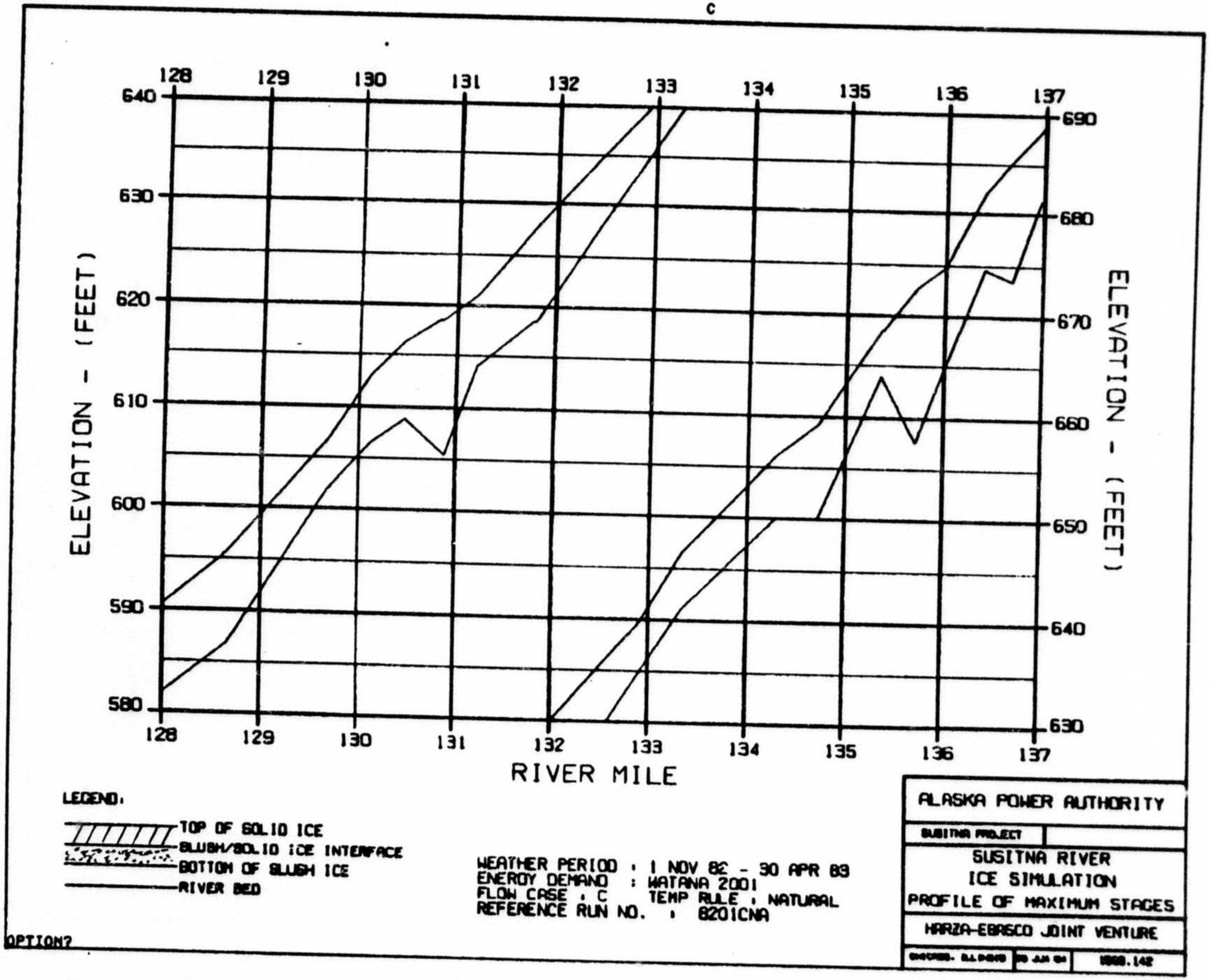
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

CHICAGO, ILLINOIS | 30 JAN 84 | 1690.142

OPTION?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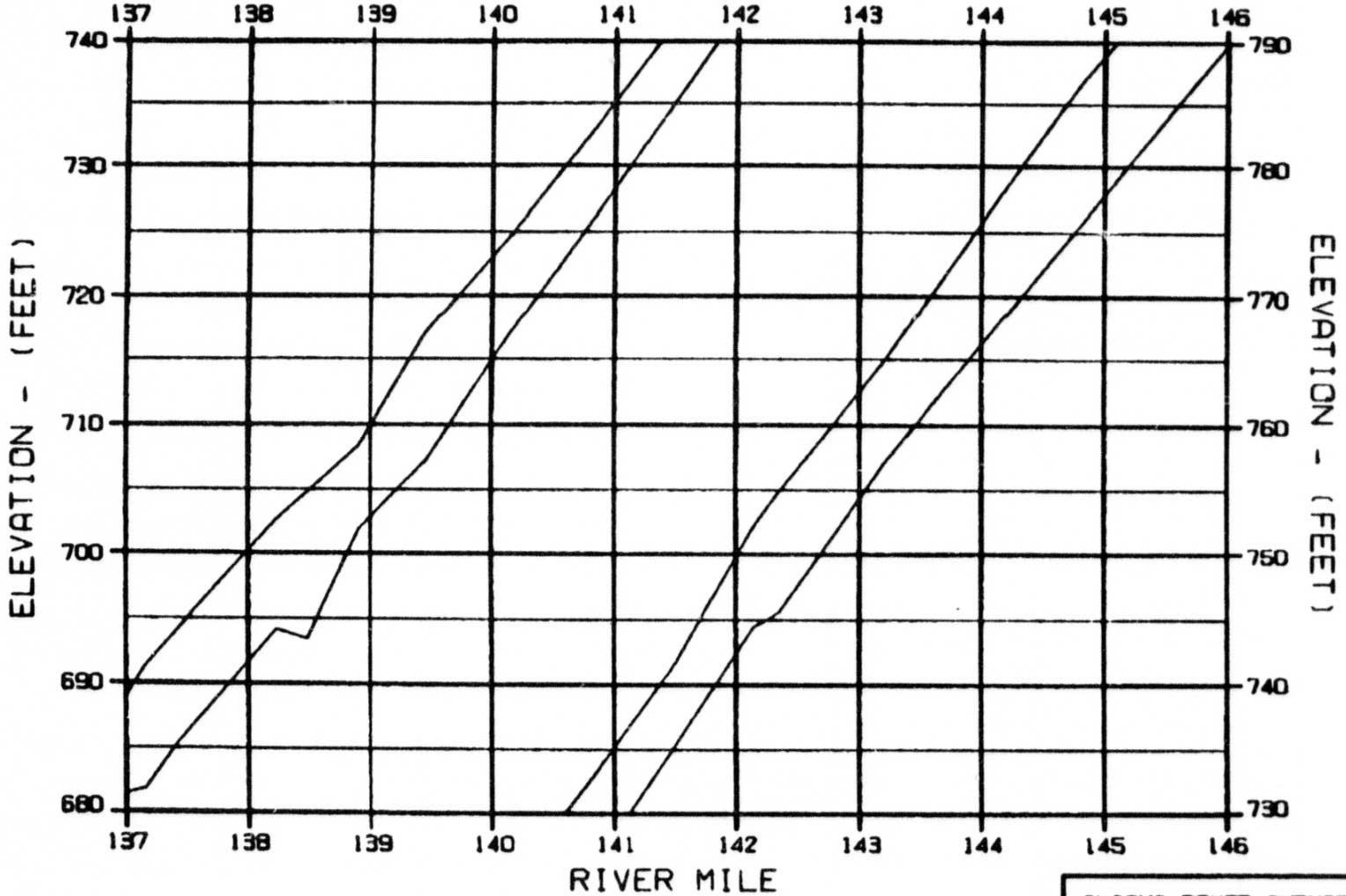
ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

c



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

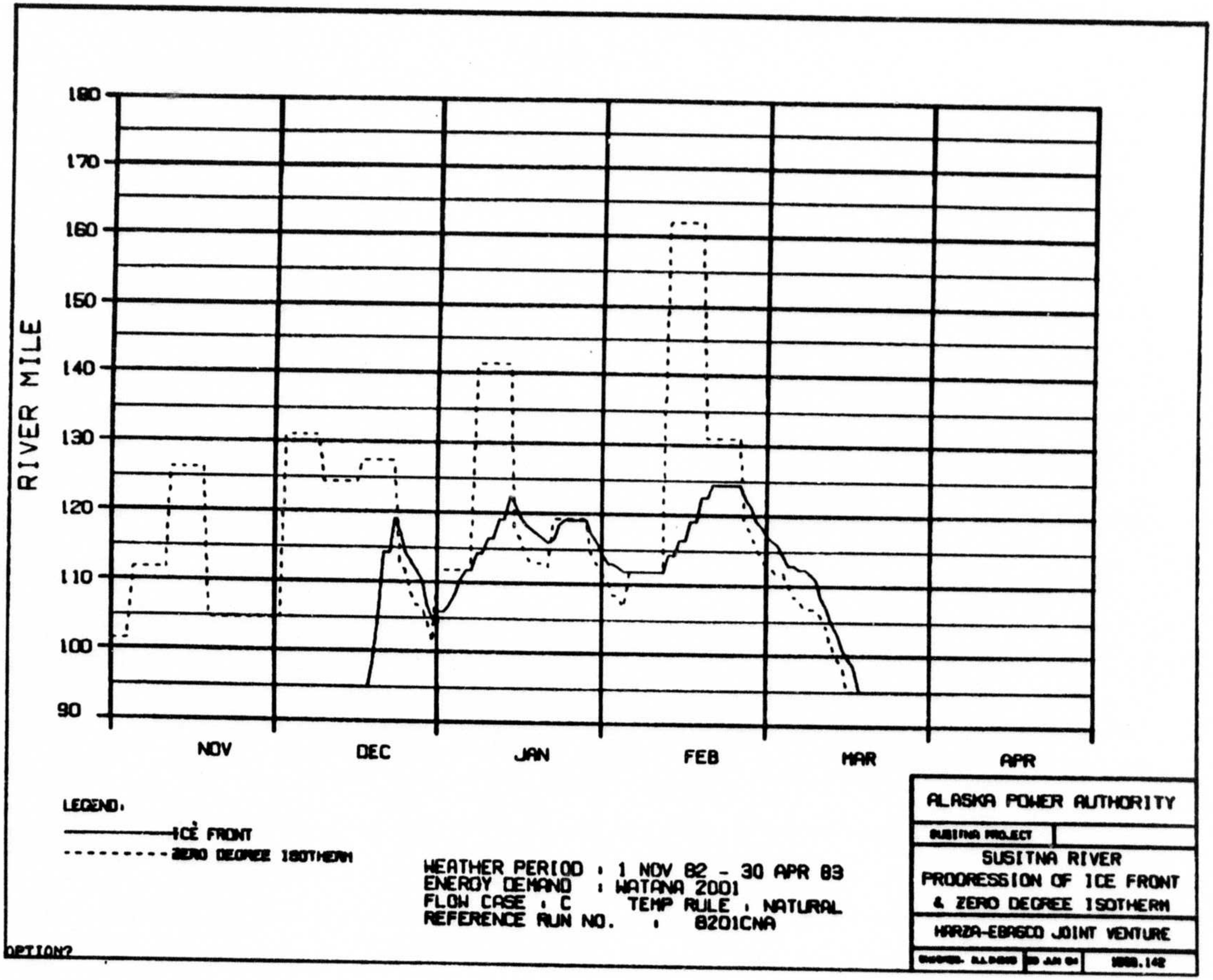
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA EBASCO JOINT VENTURE

[illegible]


RIVER MILE
90
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170
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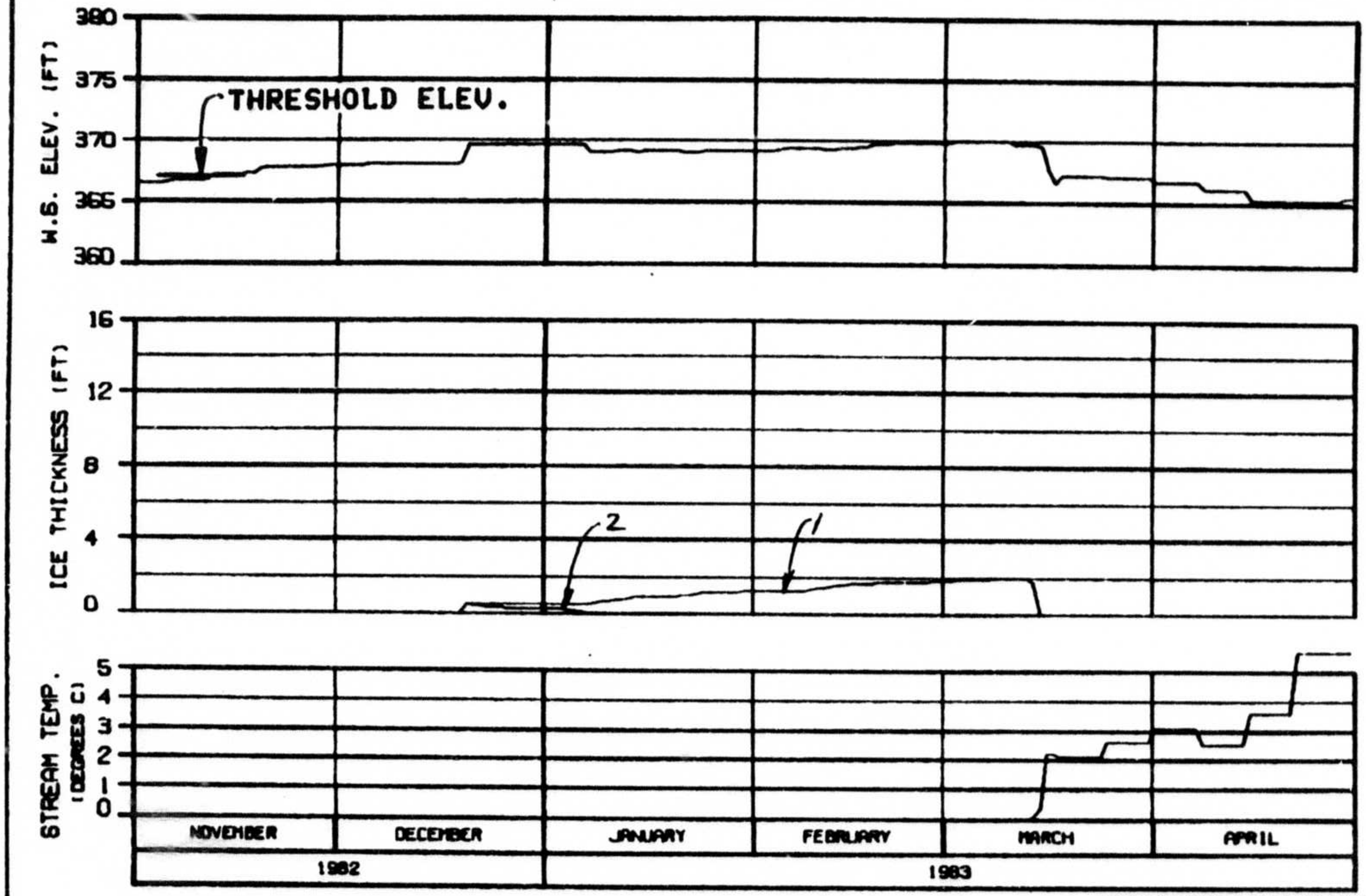
NOV
DEC
JAN
FEB
MAR
APR
LEGEND:
ICE FRONT
ZERO DEGREE ISOTHERM
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA
OPTION?
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM
HARZA-EBASCO JOINT VENTURE



HEAD OF WHISKERS SLOUGH

RIVER MILE : 101.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

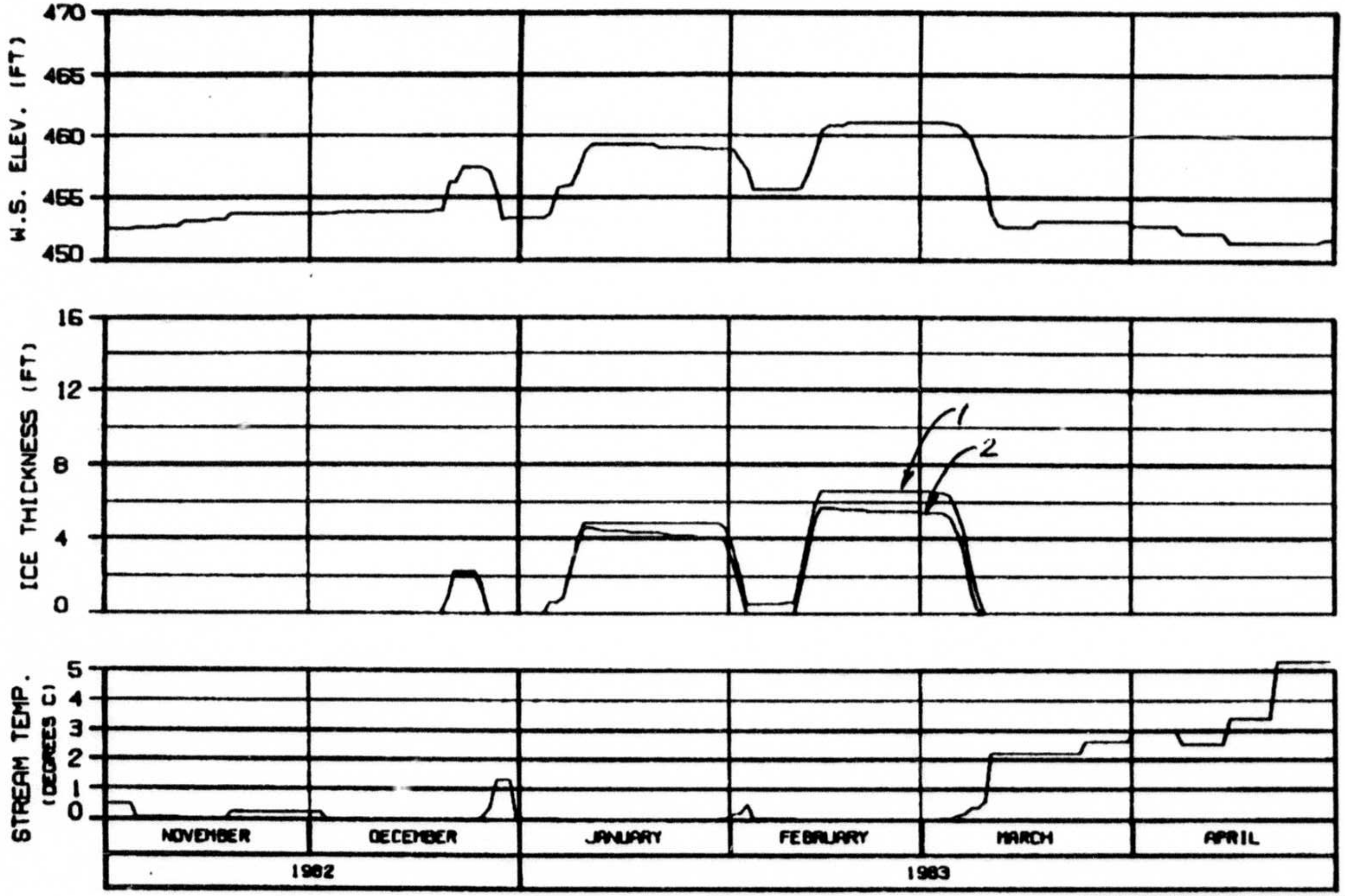
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

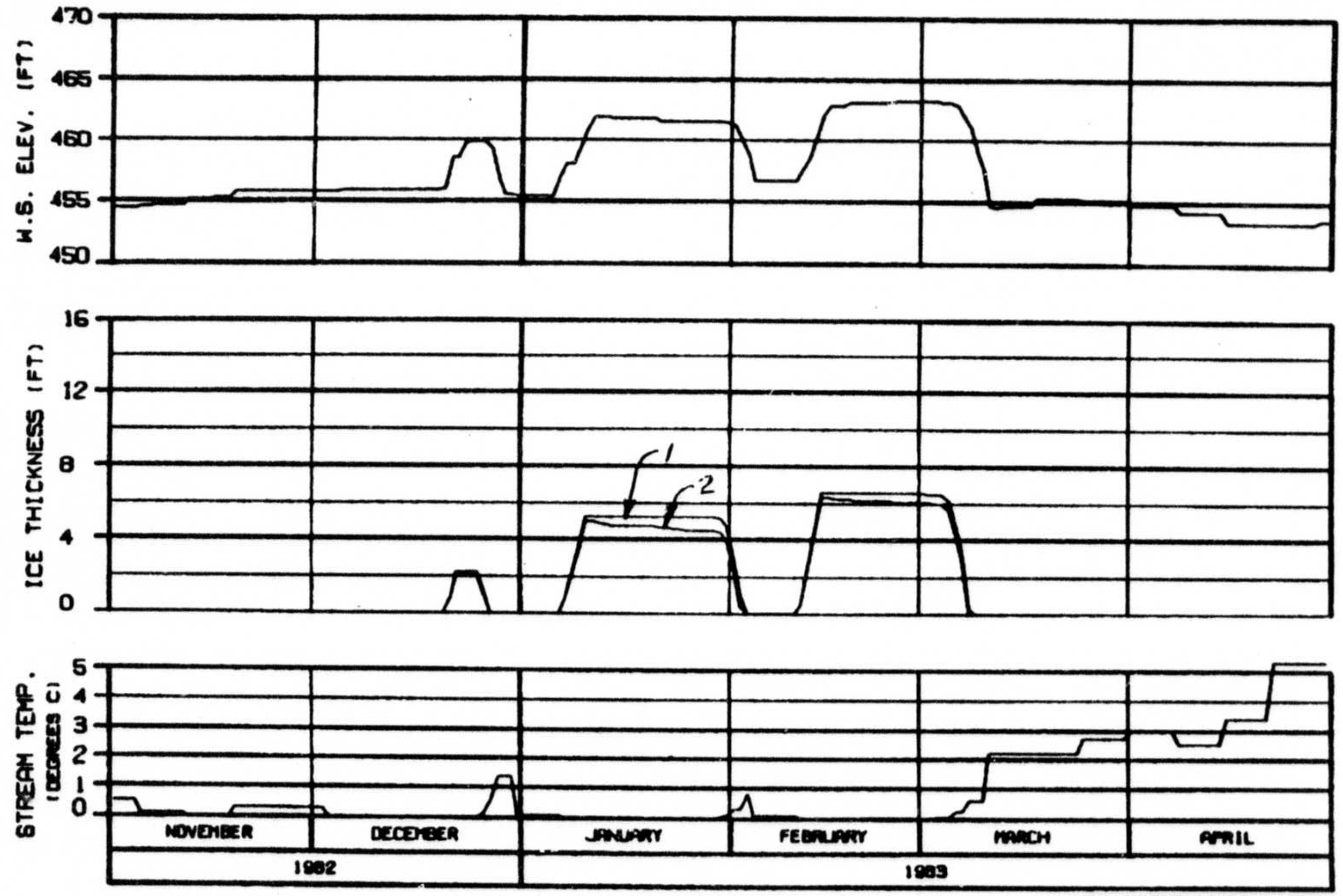
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

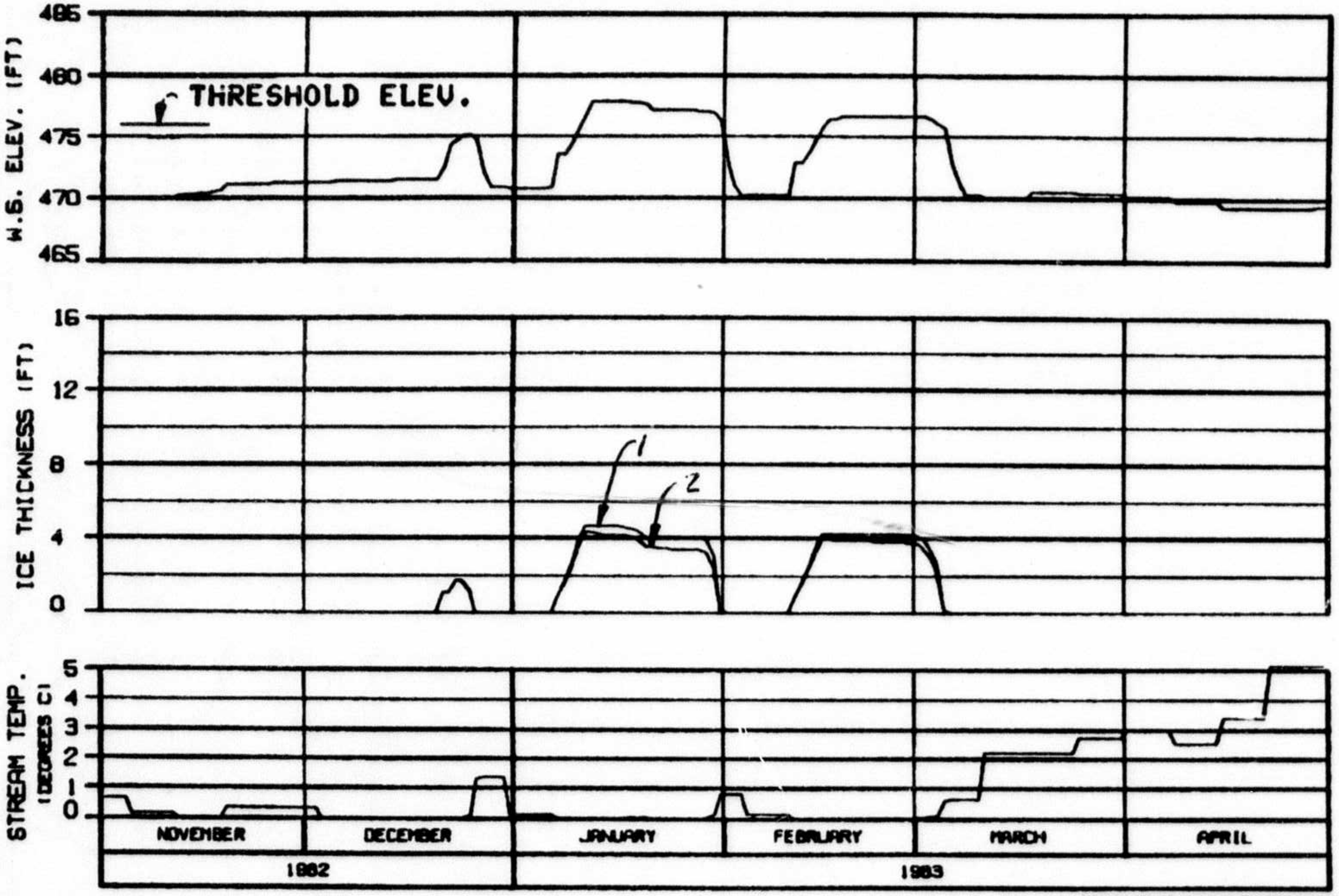
RIVER MILE : 112.34

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C   TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:

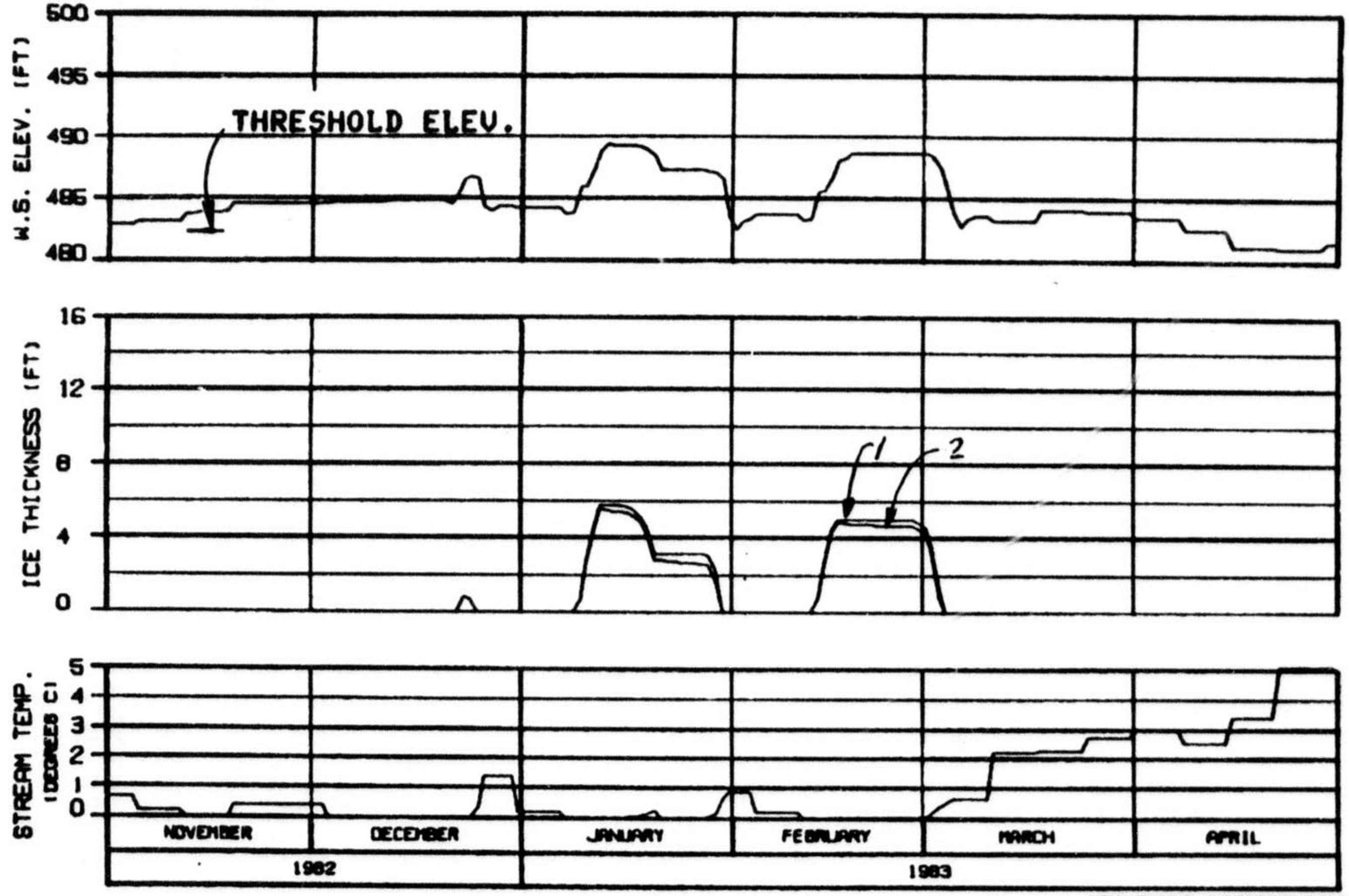
1. TOTAL THICKNESS
2. SLUSH COMPONENT

HEAD OF SLOUGH 8

RIVER MILE : 114.10

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
CHICAGO, ILLINOIS	[illegible] JAN 84	[illegible].142



SIDE CHANNEL MSII

RIVER MILE : 115.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

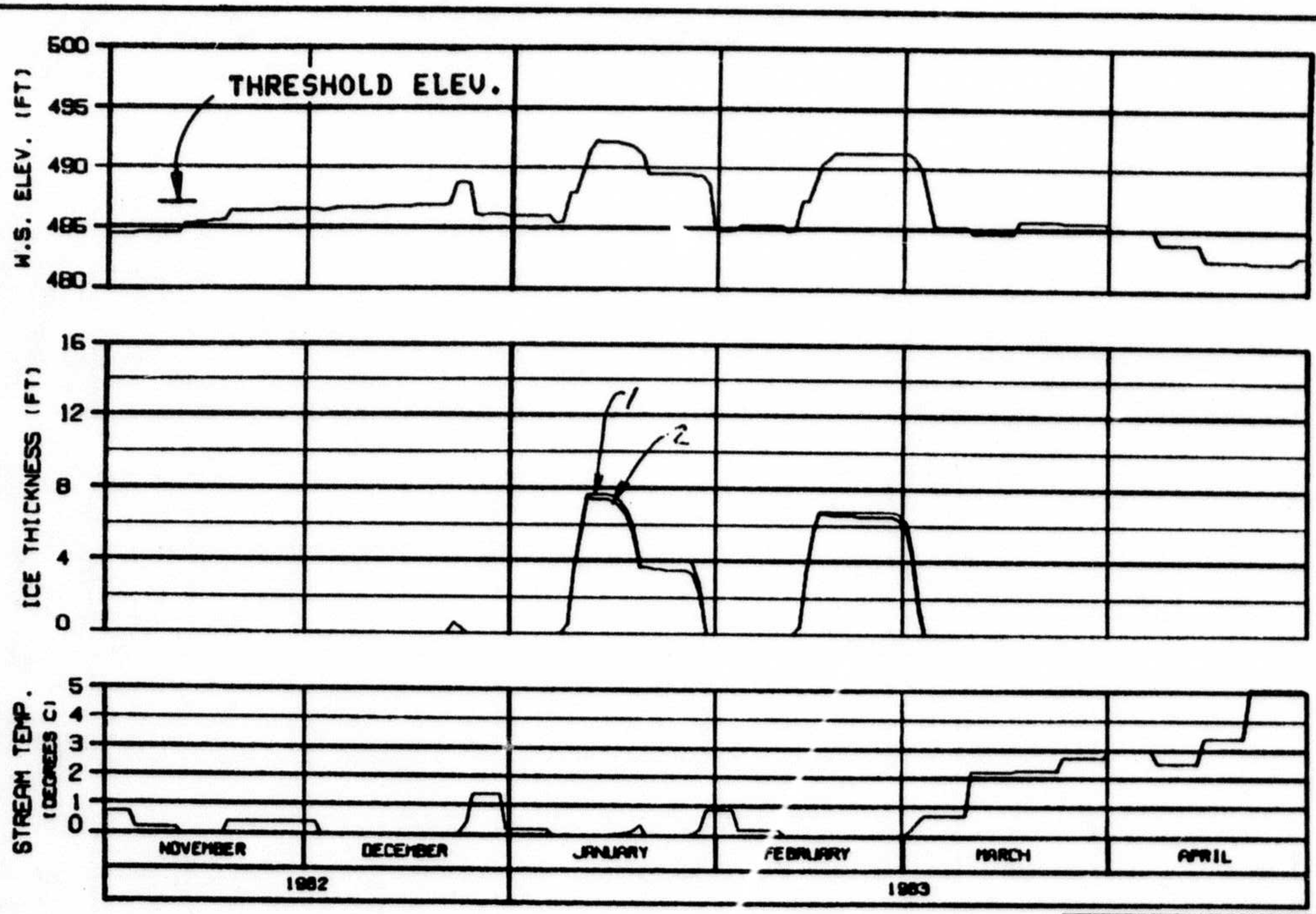
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

CHICAGO, ILLINOIS | [illegible] JAN 84 | [illegible].142



HEAD OF SIDE CHANNEL MSII

RIVER MILE : 115.90

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

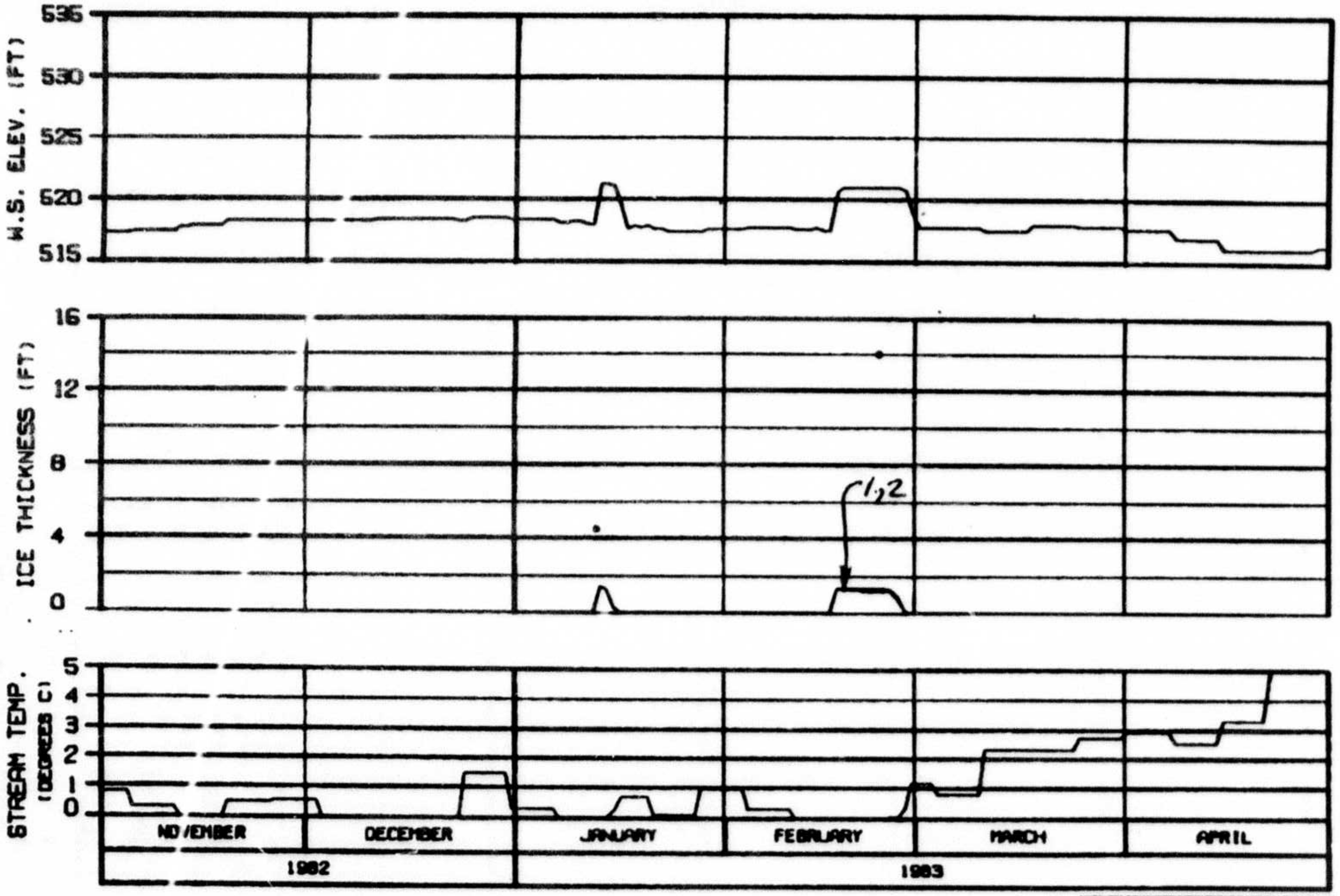
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

CHICAGO, ILLINOIS | 30 JAN 84 | 1989.142



RIVER MILE : 120.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

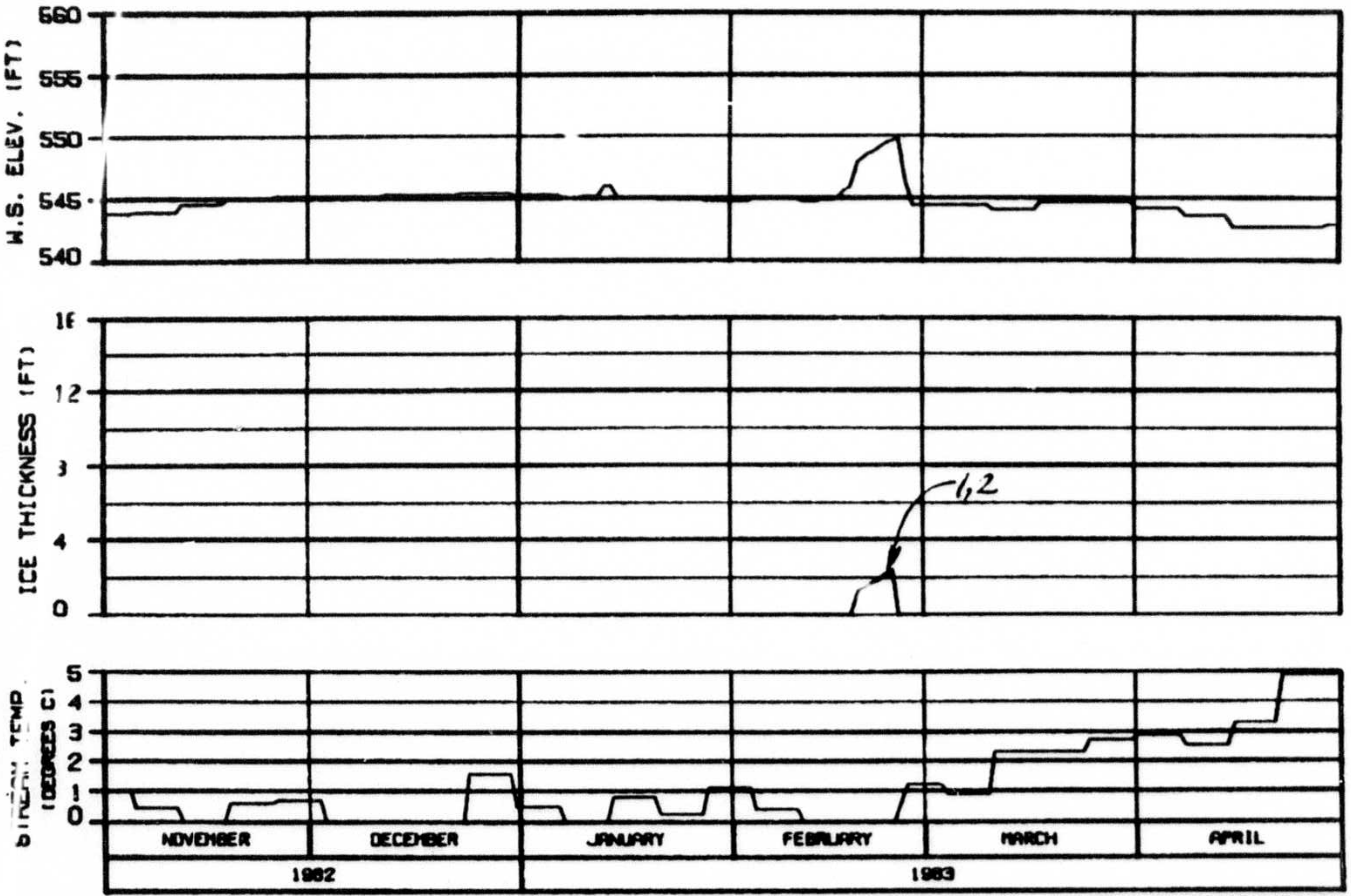
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF MOOSE SLOUGH

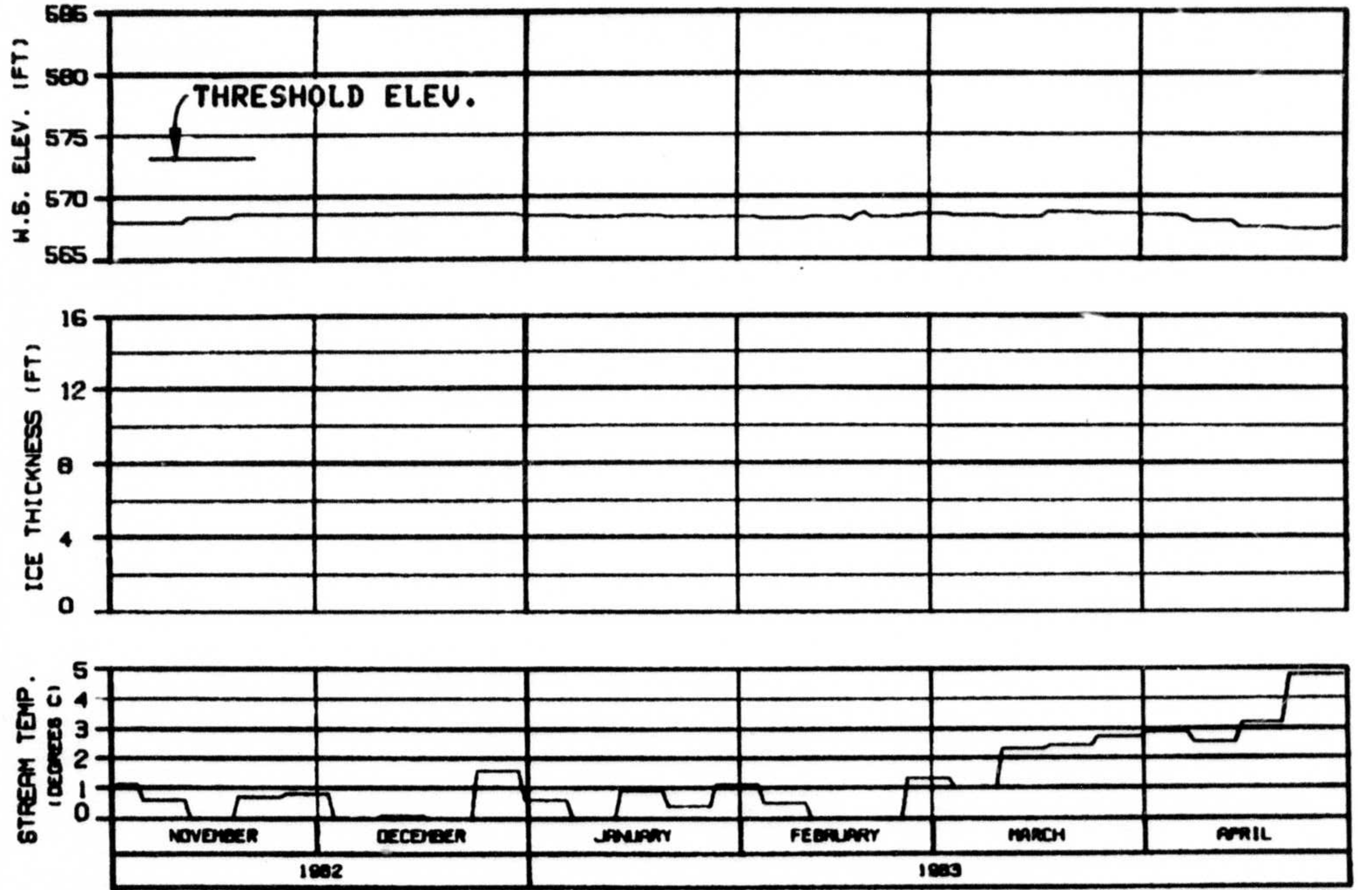
RIVER MILE : 123.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (WEST)

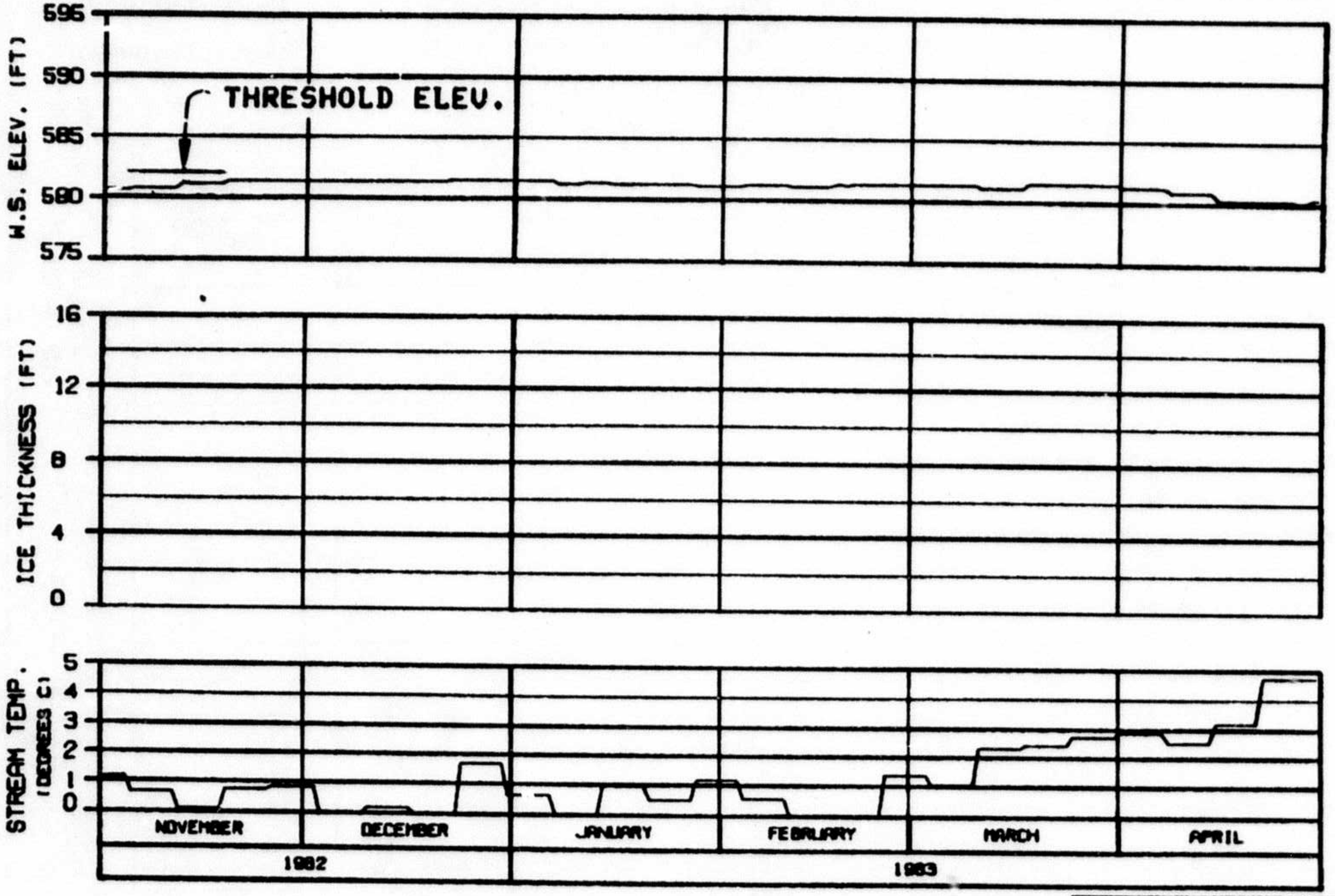
RIVER MILE : 126.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

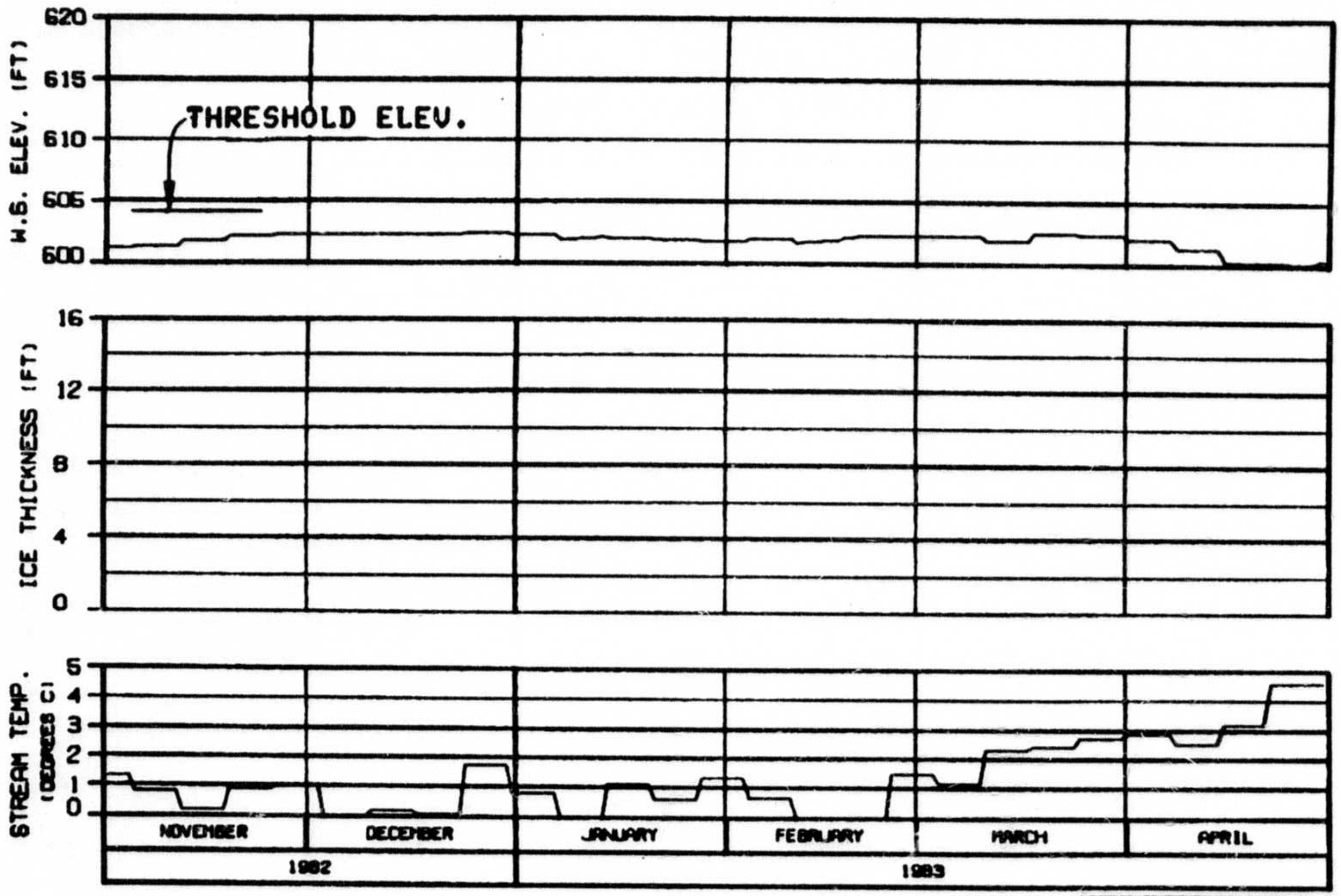
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9

RIVER MILE : 129.30

ICE THICKNESS LEGEND:

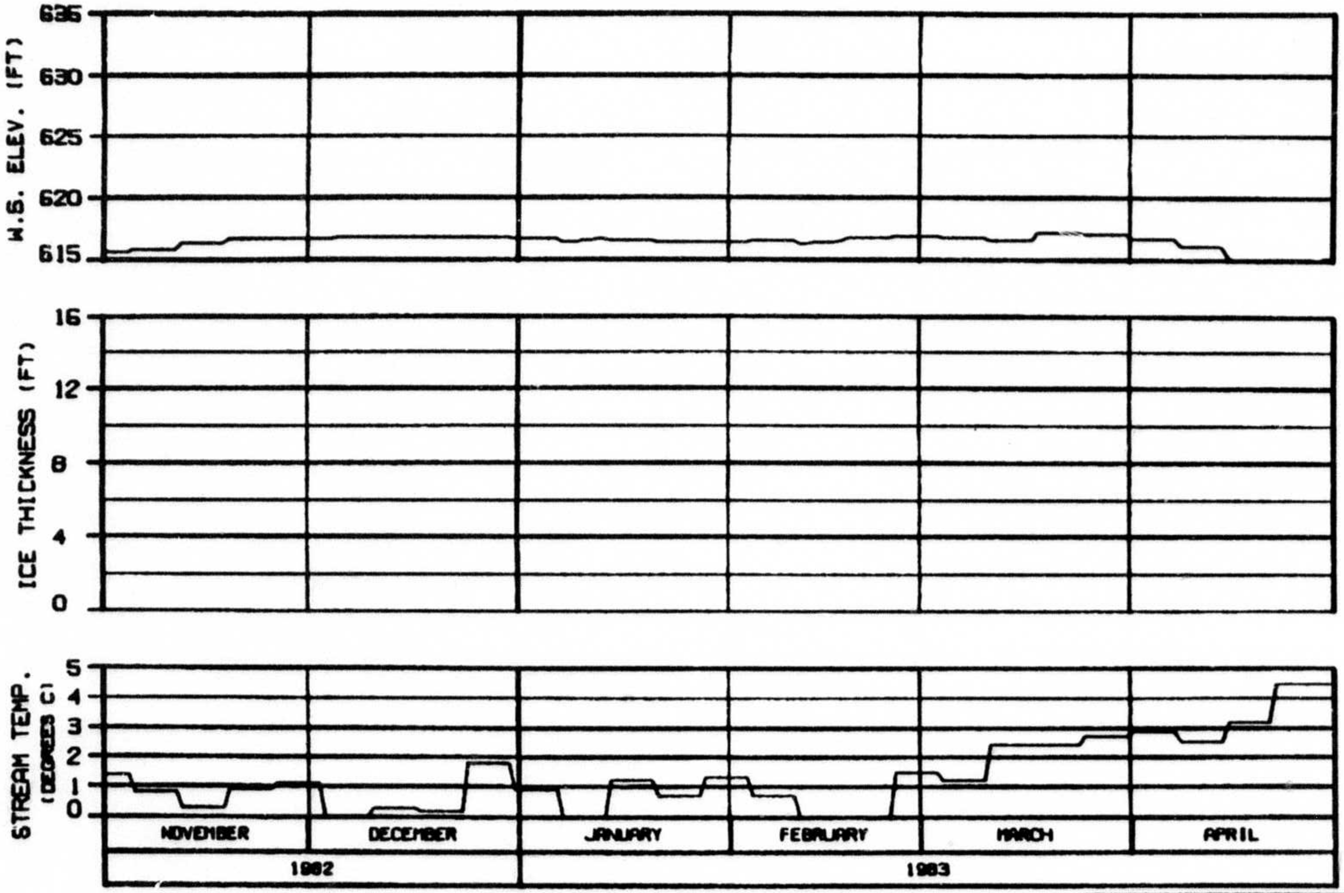
1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 82O1CNA

OPTION?

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

RIVER MILE : 130.60

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

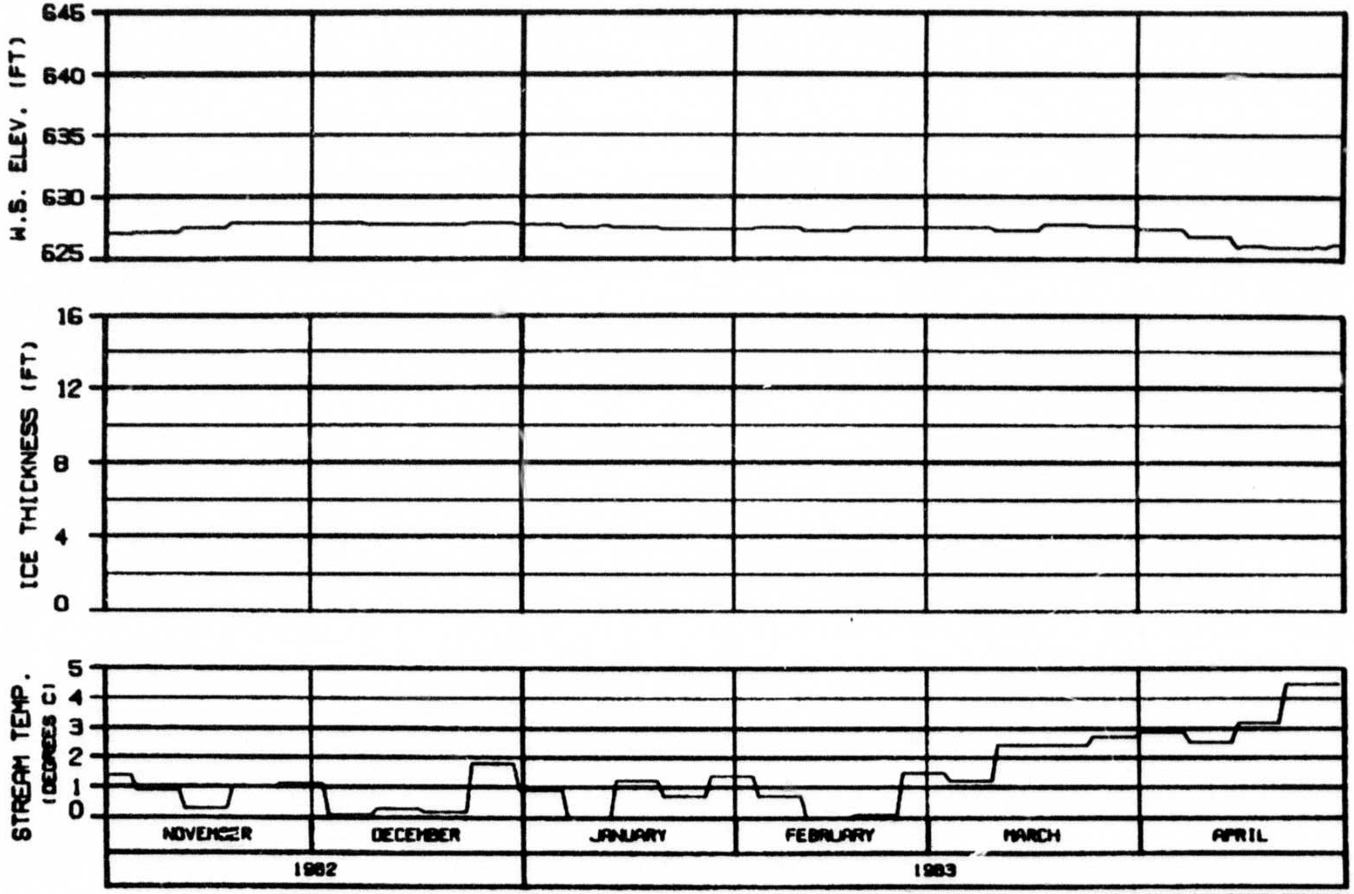
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

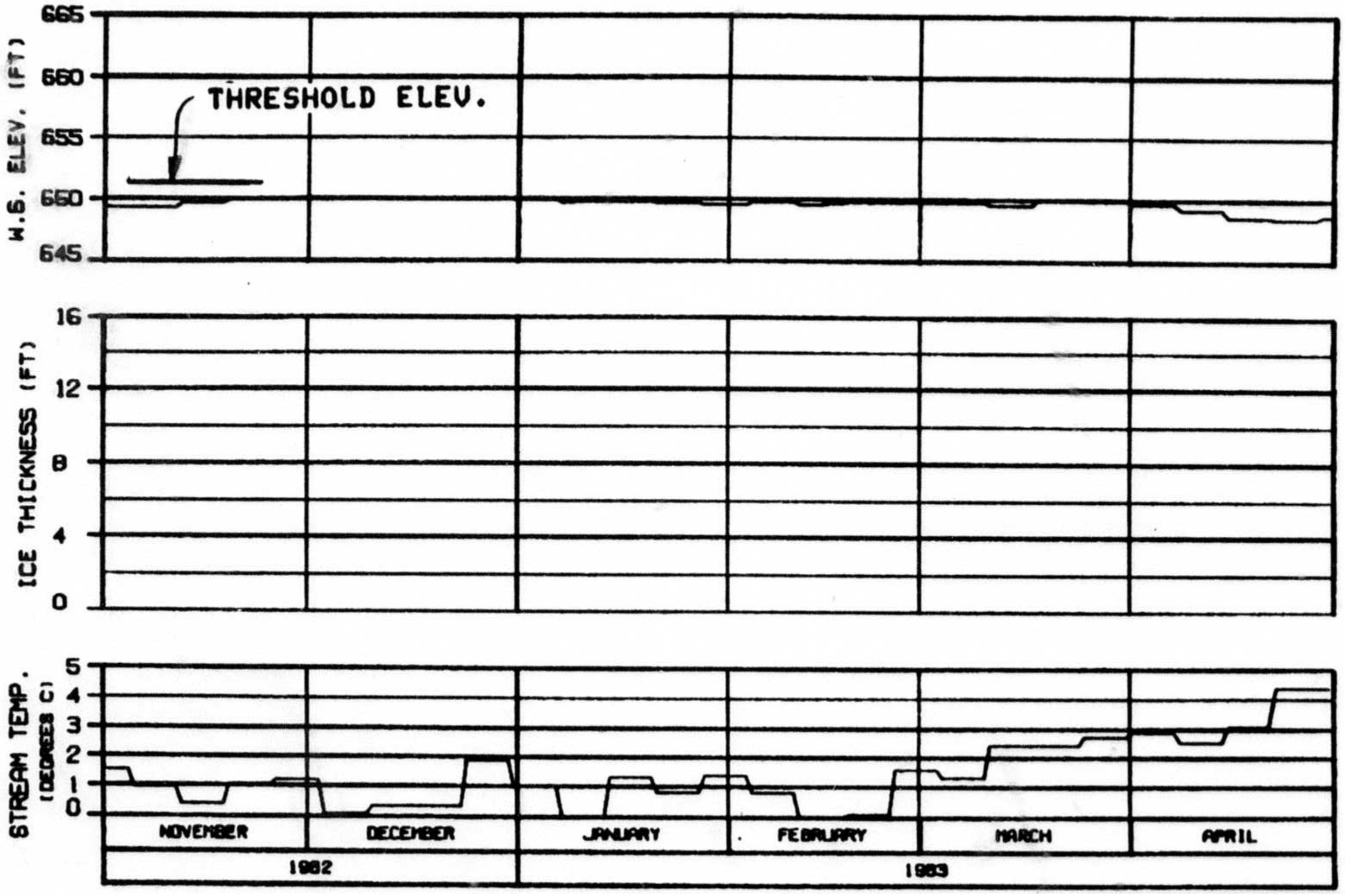
RIVER MILE : 131.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
1888.142



HEAD OF SLOUGH 9A

RIVER MILE : 133.70

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

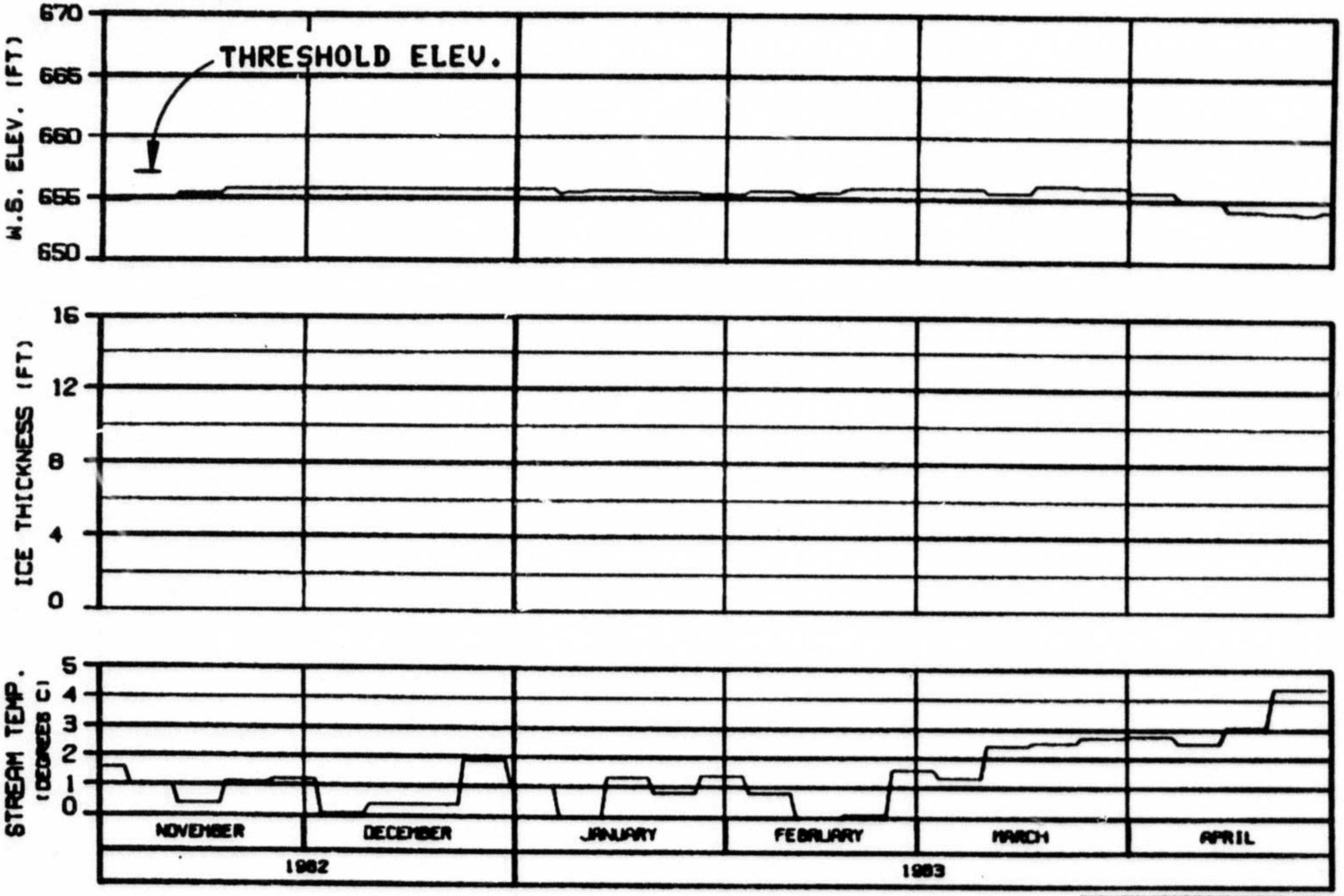
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

RIVER MILE : 134.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

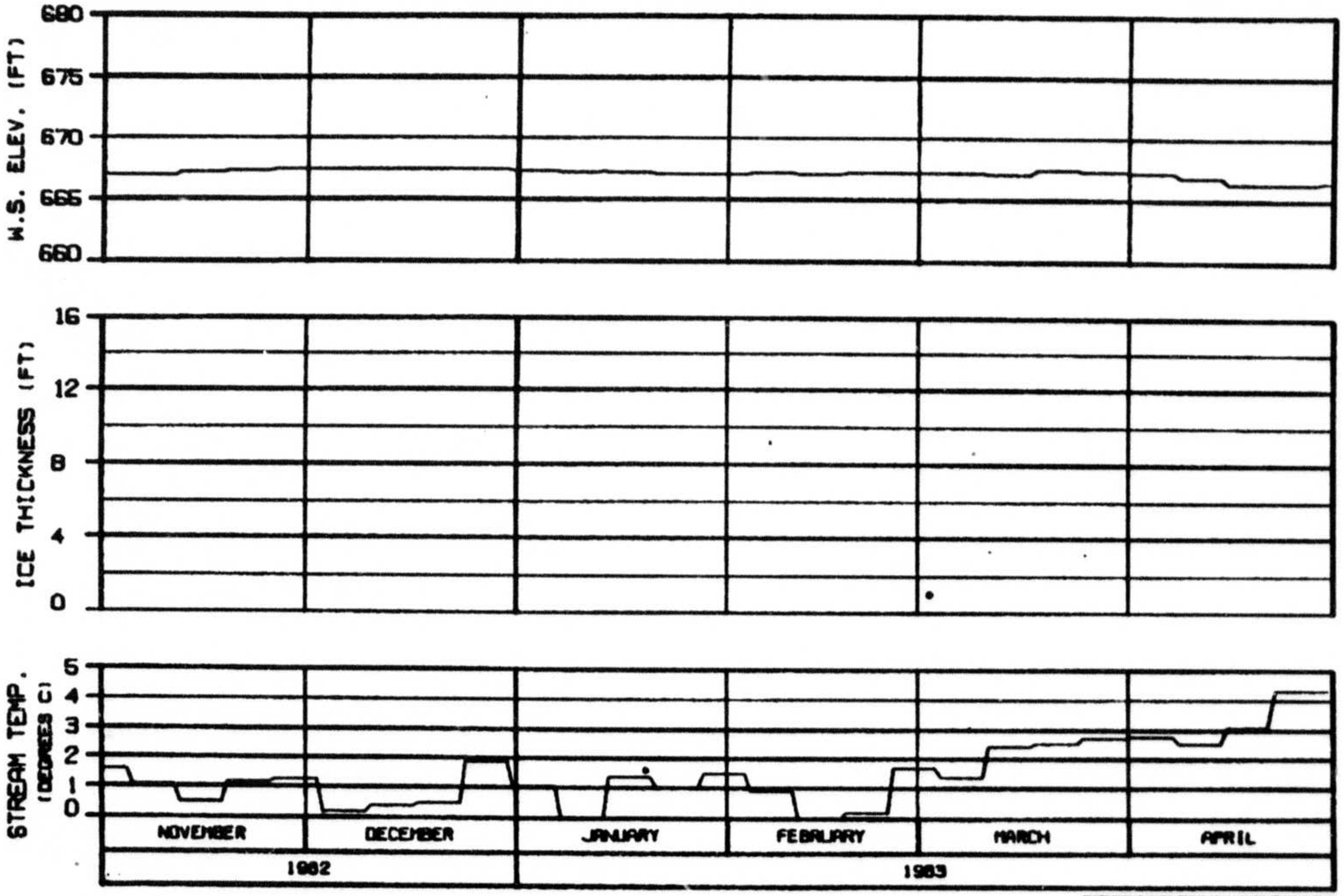
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11
RIVER MILE : 135.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : BZ01CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
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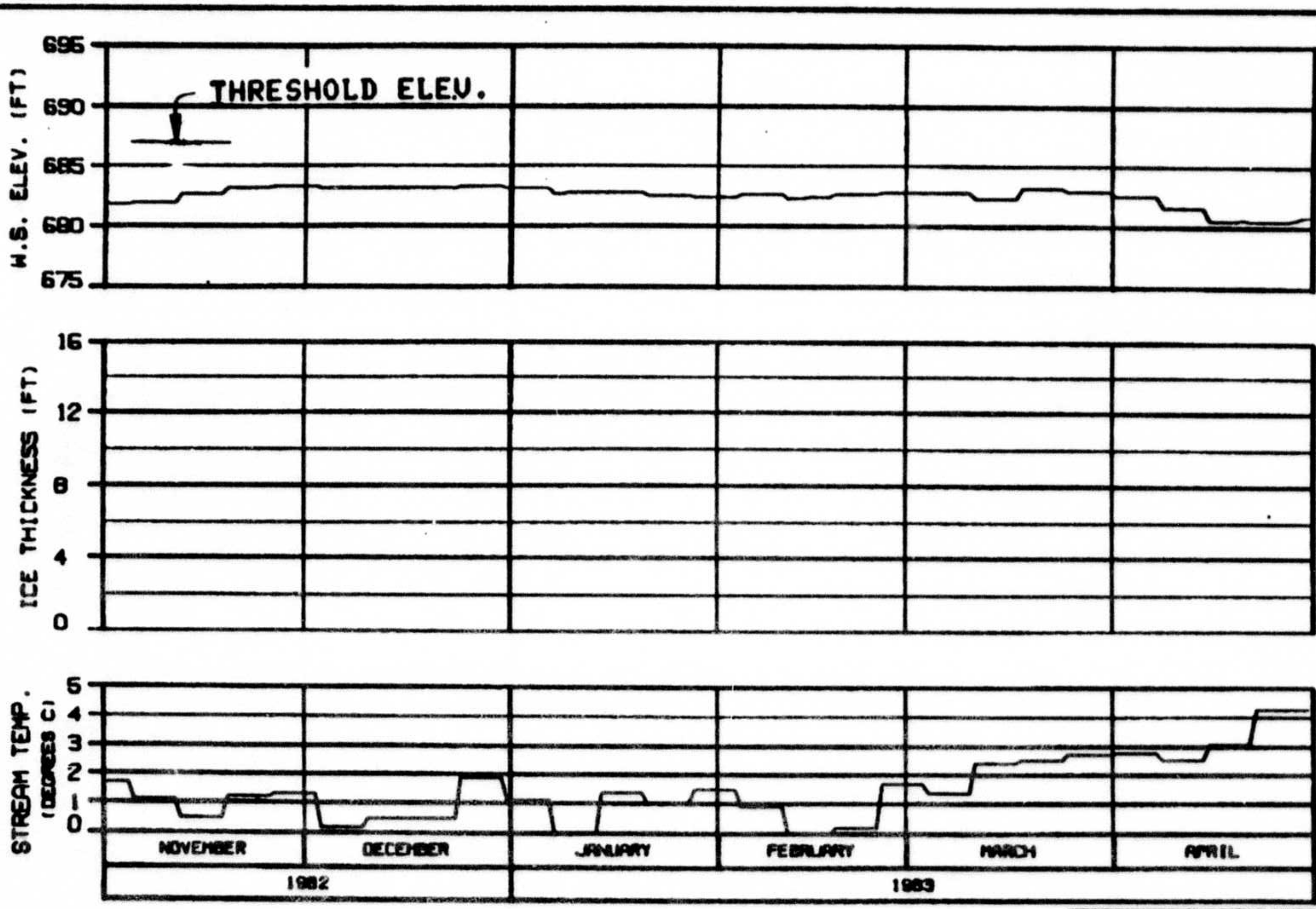


ICE THICKNESS LEGEND:

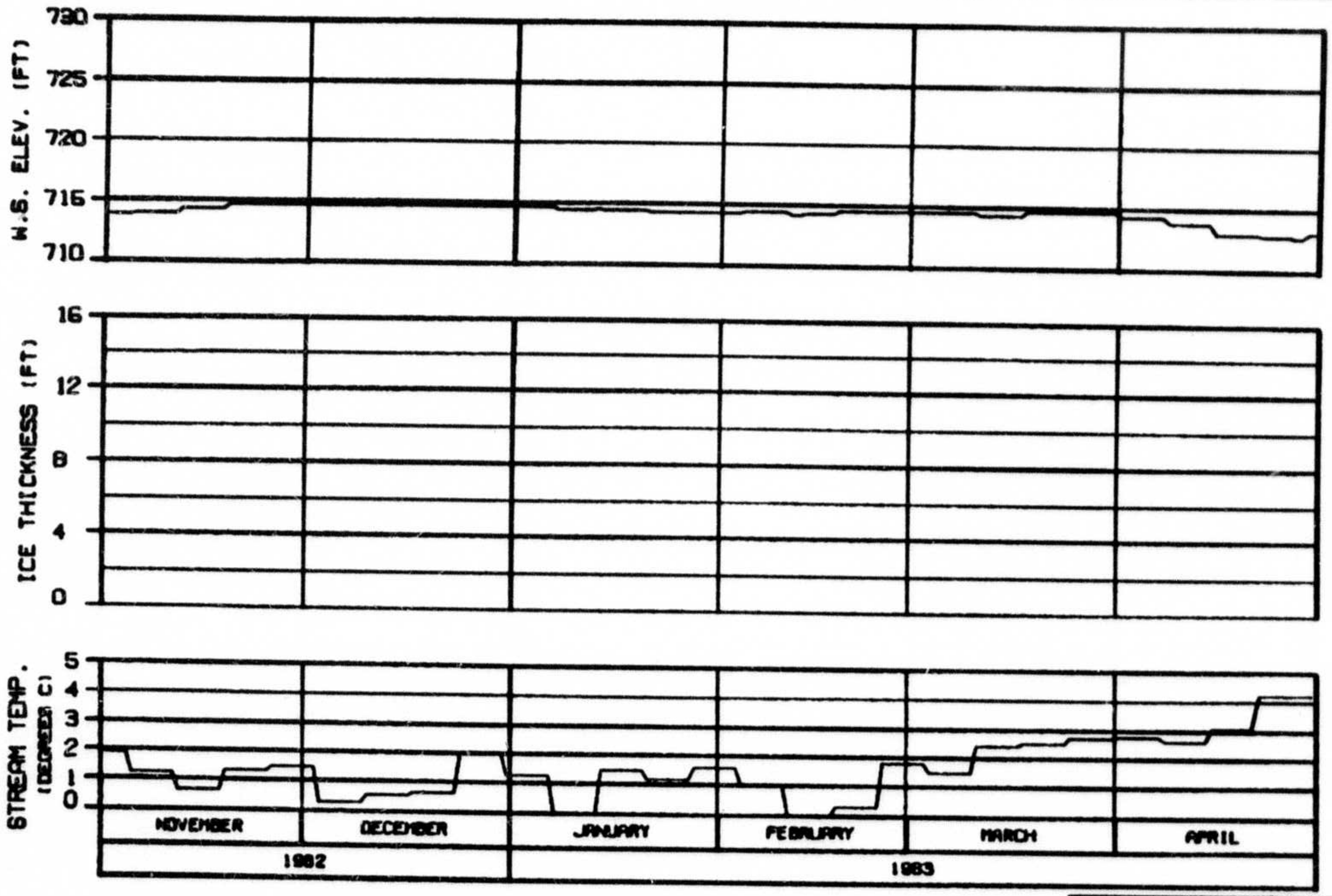
1. TOTAL THICKNESS
2. SLUSH COMPONENT

HEAD OF SLOUGH 11

RIVER MILE : 136.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 17

RIVER MILE : 139.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

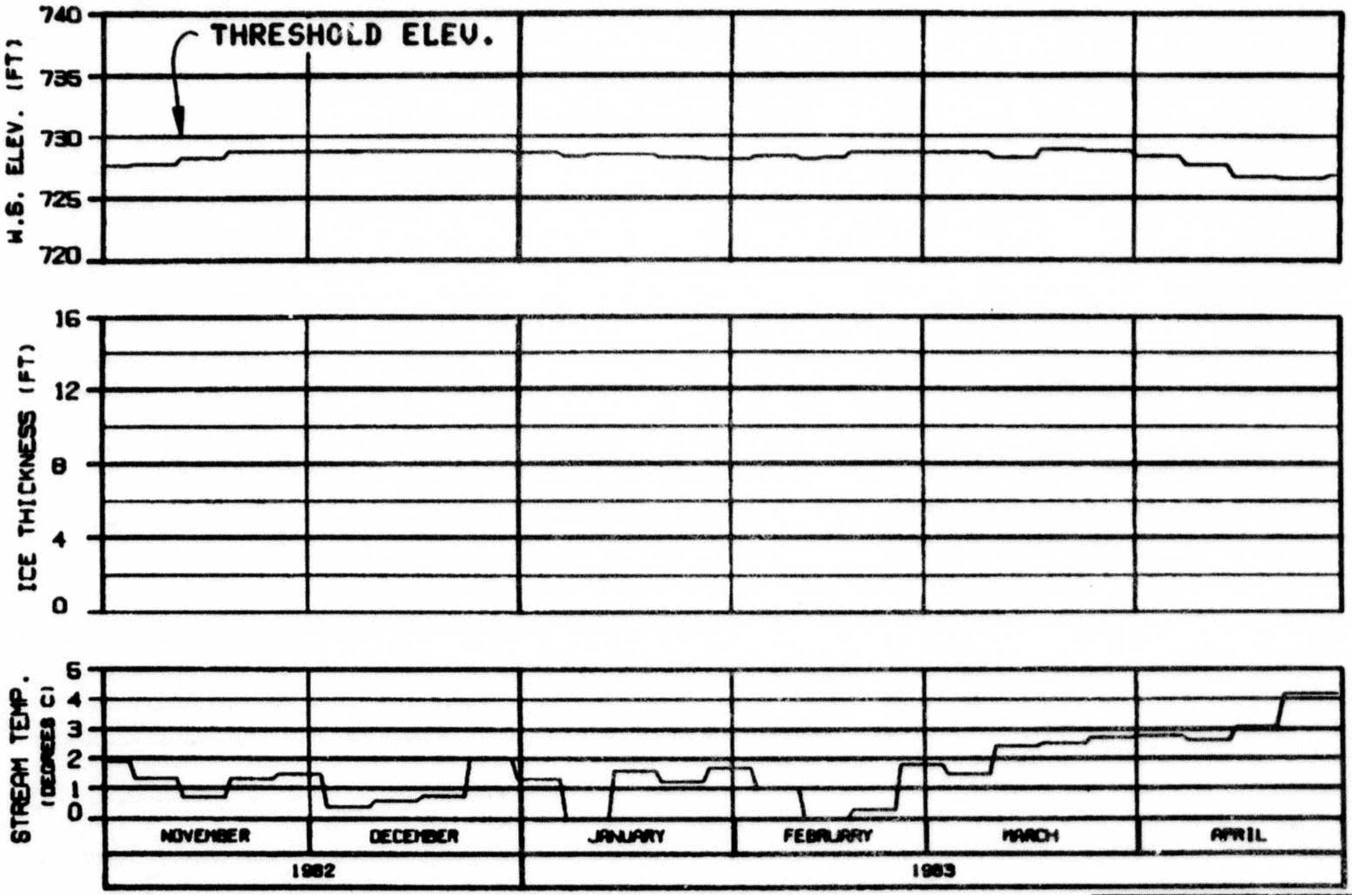
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 20

RIVER MILE : 140.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

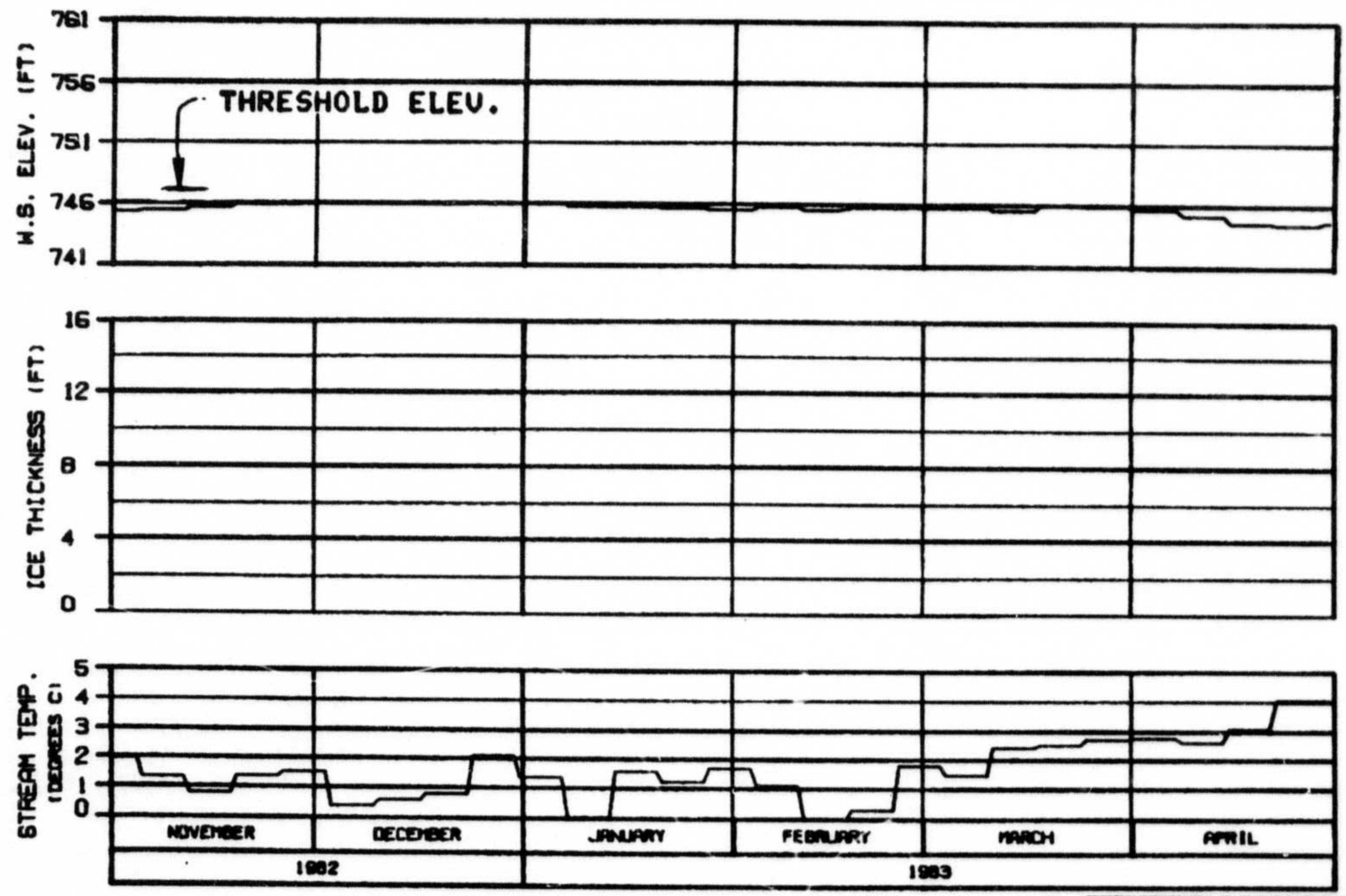
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SLOUGH 21 (ENTRANCE A6)

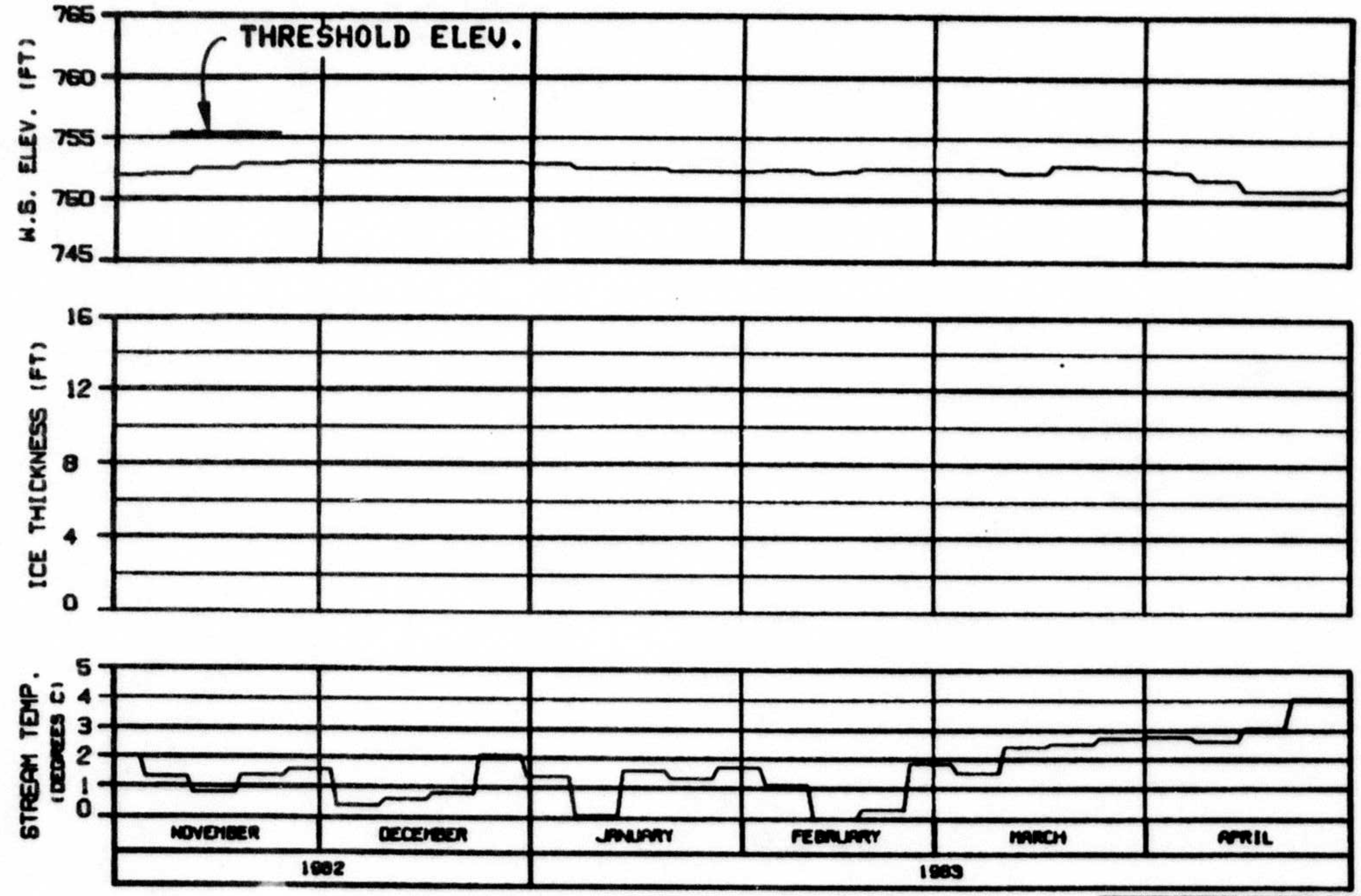
RIVER MILE : 141.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 21

RIVER MILE : 142.20

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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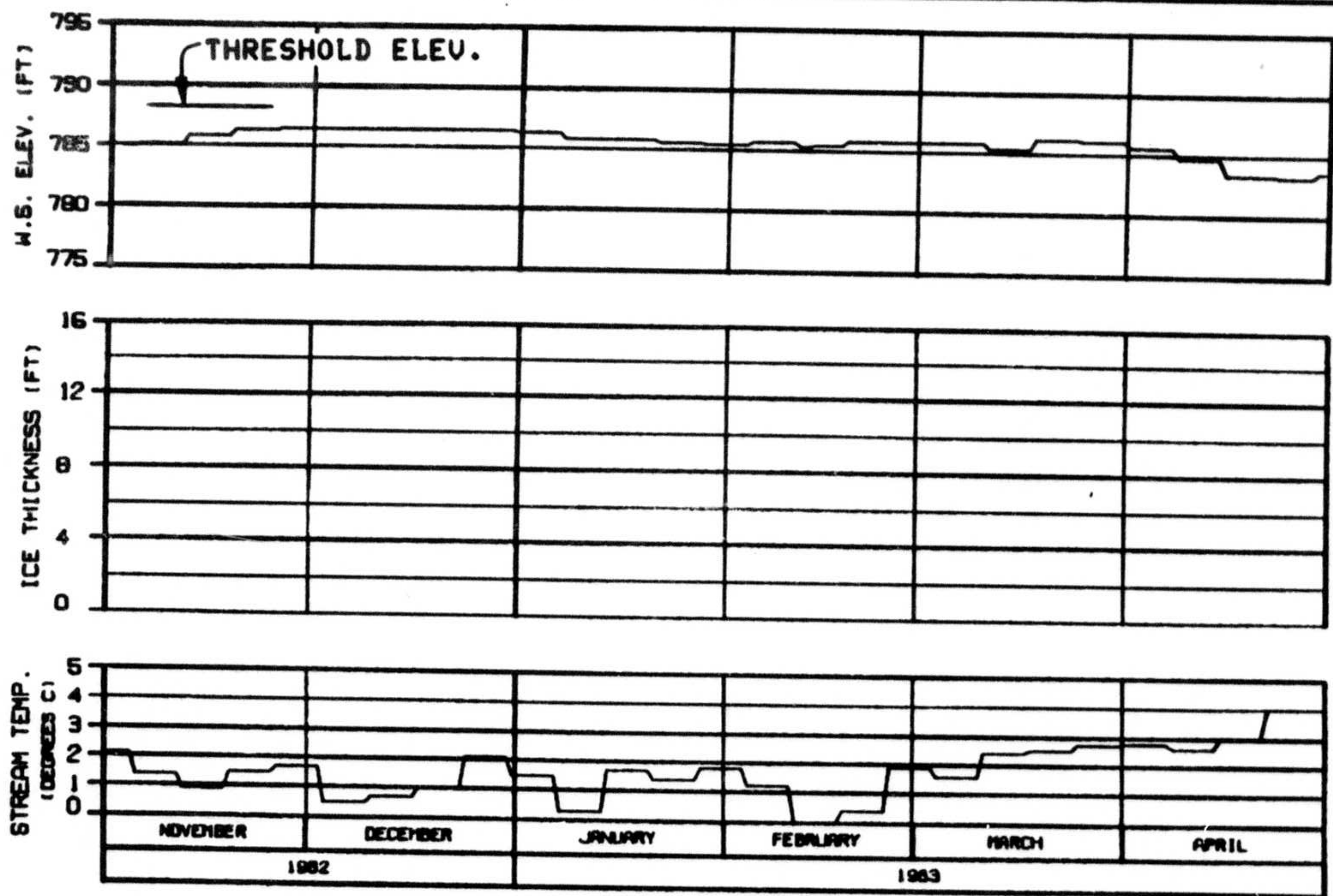


HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 2001
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8201CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

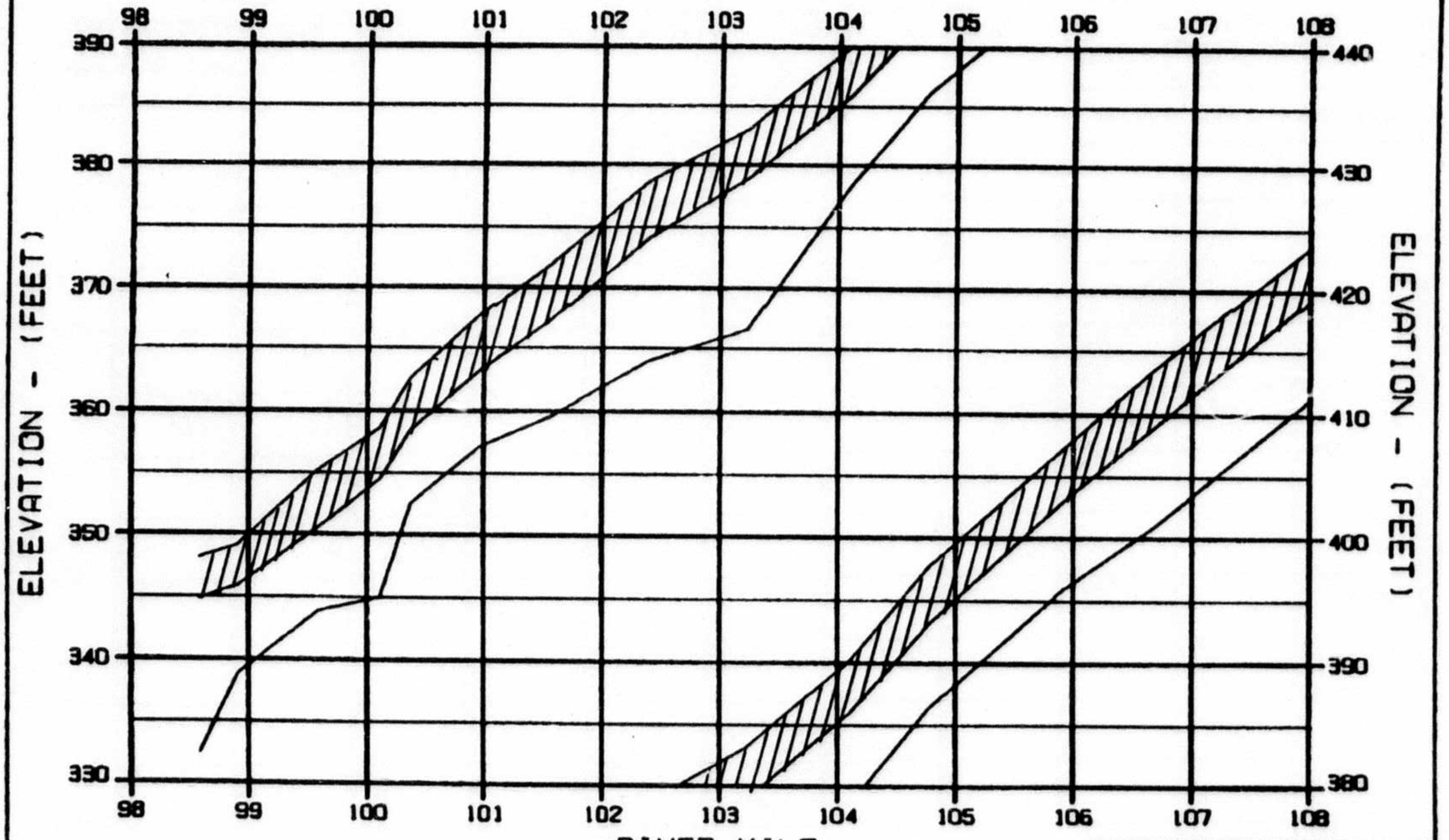
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?

EXHIBIT L

C



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

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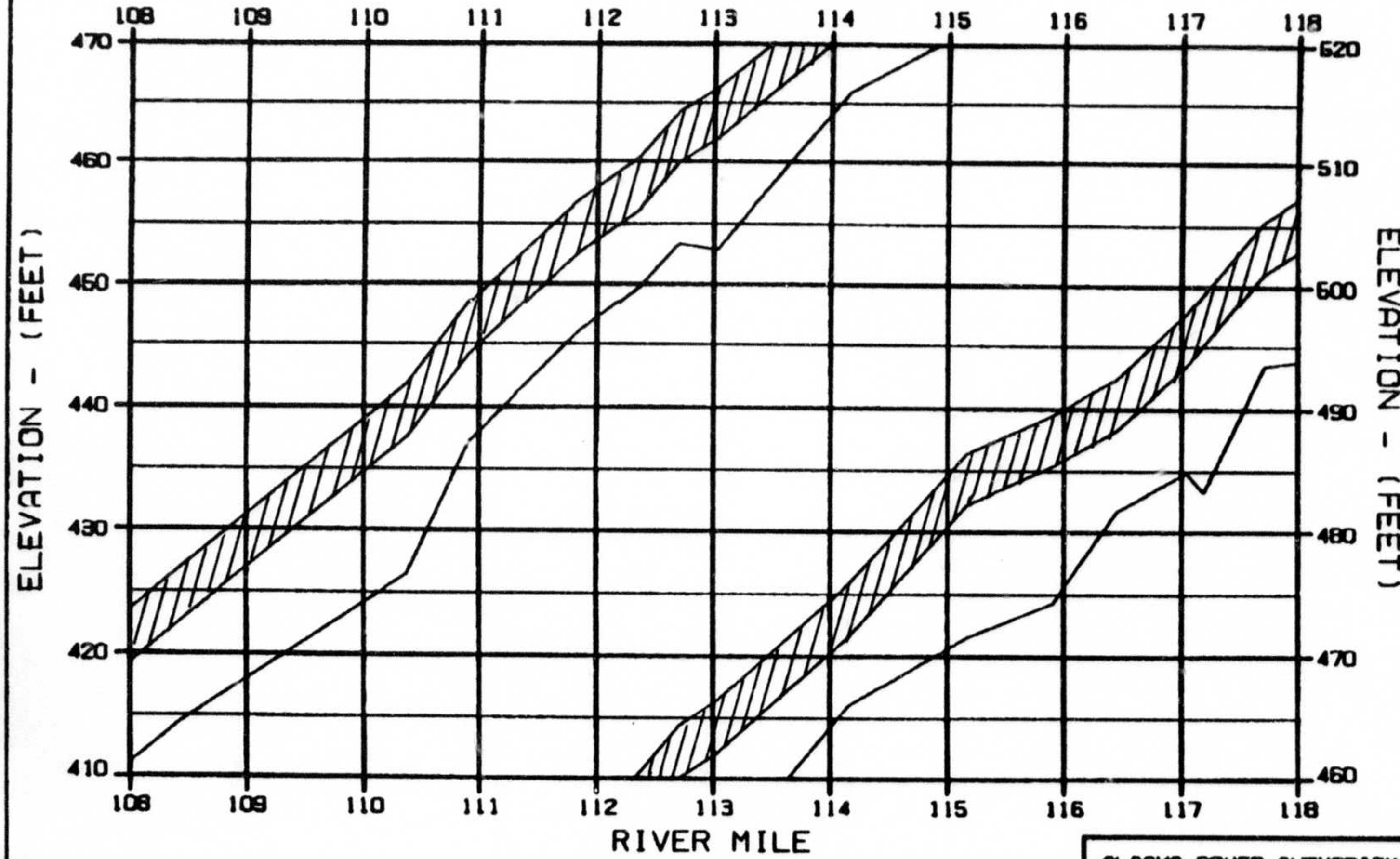

LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES	
HARZA-EBASCO JOINT VENTURE	
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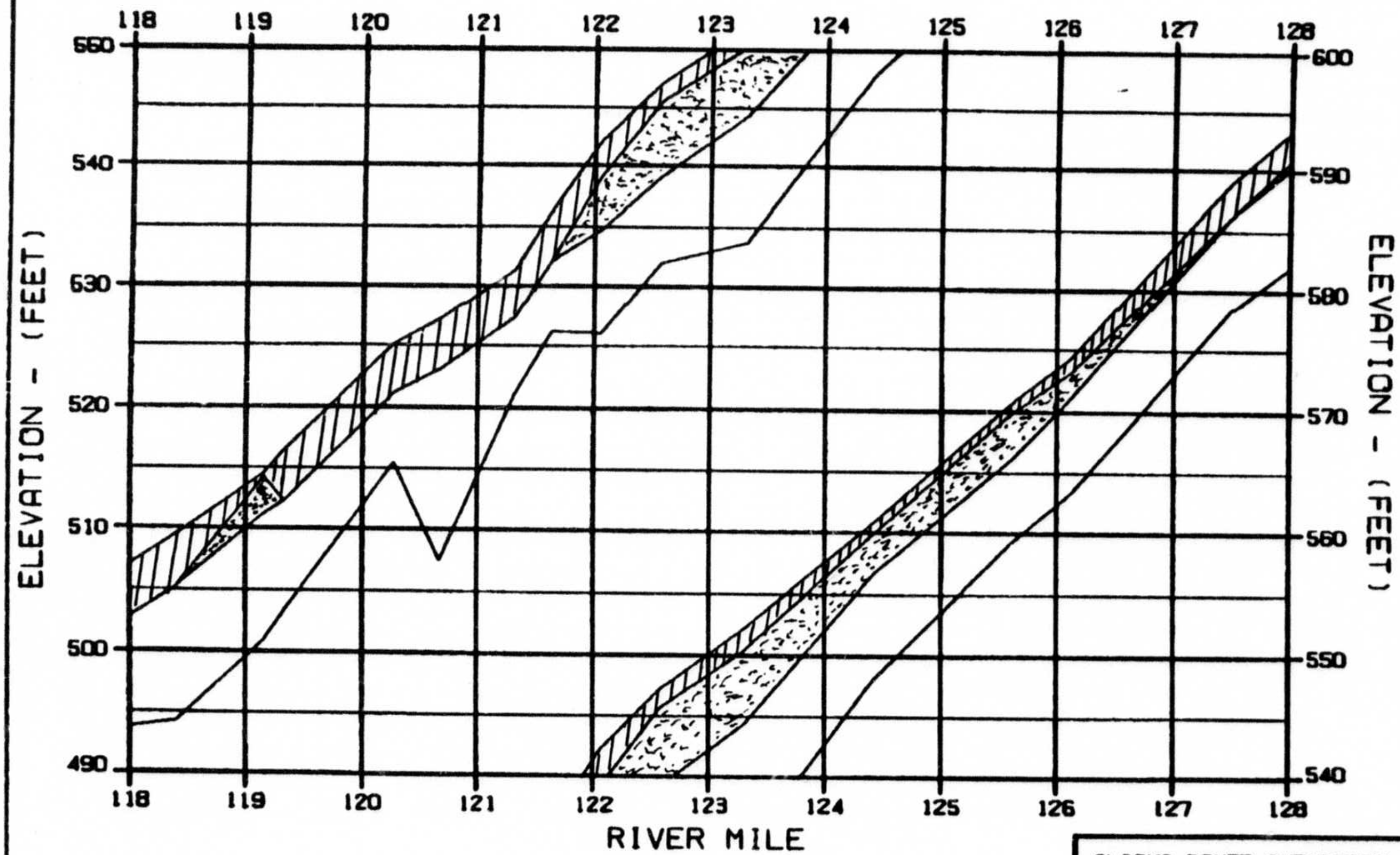
OPTION?

C



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

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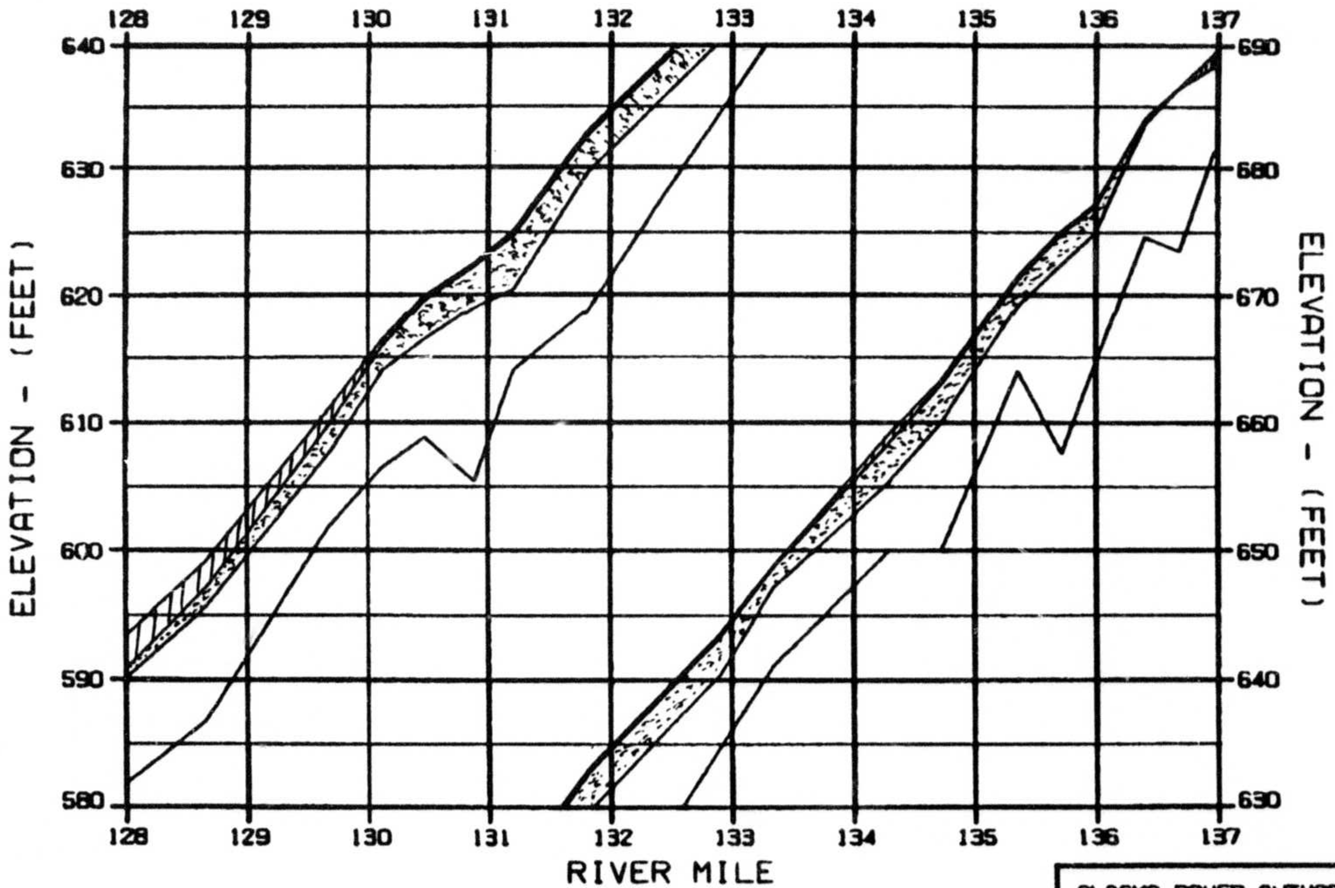

LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

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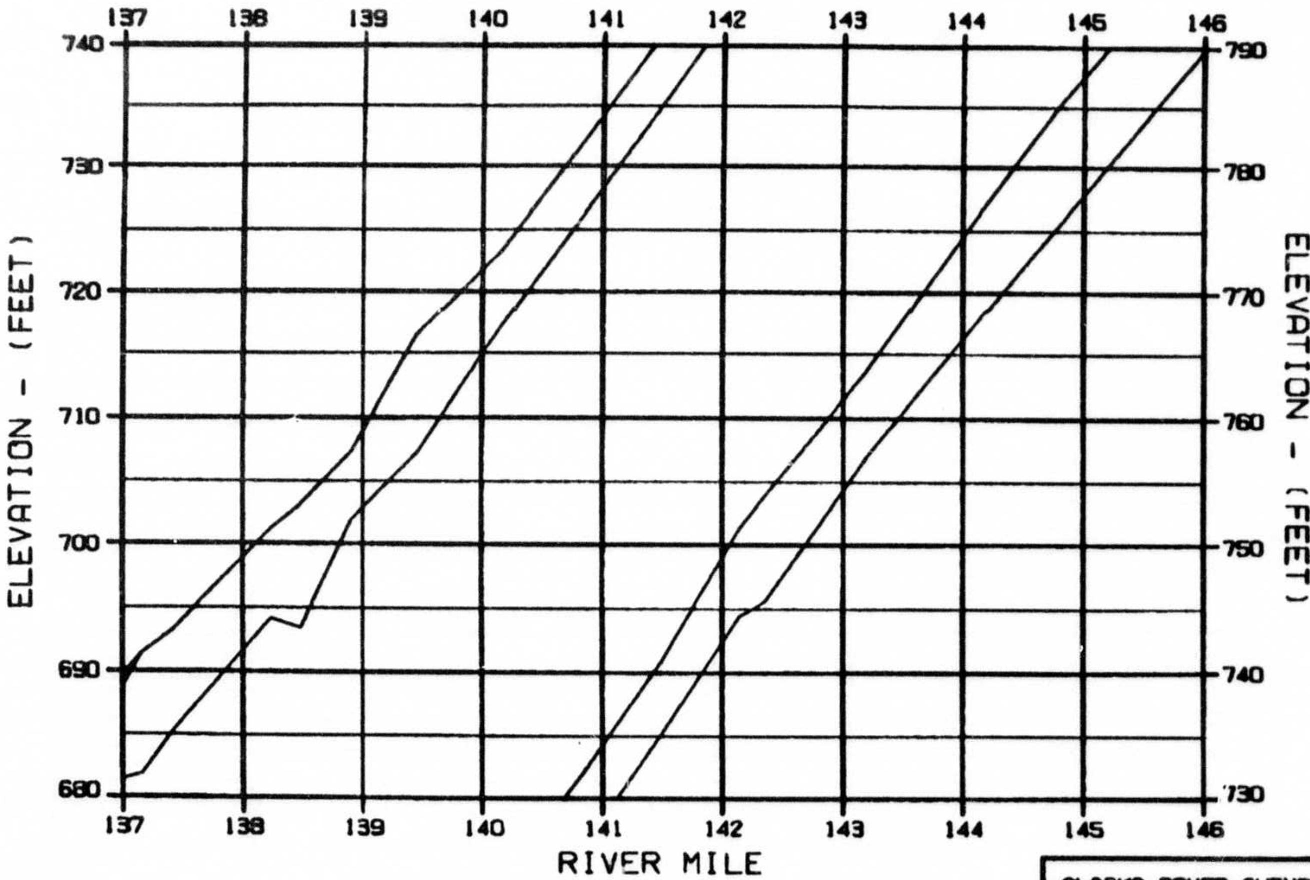

LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES	
HARZA-EBASCO JOINT VENTURE	
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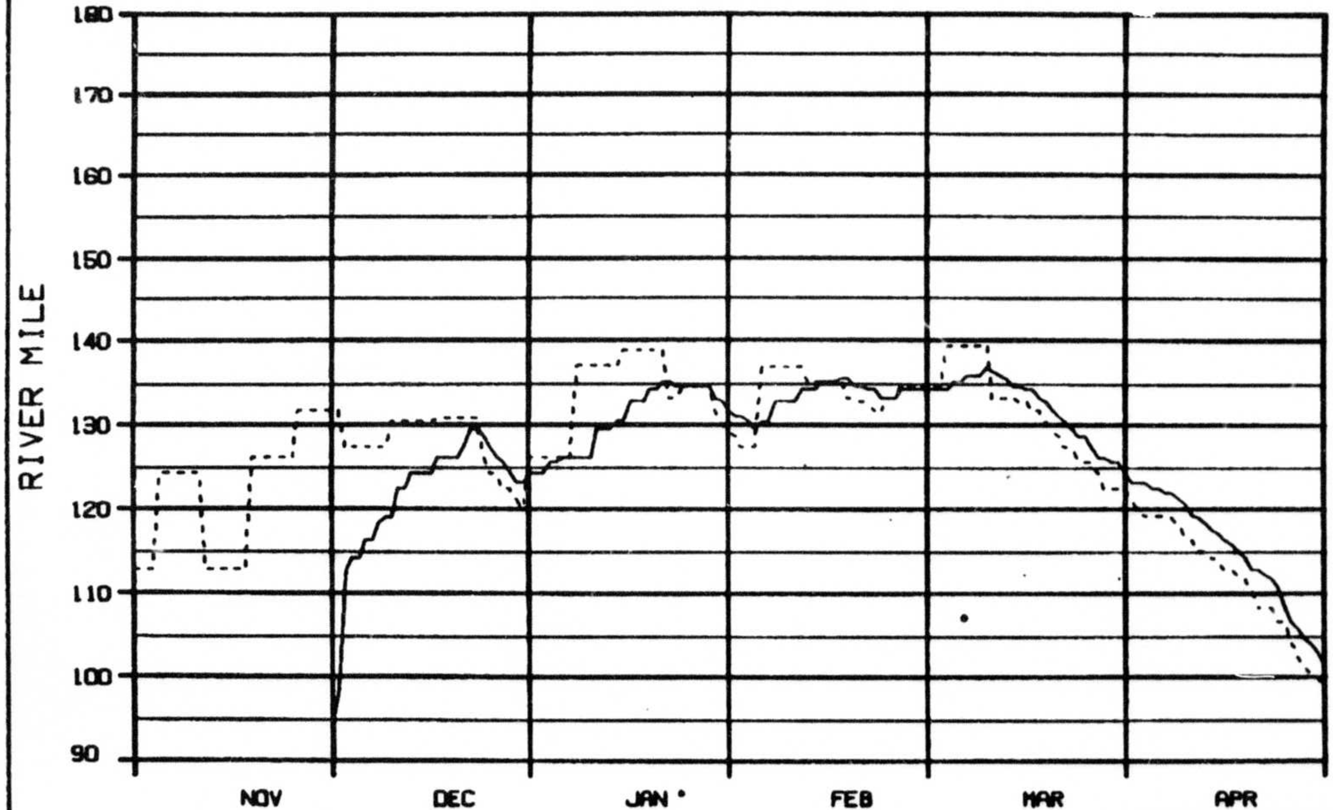
OPTION?



LEGEND:

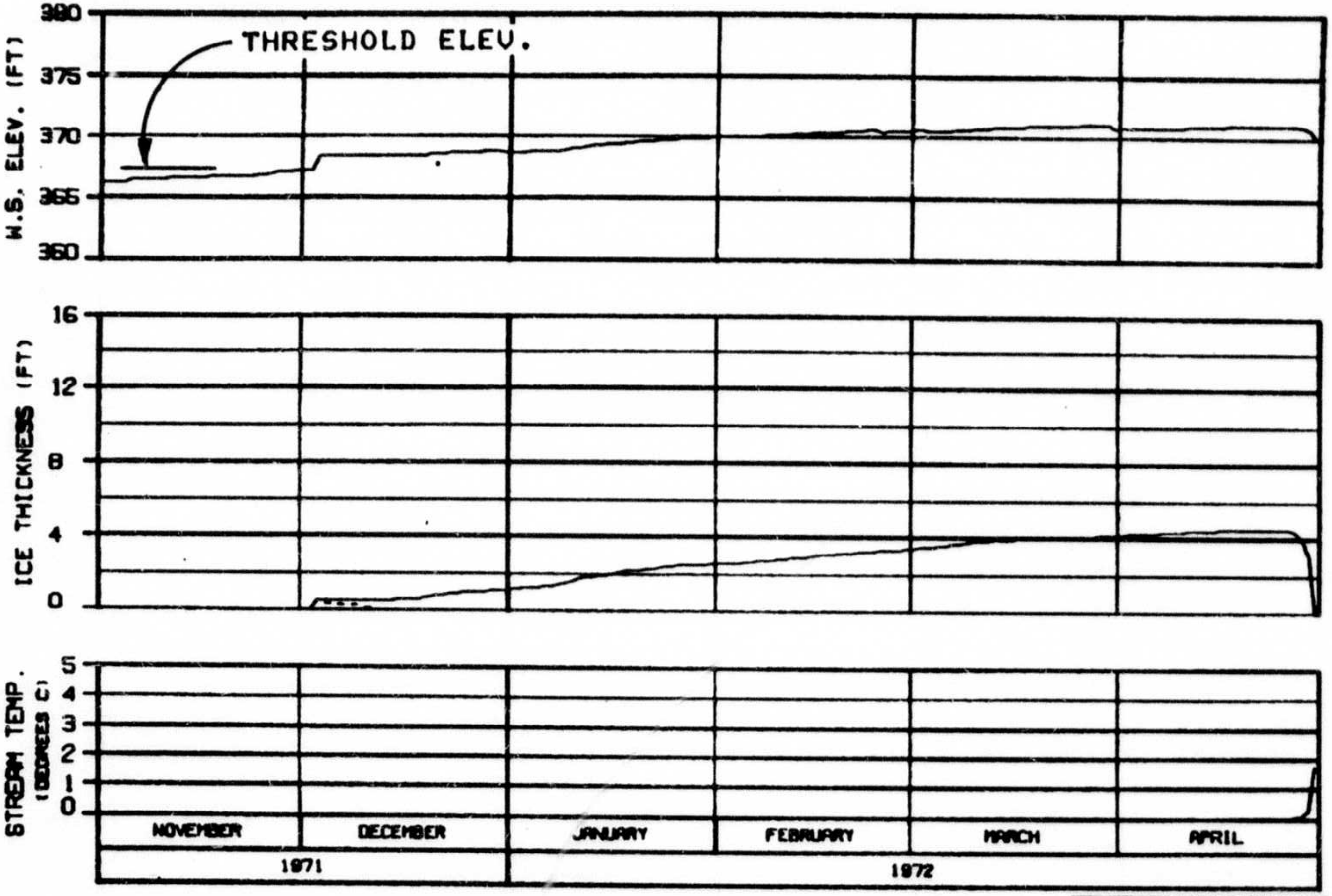
——————— ICE FRONT

- - - - - - - - - ZERO DEGREE ISOTHERM

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER PROGRESSION OF ICE FRONT & ZERO DEGREE ISOTHERM	
HARZA-EBASCO JOINT VENTURE	

OPTION?



HEAD OF WHISKERS SLOUGH

RIVER MILE : 101.50

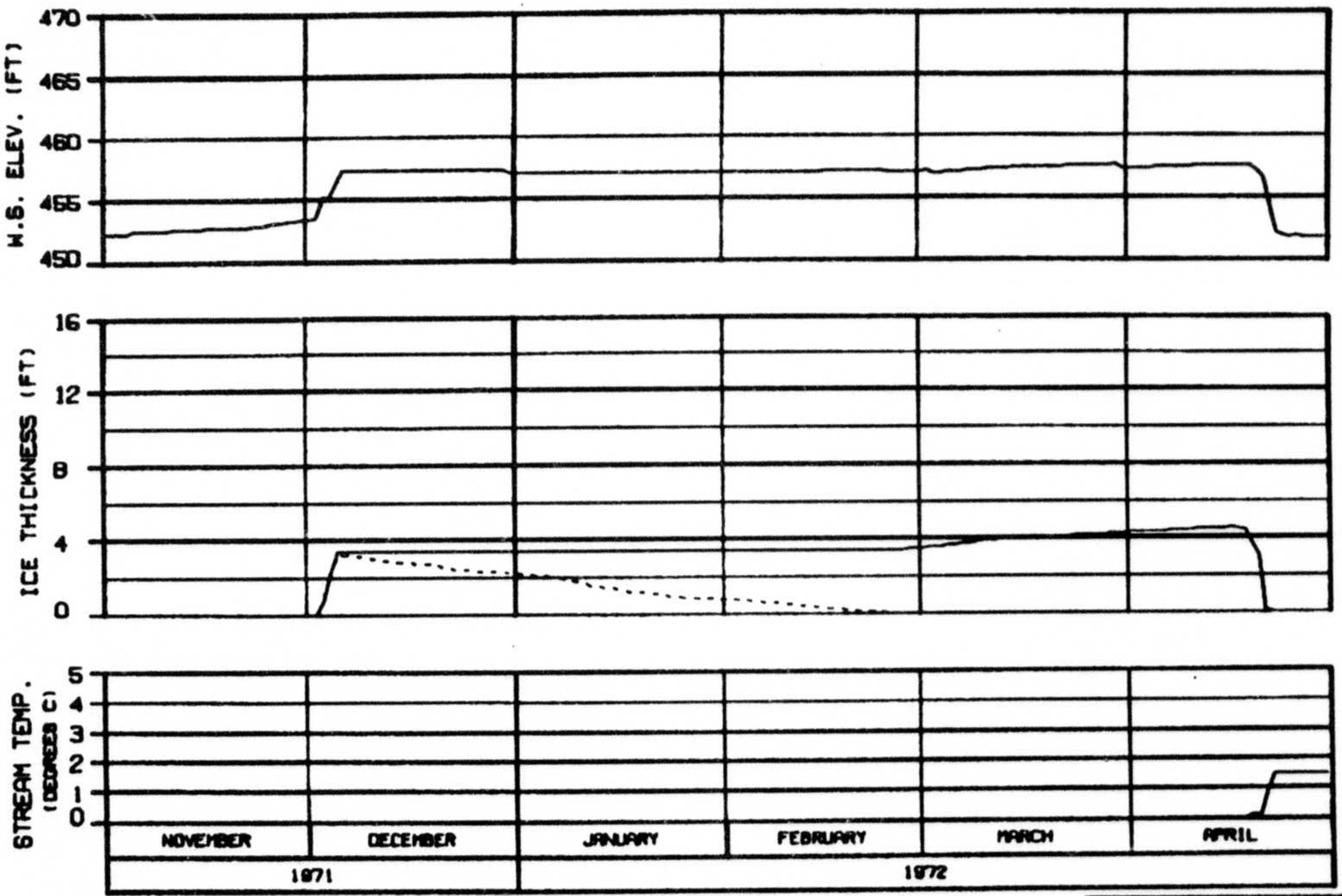
ICE THICKNESS LEGEND:

——— TOTAL THICKNESS

- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



ICE THICKNESS LEGEND:

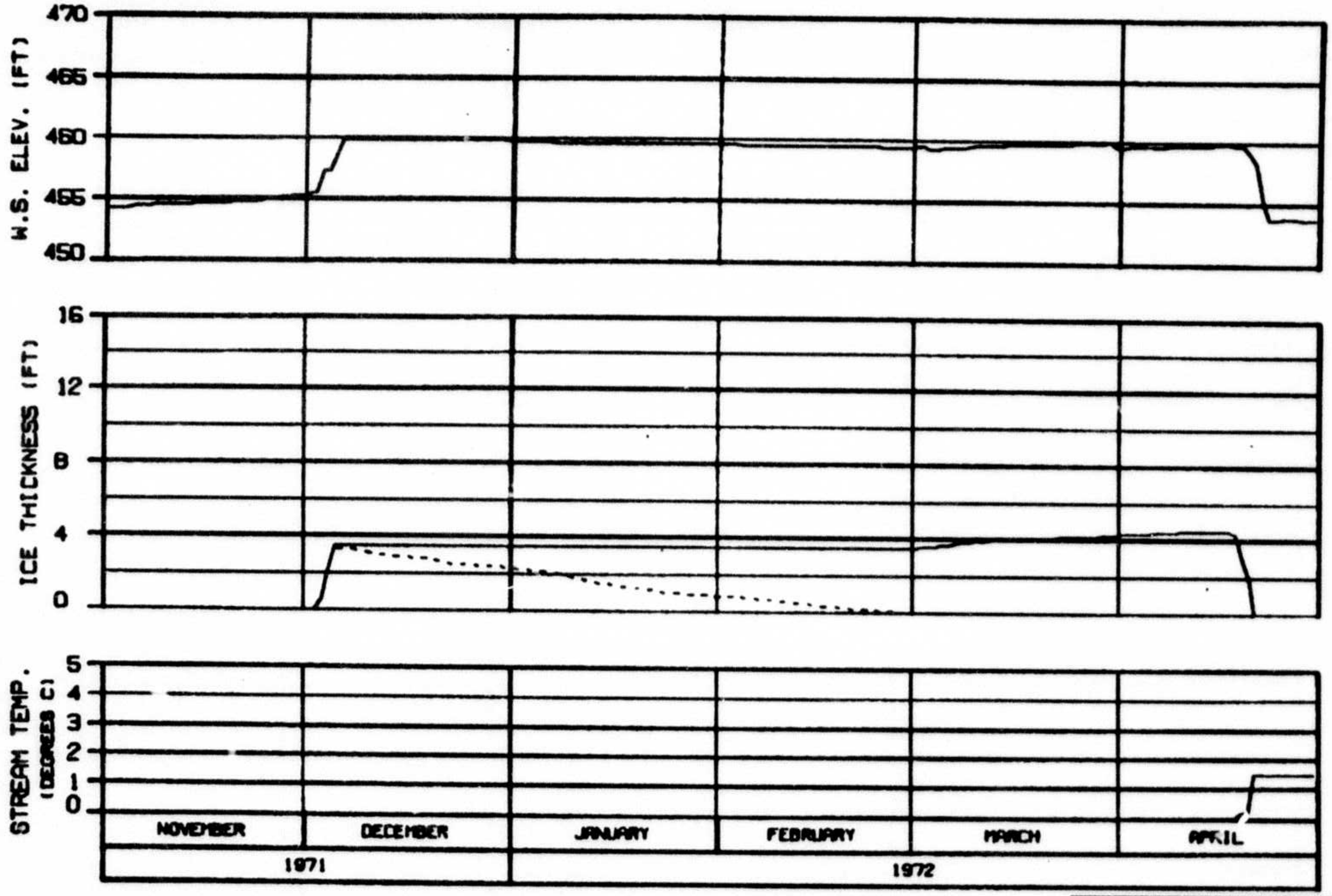
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

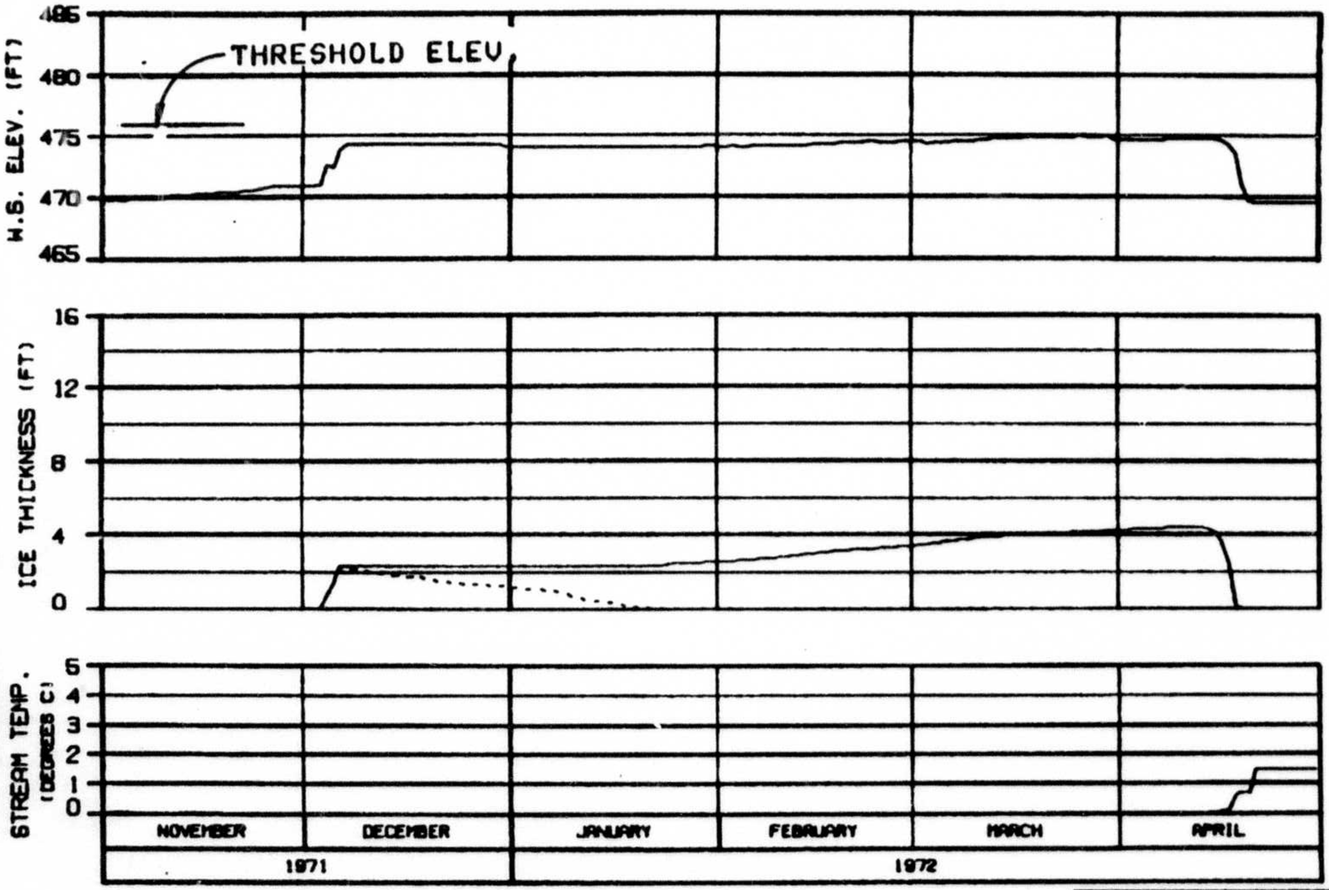
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
------ SLUSH COMPONENT

HEAD OF SLOUGH 8

RIVER MILE : 114.10

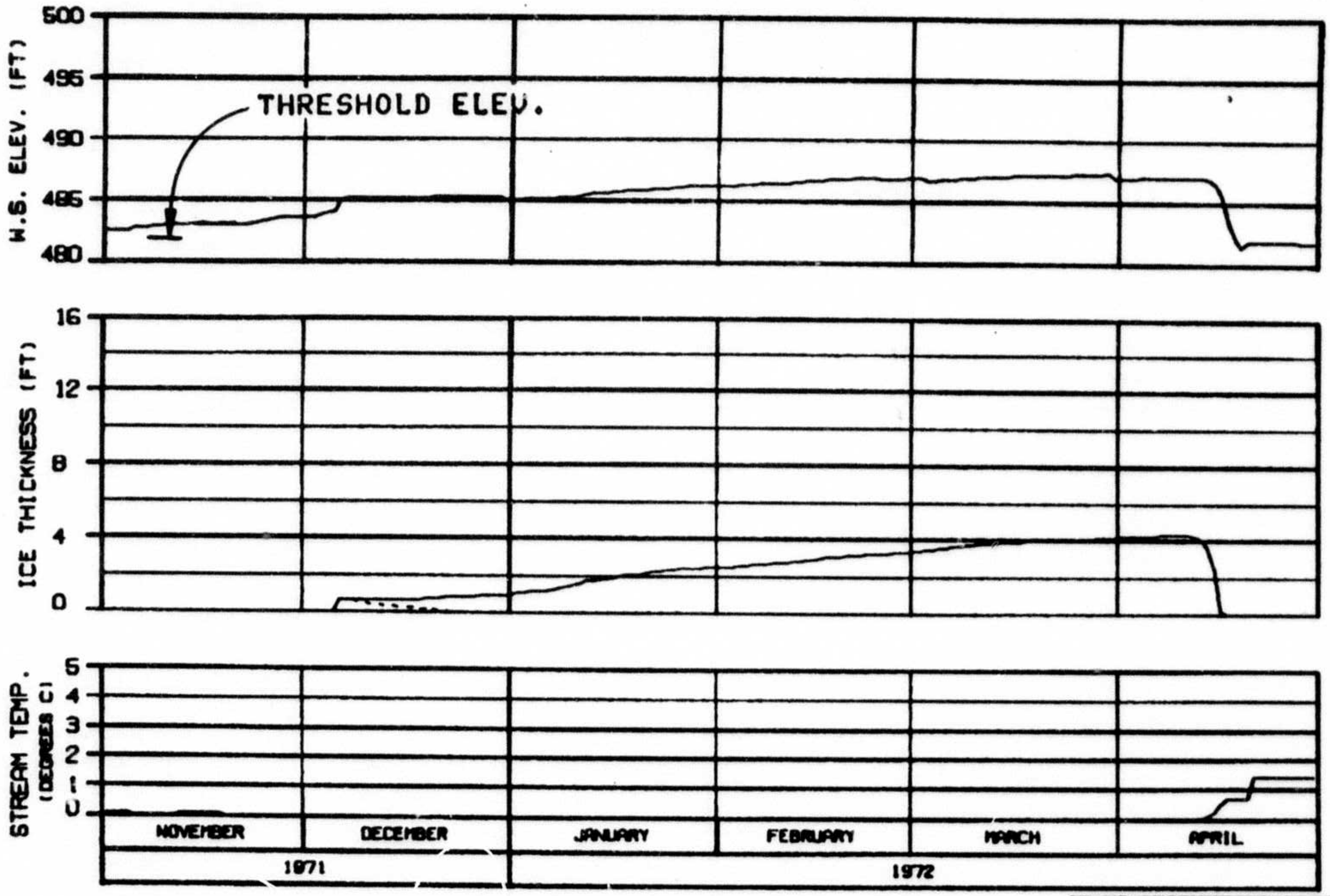
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL MSII

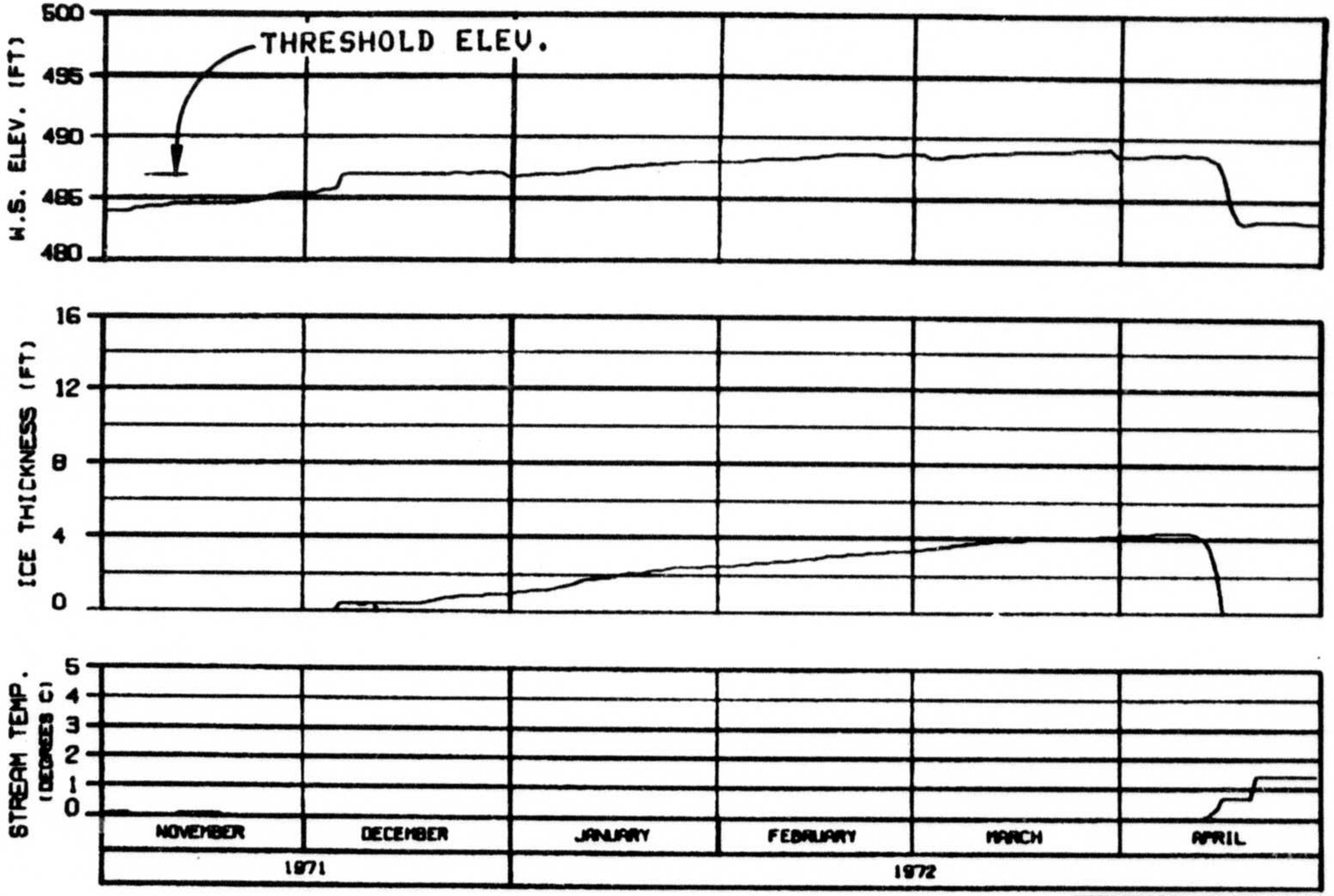
RIVER MILE : 115.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SIDE CHANNEL MSII

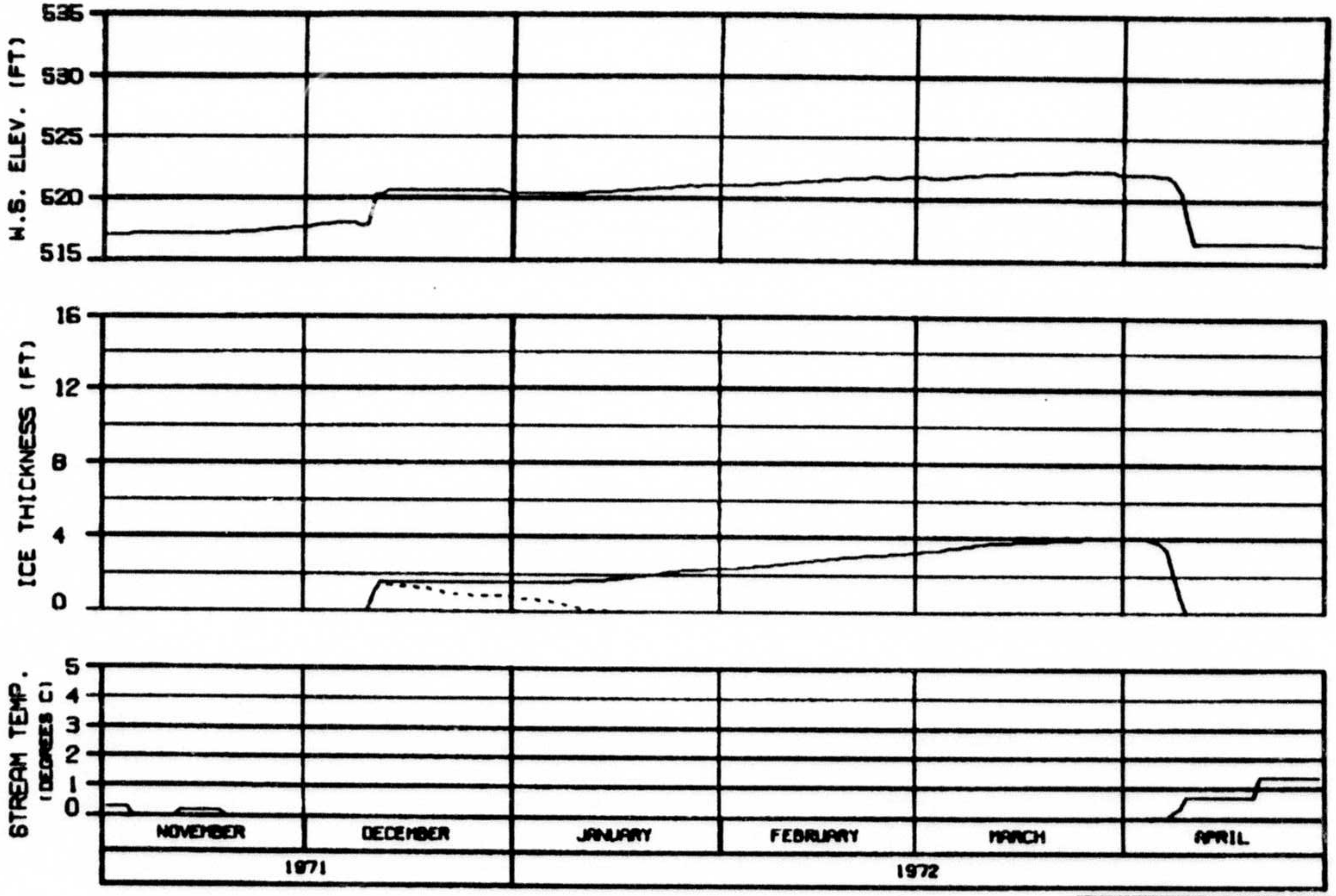
RIVER MILE : 115.90

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ICE THICKNESS LEGEND:

———— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



RIVER MILE : 120.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

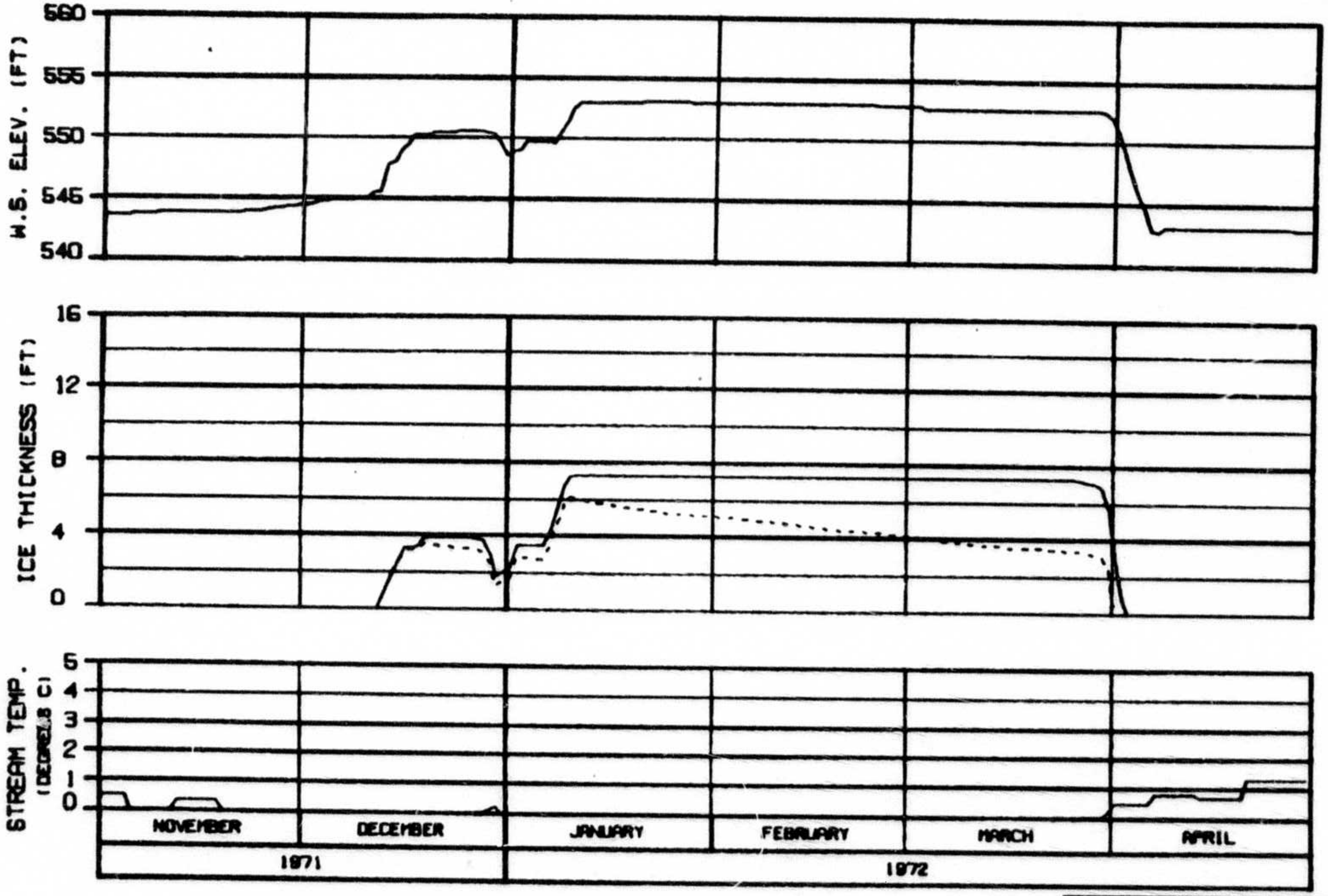
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:

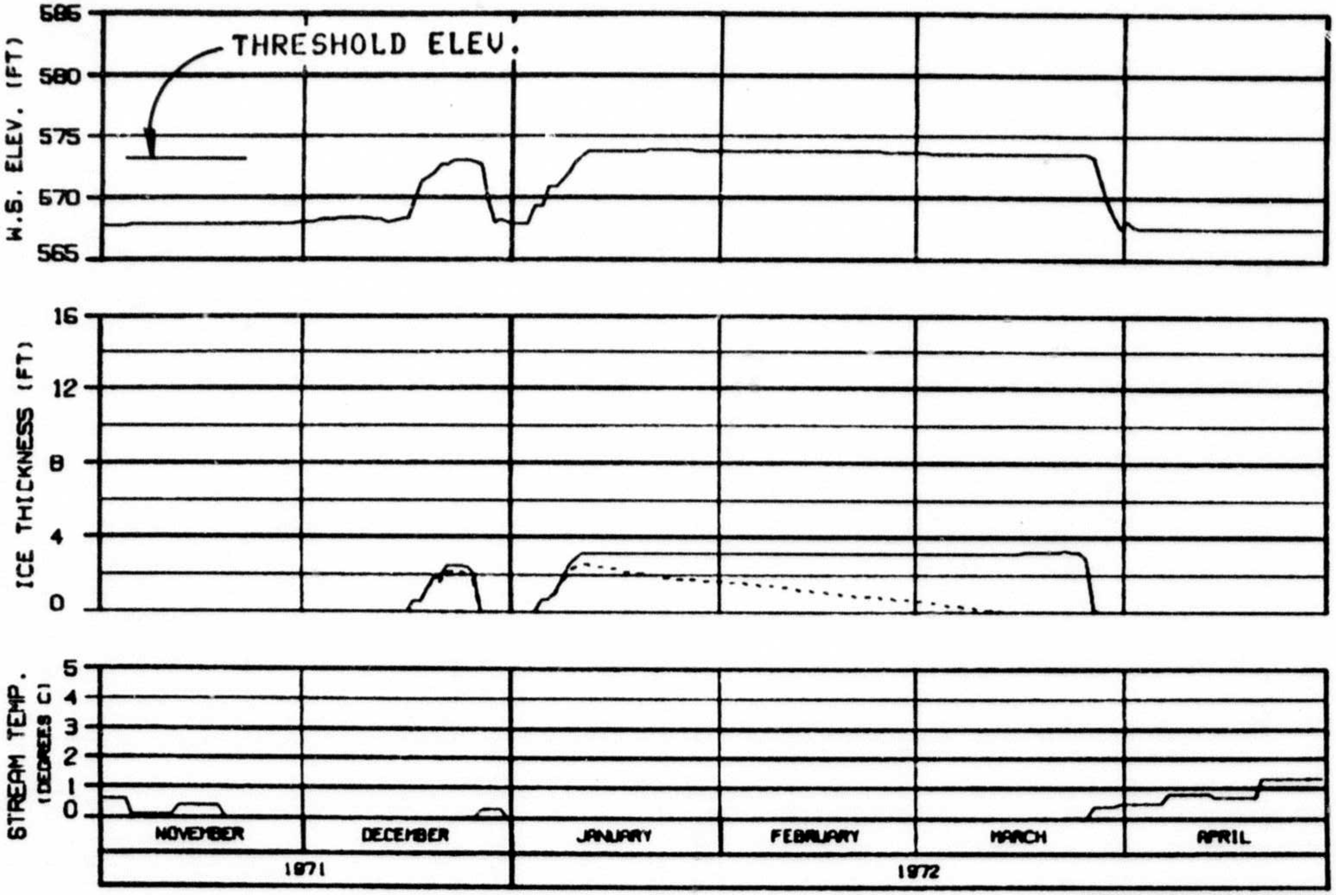
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

HEAD OF MOOSE SLOUGH

RIVER MILE : 123.50

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (WEST)

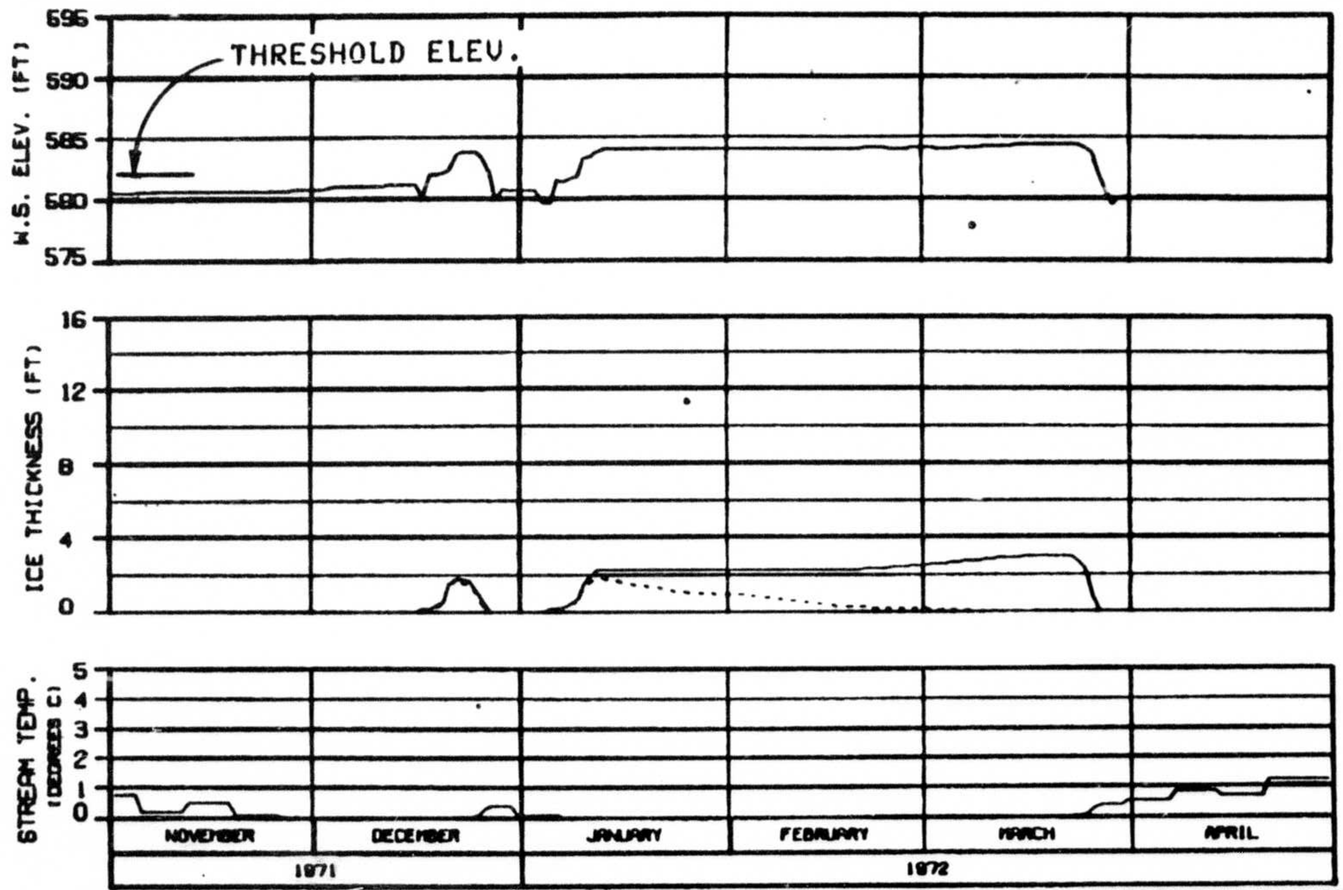
RIVER MILE : 126.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
CHICAGO, ILLINOIS	[illegible]



HEAD OF SLOUGH 8A (EAST)

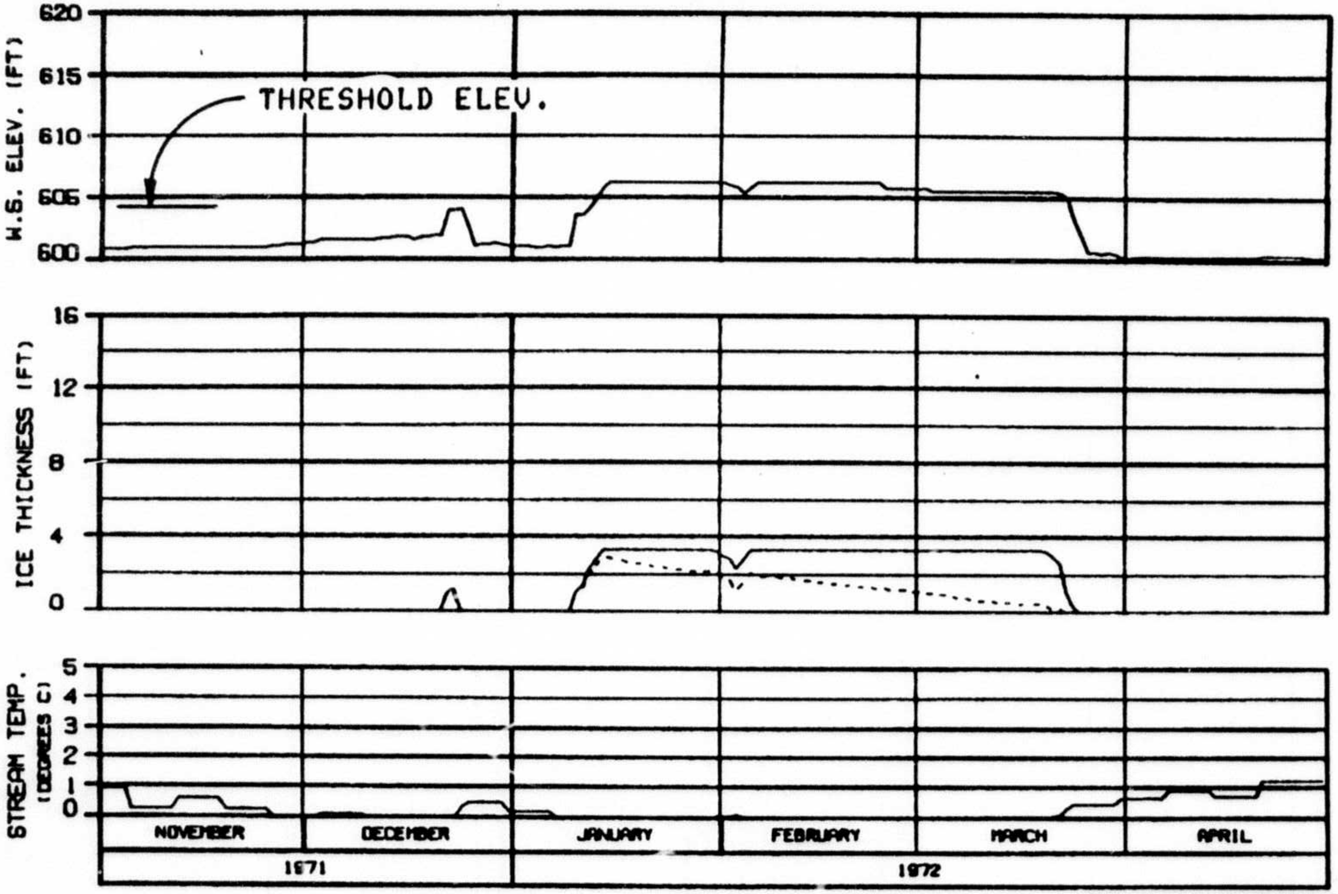
RIVER MILE : 127.10

ICE THICKNESS LEGEND:

———— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 9

RIVER MILE : 129.30

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ICE THICKNESS LEGEND:
———— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

OPTION?

