RECEIVED
APR 5 1983
ALASKA POWER AUTHORITY

1982 WINTER TEMPERATURE STUDY

Open File Report

Compiled by

E. Woody Trihey, P.E.

P. O. Box 10-1774

Anchorage, Alaska 99511

with contributions from
the

Alaska Department of Fish and Game
and
Arctic Environmental Information and Data Center

Prepared for

ACRES AMERICAN INCORPORATED

BUFFALO, NEW YORK

June 1982

Project File Copy
File # _____

ALASKA POWER AUTHORITY

334 WEST 5th AVENUE - ANCHORAGE, ALASKA 99501

Phone: (907) 277-7641
(907) 276-0001

MAY 2 1984

May 1, 1984
Susitna File No. 1.17.4.2, 6.18.5.5

Mr. William E. Larson
Project Director
Harza-Ebasco, Susitna JV
711 "H" Street, 6th Floor
Anchorage, Alaska 99501

Subject: 1982 Winter Temperature Study, by E. W. Trihey, June 1982

Dear Mr. Larson:

During a discussion (4/27/84) for the next workshop, the above report was cited; however, it did not have wide distribution among the study participants. I have attached a copy for your use and provided copies to others for their information.

Sincerely,

Jon S. Ferguson
Project Manager

EAM/JSF/jm

Attachment as stated.

cc: Mr. Eric A. Marchegiani, Alaska Power Authority, w/o
Mr. William Wilson, AEIDC
Mr. Steve Bredthaver, R&M Consultants
Mr. Don Beyer, Harza-Ebasco
Mr. Larry Moulton, WCC
Mr. E. W. Trihey, EWT, w/o

1982 WINTER TEMPERATURE STUDY

Open File Report

Compiled by

E. Woody Trihey, P.E.

P. O. Box 10-1774

Anchorage, Alaska 99511

with contributions from
the

Alaska Department of Fish and Game
and
Arctic Environmental Information and Data Center

Prepared for

ACRES AMERICAN INCORPORATED

BUFFALO, NEW YORK

June 1982

U[illegible] ALASKA
ARCTIC ENVI[illegible] INFORMATION
AND D[illegible]TER
707 A STREET
ANCHORAGE, AK 99501

SUS
158

1982 WINTER TEMPERATURE STUDY

Open File Report

Compiled by

E. Woody Trihey, P.E.

P. O. Box 10-1774

Anchorage, Alaska 99511

with contributions from
the

Alaska Department of Fish and Game
and
Arctic Environmental Information and Data Center

Prepared for

ACRES AMERICAN INCORPORATED

BUFFALO, NEW YORK

June 1982

U[illegible] ALASKA
ARCTIC EN[illegible] INFORMATION
AND D[illegible] TER
707 A STREET
ANCHORAGE, AK 99501

CONTENTS

Page

Summary .....

Susitna Intergravel Temperature Report

Steven C. Atkinson .....

Appendix A

DP2321 Temperature Data .....

Appendix B

Ryan Thermograph Data .....

February 24-28 Trip Report

E. Woody Trihey .....

SUMMARY

This document summarizes the findings of a joint effort between myself, AEIDC and ADF&G to expand upon earlier observations by ADF&G of mid-winter water temperatures and habitat conditions in the side sloughs (Barrett, 1975; ADF&G, 1981). The 1982 work was intended to provide a preliminary understanding of baseline mid-winter habitat conditions at known spawning areas, obtain surface and intergravel water temperature data, and to test a variety of instruments for measuring water temperature.

This document consists of three parts: a summary report, data presentation, and a trip report. The summary report describes the methods used for collecting continuous and instantaneous surface and intergravel water temperatures, identifies the locations where water temperature data were obtained, and presents graphical comparisons of various data sets. Appendices A and B contain the continuous water temperature records obtained at nine locations during the February - May study period. Appendix C consists of a February 24-28 trip report which describes the week's activities and offers some insights regarding the physical processes influencing winter habitat conditions.

In addition to obtaining sufficient water temperature data to demonstrate an effect of ground water upwelling on surface water temperatures and ice formation in the side sloughs, this field study also contributed to the formulation of these hypotheses.

1) Mid-winter water temperatures in the sloughs are independent of mainstem water temperatures.

2) River stage appears to be influencing groundwater upwelling in the sloughs.

3) Spawning success at upwelling areas in side channels appears to be limited by availability of suitable substrate (streambed materials).

ADF&G. 1981. Phase I final draft report. Aquatic Habitat and Instream Flow Project. ADF&G Su Hydro Aquatic Studies Program. ADF&G. Anchorage.

Barrett, B. 1974. An assessment of the anadromous fish populations in the upper Susitna River watershed between Devil Canyon and the Chulitna River. ADF&G. Anchorage.

SUSITNA INTERGRAVEL TEMPERATURE REPORT

Steven C. Atkinson
AEIDC

Introduction

During late February 1982, numerous sampling stations were established on the Susitna River above Talkeetna for the purpose of obtaining mid-winter surface and intergravel water temperature data. These data were collected to determine the cost-effectiveness of alternative data collection methods and to define the general mid-winter thermal characteristics of known side slough spawning (incubation) and overwintering areas. Data were also collected from open water leads in the mainstem river which appeared to have suitable substrates for salmon spawning. A limited number of instantaneous mainstem river temperatures were also measured by ADF&G and R&M Consultants in association with other components of their respective mid-winter field programs which are not presented in this report.

The Winter Temperature Studies were directed by Christopher Estes (ADF&G) and E. Woody Trihey (Acres American, Inc.). Technical assistance was provided by James Dryden, of Dryden and LaRue Consulting Engineers, Anchorage, Alaska.

Methods

Both continuous and instantaneous surface and intergravel water temperature measurements were obtained using a variety of field techniques. Continuous surface and intergravel water temperature data were obtained using Ryan J-90 thermographs, and laboratory calibrated thermister probes affixed to Omnidata DP2321 recorders. Instantaneous surface and intergravel water temperatures were measured on a periodic basis by connecting permanently installed YSI series 400 temperature probes to either a YSI 42SC telethermometer or Digisense digital thermometer. Intergravel water temperatures were recorded from a depth of approximately one foot within the streambed materials. Surface water temperatures were measured at the water/streambed interface except when

a hand held mercury thermometer was used. In these instances surface water temperatures were measured at the water surface.

Temperature data obtained with the Ryan J-90 thermographs are believed to be within± 0.6°C of actual temperatures. Temperature data obtained by using YSI temperature probes in association with either a YSI 42SC telethermometer or Digisense digital thermometer are within ± 0.1°C of the actual temperatures.

Surface and intergravel water temperature data presented in this report for slough 8A and RM 136.2 were obtained using a laboratory calibrated thermister probe and recording system with a certified accuracy of ± 0.1°C. The magnitude of the temperature departure from the laboratory temperature standard was known for each thermister. Therefore the field measurements of surface and intergravel water temperatures could be adjusted to coincide exactly with the standard laboratory temperature by using the correction factor for each individual probe.

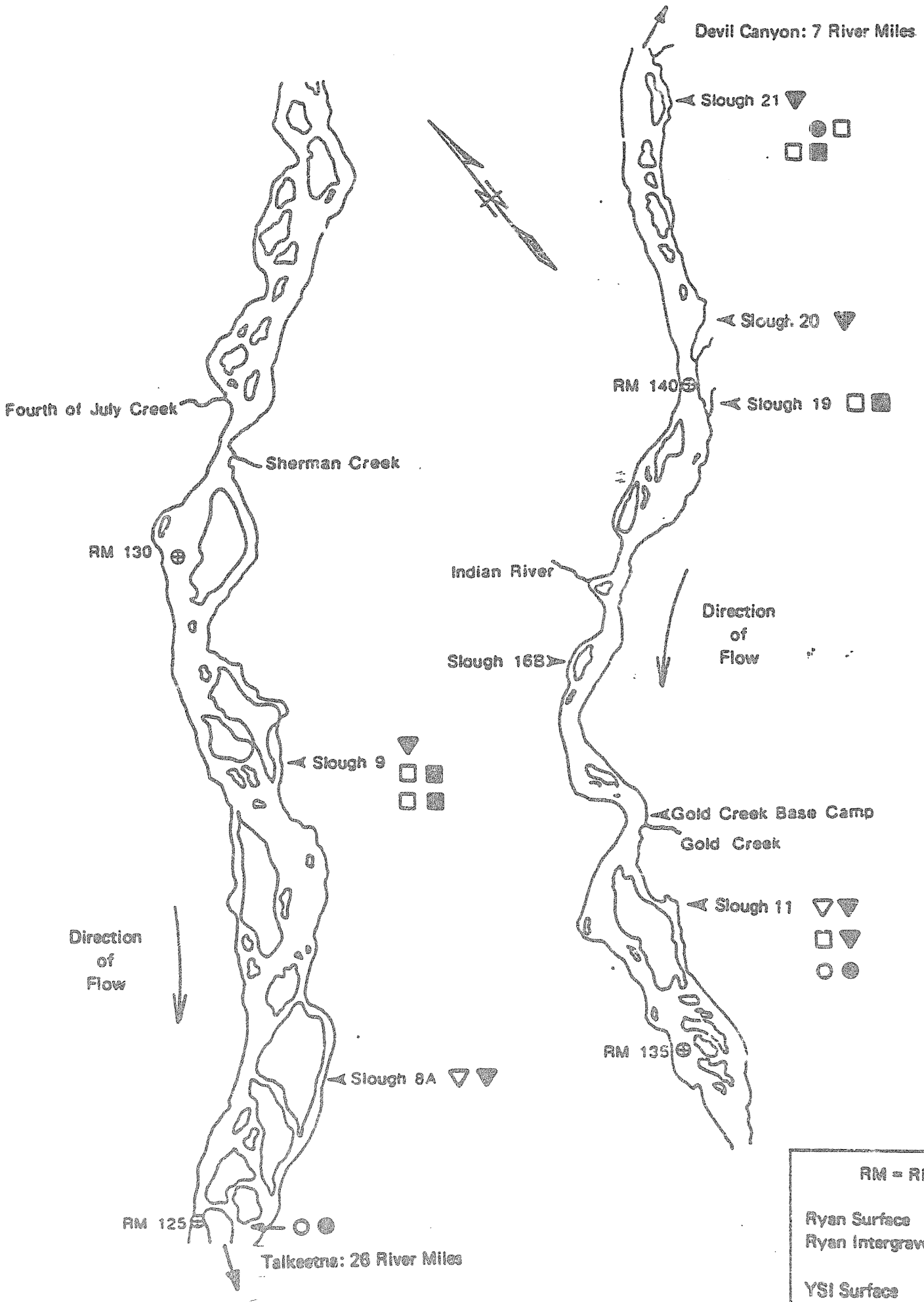
Study Site Locations

Mid-winter temperature data were obtained from 13 sites at 7 locations along the Susitna River between RM 125 and 143. Instrumentation was concentrated in known spawning (incubation) areas, with particular attention being given to the side sloughs. Intergravel and stream temperature stations were located on the basis of ADF&G's 1981 observations of spawning activity. Upwelling subsurface flow was observed or believed to be present at all locations monitored.

Results

Continuous surface and intergravel water temperature data collected between mid-February and early May 1982 are presented in tabular format in Appendices A and B. The same data are presented graphically in this section of the report to facilitate interpretation.

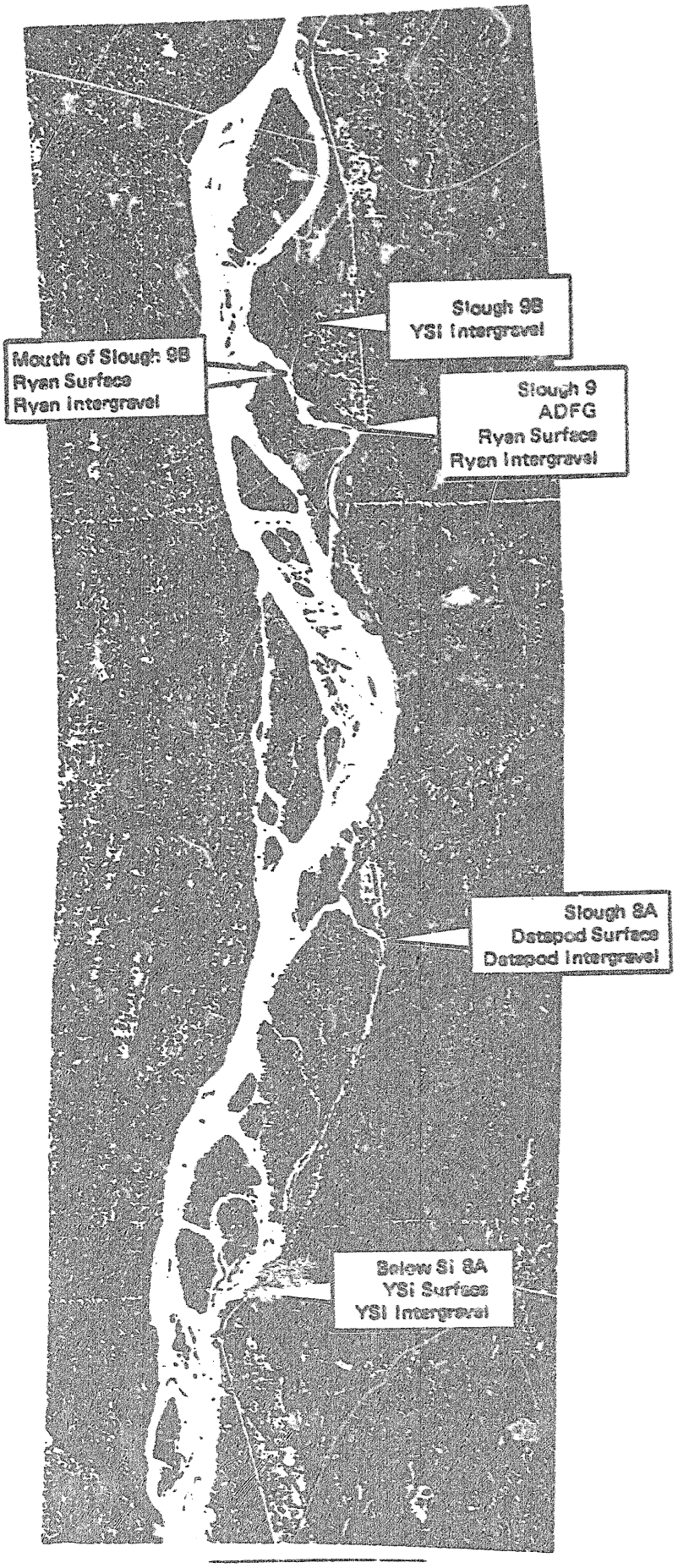
In general these plots indicate that during mid-winter intergravel water is notably warmer and of a more constant temperature than the surface water.



Location map for 1982 midwinter temperature study sites.

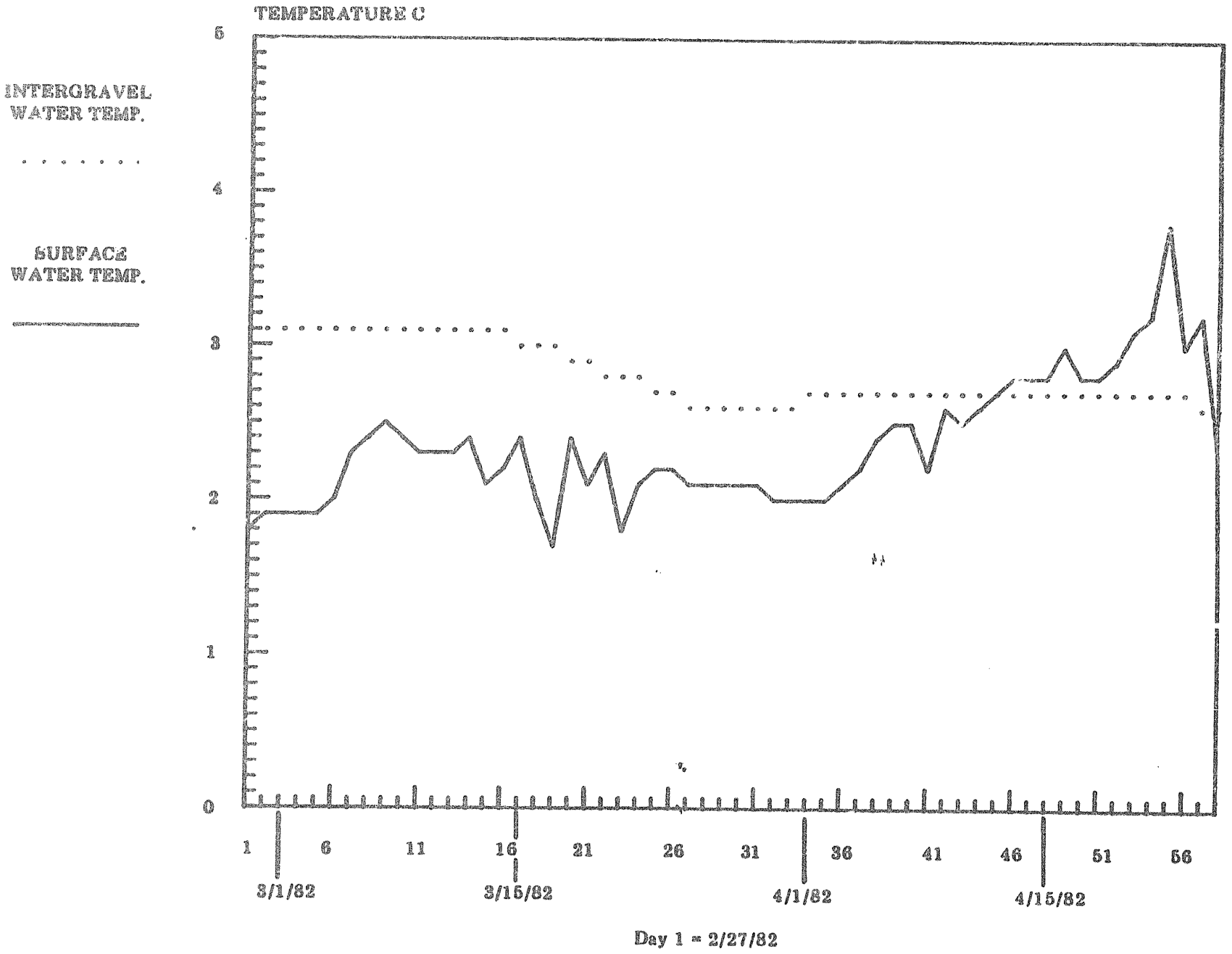
This strongly suggests that intergravel temperatures respond independently of surface water temperatures. This was expected since the monitoring stations were located in open water leads which were known, or highly suspect, of being caused by upwelling subsurface flow.

Although their initial cost is greater, the Omnidata 2321 recorders used in this study provided greater precision and a more cost-effective method of monitoring stream temperatures than the Ryan thermographs. The greatest cost savings was attributable to reduced personnel costs for data reduction and presentation. It is also believed that more reliable intergravel water temperature data were obtained by driving thermister probes into streambed gravels than from burying the Ryan thermograph units.

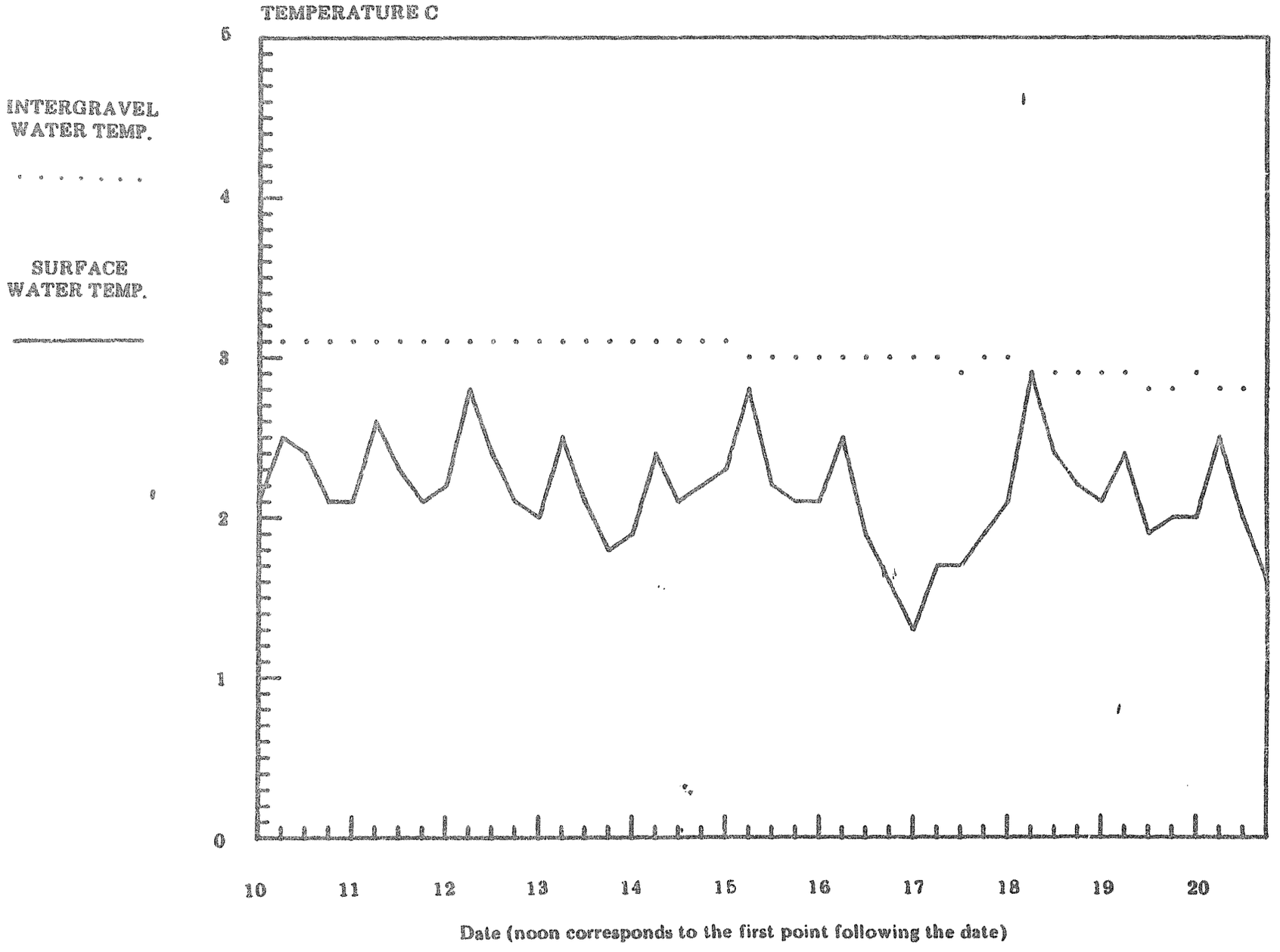


Location of thermographs in Slough 9, 9B, and 8A.

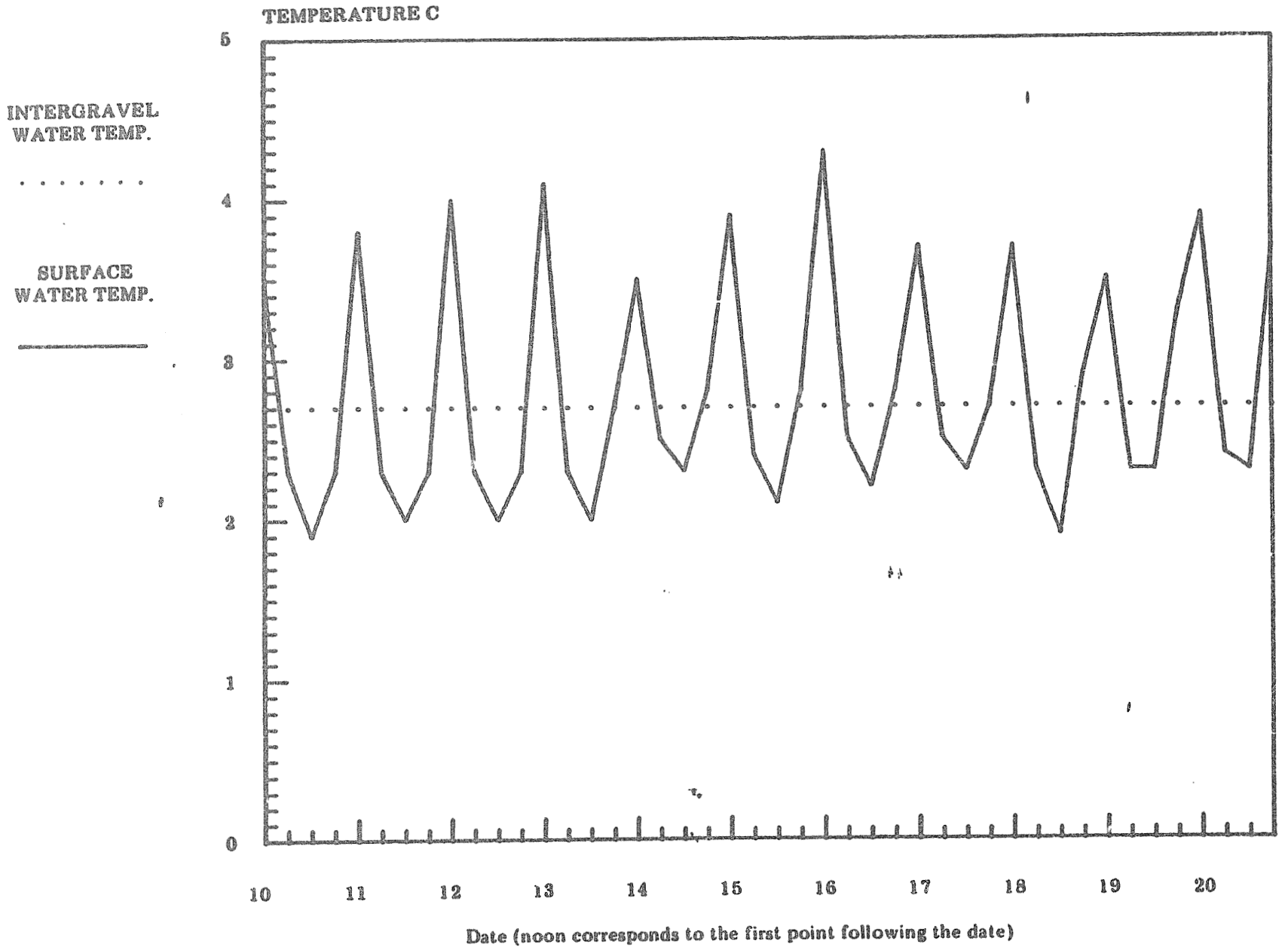
Mean daily intergravel and surface water temperature data from a spawning site in the Susitna River at Slough 8A.



Comparison of average 6-hour intergravel and surface water temperature data from a spawning site in the Susitna River at Slough 8A, March 10-20, 1982.

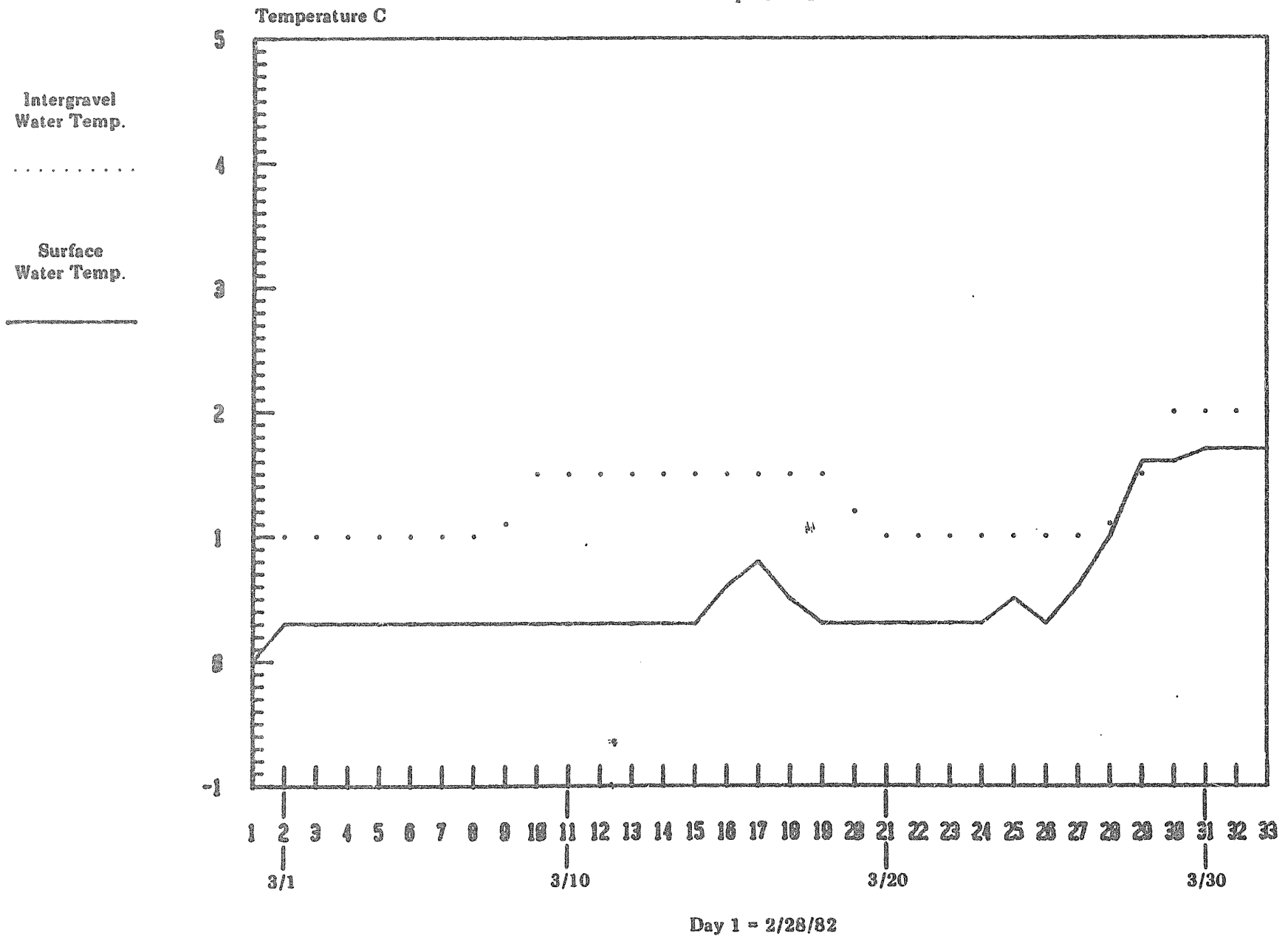


Comparison of average 6-hour intergravel and surface water temperature data from a spawning site in the Susitna River at Slough 8A, April 10-20, 1982.