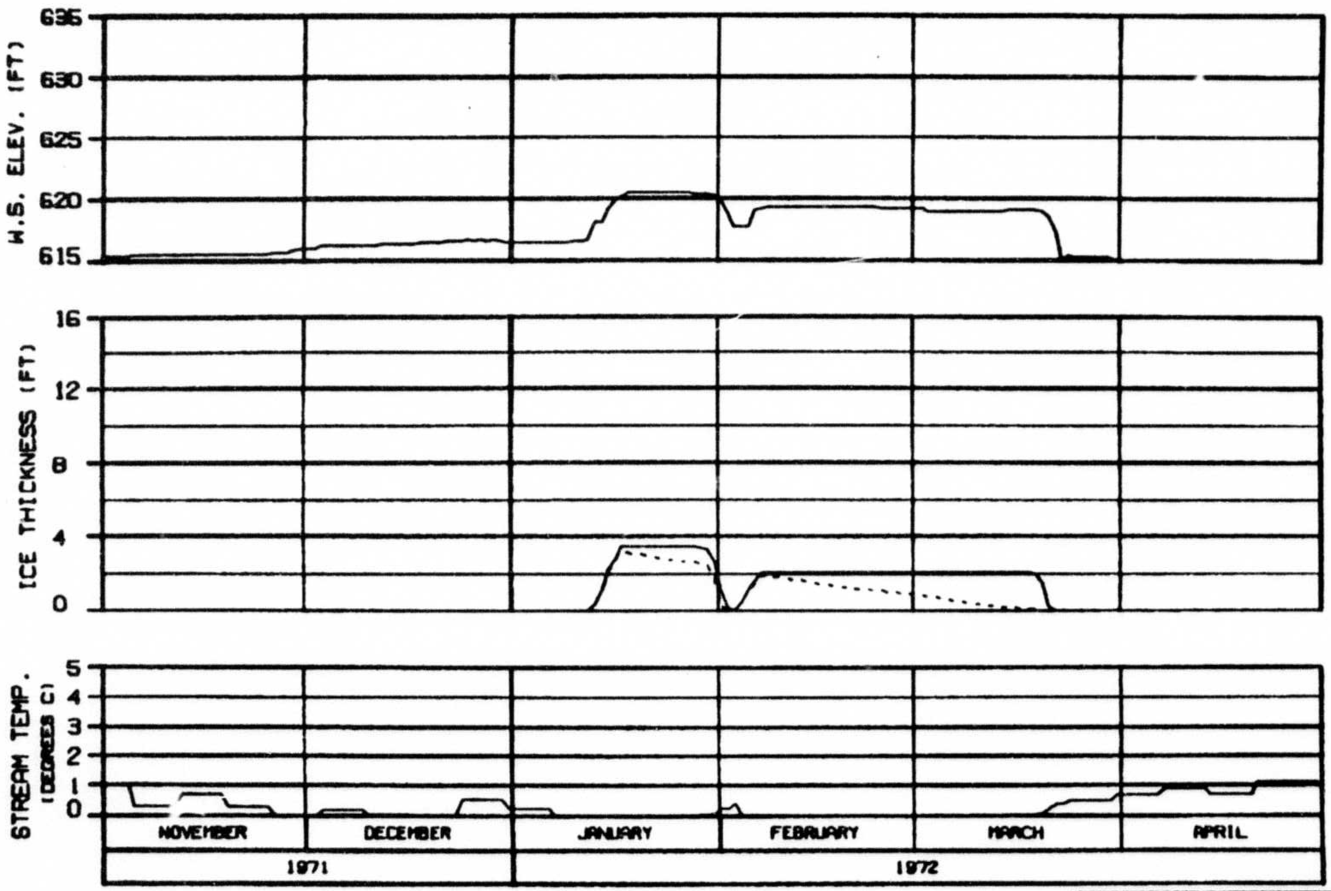
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

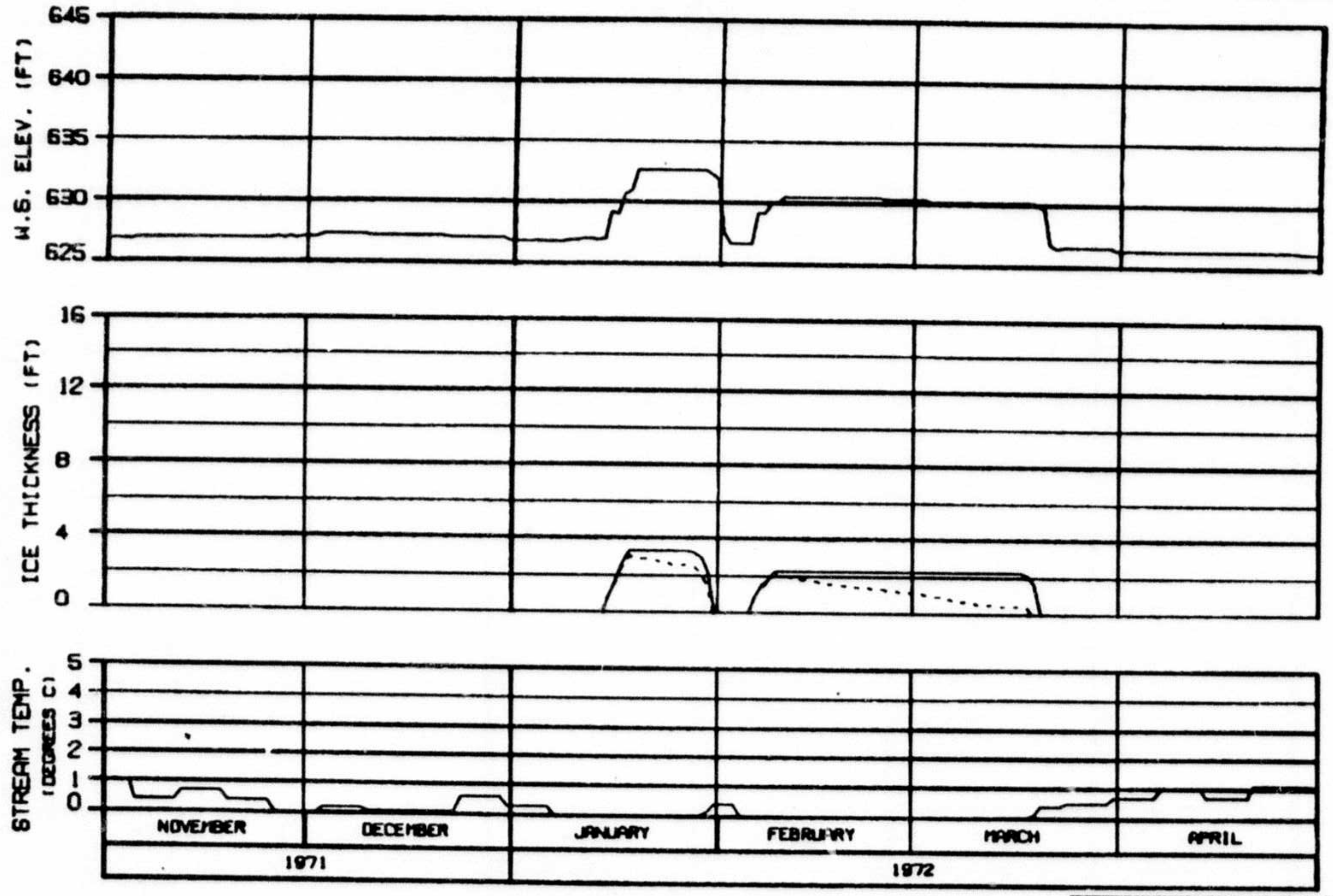
RIVER MILE : 130.60

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

RIVER MILE : 131.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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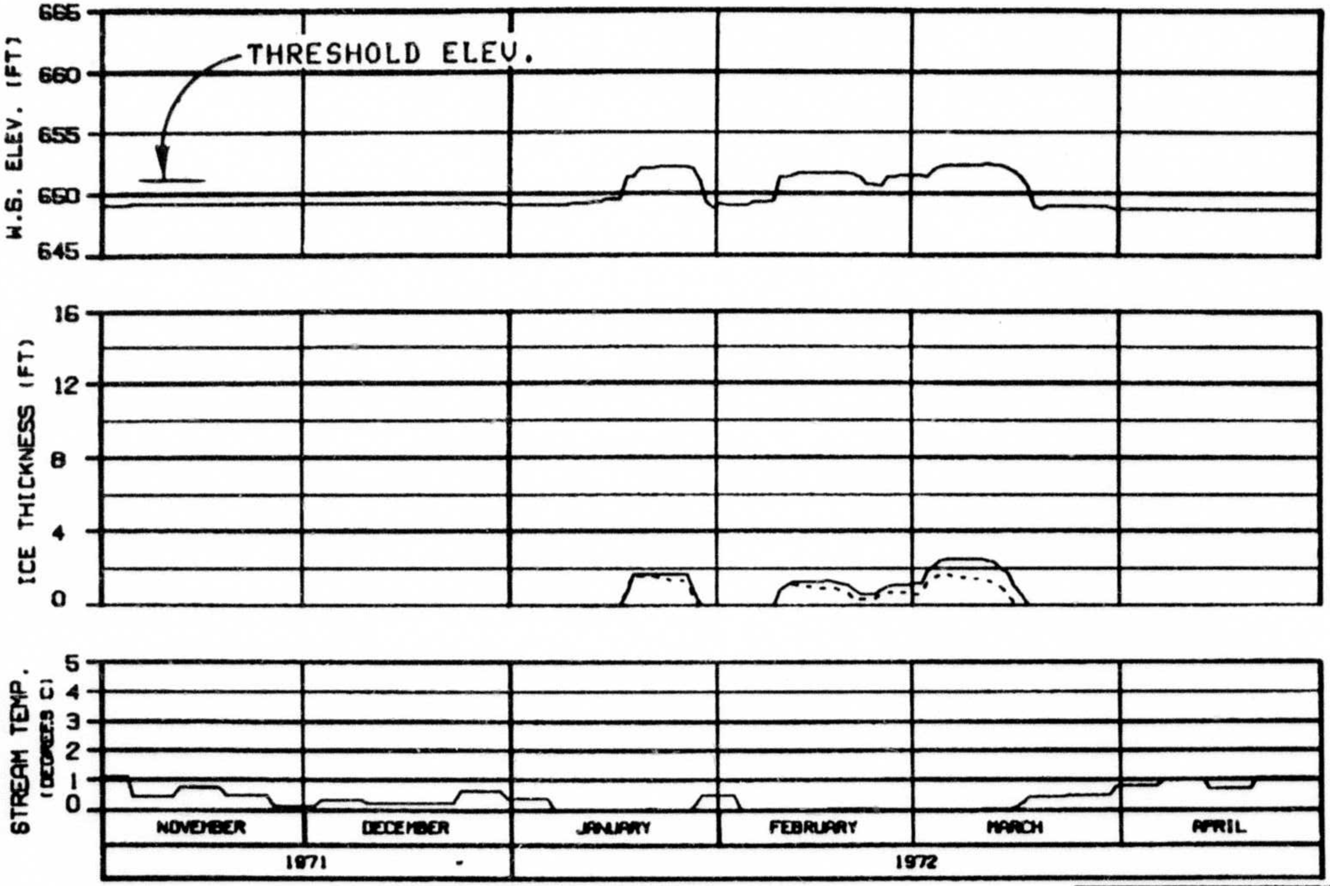


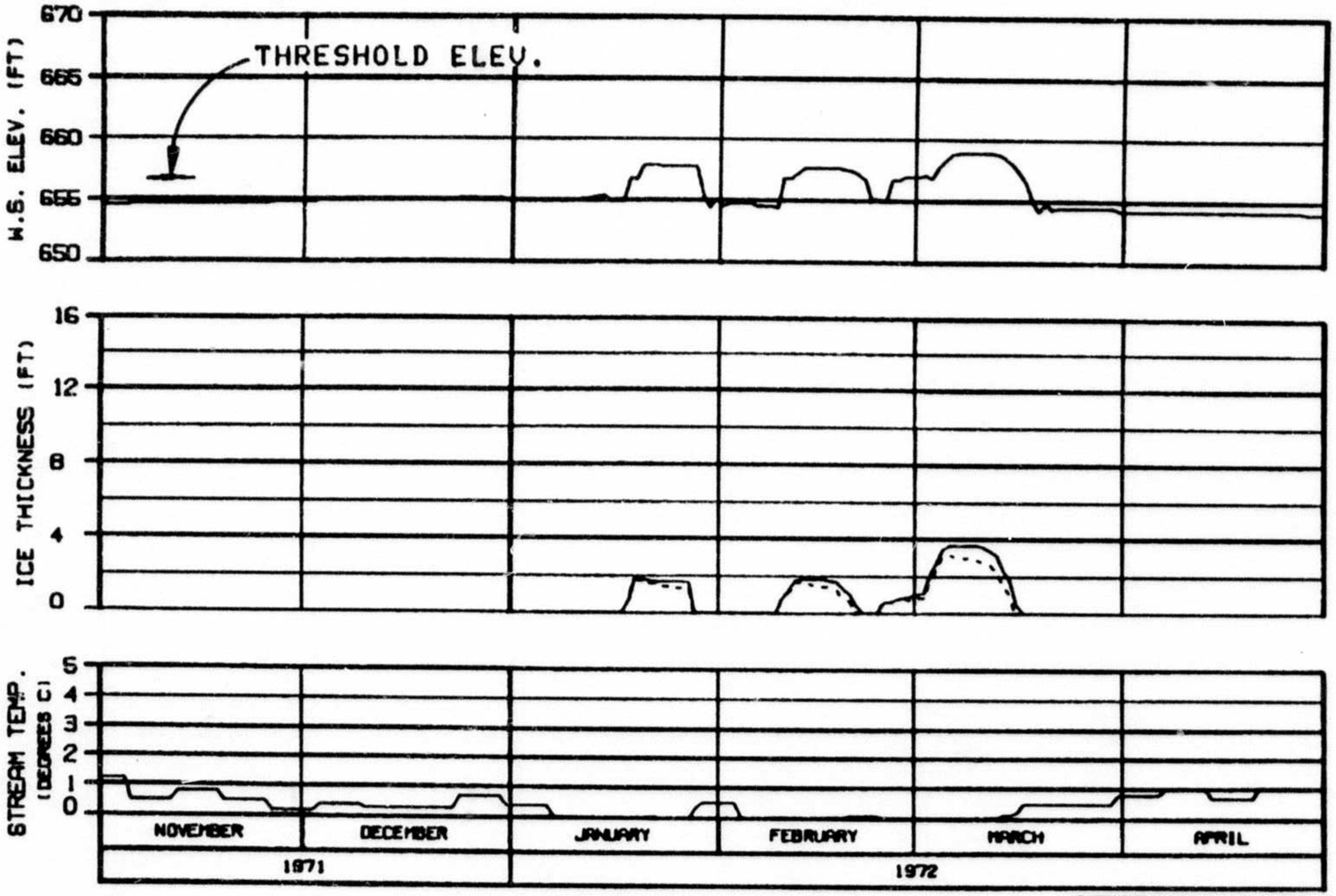
HEAD OF SLOUGH 9A

RIVER MILE : 133.70

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

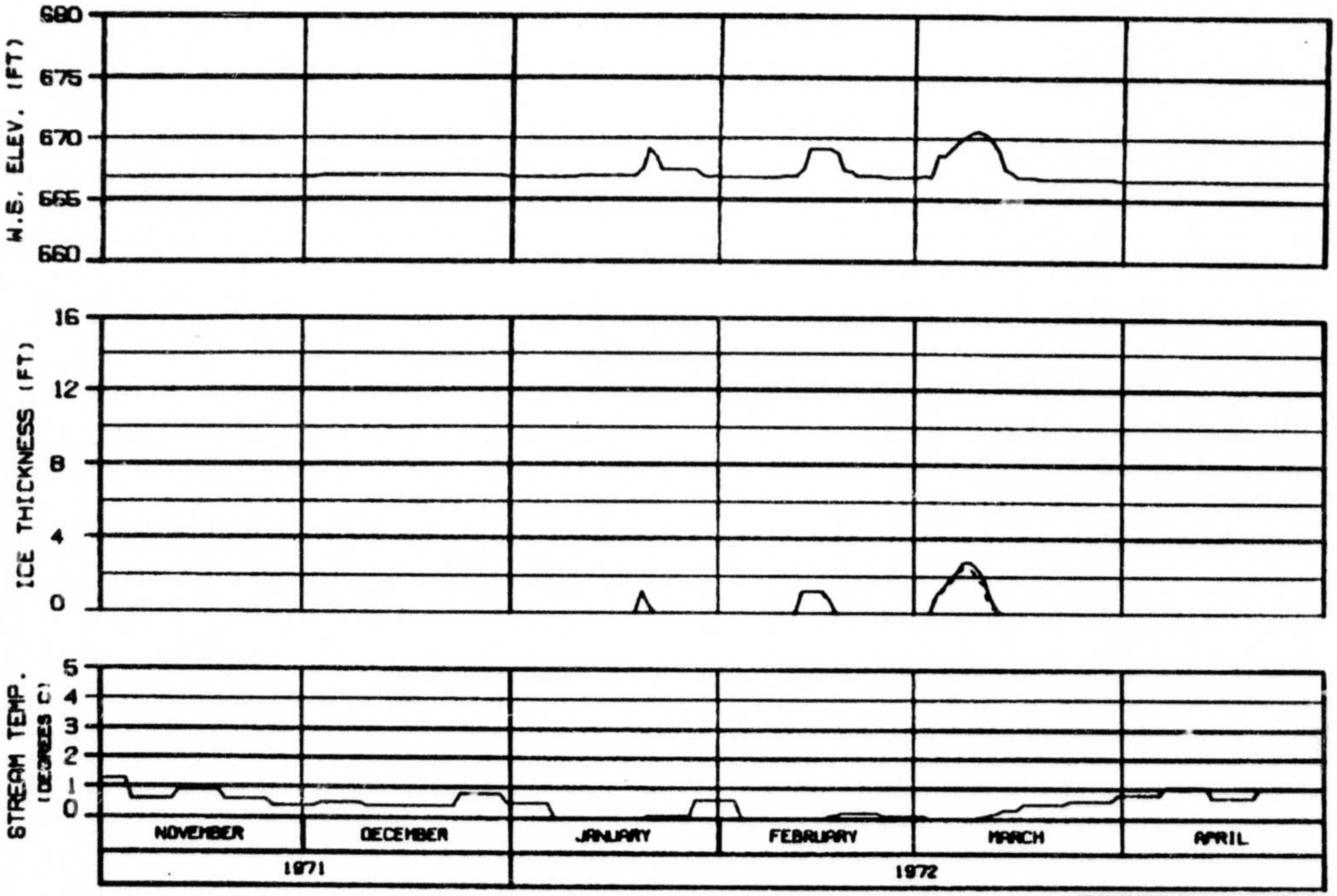
RIVER MILE : 134.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11

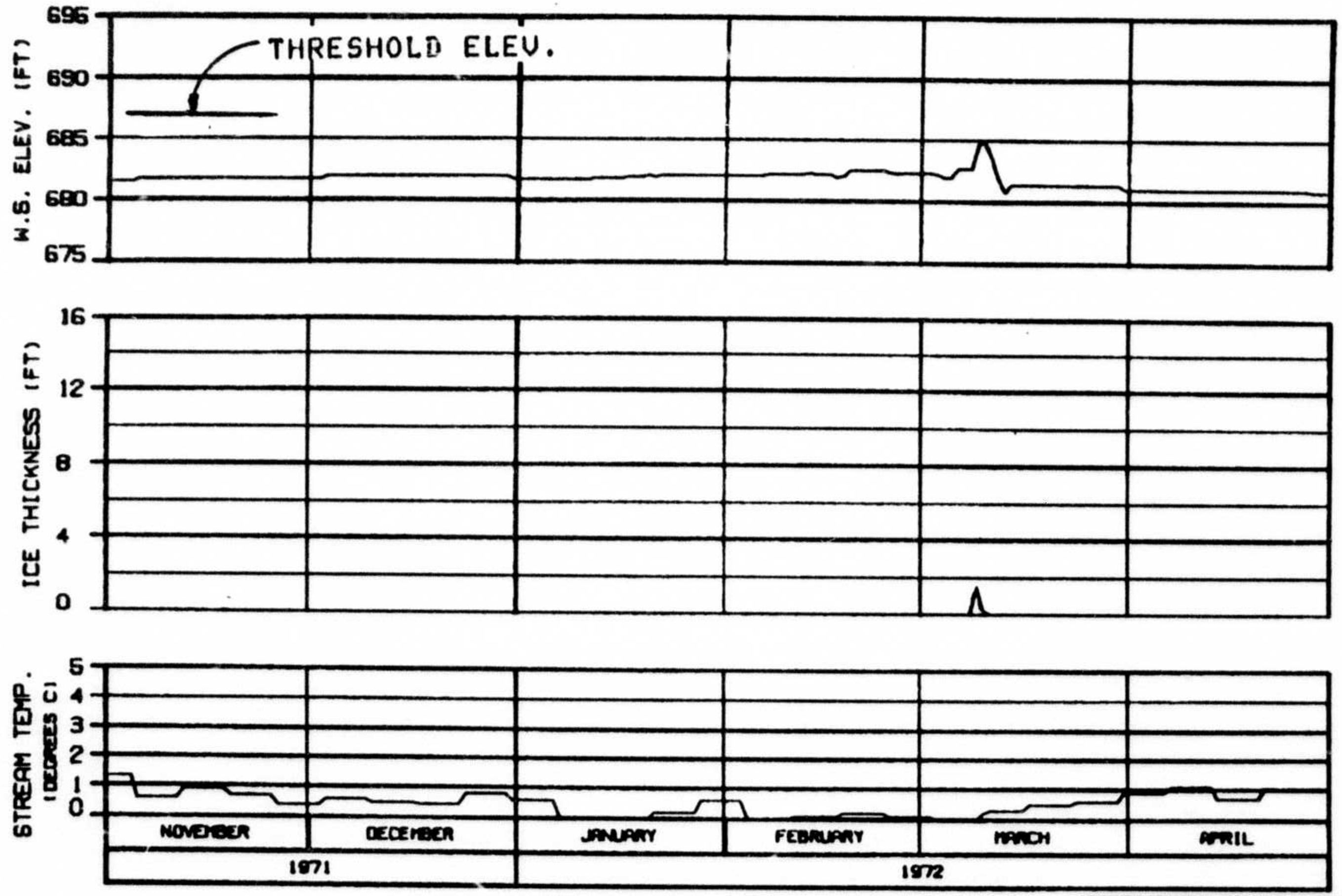
RIVER MILE : 135.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 11

RIVER MILE : 136.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

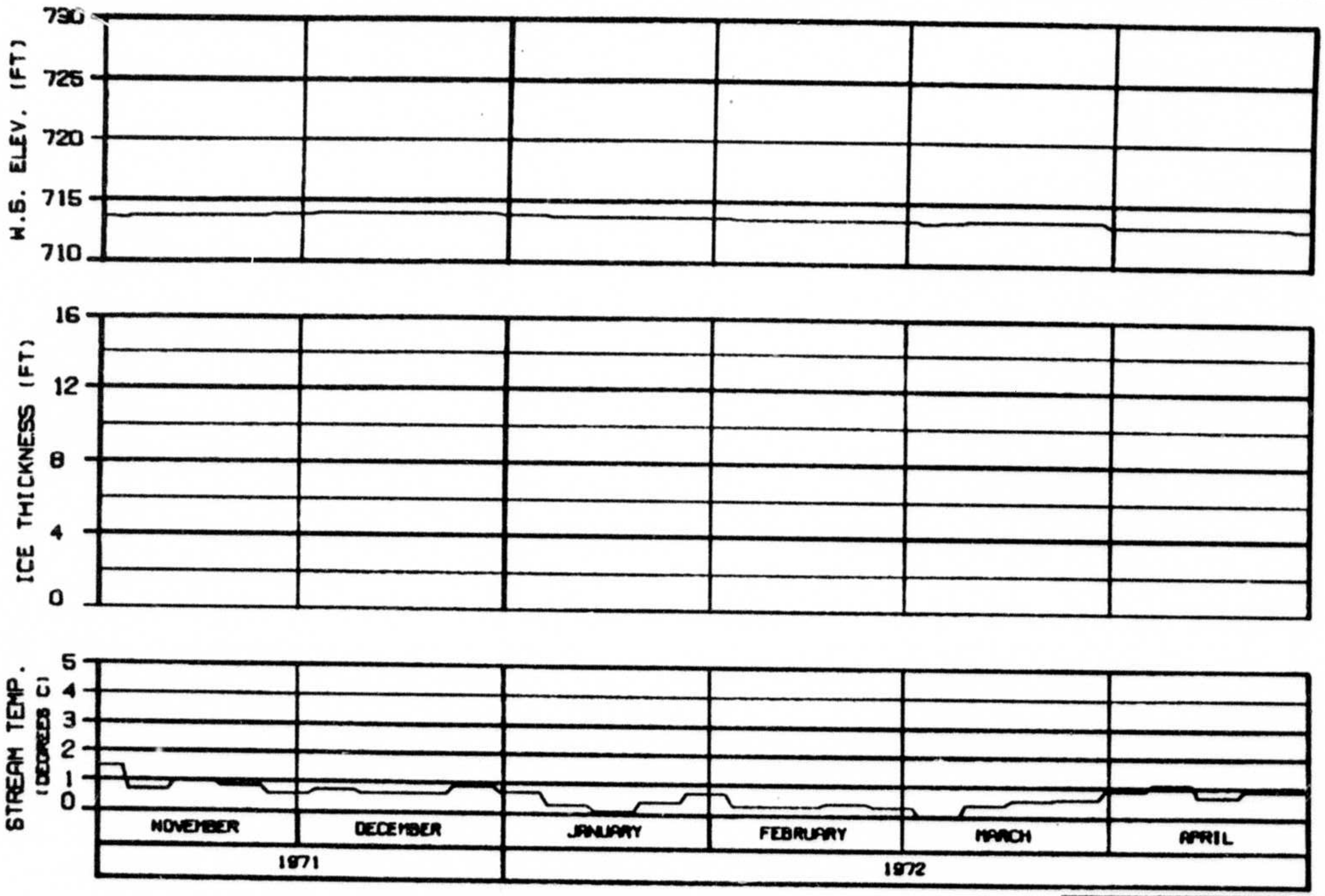
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 17

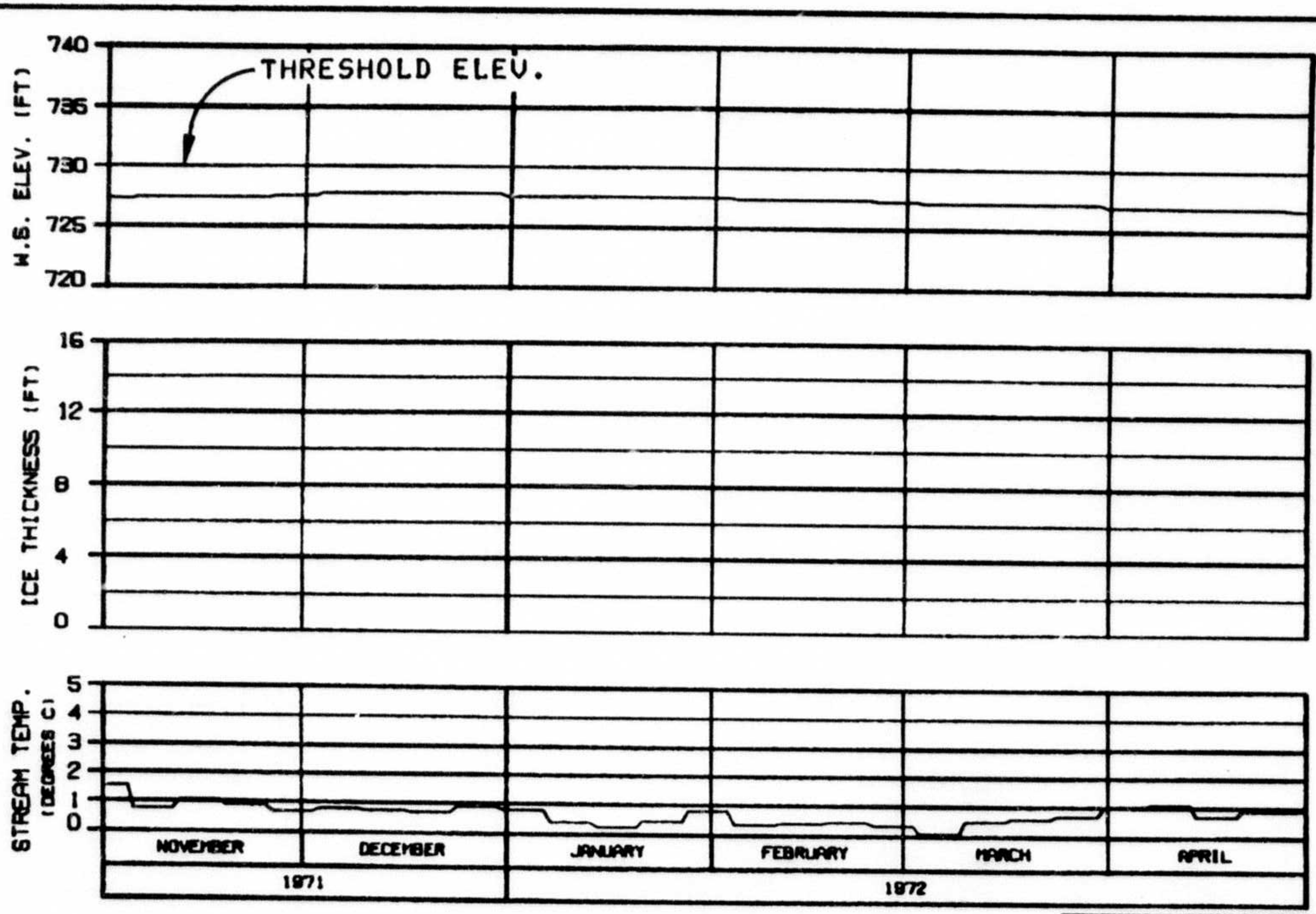
RIVER MILE : 139.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
[illegible]	[illegible]	[illegible].142



HEAD OF SLOUGH 20

RIVER MILE : 140.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

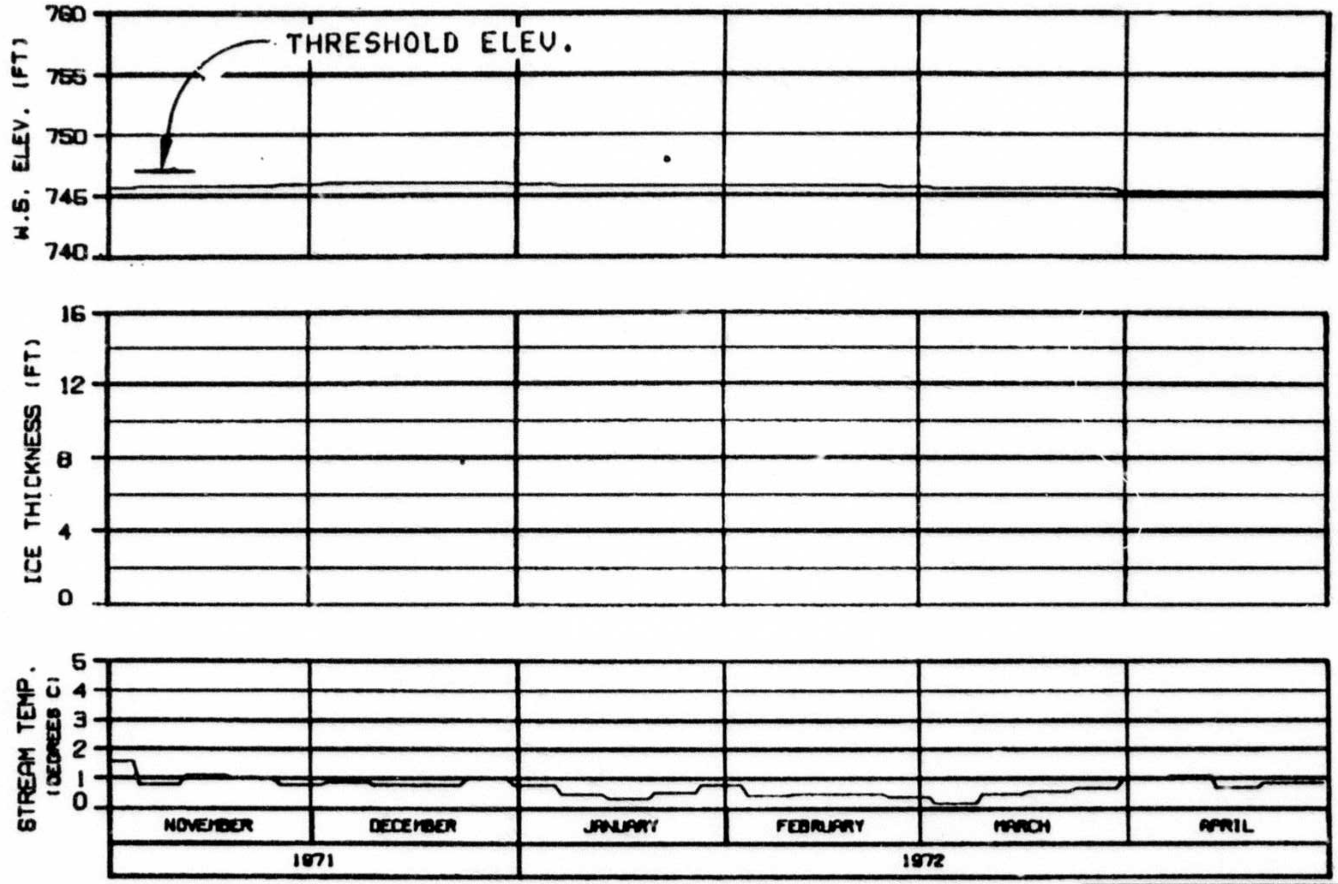
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SLOUGH 21 (ENTRANCE A6)

RIVER MILE : 141.80

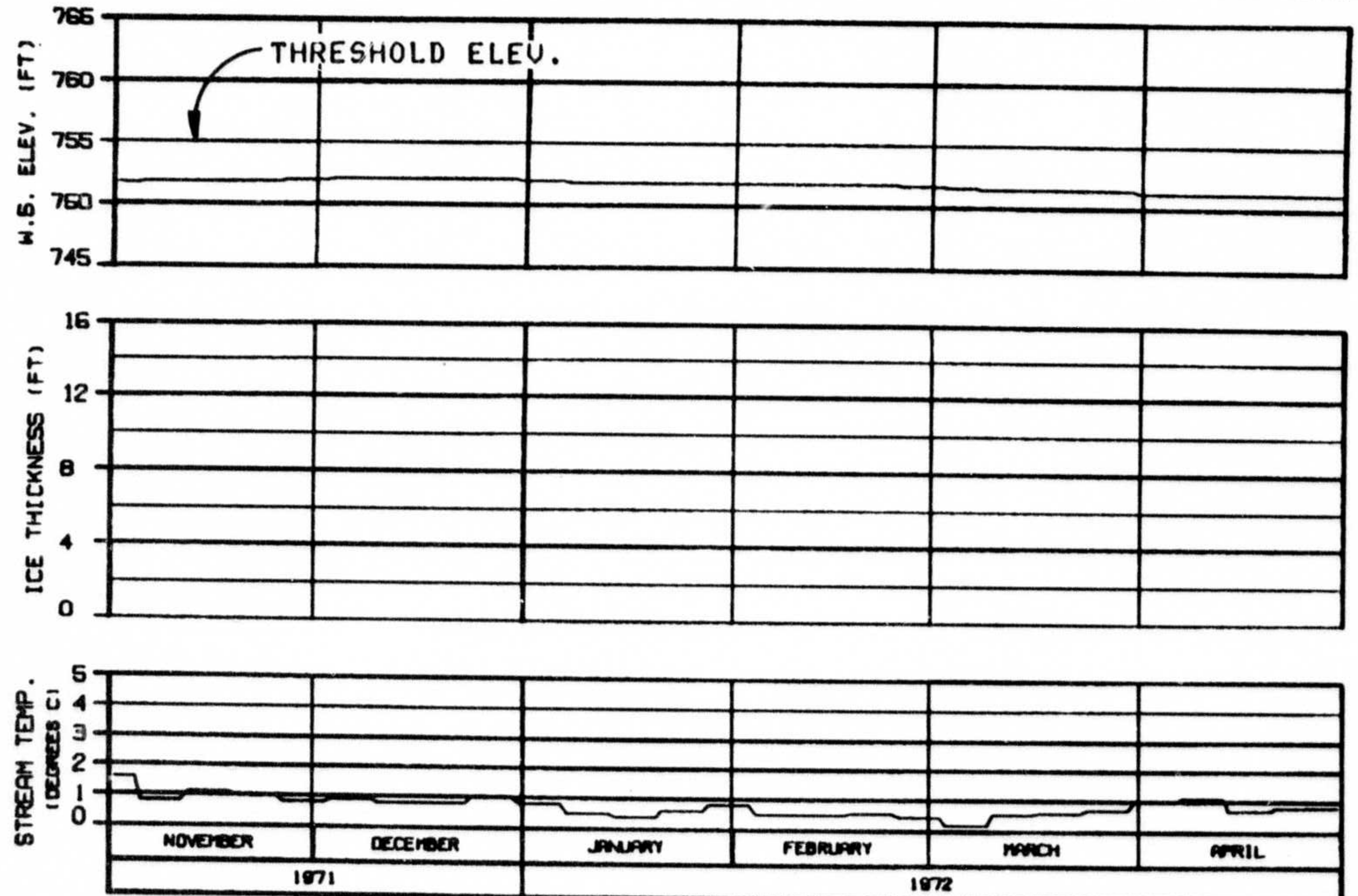
ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
		.142

OPTION?



HEAD OF SLOUGH 21

RIVER MILE : 142.20

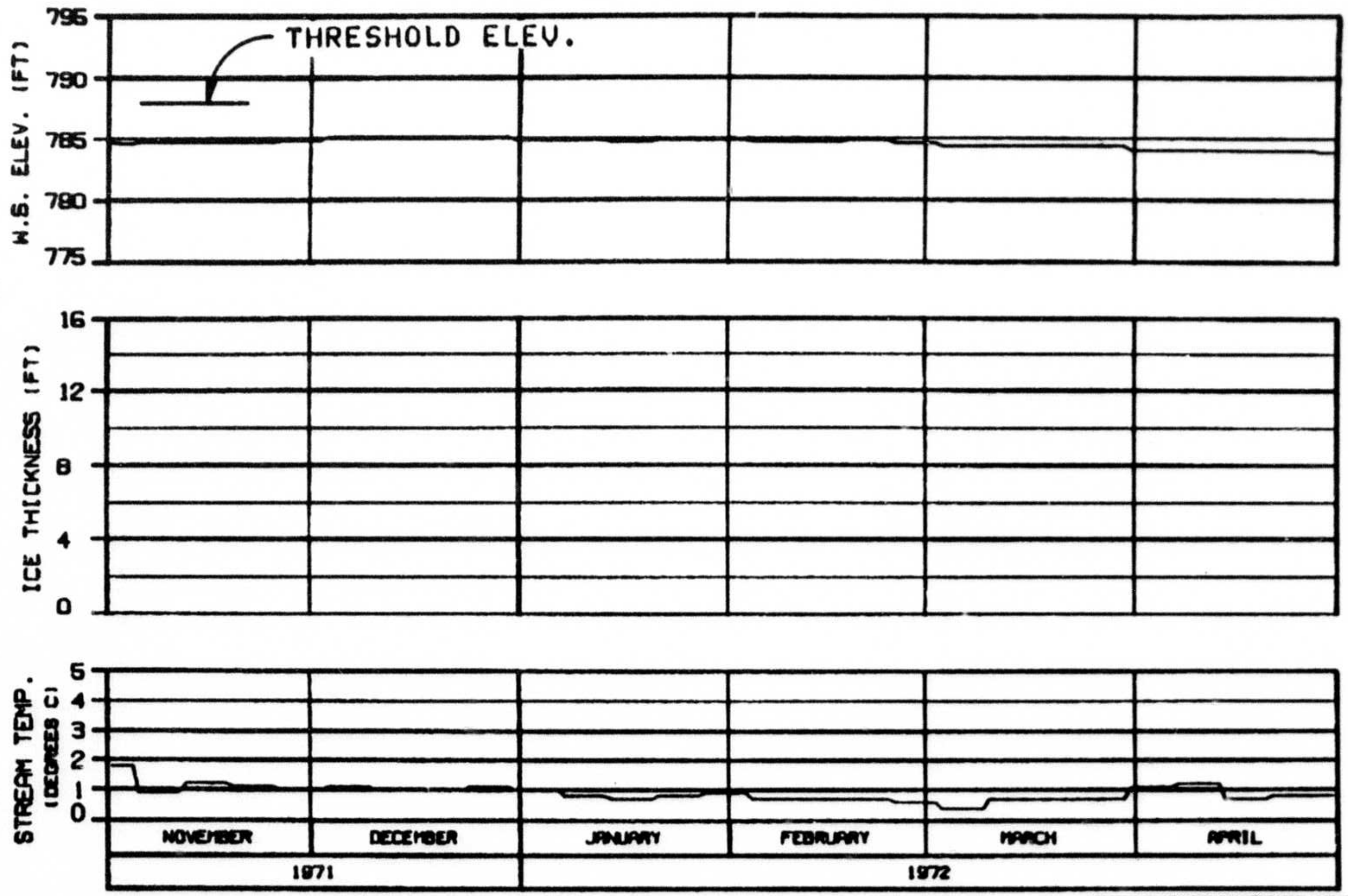
ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE

c



HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:

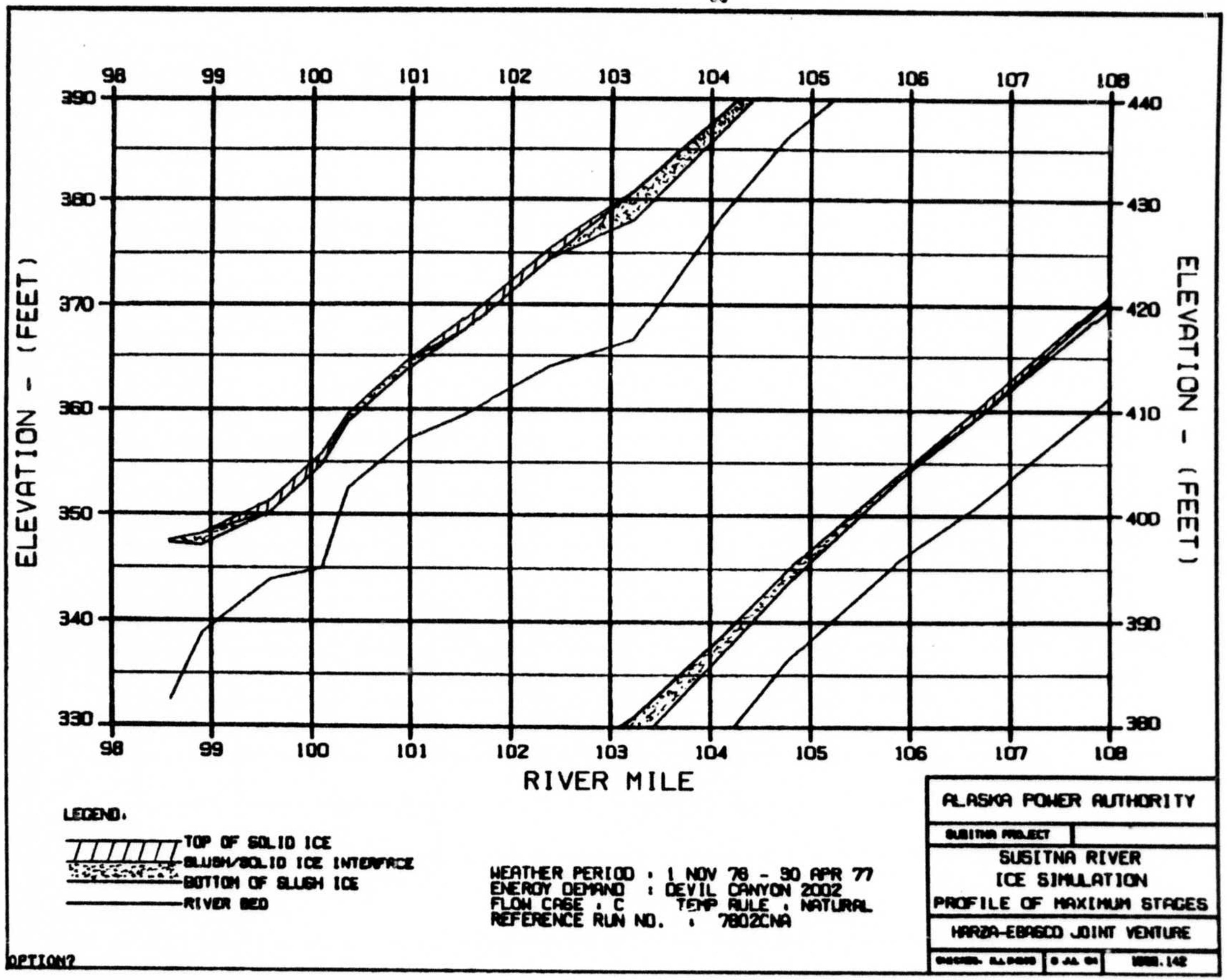
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7102CNA

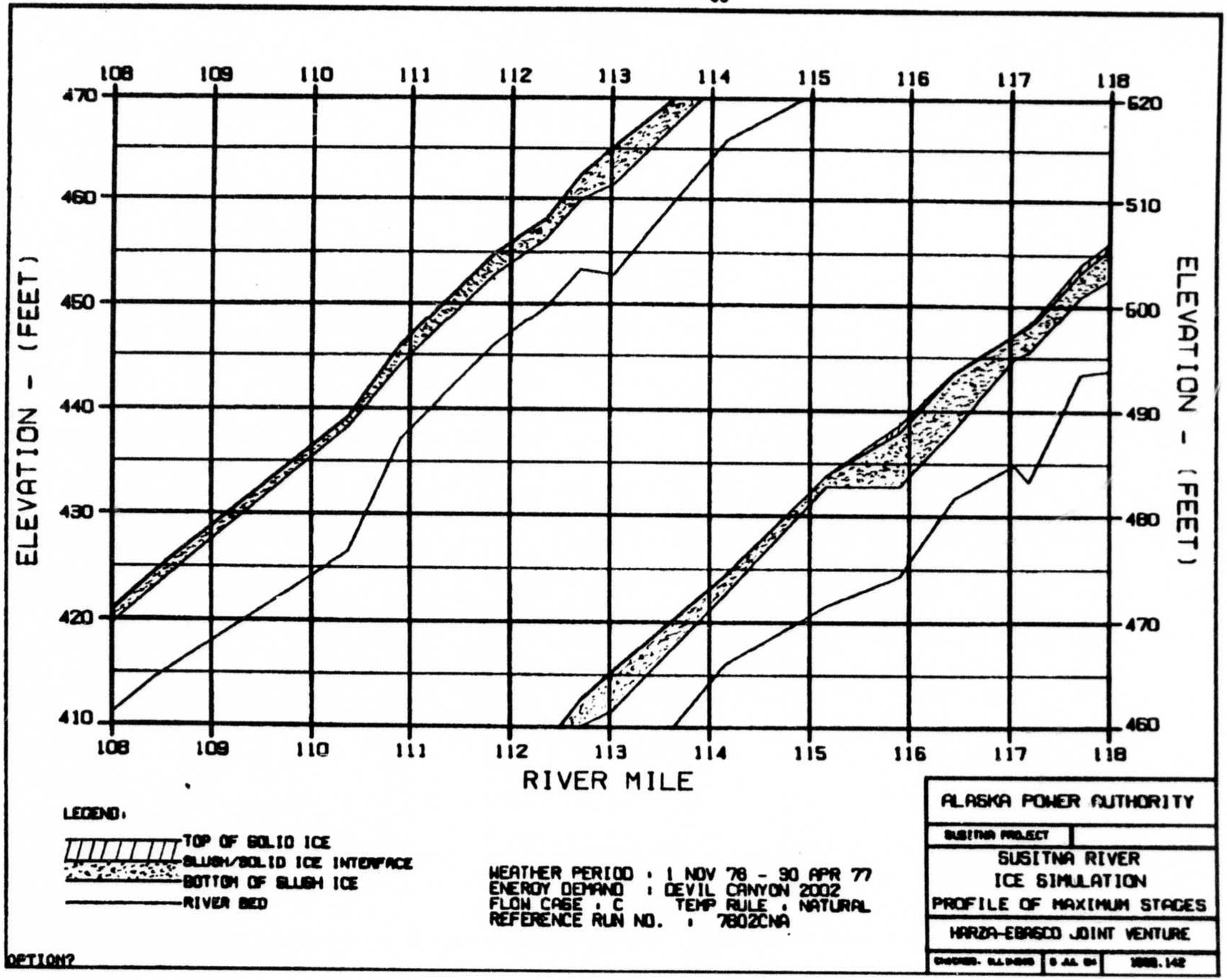
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE

OPTION?

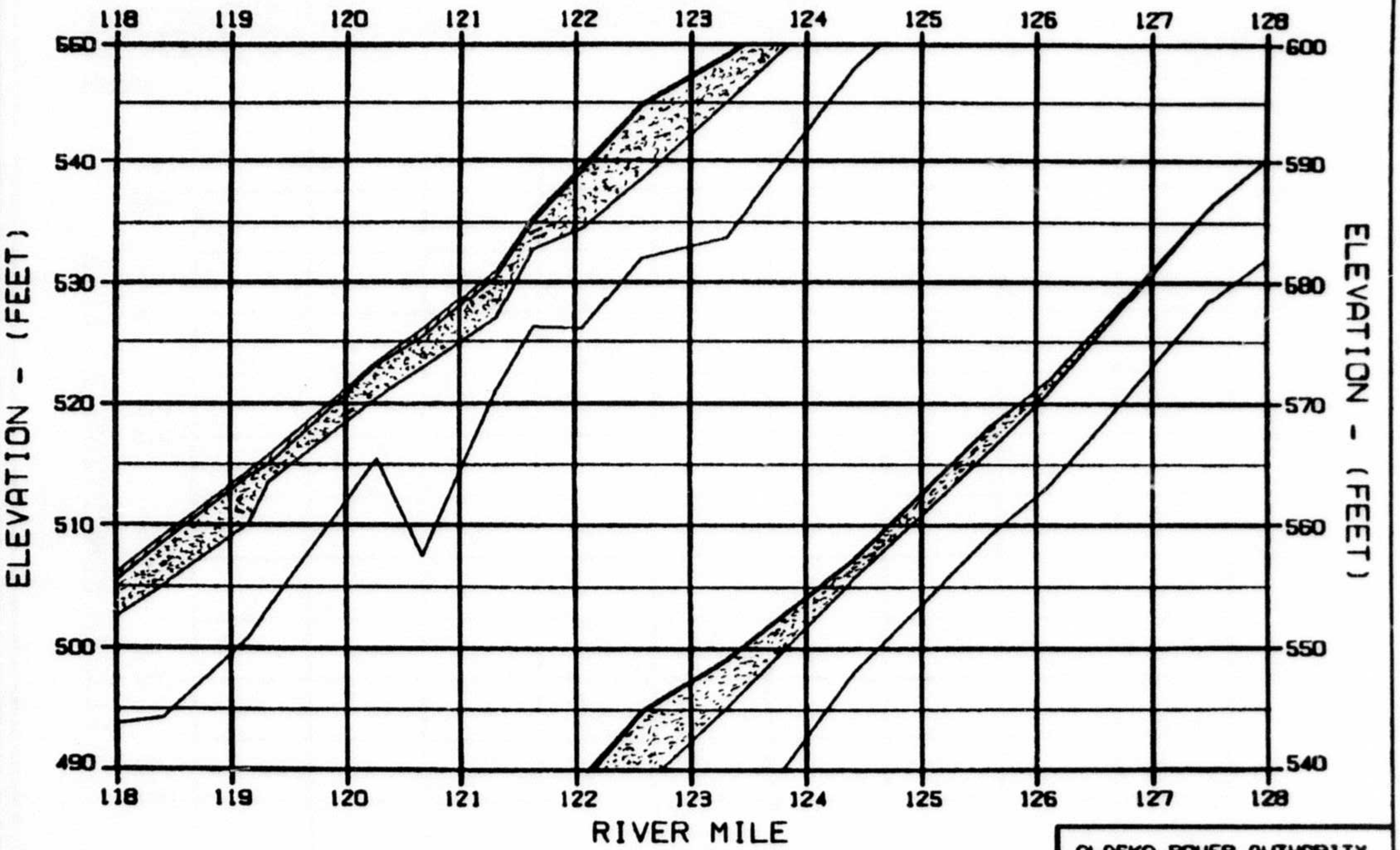
EXHIBIT M


ELEVATION - (FEET)
RIVER MILE
98
99
100
101
102
103
104
105
106
107
108
390
380
370
360
350
340
330
440
430
420
410
400
390
380
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7802CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

CC


ELEVATION - (FEET)
RIVER MILE
108
109
110
111
112
113
114
115
116
117
118
410
420
430
440
450
460
470
460
470
480
490
500
510
520
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7802CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

CC



LEGEND:

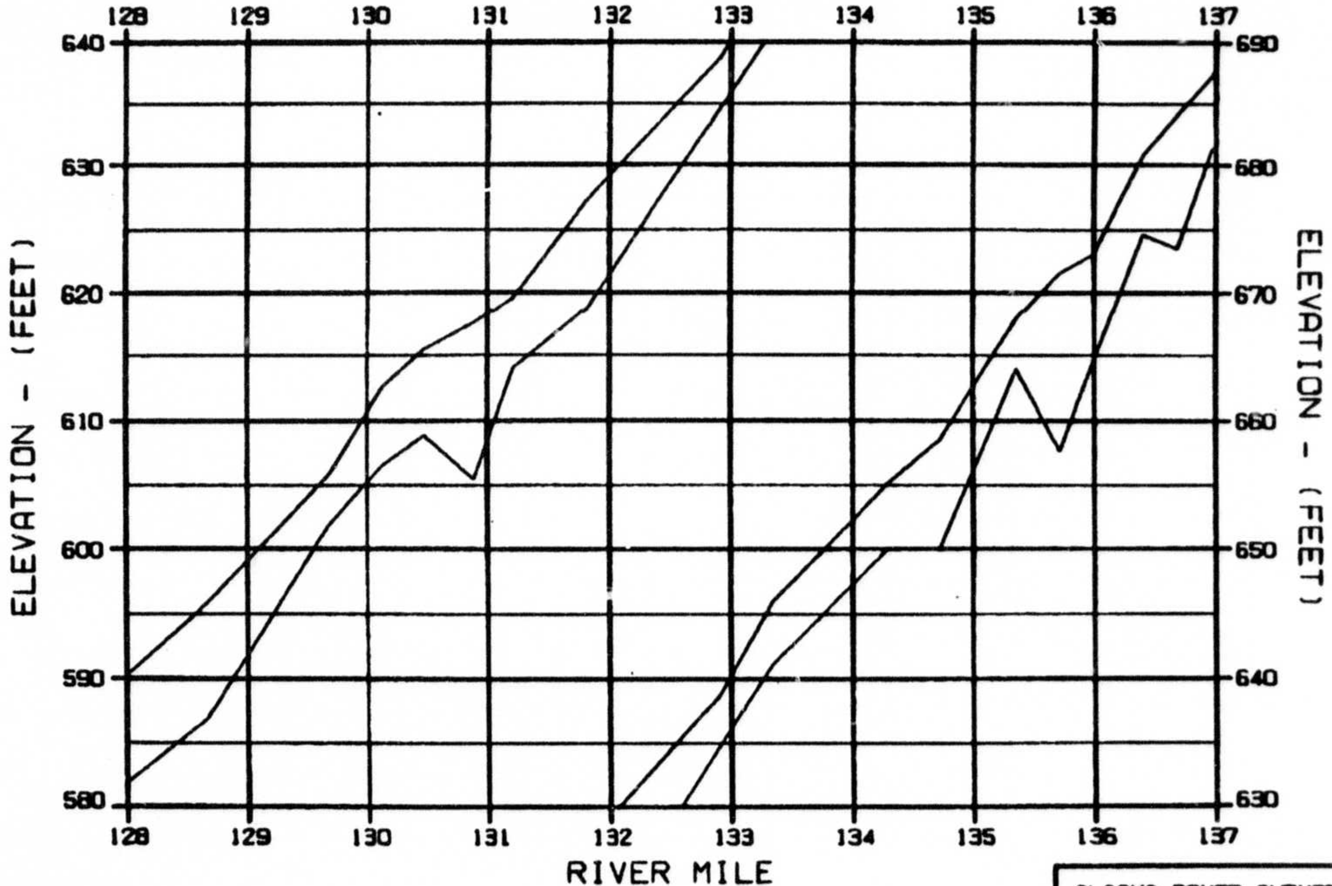
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

CC



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

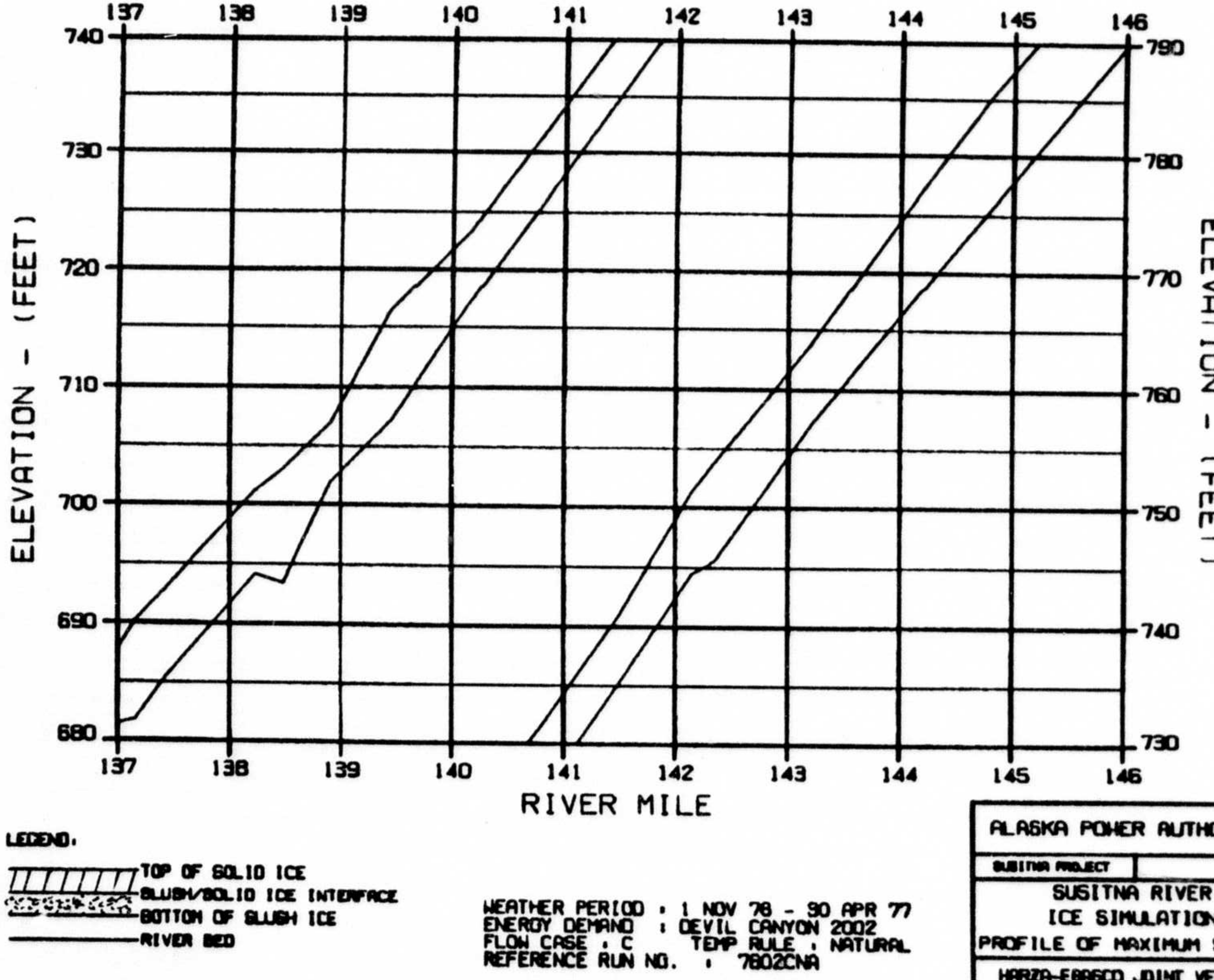
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

CHICAGO, ILLINOIS | 8 JUL 84 | 1588.142

OPTION?

CC



WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7802CNA

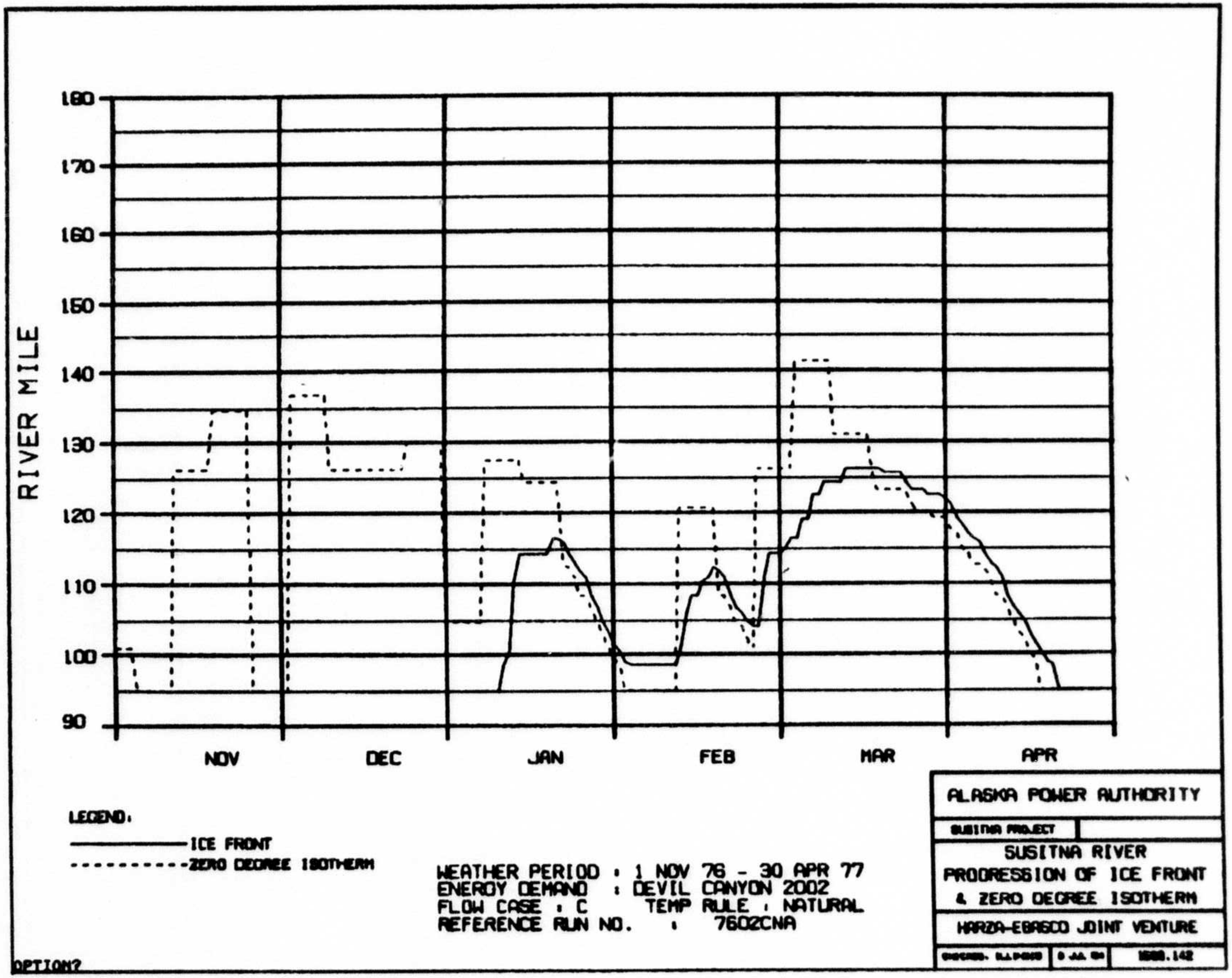
ALASKA POWER AUTHORITY

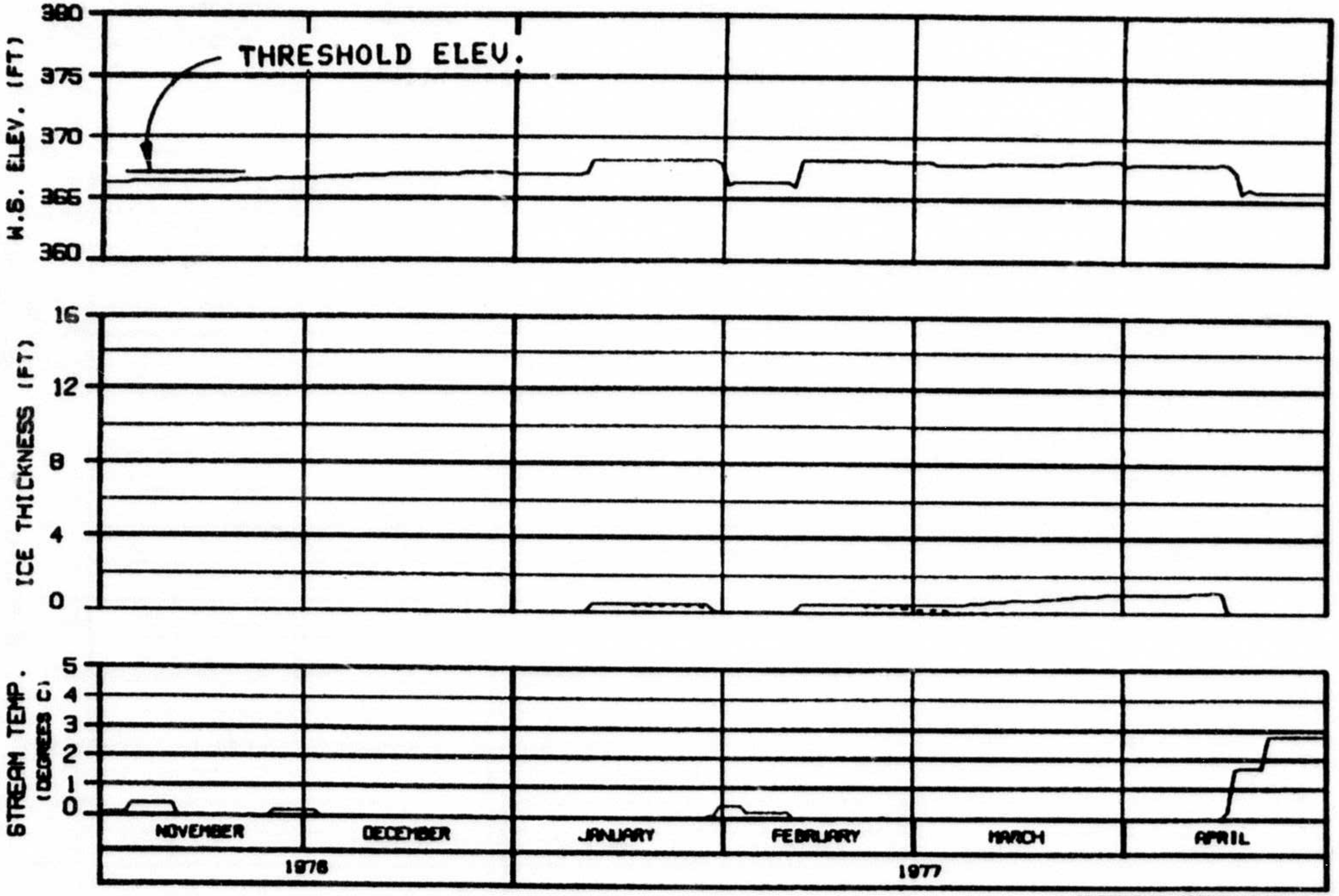
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?


180
170
160
150
140
130
120
110
100
90
RIVER MILE
NOV
DEC
JAN
FEB
MAR
APR
LEGEND:
ICE FRONT
ZERO DEGREE ISOTHERM
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM
HARZA-EBASCO JOINT VENTURE
OPTION?



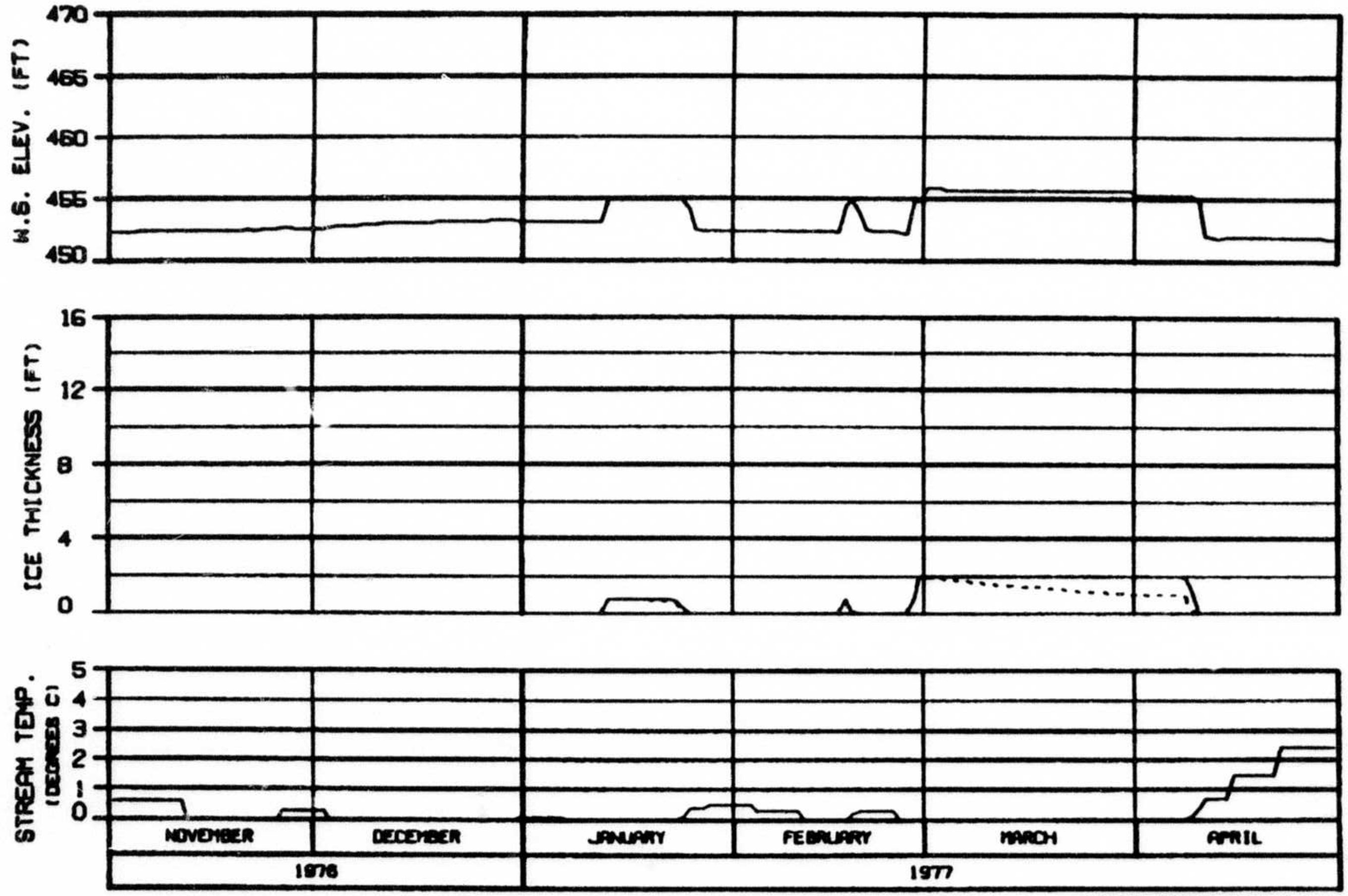
HEAD OF WHISKERS SLOUGH

RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
------ SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
1000.142



ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

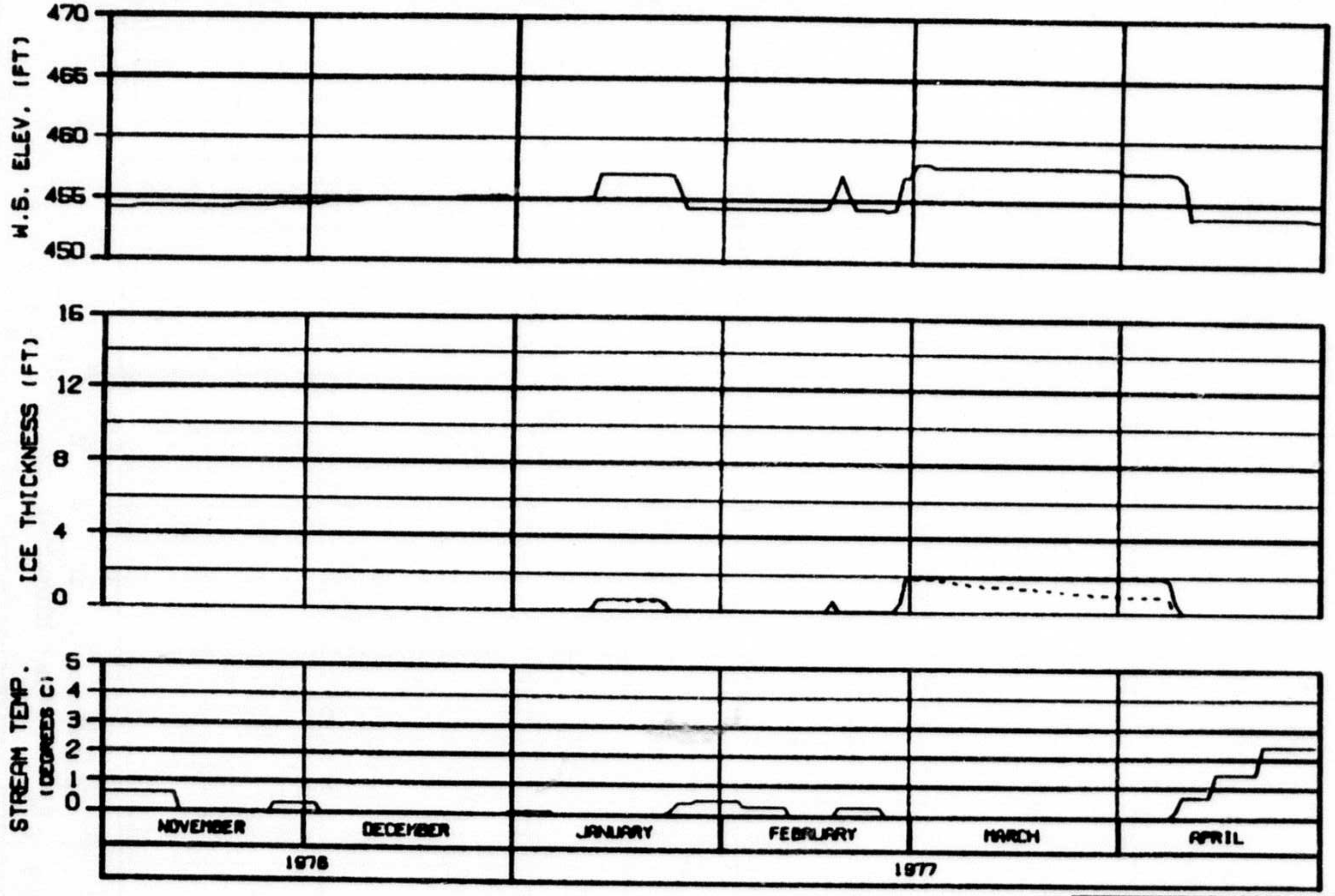
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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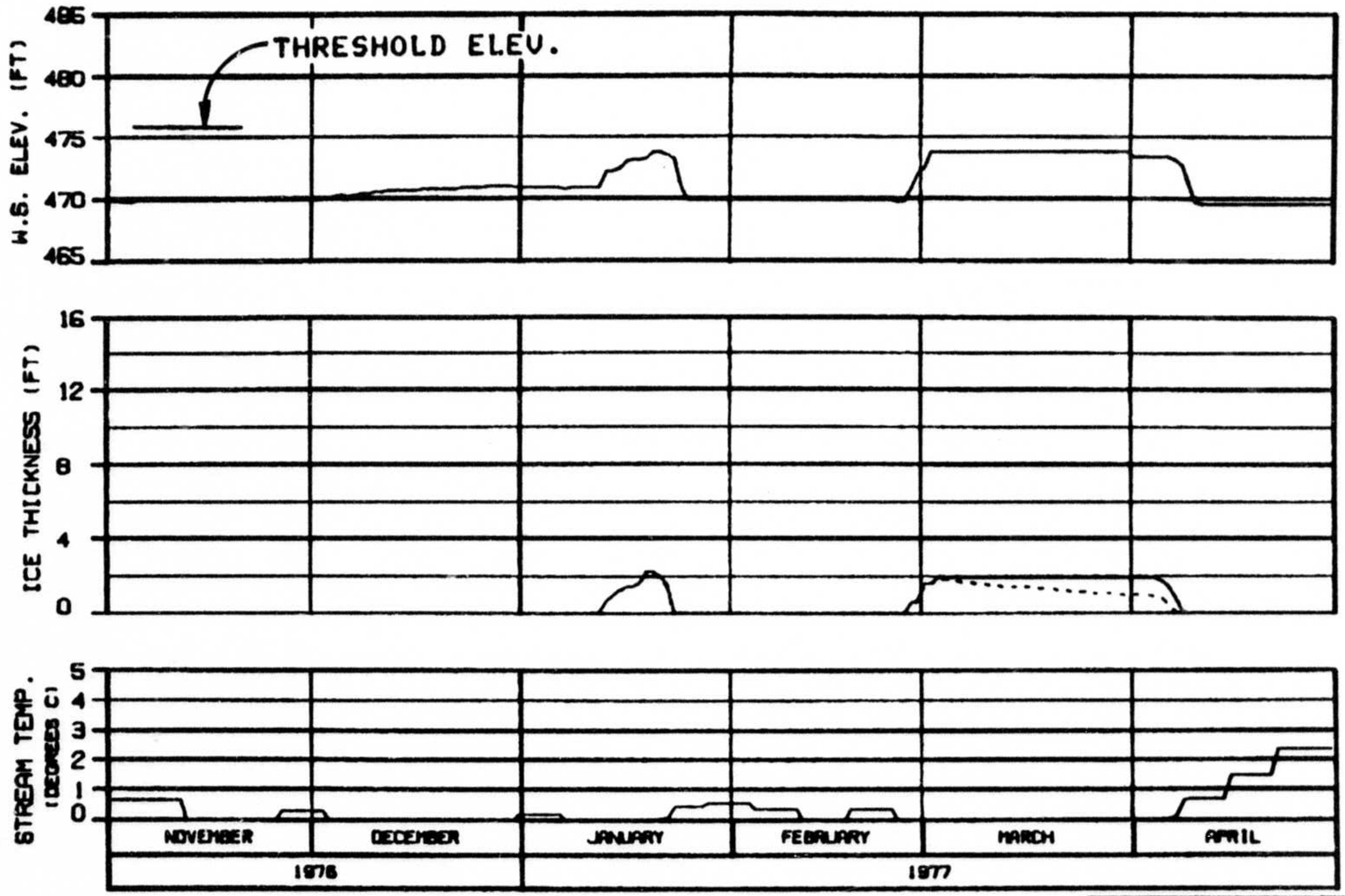

HEAD OF SLOUGH 8

RIVER MILE : 114.10

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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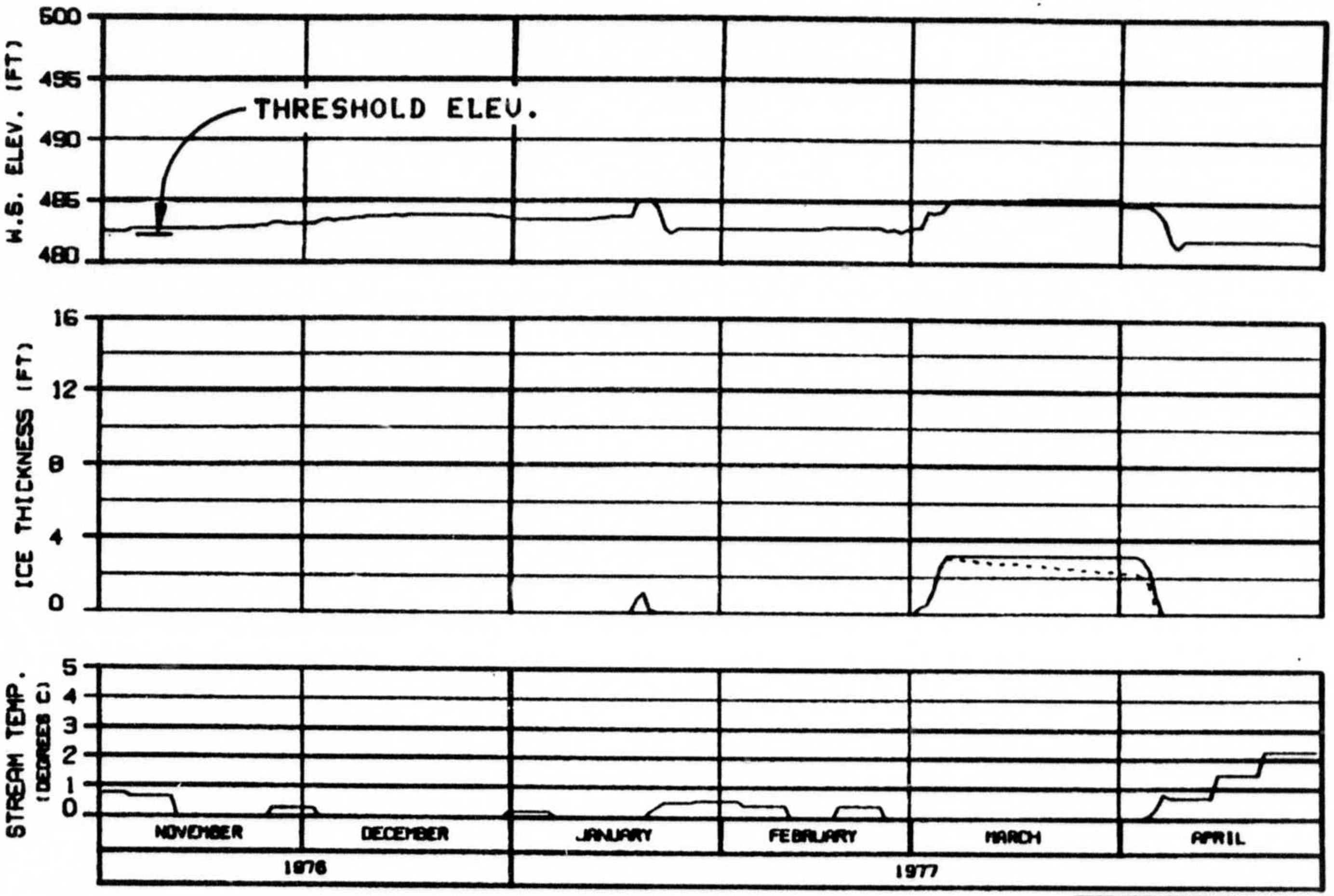


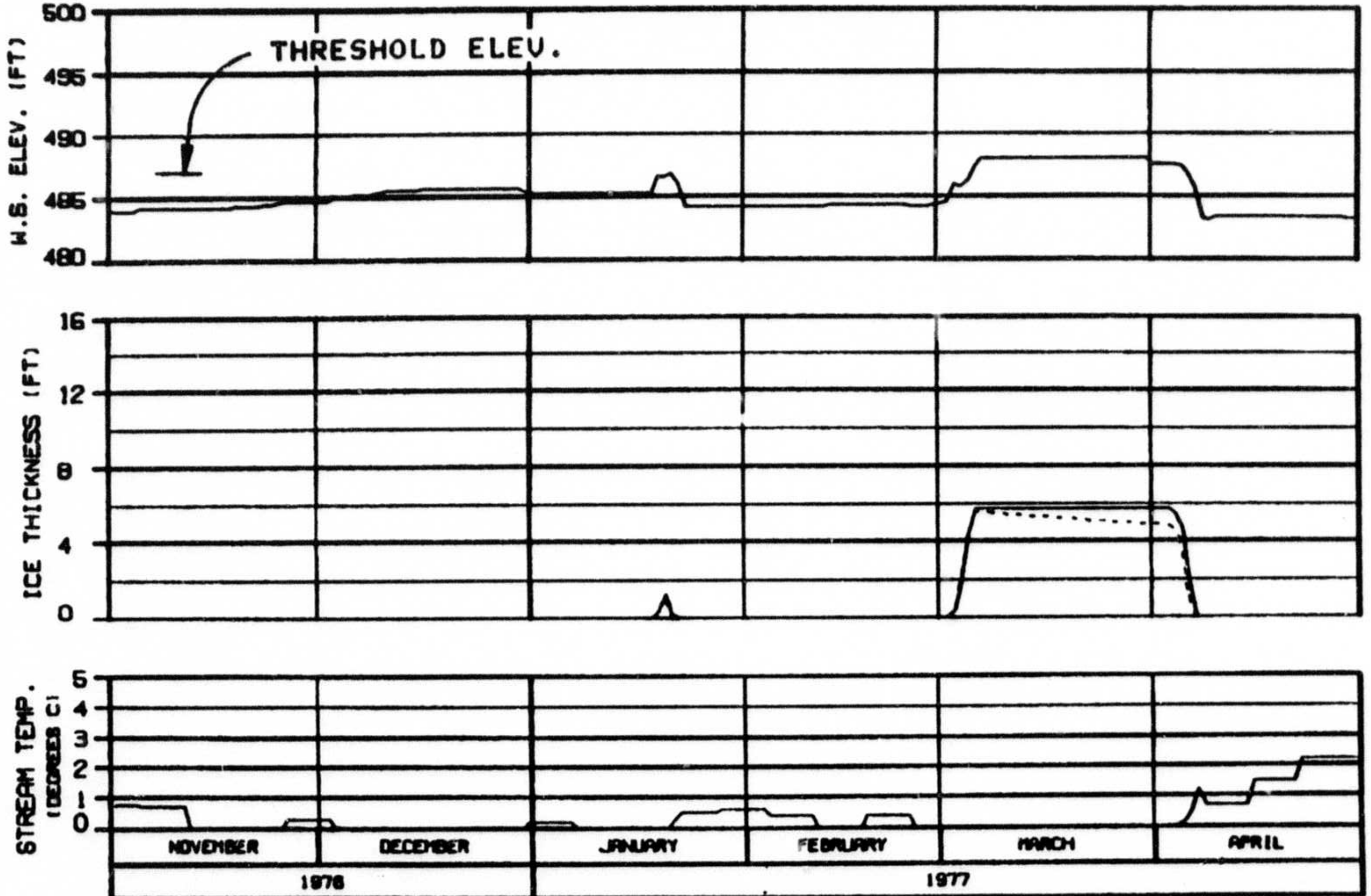
SIDE CHANNEL MSII

RIVER MILE : 115.50

ICE THICKNESS LEGEND:
- ——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SIDE CHANNEL MSII

RIVER MILE : 115.90

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

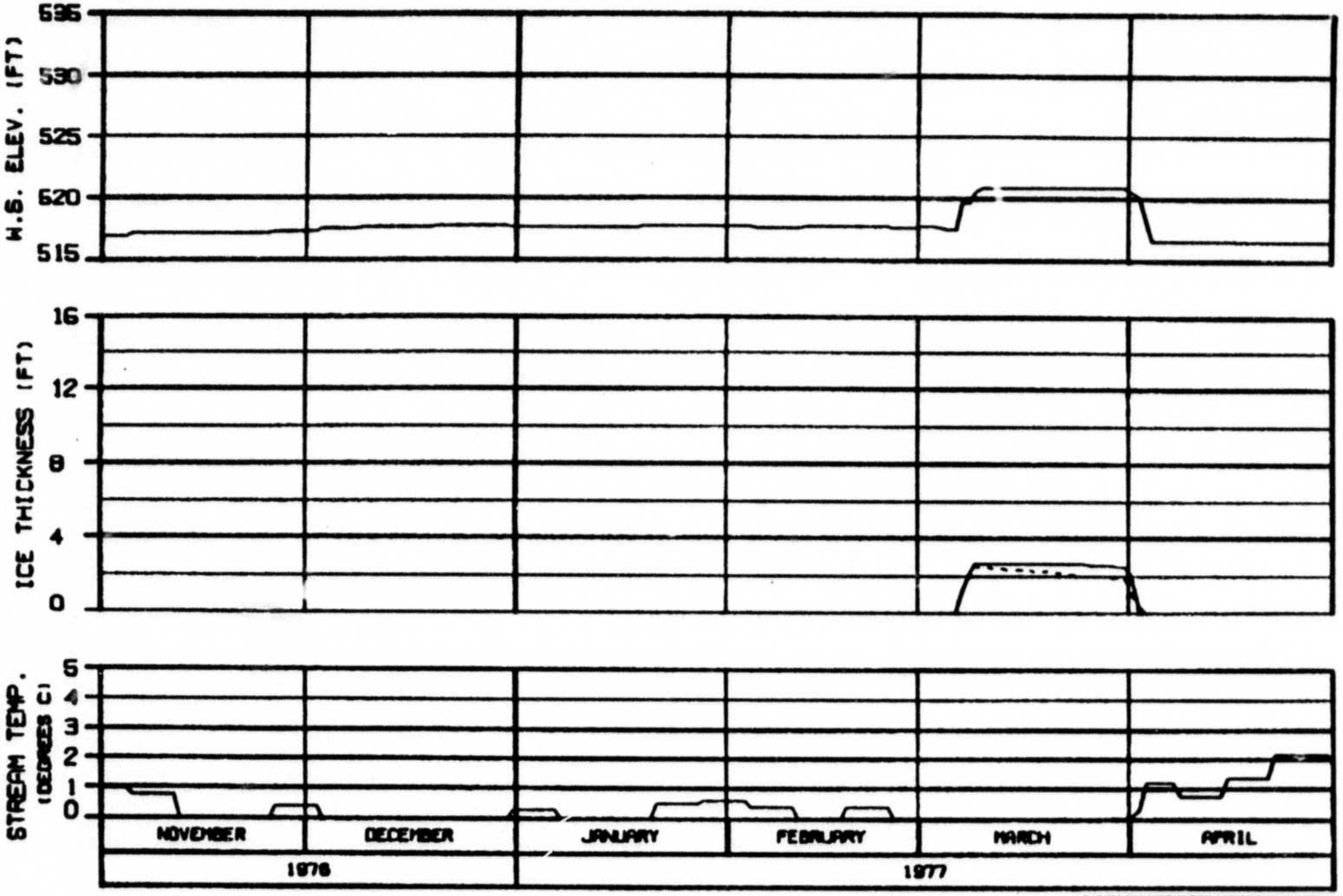
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



RIVER MILE : 120.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

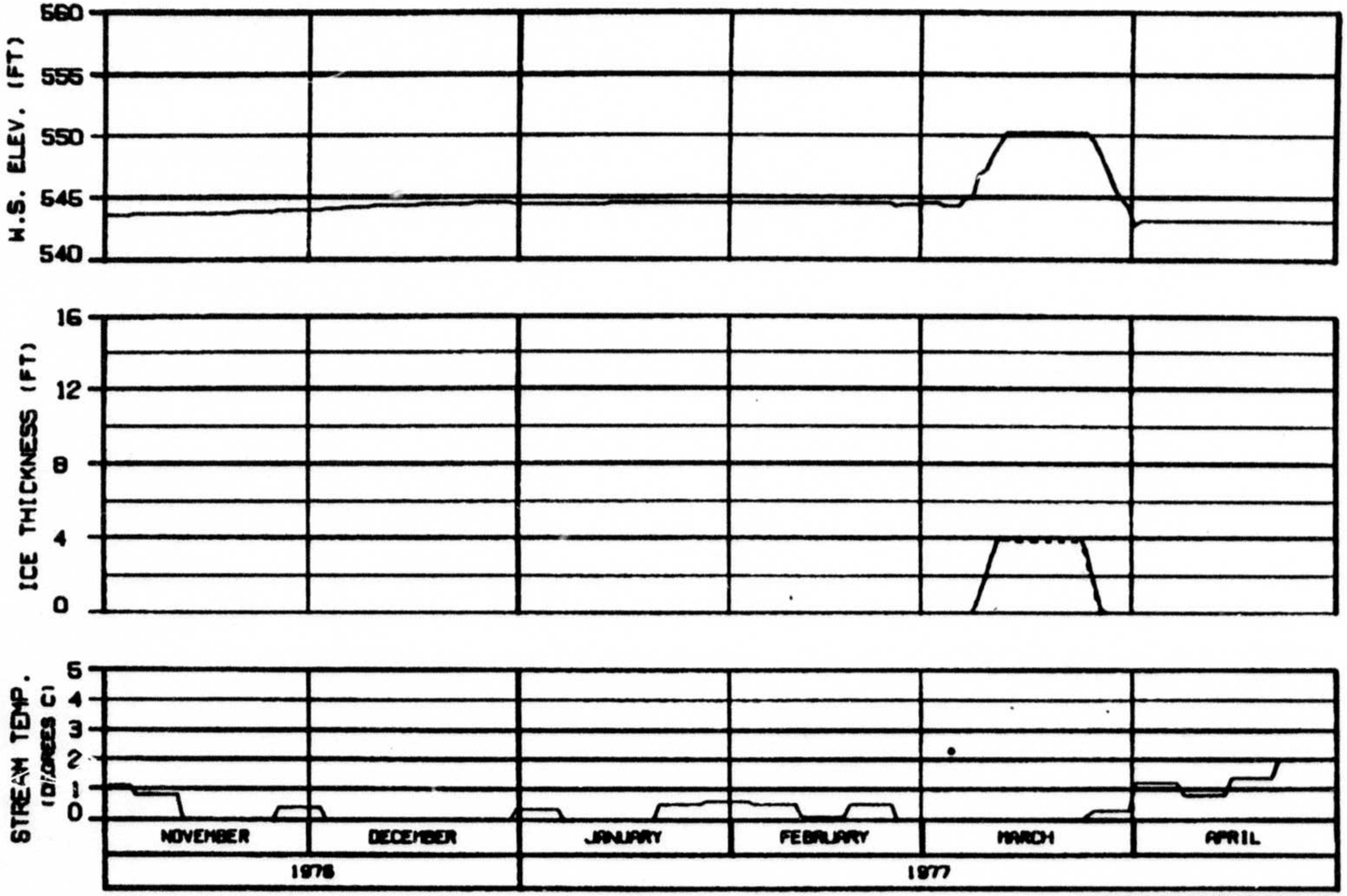
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF MOOSE SLOUGH

RIVER MILE : 123.50

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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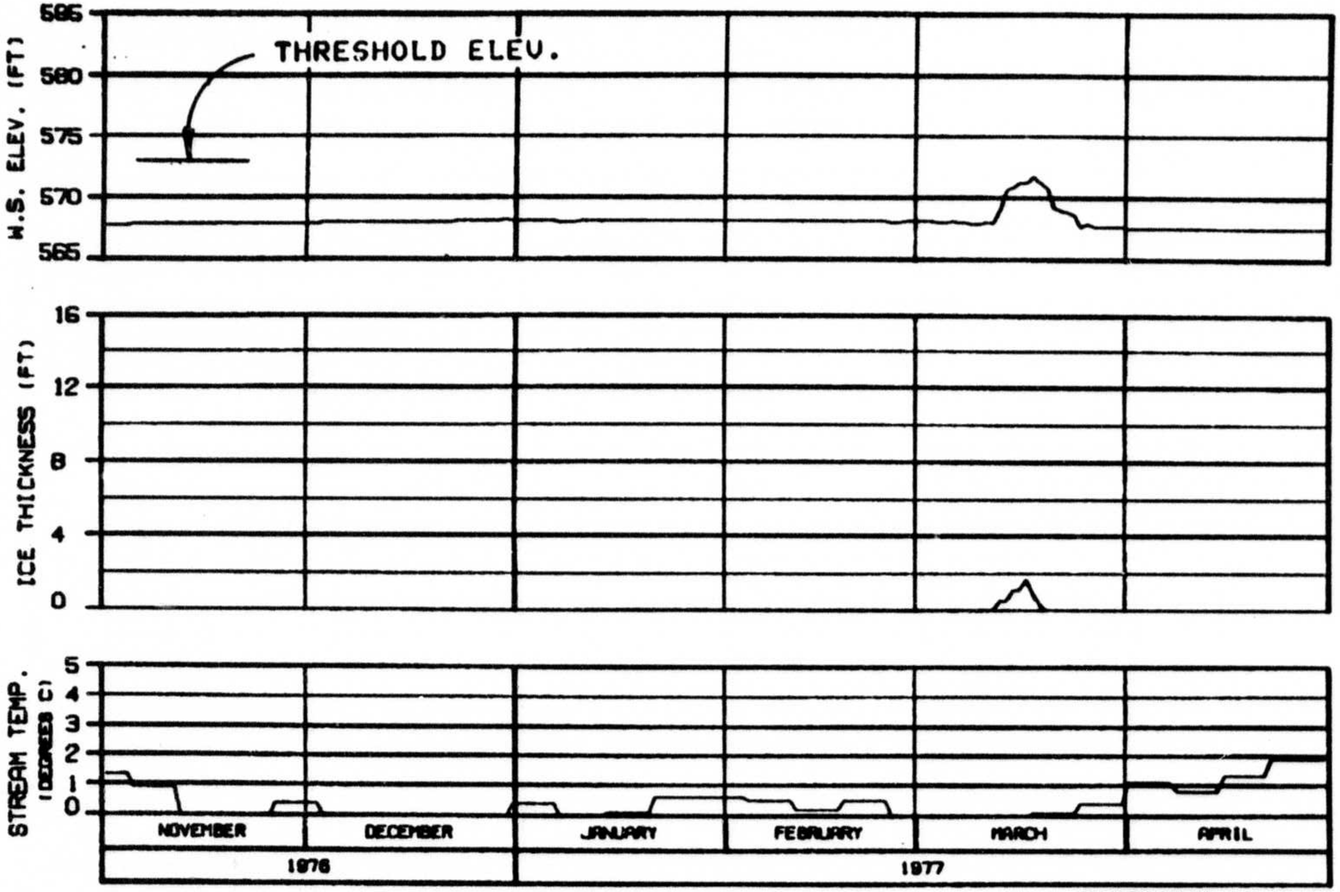

HEAD OF SLOUGH 8A (WEST)

RIVER MILE : 126.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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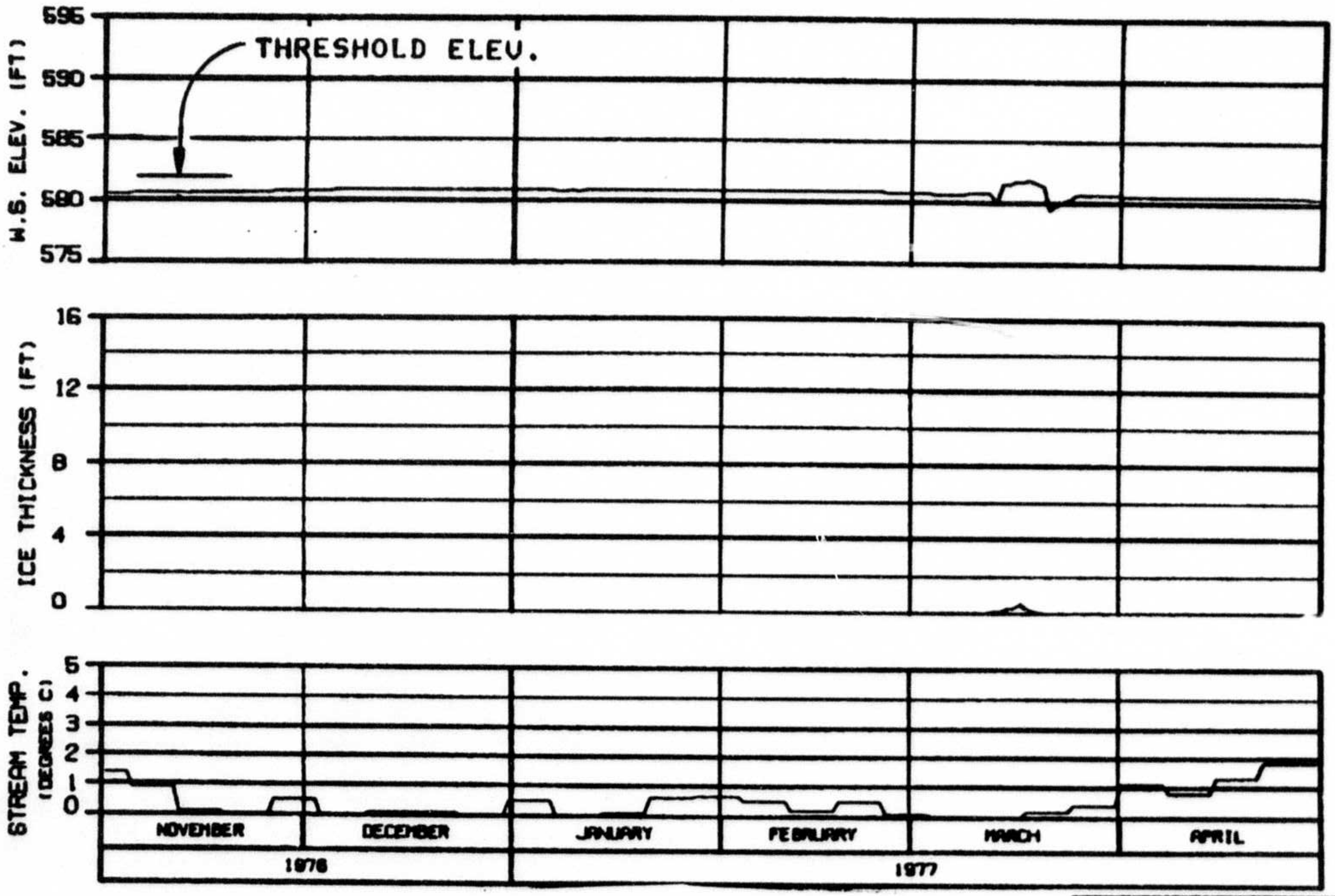


HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

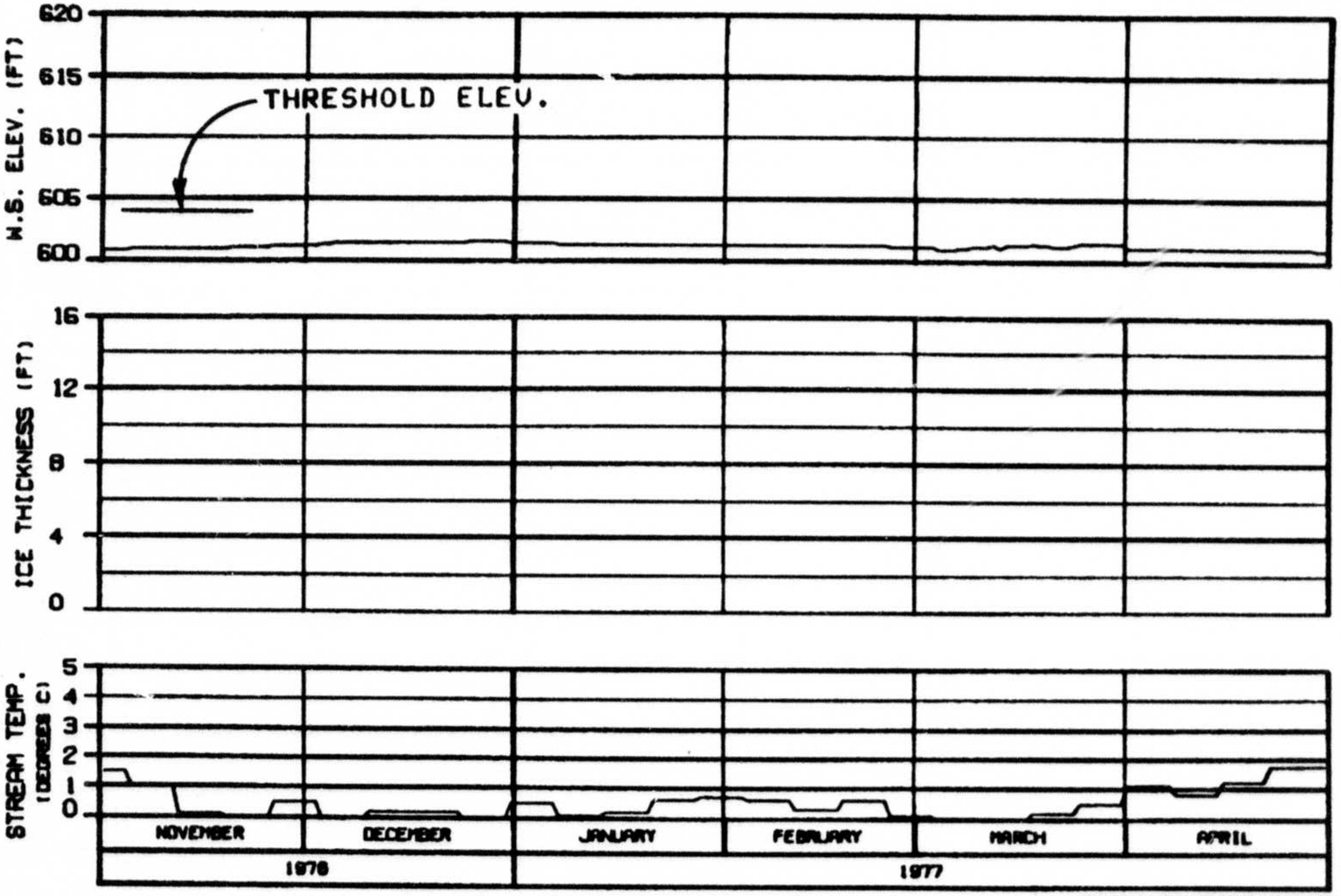
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9

RIVER MILE : 129.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

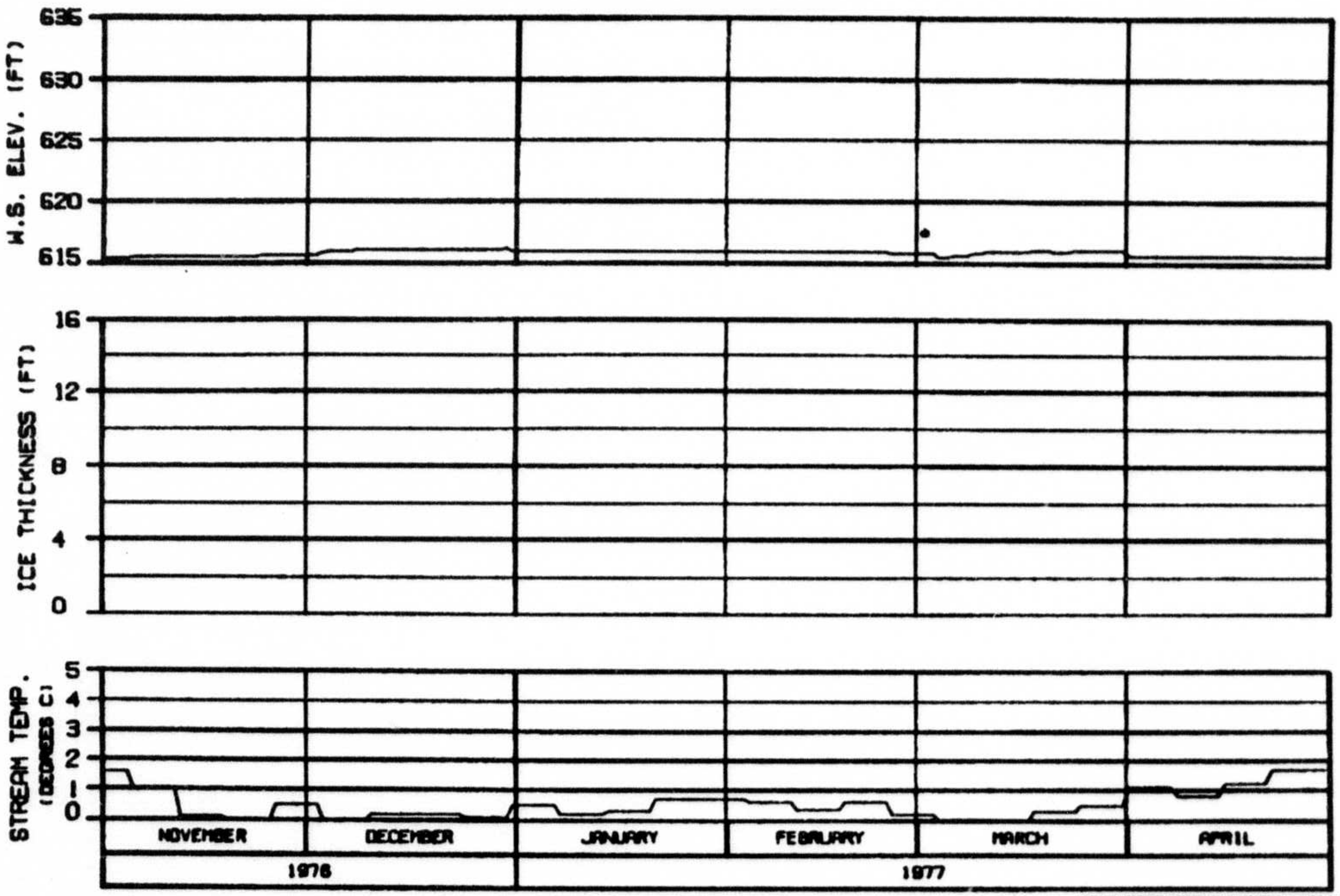
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

[illegible] | [illegible] | [illegible].142

OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

RIVER MILE : 130.60

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

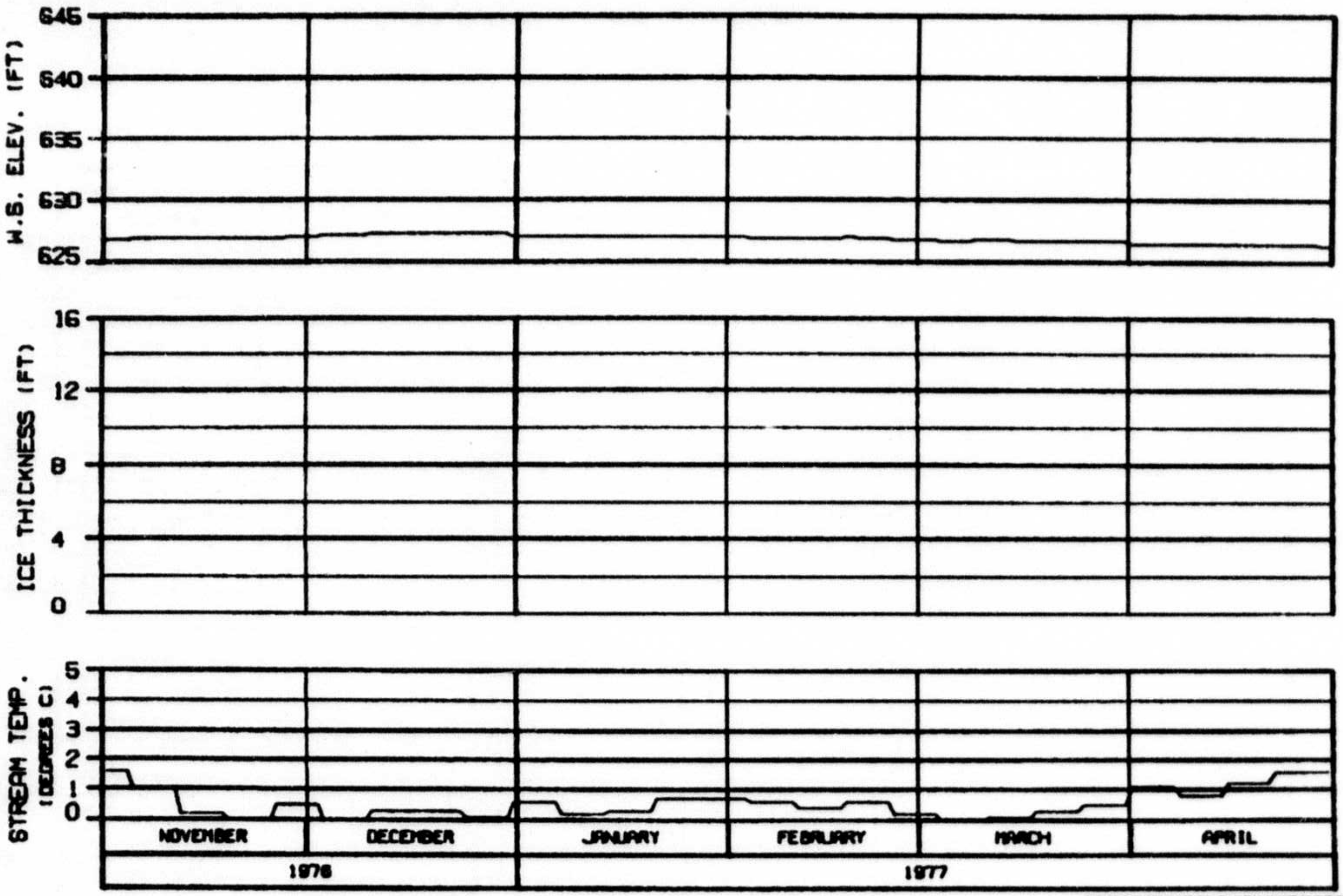
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

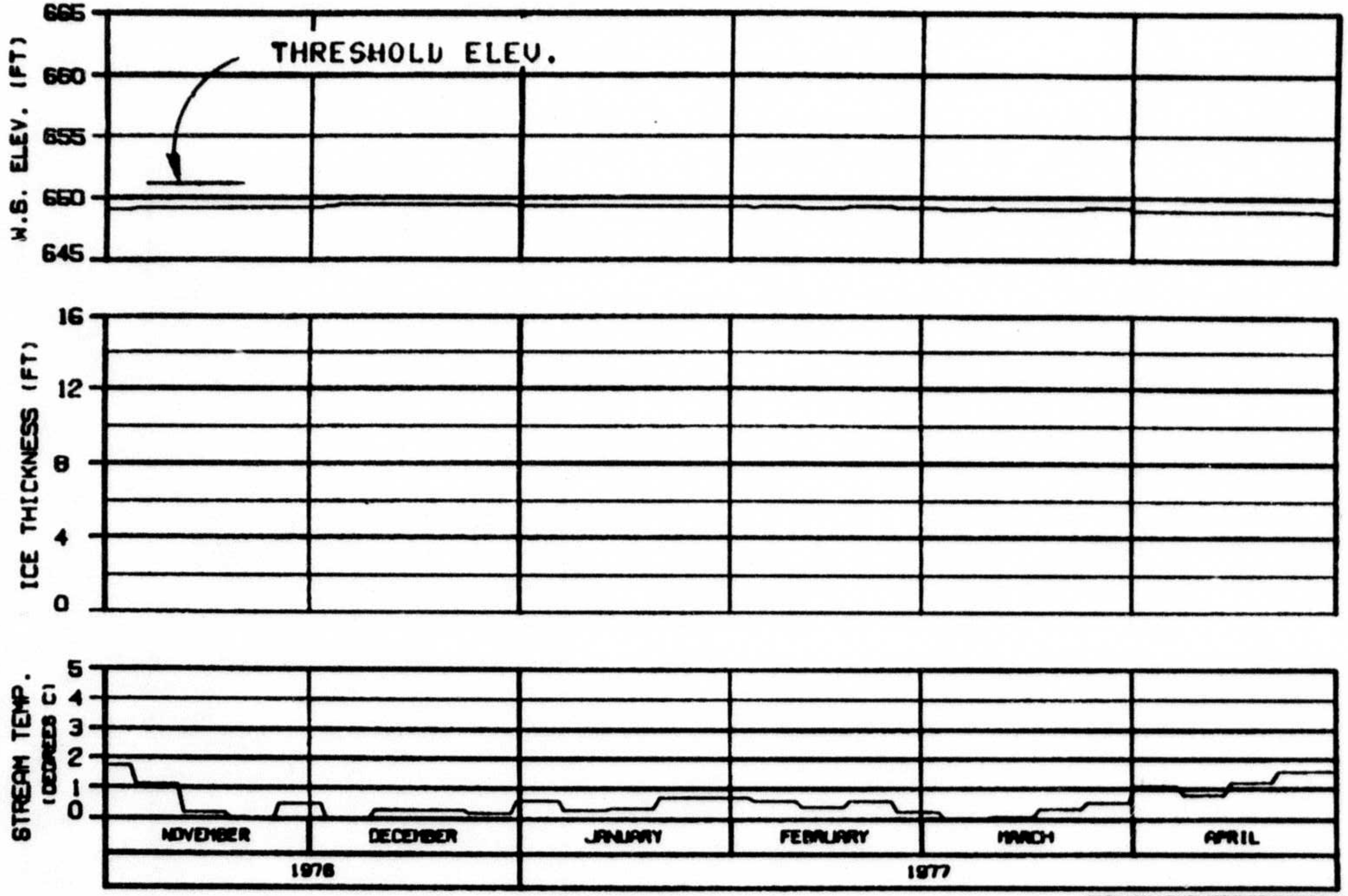
RIVER MILE : 131.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:

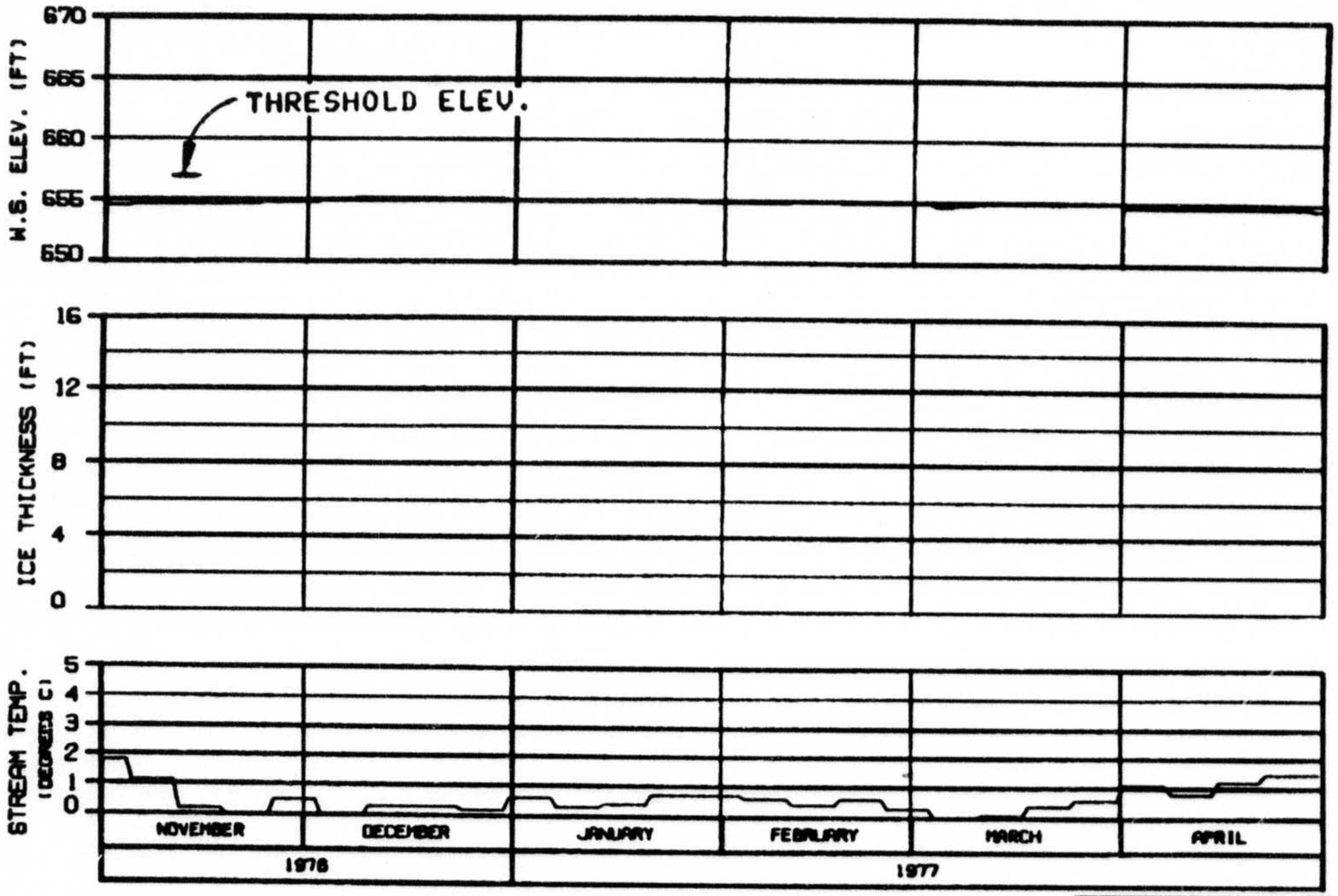
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

HEAD OF SLOUGH 9A

RIVER MILE : 133.70

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



SIDE CHANNEL U/S OF SLOUGH 10

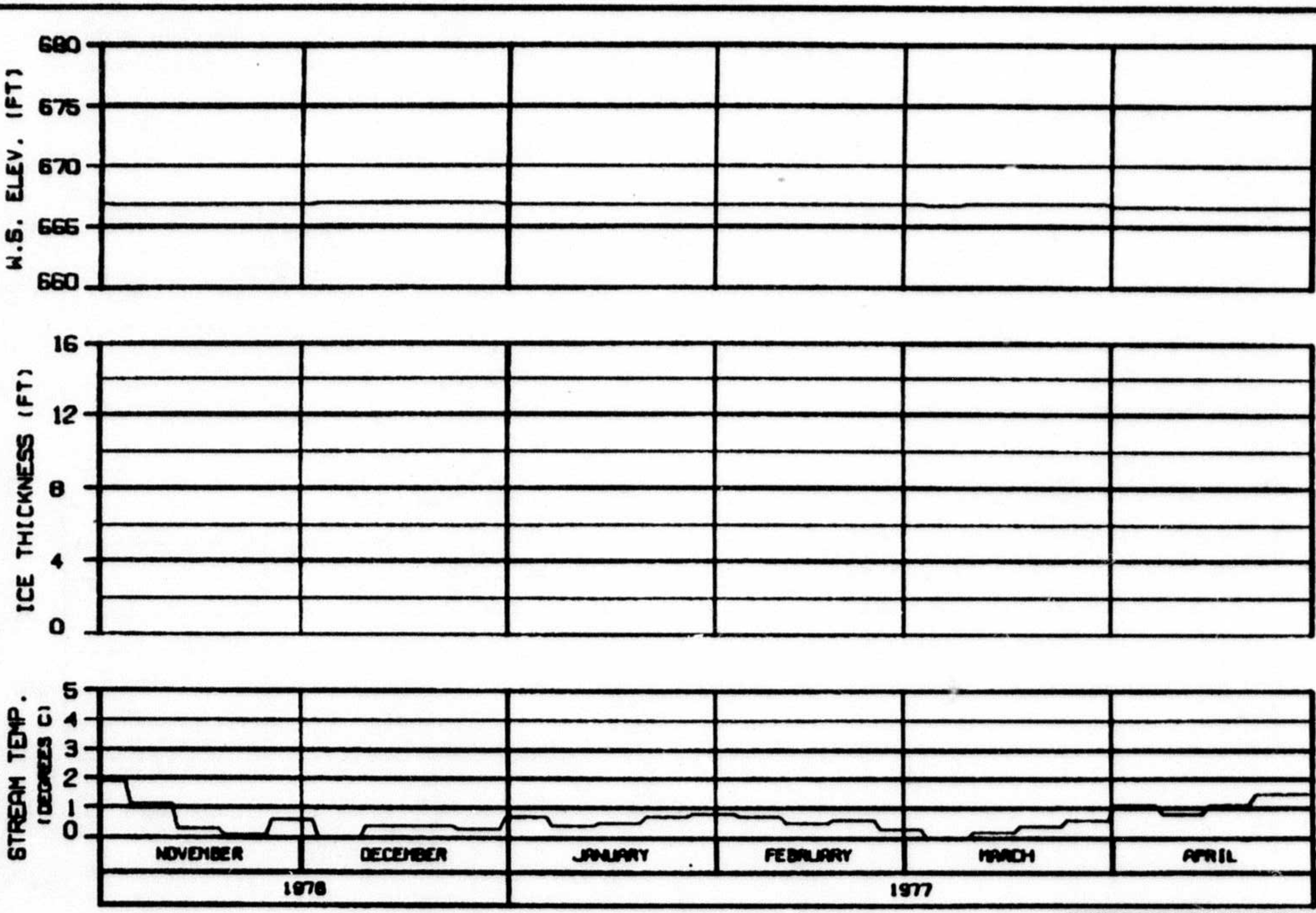
RIVER MILE : 134.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

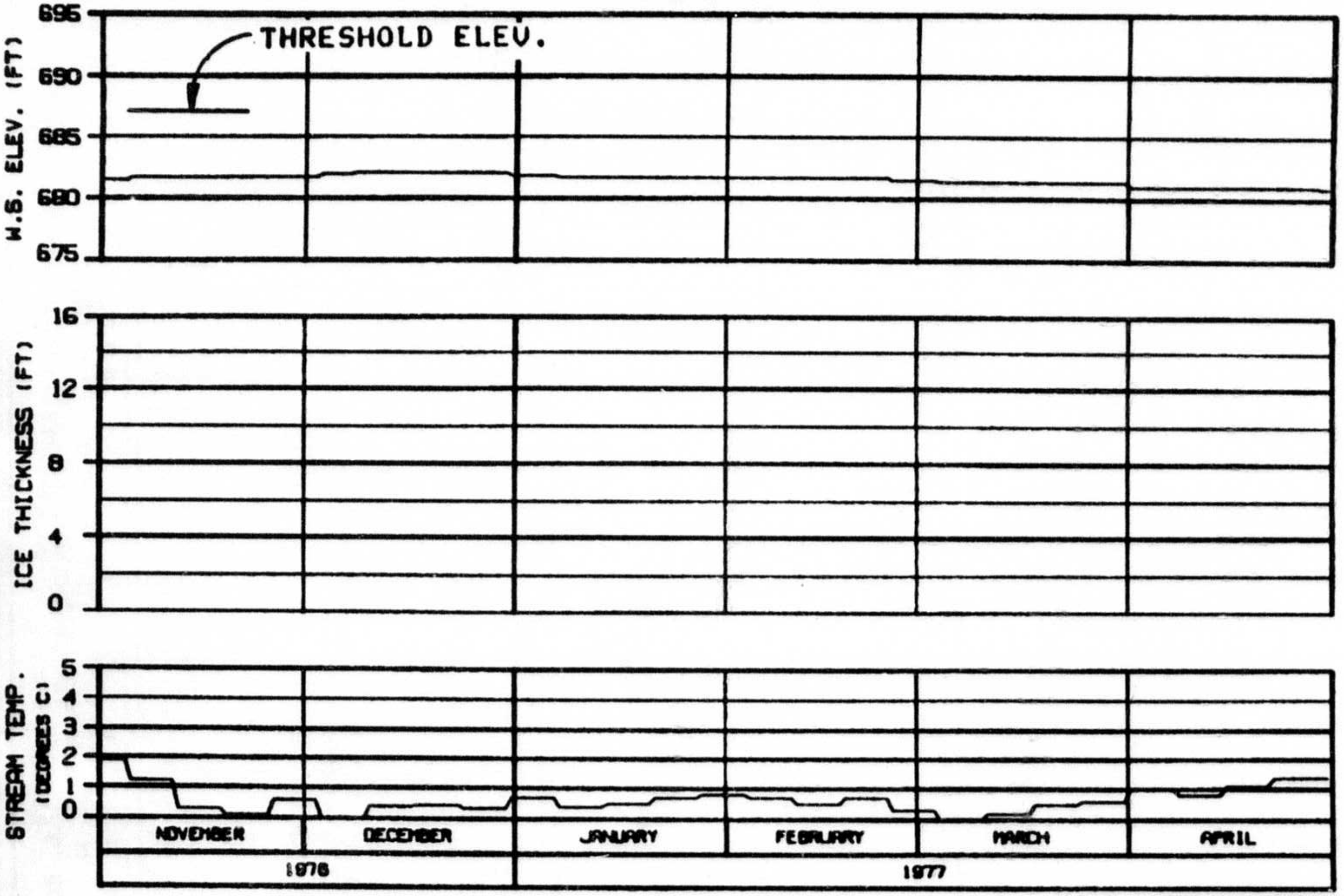
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 11

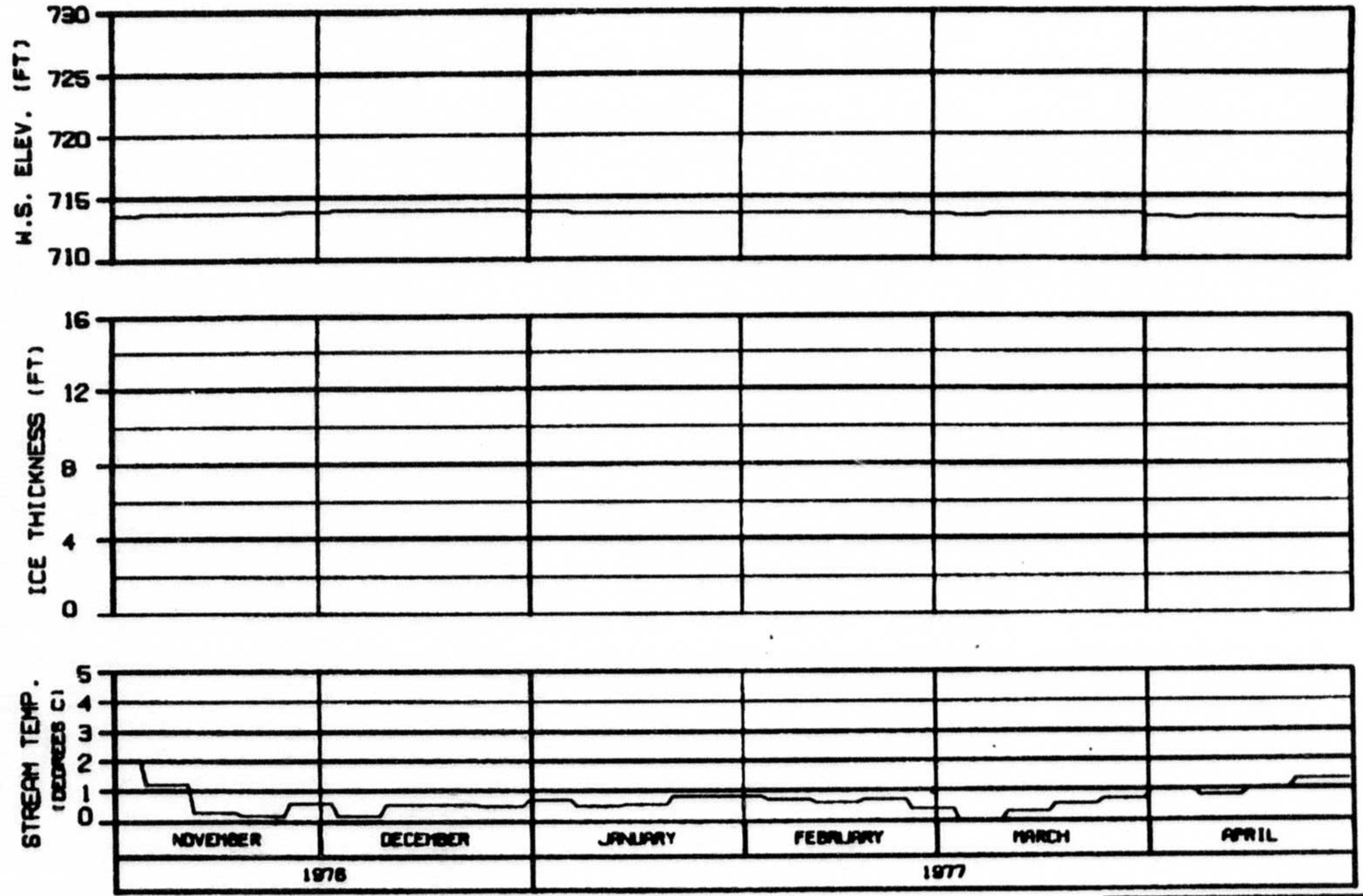
RIVER MILE : 136.50

ICE THICKNESS LEGEND:

—— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 17

RIVER MILE : 139.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - SLUSH COMPONENT

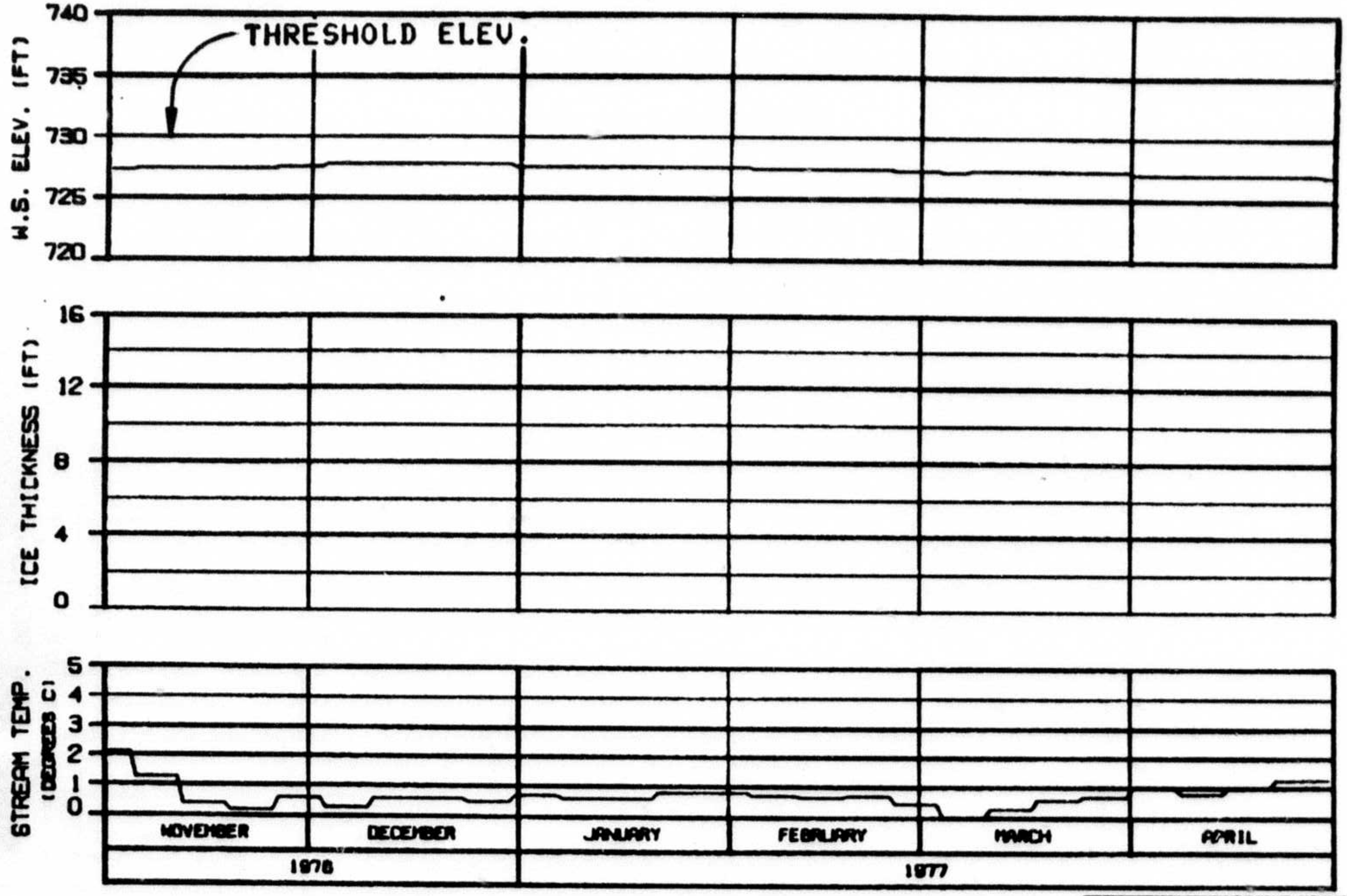
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 20

RIVER MILE : 140.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

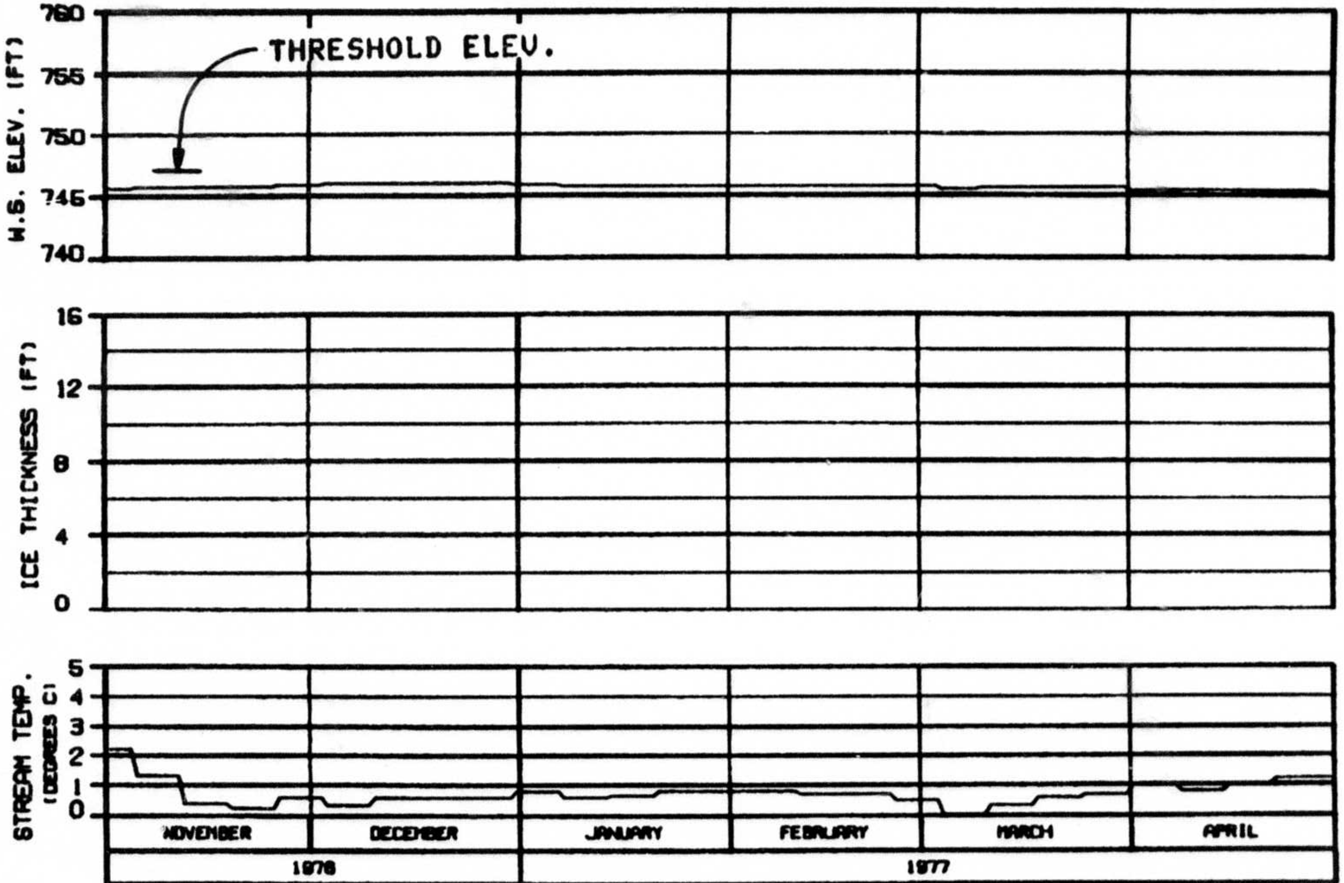
WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SLOUGH 21 (ENTRANCE A6)

RIVER MILE : 141.80

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	

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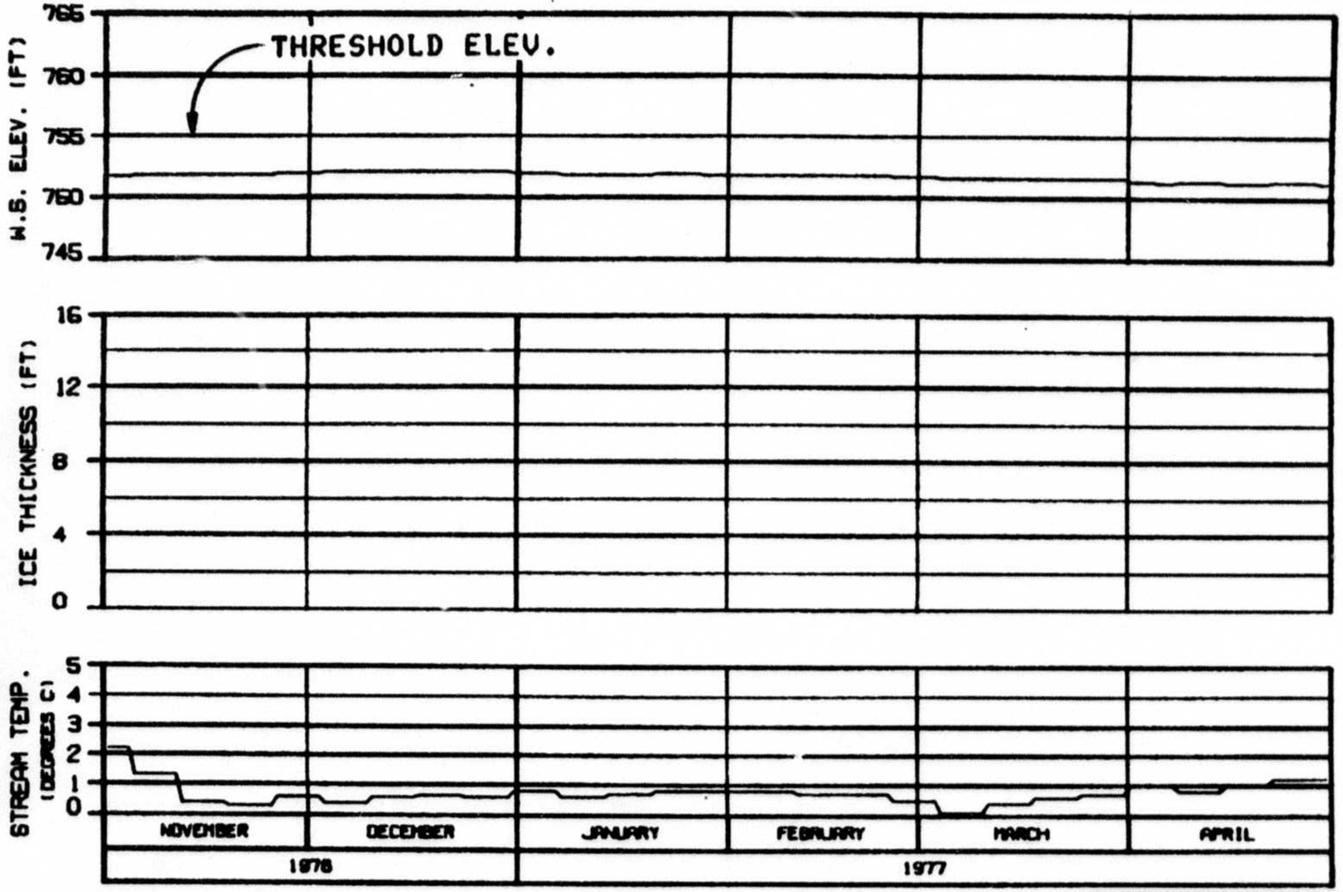


HEAD OF SLOUGH 21

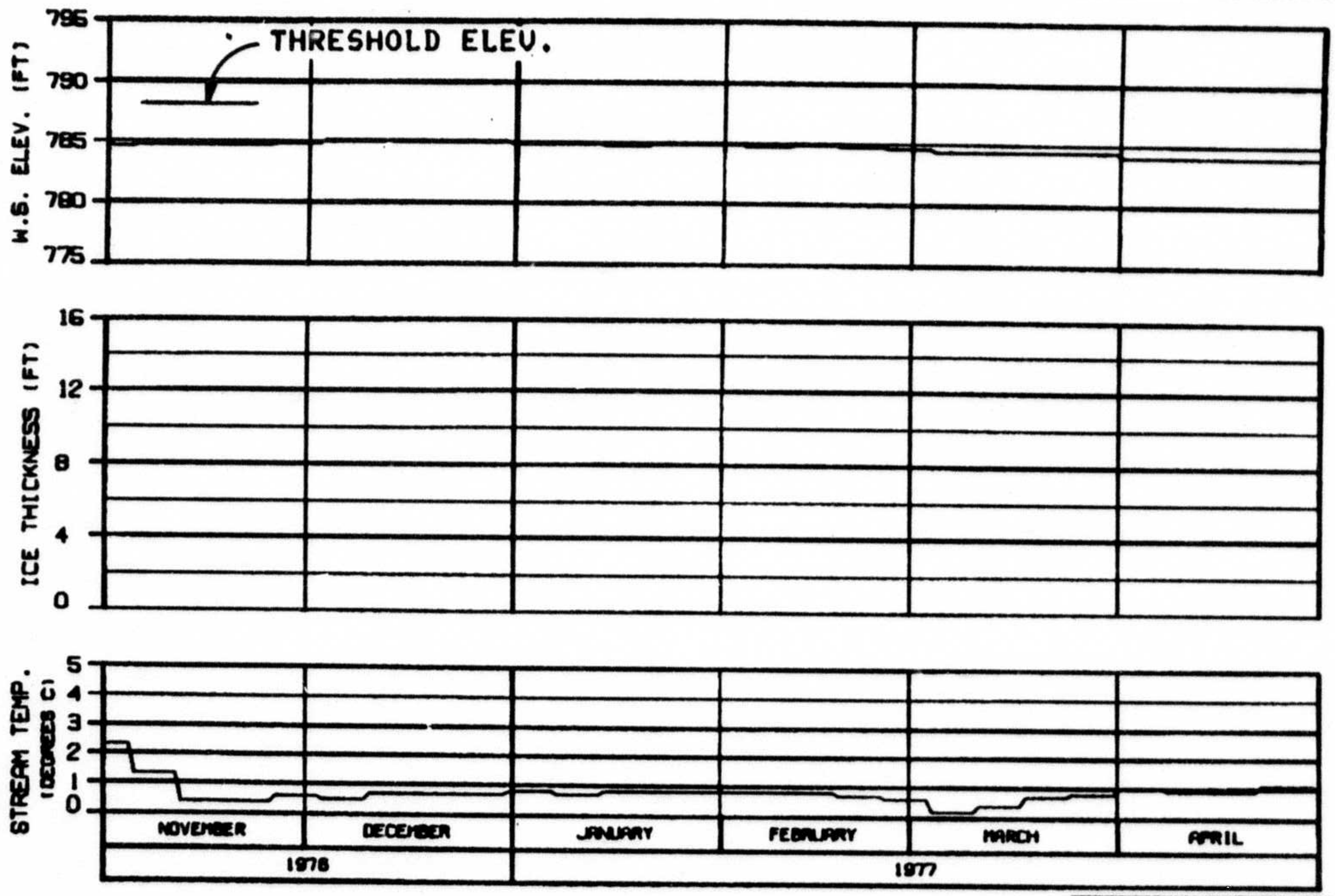
RIVER MILE : 142.20

ICE THICKNESS LEGEND:
—— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE

CC



HEAD OF SLOUGH 22

RIVER MILE : 144.80

WEATHER PERIOD : 1 NOV 76 - 30 APR 77
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7602CNA

ICE THICKNESS LEGEND:

———— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

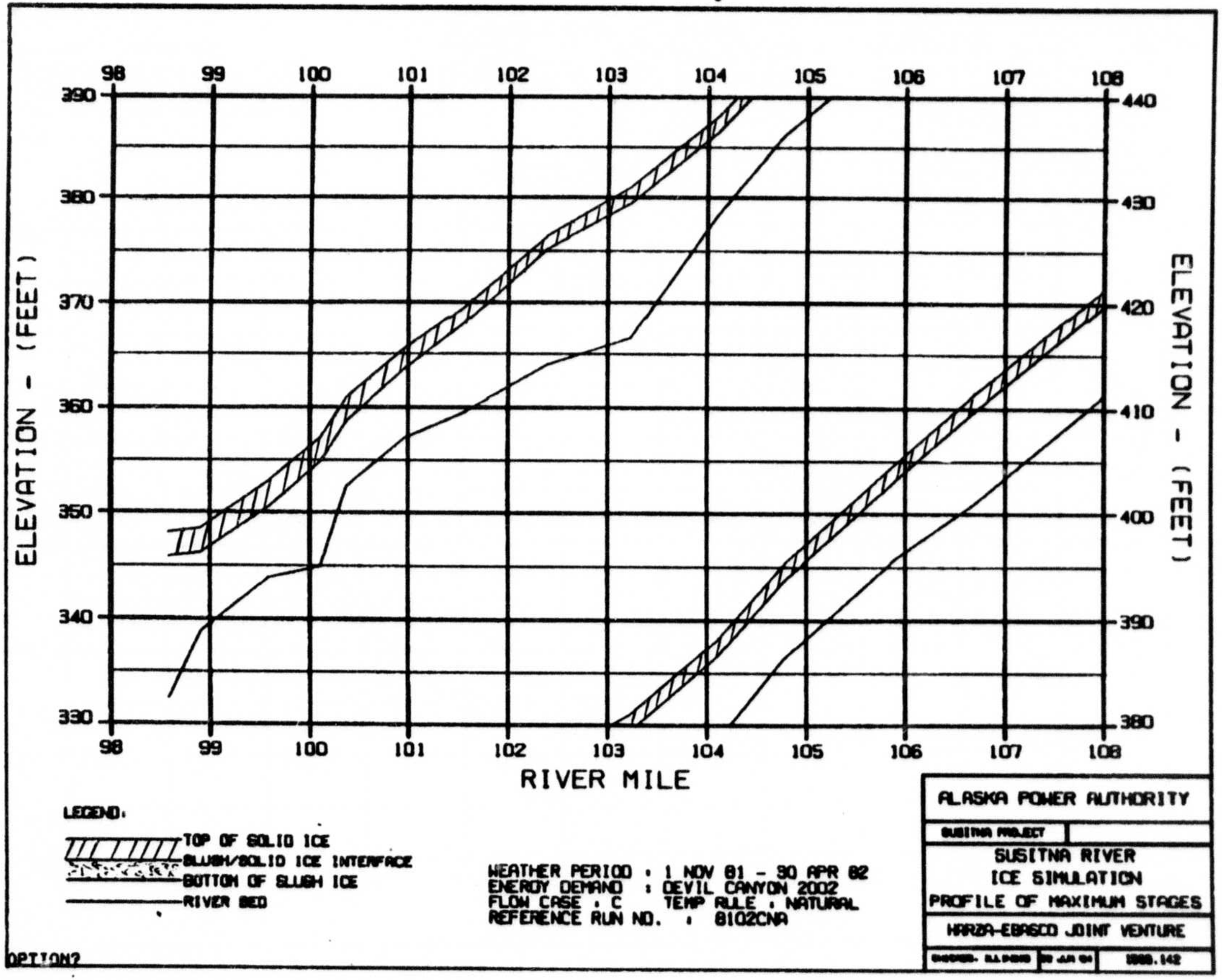
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?

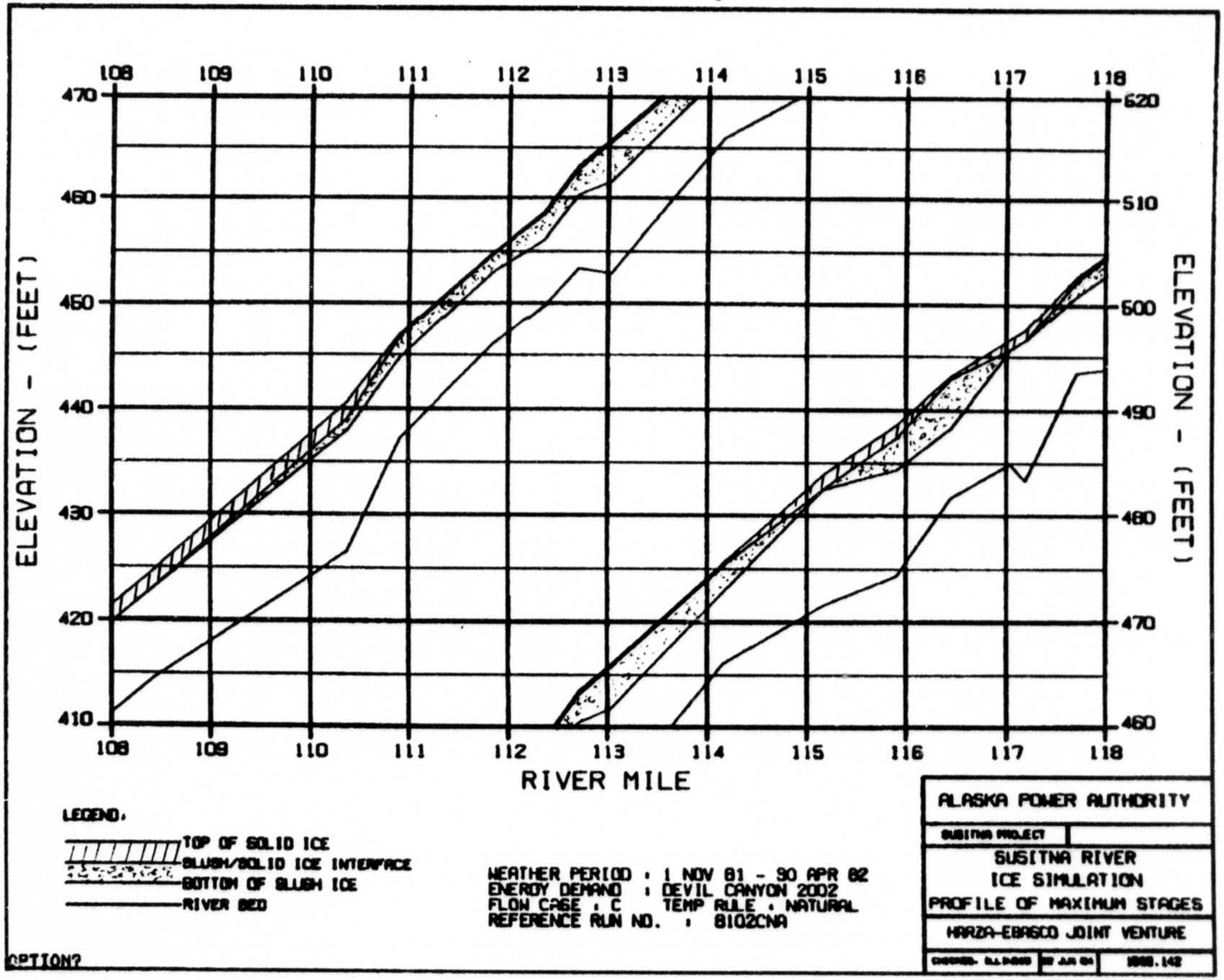
EXHIBIT N

C

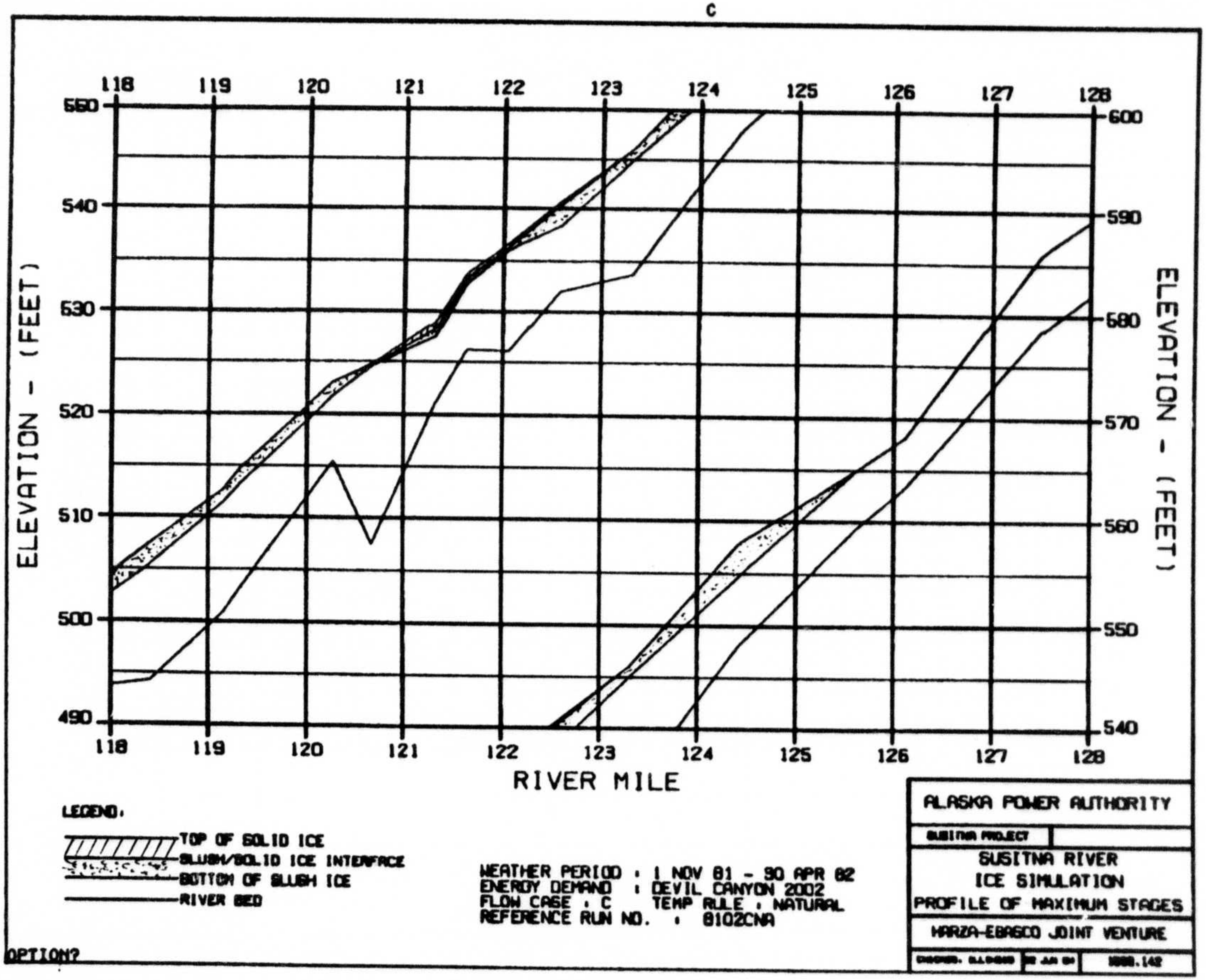


ELEVATION - (FEET)
RIVER MILE
98 99 100 101 102 103 104 105 106 107 108
390 380 370 360 350 340 330
440 430 420 410 400 390 380
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

C

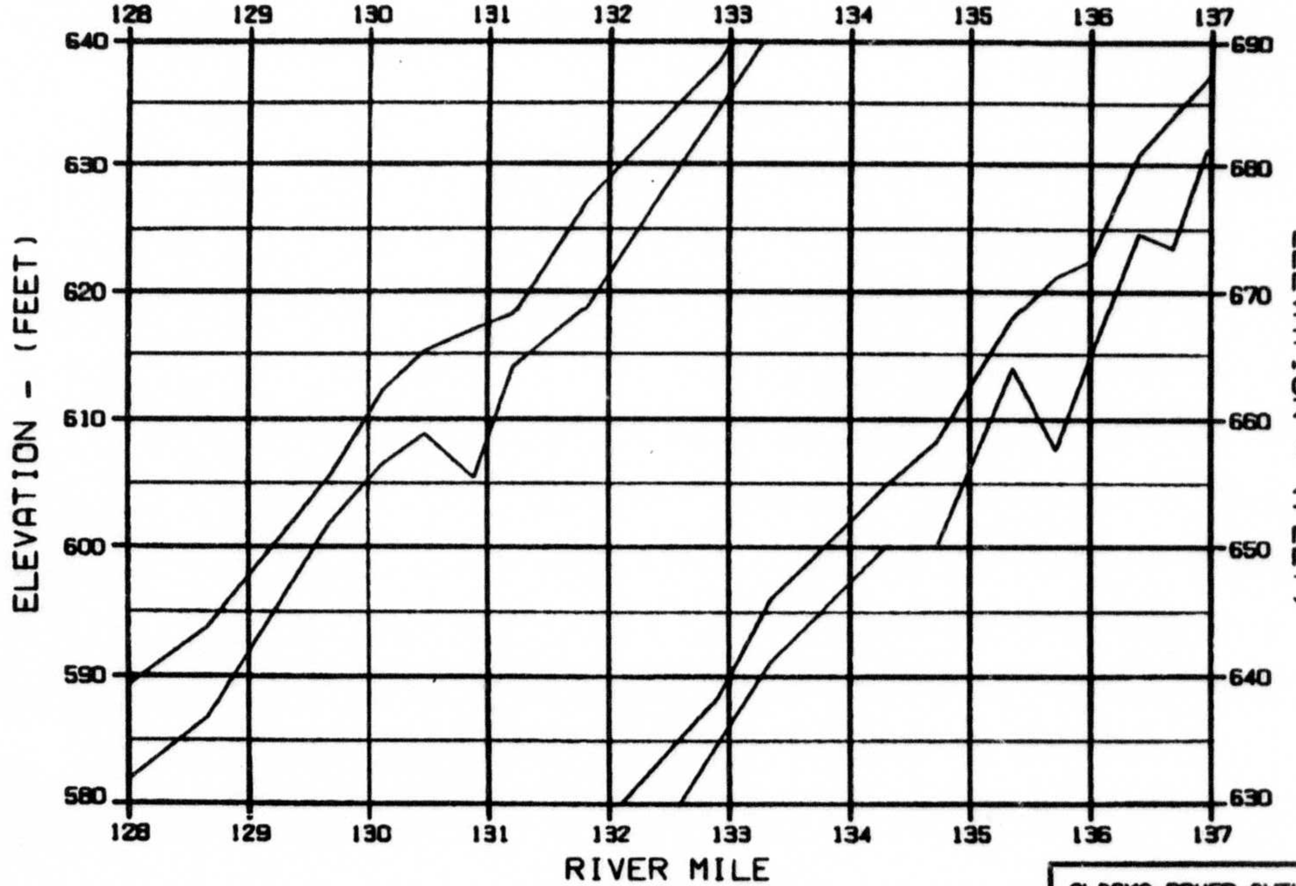


ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
108
109
110
111
112
113
114
115
116
117
118
470
460
450
440
430
420
410
620
510
500
490
480
470
460
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA
ALASKA POWER AUTHORITY
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?



C
118 119 120 121 122 123 124 125 126 127 128
560 540 530 520 510 500 490
600 590 580 570 560 550 540
ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

C



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY

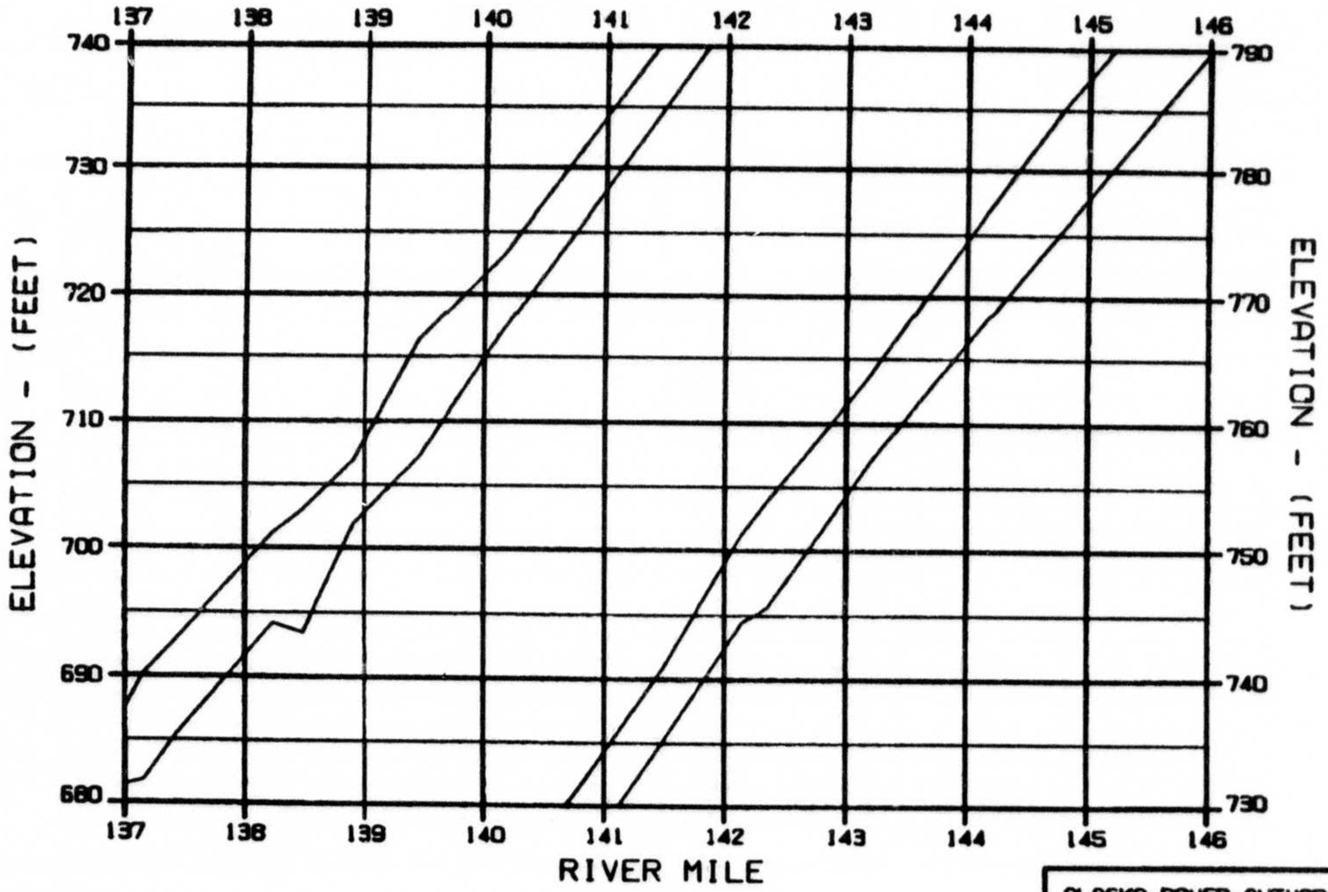
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

C



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

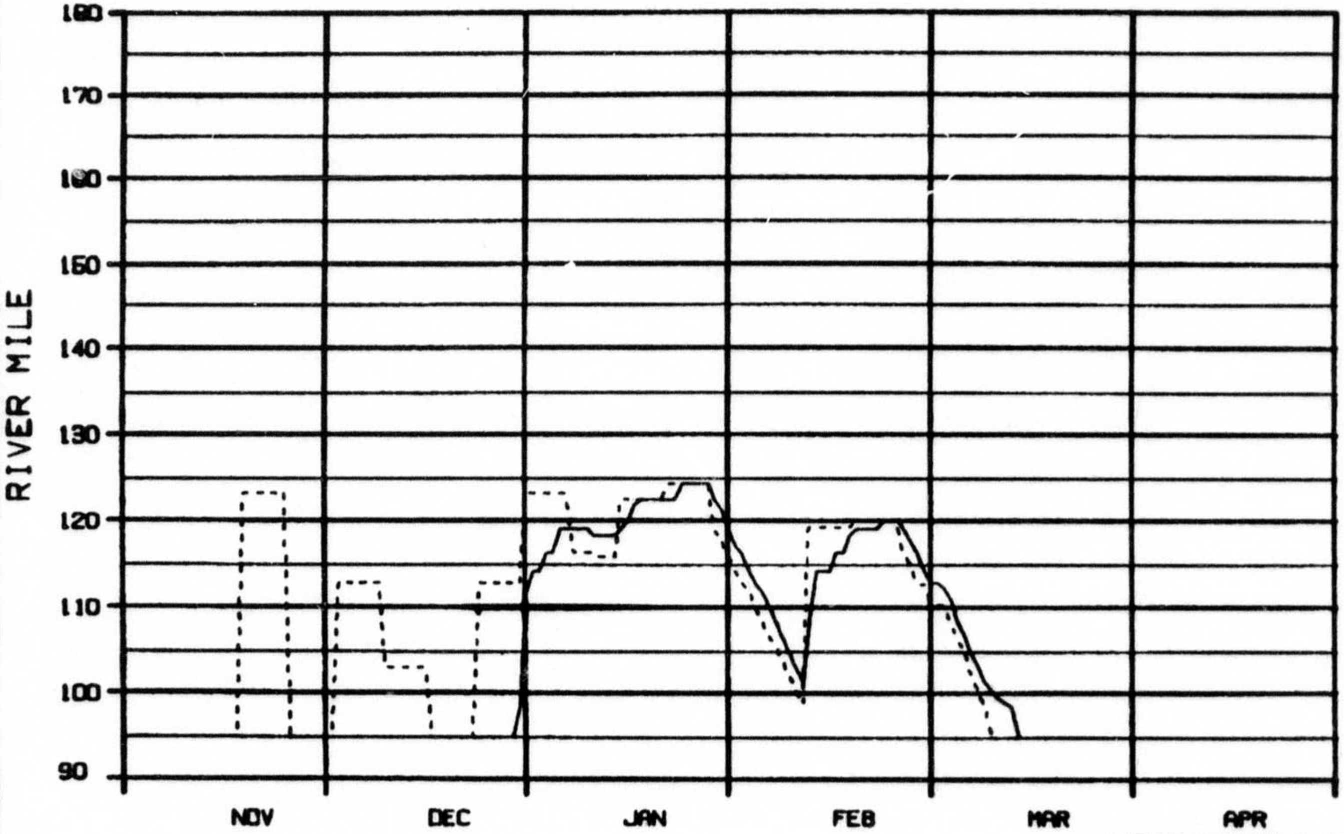
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?



LEGEND:

———— ICE FRONT

- - - - - ZERO DEGREE ISOTHERM

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER PROGRESSION OF ICE FRONT & ZERO DEGREE ISOTHERM		
HARZA-EBASCO JOINT VENTURE		
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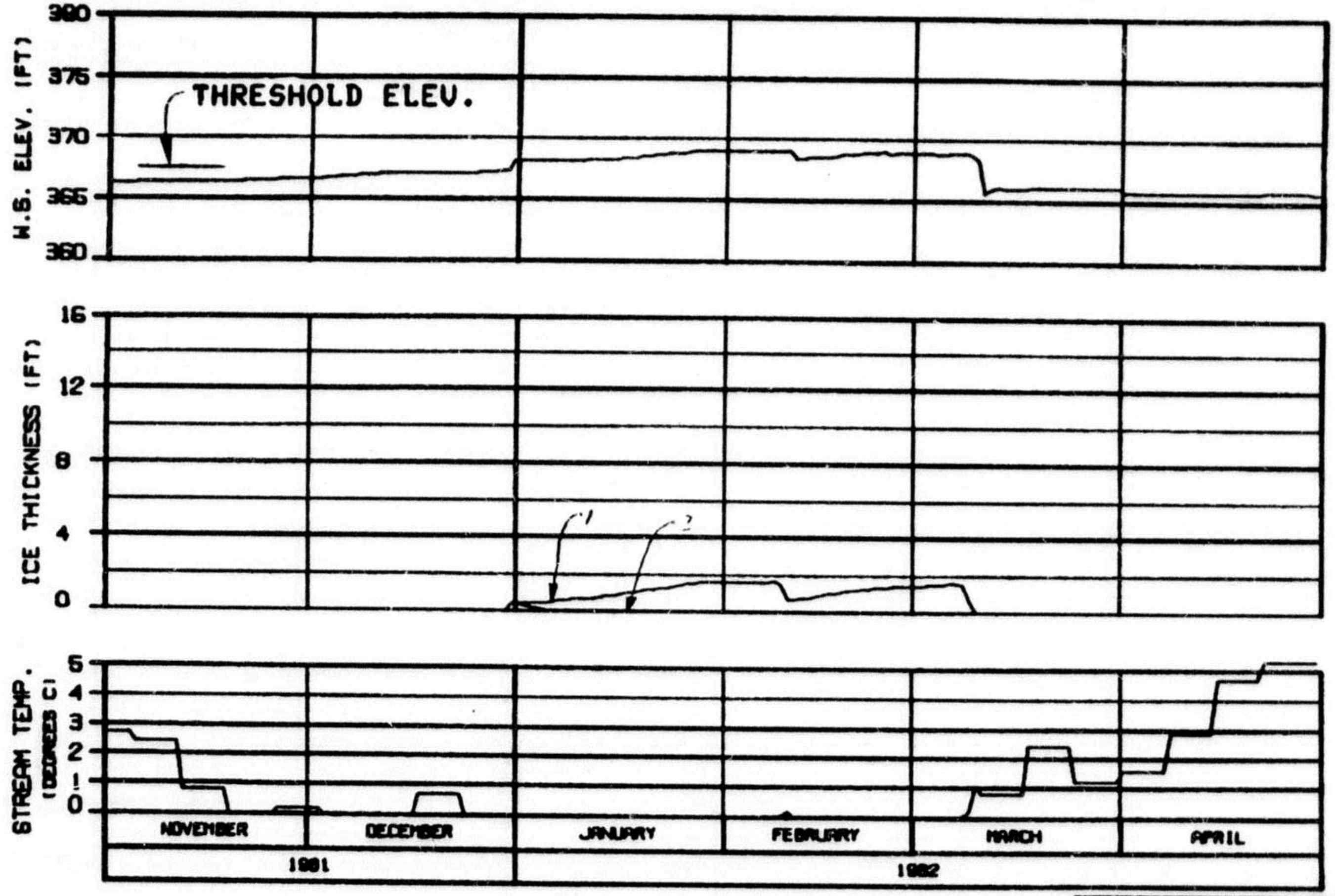
OPTION?



HEAD OF WHISKERS SLOUGH

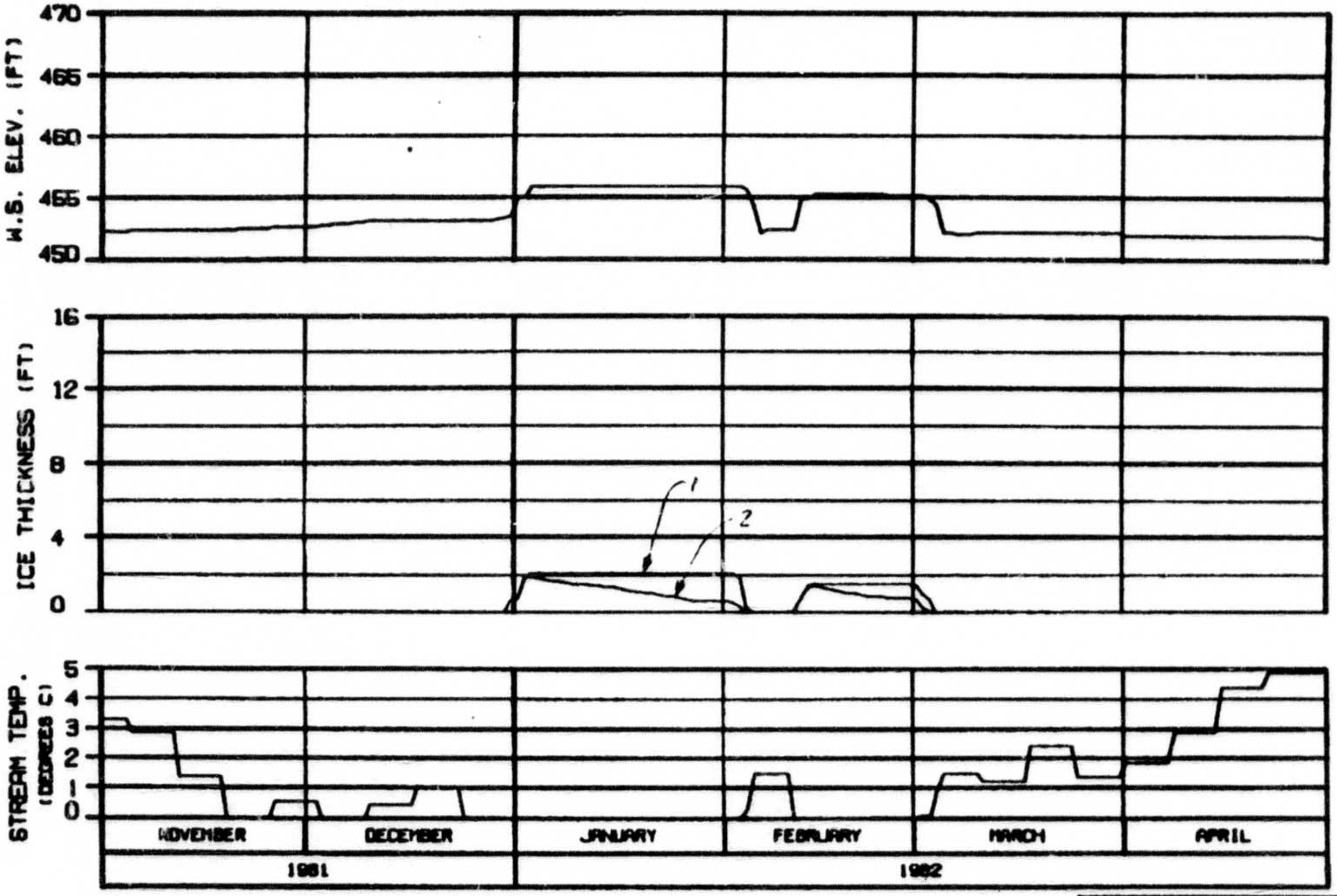
RIVER MILE : 101.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
1983.142



SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

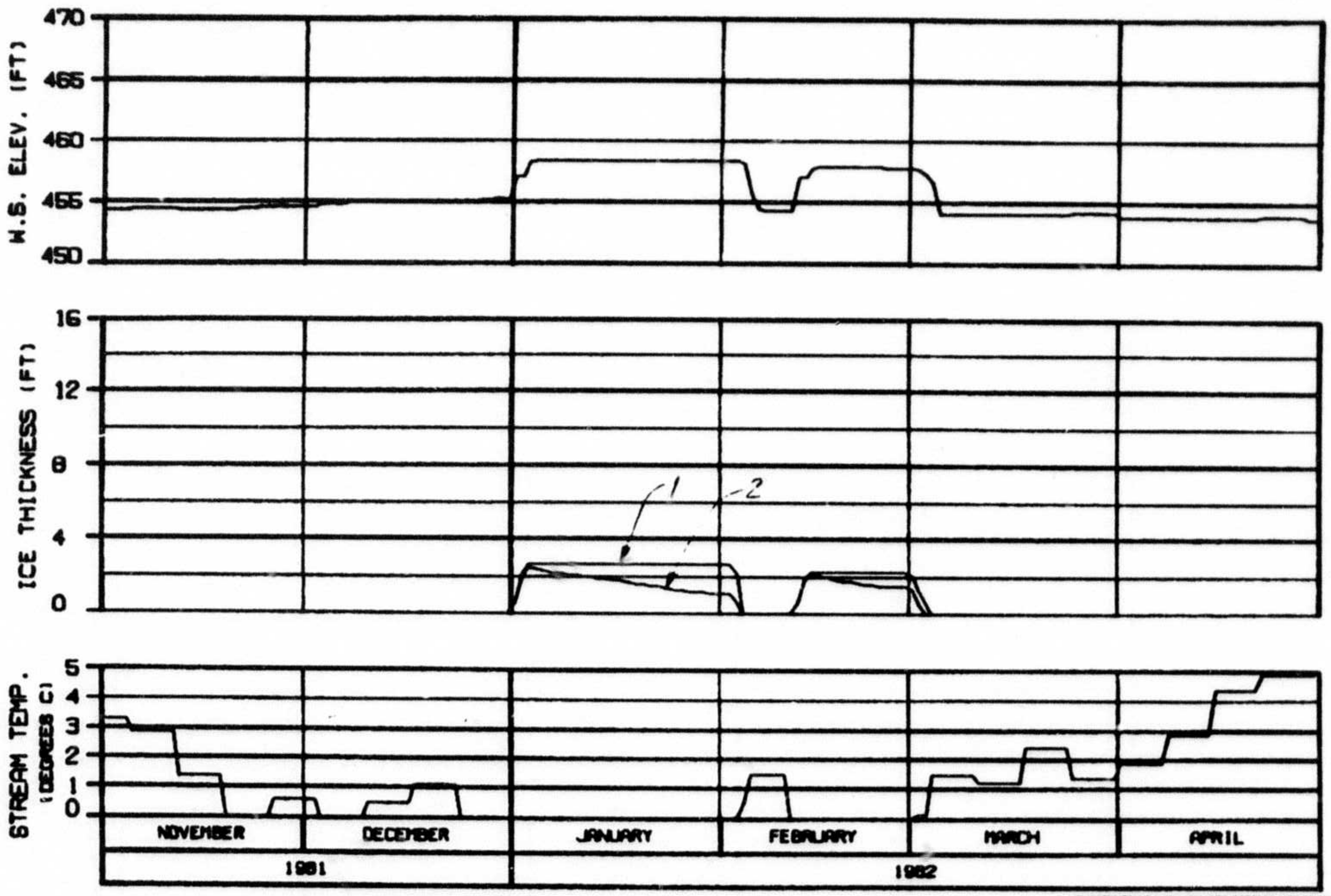
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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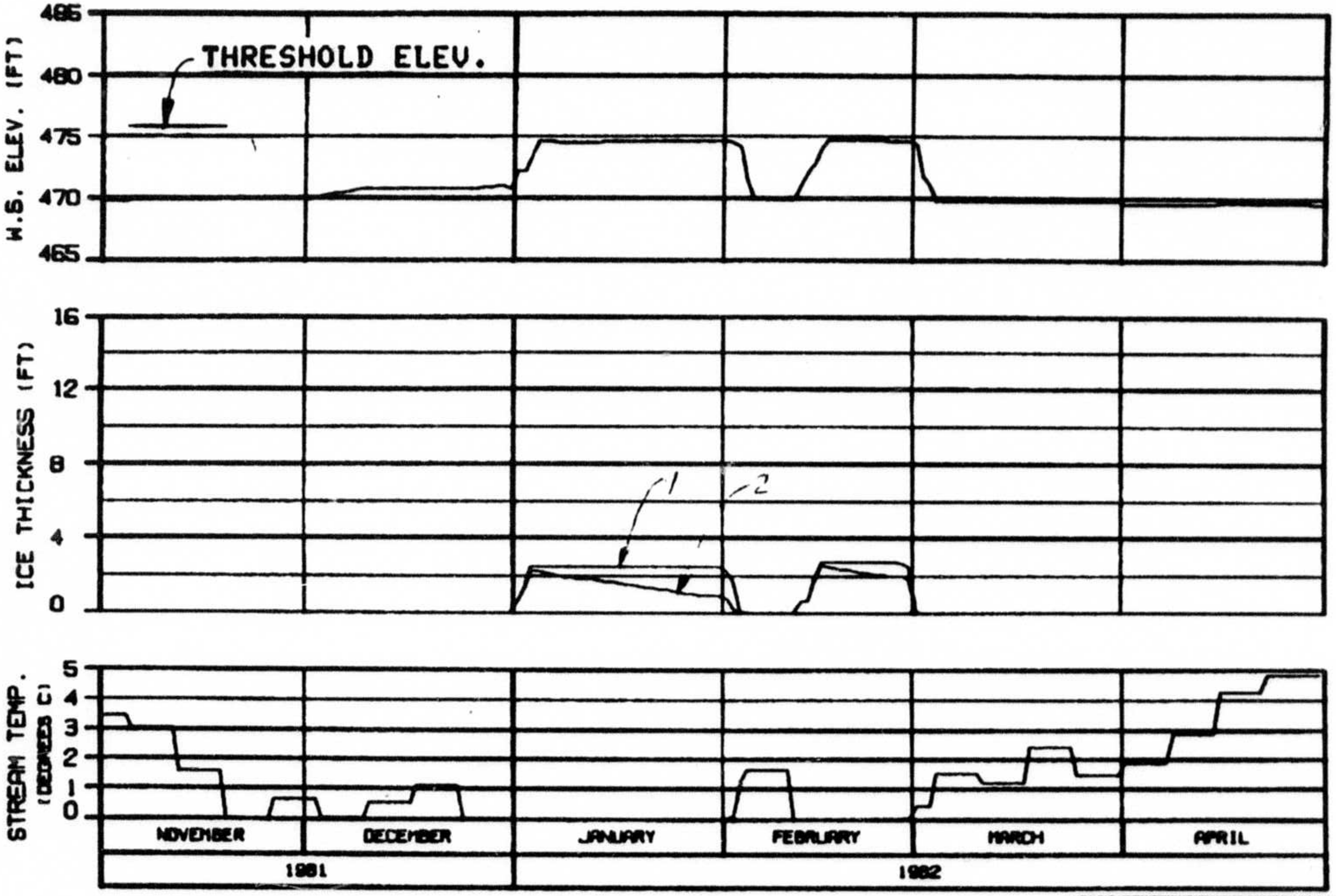

HEAD OF SLOUGH 8

RIVER MILE : 114.10

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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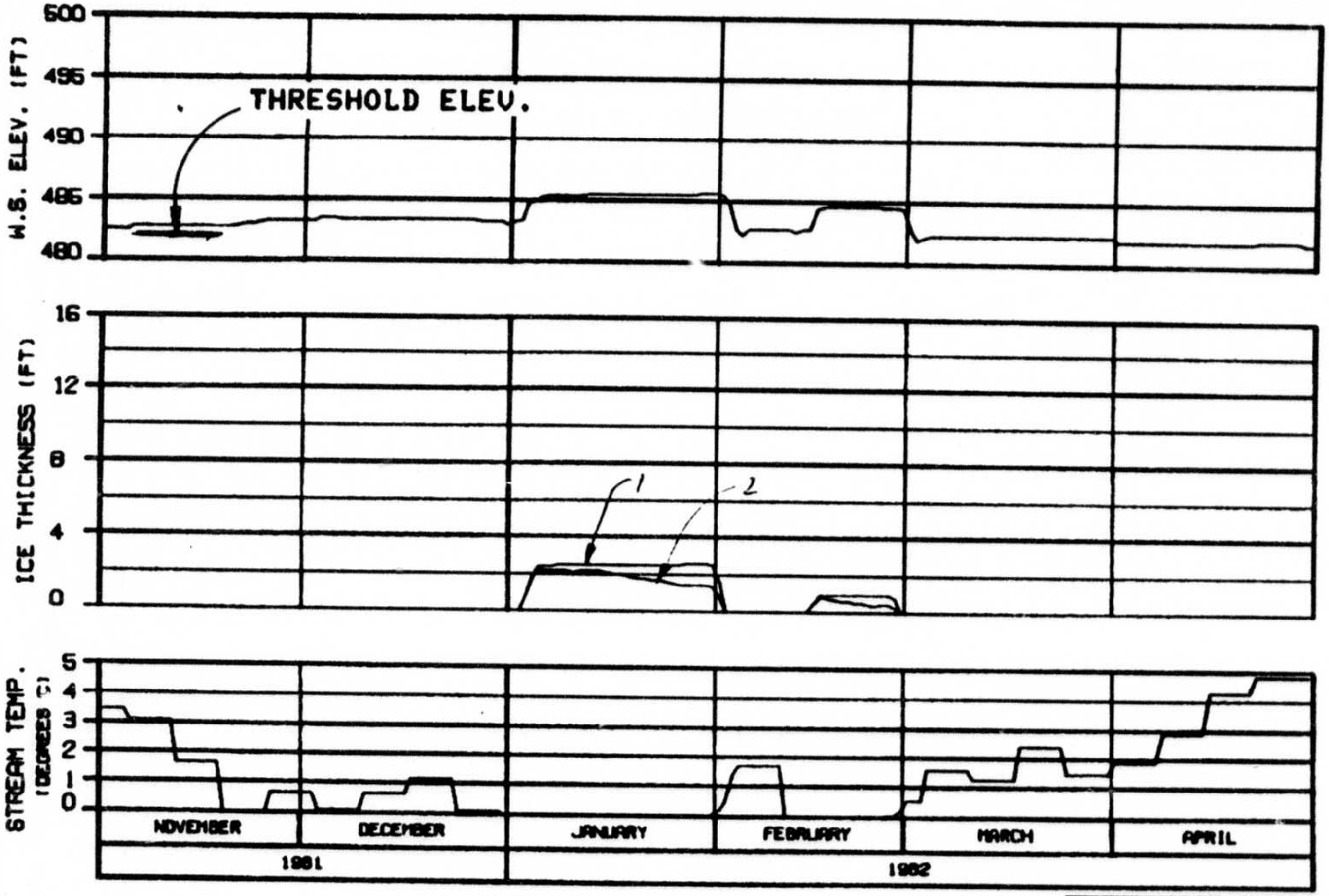


SIDE CHANNEL MSII

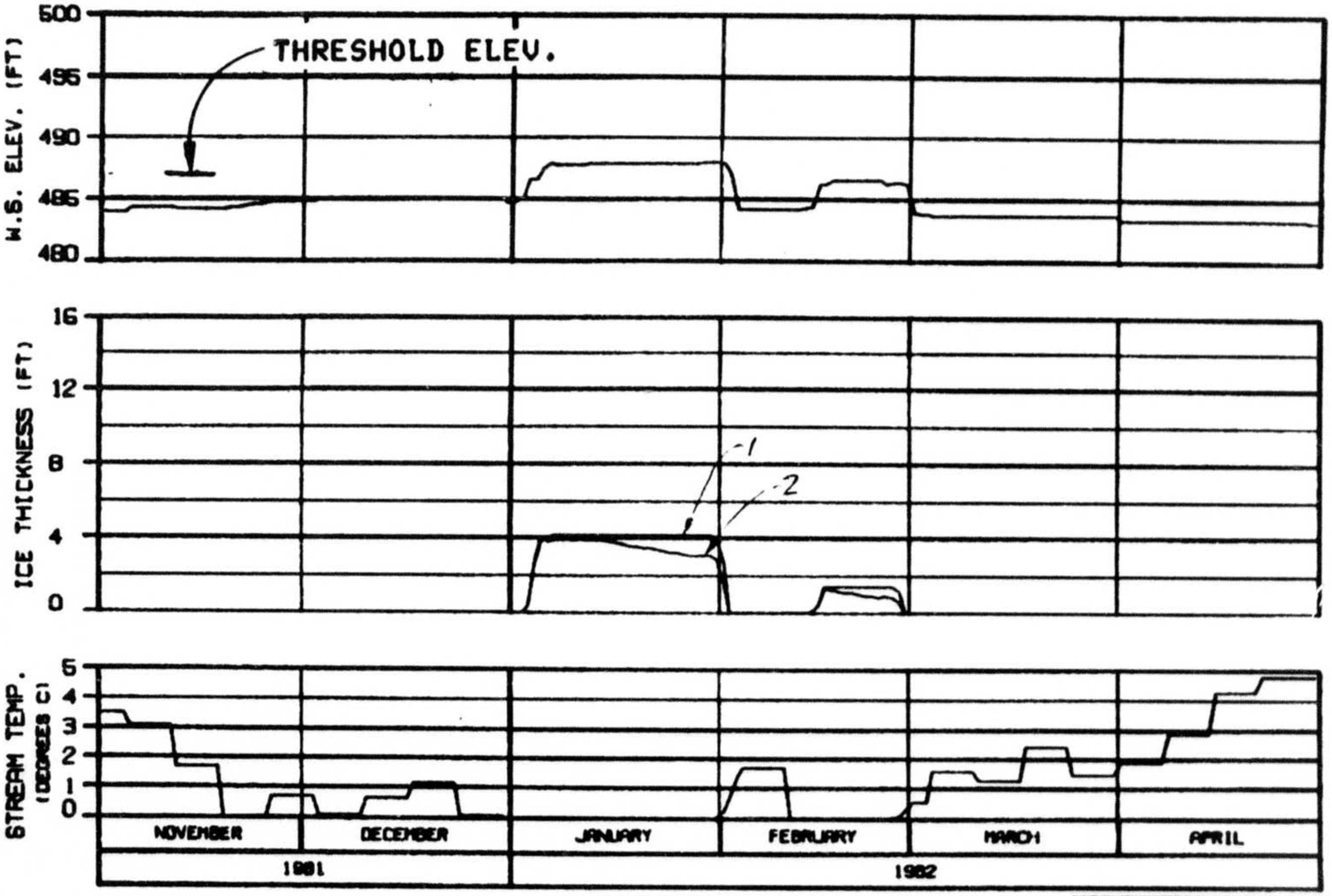
RIVER MILE : 115.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SIDE CHANNEL MSII

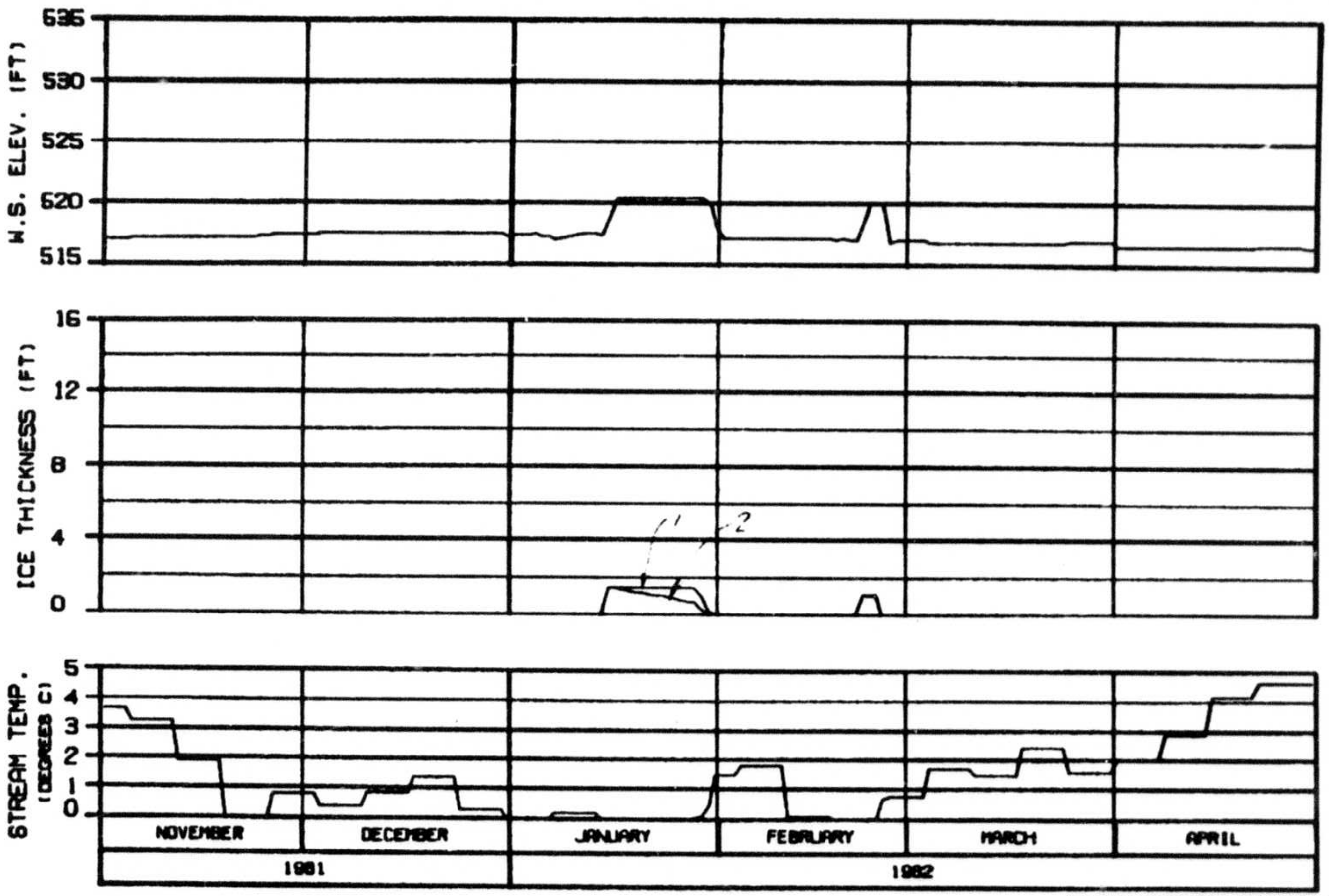
RIVER MILE : 115.90

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



RIVER MILE : 120.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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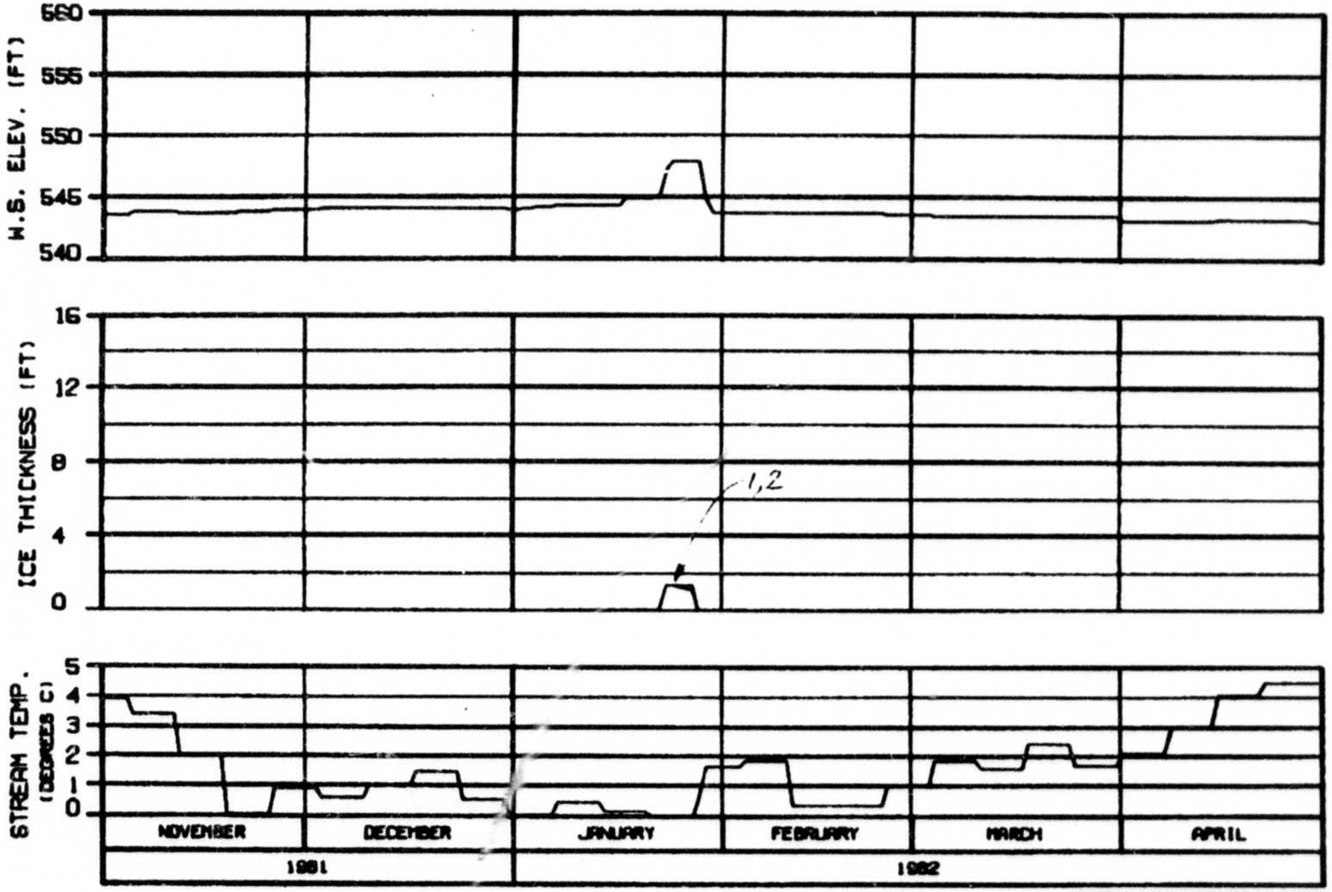


HEAD OF MOOSE SLOUGH

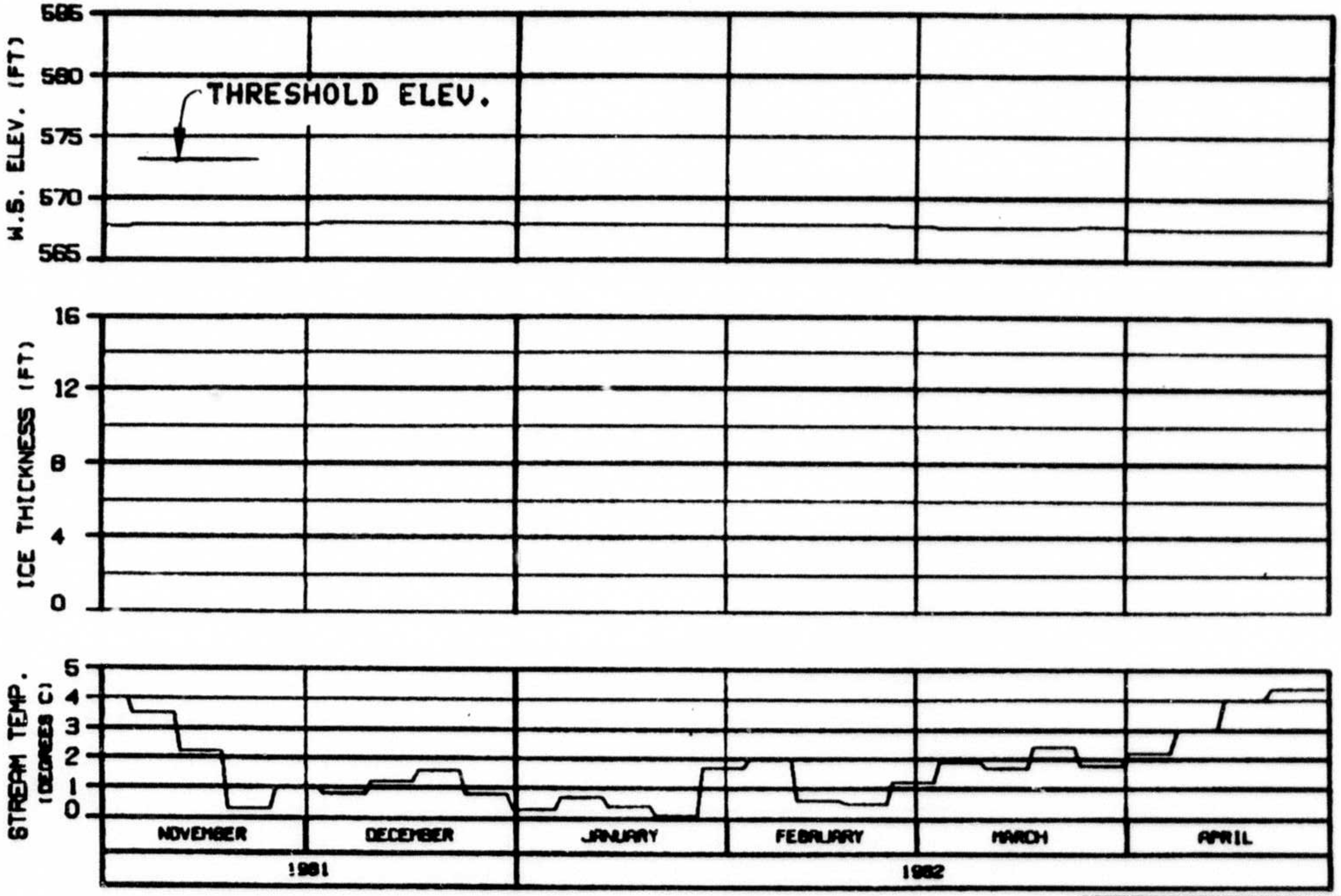
RIVER MILE : 123.50

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 8A (WEST)

RIVER MILE : 126.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

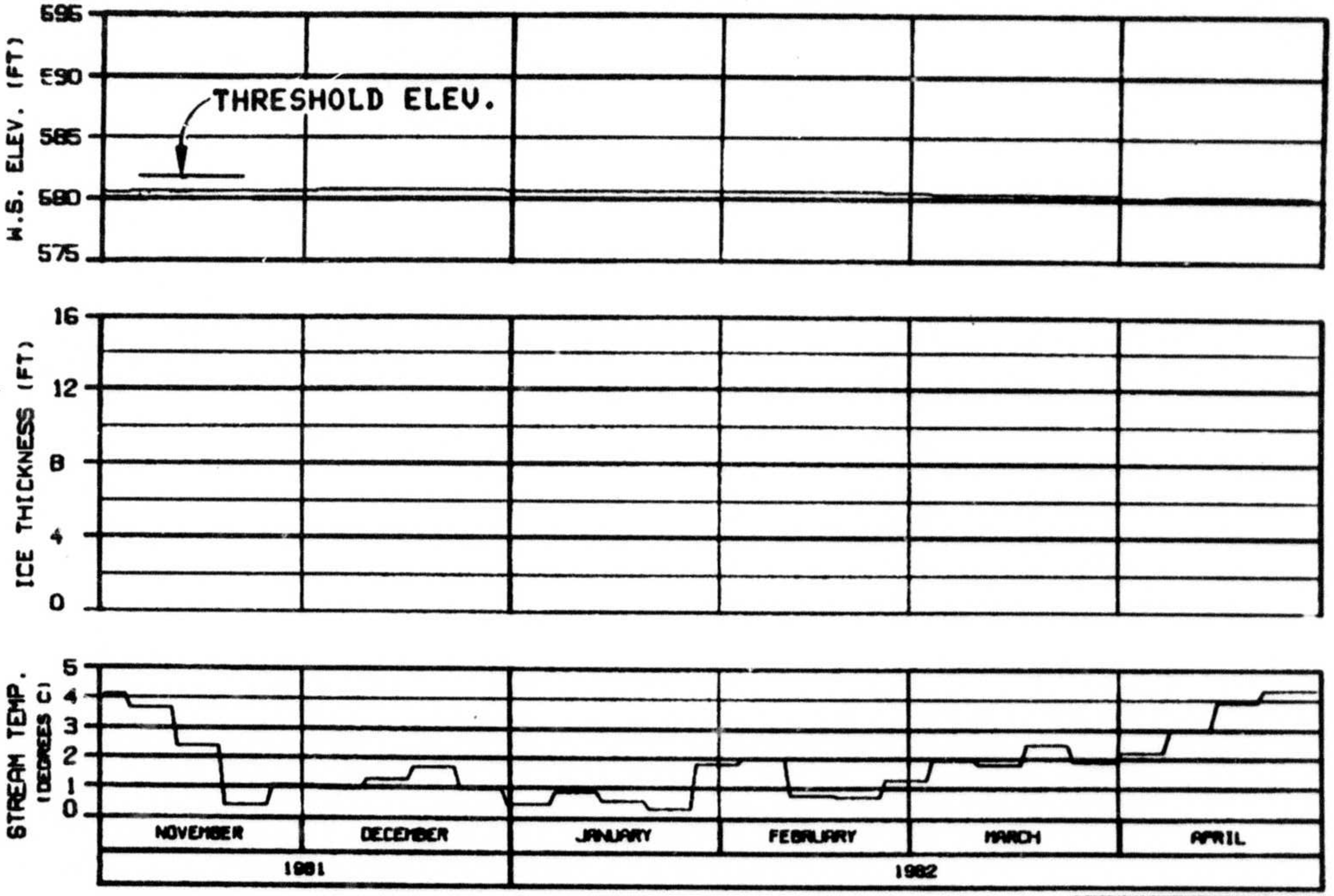
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

1988.142



HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

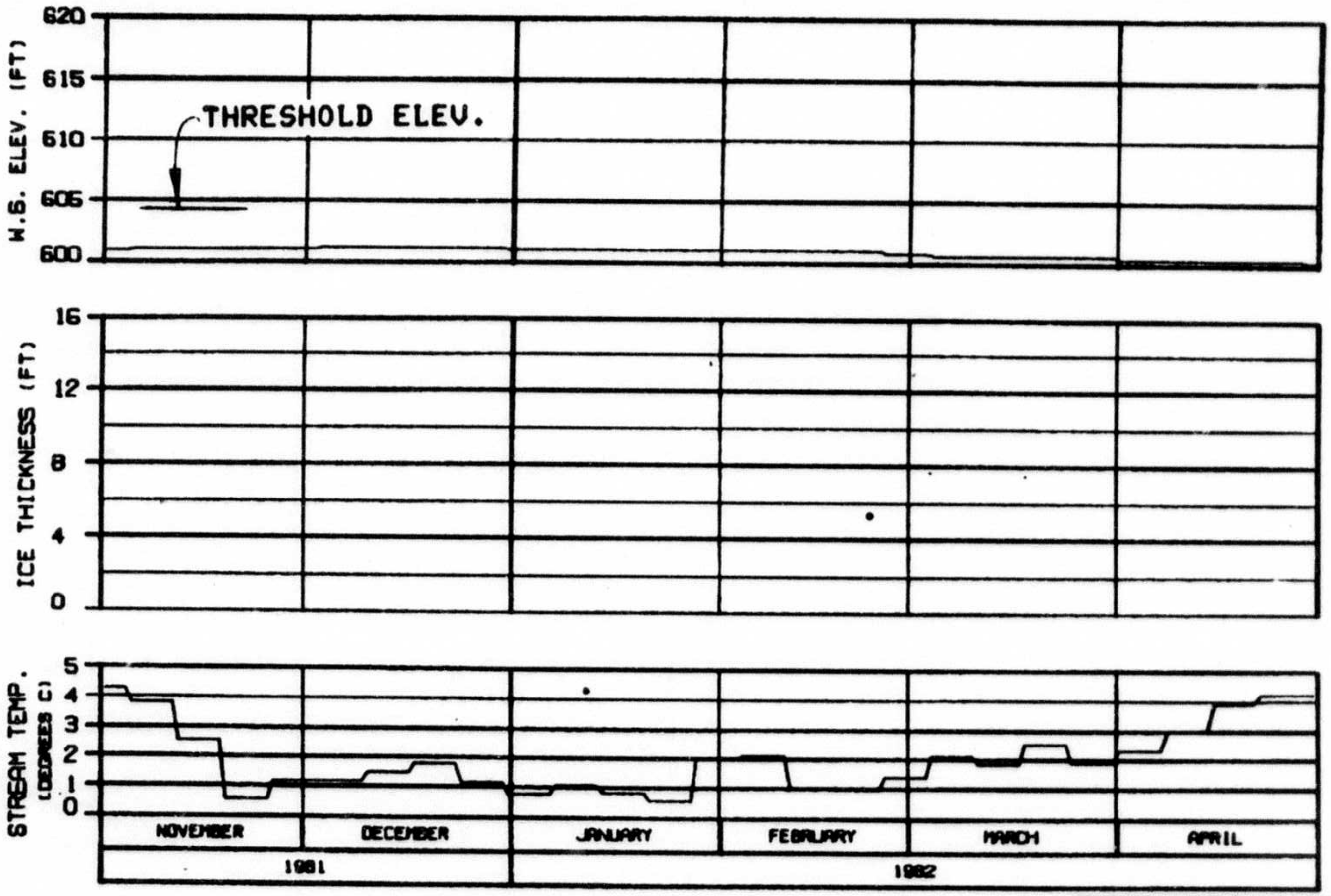
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

STOP C



HEAD OF SLOUGH 9

RIVER MILE : 129.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY

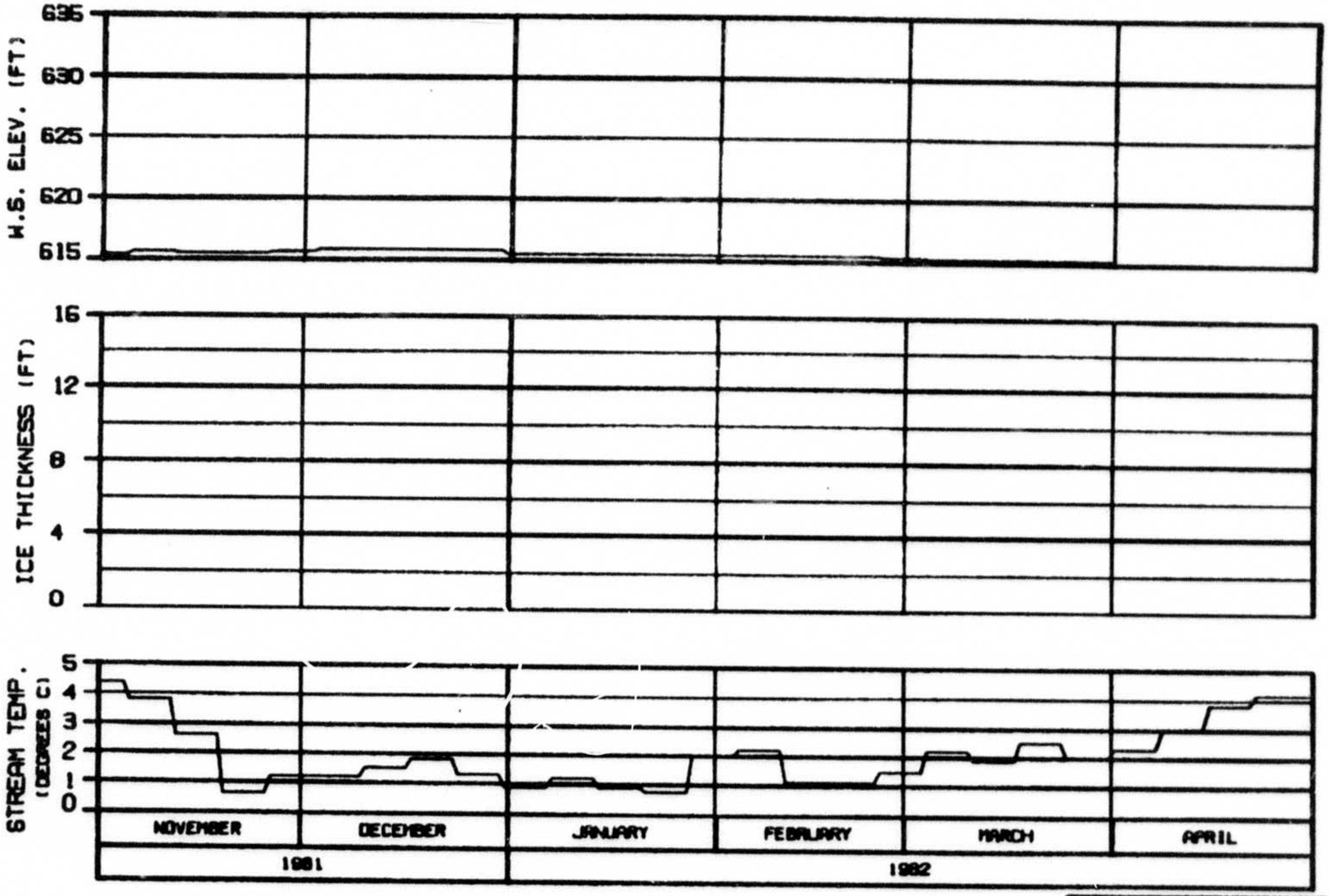
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

RIVER MILE : 130.60

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

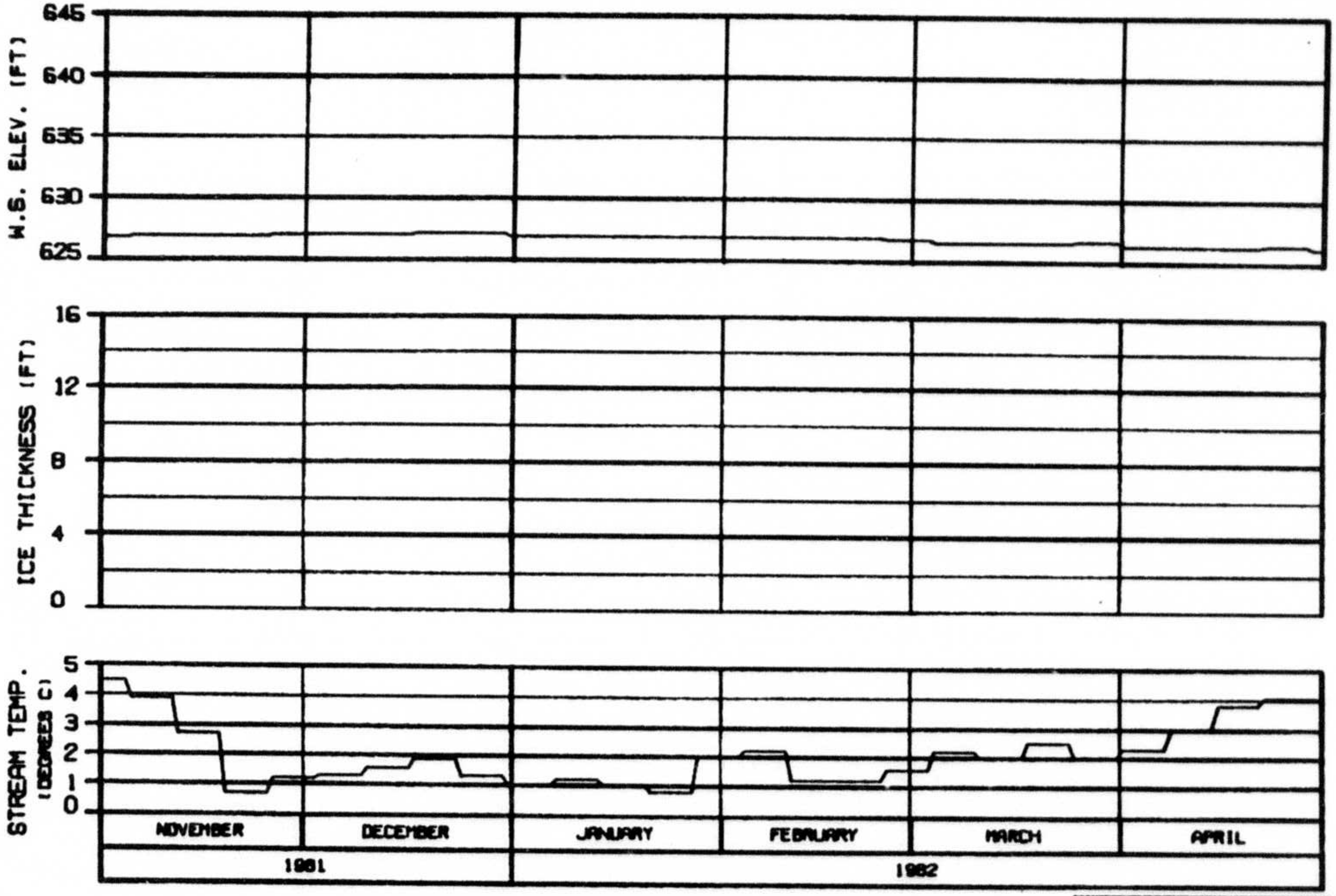
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

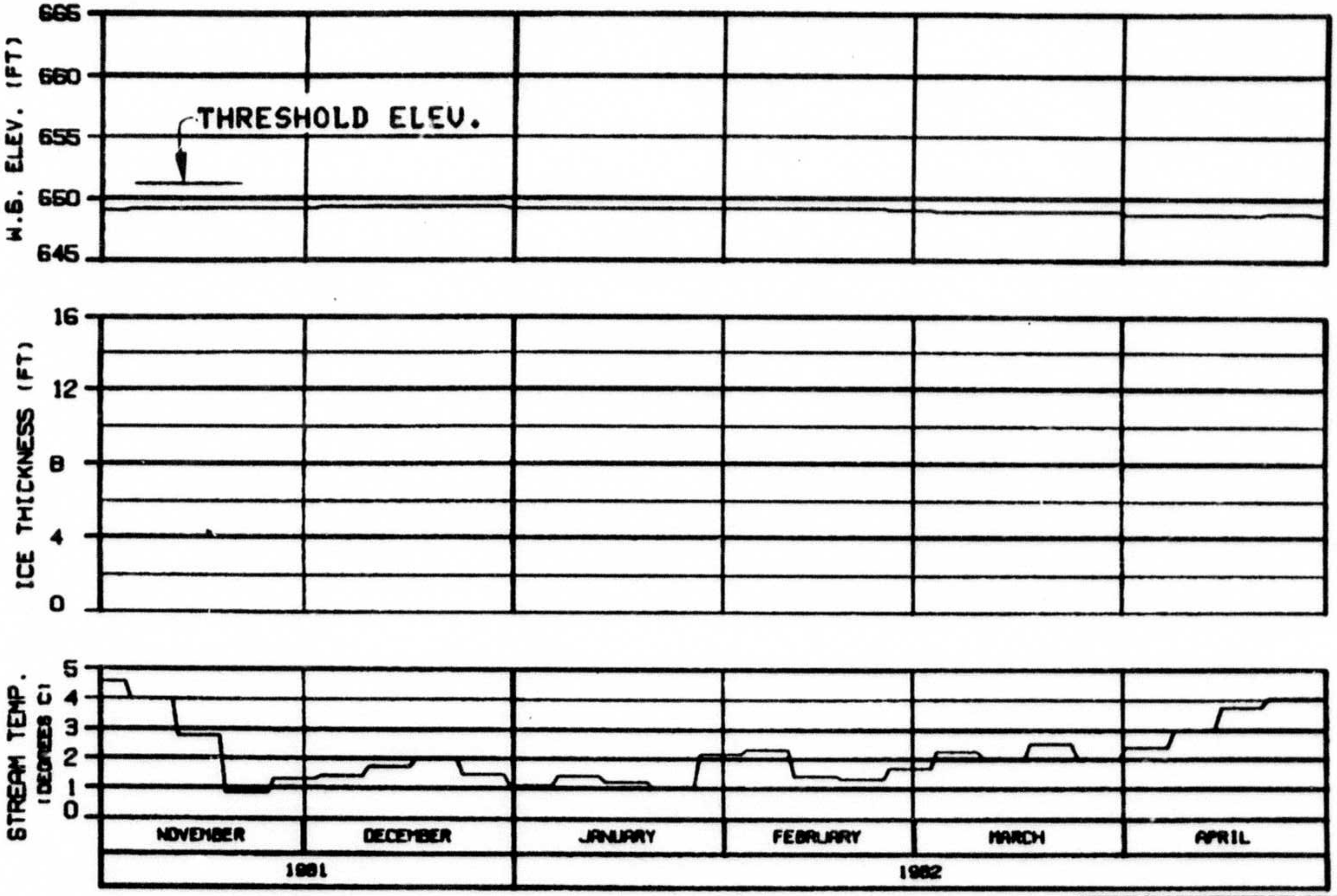
RIVER MILE : 131.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 9A

RIVER MILE : 133.70

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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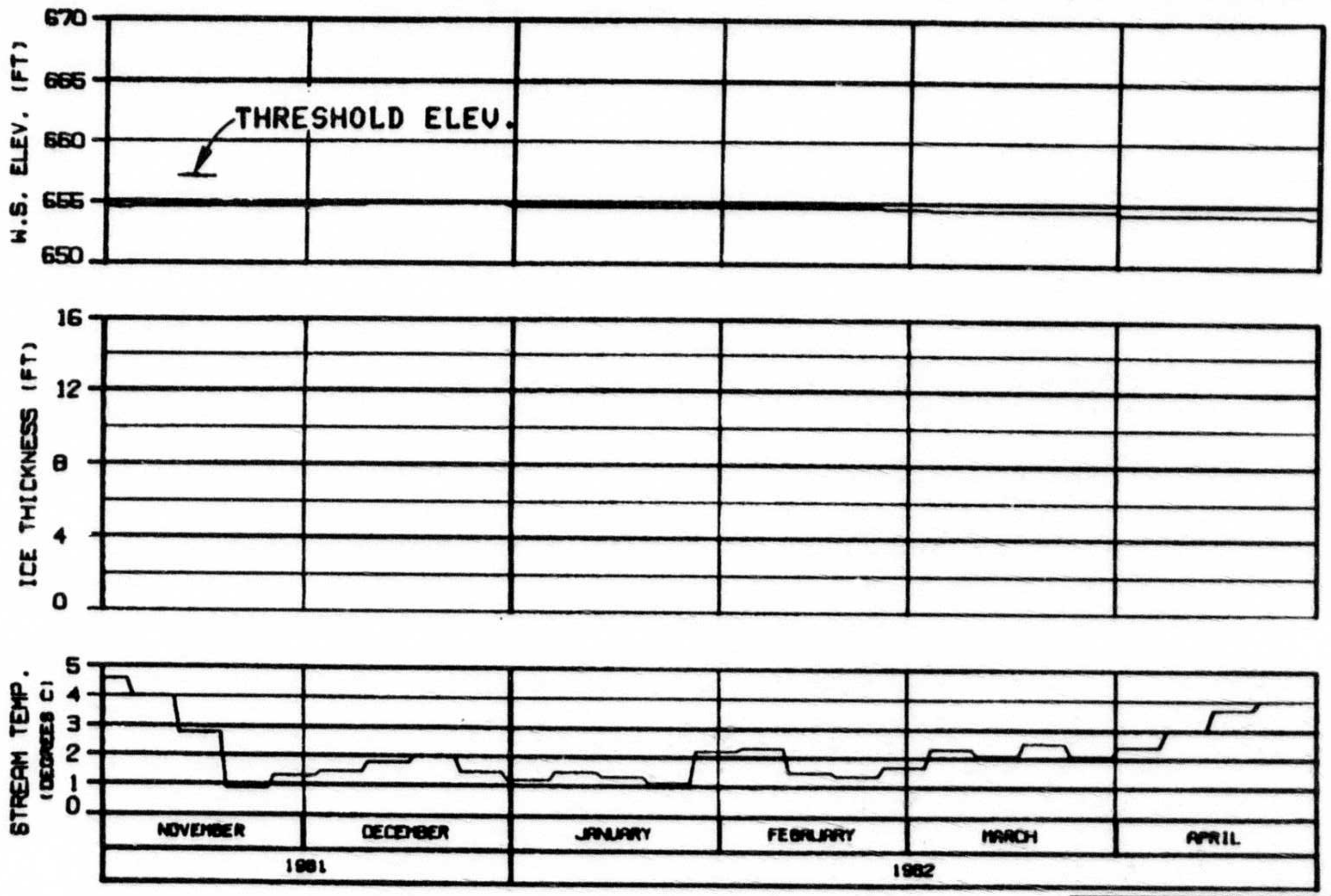


SIDE CHANNEL U/S OF SLOUGH 10

RIVER MILE : 134.30

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ICE THICKNESS LEGEND:

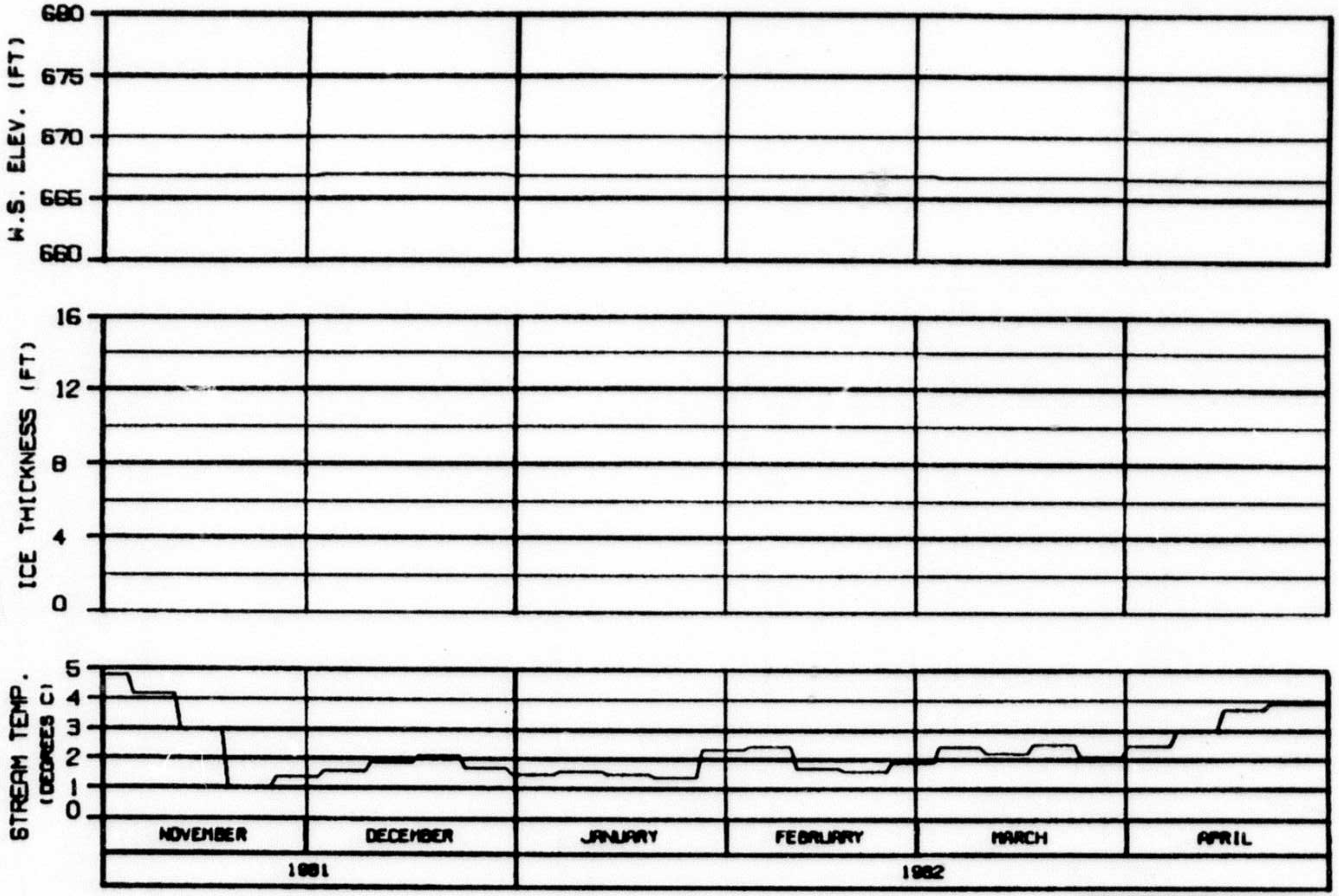
1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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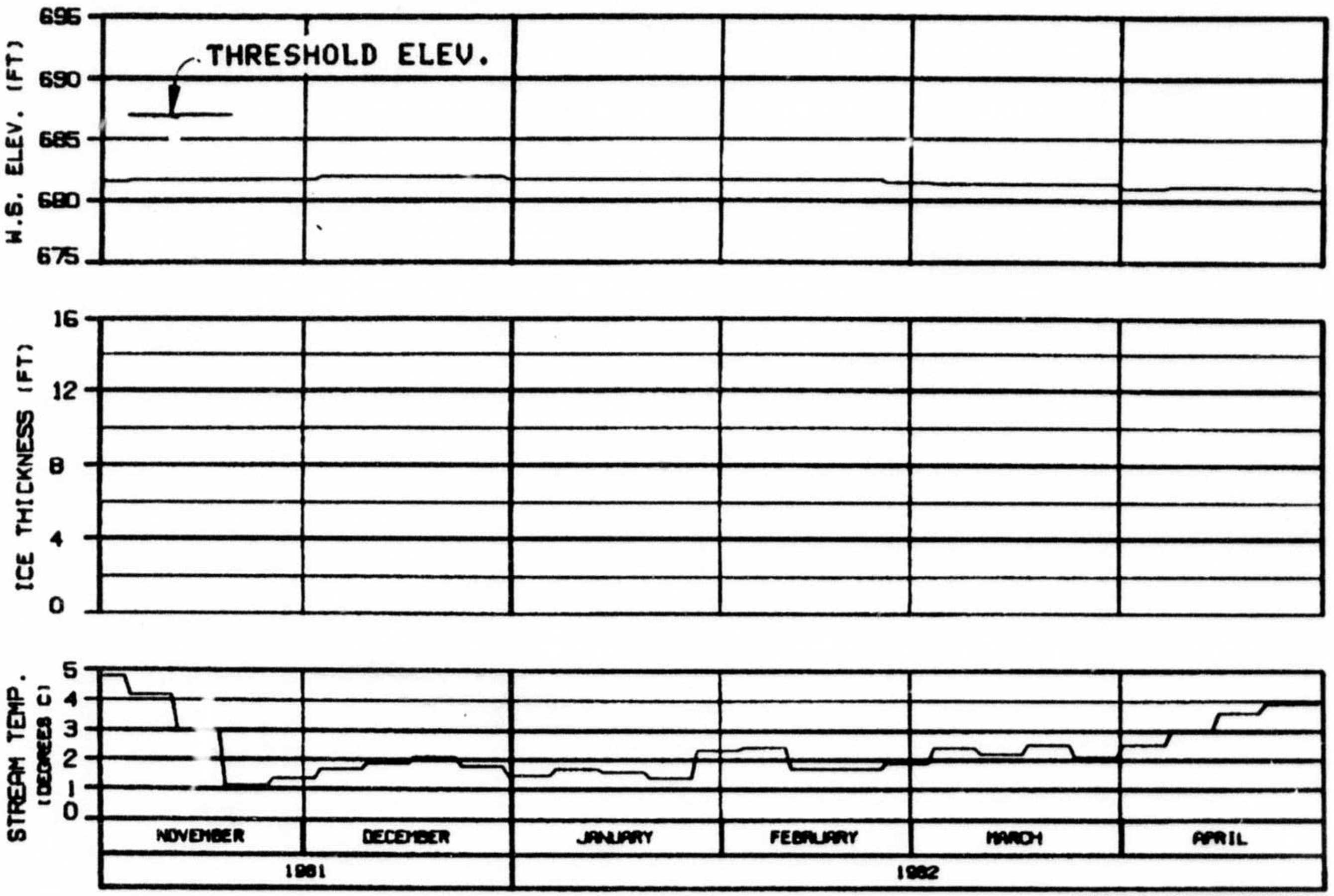


HEAD OF SLOUGH 11

RIVER MILE : 136.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

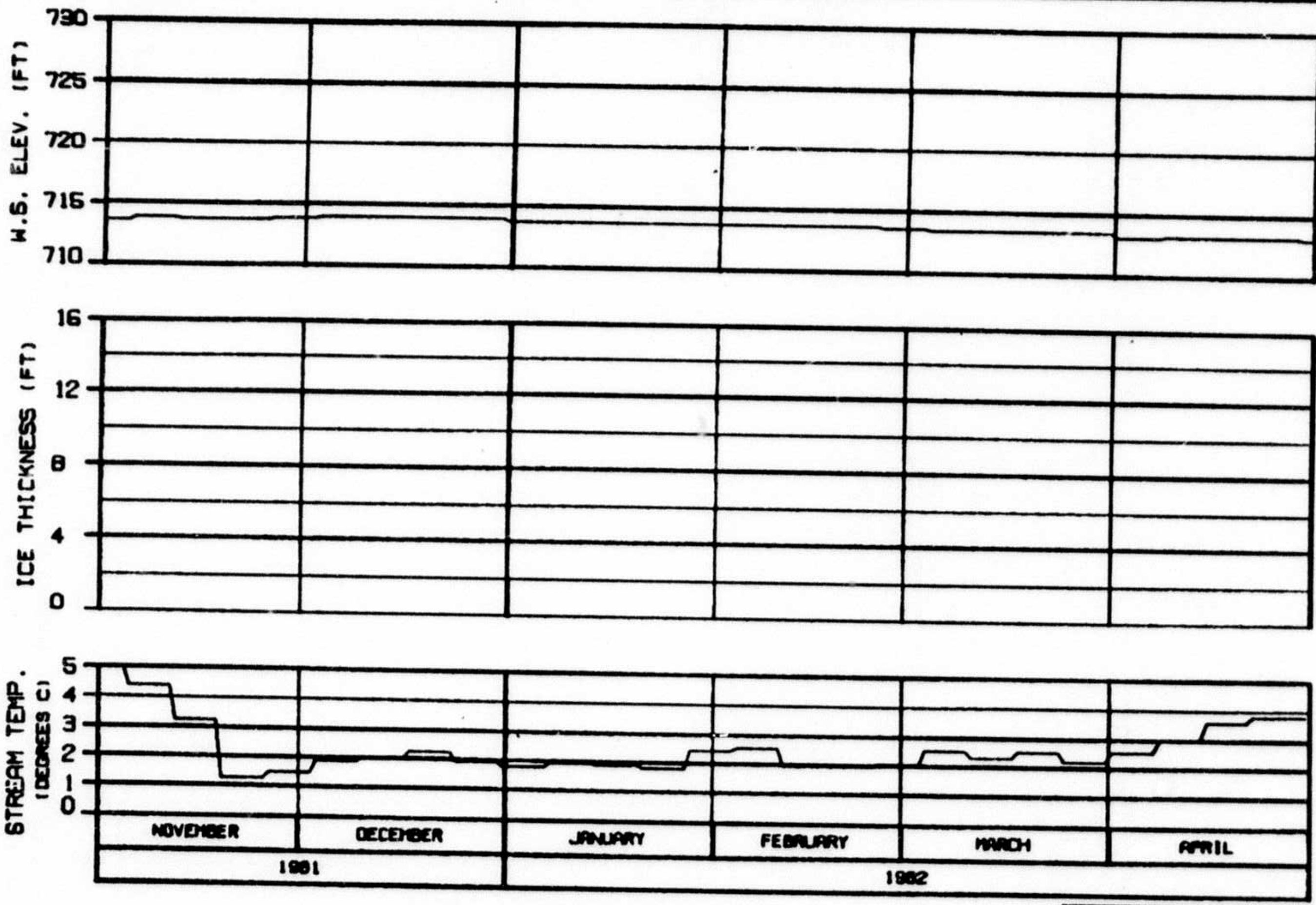
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 17

RIVER MILE : 139.30

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ICE THICKNESS LEGEND:

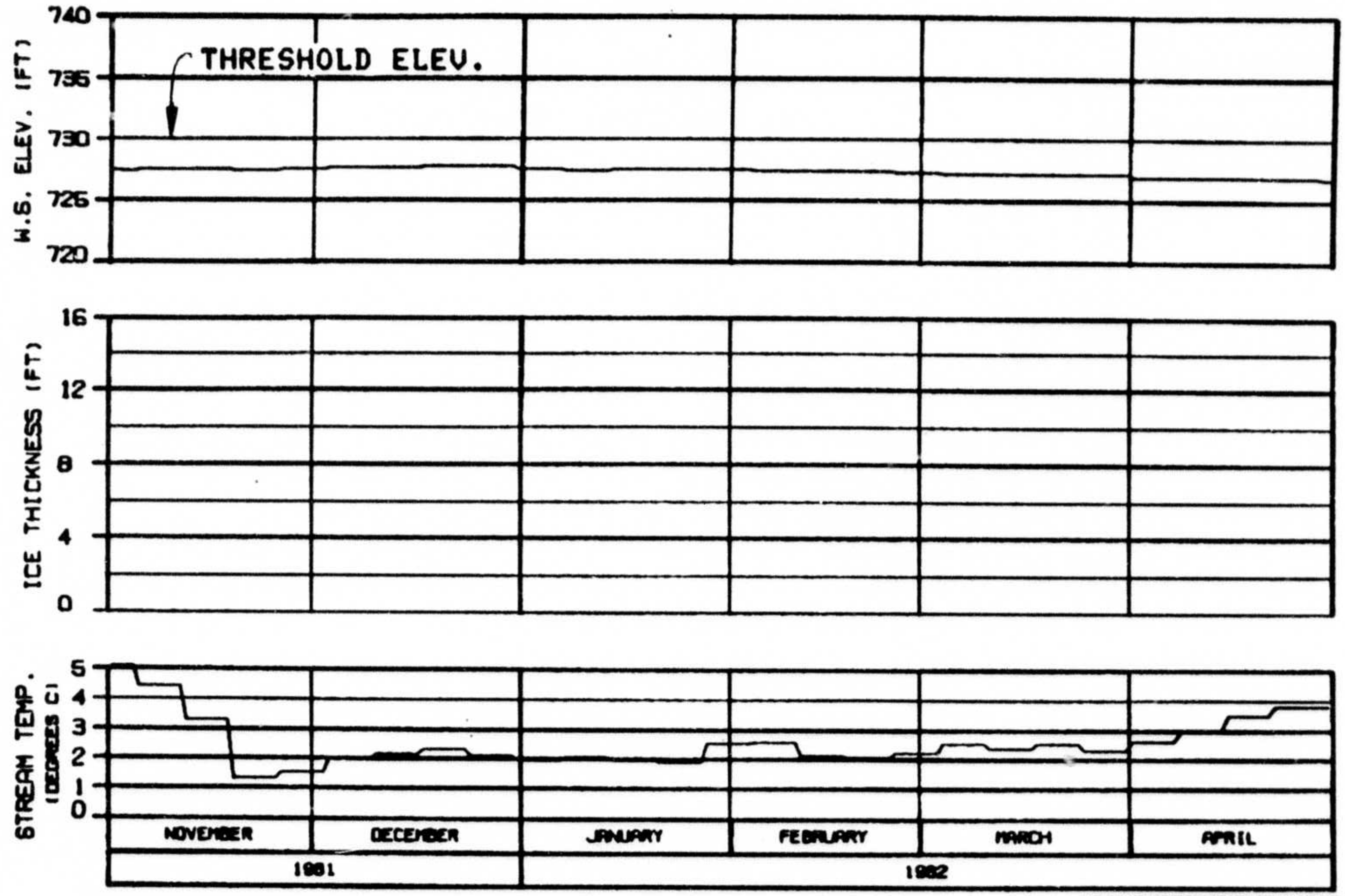
1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 20

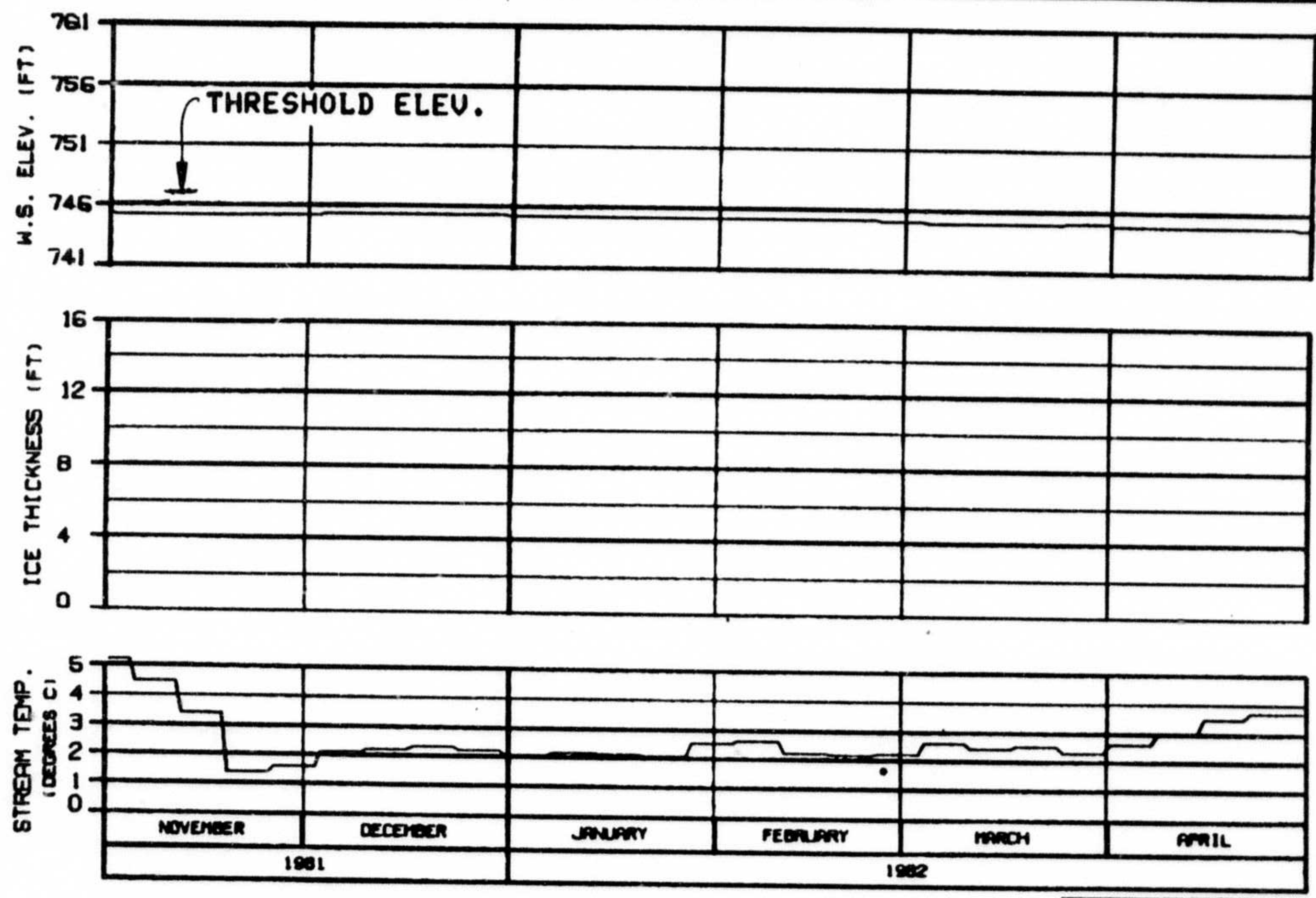
RIVER MILE : 140.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SLOUGH 21 (ENTRANCE A6)

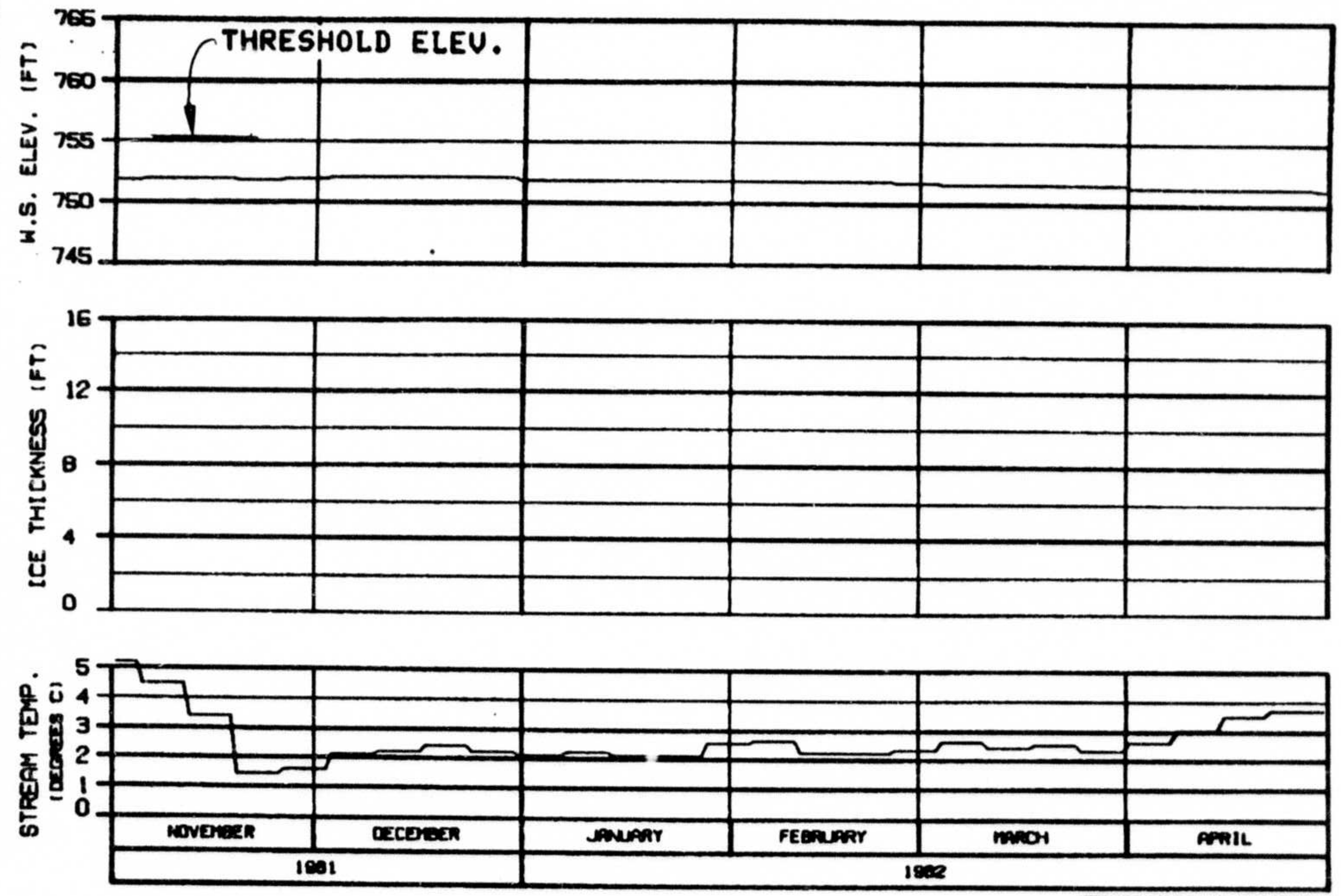
RIVER MILE : 141.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 21

RIVER MILE : 142.20

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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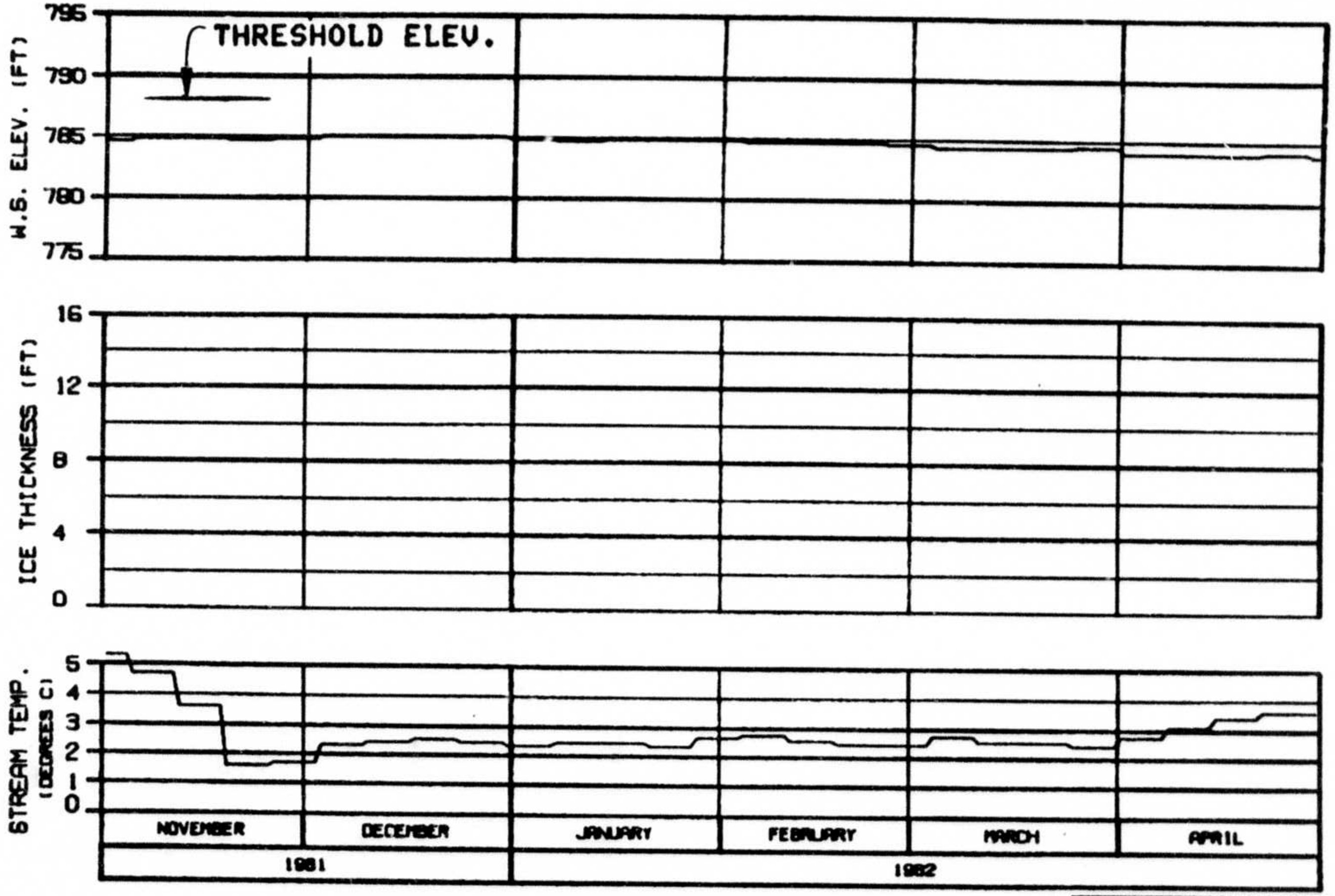


HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:

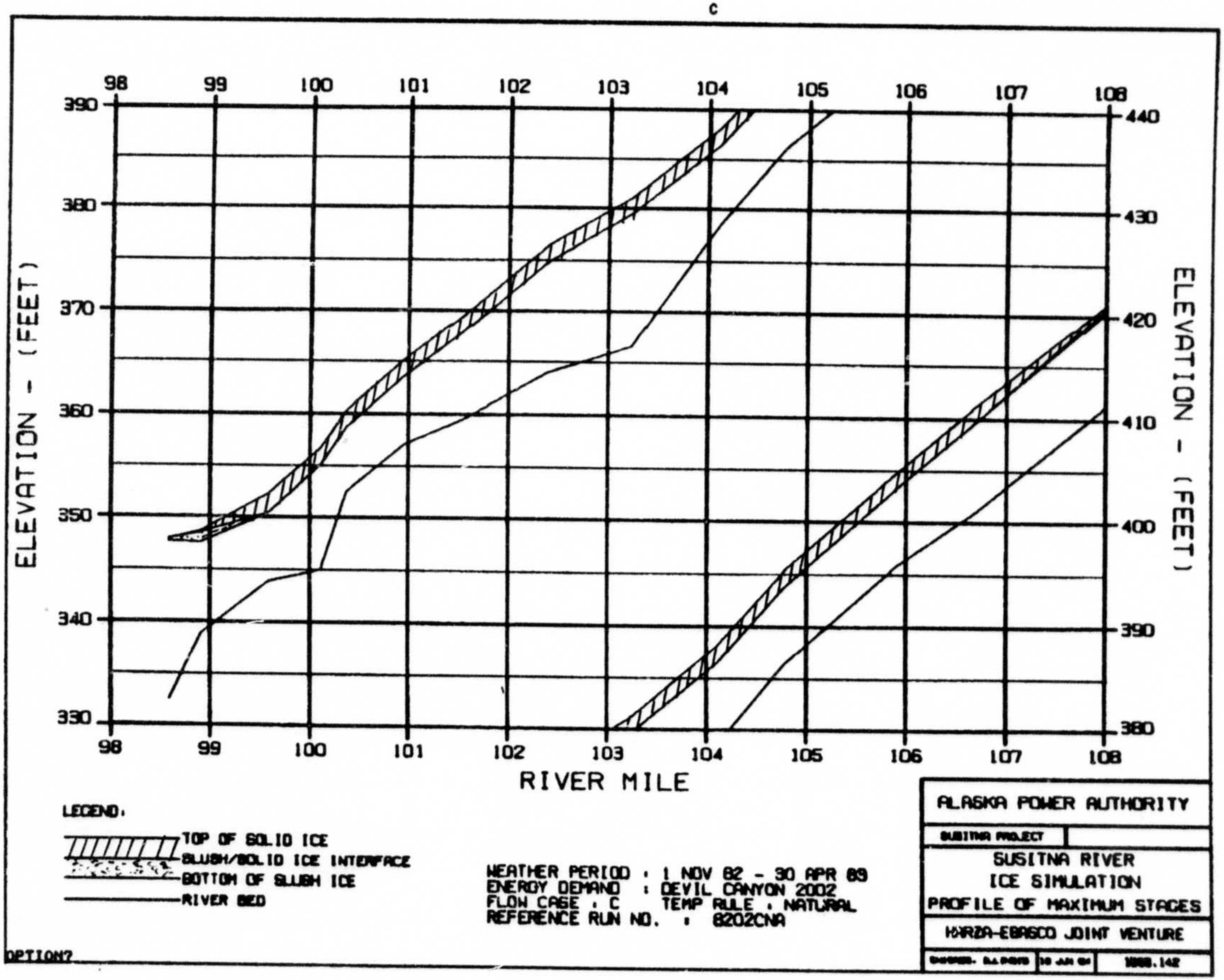
1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8102CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE

OPTION?

EXHIBIT O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ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

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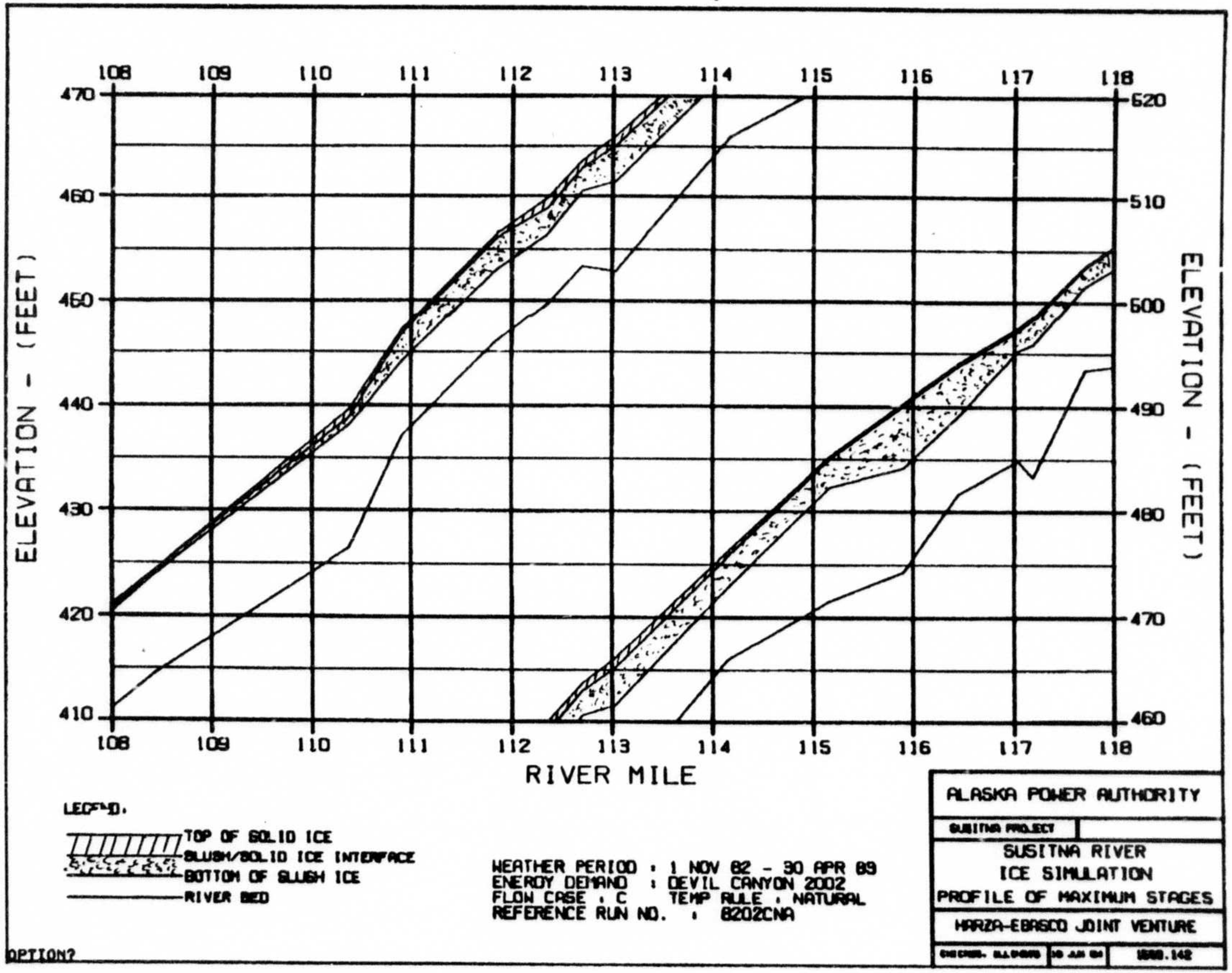
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ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 89
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA
ALASKA POWER AUTHORITY
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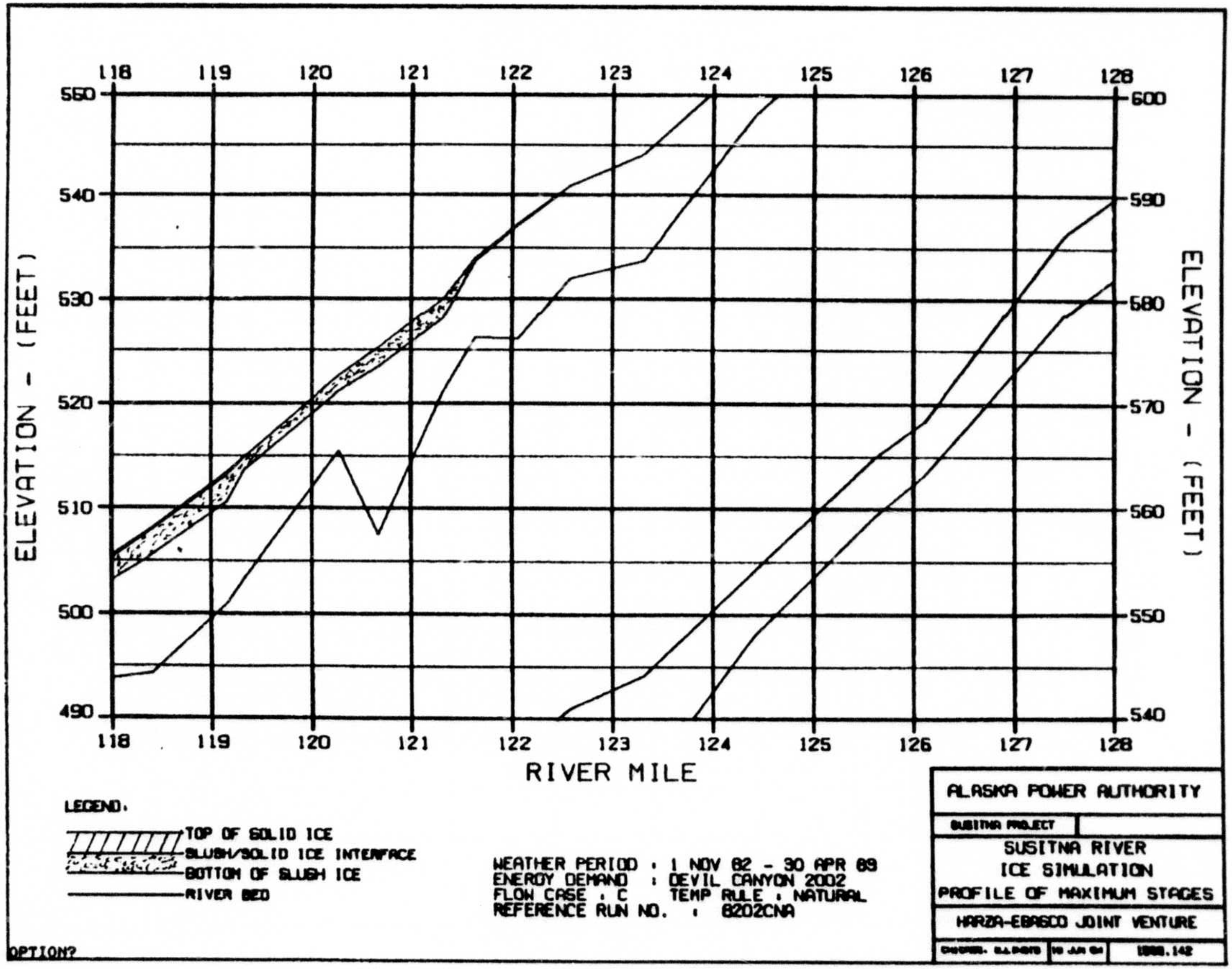
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?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ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

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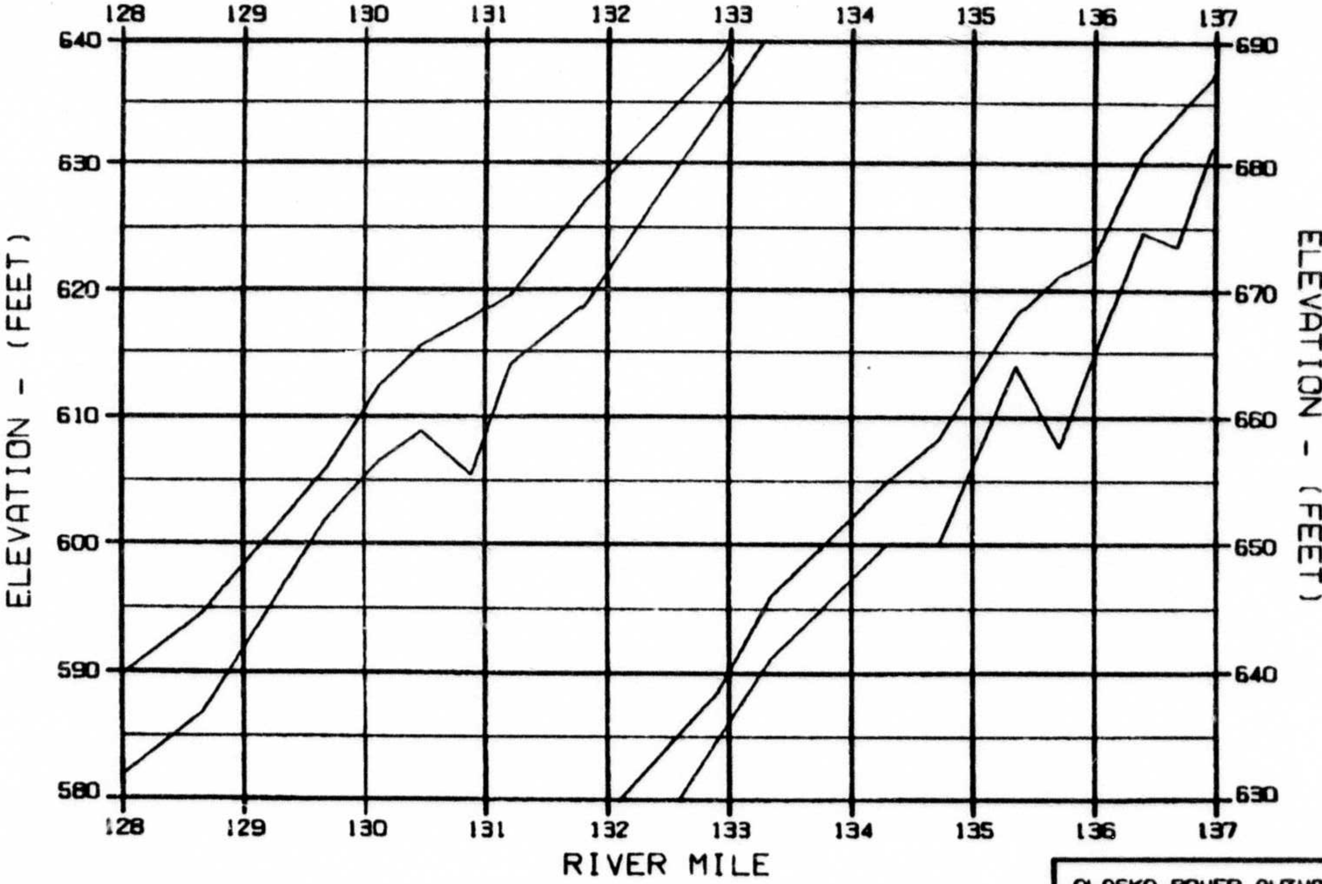

LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
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OPTION?

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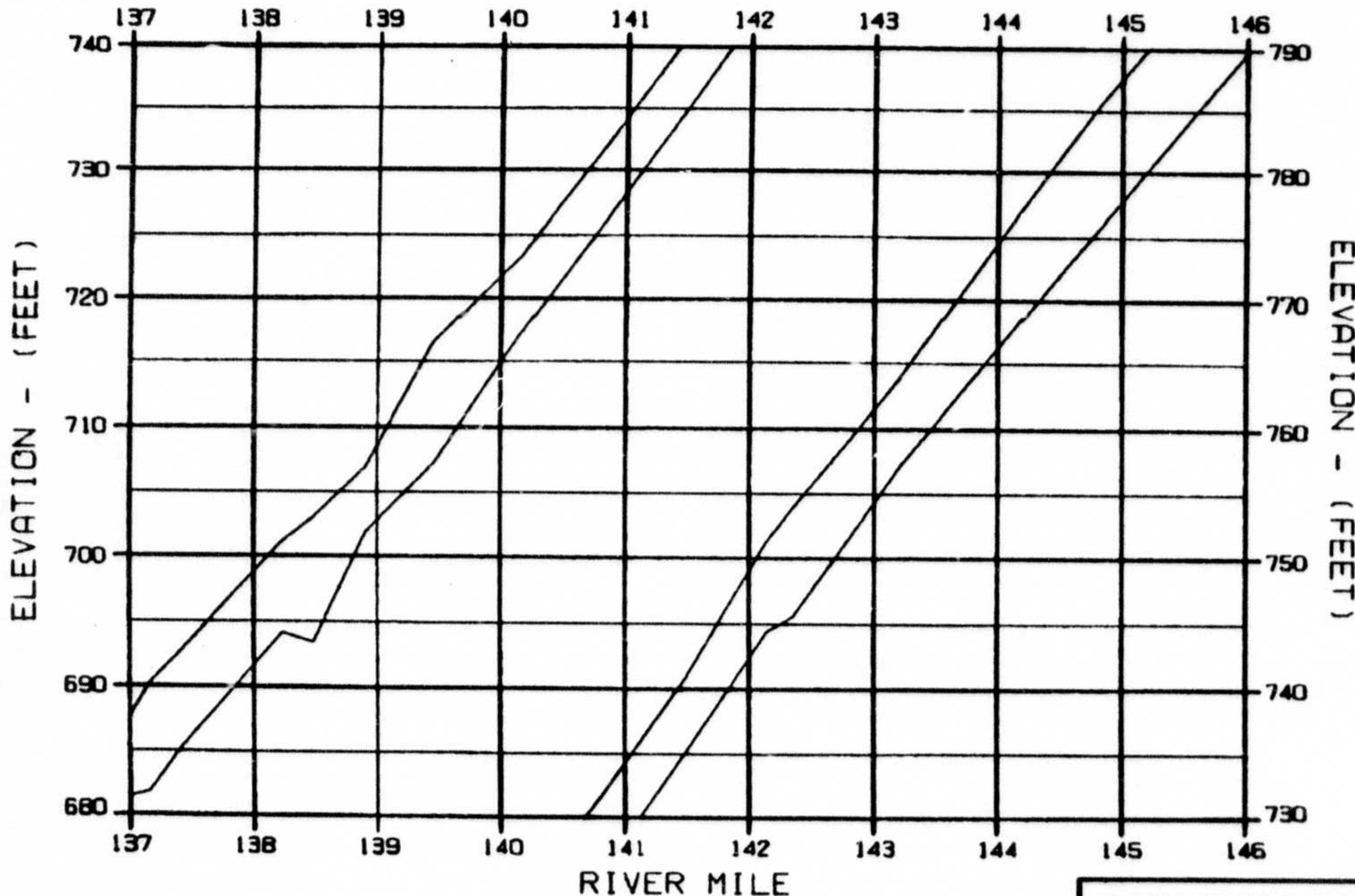

LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

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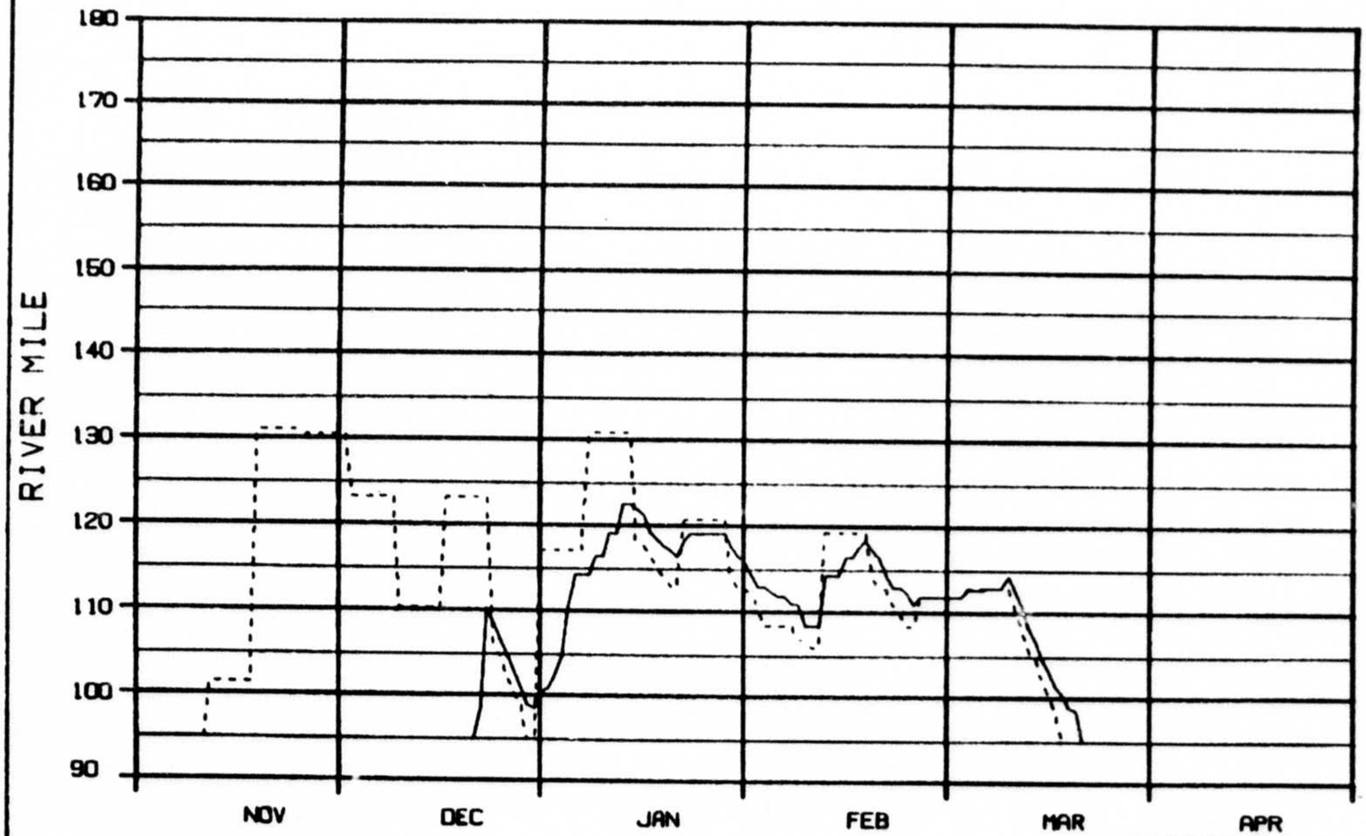


LEGEND:

——————— ICE FRONT

- - - - - - - - ZERO DEGREE ISOTHERM

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

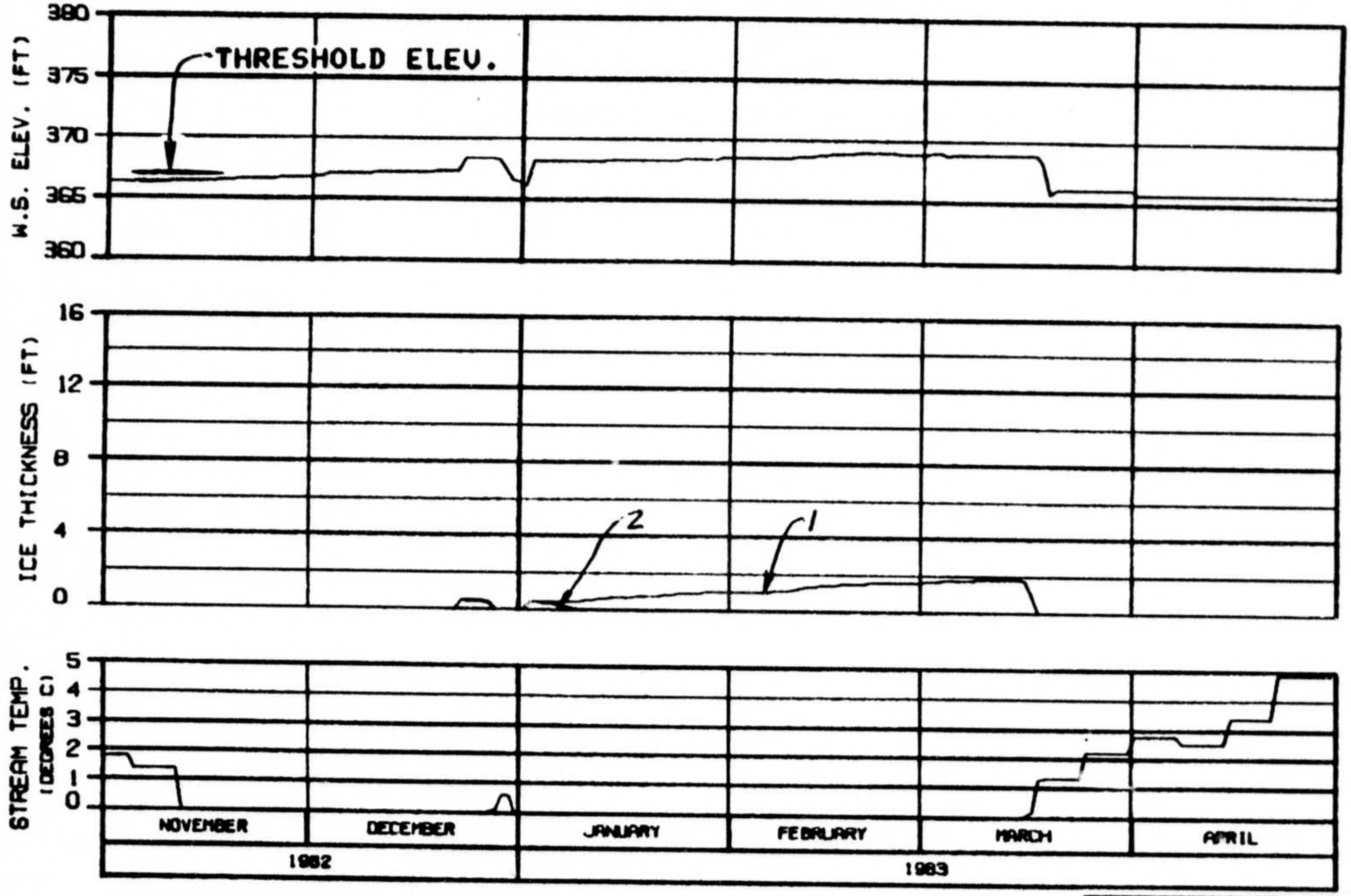
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM

HARZA-EBASCO JOINT VENTURE

OPTION?OPTION?



HEAD OF WHISKERS SLOUGH

RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ICE THICKNESS LEGEND:

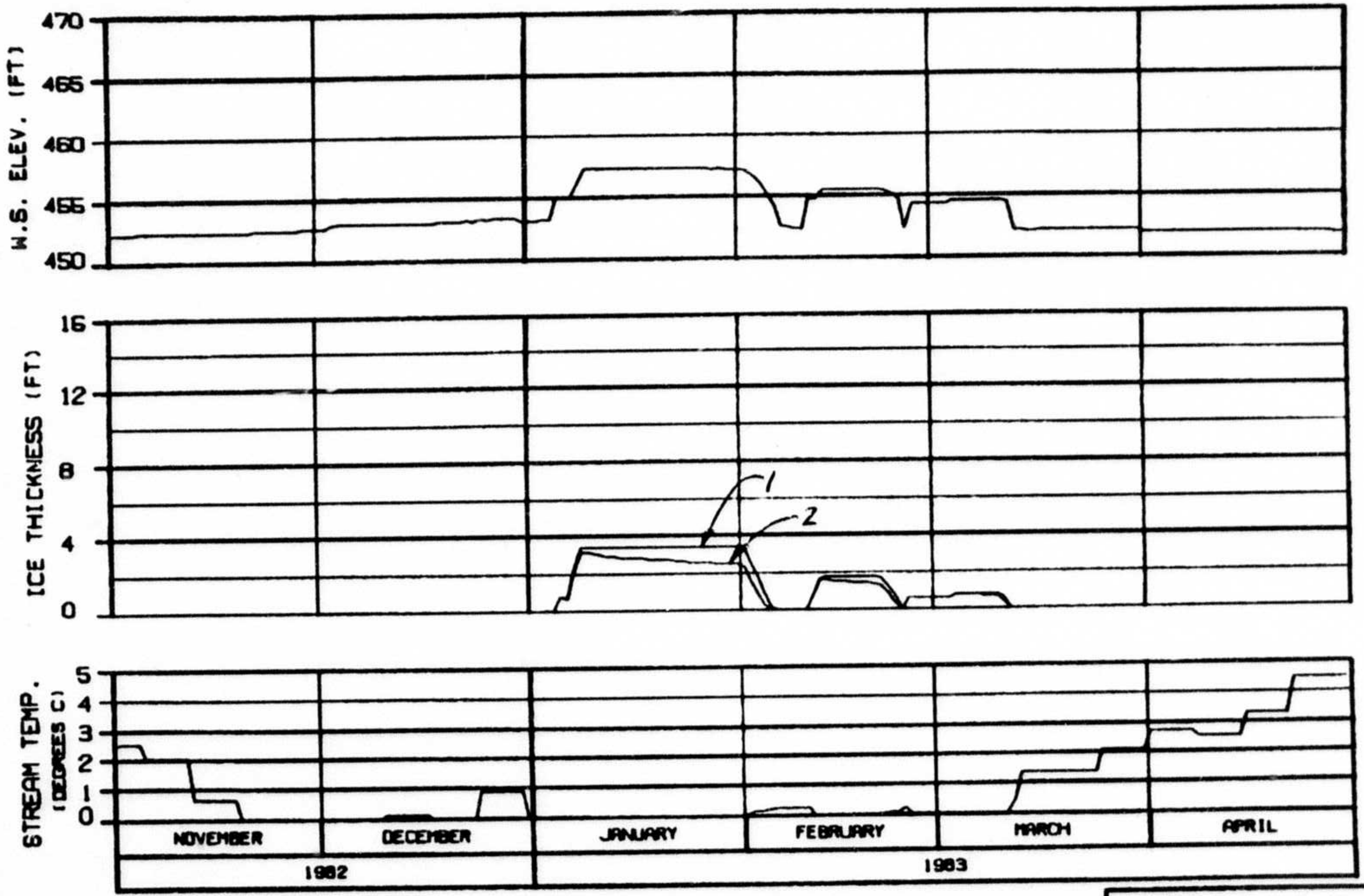
1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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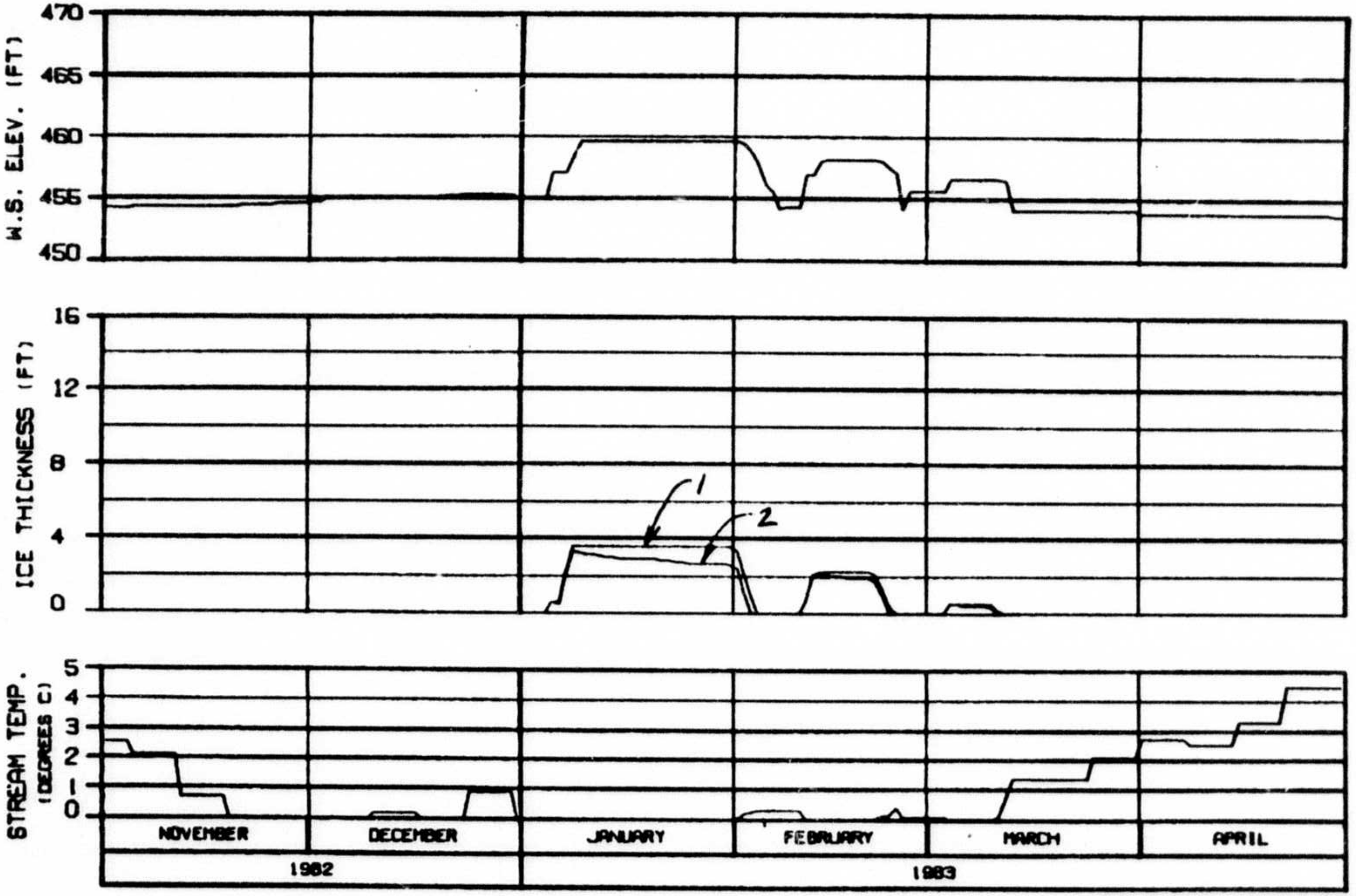


MOUTH OF SLOUGH 6A

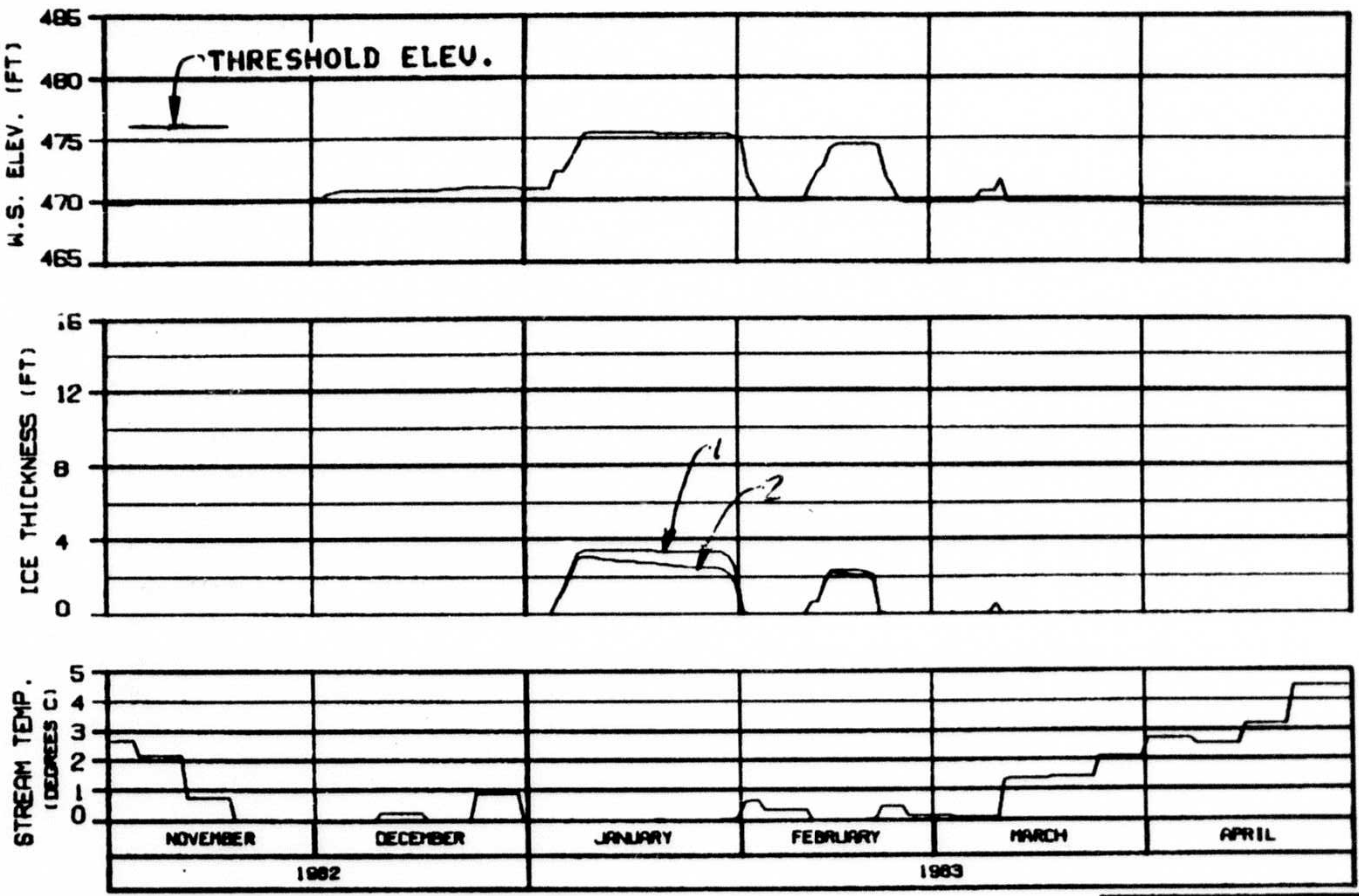
RIVER MILE : 112.34

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C   TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8

RIVER MILE : 114.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

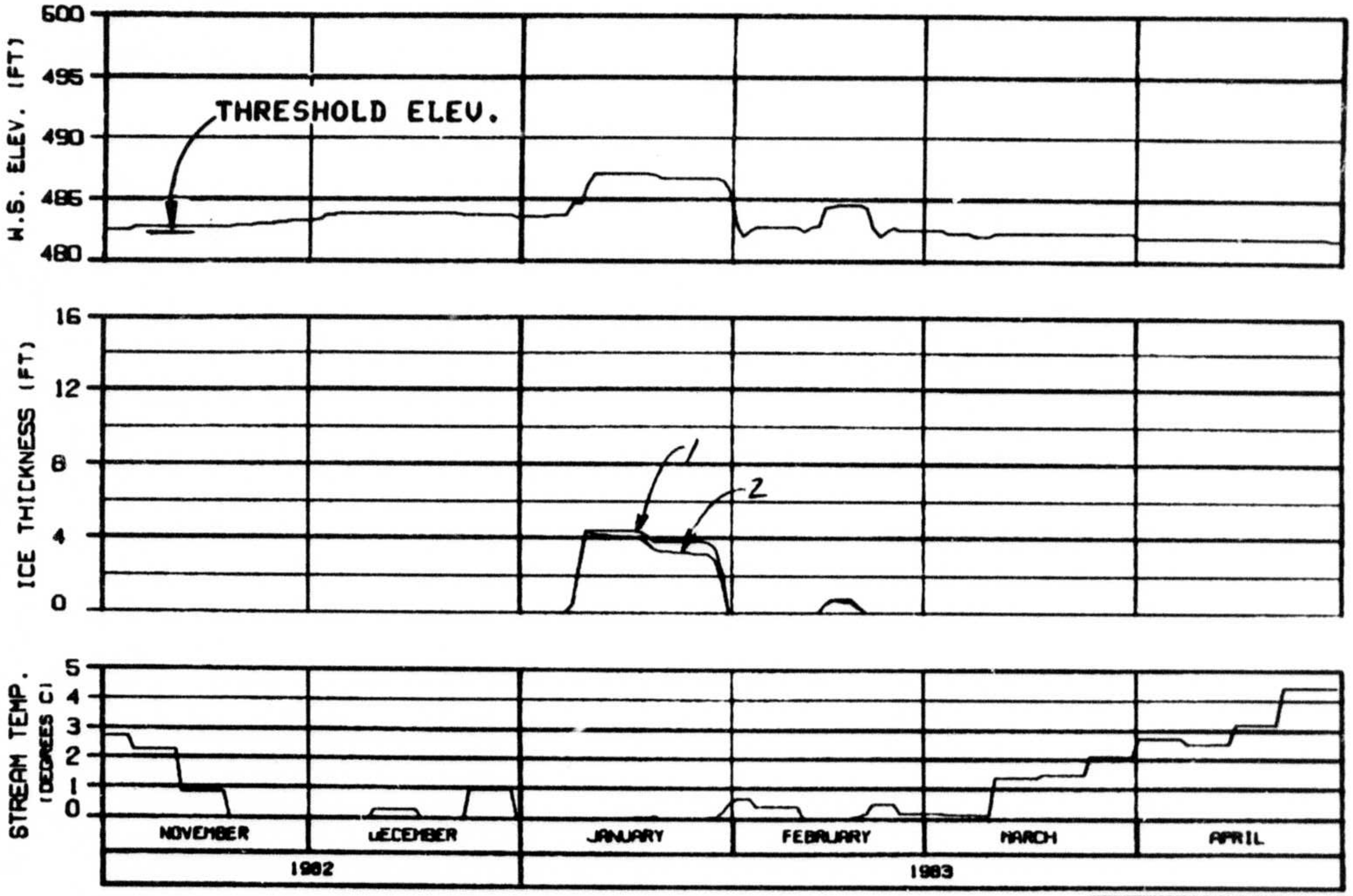
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL MSII

RIVER MILE : 115.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

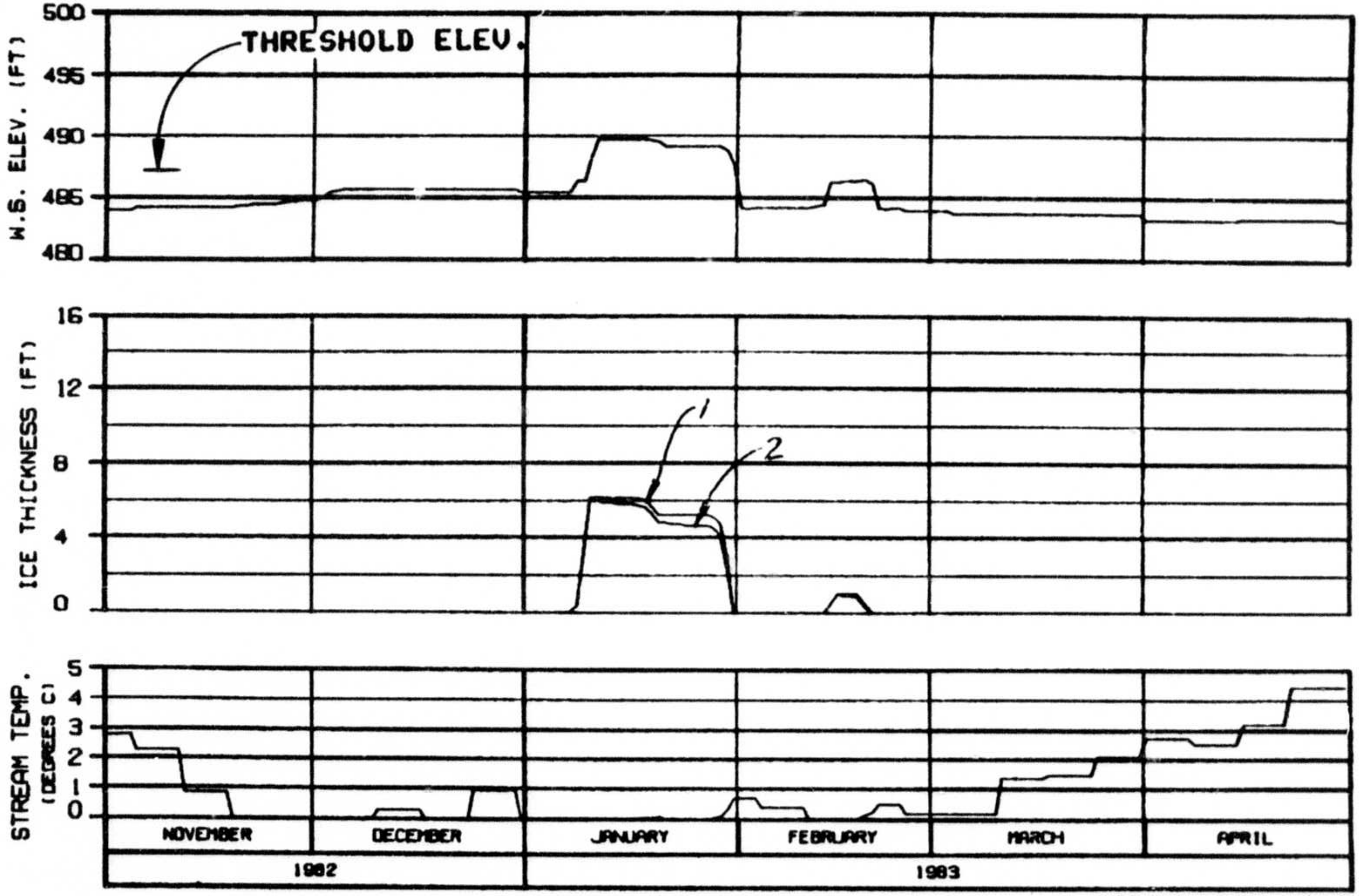
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SIDE CHANNEL MSII

RIVER MILE : 115.90

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ICE THICKNESS LEGEND:

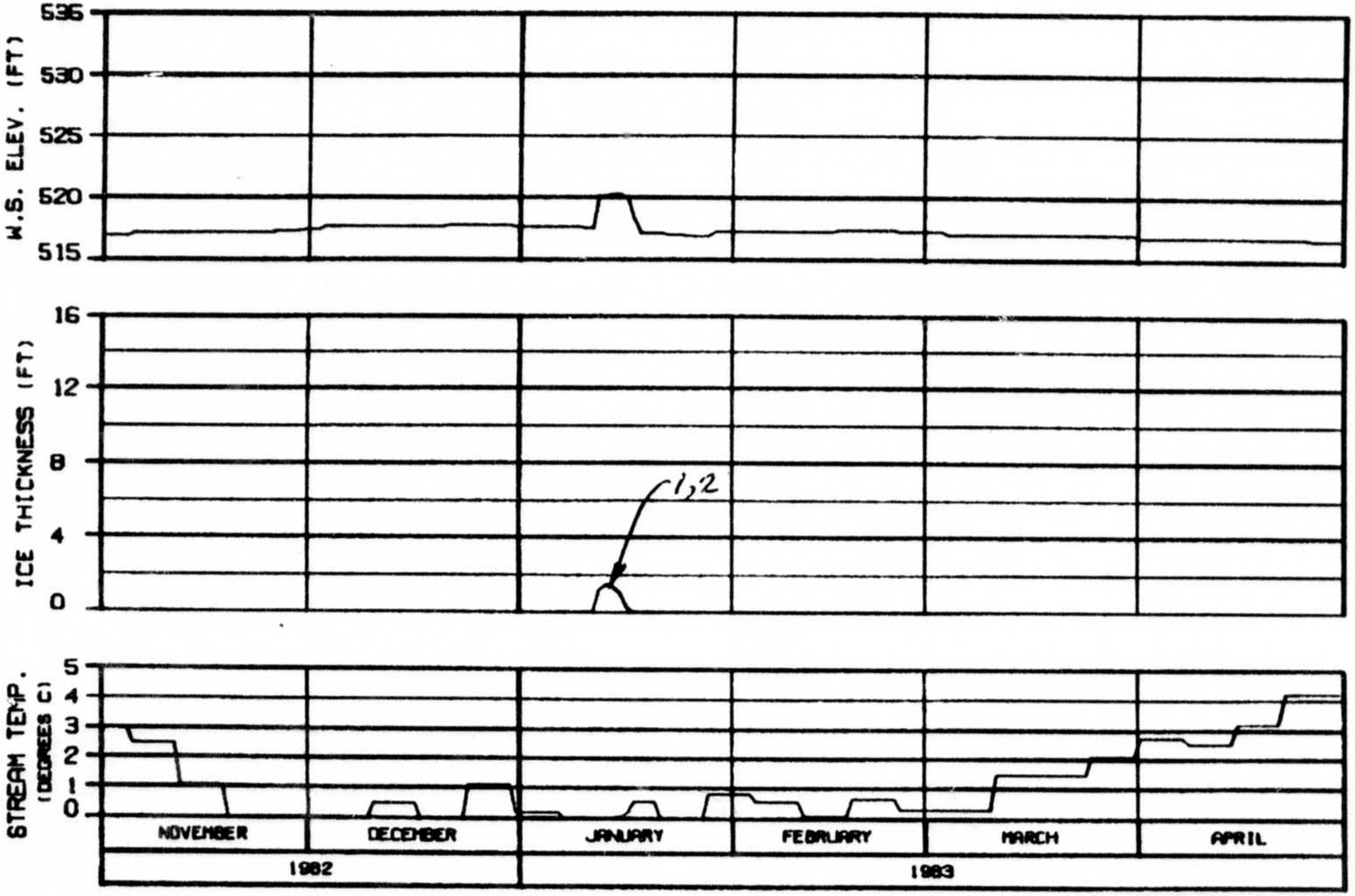
1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



RIVER MILE : 120.00

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C   TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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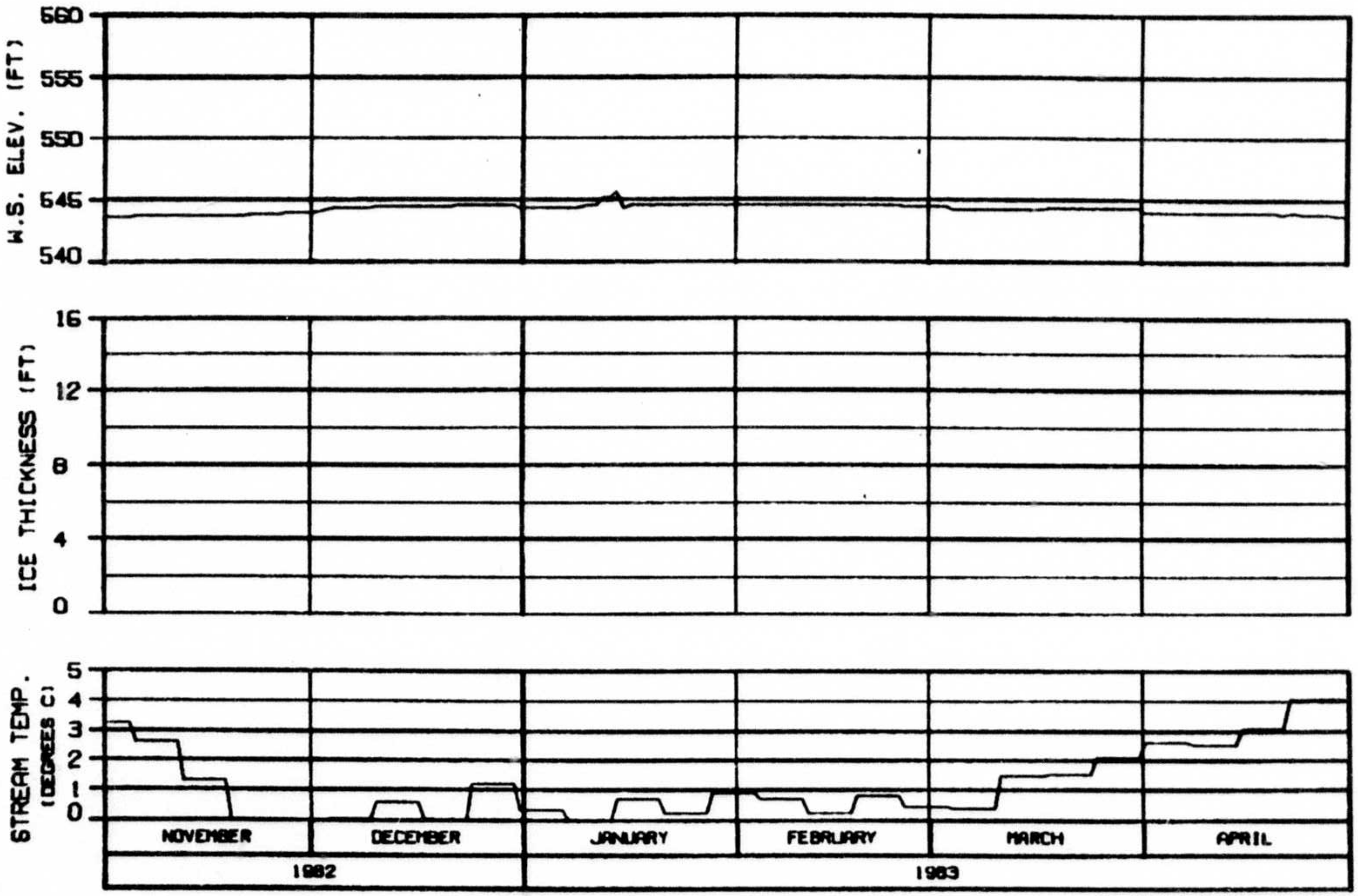


HEAD OF MOOSE SLOUGH

RIVER MILE : 123.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

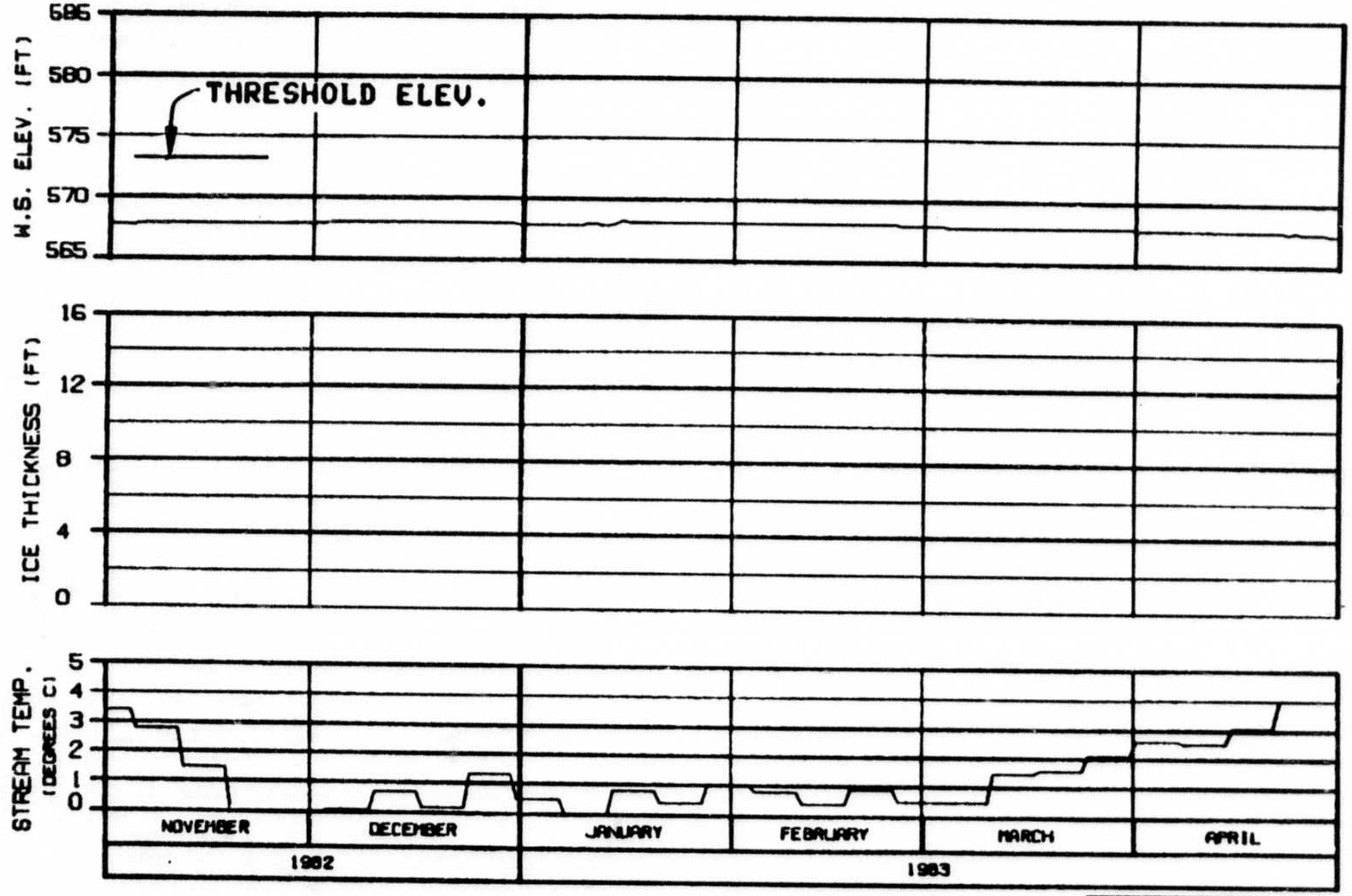
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (WEST)

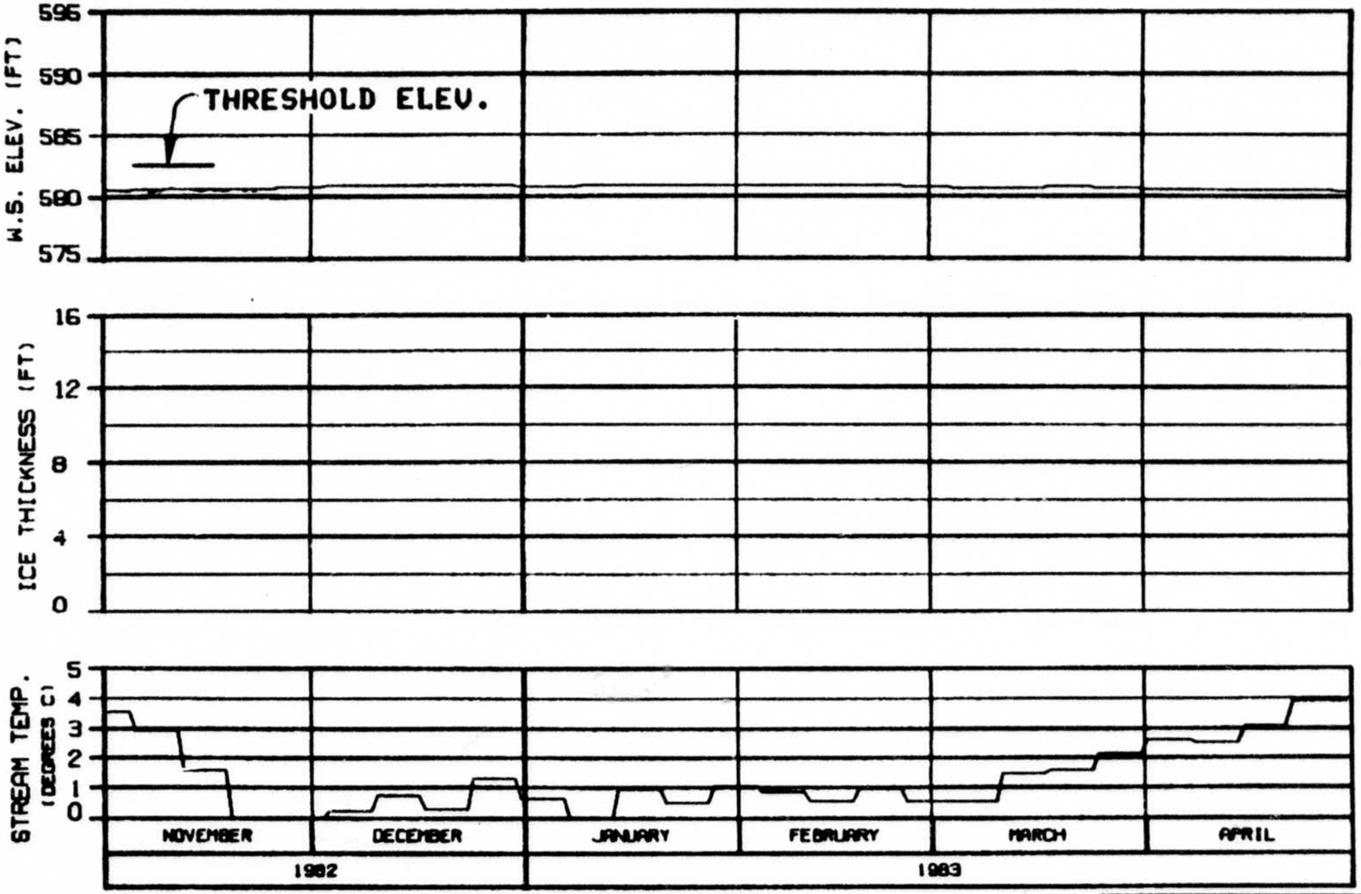
RIVER MILE : 126.10

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
CHICAGO, ILLINOIS	10 JAN 84	1668.142



HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

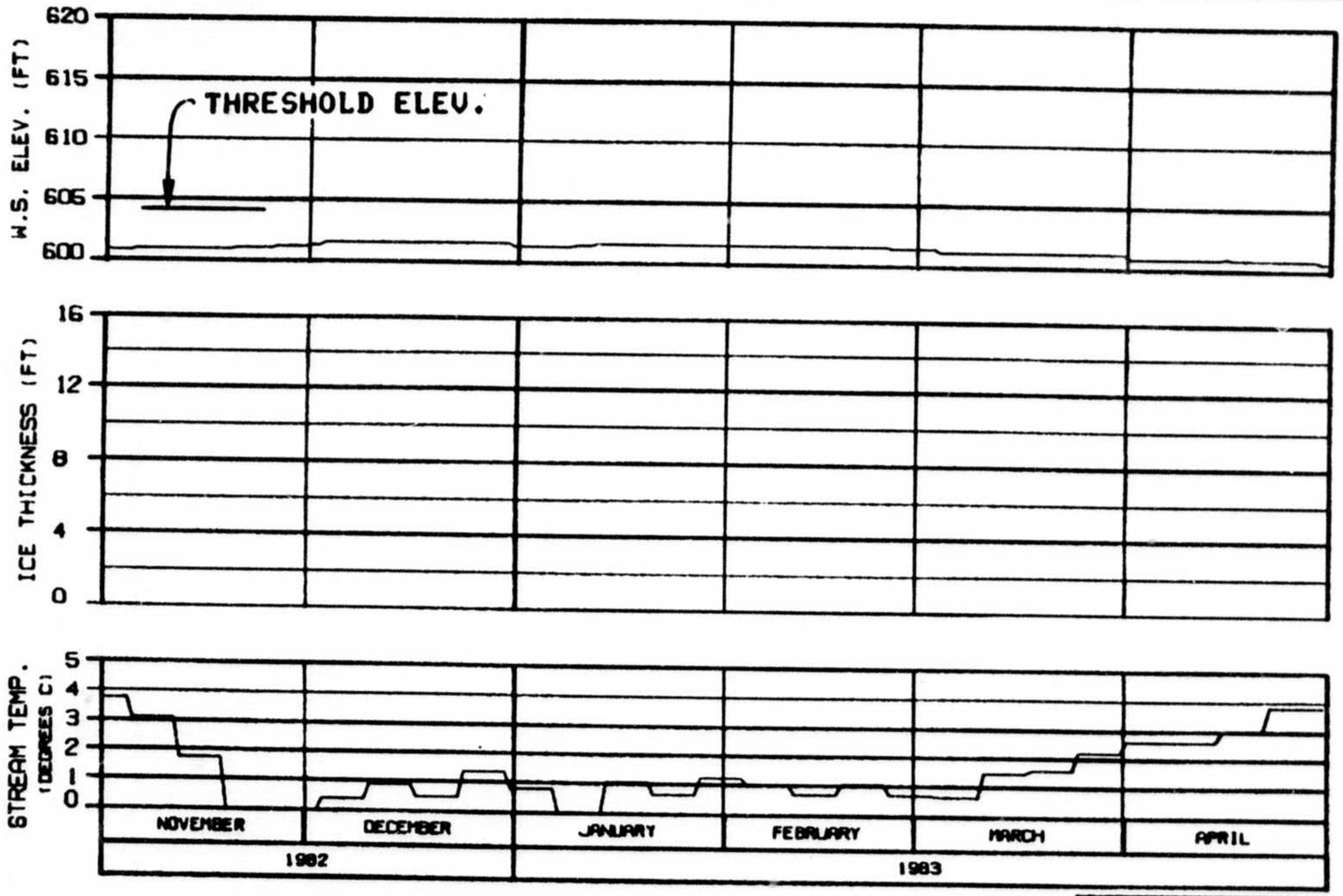
ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
1588.142

STOP C



HEAD OF SLOUGH 9

RIVER MILE : 129.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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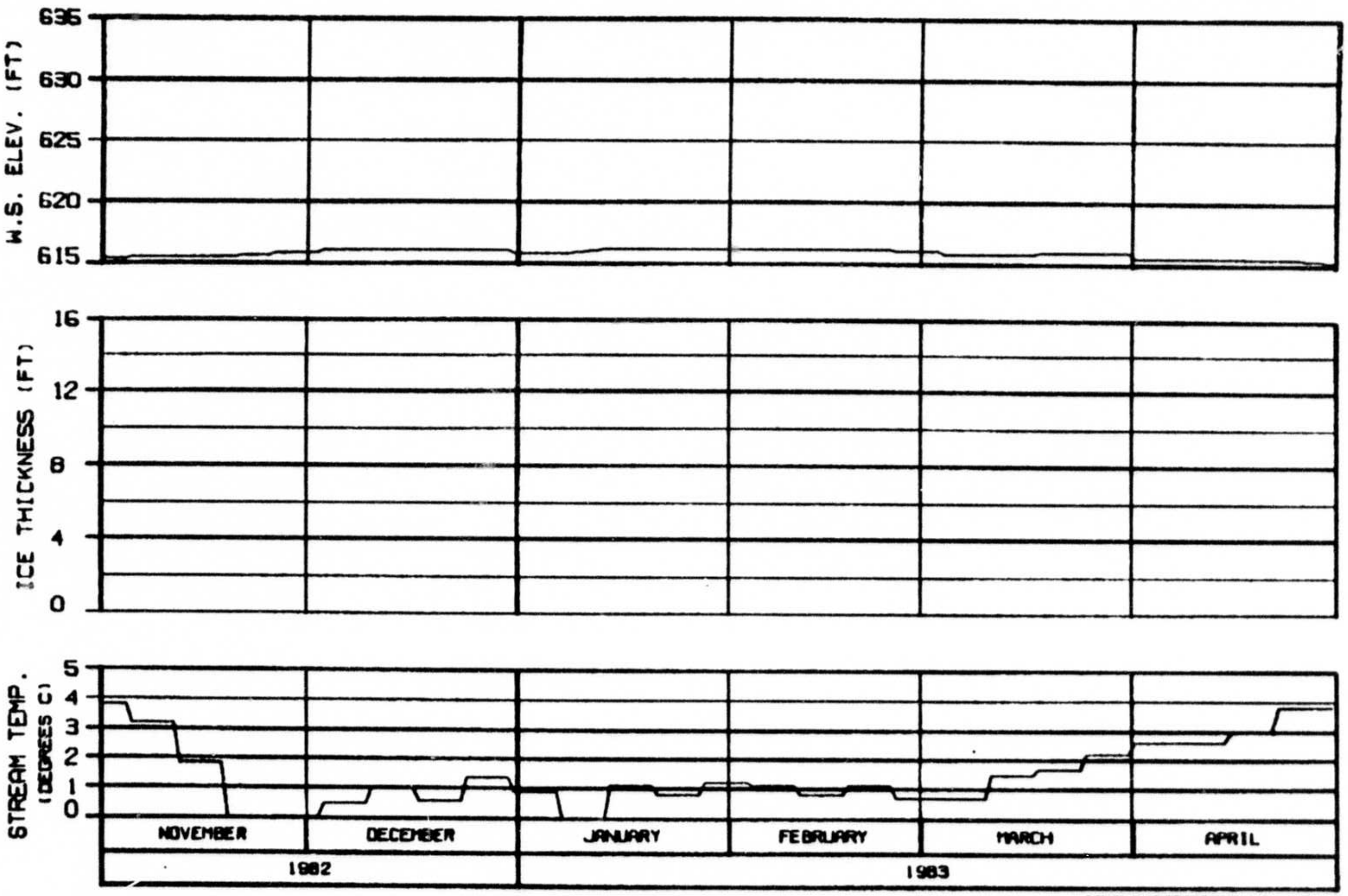
OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

RIVER MILE : 130.60

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

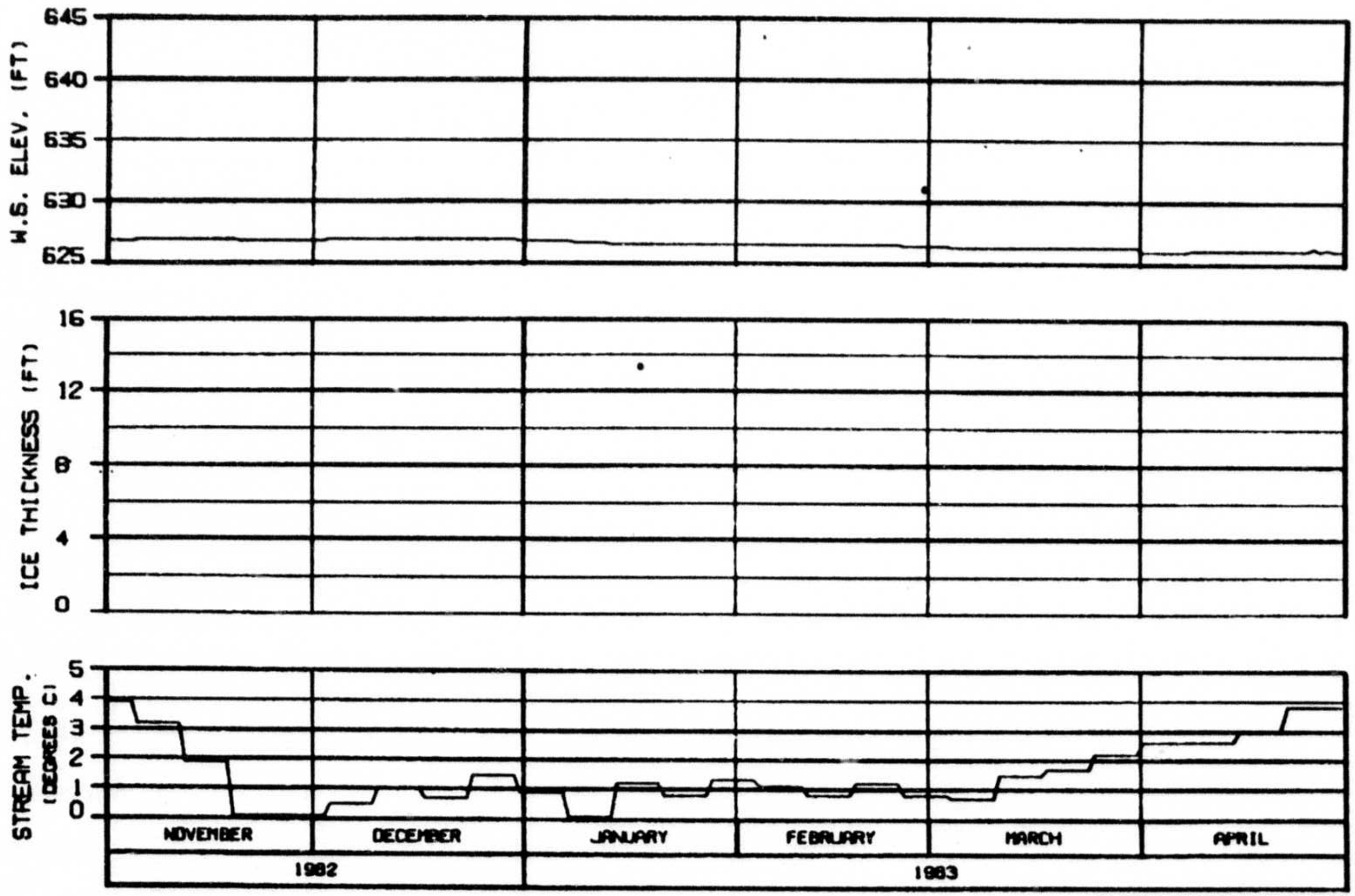
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

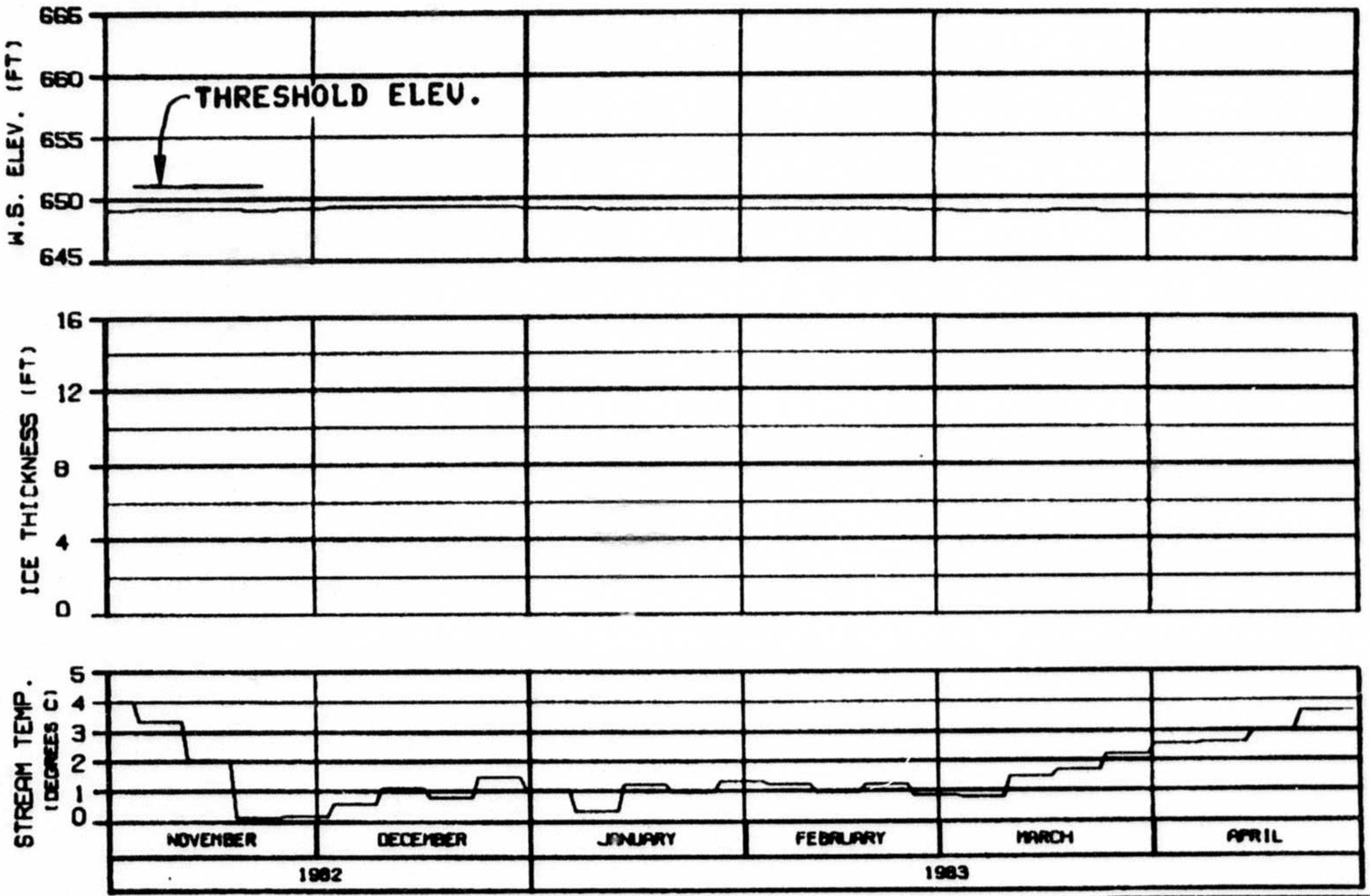
RIVER MILE : 131.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
1688.142



HEAD OF SLOUGH 9A

RIVER MILE : 133.70

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

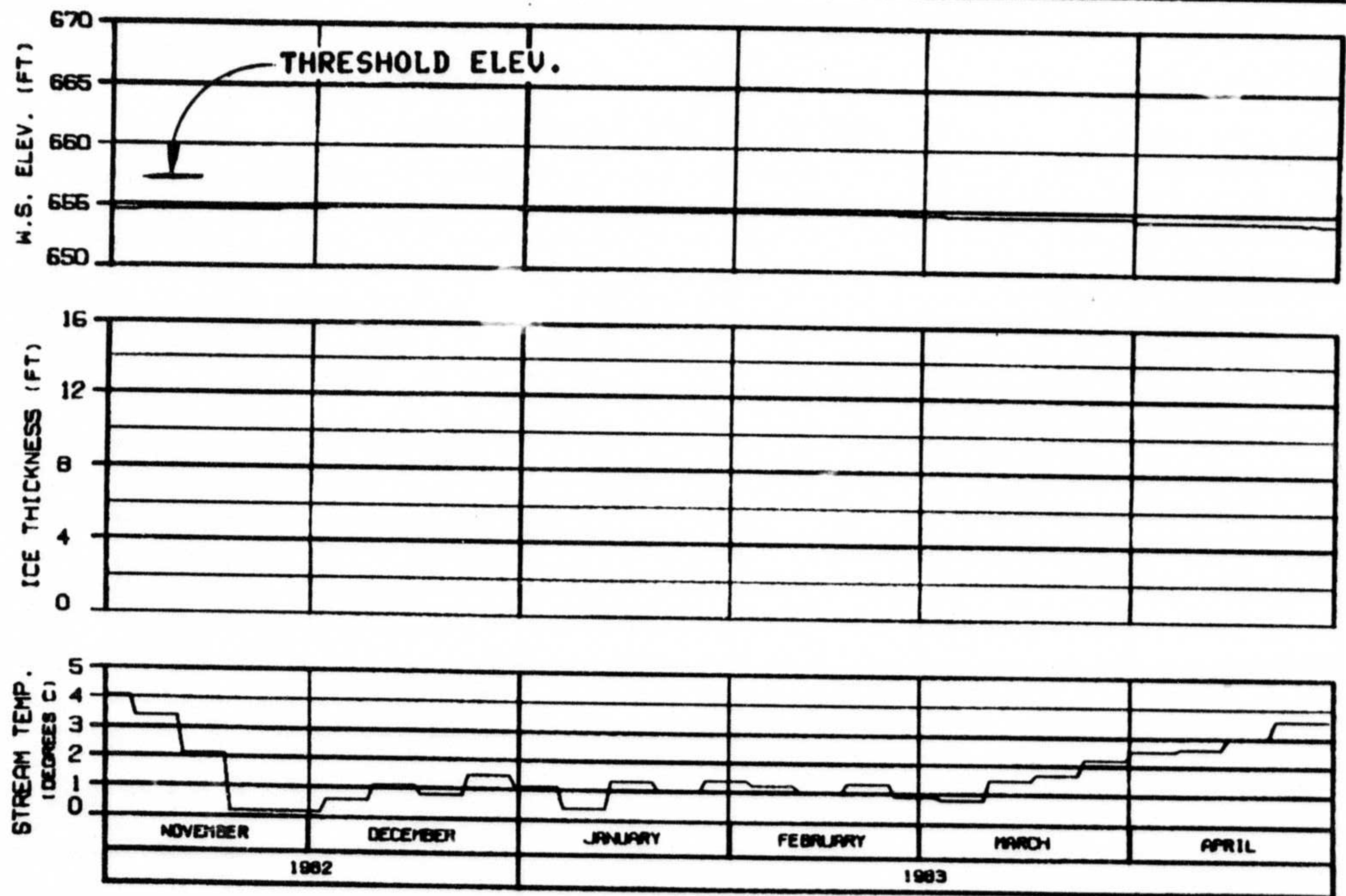
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

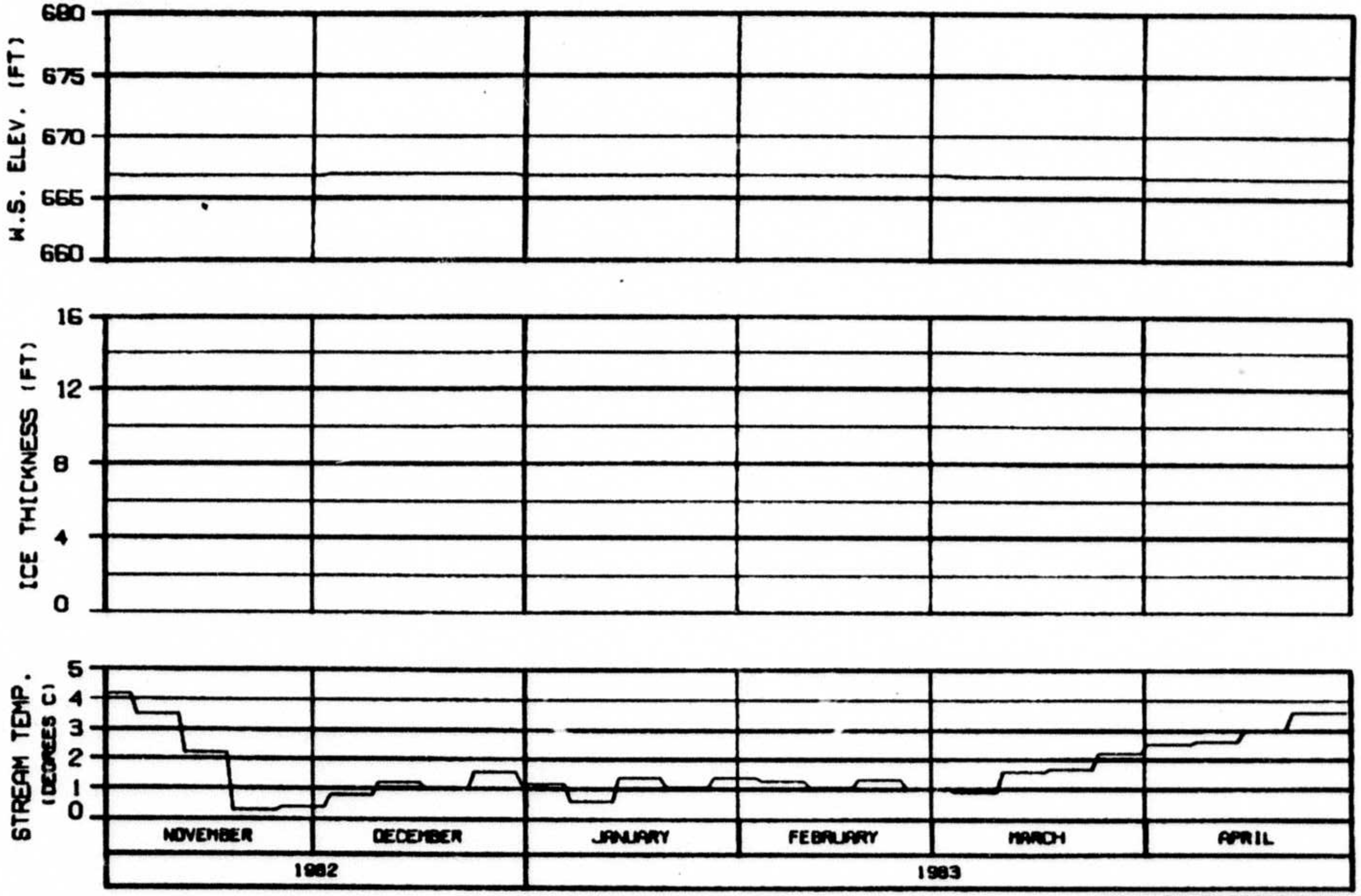
RIVER MILE : 134.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
10 JUN 84 | 1688.142



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

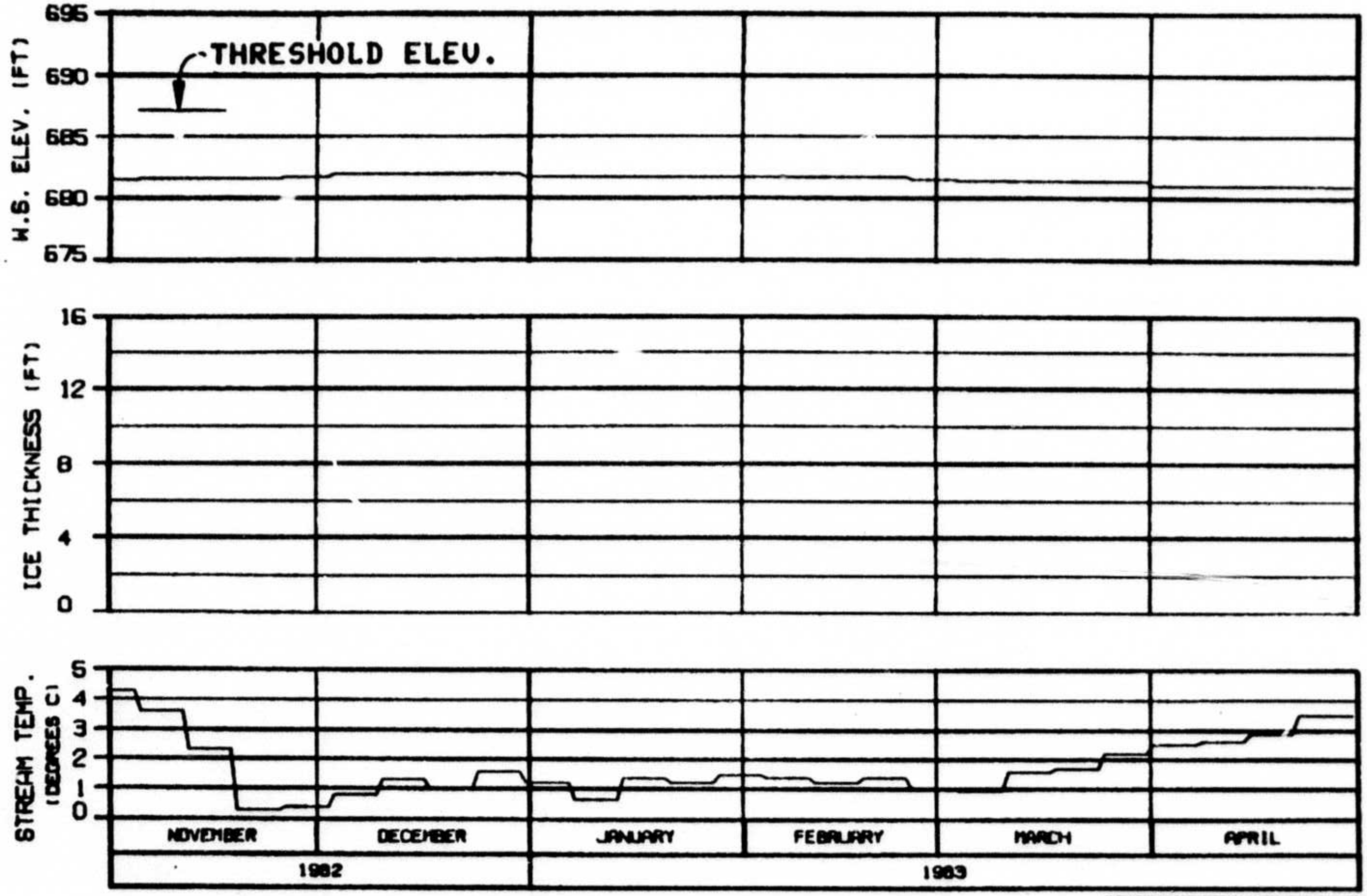
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 11

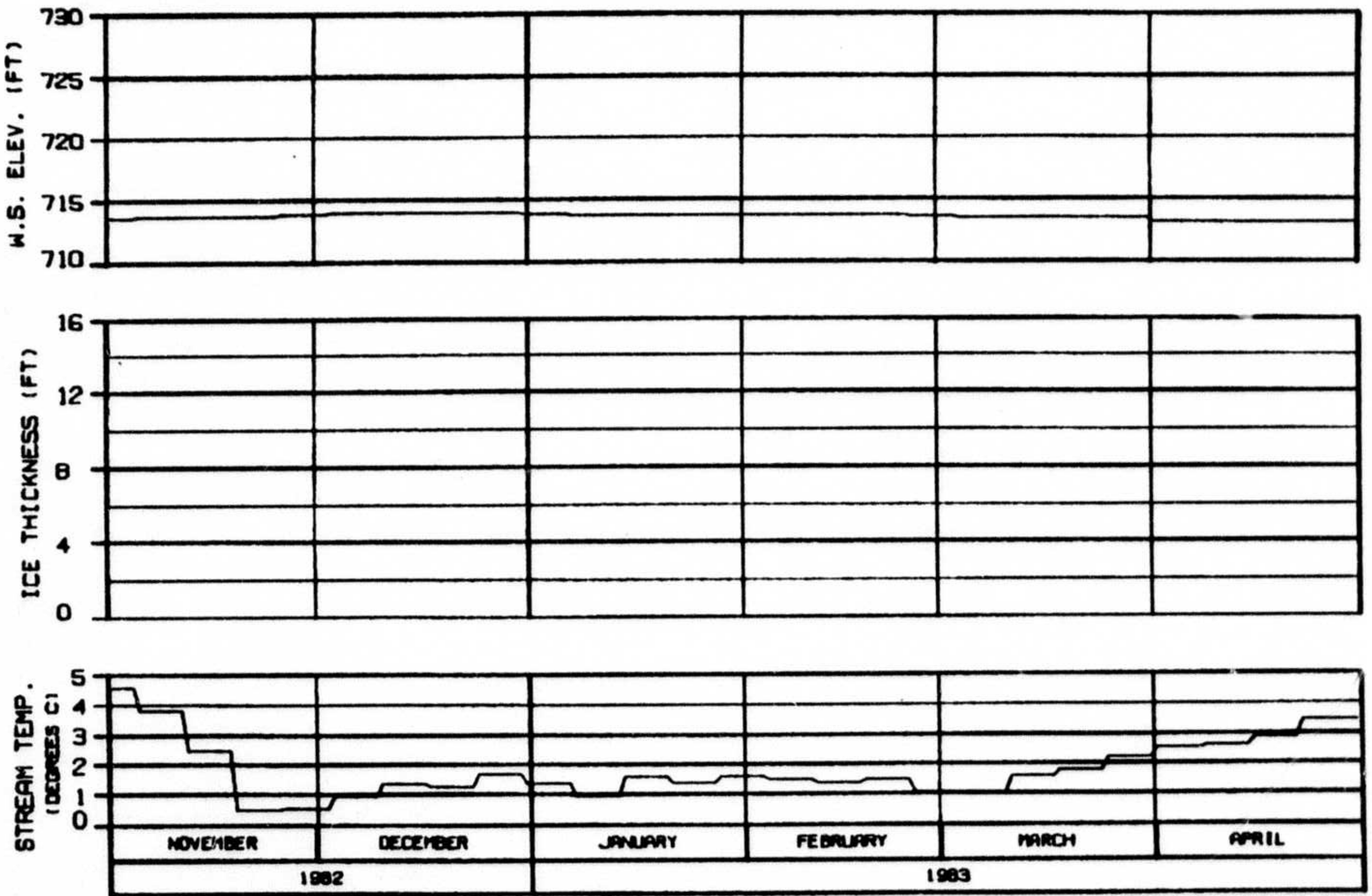
RIVER MILE : 136.50

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 17

RIVER MILE : 139.30

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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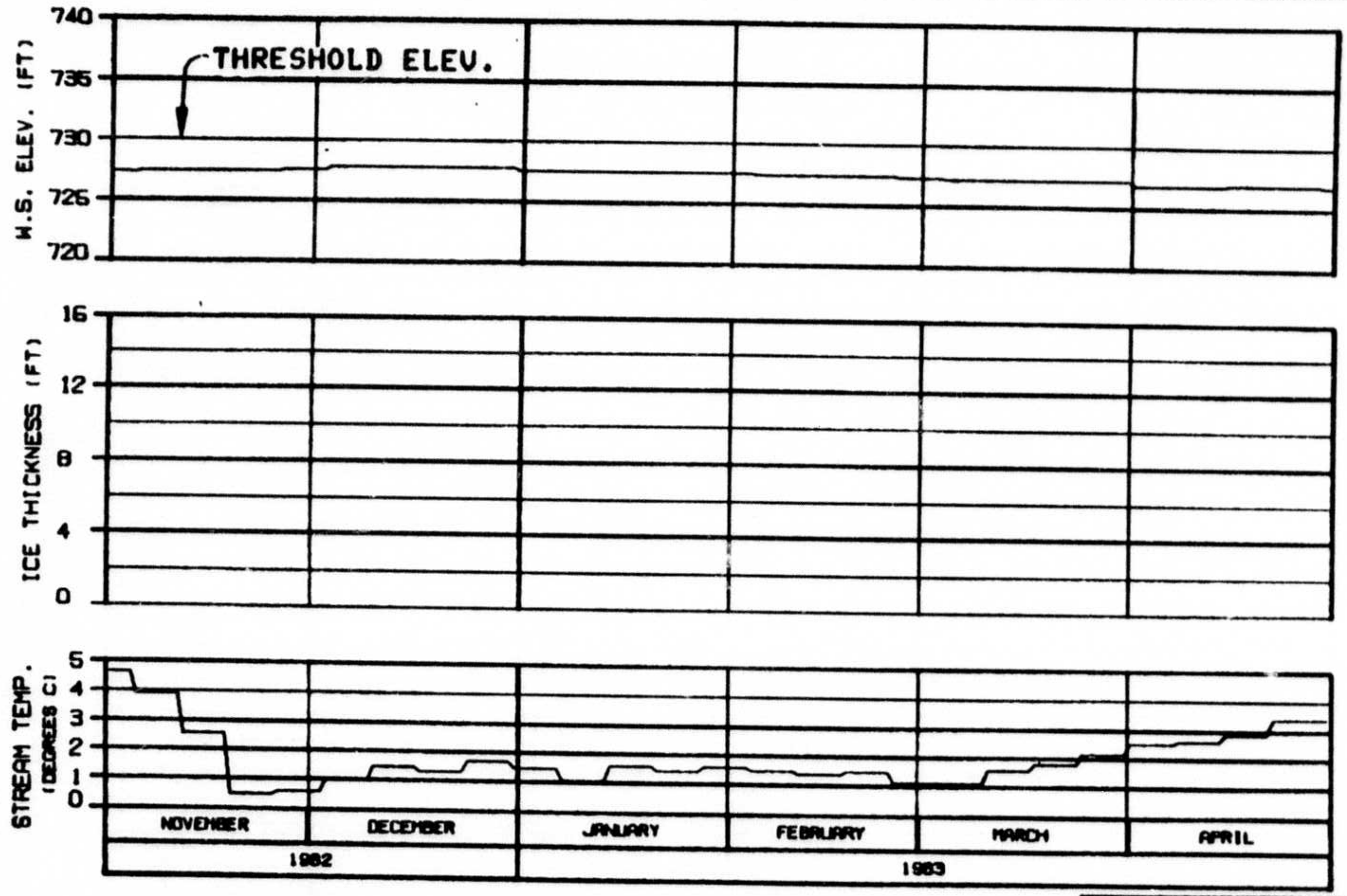


HEAD OF SLOUGH 20

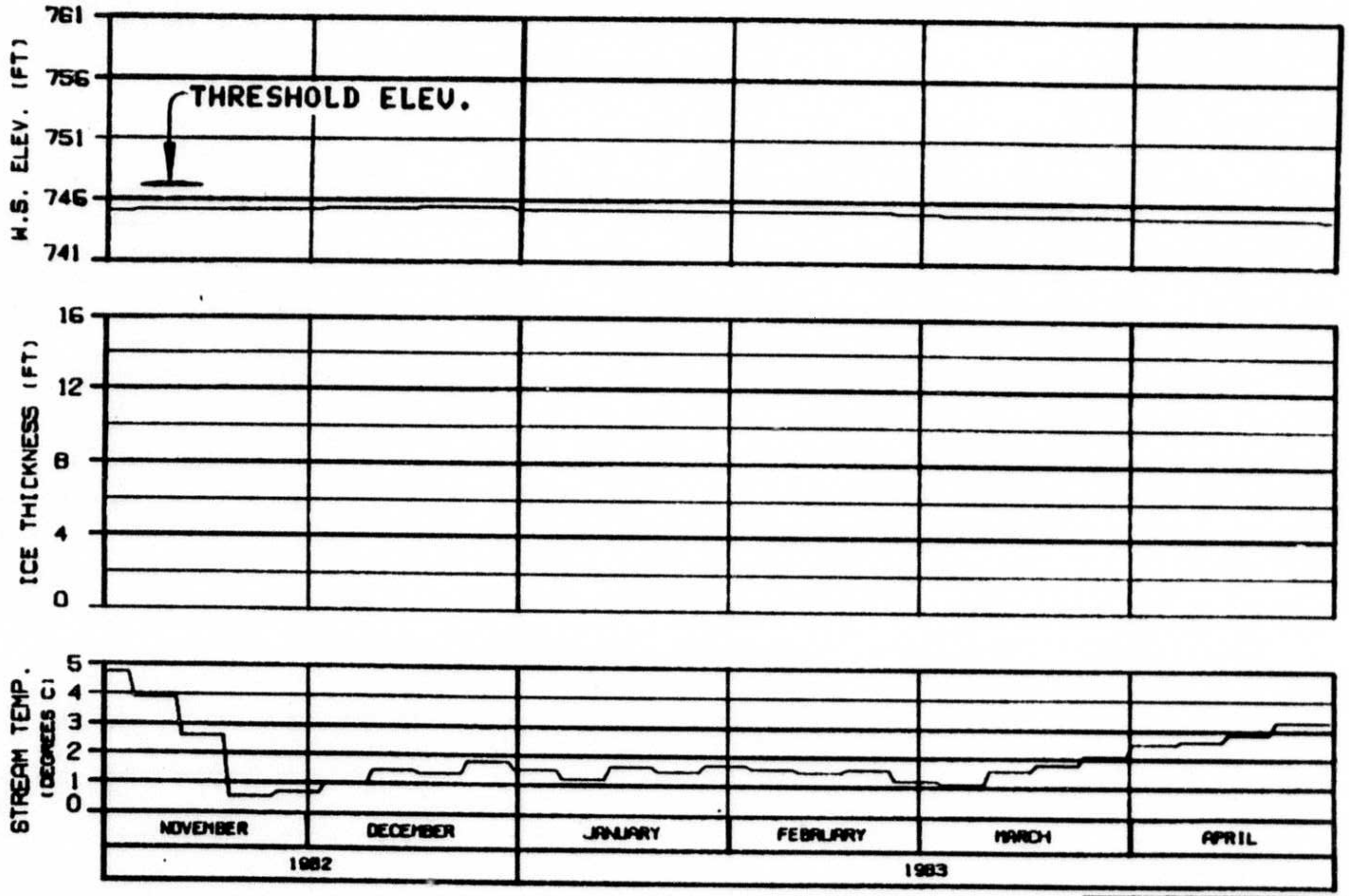
RIVER MILE : 140.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
[illegible]	10 JAN 84	[illegible].142



SLOUGH 21 (ENTRANCE A6)

RIVER MILE : 141.80

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

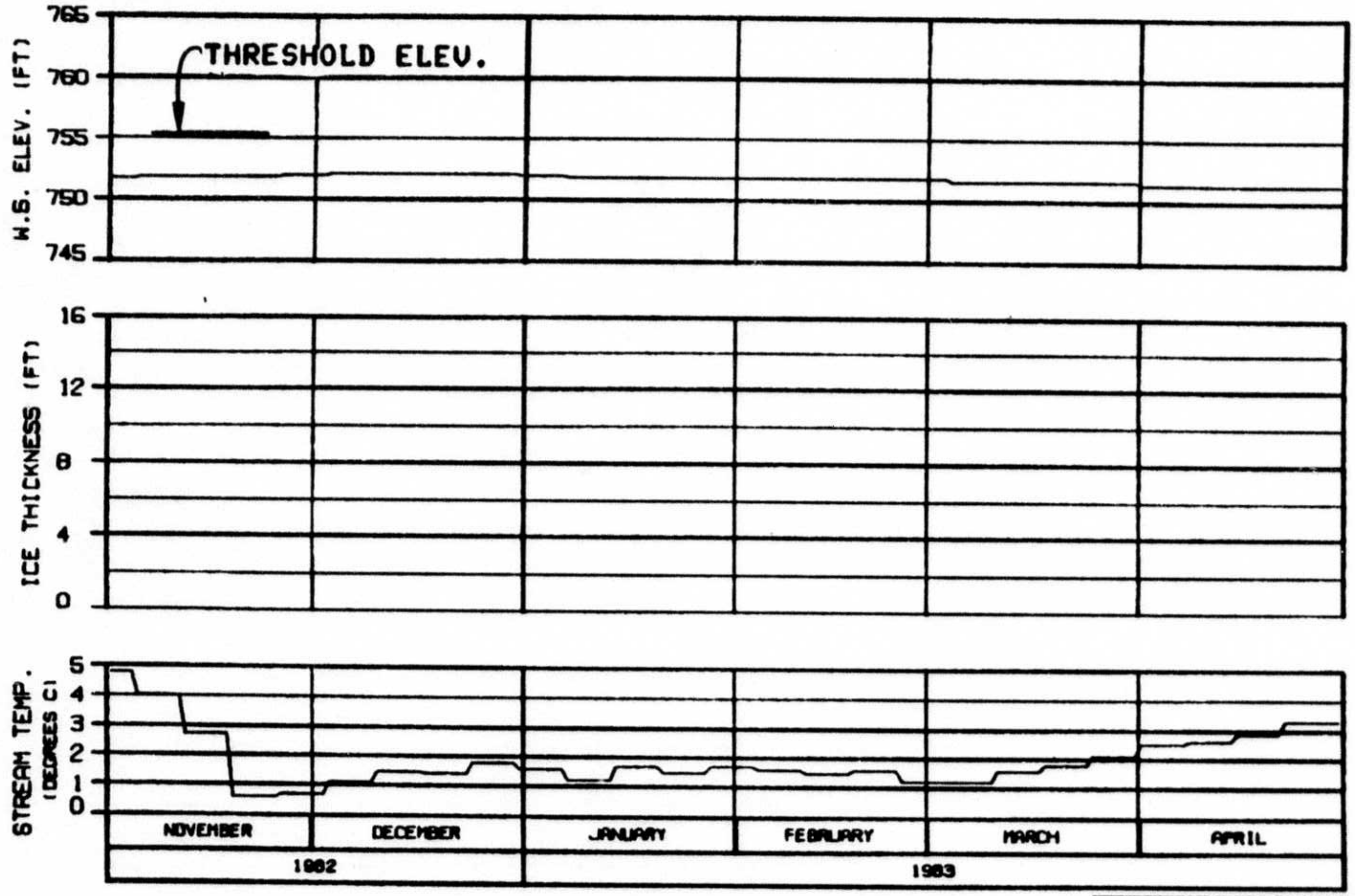
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 21

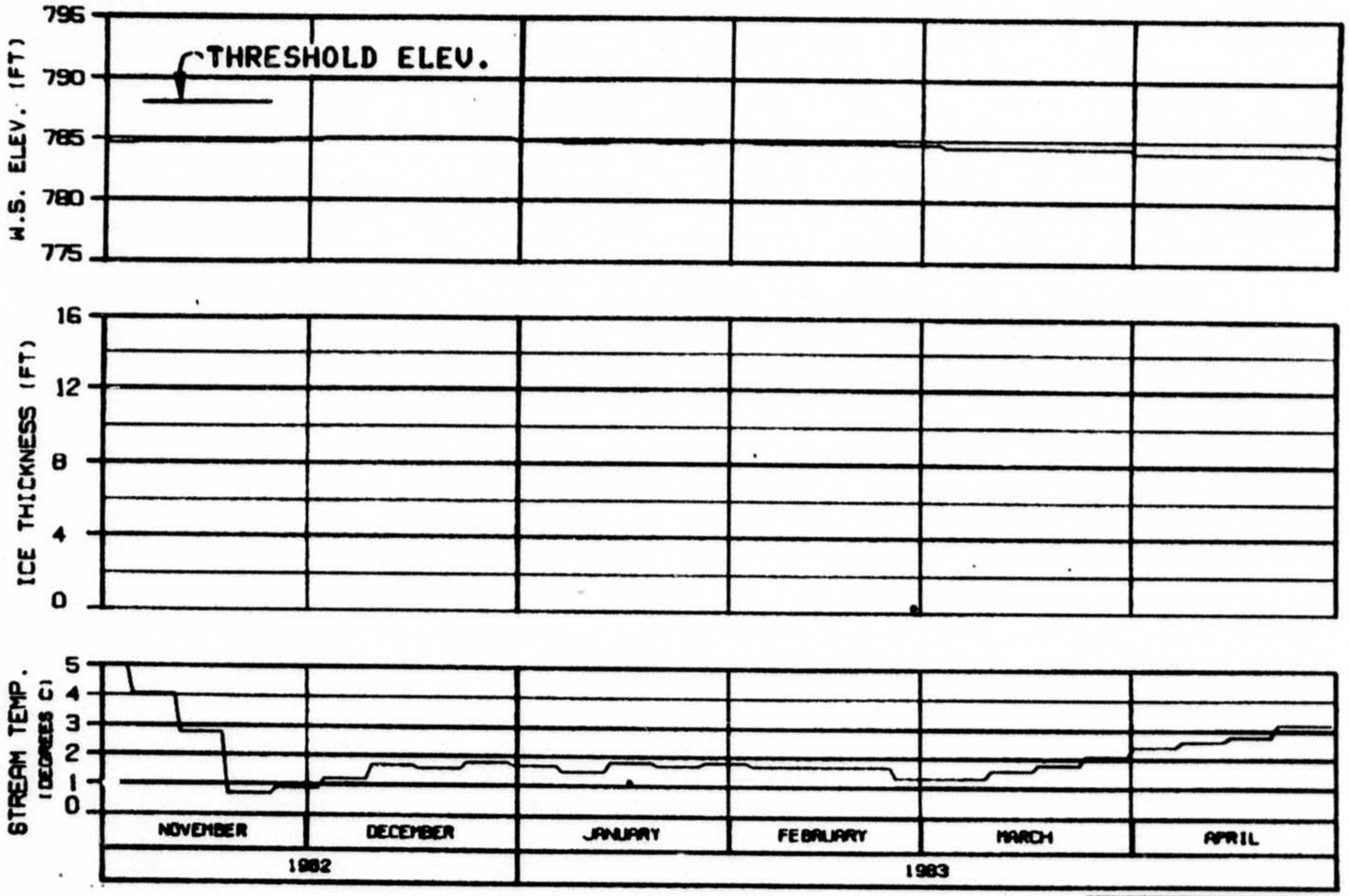
RIVER MILE : 142.20

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
[illegible] | [illegible] | [illegible]



HEAD OF SLOUGH 22

RIVER MILE : 144.80

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2002
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 8202CNA

ICE THICKNESS LEGEND:

1. TOTAL THICKNESS
2. SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?

EXHIBIT P

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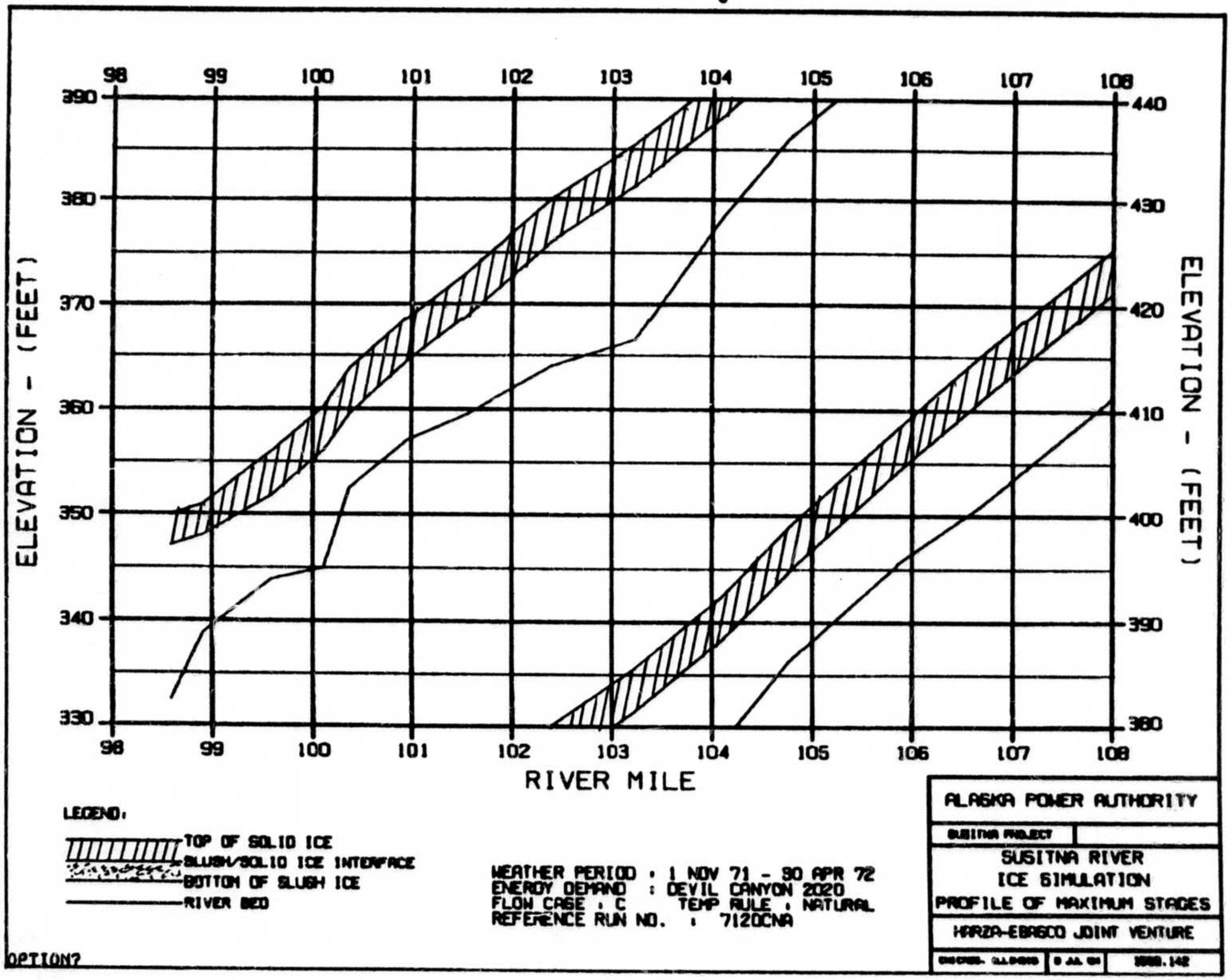
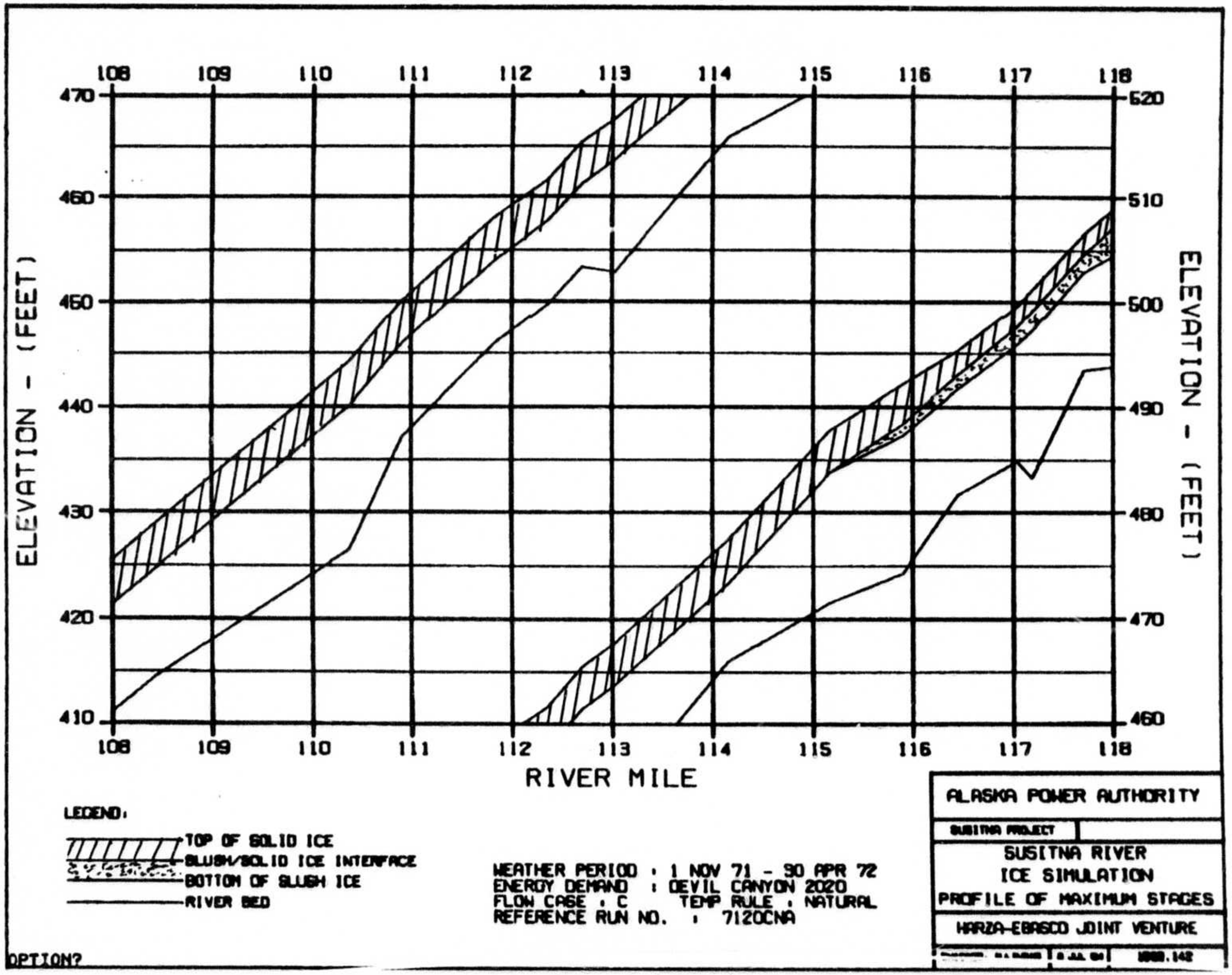
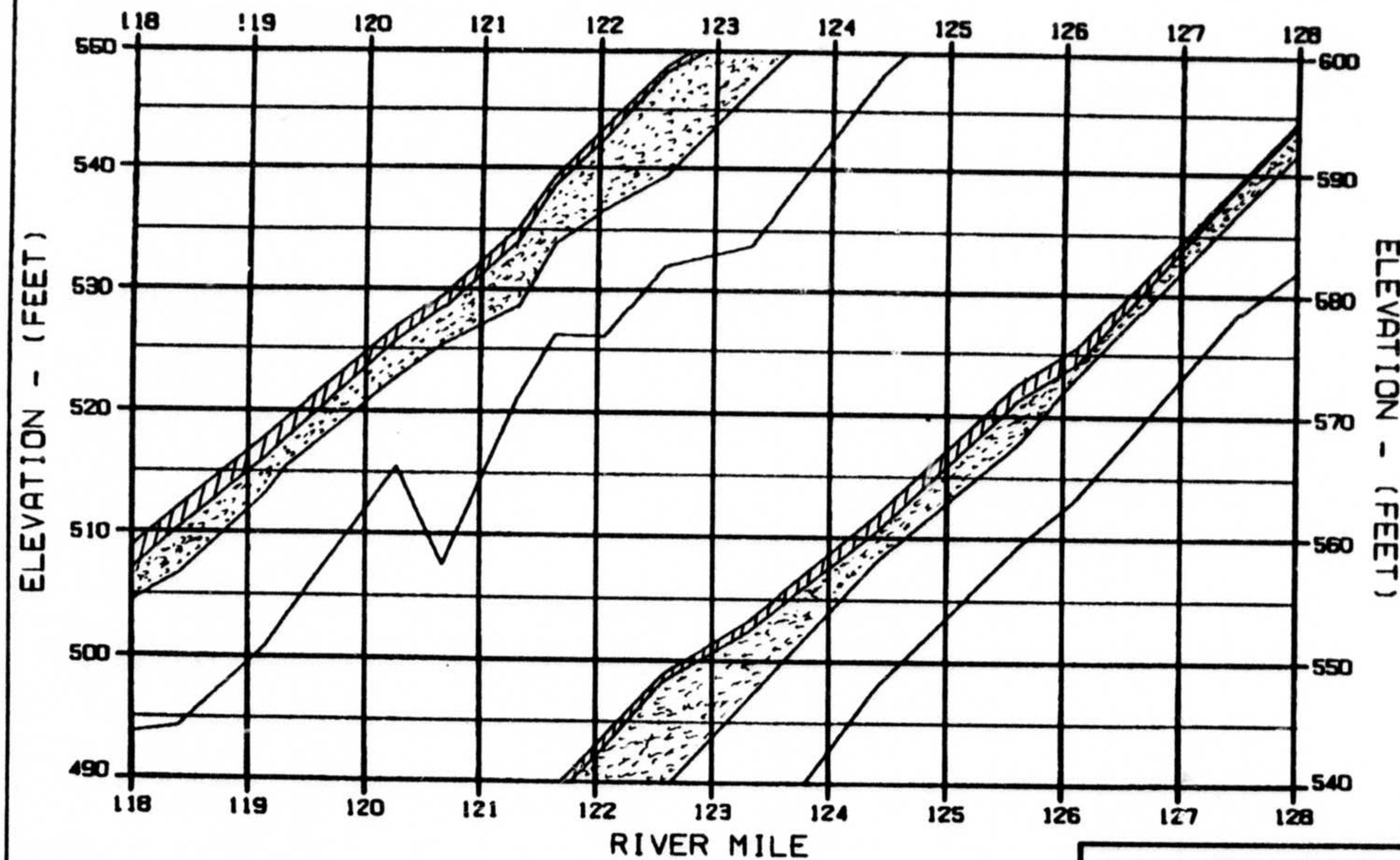

ELEVATION - (FEET)
RIVER MILE
98 99 100 101 102 103 104 105 106 107 108
390 380 370 360 350 340 330
440 430 420 410 400 390 380
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

C



ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
108 109 110 111 112 113 114 115 116 117 118
410 420 430 440 450 460 470
460 470 480 490 500 510 520
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 712OCNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

C



LEGEND:

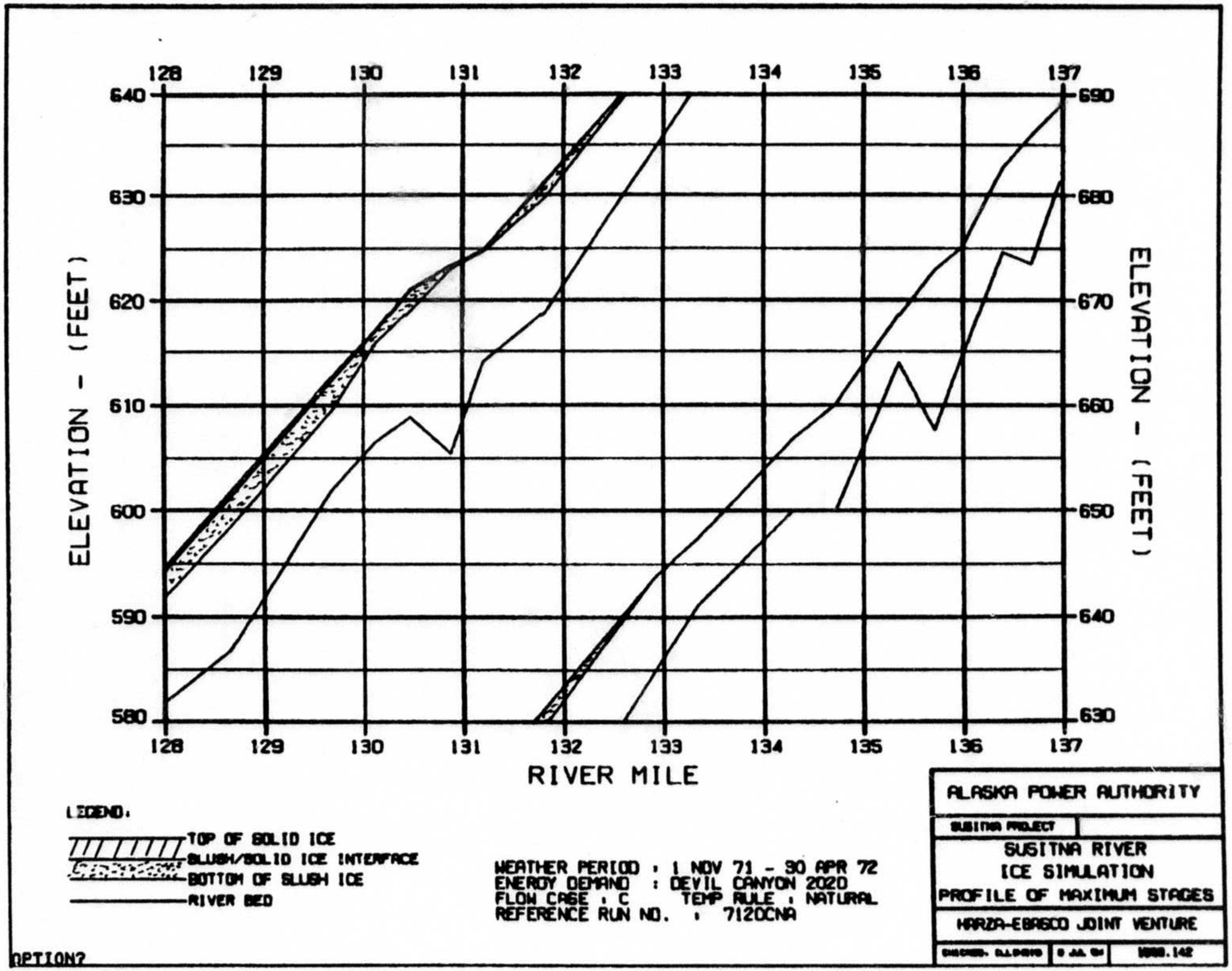
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

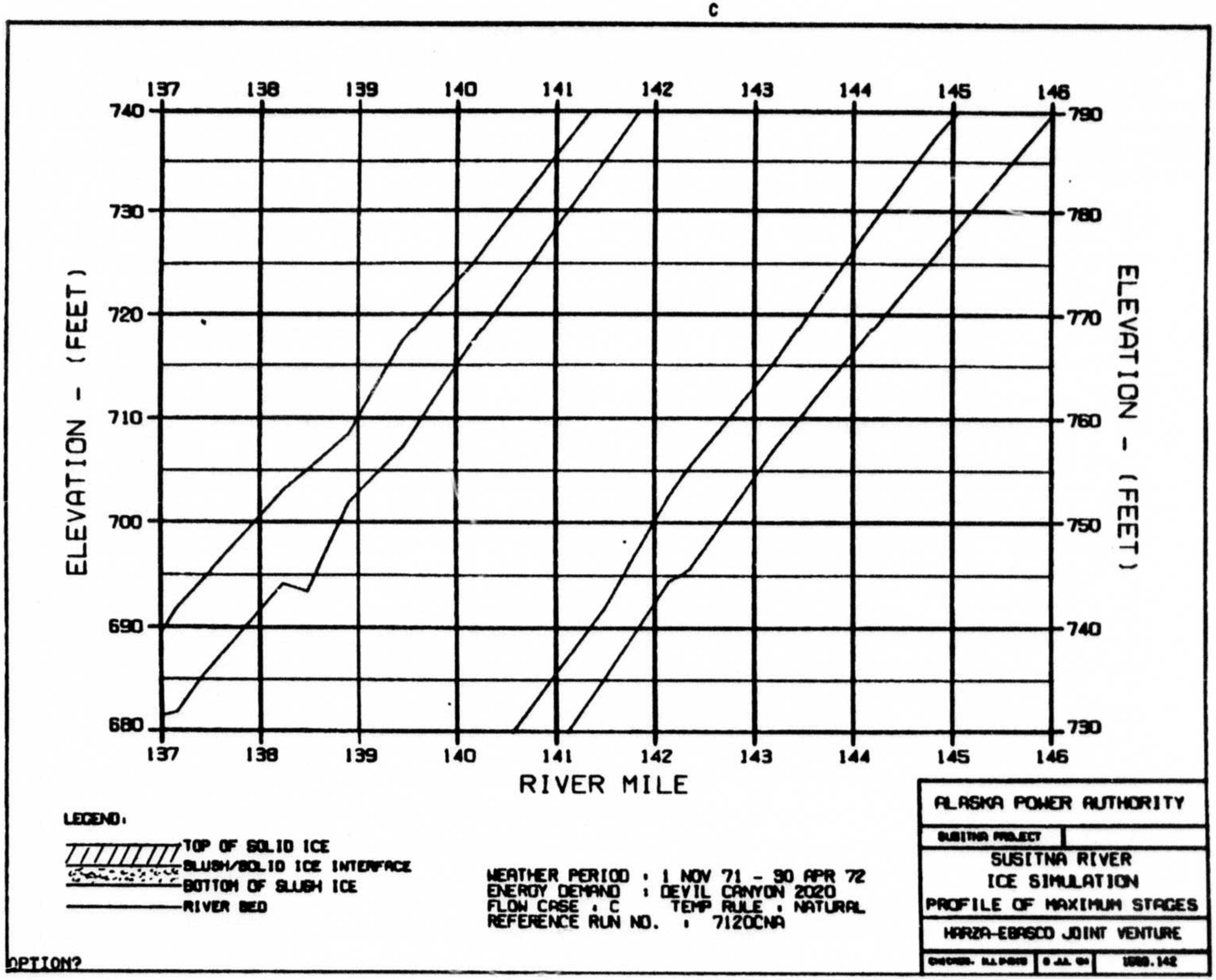
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

C



ELEVATION - (FEET)
RIVER MILE
128 129 130 131 132 133 134 135 136 137
640 630 620 610 600 590 580
690 680 670 660 650 640 630
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?