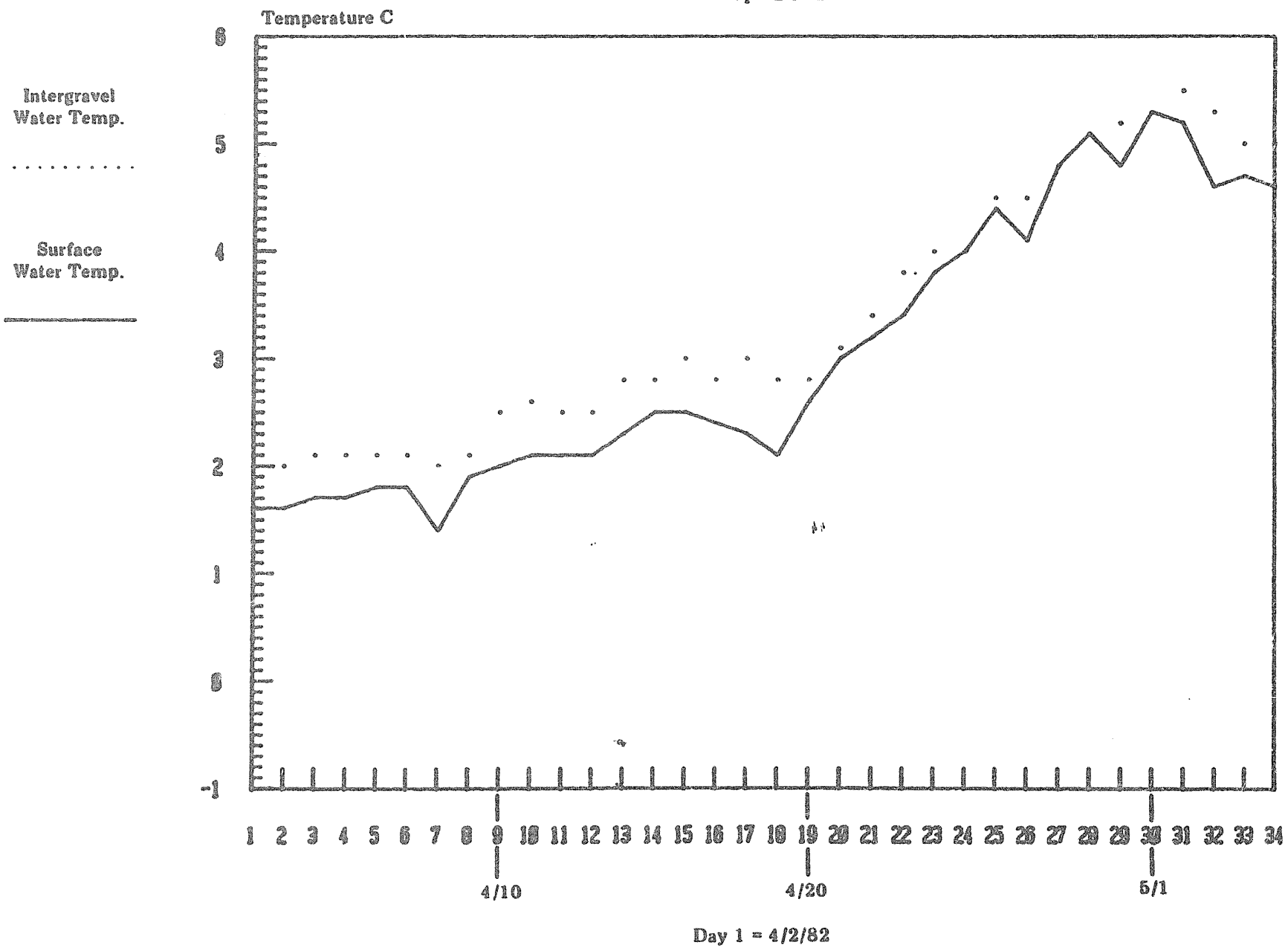
Mean daily intergravel and surface water temperature data from
ADF&G Ryan thermographs at Slough 9B, February 28 - April 1, 1982.

Graph 1 of 2



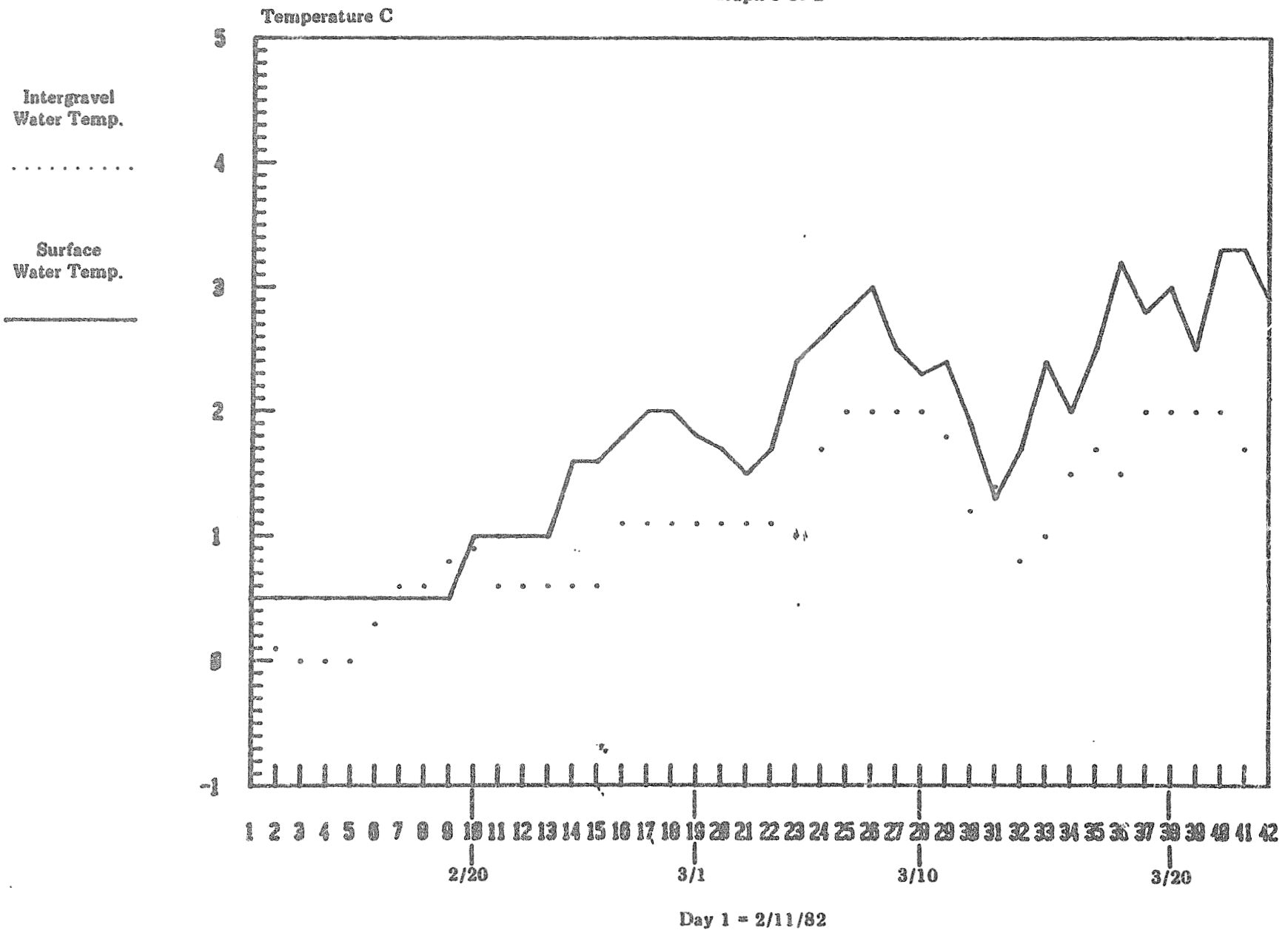
Mean daily intergravel and surface water temperature data from ADF&G Ryan thermographs at Slough 9B, April 4 - May 5, 1982.

Graph 2 of 2



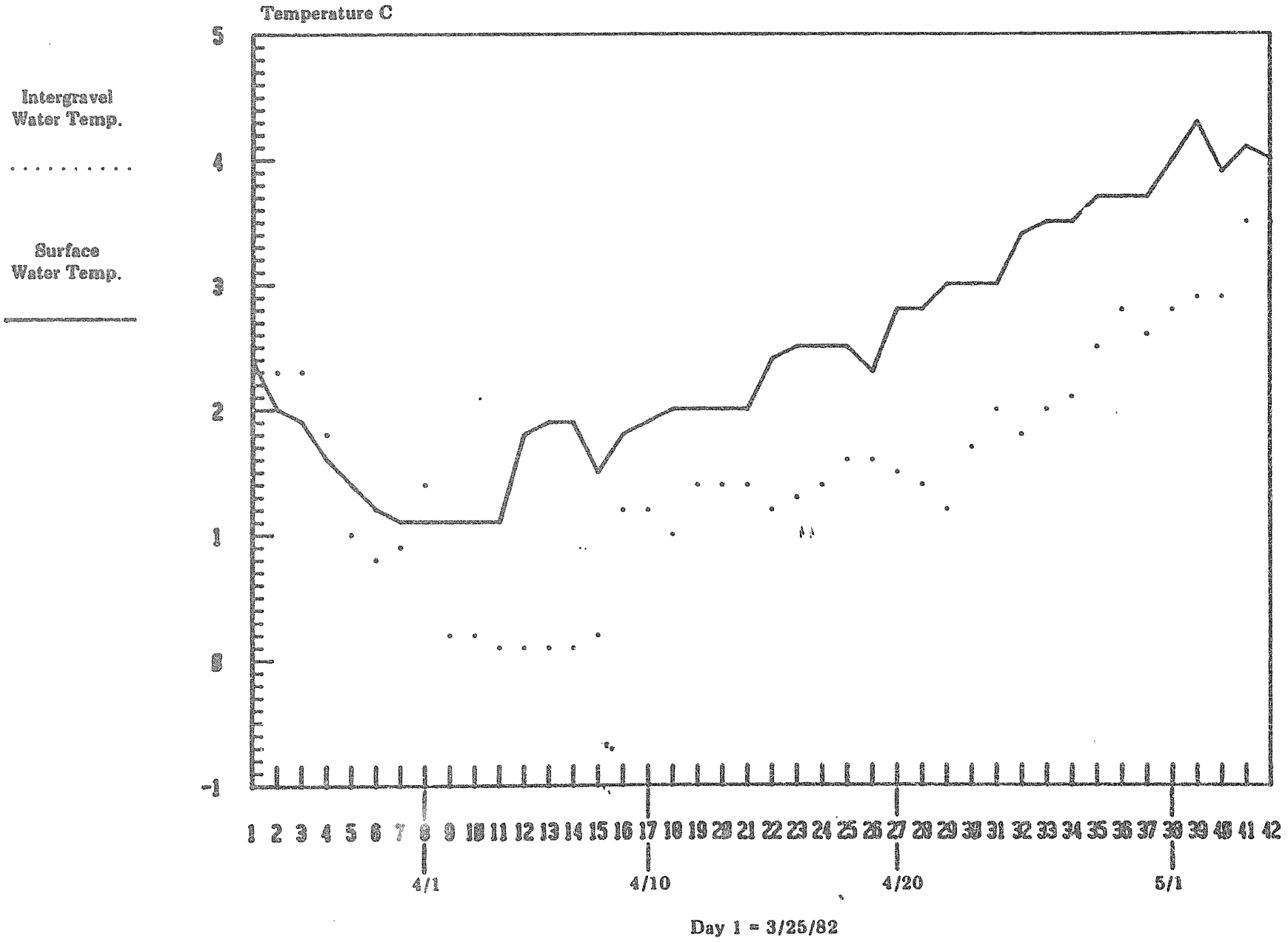
Mean daily intergravel and surface water temperature data from ADF&G Ryan thermographs at Slough 9, February 11 - March 24, 1982.

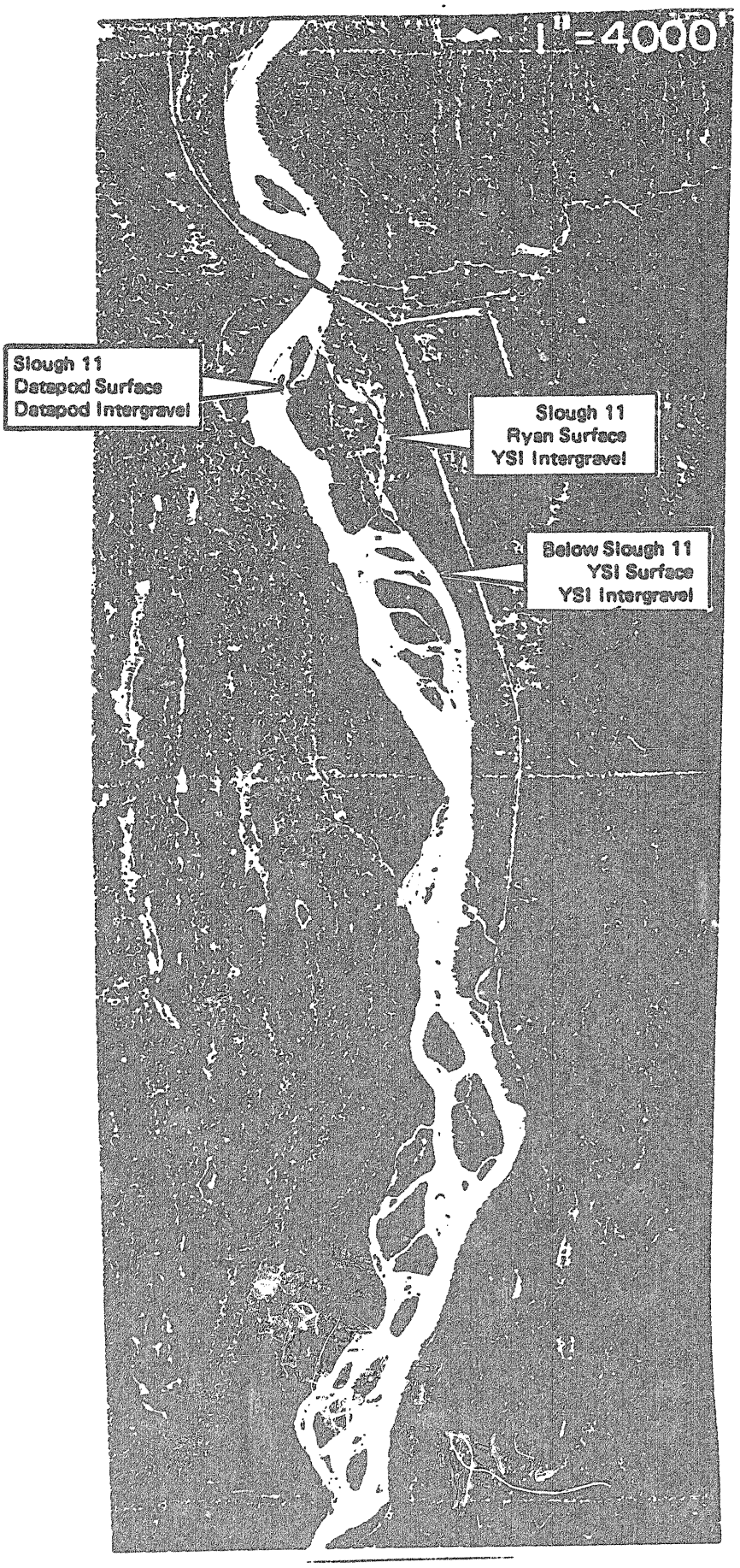
Graph 1 of 2



Mean daily intergravel and surface water temperature data from
ADF&G Ryan thermographs at Slough 9, March 25 - May 5, 1982.

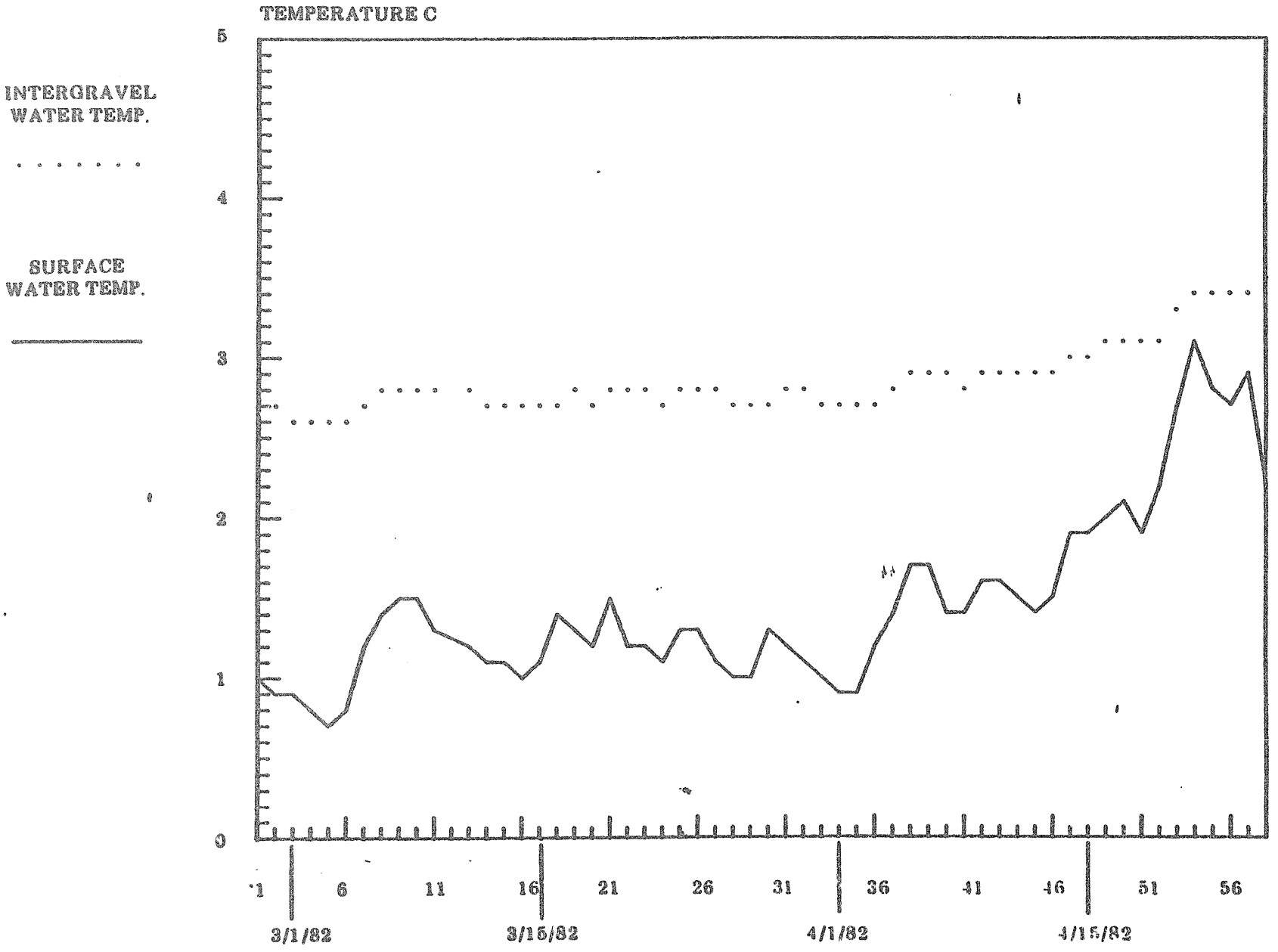
Graph 2 of 2



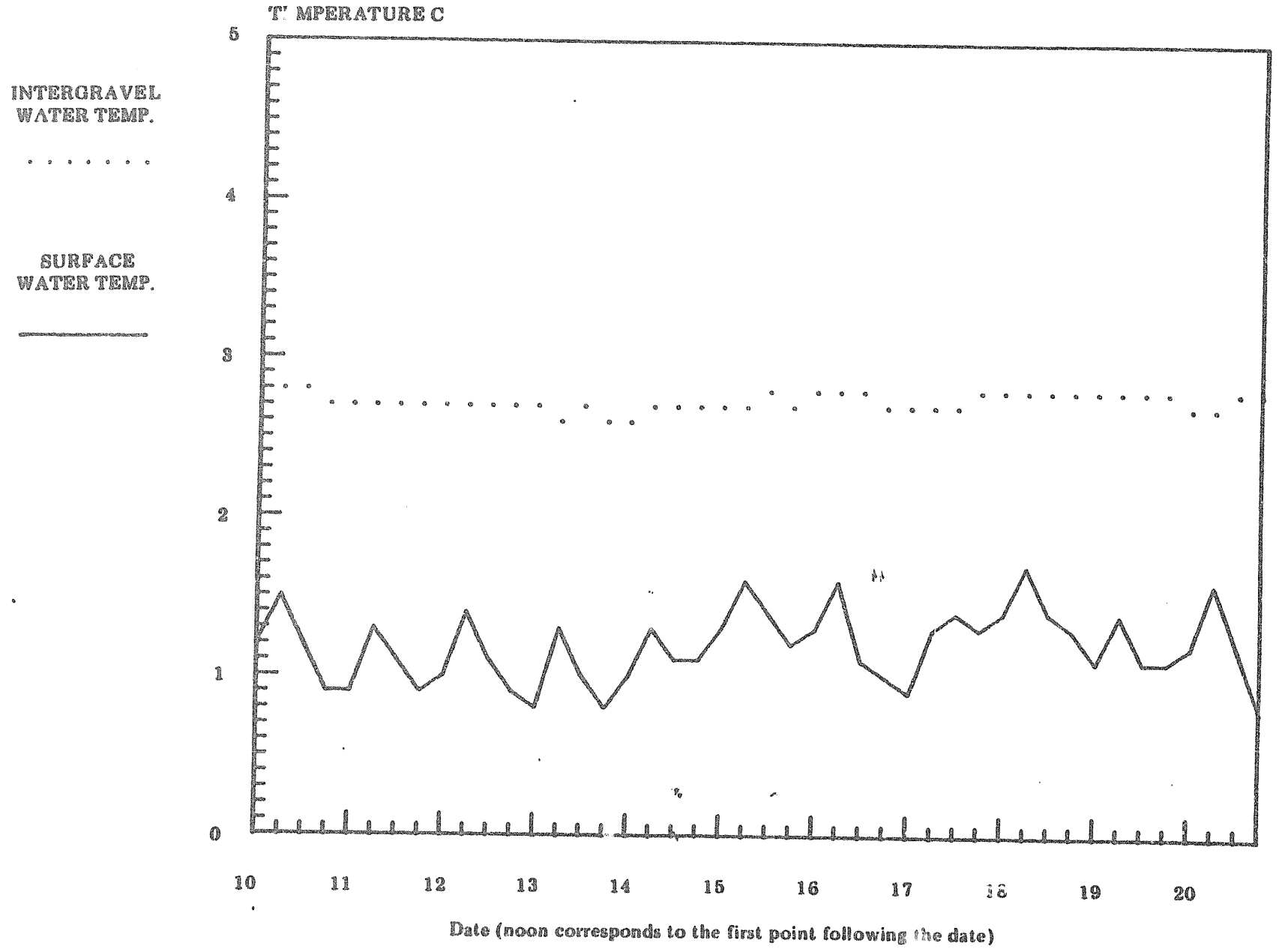


Location of thermographs in Slough 11.

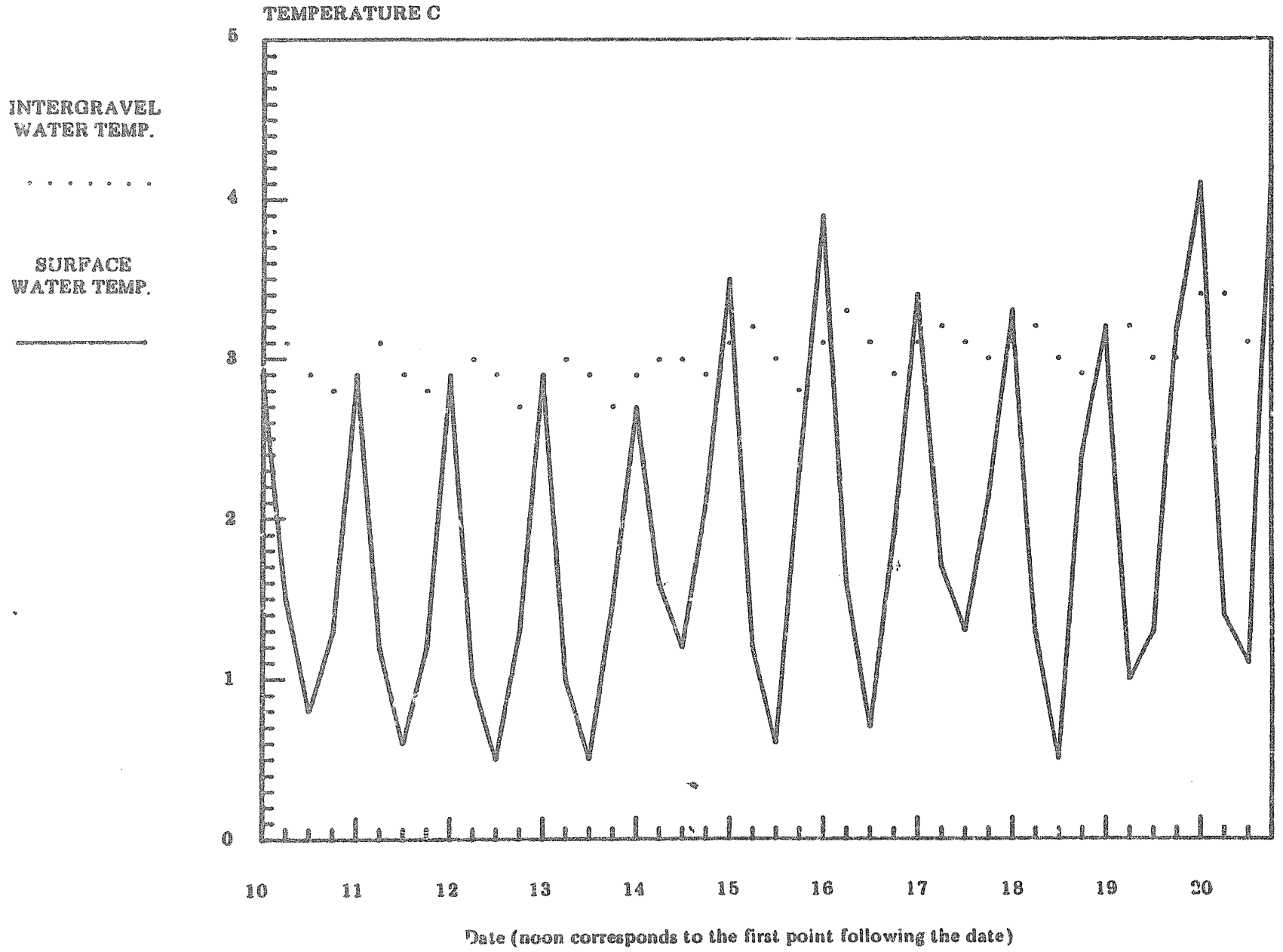
Mean daily intergravel and surface water temperature data from a mainstem spawning site in the Susitna River at river mile 136.2.



Comparison of average 6-hour intergravel and surface water temperature data from a mainstem spawning site in the Susitna River at river mile 136.2, March 10-20, 1982.

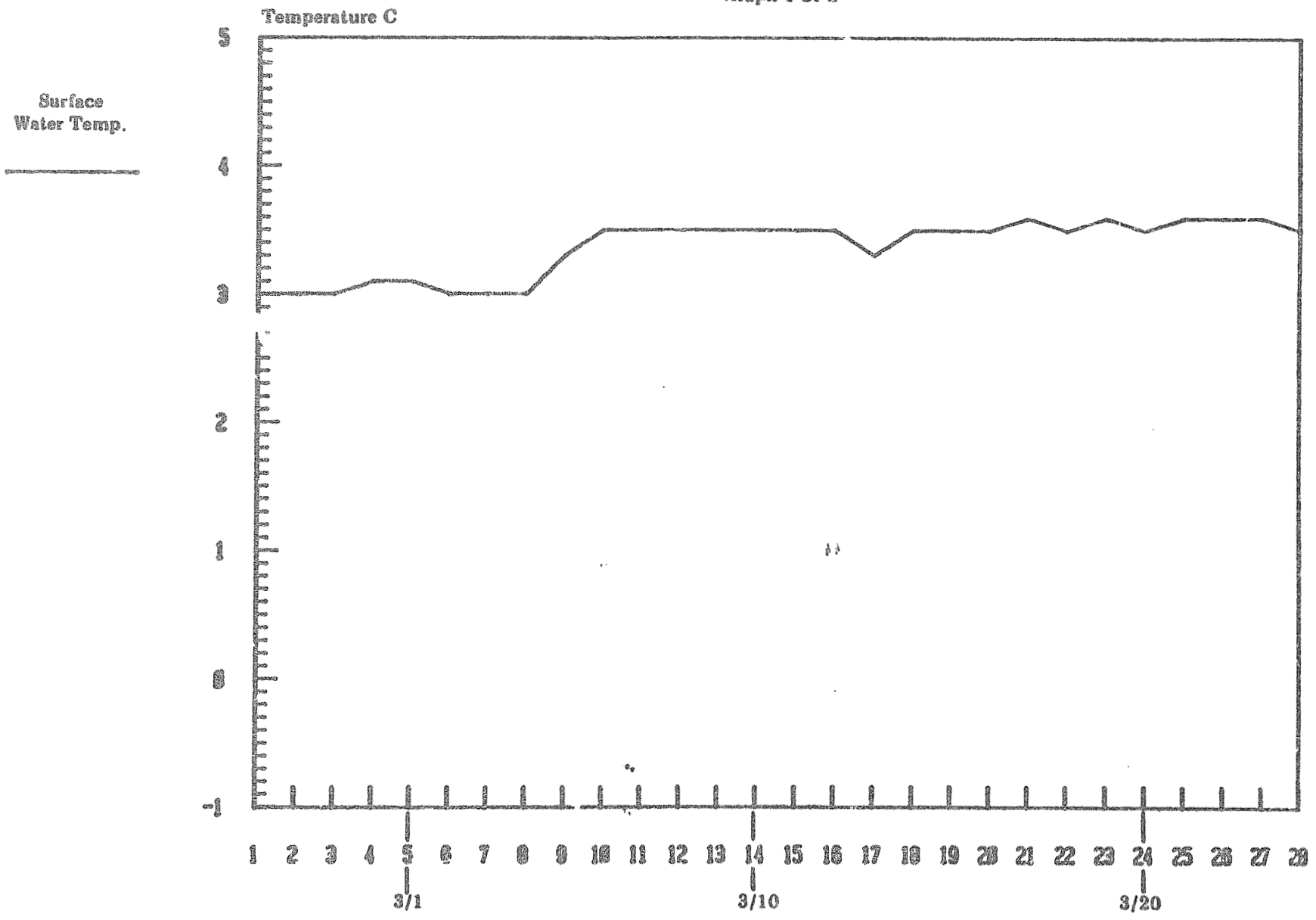


Comparison of average 6-hour intergravel and surface water temperature data from a mainstem spawning site in the Susitna River at river mile 136.2, April 10-20, 1982.