C
137 138 139 140 141 142 143 144 145 146
740 730 720 710 700 690 680
790 780 770 760 750 740 730
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

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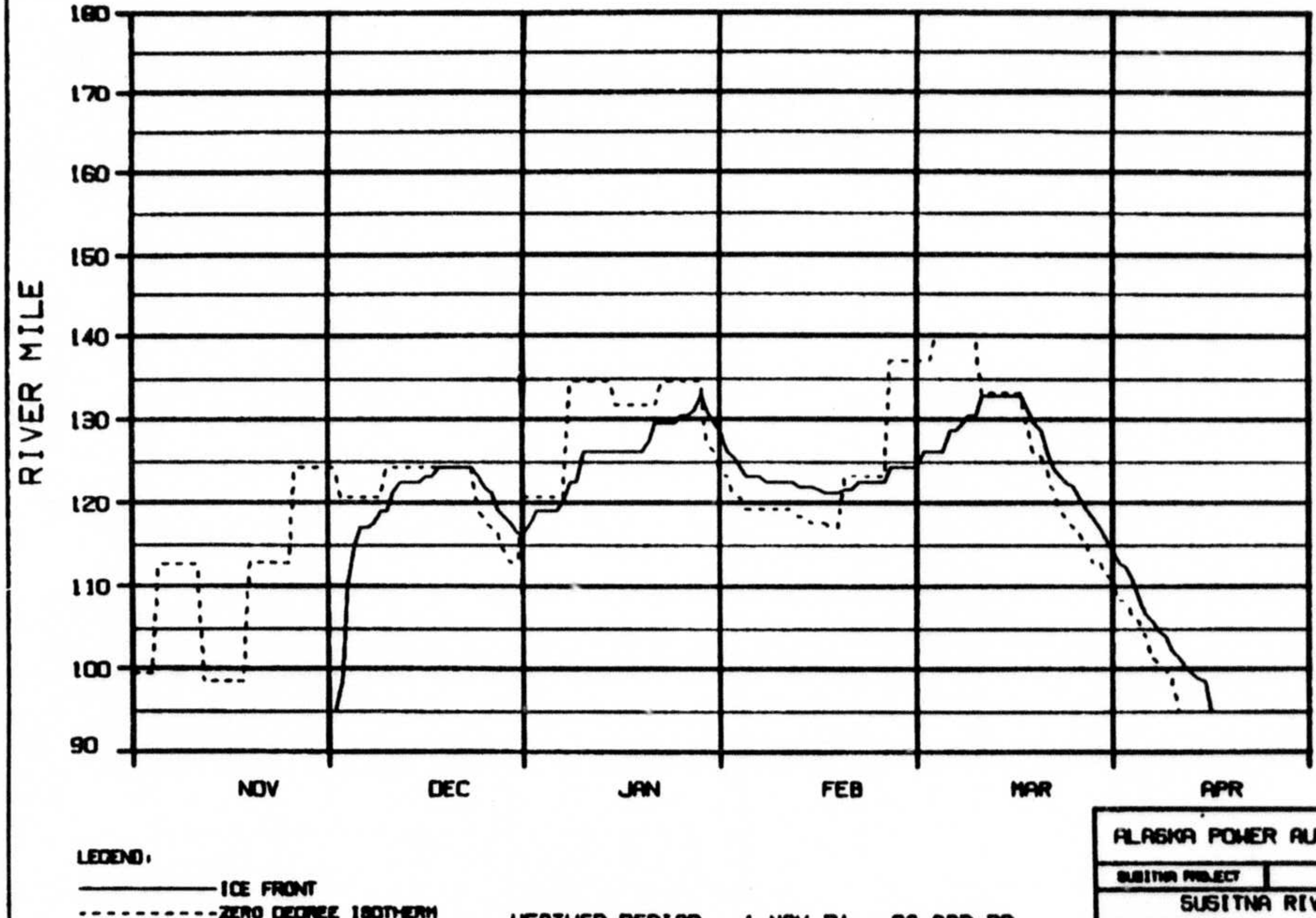


WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

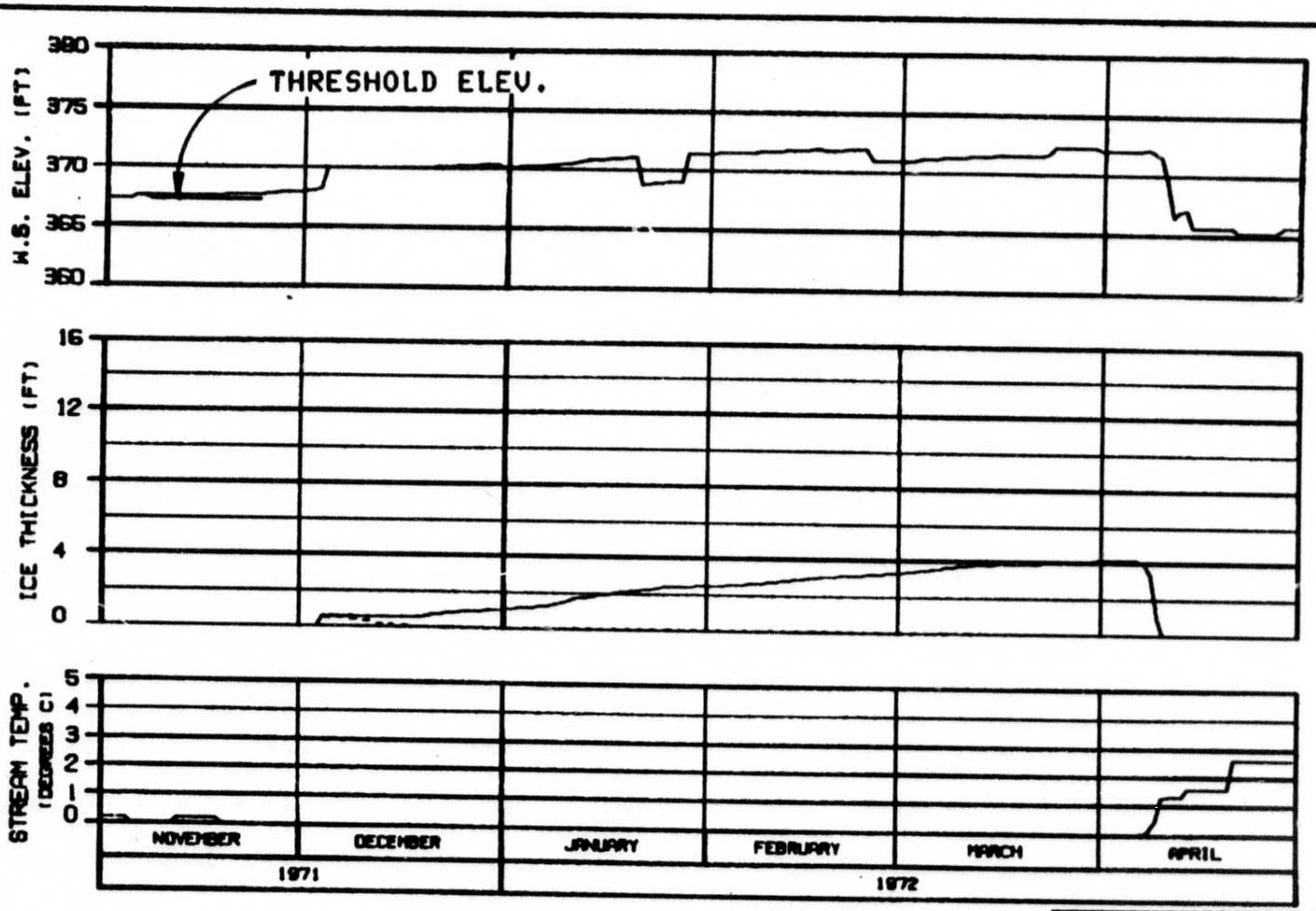
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM

HARZA-EBASCO JOINT VENTURE

OPTION?



HEAD OF WHISKERS SLOUGH

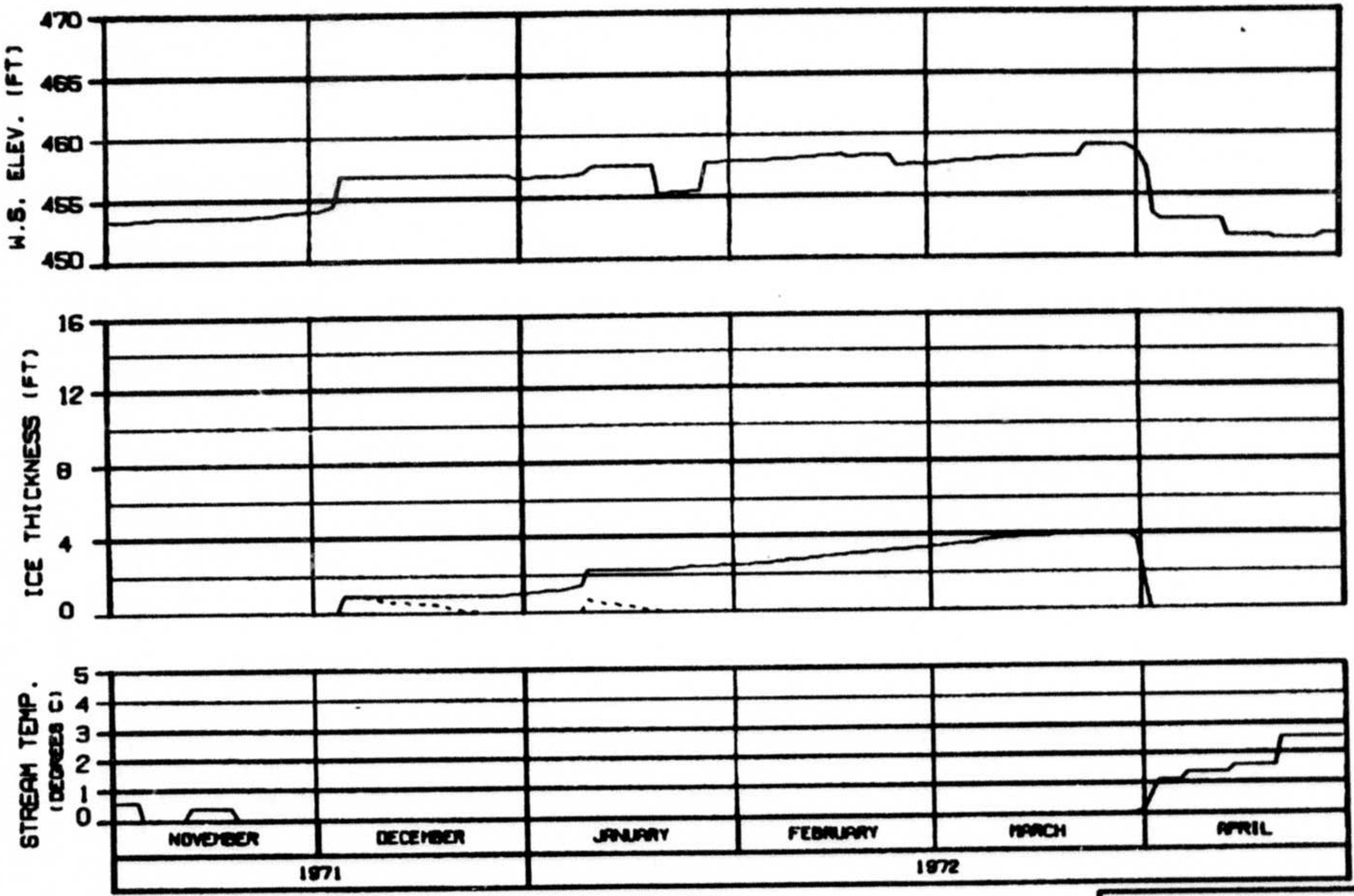
RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
1988.142



SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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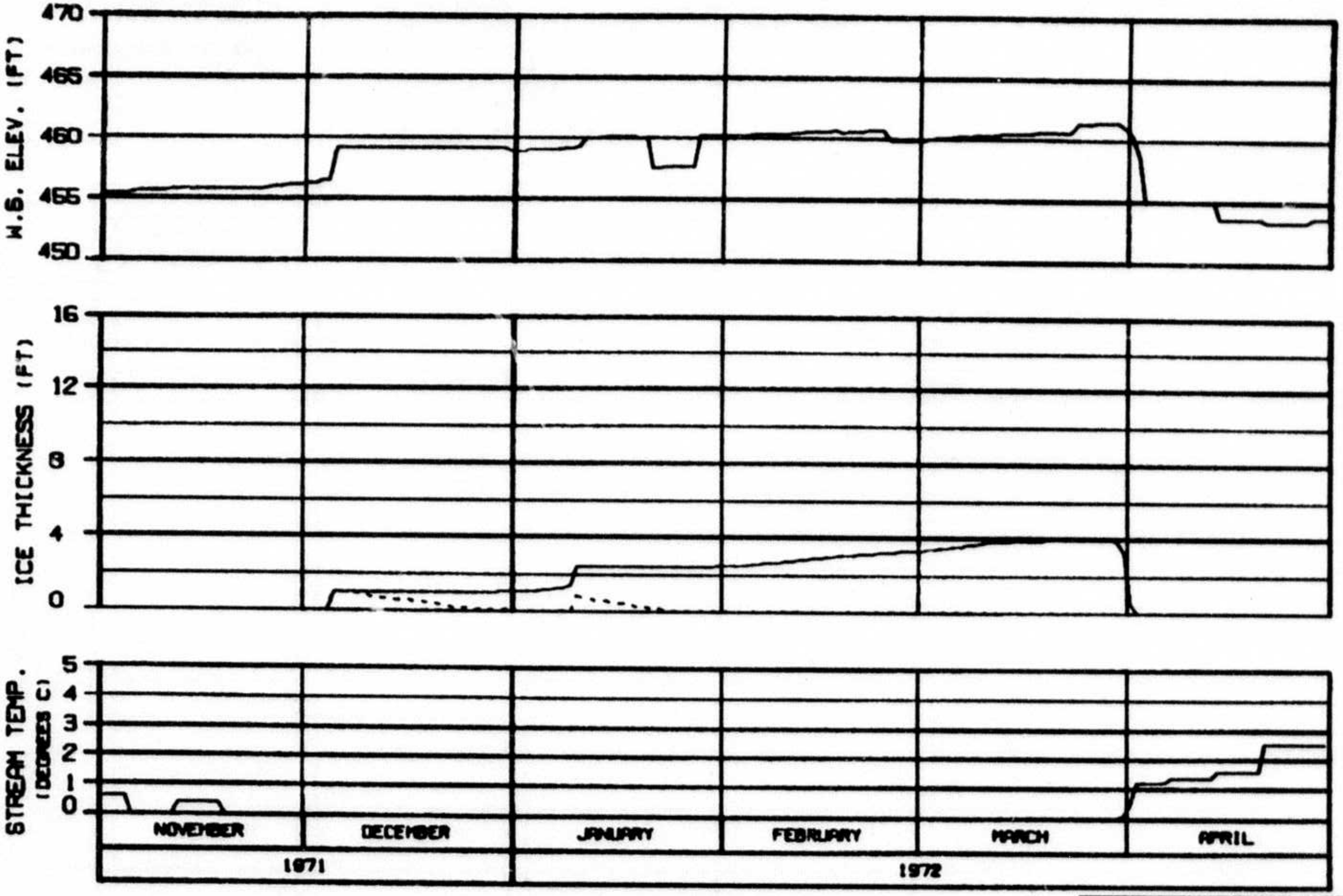

MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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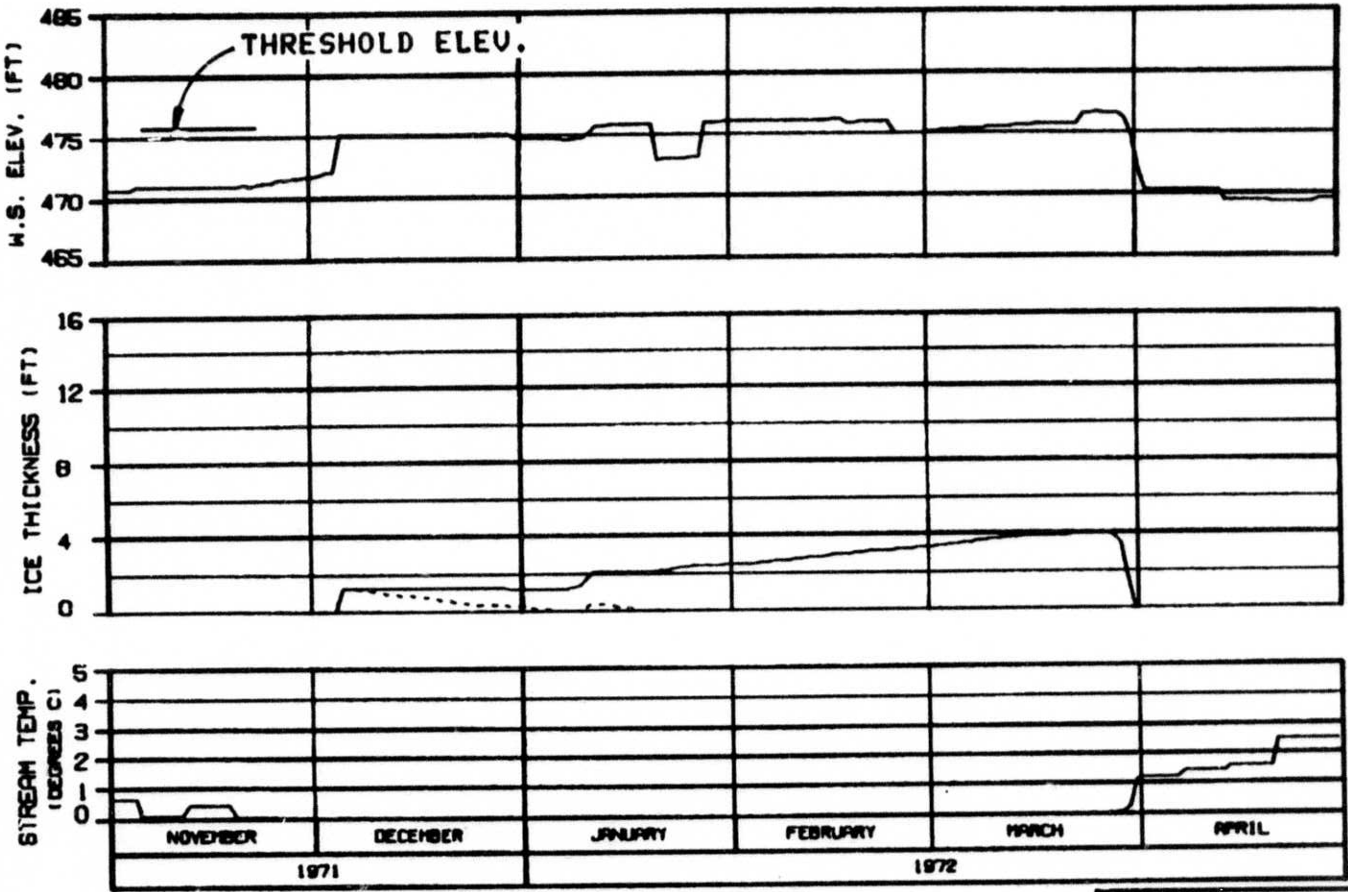


HEAD OF SLOUGH 8

RIVER MILE : 114.10

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ICE THICKNESS LEGEND:

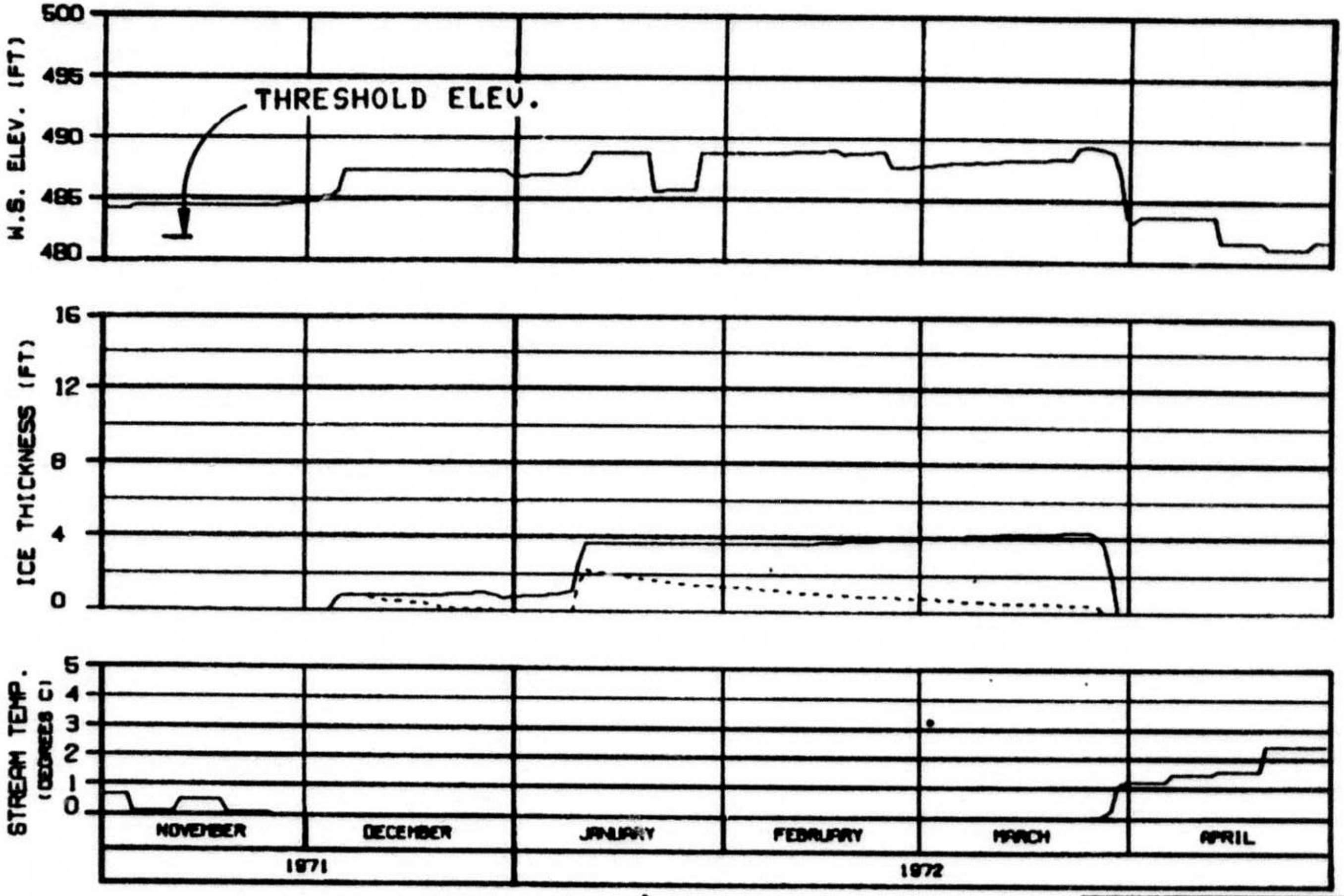
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL MSII

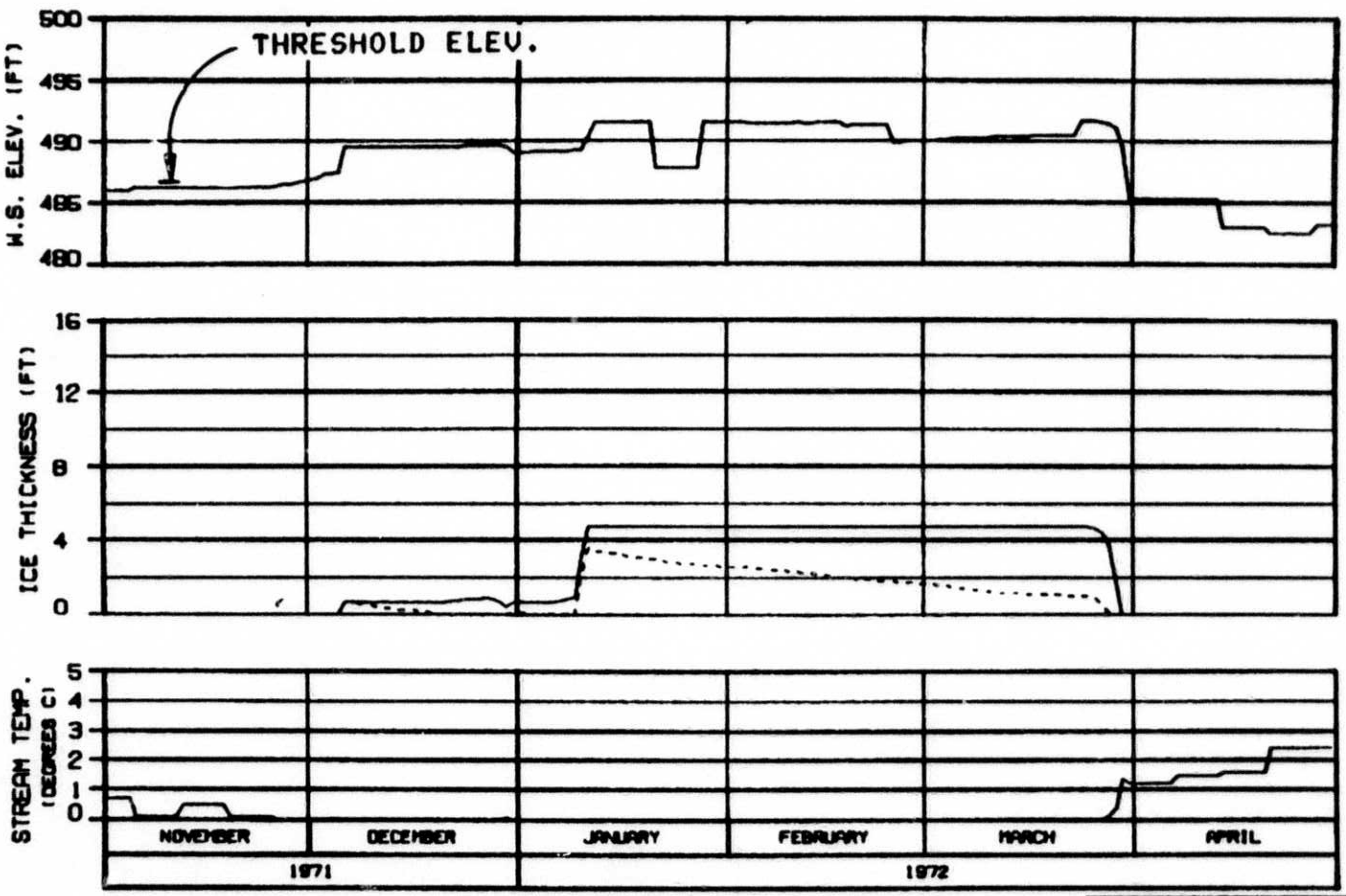
RIVER MILE : 115.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SIDE CHANNEL MSII

RIVER MILE : 115.90

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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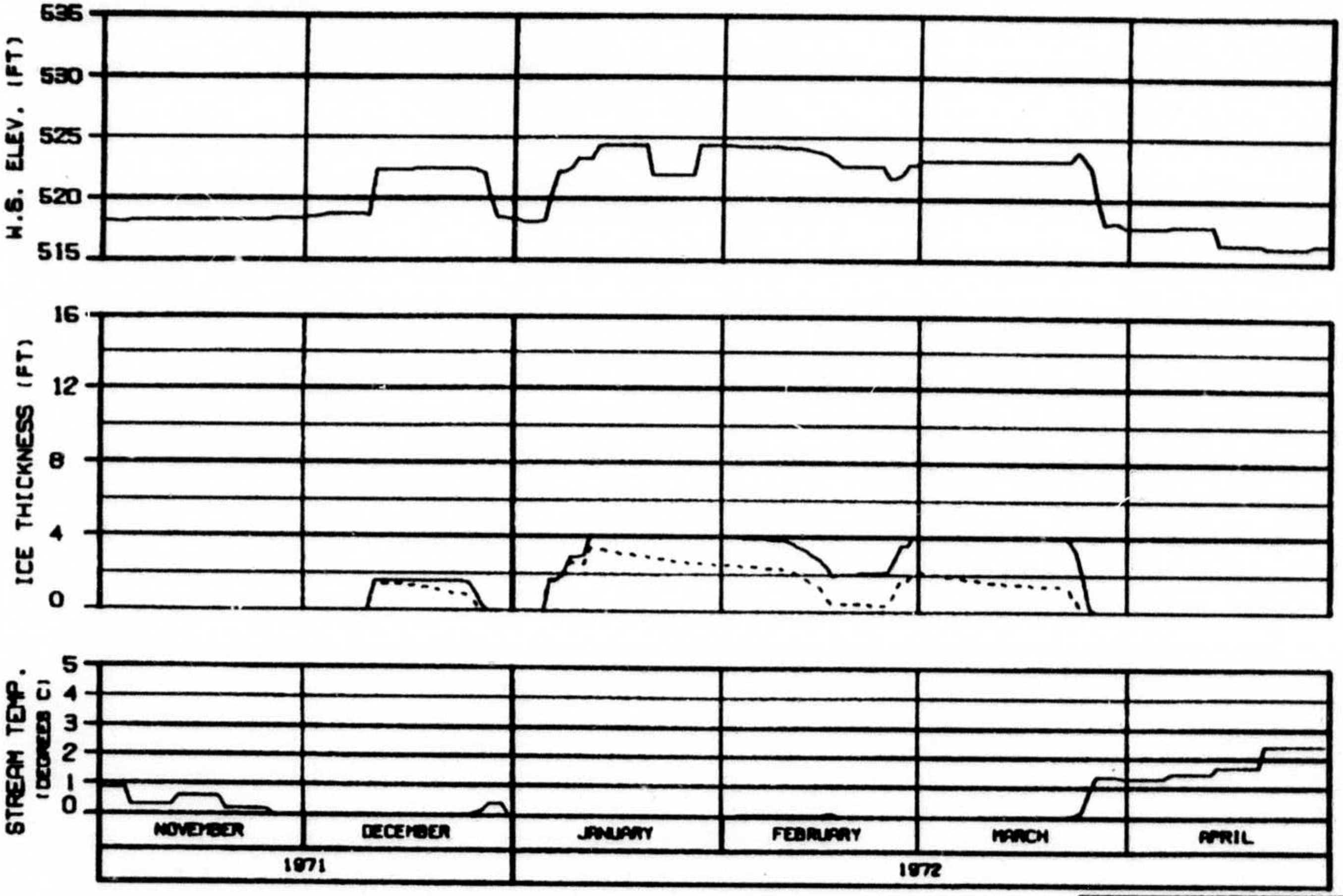


RIVER MILE : 120.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - SLUSH COMPONENT

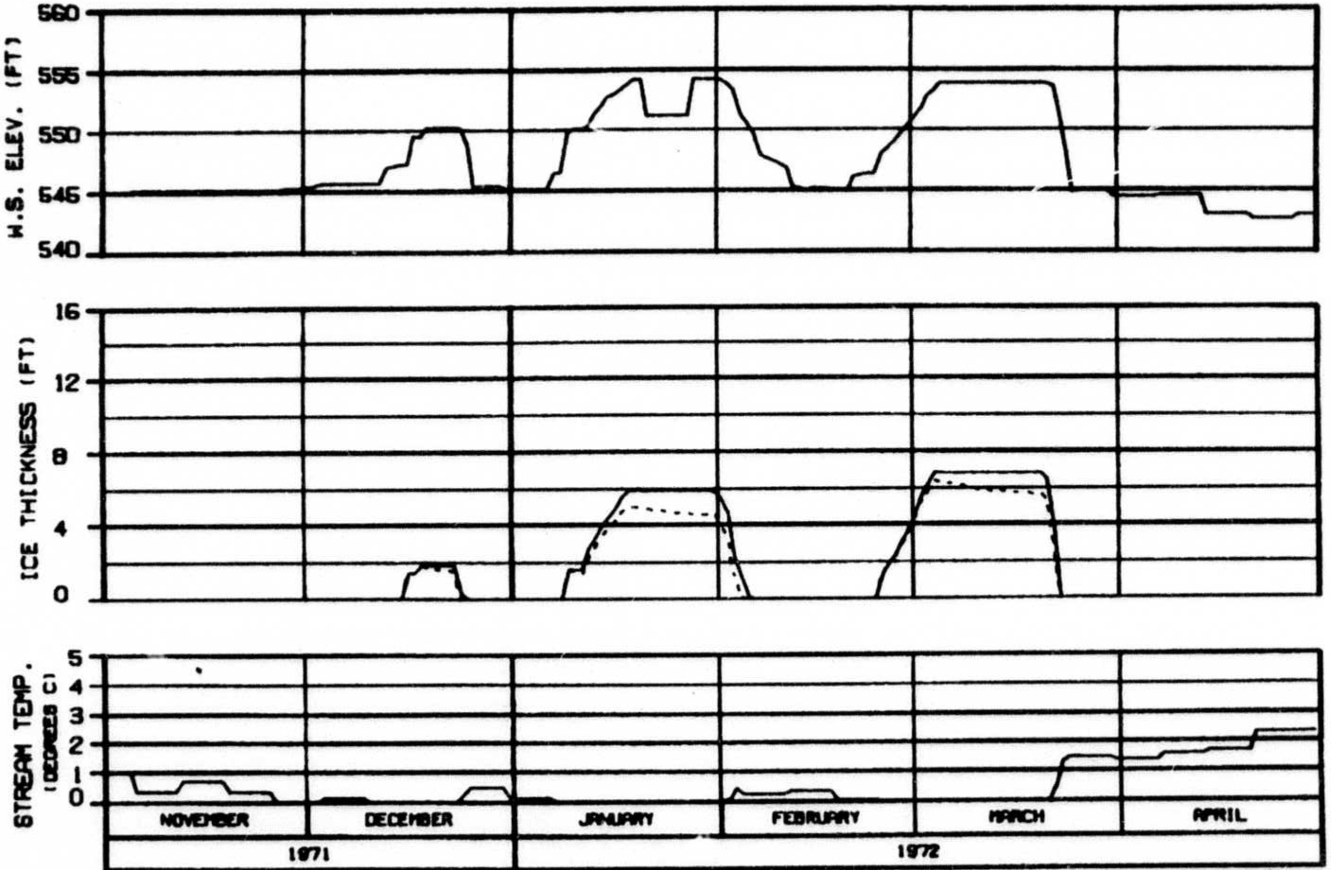
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF MOOSE SLOUGH

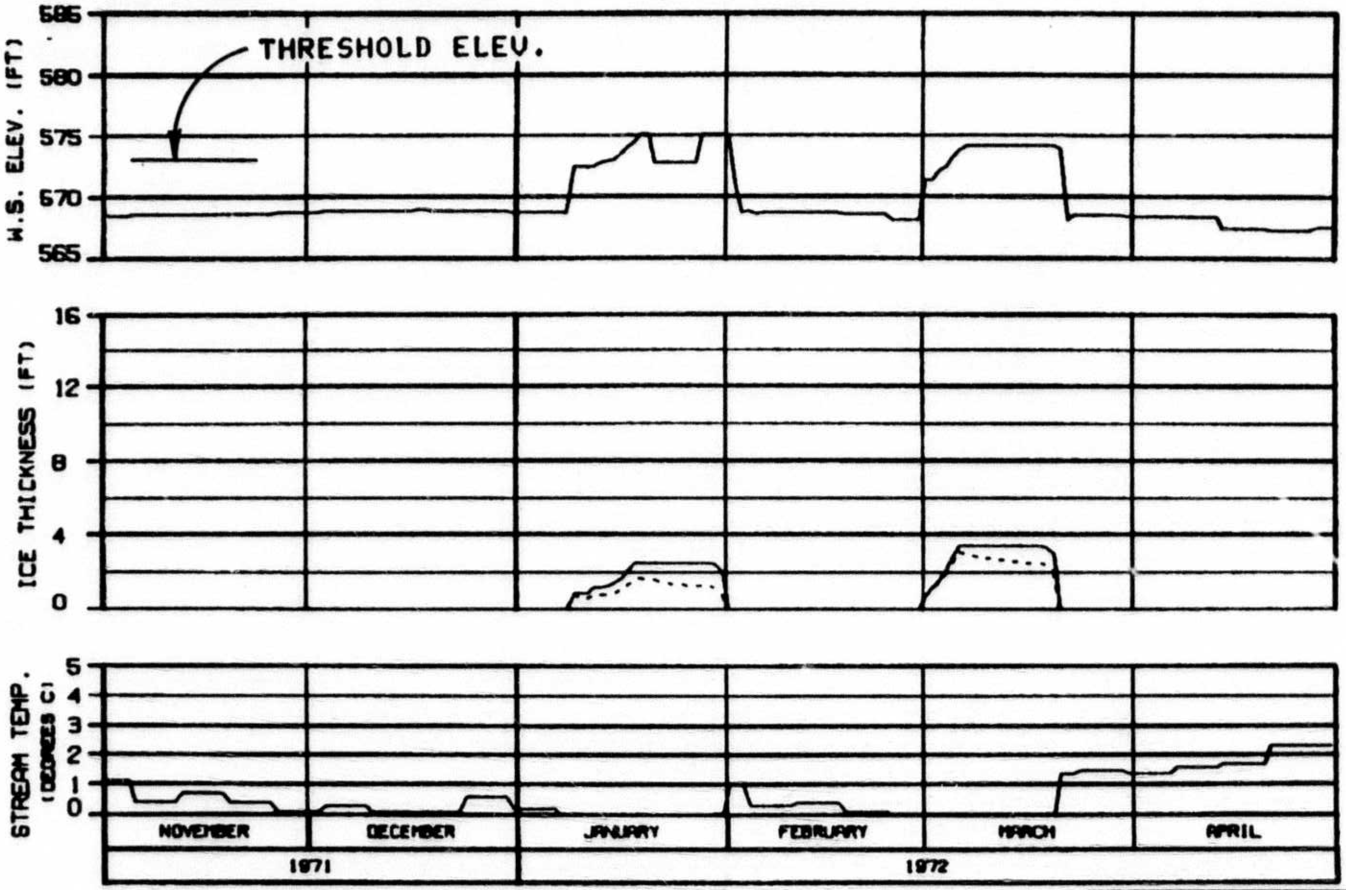
RIVER MILE : 123.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
CHICAGO, ILLINOIS	[illegible]	[illegible].142



HEAD OF SLOUGH 8A (WEST)

RIVER MILE : 126.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNO

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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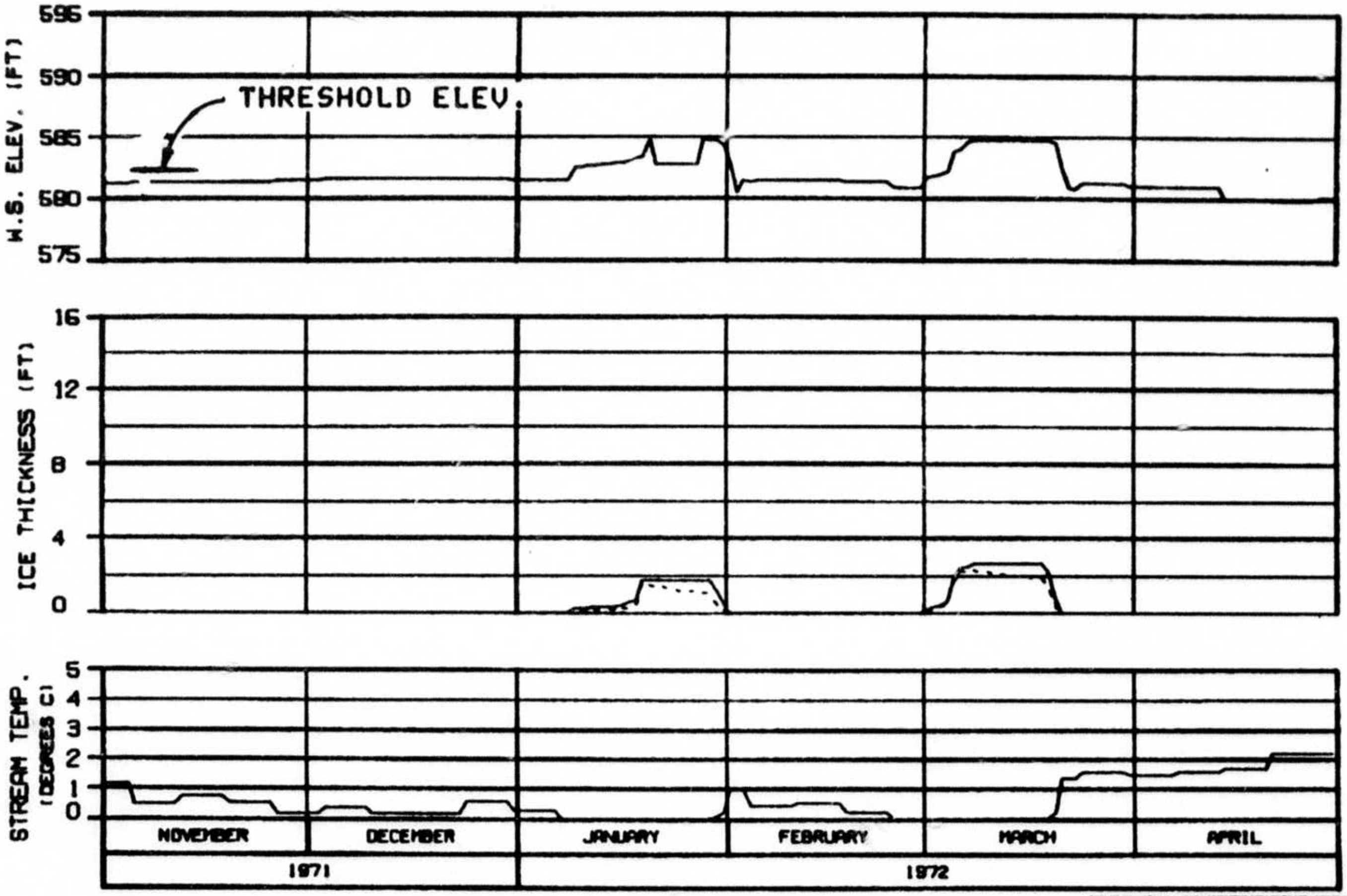


HEAD OF SLOUGH 8A (EAST)

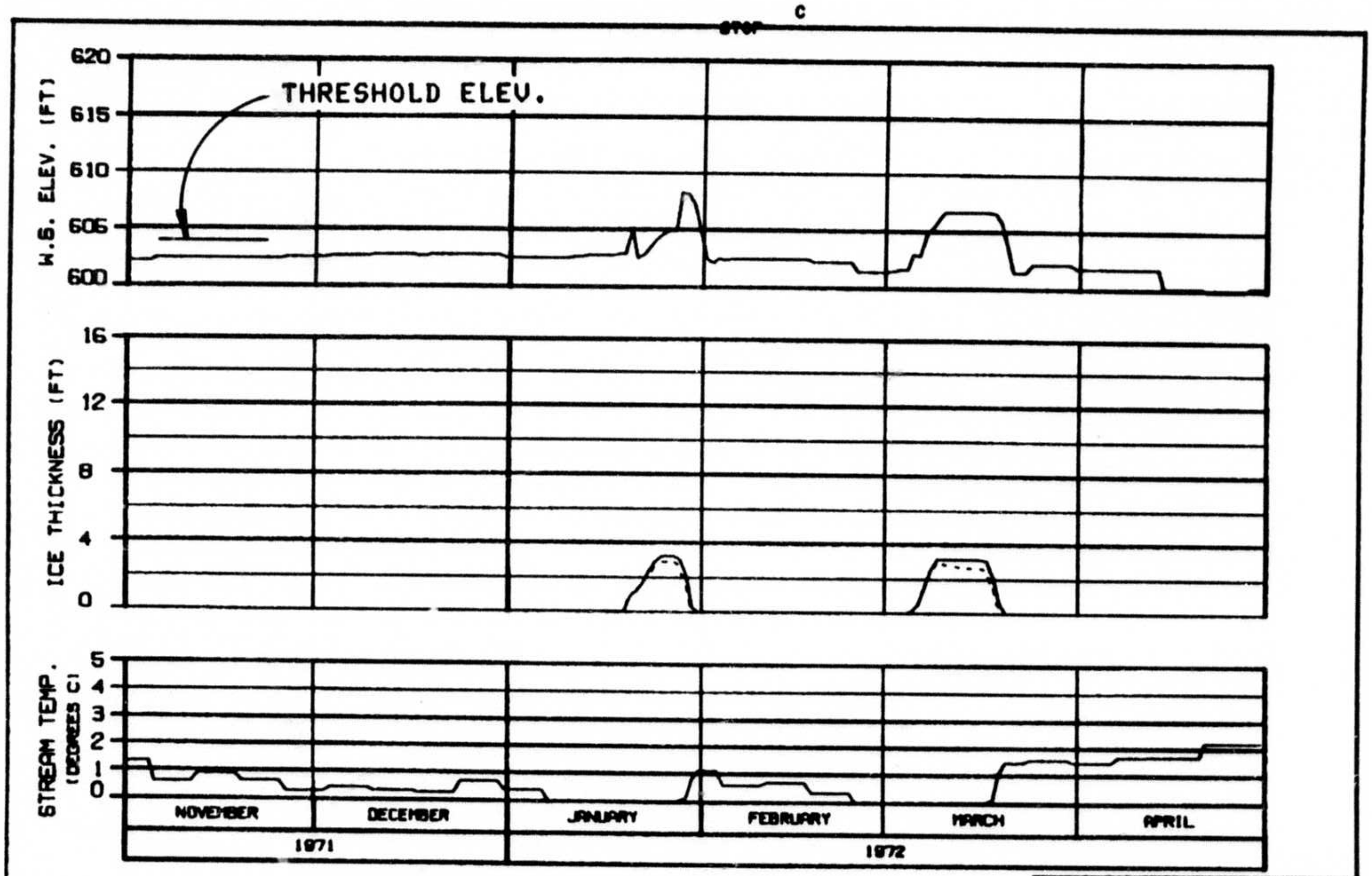
RIVER MILE : 127.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9

RIVER MILE : 129.30

ICE THICKNESS LEGEND:

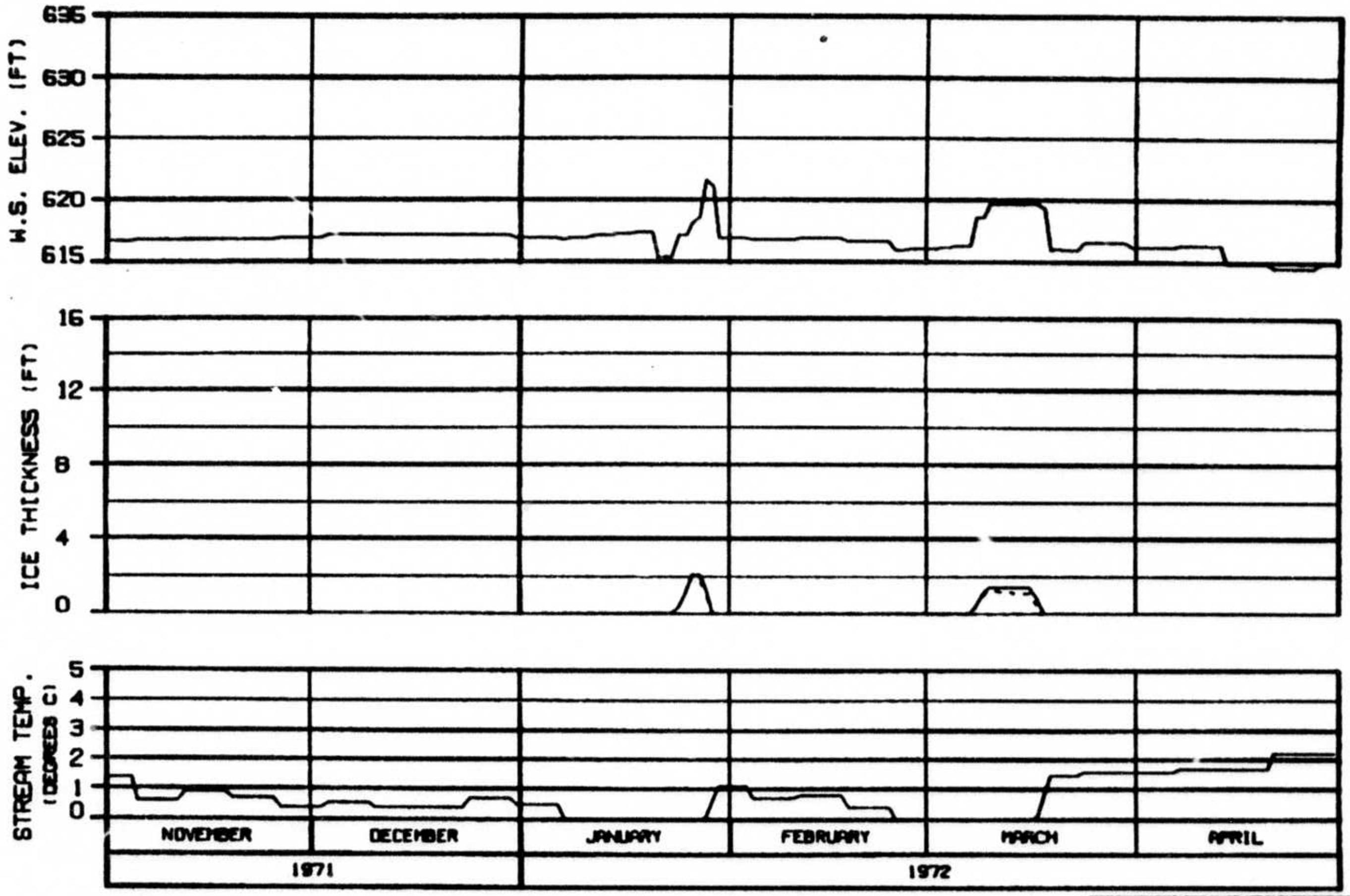
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE

OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

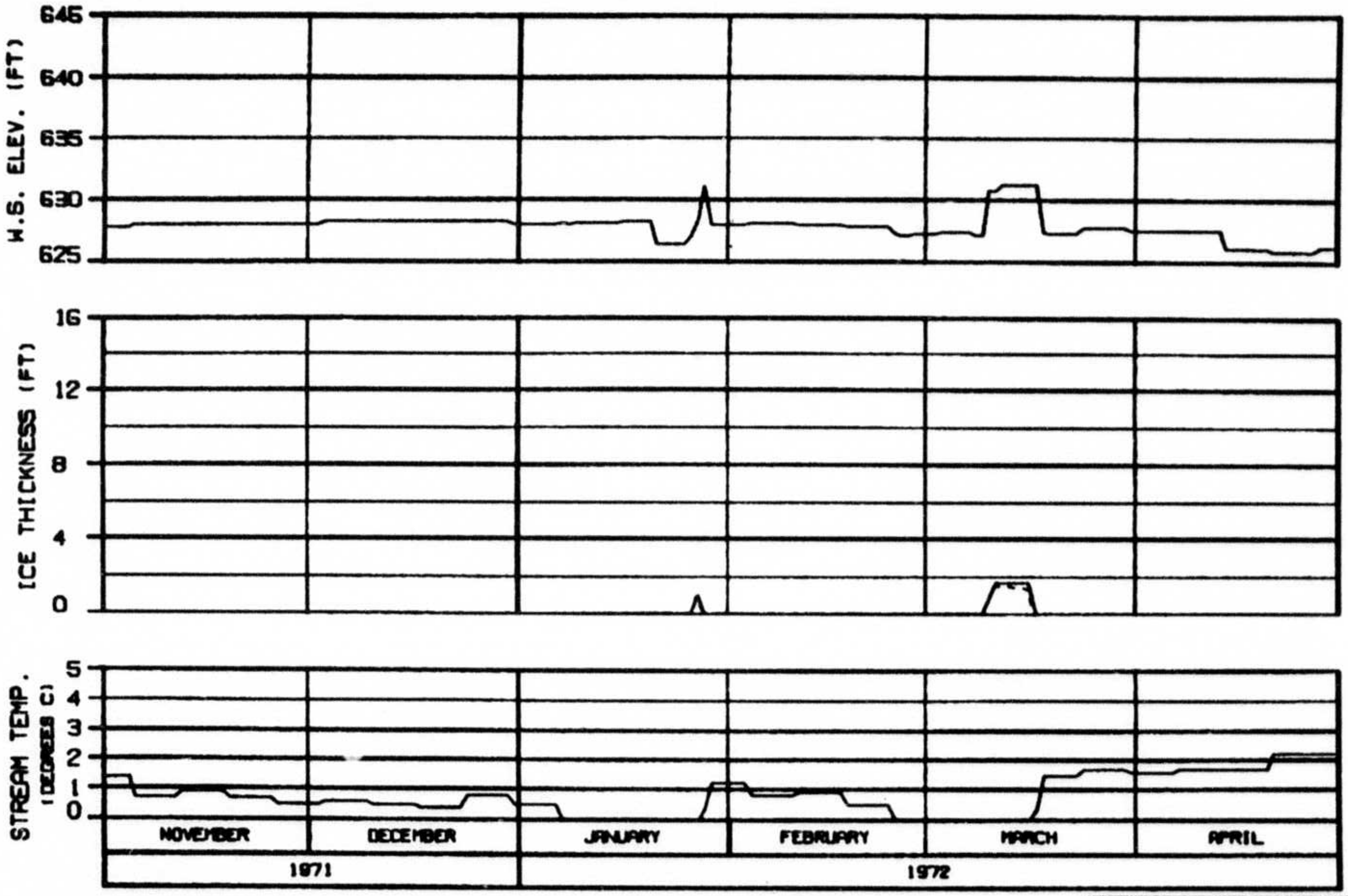
RIVER MILE : 130.60

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

RIVER MILE : 131.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

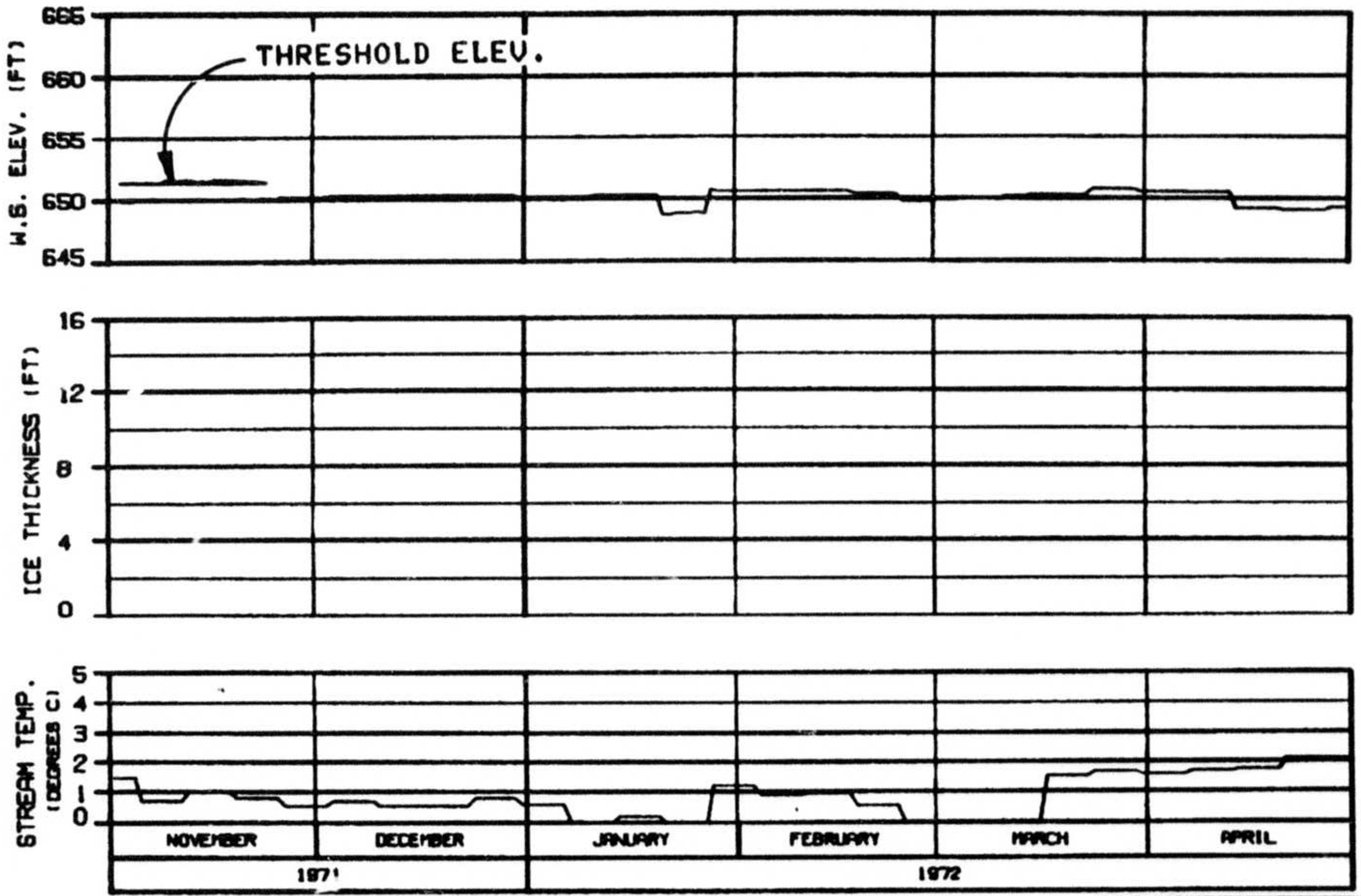
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9A

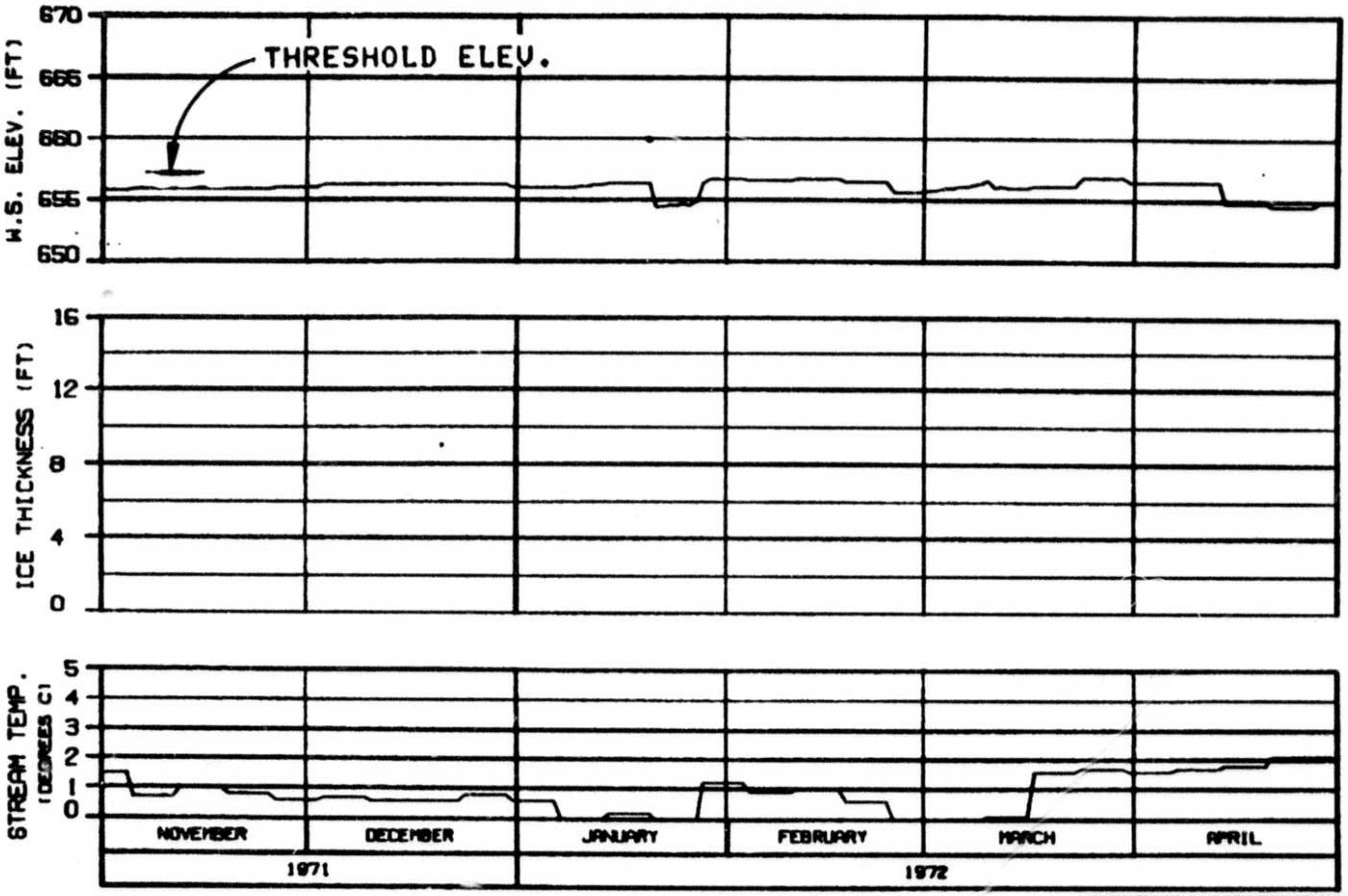
RIVER MILE : 133.70

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

RIVER MILE : 134.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

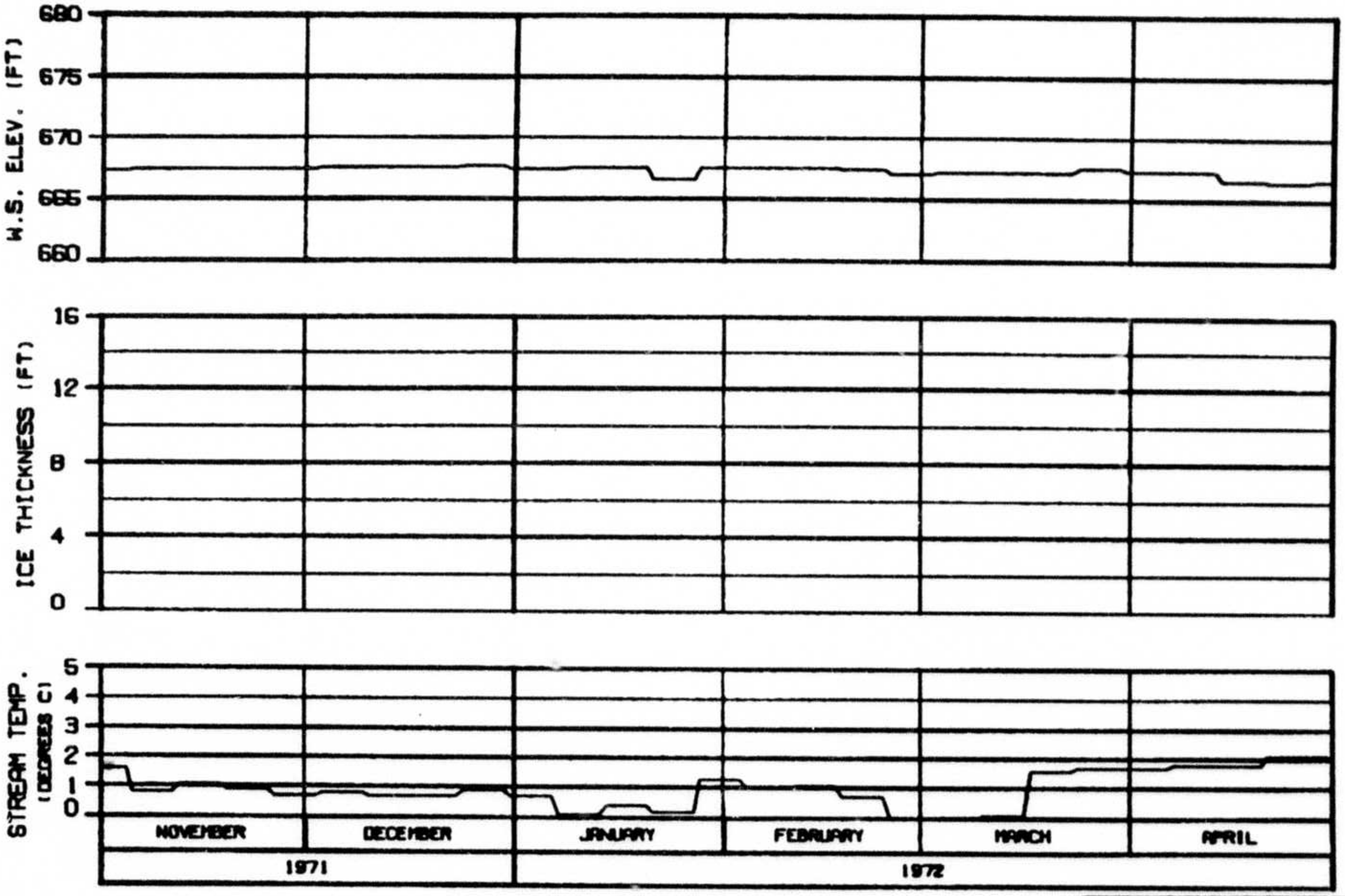
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11

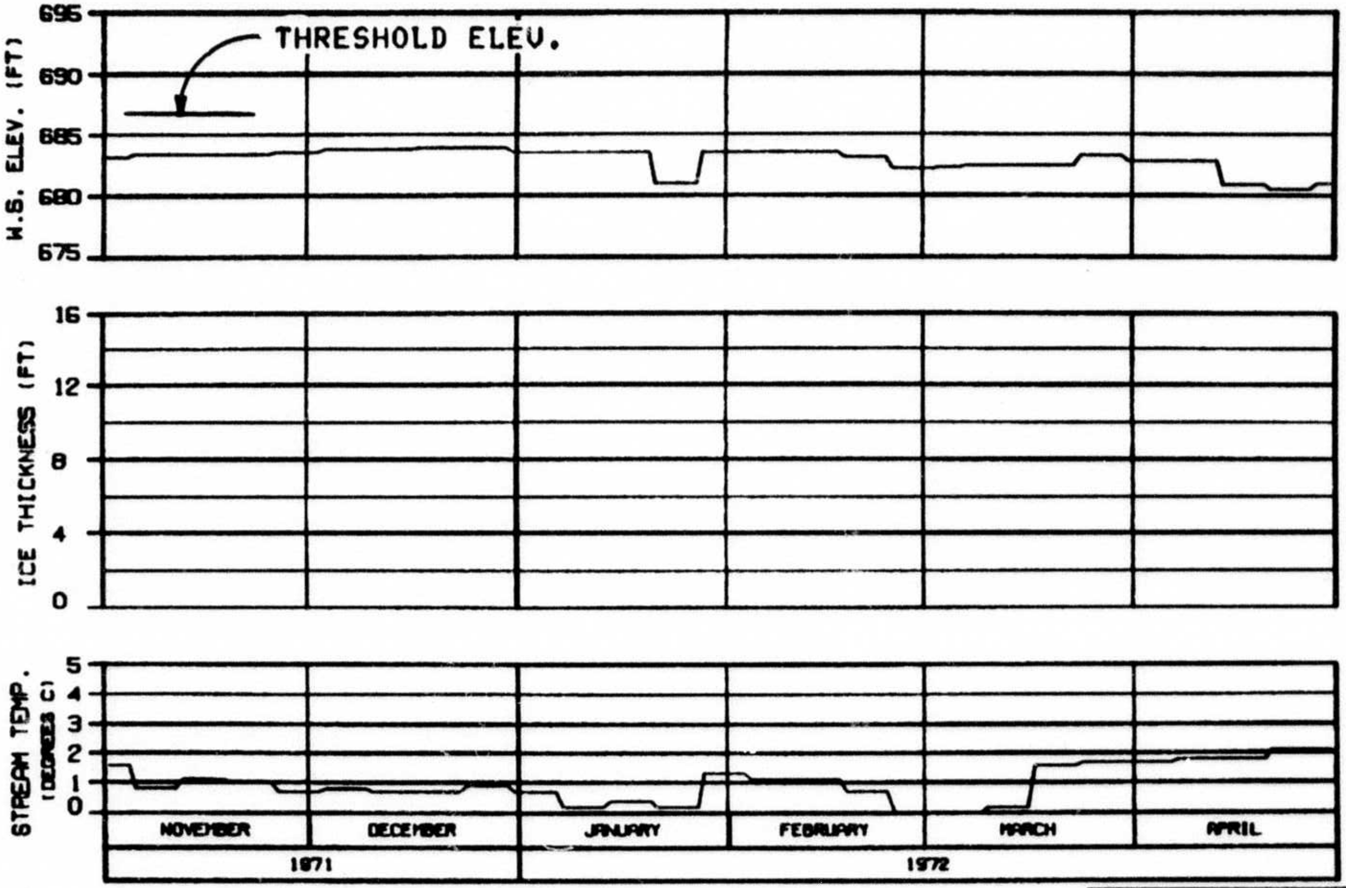
RIVER MILE : 135.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



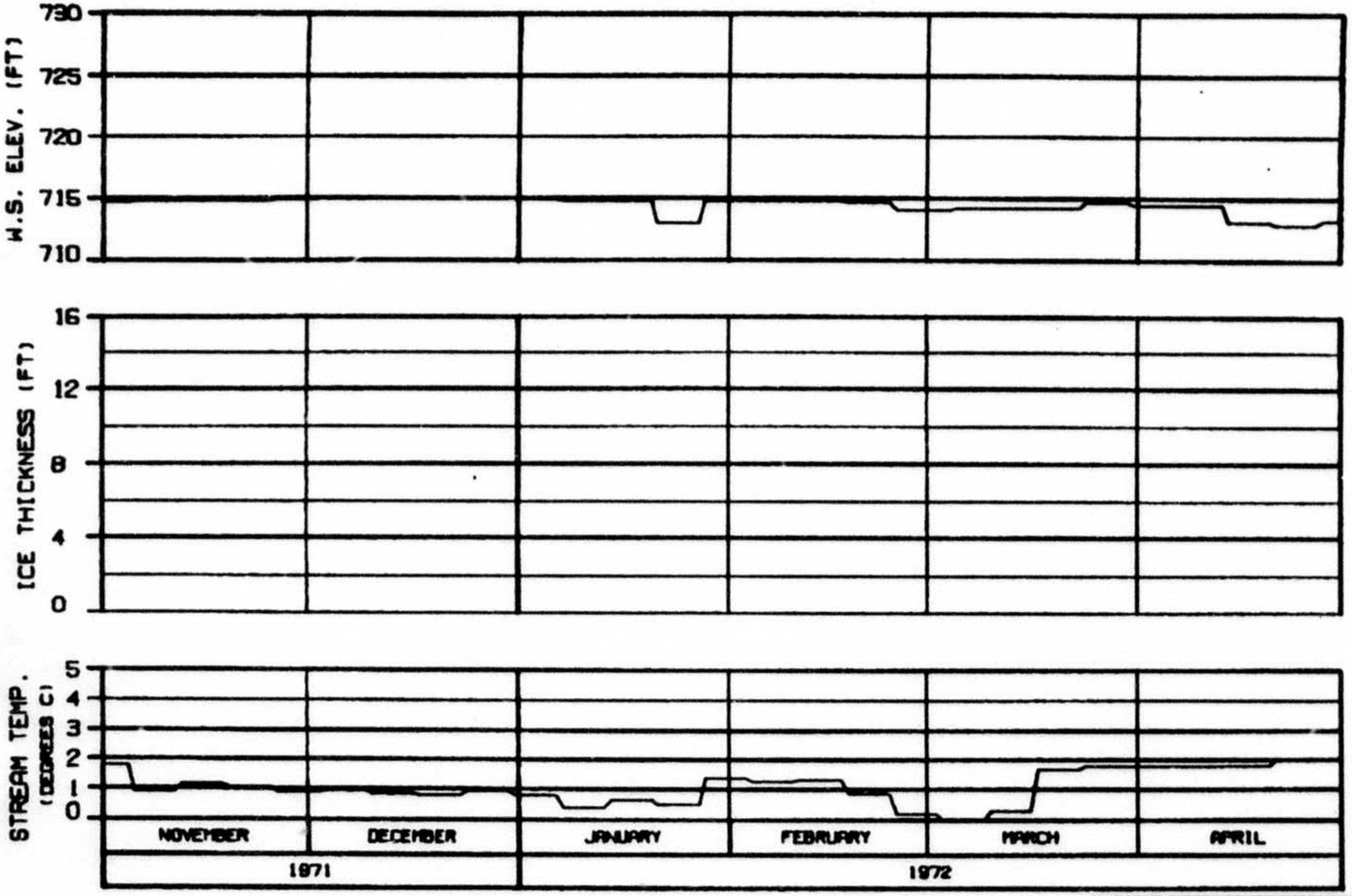
HEAD OF SLOUGH 11

RIVER MILE : 136.50

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



HEAD OF SLOUGH 17

RIVER MILE : 139.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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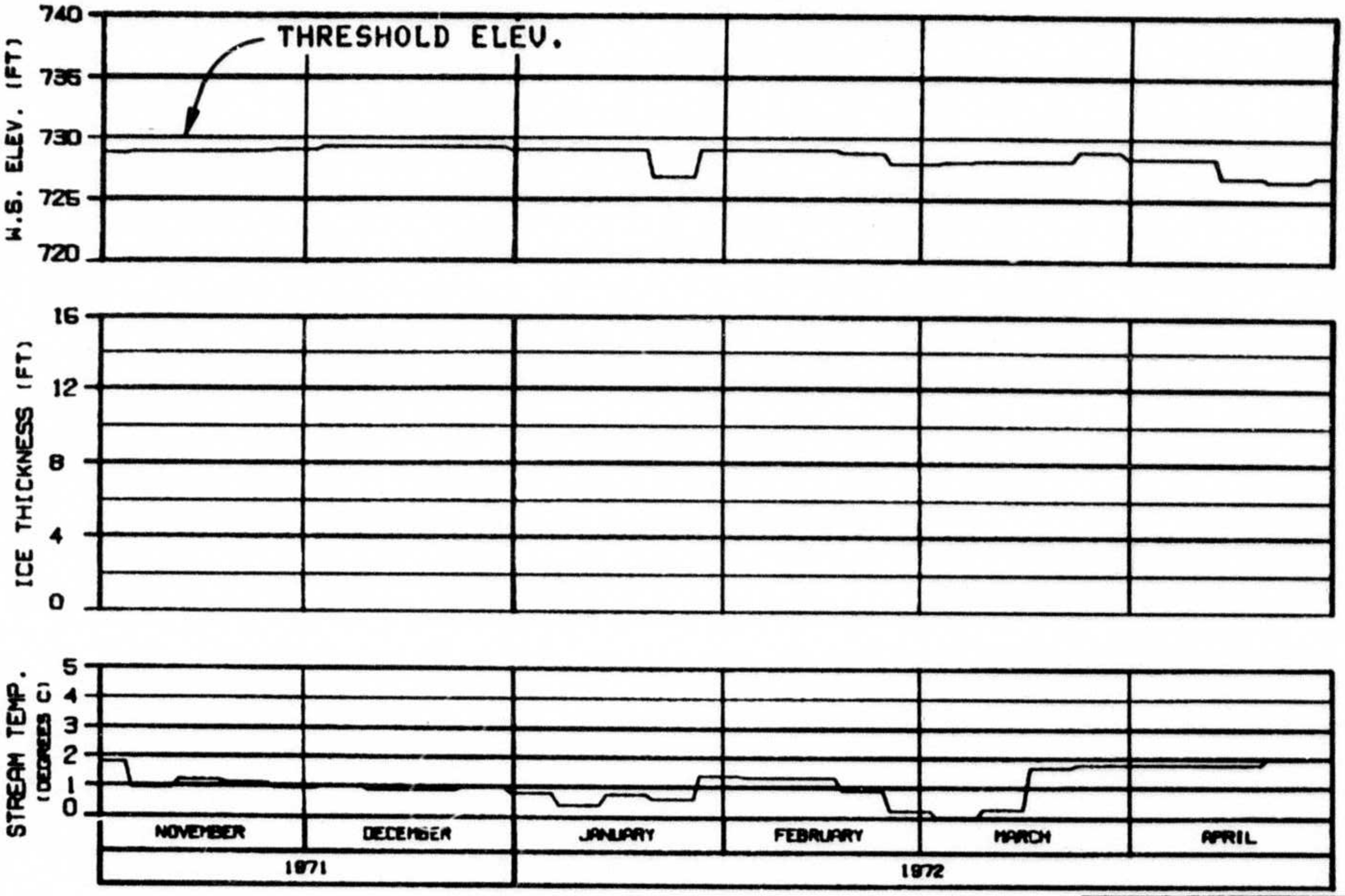

HEAD OF SLOUGH 20

RIVER MILE : 140.50

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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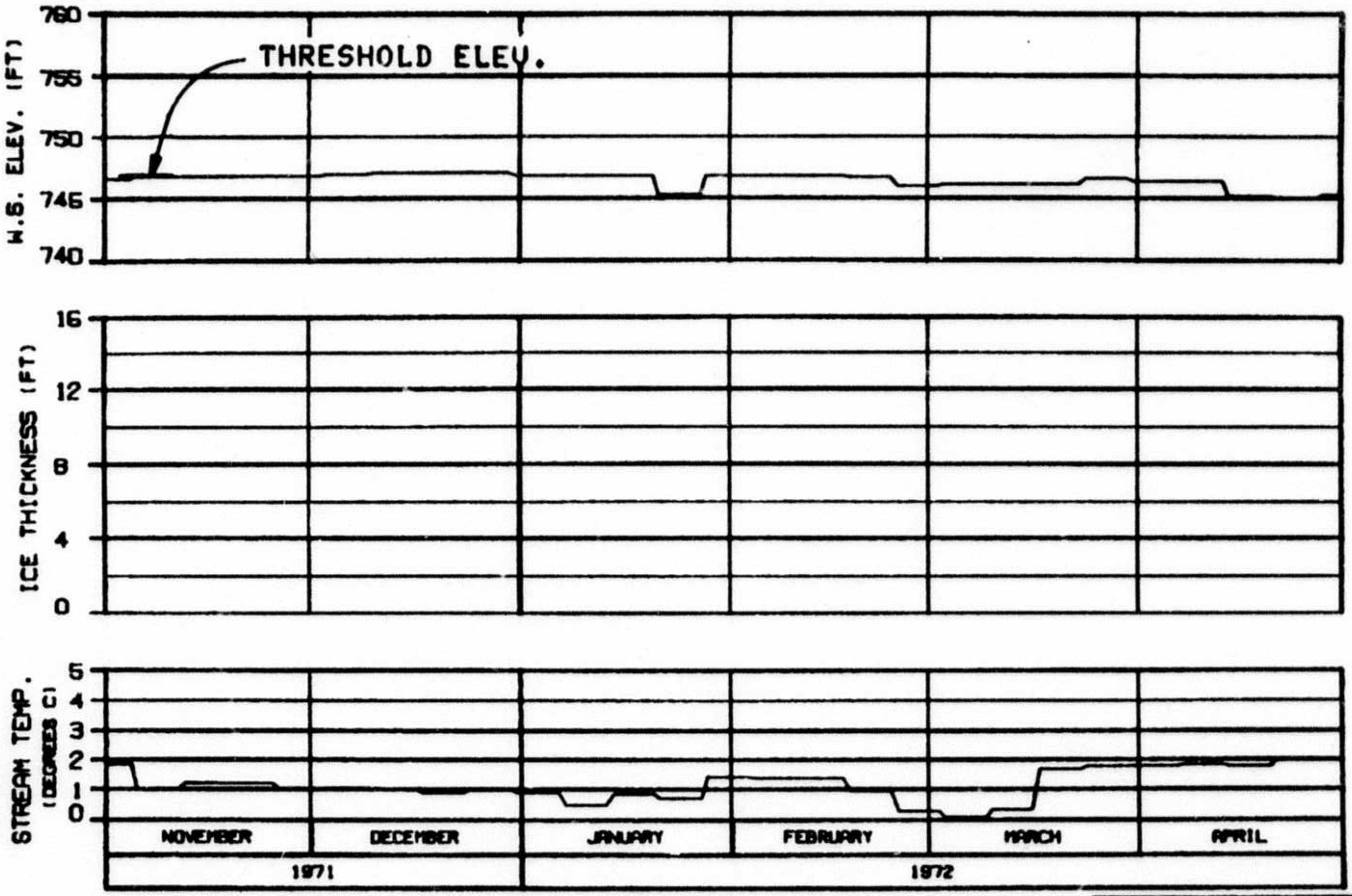


SLOUGH 21 (ENTRANCE A6)

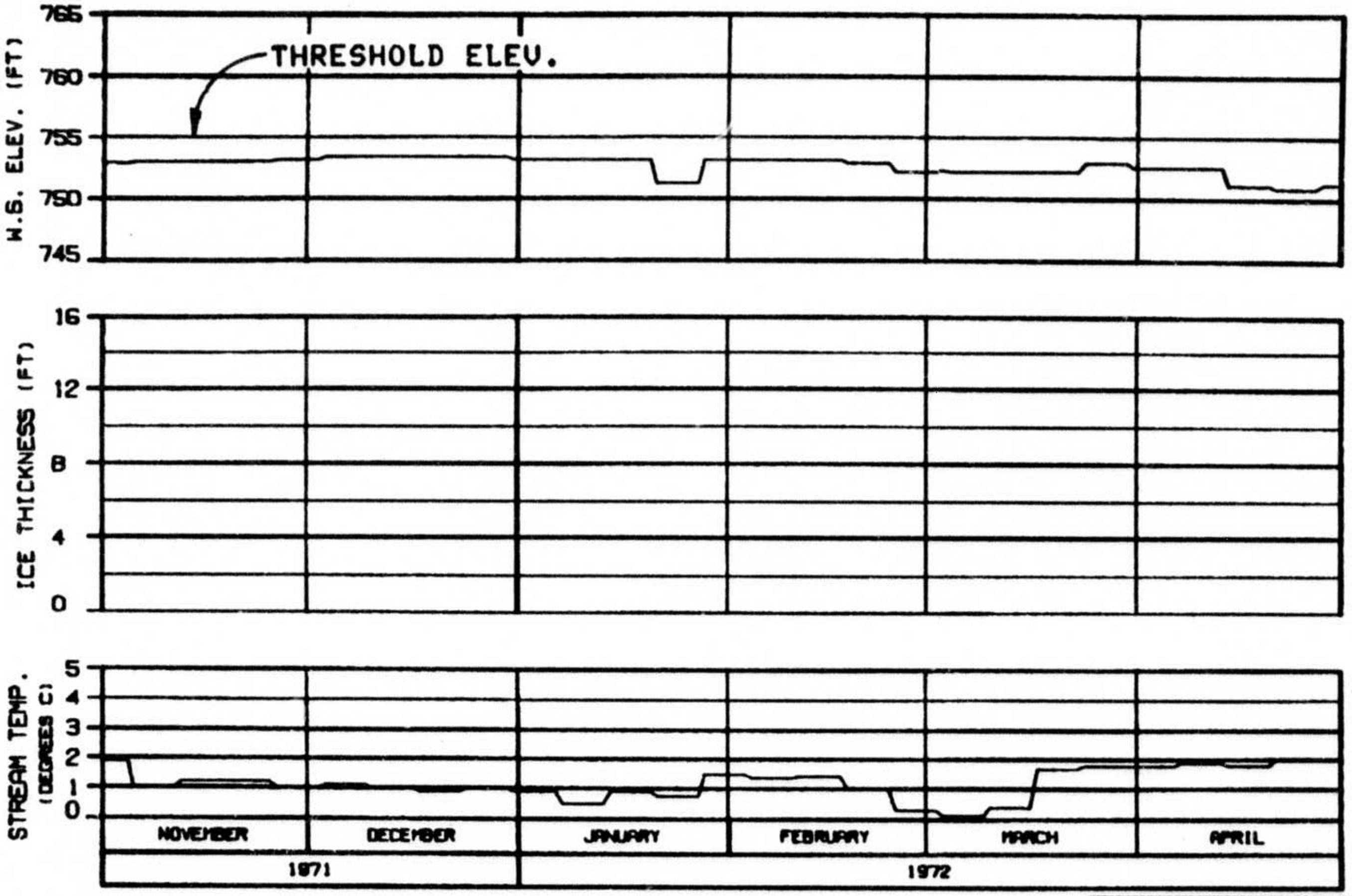
RIVER MILE : 141.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 21

RIVER MILE : 142.20

WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ICE THICKNESS LEGEND:

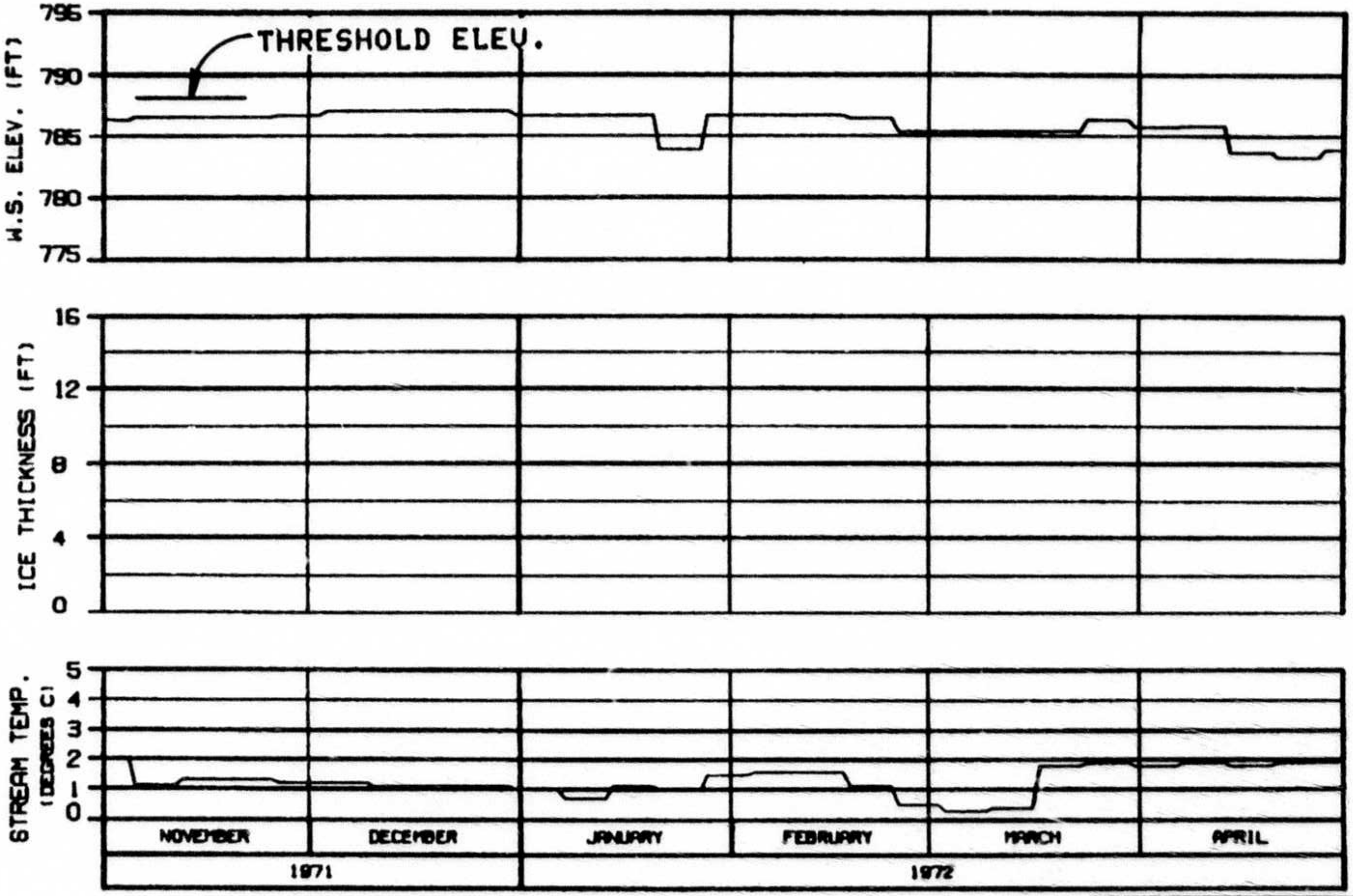
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:
TOTAL THICKNESS
SLUSH COMPONENT

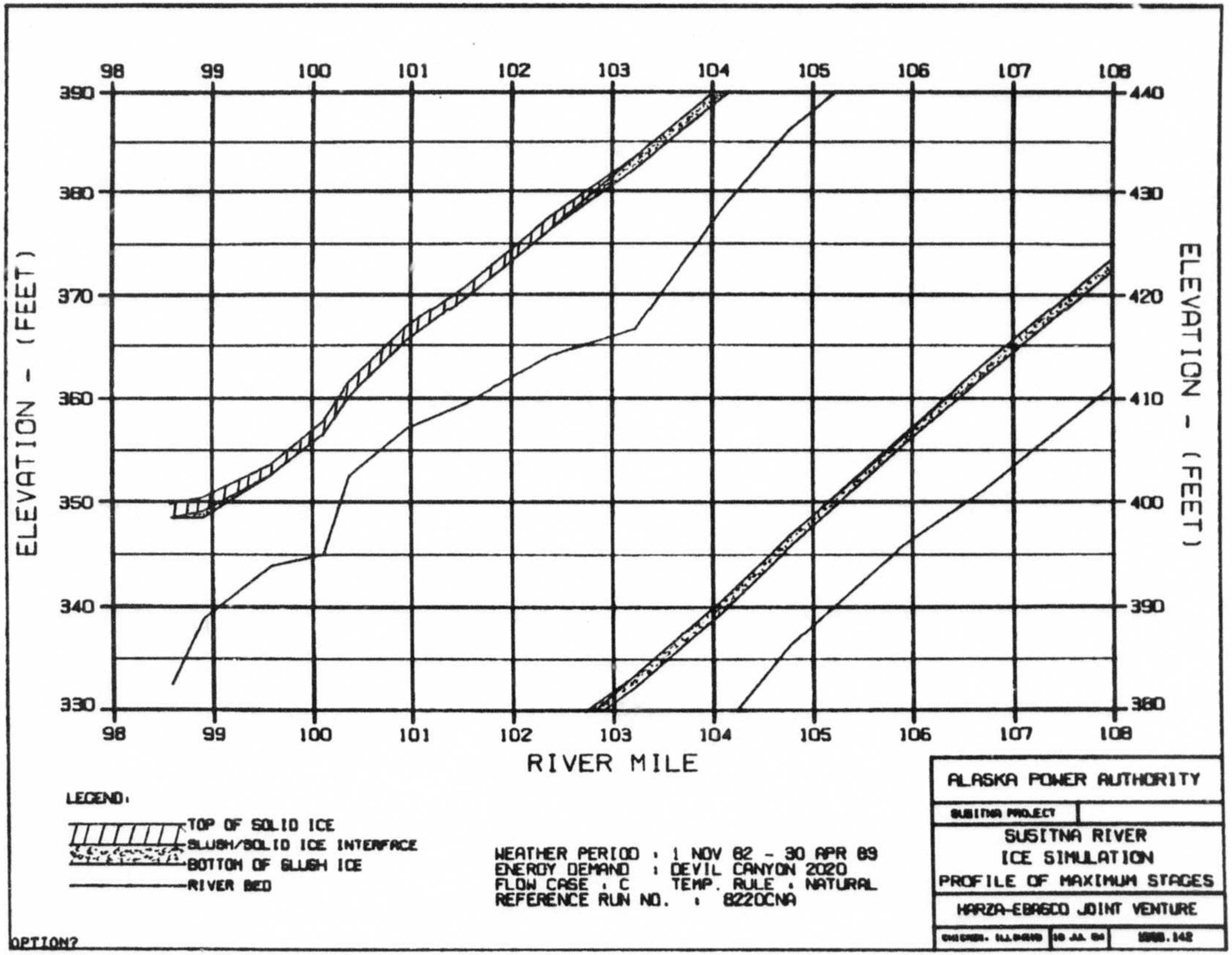
WEATHER PERIOD : 1 NOV 71 - 30 APR 72
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP RULE : NATURAL
REFERENCE RUN NO. : 7120CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE

OPTION?

EXHIBIT Q

CC



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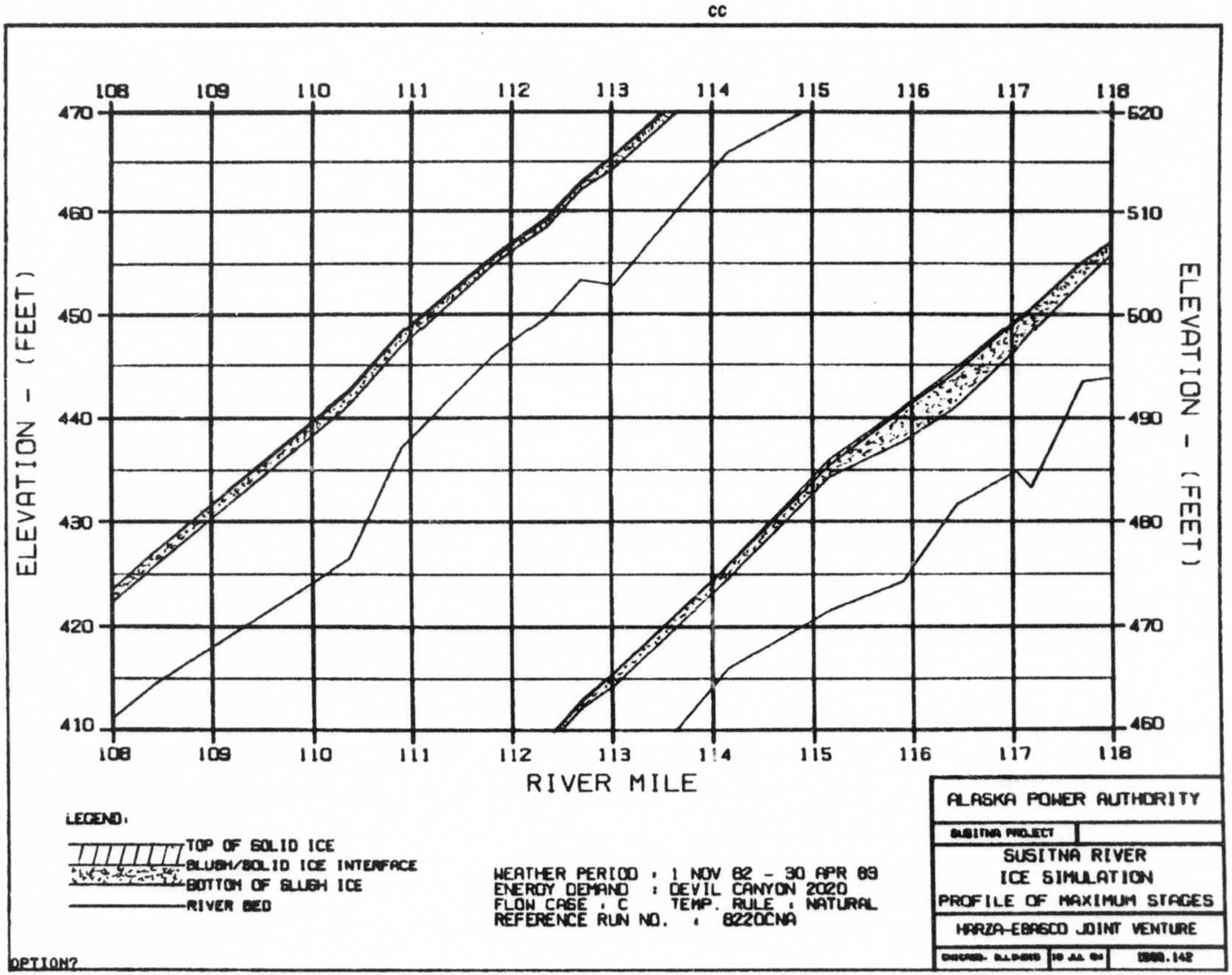
440 430 420 410 400 390 380
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?



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ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

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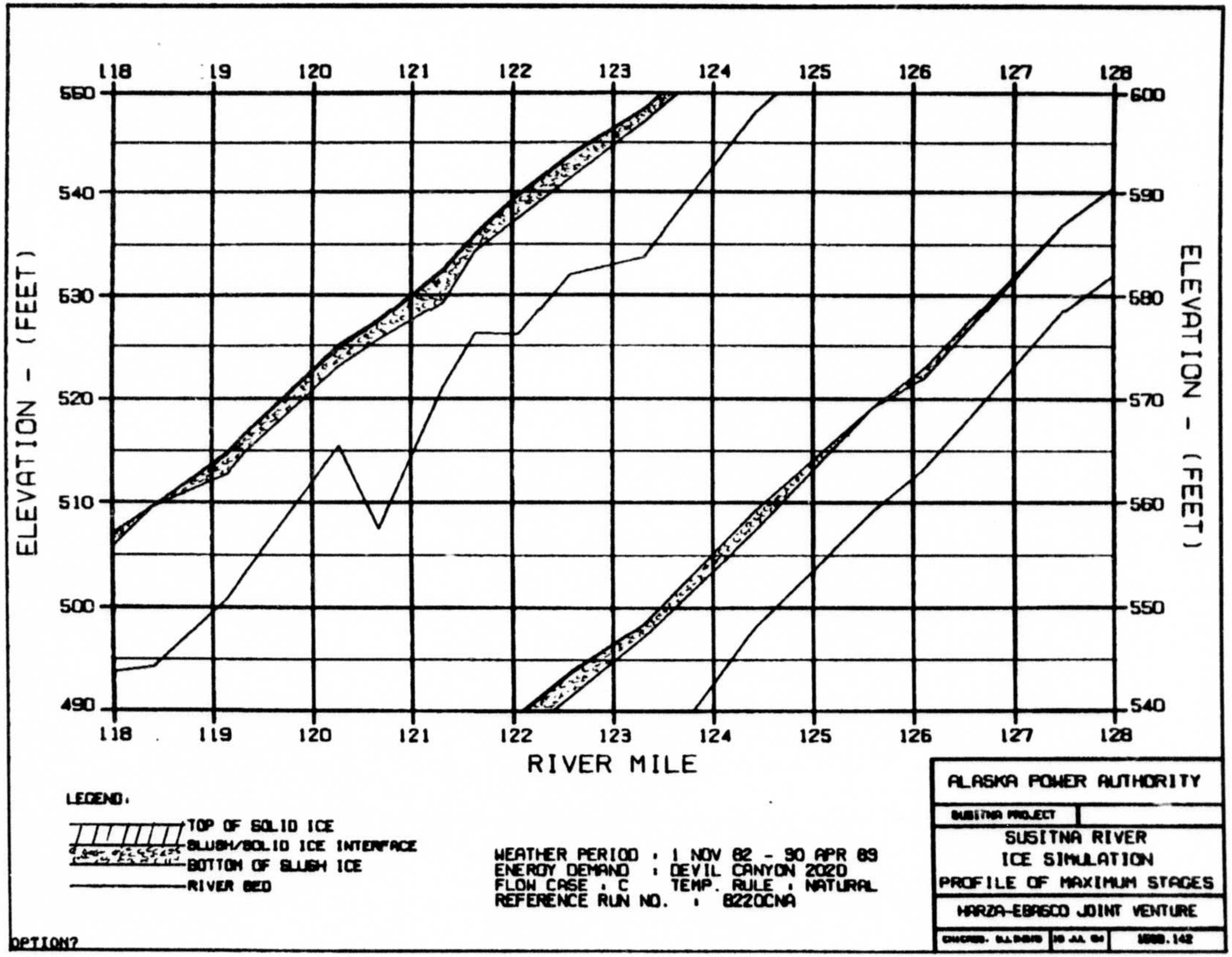
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ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
1000.142
OPTION?

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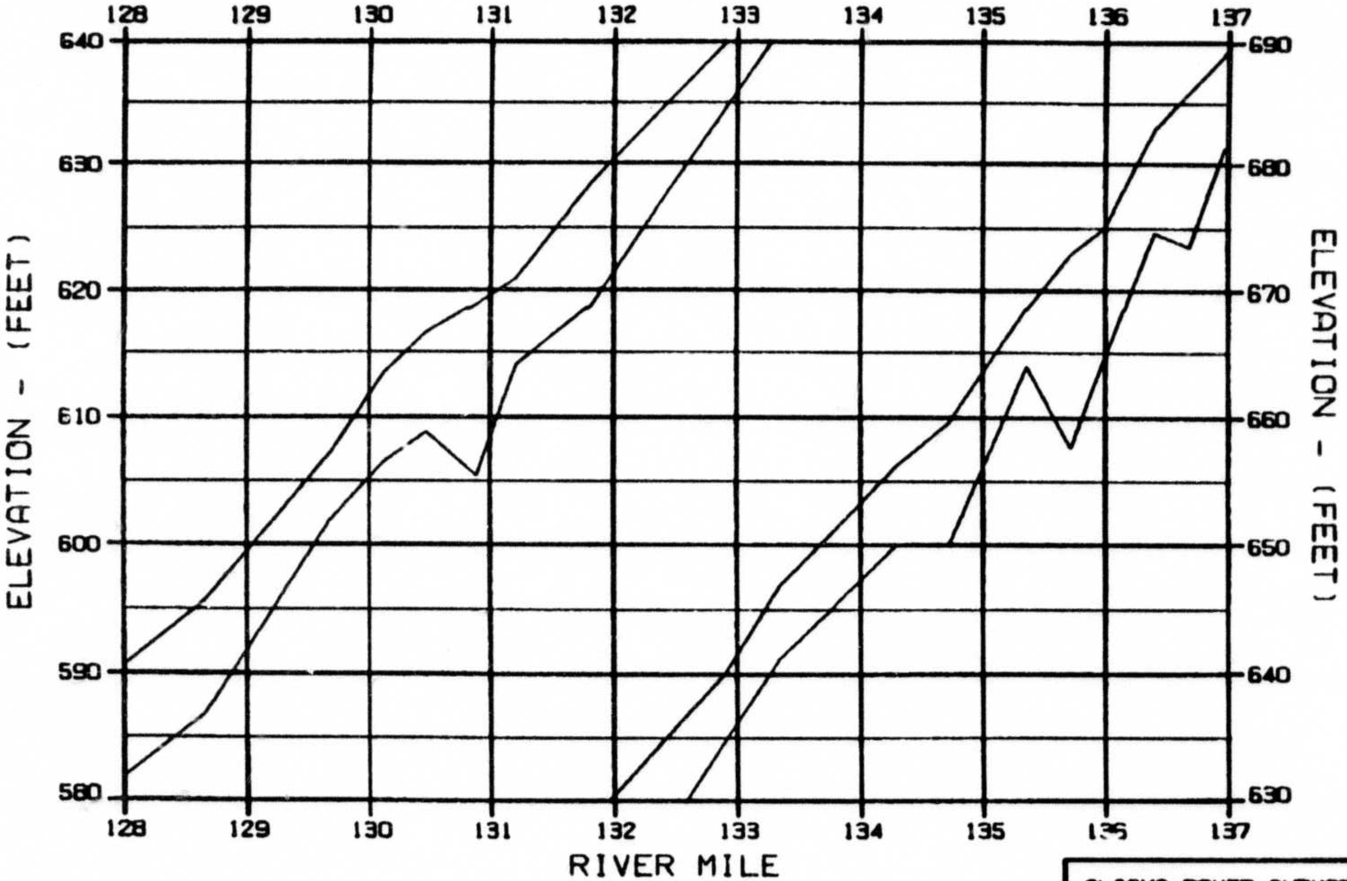


LEGEND:

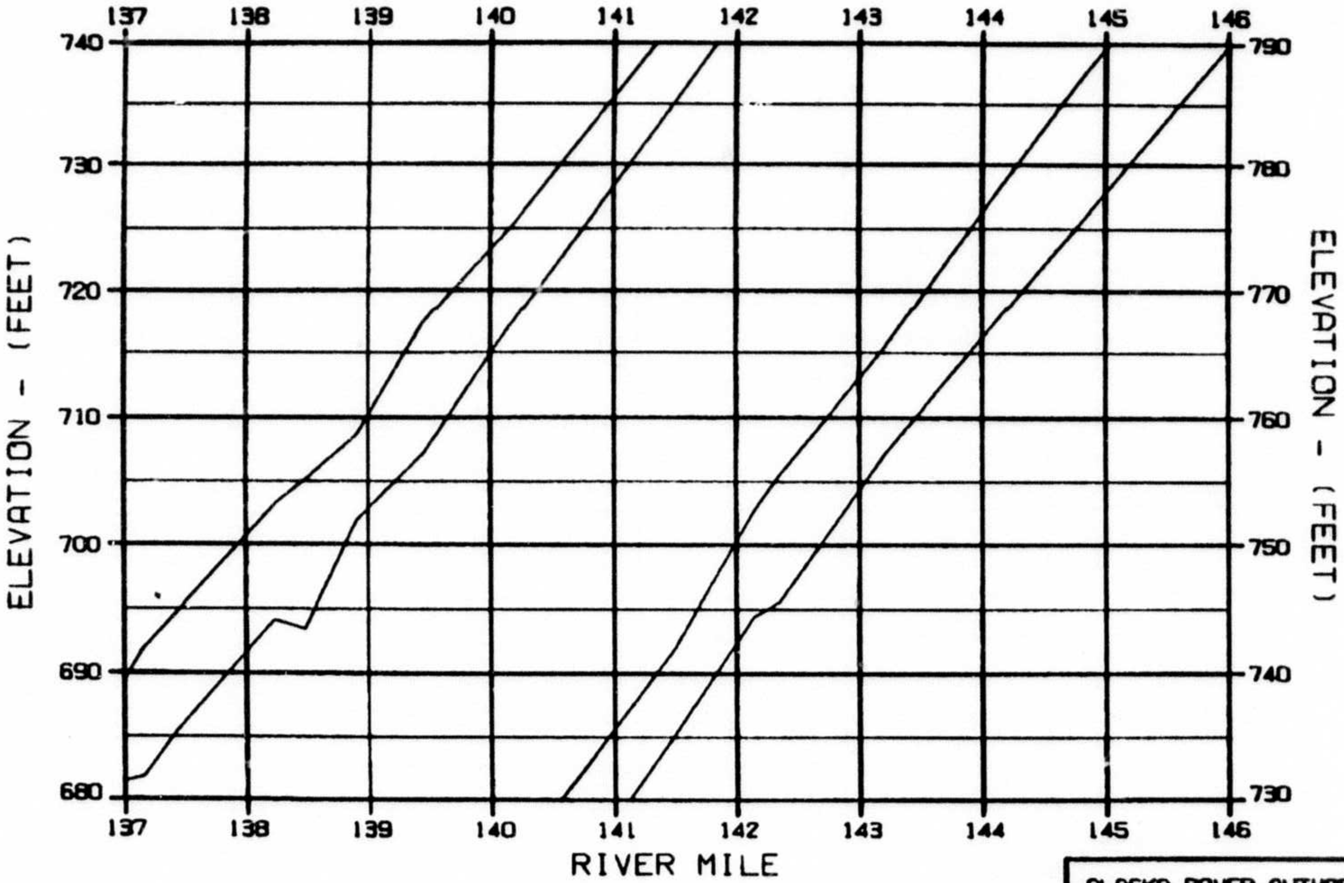
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

CC



LEGEND:

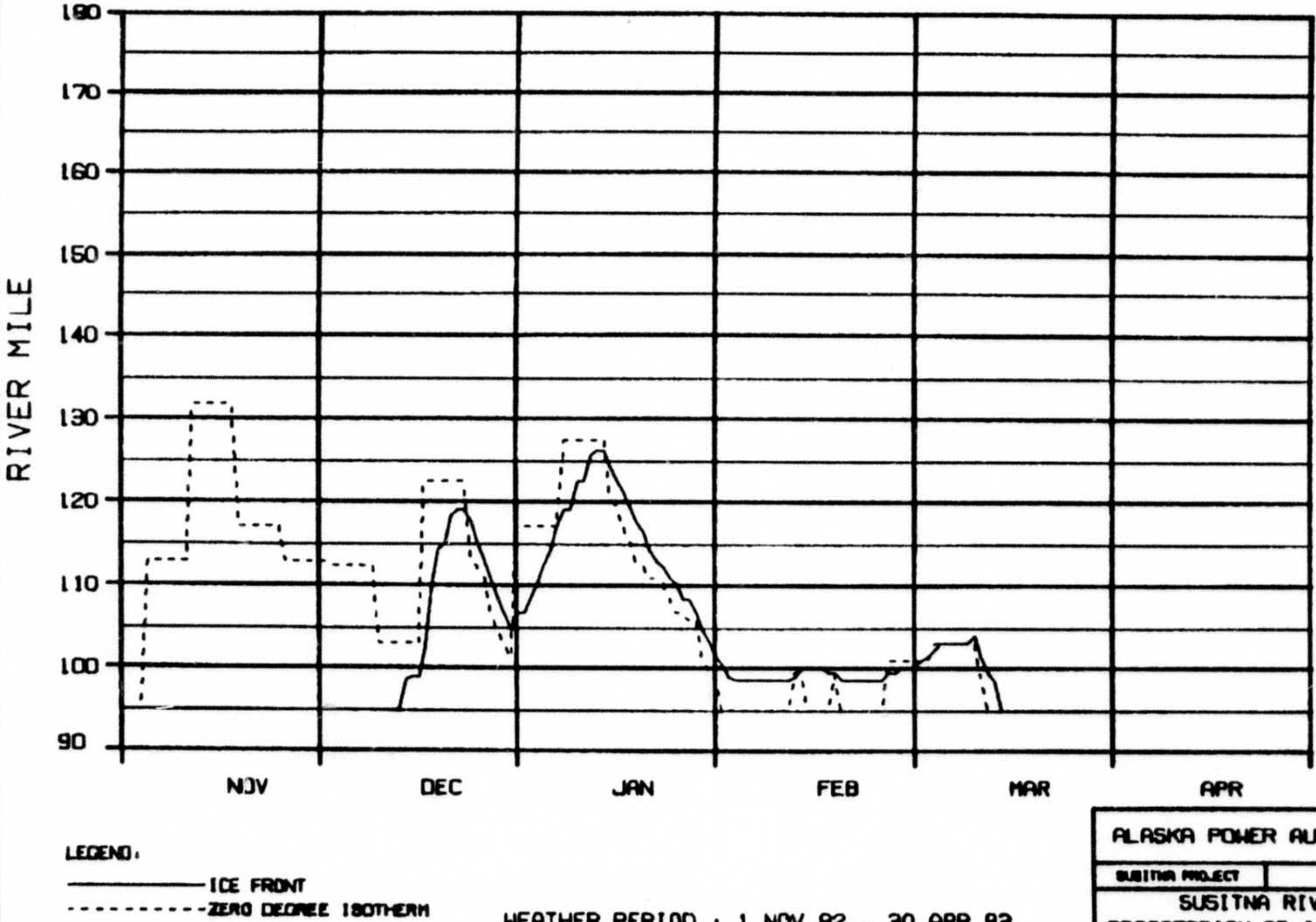
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES	
HARZA-EBASCO JOINT VENTURE	

OPTION?

CC



WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

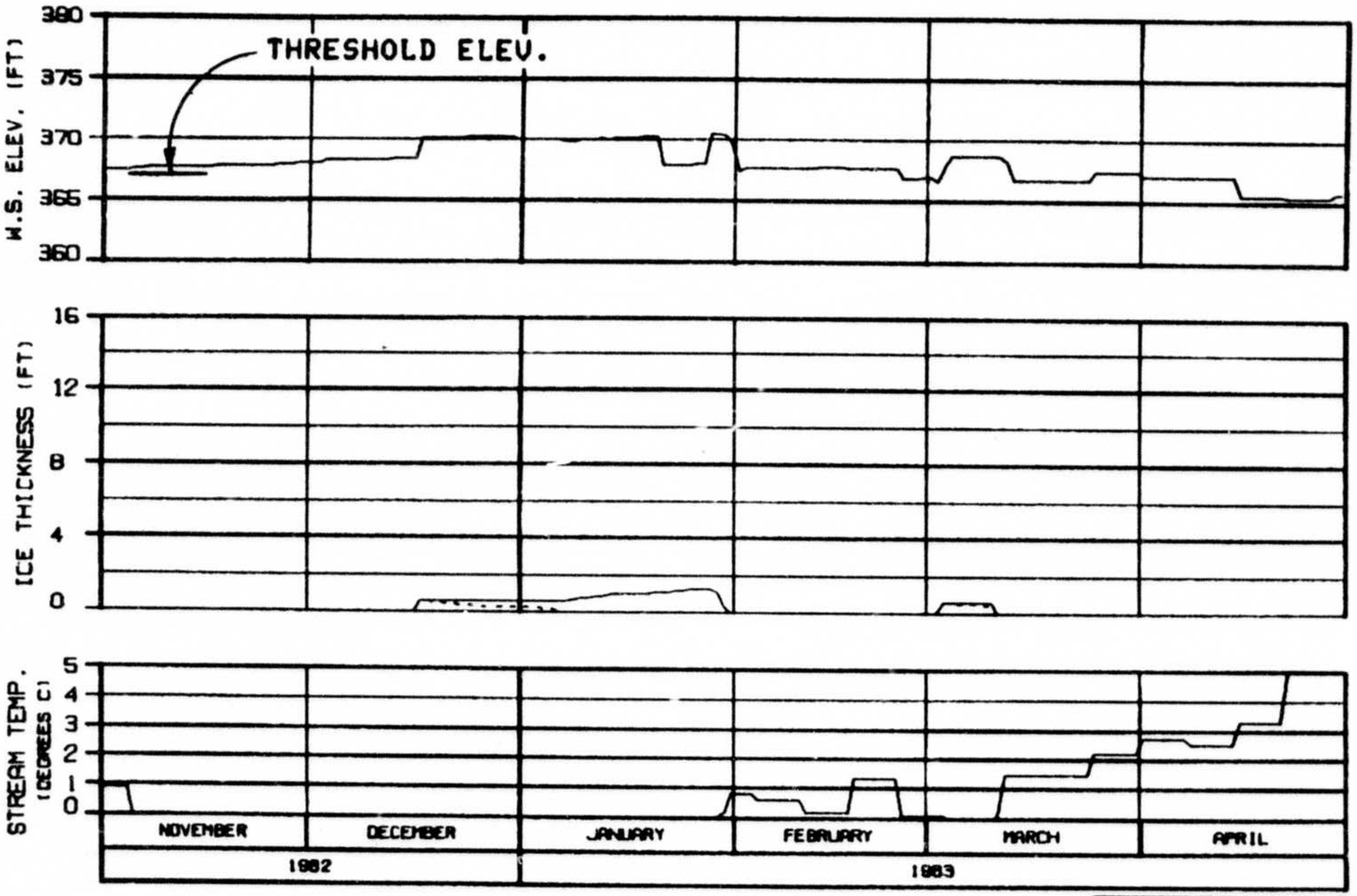
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM

HARZA-EBASCO JOINT VENTURE

OPTION?



HEAD OF WHISKERS SLOUGH

RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

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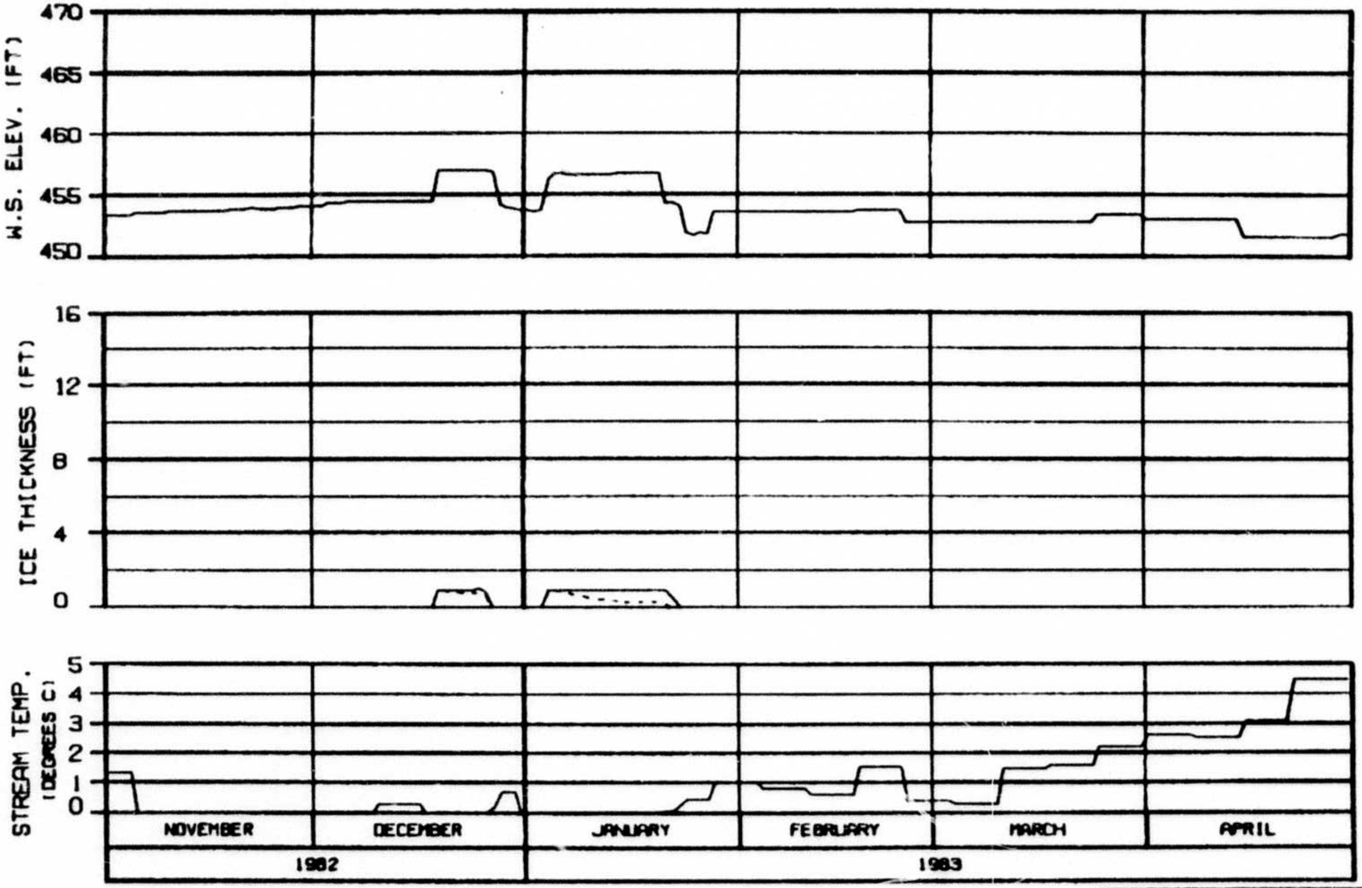

SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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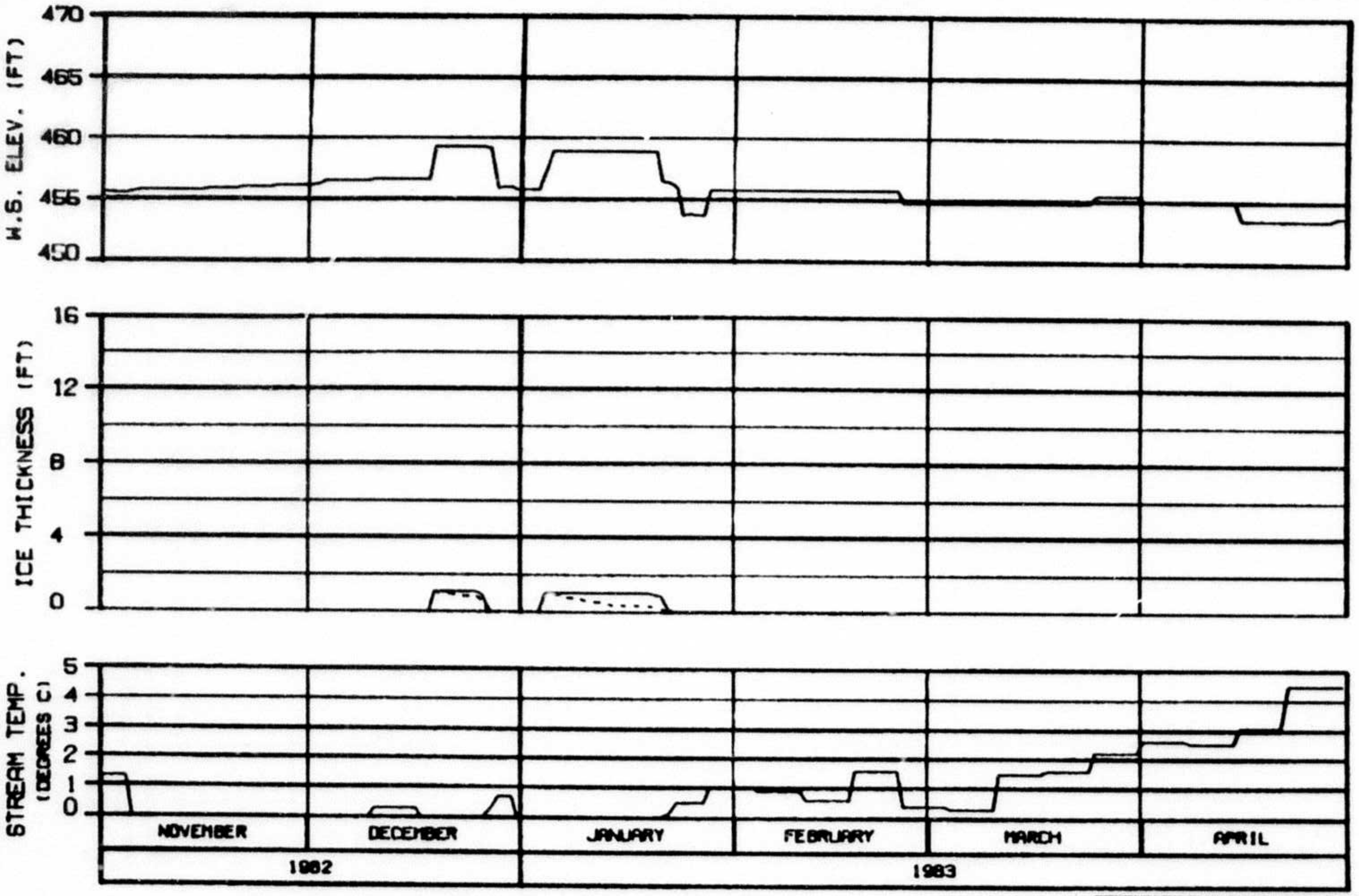


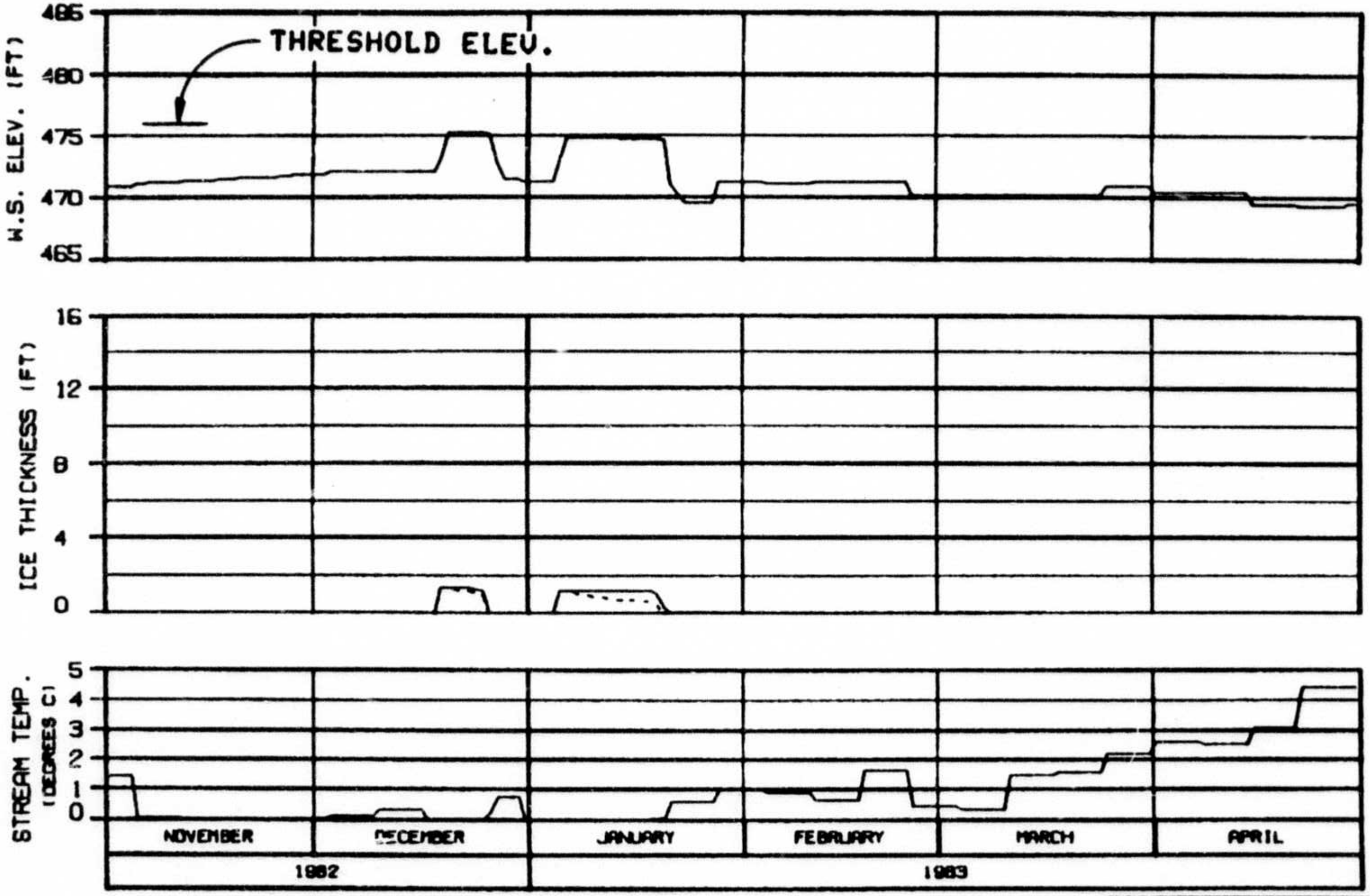
MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8

RIVER MILE : 114.10

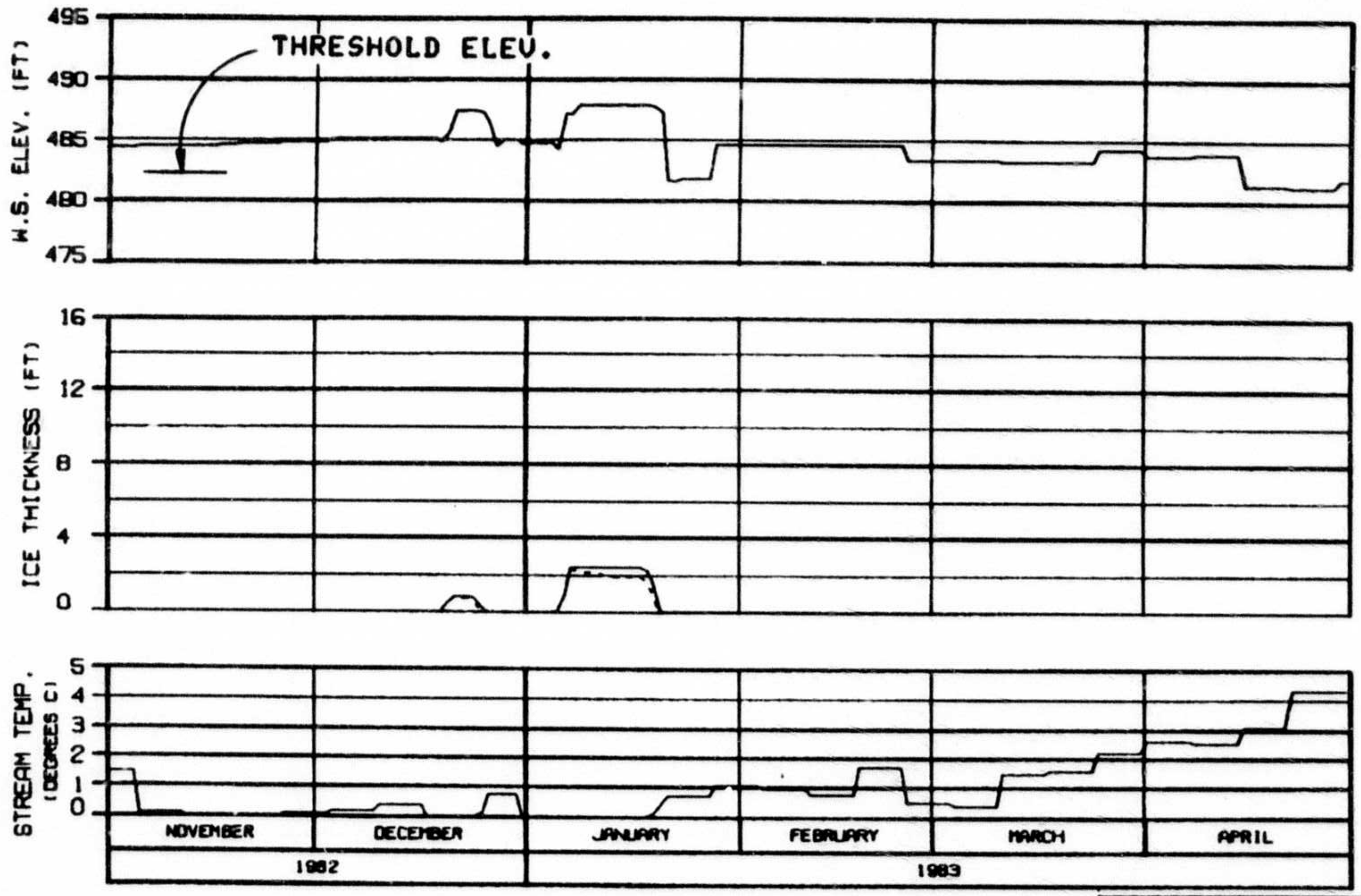
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	

CHICAGO, ILLINOIS	10 JUL 84	1000.142



SIDE CHANNEL MSII

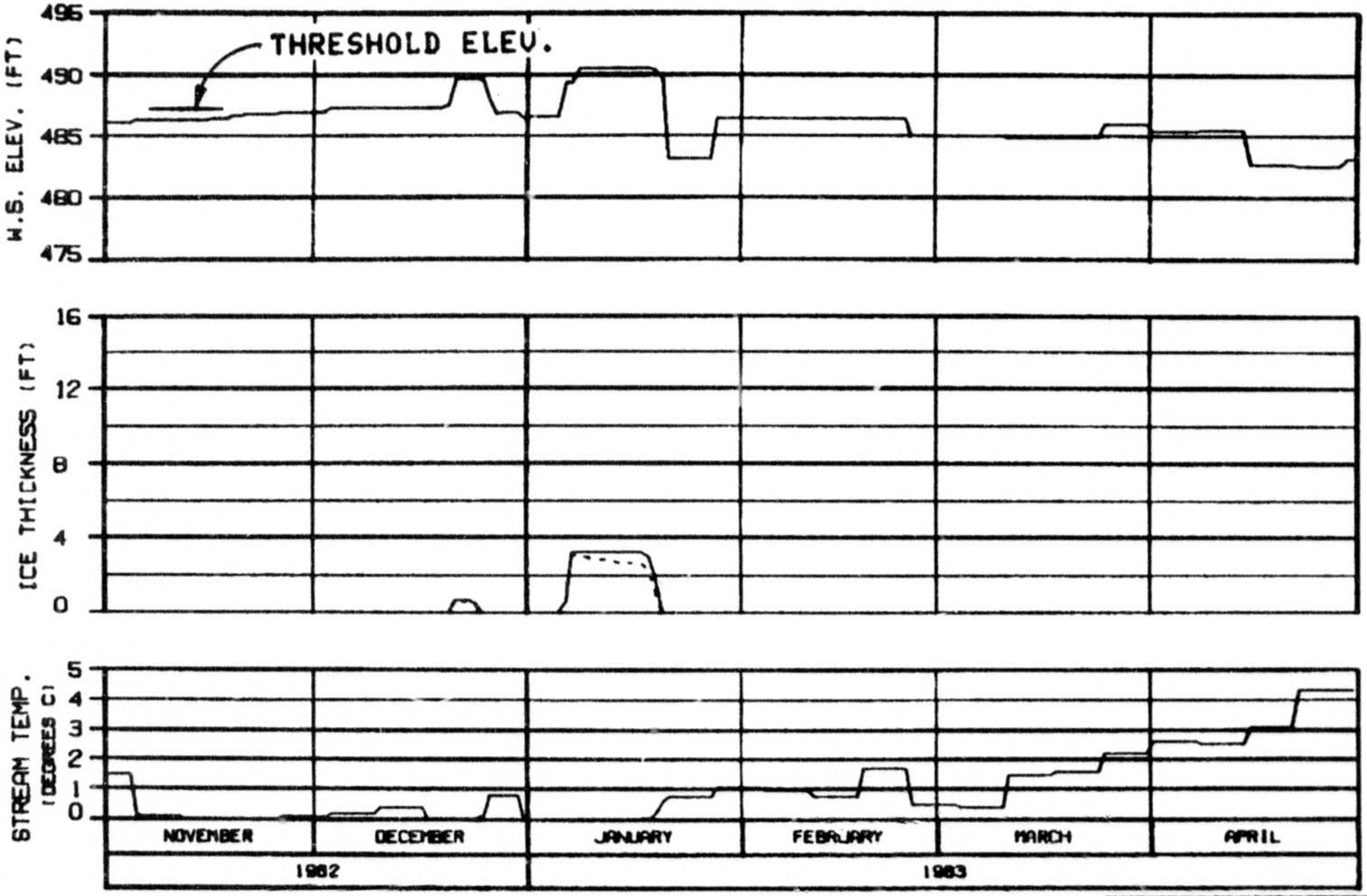
RIVER MILE : 115.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8Z20CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
CHICAGO, ILLINOIS	10 JUL 84	[illegible].142



HEAD OF SIDE CHANNEL MSII

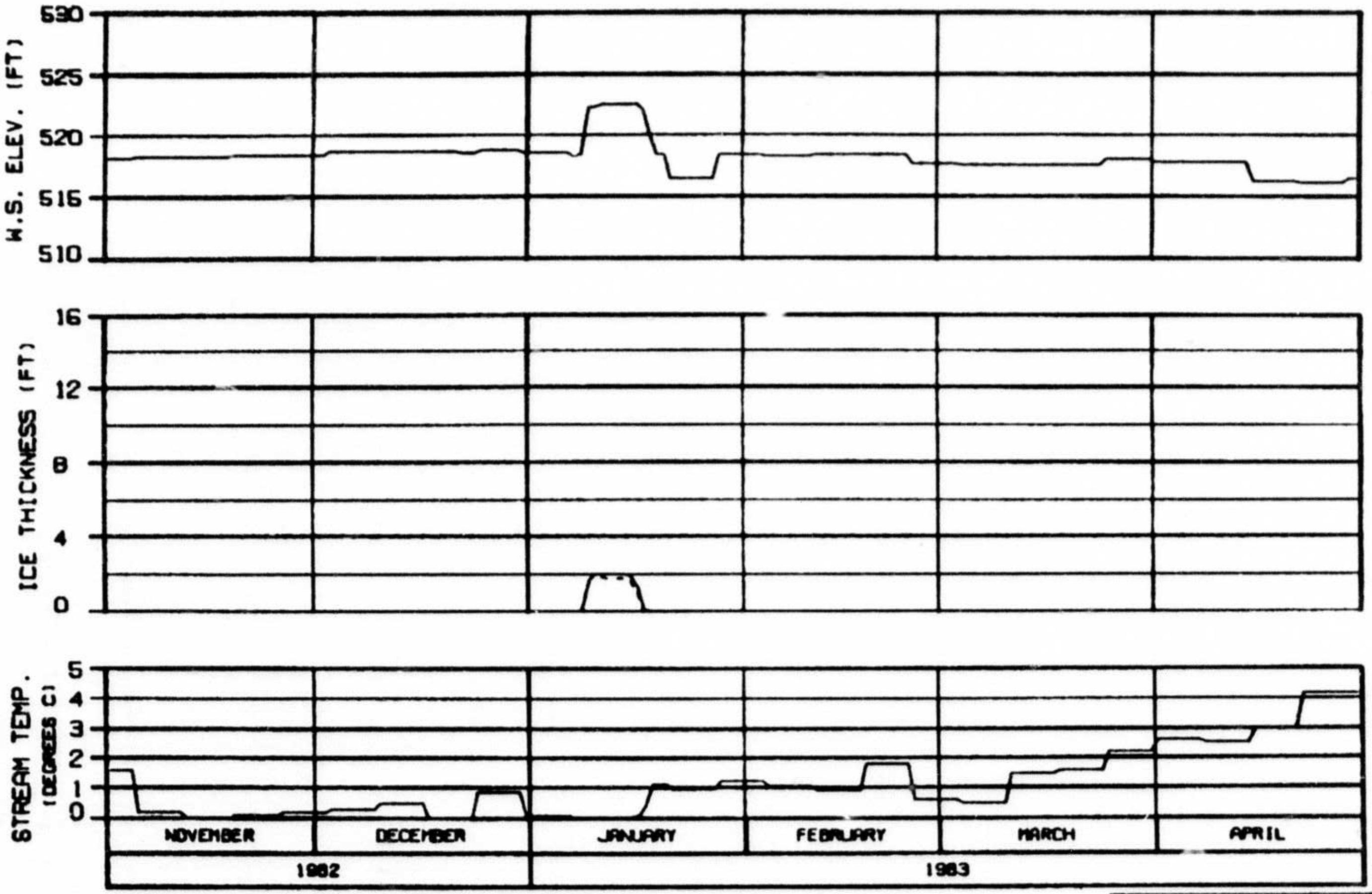
RIVER MILE : 115.90

ICE THICKNESS LEGEND:

—— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RIIF : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



RIVER MILE : 120.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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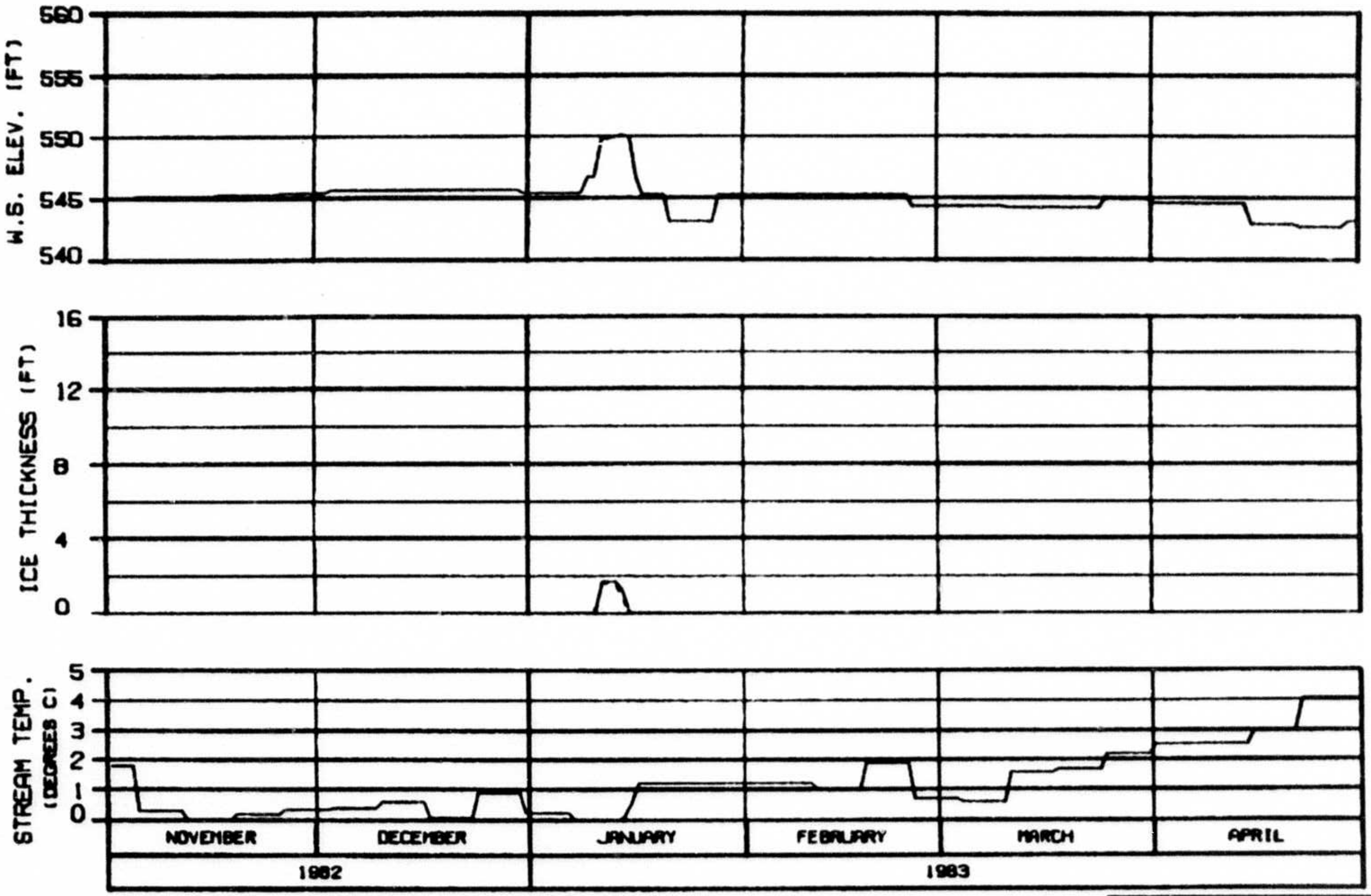


HEAD OF MOOSE SLOUGH

RIVER MILE : 123.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

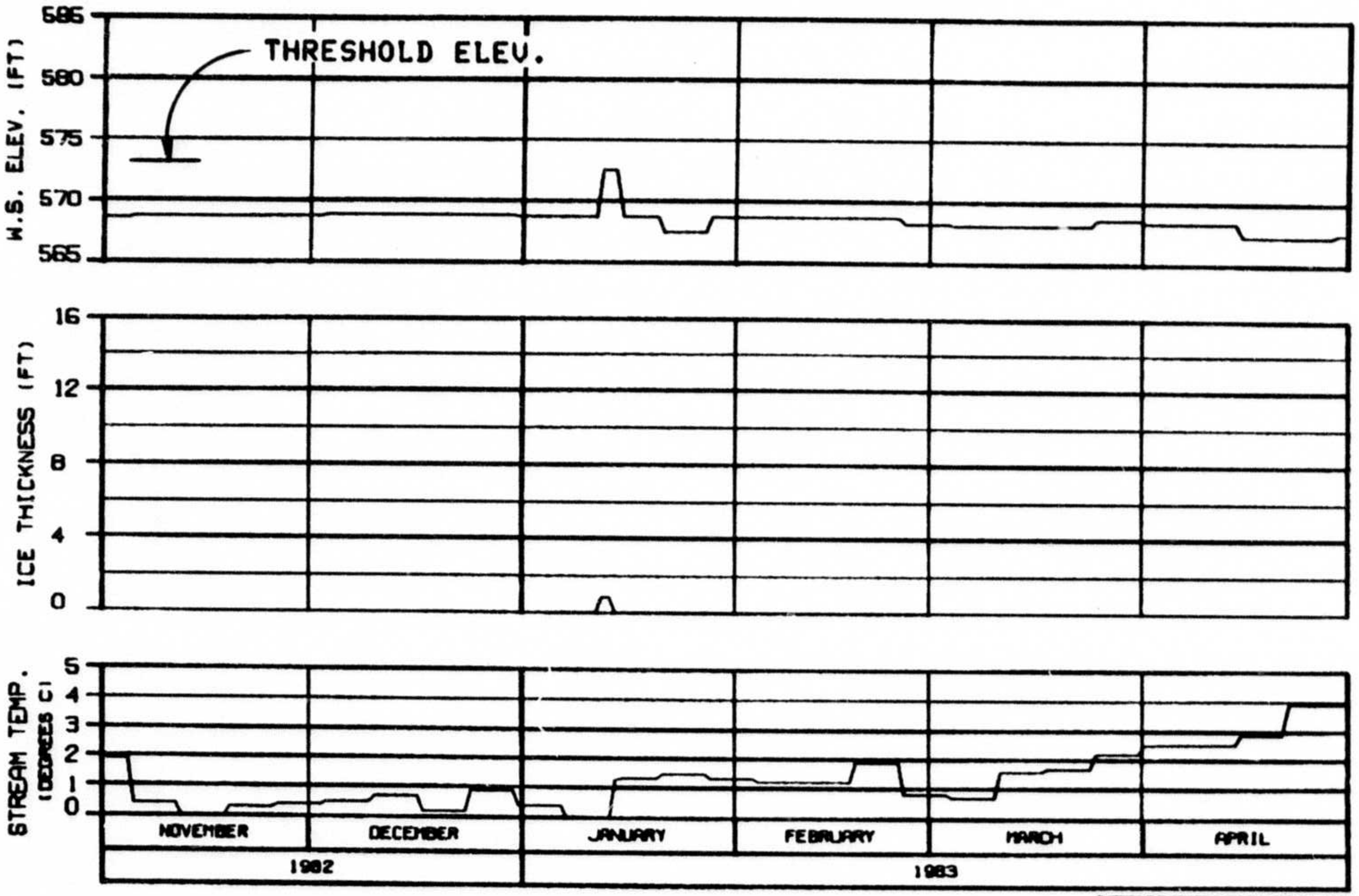
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (WEST)

RIVER MILE : 126.10

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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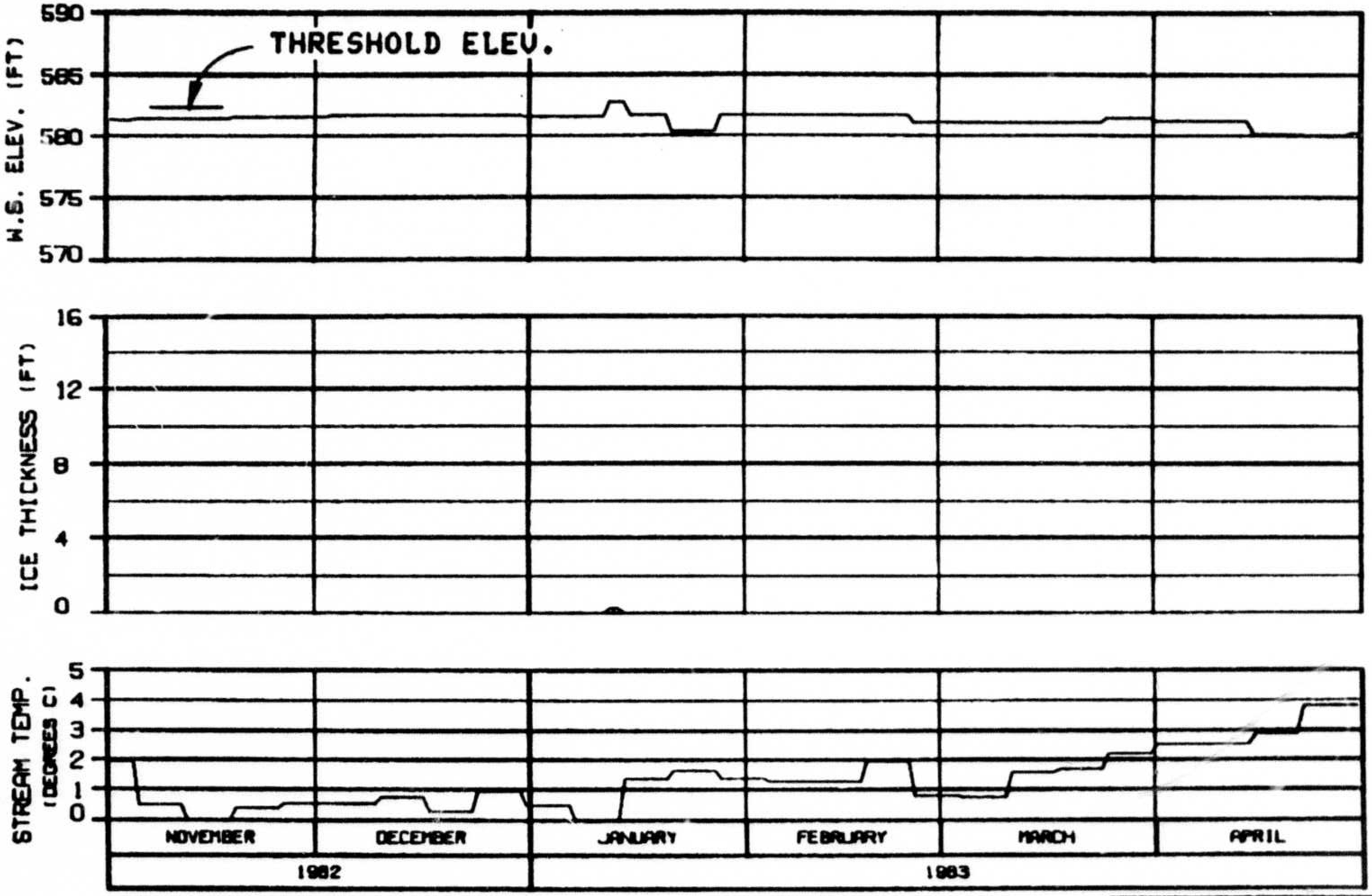


HEAD OF SLOUGH 8A (EAST)

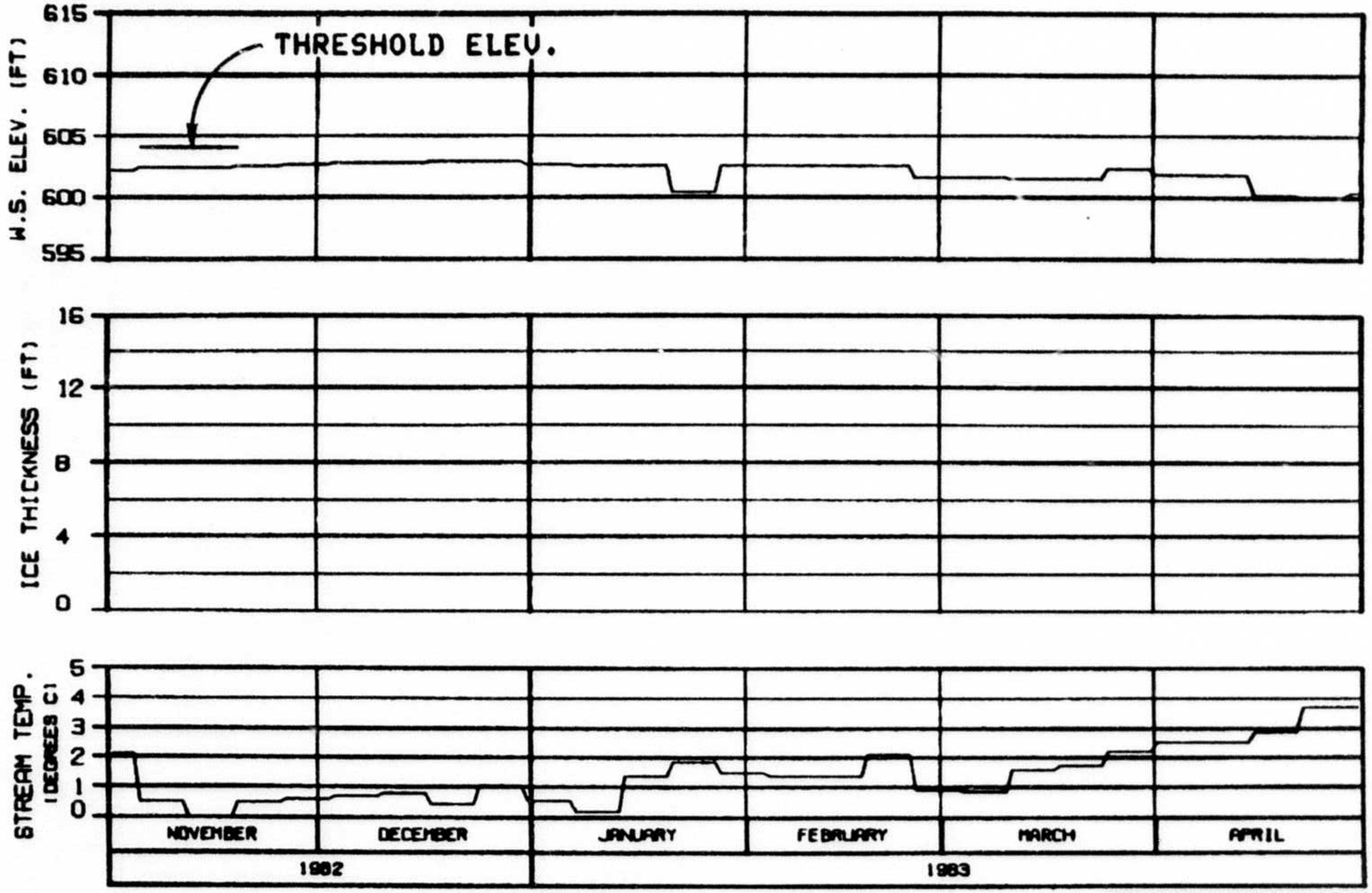
RIVER MILE : 127.10

ICE THICKNESS LEGEND:

—— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
1688.142



HEAD OF SLOUGH 9

RIVER MILE : 129.30

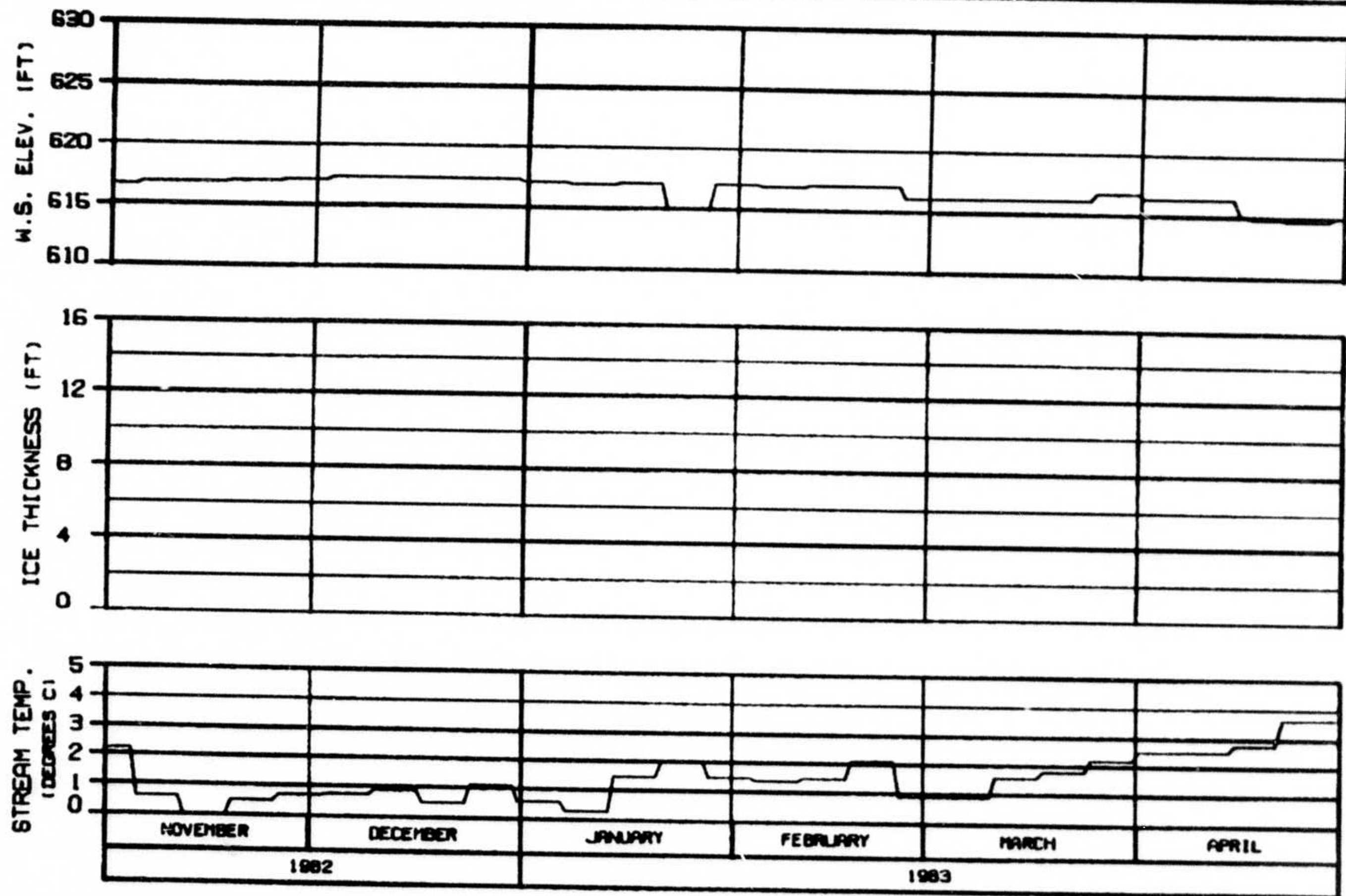
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

OPTION?