Mean daily surface water temperature data from ADF&G Ryan thermographs at Slough 11, February 25 - March 24, 1982.

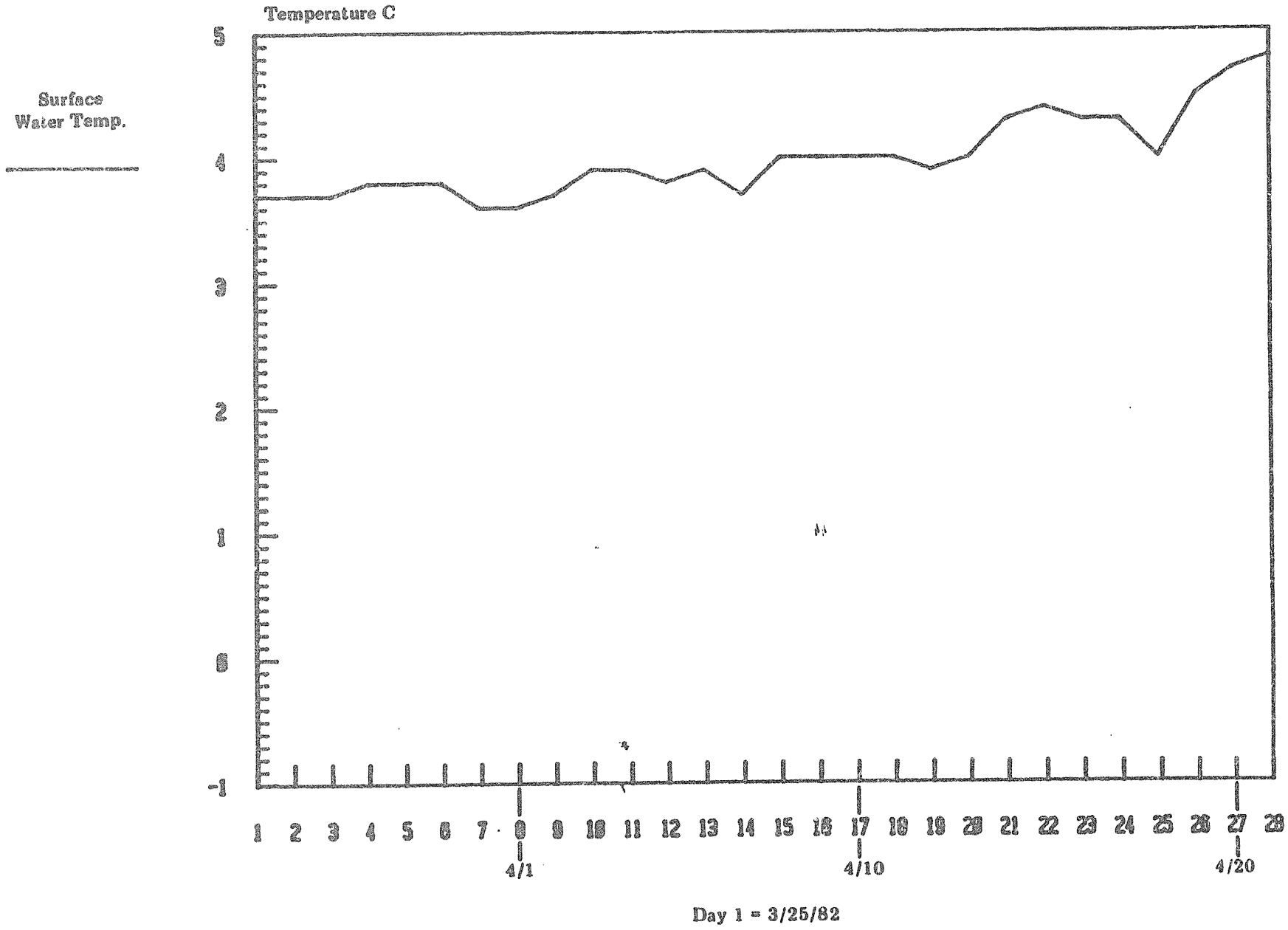
Graph 1 of 2

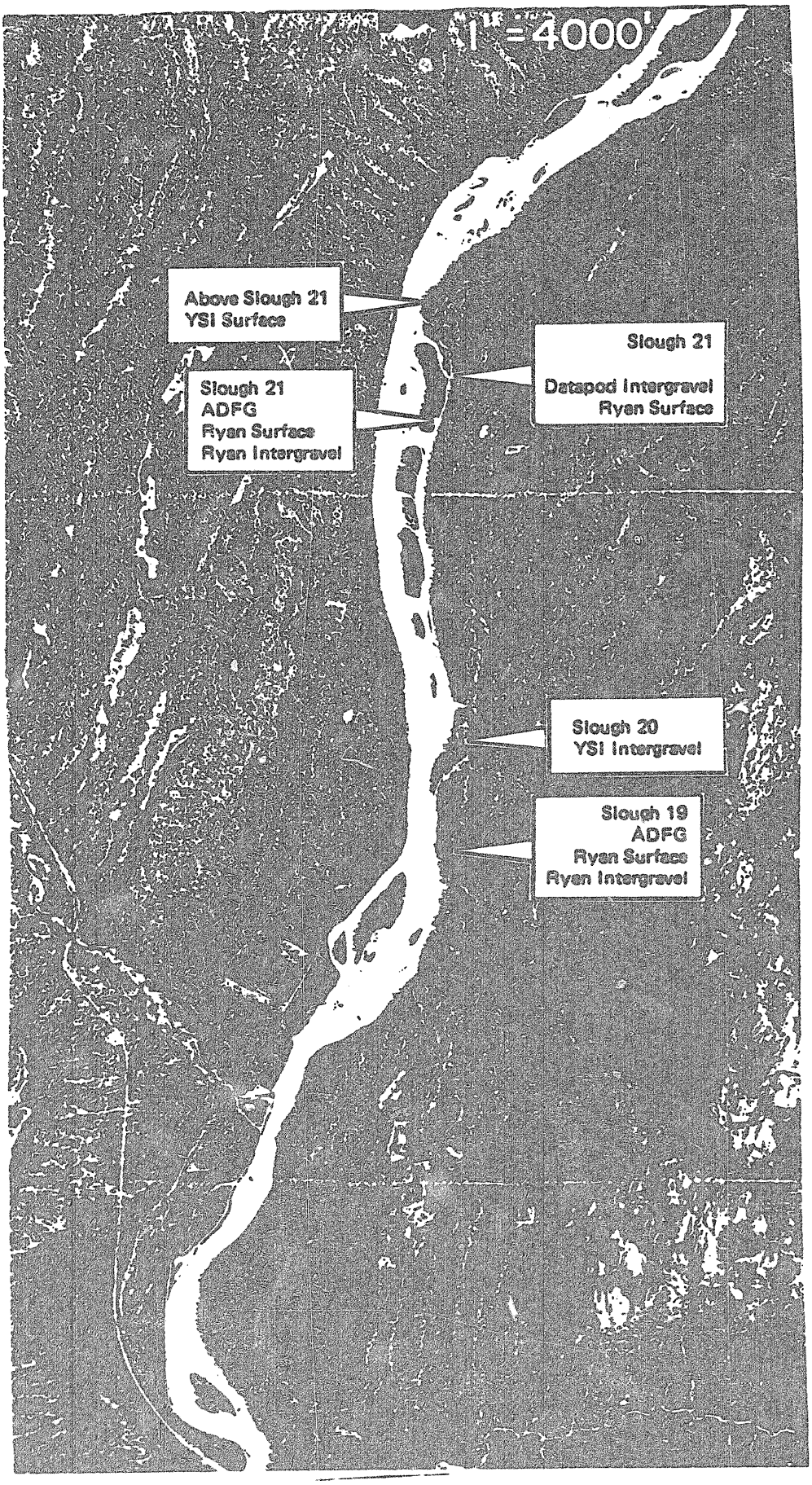


Day 1 = 2/25/82

Mean daily surface water temperature data from ADF&G Ryan thermographs at Slough 11, March 25 - April 21, 1982.

Graph 2 of 2

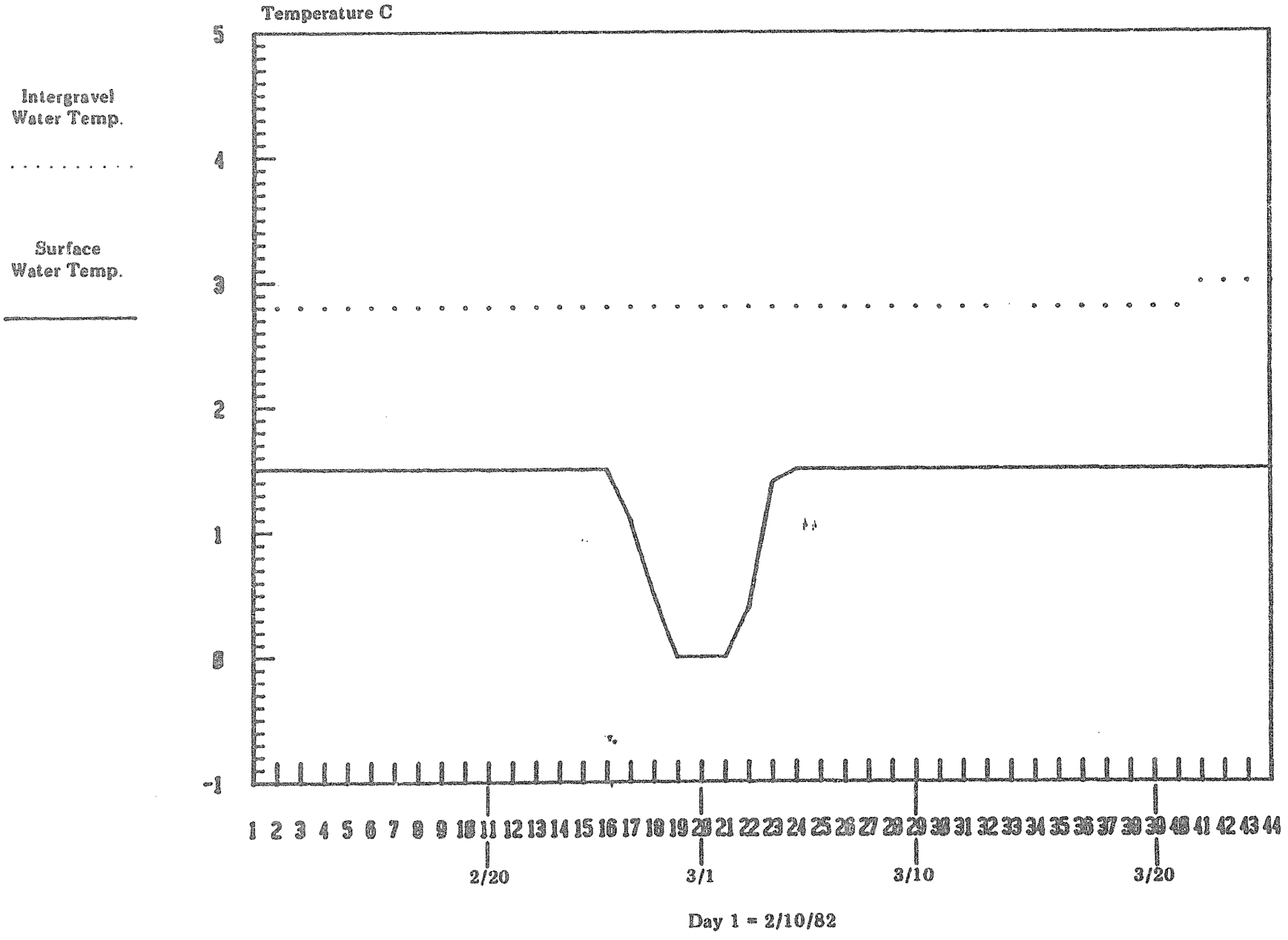




Location of thermographs in Slough 21, 20, and 19.

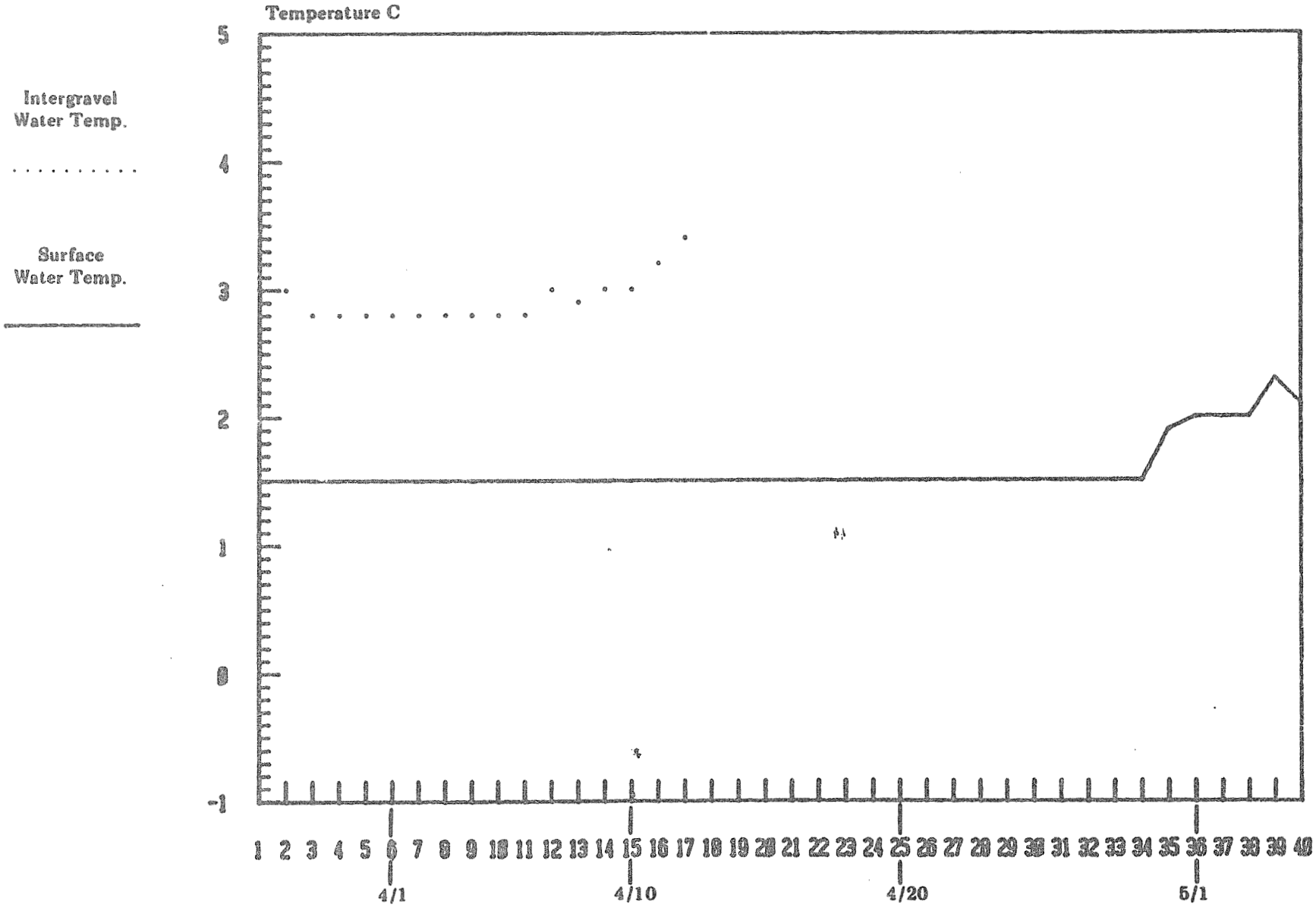
Mean daily intergravel and surface water temperature data from
ADF&G Ryan thermographs at Slough 19, February 28 - March 26, 1982.

Graph 1 of 2



Mean daily intergravel and surface water temperature data from
ADF&G Ryan thermographs at Slough 19, March 27 - May 5, 1982.

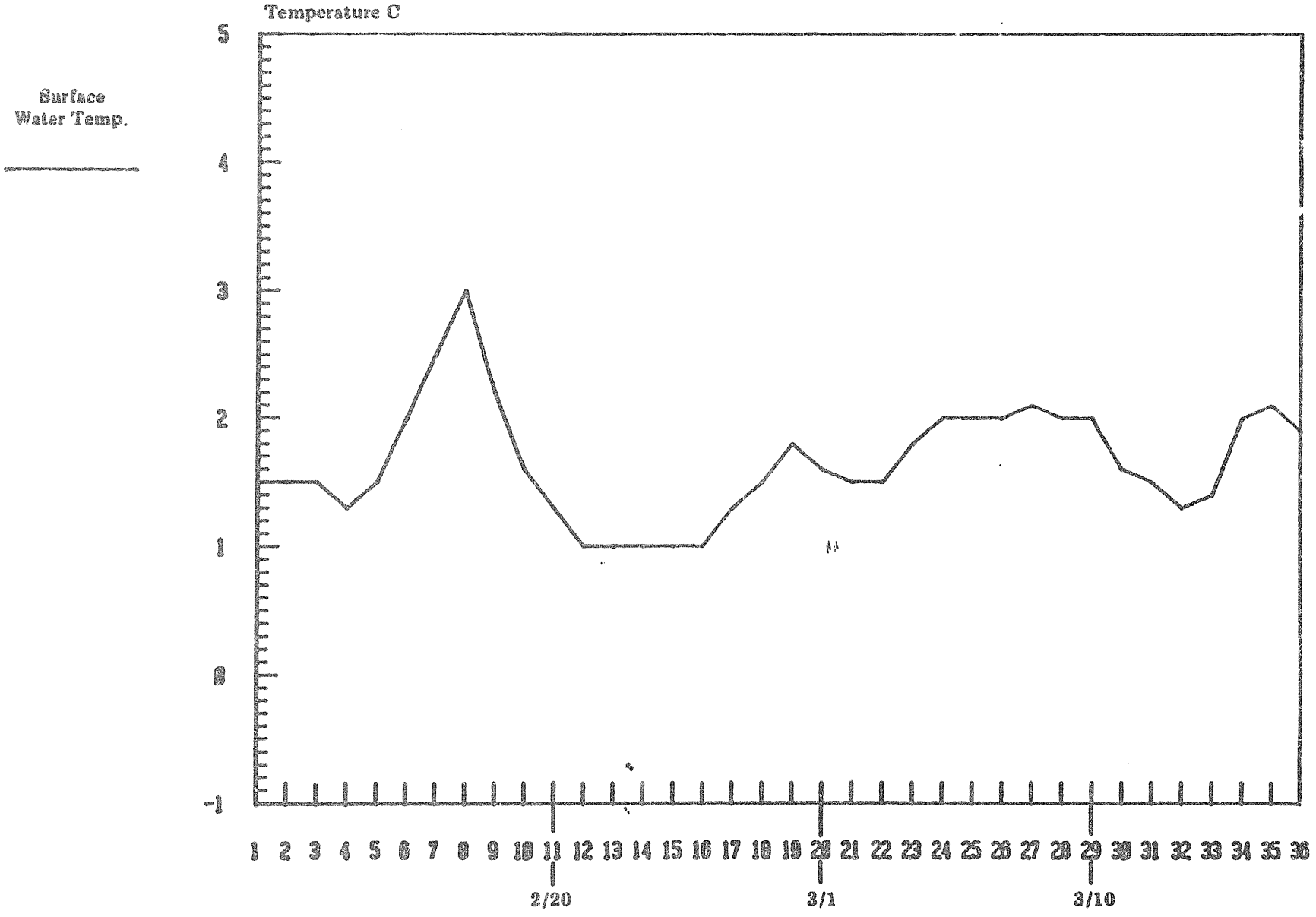
Graph 2 of 2



Day 1 = 3/27/82

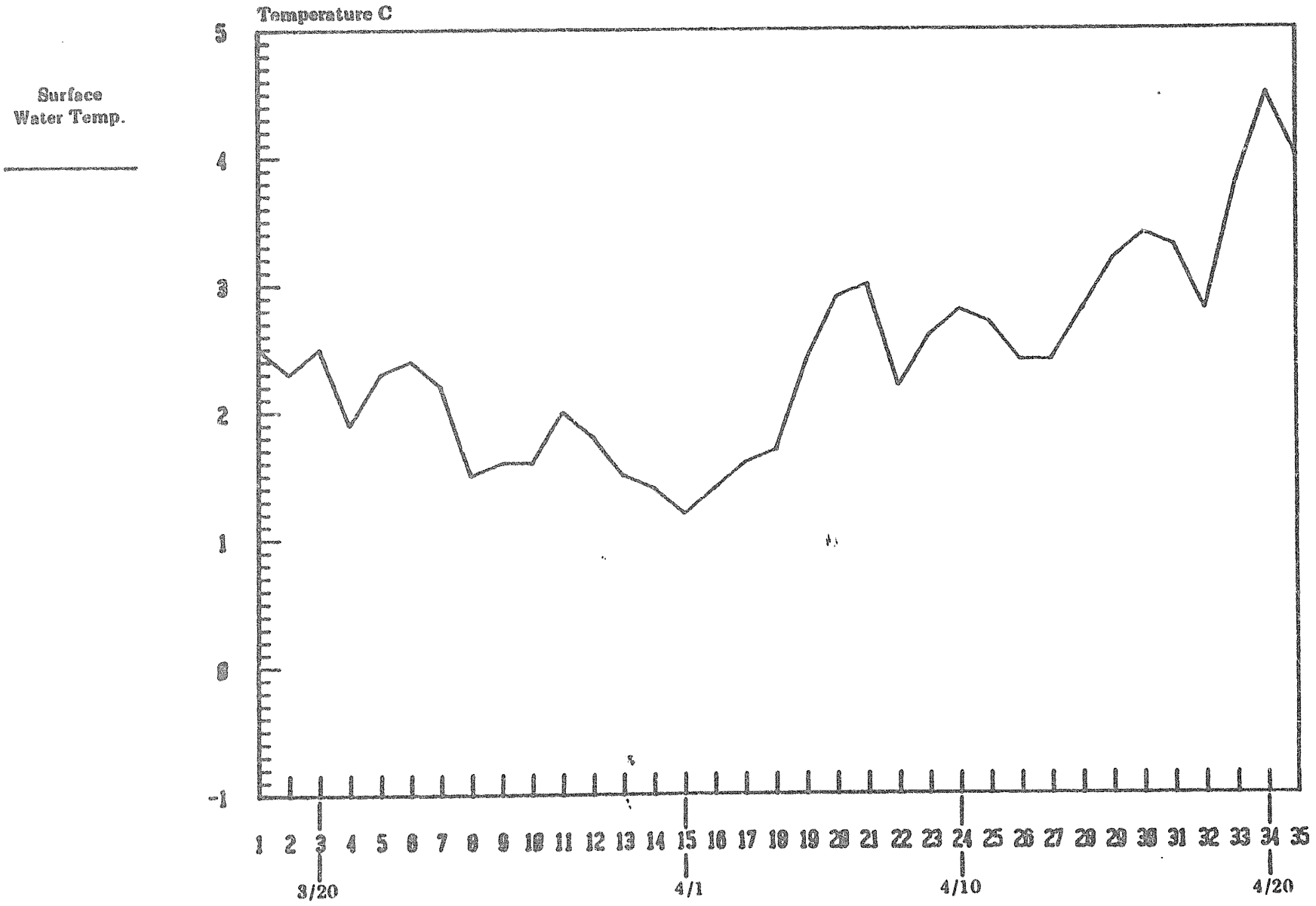
Mean daily intergravel and surface water temperature data from ADF&G Ryan thermographs at Slough 21 February 10 - March 17, 1982.

Graph 1 of 2



Mean daily surface water temperature data from ADF&G Ryan thermographs at Slough 21 March 18 - April 21, 1982.

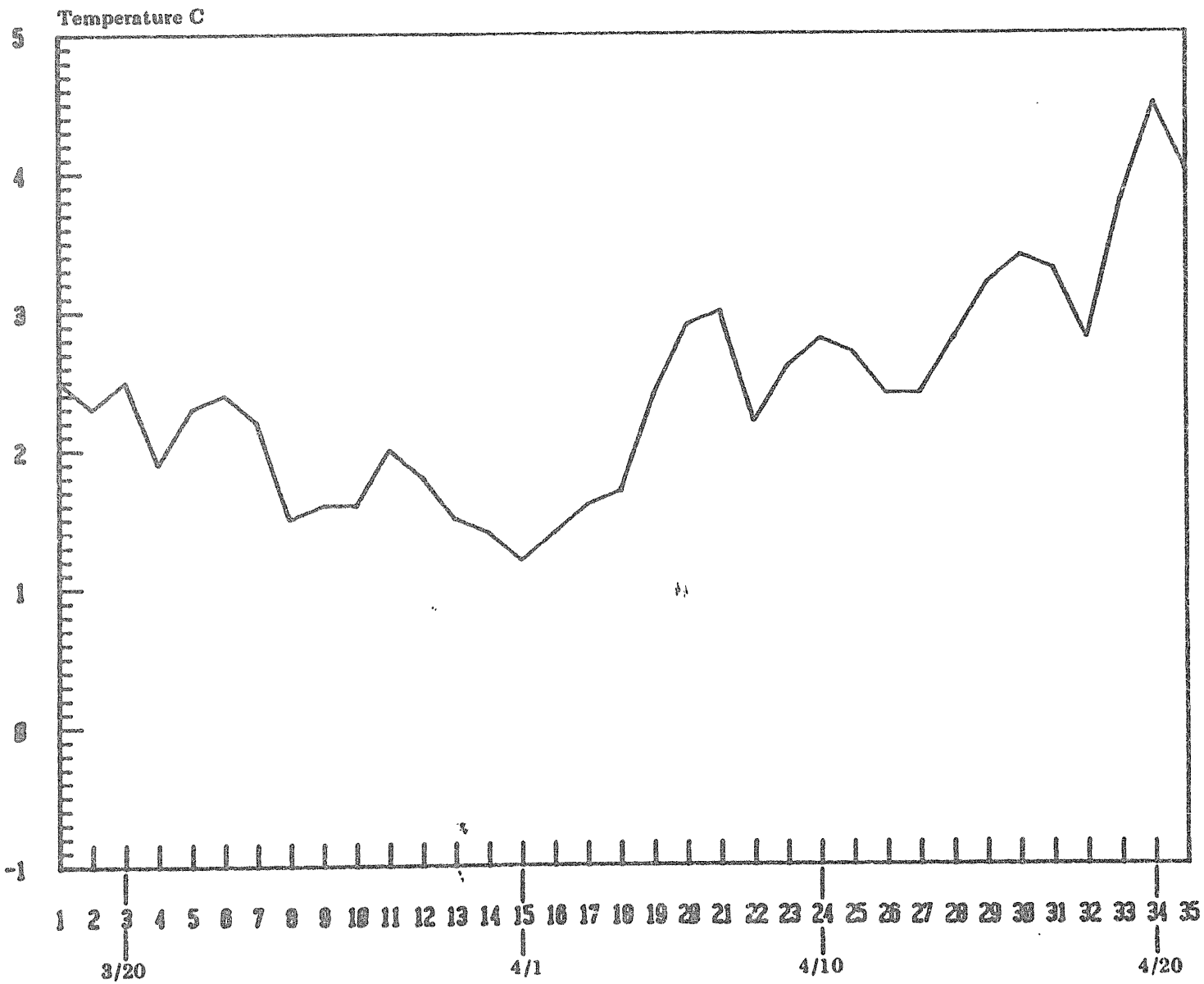
Graph 2 of 2



Mean daily surface water temperature data from ADF&G Ryan thermographs at Slough 21 March 18 - April 21, 1982.