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
10 JUL 84	1568.142

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

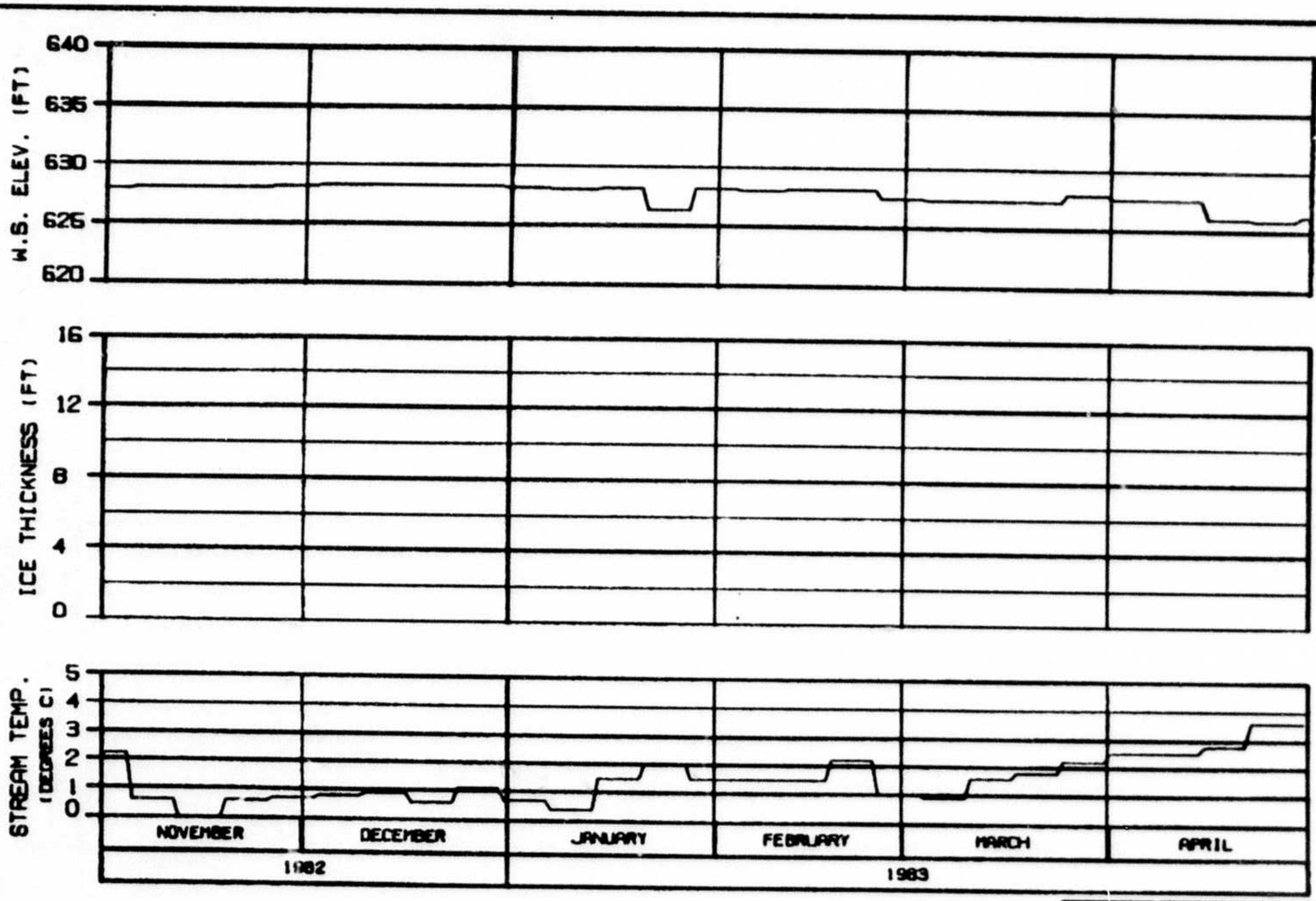
RIVER MILE : 130.60

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

RIVER MILE : 131.80

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

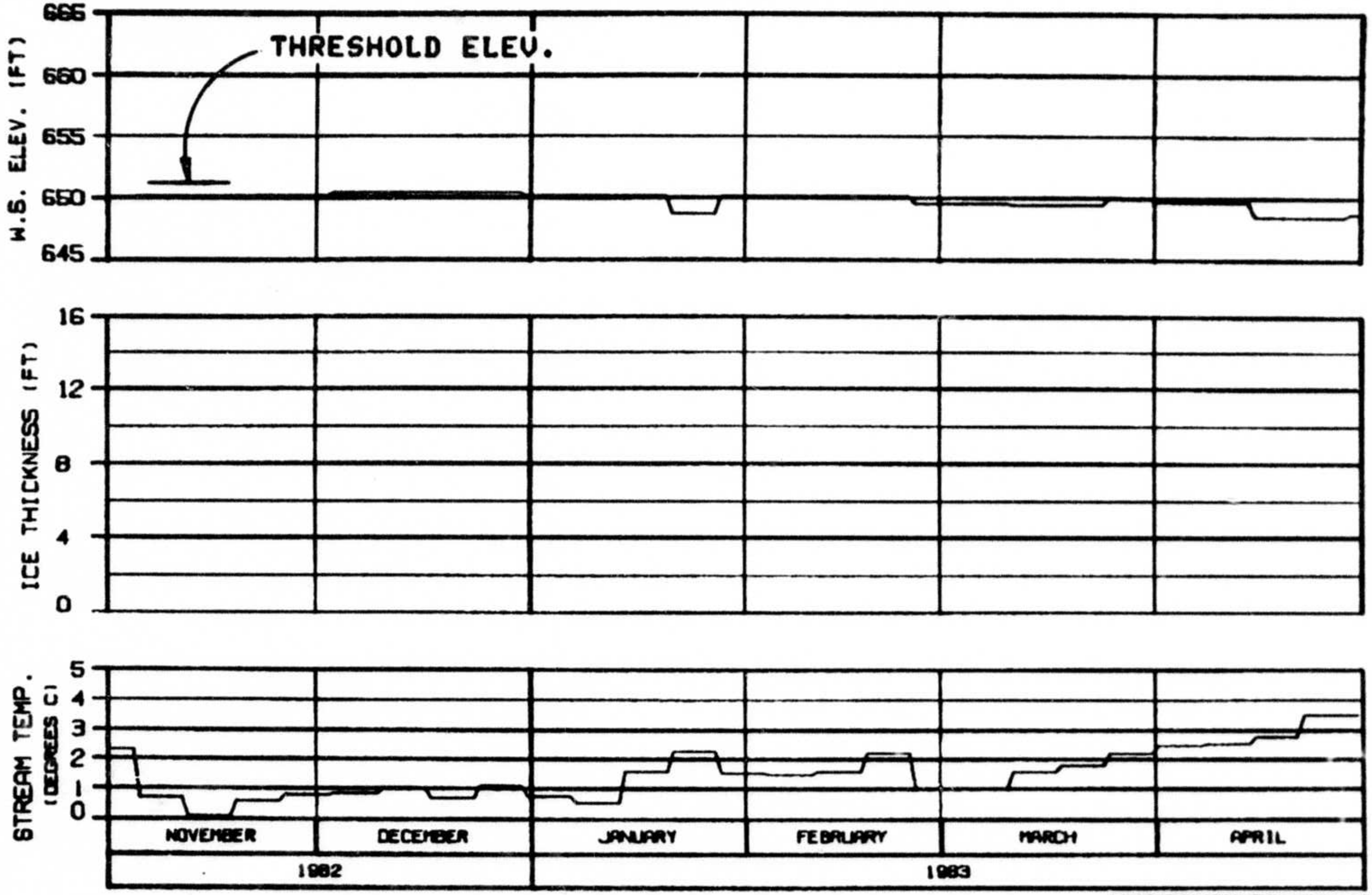
ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9A

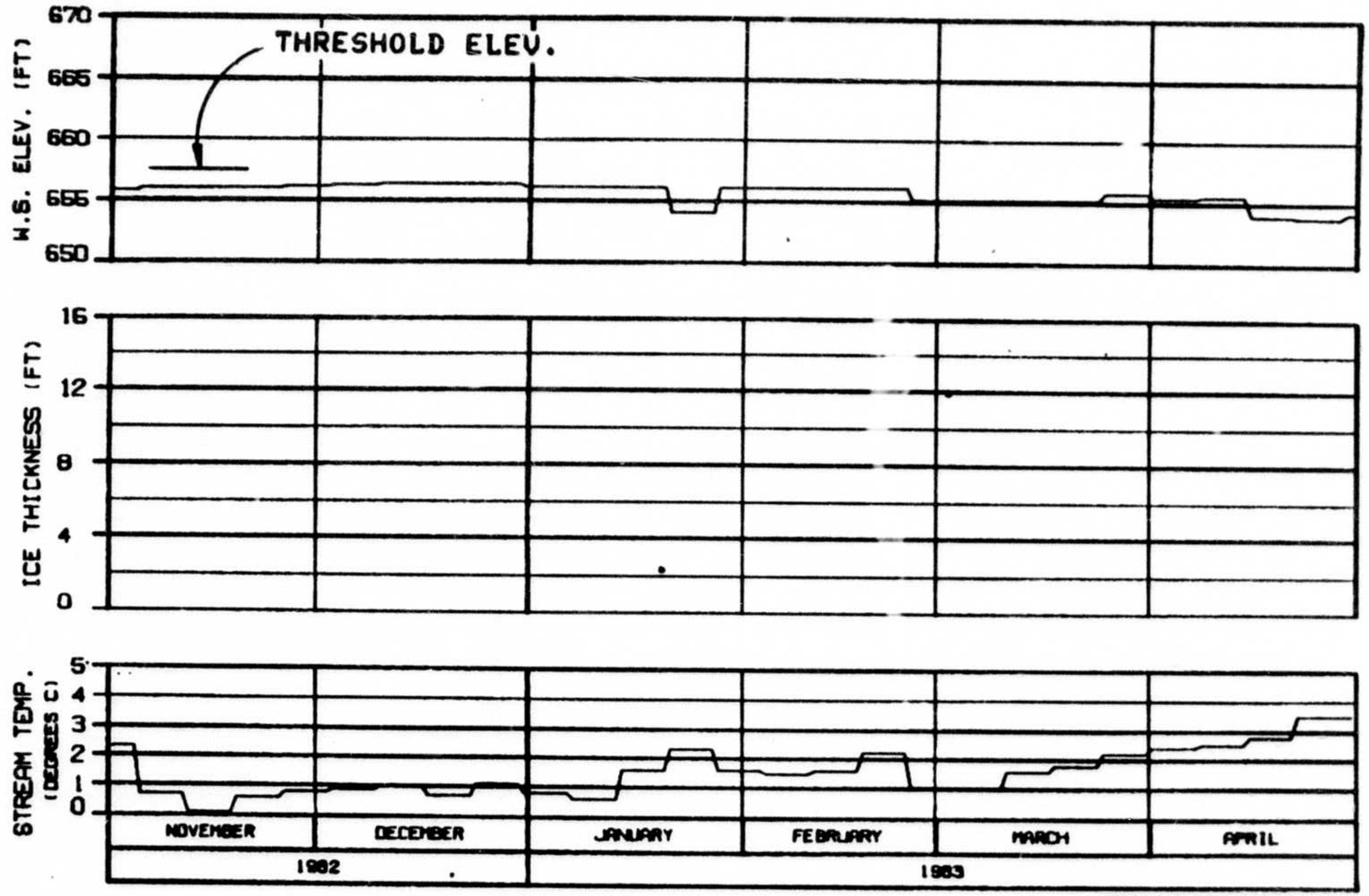
RIVER MILE : 133.70

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	



SIDE CHANNEL U/S OF SLOUGH 10

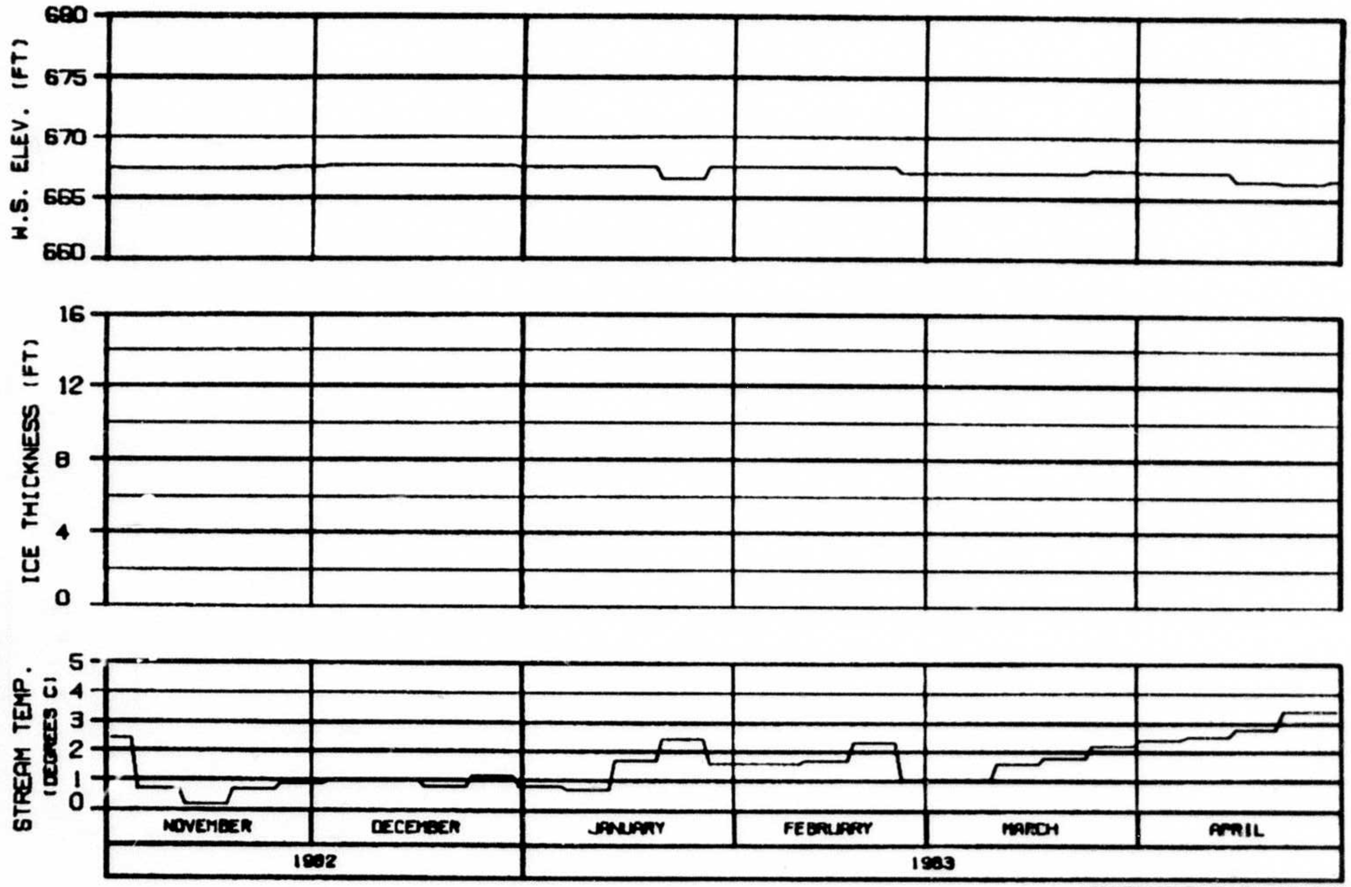
RIVER MILE : 134.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
10 JUL 84	1680.142



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

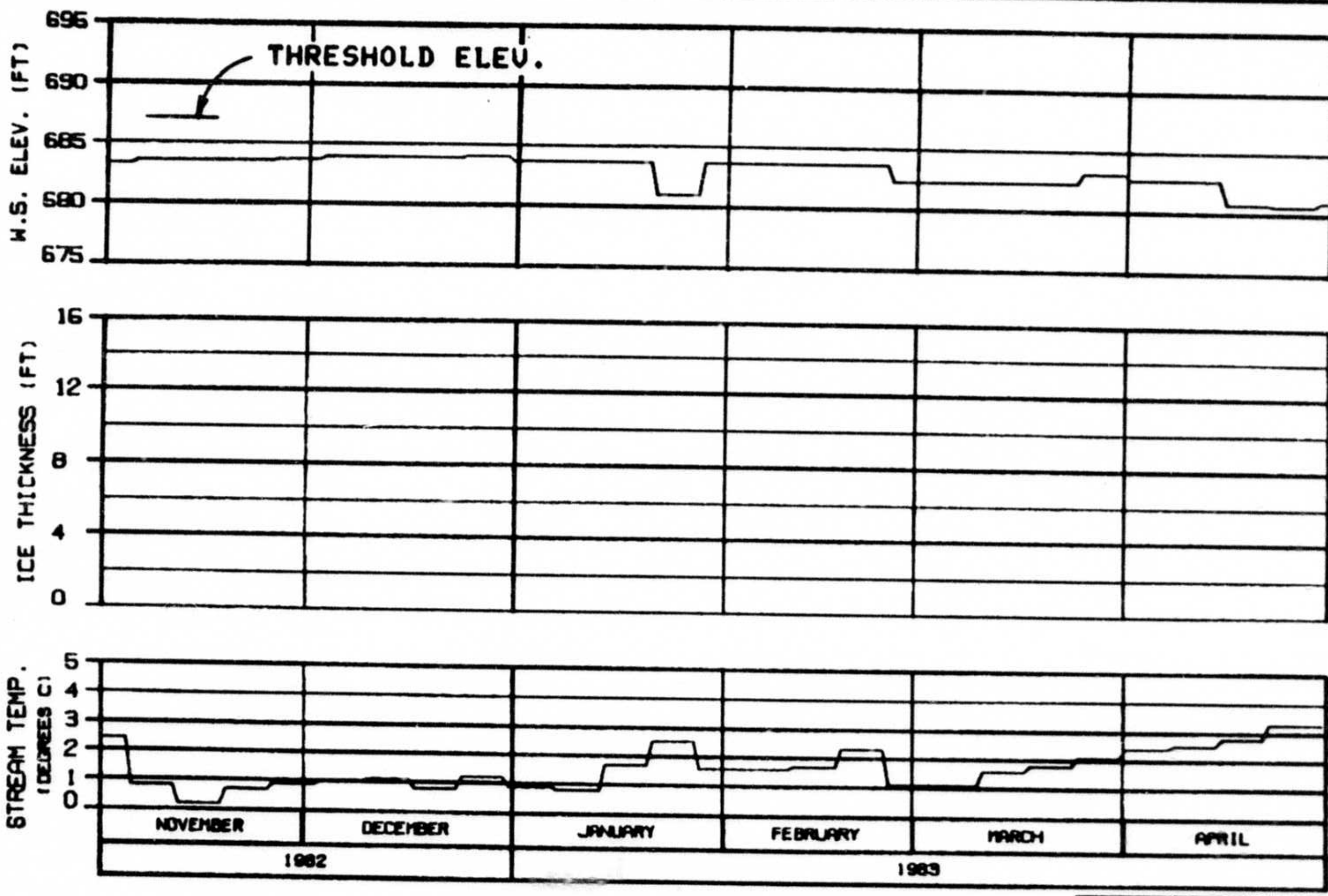
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

CHICAGO, ILLINOIS | 10 JUL 84 | [illegible].142



HEAD OF SLOUGH 11

RIVER MILE : 136.50

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
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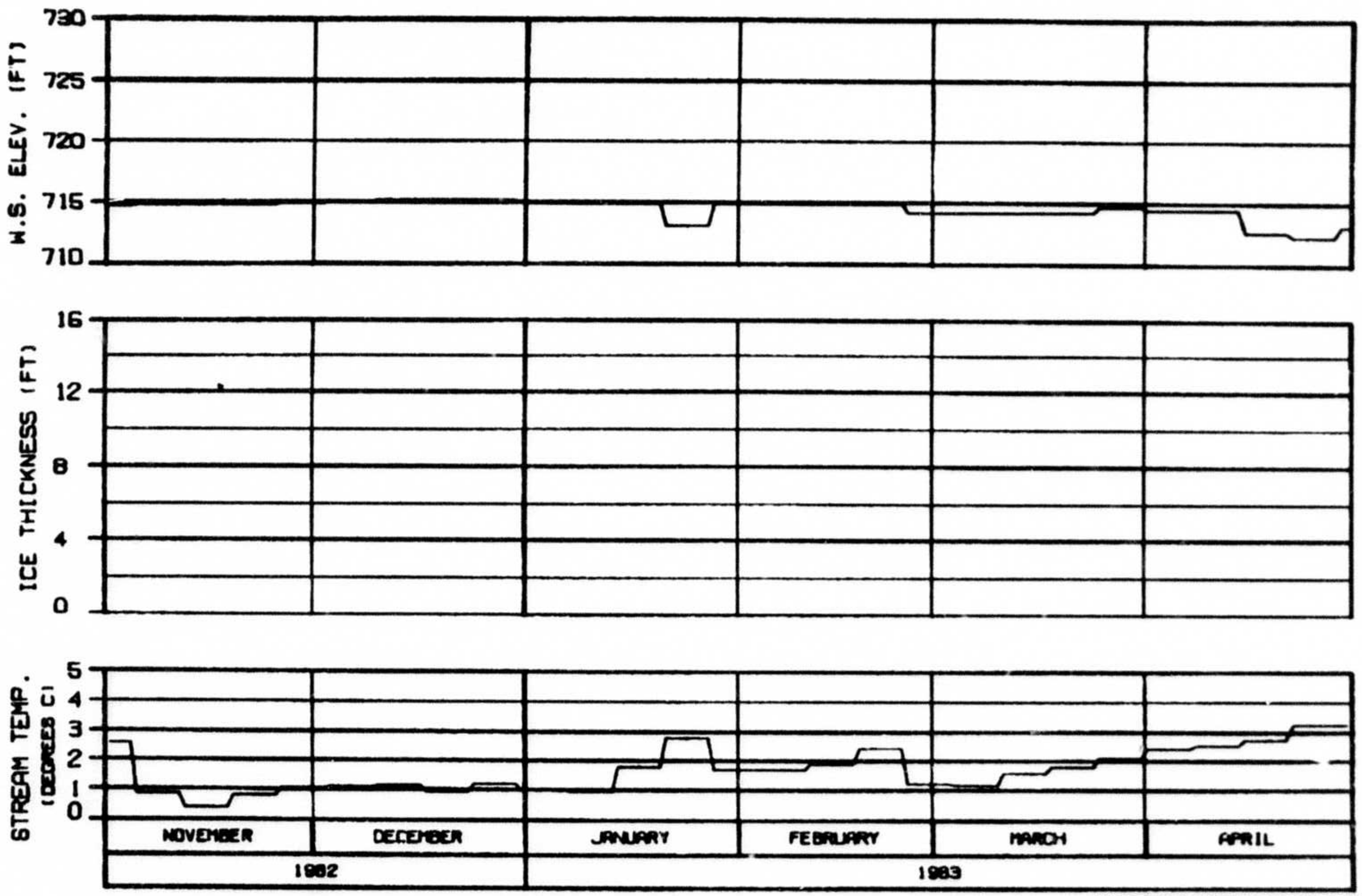


HEAD OF SLOUGH 17

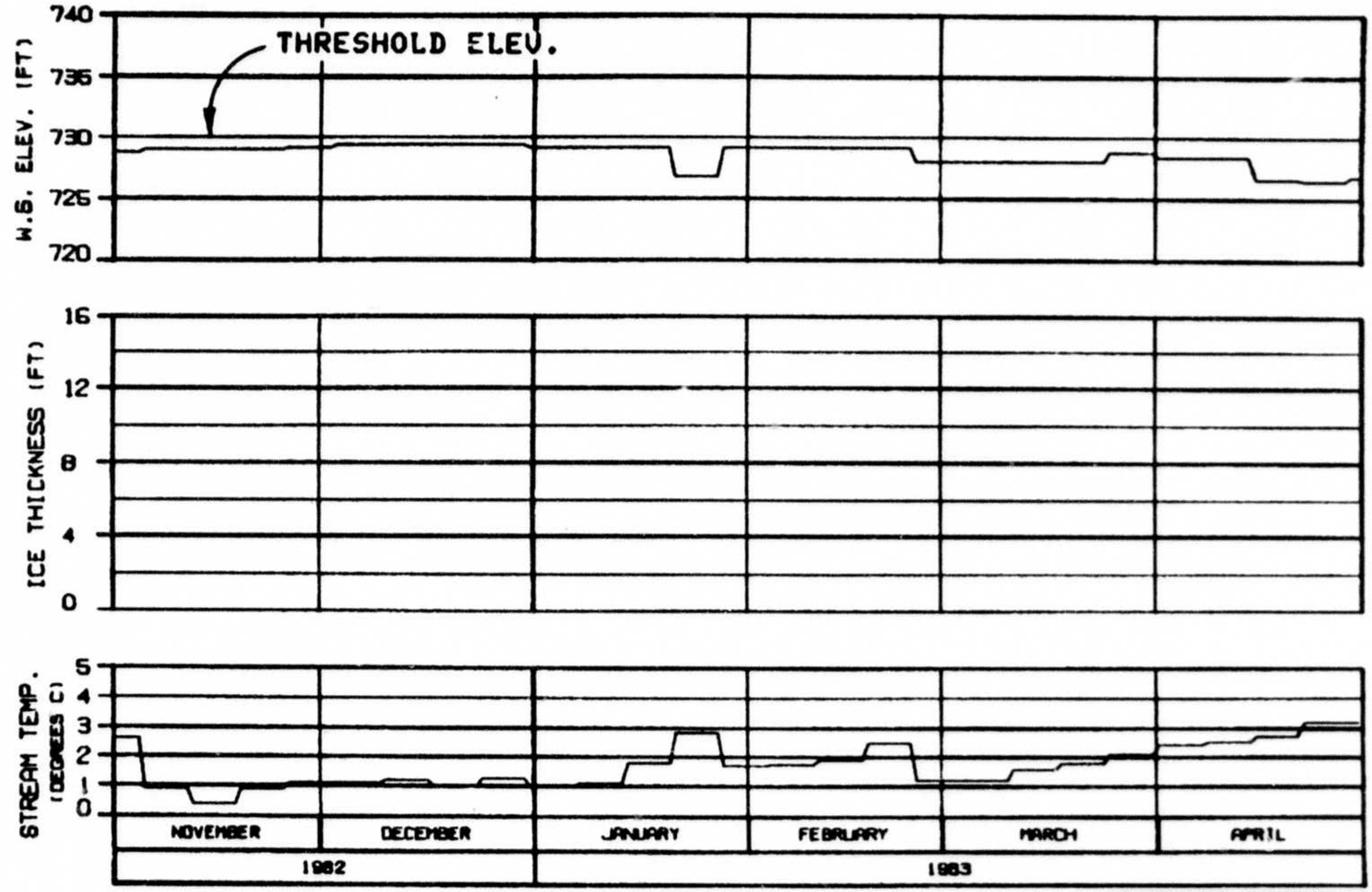
RIVER MILE : 139.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 20

RIVER MILE : 140.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

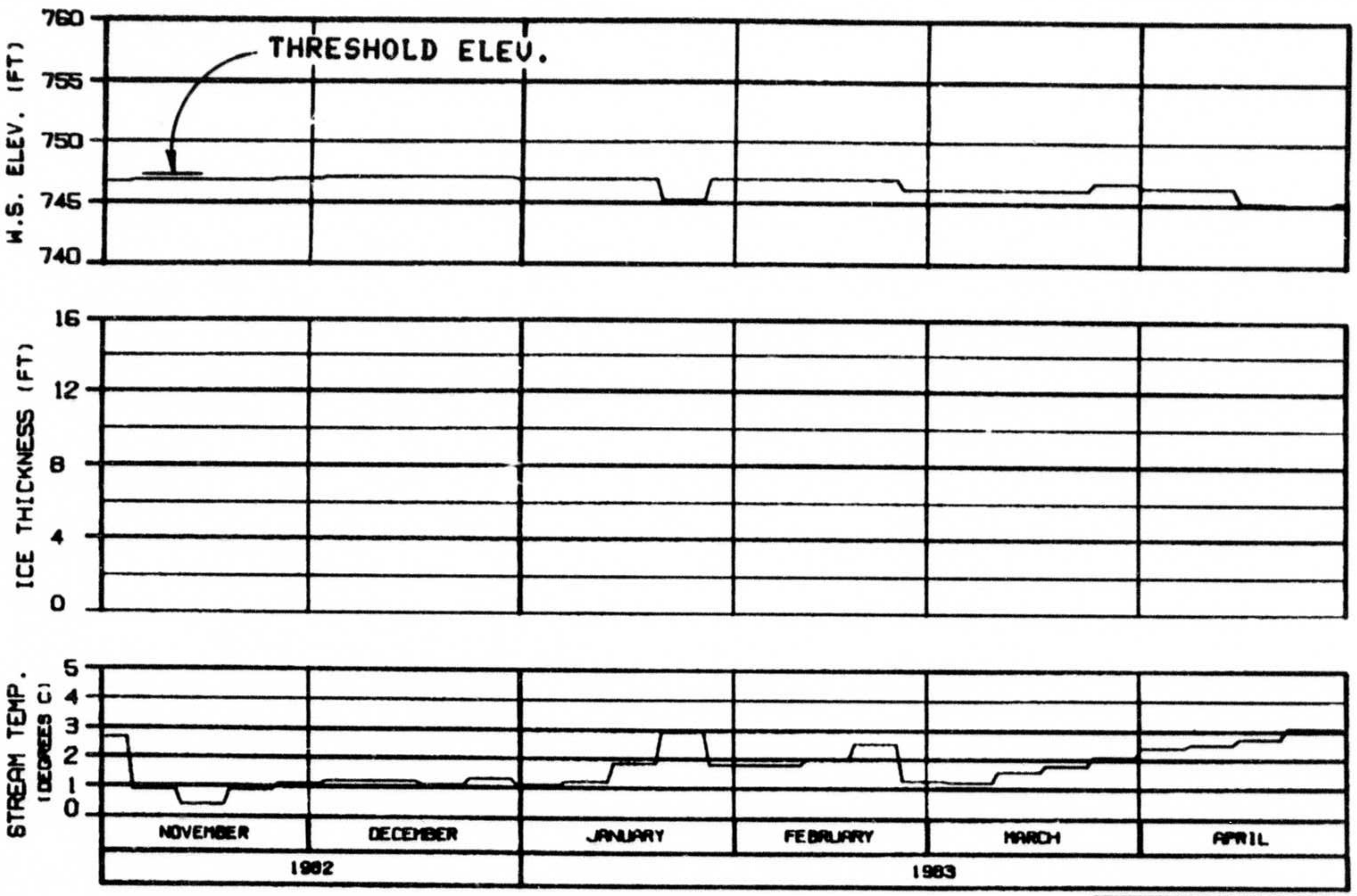
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SLOUGH 21 (ENTRANCE A6)

RIVER MILE : 141.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

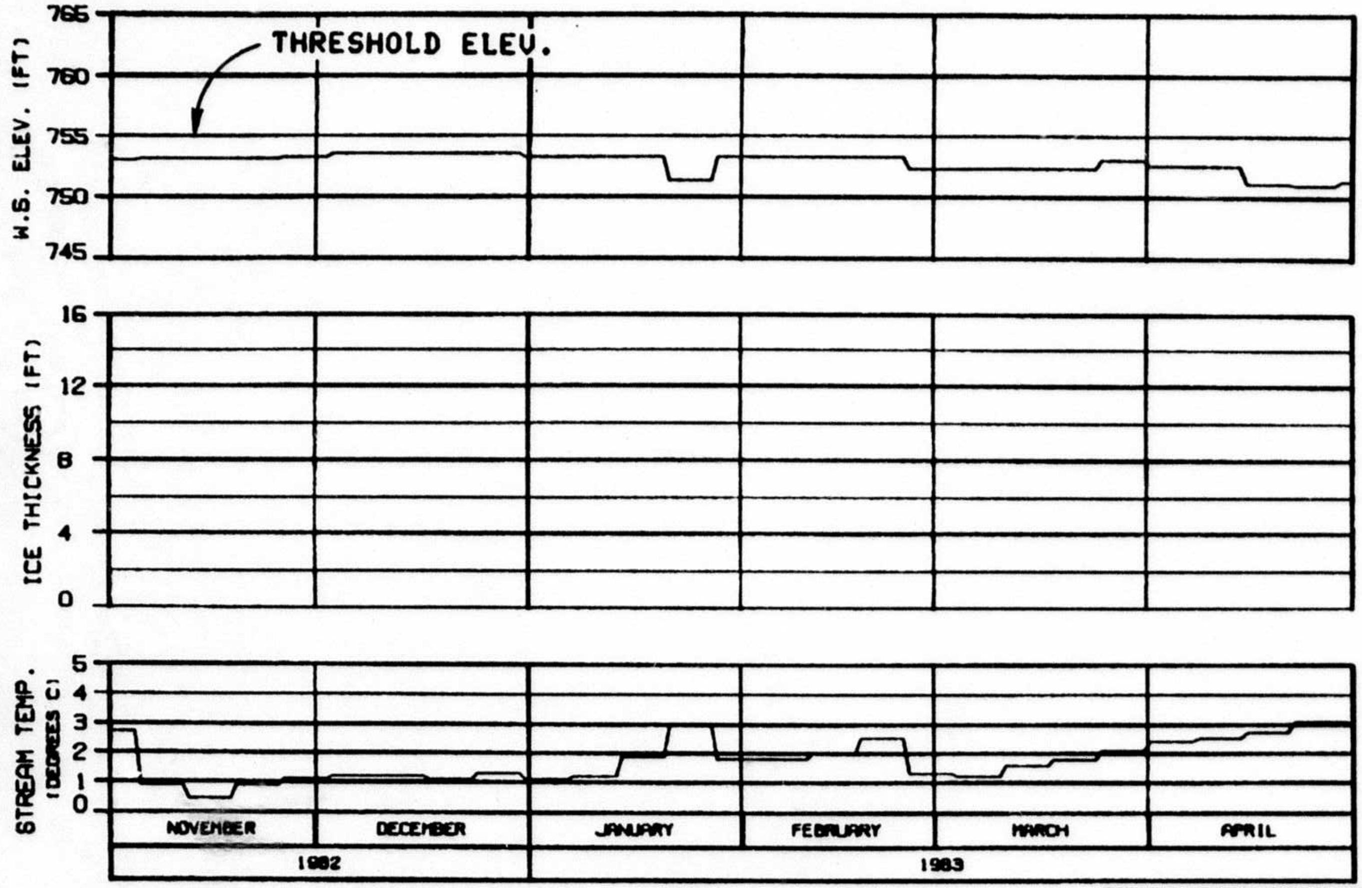
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

CHICAGO, ILLINOIS | 18 JUL 84 | 1688.142



HEAD OF SLOUGH 21

RIVER MILE : 142.20

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS

- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : B220CNA

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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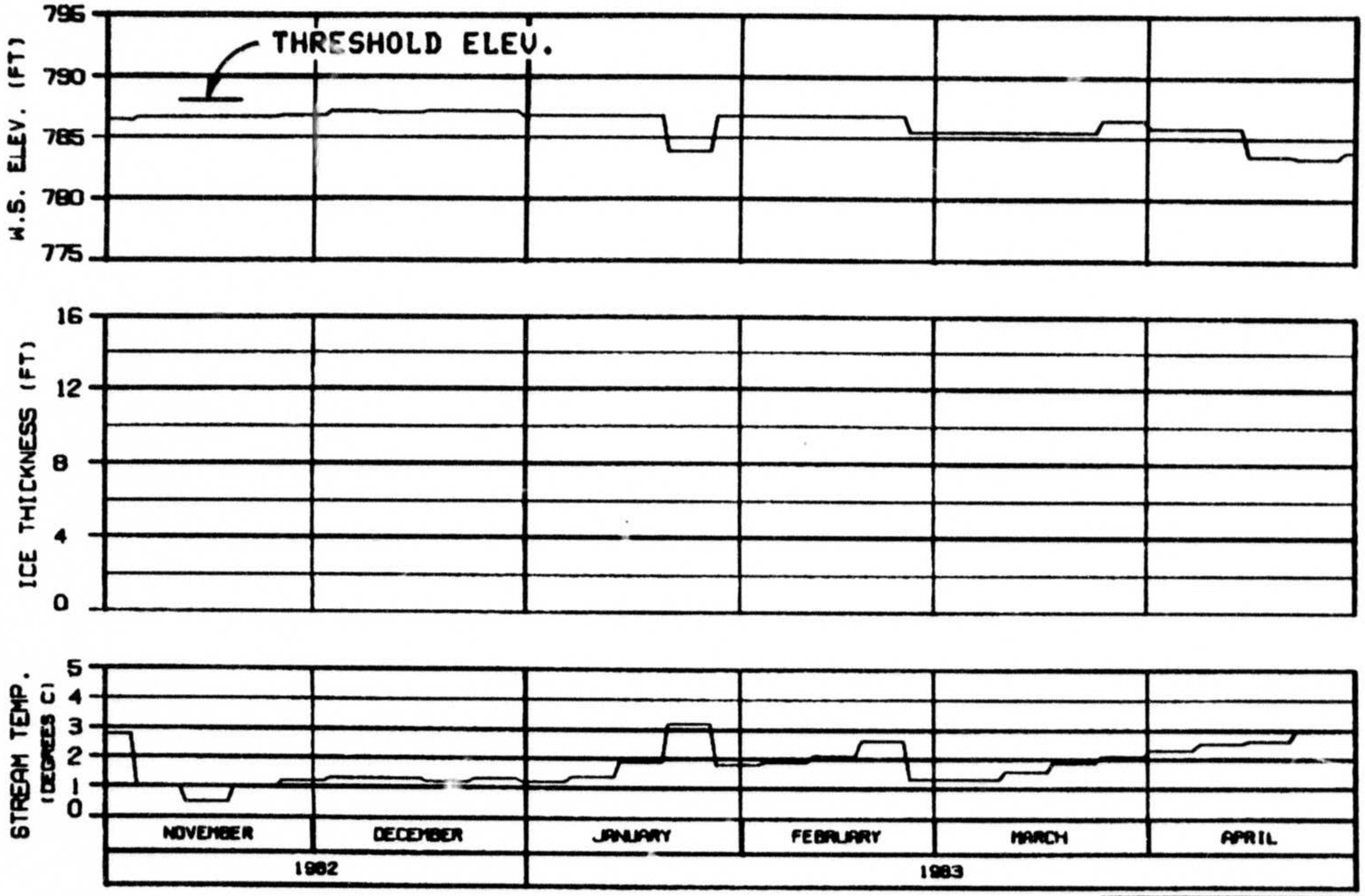


HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : DEVIL CANYON 2020
FLOW CASE : C TEMP. RULE : NATURAL
REFERENCE RUN NO. : 8220CNA

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

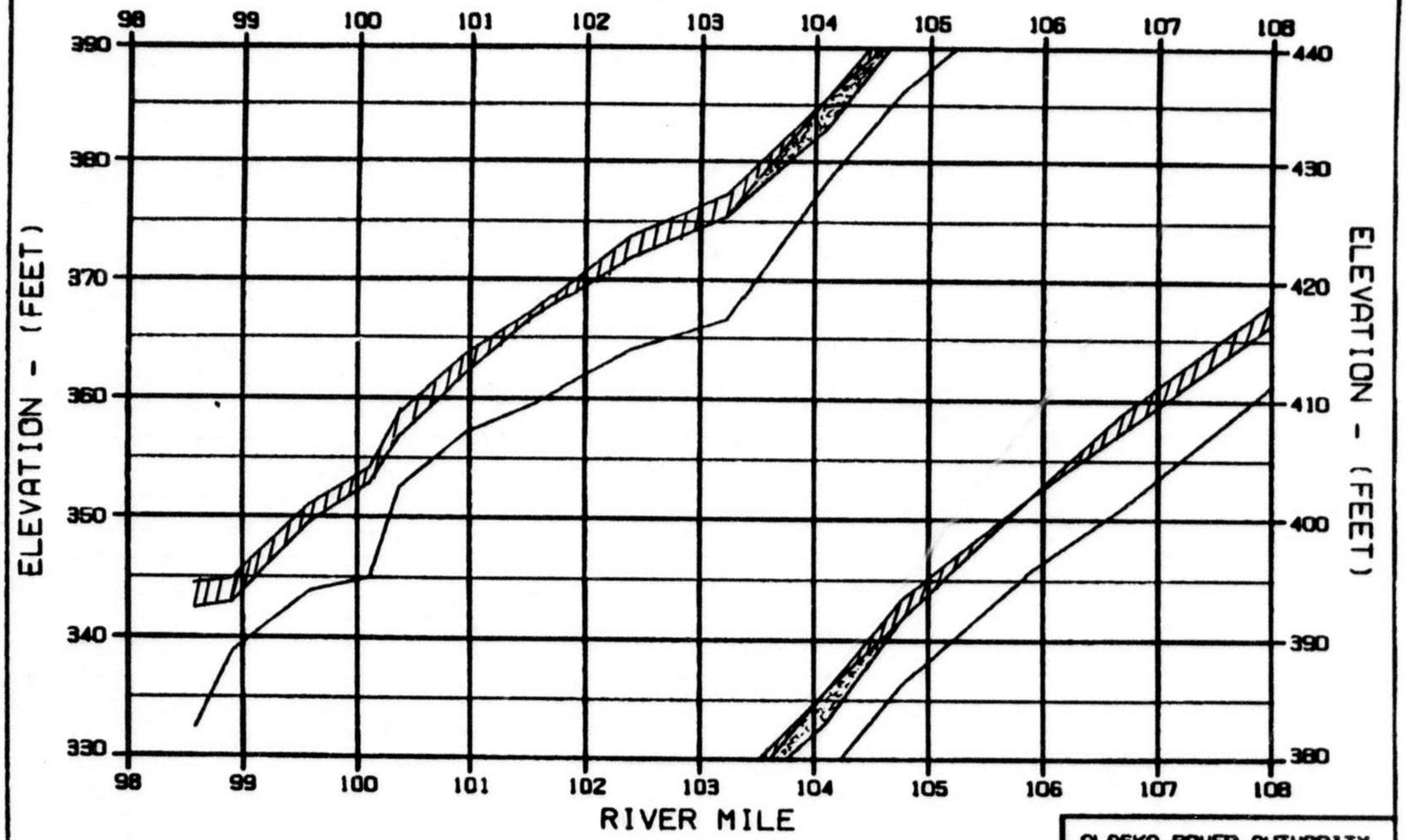
HARZA-EBASCO JOINT VENTURE

OPTION?

EXHIBIT R

The following study, entitled "Watana-First Year Filling" corresponds to the winter of 1991-92, as depicted in Exhibit E.2.138 of the License Application. The weather used corresponds to the winter of 1982-83, which is a mild winter. Releases from Watana under these conditions would be made thru the low-level outlet.

C



LEGEND:

- TOP OF SOLID ICE
- SLUSH/SOLID ICE INTERFACE
- BOTTOM OF SLUSH ICE
- RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY

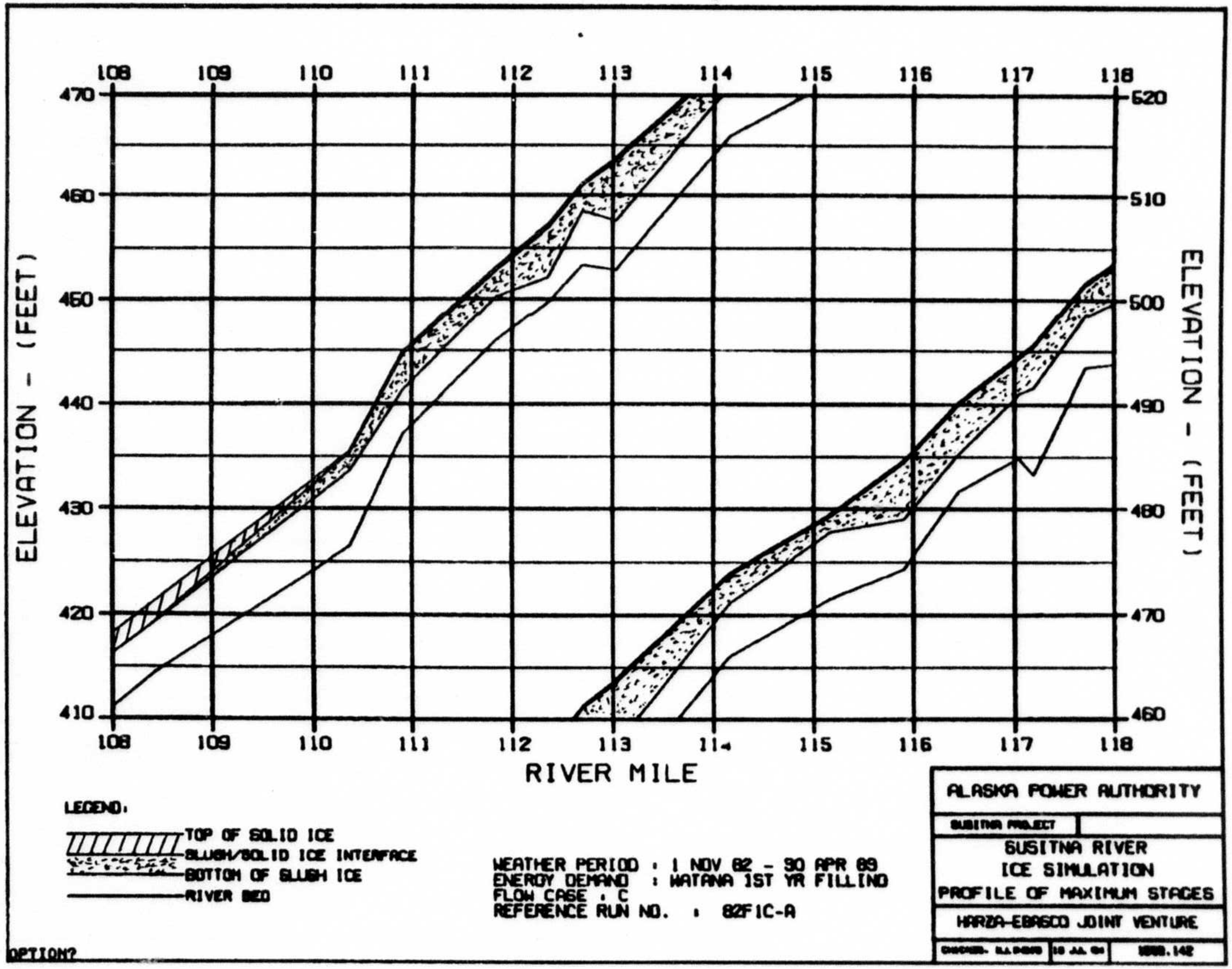
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

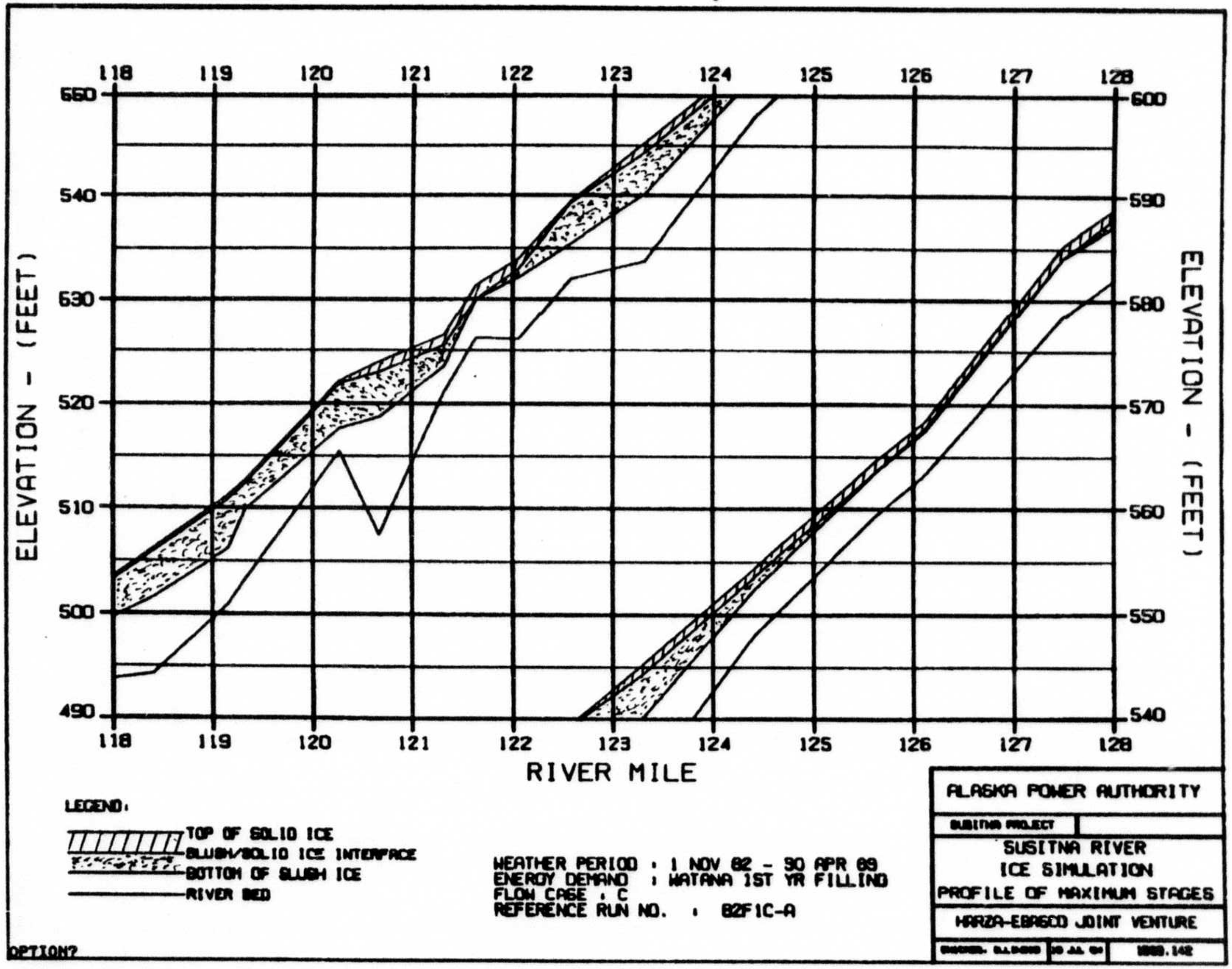
OPTION2

c

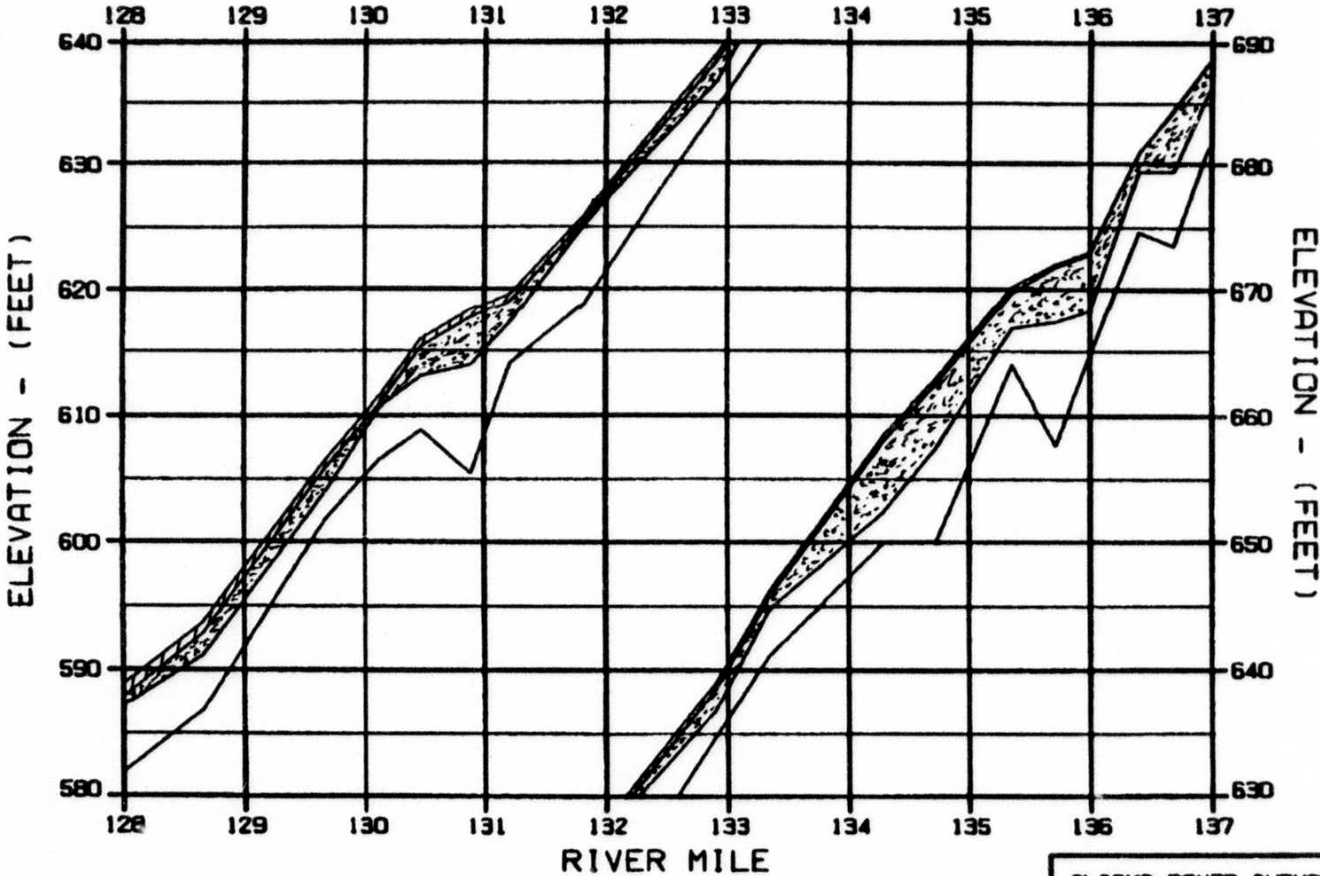


108 109 110 111 112 113 114 115 116 117 118
470 460 450 440 430 420 410
520 510 500 490 480 470 460
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82FIC-A
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

c


ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

c



LEGEND:

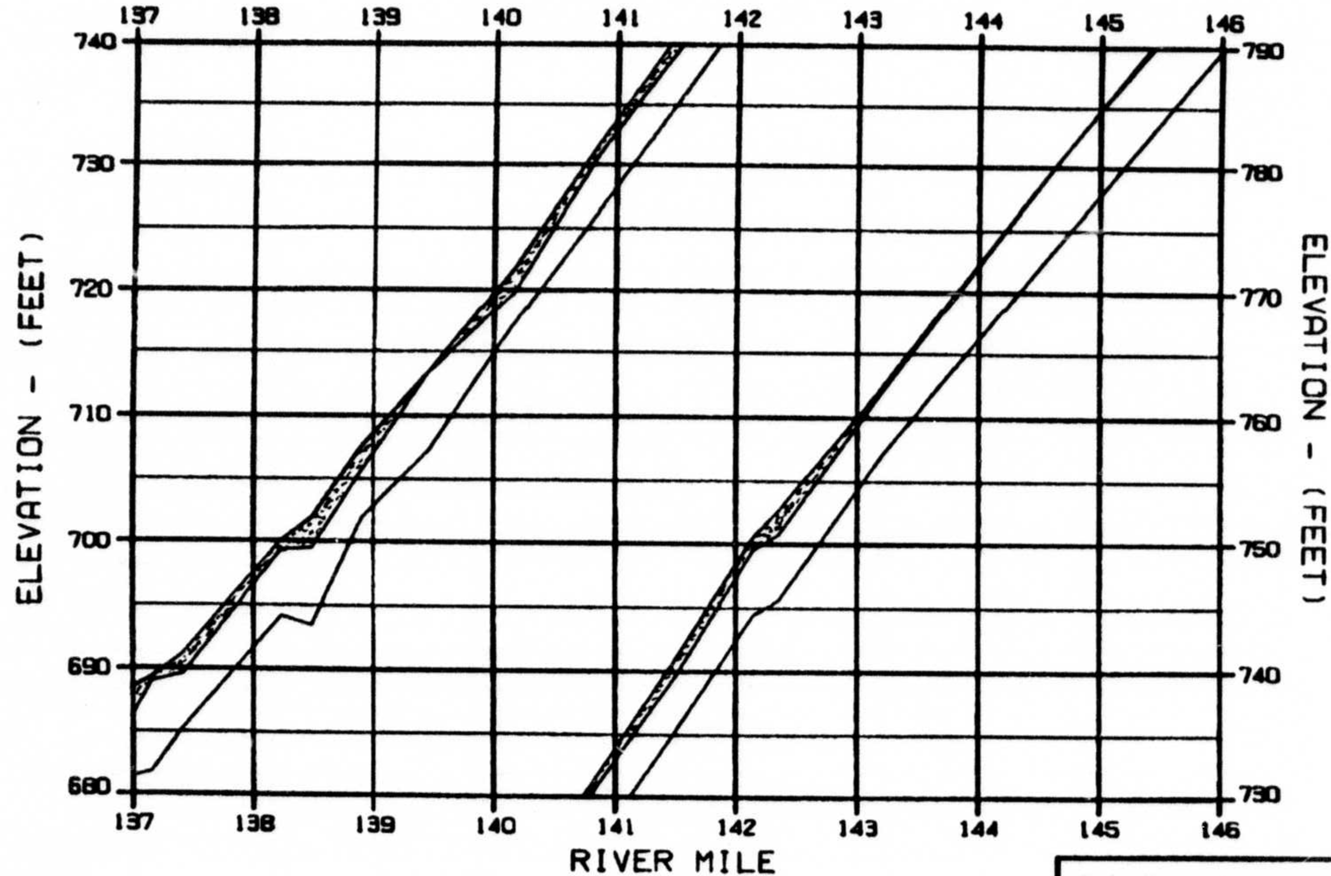
- TOP OF SOLID ICE
- SLUSH/SOLID ICE INTERFACE
- BOTTOM OF SLUSH ICE
- RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

C



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82FIC-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

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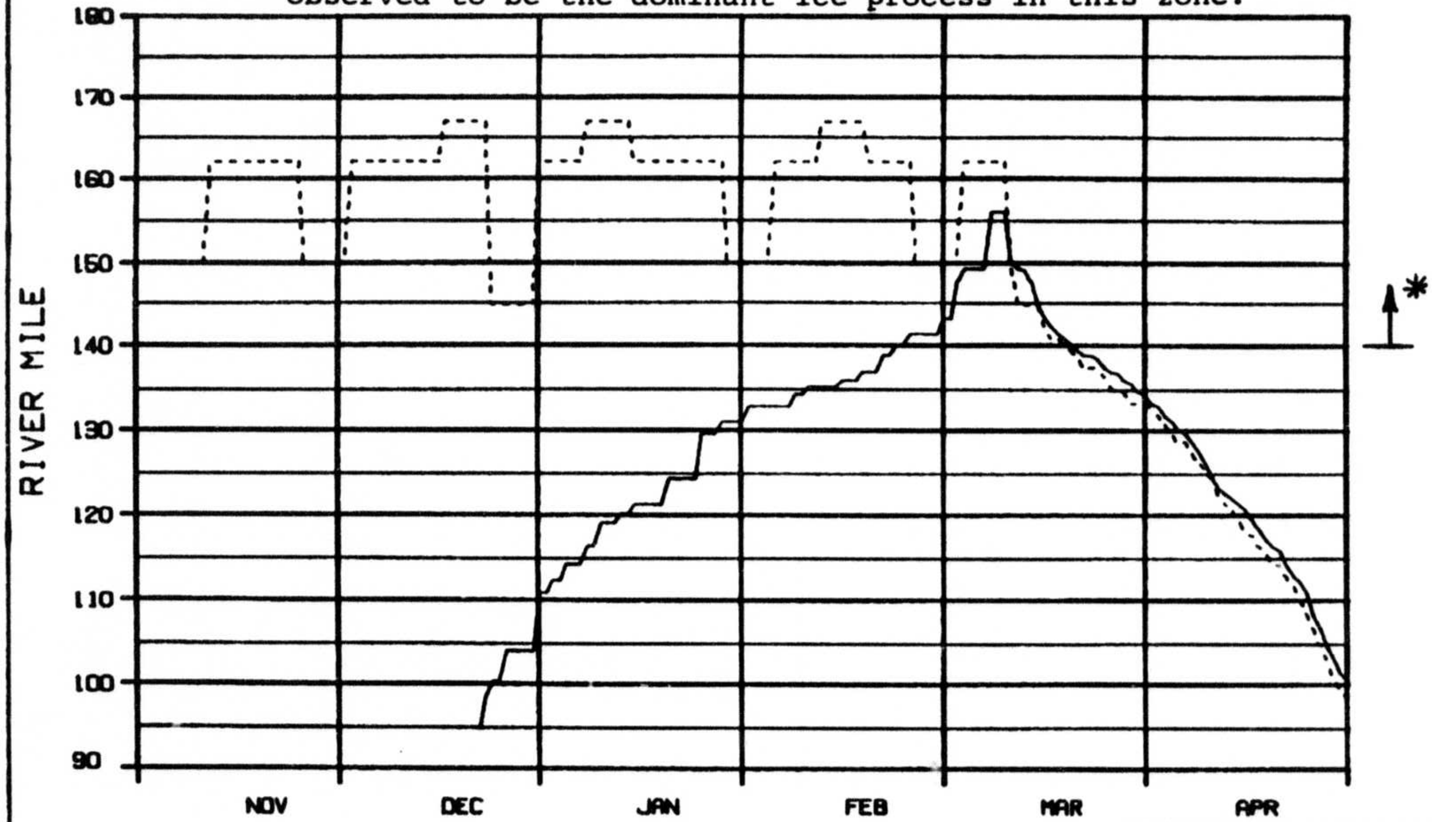
OPTION?

* Note: Simulation of progression u/s of River Mile 140 ± is considered approximate since intermittent bridging of border ice has been observed to be the dominant ice process in this zone.



LEGEND:

——————— ICE FRONT

- - - - - - - - - - ZERO DEGREE ISOTHERM

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY

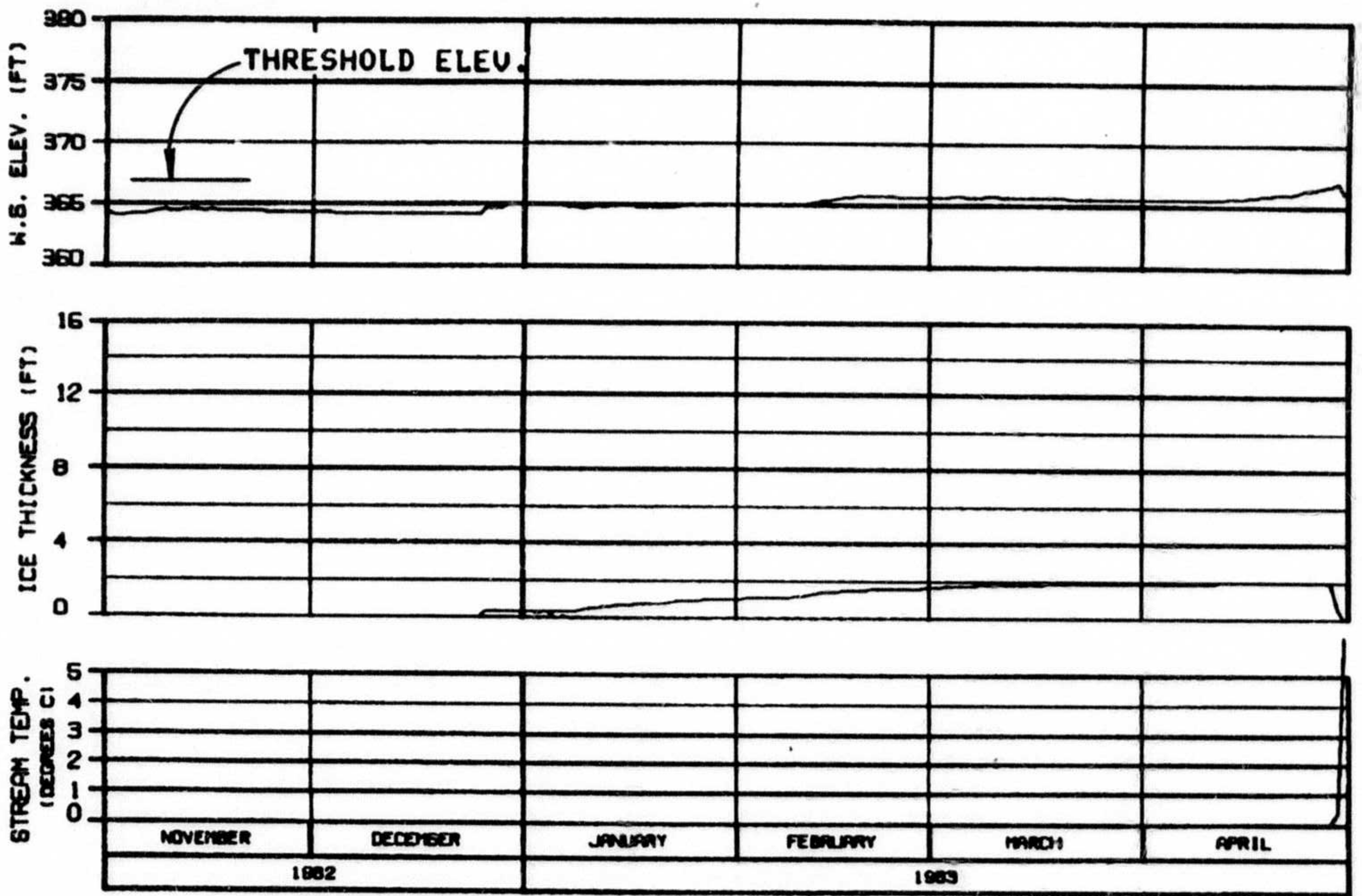
SUSITNA PROJECT

SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM

HARZA-EBASCO JOINT VENTURE

10 JUL 84 | 1000.142

OPTION?



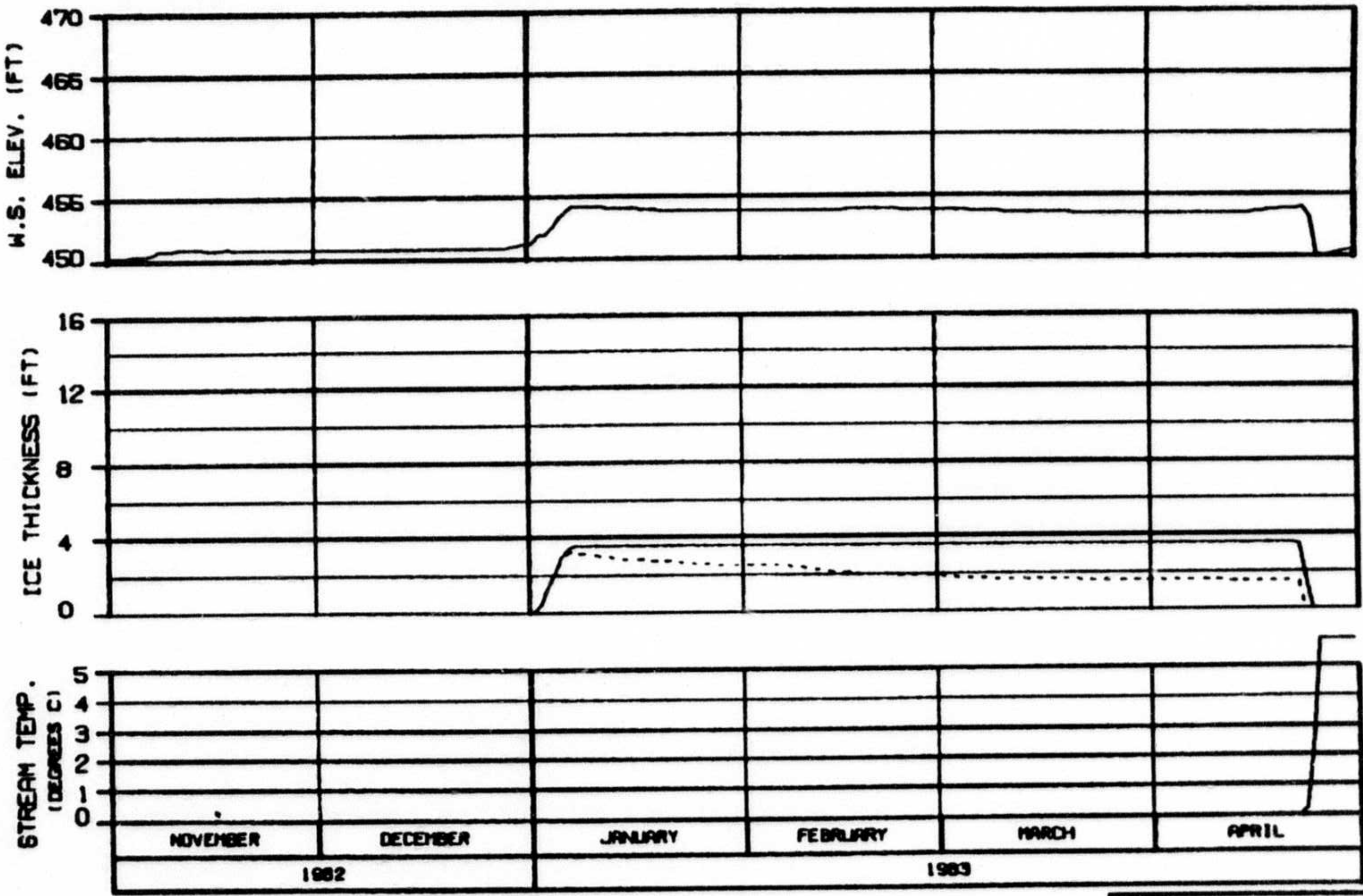
HEAD OF WHISKERS SLOUGH

RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

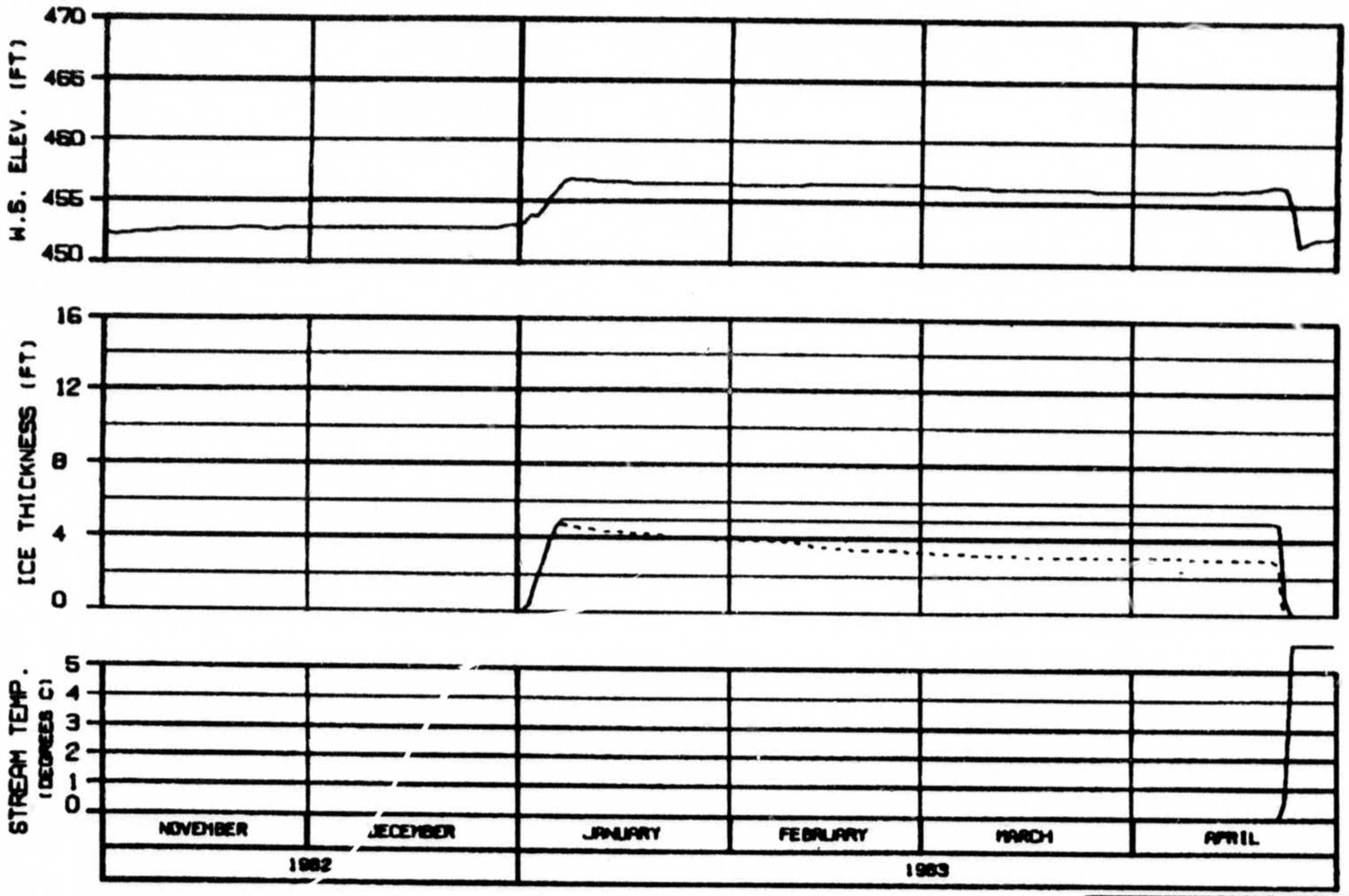
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

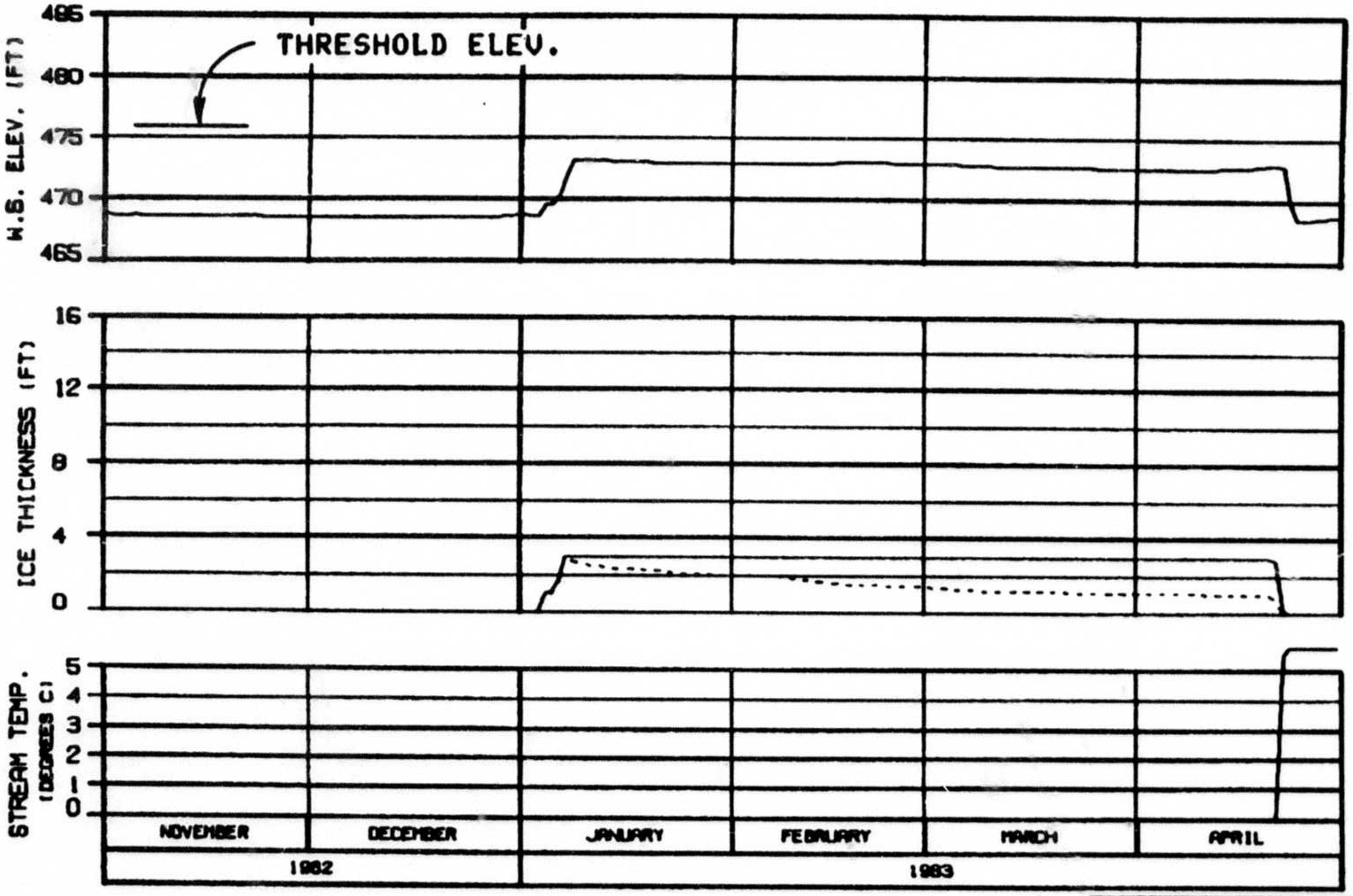
RIVER MILE : 112.34

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8

RIVER MILE : 114.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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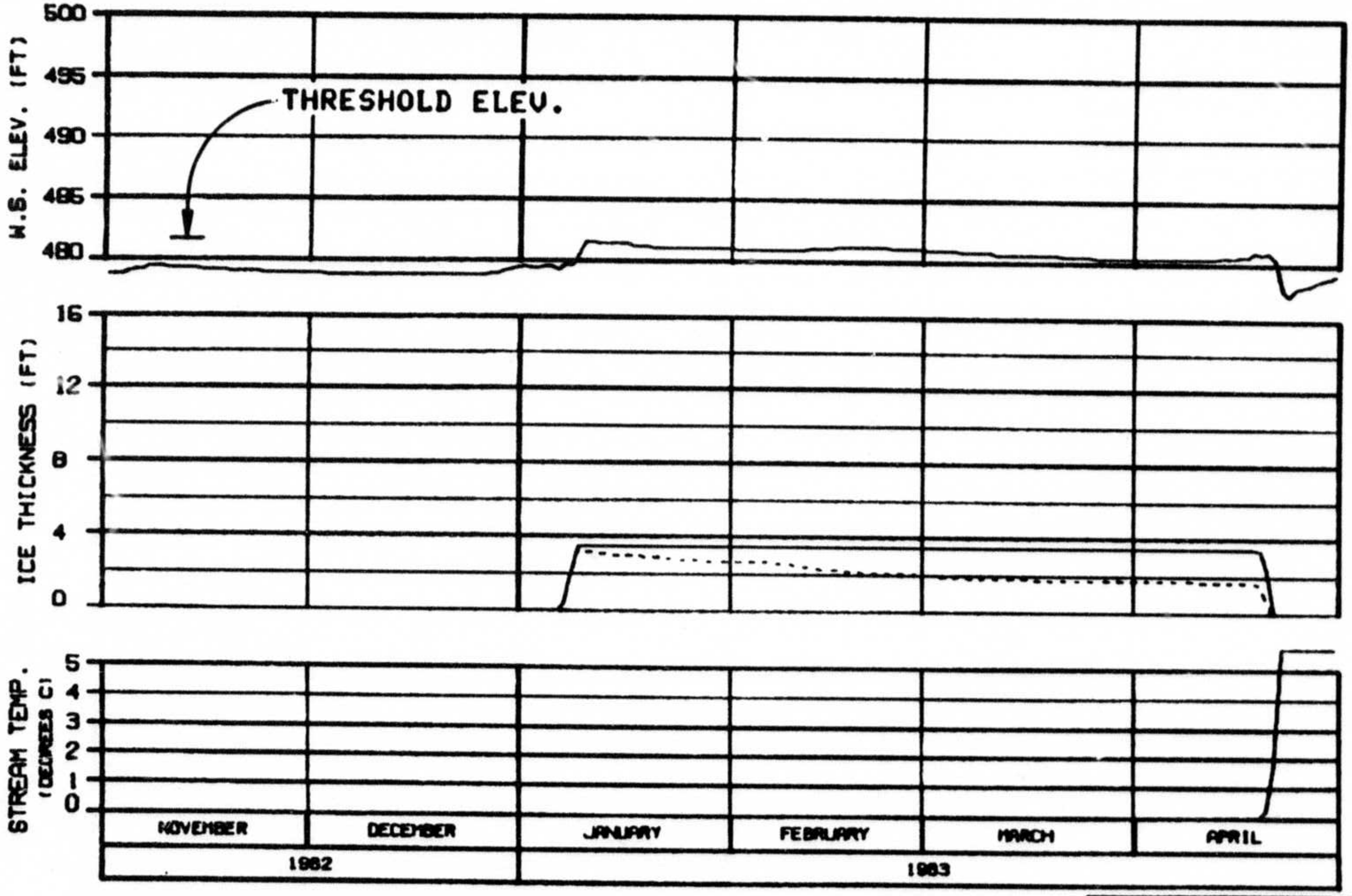


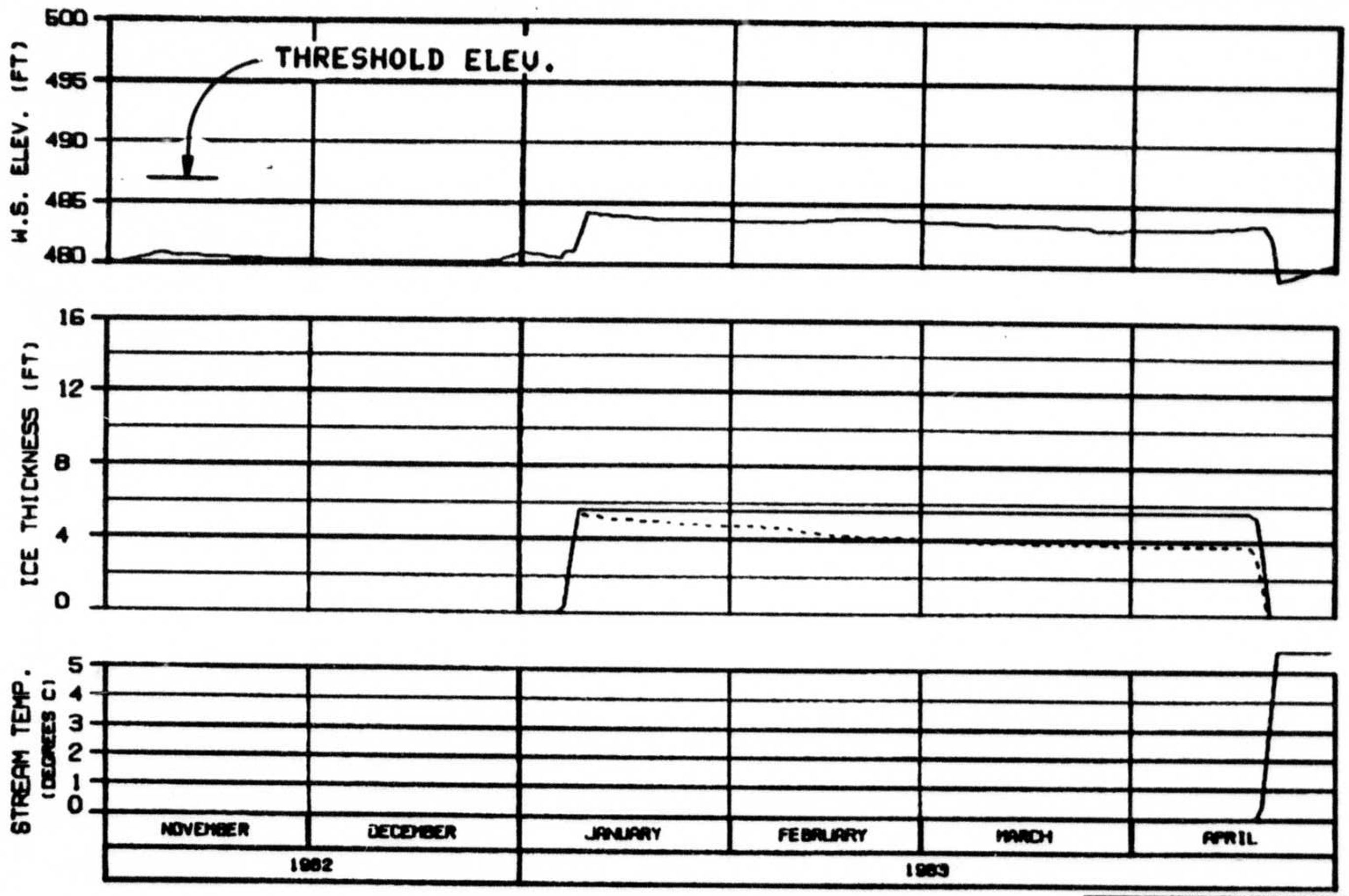
SIDE CHANNEL MSII

RIVER MILE : 115.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE



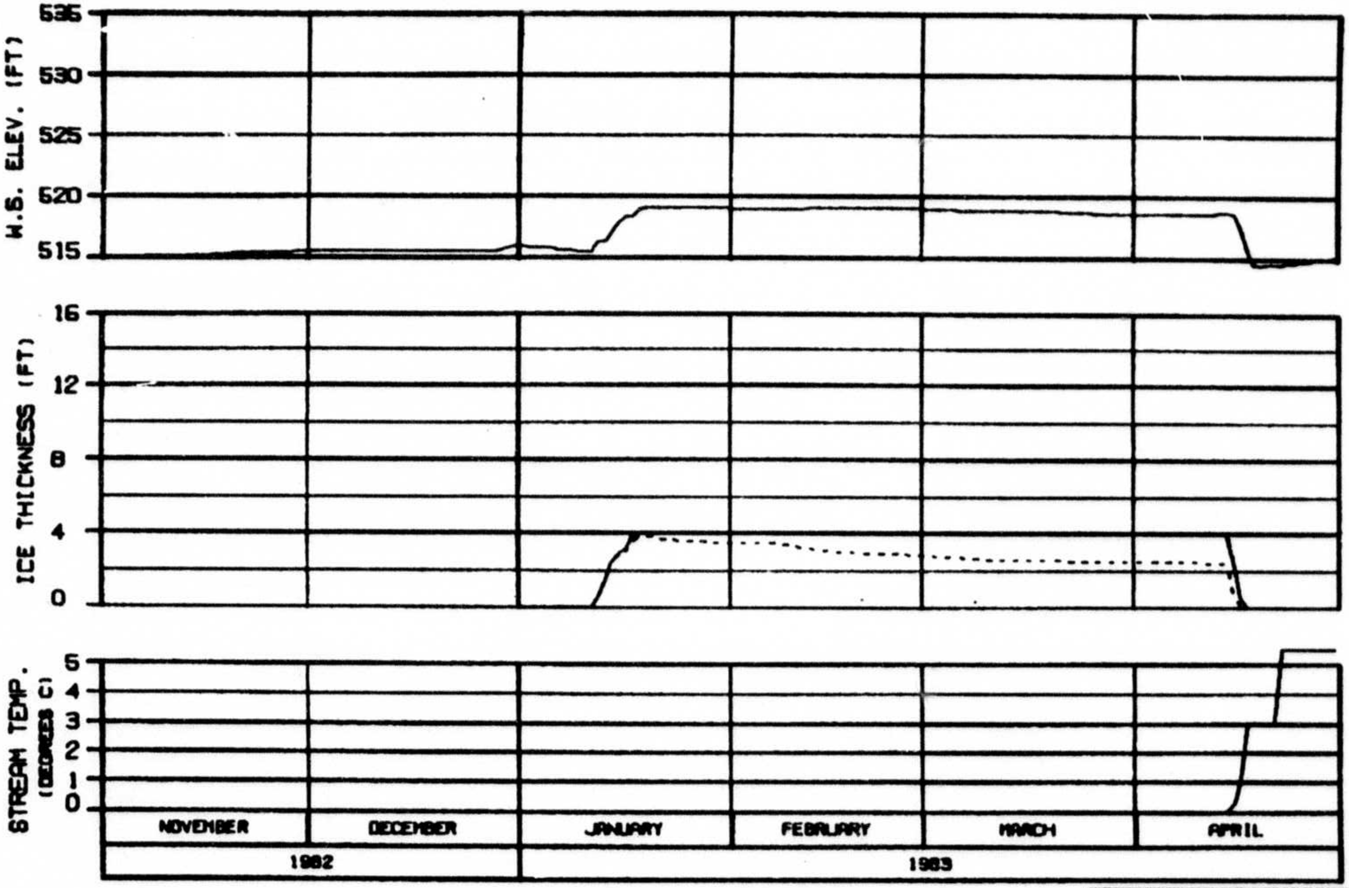
HEAD OF SIDE CHANNEL MSII

RIVER MILE : 115.90

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



RIVER MILE : 120.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

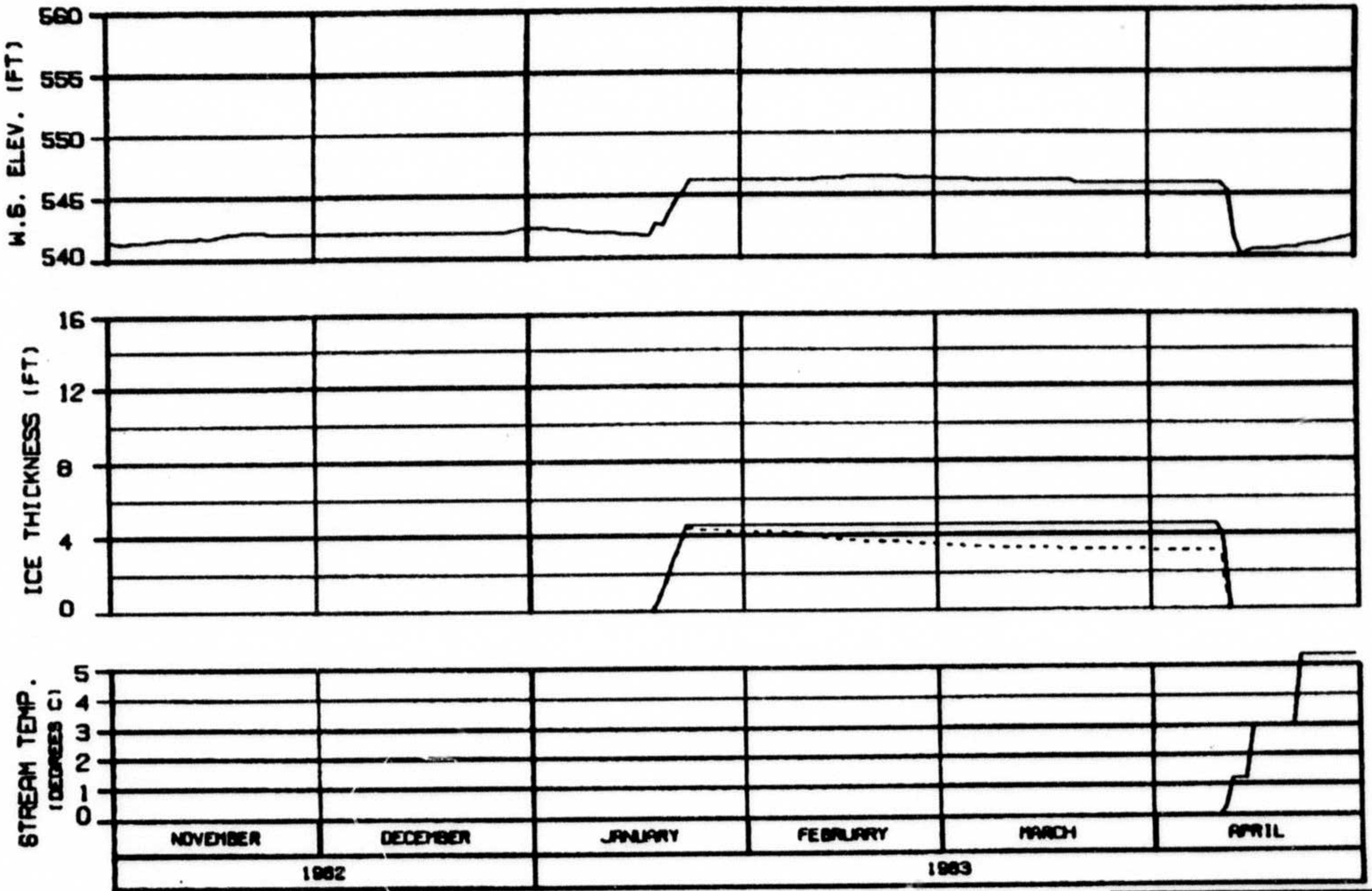
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:

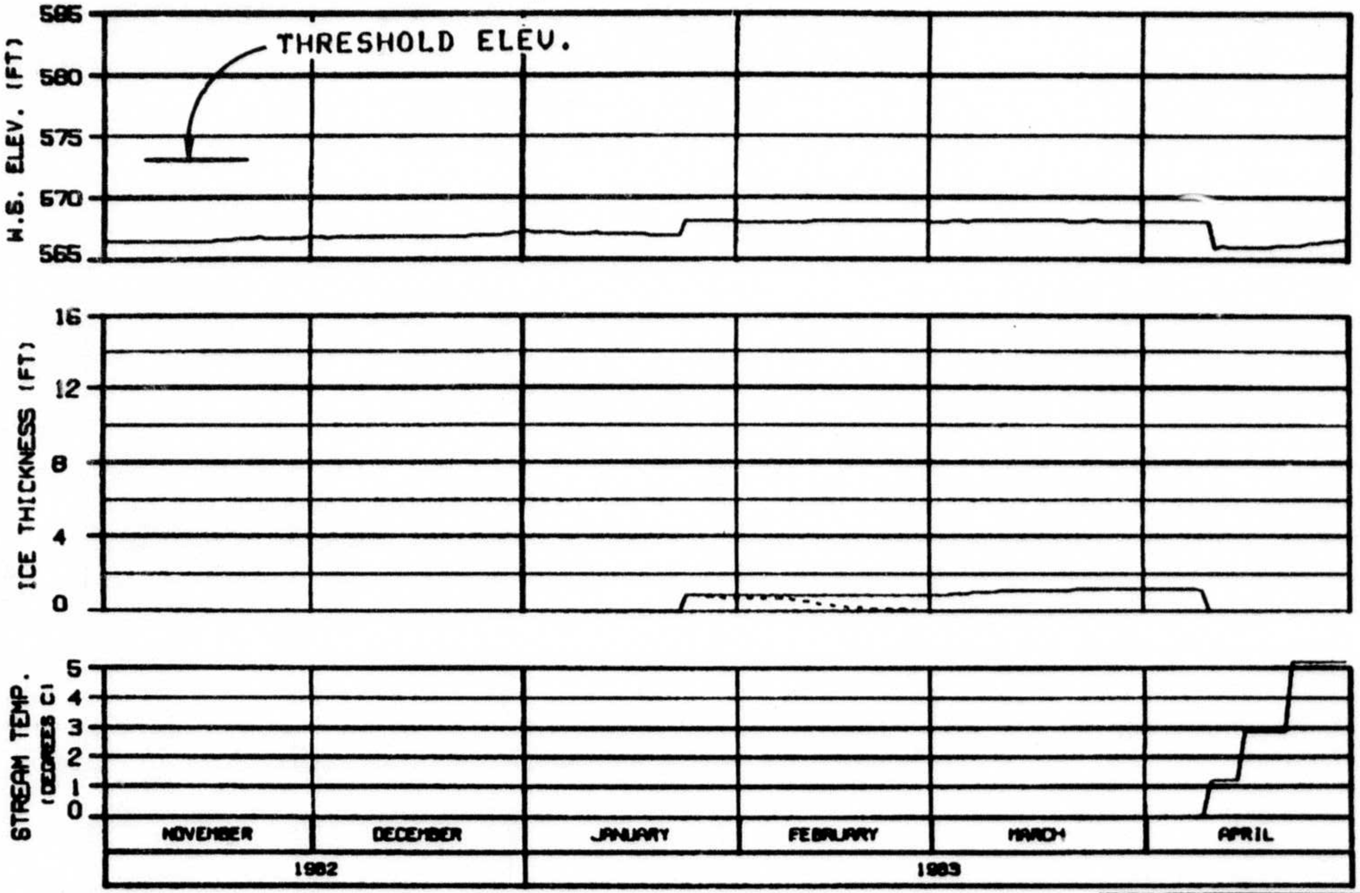
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

HEAD OF MOOSE SLOUGH

RIVER MILE : 123.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (WEST)

RIVER MILE : 126.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
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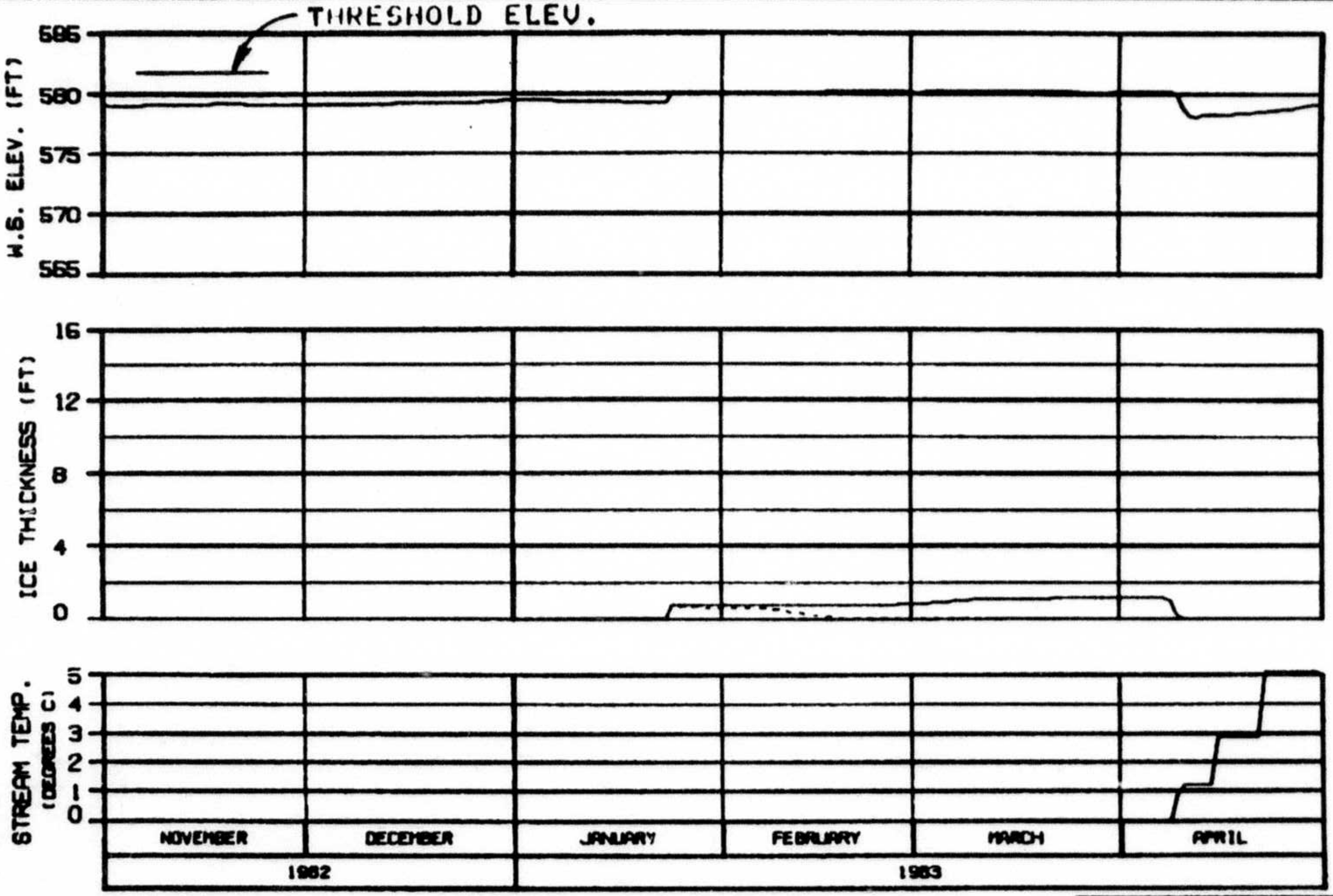


HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:

———— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

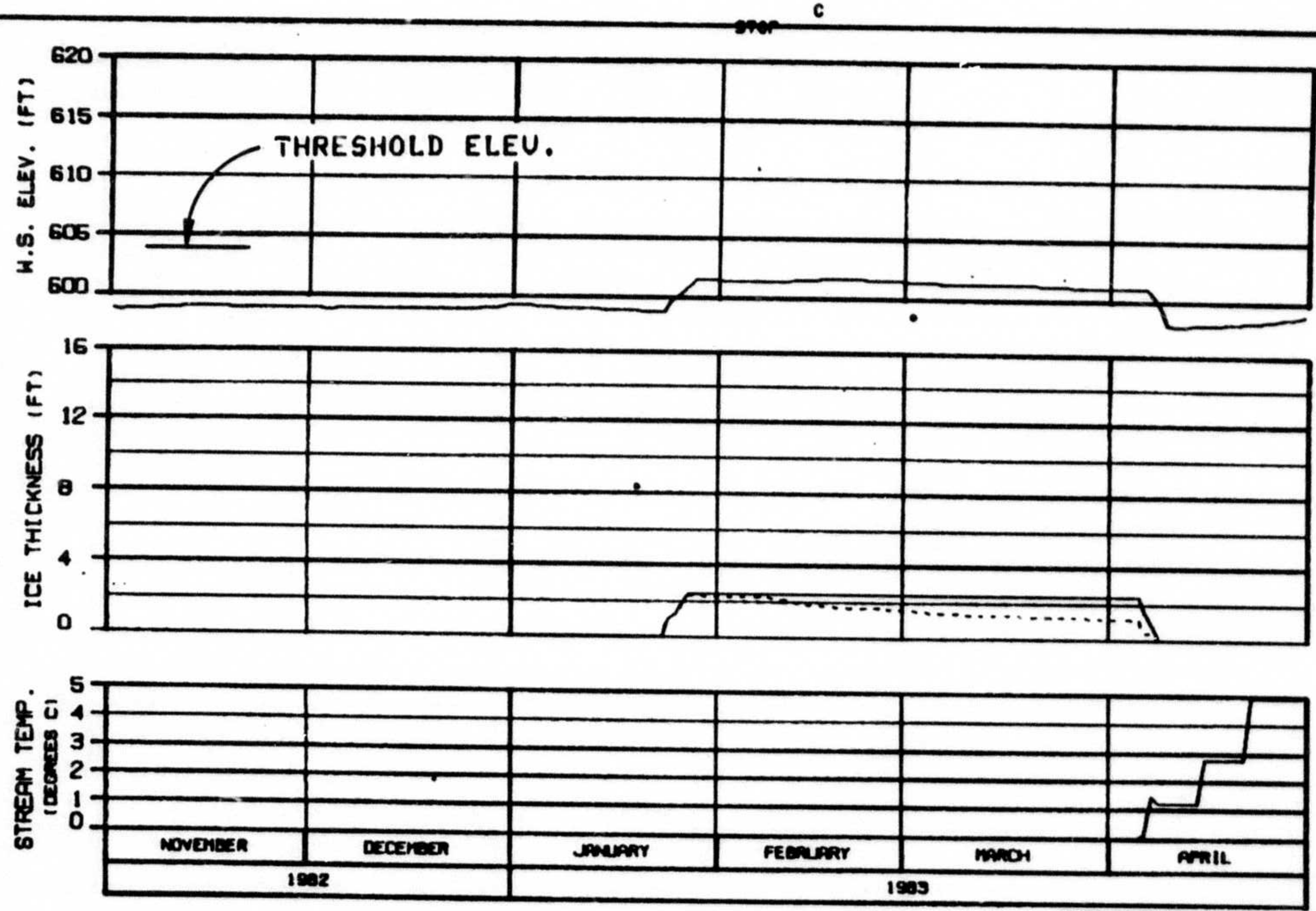
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

C



ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

HEAD OF SLOUGH 9

RIVER MILE : 129.30

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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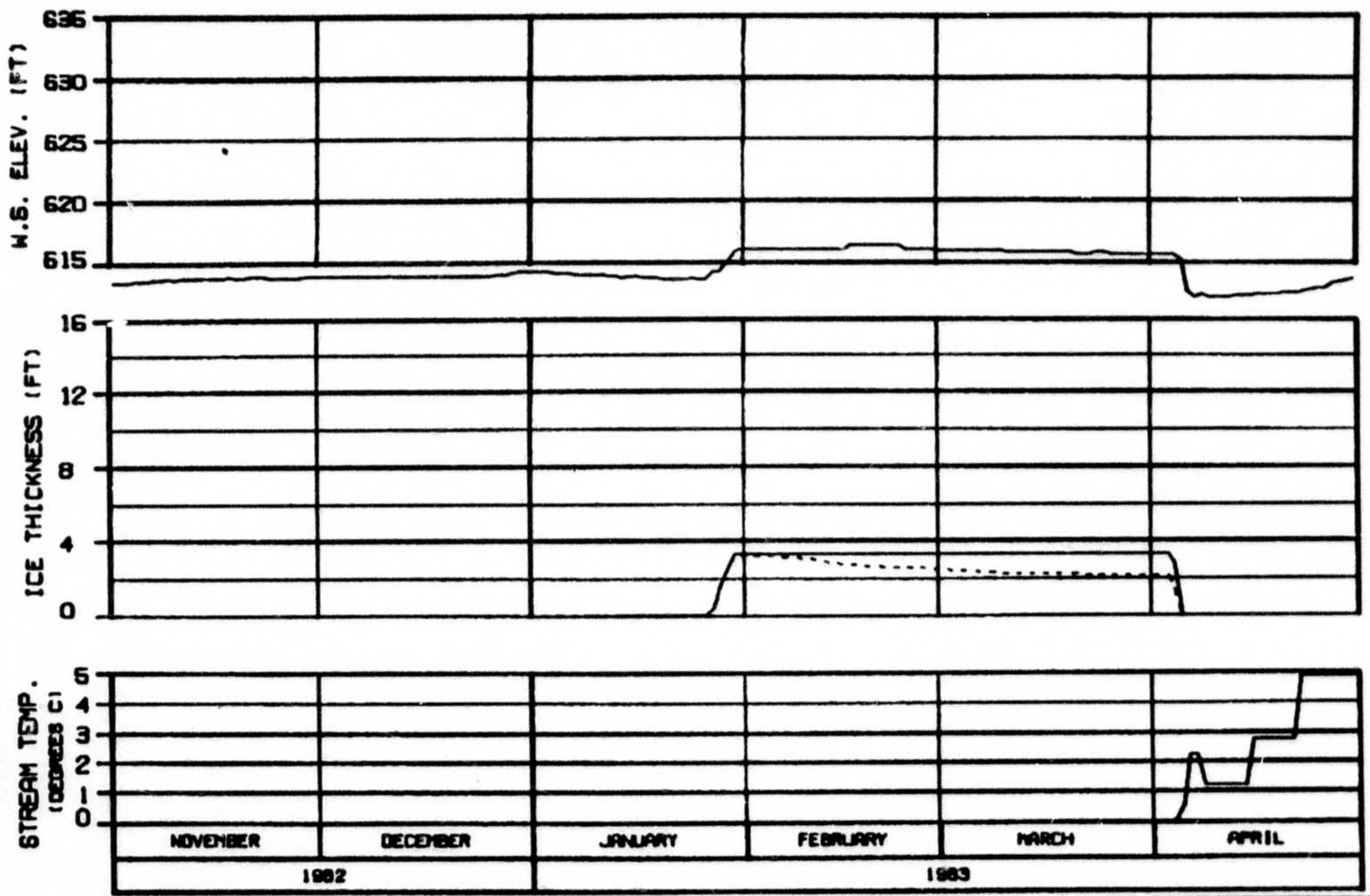
OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

RIVER MILE : 130.60

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:

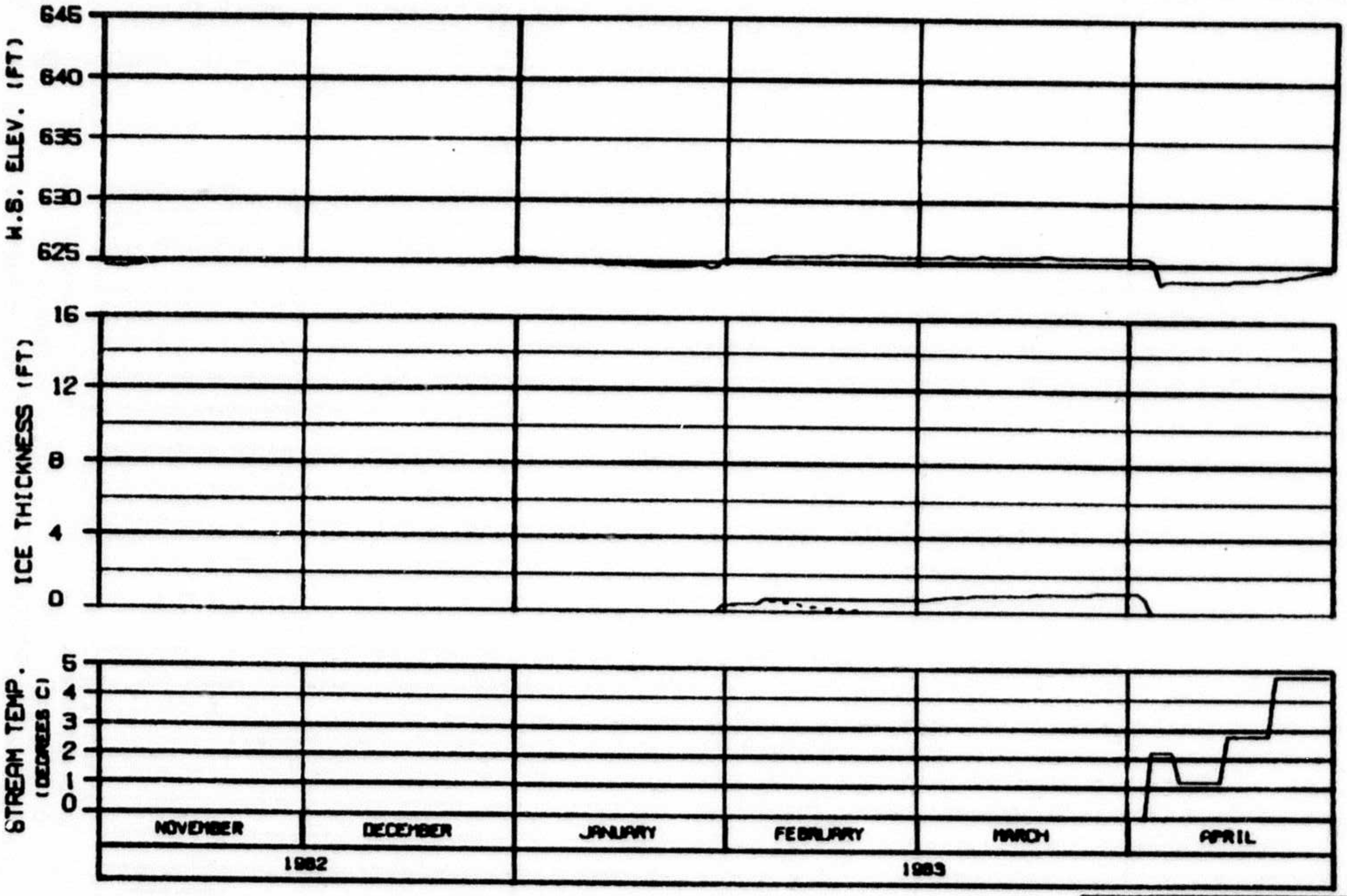
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

RIVER MILE : 131.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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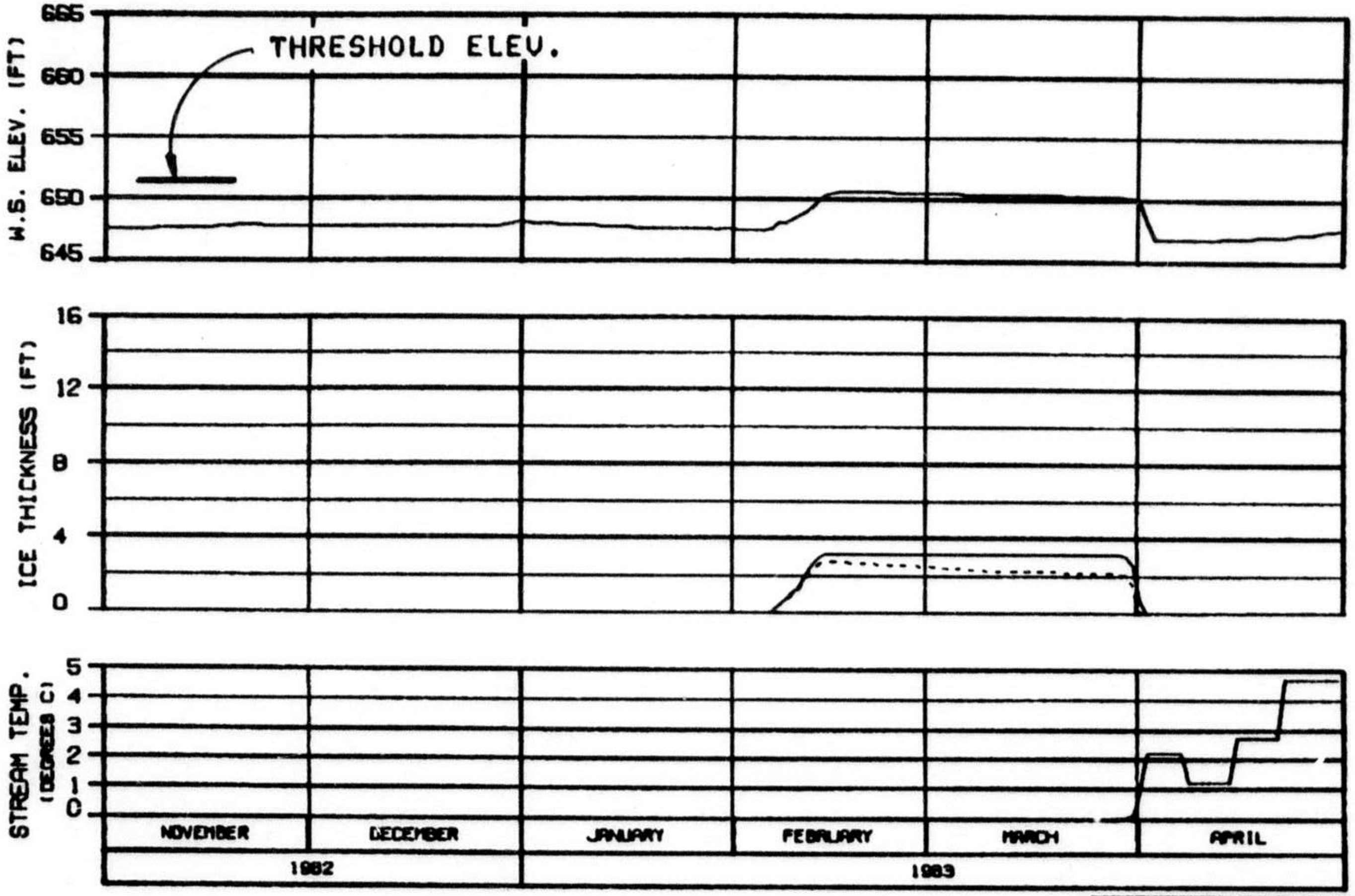


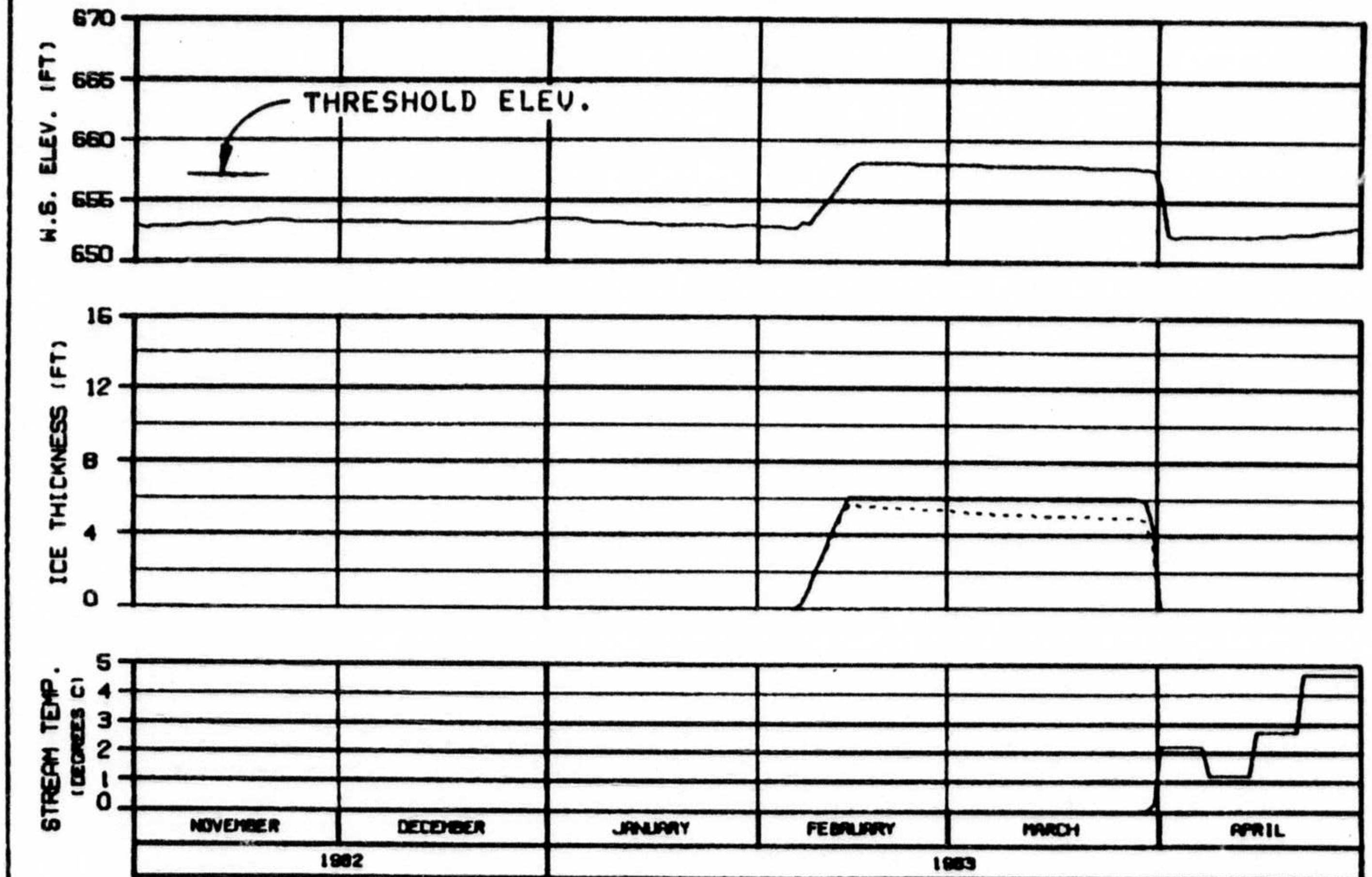
HEAD OF SLOUGH 9A

RIVER MILE : 133.70

ICE THICKNESS LEGEND:
- ——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

RIVER MILE : 134.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

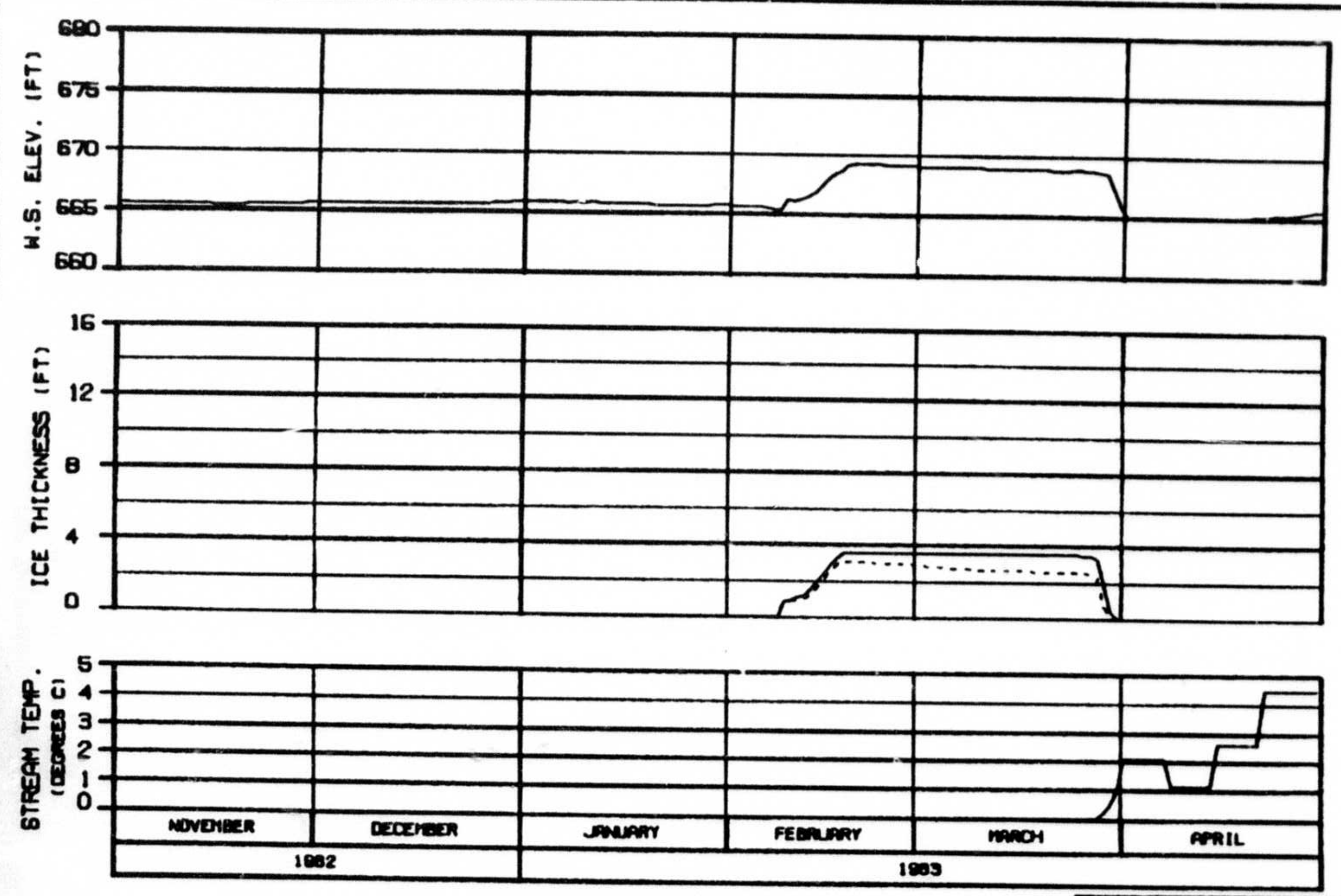
WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11

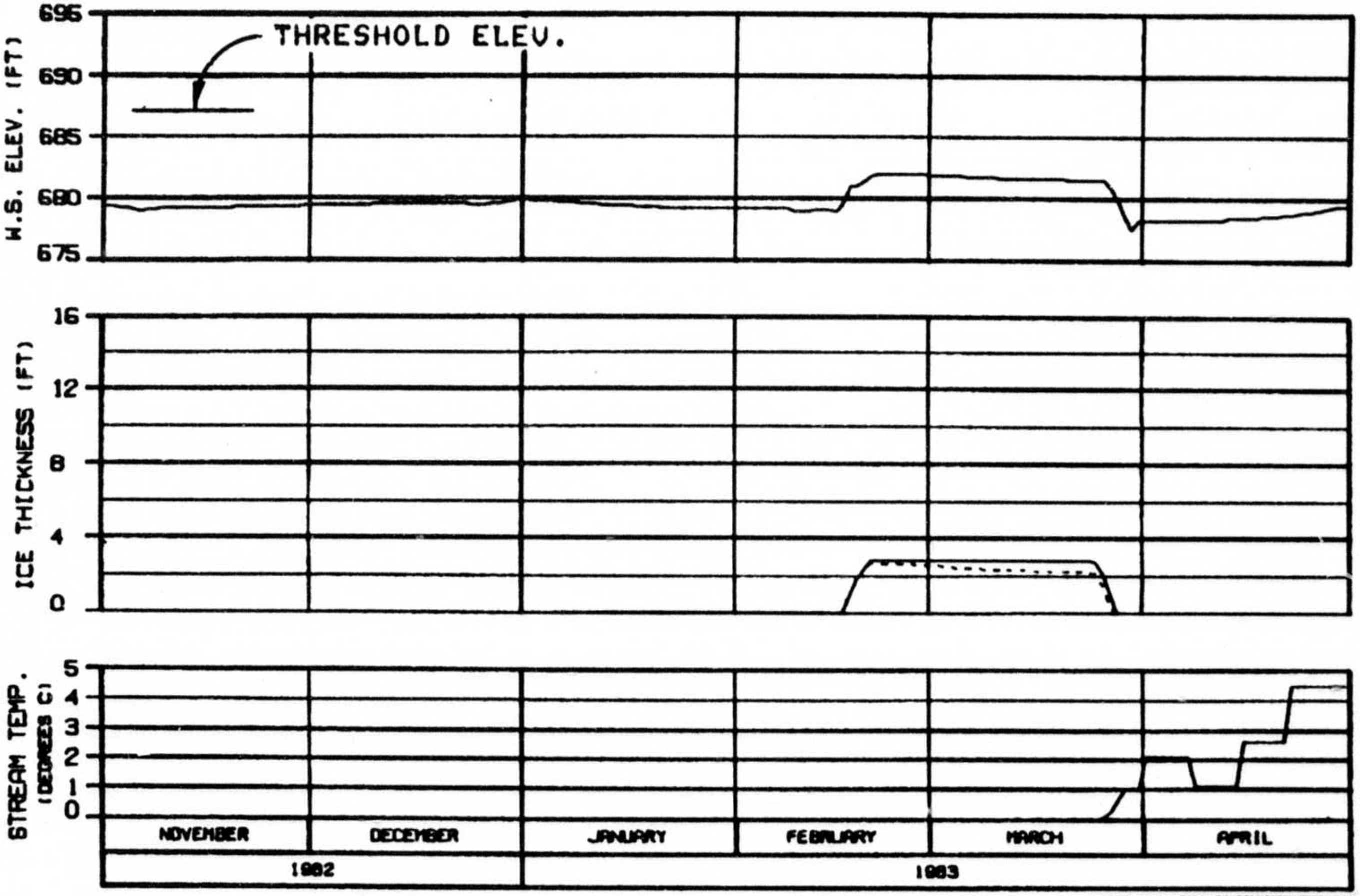
RIVER MILE : 135.30

ICE THICKNESS LEGEND:

—— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 11

RIVER MILE : 136.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:

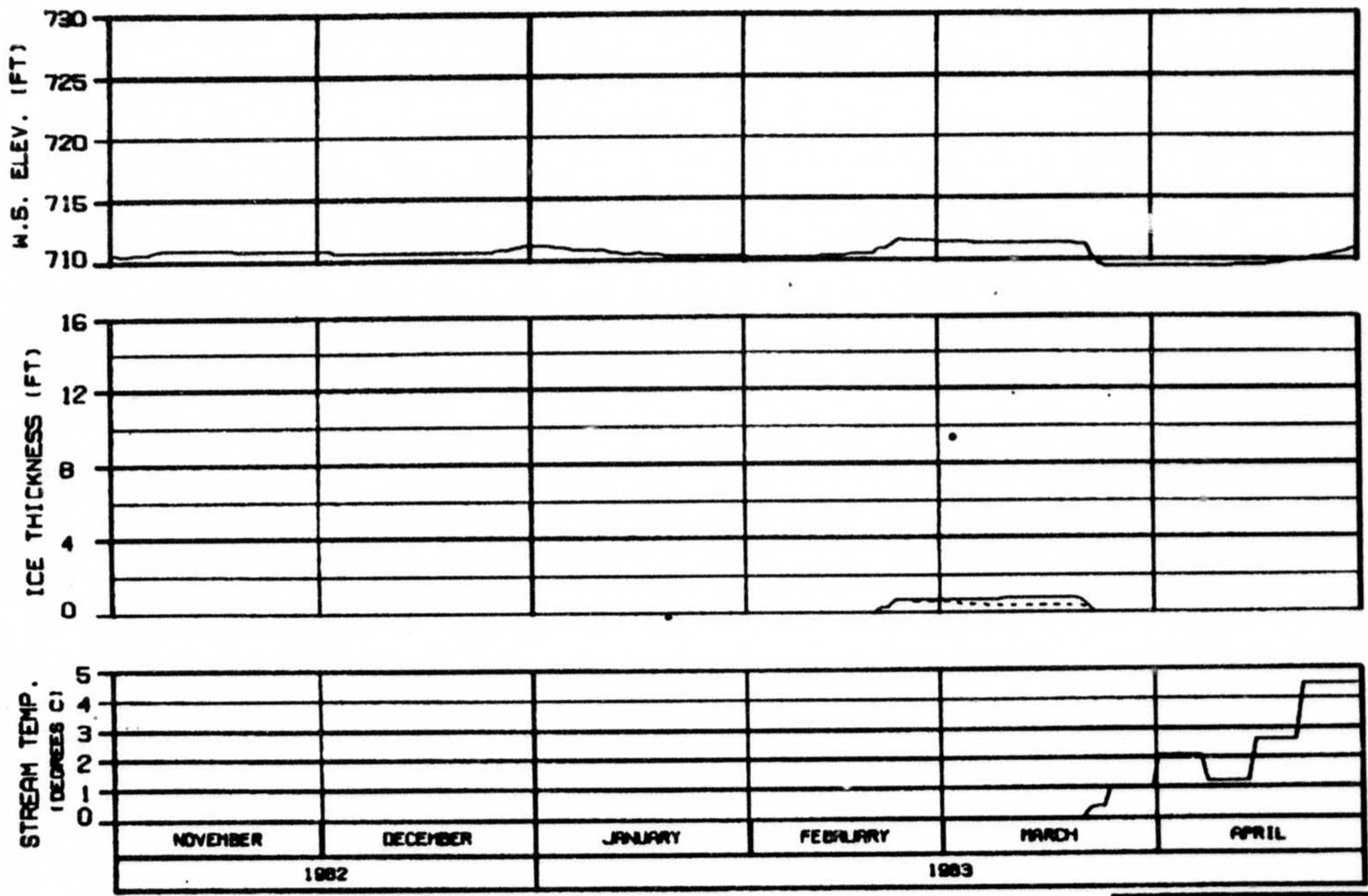
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



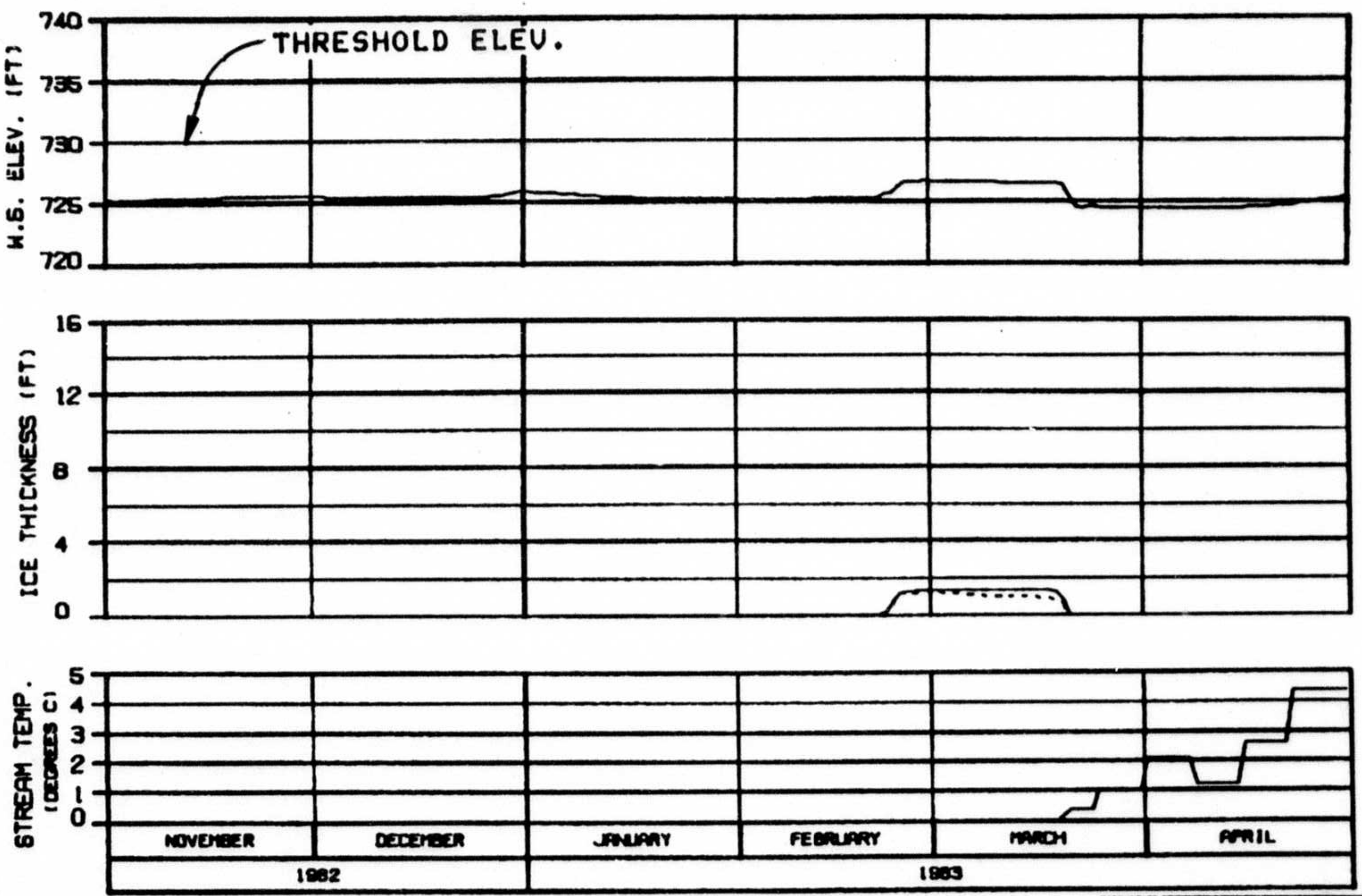
HEAD OF SLOUGH 17

RIVER MILE : 139.30

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
[illegible]	[illegible]	[illegible]



HEAD OF SLOUGH 20

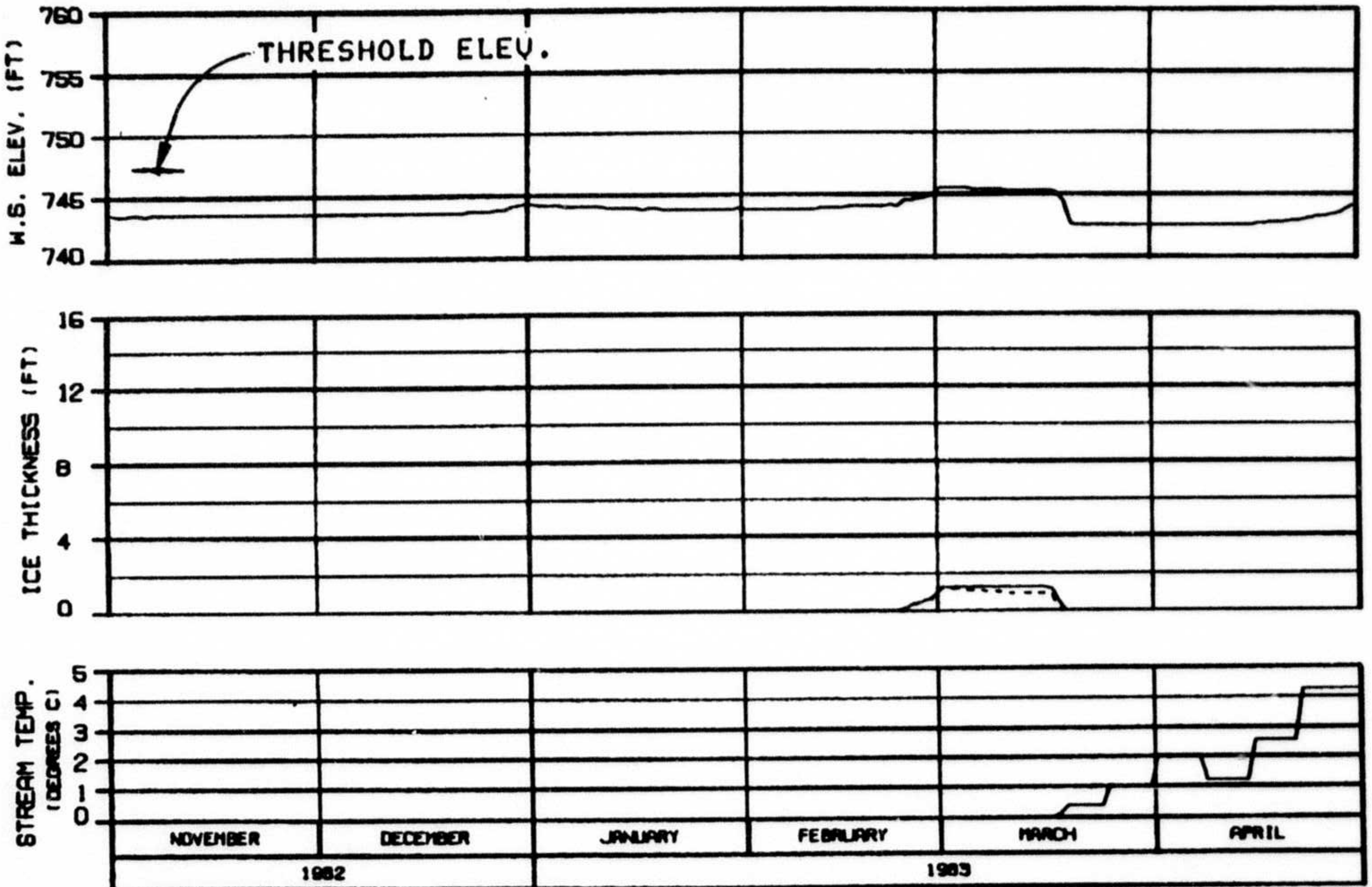
RIVER MILE : 140.50

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:

———— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
[illegible]	[illegible]



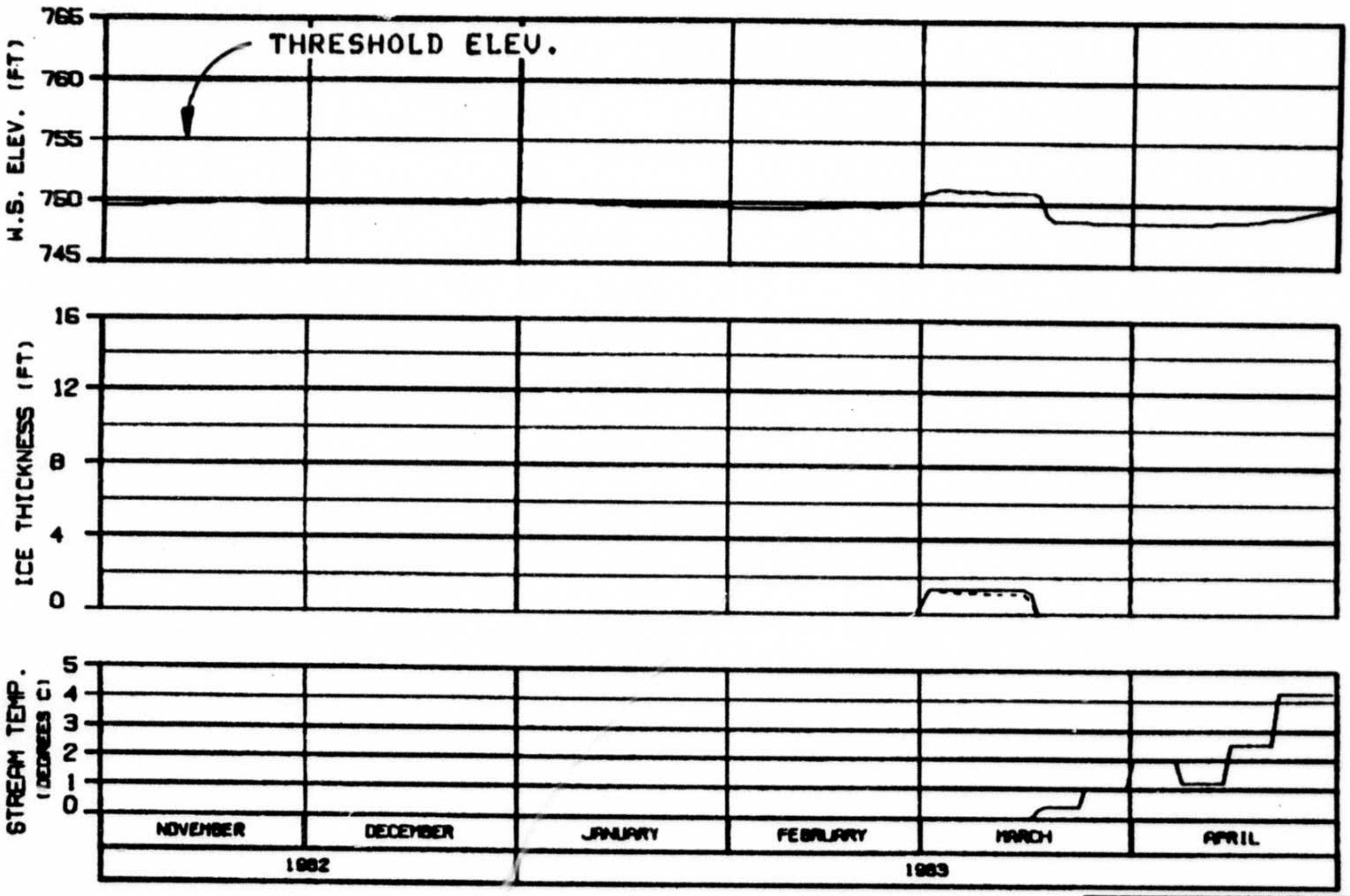
SLOUGH 21 (ENTRANCE A6)

RIVER MILE : 141.80

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
142



HEAD OF SLOUGH 21

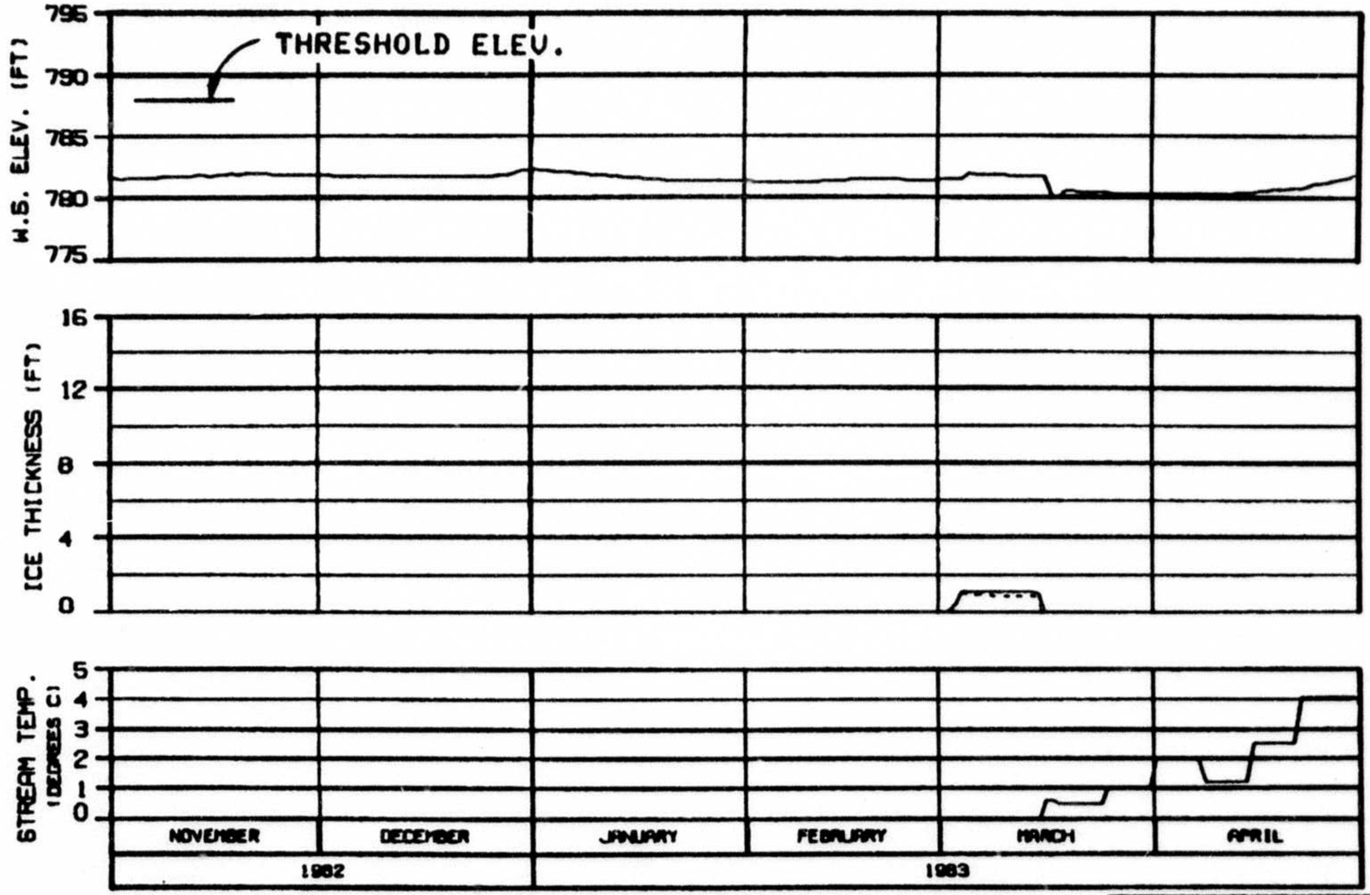
RIVER MILE : 142.20

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE

C



HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:
—— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 82 - 30 APR 83
ENERGY DEMAND : WATANA 1ST YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 82F1C-A

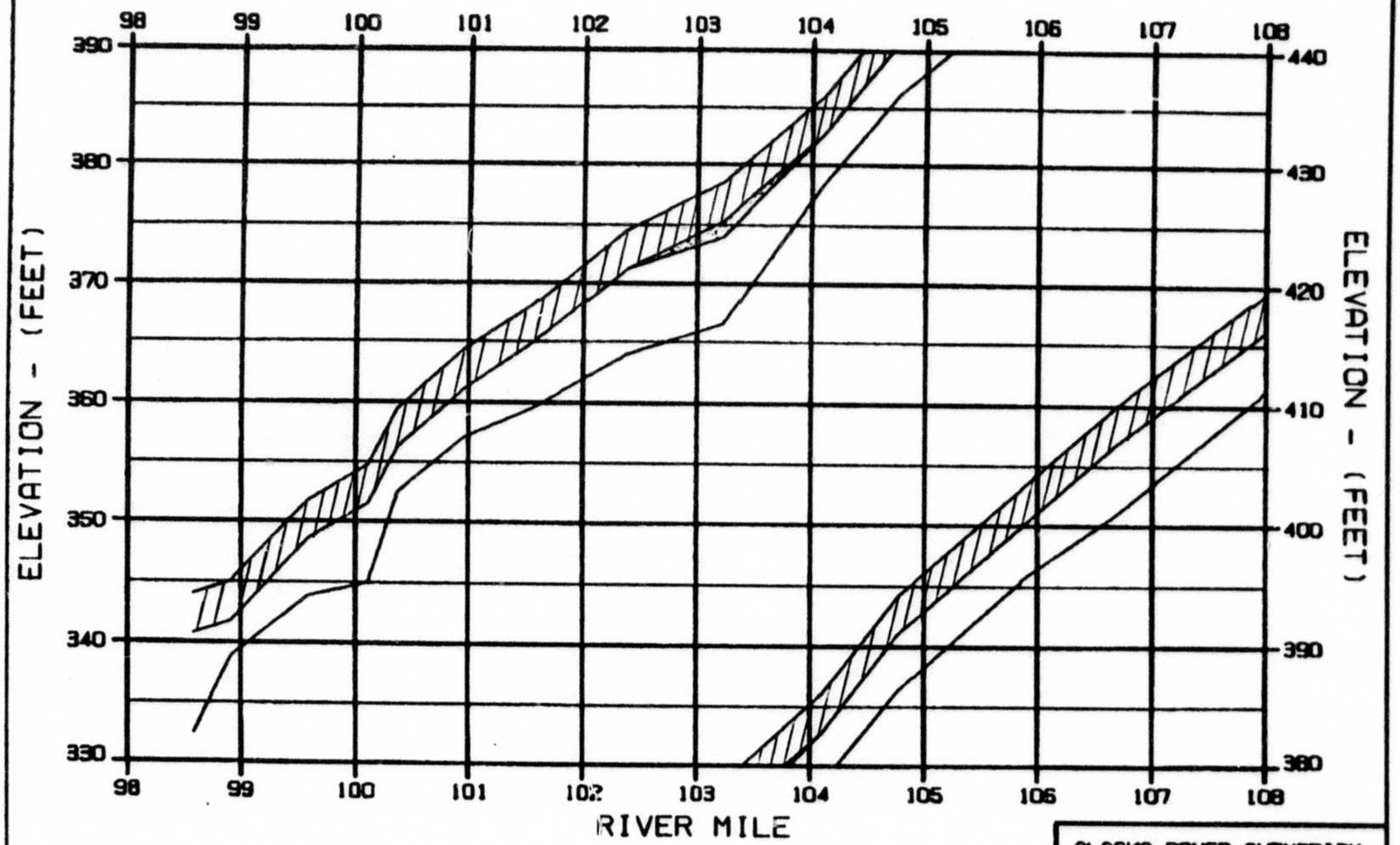
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE

OPTION?

EXHIBIT S

The following study, entitled "Watana-Second Year Filling" corresponds to the winter of 1992-93, as depicted in Exhibit E.2.138 of the License Application. The weather used corresponds to the winter of 1981-82, which is a cold winter. Releases from Watana under these conditions would be made thru the mid-level outlet.

C



LEGEND:

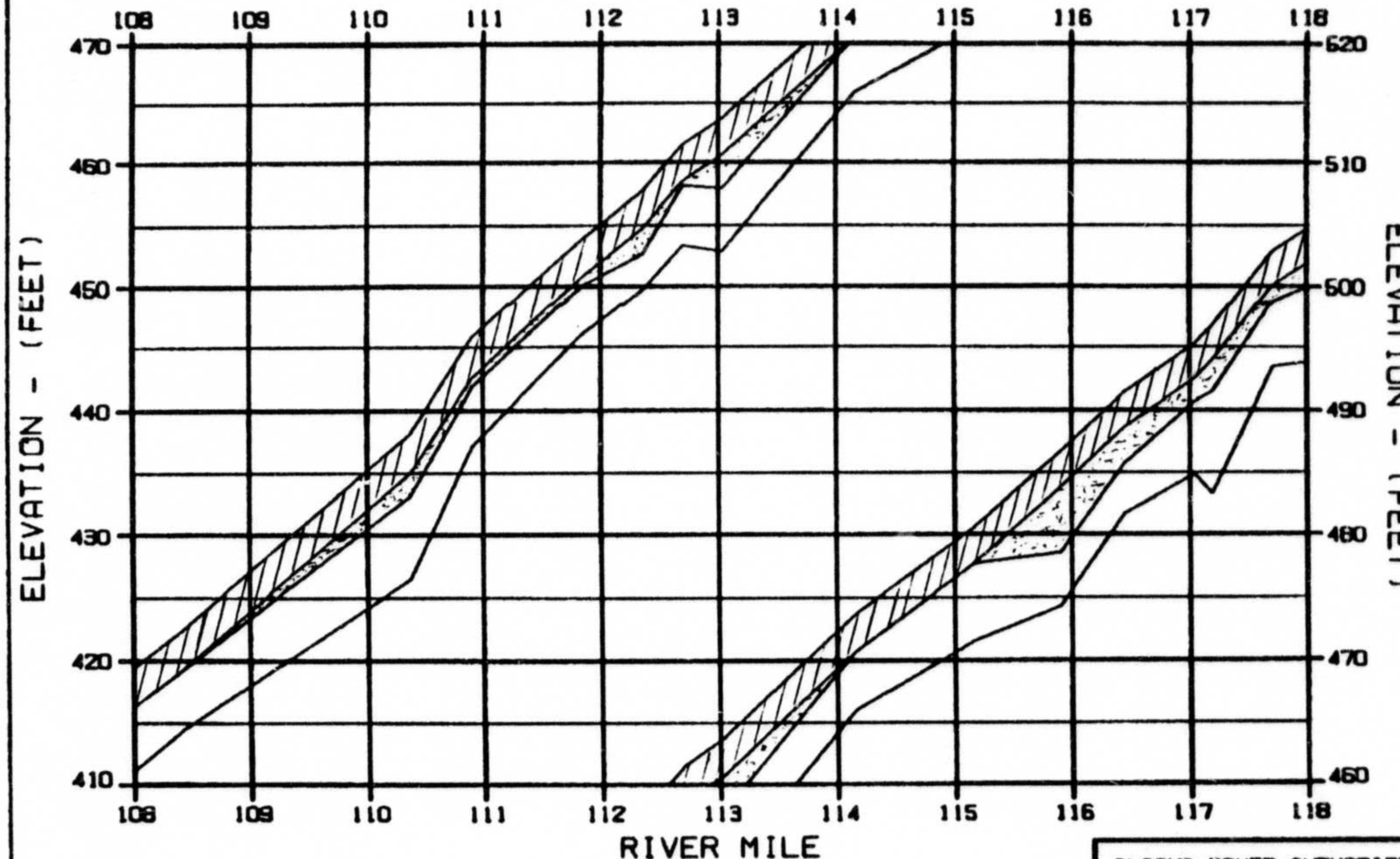
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

c



LEGEND:

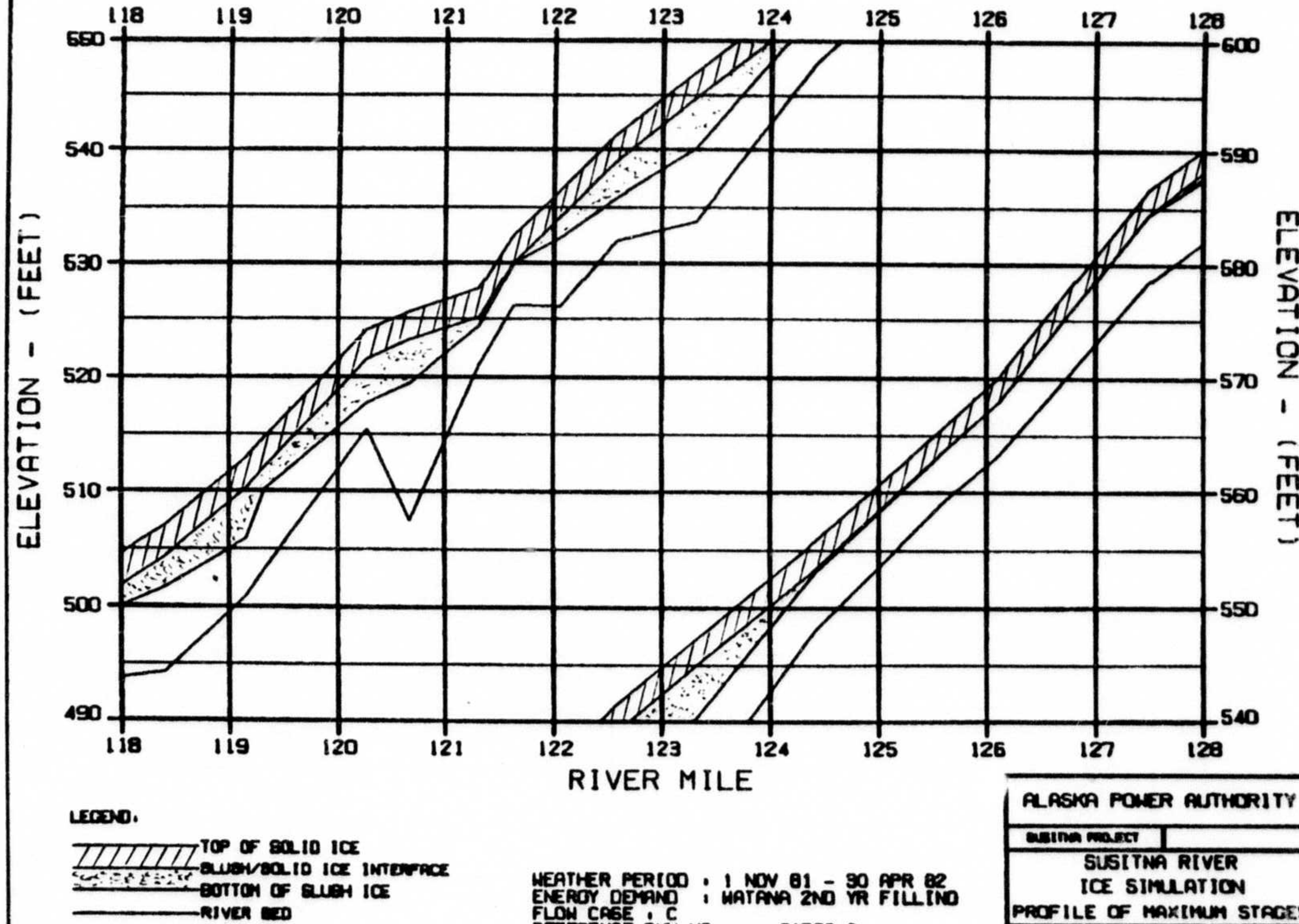
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?

c



WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

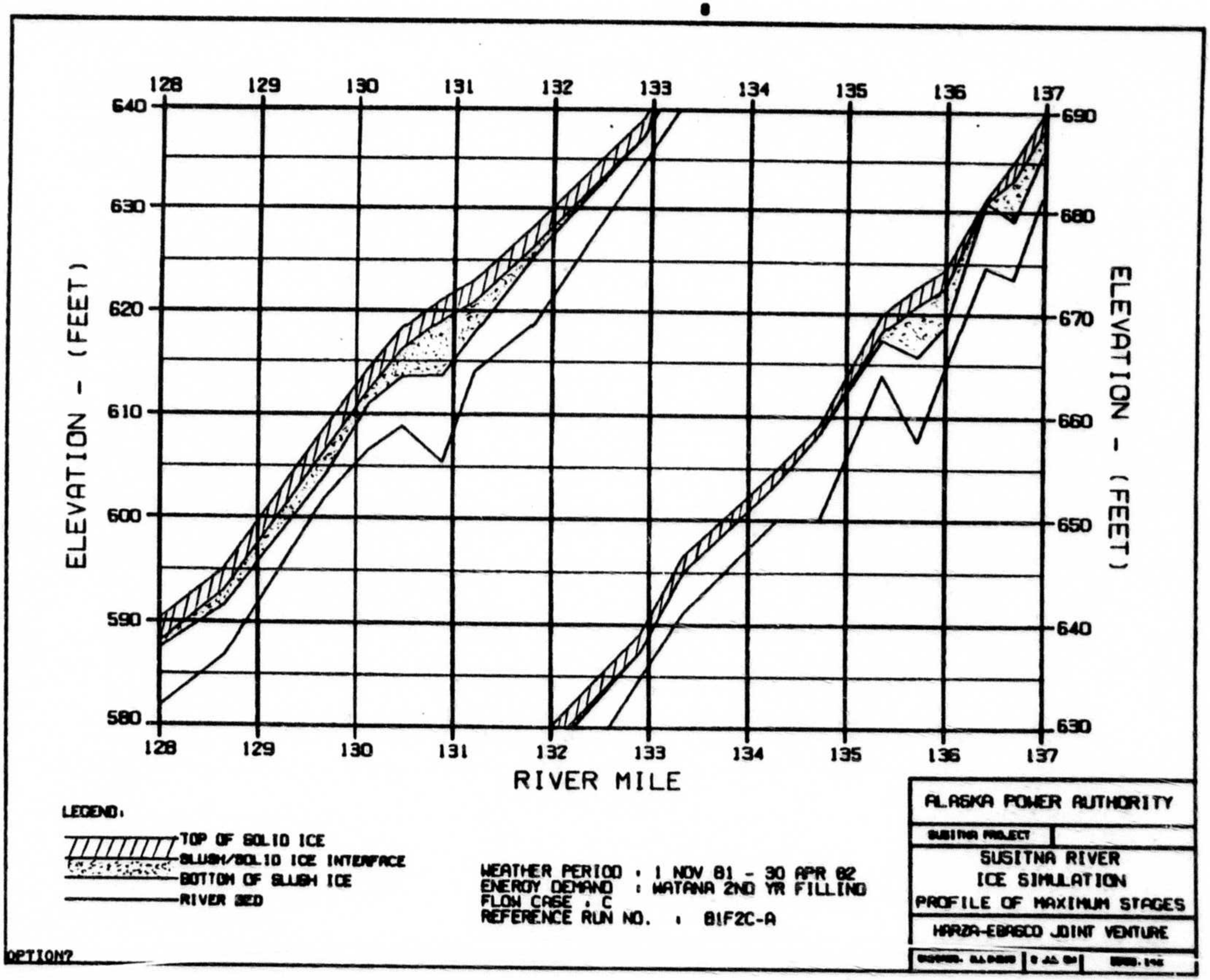
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?



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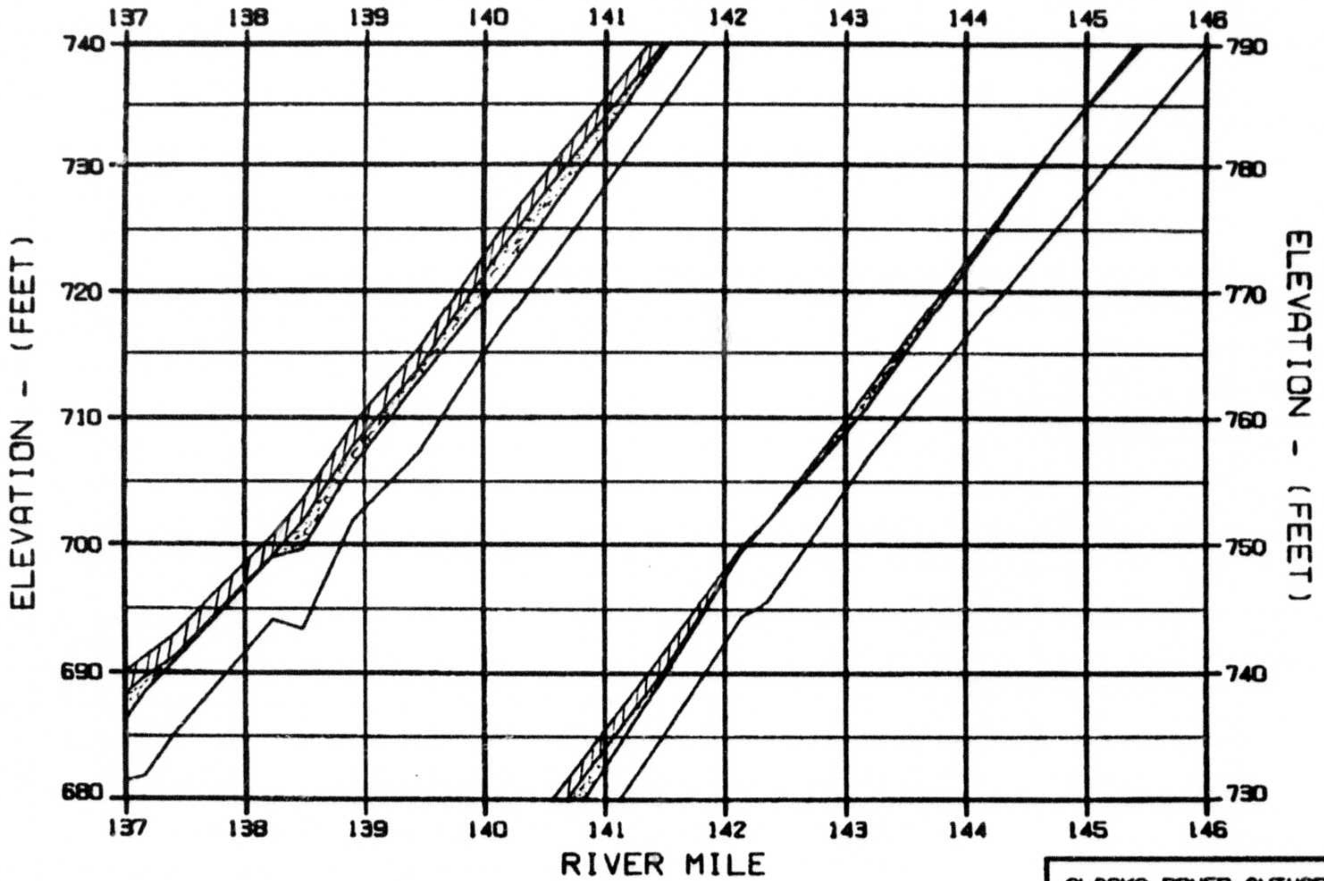
630
ELEVATION - (FEET)
ELEVATION - (FEET)
RIVER MILE
LEGEND:
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A
ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE
OPTION?

C



LEGEND:

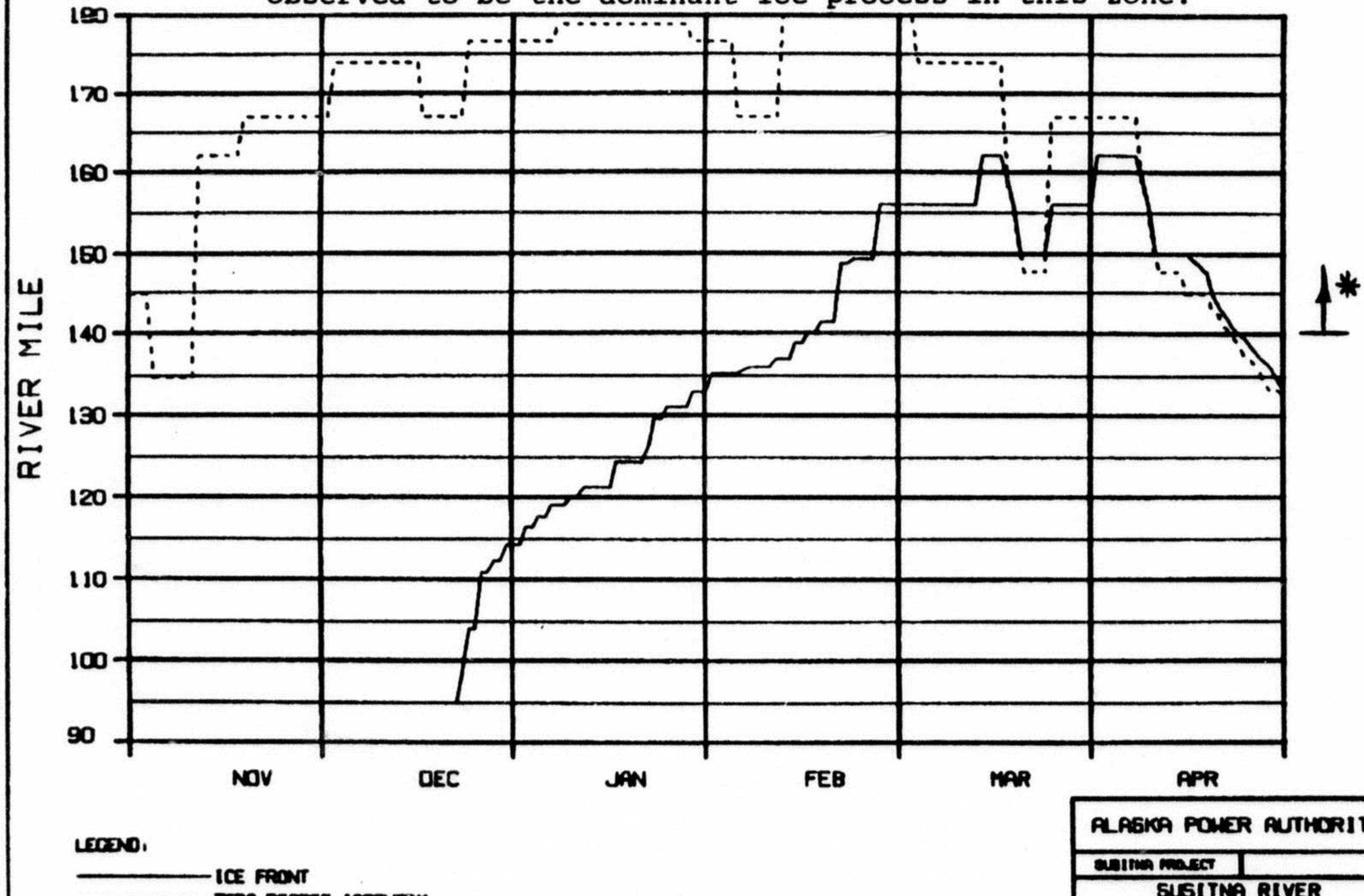
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES	
HARZA-EBASCO JOINT VENTURE	

OPTION?

* Note: Simulation of progression u/s of River Mile 140 ± is considered approximate since intermittent bridging of border ice has been observed to be the dominant ice process in this zone.



WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

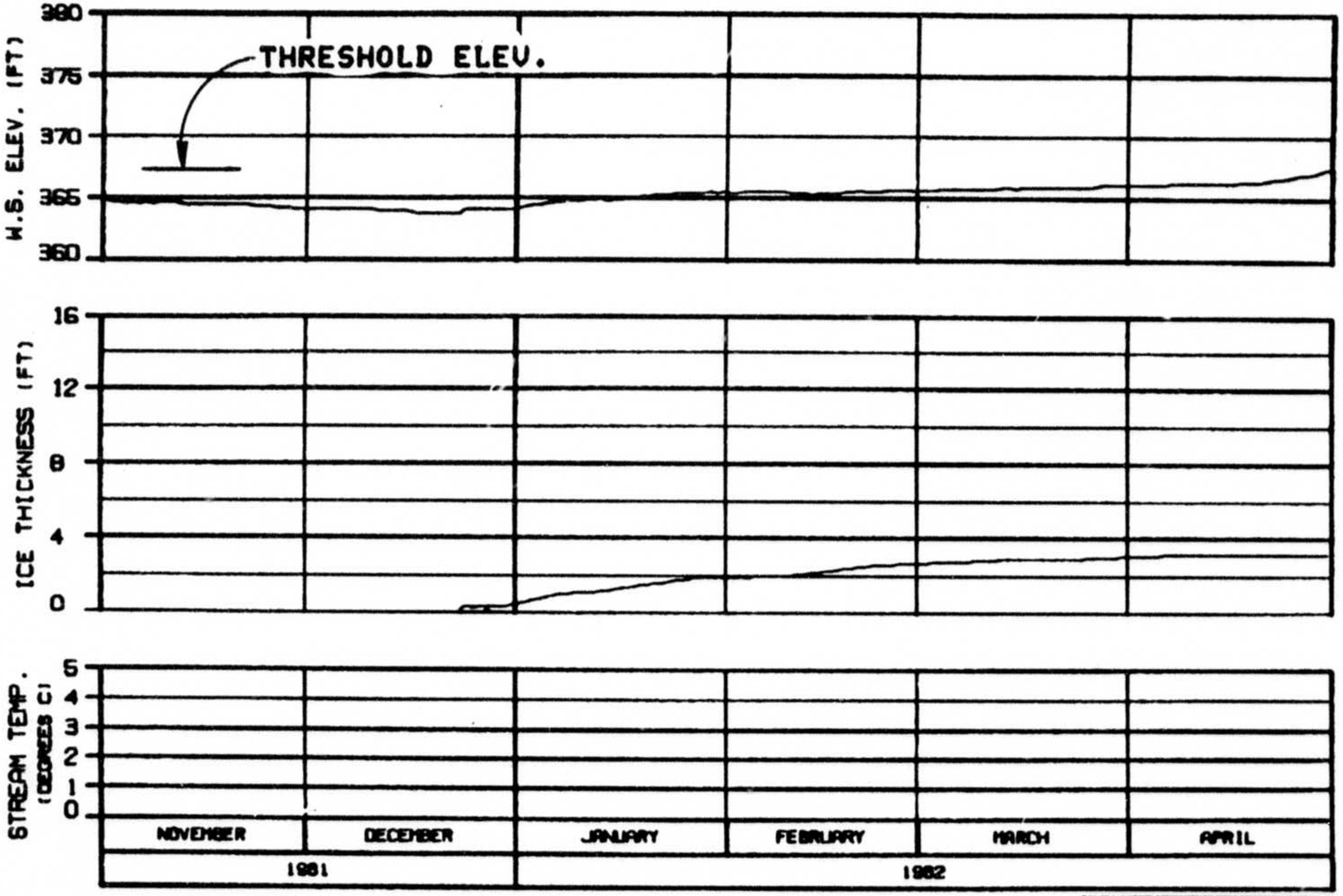
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
PROGRESSION OF ICE FRONT
& ZERO DEGREE ISOTHERM

HARZA-EBASCO JOINT VENTURE

OPTION?