Graph 2 of 2

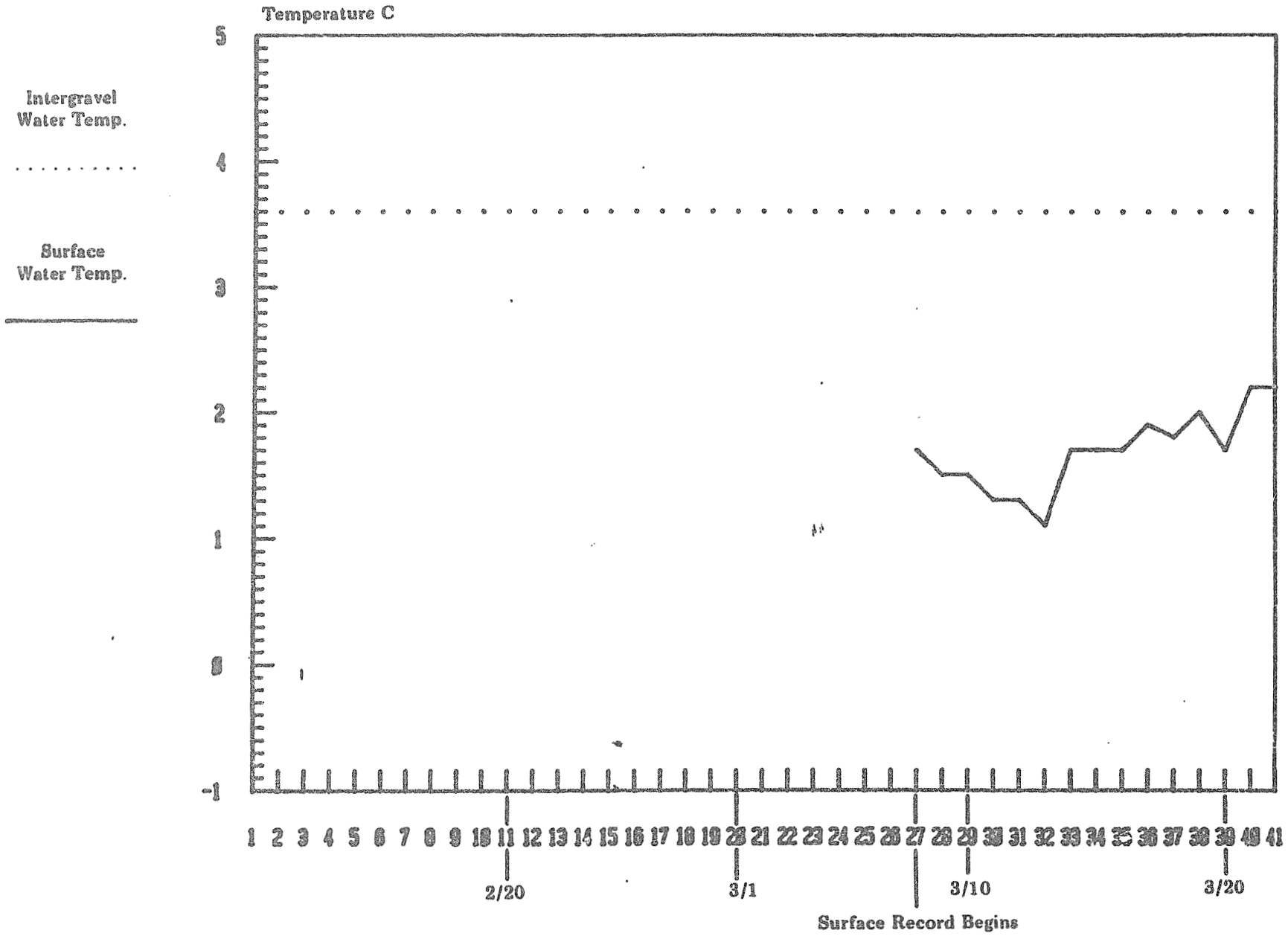
Surface Water Temp.



Day 1 = 3/18/82

Mean daily intergravel and surface water temperature data from
ADF&G Ryan thermographs at Slough 21A, February 10 - March 22, 1982.

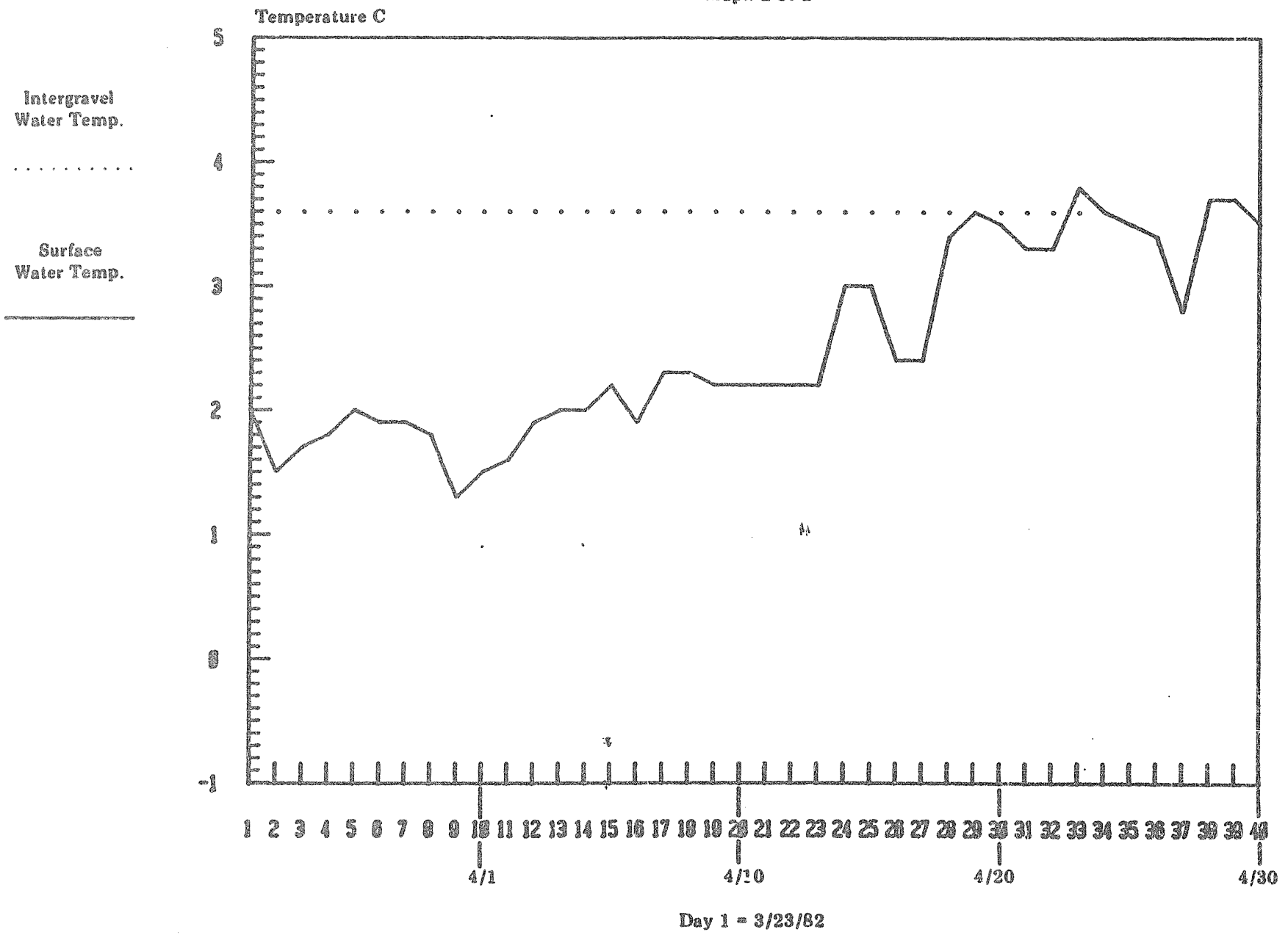
Graph 1 of 2



Day 1 = 2/10/82

Mean daily intergravel and surface water temperature data from
ADF&G Ryan thermographs at Slough 21A, March 23 - April 31, 1982.

Graph 2 of 2



Day 1 = 3/23/82

Appendix A

DP2321 temperature data

Location	Page
Slough 8A	
Surface & intergravel water temperature measurements Feb. 27 - Apr. 25, 1982.....	A1-6
River Mile 136.2	
Surface & intergravel water temperature measurements Feb. 27 - April 25, 1982.....	A7-12
Slough 21	
Intergravel water temperature measurements Mar. 9 - Apr. 20, 1982.....	A13

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES FOR SLOUGH 8A
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
02/27/82	18:06	3.0	3.0	3.0	2.2	1.8	2.4
02/28/82	00:09	3.0	3.0	3.1	1.8	1.6	1.8
02/28/82	06:12	3.1	3.0	3.1	1.7	1.6	1.7
02/28/82	12:15	3.0	3.0	3.1	1.8	1.6	2.0
02/28/82	18:18	3.1	3.0	3.1	2.3	1.9	2.6
03/01/82	00:21	3.1	3.0	3.1	1.8	1.8	1.9
03/01/82	06:24	3.1	3.0	3.1	1.8	1.7	1.8
03/01/82	12:27	3.1	3.1	3.1	1.8	1.6	2.1
03/01/82	18:30	3.1	3.0	3.1	2.3	1.8	2.7
03/02/82	00:33	3.1	3.0	3.1	1.8	1.7	1.9
03/02/82	06:36	3.1	3.1	3.1	1.7	1.7	1.8
03/02/82	12:39	3.1	3.0	3.1	1.9	1.7	2.4
03/02/82	18:42	3.1	3.0	3.1	2.3	1.8	2.7
03/03/82	00:45	3.1	3.0	3.2	1.7	1.6	1.9
03/03/82	06:48	3.1	3.1	3.1	1.7	1.6	1.7
03/03/82	12:51	3.1	3.0	3.2	1.8	1.6	2.5
03/03/82	18:54	3.1	3.0	3.1	2.2	1.6	2.6
03/04/82	00:57	3.1	3.1	3.2	1.7	1.6	1.8
03/04/82	07:00	3.1	3.1	3.2	1.6	1.6	1.7
03/04/82	13:03	3.1	3.0	3.2	2.0	1.6	2.4
03/04/82	19:06	3.1	3.1	3.1	2.2	1.9	2.4
03/05/82	01:09	3.1	3.1	3.1	2.0	2.0	2.1
03/05/82	07:12	3.1	3.1	3.1	2.0	2.0	2.1
03/05/82	13:15	3.1	3.0	3.1	2.4	2.0	2.8
03/05/82	19:18	3.1	3.0	3.1	2.4	2.1	2.8
03/06/82	01:21	3.1	3.1	3.1	2.2	2.1	2.3
03/06/82	07:24	3.1	3.1	3.1	2.2	2.1	2.3
03/06/82	13:27	3.1	3.0	3.1	2.5	2.2	2.8
03/06/82	19:30	3.1	3.0	3.1	2.5	2.2	2.8
03/07/82	01:33	3.1	3.1	3.1	2.2	2.1	2.3
03/07/82	07:36	3.1	3.1	3.1	2.2	2.1	2.3
03/07/82	13:39	3.1	3.0	3.1	2.7	2.2	3.3
03/07/82	19:42	3.1	3.0	3.1	2.6	2.2	3.1
03/08/82	01:45	3.1	3.1	3.1	2.3	2.2	2.4
03/08/82	07:48	3.1	3.1	3.1	2.2	2.1	2.4
03/08/82	13:51	3.1	3.0	3.1	2.8	2.3	3.3
03/08/82	19:54	3.1	3.0	3.1	2.4	2.1	2.8

RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
03/09/82	01:57	3.1	3.1	3.1	2.2	2.0	2.3
03/09/82	08:00	3.1	3.1	3.1	2.2	2.1	2.4
03/09/82	14:03	3.1	3.1	3.1	2.5	2.1	2.8
03/09/82	20:06	3.1	3.1	3.1	2.3	2.0	2.5
03/10/82	02:09	3.1	3.1	3.1	2.3	2.1	2.5
03/10/82	08:12	3.1	3.1	3.1	2.1	1.7	2.4
03/10/82	14:15	3.1	3.0	3.1	2.5	2.2	2.8
03/10/82	20:18	3.1	3.0	3.1	2.4	2.0	2.8
03/11/82	02:21	3.1	3.1	3.2	2.1	1.8	2.4
03/11/82	08:24	3.1	3.1	3.1	2.1	1.9	2.3
03/11/82	14:27	3.1	3.0	3.2	2.6	2.0	3.0
03/11/82	20:30	3.1	3.0	3.1	2.3	1.8	2.9
03/12/82	02:33	3.1	3.1	3.2	2.1	1.9	2.3
03/12/82	08:36	3.1	3.0	3.2	2.2	2.0	2.6
03/12/82	14:39	3.1	3.0	3.1	2.8	2.4	3.3
03/12/82	20:42	3.1	3.0	3.1	2.4	2.1	3.0
03/13/82	02:45	3.1	3.1	3.2	2.1	2.0	2.3
03/13/82	08:48	3.1	3.1	3.1	2.0	1.8	2.1
03/13/82	14:51	3.1	3.0	3.2	2.5	2.0	2.9
03/13/82	20:54	3.1	3.0	3.1	2.1	1.8	2.7
03/14/82	02:57	3.1	3.1	3.1	1.8	1.7	2.0
03/14/82	09:00	3.1	3.0	3.1	1.9	1.7	2.2
03/14/82	15:03	3.1	3.0	3.1	2.4	2.1	2.6
03/14/82	21:06	3.1	3.0	3.1	2.1	2.0	2.4
03/15/82	03:09	3.1	3.0	3.1	2.2	2.1	2.2
03/15/82	09:12	3.1	3.0	3.1	2.3	2.1	2.5
03/15/82	15:15	3.0	3.0	3.1	2.8	2.4	3.3
03/15/82	21:18	3.0	3.0	3.1	2.2	2.0	2.8
03/16/82	03:21	3.0	3.0	3.1	2.1	1.9	2.2
03/16/82	09:24	3.0	3.0	3.0	2.1	1.9	2.4
03/16/82	15:27	3.0	3.0	3.0	2.5	2.0	2.8
03/16/82	21:30	3.0	3.0	3.0	1.9	1.6	2.4
03/17/82	03:33	3.0	3.0	3.0	1.6	1.2	1.9
03/17/82	09:36	3.0	2.9	3.0	1.3	1.2	1.5
03/17/82	15:39	3.0	2.9	3.0	1.7	1.5	1.9
03/17/82	21:42	2.9	2.9	3.0	1.7	1.6	1.8
03/18/82	03:45	3.0	2.9	3.0	1.9	1.7	2.0
03/18/82	09:48	3.0	2.9	3.0	2.1	1.9	2.7

RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
03/18/82	15:51	2.9	2.9	3.0	2.9	2.6	3.2
03/18/82	21:54	2.9	2.9	2.9	2.4	2.2	2.6
03/19/82	03:57	2.9	2.9	2.9	2.2	2.0	2.4
03/19/82	10:00	2.9	2.9	2.9	2.1	1.9	2.4
03/19/82	16:03	2.9	2.8	2.9	2.4	2.0	2.6
03/19/82	22:06	2.8	2.8	2.9	1.9	1.8	2.0
03/20/82	04:09	2.8	2.8	2.9	2.0	1.7	2.1
03/20/82	10:12	2.9	2.8	2.9	2.0	1.6	2.5
03/20/82	16:15	2.8	2.8	2.8	2.5	2.3	2.6
03/20/82	22:18	2.8	2.8	2.9	2.0	1.7	2.4
03/21/82	04:21	2.8	2.8	2.8	1.6	1.4	1.9
03/21/82	10:24	2.8	2.8	2.8	1.7	1.5	2.0
03/21/82	16:27	2.8	2.8	2.8	1.8	1.5	2.0
03/21/82	22:30	2.8	2.8	2.8	1.8	1.8	2.0
03/22/82	04:33	2.8	2.8	2.8	1.8	1.6	2.0
03/22/82	10:36	2.8	2.7	2.8	2.1	1.7	2.6
03/22/82	16:39	2.8	2.7	2.8	2.5	1.9	2.8
03/22/82	22:42	2.7	2.7	2.8	1.9	1.8	2.1
03/23/82	04:45	2.7	2.7	2.7	1.9	1.7	2.0
03/23/82	10:48	2.7	2.7	2.8	2.3	1.9	2.9
03/23/82	16:51	2.7	2.7	2.8	2.7	2.1	3.2
03/23/82	22:54	2.7	2.7	2.7	2.0	1.9	2.1
03/24/82	04:57	2.7	2.7	2.7	1.9	1.8	2.0
03/24/82	11:00	2.7	2.6	2.7	2.2	1.7	2.6
03/24/82	17:03	2.7	2.6	2.7	2.8	2.2	3.2
03/24/82	23:06	2.7	2.6	2.7	1.9	1.7	2.2
03/25/82	05:09	2.7	2.6	2.7	1.8	1.7	1.9
03/25/82	11:12	2.6	2.6	2.7	2.4	1.8	3.0
03/25/82	17:15	2.6	2.6	2.7	2.5	1.8	3.1
03/25/82	23:18	2.6	2.6	2.7	1.8	1.7	1.9
03/26/82	05:21	2.6	2.6	2.7	1.8	1.7	1.8
03/26/82	11:24	2.6	2.6	2.7	2.2	1.7	3.3
03/26/82	17:27	2.6	2.6	2.5	2.8	1.9	3.4
03/26/82	23:30	2.6	2.6	2.7	1.8	1.6	1.9
03/27/82	05:33	2.6	2.6	2.7	1.7	1.6	1.8
03/27/82	11:36	2.6	2.6	2.7	2.2	1.6	3.0
03/27/82	17:39	2.6	2.6	2.6	2.6	1.9	3.2
03/27/82	23:42	2.6	2.6	2.6	1.9	1.9	2.0

RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
03/28/82	05:45	2.6	2.6	2.7	1.8	1.6	1.9
03/28/82	11:48	2.6	2.6	2.7	2.3	1.7	3.3
03/28/82	17:51	2.6	2.6	2.6	2.6	1.9	3.4
03/28/82	23:54	2.6	2.6	2.7	1.8	1.7	2.0
03/29/82	05:57	2.6	2.6	2.6	1.7	1.6	1.7
03/29/82	12:00	2.6	2.6	2.6	2.3	1.7	3.3
03/29/82	18:03	2.6	2.6	2.6	2.5	1.9	3.2
03/30/82	00:06	2.6	2.6	2.7	1.9	1.7	2.0
03/30/82	06:09	2.6	2.6	2.6	1.6	1.5	1.8
03/30/82	12:12	2.6	2.6	2.7	2.4	1.6	3.3
03/30/82	18:15	2.6	2.6	2.7	2.4	1.7	3.3
03/31/82	00:18	2.6	2.6	2.7	1.6	1.6	1.8
03/31/82	06:21	2.6	2.6	2.7	1.6	1.5	1.6
03/31/82	12:24	2.6	2.6	2.7	2.3	1.6	3.3
03/31/82	18:27	2.6	2.6	2.7	2.3	1.6	3.2
04/01/82	00:30	2.6	2.6	2.7	1.6	1.5	1.6
04/01/82	06:33	2.7	2.6	2.7	1.6	1.5	1.6
04/01/82	12:36	2.6	2.6	2.7	2.4	1.6	3.4
04/01/82	18:39	2.6	2.6	2.7	2.3	1.6	3.2
04/02/82	00:42	2.7	2.6	2.7	1.6	1.5	1.6
04/02/82	06:45	2.7	2.7	2.7	1.5	1.5	1.7
04/02/82	12:48	2.6	2.6	2.7	2.6	1.6	3.4
04/02/82	18:51	2.7	2.6	2.7	2.2	1.6	3.2
04/03/82	00:54	2.7	2.6	2.7	1.6	1.5	1.6
04/03/82	06:57	2.7	2.7	2.7	1.5	1.4	1.6
04/03/82	13:00	2.7	2.6	2.7	2.6	1.6	3.4
04/03/82	19:03	2.7	2.6	2.7	2.3	1.7	3.2
04/04/82	01:06	2.7	2.6	2.7	1.6	1.6	1.7
04/04/82	07:09	2.7	2.6	2.7	1.7	1.5	2.0
04/04/82	13:12	2.7	2.6	2.7	3.0	2.0	3.6
04/04/82	19:15	2.6	2.6	2.7	2.4	1.8	3.5
04/05/82	01:18	2.7	2.6	2.7	1.7	1.7	1.8
04/05/82	07:21	2.7	2.6	2.7	1.8	1.6	2.0
04/05/82	13:24	2.6	2.6	2.7	3.0	1.9	3.5
04/05/82	19:27	2.6	2.6	2.7	2.5	2.0	3.5
04/06/82	01:30	2.7	2.6	2.7	2.0	1.9	2.1
04/06/82	07:33	2.7	2.7	2.7	2.2	1.9	2.5

RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
04/06/82	13:36	2.6	2.6	2.7	3.2	2.4	3.7
04/06/82	19:39	2.7	2.6	2.7	2.5	2.2	3.1
04/07/82	01:42	2.7	2.6	2.7	2.2	2.2	2.3
04/07/82	07:45	2.6	2.6	2.7	2.2	1.9	2.6
04/07/82	13:48	2.7	2.6	2.7	3.2	2.6	4.5
04/07/82	19:51	2.7	2.6	2.7	2.5	2.1	3.5
04/08/82	01:54	2.7	2.7	2.7	2.1	2.1	2.2
04/08/82	07:57	2.7	2.6	2.7	2.2	2.1	2.4
04/08/82	14:00	2.7	2.6	2.7	2.4	1.8	2.7
04/08/82	20:03	2.7	2.7	2.7	2.2	1.8	2.6
04/09/82	02:06	2.7	2.7	2.7	1.9	1.6	2.1
04/09/82	08:09	2.7	2.6	2.7	2.3	1.8	2.8
04/09/82	14:12	2.7	2.6	2.7	3.8	2.9	4.5
04/09/82	20:15	2.7	2.6	2.7	2.5	2.0	3.4
04/10/82	02:18	2.7	2.6	2.7	1.9	1.7	2.2
04/10/82	08:21	2.7	2.6	2.7	2.3	1.8	3.2
04/10/82	14:24	2.7	2.6	2.7	3.5	3.0	4.0
04/10/82	20:27	2.7	2.6	2.7	2.3	1.9	3.0
04/11/82	02:30	2.7	2.6	2.7	1.9	1.8	2.0
04/11/82	08:33	2.7	2.6	2.7	2.3	1.9	3.0
04/11/82	14:36	2.7	2.6	2.7	3.8	3.1	4.2
04/11/82	20:39	2.7	2.6	2.7	2.3	2.0	3.1
04/12/82	02:42	2.7	2.6	2.7	2.0	2.0	2.1
04/12/82	08:45	2.7	2.6	2.7	2.3	1.9	3.2
04/12/82	14:48	2.6	2.6	2.7	4.0	3.3	4.3
04/12/82	20:51	2.7	2.6	2.7	2.3	2.0	3.2
04/13/82	02:54	2.7	2.6	2.7	2.0	1.9	2.1
04/13/82	08:57	2.7	2.6	2.7	2.3	1.9	3.4
04/13/82	15:00	2.7	2.6	2.7	4.1	3.2	4.4
04/13/82	21:03	2.7	2.6	2.7	2.3	2.0	3.1
04/14/82	03:06	2.7	2.6	2.8	2.0	1.9	2.1
04/14/82	09:09	2.7	2.6	2.7	2.7	2.1	3.7
04/14/82	15:12	2.7	2.7	2.7	3.5	3.0	3.7
04/14/82	21:15	2.7	2.6	2.7	2.5	2.3	3.0
04/15/82	03:18	2.7	2.7	2.7	2.3	2.2	2.4
04/15/82	09:21	2.7	2.6	2.7	2.8	2.2	3.7
04/15/82	15:24	2.7	2.6	2.7	3.9	3.1	4.2
04/15/82	21:27	2.7	2.6	2.7	2.4	2.0	3.1

RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
04/16/82	03:30	2.7	2.6	2.7	2.1	2.0	2.2
04/16/82	09:33	2.7	2.6	2.7	2.8	2.1	4.3
04/16/82	15:36	2.7	2.6	2.7	4.3	3.3	4.9
04/16/82	21:39	2.7	2.6	2.7	2.5	2.2	3.2
04/17/82	03:42	2.7	2.7	2.8	2.2	2.0	2.3
04/17/82	09:45	2.7	2.7	2.8	2.8	2.2	3.5
04/17/82	15:48	2.7	2.6	2.8	3.7	3.0	4.5
04/17/82	21:51	2.7	2.7	2.8	2.5	2.3	3.0
04/18/82	03:54	2.7	2.7	2.7	2.3	2.1	2.4
04/18/82	09:57	2.7	2.7	2.7	2.7	2.1	3.7
04/18/82	16:00	2.7	2.7	2.8	3.7	2.6	4.1
04/18/82	22:03	2.7	2.7	2.8	2.3	2.1	2.6
04/19/82	04:06	2.7	2.7	2.8	1.9	1.8	2.2
04/19/82	10:09	2.7	2.6	2.7	2.9	2.0	3.8
04/19/82	16:12	2.7	2.6	2.7	3.5	2.6	4.1
04/19/82	22:15	2.7	2.6	2.7	2.3	2.1	2.6
04/20/82	04:18	2.7	2.7	2.7	2.3	2.2	2.4
04/20/82	10:21	2.7	2.6	2.7	3.3	2.3	4.5
04/20/82	16:24	2.7	2.6	2.7	3.9	2.8	4.8
04/20/82	22:27	2.7	2.6	2.7	2.4	2.2	2.9
04/21/82	04:30	2.7	2.6	2.7	2.3	2.2	2.6
04/21/82	10:33	2.7	2.6	2.7	3.7	2.6	5.1
04/21/82	16:36	2.7	2.6	2.7	4.0	2.9	5.0
04/21/82	22:39	2.7	2.6	2.7	2.4	2.1	2.8
04/22/82	04:42	2.7	2.6	2.7	2.3	2.2	2.5
04/22/82	10:45	2.7	2.6	2.7	3.9	2.6	6.0
04/22/82	16:48	2.7	2.6	2.7	4.0	2.7	5.2
04/22/82	22:51	2.7	2.6	2.7	2.3	2.2	2.6
04/23/82	04:54	2.7	2.6	2.7	2.3	2.2	2.6
04/23/82	10:57	2.7	2.6	2.7	3.6	2.7	4.4
04/23/82	17:00	2.7	2.6	2.7	3.5	2.6	4.4
04/23/82	23:03	2.6	2.6	2.7	2.4	2.3	2.7
04/24/82	05:06	2.7	2.6	2.7	2.4	2.2	2.8
04/24/82	11:09	2.7	2.6	2.7	3.6	2.8	4.1
04/24/82	17:12	2.7	2.6	2.7	3.4	2.6	4.1
04/24/82	23:15	2.6	2.6	2.7	2.5	2.4	2.6
04/25/82	05:18	2.6	2.6	2.7	2.5	2.3	2.9

RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
04/25/82	11:21	2.6	2.6	2.7	4.4	3.0	5.8
04/25/82	17:24	2.6	2.6	2.7	3.7	2.7	5.0
04/25/82	23:27	2.6	2.6	2.7	2.3	2.1	2.7
04/26/82	05:30	2.6	2.6	2.7	2.2	2.1	2.4

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES AT RIVER MILE 136.2 SPAWNING SITE
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
02/27/82	18:06	2.7	2.6	2.8	1.2	1.1	1.4
02/28/82	00:09	2.7	2.7	2.8	1.0	.9	1.1
02/28/82	06:12	2.7	2.6	2.7	.9	.8	.9
02/28/82	12:15	2.7	2.6	2.7	.9	.7	1.2
02/28/82	18:18	2.7	2.6	2.8	1.1	.9	1.2
03/01/82	00:21	2.7	2.6	2.8	.8	.7	.9
03/01/82	06:24	2.6	2.6	2.7	.7	.6	.8
03/01/82	12:27	2.6	2.6	2.7	.8	.6	1.1
03/01/82	18:30	2.6	2.6	2.7	1.0	.9	1.2
03/02/82	00:33	2.7	2.6	2.7	.9	.8	1.0
03/02/82	06:36	2.7	2.6	2.7	.7	.6	.8
03/02/82	12:39	2.6	2.6	2.7	.8	.6	1.0
03/02/82	18:42	2.6	2.6	2.7	1.0	.8	1.1
03/03/82	00:45	2.6	2.6	2.7	.8	.7	.9
03/03/82	06:48	2.6	2.6	2.7	.7	.6	.8
03/03/82	12:51	2.6	2.6	2.6	.7	.6	.9
03/03/82	18:54	2.6	2.6	2.7	.8	.7	.9
03/04/82	00:57	2.6	2.6	2.7	.6	.6	.7
03/04/82	07:00	2.6	2.6	2.7	.6	.5	.6
03/04/82	13:03	2.6	2.5	2.7	.7	.6	.9
03/04/82	19:06	2.6	2.5	2.6	.9	.8	1.0
03/05/82	01:09	2.6	2.6	2.6	.9	.8	1.0
03/05/82	07:12	2.6	2.6	2.6	.9	.9	1.0
03/05/82	13:15	2.6	2.6	2.7	1.2	1.0	1.4
03/05/82	19:18	2.7	2.6	2.7	1.3	1.2	1.4
03/06/82	01:21	2.7	2.7	2.8	1.2	1.2	1.3
03/06/82	07:24	2.8	2.7	2.8	1.3	1.2	1.3
03/06/82	13:27	2.7	2.7	2.8	1.4	1.3	1.5
03/06/82	19:30	2.8	2.7	2.8	1.4	1.3	1.5
03/07/82	01:33	2.8	2.8	2.8	1.3	1.3	1.4
03/07/82	07:36	2.7	2.7	2.8	1.3	1.3	1.4
03/07/82	13:39	2.8	2.7	2.9	1.6	1.4	1.7
03/07/82	19:42	2.8	2.7	2.9	1.5	1.4	1.6
03/08/82	01:45	2.8	2.8	2.9	1.4	1.4	1.5
03/08/82	07:48	2.8	2.8	2.9	1.4	1.3	1.5
03/08/82	13:51	2.8	2.7	2.9	1.6	1.4	1.7
03/08/82	19:54	2.8	2.7	2.9	1.5	1.3	1.6