HEAD OF WHISKERS SLOUGH

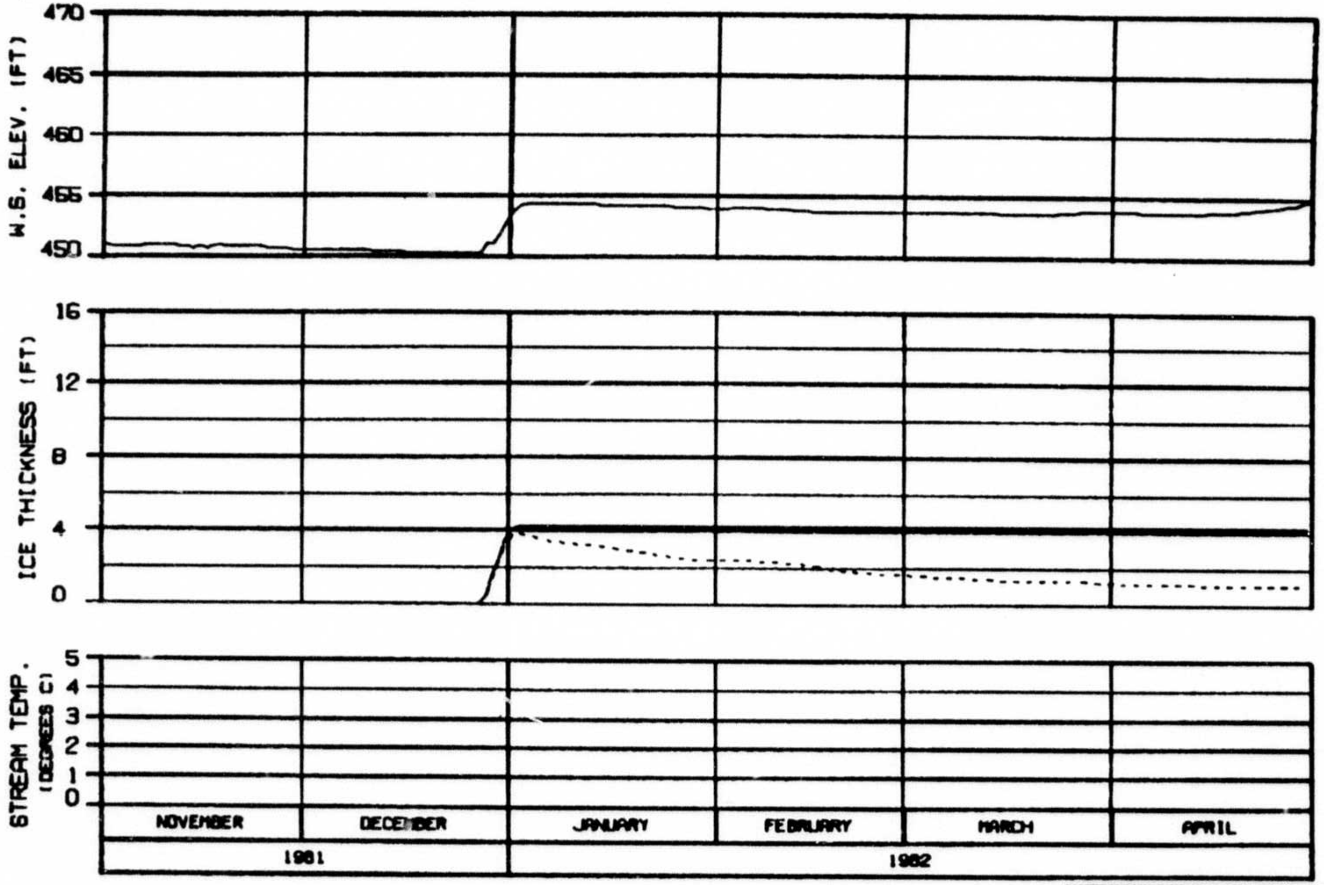
RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
CHICAGO, ILLINOIS	[illegible] [illegible]



SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

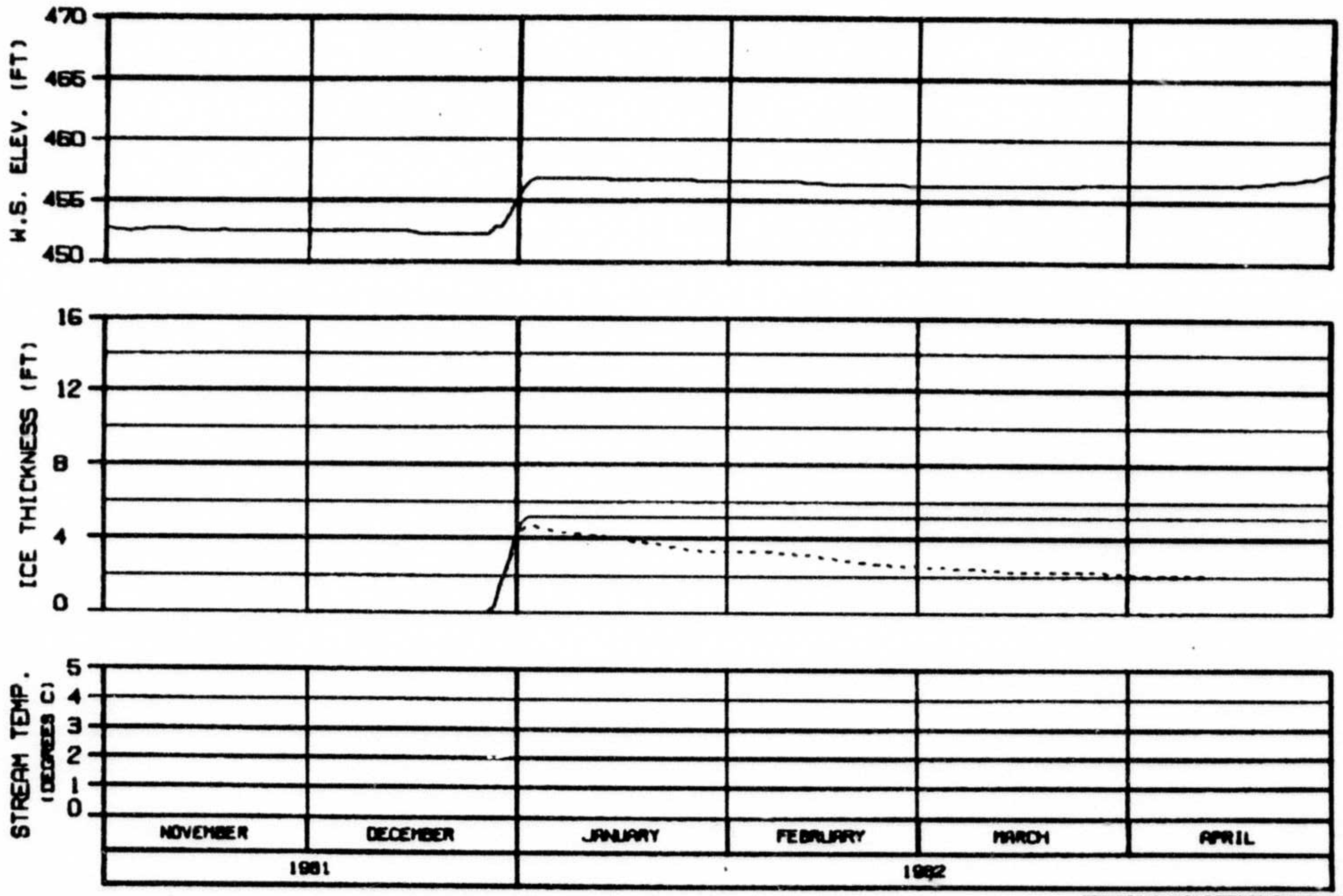
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

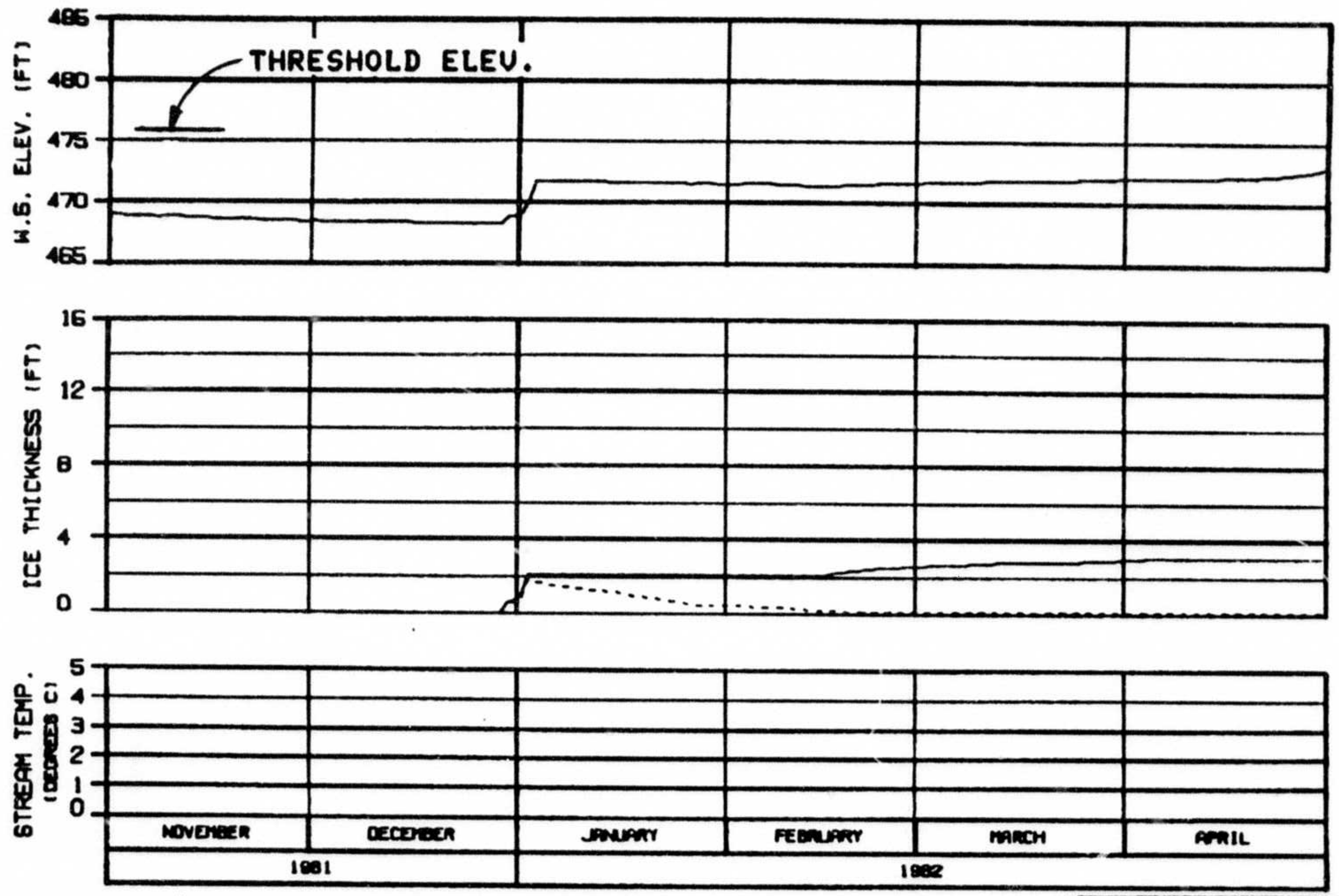
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8

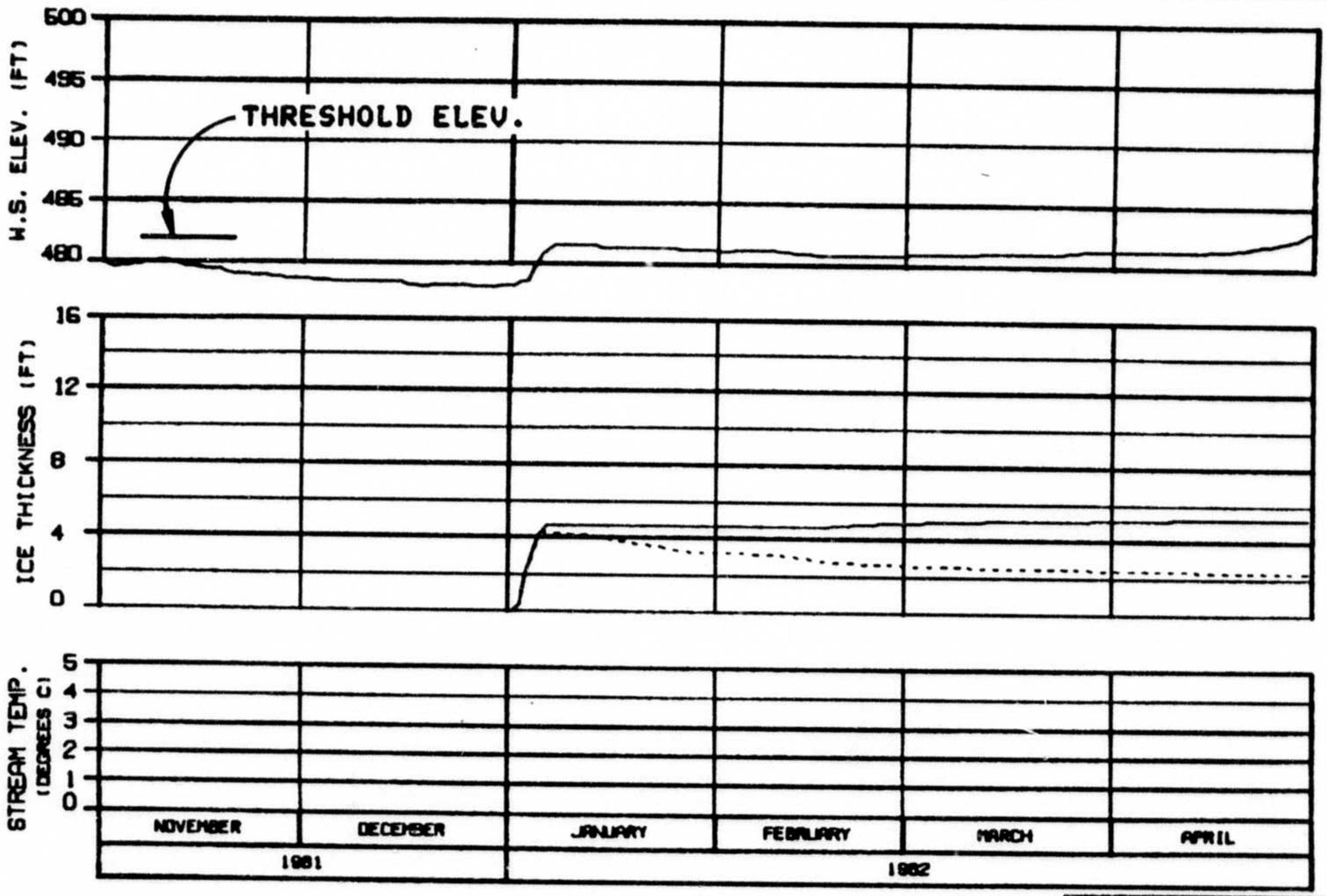
RIVER MILE : 114.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
CHICAGO, ILLINOIS	8 JUL 84	1000.142



ICE THICKNESS LEGEND:

—— TOTAL THICKNESS

- - - - - SLUSH COMPONENT

SIDE CHANNEL MSII

RIVER MILE : 115.50

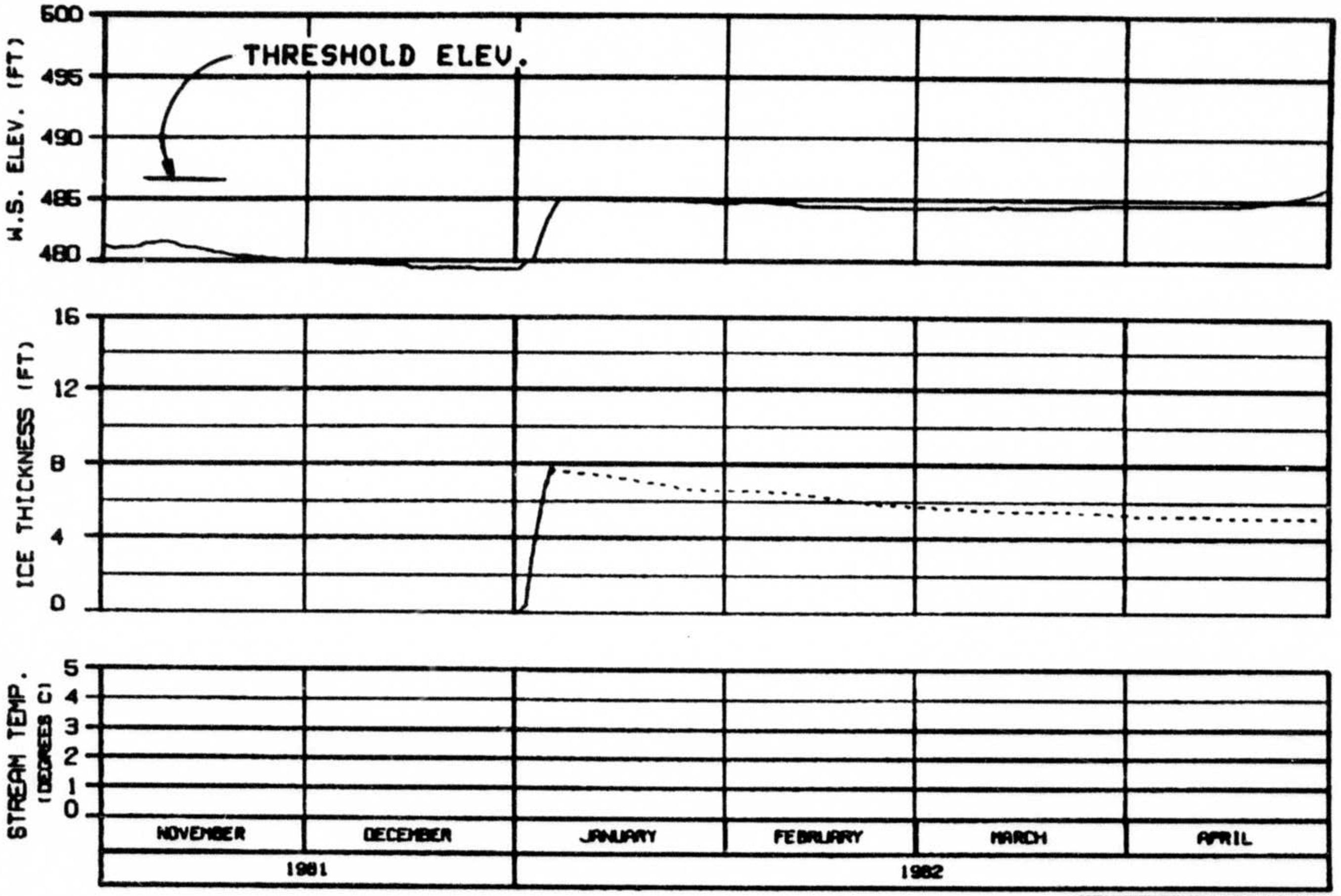
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



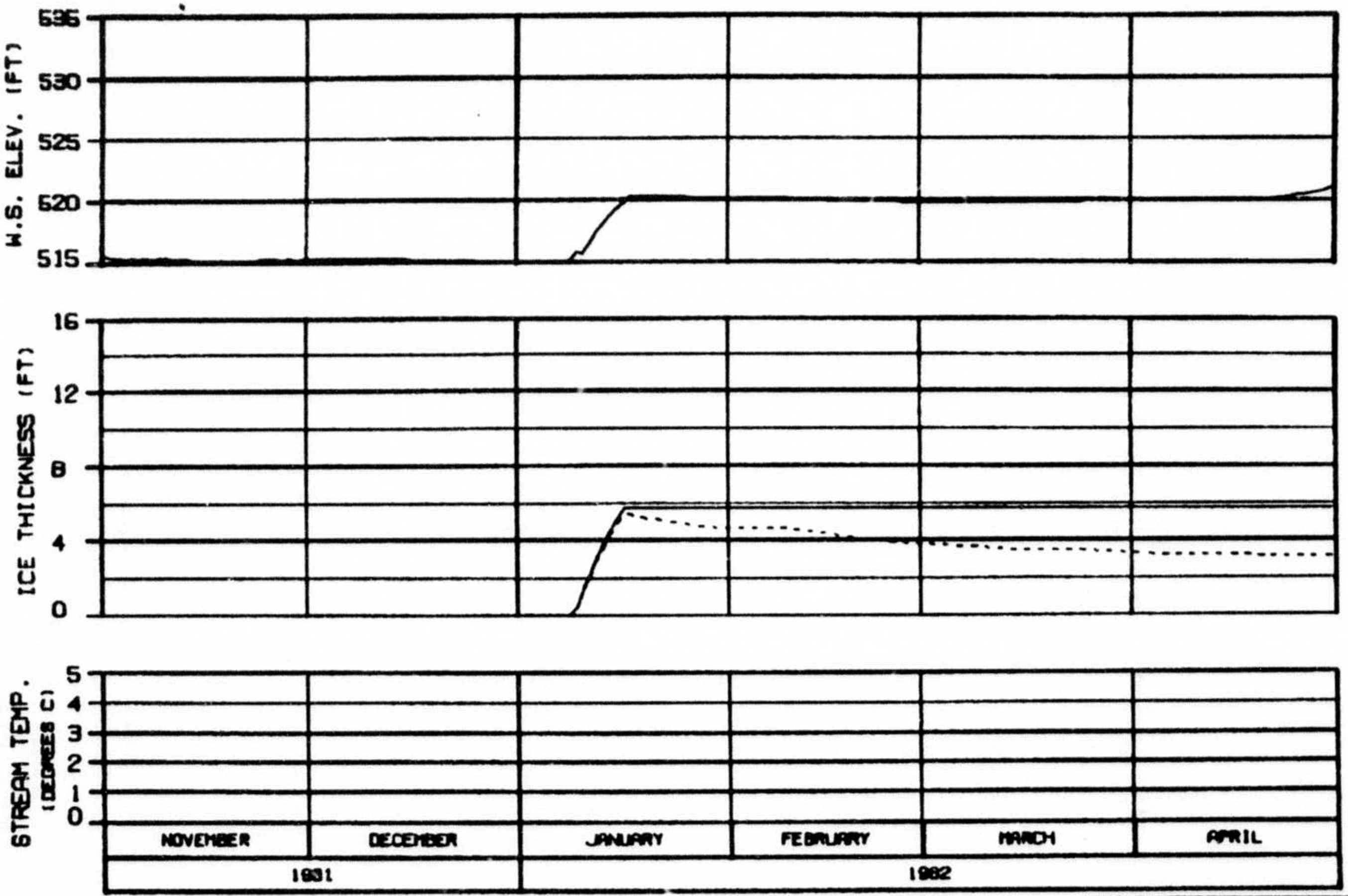
HEAD OF SIDE CHANNEL MSII

RIVER MILE : 115.90

ICE THICKNESS LEGEND:
TOTAL THICKNESS
SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE



ICE THICKNESS LEGEND:
—— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

RIVER MILE : 120.00

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
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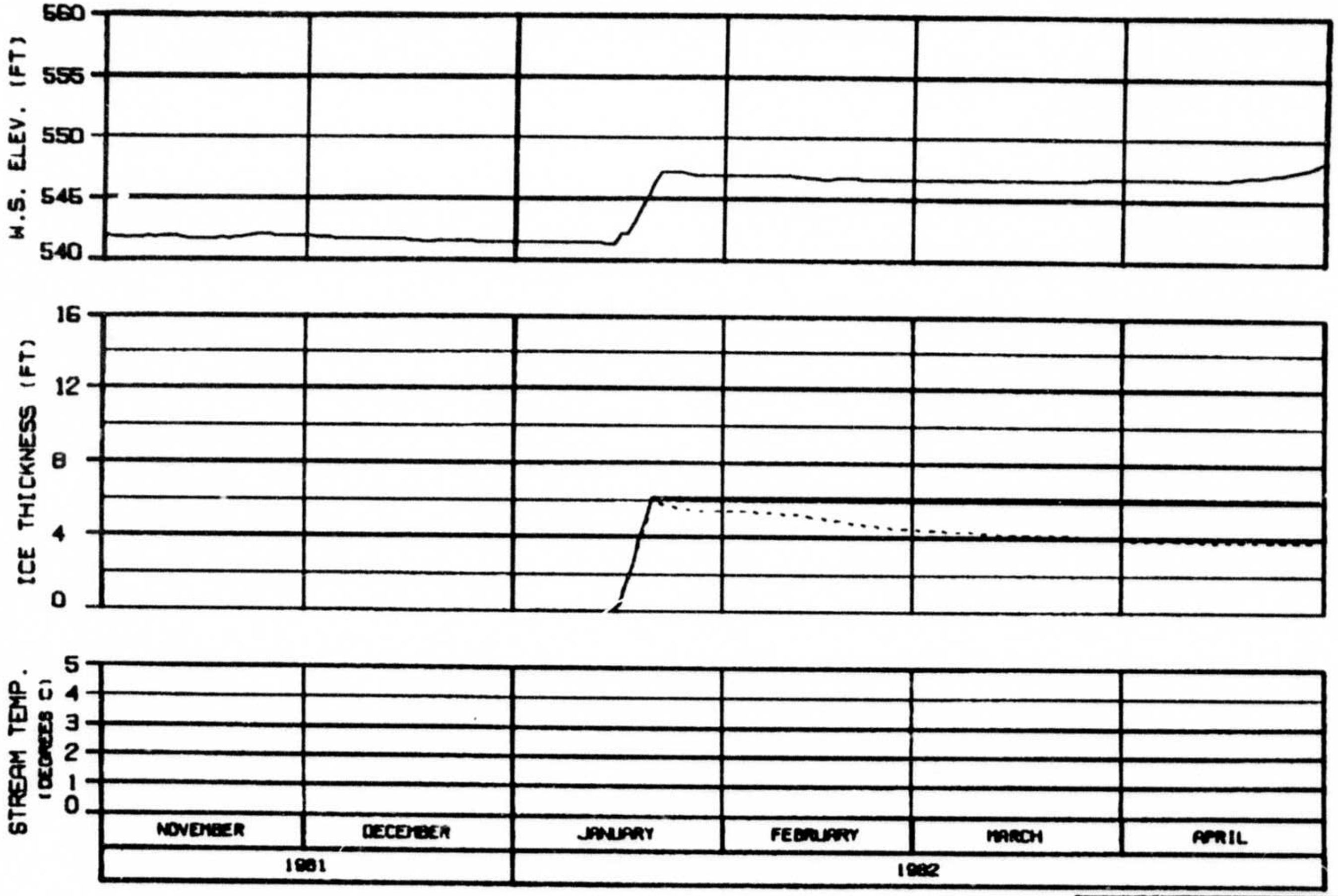

HEAD OF MOOSE SLOUGH

RIVER MILE : 123.50

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
------ SLUSH COMPONENT

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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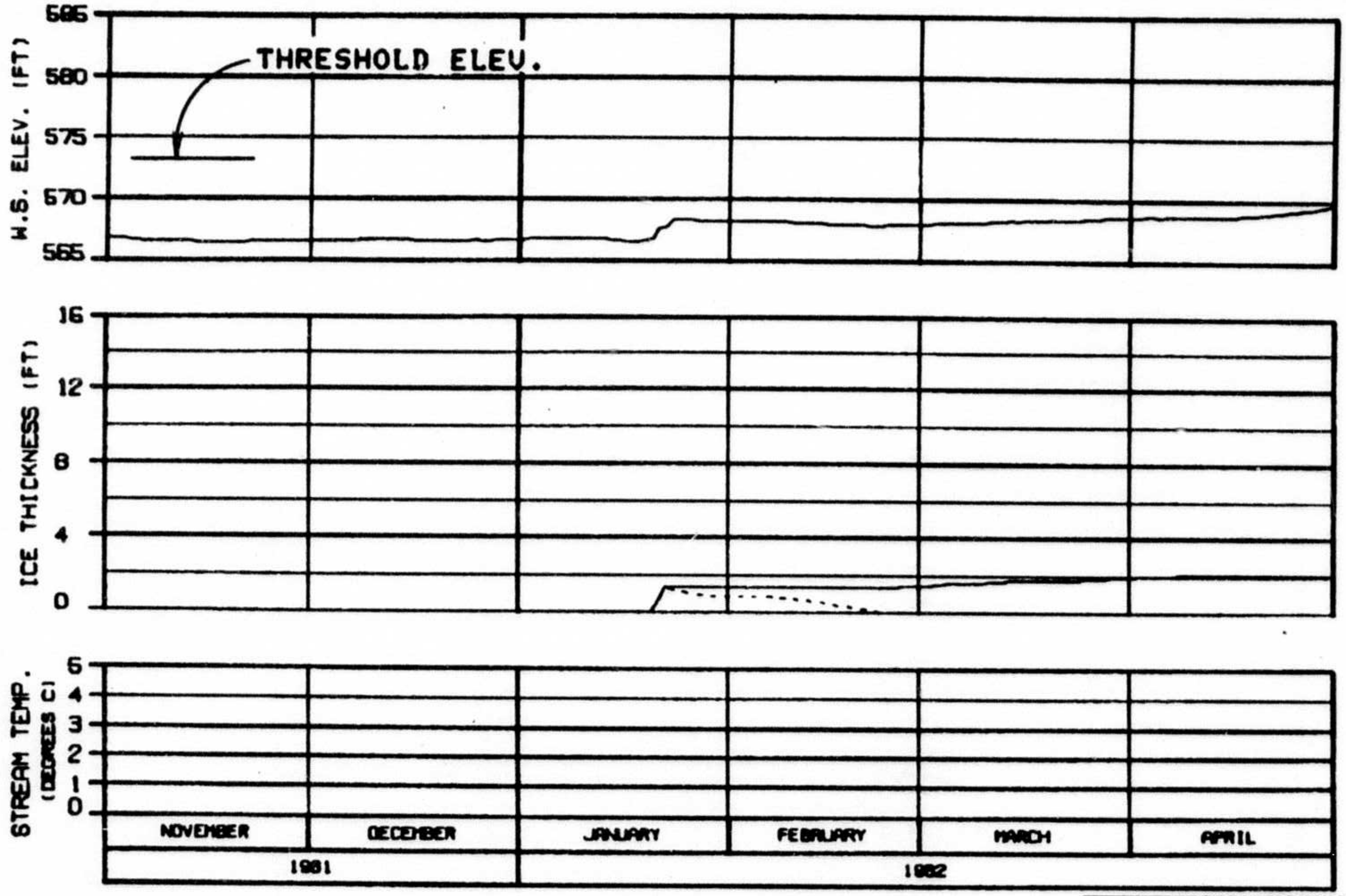


HEAD OF SLOUGH 8A (WEST)

RIVER MILE : 126.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

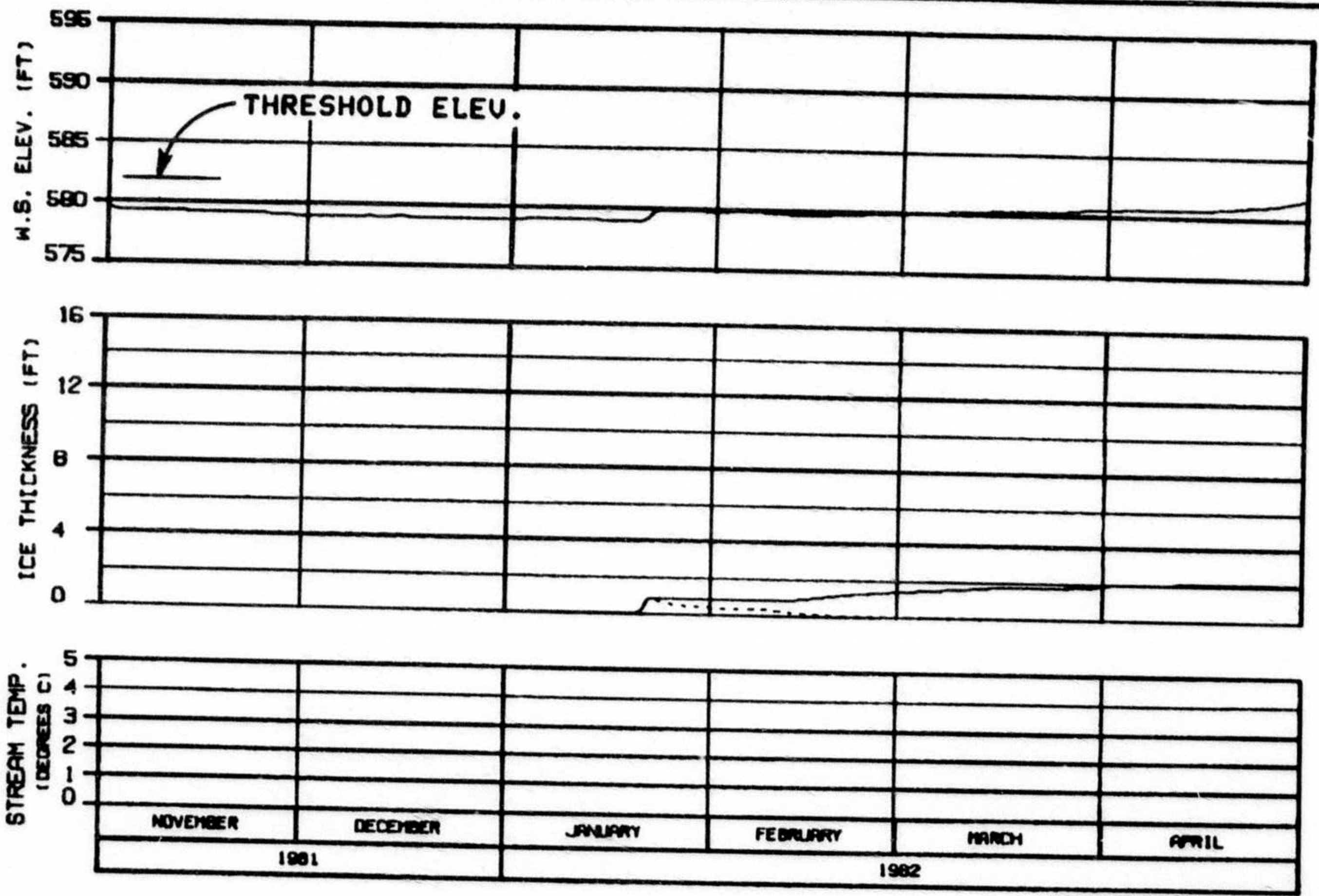
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

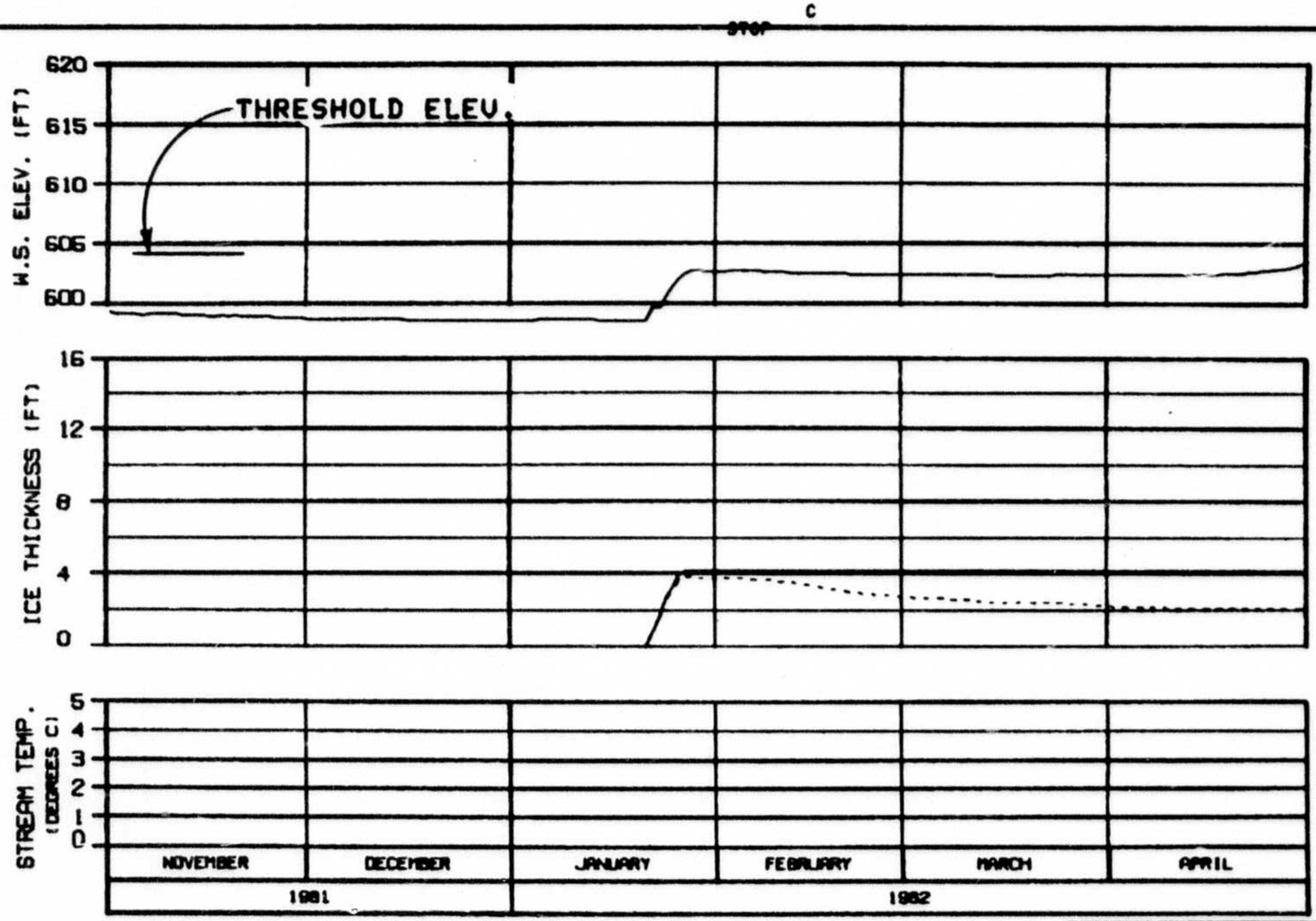
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9

RIVER MILE : 129.30

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ICE THICKNESS LEGEND:

———— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

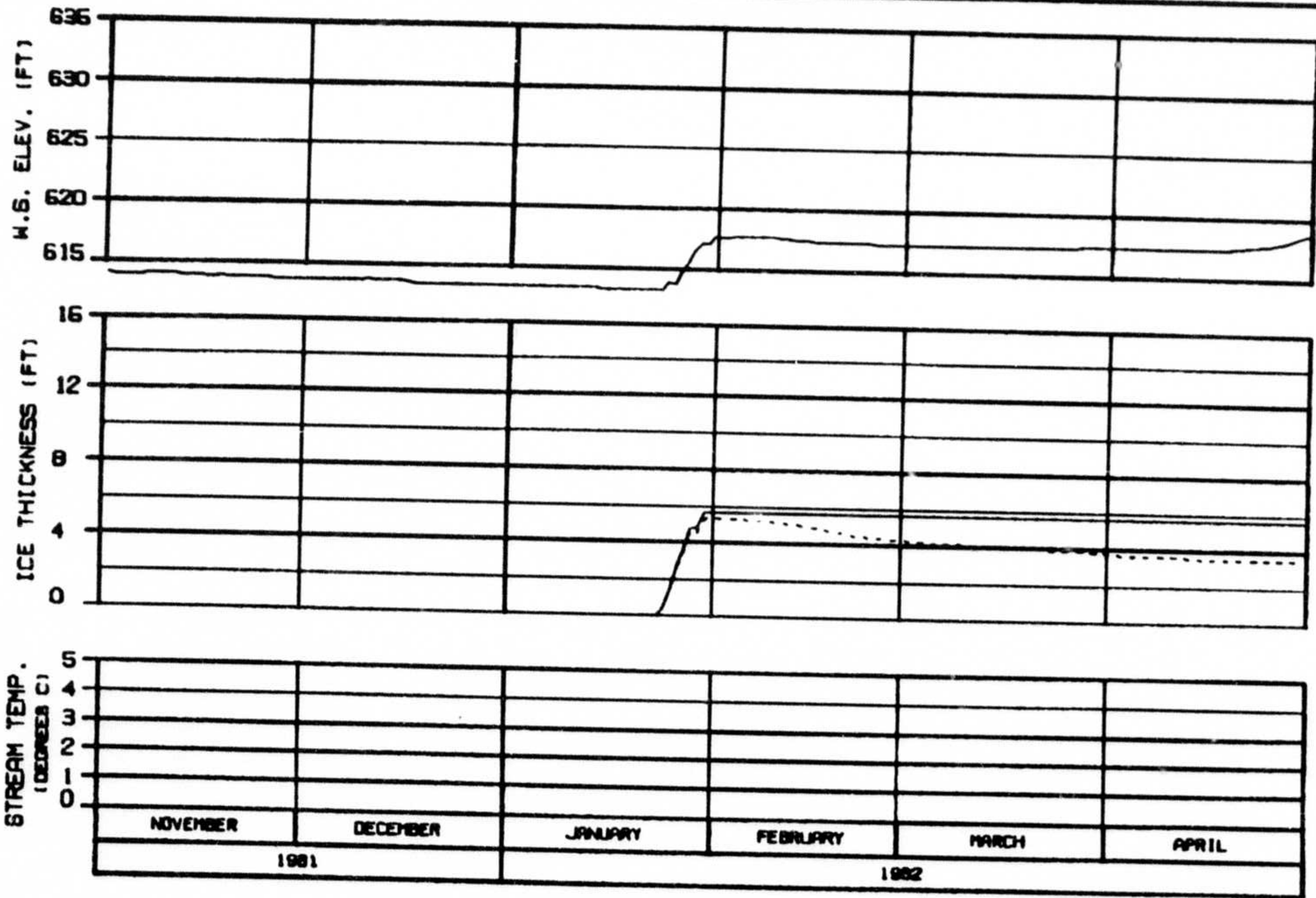
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

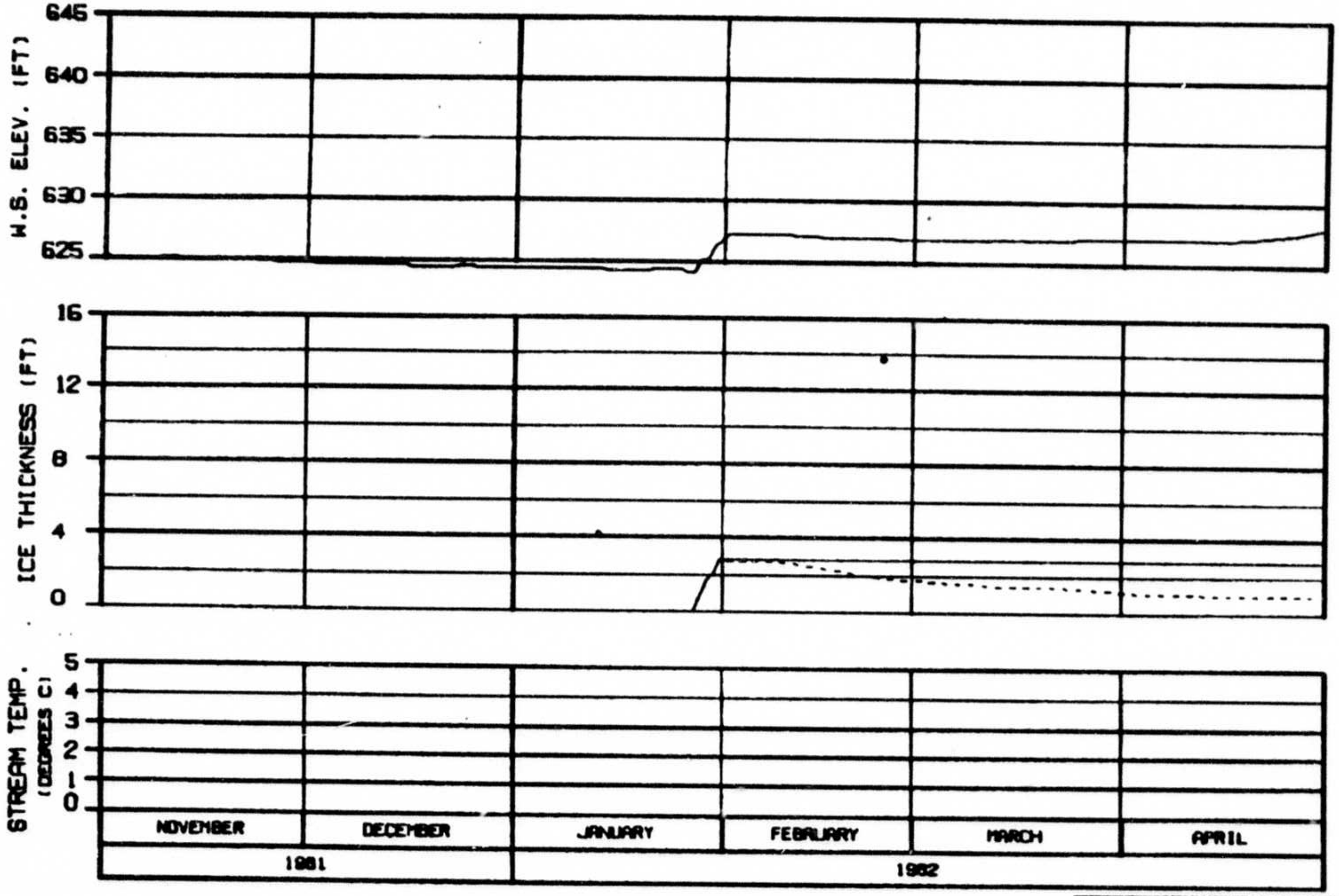
RIVER MILE : 130.60

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

RIVER MILE : 131.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY		
SUSITNA PROJECT		
SUSITNA RIVER ICE SIMULATION TIME HISTORY		
HARZA-EBASCO JOINT VENTURE		
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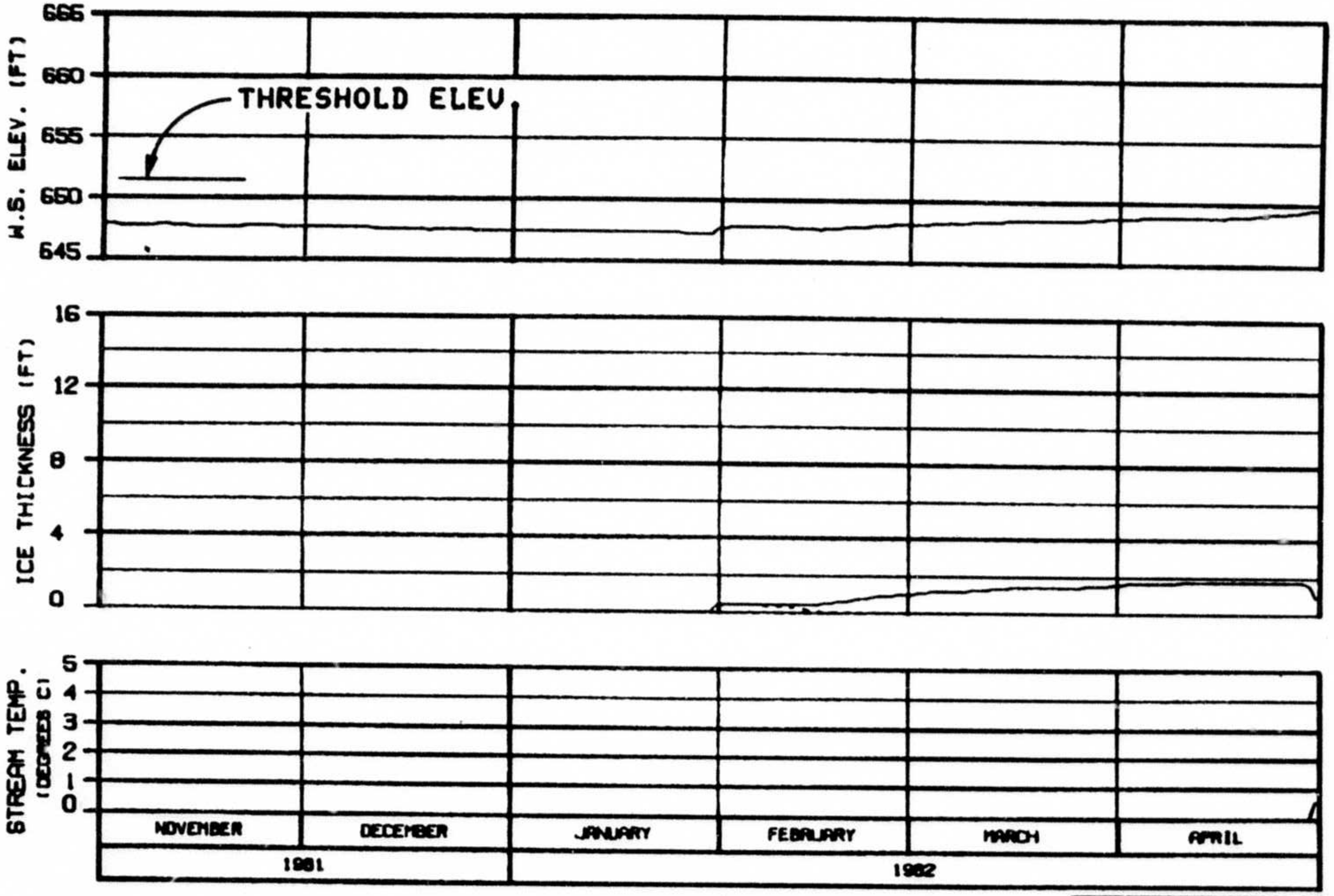

HEAD OF SLOUGH 9A

RIVER MILE : 133.70

ICE THICKNESS LEGEND:
———— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE
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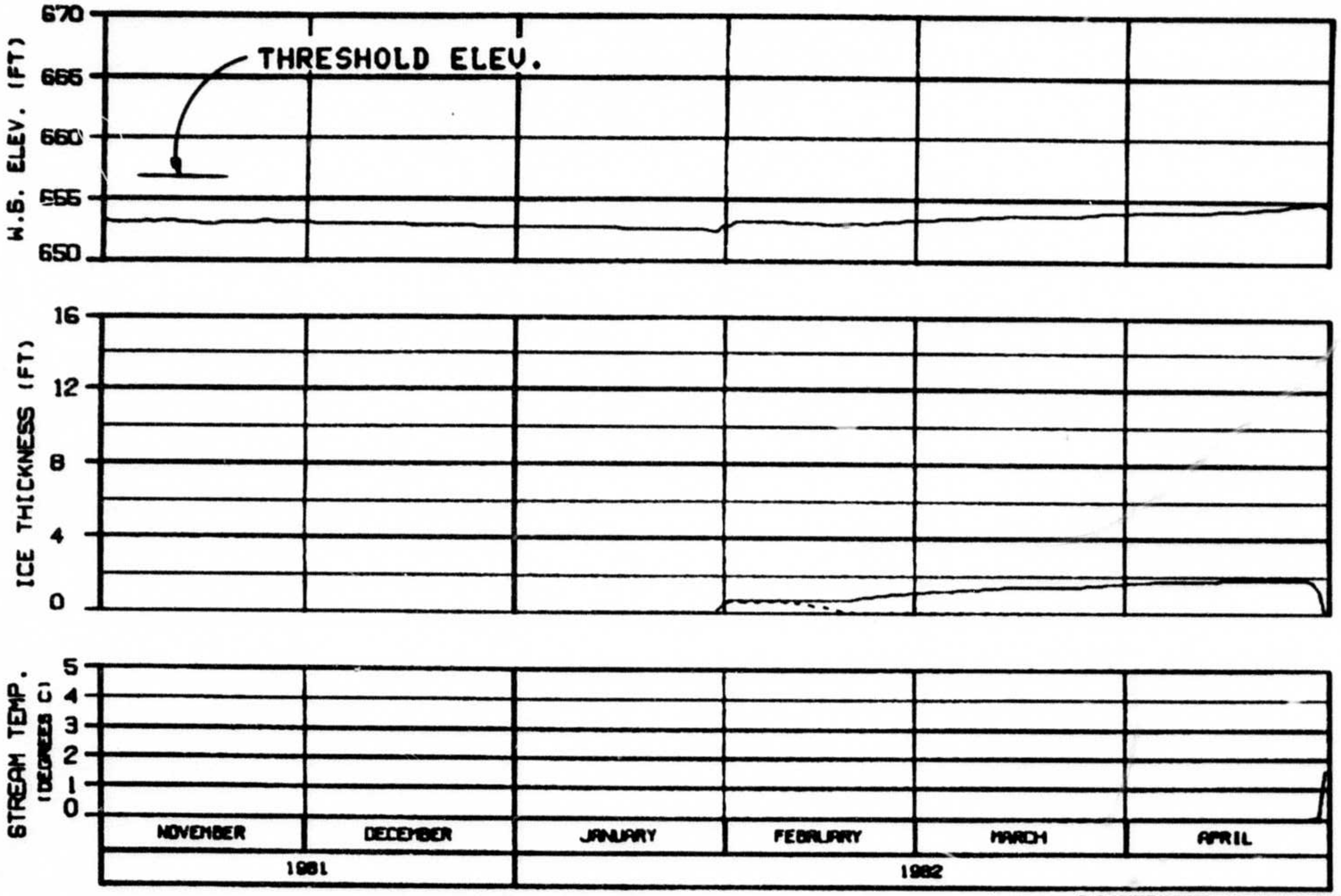


SIDE CHANNEL U/S OF SLOUGH 10

RIVER MILE : 134.30

ICE THICKNESS LEGEND:

———— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

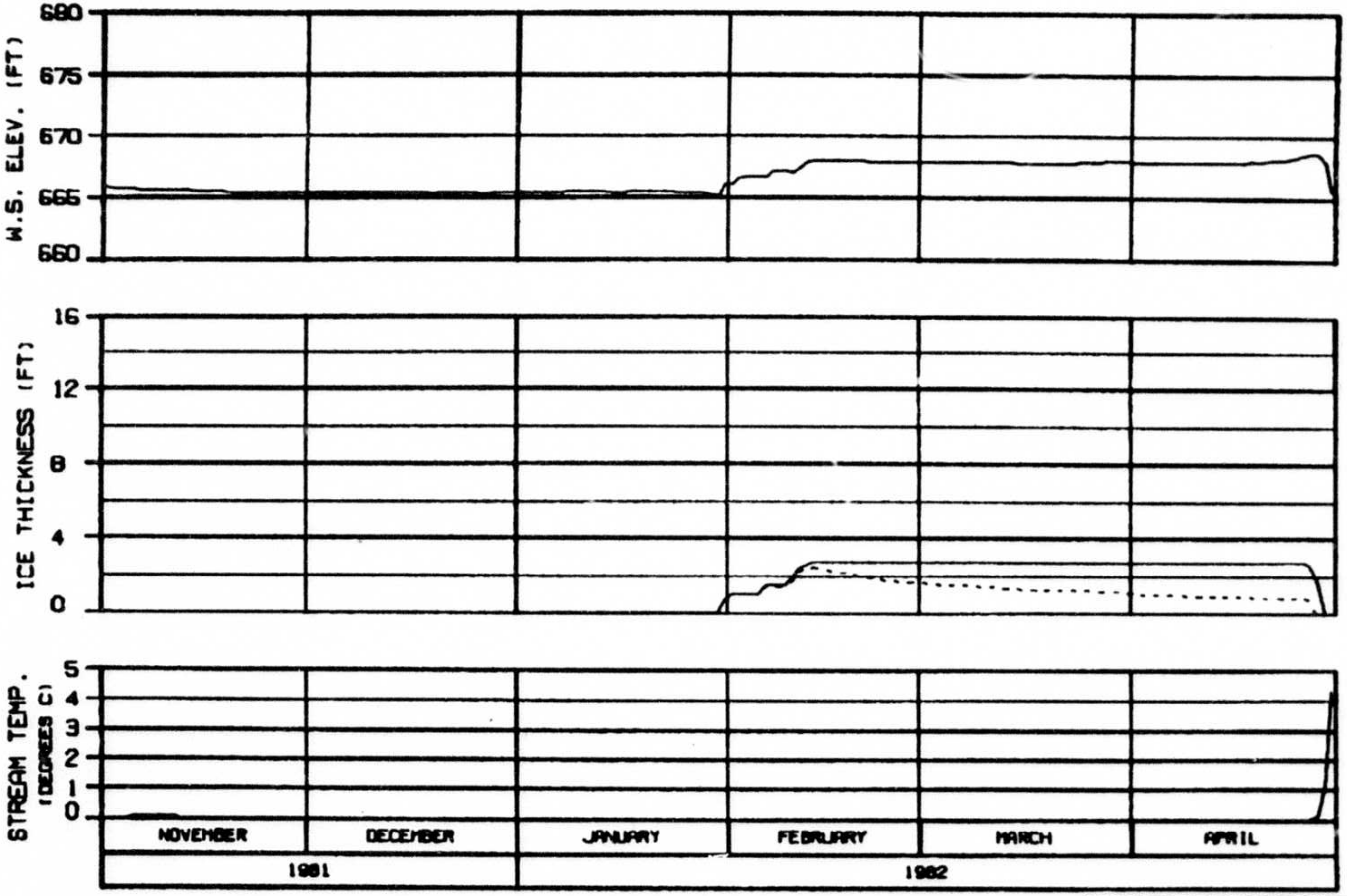
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

[illegible] | [illegible] | [illegible].142



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

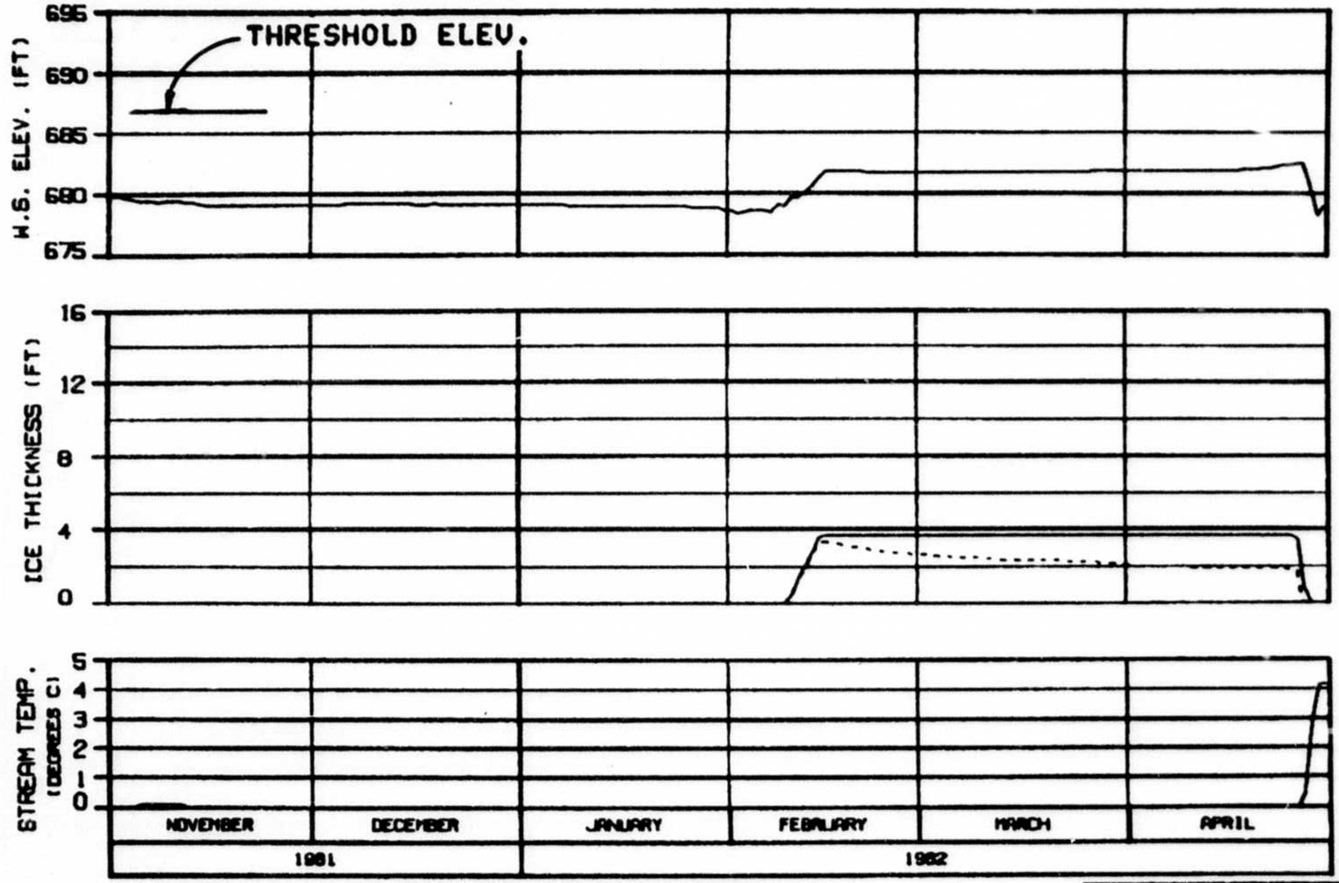
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

[illegible] | [illegible] | [illegible].142



HEAD OF SLOUGH 11

RIVER MILE : 136.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
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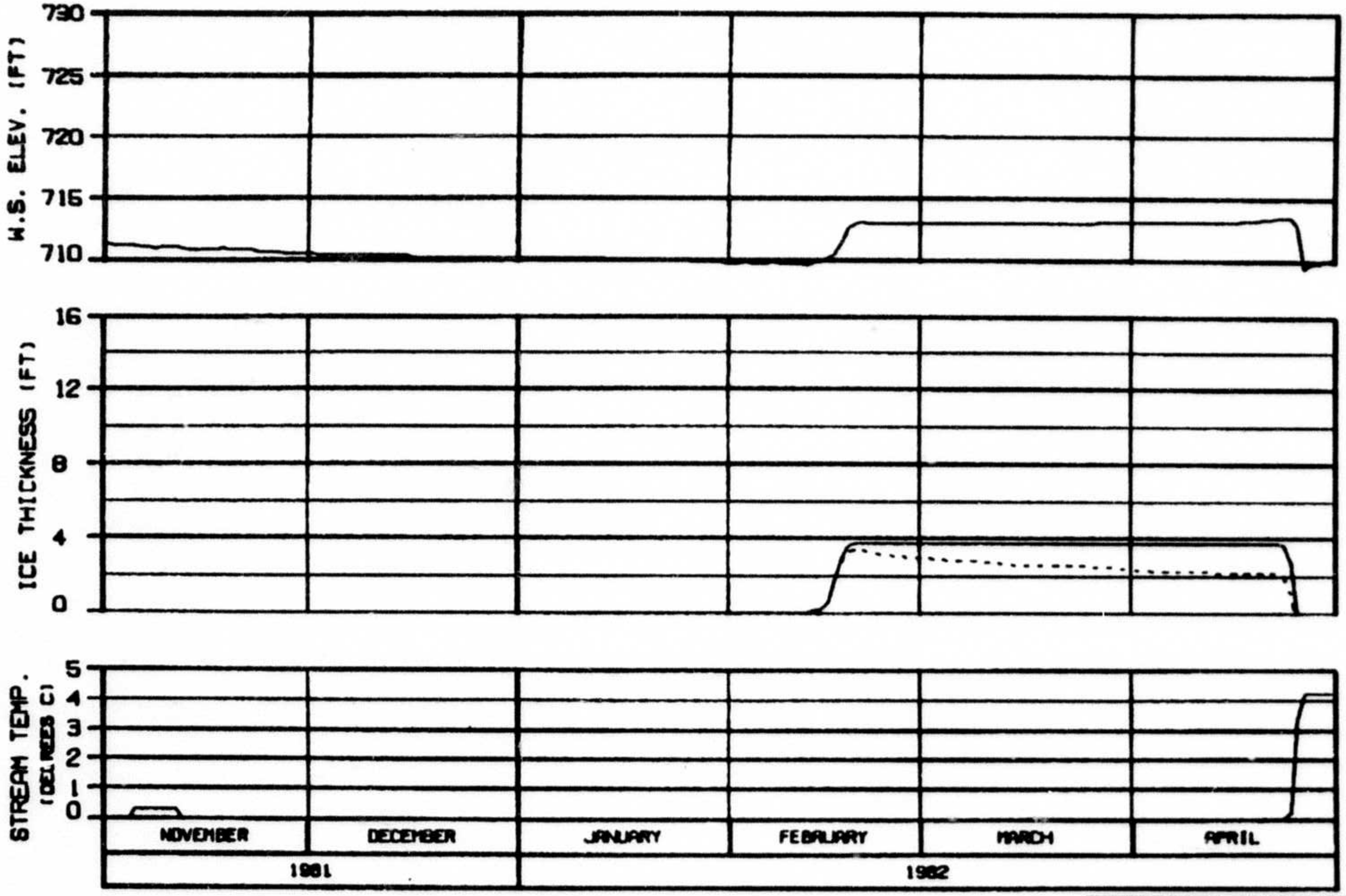


HEAD OF SLOUGH 17

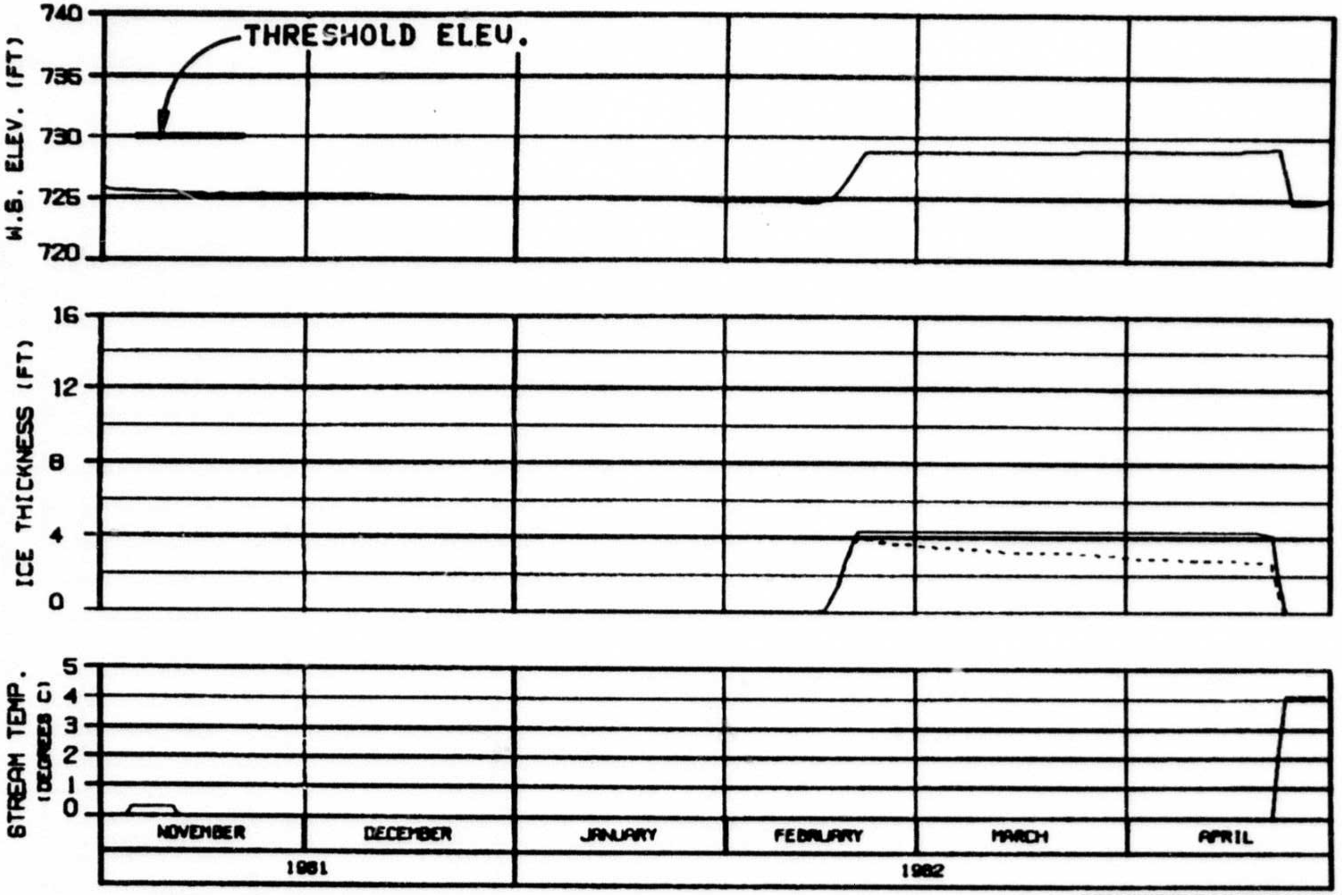
RIVER MILE : 139.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 20

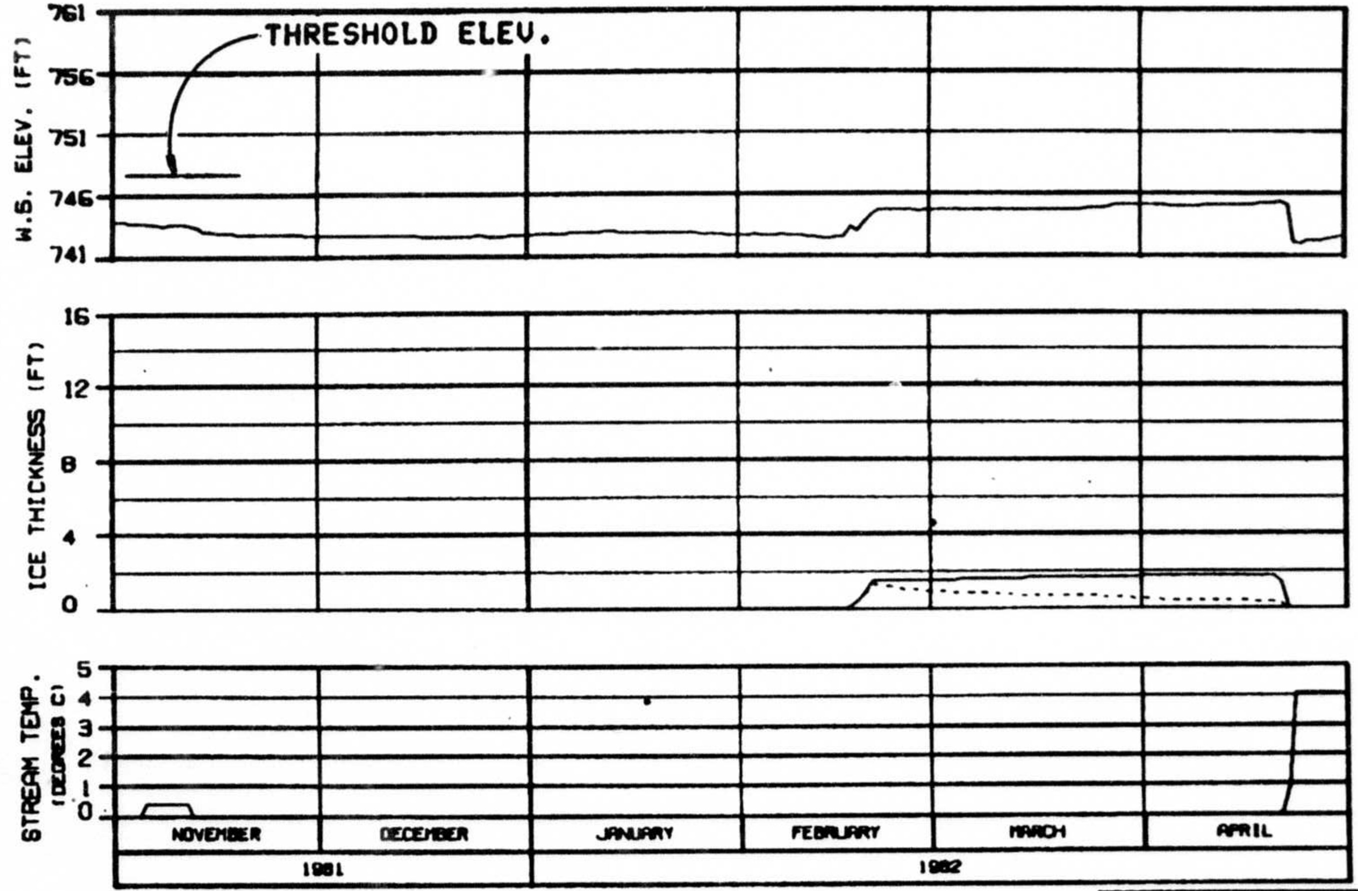
RIVER MILE : 140.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE
CHICAGO, ILLINOIS · [illegible] · [illegible].142



SLOUGH 21 (ENTRANCE A6)

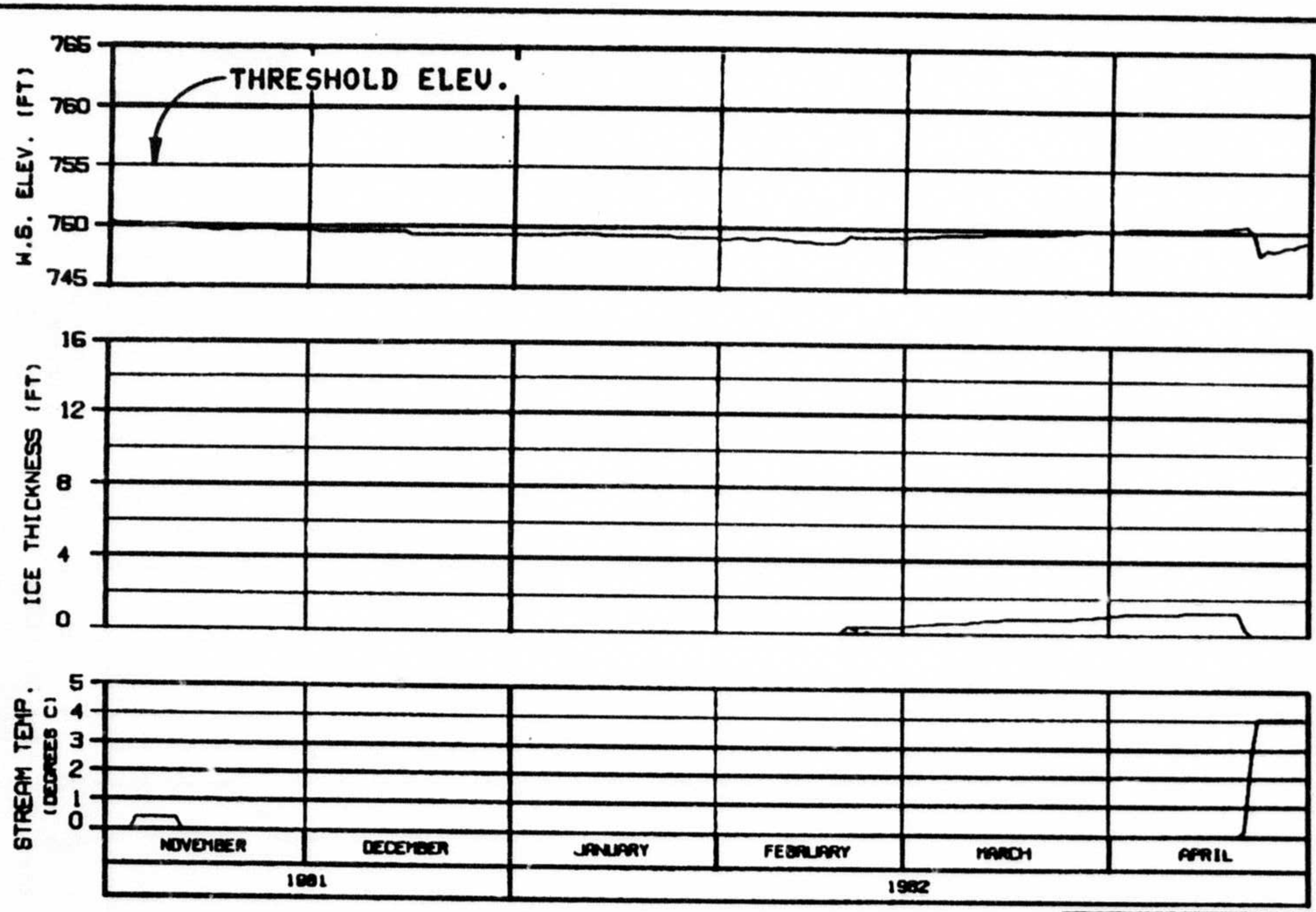
RIVER MILE : 141.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 21

RIVER MILE : 142.20

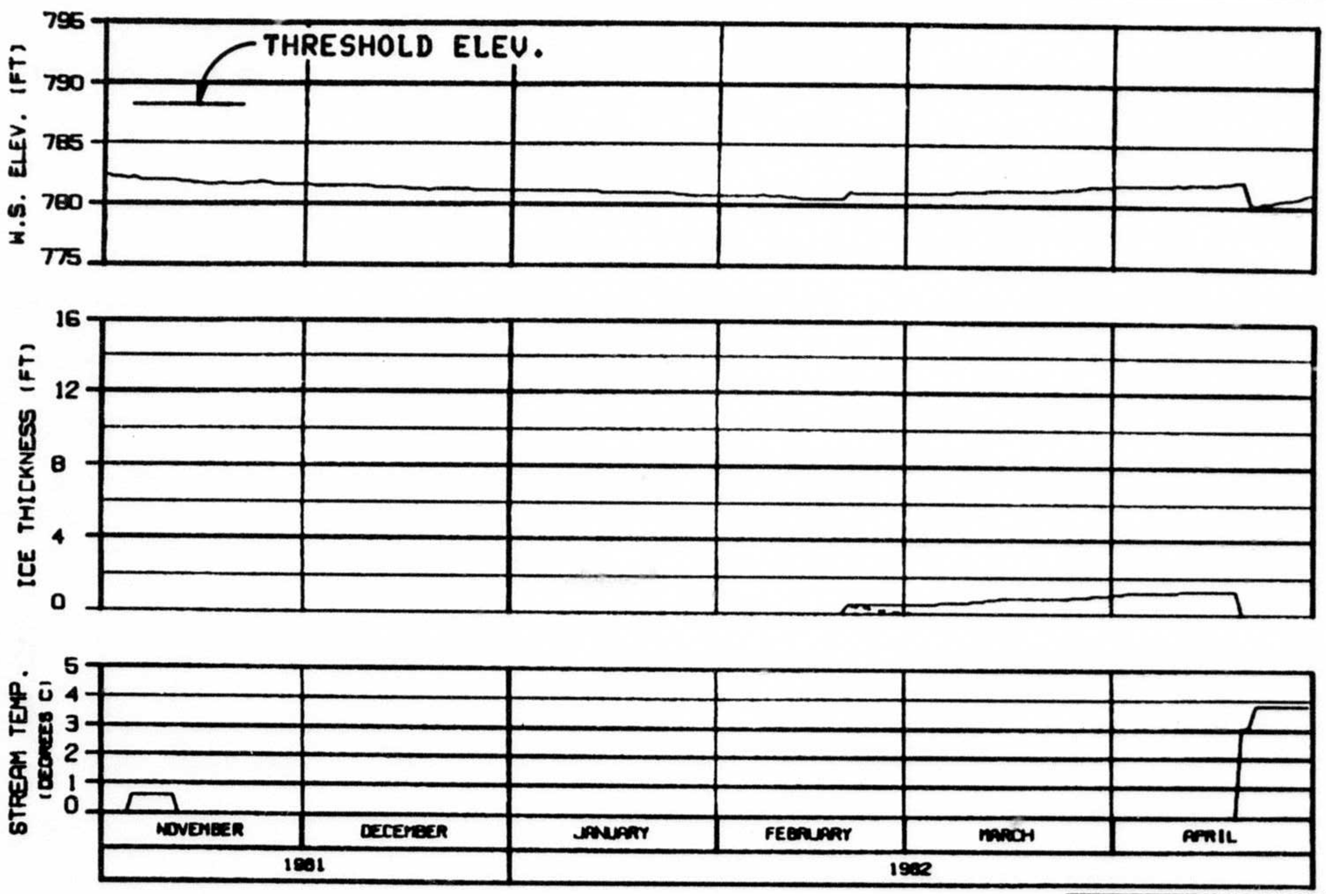
ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE

c



HEAD OF SLOUGH 22

RIVER MILE : 144.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

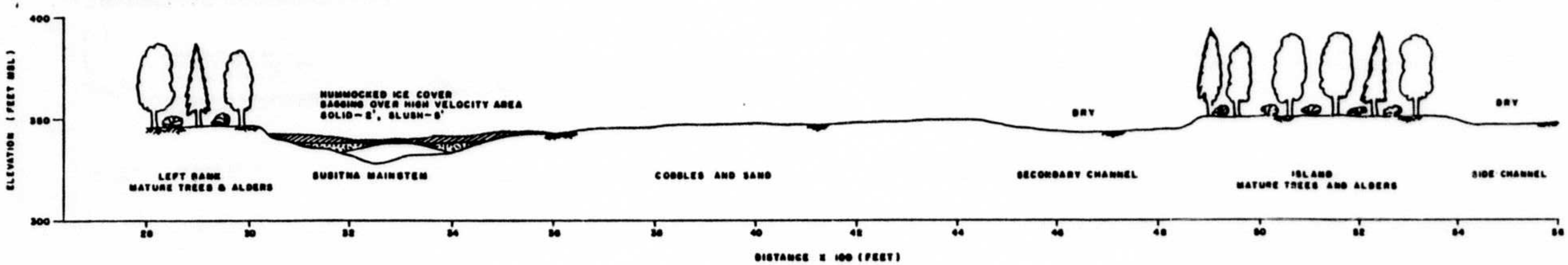
WEATHER PERIOD : 1 NOV 81 - 30 APR 82
ENERGY DEMAND : WATANA 2ND YR FILLING
FLOW CASE : C
REFERENCE RUN NO. : 81F2C-A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE

OPTION?

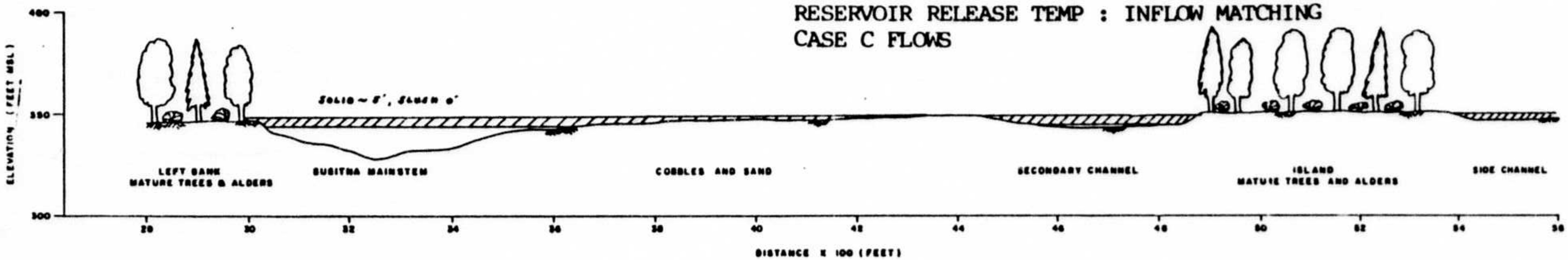
Exhibit T

1. Natural Ice Conditions (1983)

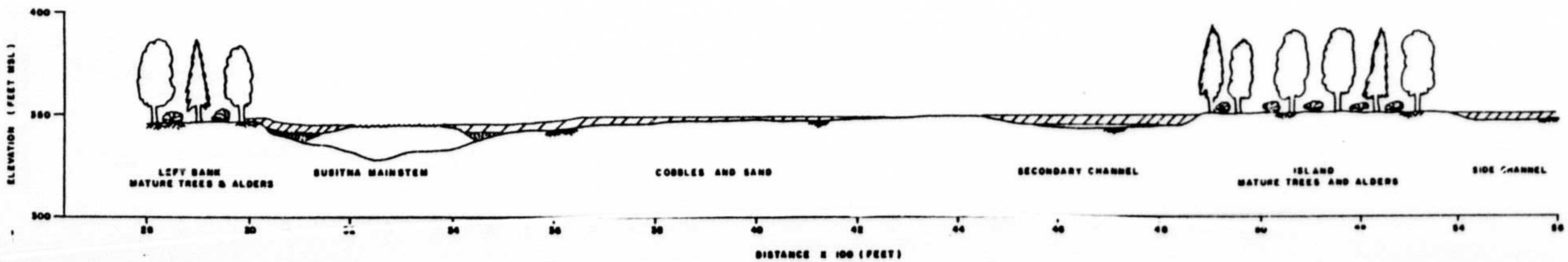


2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

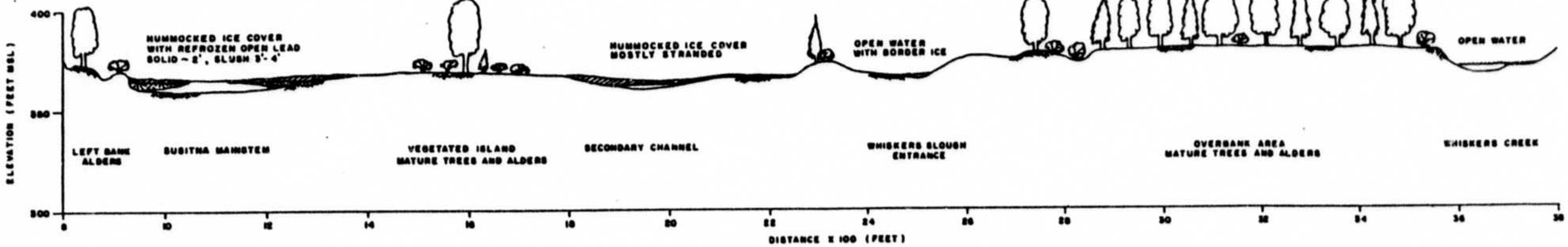
LRX-3

1982 CROSS SECTION SURVEY
RIVER MILE 98.6
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

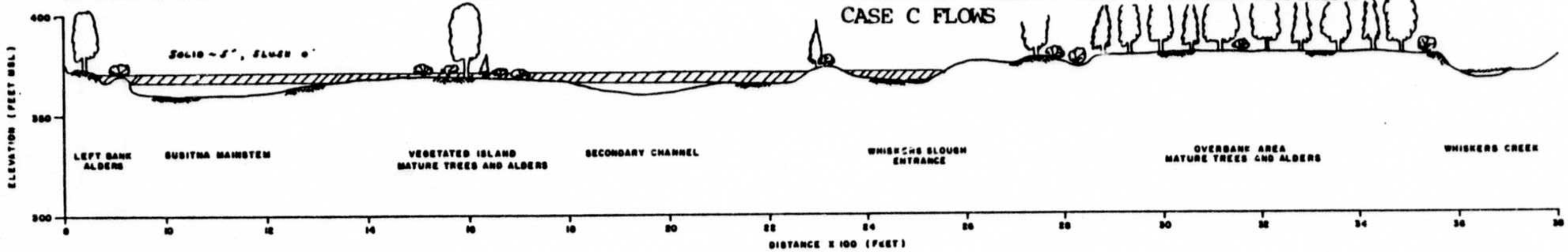
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

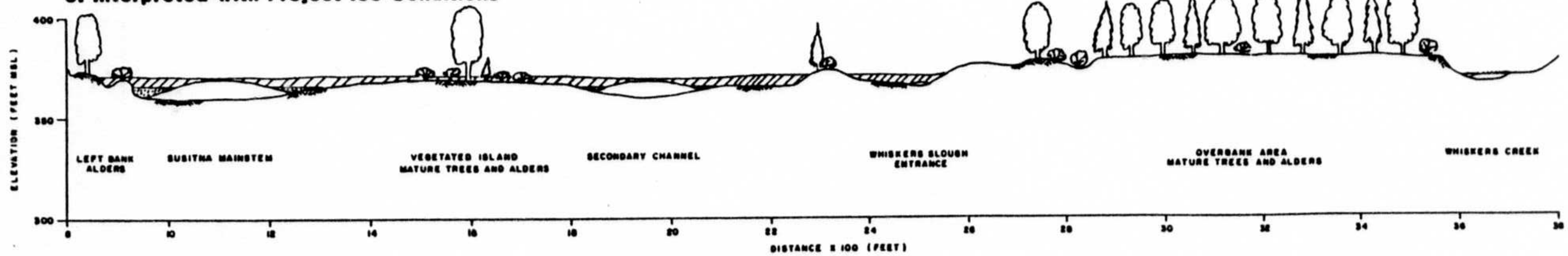


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA



3. Interpreted with Project Ice Conditions



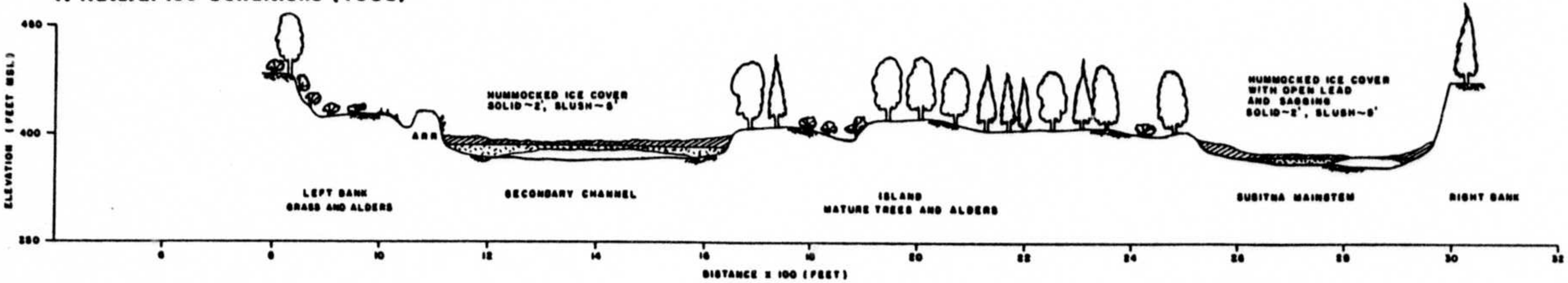
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-7

1980 CROSS SECTION SURVEY
RIVER MILE 101.5
VERTICAL EXAGGERATION 4:1

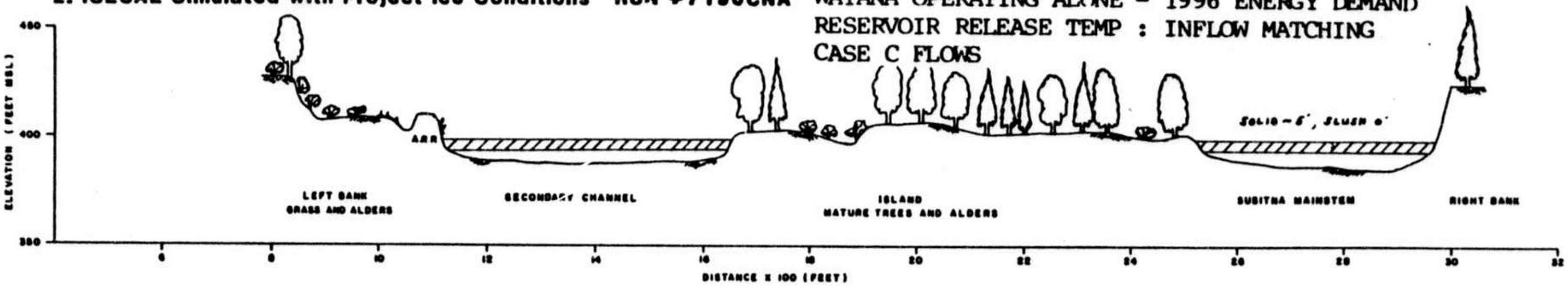
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

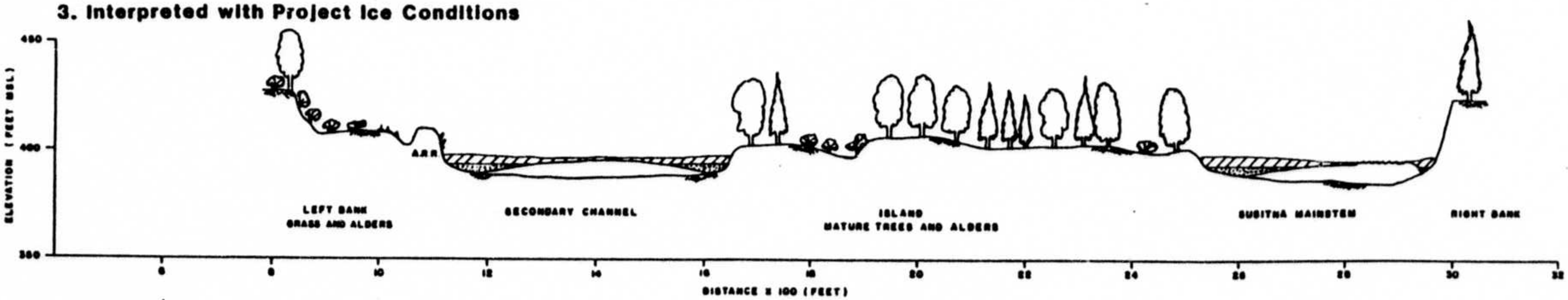


2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

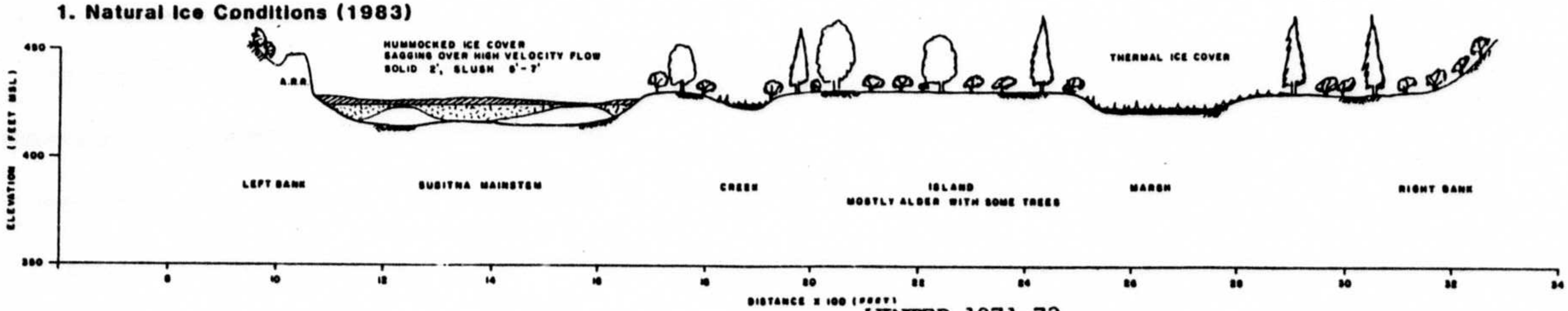
LRX-10

1980 CROSS SECTION SURVEY
RIVER MILE 104.8
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

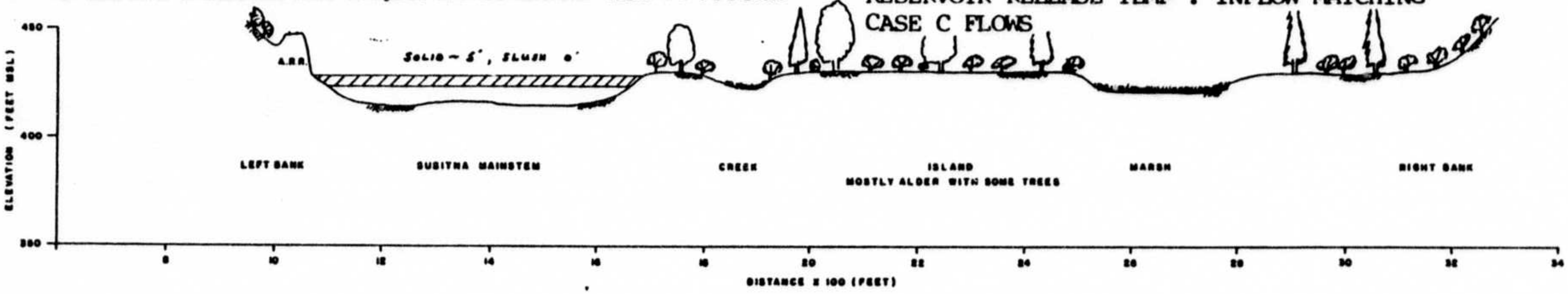
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

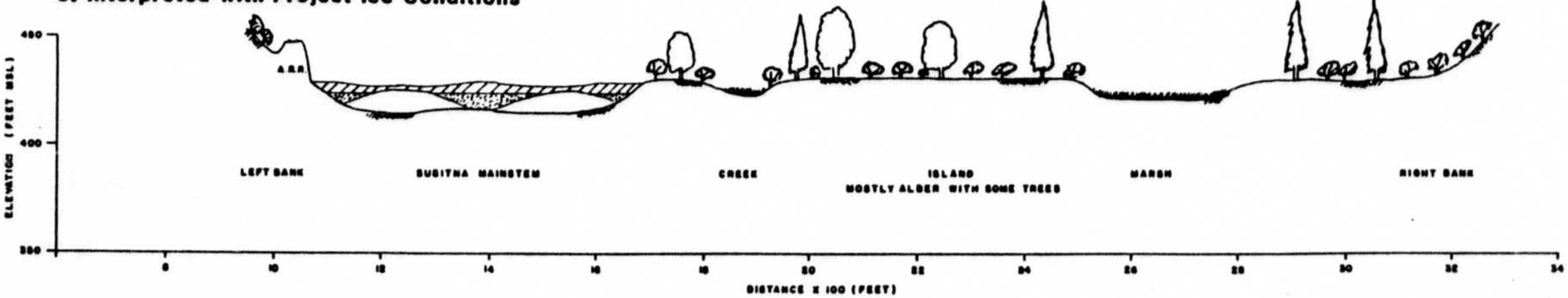


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

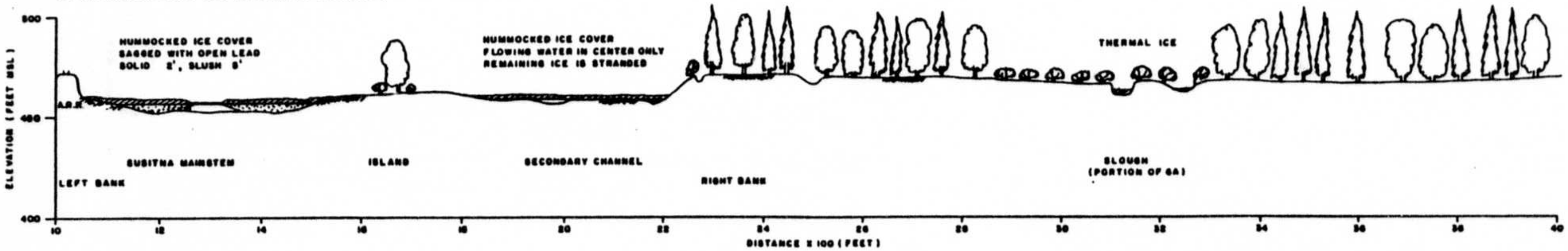
LRX-12

1981 CROSS SECTION SURVEY
RIVER MILE 108.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

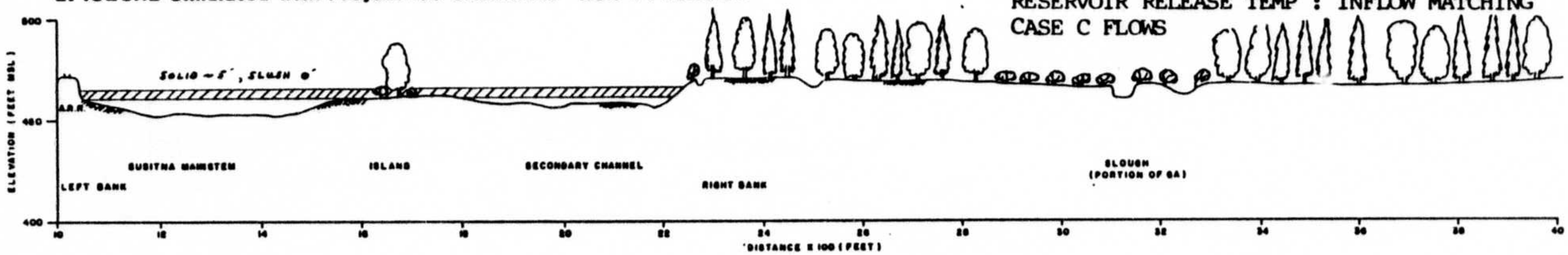
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

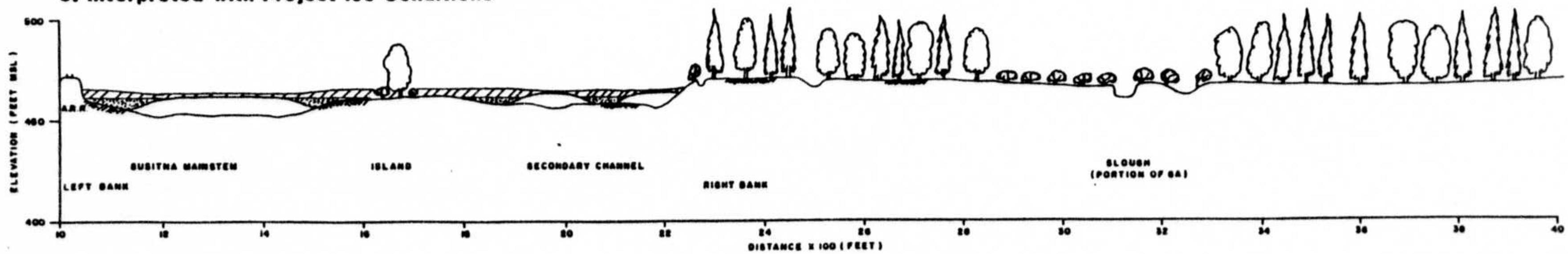


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

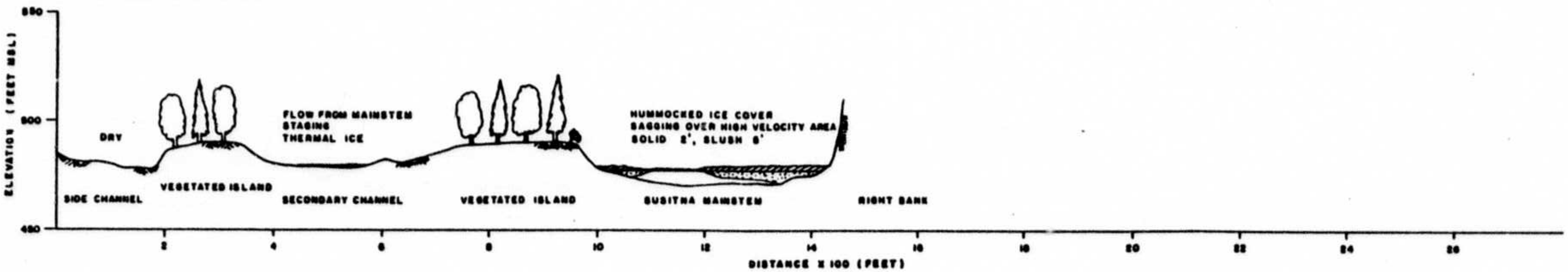
LRX-17

1980 CROSS SECTION SURVEY
RIVER MILE 112.7
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

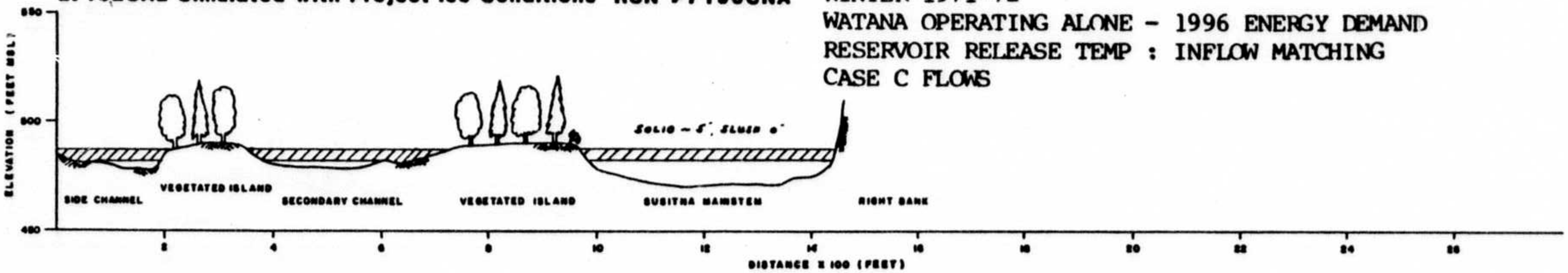
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

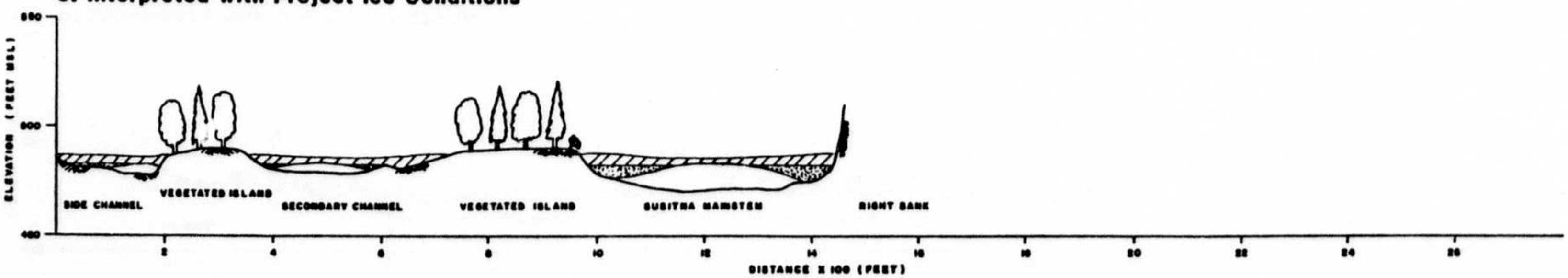


2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



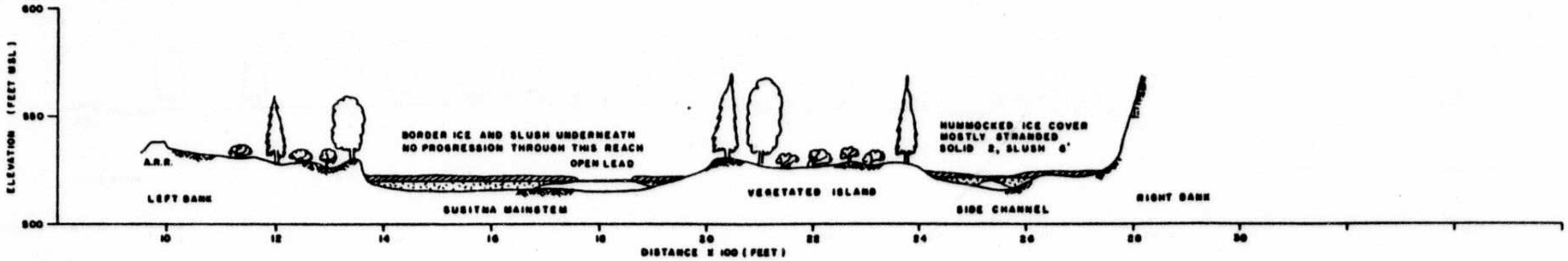
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-18.2

1982 CROSS SECTION SURVEY
RIVER MILE 115.1
VERTICAL EXAGGERATION 4:1

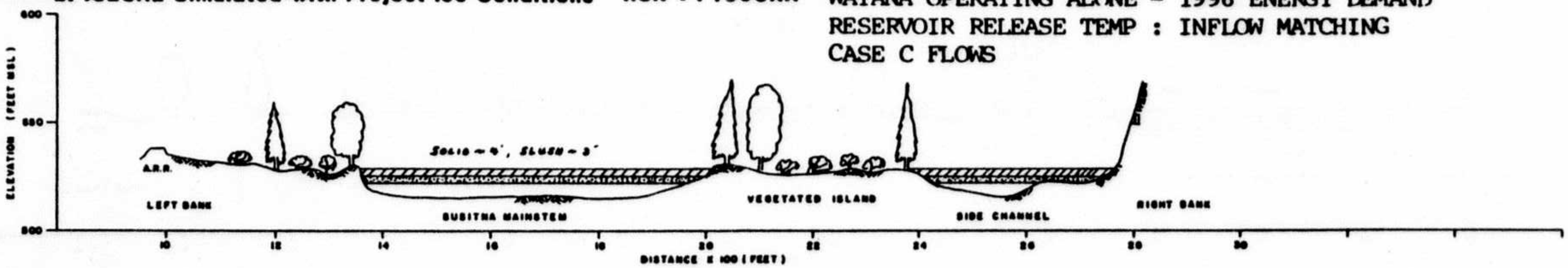
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

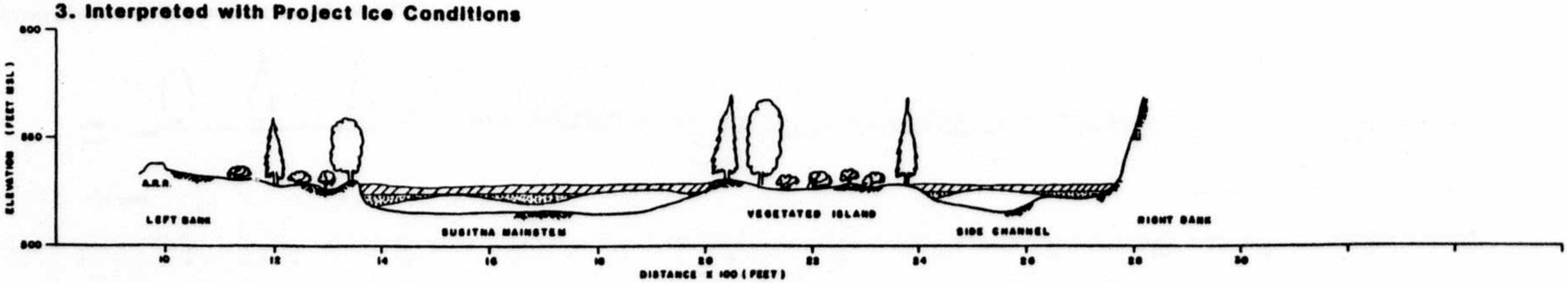


2. ICECAL Simulated-with Project Ice Conditions RUN #7196CNA

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

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ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

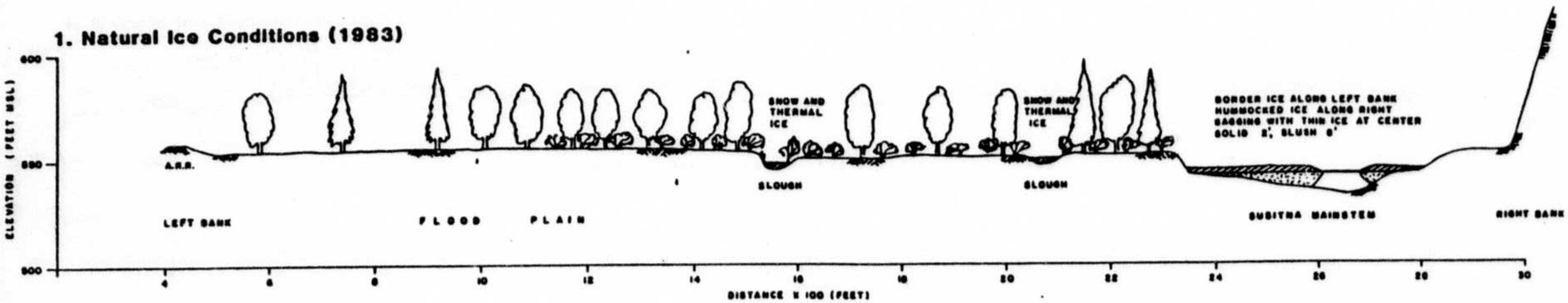
LRX-23

1980 CROSS SECTION SURVEY
RIVER MILE 120.2
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

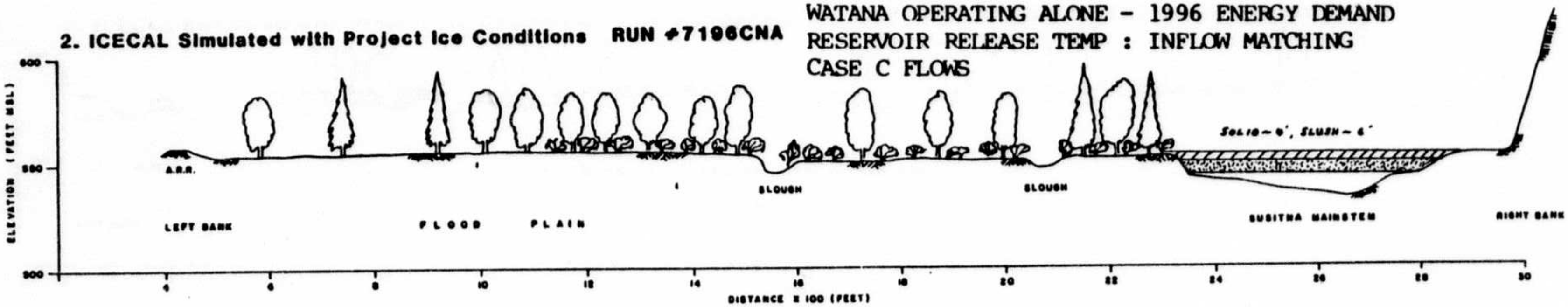
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

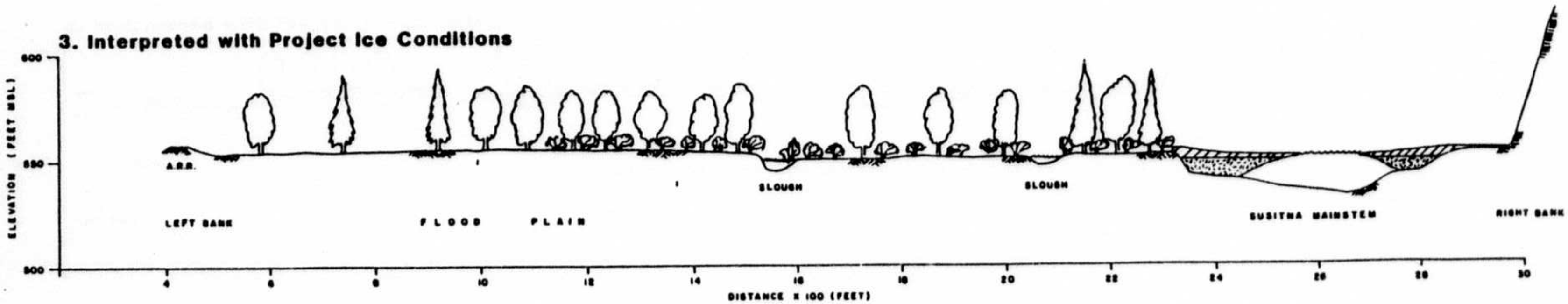


2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



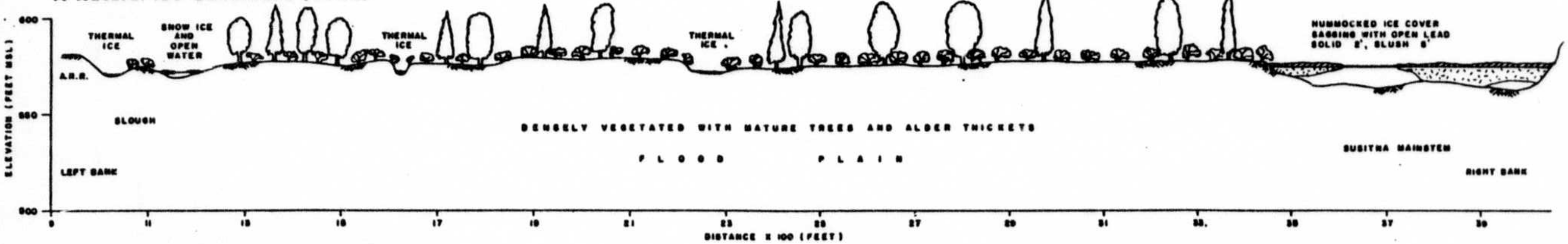
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX -27

1980 CROSS SECTION SURVEY
RIVER MILE 123.3
VERTICAL EXAGGERATION 4:1

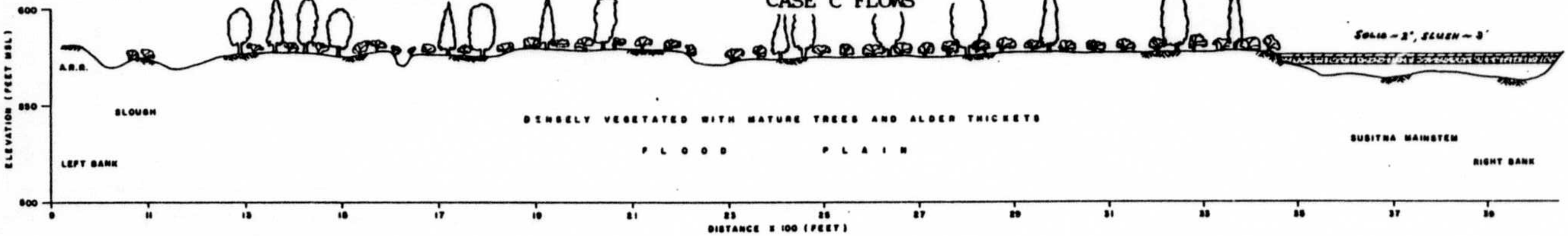
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

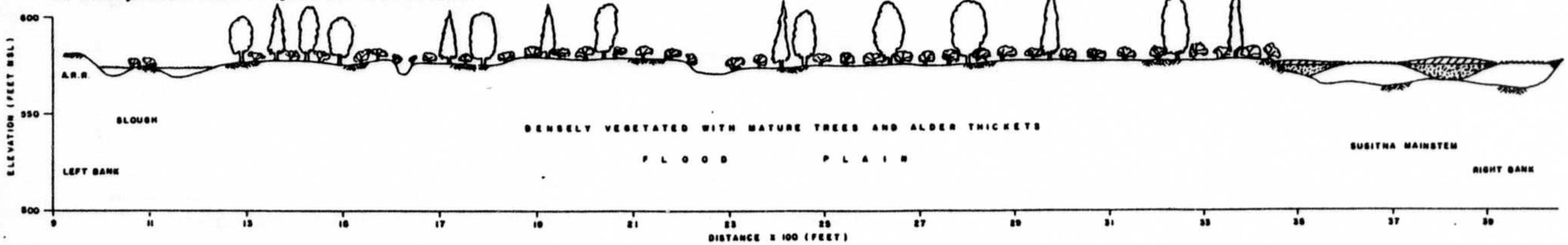


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA



3. Interpreted with Project Ice Conditions

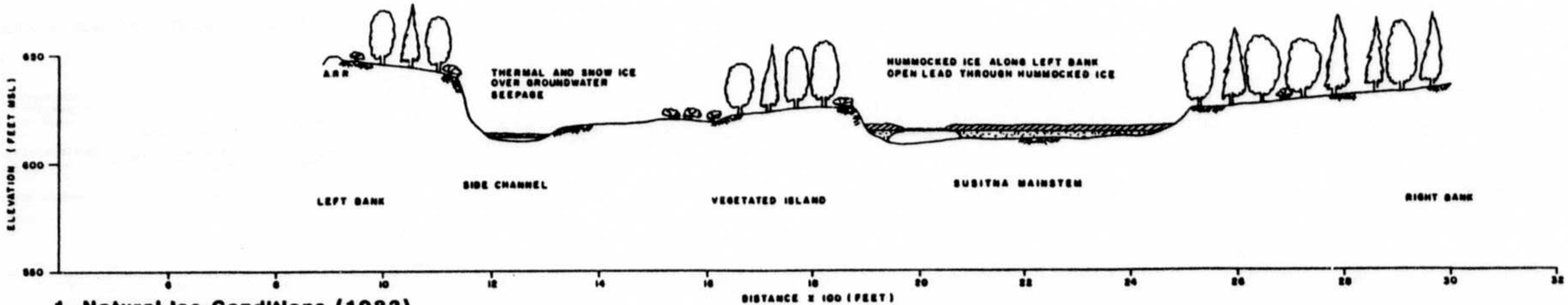


PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-29

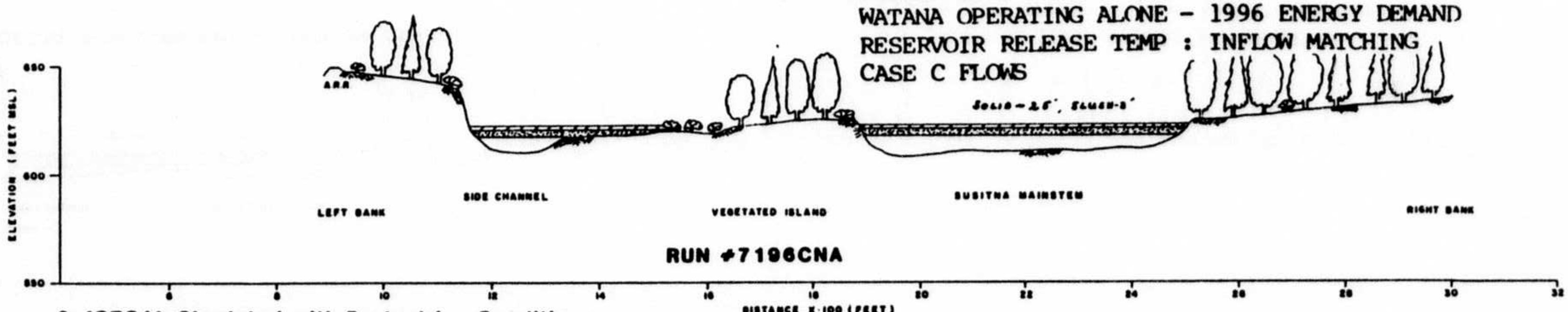
1980 CROSS SECTION SURVEY
RIVER MILE 126.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

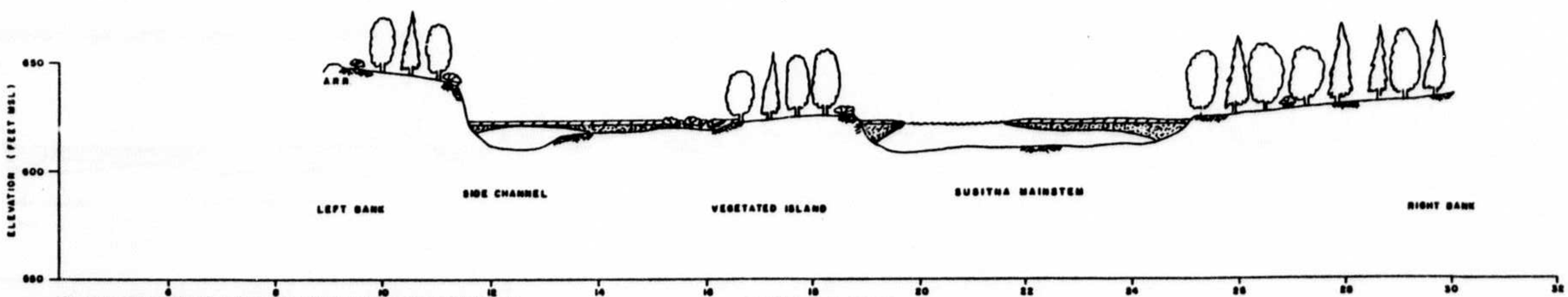


1. Natural Ice Conditions (1983)

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



2. ICECAL Simulated with Project Ice Conditions



3. Interpreted with Project Ice Conditions

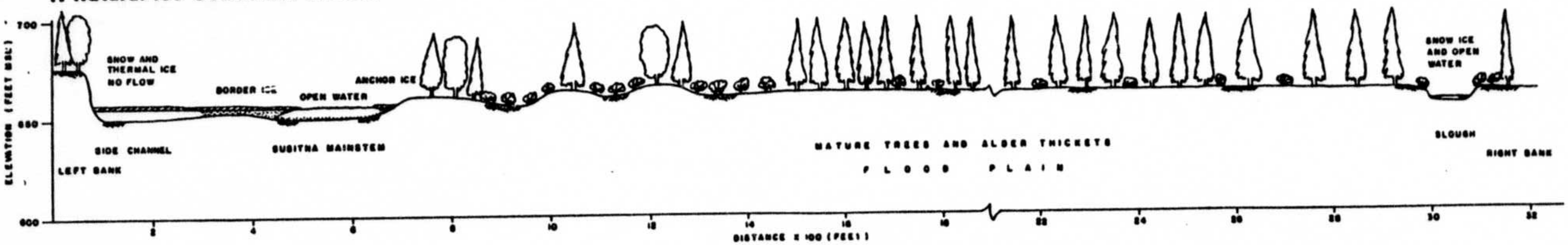
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-34

1980 CROSS SECTION SURVEY
RIVER MILE 130.5
VERTICAL EXAGGERATION 4:1

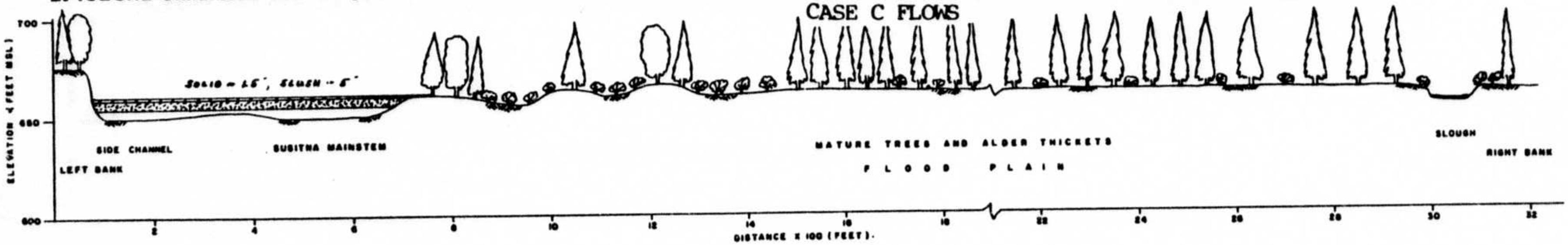
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

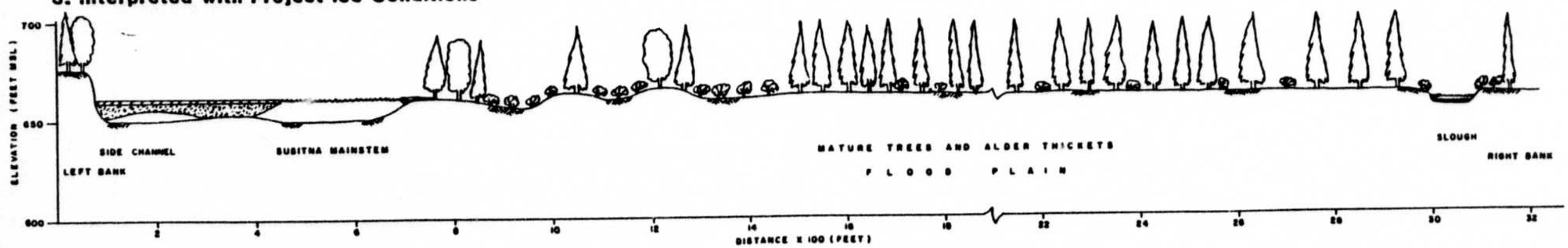


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA



3. Interpreted with Project Ice Conditions



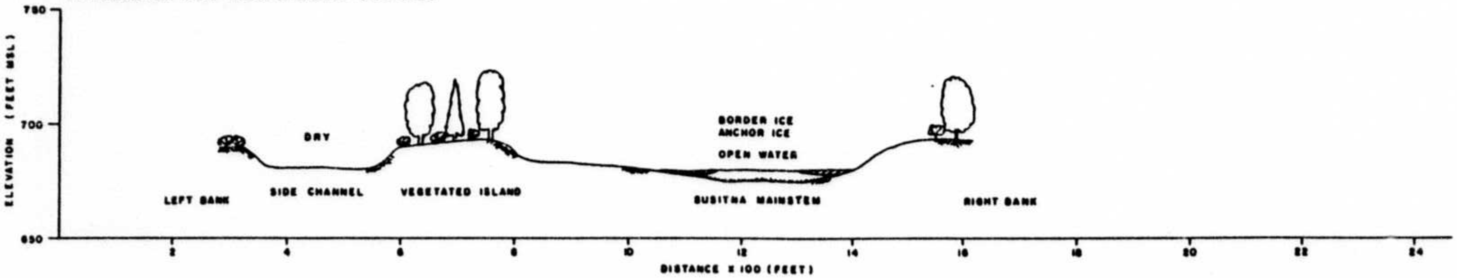
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-40

1980 CROSS SECTION SURVEY
RIVER MILE 134.2
VERTICAL EXAGGERATION 4:1

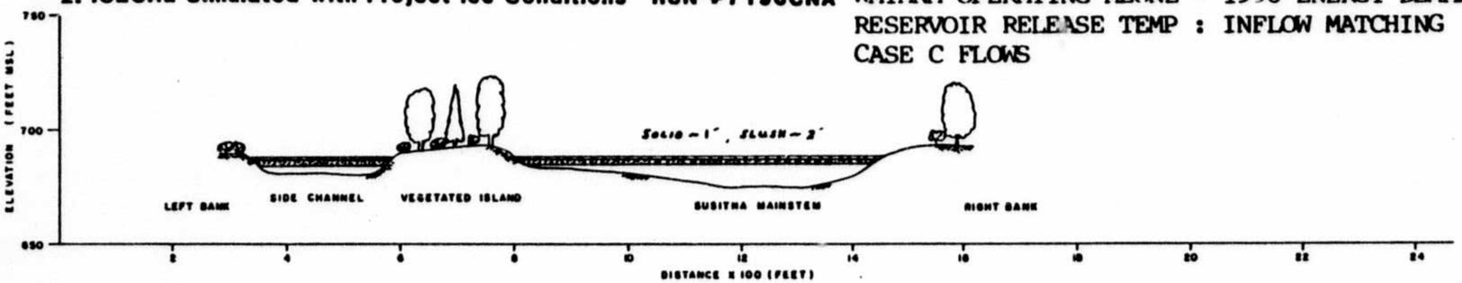
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

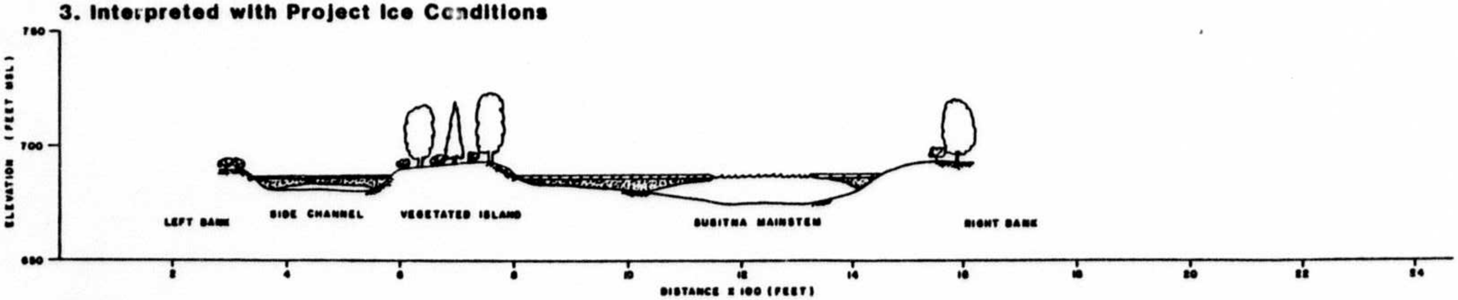


2. ICECAL Simulated with Project Ice Conditions RUN #7196CNA

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

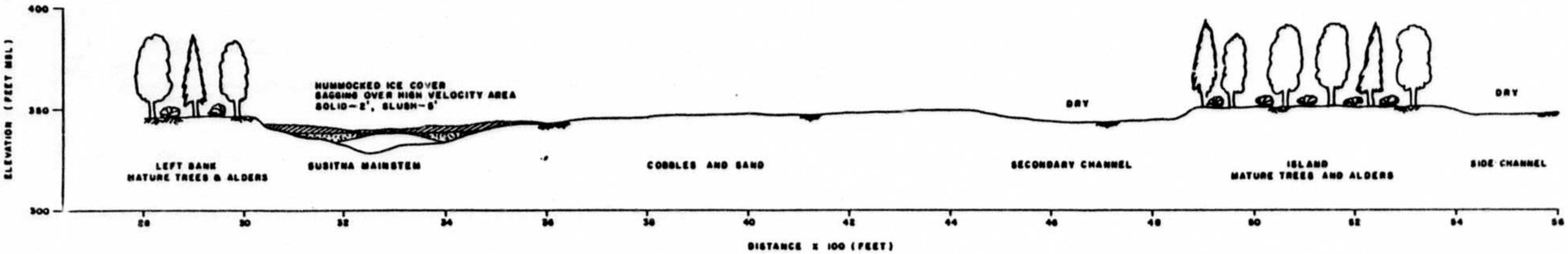
LRX-44

1980 CROSS SECTION SURVEY
RIVER MILE 136.4
VERTICAL EXAGGERATION 4:1

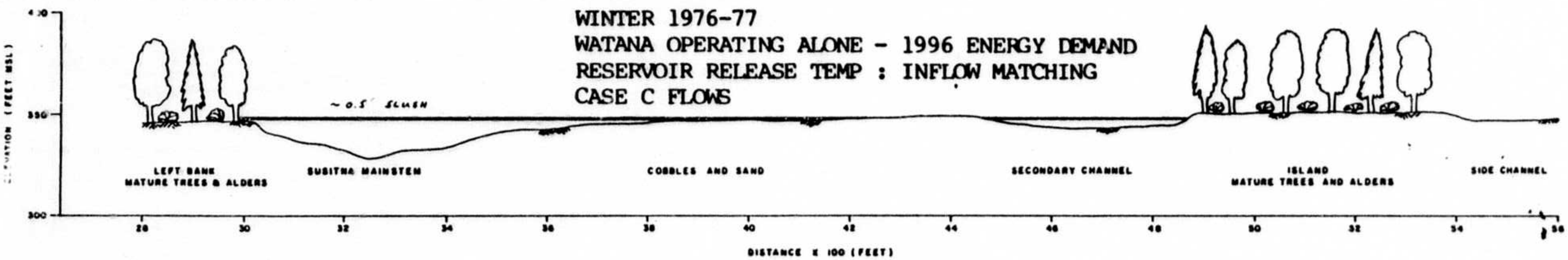
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

Exhibit U

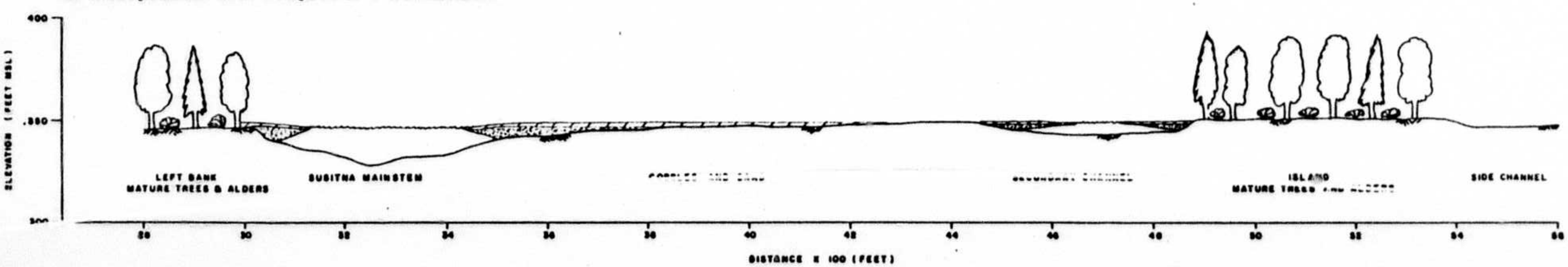
1. Natural Ice Conditions (1983)



2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

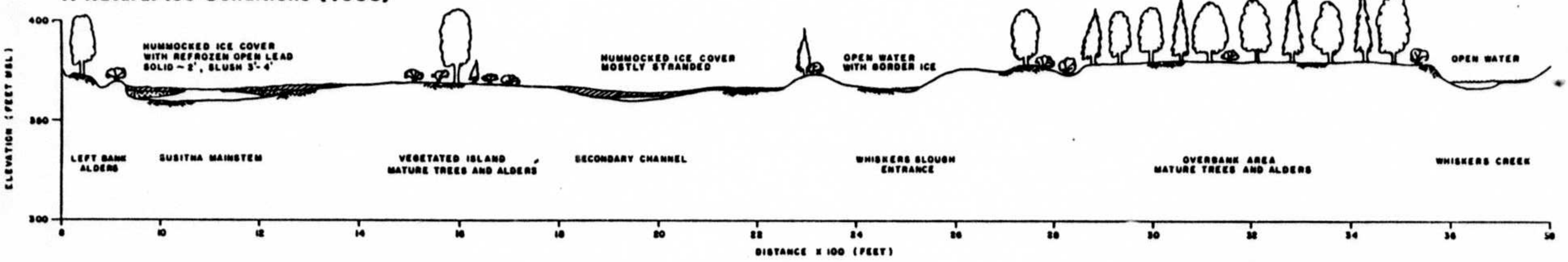
LRX-3

1982 CROSS SECTION SURVEY
RIVER MILE 98.6
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

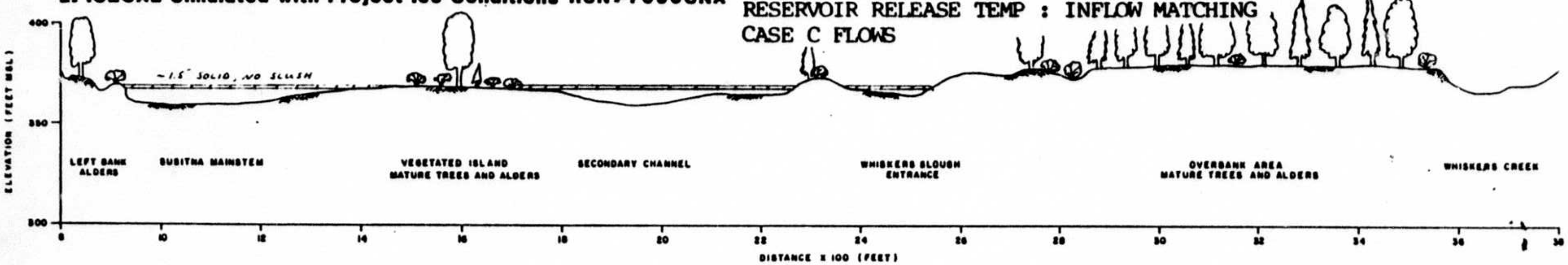
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

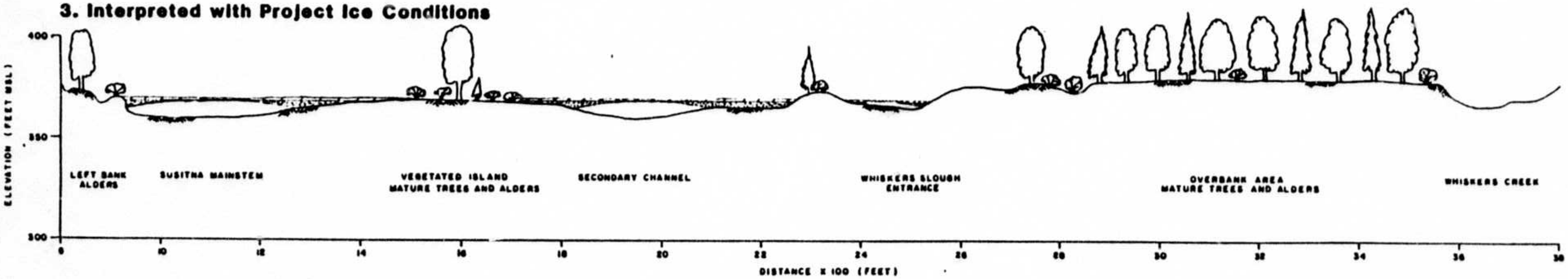


WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

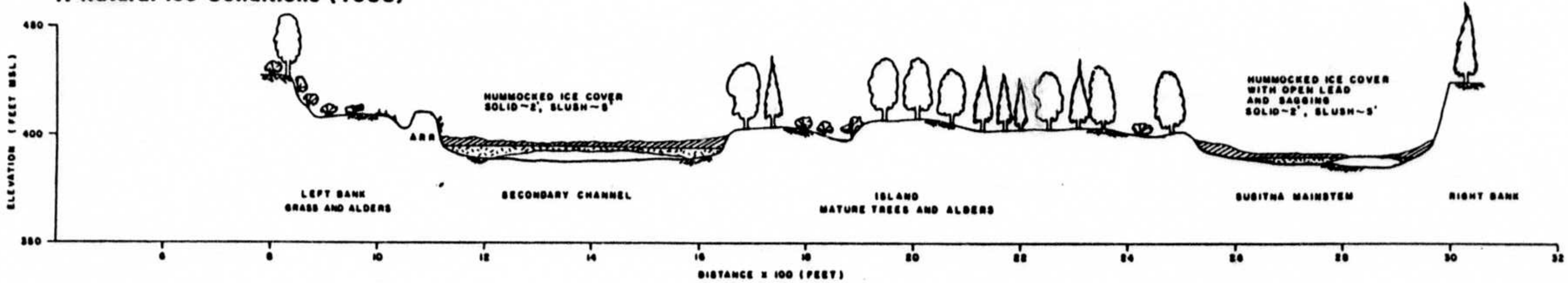
LRX-7

1980 CROSS SECTION SURVEY
RIVER MILE 101.5
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

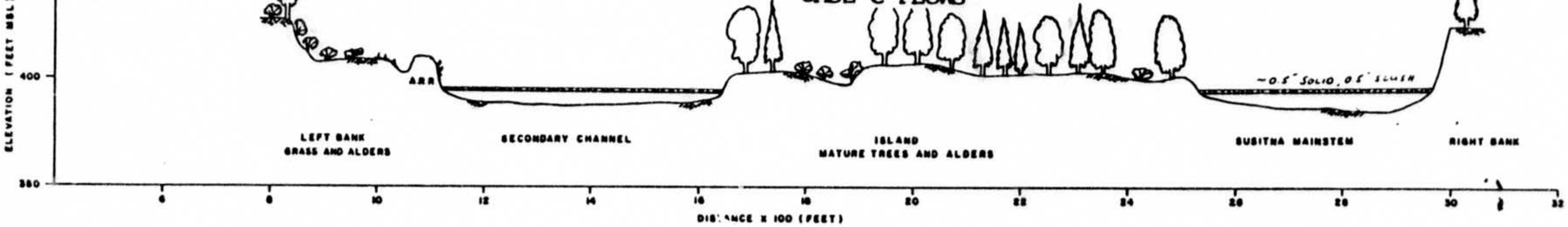
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

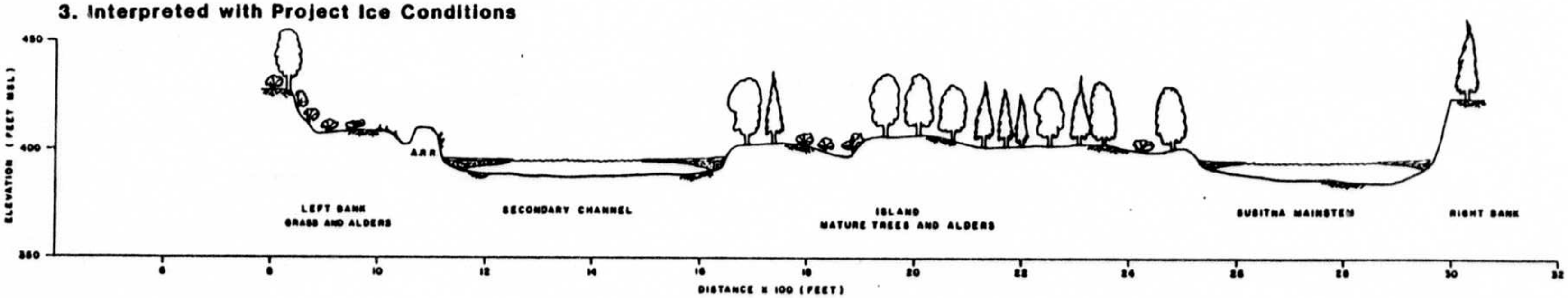


2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA

WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

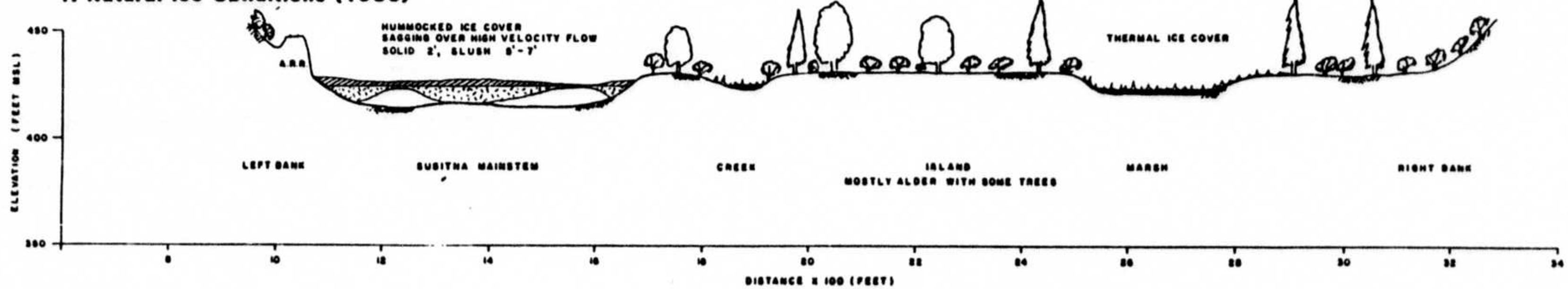
LRX-10

1980 CROSS SECTION SURVEY
RIVER MILE 104.8
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

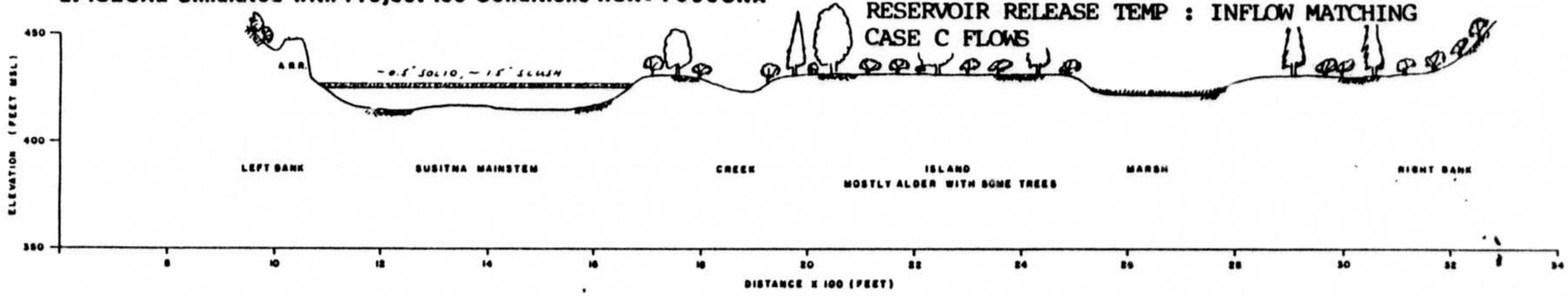
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

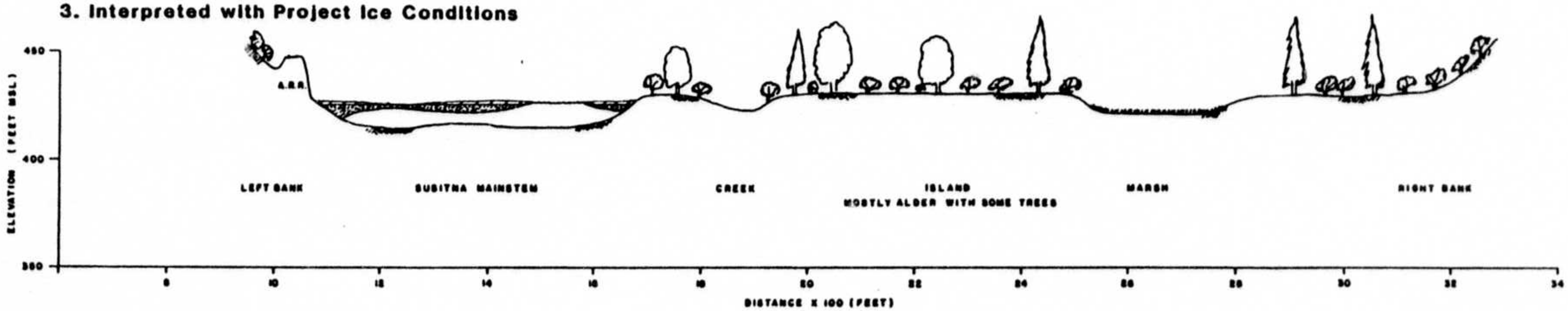


WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7396CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

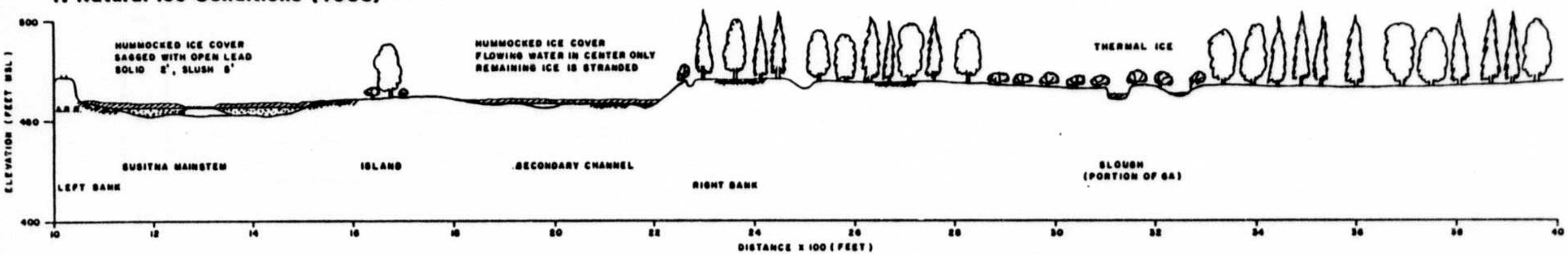
LRX-12

1981 CROSS SECTION SURVEY
RIVER MILE 108.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

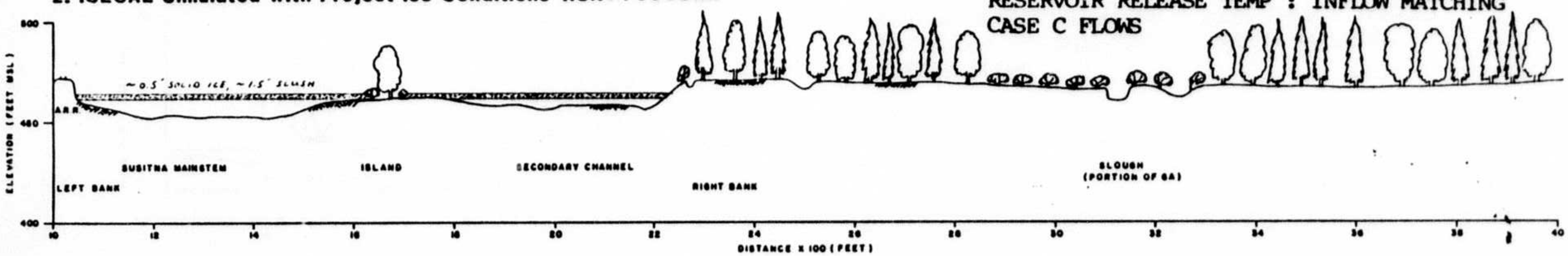
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

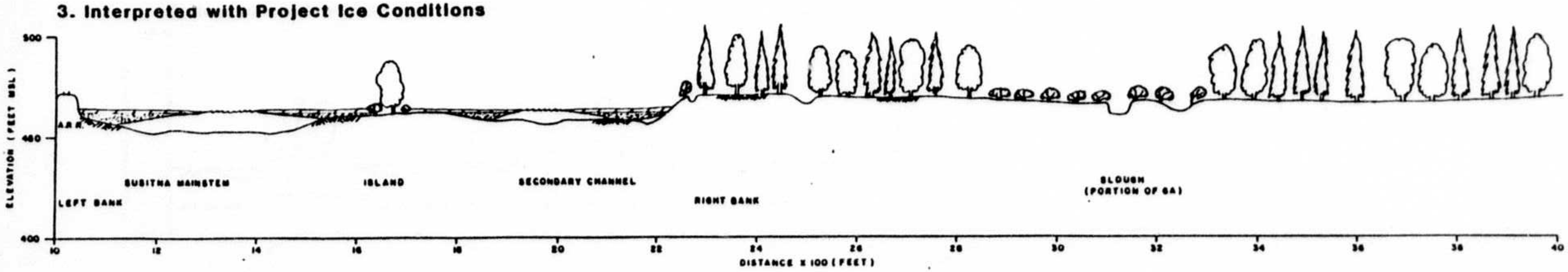


WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

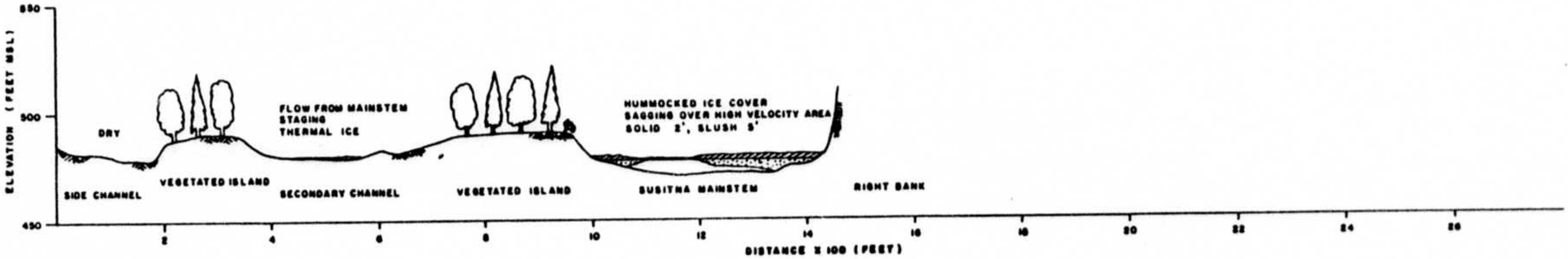
LRX-17

1980 CROSS SECTION SURVEY
RIVER MILE 112.7
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

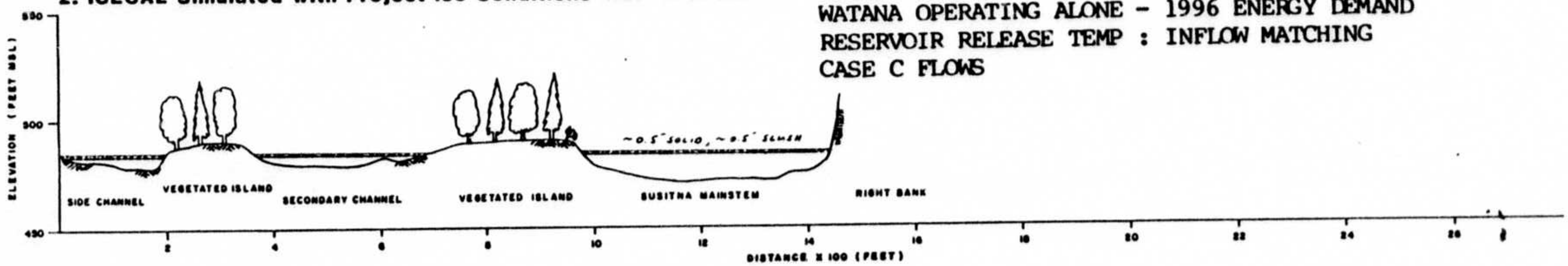
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

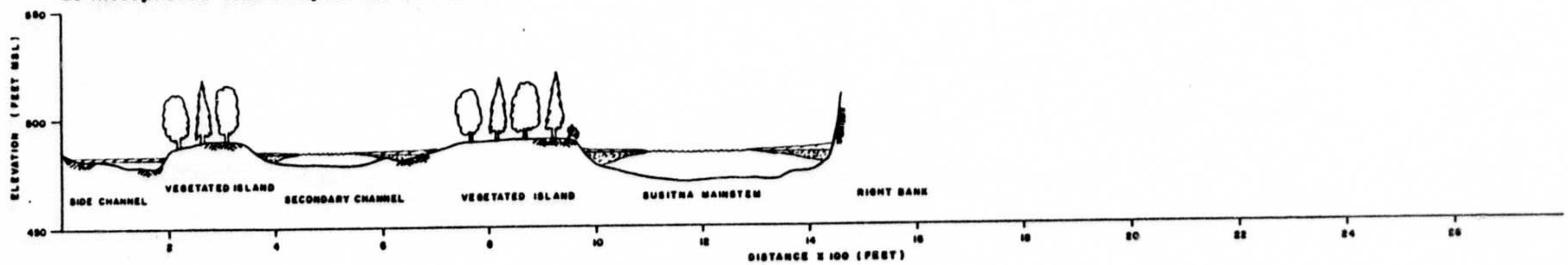


2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA

WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



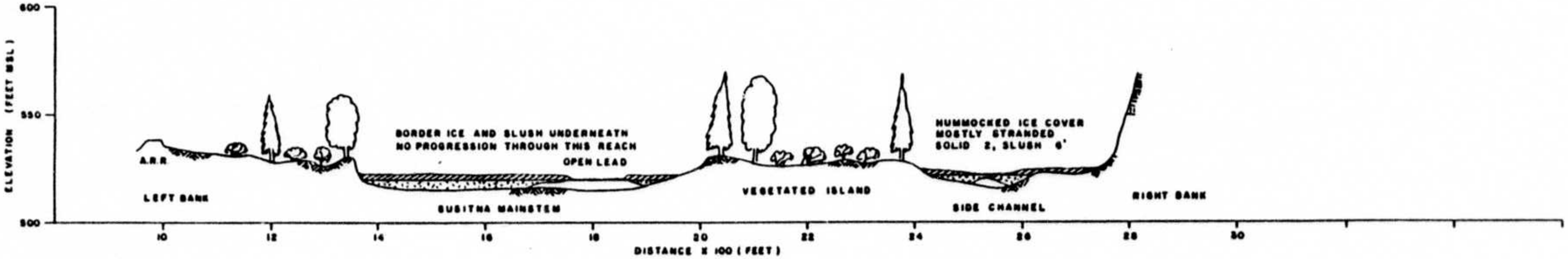
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-18.2

1982 CROSS SECTION SURVEY
RIVER MILE 115.1
VERTICAL EXAGGERATION 4:1

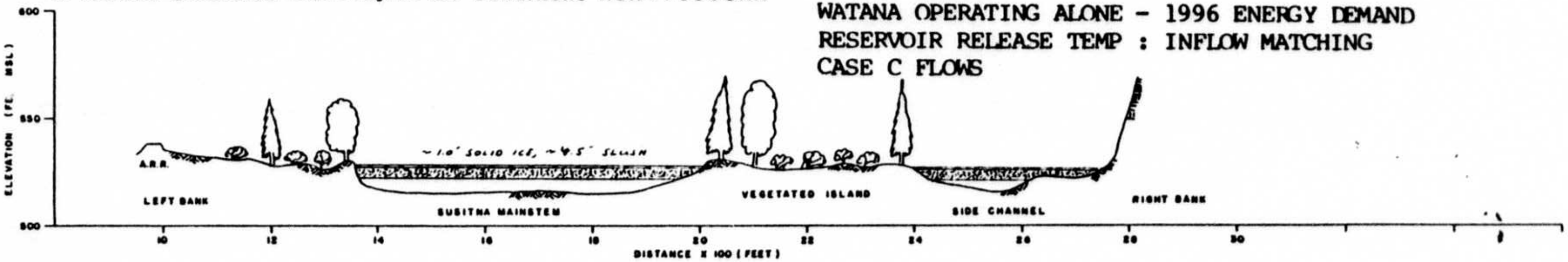
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

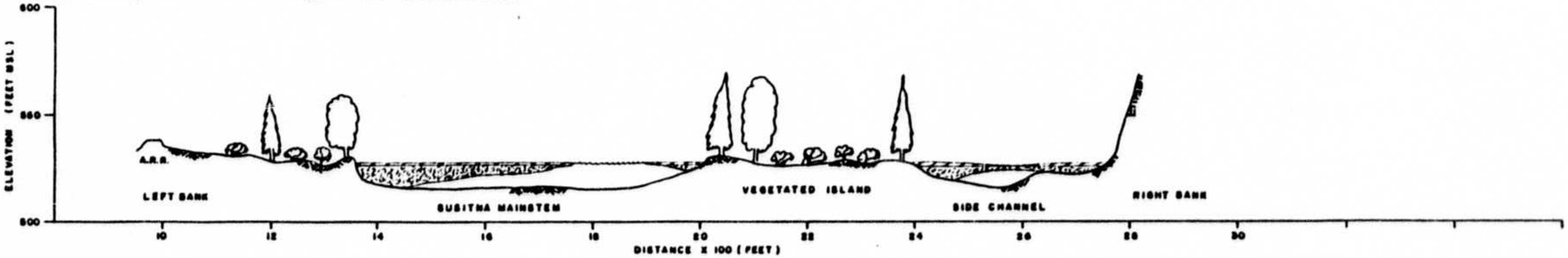


2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA

WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



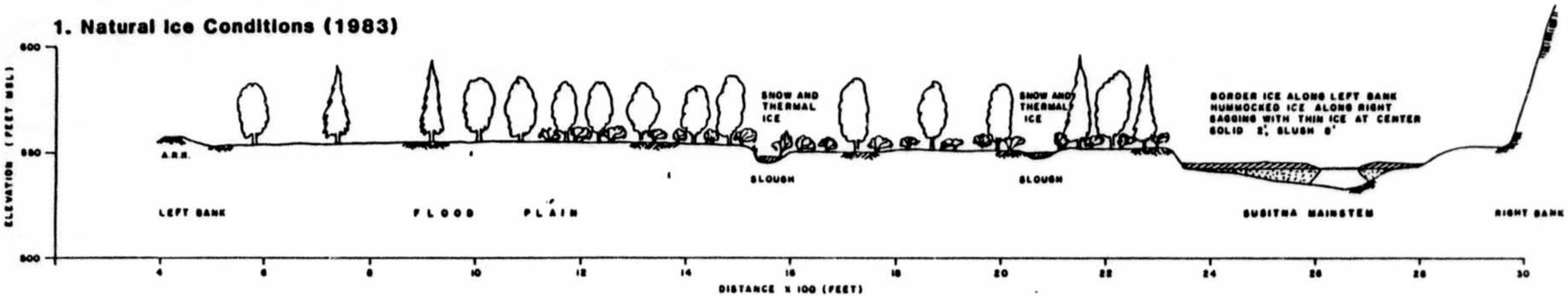
PREPARED BY:
R&M CONSULTANTS, INC.

LRX-23

1980 CROSS SECTION SURVEY
RIVER MILE 120.2
VERTICAL EXAGGERATION 4:1

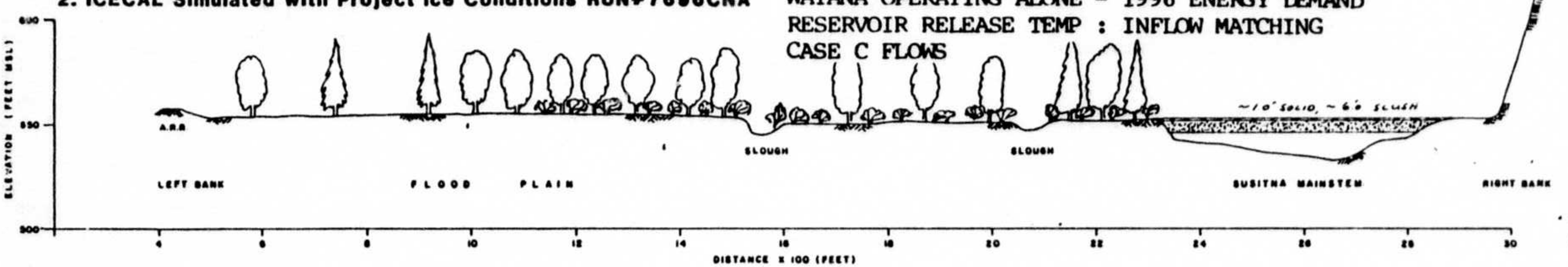
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

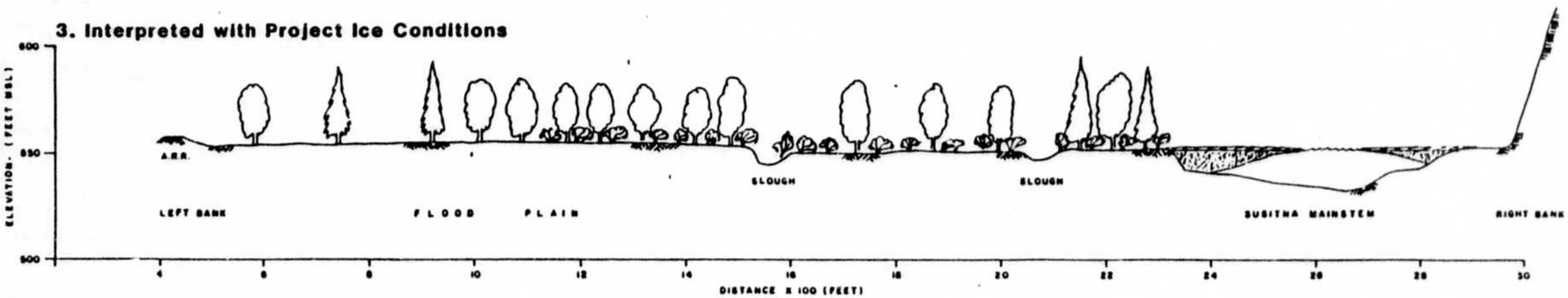


WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

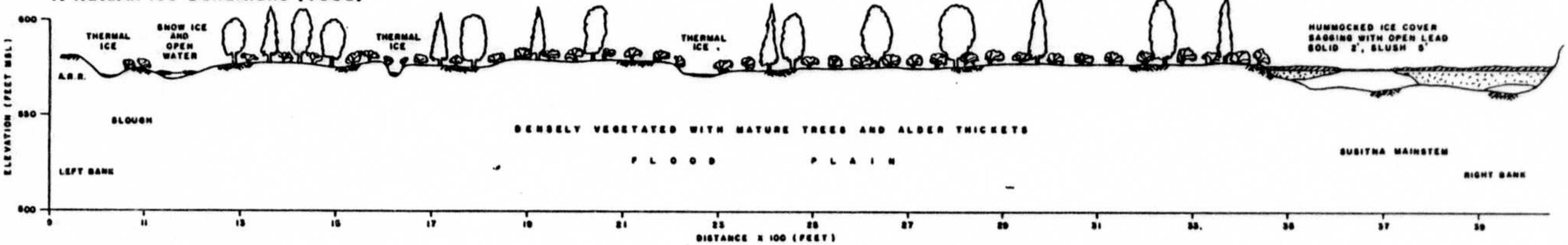
LRX -27

1980 CROSS SECTION SURVEY
RIVER MILE 123.3
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

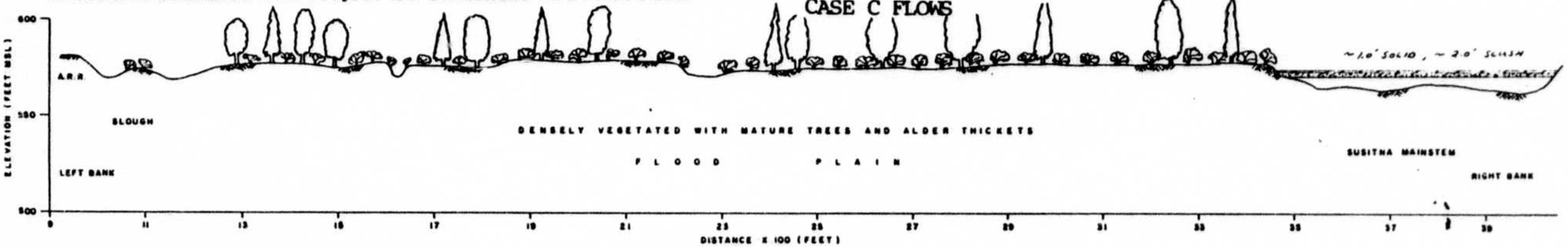
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

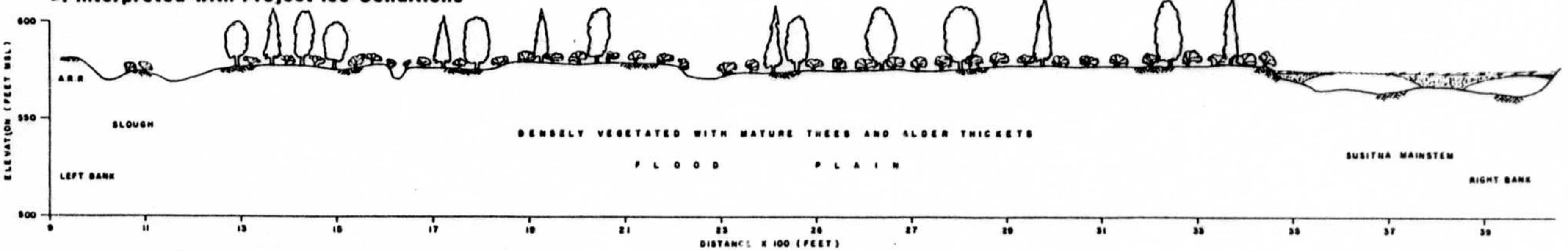


WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

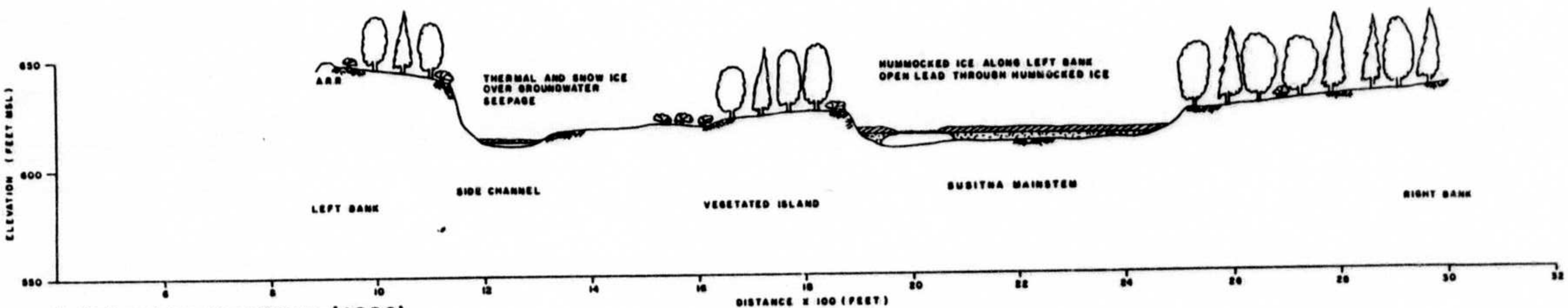
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-29

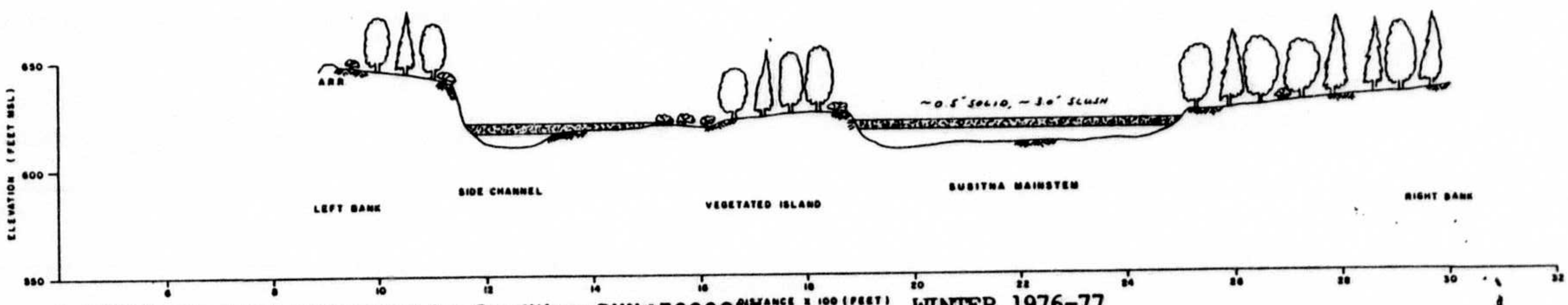
1980 CROSS SECTION SURVEY
RIVER MILE 126.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

HARZA-EBASCO
SUSITNA JOINT VENTURE

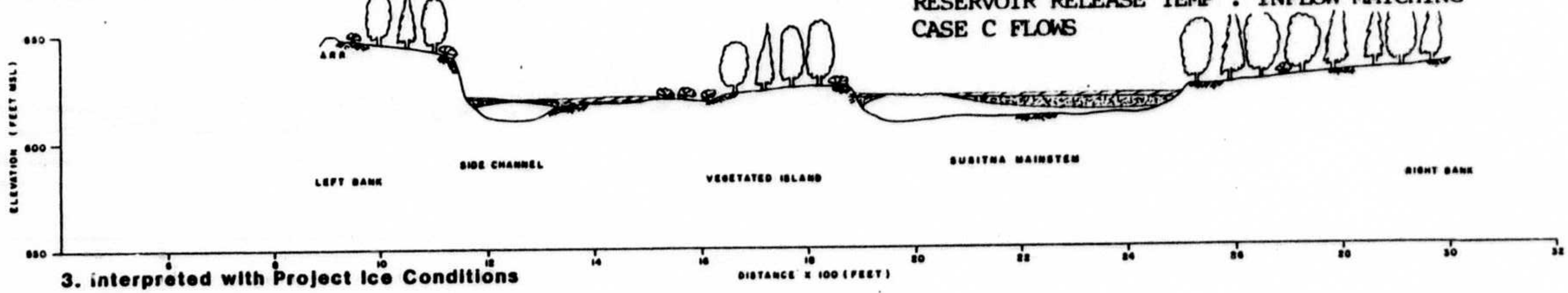


1. Natural Ice Conditions (1983)



2. ICECAL Simulated with Project Ice Conditions RUN#7696CNX

WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions

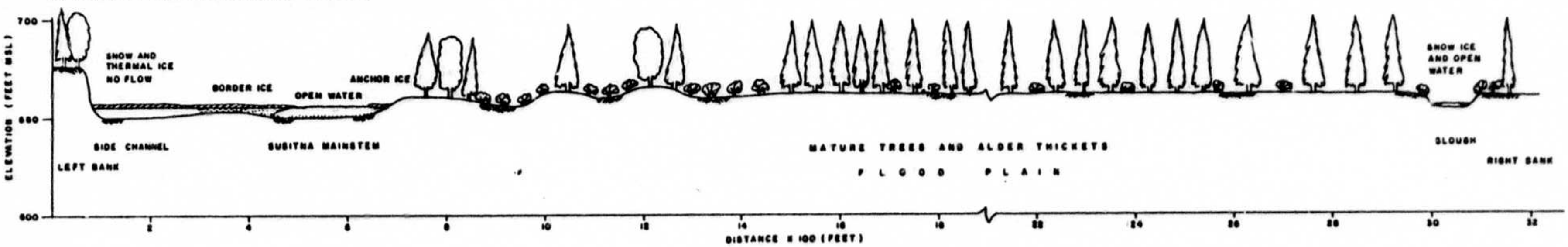
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-34

1980 CROSS SECTION SURVEY
RIVER MILE 130.5
VERTICAL EXAGGERATION 4:1

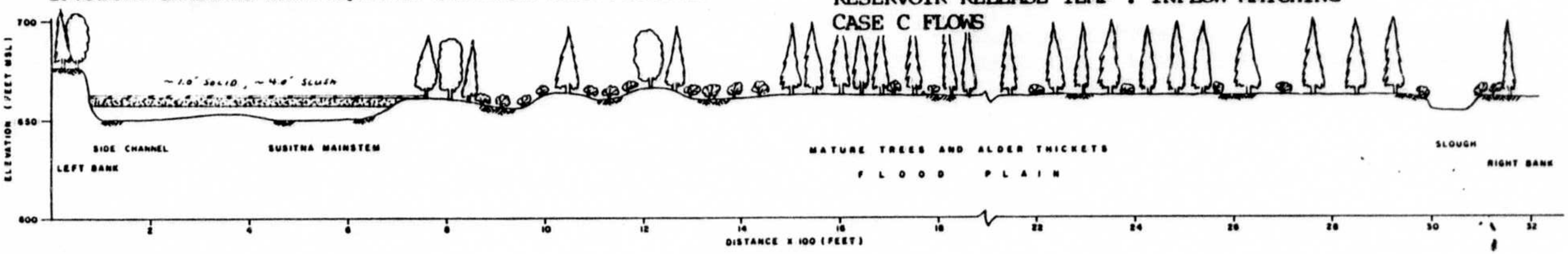
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

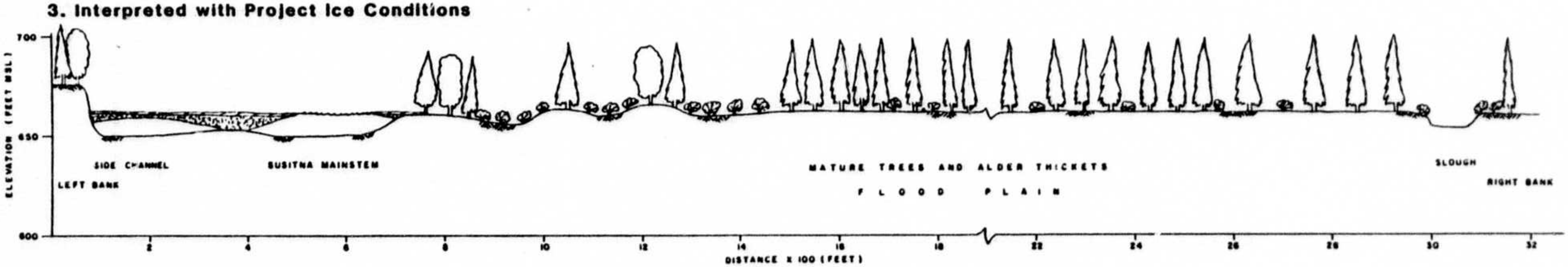


WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA



3. Interpreted with Project Ice Conditions



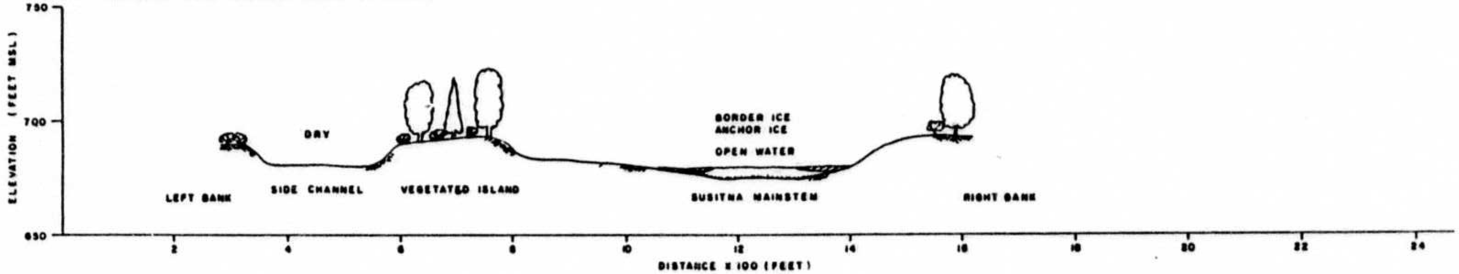
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-40

1980 CROSS SECTION SURVEY
RIVER MILE 134.2
VERTICAL EXAGGERATION 4:1

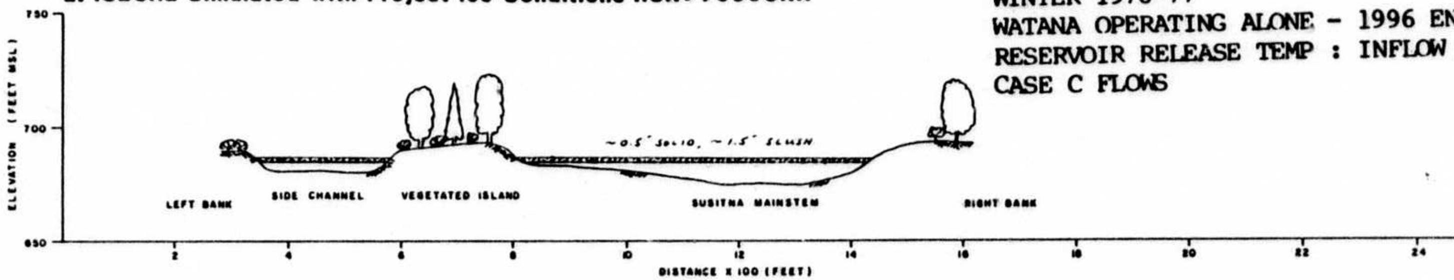
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

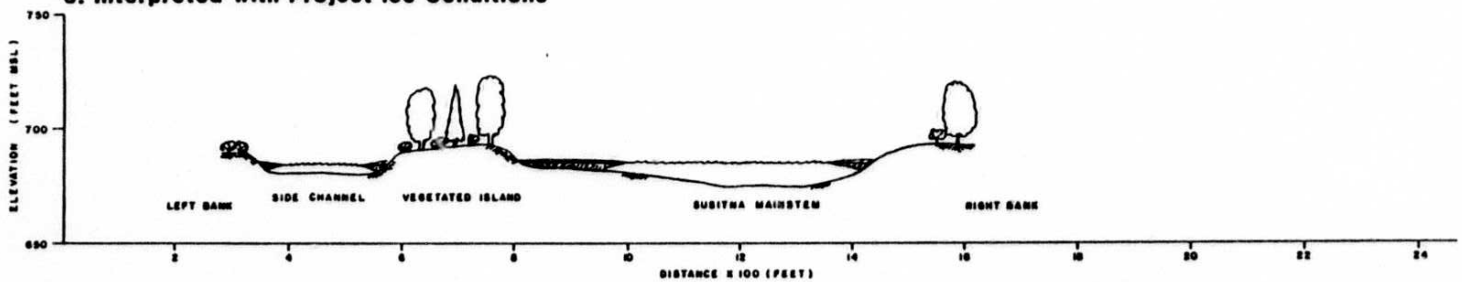


2. ICECAL Simulated with Project Ice Conditions RUN#7696CNA

WINTER 1976-77
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

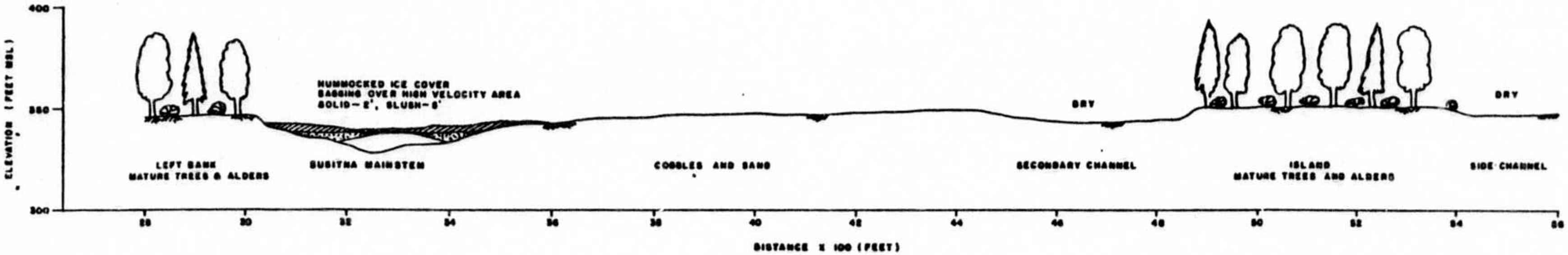
LRX-44

1980 CROSS SECTION SURVEY
RIVER MILE 136.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

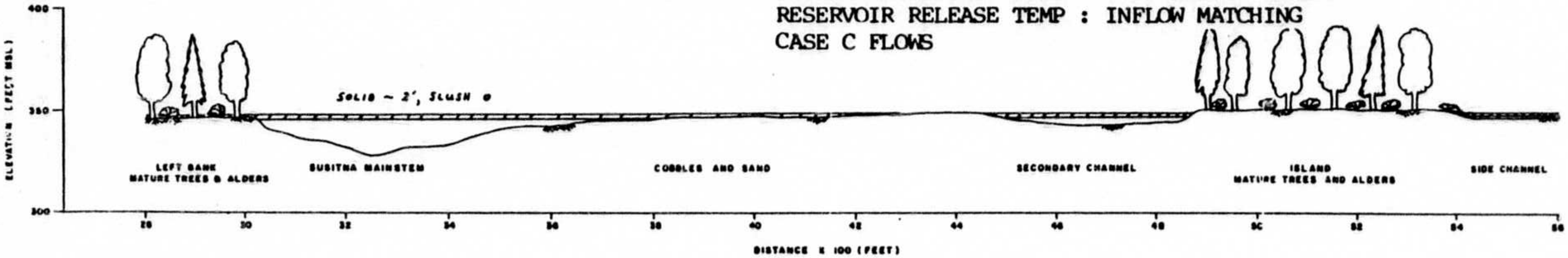
Exhibit V

1. Natural Ice Conditions (1983)

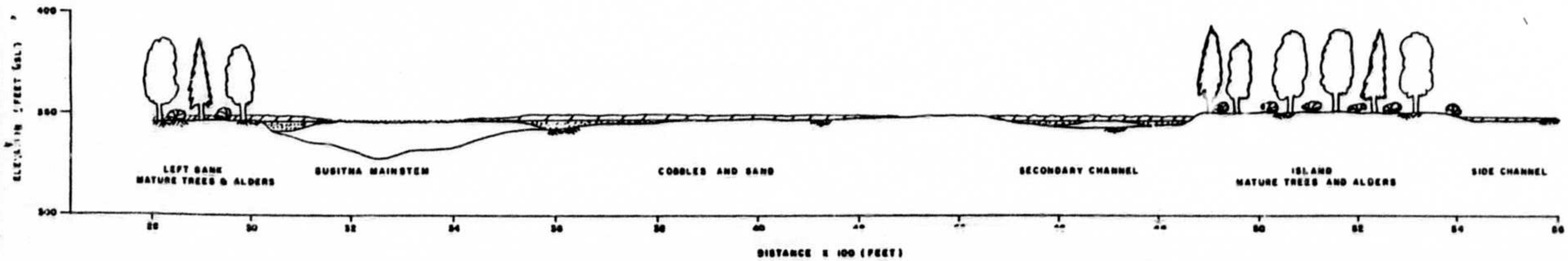


2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA

WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

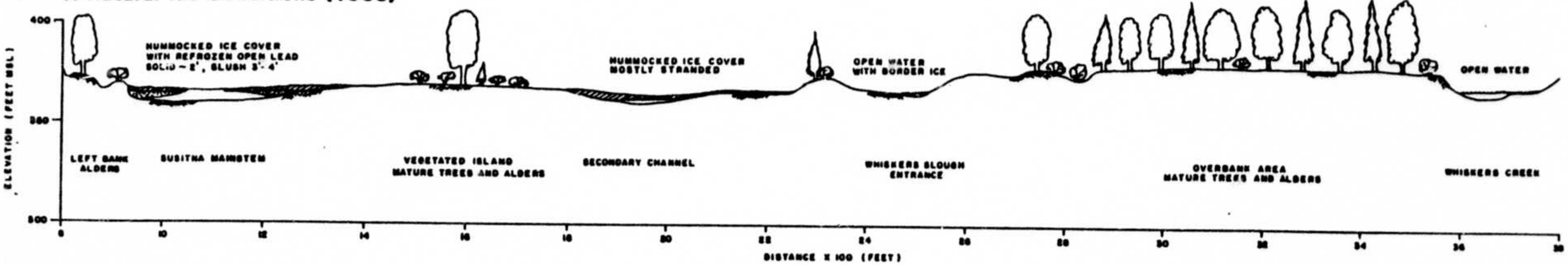
LRX-3

1982 CROSS SECTION SURVEY
RIVER MILE 98.6
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

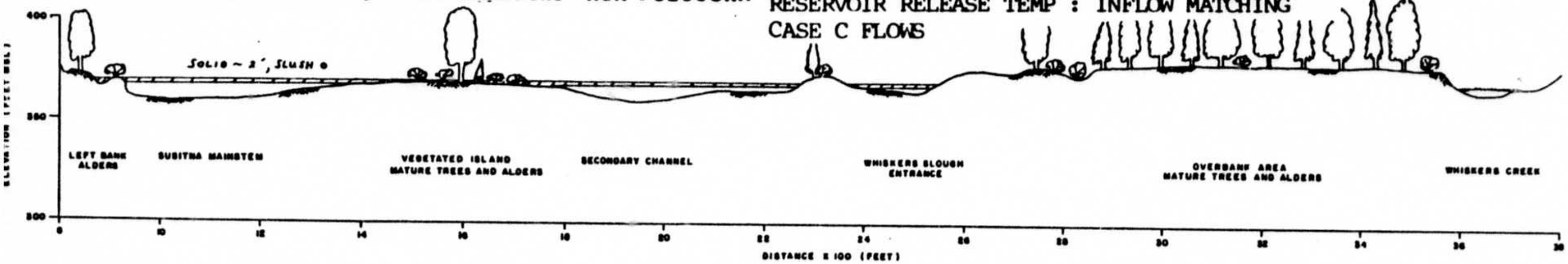
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

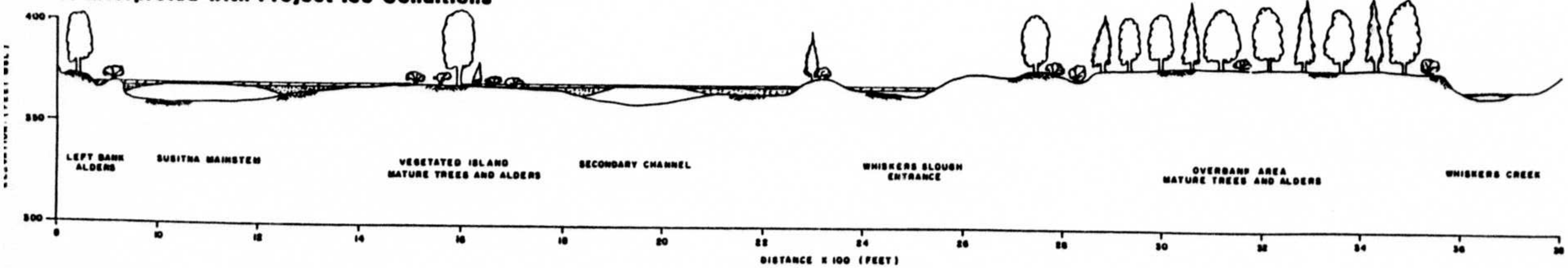


WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA



3. Interpreted with Project Ice Conditions



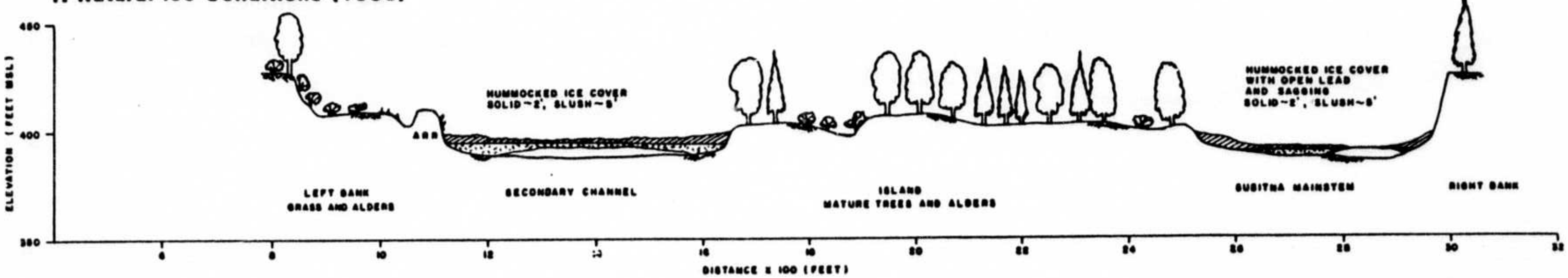
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-7

1980 CROSS SECTION SURVEY
RIVER MILE 101.5
VERTICAL EXAGGERATION 4:1

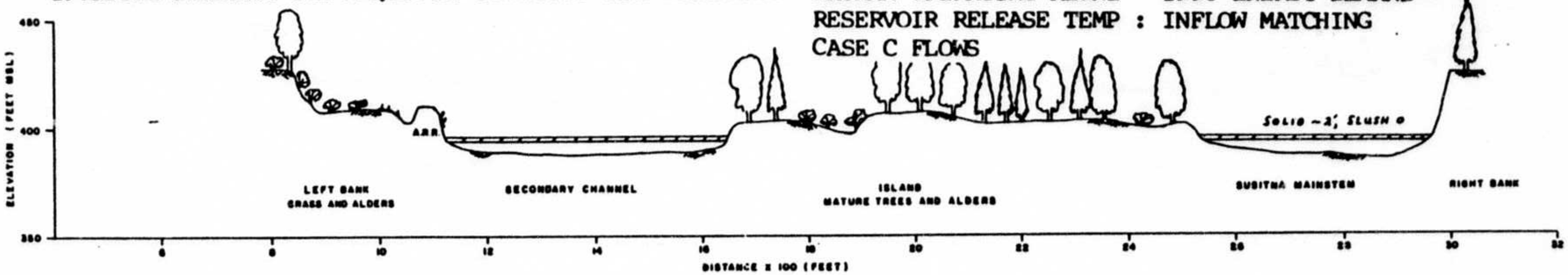
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

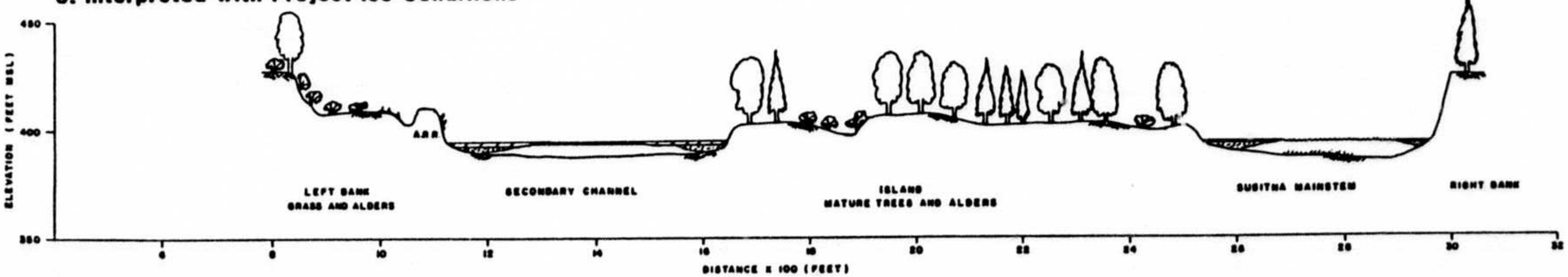


2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA

WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

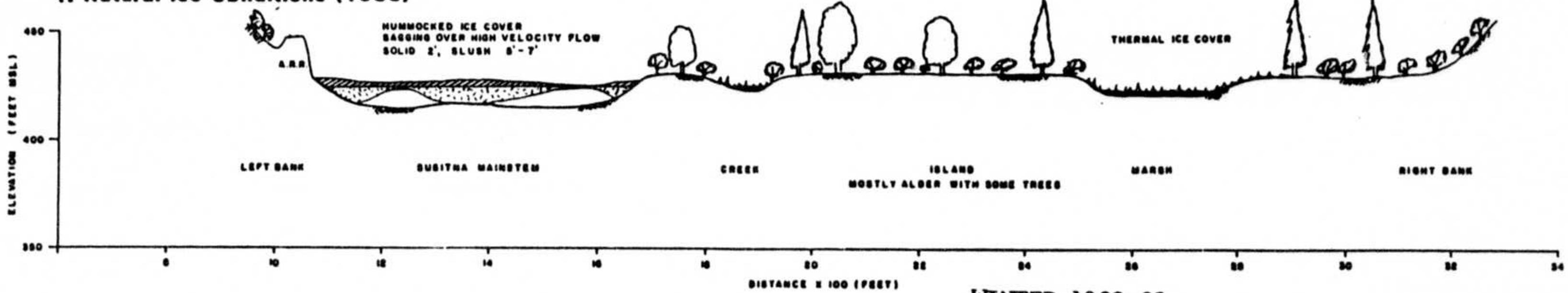
LRX-10

1980 CROSS SECTION SURVEY
RIVER MILE 104.8
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

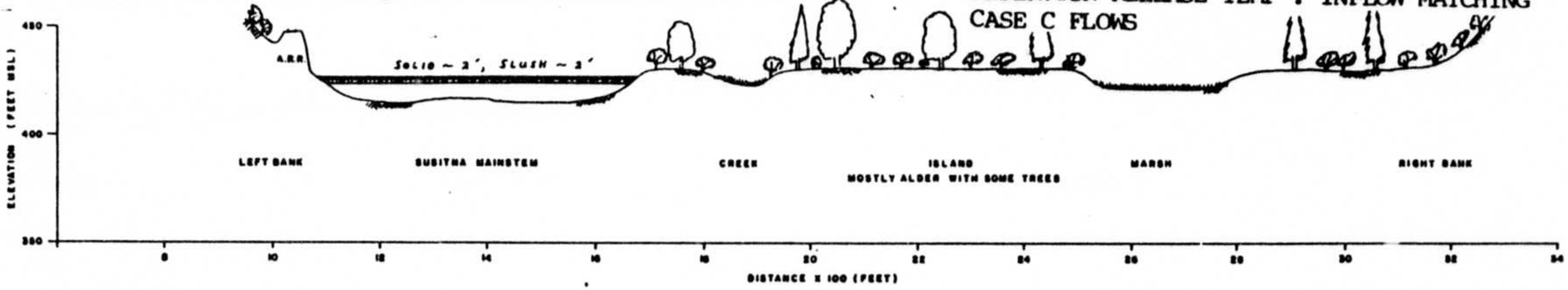
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

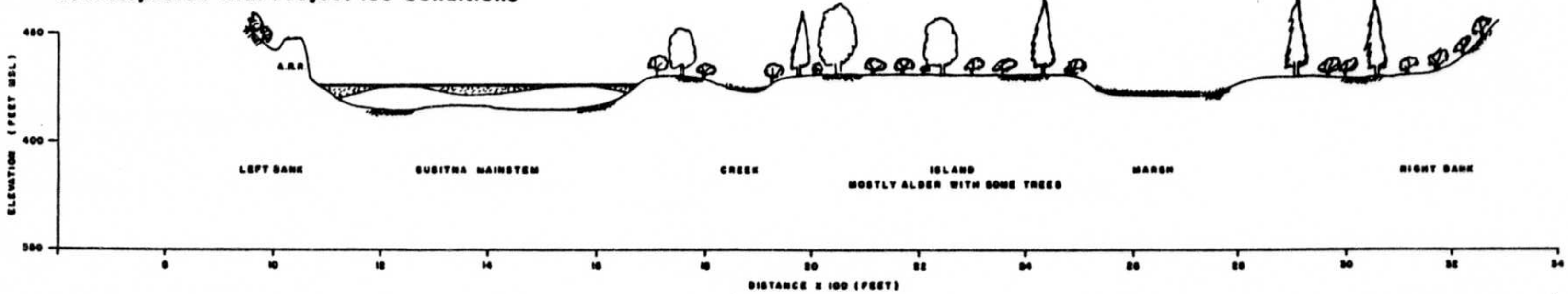


WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

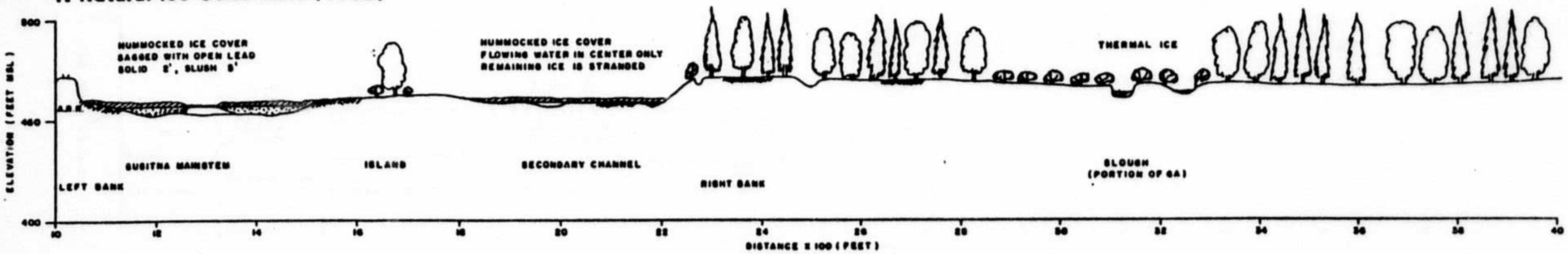
LRX-12

1981 CROSS SECTION SURVEY
RIVER MILE 108.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

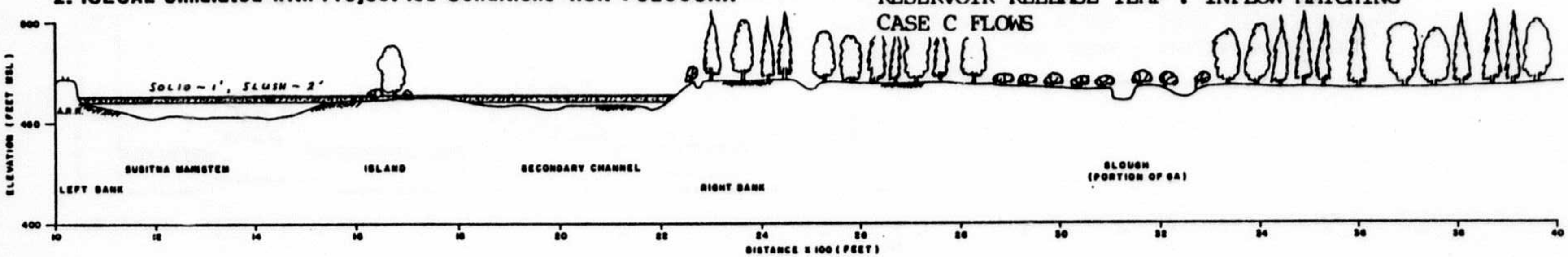
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

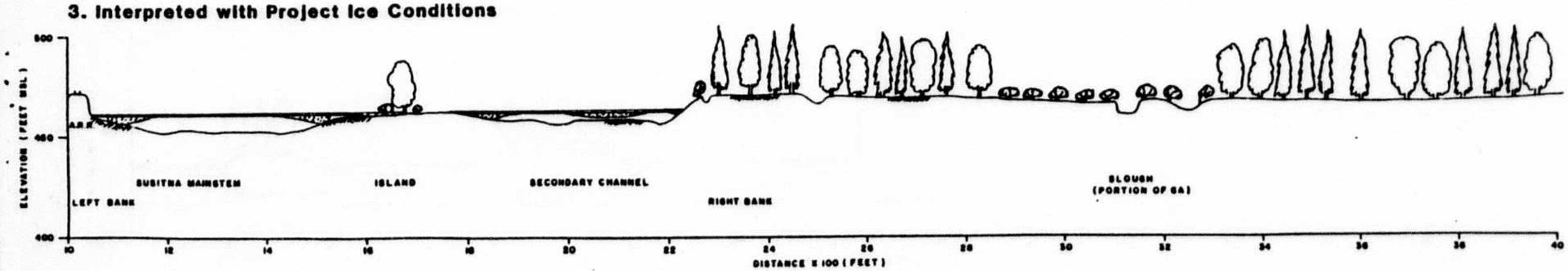


WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA



3. Interpreted with Project Ice Conditions



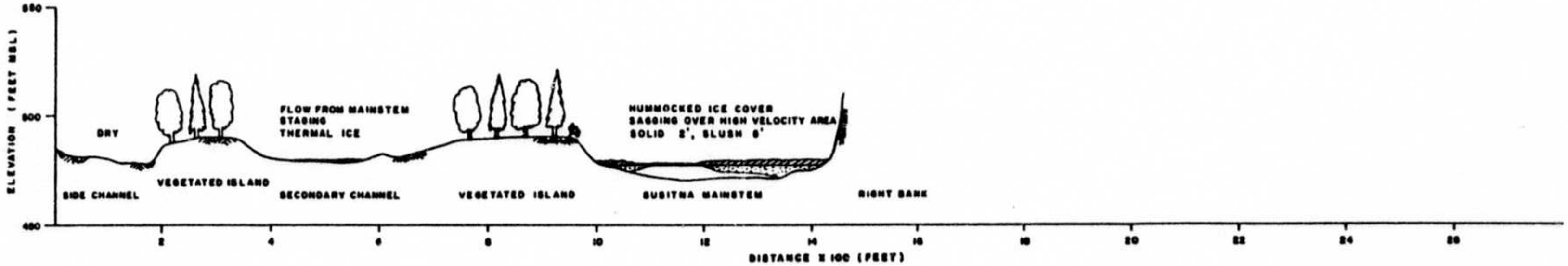
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-17

1980 CROSS SECTION SURVEY
RIVER MILE 112.7
VERTICAL EXAGGERATION 4:1

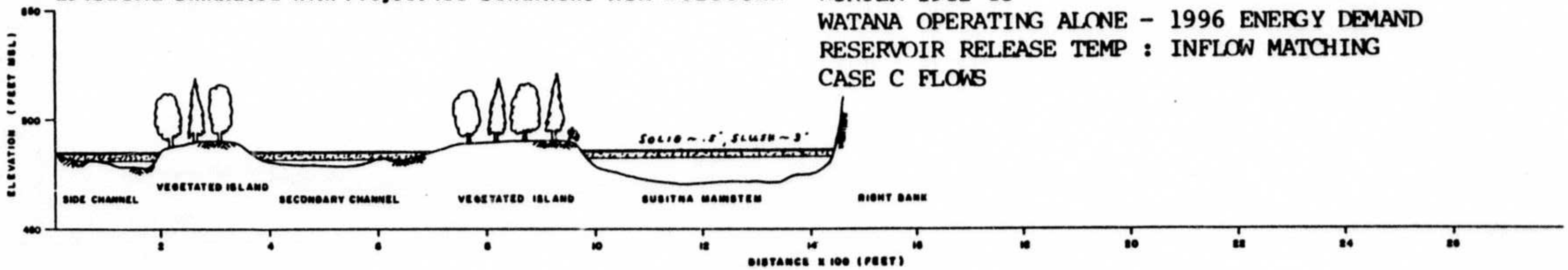
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

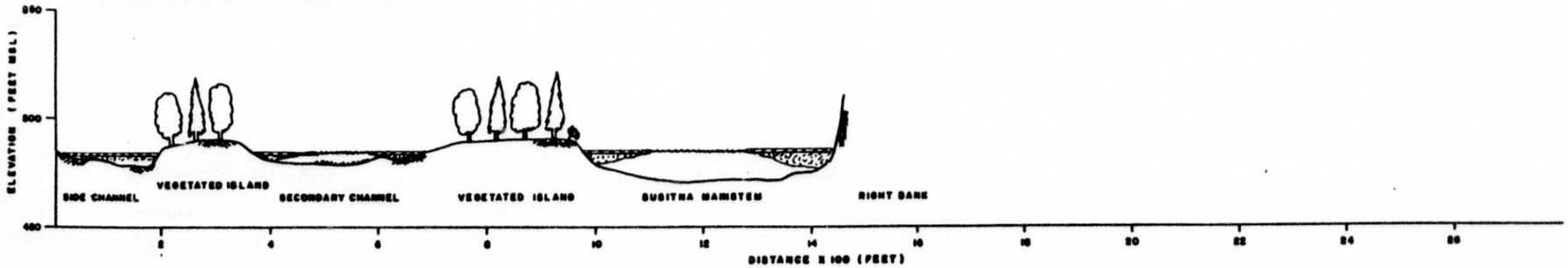


2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA

WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



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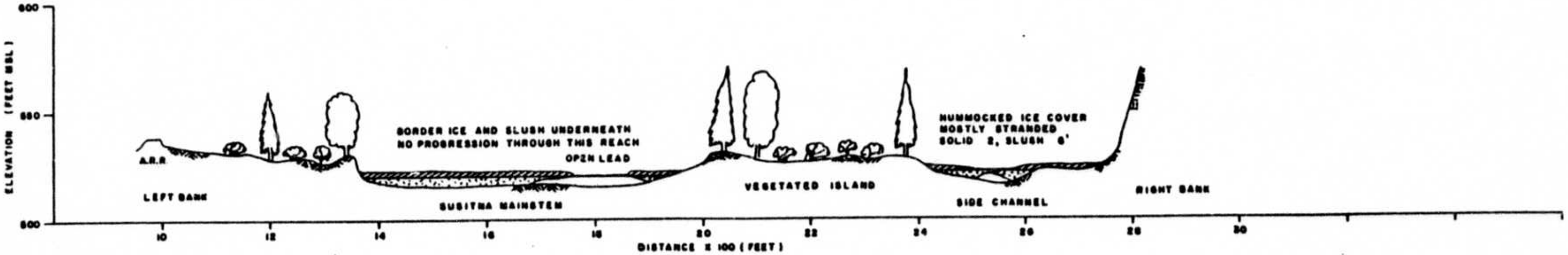
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-18.2

1982 CROSS SECTION SURVEY
RIVER MILE 115.1
VERTICAL EXAGGERATION 4:1

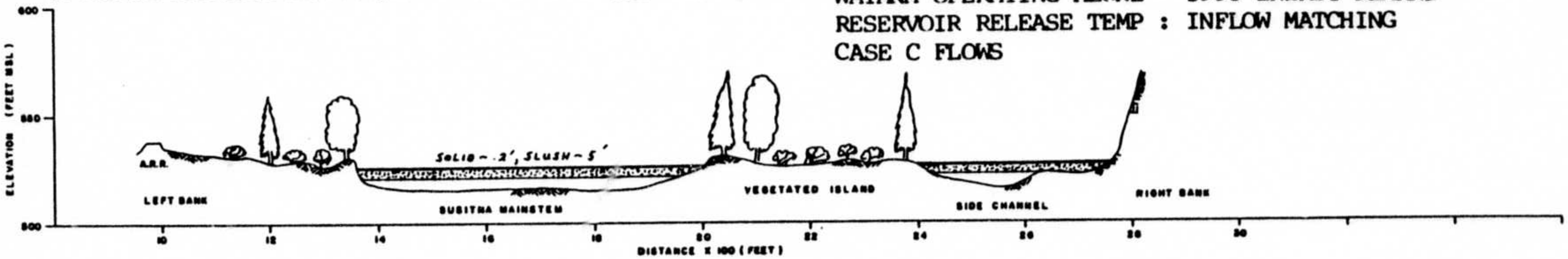
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

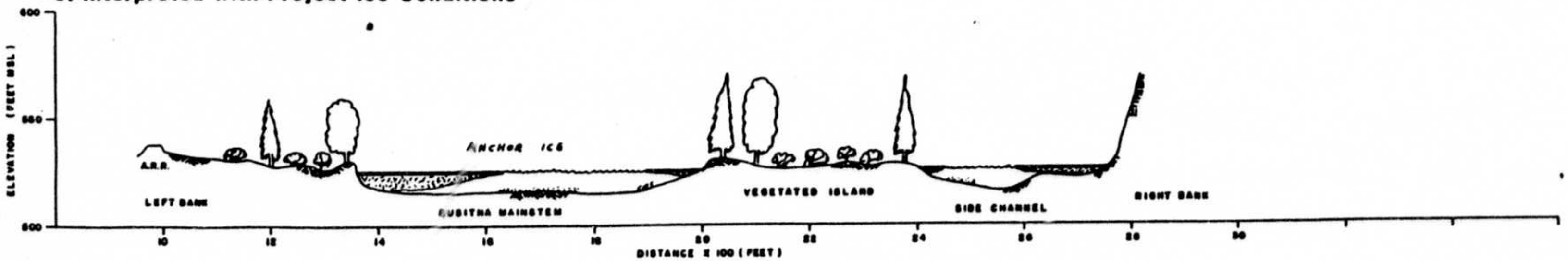


2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA

WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



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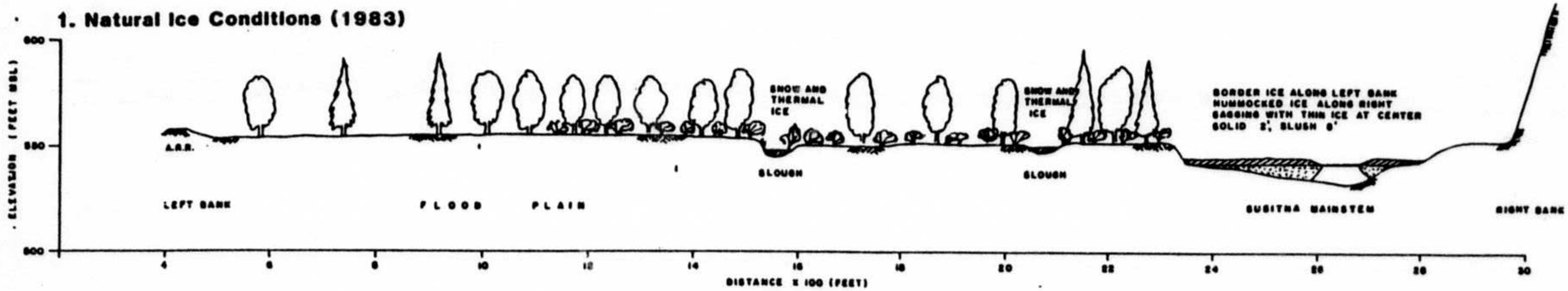
LRX-23

1980 CROSS SECTION SURVEY
RIVER MILE 120.2
VERTICAL EXAGGERATION 4:1

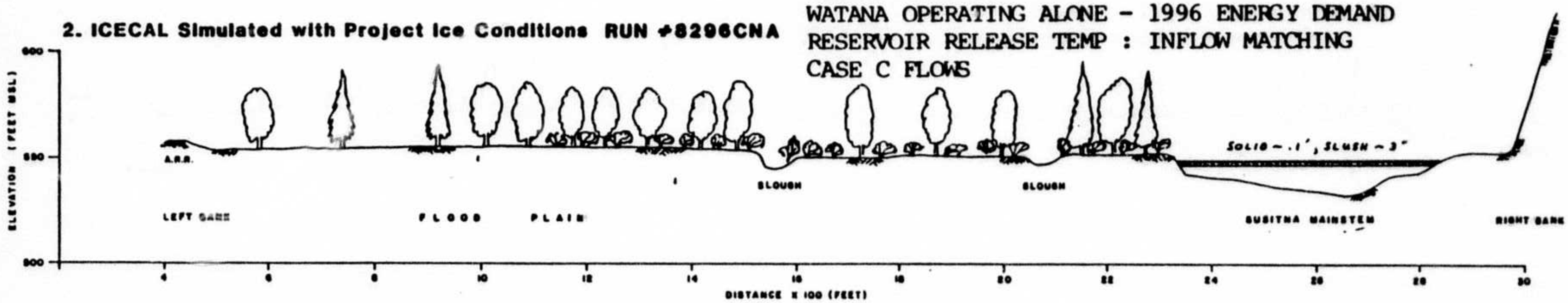
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

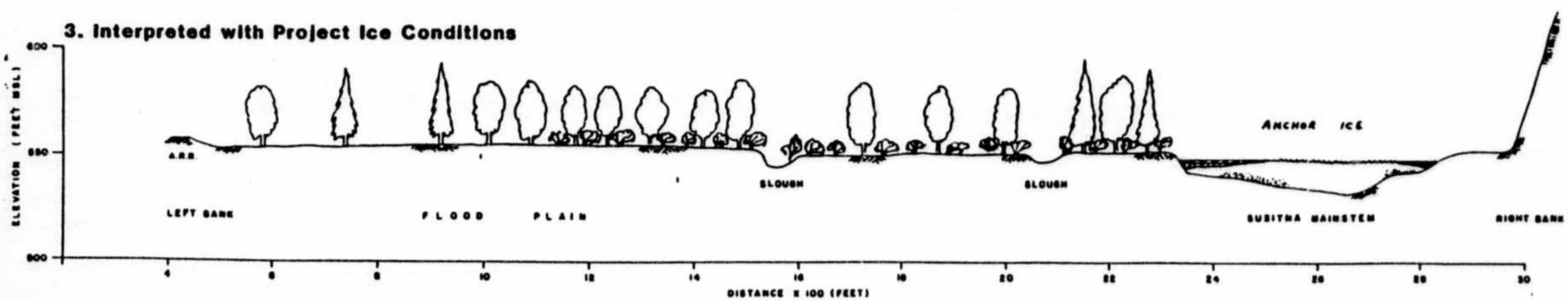


WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

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ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

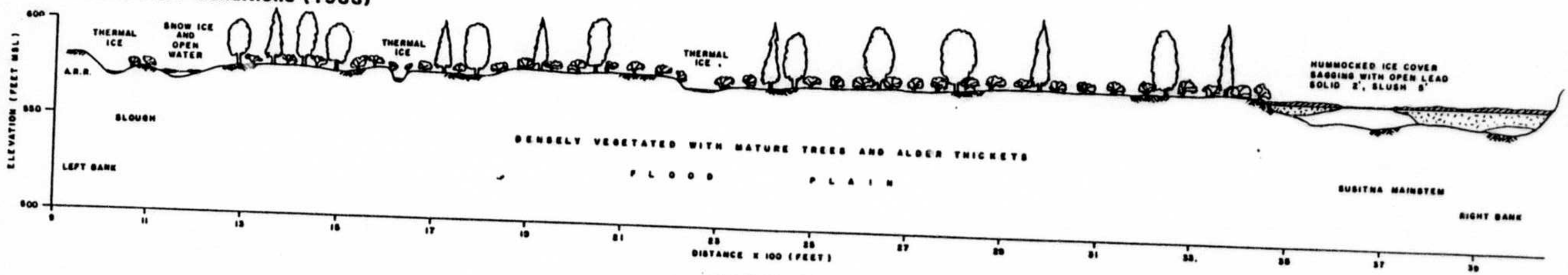
LRX -27

1980 CROSS SECTION SURVEY
RIVER MILE 123.3
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

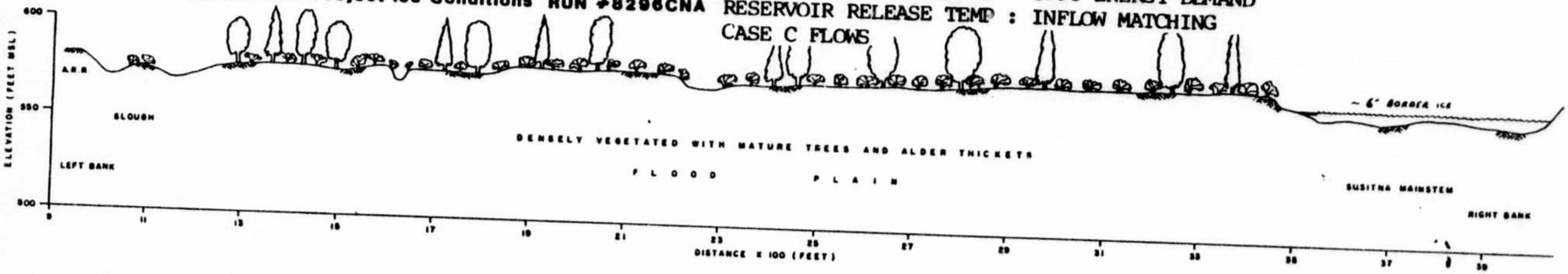
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

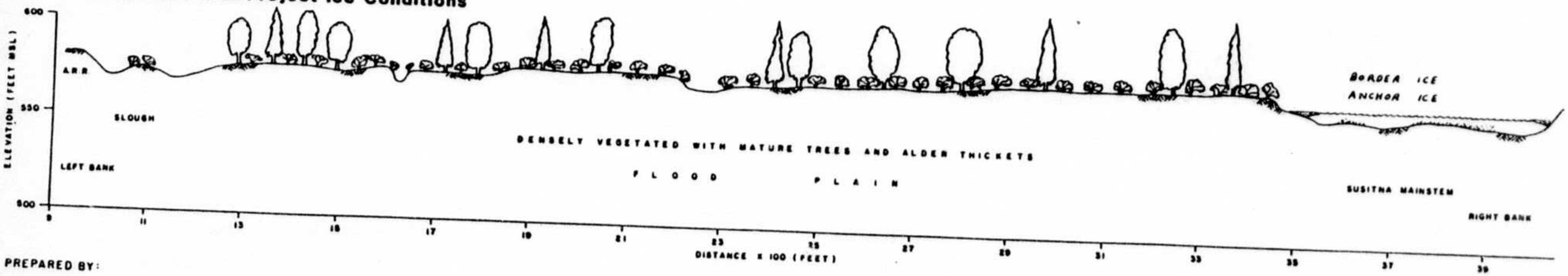


WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA



3. Interpreted with Project Ice Conditions



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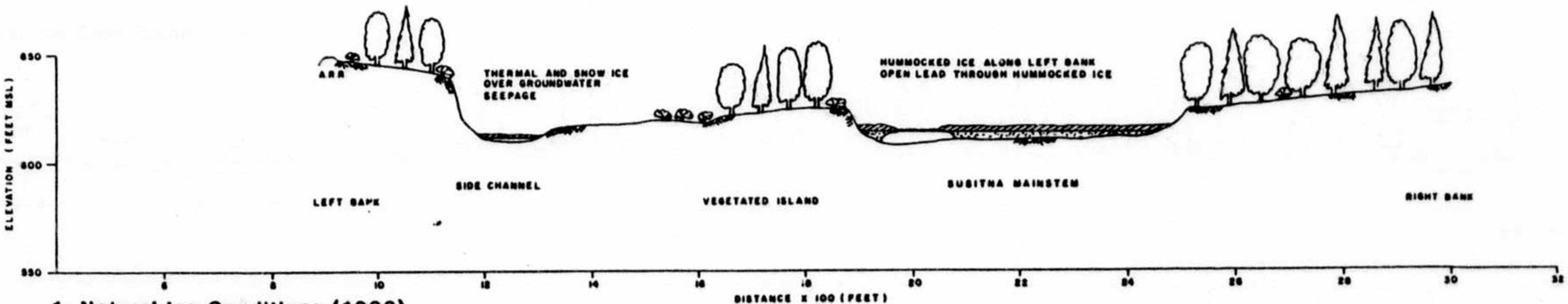
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-29

1980 CROSS SECTION SURVEY
RIVER MILE 126.1
VERTICAL EXAGGERATION 4:1

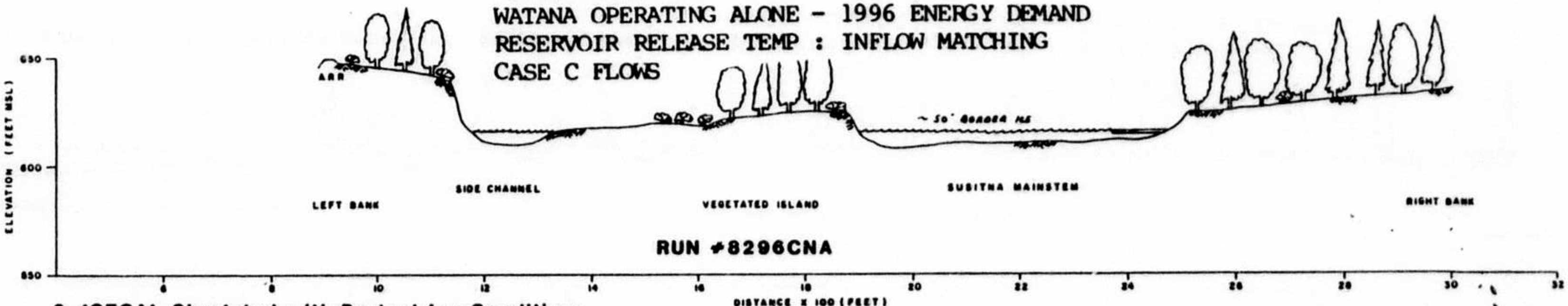
PREPARED FOR:

HARZA-EBASCO
SUSITNA JOINT VENTURE

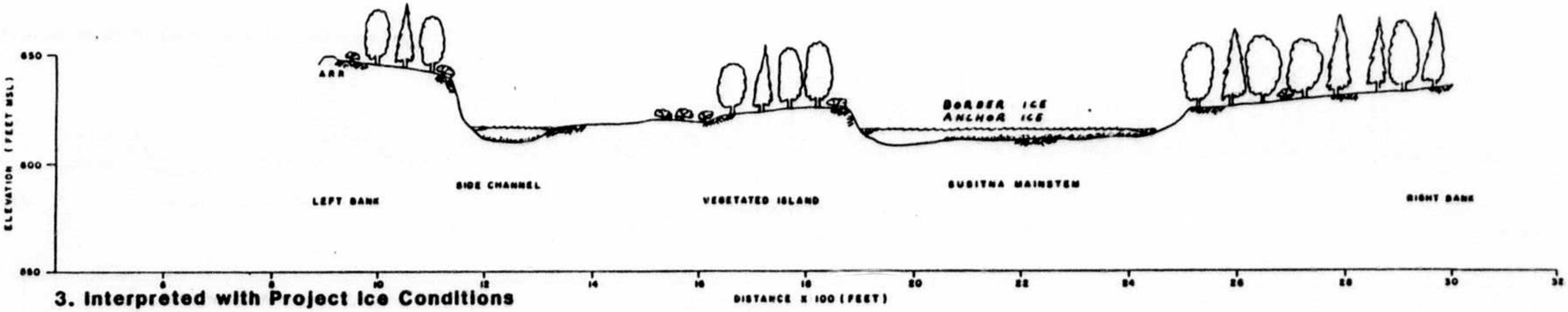


1. Natural Ice Conditions (1983)

WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



2. ICECAL Simulated with Project Ice Conditions



3. Interpreted with Project Ice Conditions

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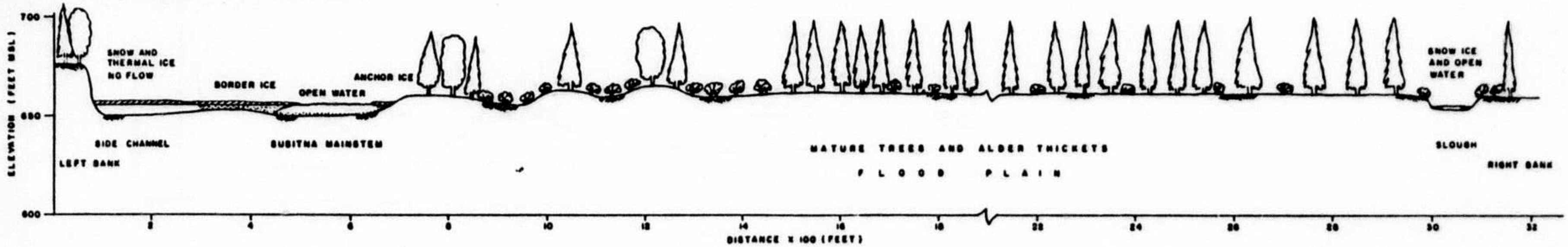
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-34

1980 CROSS SECTION SURVEY
RIVER MILE 130.5
VERTICAL EXAGGERATION 4:1

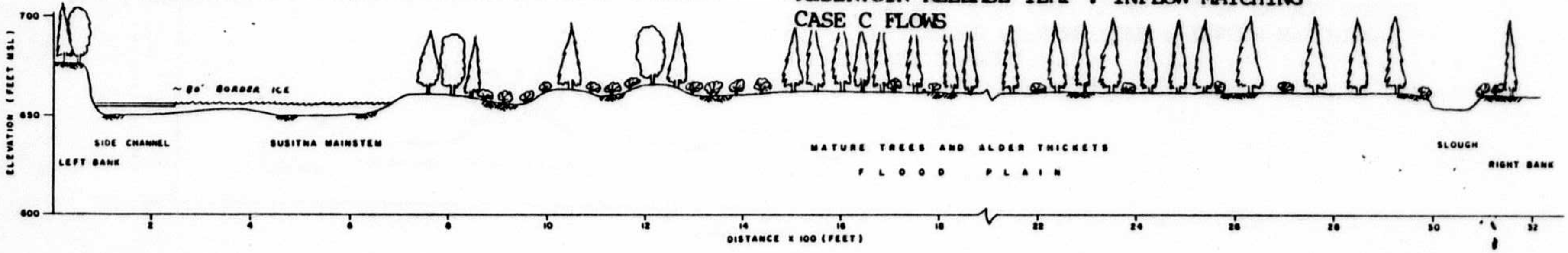
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

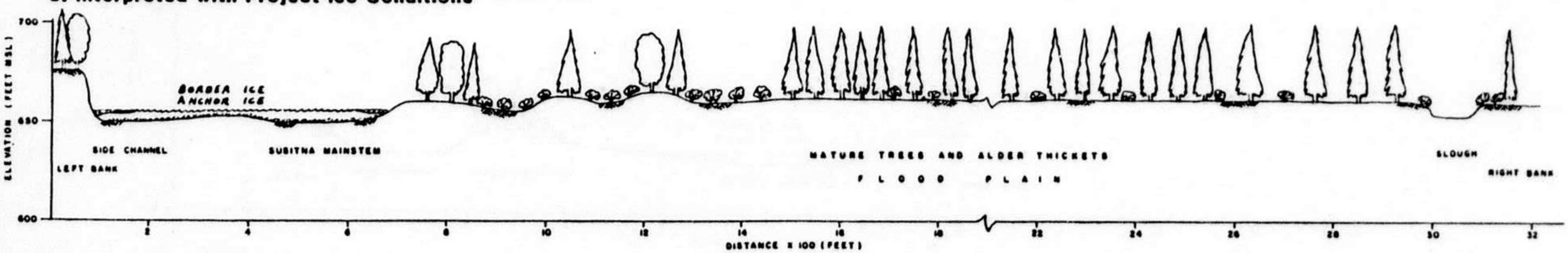


WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:
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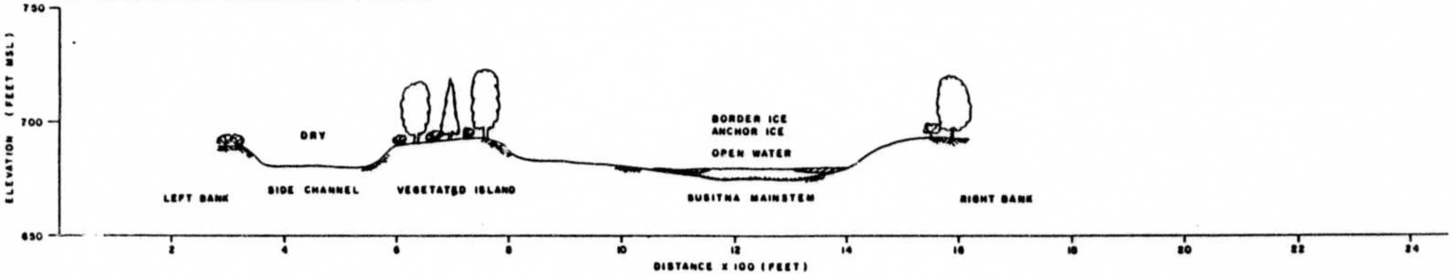
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-40

1980 CROSS SECTION SURVEY
RIVER MILE 134.2
VERTICAL EXAGGERATION 4:1

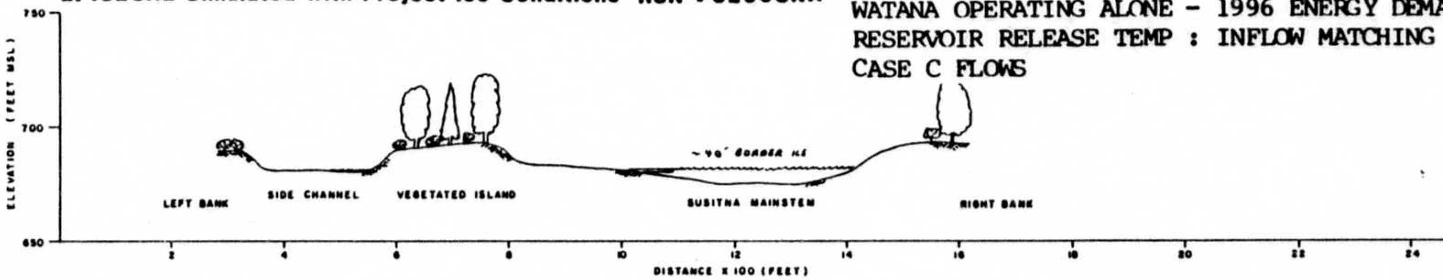
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

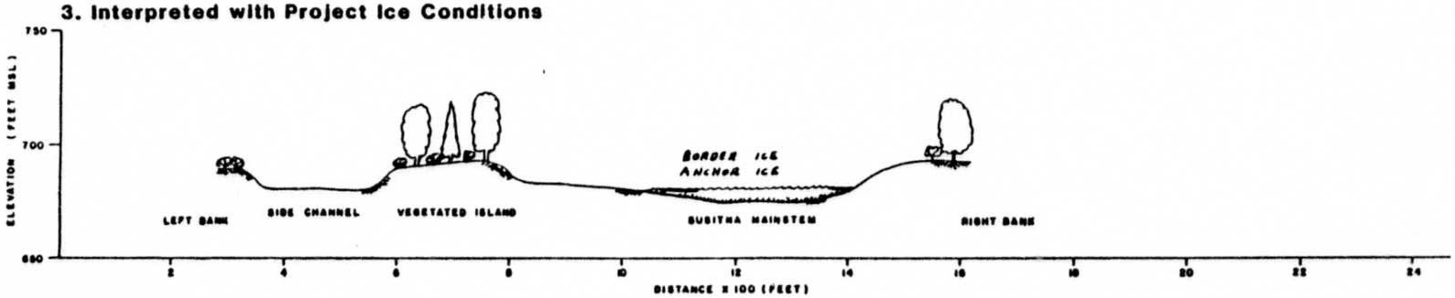


2. ICECAL Simulated with Project Ice Conditions RUN #8296CNA

WINTER 1982-83
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



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ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

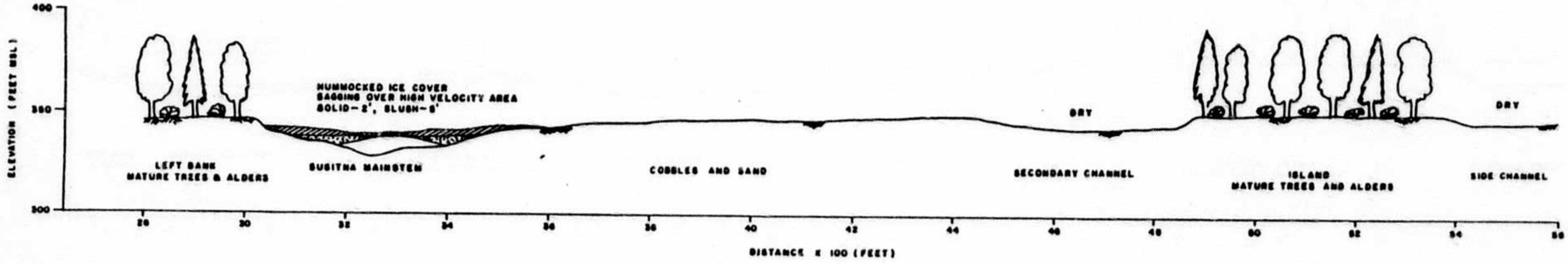
LRX-44

1980 CROSS SECTION SURVEY
RIVER MILE 136.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

Exhibit W

1. Natural Ice Conditions (1983)



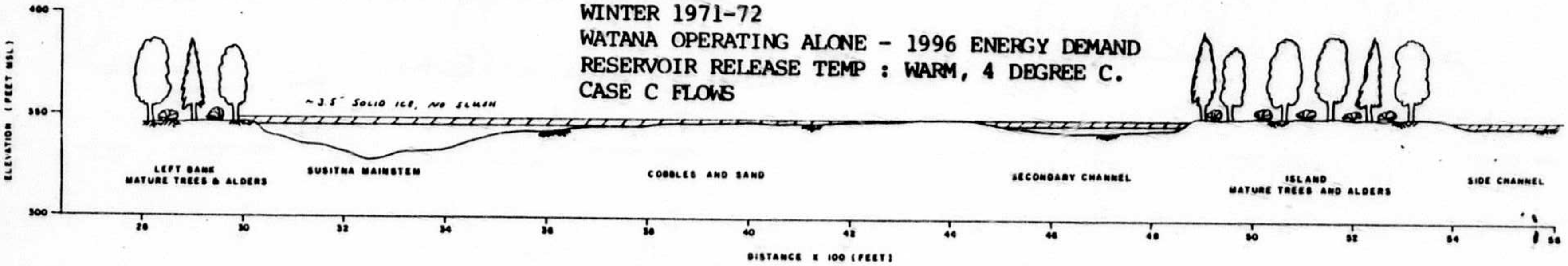
2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A

WINTER 1971-72

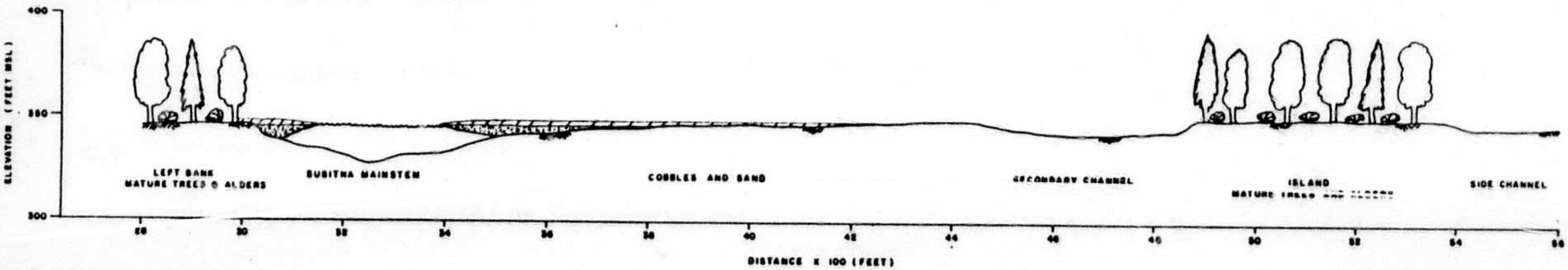
WATANA OPERATING ALONE - 1996 ENERGY DEMAND

RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.

CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-3

1982 CROSS SECTION SURVEY

RIVER MILE 98.6

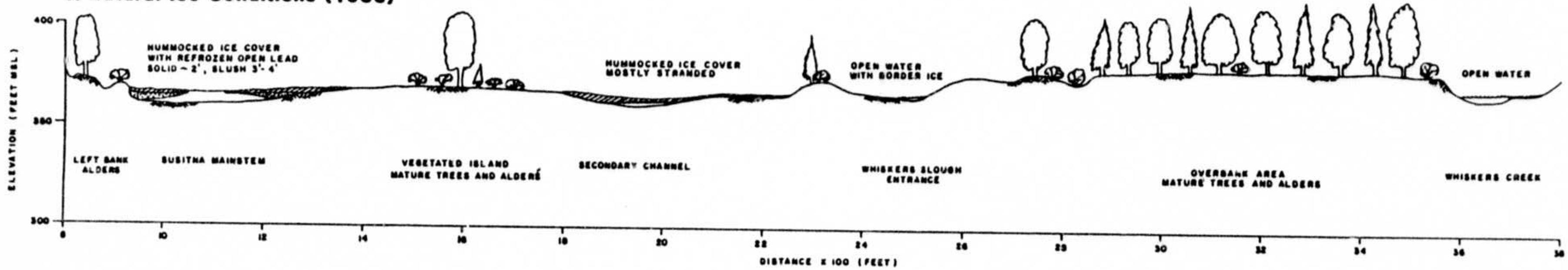
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

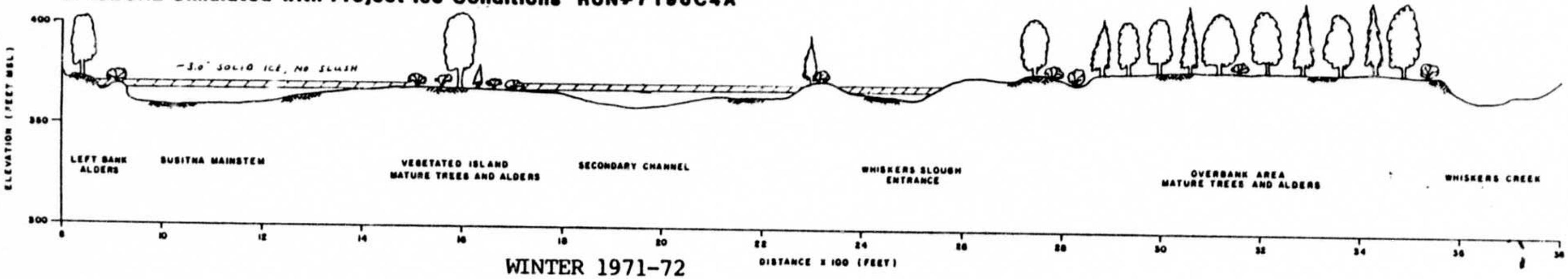
HARZA-EBASCO

SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

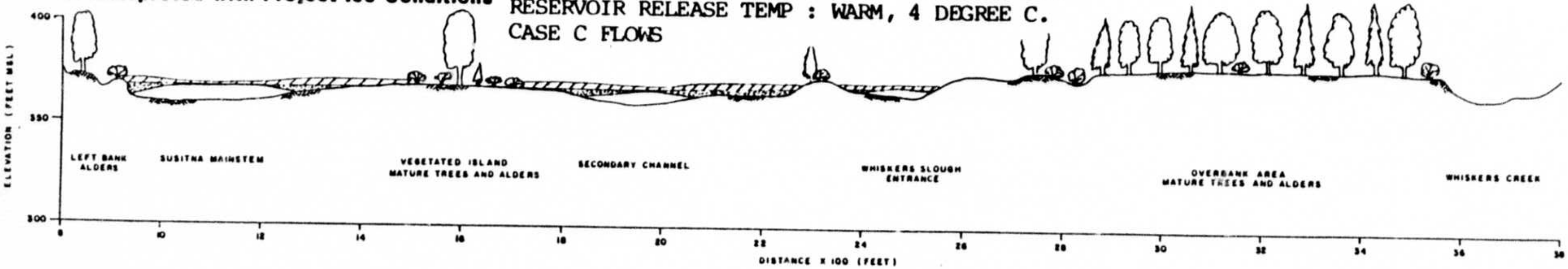


2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A



WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS

3. Interpreted with Project Ice Conditions



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R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

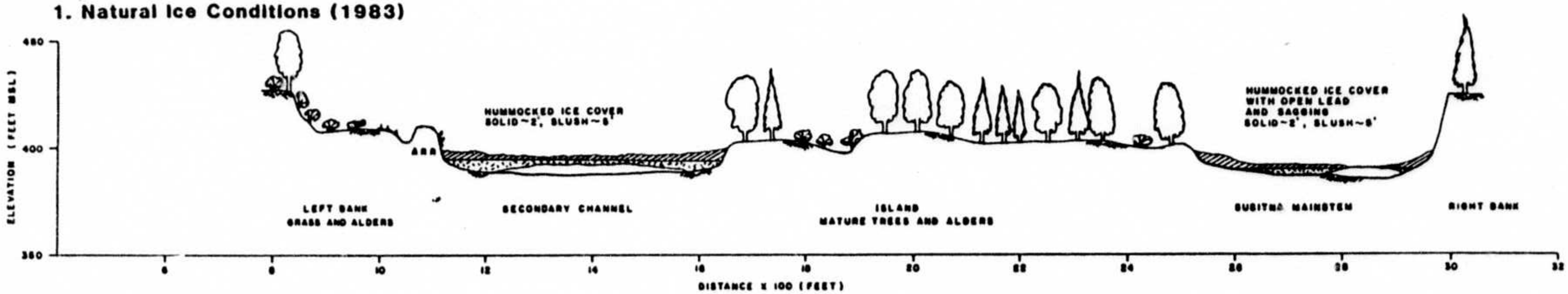
LRX-7

1980 CROSS SECTION SURVEY
RIVER MILE 101.5
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

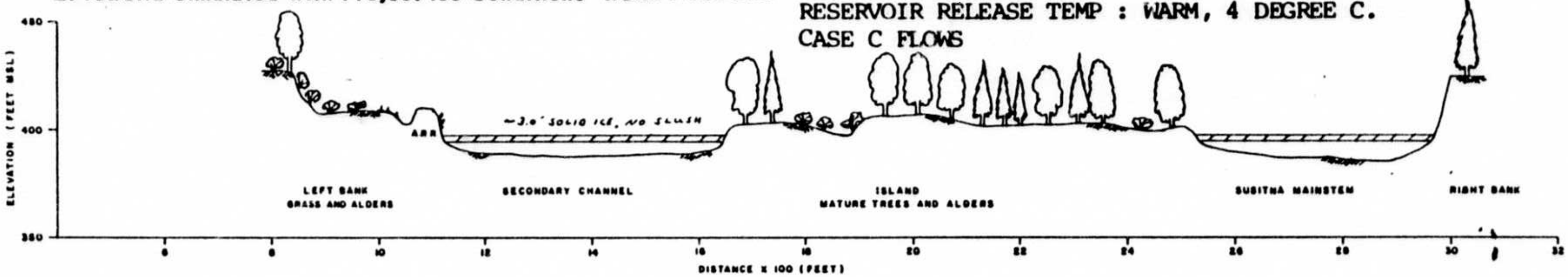
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

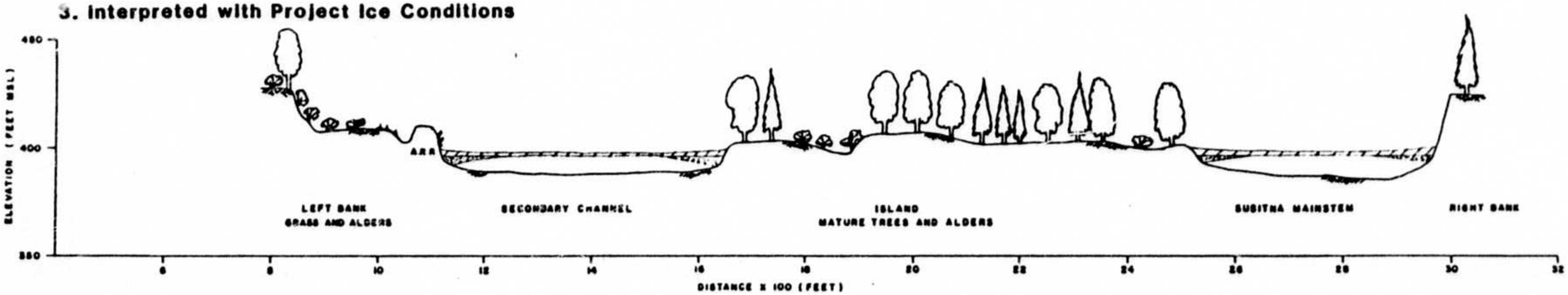


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A



3. Interpreted with Project Ice Conditions



PREPARED BY:

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ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

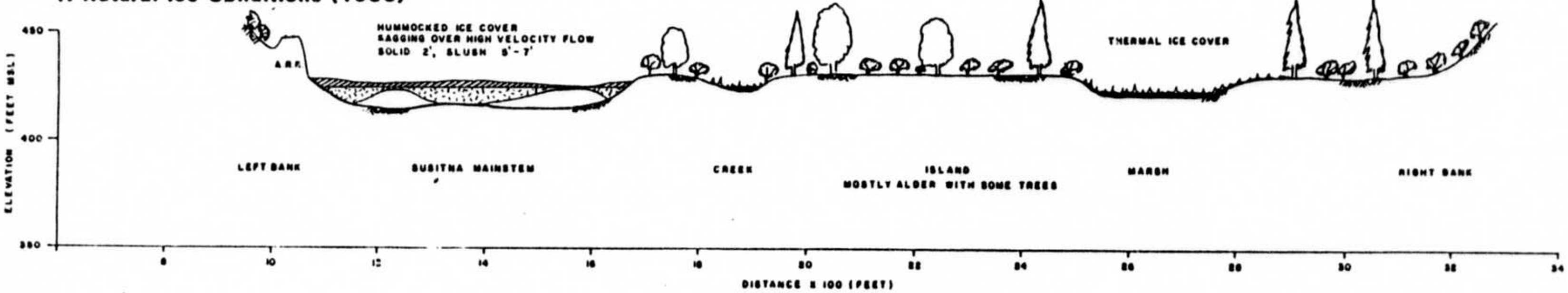
LRX-10

1980 CROSS SECTION SURVEY
RIVER MILE 104.8
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

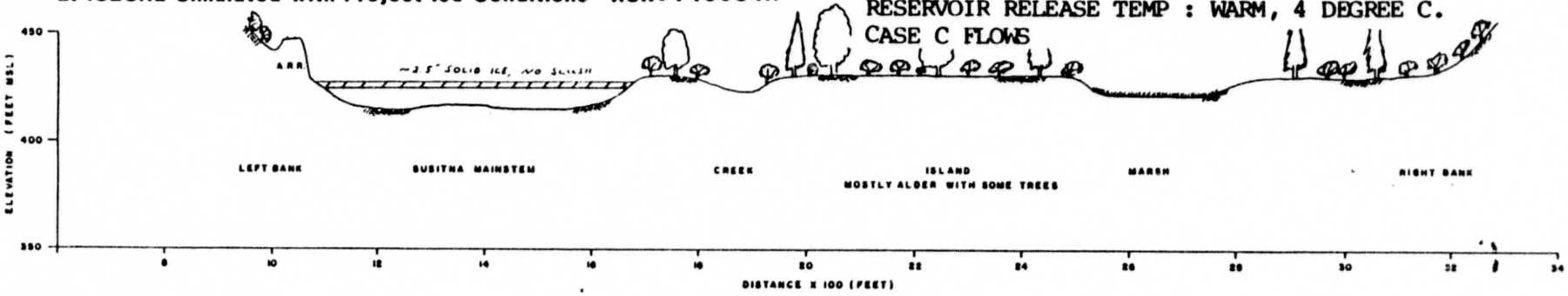
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

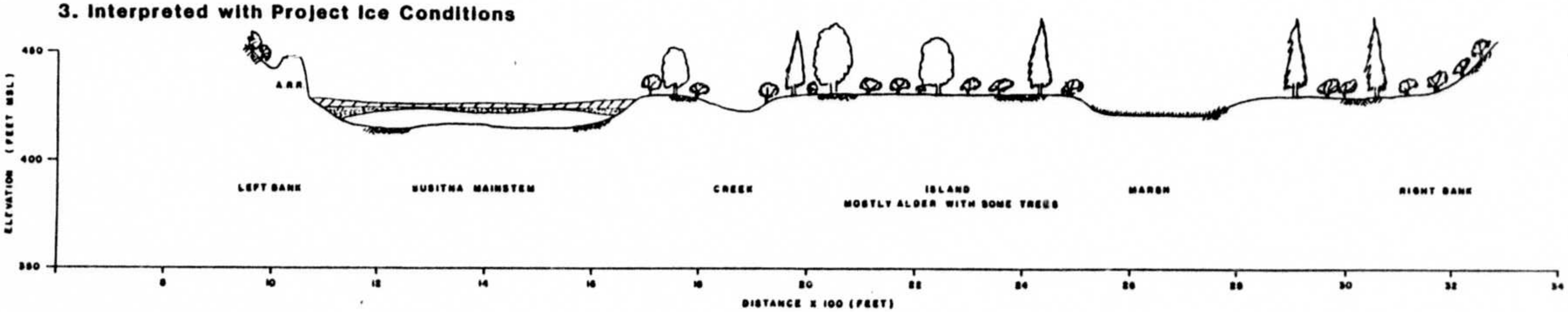


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

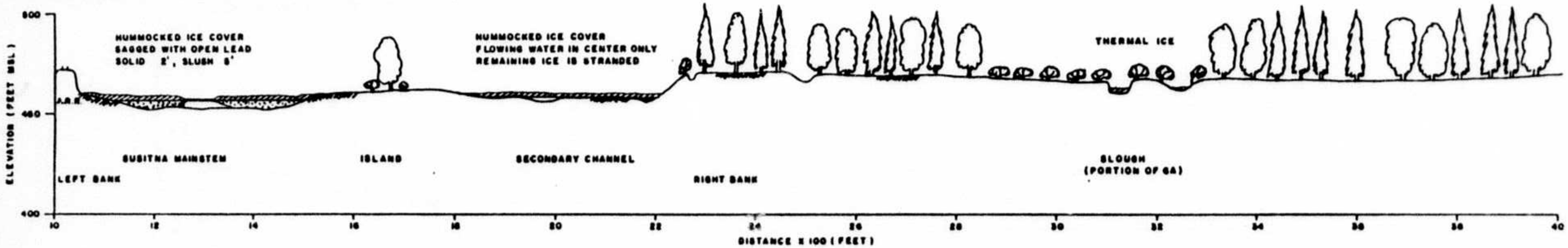
LRX-12

1981 CROSS SECTION SURVEY
RIVER MILE 108.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

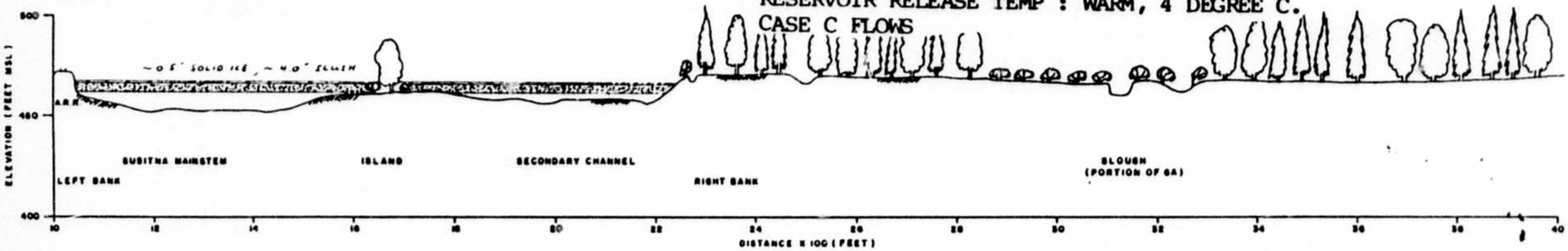
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

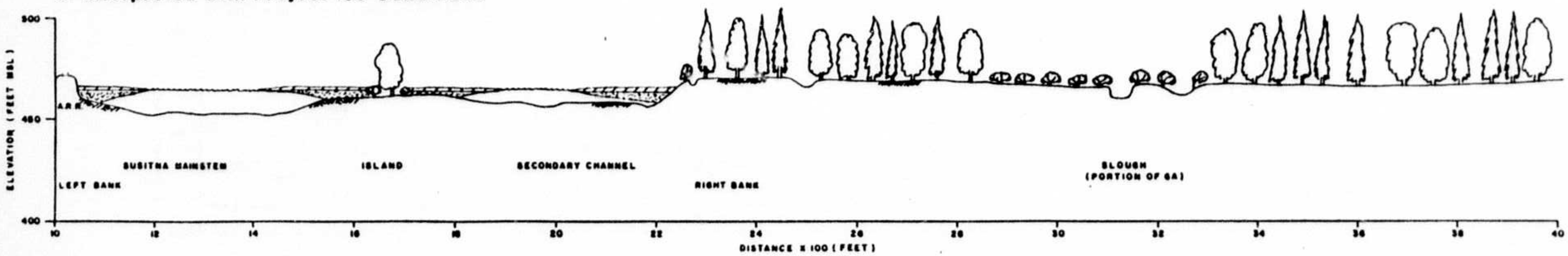


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A



3. Interpreted with Project Ice Conditions



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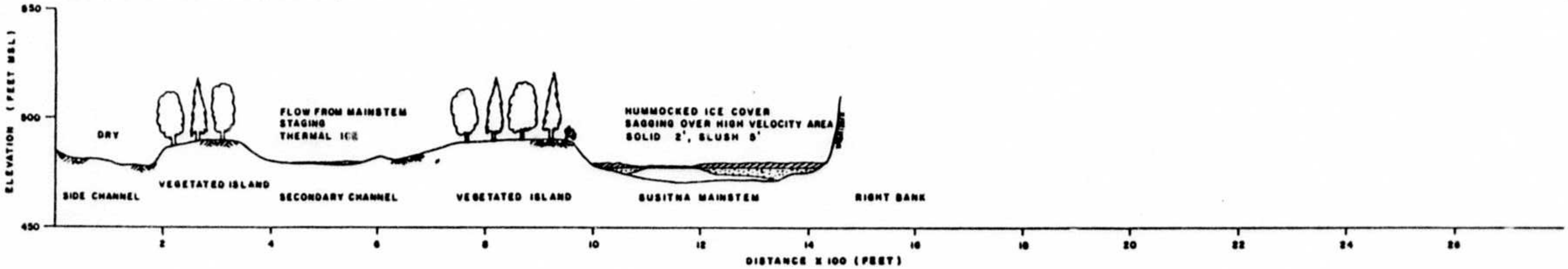
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-17

1980 CROSS SECTION SURVEY
RIVER MILE 112.7
VERTICAL EXAGGERATION 4:1

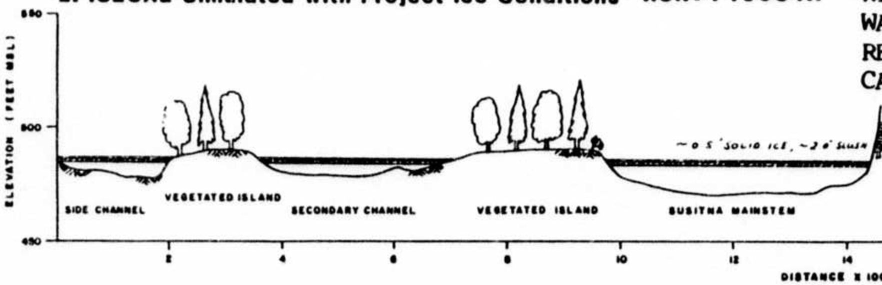
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

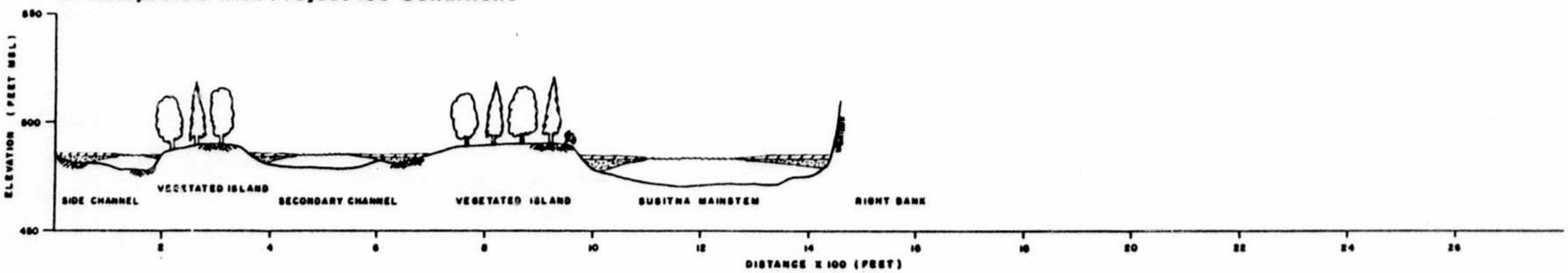


2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

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ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

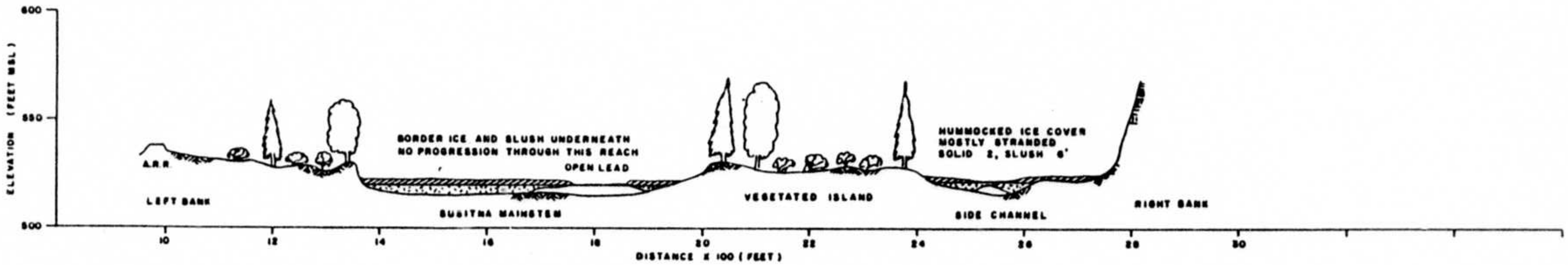
LRX-18.2

1982 CROSS SECTION SURVEY
RIVER MILE 115.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

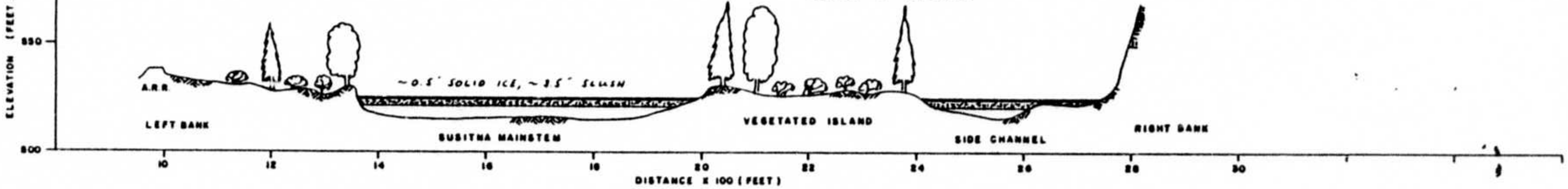
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

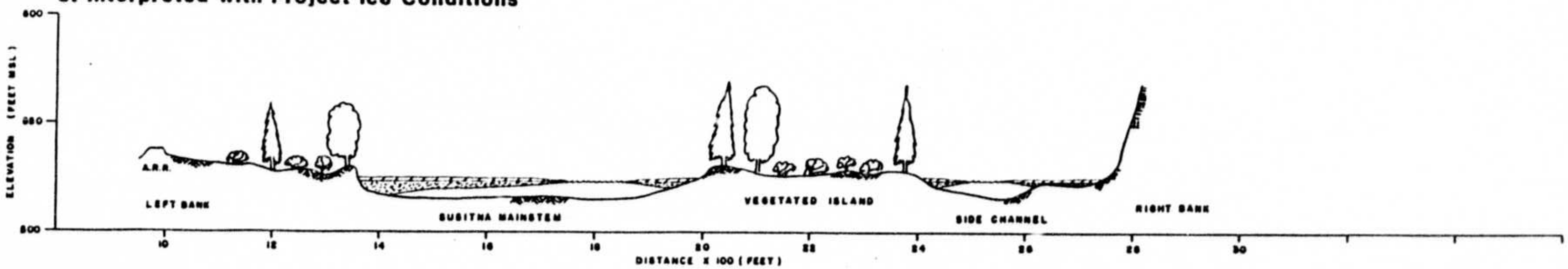


2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

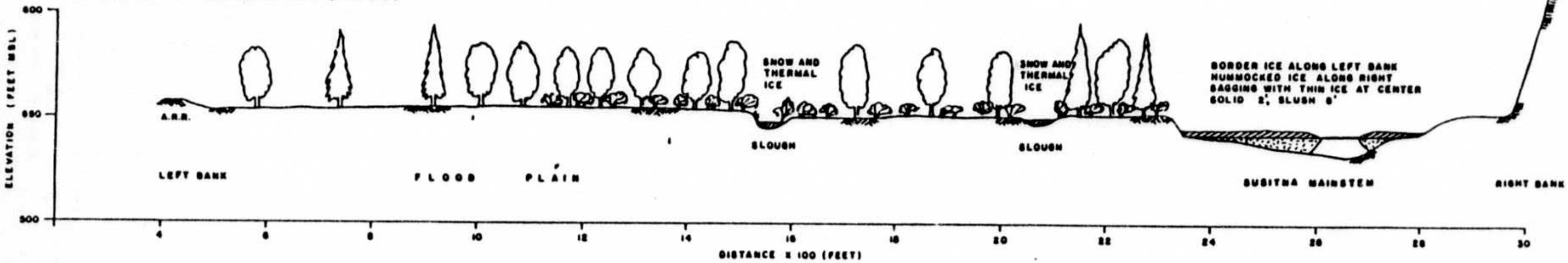
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-23

1980 CROSS SECTION SURVEY
RIVER MILE 120.2
VERTICAL EXAGGERATION 4:1

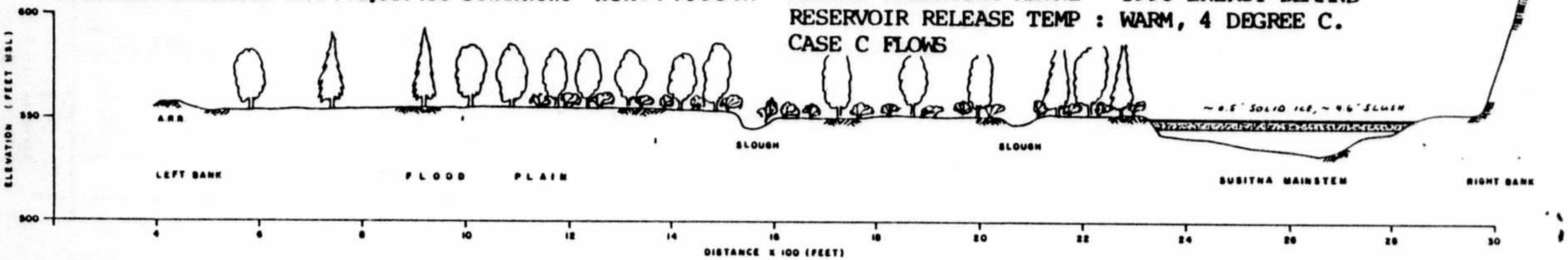
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

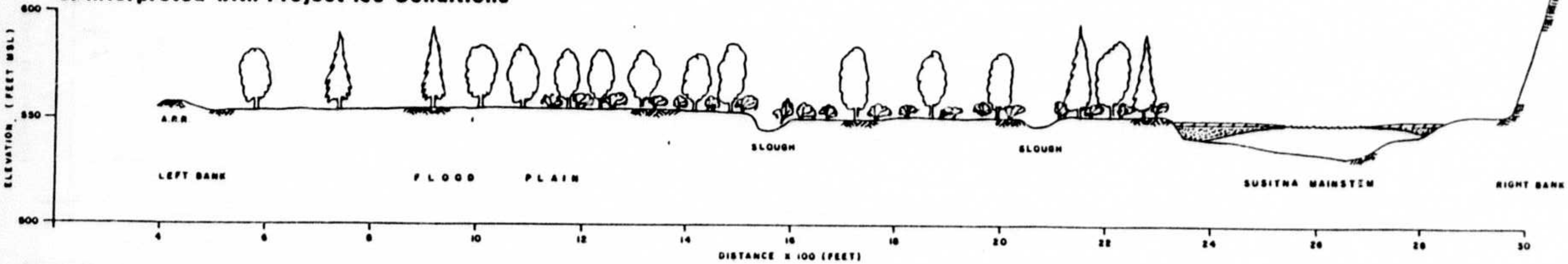


2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS



3. Interpreted with Project Ice Conditions



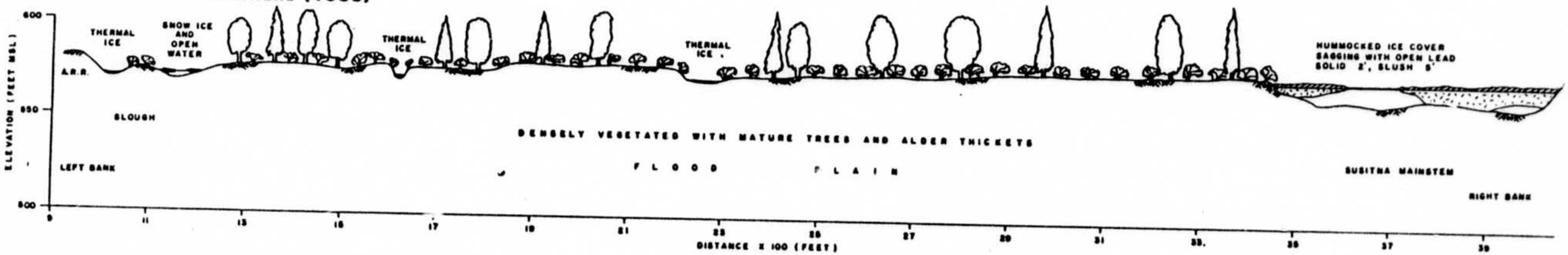
PREPARED BY:
R&M CONSULTANTS, INC.

LRX -27

1980 CROSS SECTION SURVEY
RIVER MILE 123.3
VERTICAL EXAGGERATION 4:1

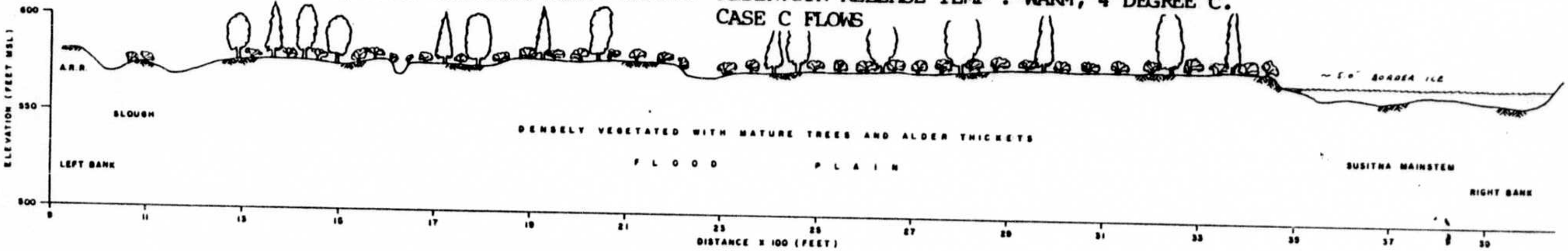
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

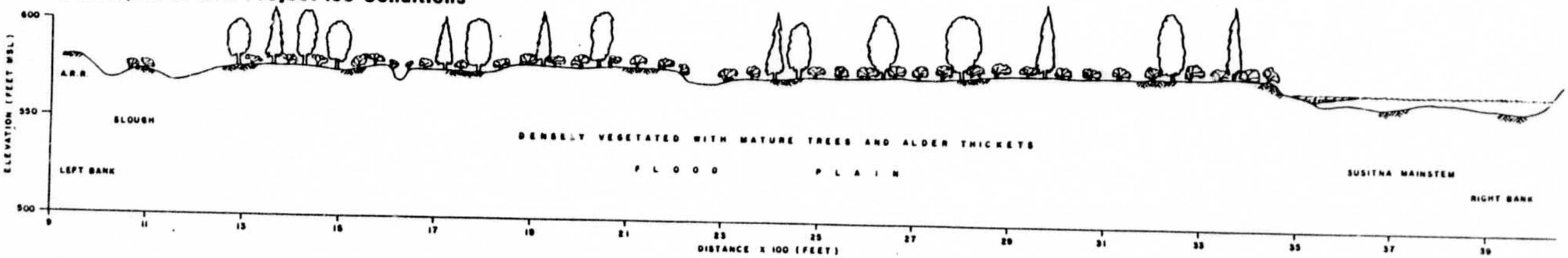


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

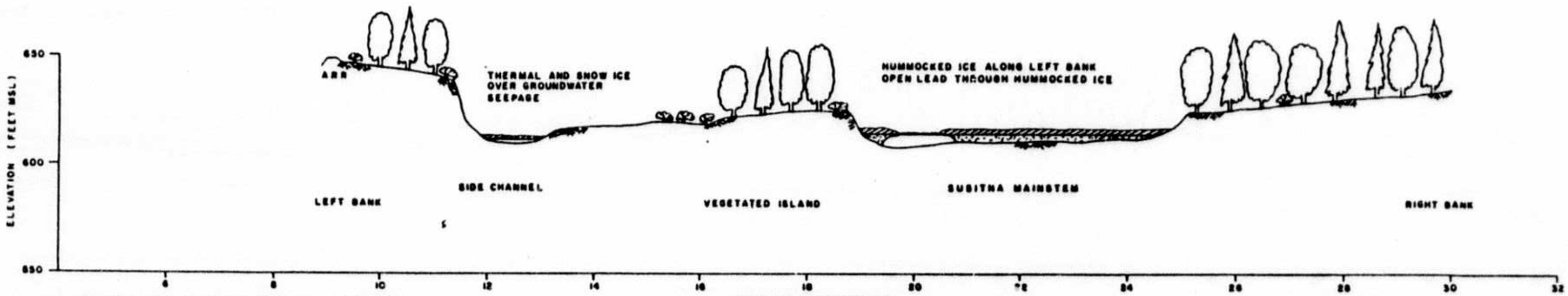
LRX-29

1980 CROSS SECTION SURVEY
RIVER MILE 126.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

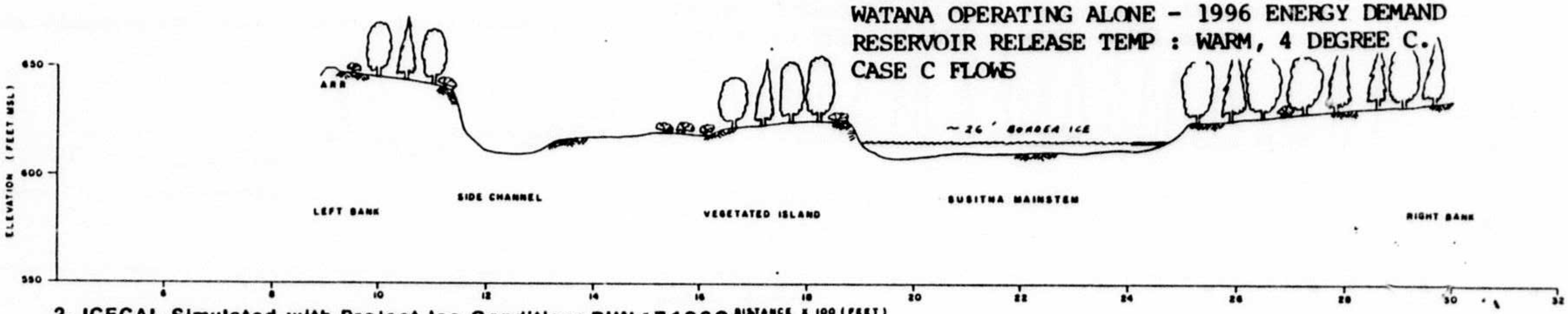
HARZA-EBASCO

SUSITNA JOINT VENTURE

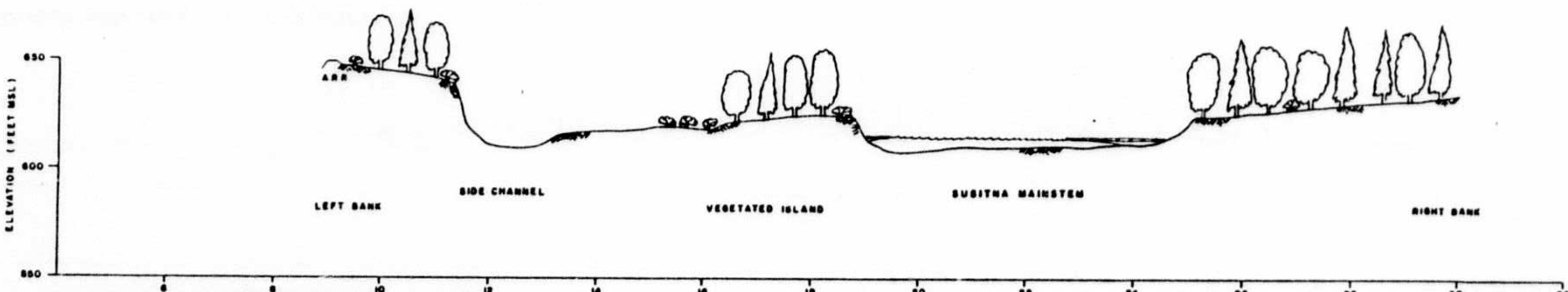


1. Natural Ice Conditions (1983)

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS



2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A



3. Interpreted with Project Ice Conditions

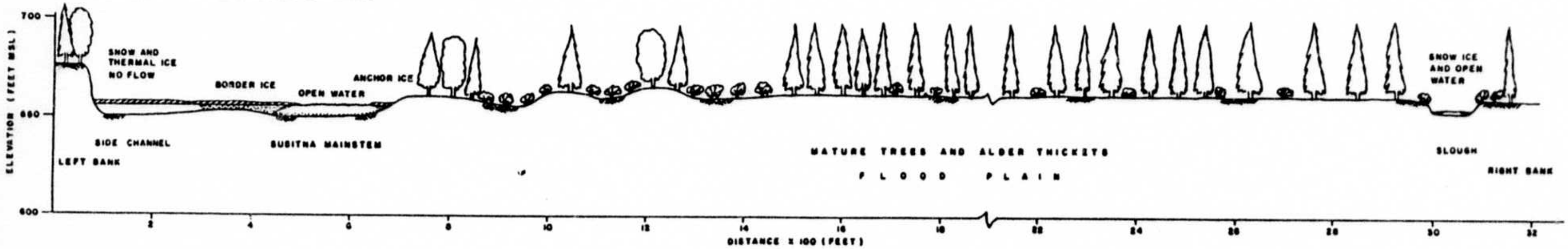
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-34

1980 CROSS SECTION SURVEY
RIVER MILE 130.5
VERTICAL EXAGGERATION 4:1

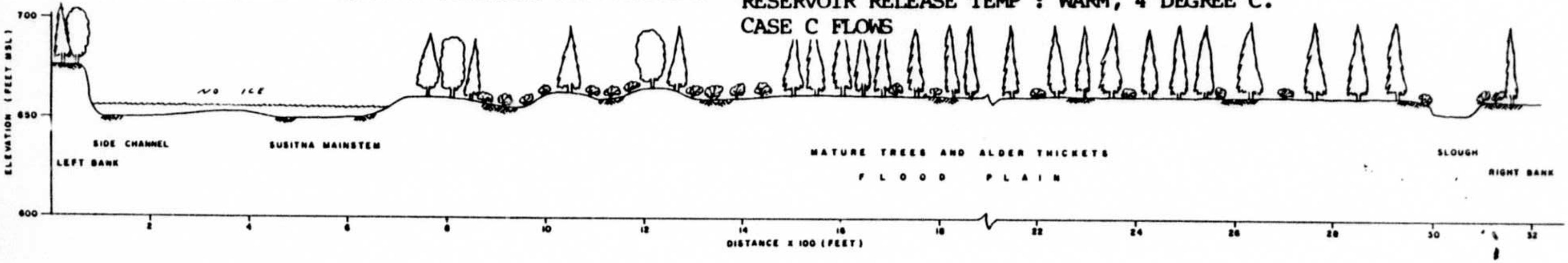
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

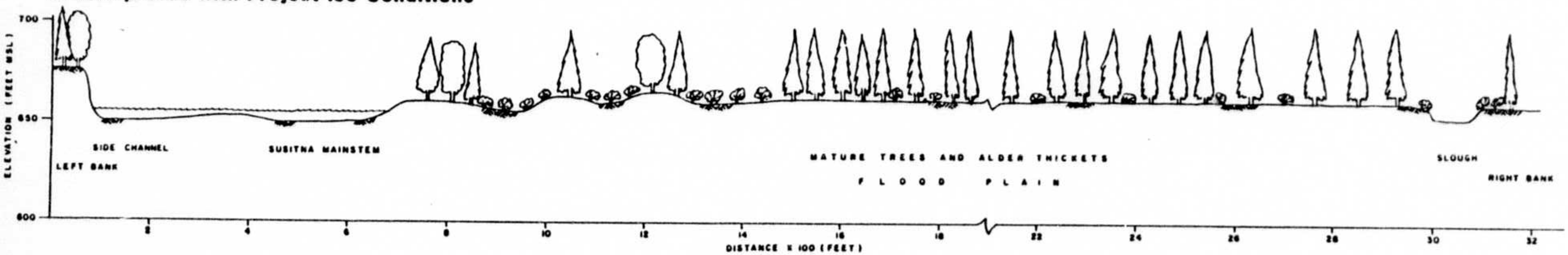


WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A



3. Interpreted with Project Ice Conditions



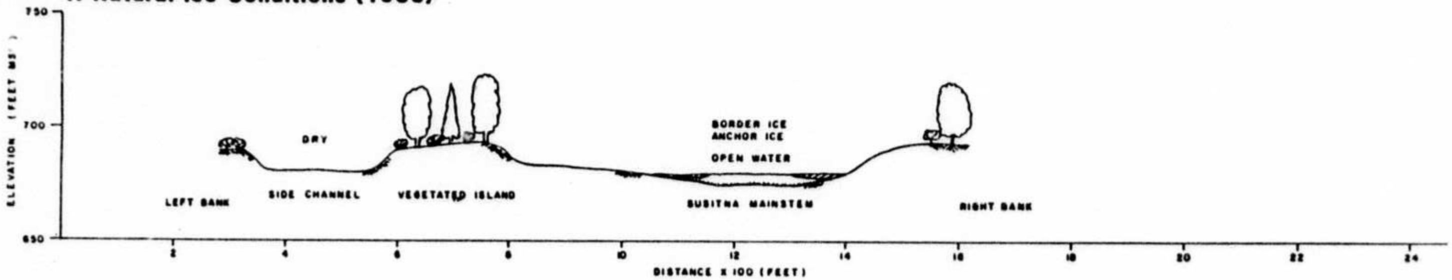
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-40

1980 CROSS SECTION SURVEY
RIVER MILE 134.2
VERTICAL EXAGGERATION 4:1

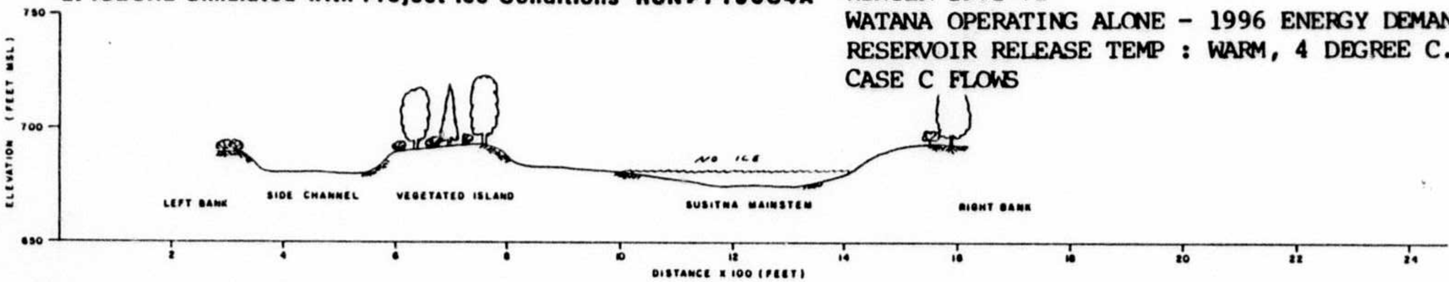
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

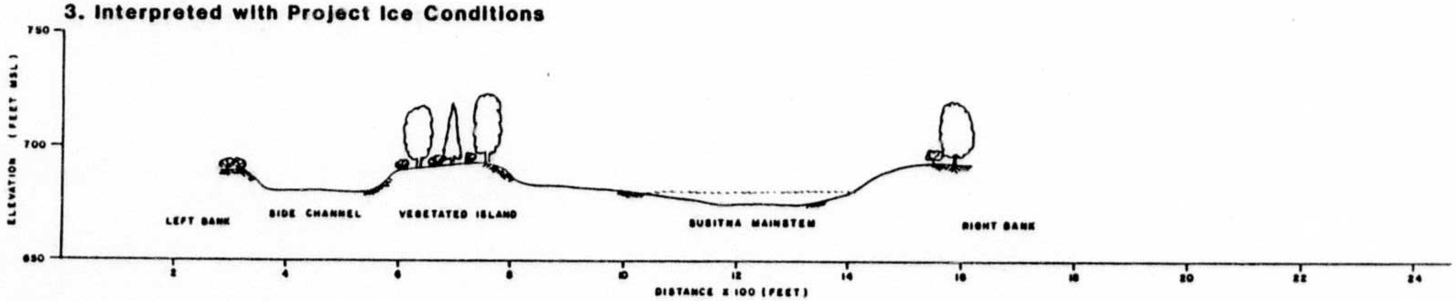


2. ICECAL Simulated with Project Ice Conditions RUN#7196C4A

WINTER 1971-72
WATANA OPERATING ALONE - 1996 ENERGY DEMAND
RESERVOIR RELEASE TEMP : WARM, 4 DEGREE C.
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-44

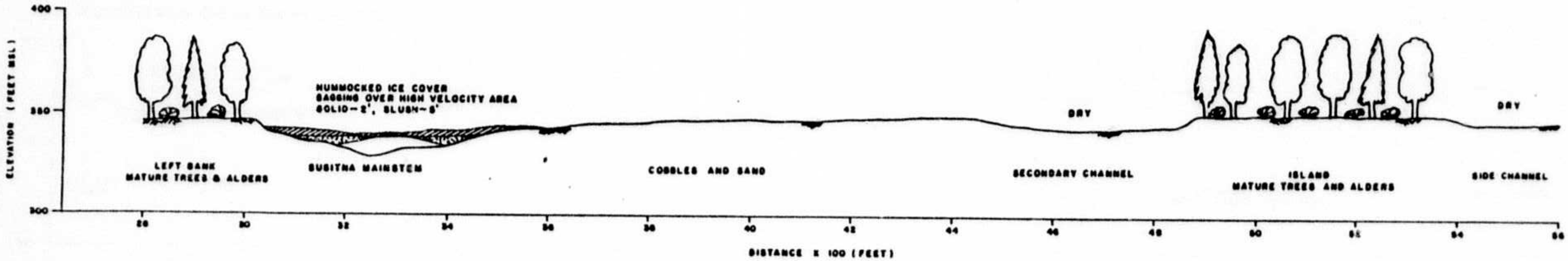
1980 CROSS SECTION SURVEY
RIVER MILE 136.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

HARZA-EBASCO
SUSITNA JOINT VENTURE

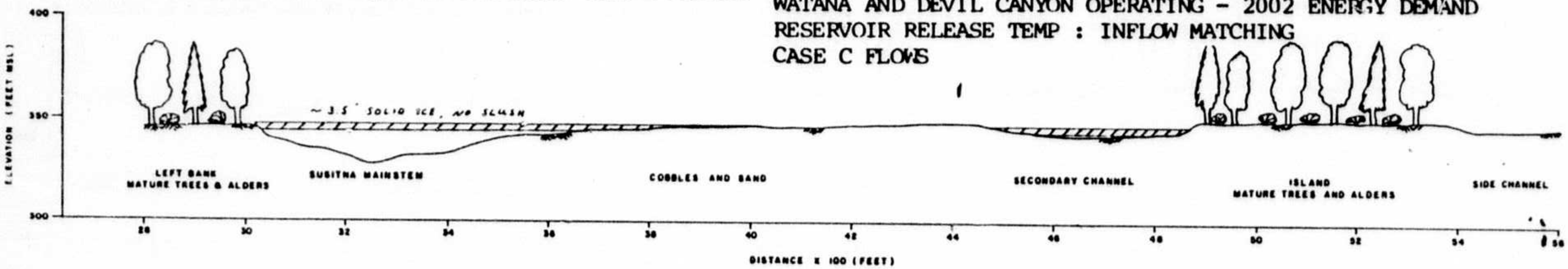
Exhibit X

1. Natural Ice Conditions (1983)

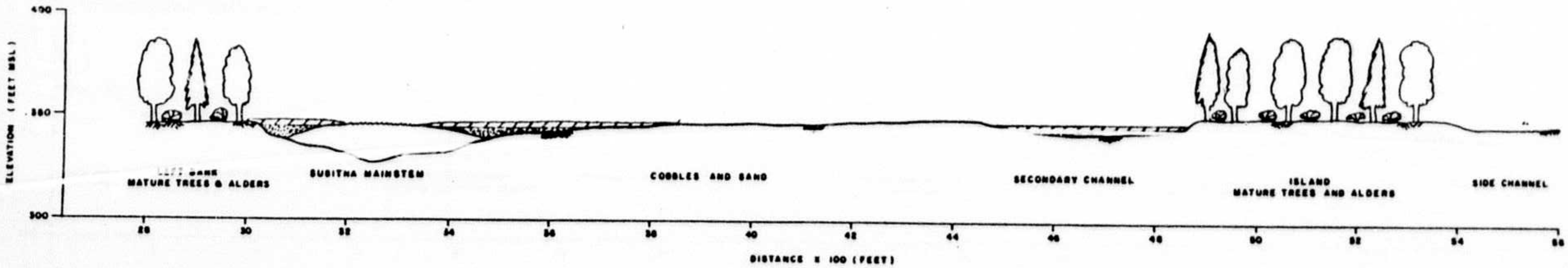


2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA

WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

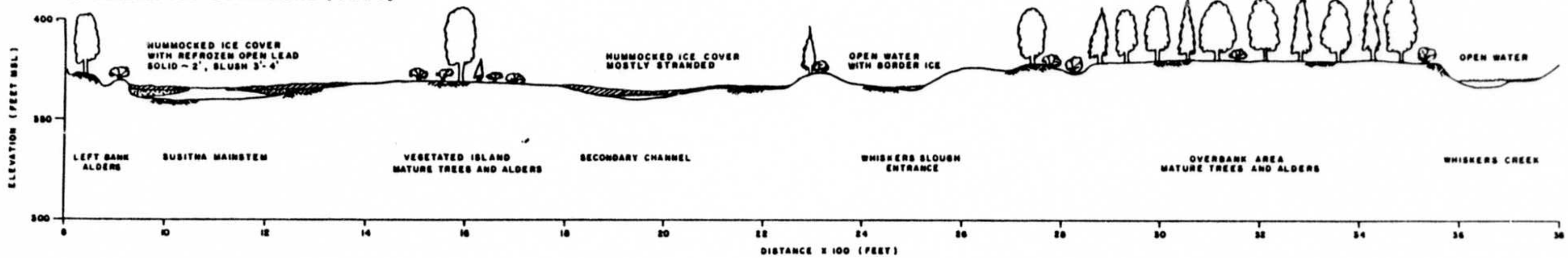
LRX-3

1982 CROSS SECTION SURVEY
RIVER MILE 98.6
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

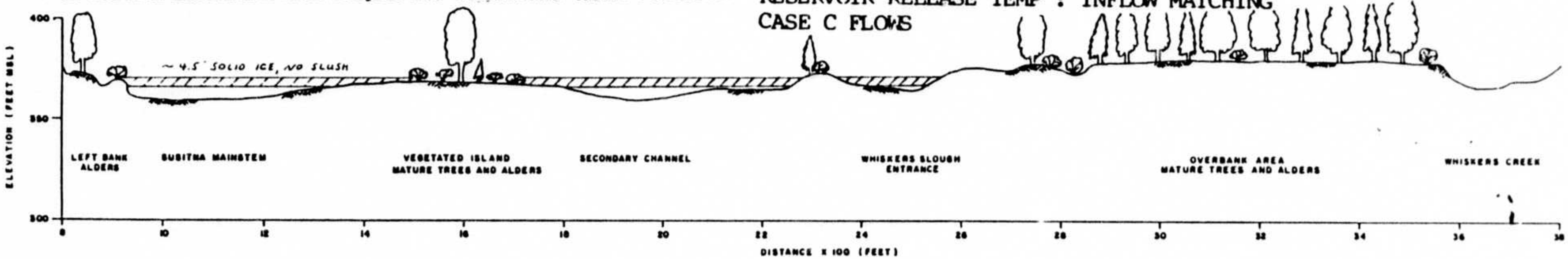
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

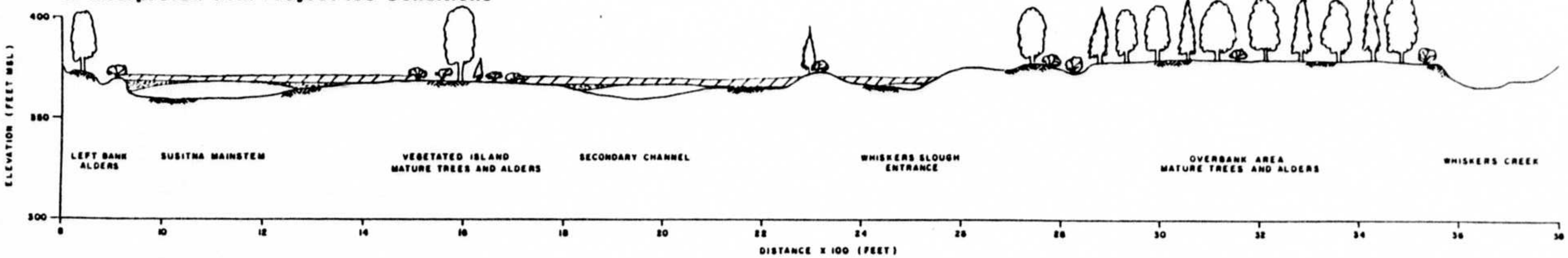


WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

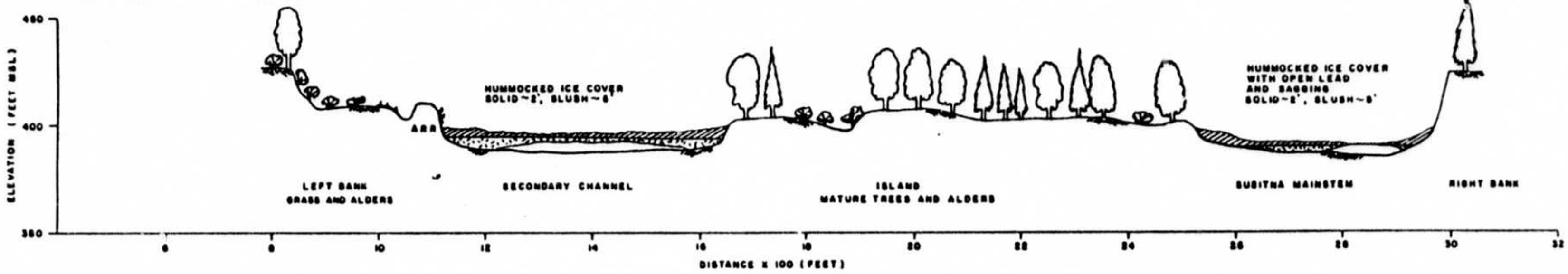
LRX-7

1980 CROSS SECTION SURVEY
RIVER MILE 101.5
VERTICAL EXAGGERATION 1:1

PREPARED FOR:

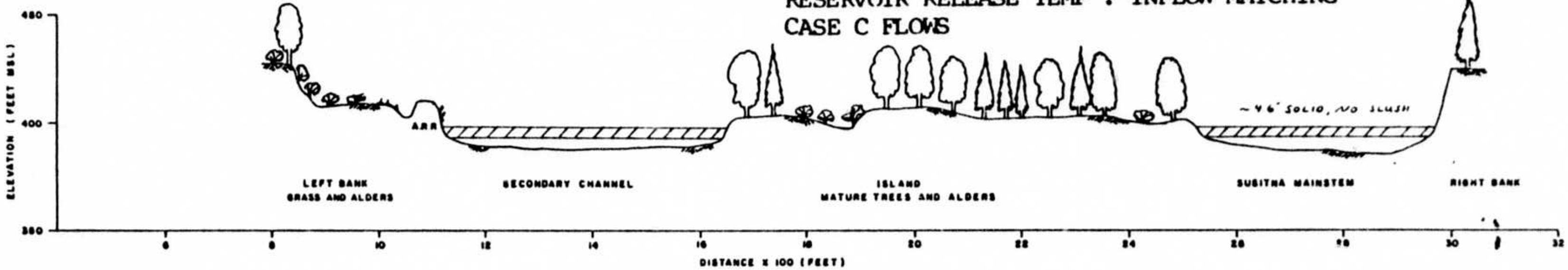
HARZA-EBASCO

1. Natural Ice Conditions (1983)

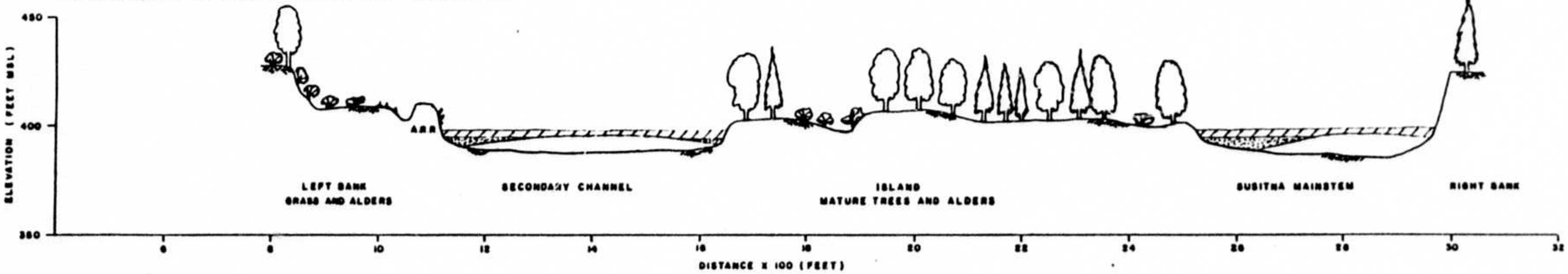


2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA

WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



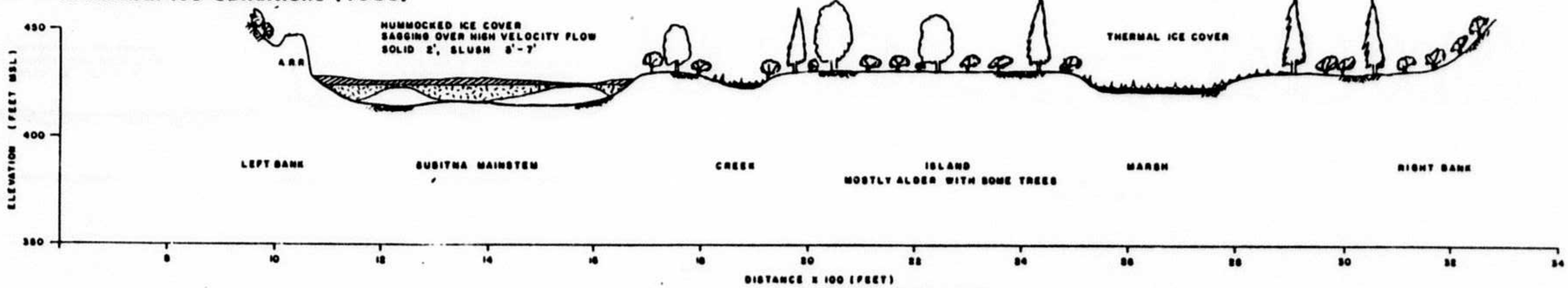
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-10

1980 CROSS SECTION SURVEY
RIVER MILE 104.8
VERTICAL EXAGGERATION 4:1

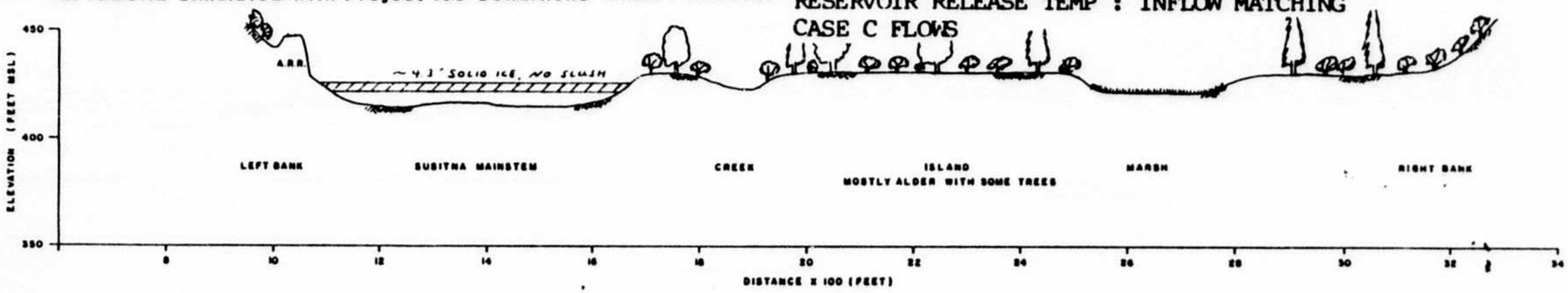
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

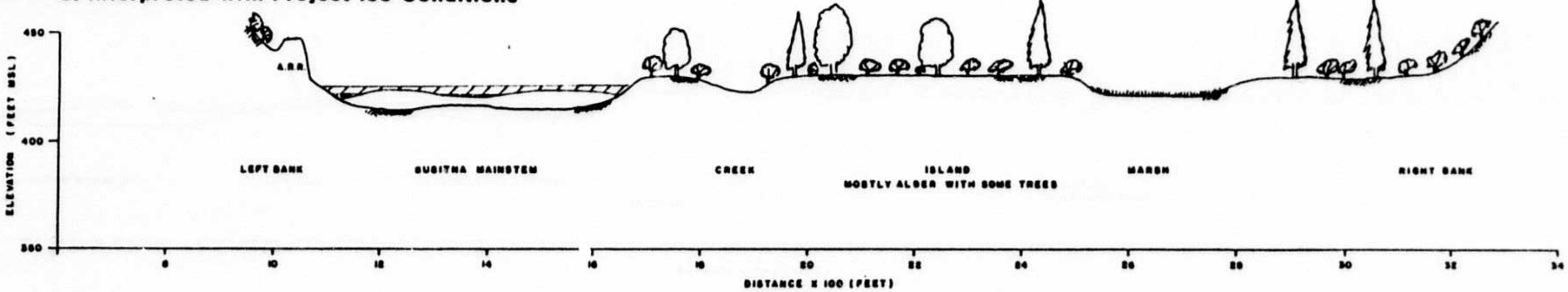


WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA



3. Interpreted with Project Ice Conditions



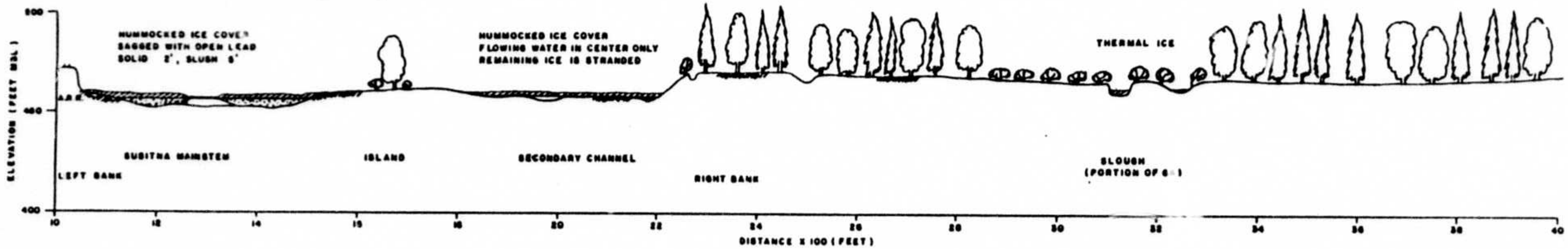
PREPARED BY:
R&M CONSULTANTS, INC.

LRX-12

1981 CROSS SECTION SURVEY
RIVER MILE 108.4
VERTICAL EXAGGERATION 4:1

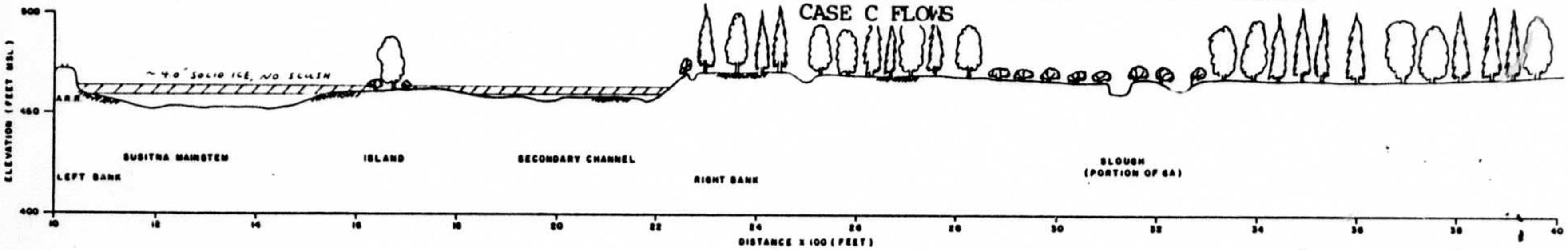
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

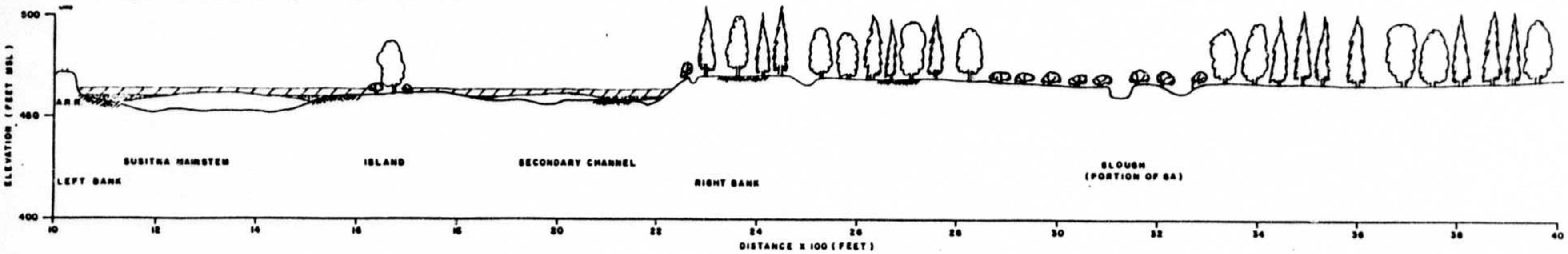


WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

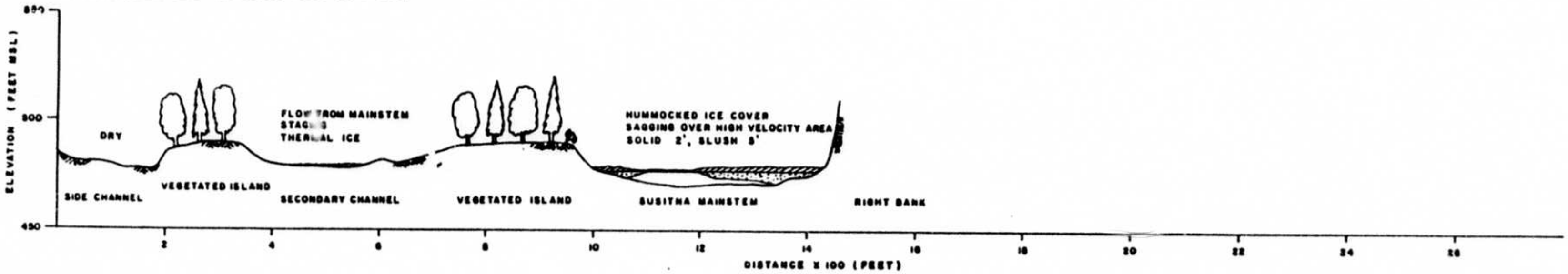
LRX-17

1980 CROSS SECTION SURVEY
RIVER MILE 112.7
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

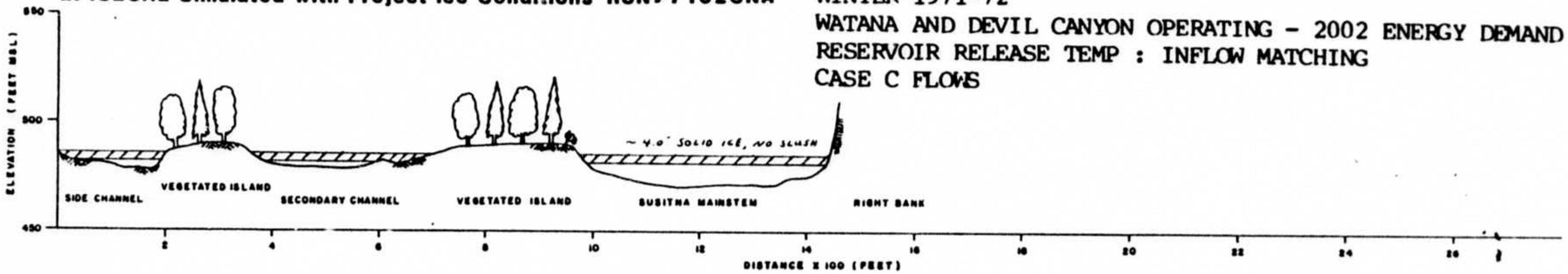
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

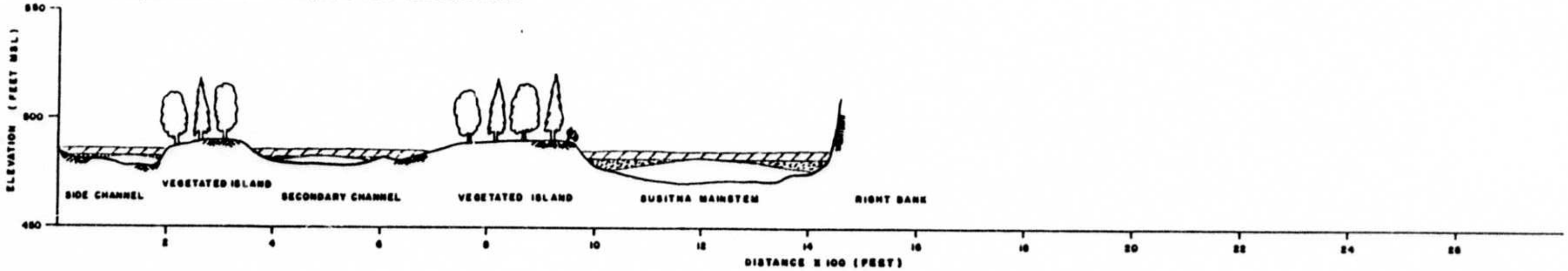


2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA

WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



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R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

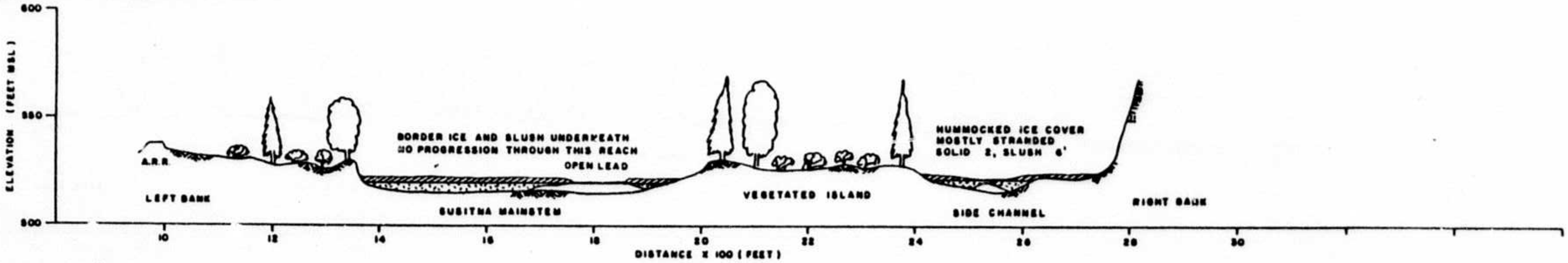
LRX-18.2

1982 CROSS SECTION SURVEY
RIVER MILE 115.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

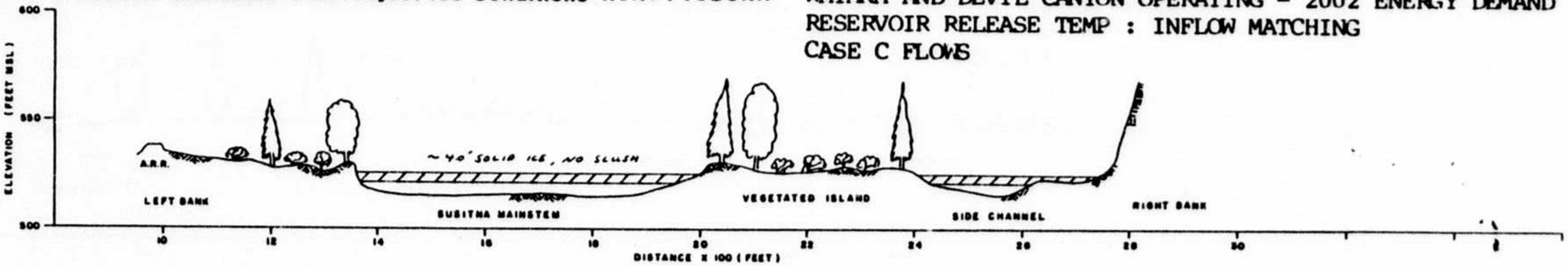
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

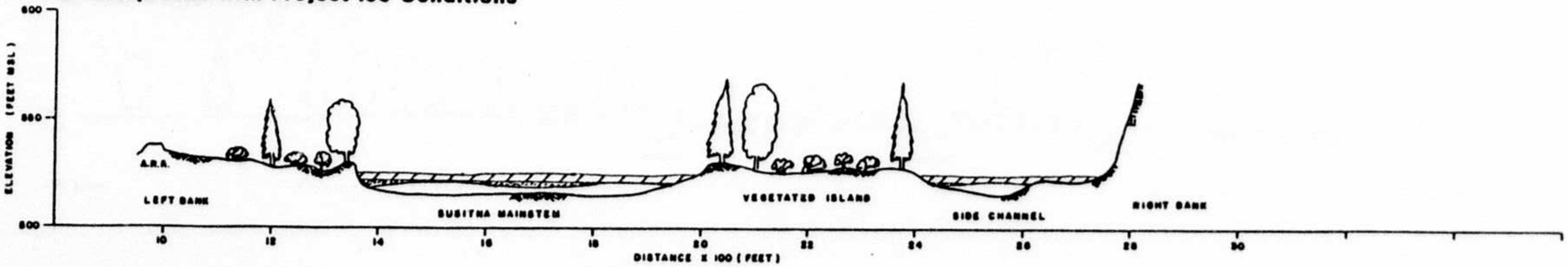


2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA

WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

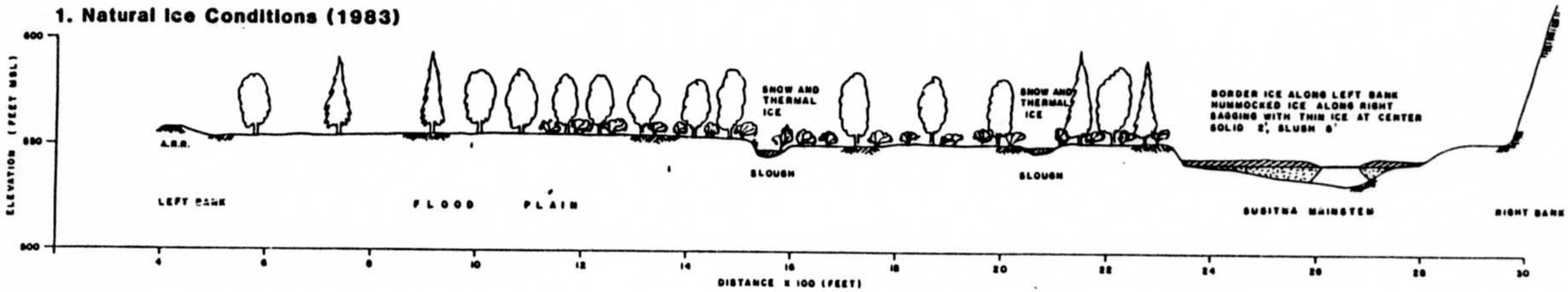
LRX-23

1980 CROSS SECTION SURVEY
RIVER MILE 120.2
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

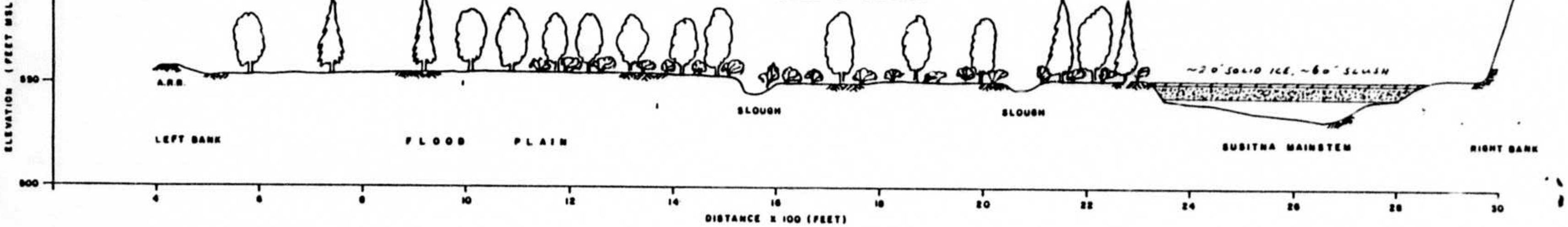
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

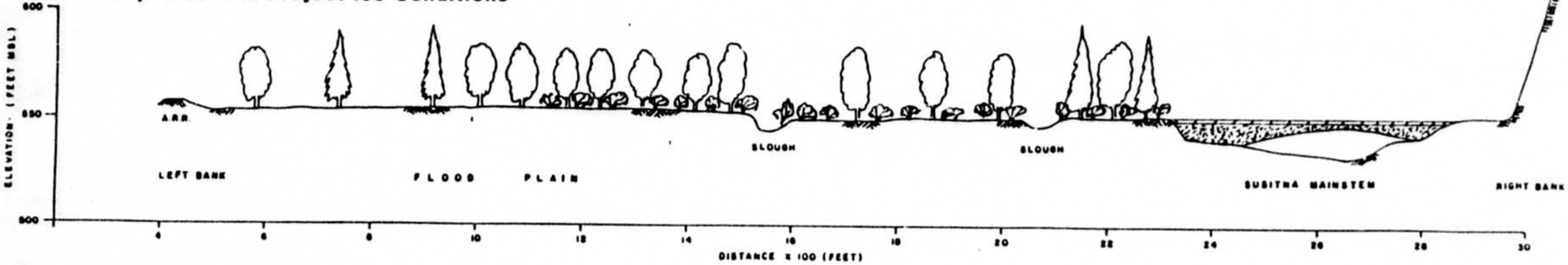


WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

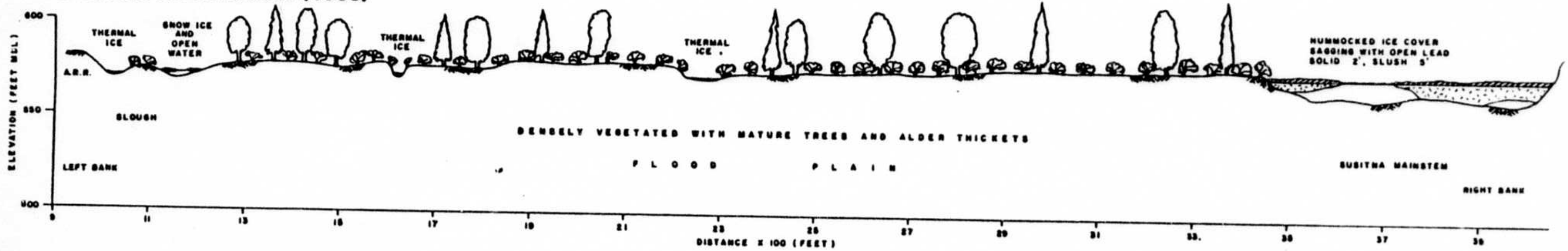
LRX -27

1980 CROSS SECTION SURVEY
RIVER MILE 123.3
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

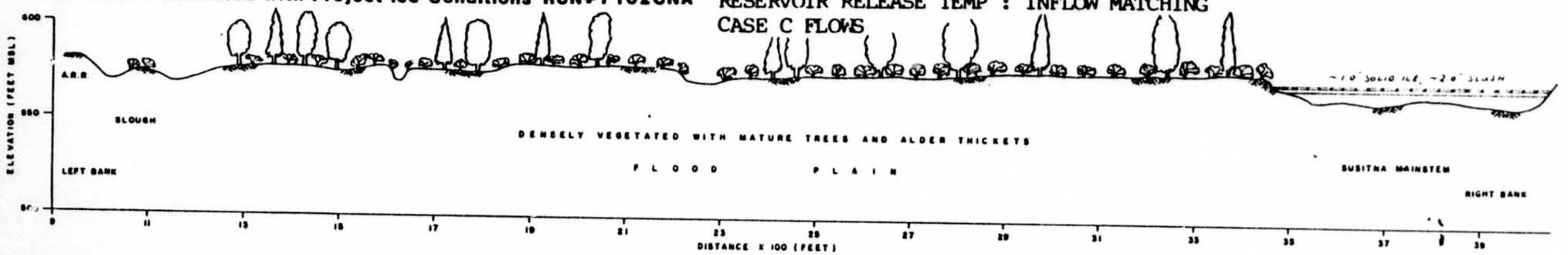
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

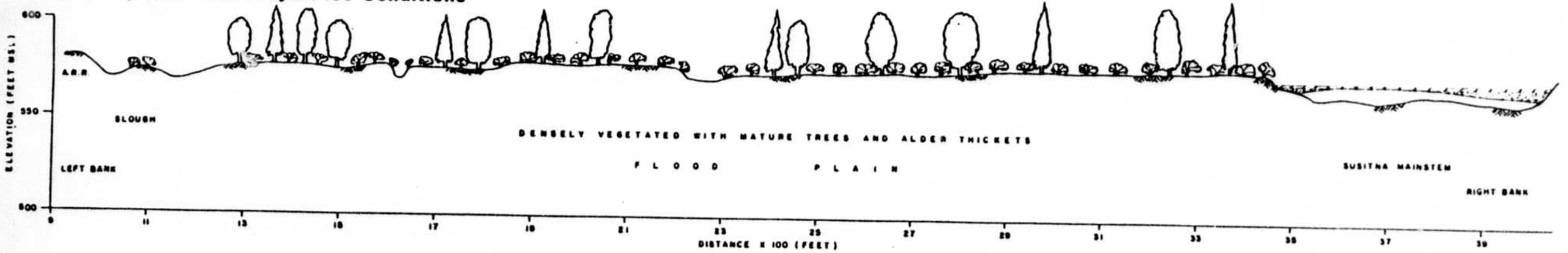


WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA



3. Interpreted with Project Ice Conditions

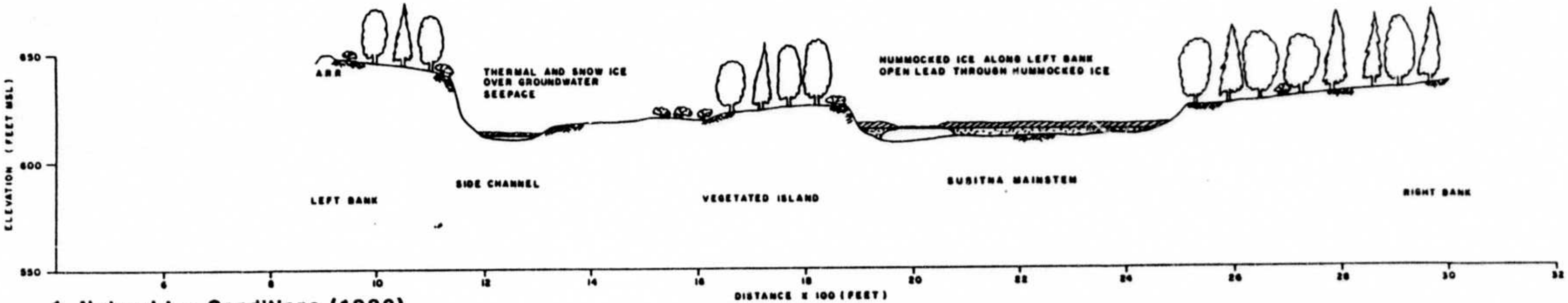


PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-29

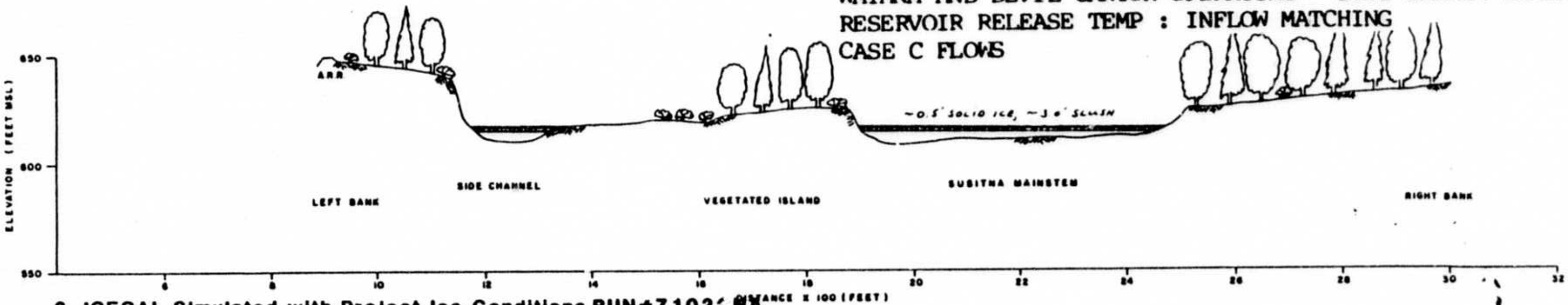
1980 CROSS SECTION SURVEY
RIVER MILE 126.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

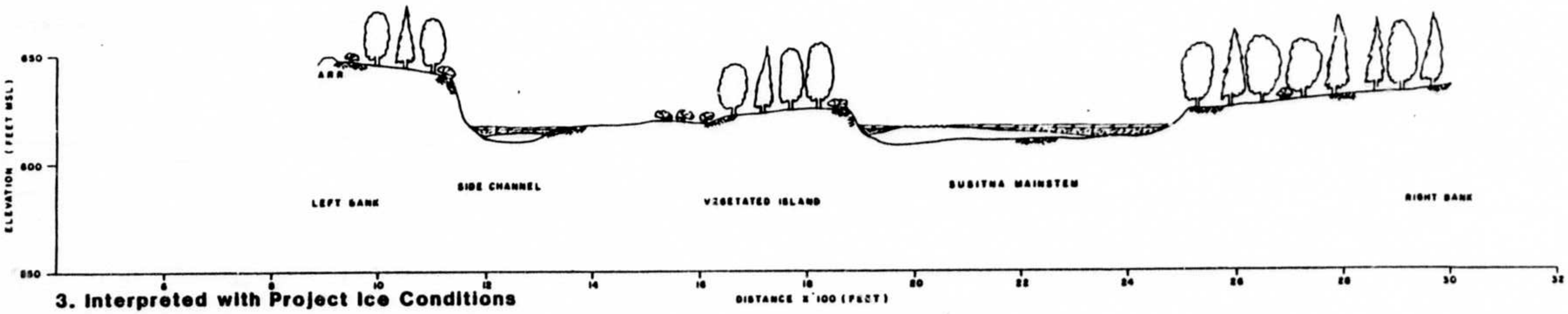


1. Natural Ice Conditions (1983)

WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



2. ICECAL Simulated with Project Ice Conditions RUN#7102[illegible]NX



3. Interpreted with Project Ice Conditions

PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

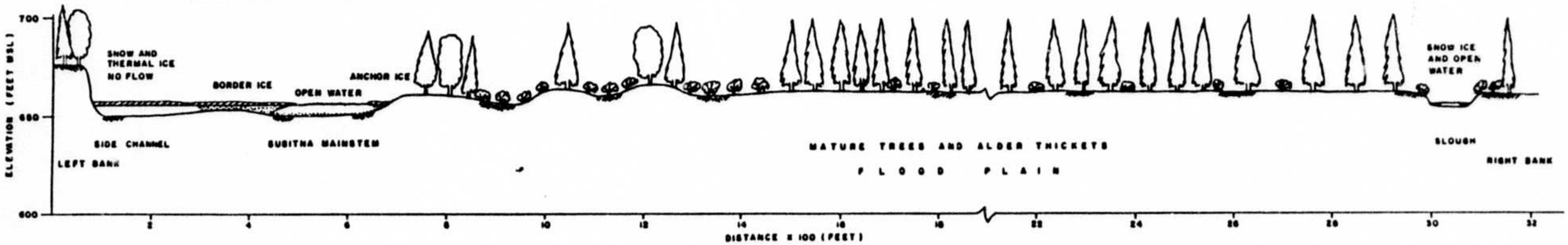
LRX-34

1980 CROSS SECTION SURVEY
RIVER MILE 130.5
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

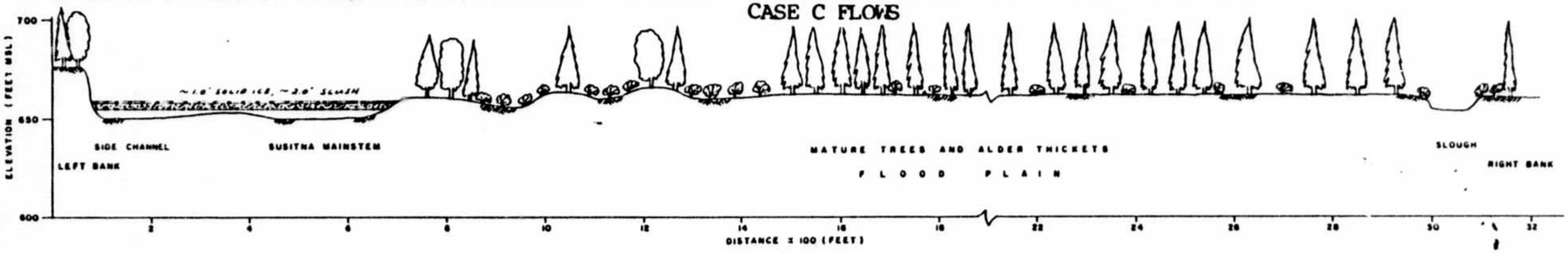
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

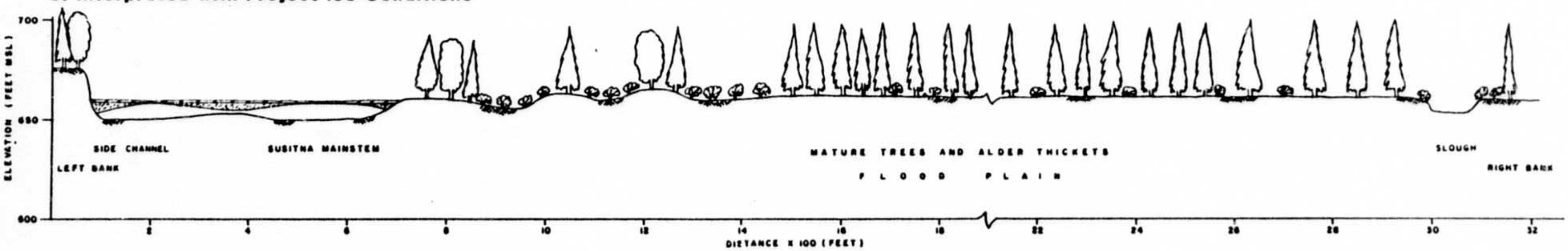


WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

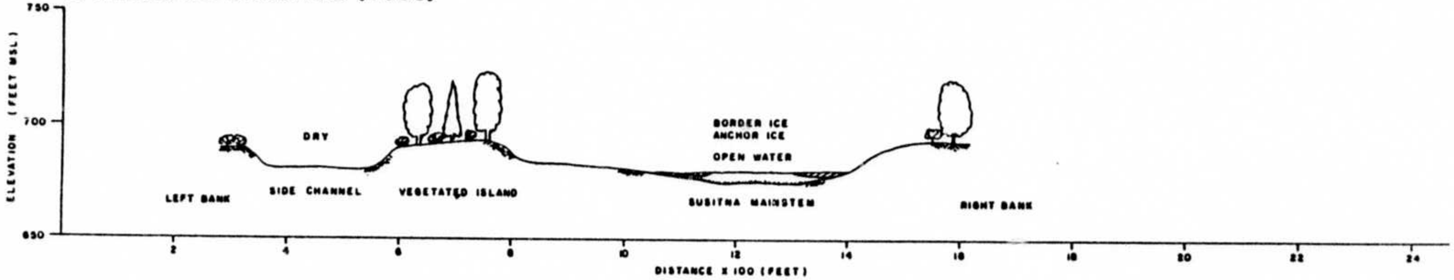
LRX-40

1980 CROSS SECTION SURVEY
RIVER MILE 134.2
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

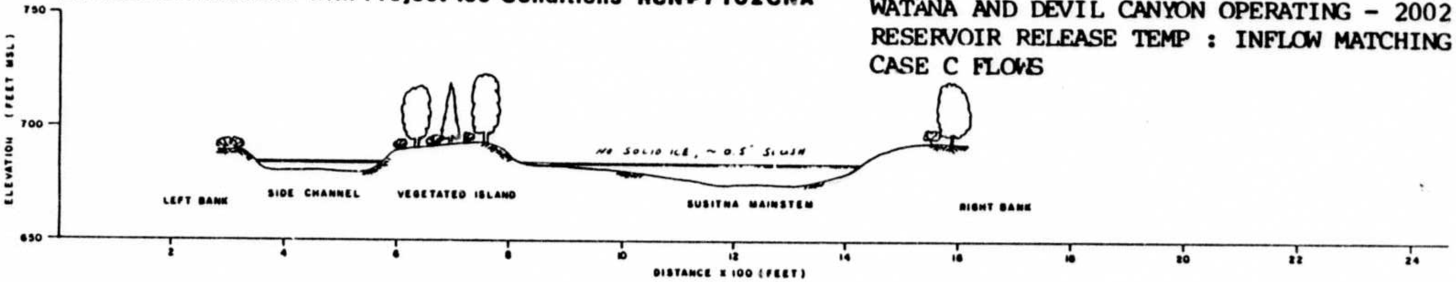
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

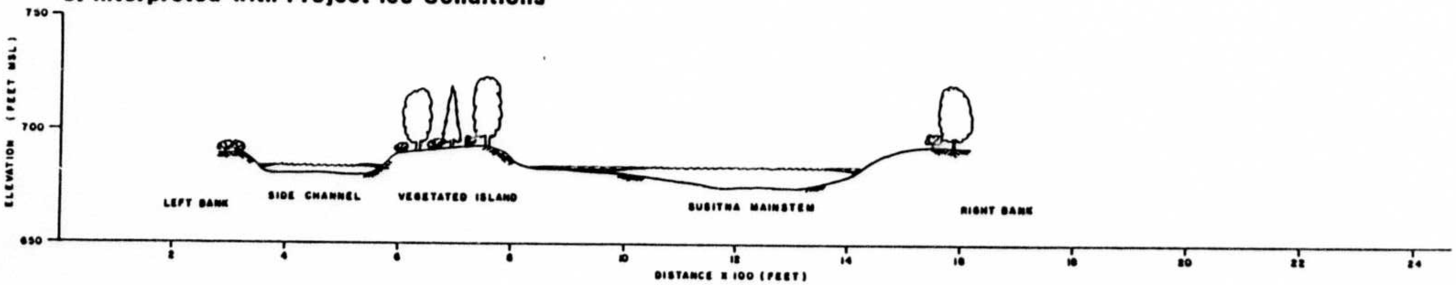


2. ICECAL Simulated with Project Ice Conditions RUN#7102CNA

WINTER 1971-72
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-44

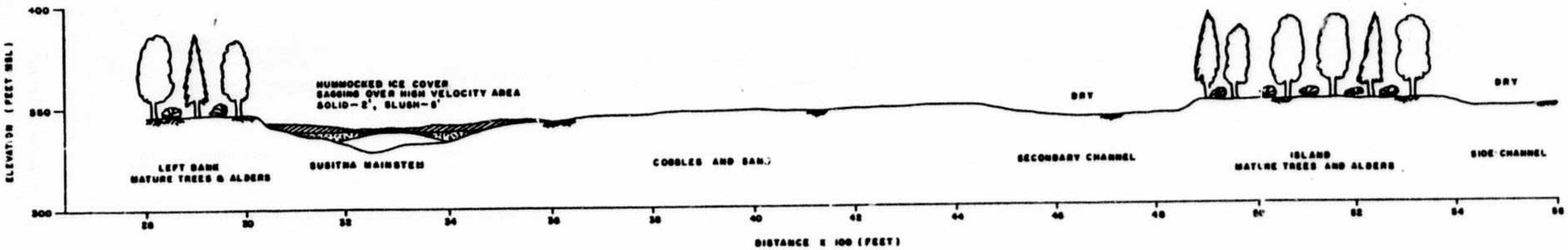
1980 CROSS SECTION SURVEY
RIVER MILE 136.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

HARZA-EBASCO
SUSITNA JOINT VENTURE

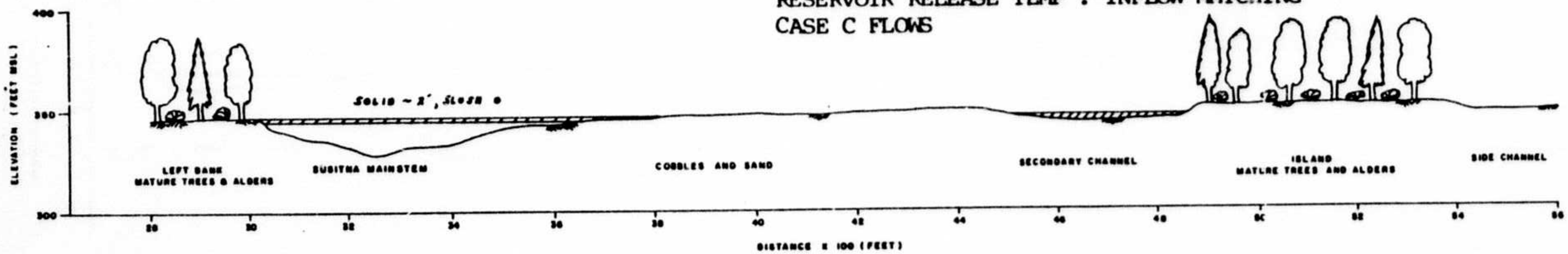
Exhibit Y

1. Natural Ice Conditions (1983)

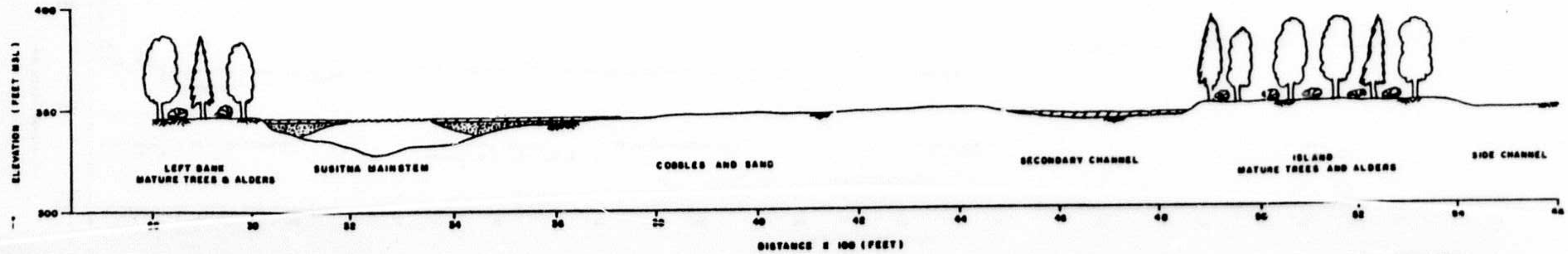


WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA



3. Interpreted with Project Ice Conditions



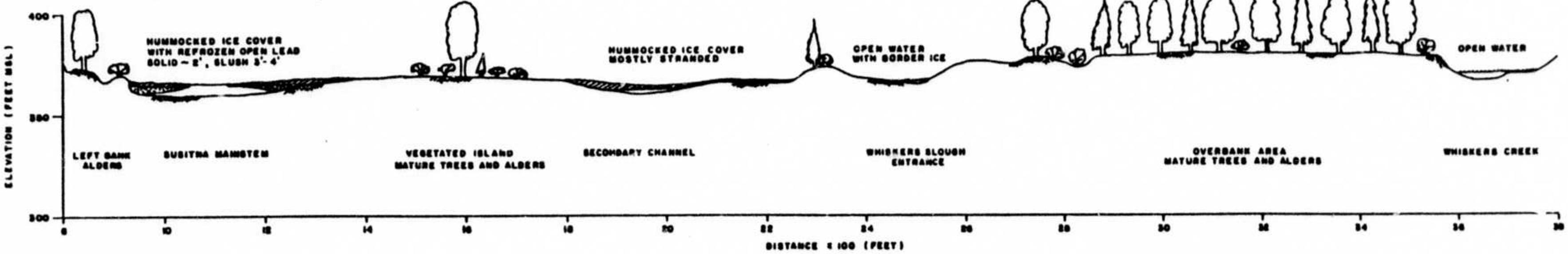
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-3

1982 CROSS SECTION SURVEY
RIVER MILE 98.6
VERTICAL EXAGGERATION 4:1

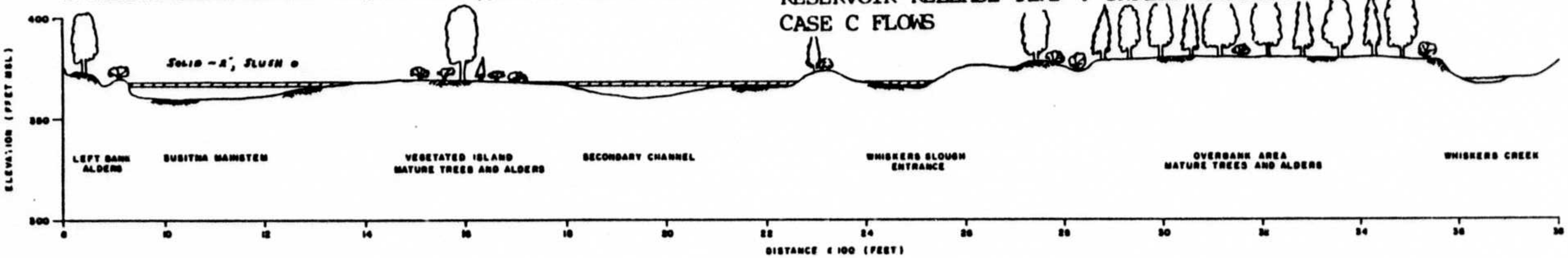
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

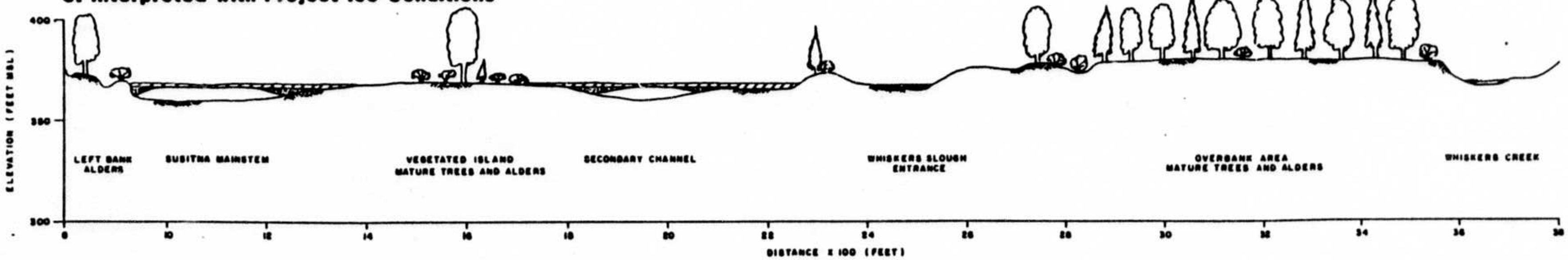


2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA

WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

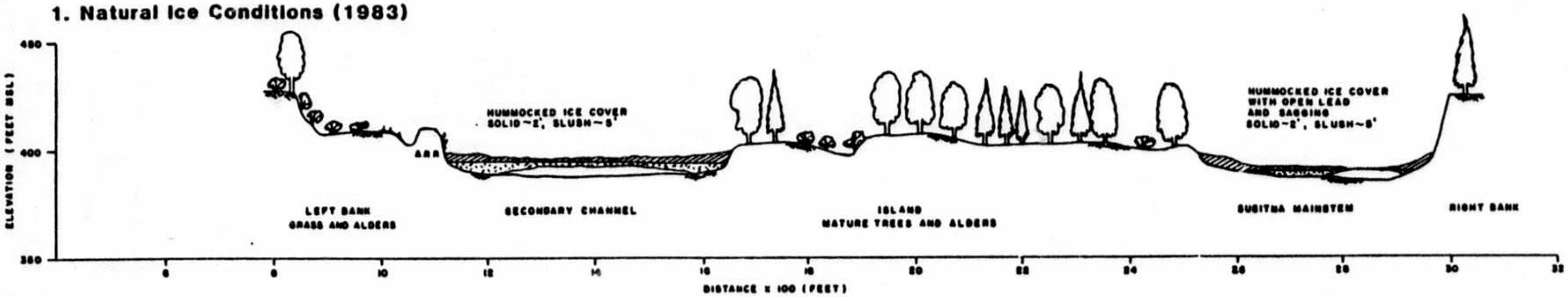
LRX-7

1980 CROSS SECTION SURVEY
RIVER MILE 101.5
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

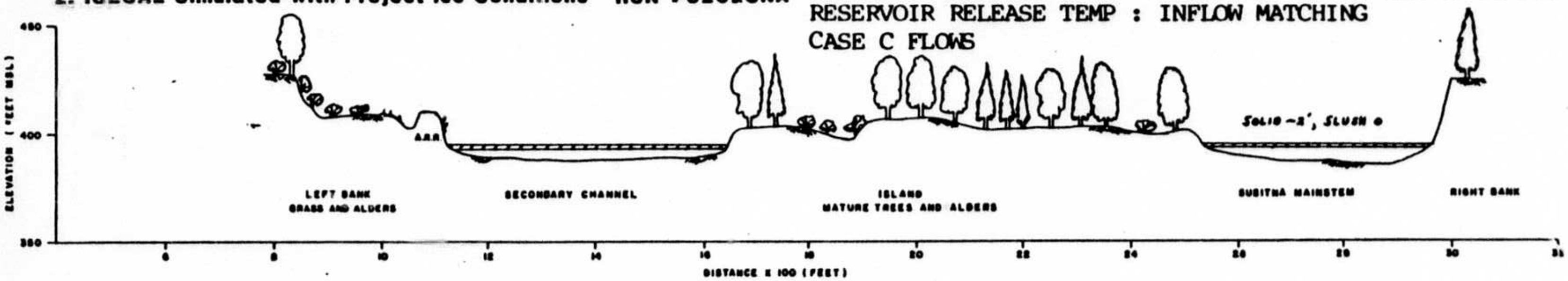
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

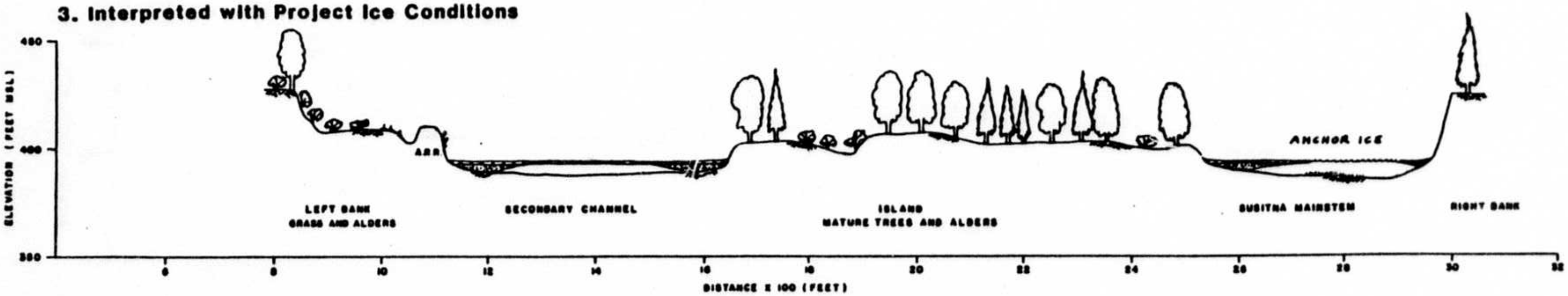


WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-10

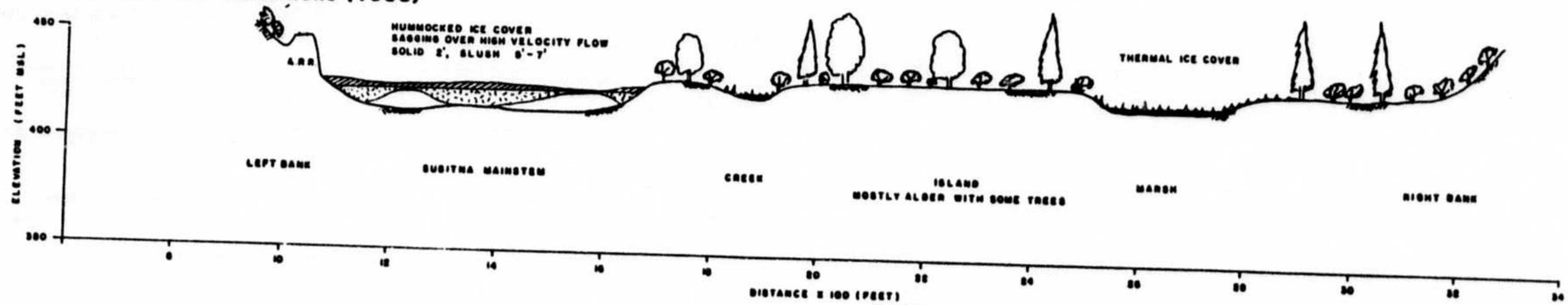
1980 CROSS SECTION SURVEY
RIVER MILE 104.8
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

HARZA-EBASCO

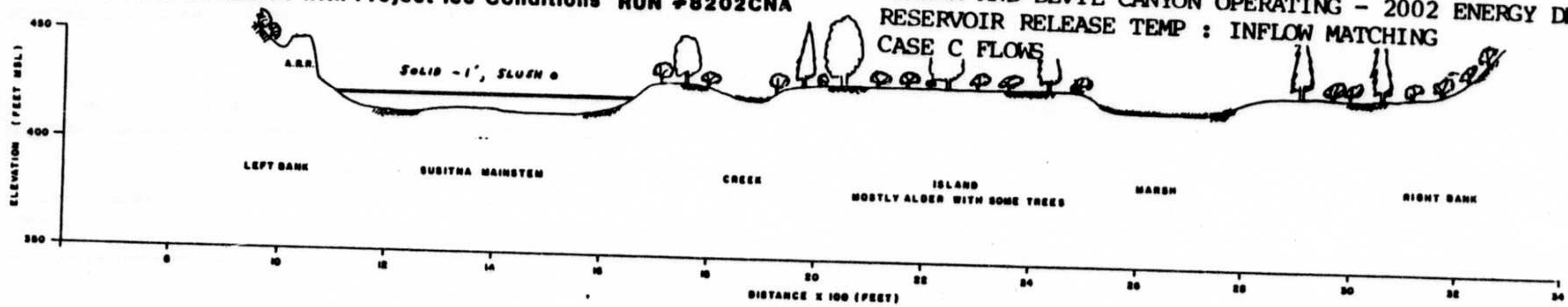
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

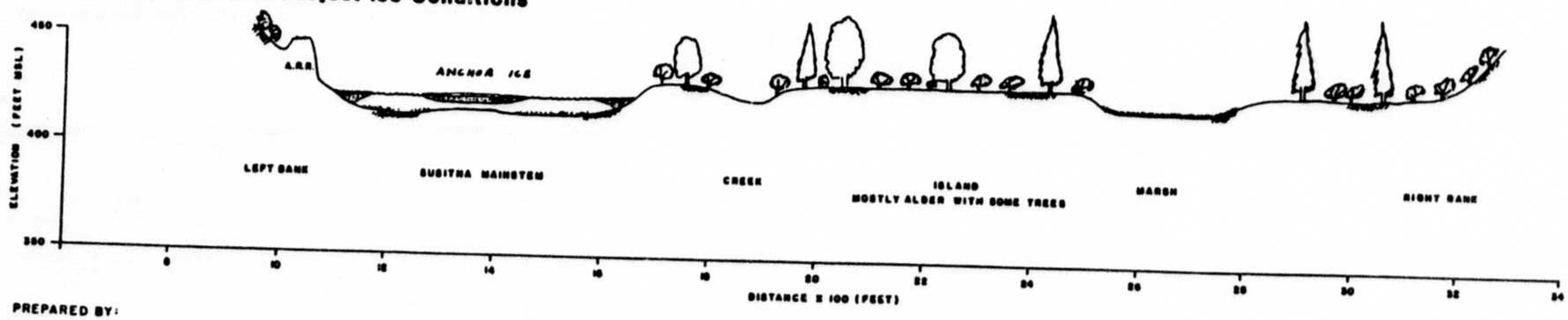


WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

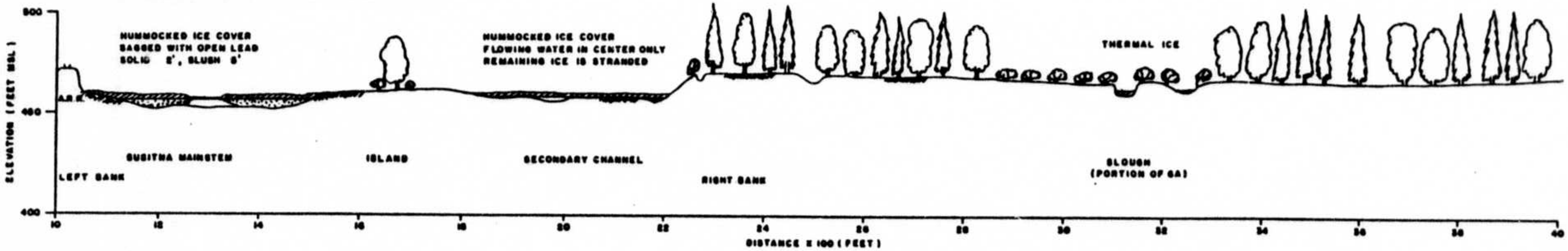
LRX-12

1981 CROSS SECTION SURVEY
RIVER MILE 108.4
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

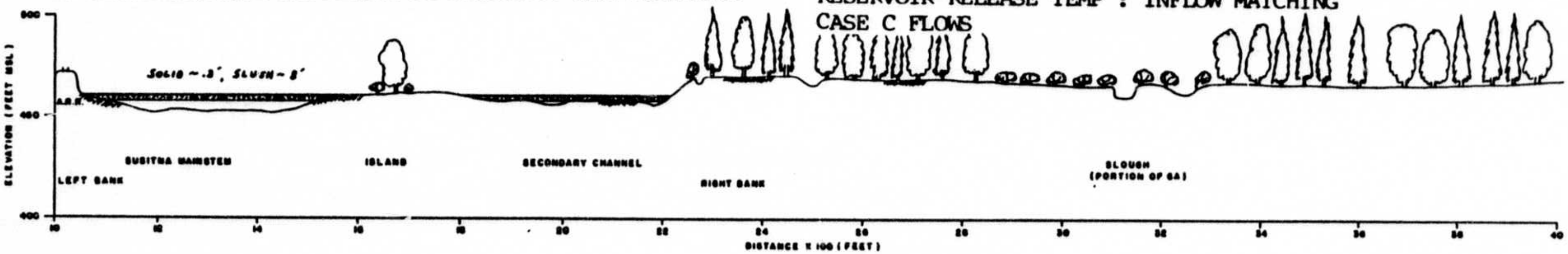
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

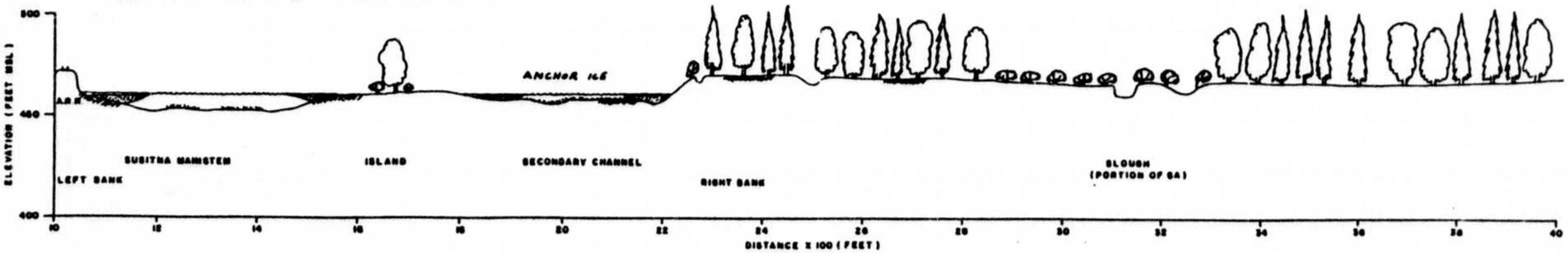


WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA



3. Interpreted with Project Ice Conditions



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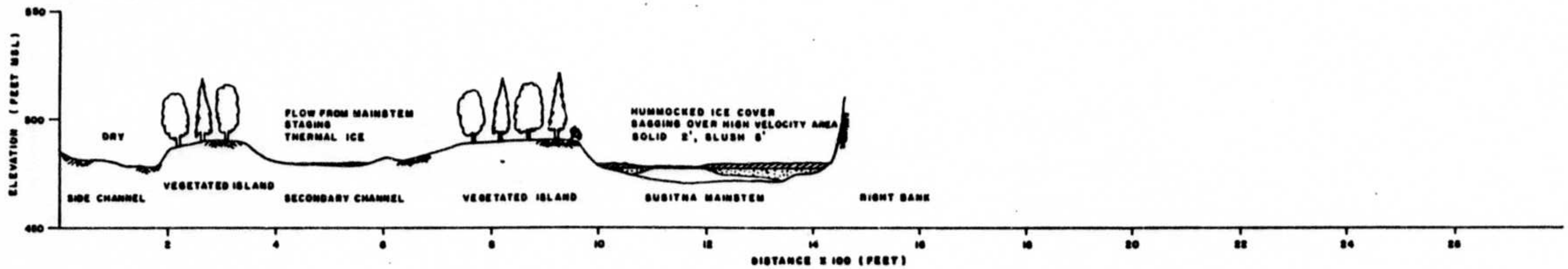
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-17

1980 CROSS SECTION SURVEY
RIVER MILE 112.7
VERTICAL EXAGGERATION 4:1

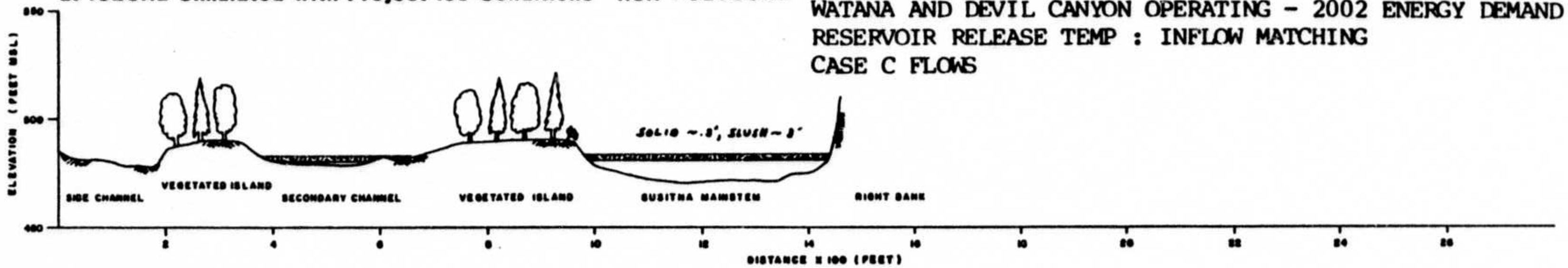
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

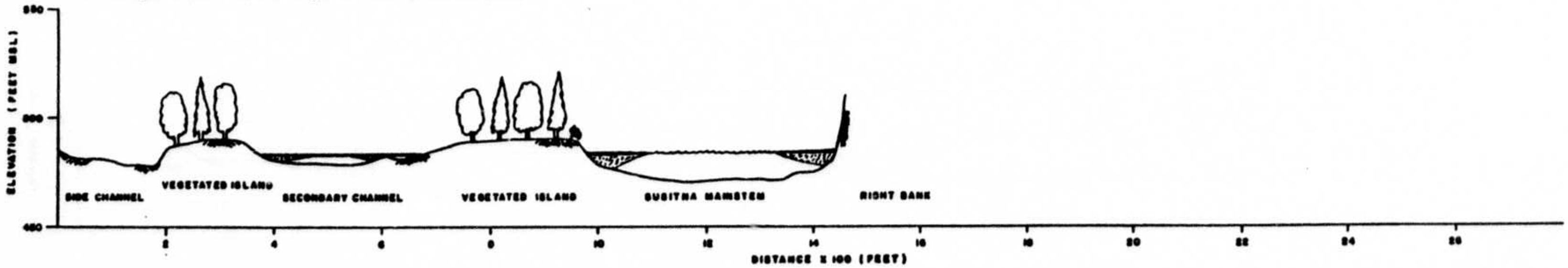


2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA

WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



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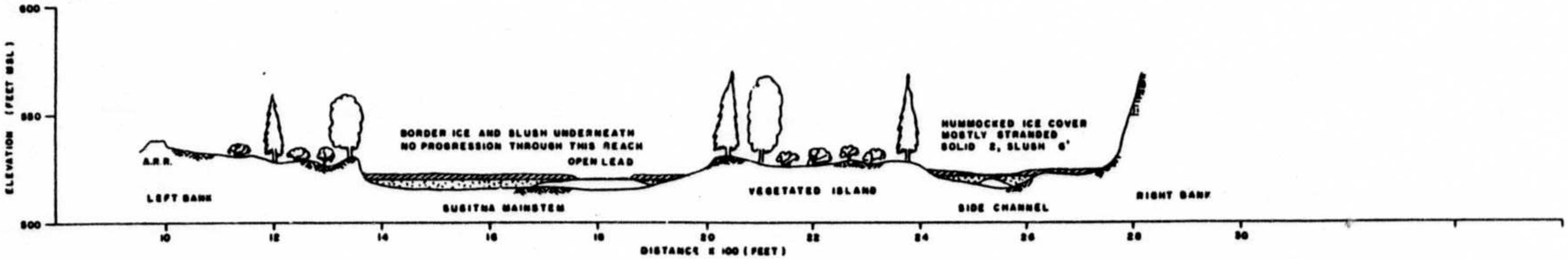
LRX-18.2

1982 CROSS SECTION SURVEY
RIVER MILE 115.1
VERTICAL EXAGGERATION 4:1

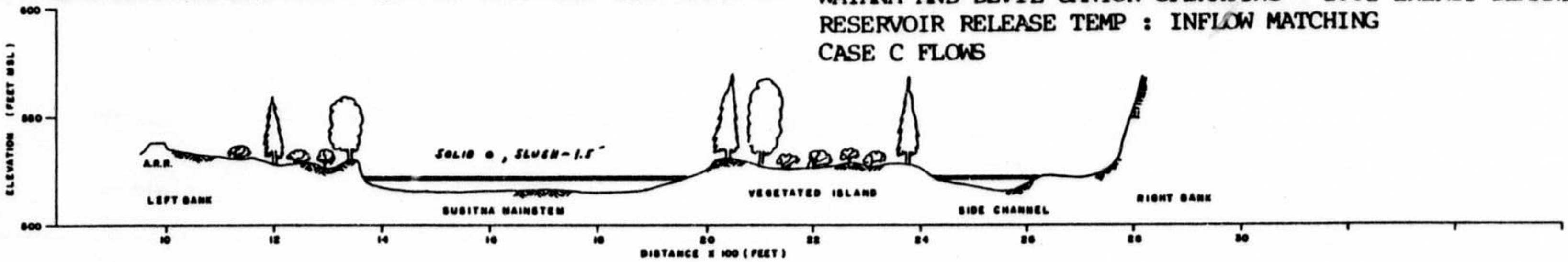
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

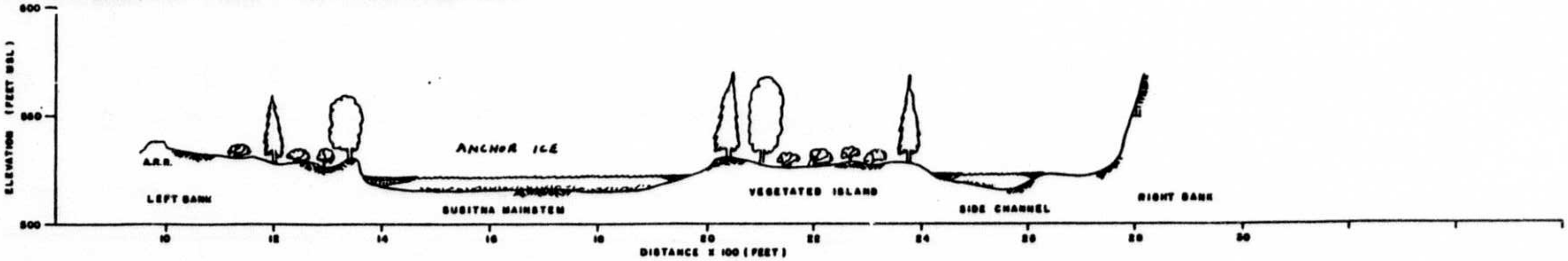


2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA

WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



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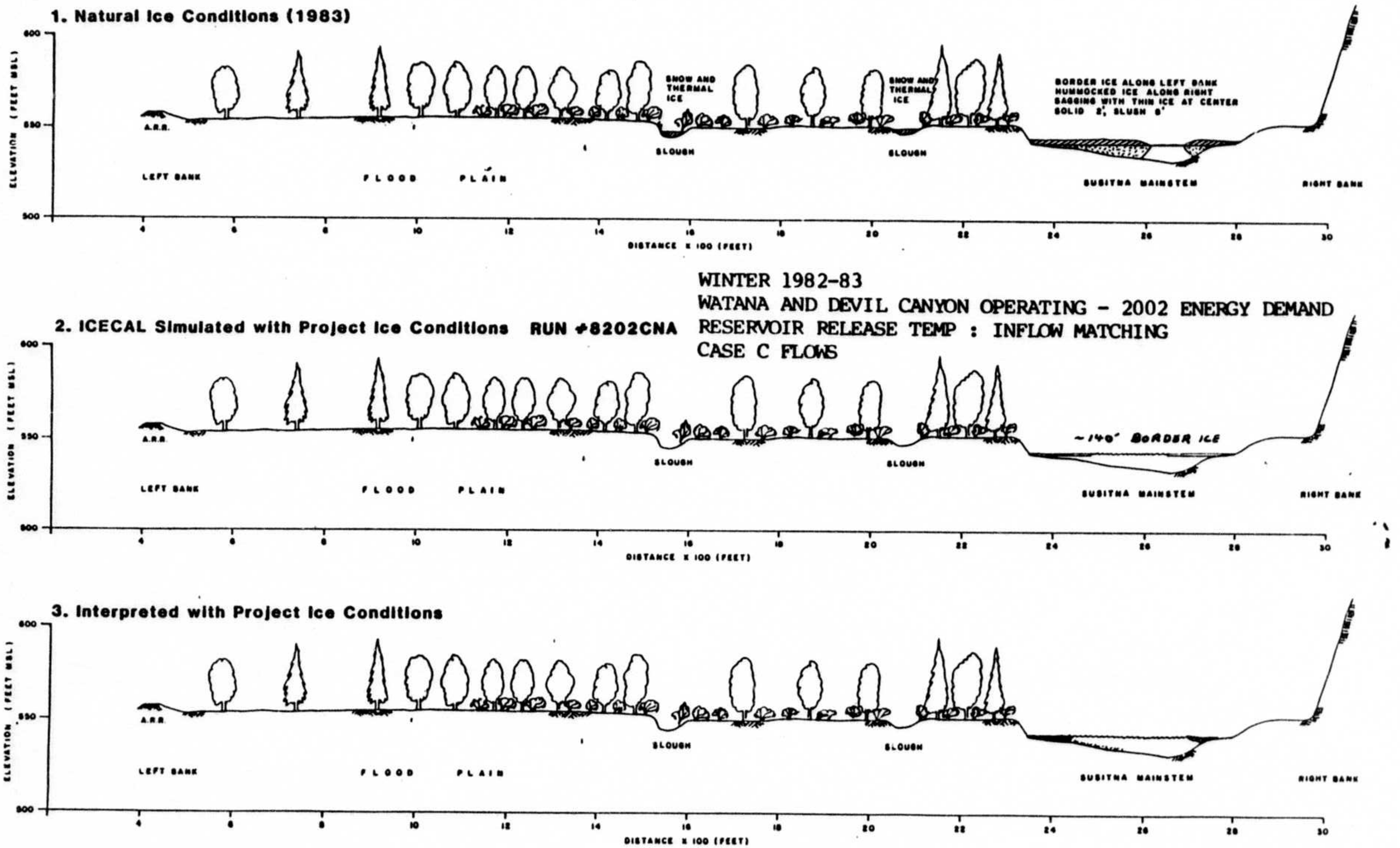
LRX-23

1980 CROSS SECTION SURVEY
RIVER MILE 120.2
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

HARZA-EBASCO

SUSITNA JOINT VENTURE



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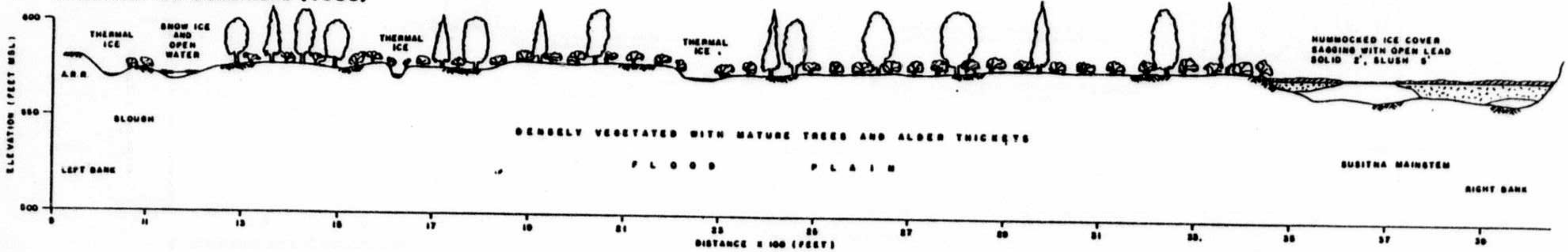
LRX -27

1980 CROSS SECTION SURVEY
RIVER MILE 123.3
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

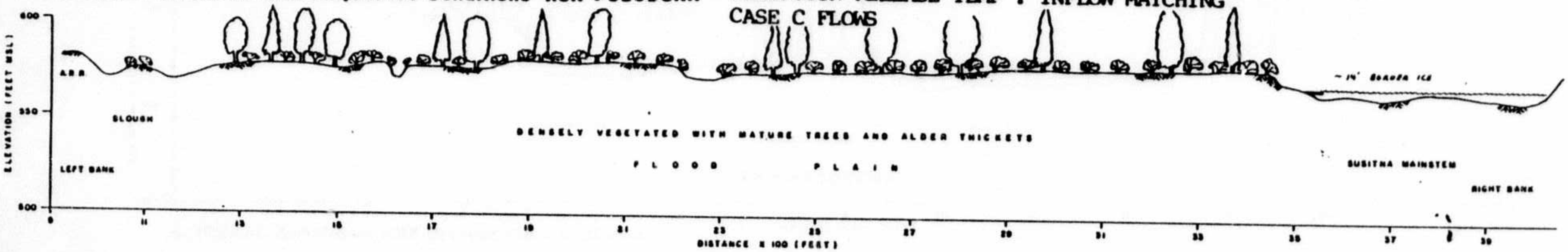
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

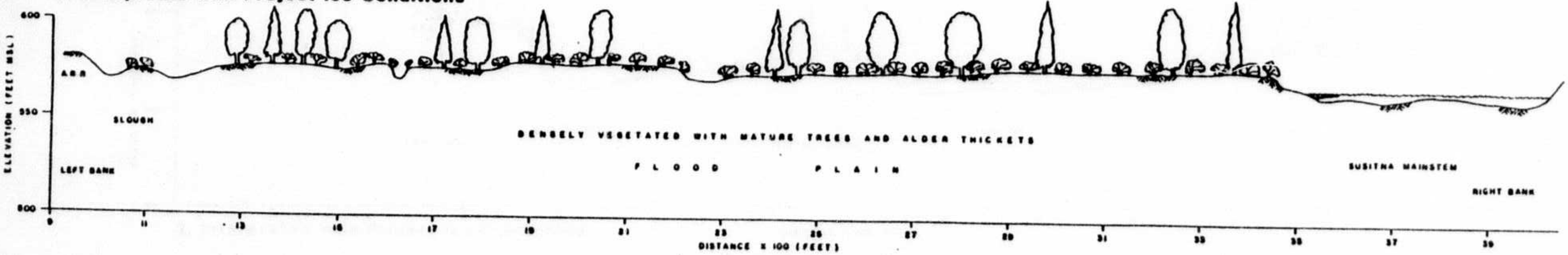


WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA



3. Interpreted with Project Ice Conditions

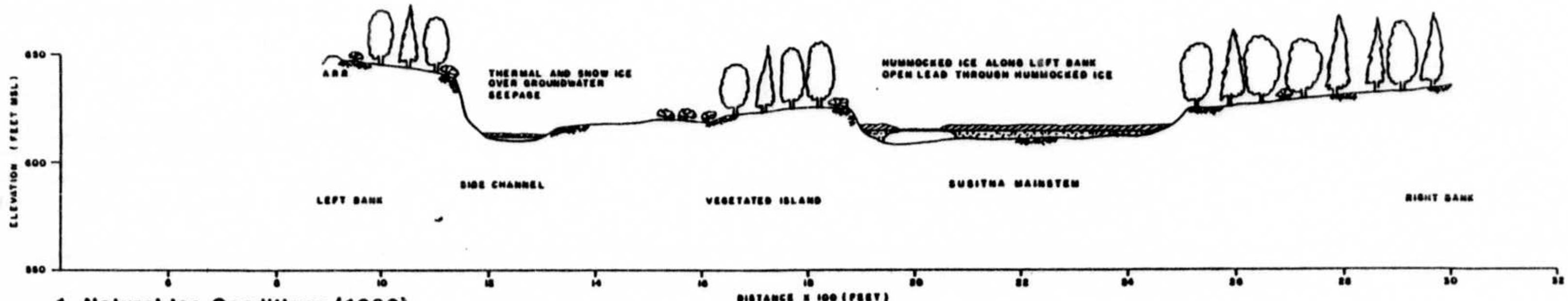


PREPARED BY:
R&M CONSULTANTS, INC.