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES AT
RIVER MILE 136.2 SPAWNING SITE
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
03/09/82	01:57	2.8	2.8	2.9	1.3	1.2	1.4
03/09/82	08:00	2.8	2.8	2.9	1.3	1.2	1.3
03/09/82	14:03	2.8	2.7	2.8	1.5	1.2	1.6
03/09/82	20:06	2.8	2.8	2.9	1.3	1.2	1.4
03/10/82	02:09	2.7	2.7	2.8	1.2	1.1	1.3
03/10/82	08:12	2.7	2.7	2.7	1.2	1.0	1.3
03/10/82	14:15	2.8	2.7	2.8	1.5	1.3	1.6
03/10/82	20:18	2.8	2.7	2.9	1.2	.9	1.6
03/11/82	02:21	2.7	2.7	2.8	.9	.8	1.0
03/11/82	08:24	2.7	2.6	2.8	.9	.8	1.0
03/11/82	14:27	2.7	2.6	2.7	1.3	1.0	1.4
03/11/82	20:30	2.7	2.7	2.8	1.1	.8	1.4
03/12/82	02:33	2.7	2.6	2.8	.9	.8	.9
03/12/82	08:36	2.7	2.6	2.7	1.0	.9	1.2
03/12/82	14:39	2.7	2.6	2.7	1.4	1.2	1.5
03/12/82	20:42	2.7	2.6	2.8	1.1	.9	1.4
03/13/82	02:45	2.7	2.6	2.8	.9	.8	1.0
03/13/82	08:48	2.7	2.6	2.7	.8	.7	1.1
03/13/82	14:51	2.6	2.6	2.7	1.3	1.0	1.4
03/13/82	20:54	2.7	2.6	2.8	1.0	.8	1.3
03/14/82	02:57	2.6	2.6	2.7	.8	.7	.9
03/14/82	09:00	2.6	2.6	2.7	1.0	.8	1.2
03/14/82	15:03	2.7	2.6	2.7	1.3	1.2	1.4
03/14/82	21:06	2.7	2.6	2.7	1.1	1.0	1.3
03/15/82	03:09	2.7	2.6	2.7	1.1	1.1	1.2
03/15/82	09:12	2.7	2.6	2.7	1.3	1.2	1.5
03/15/82	15:15	2.7	2.7	2.8	1.6	1.4	1.7
03/15/82	21:18	2.8	2.7	2.8	1.4	1.2	1.5
03/16/82	03:21	2.7	2.7	2.8	1.2	1.2	1.3
03/16/82	09:24	2.8	2.7	2.8	1.3	1.2	1.4
03/16/82	15:27	2.8	2.7	2.8	1.6	1.4	1.7
03/16/82	21:30	2.8	2.7	2.9	1.1	.9	1.5
03/17/82	03:33	2.7	2.7	2.8	1.0	.8	1.2
03/17/82	09:36	2.7	2.7	2.8	.9	.8	1.2
03/17/82	15:39	2.7	2.6	2.7	1.3	1.0	1.4
03/17/82	21:42	2.7	2.7	2.8	1.4	1.3	1.5

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES AT RIVER MILE 136.2 SPAWNING SITE
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
03/18/82	03:45	2.8	2.8	2.8	1.3	1.2	1.4
03/18/82	09:48	2.8	2.7	2.8	1.4	1.3	1.7
03/18/82	15:51	2.8	2.7	2.8	1.7	1.5	1.9
03/18/82	21:54	2.8	2.7	2.9	1.4	1.3	1.5
03/19/82	03:57	2.8	2.8	2.9	1.3	1.1	1.4
03/19/82	10:00	2.8	2.8	2.8	1.1	1.0	1.3
03/19/82	16:03	2.8	2.7	2.8	1.4	1.1	1.6
03/19/82	22:06	2.8	2.7	2.8	1.1	1.0	1.2
03/20/82	04:09	2.8	2.7	2.8	1.1	1.0	1.3
03/20/82	10:12	2.7	2.7	2.8	1.2	1.0	1.7
03/20/82	16:15	2.7	2.7	2.8	1.6	1.4	1.8
03/20/82	22:18	2.8	2.7	2.9	1.2	.9	1.4
03/21/82	04:21	2.8	2.7	2.8	.8	.7	1.0
03/21/82	10:24	2.7	2.7	2.7	.9	.7	1.2
03/21/82	16:27	2.7	2.6	2.7	1.0	.6	1.3
03/21/82	22:30	2.7	2.6	2.7	1.2	1.1	1.3
03/22/82	04:33	2.7	2.7	2.8	1.1	1.0	1.2
03/22/82	10:36	2.7	2.6	2.8	1.3	.9	2.0
03/22/82	16:39	2.8	2.7	2.8	1.5	.8	2.0
03/22/82	22:42	2.8	2.7	2.9	1.2	1.0	1.2
03/23/82	04:45	2.8	2.7	2.8	1.2	1.1	1.2
03/23/82	10:48	2.8	2.7	2.8	1.4	1.1	1.8
03/23/82	16:51	2.8	2.7	2.9	1.7	1.3	2.0
03/23/82	22:54	2.9	2.8	2.9	1.2	1.1	1.3
03/24/82	04:57	2.8	2.7	2.9	.9	.8	1.1
03/24/82	11:00	2.8	2.7	2.8	1.5	.9	2.0
03/24/82	17:03	2.8	2.7	2.9	1.5	.7	2.0
03/24/82	23:06	2.8	2.7	2.9	.7	.6	.8
03/25/82	05:09	2.7	2.7	2.8	.8	.7	.9
03/25/82	11:12	2.7	2.6	2.7	1.3	.8	1.7
03/25/82	17:15	2.8	2.7	2.8	1.3	.7	1.8
03/25/82	23:18	2.7	2.7	2.8	.6	.5	.7
03/26/82	05:21	2.7	2.6	2.7	.6	.6	.7
03/26/82	11:24	2.6	2.6	2.7	1.2	.6	1.7
03/26/82	17:27	2.7	2.7	2.8	1.3	.9	1.7
03/26/82	23:30	2.7	2.7	2.8	.7	.6	.9
03/27/82	05:33	2.7	2.6	2.8	.7	.6	.7

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES AT RIVER MILE 136.2 SPAWNING SITE
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
03/27/82	11:36	2.6	2.6	2.7	1.4	.7	1.9
03/27/82	17:39	2.7	2.6	2.9	1.7	1.2	2.1
03/27/82	23:42	2.8	2.7	2.9	1.1	1.0	1.2
03/28/82	05:45	2.8	2.7	2.8	.9	.7	1.1
03/28/82	11:48	2.7	2.6	2.8	1.6	.9	2.2
03/28/82	17:51	2.8	2.7	2.9	1.6	1.0	2.2
03/28/82	23:54	2.8	2.7	2.9	.8	.6	1.1
03/29/82	05:57	2.7	2.7	2.8	.6	.5	.8
03/29/82	12:00	2.7	2.6	2.7	1.5	.7	2.1
03/29/82	18:03	2.8	2.7	2.9	1.6	1.0	2.2
03/30/82	00:06	2.8	2.7	2.9	.9	.8	1.1
03/30/82	06:09	2.7	2.7	2.8	.7	.6	.9
03/30/82	12:12	2.7	2.6	2.8	1.6	.9	2.1
03/30/82	18:15	2.8	2.7	2.9	1.4	.8	2.1
03/31/82	00:18	2.8	2.7	2.9	.7	.6	.8
03/31/82	06:21	2.7	2.6	2.7	.6	.6	.8
03/31/82	12:24	2.7	2.6	2.7	1.5	.8	2.0
03/31/82	18:27	2.8	2.7	2.8	1.2	.6	1.7
04/01/82	00:30	2.7	2.7	2.8	.6	.5	.7
04/01/82	06:33	2.6	2.6	2.7	.6	.5	.9
04/01/82	12:36	2.6	2.6	2.7	1.3	.8	1.7
04/01/82	18:39	2.7	2.7	2.8	.9	.4	1.6
04/02/82	00:42	2.7	2.6	2.7	.6	.4	.6
04/02/82	06:45	2.6	2.6	2.7	.6	.5	.8
04/02/82	12:48	2.6	2.6	2.7	1.3	.8	1.6
04/02/82	18:51	2.7	2.6	2.8	1.1	.6	1.6
04/03/82	00:54	2.7	2.6	2.7	.6	.6	.7
04/03/82	06:57	2.6	2.6	2.7	.7	.6	1.1
04/03/82	13:00	2.6	2.6	2.7	1.8	1.1	2.2
04/03/82	19:03	2.8	2.7	2.9	1.4	.9	2.0
04/04/82	01:06	2.8	2.7	2.8	.8	.6	.9
04/04/82	07:09	2.7	2.6	2.8	.8	.6	1.5
04/04/82	13:12	2.7	2.6	2.8	2.2	1.5	2.6
04/04/82	19:15	2.9	2.8	3.0	1.5	1.0	2.4
04/05/82	01:18	2.9	2.7	2.9	.8	.7	1.0
04/05/82	07:21	2.7	2.7	2.8	.9	.6	1.5
04/05/82	13:24	2.8	2.6	2.9	2.4	1.6	2.7

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES AT RIVER MILE 136.2 SPAWNING SITE
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
04/05/82	19:27	3.0	2.8	3.0	1.8	1.2	2.6
04/06/82	01:30	2.9	2.8	3.0	1.2	1.1	1.3
04/06/82	07:33	2.8	2.7	2.9	1.3	1.0	1.9
04/06/82	13:36	2.9	2.8	3.0	2.5	1.9	2.8
04/06/82	19:39	3.0	2.9	3.1	1.6	1.1	2.2
04/07/82	01:42	2.9	2.9	3.0	1.3	1.0	1.4
04/07/82	07:45	2.8	2.8	2.9	1.2	1.0	1.6
04/07/82	13:48	2.9	2.8	3.0	2.2	1.6	2.8
04/07/82	19:51	3.0	2.9	3.0	1.4	.9	1.9
04/08/82	01:54	2.9	2.8	3.0	.9	.8	1.0
04/08/82	07:57	2.8	2.7	2.8	1.1	.9	1.4
04/08/82	14:00	2.8	2.7	2.8	1.6	.5	2.2
04/08/82	20:03	2.9	2.8	2.9	1.3	.5	2.1
04/09/82	02:06	2.8	2.7	2.9	1.0	.3	1.3
04/09/82	08:09	2.8	2.7	2.8	1.5	1.1	2.3
04/09/82	14:12	2.9	2.7	3.0	2.9	2.1	3.4
04/09/82	20:15	3.1	3.0	3.1	1.6	.8	2.5
04/10/82	02:18	2.9	2.8	3.0	.6	.6	.8
04/10/82	08:21	2.8	2.7	2.8	1.2	.6	2.5
04/10/82	14:24	2.9	2.7	3.0	2.9	2.2	3.3
04/10/82	20:27	3.1	3.0	3.1	1.5	.9	2.2
04/11/82	02:30	2.9	2.9	3.0	.8	.7	.9
04/11/82	08:33	2.8	2.7	2.9	1.3	.6	2.4
04/11/82	14:36	2.9	2.7	3.0	2.9	2.4	3.3
04/11/82	20:39	3.1	3.0	3.1	1.2	.6	2.4
04/12/82	02:42	2.9	2.8	3.0	.6	.5	.7
04/12/82	08:45	2.8	2.7	2.8	1.2	.5	2.4
04/12/82	14:48	2.8	2.7	3.0	2.9	2.1	3.2
04/12/82	20:51	3.0	2.9	3.1	1.0	.5	2.1
04/13/82	02:54	2.9	2.8	3.0	.5	.4	.6
04/13/82	08:57	2.7	2.7	2.8	1.3	.5	2.6
04/13/82	15:00	2.9	2.7	3.0	2.9	2.4	3.3
04/13/82	21:03	3.0	2.9	3.1	1.0	.4	2.4
04/14/82	03:06	2.9	2.8	3.0	.5	.4	.6
04/14/82	09:09	2.7	2.6	2.8	1.5	.6	2.8
04/14/82	15:12	2.9	2.8	3.0	2.7	2.1	3.2
04/14/82	21:15	3.0	3.0	3.1	1.6	1.3	2.1

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES AT
RIVER MILE 136.2 SPAWNING SITE
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
04/15/82	03:18	3.0	2.8	3.1	1.2	.8	1.4
04/15/82	09:21	2.9	2.8	2.9	2.1	.8	3.2
04/15/82	15:24	3.1	2.9	3.2	3.5	2.5	4.2
04/15/82	21:27	3.2	3.1	3.3	1.2	.6	2.4
04/16/82	03:30	3.0	2.9	3.1	.6	.6	.8
04/16/82	09:33	2.8	2.8	2.9	2.3	.7	3.9
04/16/82	15:36	3.1	2.9	3.3	3.9	3.1	4.4
04/16/82	21:39	3.3	3.2	3.4	1.6	1.0	3.0
04/17/82	03:42	3.1	2.9	3.3	.7	.6	1.0
04/17/82	09:45	2.9	2.9	3.0	1.9	.8	3.0
04/17/82	15:48	3.1	2.9	3.2	3.4	2.5	4.0
04/17/82	21:51	3.2	3.2	3.3	1.7	1.4	2.5
04/18/82	03:54	3.1	3.1	3.2	1.3	1.0	1.4
04/18/82	09:57	3.0	2.9	3.1	2.1	1.2	4.0
04/18/82	16:00	3.1	2.9	3.3	3.3	2.0	4.1
04/18/82	22:03	3.2	3..	3.3	1.3	.7	2.0
04/19/82	04:06	3.0	2.9	3.2	.5	.4	.6
04/19/82	10:09	2.9	2.8	2.9	2.4	.6	3.8
04/19/82	16:12	3.1	2.9	3.3	3.2	1.9	4.1
04/19/82	22:15	3.2	3.1	3.3	1.0	.5	1.9
04/20/82	04:18	3.0	3.0	3.1	1.3	1.2	1.4
04/20/82	10:21	3.0	2.9	3.1	3.2	1.2	4.7
04/20/82	16:24	3.4	3.1	3.5	4.1	2.4	5.0
04/20/82	22:27	3.4	3.2	3.5	1.4	.8	2.3
04/21/82	04:30	3.1	3.0	3.3	1.1	.4	1.9
04/21/82	10:33	3.1	3.0	3.3	4.2	1.9	5.8
04/21/82	16:36	3.5	3.2	3.7	4.5	2.6	5.7
04/21/82	22:39	3.6	3.4	3.7	1.7	1.3	2.6
04/22/82	04:42	3.3	3.2	3.4	1.5	1.4	1.7
04/22/82	10:45	3.2	3.1	3.4	4.5	1.7	6.7
04/22/82	16:48	3.6	3.4	3.7	4.1	2.3	5.9
04/22/82	22:51	3.6	3.4	3.7	1.3	.9	2.2
04/23/82	04:54	3.3	3.1	3.4	1.3	.9	2.1
04/23/82	10:57	3.2	3.1	3.4	4.3	2.1	5.3
04/23/82	17:00	3.6	3.4	3.7	3.8	2.2	5.4
04/23/82	23:03	3.5	3.4	3.7	1.6	1.3	2.2

MIDWINTER INTERGRAVEL AND SURFACE WATER TEMPERATURES AT
RIVER MILE 136.2 SPAWNING SITE
RAW DATA

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	WATER TEMP-DEG C AVG	WATER TEMP-DEG C MIN	WATER TEMP-DEG C MAX
04/24/82	05:06	3.3	3.2	3.4	1.5	1.2	2.5
04/24/82	11:09	3.3	3.2	3.4	4.0	2.6	4.8
04/24/82	17:12	3.5	3.4	3.6	3.3	2.2	4.5
04/24/82	23:15	3.5	3.4	3.6	1.8	1.6	2.1
04/25/82	05:18	3.3	3.2	3.4	1.7	1.5	3.0
04/25/82	11:21	3.3	3.2	3.5	4.9	3.0	6.3
04/25/82	17:24	3.6	3.5	3.7	3.8	2.3	5.7
04/25/82	23:27	3.6	3.5	3.7	1.5	1.0	2.3
04/26/82	05:30	3.3	3.2	3.5	1.4	.8	3.0

AVERAGE DAILY INTERGRAVEL WATER TEMPERATURES AT SLOUGH 21

DATE	TIME	GRAVEL TEMP-DEG C AVG	GRAVEL TEMP-DEG C MIN	GRAVEL TEMP-DEG C MAX	UNUSED CHANNEL AVG	UNUSED CHANNEL MIN	UNUSED CHANNEL MAX
03/09/82	12:00	2.5					
03/10/82	12:00	2.5					
03/11/82	12:00	2.5					
03/12/82	12:00	2.5					
03/13/82	12:00	2.5					
03/14/82	12:00	2.5					
03/15/82	12:00	2.5					
03/16/82	12:00	2.5					
03/17/82	12:00	2.5					
03/18/82	12:00	2.5					
03/19/82	12:00	2.5					
03/20/82	12:00	2.5					
03/21/82	12:00	2.5					
03/22/82	12:00	2.5					
03/23/82	12:00	2.5					
03/24/82	12:00	2.5					
03/25/82	12:00	2.5					
03/26/82	12:00	2.5					
03/27/82	12:00	2.5					
03/28/82	12:00	2.5					
03/29/82	12:00	2.5					
03/30/82	12:00	2.5					
03/31/82	12:00	2.5					
04/01/82	12:00	2.5					
04/02/82	12:00	2.5					
04/03/82	12:00	2.5					
04/04/82	12:00	2.5					
04/05/82	12:00	2.5					
04/06/82	12:00	2.5					
04/07/82	12:00	2.5					
04/08/82	12:00	2.5					
04/09/82	12:00	2.5					
04/10/82	12:00	2.5					
04/11/82	12:00	2.5					
04/12/82	12:00	2.5					
04/13/82	12:00	2.0					
04/14/82	12:00	2.5					
04/15/82	12:00	2.5					
04/16/82	12:00	2.5					
04/17/82	12:00	2.5					
04/18/82	12:00	2.5					
04/19/82	12:00	2.5					
04/20/82	12:00	2.5					

Appendix B

Ryan Thermograph Data

Location	Page
Whiskers Creek Slough	
Surface water temperatures Feb. 17 - May 6, 1982	B1-7
Slough 9	
Surface water temperatures Feb. 10 - May 6, 1982	B8-15
Intergravel temperatures Feb. 9 - May 6, 1982	B16-23
Slough 9B	
Surface water temperatures Feb. 27 - May 6, 1982	B24-29
Intergravel temperatures Feb. 27 - May 6, 1982	B30-35
Slough 11	
Surface water temperatures Feb 24 - Apr. 22, 1982	B36-40
Slough 19	
Surface water temperatures Feb. 7 - May 6, 1982	B41-48
Intergravel temperatures Feb. 5 - Apr 13, 1982	B49-54
Slough 21	
Surface water temperatures (A) Mar. 8 - May 2, 1982	B55-59
Surface water temperatures (B) Feb. 6 - May 3, 1982	B60-67
Intergravel temperatures Feb. 6 - May 4, 1982	B68-74

OBS ID #: 000177 * * * FORM AN-82-06/CORRECTED * * * PAGE 01 OF 07

THERMOGRAPH #: 62076 SAMPLING SITE: WHISKERS CREEK SLOUGH

RM: 101.2 TRM: GEOCODE: S/26N/05W/03/ADB/ CORRECTION FACTOR: -1.5

TIME	DATE 820222	820223	820224	820225	820226	820227	820228	TIME
0200		1.5	1.0	0.0	.5	.5	1.0	0200
0400		1.5	.5	0.0	0.0	.5	1.0	0400
0600		1.5	.5	0.0	0.0	.5	1.0	0600
0800		1.5	0.0	0.0	0.0	.5	1.0	0800
1000		1.5	0.0	0.0	0.0	.5	1.0	1000
1200		1.5	0.0	0.0	0.0	1.0	1.0	1200
1400	1.5	1.5	0.0	.5	0.0	1.0	1.0	1400
1600	1.5		0.0	.5	0.0	1.0	1.0	1600
1800	1.5		0.0	.5	0.0	1.0	1.0	1800
2000	1.5		0.0	.5	0.0	1.0	1.0	2000
2200	1.5		0.0	.5	0.0	1.0	1.0	2200
2400	1.5		0.0	.5	0.0	1.0	1.0	2400
MEAN			.2	.3	.0	.8	1.0	MEAN
MIN	1.5	1.5	0.0	0.0	0.0	.5	1.0	MIN
MAX	1.5	1.5	1.0	.5	.5	1.0	1.0	MAX

THERMOGRAPH #: 62076 SAMPLING SITE: WHISKERS CREEK SLOUGH

RM: 101.2 TRM: GEOCODE: 8/26N/05W/03/ADB/ CORRECTION FACTOR: -1.5

TIME	DATE 820301	820302	820303	820304	820305	820306	820307	820308	820309	820310	820311	820312	TIME
0200	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	0200
0400	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	0400
0600	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	0600
0800	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	0800
1000	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1000
1200	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1200
1400	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1400
1600	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1600
1800	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1800
2000	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2000
2200	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2200
2400	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	2400
MEAN	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	MEAN
MIN	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	MIN
MAX	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	MAX

OBS ID #: 000179 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62076 SAMPLING SITE: WHISKERS CREEK SLOUGH

RM: 101.2 TRM: GEOCODE: 8/26N/05W/03/ADB/ CORRECTION FACTOR: -1.5

DATE

TIME	820313	820314	820315	820316	820317	820318	820319	820320	820321	820322	820323	820324	TIME
0200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0200
0400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0400
0600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0600
0800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0800
1000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1000
1200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1200
1400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1400
1600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1600
1800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1800
2000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2000
2200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2200
2400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2400
MEAN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	MEAN
MIN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	MIN
MAX	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	MAX

OBS ID #: 000180 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62076 SAMPLING SITE: WHISKERS CREEK SLOUGH

RM: 101.2 TRM: GEOCODE: S/26N/05W/03/ADB/ CORRECTION FACTOR: -1.5

	DATE											
TIME	820325	820326	820327	820328	820329	820330	820331	820401	820402	820403	820404	820405
0200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
0400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
0600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
0800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
1800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
MEAN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
MIN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
MAX	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

OBS ID #: 000181 * * * FORM AH-82-06/CORRECTED * * * PAGE 05 OF 07

THERMOGRAPH #: 62076 SAMPLING SITE: WHISKERS CREEK SLOUGH

RM: 101.2 TRM: GEOCODE: S/26N/05W/03/ADB/ CORRECTION FACTOR: -1.5

TIME	DATE 820406	820407	820408	820409	820410	820411	820412	820413	820414	820415	820416	820417	TIME
0200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0200
0400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0400
0600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0600
0800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0800
1000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1000
1200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1200
1400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1400
1600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1600
1800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1800
2000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2000
2200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2200
2400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2400
MEAN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	MEAN
MIN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	MIN
MAX	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	MAX

OBS ID #: 000182 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62076 SAMPLING SITE: WHISKERS CREEK SLOUGH

RM: 101.2 TRM: GEOCODE: 8/26N/05W/03/ADB/ CORRECTION FACTOR: -1.5

DATE

TIME	820418	820419	820420	820421	820422	820423	820424	820425	820426	820427	820428	820429	TIME
0200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	0200
0400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	0400
0600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	0600
0800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	0800
1000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	1000
1200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	1200
1400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	1400
1600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	1600
1800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	1800
2000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2000
2200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2200
2400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2400
MEAN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.8	2.0	2.0	2.0	MEAN
MIN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	MIN
MAX	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	MAX

OBS ID #: 000183 * * * FORM AH-82-06/CORRECTED * * * PAGE 07 OF 07

THERMOGRAPH #: 62076 SAMPLING SITE: WHISKERS CREEK SLOUGH

RM: 101.2 TRM: GEOCODE: 8/26N/05W/03/ADB/ CORRECTION FACTOR: -1.5

TIME	DATE 820430	820501	820502	820503	820504	820505	820506	TIME
0200	2.0	2.0	2.0	1.5	1.5	1.5	1.5	0200
0400	2.0	2.0	1.5	1.5	1.5	1.5	1.5	0400
0600	2.0	2.0	1.5	1.5	1.5	1.5	1.5	0600
0800	2.0	2.0	1.5	1.5	1.5	1.5	1.5	0800
1000	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1000
1200	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1200
1400	2.0	2.0	2.0	1.5	1.5	1.5		1400
1600	2.0	2.0	2.0	1.5	1.5	1.5		1600
1800	2.0	2.0	1.5	1.5	1.5	1.5		1800
2000	2.0	2.0	1.5	1.5	1.5	1.5		2000
2200	2.0	2.0	1.5	1.5	1.5	1.5		2200
2400	2.0	2.0	1.5	1.5	1.5	1.5		2400
MEAN	2.0	2.0	1.6	1.5	1.5	1.5		MEAN
MIN	2.0	2.0	1.5	1.5	1.5	1.5	1.5	MIN
MAX	2.0	2.0	2.0	1.5	1.5	1.5	1.5	MAX

OBS ID #: 000184 * * * FORM AH-82-06/CORRECTED * * * PAGE 01 OF 03

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUGH 9 BELOW TRIBUTARY 3

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: .7

	DATE											
TIME	820210	820211	820212	820213	820214	820215	820216	820217	820218	820219	820220	820221	TIME
0200		.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	0200
0400		.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	0400
0600		.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	0600
0800		.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	0800
1000		.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	1000
1200		.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	1200
1400		.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	.7	1400
1600	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	.7	1600
1800	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	.7	1800
2000	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	.7	2000
2200	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	.7	2200
2400	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	.7	2400
MEAN		.2	.2	.2	.2	.2	.2	.2	.2	.4	.7	.7	MEAN
MIN	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	MIN
MAX	.2	.2	.2	.2	.2	.2	.2	.2	.2	.7	.7	.7	MAX

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUCH 9 BELOW TRIBUTARY B

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABC/ CORRECTION FACTOR: .7

TIME	DATE 820222	820223	820224	820225	820226	820227	820228	820301	820302	820303	820304	820305	TIME
0200	.7	.7	1.2	1.2	1.2	1.7	1.7	1.2	1.2	1.2	.7	1.7	0200
0400	.7	.7	1.2	1.2	1.2	1.7	1.7	1.2	1.2	1.2	.7	1.7	0400
0600	.7	.7	1.2	1.2	1.2	1.7	1.2	1.2	1.2	.7	.7	1.7	0600
0800	.7	.7	1.2	1.2	1.2	1.7	1.2	1.2	1.2	.7	.7	1.7	0800
1000	.7	.7	1.2	1.2	1.2	1.7	1.7	1.2	1.2	1.2	1.7	2.2	1000
1200	.7	.7	1.2	1.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.2	1200
1400	.7	1.2	1.7	1.7	1.7	2.2	2.2	2.2	2.2	1.7	2.2	2.7	1400
1600	.7	1.2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.7	1600
1800	.7	1.2	1.2	1.2	1.7	1.7	1.7	1.7	1.7	1.2	1.7	2.2	1800
2000	.7	1.2	1.2	1.2	1.7	1.7	1.7	1.7	1.7	1.2	1.7	2.2	2000
2200	.7	1.2	1.2	1.2	1.7	1.7	1.7	1.7	1.2	.7	1.7	2.2	2200
2400	.7	1.2	1.2	1.2	1.7	1.7	1.7	1.2	1.2	.7	1.7	2.2	2400
MEAN	.7	.9	1.3	1.3	1.5	1.7	1.7	1.5	1.4	1.2	1.4	2.1	MEAN
MIN	.7	.7	1.2	1.2	1.2	1.7	1.2	1.2	1.2	.7	.7	1.7	MIN
MAX	.7	1.2	1.7	1.7	1.7	2.2	2.2	2.2	2.2	1.7	2.2	2.7	MAX

OBS ID #: 000186 * * * FORM AH-92-06/CORRECTED * * *

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUGH 9 BELOW TRIBUTARY B

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: .7

TIME	DATE 820306	820307	820308	62030	420310	820311	820312	820313	820314	820315	820316	TIME
0200	2.2	2.2	2.7	2.2	2.2	.7	.7	.7	.7	1.7	1.7	0200
0400	2.2	2.2	2.7	2.2	2.2	.7	.7	.7	.7	1.7	1.7	0400
0600	2.2	2.2	2.2	2.2	2.2	.7	.7	.7	.7	1.7	1.7	0600
0800	2.2	2.2	2.2	1.7	2.2	.7	1.2	.7	1.2	1.7	1.7	0800
1000	2.2	2.7	2.7	2.2	2.2	.7	1.7	.7	1.2	2.2	2.2	1000
1200	2.7	2.7	3.2	2.7	2.2	1.7	2.2	1.7	1.7	2.7		1200
1400	2.7	3.2	3.2	2.7	2.7	2.2	2.7	2.2	2.2	2.7		1400
1600	2.7	2.7	2.7	2.2	2.7	2.2	2.2	1.7	2.2	2.7		1600
1800	2.7	2.7	2.7	2.2	2.2	1.7	1.7	1.2	1.7	2.2		1800
2000	2.2	2.7	2.7	2.2	1.2	1.2	1.2	.7	1.7	2.2		2000
2200	2.2	2.7	2.7	2.2	1.2	.7	1.2	.7	1.7	2.2		2200
2400	2.2	2.7	2.2	2.2	.7	.7	.7	.7	1.7	1.7		2400
MEAN	2.4	2.6	2.7	2.2	2.0	1.2	1.4	1.0	1.4	2.1		MEAN
MIN	2.2	2.2	2.2	1.7	.7	.7	.7	.7	.7	1.7	1.7	MIN
MAX	2.7	3.2	3.2	2.7	2.7	2.2	2.7	2.2	2.2	2.7	2.2	MAX

OBS ID #: 000187 * * * FORM AH-82-06/CORRECTED * * * PAGE 01 OF 05

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUGH 9 BELOW TRIBUTARY B

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: .6

TIME	DATE 820316	820317	820318	820319	820320	820321	820322	820323	820324	820325	820326	820327	TIME
0200		1.1	2.6	2.6	2.6	1.6	2.6	2.6	2.6	2.1	1.6	1.1	0200
0400		1.1	2.6	2.6	2.1	1.6	2.6	2.6	2.1	2.1	1.6	1.1	0400
0600		1.1	2.6	2.1	2.1	1.6	2.6	2.6	2.1	2.1	1.6	1.1	0600
0800		1.1	2.6	2.1	2.1	2.1	2.6	2.6	2.6	2.1	1.6	1.1	0800
1000		1.6	2.6	2.1	2.6	1.6	3.1	3.1	3.1	2.6	1.6	1.6	1000
1200		2.6	3.6	2.6	3.1	2.1	3.6	3.6	3.6	2.6	2.1	1.6	1200
1400		2.6	3.1	2.6	2.6	1.6	3.6	3.6	3.6	2.6	2.1	2.1	1400
1600		2.6	3.1	2.1	2.6	2.1	3.1	3.1	2.6	2.1	1.6	1.6	1600
1800		2.6	2.6	2.1	2.6	2.6	2.6	3.1	2.1	1.6	1.6	1.6	1800
2000	1.6	2.6	2.6	2.1	2.6	2.6	2.6	2.6	2.1	1.6	1.6	1.6	2000
2200	1.6	2.6	2.6	2.1	2.1	2.6	2.6	2.6	2.1	1.6	1.6	1.6	2200
2400	1.6	2.6	2.6	2.6	2.1	2.6	2.6	2.6	2.1	1.6	1.1	1.6	2400
MEAN		2.0	2.8	2.3	2.4	2.1	2.8	2.9	2.6	2.1	1.6	1.5	MEAN
MIN	1.6	1.1	2.6	2.1	2.1	1.6	2.6	2.6	2.1	1.6	1.1	1.1	MIN
MAX	1.6	2.6	3.6	2.6	3.1	2.6	3.6	3.6	3.6	2.6	2.1	2.1	MAX

OBS ID #: 000188 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUGH 9 BELOW TRIBUTARY B

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: .6

TIME	DATE 820328	820329	820330	820331	820401	820402	820403	820404	820405	820406	820407	820408	TIME
0200	1.6	.6	.6	.6	.6	.6	.6	.6	.6	1.1	1.6	1.1	0200
0400	1.6	.6	.6	.6	.6	.6	.6	.6	.6	1.1	1.6	1.1	0400
0600	1.1	.6	.6	.6	.6	.6	.6	.6	.6	1.1	1.1	1.1	0600
0800	1.1	.6	.6	.6	.6	.6	.6	.6	.6	1.1	1.6	1.1	0800
1000	1.1	1.1	1.1	.6	.6	.6	.6	.6	1.1	1.6	1.6	.6	1000
1200	1.6	1.6	1.1	1.1	1.1	1.1	.6	1.1	1.1	1.6	1.6	1.6	1200
1400	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.6	2.1	2.1	1.6	1400
1600	1.6	1.6	1.1	1.1	.6	1.1	1.1	1.1	1.6	1.6	1.6	1.6	1600
1800	1.1	1.1	.6	.6	.6	.6	.6	.6	1.1	1.6	1.6	1.1	1800
2000	1.1	1.1	.6	.6	.6	.6	.6	.6	1.1	1.6	1.1	1.1	2000
2200	1.1	1.1	.6	.6	.6	.6	.6	.6	1.1	1.6	1.1	1.1	2200
2400	.6	.6	.6	.6	.6	.6	.6	.6	1.1	1.6	1.1	1.1	2400
MEAN	1.3	1.0	.8	.7	.7	.7	.7	.7	1.0	1.5	1.5	1.2	MEAN
MIN	.6	.6	.6	.6	.6	.6	.6	.6	.6	1.1	1.1	.6	MIN
MAX	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1	1.6	2.1	2.1	1.6	MAX

OBS ID #: 000189 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUGH 9 BELOW TRIBUTARY B

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABC/ CORRECTION FACTOR: .6

TIME	DATE 820409	820410	820411	820412	820413	820414	820415	820416	820417	820418	820419	820420	TIME
0200	1.1	1.1	1.1	1.1	1.1	1.1	1.6	1.6	1.6	2.1	1.1	1.6	0200
0400	1.1		1.1						1.6	1.6	1.1	1.6	0400
0600	1.1		1.1						1.6	1.6	1.1	1.6	0600
0800	1.6		1.6			1.6			1.6	1.6	1.6	2.1	0800
1000	1.6		1.6	1.6	1.6	2.1	2.1	2.6	2.1	2.1	2.6	2.6	1000
1200	2.1	2.1	2.6	2.6	2.6		2.6	3.1	2.6	2.6	2.6	3.6	1200
1400	2.6	2.1	2.6	2.6	2.6		2.6	3.1	2.6	2.6	2.6	3.6	1400
1600	2.1	2.1	2.1	2.1	2.1		2.6	2.6	2.6	2.6	2.6	3.1	1600
1800	1.6	1.6	1.6	1.6	1.6		2.1	2.6	2.1	2.1	2.1	2.6	1800
2000	1.6	1.6	1.6	1.6	1.6	1.6	2.1		2.1	2.1	1.6	2.1	2000
2200	1.6	1.6	1.1	1.6	1.1	1.6	1.6		2.1	1.6	1.6	2.1	2200
2400	1.1	1.6	1.1	1.1	1.1	1.6	1.6		2.1	1.6	1.6	1.6	2400
MEAN	1.6		1.6	1.8	1.7		2.1		2.1	2.0	1.9	2.3	MEAN
MIN	1.1	1.1	1.1	1.1	1.1	1.1	1.6	1.6	1.6	1.6	1.1	1.6	MIN
MAX	2.6	2.1	2.6	2.6	2.6	2.1	2.6	3.1	2.6	2.6	2.6	3.6	MAX

OBS ID #: 000190 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUGH 9 BELOW TRIBUTARY B

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: .6

TIME	DATE 820421	820422	820423	820424	820425	820426	820427	820428	820429	820430	820501	820502	TIME
0200	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.1	2.1	2.6	0200
0400	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.1	2.1	2.6	0400
0600	2.1	2.1	2.1	2.1	2.1	2.1	2.6	3.1	2.6	2.1	2.1	3.1	0600
0800	2.6	2.6	2.6	2.6	3.1	2.6	3.1	3.1	3.1	3.1	3.1	3.6	0800
1000	3.1	3.1	3.6	3.1	3.6	4.1	3.6	4.6	4.1	4.1	4.6	4.6	1000
1200	3.6	4.1	3.6	3.6	4.1	5.1	3.6	4.1	5.1	4.6	5.6	5.1	1200
1400	3.1	3.6	3.6	3.6	4.1	4.6	4.1	4.6	5.1	5.1	5.6	6.1	1400
1600	2.6	3.1	3.1	3.1	3.6	4.1	4.1	4.1	3.6	4.6	5.1	5.1	1600
1800	2.6	2.6	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.6	4.1	4.1	1800
2000	2.6	2.1	2.1	2.6	2.6	2.6	2.6	2.6	3.1	3.1	3.1	3.1	2000
2200	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	2.6	3.1	3.1	2200
2400	2.1	1.6	2.1	2.1	2.6	2.6	2.6	2.6	2.6	2.6	3.1	2.6	2400
MEAN	2.6	2.6	2.6	2.6	3.0	3.2	3.1	3.3	3.3	3.3	3.6	3.8	MEAN
MIN	2.1	1.6	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.1	2.1	2.6	MIN
MAX	3.6	4.1	3.6	3.6	4.1	5.1	4.1	4.6	5.1	5.1	5.6	6.1	MAX

OBS ID #: 000191 * * * FORM AH-82-06/CORRECTED * * * PAGE 05 OF 05

THERMOGRAPH #: 62079 SAMPLING SITE: SLOUGH 9 BELOW TRIBUTARY B

RM: 129.0 THM: GEOCODE: 8/30N/03W/16/ABC/ CORRECTION FACTOR: .6

---- D A T E ----

TIME	820503	820504	820505	820506	TIME
0200	2.6	2.6	2.6	2.6	0200
0400	2.6	2.6	2.1	2.6	0400
0600	2.6	2.6	2.1	2.6	0600
0800	3.1	3.1	3.6	3.6	0800
1000	4.6	5.1	4.6	5.6	1000
1200	4.6	5.6	6.1	6.6	1200
1400	5.1	5.6	5.6		1400
1600	4.6	5.1	4.6		1600
1800	3.6	4.1	4.1		1800
2000	3.1	3.1	3.1		2000
2200	3.1	2.6	2.6		2200
2400	3.1	2.6	2.6		2400
MEAN	3.6	3.7	3.6		MEAN
MIN	2.6	2.6	2.1	2.6	MIN
MAX	5.1	5.6	6.1	6.6	MAX

OBS ID #: 000222 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62199 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

TIME	DATE 820209	820210	820211	820212	820213	820214	820215	820216	820217	820218	820219	820220	TIME
0200		.5	.5	0.0	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	0200
0400		.5	.5	0.0	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	0400
0600		.5	.5	0.0	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	0600
0800		.5	.5	0.0	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	0800
1000		.5	.5	0.0	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	1000
1200		.5	.5	0.0	0.0	0.0	0.0	0.0	.5	.5	1.0	1.0	1200
1400		.5	.5	.5	0.0	0.0	0.0	.5	1.0	1.0	1.0	1.0	1400
1600		.5	.5	.5	0.0	0.0	0.0	.5	1.0	1.0	1.0	1.0	1600
1800	1.0	.5	.5	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	1.0	1800
2000	1.0	.5	.5	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	.5	2000
2200	1.0	.5	.5	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	.5	2200
2400	.5	.5	.5	0.0	0.0	0.0	0.0	.5	.5	.5	1.0	.5	2400
MEAN		.5	.5	.1	0.0	0.0	0.0	.2	.6	.6	.8	.9	MEAN
MIN	.5	.5	.5	0.0	0.0	0.0	0.0	0.0	.5	.5	.5	.5	MIN
MAX	1.0	.5	.5	.5	0.0	0.0	0.0	.5	1.0	1.0	1.0	1.0	MAX

OBS ID #: 000223 * * * FORM AR-82-06/CORRECTED * * * PAGE 02 OF 08

THERMOGRAPH #: 62199 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

	DATE											
TIME	820221	820222	820223	820224	820225	820226	820227	820228	820301	820302	820303	820304	TIME
0200	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	.5	0200
0400	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	.5	0400
0600	.5		.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	.5	0600
0800	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	.5	0800
1000	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1000
1200	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1200
1400	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1400
1600	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1600
1800	.5	.5	1.0	1.0	1.5	1.0	1.5	1.5	1.5	1.5	1.0	1.5	1800
2000	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.5	2000
2200	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2200
2400	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2400
MEAN	.6	.6	.7	.8	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	MEAN
MIN	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	.5	MIN
MAX	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	MAX

OBS ID #: 000224 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62199 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRI: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

TIME	DATE 820305	820306	820307	820308	820309	820310	820311	820312	820313	820314	820315	820316	TIME
0200	1.5	1.5	2.0	2.0	2.0	2.0	1.0	.5	1.0	.5	1.0	1.5	0200
0400	1.5	1.5	2.0	2.0	2.0	2.0	1.0	.5	.5	.5	1.0	1.5	0400
0600	1.5	1.5	2.0	2.0	2.0	2.0	.5	.5	.5	.5	1.0	1.5	0600
0800	1.5	1.5	2.0	2.0	2.0	2.0	.5	1.0	.5	.5	1.0	1.5	0800
1000	1.0	1.5	2.0	2.0	2.0	2.0	.5	1.0	.5	.5	1.0	1.5	1000
1200	1.5	2.0	2.0	2.0	2.0	2.0	1.0	1.5	1.0	1.0	1.5	2.0	1200
1400	2.0	2.0	2.0	2.0	2.0	2.0	1.5	2.0	1.5	1.5	2.0	2.0	1400
1600	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.5	2.0	2.0	1600
1800	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.0	1.5	2.0	2.0	1800
2000	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.0	1.0	1.0	2.0	1.5	2000
2200	1.5	2.0	2.0	2.0	2.0	1.5	1.0	1.0	.5	1.0	1.5	1.5	2200
2400	1.5	2.0	2.0	2.0	2.0	1.0	1.0	1.0	.5	1.0	1.5	1.5	2400
MEAN	1.6	1.8	2.0	2.0	2.0	1.8	1.0	1.1	.8	.9	1.5	1.7	MEAN
MIN	1.0	1.5	2.0	2.0	2.0	1.0	.5	.5	.5	.5	1.0	1.5	MIN
MAX	2.0	2.0	2.0	2.0	2.0	2.0	1.5	2.0	1.5	1.5	2.0	2.0	MAX

OBS ID #: 000225 * * * FORM AR-82-06/CORRECTED * * * PAGE 04 OF 08

THERMOCRAPH #: 62199 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

TIME	DATE 820317	820318	820319	820320	820321	820322	820323	820324	820325	820326	820327	820328	TIME
0200	1.5	2.0	2.0	2.0	1.5	2.0	2.0	2.0	2.0	1.0	.5	1.0	0200
0400	1.0	2.0	2.0	2.0	1.5	2.0	2.0	2.0	2.0	1.0	.5	1.0	0400
0600	1.0	2.0	2.0	2.0	1.5	2.0	2.0	2.0	2.0	.5	.5	.5	0600
0800	1.0	2.0	1.5	2.0	1.5	2.0	2.0	2.0	2.0	1.0	.5	.5	0800
1000	1.0	2.0	1.5	2.0	1.5	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1000
1200	1.5	2.0	2.0	2.0	1.5	2.5	2.5	2.5	2.0	1.5	1.0	1.5	1200
1400	1.5	2.5	2.0	2.0	1.5	2.5	2.5	2.5	2.0	1.5	1.5	1.5	1400
1600	2.0	2.5	2.0	2.0	1.5	2.5	2.5	2.5	2.0	1.5	1.5	1.0	1600
1800	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	1.5	1.0	1.0	1.0	1800
2000	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	.5	2000
2200	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	.5	2200
2400	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	.5	1.0	.5	2400
MEAN	1.5	2.1	1.9	2.0	1.7	2.1	2.2	2.1	1.7	1.0	.9	.9	MEAN
MIN	1.0	2.0	1.5	2.0	1.5	2.0	2.0	2.0	1.0	.5	.5	.5	MIN
MAX	2.0	2.5	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	1.5	MAX

OBS ID #: 000226 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62199 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

TIME	DATE 820329	820330	820331	820401	820402	820403	820404	820405	820406	820407	820408	820409	TIME
0200	.5	.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0200
0400	.5	.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0400
0600	.5	.5	0.0	0.0	0.0	0.0	0.0	.5	1.0	1.0	1.0	1.0	0600
0800	.5	.5	0.0	0.0	0.0	0.0	0.0	.5	1.0	1.0	1.0	1.0	0800
1000	.5	.5	0.0	0.0	.5	0.0	0.0	1.0	1.0	1.5	.5	1.5	1000
1200	1.0	1.0	.5	.5	.5	.5	.5	1.0	1.5	1.5	1.0	2.0	1200
1400	1.0	1.0	.5	.5	.5	.5	.5	1.0	2.0	2.0	1.0	2.0	1400
1600	1.0	.5	.5	.5	.5	.5	.5	1.0	1.5	1.5	1.0	2.0	1600
1800	.5	.5	.5	0.0	.5	.5	.5	1.0	1.0	1.0	1.0	1.5	1800
2000	.5	0.0	0.0	0.0	0.0	0.0	.5	1.0	1.0	1.0	1.0	1.0	2000
2200	.5	0.0	0.0	0.0	0.0	0.0	.5	1.0	1.0	1.0	1.0	1.0	2200
2400	.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2400
MEAN	.6	.5	.2	.1	.2	.2	.2	.7	1.2	1.2	1.0	1.3	MEAN
MIN	.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	.5	1.0	MIN
MAX	1.0	1.0	.5	.5	.5	.5	.5	1.0	2.0	2.0	1.0	2.0	MAX

THERMOGRAPH #: 62:99 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

TIME	DATE 820410	820411	820412	820413	820414	820415	820416	820417	820418	820419	820420	820421	TIME
0200	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	.5	1.0	1.5	0200
0400	1.0	1.0	1.0	.5	.5	1.0	1.0	1.0	1.5	.5	1.0	1.0	0400
0600	1.0	1.0	.5	.5	1.0	1.0	1.0	1.0	1.0	.5	1.0	1.5	0600
0800	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.0	1.0	1.5	2.0	0800
1000	1.5	1.5	1.0	1.5	1.5	2.0	2.0	1.5	2.0	2.0	2.0	2.5	1000
1200	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	3.0	1200
1400	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.0	3.0	2.5	1400
1600	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.0	2.5	2.0	1600
1800	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0	1.5	1.5	2.0	2.0	1800
2000	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.0	1.5	2.0	2000
2200	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0	1.5	1.5	2200
2400	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.5	1.5	2400
MEAN	1.3	1.3	1.2	1.2	1.3	1.6	1.6	1.5	1.5	1.2	1.7	1.9	MEAN
MIN	1.0	1.0	.5	.5	.5	1.0	1.0	1.0	1.0	.5	1.0	1.0	MIN
MAX	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.0	3.0	3.0	MAX

OBS ID #: 000228 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62199 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

TIME	DATE 820422	820423	820424	820425	820426	820427	820428	820429	820430	820501	820502	820503	TIME
0200	1.5	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	0200
0400	1.5	1.0	1.5	2.0	2.0	2.0	2.0	2.0	1.5	1.5	2.5	2.0	0400
0600	1.5	1.5	1.5	2.0	1.5	2.0	2.5	2.0	1.5	2.0	2.5	2.0	0600
0800	2.0	2.0	2.0	2.5	2.5	2.5	3.0	3.0	2.5	3.0	3.5	3.0	0800
1000	2.5	3.0	2.5	3.0	3.5	3.0	4.0	4.0	3.5	4.5	4.5	4.5	1000
1200	3.0	3.0	3.0	3.5	4.5	3.0	4.0	4.5	4.5	5.5	5.0	4.5	1200
1400	3.0	3.0	3.0	3.5	4.5	3.5	4.0	4.5	5.0	5.5	6.0	5.0	1400
1600	2.5	2.5	2.5	3.0	3.5	3.5	3.5	3.5	4.5	5.0	5.0	4.5	1600
1800	2.0	2.0	2.0	2.5	2.5	2.5	3.0	3.0	3.0	3.5	4.0	3.5	1800
2000	1.5	1.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	2000
2200	1.5	1.5	2.0	2.0	2.0	2.5	2.5	2.0	2.5	3.0	3.0	3.0	2200
2400	1.0	1.5	2.0	2.0	2.0	2.0	2.5	2.0	2.0	3.0	2.5	3.0	2400
MEAN	2.0	2.0	2.1	2.5	2.7	2.6	3.0	2.9	2.9	3.5	3.7	3.4	MEAN
MIN	1.0	1.0	1.5	2.0	1.5	2.0	2.0	2.0	1.5	1.5	2.5	2.0	MIN
MAX	3.0	3.0	3.0	3.5	4.5	3.5	4.0	4.5	5.0	5.5	6.0	5.0	MAX

OBS ID #: 000229 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62199 SAMPLING SITE: SLOUGH 9 BELOW TRIB B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABC/ CORRECTION FACTOR: 0.0

TIME	DATE 820504	DATE 820505	DATE 820506	TIME
0200	2.0	2.0	2.5	0200
0400	2.0	2.0	2.0	0400
0600	2.5	2.0	2.5	0600
0800	3.0	3.5	3.5	0800
1000	5.0	5.0	5.5	1000
1200	5.0	6.0	6.5	1200
1400	5.5	5.5	6.5	1400
1600	5.0	5.0		1600
1800	4.0	4.0		1800
2000	3.0	3.0		2000
2200	3.0	3.0		2200
2400	2.5	2.5		2400
MEAN	3.5	3.6		MEAN
MIN	2.0	2.0	2.0	MIN
MAX	5.5	6.0	6.5	MAX

OBS ID #: 000171 * * * FORM AK-82-06/CORRECTED * * * PAGE 01 OF 06

THERMOGRAPH #: 62089 SAMPLING SITE: SLOUGH 9B

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABB/ CORRECTION FACTOR: .8

TIME	DATE 820227	820228	820301	820302	820303	820304	820305	820306	820307	820308	820309	820310	TIME
0200		1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0200
0400		1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0400
0600		1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0600
0800		1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0800
1000		1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1000
1200	1.3	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1200
1400	1.3	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1400
1600	1.3	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1600
1800	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1800
2000	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.3	1.8	1.8	1.8	2000
2200	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2200
2400	1.3	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2400
MEAN		1.5	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	MEAN
MIN	1.3	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	MIN
MAX	1.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.3	1.8	1.8	1.8	MAX

OBS ID #: 000172 * * * FORM AH-82-06/CORRECTED * * * PAGE 02 OF 06

THERMOGRAPH #: 62089 SAMPLING SITE: SLOUGH 9B

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABB/ CORRECTION FACTOR: .8

TIME	DATE 820311	820312	820313	820314	820315	820316	820317	820318	820319	820320	820321	820322	TIME
0200	1.8	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	0200
0400	1.8	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	0400
0600	1.8	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	0600
0800	1.8	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	0800
1000	1.8	1.8	1.8	1.8	1.8	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1000
1200	1.8	1.8	1.8	1.8	1.8	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1200
1400	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1400
1600	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1600
1800	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1800
2000	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	1.8	2000
2200	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	1.8	2200
2400	1.8	1.8	1.8	1.8	2.3	2.3	1.8	1.8	1.8	1.8	1.8	1.8	2400
MEAN	1.8	1.8	1.8	1.8	2.0	2.3	2.0	1.8	1.8	1.8	1.8	1.8	MEAN
MIN	1.8	1.8	1.8	1.8	1.8	2.3	1.8	1.8	1.8	1.8	1.8	1.8	MIN
MAX	1.8	1.8	1.8	1.8	2.3	2.3	2.3	1.8	1.8	1.8	1.8	1.8	MAX

OBS ID #: 000173 * * * FORM AM-82-06/CORRECTED * * * PAGE 03 OF 06

THERMOGRAPH #: 62089 SAMPLING SITE: SLOUGH 9B

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABB/ CORRECTION FACTOR: .8

TIME	DATE 820323	820324	820325	820326	820327	820328	820329	820330	820331	820401	820402	820403	TIME
0200	1.8	1.8	1.8	1.8	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	0200
0400	1.8	1.8	1.8	1.8	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	0400
0600	1.8	1.8	1.8	1.8	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	0600
0800	1.8	1.8	1.8	1.8	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	0800
1000	1.8	1.8	1.8	1.8	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	1000
1200	1.8	1.8	1.8	1.8	2.3	2.8	2.8	3.3	3.3	3.3	2.8	3.3	1200
1400	1.8	2.3	1.8	2.3	2.8	3.3	3.3	3.3	3.8	3.8	3.3	3.8	1400
1600	1.8	2.3	1.8	2.8	3.3	3.8	3.8	3.8	3.8	3.8	3.8	3.8	1600
1800	1.8	2.3	1.8	2.8	3.3	3.8	3.8	3.8	3.8	3.8	3.8	3.8	1800
2000	1.8	2.3	1.8	2.3	3.3	3.3	3.3	3.8	3.8	3.3	3.3	3.3	2000
2200	1.8	2.3	1.8	2.3	2.8	3.3	3.3	3.3	3.3	2.8	2.8	2.8	2200
2400	1.8	1.8	1.8	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2400
MEAN	1.8	2.0	1.8	2.1	2.5	3.1	3.1	3.2	3.2	3.1	3.0	3.1	MEAN
MIN	1.8	1.8	1.8	1.8	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	MIN
MAX	1.8	2.3	1.8	2.8	3.3	3.8	3.8	3.8	3.8	3.8	3.8	3.8	MAX

OBS ID #: 000174 * * * FORM AH-82-06/CORRECTED * * * PAGE 04 OF 06

THERMOGRAPH #: 62089 SAMPLING SITE: SLOUGH 9B

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABB/ CORRECTION FACTOR: .8

TIME	DATE 820404	820405	820406	820407	820408	820409	820410	820411	820412	820413	820414	820415	TIME
0200	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.8	0200
0400	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.3	0400
0600	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.3	0600
0800	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.3	0800
1000	2.8	2.8	2.8	2.8	2.8	2.8	3.3	3.3	3.3	2.8	3.3	3.3	1000
1200	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.8	3.8	3.8	4.3	3.8	1200
1400	3.8	3.8	3.8	3.3	2.8	3.8	4.3	4.3	4.3	4.8	4.8	4.8	1400
1600	3.8	3.8	3.8	3.8	2.8	4.3	4.3	4.3	4.8	4.8	4.8	4.8	1600
1800	3.8	3.8	3.8	3.8	3.3	4.3	4.3	4.3	4.8	4.8	4.8	4.8	1800
2000	3.8	3.8	3.8	3.8	3.3	3.8	3.8	4.3	4.3	4.3	4.3	4.8	2000
2200	3.3	3.3	3.3	3.3	2.8	3.8	3.8	3.8	3.8	3.8	4.3	4.3	2200
2400	2.8	2.8	3.3	3.3	2.8	3.3	3.3	3.3	3.3	3.3	3.8	3.8	2400
MEAN	3.2	3.2	3.3	3.2	2.9	3.4	3.5	3.5	3.6	3.6	3.8	4.0	MEAN
MIN	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.3	MIN
MAX	3.8	3.8	3.8	3.8	3.3	4.3	4.3	4.3	4.8	4.8	4.8	4.8	MAX

OBS ID #: 000175 * * * FORM AH-82-06/CORRECTED * * * PAGE 05 OF 06

THERMOGRAPH #: 62089 SAMPLING SITE: SLOUGH 9B

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABB/ CORRECTION FACTOR: .8

TIME	DATE 820416	820417	820418	820419	820420	820421	820422	820423	820424	820425	820426	820427	TIME
0200	3.3	3.3	3.3	2.8	2.8	3.8	3.8	4.8	4.8	4.3	4.8	4.3	0200
0400	3.3	3.3	3.3	2.8	2.8	3.3	3.8	4.3	4.3	4.3	4.8	3.8	0400
0600	3.3	3.3	3.3	2.8	2.8	3.3	3.3	3.8	4.3	3.8	4.8	3.8	0600
0800	3.3	3.3	3.3	2.8	2.8	3.3	3.3	3.8	4.3	4.3	4.8	3.8	0800
1000	3.3	3.3	3.3	2.8	2.8	3.8	3.8	4.8	4.8	5.3	5.3	4.8	1000
1200	4.3	3.8	3.8	4.3	4.3	4.8	4.8	5.3	5.8	5.8	6.3	5.8	1200
1400	4.8	4.3	4.3	4.8	5.3	5.3	5.8	5.8	6.3	6.8	7.3	6.8	1400
1600	4.8	4.8	4.3	4.8	5.3	5.3	5.8	5.8	6.3	6.8	7.3	7.3	1600
1800	4.8	4.8	4.3	4.8	5.3	5.3	5.8	5.8	6.3	6.8	7.3	7.3	1800
2000	4.8	4.8	4.3	4.3	5.3	5.3	5.8	5.8	5.8	6.8	6.8	7.3	2000
2200	4.3	4.3	4.3	3.3	4.8	5.3	5.8	5.3	5.3	5.8	6.3	6.8	2200
2400	3.8	3.8	3.3	2.8	4.3	4.8	4.8	4.8	4.8	5.3	4.8	5.8	2400
MEAN	4.0	3.9	3.8	3.6	4.0	4.5	4.7	5.0	5.3	5.5	5.9	5.6	MEAN
MIN	3.3	3.3	3.3	2.8	2.8	3.3	3.3	3.8	4.3	3.8	4.8	3.8	MIN
MAX	4.8	4.8	4.3	4.8	5.3	5.3	5.8	5.8	6.3	6.8	7.3	7.3	MAX

OBS ID #: 000176 * * * FORM AH-82-06/CORRECTED * * * PAGE 06 OF 06

THERMOGRAPH #: 62089 SAMPLING SITE: SLOUGH 9B

KM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABB/ CORRECTION FACTOR: .8

TIME	DATE 820428	820429	820430	820501	820502	820503	820504	820505	820506	TIME
0200	4.8	4.8	4.8	4.8	5.3	5.3	4.8	3.8	4.8	0200
0400	4.3	4.8	4.8	4.8	4.8	4.8	3.8	3.8	4.8	0400
0600	4.3	4.8	4.8	4.8	4.8	4.3	3.8	3.8	4.3	0600
0800	4.3	4.8	4.8	4.8	4.8	4.8	3.8	4.8	5.3	0800
1000	5.8	5.8	5.8	5.8	5.3	5.3	4.8	5.3	5.8	1000
1200	6.8	5.8	5.8	5.8	6.8	5.8	6.3	6.8	6.8	1200
1400	7.8	8.8	6.8	7.8	8.8	6.8	7.8	8.3		1400
1600	8.3	9.3	7.8	9.8	9.8	7.8	9.8	8.8		1600
1800	8.3	9.3	8.8	10.3	9.8	8.3	9.3	8.3		1800
2000	7.8	8.3	8.3	9.3	8.8	7.8	8.3	7.8		2000
2200	6.8	6.8	7.3	7.8	7.3	6.3	6.8	6.8		2200
2400	5.8	5.3	5.8	5.8	5.3	5.3	4.3	5.3		2400
MEAN	6.3	6.5	6.3	6.8	6.8	6.0	6.1	6.1		MEAN
MIN	4.3	4.8	4.8	4.8	4.8	4.3	3.8	3.8	4.3	MIN
MAX	8.3	9.3	8.8	10.3	9.8	8.3	9.8	8.8	6.8	MAX

OBS ID #: 000205 * * * FORM AH-82-06/CORRECTED * * * PAGE 01 OF 06

THERMOGRAPH #: 62091 SAMPLING SITE: SLOUGH 9B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: 8/30N/03W/16/ABB/ CORRECTION FACTOR: 0.0

TIME	DATE 820227	820228	820301	820302	820303	820304	820305	820306	820307	820308	820309	TIME
0200		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0200
0400		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0400
0600		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0600
0800		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	0800
1000		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1000
1200		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1200
1400		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1400
1600		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1600
1800	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1800
2000	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2000
2200	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2200
2400	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2400
MEAN		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.5	MEAN
MIN	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	MIN
MAX	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	MAX

OBS ID #: 000206 * * * FORM AH-82-06/CORRECTED * * * PAGE 02 OF 06

THERMOGRAPH #: 62091 SAMPLING SITE: SLOUGH 9B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABB/ CORRECTION FACTOR: 0.0

TIME	DATE 820310	820311	820312	820313	820314	820315	820316	820317	820318	820319	820320	820321	TIME
0200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	0200
0400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	0400
0600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	0600
0800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	0800
1000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1000
1200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1200
1400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1400
1600	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1600
1800	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1800
2000	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	2000
2200	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	2200
2400	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	2400
MEAN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	1.0	1.0	1.0	MEAN
MIN	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.0	MIN
MAX	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	MAX

THERMOGRAPH #: 62091 SAMPLING SITE: SLOUGH 9B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABB/ CORRECTION FACTOR: 0.0

TIME	DATE 820322	820323	820324	820325	820326	820327	820328	820329	820330	820331	820401	820402	TIME
0200	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	0200
0400	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	0400
0600	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	0600
0800	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	0800
1000	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	1000
1200	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	1200
1400	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	1400
1600	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	1600
1800	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	1800
2000	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2000
2200	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2200
2400	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2400
MEAN	1.0	1.0	1.0	1.0	1.0	1.1	1.6	2.0	2.0	2.0	2.0	2.0	MEAN
MIN	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	MIN
MAX	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	MAX

OBS ID #: 000208 * * * FORM AH-82-06/CORRECTED * * * PAGE 04 OF 06

THERMOGRAPH #: 62091 SAMPLING SITE: SLOUGH 9B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABB/ CORRECTION FACTOR: 0.0