LRX-29

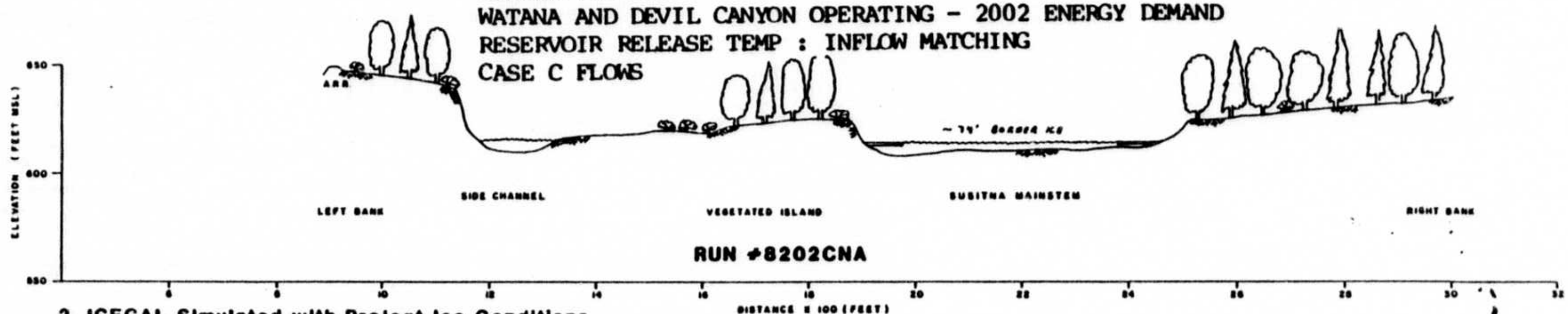
1980 CROSS SECTION SURVEY
RIVER MILE 1__.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:
HARZA EBASCO
SUSITNA JOINT VENTURE



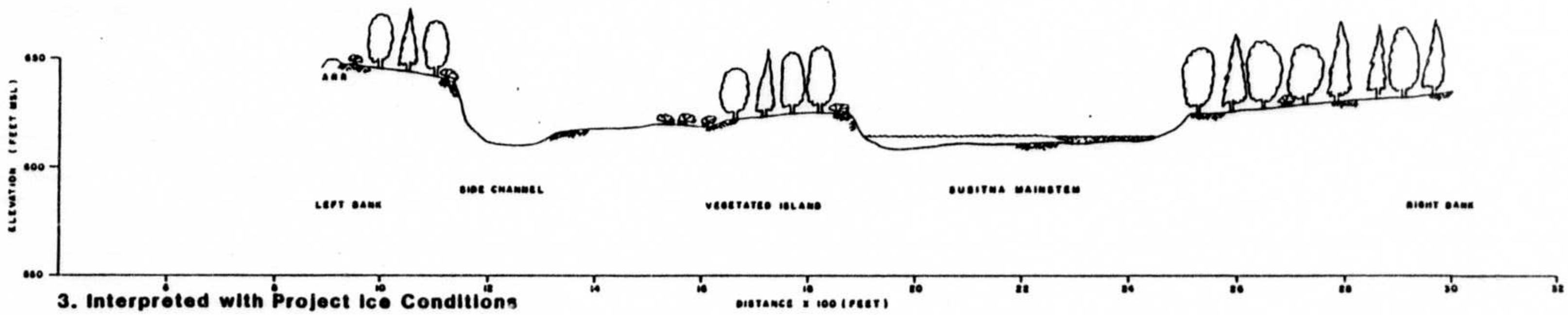
1. Natural Ice Conditions (1983)

WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



RUN #8202CNA

2. ICECAL Simulated with Project Ice Conditions



3. Interpreted with Project Ice Conditions

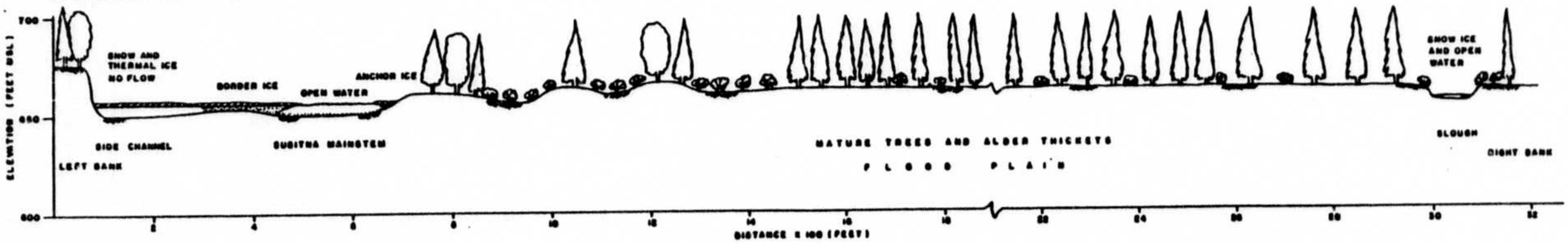
PREPARED BY:
R&M CONSULTANTS, INC.

LRX-34

1980 CROSS SECTION SURVEY
RIVER MILE 130.5

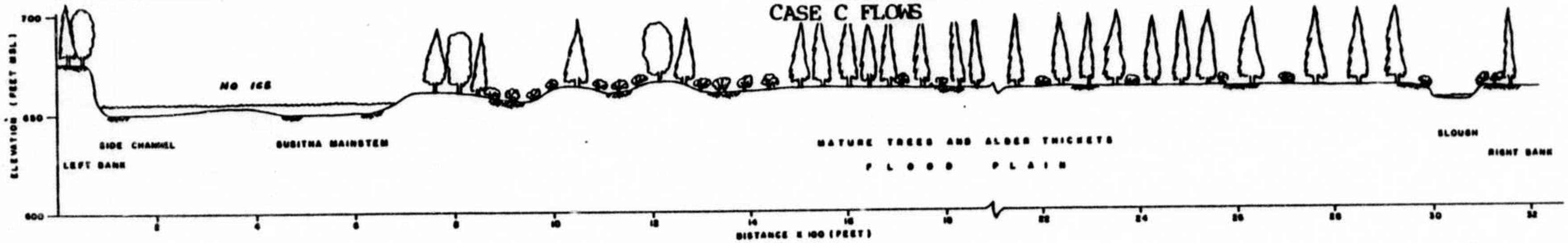
PREPARED FOR:
HARZA-EBASCO
JOINT

1. Natural Ice Conditions (1983)

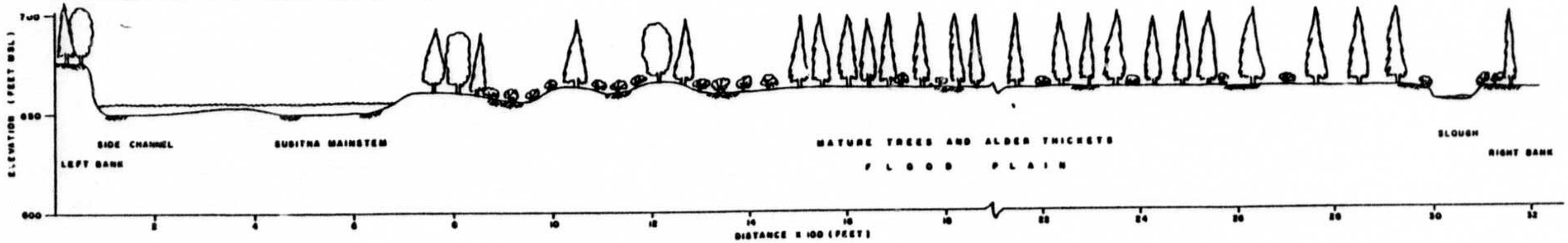


WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS

2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA



3. Interpreted with Project Ice Conditions



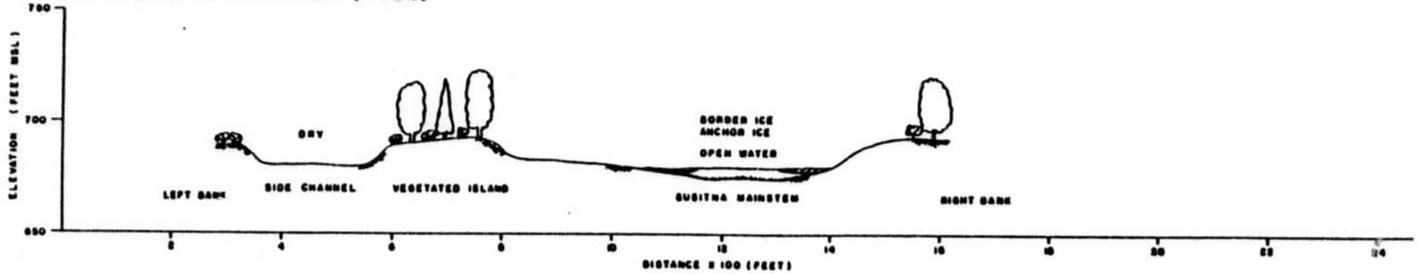
PREPARED BY:
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-40

1980 CROSS SECTION SURVEY
RIVER MILE 134.2
VERTICAL EXAGGERATION 4:1

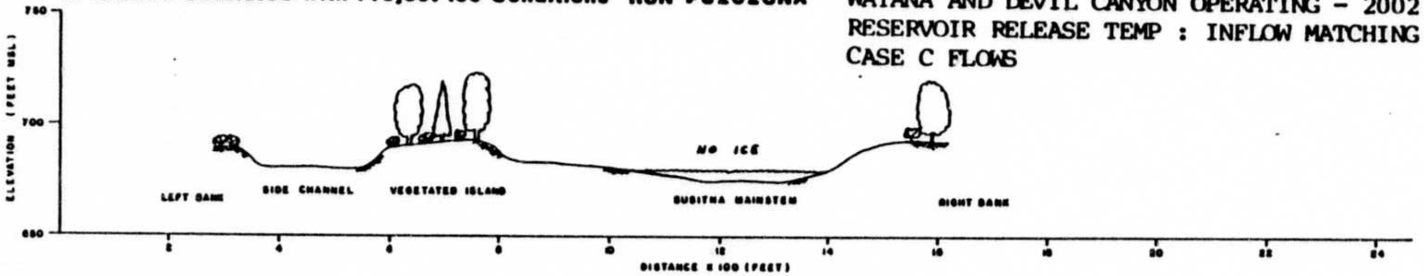
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

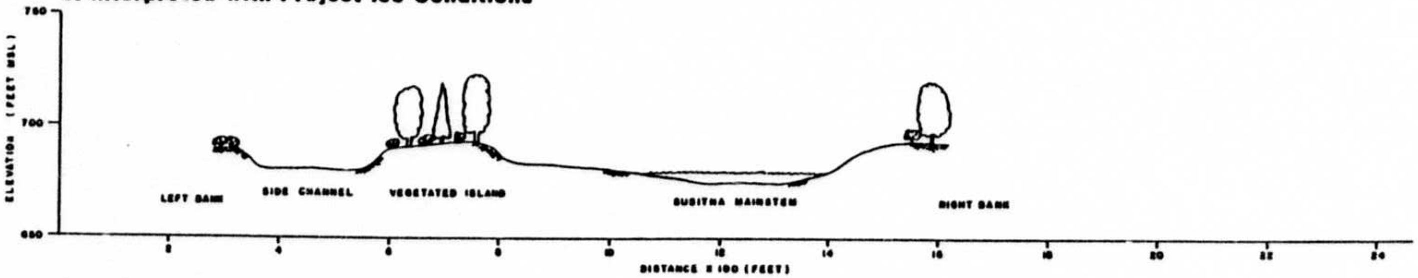


2. ICECAL Simulated with Project Ice Conditions RUN #8202CNA

WINTER 1982-83
WATANA AND DEVIL CANYON OPERATING - 2002 ENERGY DEMAND
RESERVOIR RELEASE TEMP : INFLOW MATCHING
CASE C FLOWS



3. Interpreted with Project Ice Conditions



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ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

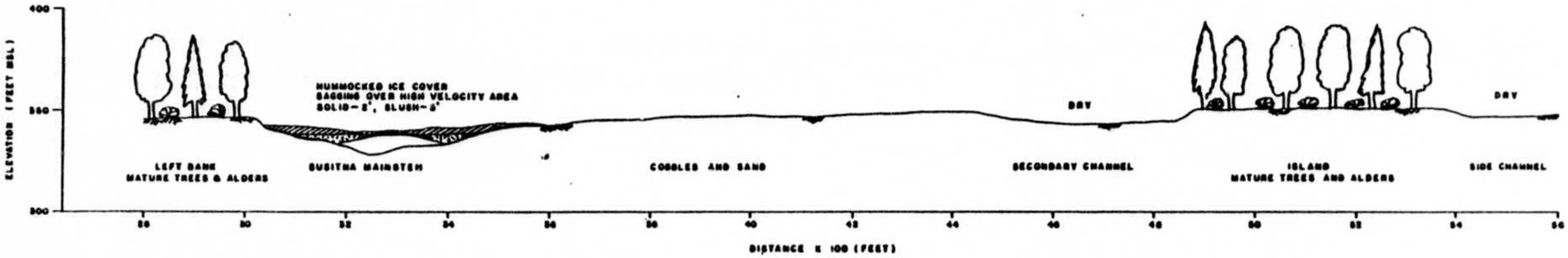
LRX-44

1980 CROSS SECTION SURVEY
RIVER MILE 136.4
VERTICAL EXAGGERATION 4:1

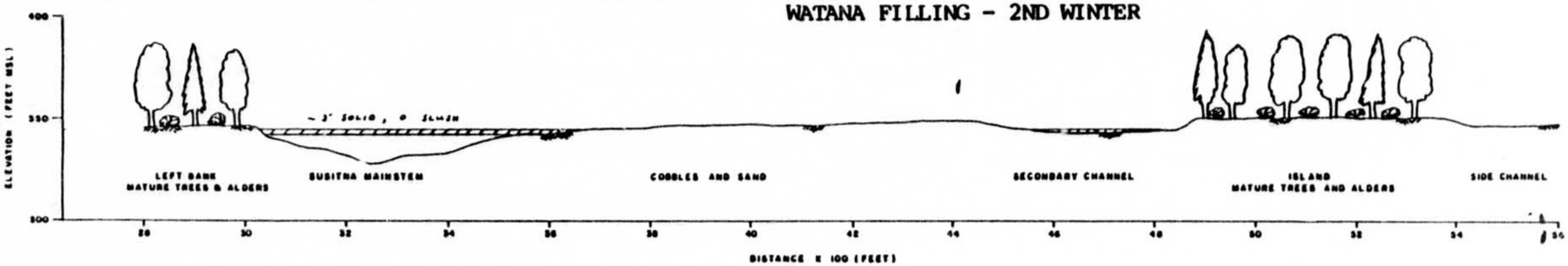
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

Exhibit Z

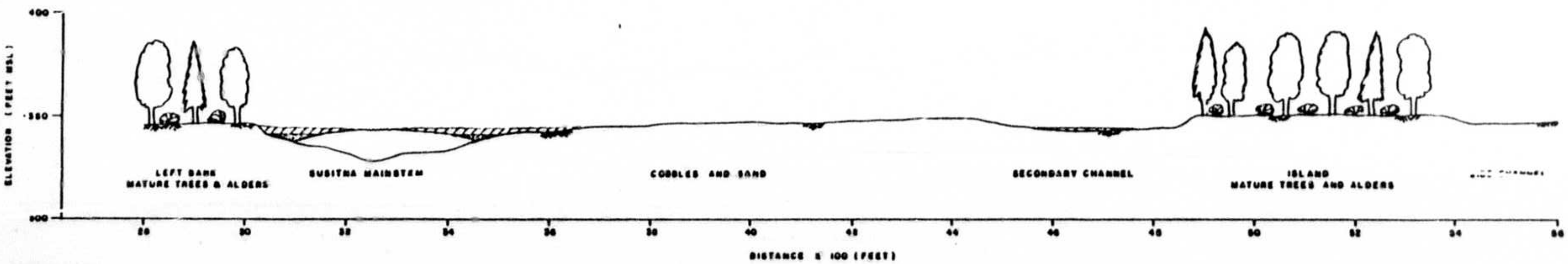
1. Natural Ice Conditions (1983)



2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



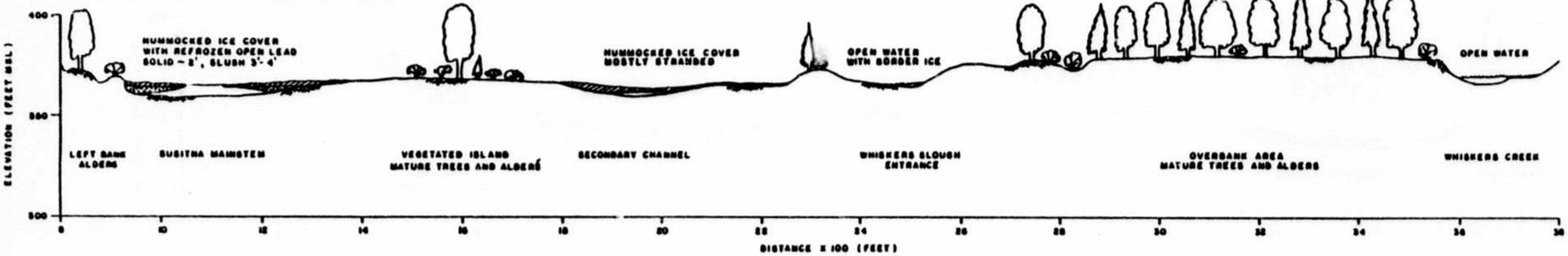
PREPARED BY:
R&M CONSULTANTS, INC.

RX-

1982 CROSS SECTION SURVEY
RIVER MILE 6

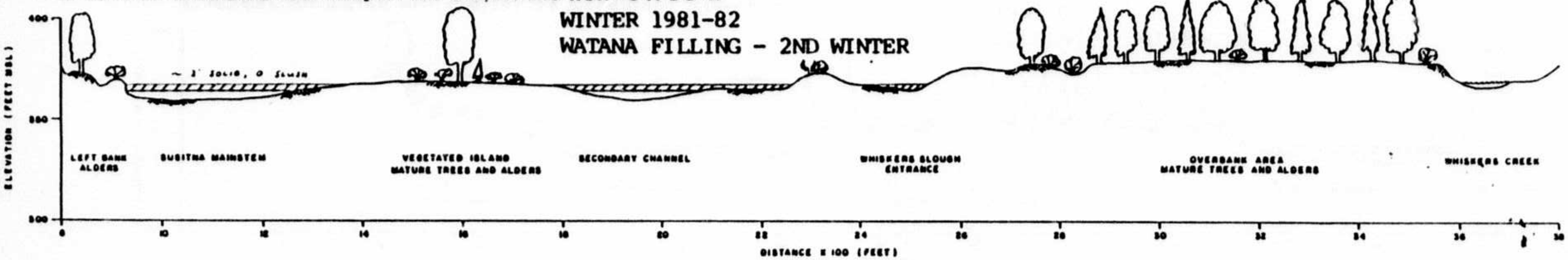
PREPARED FOR:
HARZA-EBASCO

1. Natural Ice Conditions (1983)

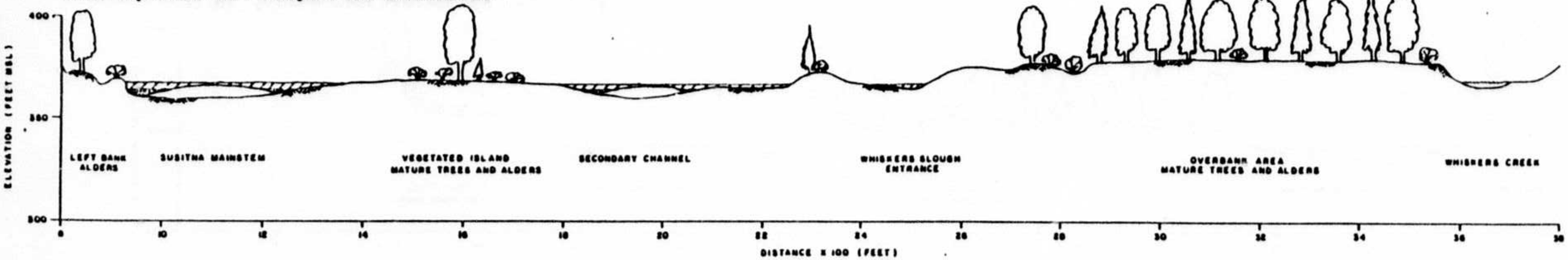


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M C... ...ULT... ...S, IN...

ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-7

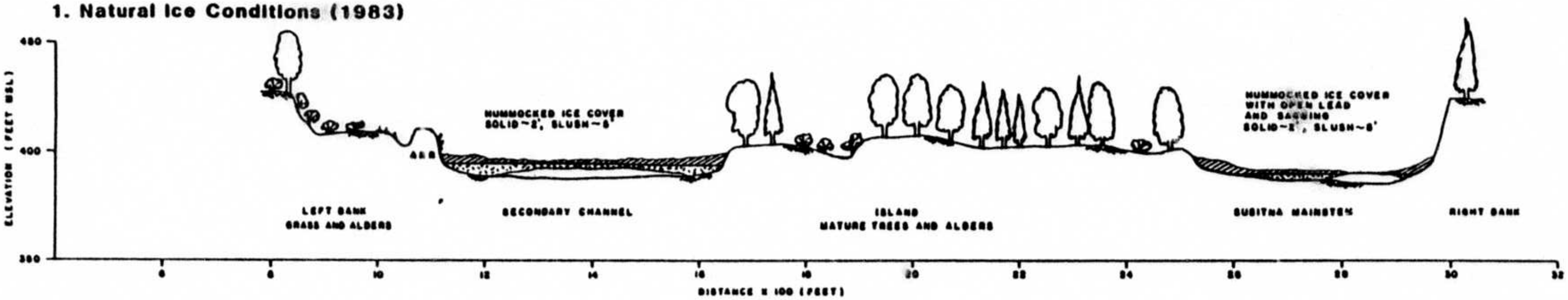
1980 CROSS SECTION SURVEY
RIVER MILE 101.5
VER...L EX...ERA... 4:1

PREPARED FOR:

HARZA-EBASCO

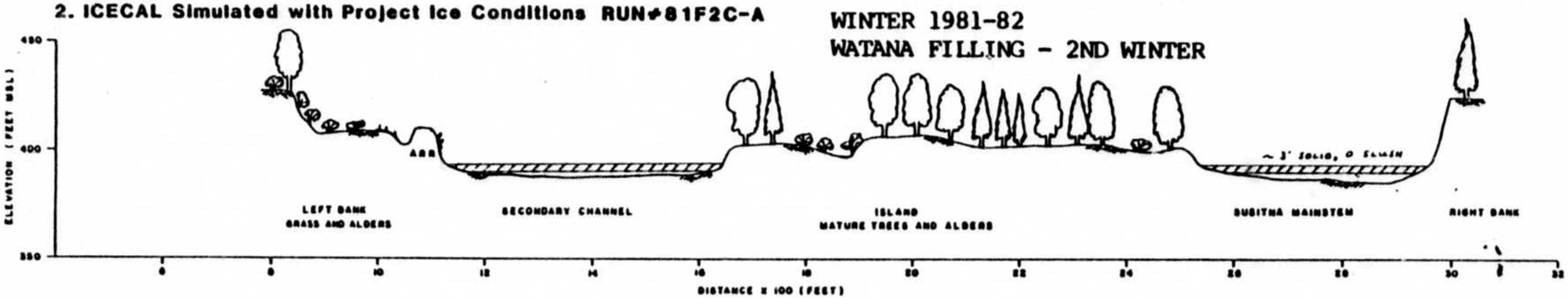
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

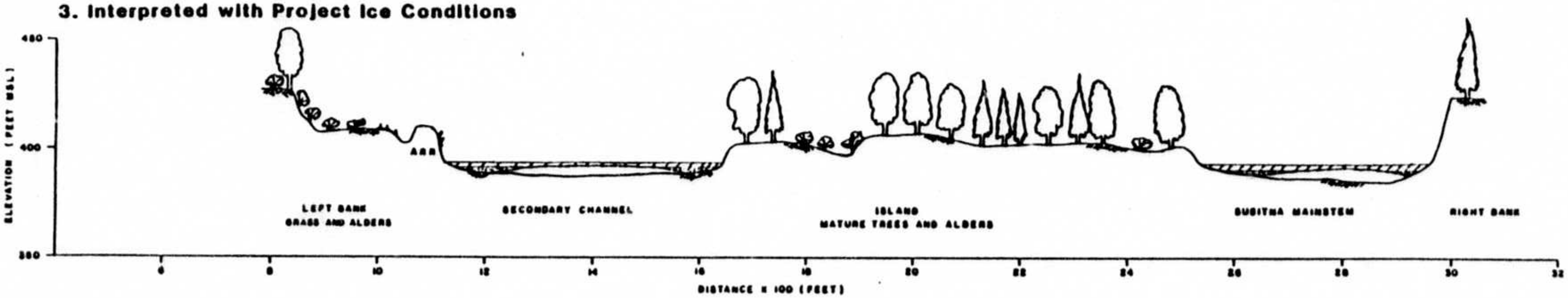


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



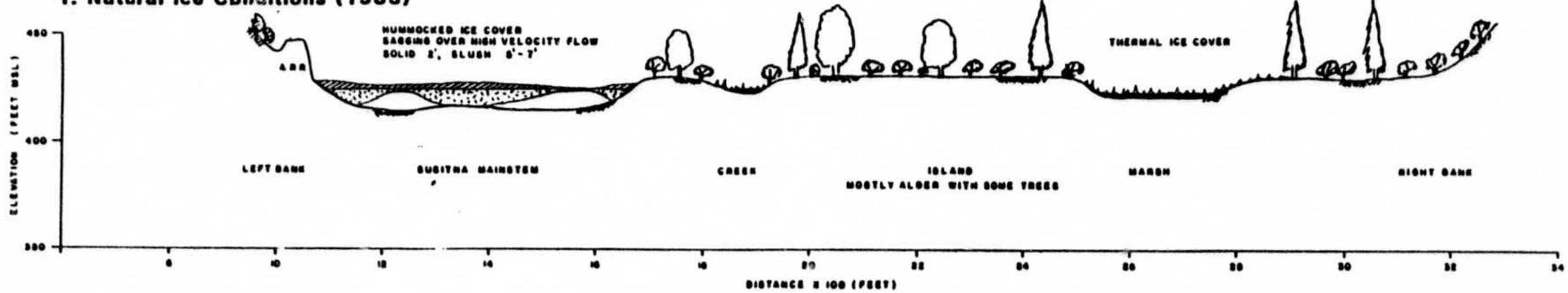
PREPARED BY:
R&M CONSULTANTS, INC.

X-

1980 CROSS SECTION SURVEY
R MIL 4.8
VERTICAL EXAGGERATION 4:1

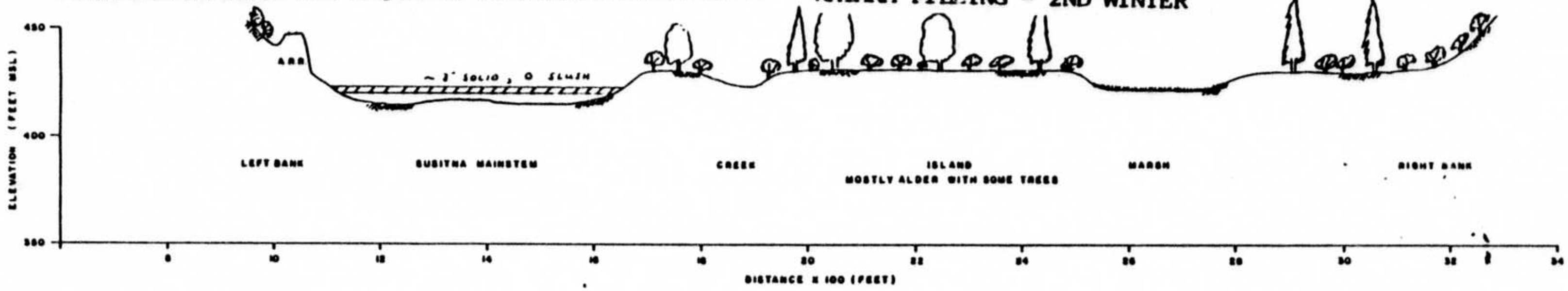
PREPARED FOR:
EBA
JOINT VENTURE

1. Natural Ice Conditions (1983)

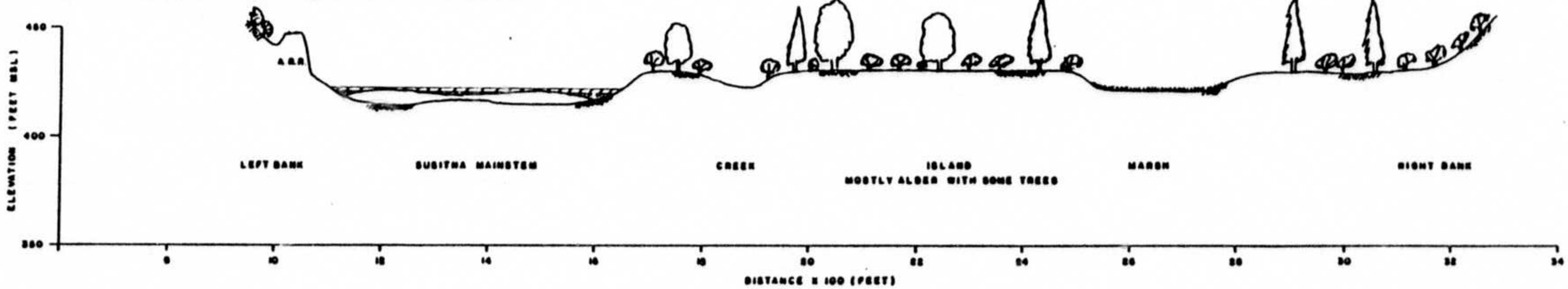


WINTER 1981-82
WATANA FILLING - 2ND WINTER

2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A



3. Interpreted with Project Ice Conditions



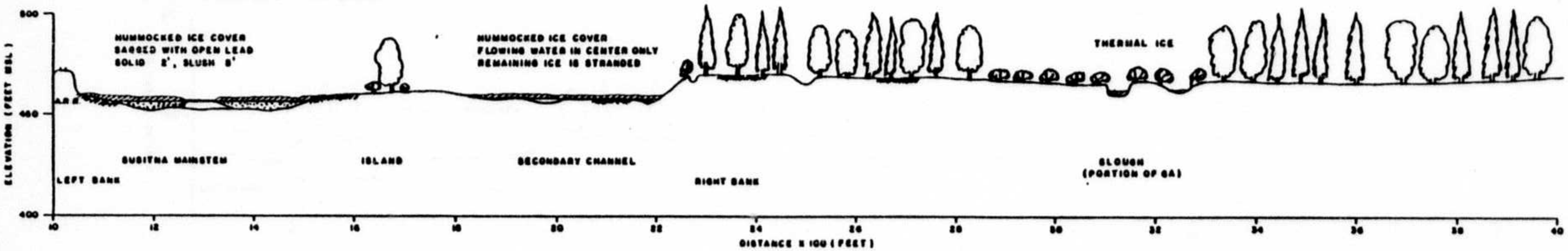
PREPARED BY:
R&M CONSULTANTS, INC.

LRX-12

1981 CROSS SECTION SURVEY
RIVER MILE 108.
VERTICAL EXAGGERATION 4:1

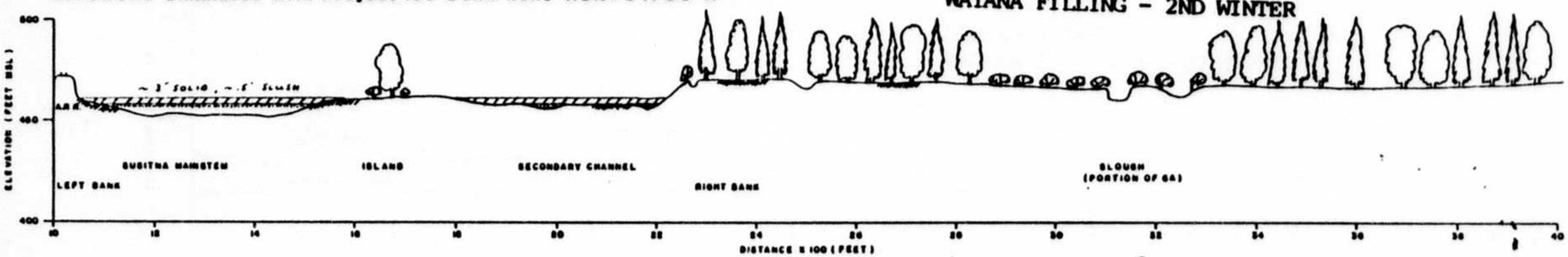
PREPARED FOR:
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

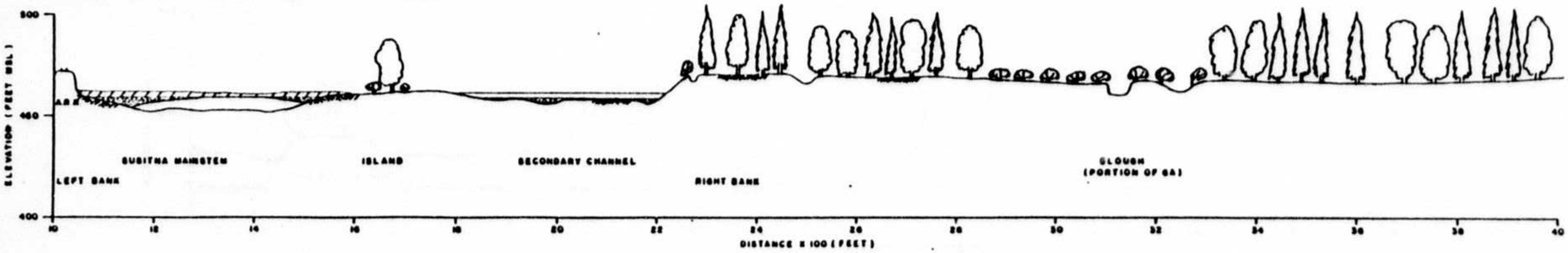


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

LRX-17

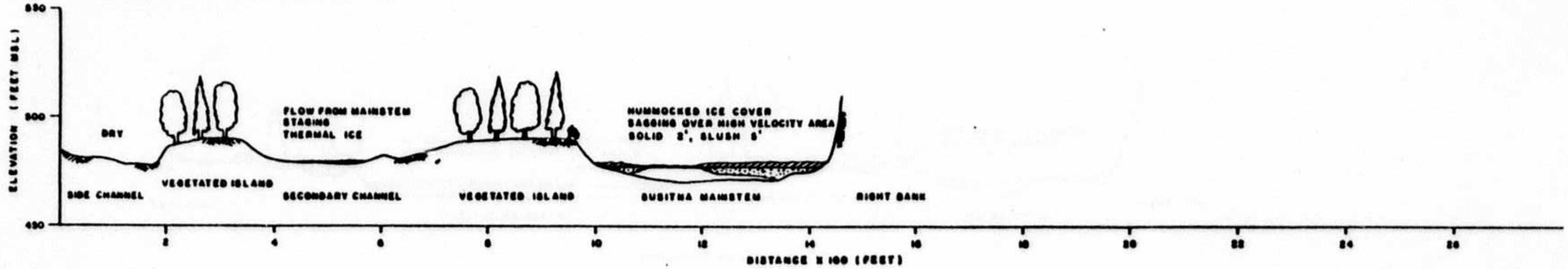
1980 CROSS SECTION SURVEY
RIVER MILE 112.7
VE... AL ... GER... ON 4 .

PREPARED FOR:

HARZA-EBASCO

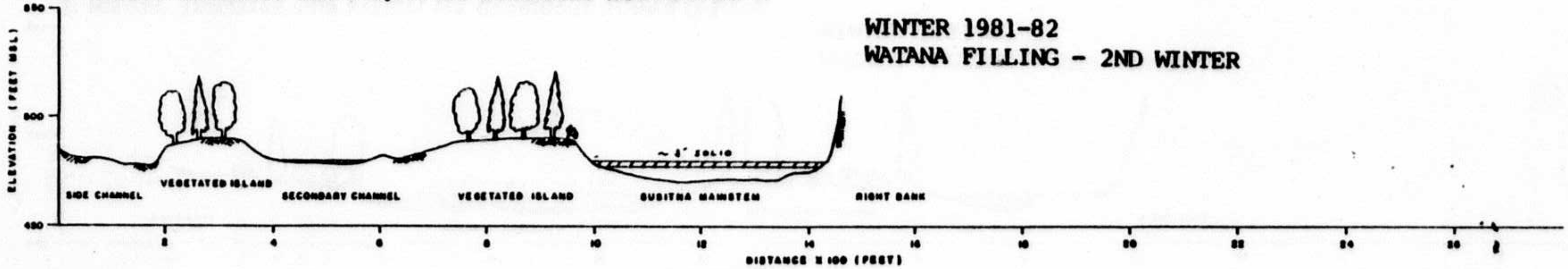
SUSITNA ... VENT...

1. Natural Ice Conditions (1983)

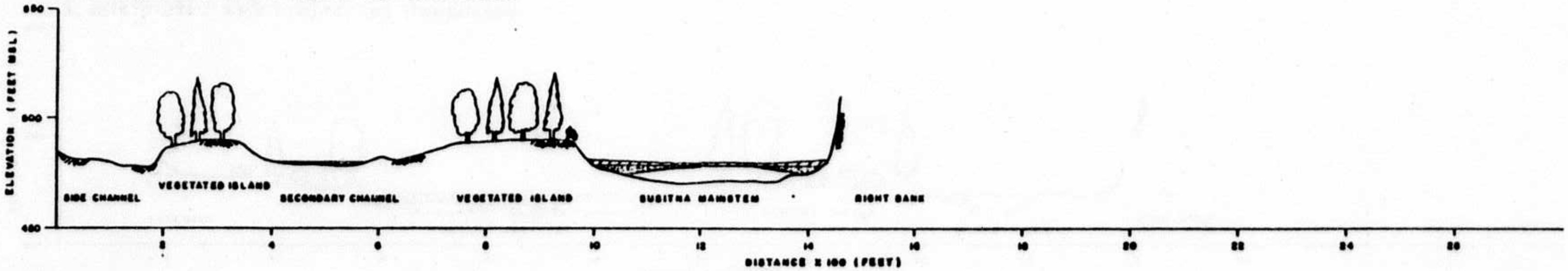


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions

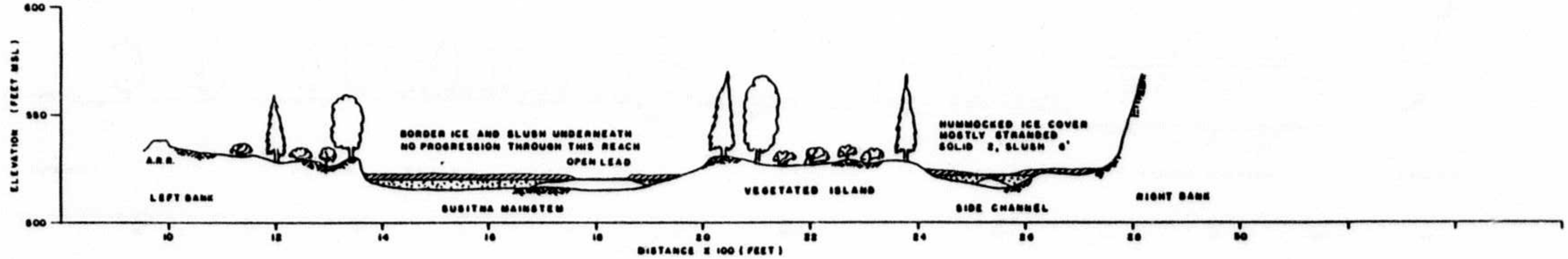


PREPARED BY:
R&M
R& ONS ANT C.

LRX-18.2 1982 CROSS SECTION SURVEY
RIVER MILE 115.1
TIC AG TIO

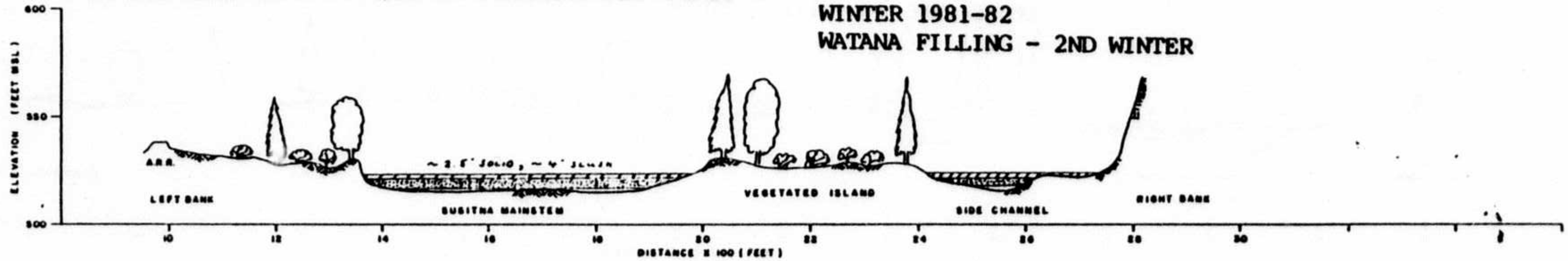
PREPARED FOR:
HARZA-EBASC
SUS OINT IE

1. Natural Ice Conditions (1983)

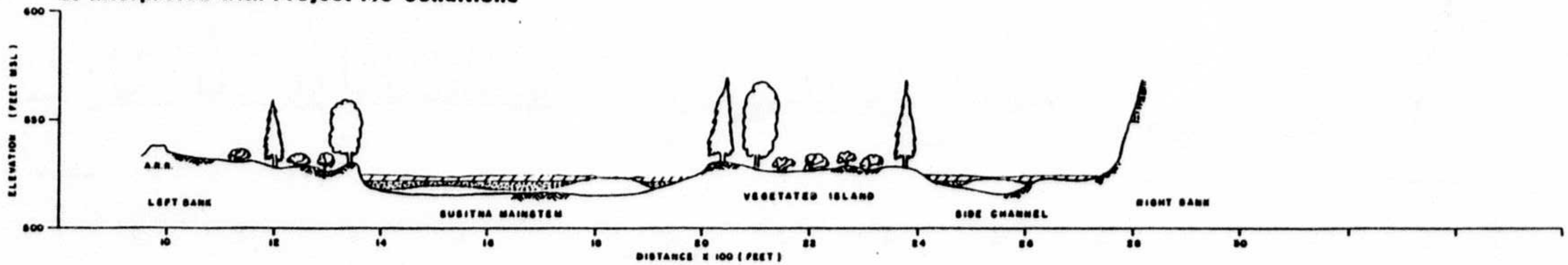


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

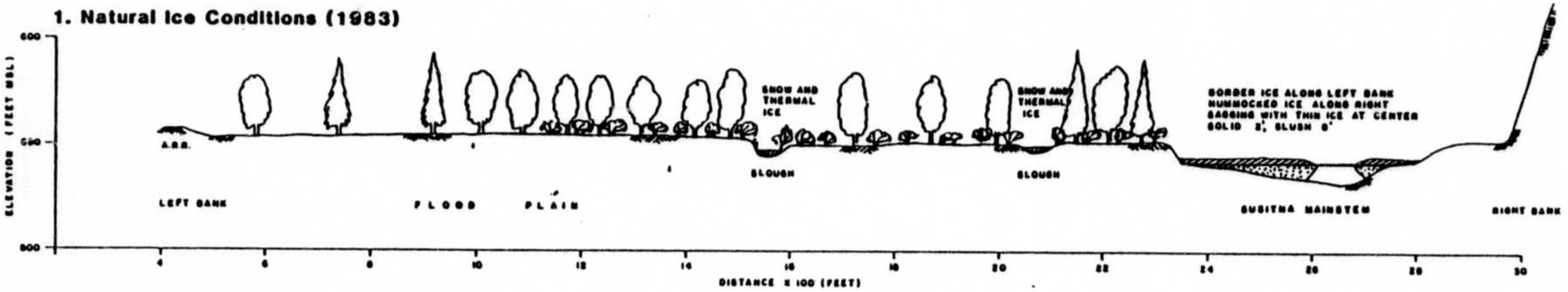
RX-22

1980 CROSS SECTION SURVEY
RIVER MILE 120.
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

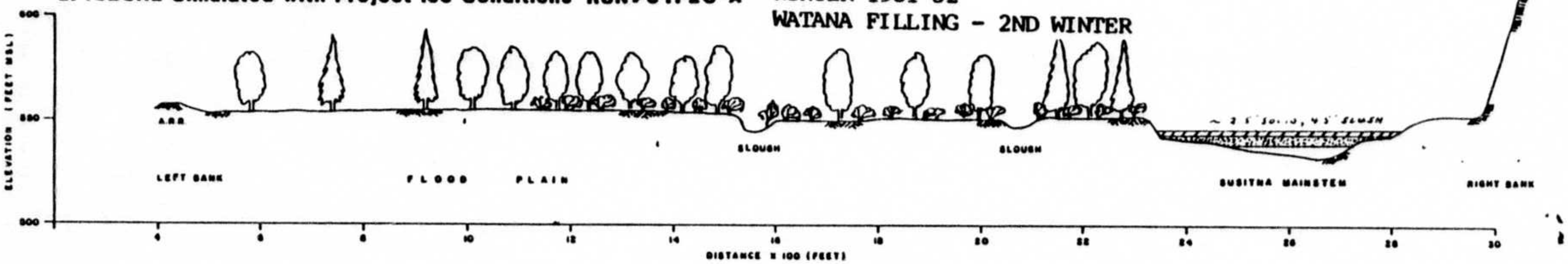
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

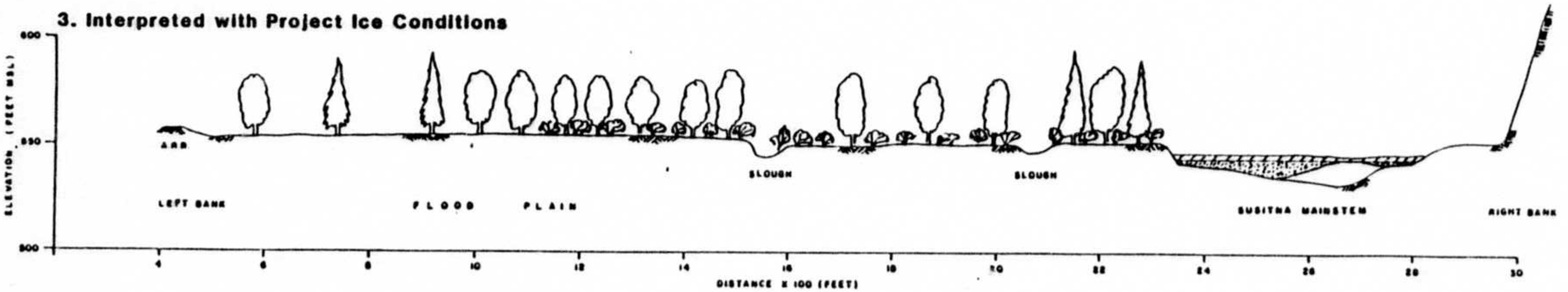


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M ... SULT... S, IN...

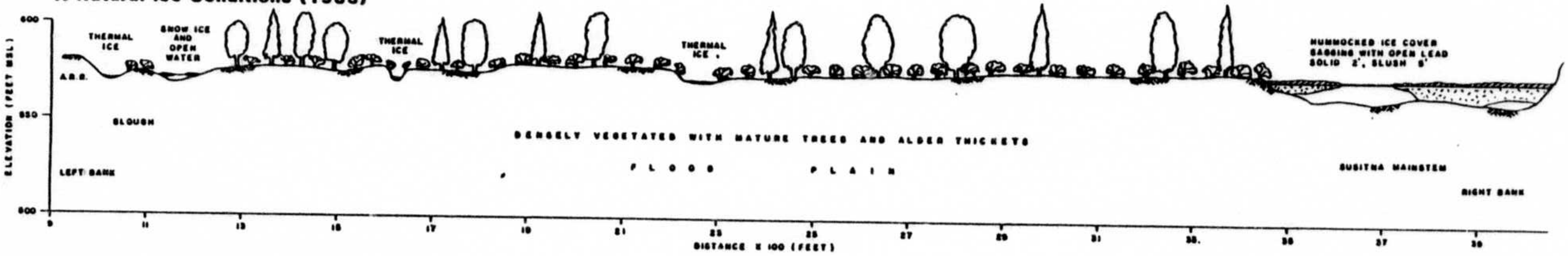
LRX -27

1980 CROSS SECTION SURVEY
RIVER MILE ...3
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

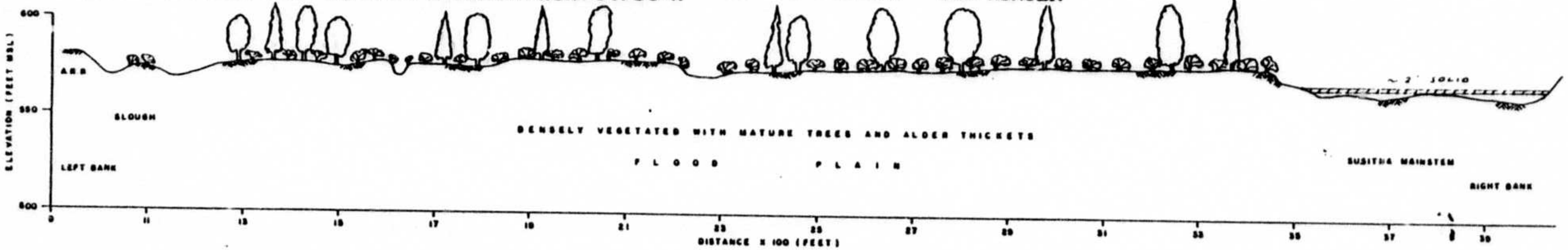
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

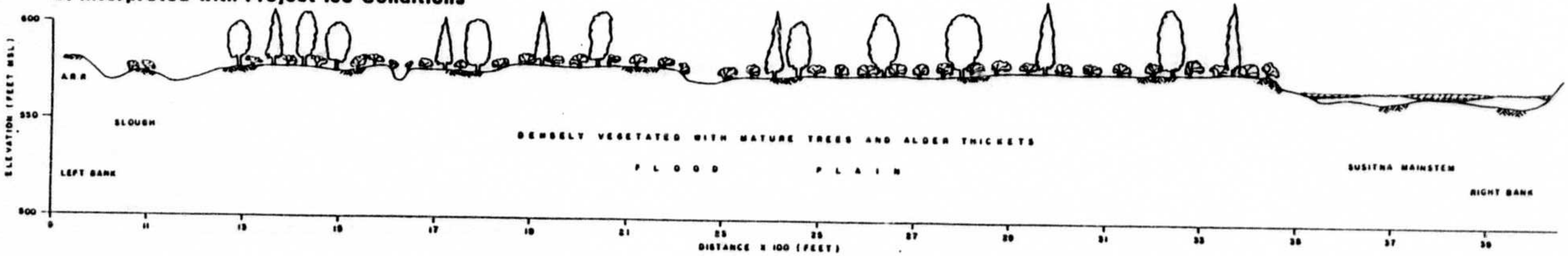


WINTER 1981-82
WATANA FILLING - 2ND WINTER

2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A



3. Interpreted with Project Ice Conditions



PREPARED BY:

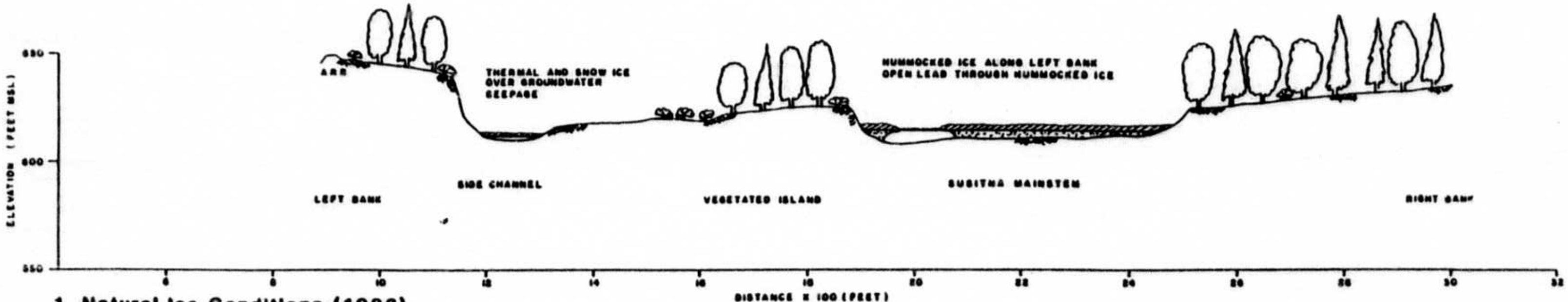
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

LRX-29

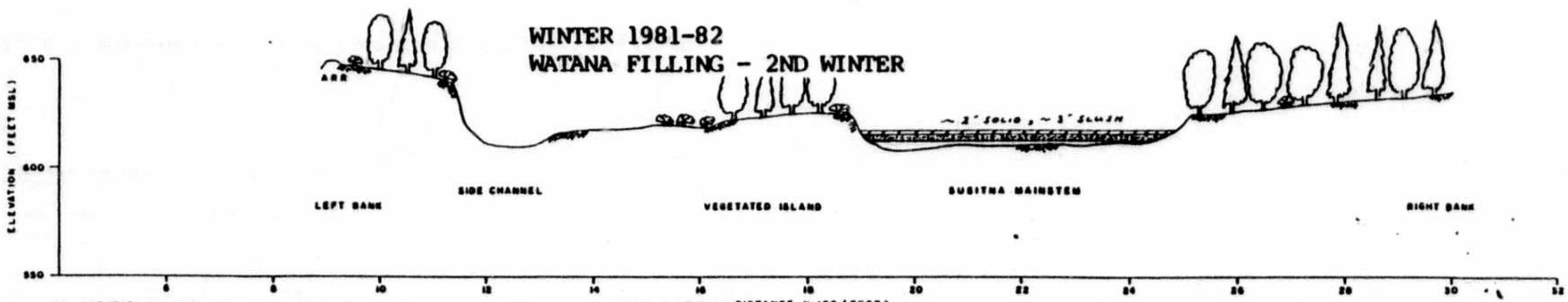
1980 CROSS SECTION SURVEY
RIVER MILE 126.1
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

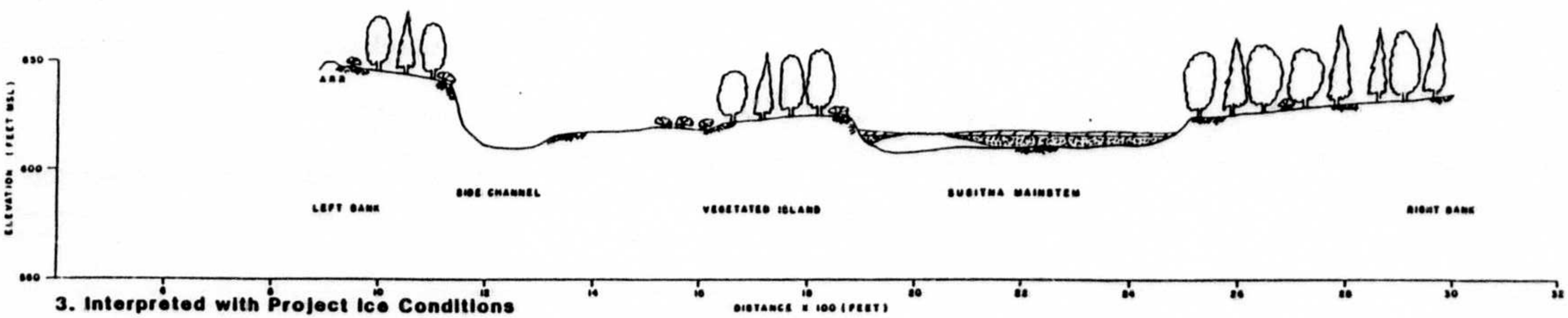
HARZA-EBASCO
SUSITNA JOINT VENTURE



1. Natural Ice Conditions (1983)



2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A



3. Interpreted with Project Ice Conditions

PREPARED BY:

R&M CONSULTANTS, INC.

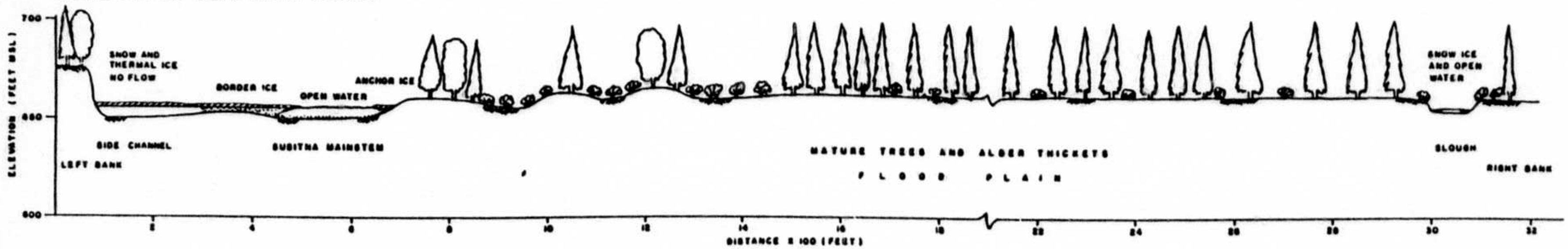
LRX-34

1980 CROSS SECTION SURVEY
RIVER MILE 130.5
VERTICAL EXAGGERATION 4:1

PREPARED FOR:

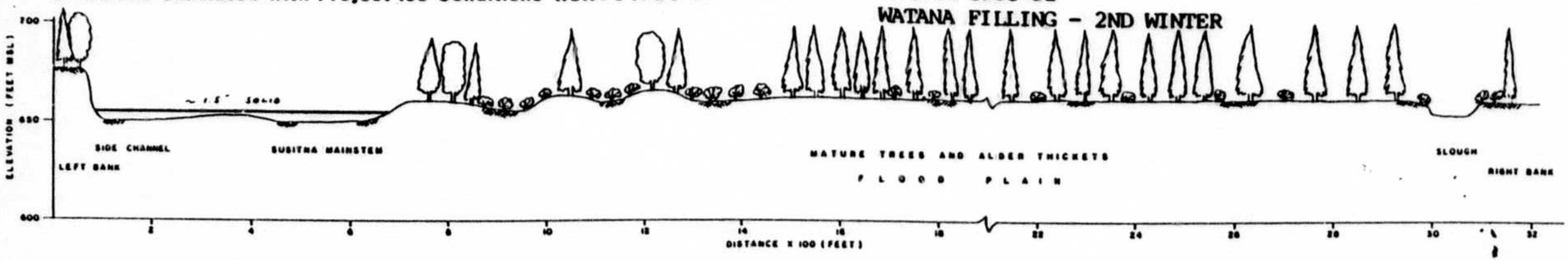
HARZA-EBASCO
SUSITNA JOINT VENTURE

1. Natural Ice Conditions (1983)

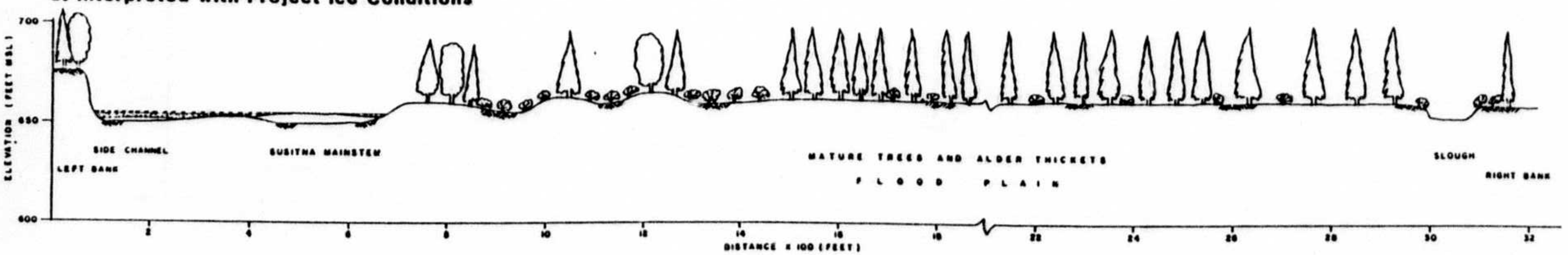


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

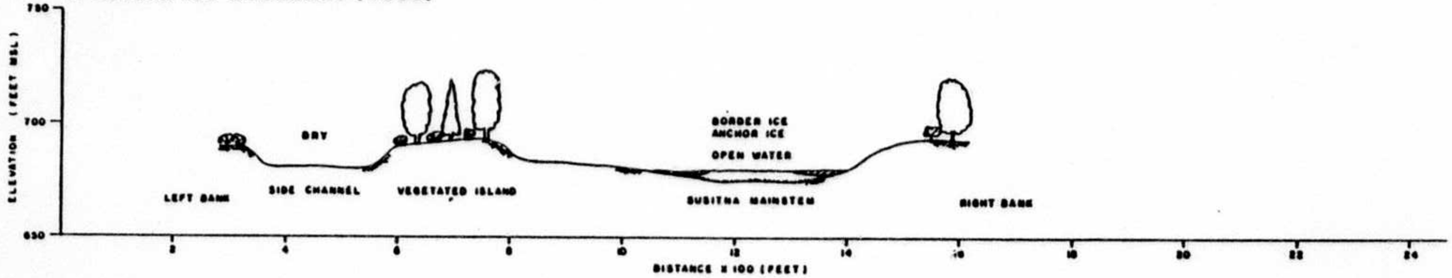
LRX-40

1980 CROSS SECTION SURVEY
RIVER MILE 134.2

PREPARED FOR:

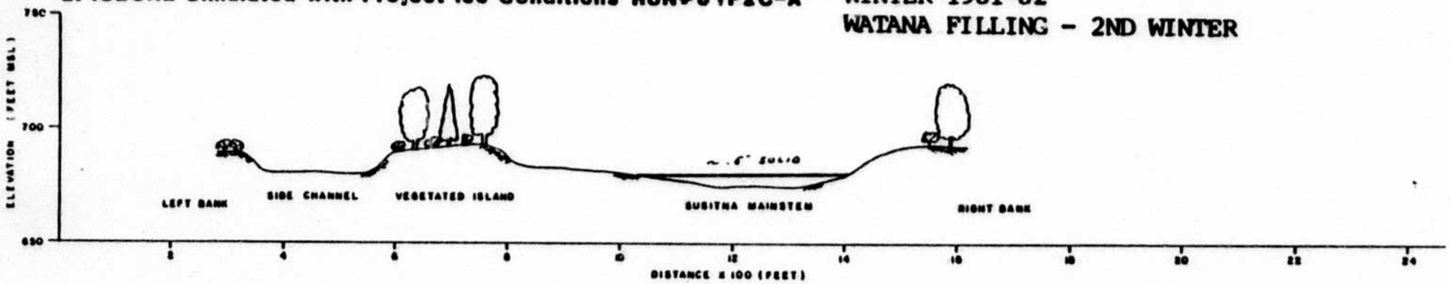
HARZA-EBASCO

1. Natural Ice Conditions (1983)

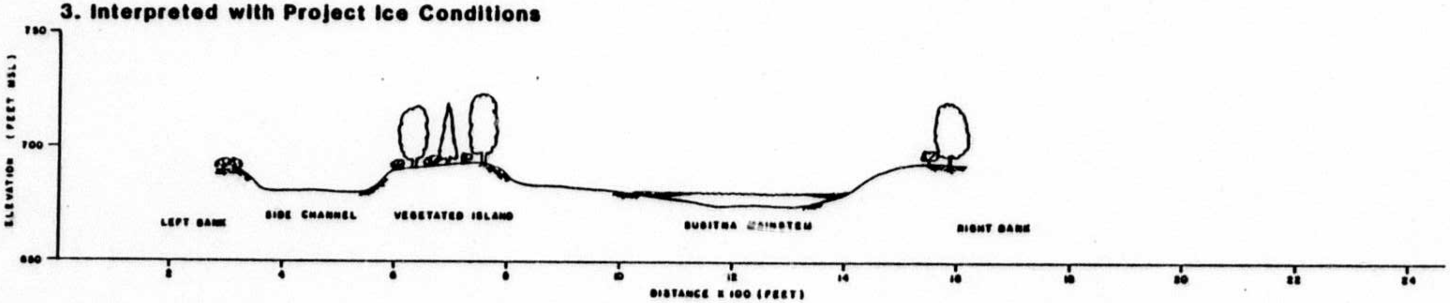


2. ICECAL Simulated with Project Ice Conditions RUN#81F2C-A

WINTER 1981-82
WATANA FILLING - 2ND WINTER



3. Interpreted with Project Ice Conditions



PREPARED BY:

R&M CONSULTANTS, INC.

LRX-44

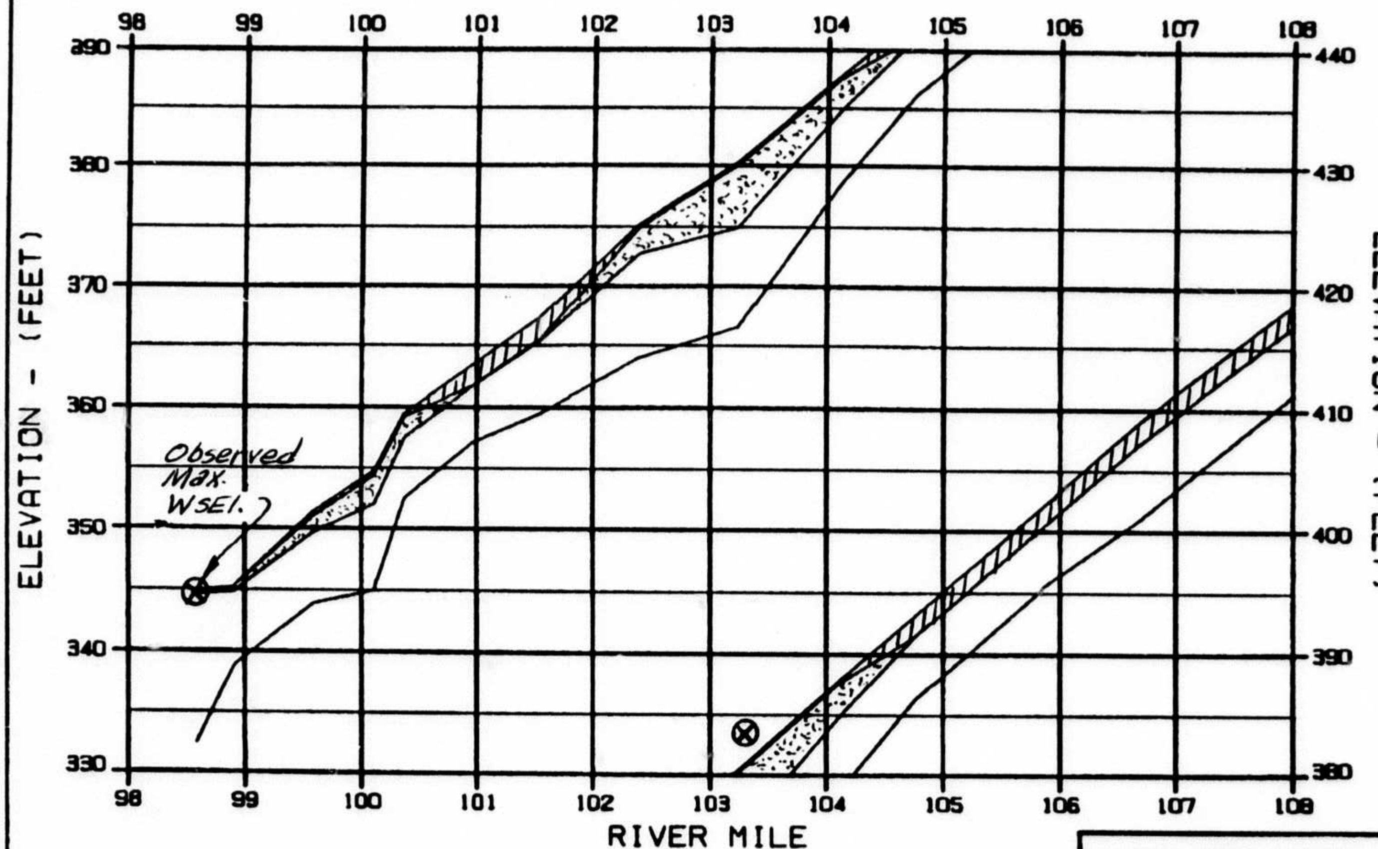
1980 CROSS SECTION SURVEY
RIVER MILE 136.4
VERTICAL EXAGGERATION

PREPARED FOR:

HARZA-EBASCO


ELEVATION
RIVER MILE

c



LEGEND:

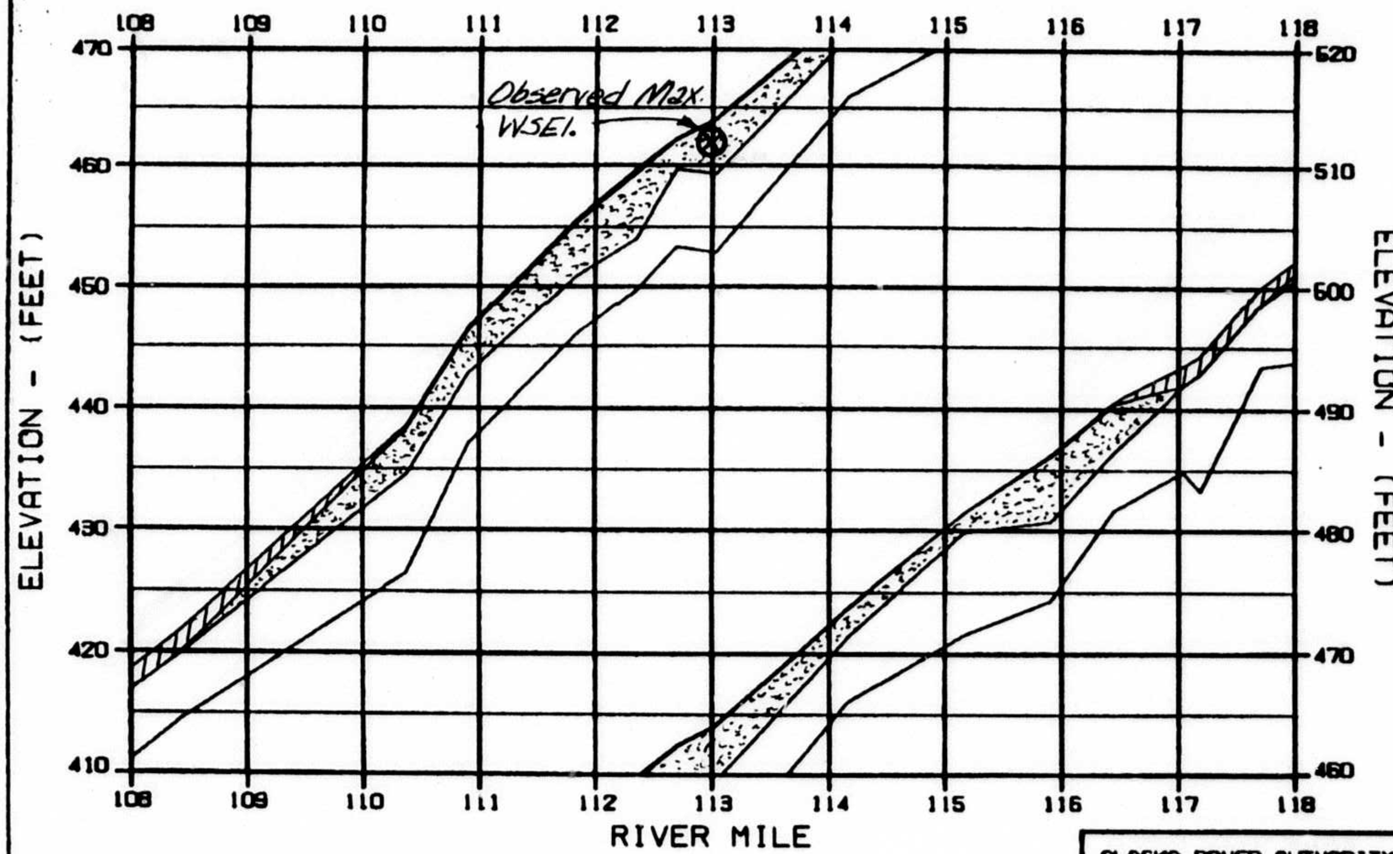
TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION2

c



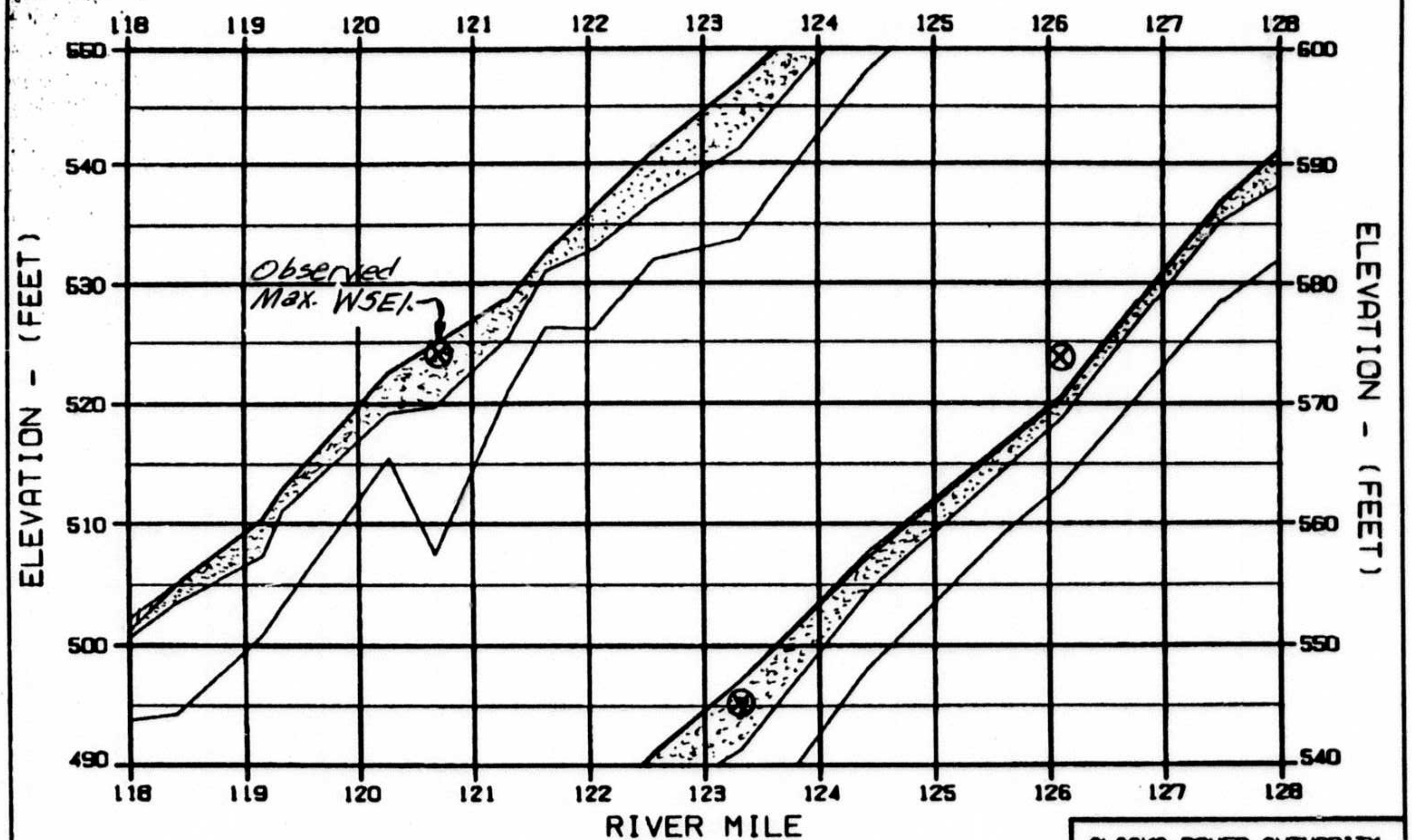
LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES
HARZA-EBASCO JOINT VENTURE

OPTION?



LEGEND:

TOP OF SOLID ICE
SLUSH/SOLID ICE INTERFACE
BOTTOM OF SLUSH ICE
RIVER BED

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY

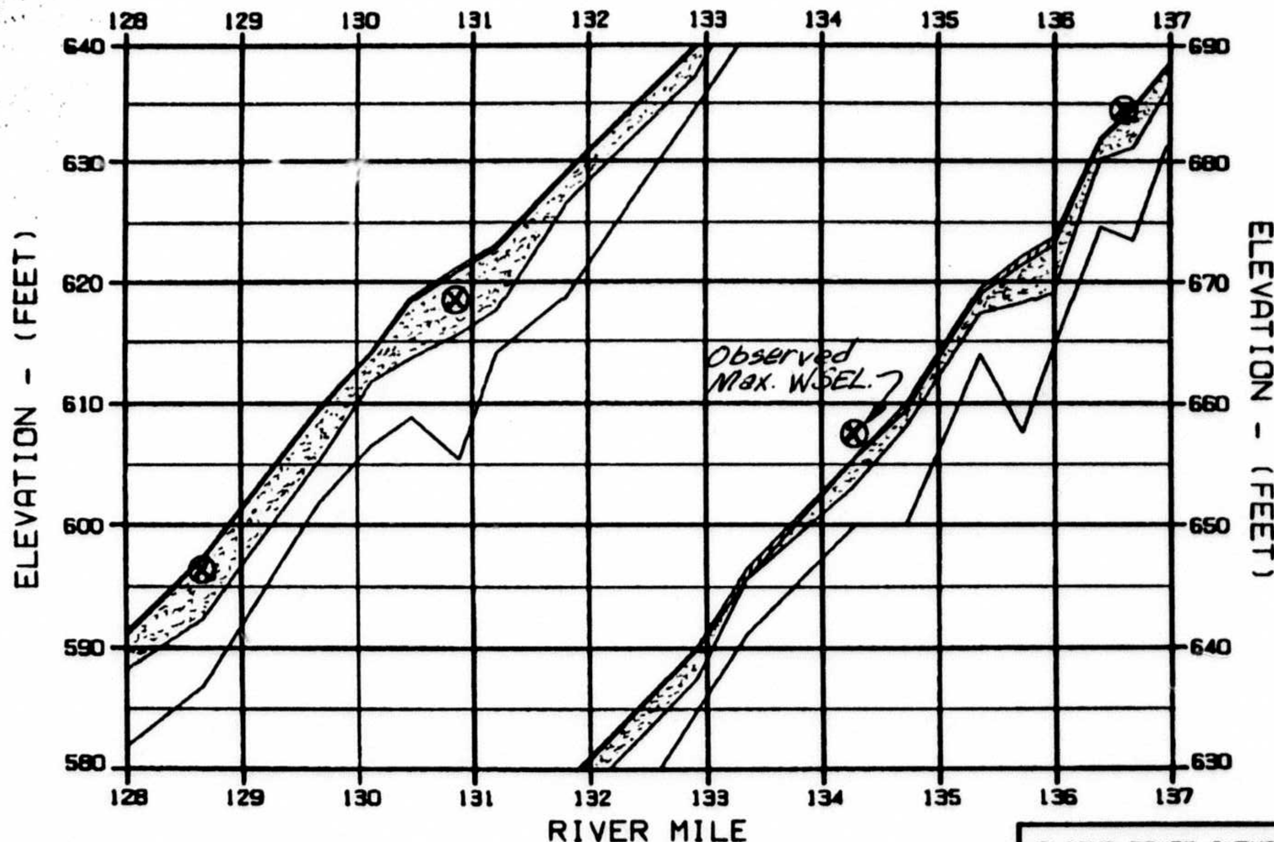
SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

OPTION?

C



LEGEND:

- TOP OF SOLID ICE
- SLUSH/SOLID ICE INTERFACE
- BOTTOM OF SLUSH ICE
- RIVER BED

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

OPTION?

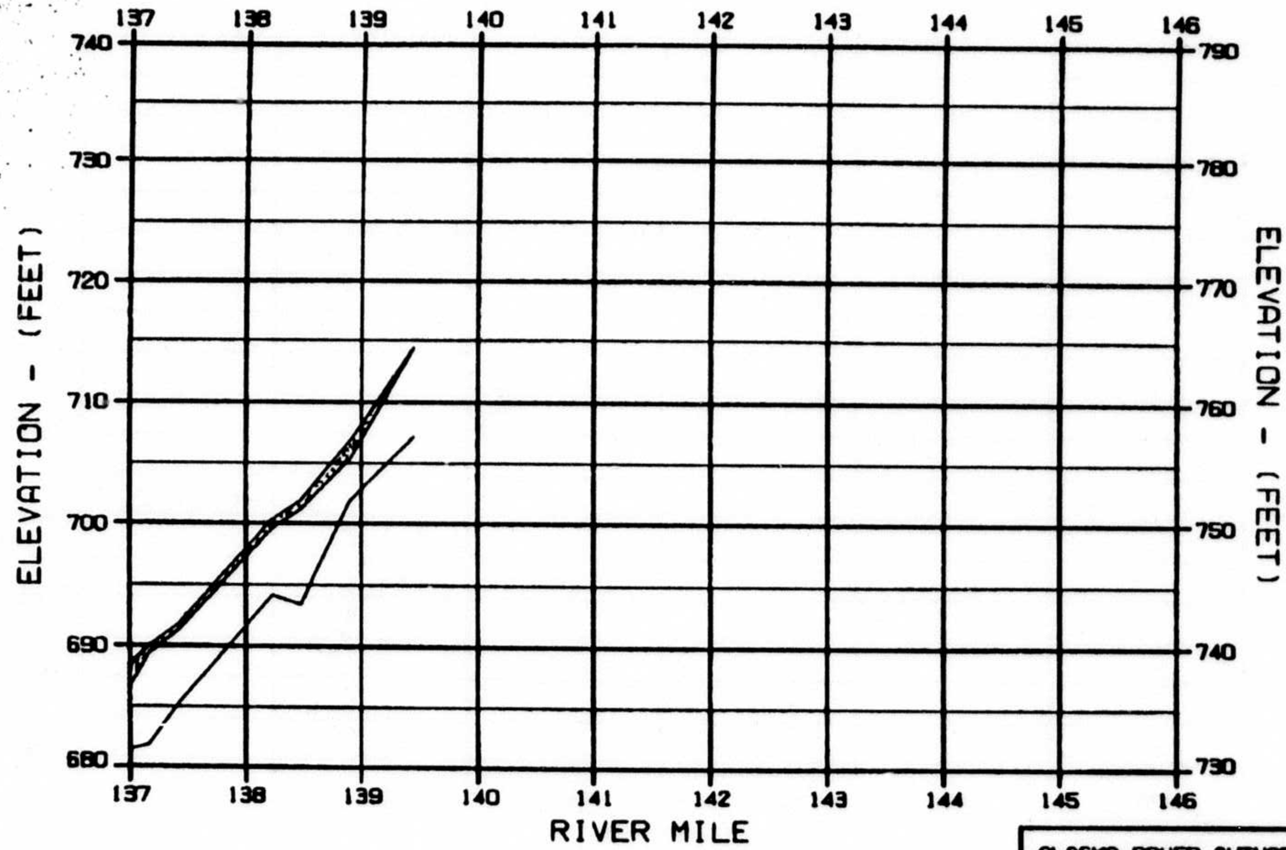
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
PROFILE OF MAXIMUM STAGES

HARZA-EBASCO JOINT VENTURE

C



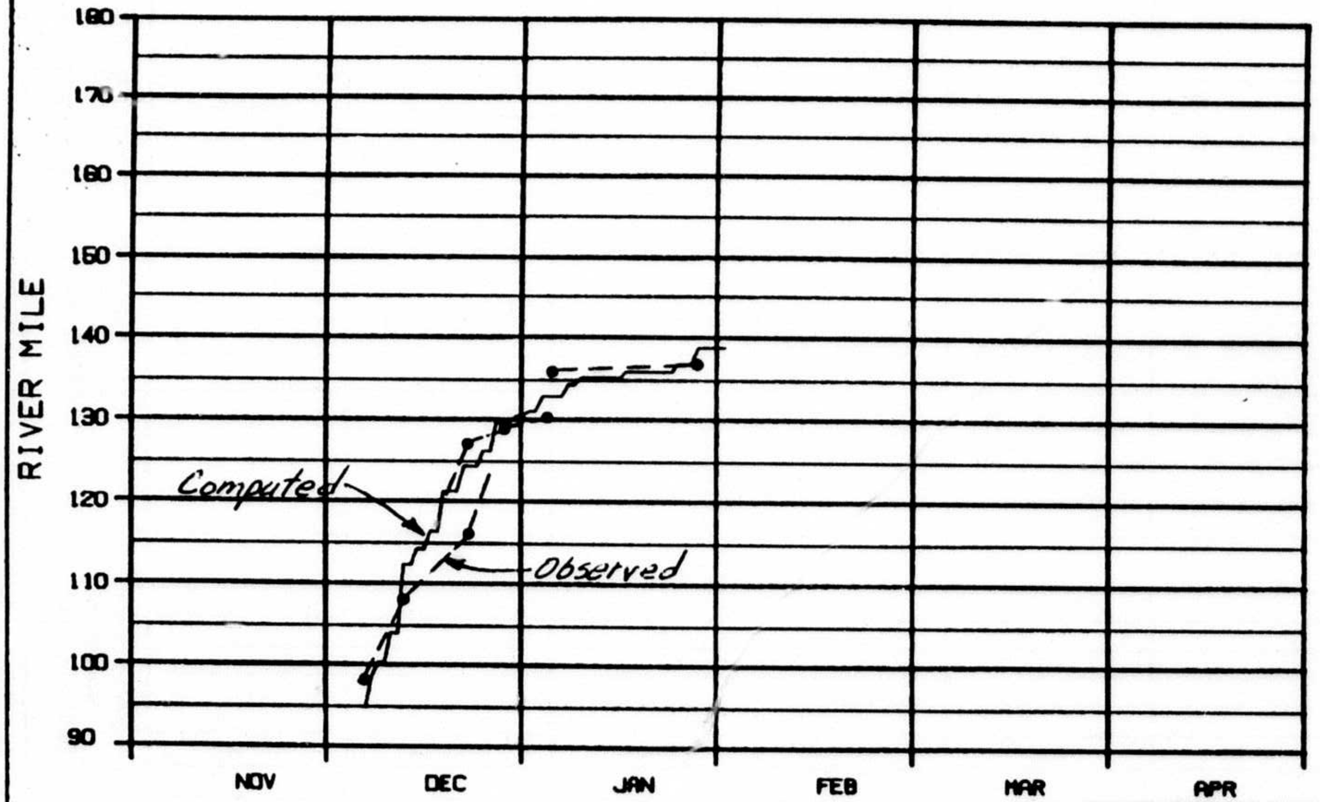
LEGEND:

- TOP OF SOLID ICE
- SLUSH/SOLID ICE INTERFACE
- BOTTOM OF SLUSH ICE
- RIVER BED

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION PROFILE OF MAXIMUM STAGES	
HARZA-EBASCO JOINT VENTURE	

OPTION?

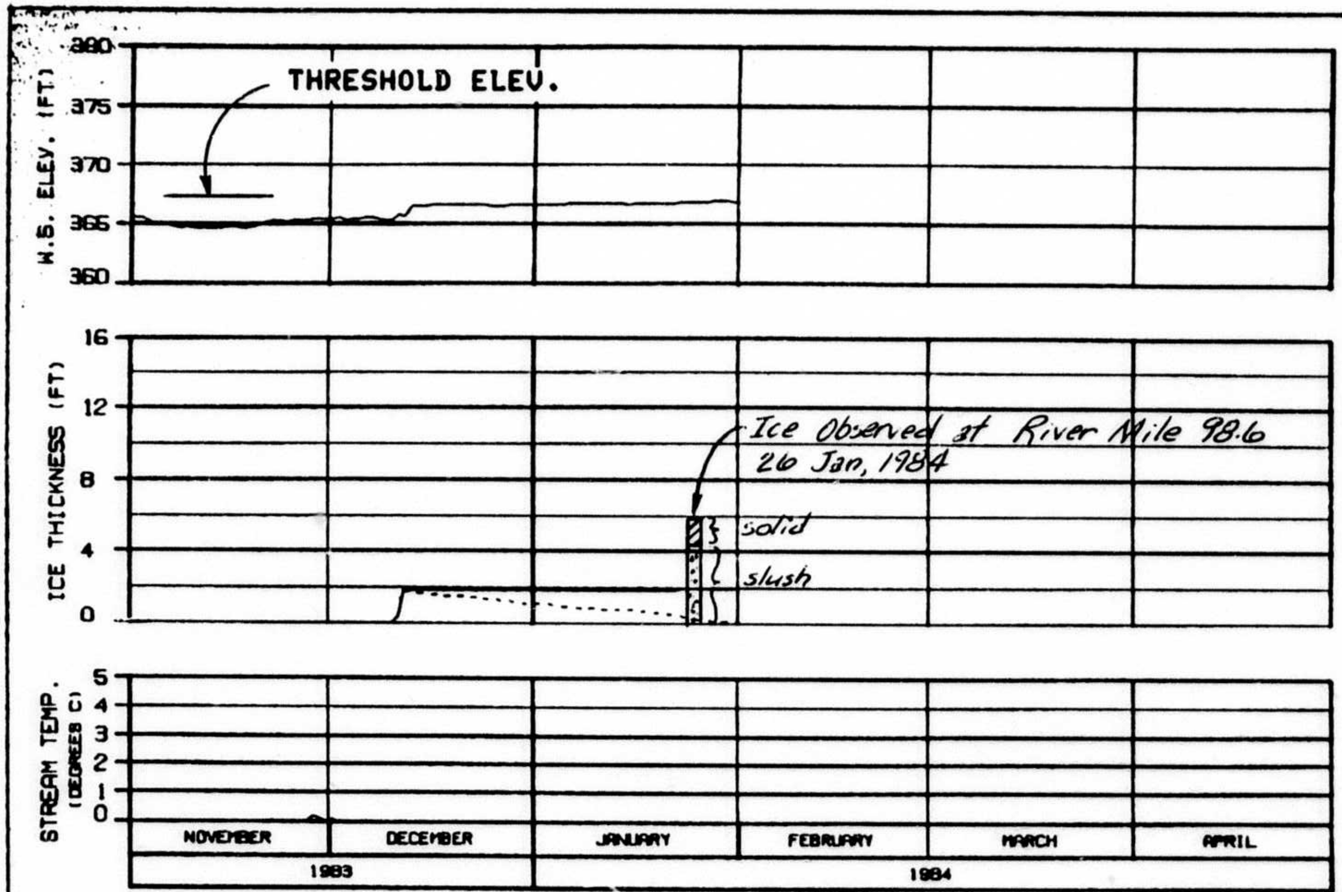


LEGEND:

——— ICE FRONT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER PROGRESSION OF ICE FRONT & ZERO DEGREE ISOTHERM	
HARZA-EBASCO JOINT VENTURE	
[illegible] 11 SEP 84	[illegible].142



HEAD OF WHISKERS SLOUGH

RIVER MILE : 101.50

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

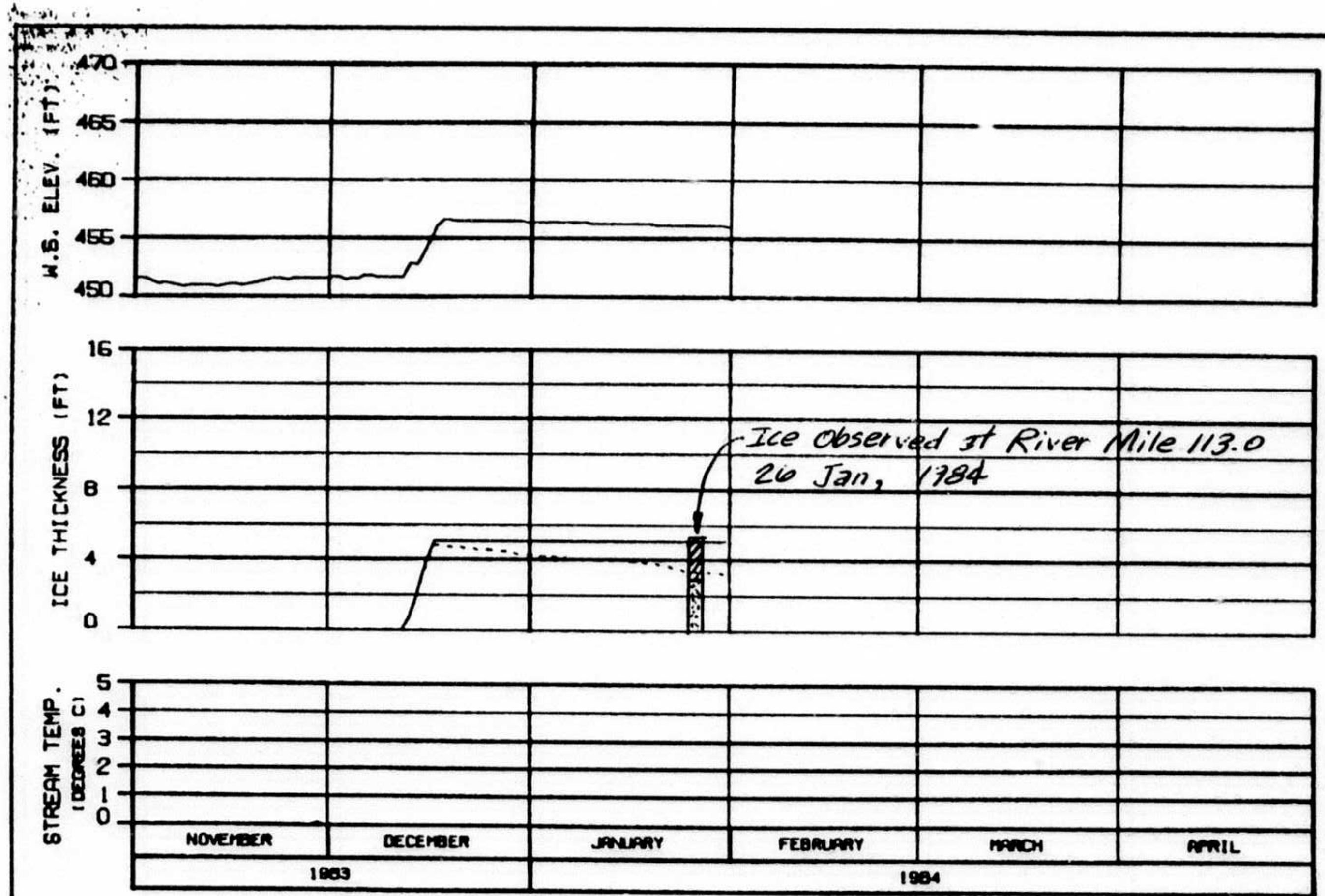
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

CHICAGO, ILLINOIS | 11 SEP 84 | [illegible].142



SIDE CHANNEL AT HEAD OF GASH CREEK

RIVER MILE : 112.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

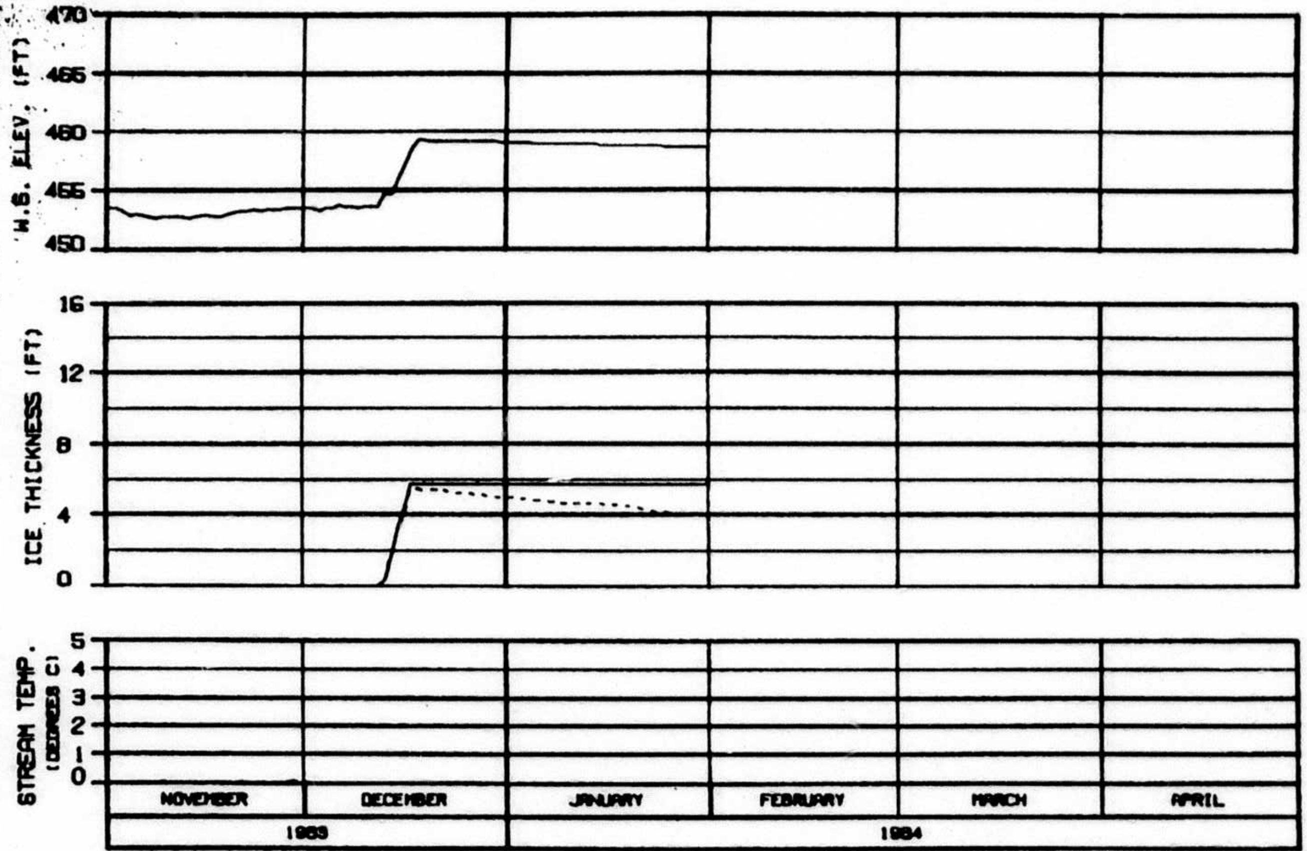
WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



MOUTH OF SLOUGH 6A

RIVER MILE : 112.34

ICE THICKNESS LEGEND:

—— TOTAL THICKNESS
- - - - SLUSH COMPONENT

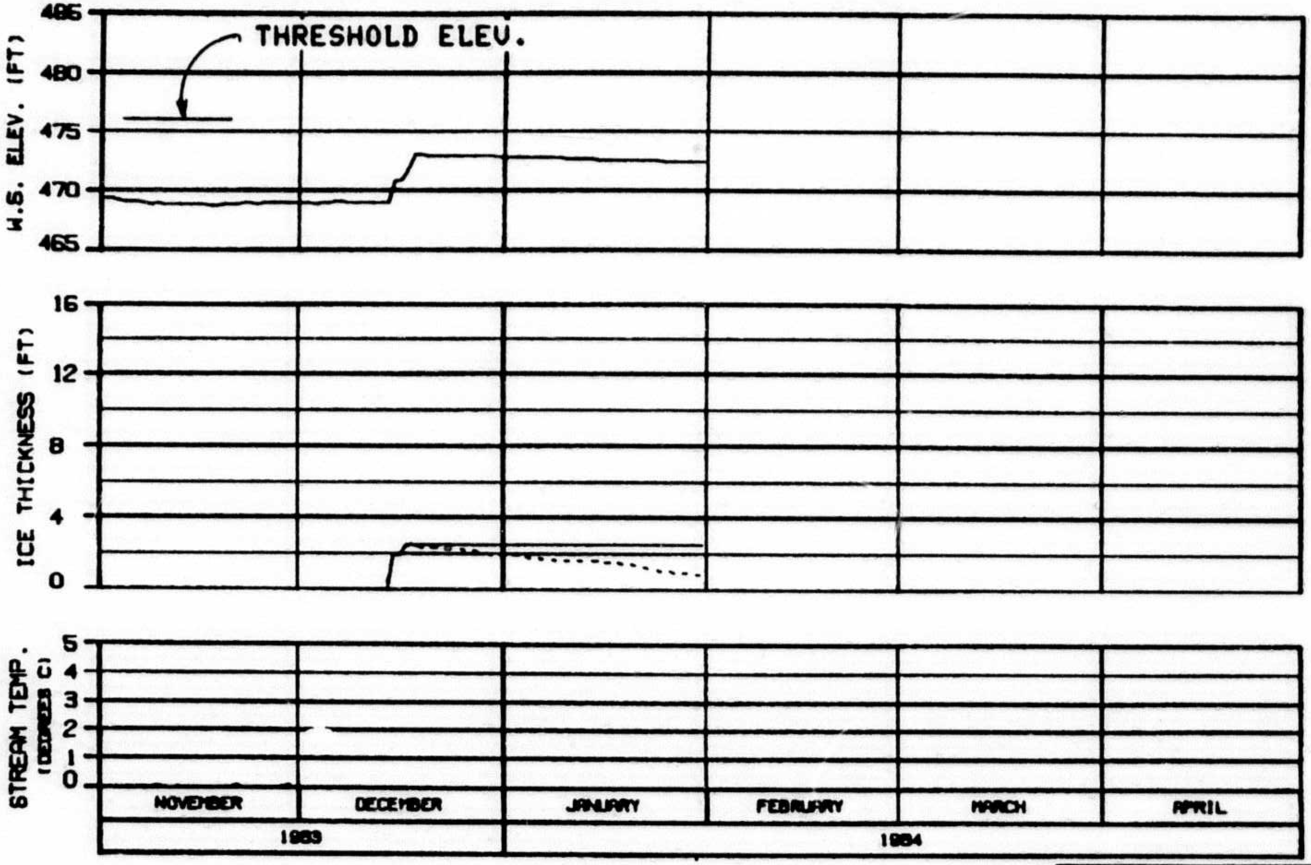
WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8

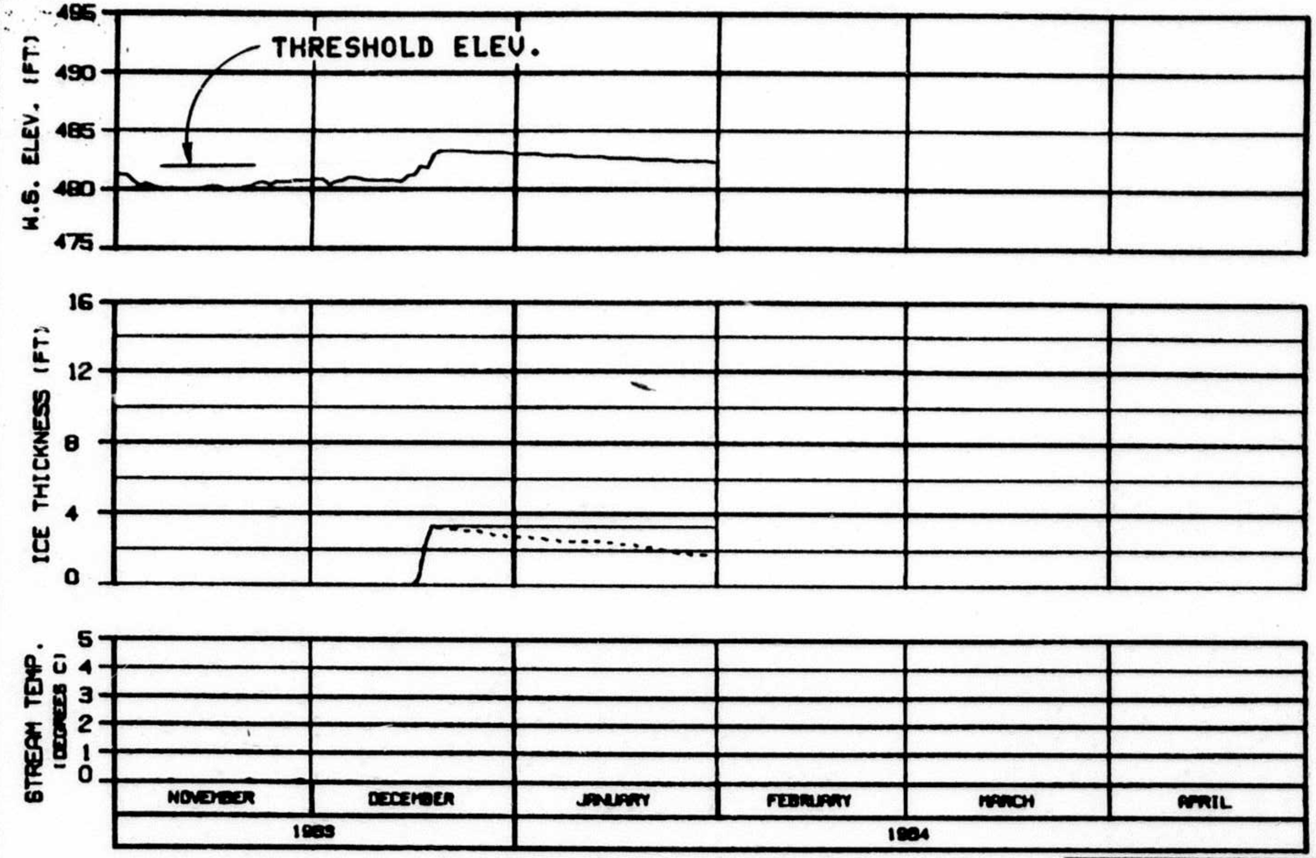
RIVER MILE : 114.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
[illegible]	[illegible]



SIDE CHANNEL MSII

RIVER MILE : 115.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

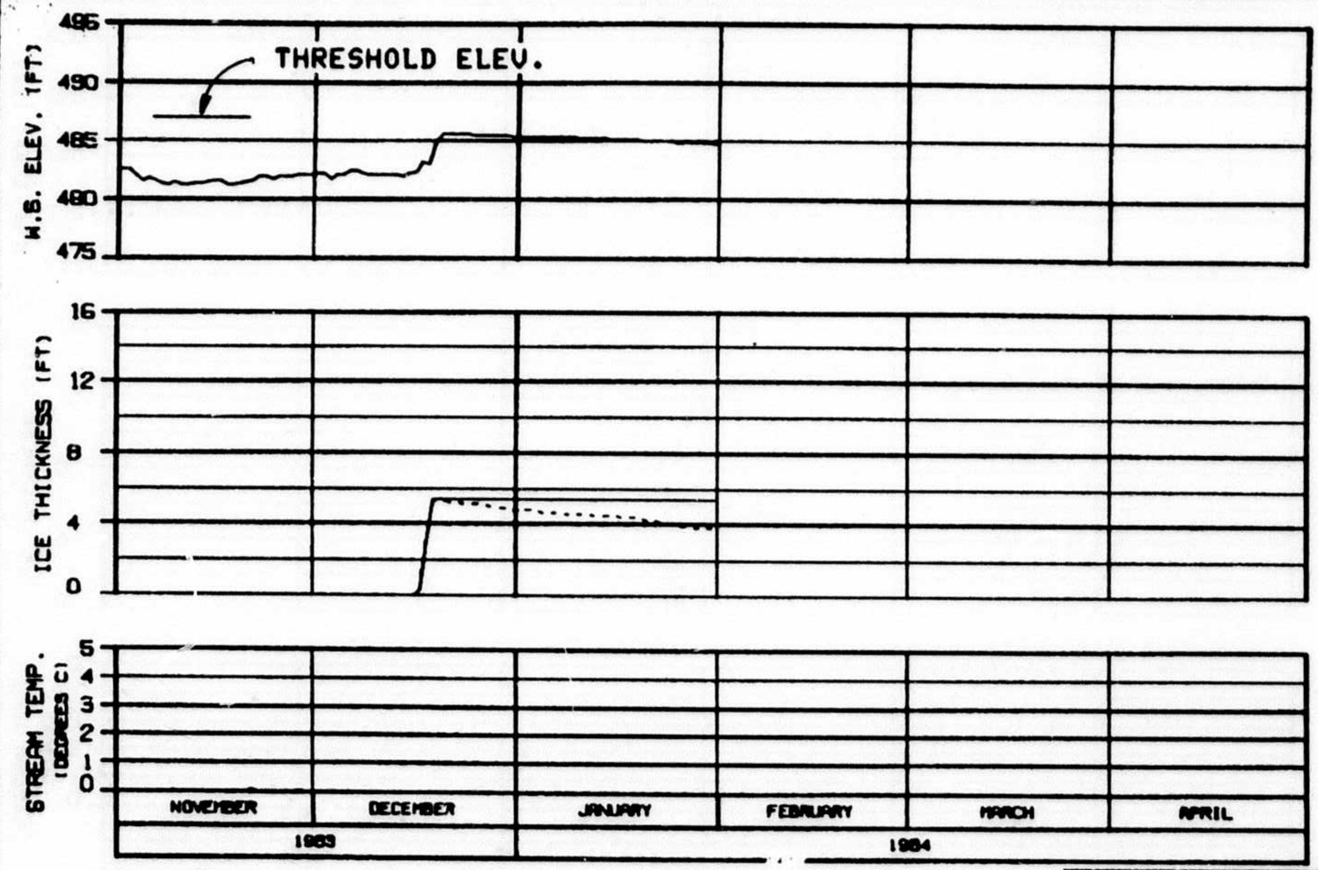
ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE

21 SEP 84 | DWG.142



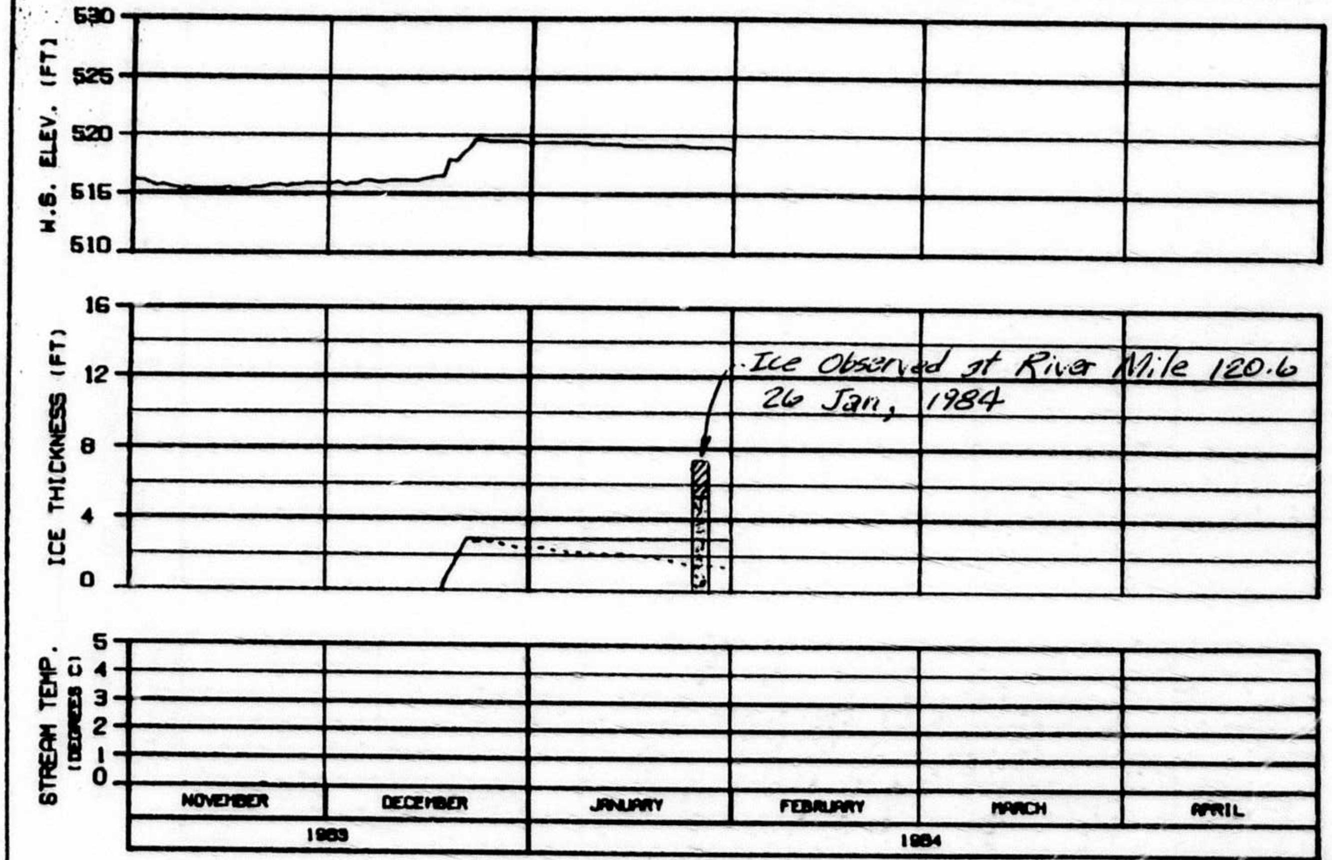
HEAD OF SIDE CHANNEL MSII

RIVER MILE : 115.90

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ICE THICKNESS LEGEND:
——— TOTAL THICKNESS
- - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



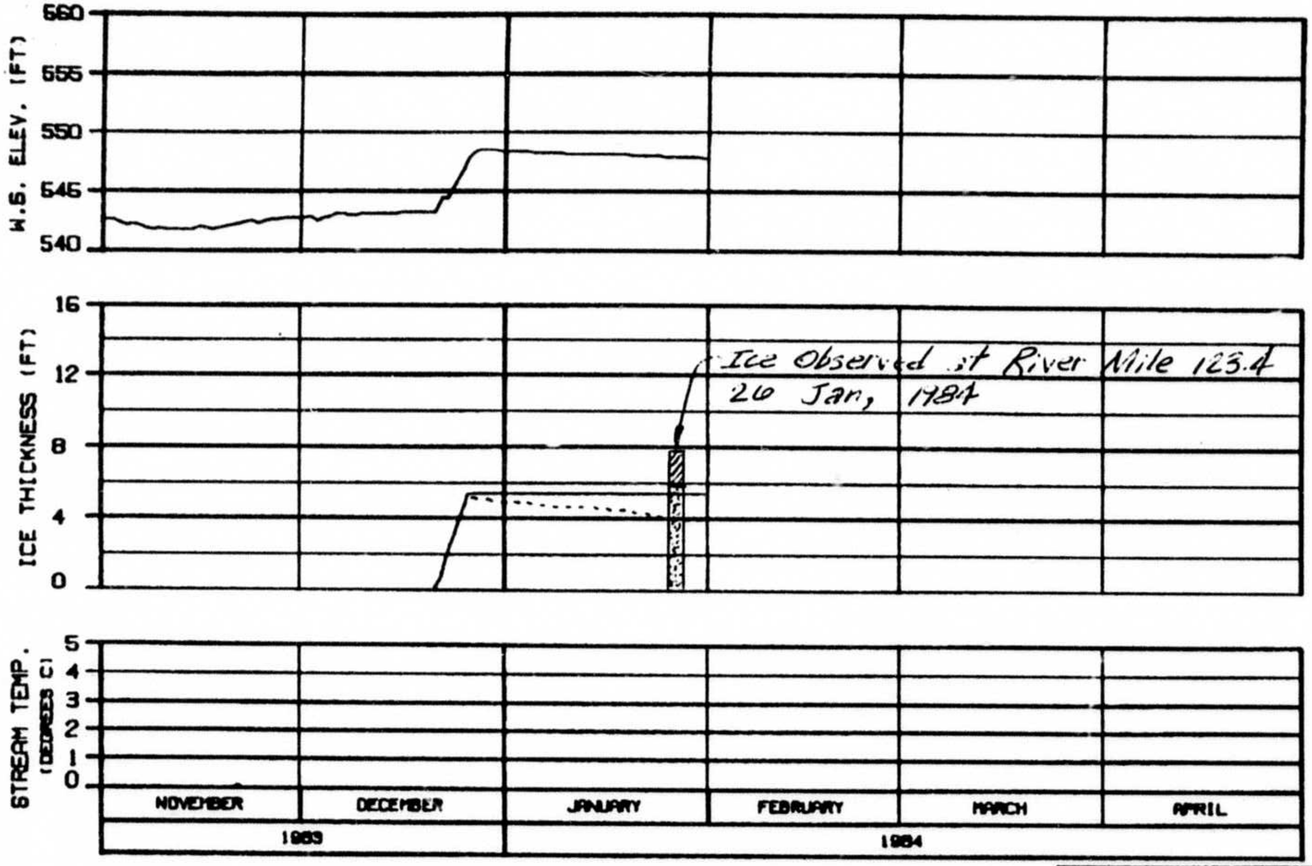
RIVER MILE : 120.00

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83?

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF MOOSE SLOUGH

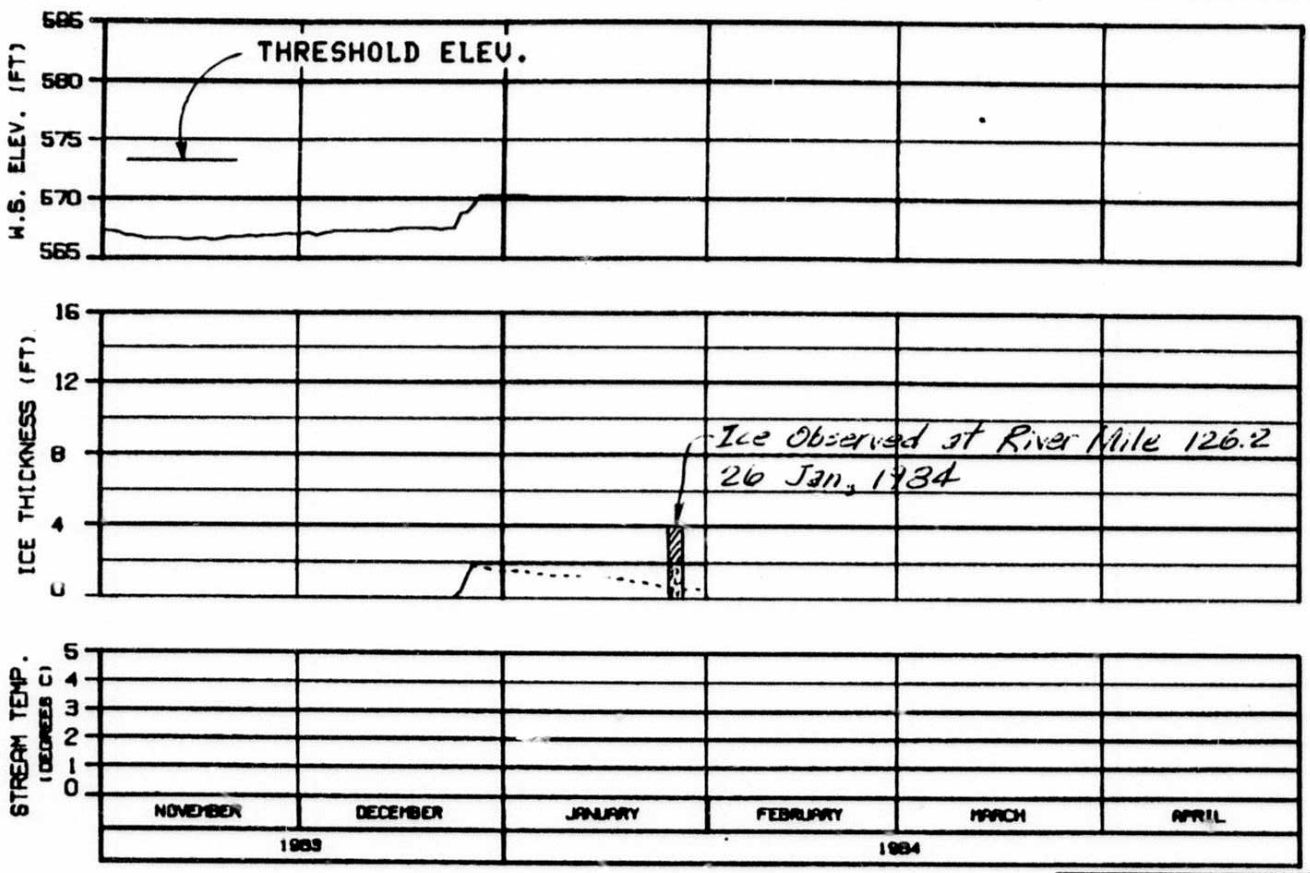
RIVER MILE : 123.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	
11 SEP 84	1000.142



HEAD OF SLOUGH 8A (WEST)

RIVER MILE : 126.10

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ICE THICKNESS LEGEND:

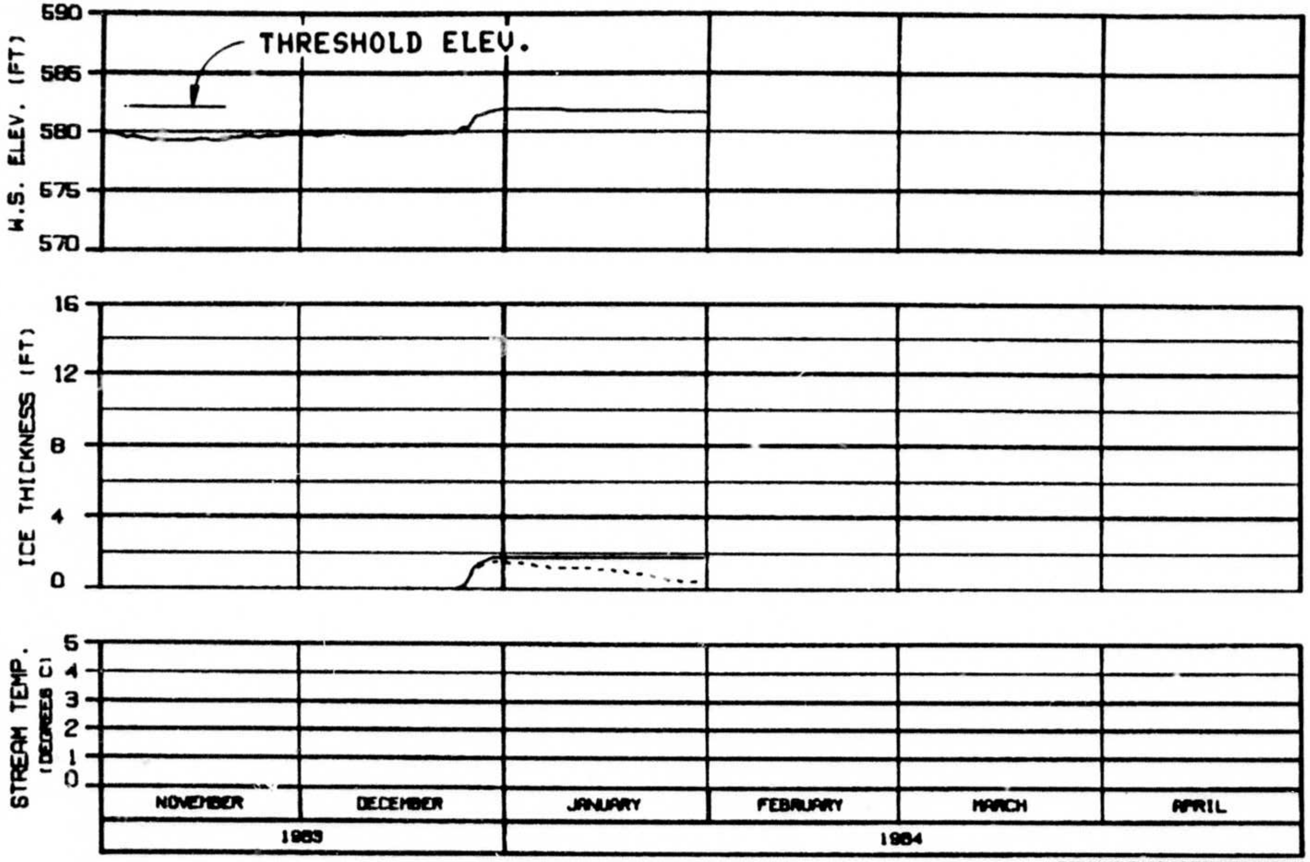
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 8A (EAST)

RIVER MILE : 127.10

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	

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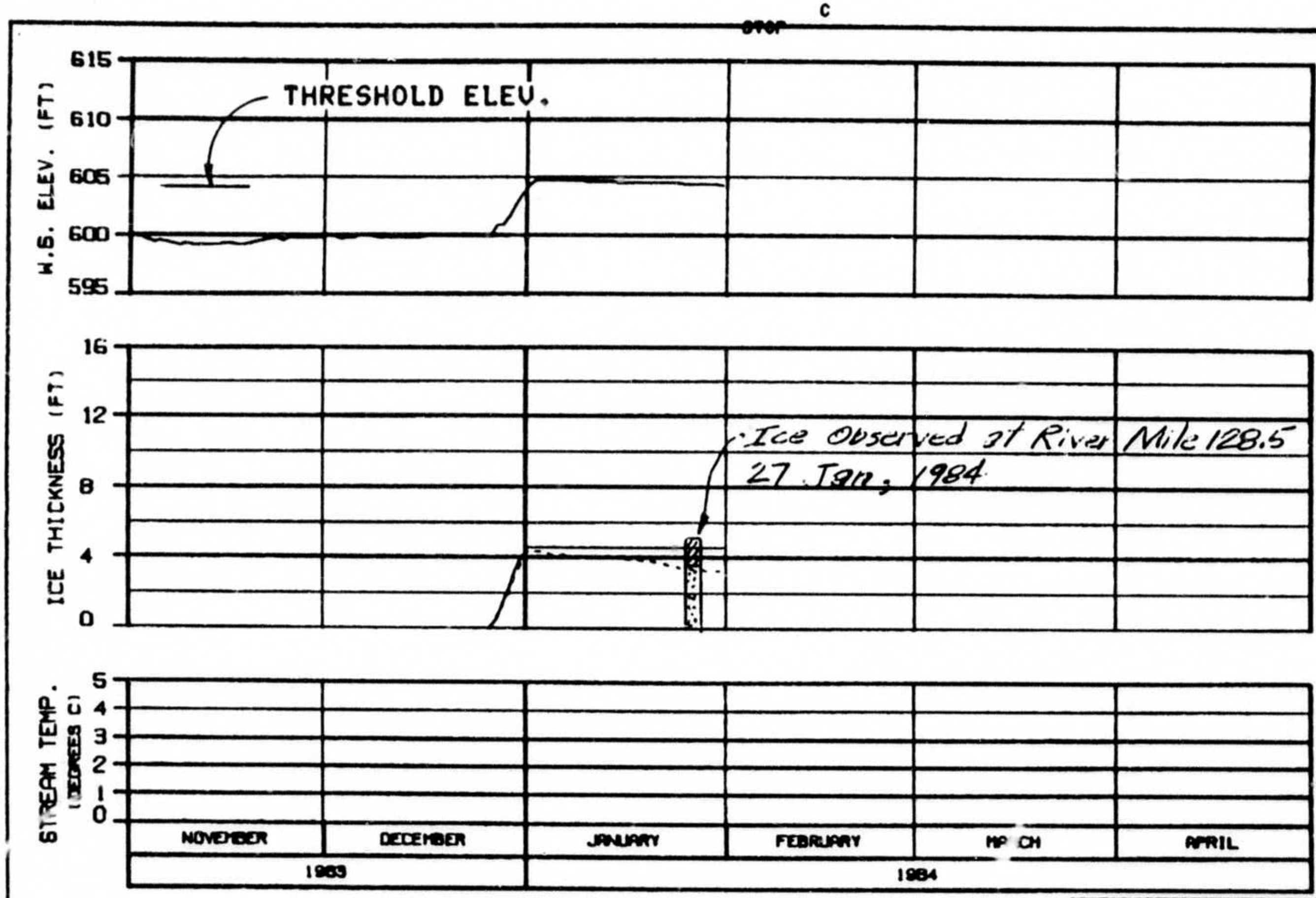


HEAD OF SLOUGH 9

RIVER MILE : 129.30

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

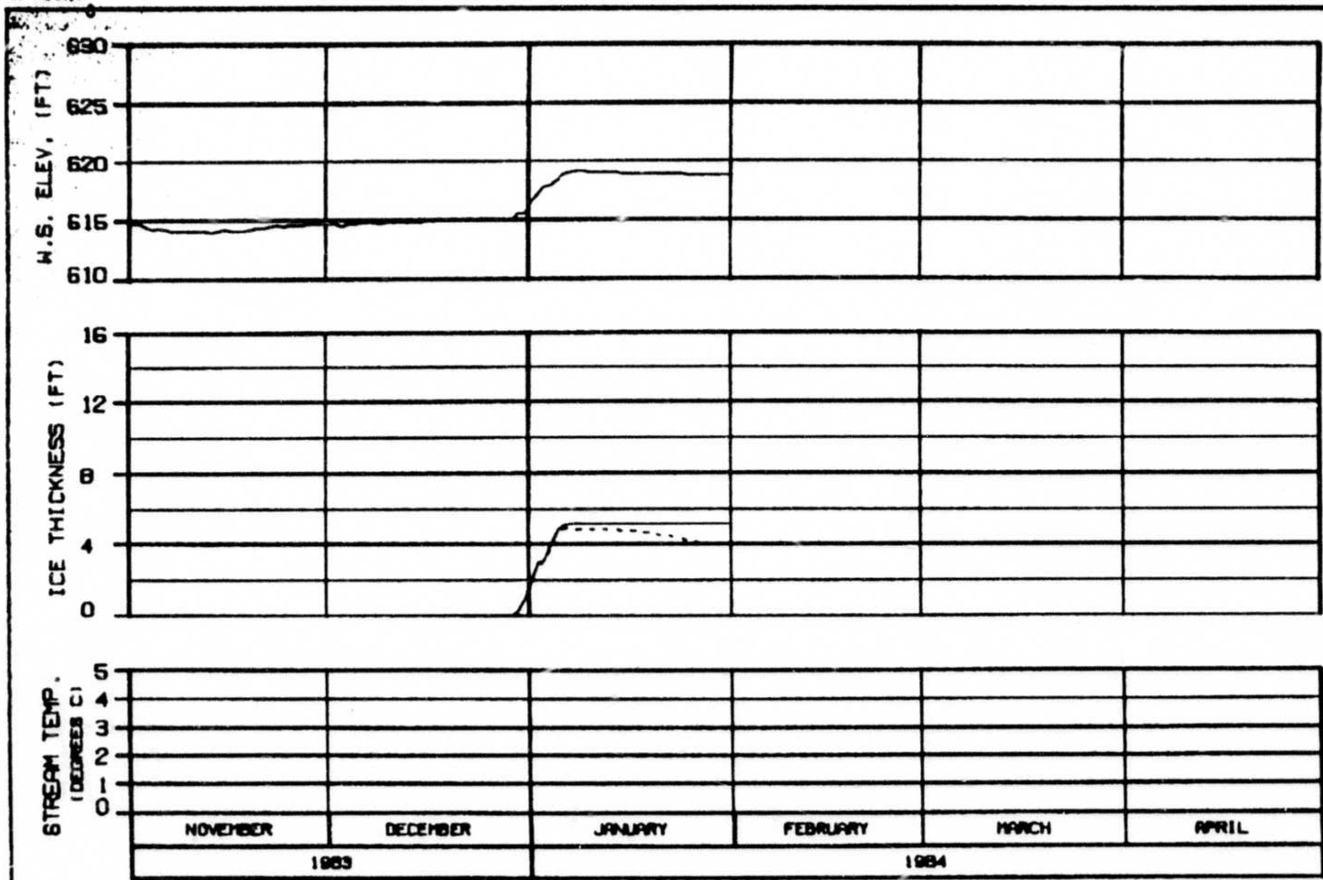
ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY	
SUSITNA PROJECT	
SUSITNA RIVER ICE SIMULATION TIME HISTORY	
HARZA-EBASCO JOINT VENTURE	

OPTION?

OPTION?



SIDE CHANNEL U/S OF SLOUGH 9

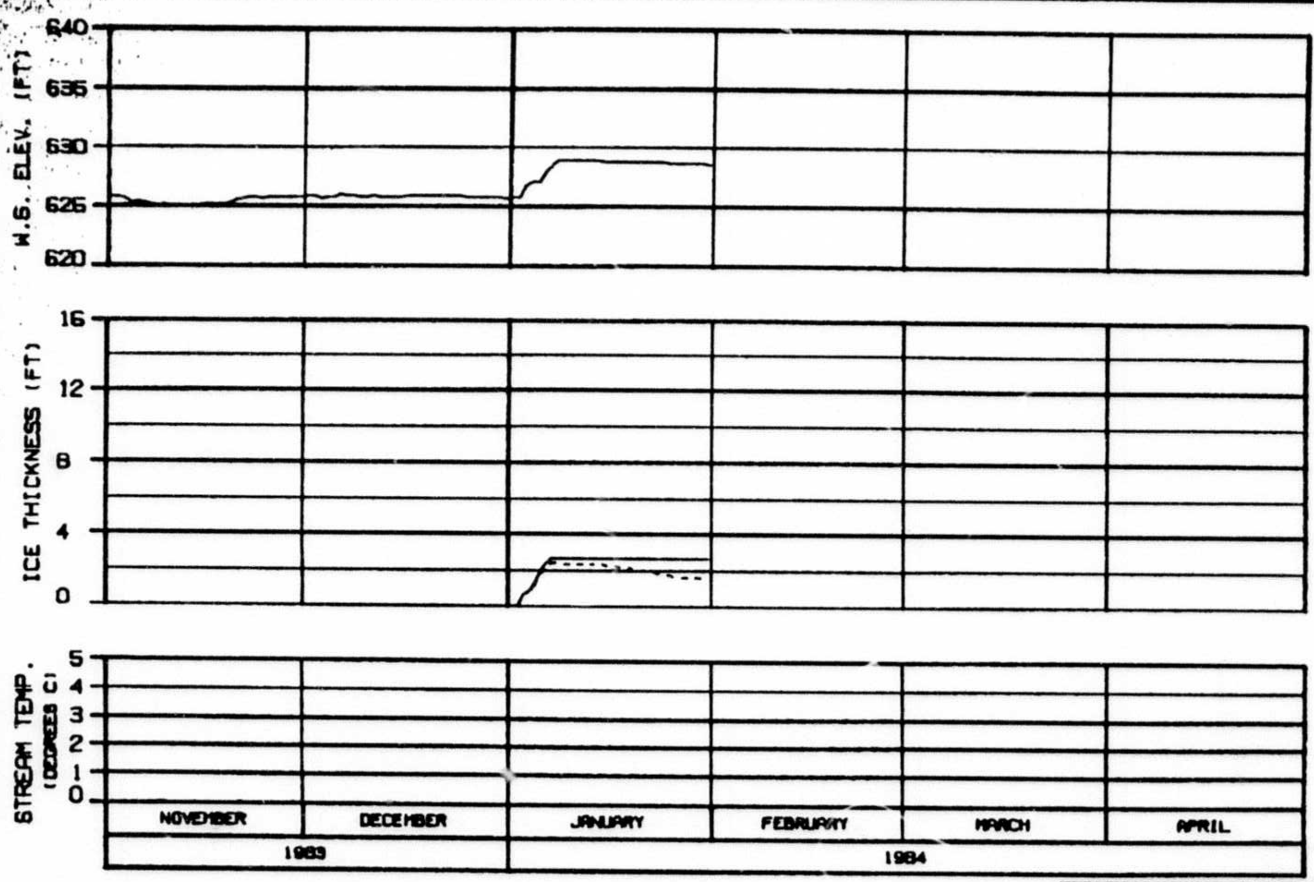
RIVER MILE : 130.60

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF 4TH JULY CREEK

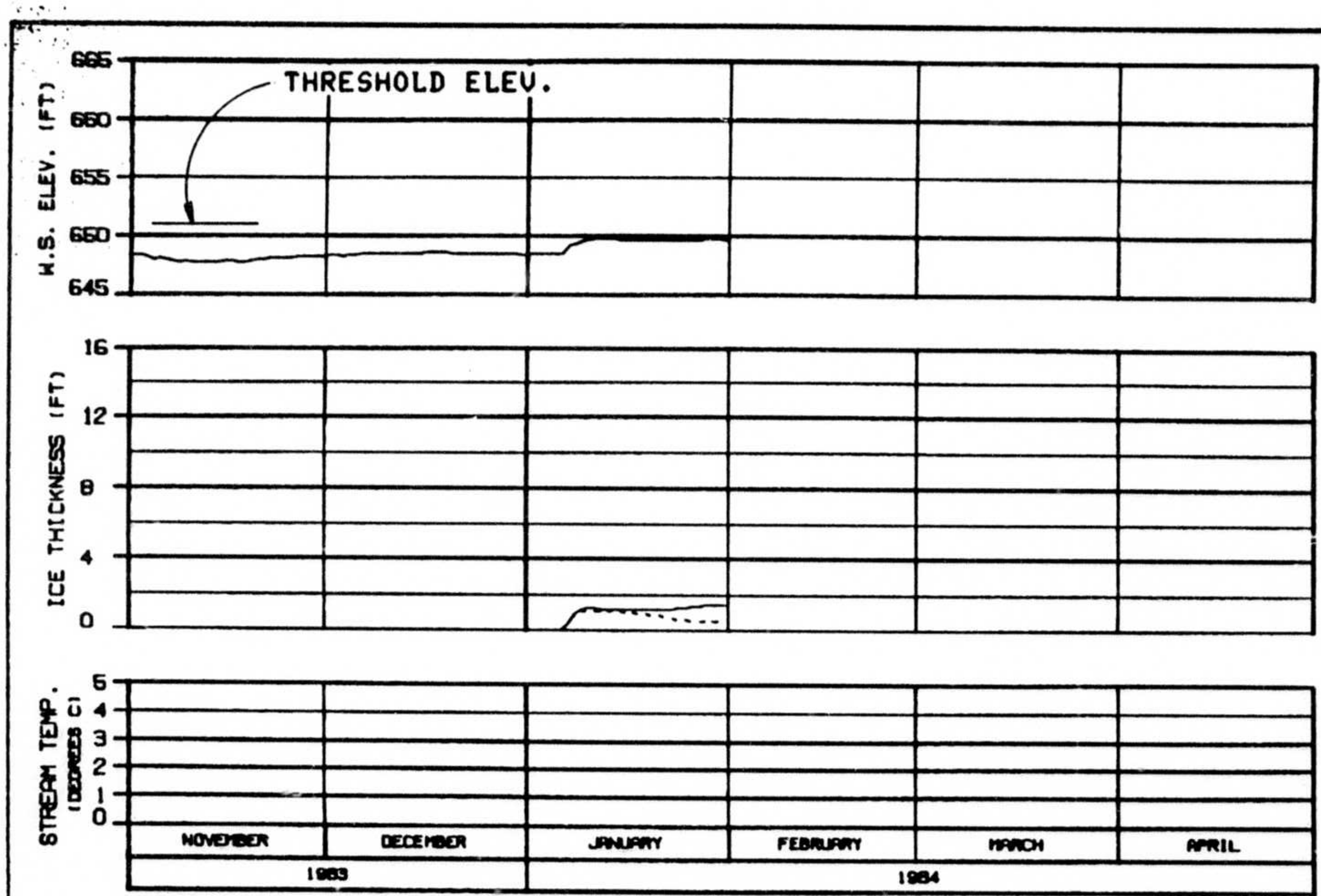
RIVER MILE : 131.80

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY
SUSITNA PROJECT
SUSITNA RIVER ICE SIMULATION TIME HISTORY
HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 9A

RIVER MILE : 133.70

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ICE THICKNESS LEGEND:

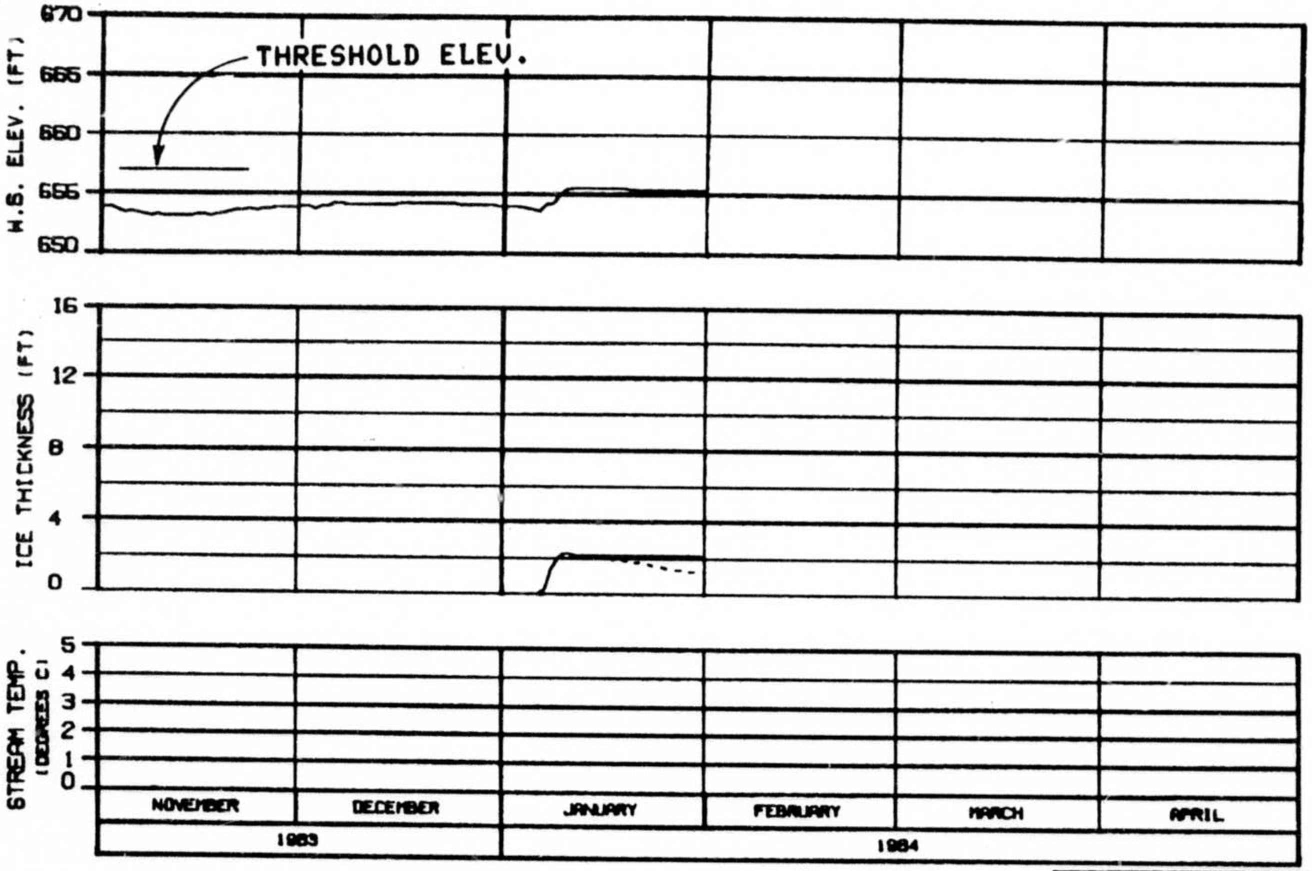
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL U/S OF SLOUGH 10

RIVER MILE : 134.30

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ICE THICKNESS LEGEND:

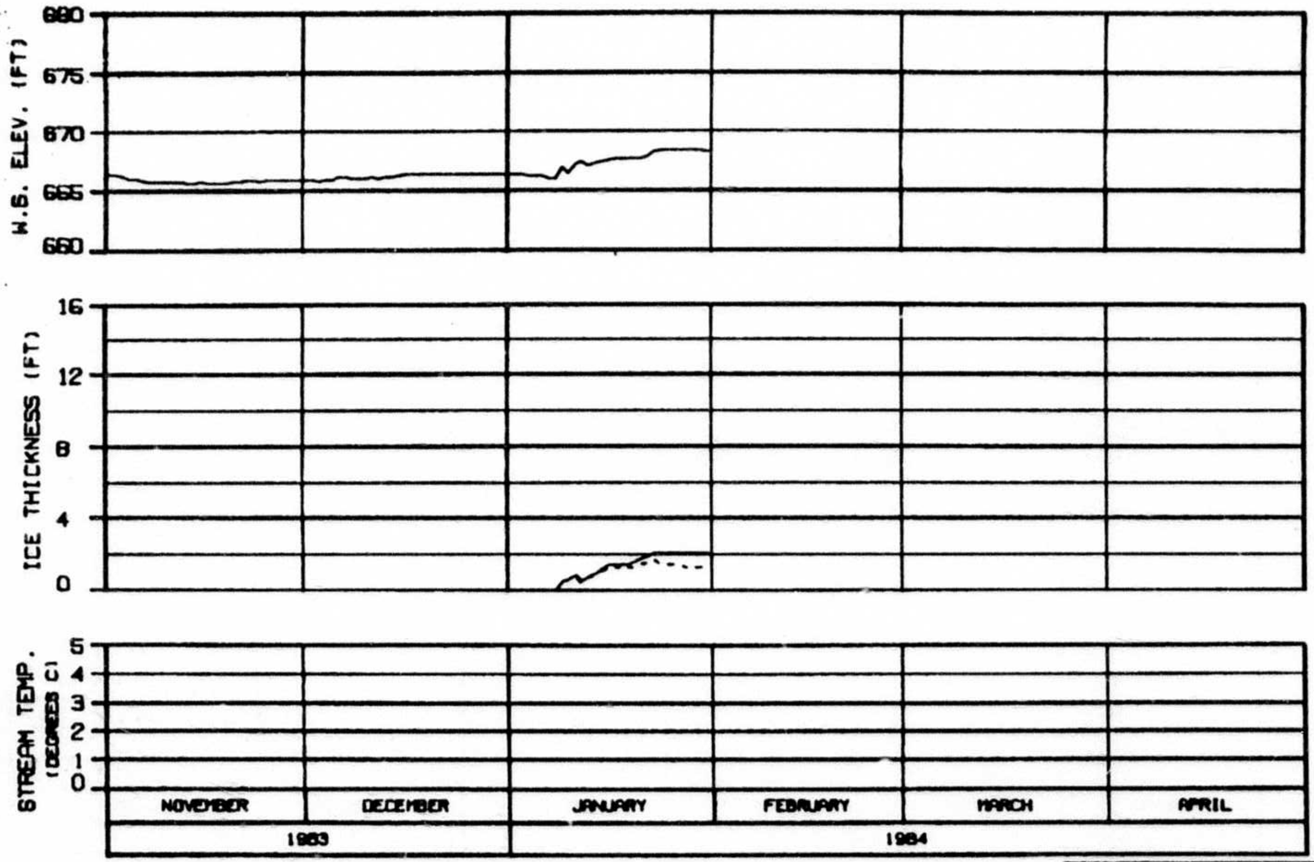
——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



SIDE CHANNEL D/S OF SLOUGH 11

RIVER MILE : 135.30

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
- - - - - SLUSH COMPONENT

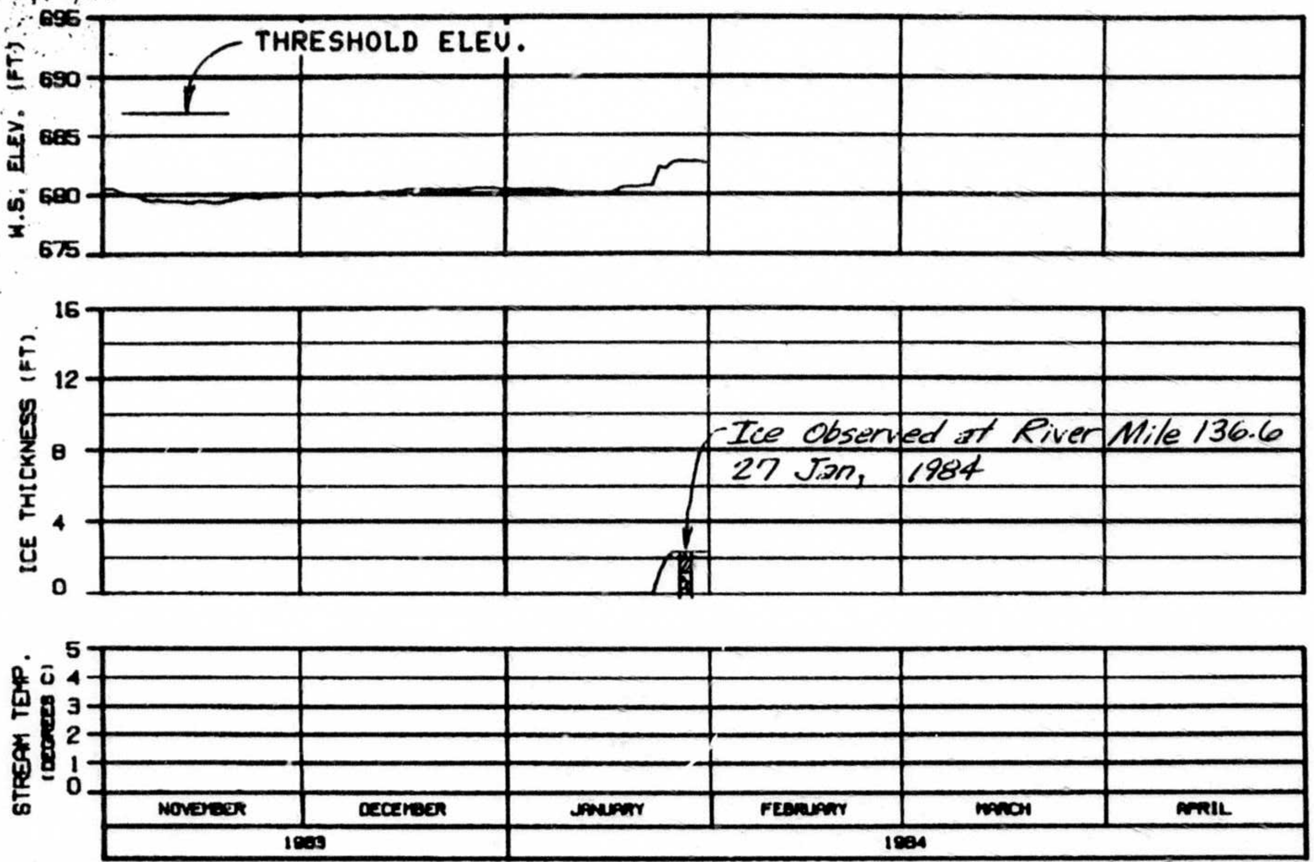
WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE



HEAD OF SLOUGH 11

RIVER MILE : 136.50

ICE THICKNESS LEGEND:

——— TOTAL THICKNESS
------ SLUSH COMPONENT

WEATHER PERIOD : 1 NOV 83 - 31 JAN 84
PRE PROJECT SIMULATION
REFERENCE RUN NO. : PRE83A

ALASKA POWER AUTHORITY

SUSITNA PROJECT

SUSITNA RIVER
ICE SIMULATION
TIME HISTORY

HARZA-EBASCO JOINT VENTURE