---- D A T E ----

TIME	820403	820404	820405	820406	820407	820408	820409	820410	820411	820412	820413	820414	TIME
0200	2.0	2.0	2.5	2.5	2.5	2.5	2.0	2.5	2.5	3.0	3.0	3.0	0200
0400	2.0	2.0	2.5	2.0	2.5	2.0	2.0	2.5	2.5	3.0	2.5	3.0	0400
0600	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	0600
0800	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.0	2.5	0800
1000	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5	1000
1200	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5	1200
1400	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5	1400
1600	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5	1600
1800	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	3.0	1800
2000	2.0	2.5	2.0	2.5	2.0	2.0	2.5	2.5	2.5	2.5	3.0	3.0	2000
2200	2.0	2.5	2.5	2.5	2.5	2.0	2.5	2.5	3.0	3.0	3.0	3.0	2200
2400	2.0	2.5	2.5	2.5	2.5	2.0	2.5	2.5	3.0	3.0	3.0	3.0	2400
MEAN	2.0	2.1	2.2	2.2	2.2	2.0	2.1	2.5	2.6	2.5	2.5	2.7	MEAN
MIN	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5	MIN
MAX	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	MAX

OBS ID #: 000209 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62091 SAMPLING SITE: SLOUGH 9B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABB/ CORRECTION FACTOR: 0.0

TIME	DATE 820415	820416	820417	820418	820419	820420	820421	820422	820423	820424	820425	820426	TIME
0200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.0	4.0	5.0	0200
0400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.0	4.0	4.5	0400
0600	3.0	3.0	3.0	3.0	3.0	2.5	3.0	3.5	4.0	4.0	4.0	4.5	0600
0800	3.0	3.0	3.0	3.0	3.0	2.5	3.0	3.5	3.5	4.0	4.0	4.0	0800
1000	2.5	3.0	2.5	3.0	2.5	2.5	3.0	3.0	3.5	3.5	3.5	4.0	1000
1200	2.5	3.0	2.5	3.0	2.5	2.5	3.0	3.0	3.5	3.5	3.5	4.0	1200
1400	2.5	3.0	2.5	3.0	2.5	2.5	3.0	3.0	3.5	3.5	3.5	4.0	1400
1600	2.5	3.0	2.5	3.0	2.5	2.5	3.0	3.0	3.5	4.0	4.0	4.5	1600
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.0	4.0	4.5	1800
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.0	4.5	5.0	2000
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.0	4.0	4.5	5.0	2200
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.0	4.0	5.0	5.0	2400
MEAN	2.8	3.0	2.8	3.0	2.8	2.7	3.1	3.4	3.8	3.9	4.0	4.5	MEAN
MIN	2.5	3.0	2.5	3.0	2.5	2.5	3.0	3.0	3.5	3.5	3.5	4.0	MIN
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.0	4.0	4.0	5.0	5.0	MAX

OBS ID #: 000210 * * * FORM AH-82-06/CORRECTED * * * PAGE 06 OF 06

THERMOGRAPH #: 62091 SAMPLING SITE: SLOUGH 9B INTRAGRAVEL

RM: 129.0 TRM: GEOCODE: S/30N/03W/16/ABB/ CORRECTION FACTOR: 0.0

TIME	DATE 820427	820428	820429	820430	820501	820502	820503	820504	820505	820506	TIME
0200	5.0	5.0	5.5	6.0	5.5	6.0	6.0	5.5	5.5	5.5	0200
0400	5.0	5.0	5.5	5.5	5.5	6.0	6.0	5.0	5.5	5.0	0400
0600	4.5	5.0	5.0	5.0	5.0	5.5	5.5	5.0	5.0	5.0	0600
0800	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	4.5	5.0	0800
1000	4.0	4.5	4.5	5.0	5.0	5.0	5.0	4.5	4.5	4.5	1000
1200	4.0	4.0	4.5	5.0	5.0	5.0	5.0	4.5	4.5	4.5	1200
1400	4.0	4.5	4.5	5.0	5.0	5.0	5.0	4.5	4.5		1400
1600	4.0	4.5	5.0	5.0	5.0	5.0	5.0	4.5	5.0		1600
1800	4.5	5.0	5.0	5.0	5.0	5.5	5.0	5.0	5.0		1800
2000	5.0	5.0	5.5	5.0	5.5	5.5	5.0	5.0	5.0		2000
2200	5.0	5.5	5.5	5.5	6.0	6.0	5.5	5.5	5.5		2200
2400	5.0	5.5	6.0	5.5	6.0	6.0	5.5	5.5	5.5		2400
MEAN	4.5	4.8	5.1	5.2	5.3	5.5	5.3	5.0	5.0		MEAN
MIN	4.0	4.0	4.5	5.0	5.0	5.0	5.0	4.5	4.5	4.5	MIN
MAX	5.0	5.5	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	MAX

OBS ID #: 000192 * * * FORM AH-82-06/CORRECTED * * * PAGE 01 OF 05

THERMOGRAPH #: 62081 SAMPLING SITE: SLOUGH 11

RM: 135.3 TRM: GEOCODE: S/31N/02W/19/DDD/ CORRECTION FACTOR: 0.0

	DATE											
TIME	820224	820225	820226	820227	820228	820301	820302	820303	820304	820305	820306	820307	TIME
0200		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	0200
0400		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	0400
0600		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	0600
0800		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	0800
1000		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	1000
1200		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	1200
1400		2.0	2.0	2.0	2.5	2.5	2.5	2.0	2.5	2.5	3.0	2.5	1400
1600		2.0	2.0	2.0	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.5	1600
1800	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	1800
2000	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2000
2200	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2200
2400	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2400
MEAN		2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.2	2.3	2.5	2.5	MEAN
MIN	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	MIN
MAX	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.0	2.5	2.5	3.0	2.5	MAX

OBS ID #: 000193 * * * FORM AH-82-06/CORRECTED * * * PAGE 02 OF 05

THERMOGRAPH #: 62081 SAMPLING SITE: SLOUGH 11

RM: 135.3 TRM: GEOCODE: 8/31N/02W/19/DDD/ CORRECTION FACTOR: 0.0

	DATE												
TIME	820308	820309	820310	820311	820312	820313	820314	820315	820316	820317	820318	820319	TIME
0200	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0200
0400	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0400
0600	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0600
0800	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0800
1000	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5	2.5	2.5	2.5	2.5	1000
1200	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.5	3.0	1200
1400	2.5	2.5	3.0	2.5	3.0	2.5	3.0	3.0	2.5	3.0	2.5	3.0	1400
1600	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.0	2.5	2.5	1600
1800	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1800
2000	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2000
2200	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2200
2400	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2400
MEAN	2.5	2.5	2.5	2.5	2.5	2.3	2.5	2.5	2.5	2.6	2.5	2.6	MEAN
MIN	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5	2.5	2.5	2.5	2.5	MIN
MAX	2.5	2.5	3.0	2.5	3.0	2.5	3.0	3.0	2.5	3.0	2.5	3.0	MAX

OBS ID #: 000194 * * * FORM AH-82-06/CORRECTED * * * PAGE 03 OF 05

THERMOGRAPH #: 62081 SAMPLING SITE: SLOUGH 11

RM: 135.3 TRM: GEOCODE: 8/31N/02W/19/DDD/ CORRECTION FACTOR: 0.0

TIME	DATE 820320	820321	820322	820323	820324	820325	820326	820327	820328	820329	820330	820331	TIME
0200	2.5	2.5	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0200
0400	2.5	2.5	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0400
0600	2.5	2.5	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0600
0800	2.5	2.5	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	0800
1000	2.5	2.5	2.5	2.5	2.5	2.0	2.5	2.5	2.5	3.0	3.0	2.5	1000
1200	2.5	3.0	3.0	3.0	3.0	2.5	3.0	3.0	3.0	3.0	3.0	3.0	1200
1400	2.5	3.0	3.0	3.0	2.5	3.0	3.5	3.5	3.5	3.5	3.5	3.0	1400
1600	2.5	2.5	3.0	3.0	2.5	3.0	3.0	3.5	3.5	3.5	3.5	3.0	1600
1800	2.5	2.5	3.0	2.5	2.5	2.5	2.5	3.0	3.0	3.0	3.0	2.5	1800
2000	2.5	2.5	2.5	2.5	2.0	2.5	2.5	3.0	3.0	3.0	2.5	2.5	2000
2200	2.5	2.5	2.5	2.0	2.0	2.5	2.5	3.0	2.5	2.5	2.5	2.5	2200
2400	2.5	2.5	2.5	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2400
MEAN	2.5	2.6	2.7	2.5	2.2	2.4	2.7	2.8	2.8	2.8	2.8	2.6	MEAN
MIN	2.5	2.5	2.5	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	MIN
MAX	2.5	3.0	3.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5	3.5	3.0	MAX

OBS ID #: 000195 * * * FORM AH-82-06/CORRECTED * * * PAGE 04 OF 05

THERMOGRAPH #: 62081 SAMPLING SITE: SLOUGH 11

RM: 135.3 TRM: GEOCODE: S/31N/02W/19/DDD/ CORRECTION FACTOR: 0.0

	DATE												
TIME	820401	820402	820403	820404	820405	820406	820407	820408	820409	820410	820411	820412	TIME
0200	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0200
0400	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0400
0600	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0600
0800	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.0	3.0	2.5	2.5	2.5	0800
1000	2.5	3.0	3.0	3.0	3.5	3.0	2.5	3.0	3.5	3.5	3.5	3.0	1000
1200	3.0	3.0	3.5	3.5	3.5	3.5	3.0	3.5	4.0	4.0	4.0	4.0	1200
1400	3.0	3.5	4.0	3.5	3.5	3.5	3.0	4.0	4.0	4.0	4.0	4.0	1400
1600	3.0	3.0	3.5	3.5	3.0	3.5	3.0	3.5	3.5	3.5	3.5	3.5	1600
1800	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1800
2000	2.5	2.5	2.5	3.0	2.5	3.0	2.5	3.0	3.0	2.5	2.5	2.5	2000
2200	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2200
2400	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.0	2400
MEAN	2.6	2.7	2.9	2.9	2.8	2.9	2.7	3.0	3.0	3.0	3.0	2.9	MEAN
MIN	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.0	MIN
MAX	3.0	3.5	4.0	3.5	3.5	3.5	3.0	4.0	4.0	4.0	4.0	4.0	MAX

OBS ID #: 000196 * * * FORM AH-82-06/CORRECTED * * * PAGE 05 OF 05

THERMOGRAPH #: 62081 SAMPLING SITE: SLOUGH 11

RM: 135.3 TRM: GEOCODE: S/31N/02W/19/DDD/ CORRECTION FACTOR: 0.0

TIME	DATE 820413	820414	820415	820416	820417	820418	820419	820420	820421	820422	TIME
0200	2.0	3.0	2.5	3.0	3.0	2.5	2.5	3.0	3.0	3.0	0200
0400	2.0	3.0	2.5	3.0	3.0	2.5	2.5	3.0	3.0	3.0	0400
0600	2.5	3.0	2.5	3.0	3.0	2.5	3.0	3.0	3.0	3.0	0600
0800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.5	4.0	0800
1000	3.5	3.5	3.5	3.0	3.5	3.5	4.0	4.0	4.5	4.5	1000
1200	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	5.0	5.0	1200
1400	3.5	4.0	4.5	4.5	4.0	4.0	5.0	5.0	5.5	5.0	1400
1600	3.5	4.0	4.5	4.0	4.0	3.5	4.5	4.5	5.0	5.0	1600
1800	3.0	3.5	4.0	3.5	3.5	3.0	4.0	4.0	4.0	4.0	1800
2000	3.0	3.0	3.5	3.0	3.0	3.0	3.5	3.5	3.5		2000
2200	3.0	3.0	3.0	3.0	3.0	2.5	3.0	3.0	3.0		2200
2400	3.0	2.5	3.0	3.0	3.0	2.5	3.0	3.0	3.0		2400
MEAN	3.0	3.3	3.4	3.3	3.3	3.0	3.5	3.7	3.8	4.1	MEAN
MIN	2.0	2.5	2.5	3.0	3.0	2.5	2.5	3.0	3.0	3.0	MIN
MAX	4.0	4.0	4.5	4.5	4.0	4.0	5.0	5.0	5.5	5.0	MAX

OBS ID #: 000197 * * * FORM AR-82-06/CORRECTED * * * PAGE 01 OF 08

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB, CORRECTION FACTOR: .8

	DATE											
TIME	820207	820208	820209	820210	820211	820212	820213	820214	820215	820216	820217	820218	TIME
0200		1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0200
0400		1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0400
0600		1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0600
0800		1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0800
1000		1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1000
1200		1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1200
1400		1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1400
1600	1.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1600
1800	1.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1800
2000	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2000
2200	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2200
2400	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2400
MEAN		1.9	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MEAN
MIN	1.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MIN
MAX	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MAX

OBS ID #: 000198 * * * FORM AH-82-06/CORRECTED * * * PAGE 02 OF 08

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/?BB/ CORRECTION FACTOR: .8

	DATE											
TIME	820219	820220	820221	820222	820223	820224	820225	820226	820227	820228	820301	820302	TIME
0200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.3	.8	.8	0200
0400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.3	.8	.8	0400
0600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.3	.8	.8	0600
0800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	0800
1000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	1000
1200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	1200
1400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	1400
1600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	1600
1800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	1800
2000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	2000
2200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	2200
2400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	2400
MEAN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9	1.3	.8	.8	MEAN
MIN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.3	.8	.8	MIN
MAX	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.3	.8	.8	MAX

OBS ID #: C00199 * * * FORM AH-82-05/CORRECTED * * * PAGE 03 OF 08

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: .8

TIME	DATE 820303	820304	820305	820306	820307	820308	820309	820310	820311	820312	820313	820314	TIME
0200	.8	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0200
0400	.8	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0400
0600	.8	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0600
0800	.8	.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0800
1000	.8	.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1000
1200	.8	.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1200
1400	.8	1.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1400
1600	.8	1.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1600
1800	.8	1.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1800
2000	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2000
2200	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2200
2400	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2400
MEAN	.8	1.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MEAN
MIN	.8	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MIN
MAX	.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MAX

OBS ID #: 000200 * * * FORM AH-82-06/CORRECTED * * * PAGE 04 OF 08

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0 TRM: GEOCODE: 8/31W/11W/10/DBB/ CORRECTION FACTOR: .8

TIME	DATE 820315	820316	820317	820318	820319	820320	820321	820322	820323	820324	820325	820326	TIME
0200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0200
0400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0400
0600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0600
0800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0800
1000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1000
1200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1200
1400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1400
1600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1600
1800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1800
2000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2000
2200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2200
2400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2400
MEAN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MEAN
MIN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MIN
MAX	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MAX

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: .8

TIME	DATE 820327	820328	820329	820330	820331	820401	820402	820403	820404	820405	820406	820407	TIME
0200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0200
0400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0400
0600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0600
0800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0800
1000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1000
1200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1200
1400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1400
1600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1600
1800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1800
2000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2000
2200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2200
2400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2400
MEAN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MEAN
MIN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MIN
MAX	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MAX

OBS ID #: 000202 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: .8

TIME	DATE 820408	820409	820410	820411	820412	820413	820414	820415	820416	820417	820418	820419	TIME
0200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0200
0400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0400
0600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0600
0800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0800
1000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1000
1200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1200
1400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1400
1600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1600
1800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1800
2000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2000
2200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2200
2400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2400
MEAN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MEAN
MIN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MIN
MAX	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MAX

OBS ID #: 000203 * * * FORM AH-82-06/CORRECTED * * * PAGE 07 OF 08

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: .8

TIME	DATE 820420	820421	820422	820423	820424	820425	820426	820427	820428	820429	820430	820501	TIME
0200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0200
0400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0400
0600	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0600
0800	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	0800
1000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1000
1200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.8	3.3	3.3	1200
1400	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2.3	2.3	2.8	3.8	3.8	1400
1600	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2.3	2.3	2.8	3.3	3.8	1600
1800	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2.3	2.3	2.8	2.8	3.3	1800
2000	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2.8	2000
2200	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2200
2400	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2400
MEAN	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.5	2.7	2.8	MEAN
MIN	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	MIN
MAX	2.3	2.3	2.3	2.3	2.3	2.3	2.8	2.3	2.3	2.8	3.8	3.8	MAX

OBS ID #: 000204 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62082 SAMPLING SITE: SLOUGH 19

RM: 140.0. TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: .8

TIME	DATE 820502	820503	820504	820505	820506	TIME
0200	2.3	2.3	2.3	2.3	2.3	0200
0400	2.3	2.3	2.3	2.3	2.3	0400
0600	2.3	2.3	2.3	2.3	2.3	0600
0800	2.3	2.3	2.3	2.3		0800
1000	2.8	2.8	3.8	3.3		1000
1200	3.3	3.3	3.8	3.8		1200
1400	3.8	3.3	4.3	3.8		1400
1600	3.8	3.3	4.3	3.8		1600
1800	3.3	3.3	3.3	3.3		1800
2000	2.8	2.8	2.8	2.8		2000
2200	2.3	2.8	2.8	2.8		2200
2400	2.3	2.3	2.3	2.3		2400
MEAN	2.8	2.8	3.0	[illegible].9		MEAN
MIN	2.3	2.3	2.3	2.3	2.3	MIN
MAX	3.8	3.3	4.3	3.8	2.3	MAX

OBS ID #: 000215 * * * FORM AH-82-06/CORRECTED * * * PAGE 01 OF 06

THERMOGRAPH #: 62197 SAMPLING SITE: SLOUGH 19 INTRAGRAVEL

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: 0.0

TIME	DATE 820205	820206	820207	820208	820209	820210	820211	820212	820213	820214	820215	820216	TIME
0200		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0200
0400		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0400
0600		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0600
0800		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0800
1000		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1000
1200		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1200
1400		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1400
1600		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1600
1800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1800
2000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2000
2200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2200
2400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2400
MEAN		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MEAN
MIN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MIN
MAX	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MAX

OBS ID #: 000217 * * * FORM AH-82-06/CORRECTED * * * PAGE 02 OF 06

THERMOGRAPH #: 62197 SAMPLING SITE: SLOUGH 19 INTRAGRAVEL

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: 0.0

	DATE											
TIME	820217	820218	820219	820220	820221	820222	820223	820224	820225	820226	820227	820228	TIME
0200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0200
0400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0400
0600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0600
0800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0800
1000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1000
1200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1200
1400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1400
1600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1600
1800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1800
2000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2000
2200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2200
2400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2400
MEAN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MEAN
MIN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MIN
MAX	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MAX

OBS ID #: 000218 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62197 SAMPLING SITE: SLOUGH 19 INTRAGRAVEL

RM: 140.0 TRM: GEOCODE: 8/31N/11W/10/DBB/ CORRECTION FACTOR: 0.0

TIME	DATE 820301	820302	820303	820304	820305	820306	820307	820308	820309	820310	820311	820312	TIME
0200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0200
0400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0400
0600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0600
0800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0800
1000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1000
1200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1200
1400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1400
1600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1600
1800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1800
2000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2000
2200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2200
2400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2400
MEAN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MEAN
MIN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MIN
MAX	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MAX

OBS ID #: 000219 * * * FORM AH-82-06/CORRECTED * * * PAGE 04 OF 06

THERMOGRAPH #: 62197 SAMPLING SITE: SLOUGH 19 INTRAGRAVEL

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: 0.0

TIME	DATE 820313	820314	820315	820316	820317	820318	820319	820320	820321	820322	820323	820324	TIME
0200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0200
0400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0400
0600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0600
0800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0800
1000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1000
1200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1200
1400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1400
1600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	1600
1800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	1800
2000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	2000
2200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	2200
2400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	2400
MEAN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.2	4.2	MEAN
MIN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MIN
MAX	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	MAX

OBS ID #: 000220 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62197 SAMPLING SITE: SLOUGH 19 INTRAGRAVEL

RM: 140.0 TRM: GEOCODE: S/31N/11W/10/DBB/ CORRECTION FACTOR: 0.0

DATE

TIME	820325	820326	820327	820328	820329	820330	820331	820401	820402	820403	820404	820405	TIME
0200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0200
0400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0400
0600	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0600
0800	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	0800
1000	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1000
1200	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1200
1400	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1400
1600	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1600
1800	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	1800
2000	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2000
2200	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2200
2400	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2400
MEAN	4.2	4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MEAN
MIN	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MIN
MAX	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	MAX

OBS ID #: 600221 * * * FORM AH-82-06/CORRECTED * * * PAGE 06 OF 06

THERMOGRAPH #: 62197 SAMPLING SITE: SLOUGH 19 INTRAGRAVEL

RM: 140.0 TRM: GEOCODE: 8/31N/11W/10/DBB/ CORRECTION FACTOR: 0.0

	DATE								
TIME	820406	820407	820408	820409	820410	820411	820412	820413	TIME
0200	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	0200
0400	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	0400
0600	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	0600
0800	4.0	4.0	4.0	4.0	4.0	4.0	4.5		0800
1000	4.0	4.0	4.0	4.0	4.0	4.0	4.5		1000
1200	4.0	4.0	4.0	4.0	4.0	4.0	4.5		1200
1400	4.0	4.0	4.0	4.5	4.5	4.5	4.5		1400
1600	4.0	4.5	4.5	4.5	5.0	5.0	5.0		1600
1800	4.0	4.5	4.5	4.5	5.0	5.0	5.0		1800
2000	4.0	4.5	4.5	4.5	4.5	5.0	5.0		2000
2200	4.0	4.5	4.0	4.5	4.5	4.5	4.5		2200
2400	4.0	4.0	4.0	4.0	4.0	4.5	4.5		2400
MEAN	4.0	4.2	4.1	4.2	4.3	4.4	4.6		MEAN
MIN	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	MIN
MAX	4.0	4.5	4.5	4.5	5.0	5.0	5.0	4.5	MAX

OBS ID #: 000211 * * * FORM AH-82-06/CORRECTED * * * PAGE 01 OF 05

THERMOGRAPH #: 62097 SAMPLING SITE: SLOUGH 21 MIDDLE

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820308	820309	820310	820311	820312	820313	820314	820315	820316	820317	820318	820319	TIME
0200		.5	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.5	0200
0400		.5	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	0400
0600		.5	1.0	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	0600
0800		.5	1.0	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	0800
1000		1.0	1.0	.5	.5	.5	.5	1.0	1.0	1.0	1.5	1.0	1000
1200		1.0	1.0	1.0	1.0	.5	.5	1.5	1.0	1.0	1.5	1.5	1200
1400		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1400
1600	1.0	1.0	.5	1.0	1.0	.5	1.0	1.0	1.0	1.0	1.5	1.0	1600
1800	1.0	1.0	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1800
2000	1.0	.5	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.5	1.0	2000
2200	1.0	1.0	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	2200
2400	1.0	1.0	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	2400
MEAN		.8	.7	.6	.6	.5	.7	1.0	1.0	1.0	1.2	1.1	MEAN
MIN	1.0	.5	.5	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	MIN
MAX	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.5	1.5	MAX

THERMOGRAPH #: 62097 SAMPLING SITE: SLOUGH 21 MIDDLE

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820320	820321	820322	820323	820324	820325	820326	820327	820328	820329	820330	820331	TIME
0200	1.0	1.0	1.0	1.5	1.0	1.0	.5	1.0	1.0	1.0	.5	1.0	0200
0400	1.0	1.0	1.0	1.5	1.0	1.0	.5	1.0	1.0	1.0	.5	1.0	0400
0600	1.0	1.0	1.0	1.5	1.0	1.0	.5	1.0	1.0	1.0	.5	1.0	0600
0800	1.5	1.0	1.5	1.5	1.5	1.5	.5	1.0	1.0	1.0	.5	1.0	0800
1000	2.0	1.0	2.0	1.5	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1000
1200	2.0	1.0	2.0	2.0	2.0	1.5	1.5	1.5	2.0	1.5	1.5	1.5	1200
1400	2.0		1.5	2.0	2.0	1.5	1.5	1.5	2.0	1.5	1.5	1.5	1400
1600	2.0	.0	1.5	2.0	1.5	1.0	1.0	1.5	1.5	1.0	1.0	1.0	1600
1800	1.5	1.0	1.5	1.5	1.0	.5	1.0	1.0	1.0	1.0	1.0	1.0	1800
2000	1.5	1.0	1.5	1.5	1.0	.5	1.0	1.0	1.0	1.0	1.0	1.0	2000
2200	1.0	1.0	1.5	1.5	1.0	.5	1.0	1.0	1.0	1.0	1.0	1.0	2200
2400	1.0	1.0	1.5	1.5	1.0	.5	1.0	1.0	1.0	.5	1.0	1.0	2400
MEAN	1.5	1.0	1.5	1.6	1.3	1.0	.9	1.1	1.2	1.0	.9	1.1	MEAN
MIN	1.0	1.0	1.0	1.5	1.0	.5	.5	1.0	1.0	.5	.5	1.0	MIN
MAX	2.0	1.0	2.0	2.0	2.0	1.5	1.5	1.5	2.0	1.5	1.5	1.5	MAX

OBS ID #: 000213 * * * FORM AH-82-06/CORRECTED * * * PAGE 03 OF 05

THERMOGRAPH #: 62097 SAMPLING SITE: SLOUGH 21 MIDDLE

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820401	820402	820403	820404	820405	820406	820407	820408	820409	820410	820411	820412	TIME
0200	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0200
0400	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0400
0600	.5	.5	.5	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0	0600
0800	1.0	.5	.5	1.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.0	0800
1000	1.0	1.0	1.0	1.0	1.5	2.0	2.5	1.5	2.5	2.5	2.5	2.5	1000
1200	1.0	1.0	1.5	1.5	2.0	2.5	2.5	1.5	3.0	3.0	3.0	3.0	1200
1400	1.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0	2.5	2.5	2.5	3.0	1400
1600	.5	.5	1.0	1.0	1.5	1.5	2.0	1.5	2.0	2.0	1.5	2.0	1600
1800	.5	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.0	1800
2000	.5	.5	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	2000
2200	.5	.5	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	2200
2400	.5	.5	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	2400
MEAN	.7	.7	.9	1.0	1.2	1.5	1.5	1.3	1.6	1.6	1.5	1.5	MEAN
MIN	.5	.5	.5	.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	MIN
MAX	1.0	1.0	1.5	1.5	2.0	2.5	2.5	2.0	3.0	3.0	3.0	3.0	MAX

OBS ID #: 000214 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62097 SAMPLING SITE: SLOUGH 21 MIDDLE

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820413	820414	820415	820416	820417	820418	820419	820420	820421	820422	820423	820424	TIME
0200	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	1.5	2.0	1.5	2.0	0200
0400	1.0	1.0	1.0	1.0	1.5	1.5	.5	1.5	1.5	2.0	2.0	2.0	0400
0600	1.0	1.0	1.5	1.5	1.5	1.5	1.0	2.0	2.5	2.0	2.5	2.5	0600
0800	1.0	1.5	2.0	1.5	2.0	2.0	1.5	2.5	3.0	3.0	3.0	3.0	0800
1000	2.5	2.0	3.0	3.5	3.0	3.0	2.5	4.0	4.0	4.5	3.5	3.5	1000
1200	3.0	2.5	3.5	4.0	3.5	3.0	3.0	4.5	5.0	4.5	4.0	3.5	1200
1400	3.0	2.0	3.0	4.0	3.5	3.0	2.5	4.0	4.0	4.0	3.5	3.5	1400
1600	1.5	2.0	2.5	3.0	2.5	2.0	2.0	3.0	3.5	3.5	3.0	3.0	1600
1800	1.0	1.5	1.5	2.0	2.0	1.5	1.0	2.5	2.5	2.5	2.5	2.5	1800
2000	1.0	1.5	1.5	2.0	2.0	1.5	1.0	2.0	2.5	2.0	2.0	2.0	2000
2200	1.0	1.5	1.5	1.5	2.0	1.5	1.0	2.0	2.0	2.0	2.0	2.0	2200
2400	1.0	1.5	1.0	1.5	2.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2400
MEAN	1.5	1.6	1.9	2.2	2.2	1.9	1.5	2.6	2.8	2.8	2.6	2.6	MEAN
MIN	1.0	1.0	1.0	1.0	1.5	1.0	.5	1.5	1.5	2.0	1.5	2.0	MIN
MAX	3.0	2.5	3.5	4.0	3.5	3.0	3.0	4.5	5.0	4.5	4.0	3.5	MAX

OBS ID #: 000215 * * * FORM AH-82-06/CORRECTED * * * PAGE 05 OF 05

THERMOGRAPH #: 62097 SAMPLING SITE: SLOUGH 21 MIDDLE

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820425	820426	820427	820428	820429	820430	820501	820502	820503	TIME
0200	2.0	2.0	2.0	2.0	1.5	1.0	1.5	2.0	1.5	0200
0400	2.0	2.0	2.0	2.0	1.5	1.0	1.5	2.0	1.5	0400
0600	2.5	2.0	2.5	2.5	1.5	1.5	1.5	2.0	2.0	0600
0800	3.0	2.5	3.0	3.5	2.5	2.5	2.5	3.0	3.5	0800
1000	4.0	4.0	3.5	4.5	4.0	4.0	4.5	4.0		1000
1200	4.5	4.5	4.0	4.0	4.0	5.0	5.0	4.5		1200
1400	4.5	5.0	4.0	4.0	3.5	4.5	5.0	5.0		1400
1600	4.0	3.5	4.0	3.0	3.0	3.5	4.5	4.0		1600
1800	3.0	2.5	3.0	2.5	2.0	2.5	3.0	2.5		1800
2000	2.5	2.0	2.5	2.0	1.5	2.0	2.5	2.0		2000
2200	2.0	2.0	2.0	2.0	1.0	1.5	2.0	2.0		2200
2400	2.0	2.0	2.0	1.5	1.0	1.5	2.0	2.0		2400
MEAN	3.0	2.8	2.9	2.8	2.2	2.5	3.0	2.9		MEAN
MIN	2.0	2.0	2.0	1.5	1.0	1.0	1.5	2.0	1.5	MIN
MAX	4.5	5.0	4.0	4.5	4.0	5.0	5.0	5.0	3.5	MAX

OBS ID #: 000230 * * * FORM AH-82-06/CORRECTED * * * PAGE 01 OF 08

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820206	820207	820208	820209	820210	820211	820212	820213	820214	820215	820216	820217	TIME
0200		2.5	2.0	2.5	1.5	1.5	1.5	1.0	1.5	2.0	2.0	3.0	0200
0400		2.5	2.0	2.0	1.5	1.5	1.5	1.0	1.5	2.0	2.0	3.0	0400
0600		2.0	2.0	2.0	1.5	1.5	1.5	1.0	1.5	2.0	2.0	3.0	0600
0800		2.0	2.0	2.0	1.5	1.5	1.5	1.0	1.5	2.0	2.0	3.0	0800
1000		2.5	2.5	2.0	1.5	1.5	1.5	1.5	1.5	2.0	2.0	3.0	1000
1200		2.5	2.0	2.0	1.5	1.5	1.5	2.0	1.5	2.0	2.5	3.0	1200
1400		2.5	2.0	2.0	1.5	1.5	1.5	1.5		2.0	3.0	3.0	1400
1600	2.5	2.5	2.0	2.0	1.5	1.5	1.5	1.5		2.0	3.0	3.0	1600
1800	2.5	2.5	2.0	2.0	1.5	1.5	1.5	1.5		2.0	3.0	3.0	1800
2000	2.5	2.0	2.5	2.0	1.5	1.5	1.5	1.5	1.5	2.0	3.0	3.0	2000
2200	2.5	2.0	2.5	2.0	1.5	1.5	1.5	1.5	1.5	2.0	3.0	3.0	2200
2400	2.5	2.0	2.5	2.0	1.5	1.5	1.0	1.5	1.5	2.0	3.0	2.5	2400
MEAN		2.3	2.2	2.0	1.5	1.5	1.5	1.4	1.5	2.0	2.5	3.0	MEAN
MIN	2.5	2.0	2.0	2.0	1.5	1.5	1.0	1.0	1.5	2.0	2.0	2.5	MIN
MAX	2.5	2.5	2.5	2.5	1.5	1.5	1.5	2.0	1.5	2.0	3.0	3.0	MAX

OBS ID #: 000231 * * * FORM AH-82-06/CORRECTED * * * PAGE 02 OF 08

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820218	820219	820220	820221	820222	820223	820224	820225	820226	820227	820228	820301	TIME
0200	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0200
0400	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0400
0600	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0600
0800	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0800
1000	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1000
1200	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1200
1400	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1400
1600	2.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.0	1600
1800	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.5	1800
2000	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.5	2000
2200	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2200
2400	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2400
MEAN	2.3	1.8	1.3	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.5	1.8	MEAN
MIN	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	MIN
MAX	2.5	2.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	2.5	MAX

OBS ID #: 000232 * * * FORM AH-82-06/CORRECTED * * * PAGE 03 OF 08

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820302	820303	820304	820305	820306	820307	820308	820309	820310	820311	820312	TIME
0200	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	0200
0400	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	0400
0600	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	0600
0800	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	0800
1000	1.5	1.5	1.5	2.0	2.0	2.5	2.5	2.0	2.0	1.5	1.5	1000
1200	1.5	1.5	1.5	2.0	2.0	2.5	2.5	2.0	2.5	1.5	1.5	1200
1400	1.5	1.5	2.0	2.0	2.5	2.5	2.5	2.0	2.5	2.0	1.5	1400
1600	1.5	1.5	2.0	2.0	2.5	2.5	2.5	2.0	2.5	2.0	1.5	1600
1800	1.5	1.5	2.0	2.0	2.0	2.0	2.5	2.0	2.0	1.5	1.5	1800
2000	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	2000
2200	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	2200
2400	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	2400
MEAN	1.5	1.5	1.7	2.0	2.1	2.2	2.2	2.0	2.0	1.6	1.5	MEAN
MIN	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	MIN
MAX	2.0	1.5	2.0	2.0	2.5	2.5	2.5	2.0	2.5	2.0	1.5	MAX

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820313	820314	820315	820316	820317	820318	820319	820320	820321	820322	820323	820324	TIME
0200	1.0	1.0	1.5	2.0	1.5	2.0	2.5	2.0	1.5	2.0	2.0	2.0	0200
0400	1.0	1.0	1.5	2.0	1.5	2.0	2.0	2.0	1.5	2.0	2.0	2.0	0400
0600	1.0	1.0	1.5	2.0	1.5	2.0	2.0	2.0	1.5	2.0	2.0	2.0	0600
0800	1.0	1.0	1.5	2.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.5	0800
1000	1.0	1.5	2.0	2.0	1.5	2.5	2.5	2.5	2.0	3.0	2.5	2.5	1000
1200	1.5	1.5	2.5	2.5	2.0	3.0	2.5	3.5	2.0	3.0	3.0	3.0	1200
1400	2.0	2.0	2.5	2.5	2.0	3.0	3.0	3.5	2.0	3.0	3.5	3.5	1400
1600	2.0	2.0	2.5	2.5	2.0	3.0	2.5	3.0	2.0	2.5	3.0	2.5	1600
1800	1.5	1.5	2.0	2.0	2.0	2.5	2.5	3.0	2.0	2.0	2.5	2.0	1800
2000	1.0	1.5	2.0	2.0	2.0	2.5	2.0	2.5	2.0	2.0	2.5	1.5	2000
2200	1.0	1.5	2.0	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	1.5	2200
2400	1.0	1.5	2.0	2.0	2.0	2.5	2.0	2.0	2.0	2.0	2.0	1.5	2400
MEAN	1.2	1.4	2.0	2.1	1.8	2.5	2.3	2.5	1.9	2.3	2.4	2.2	MEAN
MIN	1.0	1.0	1.5	2.0	1.5	2.0	2.0	2.0	1.5	2.0	2.0	1.5	MIN
MAX	2.0	2.0	2.5	2.5	2.0	3.0	3.0	3.5	2.0	3.0	3.5	3.5	MAX

OBS ID #: 000234 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820325	820326	820327	820328	820329	820330	820331	820401	820402	820403	820404	820405	TIME
0200	1.5	2.5	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0200
0400	1.5	1.5	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0400
0600	1.5	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	0600
0800	2.0	1.0	1.5	1.5	1.0	1.5	1.0	1.0	1.0	1.0	1.5	1.5	0800
1000	2.0	1.0	2.0	1.5	1.5	1.5	1.5	1.0	1.0	1.5	2.0	2.0	1000
1200	2.0	2.0	2.5	3.0	2.5	2.5	2.0	1.5	1.5	2.5	2.5	3.5	1200
1400	2.5	2.5	2.5	3.5	3.5	3.0	2.5	2.0	2.0	2.5	3.0	4.0	1400
1600	2.0	2.5	2.5	3.0	3.0	2.5	2.0	1.5	2.0	2.0	3.0	3.5	1600
1800	1.5	2.0	2.0	2.0	2.0	1.5	1.5	1.0	1.5	2.0	2.5	3.0	1800
2000	1.0	1.5	2.0	1.5	1.5	1.5	1.0	1.0	1.5	1.5	2.0	2.5	2000
2200	1.0	1.0	2.0	1.5	1.5	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2200
2400	2.0	1.0	2.0	1.0	1.5	1.0	1.0	1.0	1.0	1.5	1.5	2.0	2400
MEAN	1.7	1.6	1.8	2.0	1.7	1.6	1.4	1.2	1.3	1.6	2.0	2.4	MEAN
MIN	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	MIN
MAX	2.5	2.5	2.5	3.5	3.5	3.0	2.5	2.0	2.0	2.5	3.0	4.0	MAX

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR. 0.0

--- D A T E ---

TIME	820406	820407	820408	820409	820410	820411	820412	820413	820414	820415	820416	820417	TIME
0200	2.0	2.5	2.0	1.5	1.5	1.5	1.5	1.5	1.0	2.0	2.0	2.0	0200
0400	2.0	2.5	2.0	1.5	1.5	1.5	1.0	1.5	1.0	2.0	1.5	2.0	0400
0600	2.0	2.5	2.0	2.0	1.5	1.5	1.0	1.5	1.5	2.0	1.5	2.5	0600
0800	2.5	2.5	2.5	3.0	2.5	2.5	1.5	1.5	2.5	3.0	2.0	3.0	0800
1000	3.0	4.0	2.5	3.5	3.5	3.5	2.5	3.0	3.5	4.5	4.0	4.0	1000
1200	4.5	5.0	3.0	4.5	5.0	4.5	5.0	5.0	4.5	5.5	6.5	5.0	1200
1400	4.5	4.0	3.0	4.5	5.0	4.5	5.0	5.0	4.5	5.5	6.5	6.0	1400
1600	3.5	3.5	3.0	3.5	4.0	3.5	4.0	4.0	4.0	4.5	5.5	4.5	1600
1800	3.0	3.0	2.5	2.5	3.0	2.5	2.5	2.0	3.0	3.0	4.0	3.5	1800
2000	2.5	2.5	1.5	2.0	2.5	2.0	1.5	1.5	3.0	2.5	3.0	3.0	2000
2200	2.5	2.0	1.5	1.5	2.0	1.5	1.5	1.5	2.5	2.0	2.5	2.5	2200
2400	2.5	2.0	1.5	1.5	2.0	1.5	1.5	1.0	2.0	2.0	2.0	2.5	2400
MEAN	2.9	3.0	2.2	2.6	2.8	2.5	2.4	2.4	2.7	3.2	3.4	3.4	MEAN
MIN	2.0	2.0	1.5	1.5	1.5	1.5	1.0	1.0	1.0	2.0	1.5	2.0	MIN
MAX	4.5	5.0	3.0	4.5	5.0	4.5	5.0	5.0	4.5	5.5	6.5	6.0	MAX

OBS ID #: 000236 * * * FORM AH-82-06/CORRECTED * * * PAGE 07 OF 08

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820418	820419	820420	820421	820422	820423	820424	820425	820426	820427	820428	820429	TIME
0200	2.5	1.0	2.0	2.0	2.5	2.0	2.5	3.0	2.0	3.0	3.0	2.5	0200
0400	2.0	1.0	2.0	2.0	2.5	2.0	2.5	3.0	2.0	3.0	3.0	2.5	0400
0600	2.0	1.5	2.0	2.5	3.0	3.0	3.0	3.5	2.5	3.5	3.5	3.0	0600
0800	2.0	2.0	4.0	4.0	4.0	4.5	4.0	5.0	3.0	4.5	5.0	4.0	0800
1000	3.5	3.0	5.0	5.5	6.5	5.5	5.0	6.5	6.0	5.5	6.5	6.5	1000
1200	4.5	4.5	6.5	7.5	7.0	6.0	5.5	7.5	7.5	6.5	6.5	6.5	1200
1400	5.0	4.5	6.5	7.0	6.5	6.0	5.5	6.0	7.5	6.5	6.5	6.0	1400
1600	4.0	4.0	5.5	5.5	5.0	5.0	4.5	6.0	6.0	6.5	5.5	4.5	1600
1800	3.0	2.5	3.5	4.0	3.5	3.5	3.5	4.0	3.5	4.5	4.0	3.5	1800
2000	2.0	2.0	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.5	3.0	2.5	2000
2200	2.0	2.0	2.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2200
2400	1.5	2.0	2.0	2.5	2.0	2.5	3.0	2.5	3.0	3.0	2.5	2.0	2400
MEAN	2.8	2.5	3.6	4.0	4.0	3.8	3.7	4.4	4.1	4.4	4.3	3.8	MEAN
MIN	1.5	1.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	3.0	2.5	2.0	MIN
MAX	5.0	4.5	6.5	7.5	7.0	6.0	5.5	7.5	7.5	6.5	6.5	6.5	MAX

OBS ID #: 000237 * * * FORM AH-82-06/CORRECTED * * *

THERMOGRAPH #: 62077 SAMPLING SITE: SLOUGH 21 MOUTH

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

---- D A T E ----

TIME	820430	820501	820502	820503	TIME
0200	2.0	1.5	2.5	2.0	0200
0400	2.0	1.5	2.5	2.0	0400
0600	2.5	2.0	3.0	2.5	0600
0800	4.0	4.0	4.0		0800
1000	6.5	7.5	5.5	7.0	1000
1200	8.0	9.0	7.0	5.0	1200
1400	8.0	8.5	7.0	7.0	1400
1600	6.0	7.0	6.0		1600
1800	4.0	4.5	3.5		1800
2000	3.0	3.5	2.5		2000
2200	2.0	3.0	2.5		2200
2400	2.0	2.5	2.0		2400
MEAN	4.2	4.5	4.0		MEAN
MIN	2.0	1.5	2.0	2.0	MIN
MAX	8.0	9.0	7.0	7.0	MAX

OBS ID #: 00023   * * * FORM AH-82-06/CORRECTED * * *   PAGE 01 OF 07

THERMOGRAPH #: 62101   SAMPLING SITE: SLOUGH 21 MOUTH INTRAGRAVEL

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/   CORRECTION FACTOR: 0.0

	DATE											
TIME	820206	820207	820208	820209	820210	820211	820212	820213	820214	820215	820216	820217
0200		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
0400		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
0600		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
0800		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1000		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1200		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1400		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MEAN		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

OBS ID #: 000239 * * * FORM AH-82-06/CORRECTED * * * PAGE 02 OF 07

THERMOGRAPH #: 62101 SAMPLING SITE: SLOUGH 21 MOUTH INTRAGRAVEL

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820218	820219	820220	820221	820222	820223	820224	820225	820226	820227	820228	820301	TIME
0200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0200
0400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0400
0600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0600
0800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0800
1000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1000
1200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1200
1400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1400
1600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1600
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1800
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2000
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2200
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2400
MEAN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MEAN
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MIN
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MAX

OBS ID #: 000240 * * * FORM AH-82-06/CORRECTED * * * PAGE 03 OF 07

THERMOGRAPH #: 62101 SAMPLING SITE: SLOUGH 21 MOUTH INTRAGRAVEL

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820302	820303	820304	820305	820306	820307	820308	820309	820310	820311	820312	820313	TIME
0200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0200
0400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0400
0600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0600
0800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0800
1000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1000
1200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1200
1400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1400
1600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1600
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1800
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2000
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2200
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2400
MEAN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MEAN
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MIN
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MAX

OBS ID #: 000241 * * * FORM AH-82-06/CORRECTED * * * PAGE 04 OF 07

THERMOGRAPH #: 62101 SAMPLING SITE: SLOUGH 21 MOUTH INTRAGRAVEL

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

	DATE												
TIME	820314	820315	820316	820317	820318	820319	820320	820321	820322	820323	820324	820325	TIME
0200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0200
0400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0400
0600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0600
0800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0800
1000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1000
1200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1200
1400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1400
1600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1600
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1800
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2000
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2200
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2400
MEAN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MEAN
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MIN
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MAX

THERMOGRAPH #: 62101 SAMPLING SITE: SLOUGH 21 MOUTH INTRAGRAVEL

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820326	820327	820328	820329	820330	820331	820401	820402	820403	820404	820405	820406	TIME
0200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0200
0400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0400
0600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0600
0800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0800
1000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1000
1200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1200
1400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1400
1600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1600
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1800
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2000
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2200
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2400
MEAN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MEAN
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MIN
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MAX

OBS ID #: 000243 * * * FORM AH-82-06/CORRECTED * * * PAGE 06 OF 07

THERMOGRAPH #: 62101 SAMPLING SITE: SLOUGH 21 MOUTH INTRAGRAVEL

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

TIME	DATE 820407	820408	820409	820410	820411	820412	820413	820414	820415	820416	820417	TIME
0200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0200
0400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0400
0600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0600
0800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0800
1000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1000
1200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1200
1400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1400
1600	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1600
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1800
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2000
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2200
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2400
MEAN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MEAN
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MIN
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	MAX

OBS ID #: 000244 * * * FORM AH-82-06/CORRECTED * * * PAGE 07 OF 07

THERMOGRAPH #: 62101 SAMPLING SITE: SLOUGH 21 MOUTH INTRAGRAVEL

RM: 142.0 TRM: GEOCODE: S/31N/11W/02/AAA/ CORRECTION FACTOR: 0.0

	--- DATE ---						
TIME	820418	820419	820420	820421	820422	820423	820424
0200	3.0	3.0	3.0	3.0	3.0	3.0	3.0
0400	3.0	3.0	3.0	3.0	3.0	3.0	3.0
0600	3.0	3.0	3.0	3.0	3.0	3.0	3.0
0800	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1000	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1200	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1400	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1600	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1800	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2000	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2200	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2400	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MEAN	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MIN	3.0	3.0	3.0	3.0	3.0	3.0	3.0
MAX	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Appendix C

February 24-28, 1982 Trip Report

1982 WINTER TEMPERATURE STUDY

February 24-28 Trip Report

E. Woody Trihey

Summary

The purpose of this five day field trip was to establish a network of stream and intergravel water temperature monitoring stations, and to evaluate the performance of various types of instrumentation. Ten stations were established in the sloughs and the mainstem of the Susitna River above Curry. Temperature data are expected to be collected through April 1982. These data are expected to provide a preliminary understanding of baseline mid-winter thermal characteristics at known spawning areas in the side sloughs, and surface water temperatures under ice covered side channels[1] of the mainstem Susitna River. Special attention was given to monitoring surface and intergravel water temperatures at spawning areas identified in the 1981 ADF&G field program, as well as to obvious zones of ground water upwelling in the main channel where spawning may or may not have occurred.

Steve Atkinson (AEIDC) and I flew to Gold Creek (via Alyeska on Hudson Air Service) to meet Andy Hoffmann and Mike Stratton (ADF&G) on the morning of February 24. Field transportation February 24-26 was by snow machine. During this three day period we established seven

---

[1] There was no apparent velocity under the ice cover in the areas sampled. It is suspected that the water present in these areas was "ponded" due to staging and backwater effects of the mainstem.

monitoring stations and prepared three additional sites for installation of Datapod recorders. Mike Stratton, Andy Hoffmann and Steve Atkinson returned to Anchorage the afternoon of February 26. Jean Baldrige (AEIDC) drove to Talkeetna that evening bringing the DSM 1000 Data Storage Modules and the equipment and materials needed for pre-emergent sampling of incubating eggs and alevins from the streambed.

On February 27 and 28, Jean Baldrige and I installed the Datapod recorders, checked the performance of the equipment at the seven stations established February 24-26. We also installed two Ryan thermographs at an eleventh monitoring station in Slough 9A to record continuous surface and intergravel water temperatures.

In addition we evaluated substrate composition at several mainstem locations, and collected incubating eggs and alevins from two sloughs (21 and 11). On February 28 all open water leads in the Susitna River (mainstem and sloughs) between RM 125 and RM 145 were surveyed by helicopter and their locations marked on blueline field maps. Notations were made to indicate whether the open leads were attributable to either thermal or velocity characteristics of the river.

SLOUGH 21

Instrumentation was installed at Slough 21 to monitor continuous intergravel and surface water temperatures at a known chum salmon spawning location and, perhaps, to provide some insights regarding the possibility of subsurface flow exiting between the mainstem river (RM 143) and

the slough (RM 142). Slough 21 is located in the downstream side of an old point bar. This bar is stable, well vegetated with a mature alder-cottonwood overstory and probably consists of rather permeable alluvial deposits. It is quite conceivable that the upwelling flow which exists in the slough results, at least in part, from the hydraulic head created by the difference in elevation between the stage of the mainstem river on the upstream side of the point bar and the streambed elevation in the slough.

A temperature station was established in the upper portion of Slough 21 to monitor intergravel and surface water temperatures. A Datapod model DP 2321 recorder (serial No. 508B) and two calibrated temperature probes were installed February 27 to record average, maximum, and minimum temperatures over 6-hour periods. The channel A probe (calibration correction -0.1°C) is recording intergravel temperature data, and the channel B probe (calibration correction + 0.1°C) is recording surface water temperature data. This recorder was checked February 28 and thought to be malfunctioning. ADF&G personnel checked the instrument again on march 1. The unit would not cycle, and only the channel B temperature measurement was visible on the LED. These symptoms provided a strong indication that data was not being recorded on the unit's memory chip. Dryden and Larue were informed of the problem March 2 and indicated that they would provide another recorder. However the only replacement recorder available was a single channel instrument accurate to ±0.5°C. The malfunctioning Datapod is scheduled for replacement by the ADF&G on March 4. The replacement unit will record average daily

intergravel water temperatures. A Ryan model J-90 thermograph will be installed to monitor surface water temperatures.

Slough21 was identified as a chum salmon spawning area by ADF&G during their 1981 field studies. On Saturday, February 27, Jean Baldrige located and identified several redds. No juvenile fish were observed. One redd was disturbed and ten alevins were extracted. These young salmon were preserved in alcohol and presented to Alan Kingsbury (ADF&G, Comm. Fish.) for identification. He tentatively identified them as probable chum salmon, indicating that the gill arches would have to be counted for verification of identity.

SLOUGH 20

The instrumentation installed in Slough 20 was to periodically obtain instantaneous intergravel and surface water temperatures. This slough has been identified in the 1981 ADF&G field studies as providing spawning habitat for chum salmon. It also provides rearing habitat for chinook salmon.

A small tributary enters the upper portion of Slough 20 from the east. A monitoring station was not established, but surface and intergravel water temperatures were measured at the mouth of this tributary with a pocket thermometer. On February 25 subsurface and surface water temperatures were 3.2°C. The subsurface water temperature was measured by inserting a pocket thermometer approximately 0.5 feet into the sand/silt substrate and allowed to stand for 5 minutes before extracting it. This

technique was used to obtain two subsurface temperature measurements in a 15 minute time span.

A permanent monitoring station was established in the slough approximately 250 feet downstream from the mouth of this tributary. A YSI series 400 temperature probe was installed to a depth of one foot in the streambed gravels at a suspected spawning site. Both intergravel and surface water temperatures were measured as being 2°C. (The surface water temperature was also measured at 2°C with the same pocket thermometer used to measure the temperature of the tributary.)

We attempted to establish a temperature monitoring station at the mouth of Waterfall Creek. Three holes were chopped through the ice in Slough 20 off the mouth of the creek only to find that the slough was frozen solid into the substrate. Based on this observation of the physical conditions, the total input of stream flow and heat energy into Slough 20 apparently originates from the small tributary stream. As the water flows downstream in the slough from the mouth of the tributary, it is cooled by heat loss to the atmosphere. By the time the flow reaches Waterfall Creek, it has frozen solid forming an ice plug in the slough. Intergravel flow might still exist, however, no attempt was made to dig more than 0.5 feet into the frozen bed of the slough.

A discharge measurement might be made at the mouth of the small tributary and at the approximate location of the YSI probe to determine whether there is a net increase or decrease in surface flow in this subreach of the slough. I suspect that there is a net loss of surface

flow to intergravel percolation which may be reappearing downstream somewhere under the ice cover between the mouth of Waterfall Creek and the mouth of Slough 20.

Field time was too limited to attempt chipping through the Slough's ice cover below the mouth of Waterfall Creek to ascertain whether or not water was present in the lower portion of the slough. The power auger was not used because of the likelihood of destroying the bit were it to come in contact with frozen substrate were water not present under the ice cover. Consideration was given to installing a Ryan thermograph in the slough near the mouth of the tributary, however, a suitable location could not be found (too shallow). Therefore, it is recommended that whenever ADF&G field crews are in the vicinity of Slough 20, they measure surface water temperatures near the YSI probe and at the mouth of the small tributary stream with a pocket thermometer, or preferably, with a hand held temperature probe (Hydro-Lab).

SLOUGH 19

Slough 19 was identified in the 1981 ADF&G studies as a sockeye salmon spawning area. Two Ryan thermographs were installed at this slough earlier in the month by Tim Quane, a member of the Aquatic Habitat Team, as part of a cooperative effort to obtain winter temperature data. One is buried approximately 1 foot in the substrate, the other is recording surface water temperature. Slough 19 was not visited during the February 23-28 field work.

SLOUGH 11

Three temperature monitoring stations were established in the vicinity of Slough 11 -- two stations are located on side channels of Susitna River at RM 136.2 and RM 135. An additional station is located in Slough 11 (RM 135.5). Instrumentation has been installed at these sites that will provide for the collection of both continuous and instantaneous surface and intergravel water temperature data. Slough 11 and the mainstem side channel area at RM 136.2 have been identified by ADF&G as chum salmon spawning areas. Slough 11 has also been identified as an important sockeye salmon spawning area for the river segment above Talkeetna.

A continuous recording station was established in a side channel of the Susitna River (RM 136.2) to measure intergravel and water temperatures at a known chum salmon spawning area. This station records average, maximum, and minimum surface and intergravel water temperatures every 6 hours. Probes were installed on February 25 and the Datapod recorder (serial No. 506B) was installed on February 27. Channel A (calibration correction -0.14°C) is recording intergravel temperatures and channel B (calibration correction -0.10°C) is recording surface water temperatures.

A YSI series 400 temperature probe was installed in an open lead 1 foot beneath the substrate at Slough 11 (RM 135.5). Instantaneous intergravel temperatures can be obtained on a periodic basis using a YSI 42SC tele-thermometer. A Ryan thermograph was installed in a pool 10 yards

downstream from the YSI probe to obtain a continuous record of surface water temperatures. A comparison can later be made between the periodic readings of intergravel temperatures measured by the YSI probe and the thermograph records.

Jean Baldrige and I observed several redds through a clear ice cover on the slough. One redd immediately downstream of an open-water riffle was disturbed and two sizes of eggs and several alevins were collected. The reason that both the chum and sockeye salmon were recovered from the same redd (superimposition of eggs) is due to the high utilization of this area by adult spawners.

These eggs and alevins were preserved in alcohol and presented to Allen Kingsbury (ADF&G, Comm. Fish.) for identification. He tentatively identified the alevins and smaller eggs as sockeye salmon. he was quite confident the larger eggs were chum salmon eggs.

A third temperature monitoring station was established in a mainstem side channel at RM 135. The instrumentation was placed in a shallow open lead which was maintained by upwelling subsurface flow. Spawning was not known to occur in this area. YSI series 400 temperature probes were installed on February 25 to measure instantaneous intergravel and surface water temperatures. Substrate composition was visually evaluated, and with the aid of a shovel it was found to be highly cemented at several sites in this location. The surface layer gives the false impression that suitable spawning substrates were present. Only the top 2 to 3 inches (approximate thickness of one layer of the large gravel

present) of the streambed were easily disturbed. Beneath this layer, silts and fine sand have completely filled the interstitial spaces between the substrate particles. It was extremely difficult to dig into these streambed materials with a shovel, therefore it is doubtful that spawning salmon would be successful in digging redds at this location. Due to the nature of streambed materials, it is not likely that this side channel would be a highly productive spawning area even though it is fed directly by upwelling subsurface flow.

SLOUGH 10

Slough 10 was noted as an important rearing area in the 1981 ADF&G studies, but no adult spawners were observed using this area. Therefore this slough was visited with the idea of installing Ryan thermographs to obtain continuous surface and intergravel water temperature data. However, aerial and foot surveys indicated a considerable ice formation covered the slough, making it quite difficult to install and later retrieve the thermographs. An insufficient number of YSI temperature probes were available to instrument this location without deleting what was considered to be more important installations at other locations. Therefore, no instrumentation was installed at Slough 10. It is recommended that water temperature data for this slough, and the mainstem near its mouth be obtained throughout the 1982-83 study period as part of the FY 83 ADF&G program.

SLOUGH 9

Chum salmon are known to spawn in the upper and middle reaches of Slough 9. Coho salmon are believed to spawn in the uppermost reaches of the Slough - downstream from the confluence of two small spring-fed tributaries which enter the Slough (Slough 9B). Like Slough 21, Slough 9 is also located on the downstream side of an old point bar. Thus it is quite possible that the subsurface flow which arises in the Slough is driven by the hydraulic gradient which exist between ice-covered mainstem river upstream of the point bar and the streambed elevation of the slough itself. Three temperature monitoring stations were established in Slough 9 and 9B to determine if there is a notable decay in surface and intergravel water temperatures as one moves downstream in this slough system.

The downstream-most station (located near the first bend in the slough below the railroad tracks) was installed by Tim Quane and consists of two Ryan thermographs - one buried a foot beneath the streambed, the other recording the surface water temperatures. A small tributary stream which parallels the railroad right of way for approximately 500 feet enters the slough just upstream from these thermographs. This small stream most likely intercepts subsurface flow originating from the steep hillside behind the railroad. It will likely provide a significant influence on the surface water temperatures which are being recorded by these thermographs.

A second pair of Ryan thermographs were installed near the mouth of Slough 9B to record surface and intergravel water temperatures. This Slough was identified as a probable coho spawning area. Coho carcasses were observed in Slough 9B in early October 1982, and decomposed jawbones which may have been coho were observed February 29 near the site the thermographs were installed. A third monitoring station, a YSI temperature probe, was established in the streambed gravels at the upstream end of Slough 9B. The slough temperature was measured with a pocket thermometer. Slough 9B was the warmest spot located during this field work. Intergravel temperatures were measured at 4.4 and 4.5°C on the three days observations were made. Surface water temperatures were markedly cooler at this location - 1.5°C on Thursday, 1.8°C on Saturday, and 2.8°C on Sunday. The variation in surface water temperatures may, in part, be attributable to the field techniques rather than actual variations in surface water temperatures.

Substrate composition was carefully inspected February 28 throughout this slough system. Substrates were found to be quite cemented in open leads of the lower reach of Slough 9. This portion of the slough system conveys a notable amount of mainstem flow during the summer period. Substrates in Slough 9B were fairly loose gravels, covered with a 2 to 3 inch deposit of silts and fine sands. Adult spawners would have little difficulty in preparing redds in Slough 9B.

An attempt to install instruments in a side channel of the Susitna River at approximately RM 130, had to be aborted because the ice cover was

found to be too thick to make this attempt successful. (The power auger was not available.)

SLOUGH 8A

Two continuous temperature monitoring stations were established in Slough 8A to obtain intergravel and surface water temperature data. A Datapod recorder (serial No. 507B) and two calibrated probes were installed February 27 at a known spawning area in the upper portion of the Slough. Channel A (calibration correction -0.09°C) records intragravel temperatures at a depth of 1 foot below the surface. Channel B (calibration correction -0.12°C) records surface water temperature. Average, maximum, and minimum temperatures are recorded for 6 hour intervals.

Mr. Tim Quane (ADF&G) had previously installed two Ryan thermographs near the mouth of Slough 8A to obtain a continuous record of surface and intragravel water temperatures.

SKULL CREEK

On February 25th, a monitoring station was installed at an open water lead in a mainstem side channel (RM 125), approximately half-way downstream from the mouth of Slough 8A toward Skull Creek. No information exists regarding the use of this area by adult spawners. YSI series 400 temperature probes were installed to measure instantaneous intergravel and surface water temperatures. Substrate composition at this location

SUBSTRATE CONDITIONS

After examining the substrate composition in several open leads, it became quite apparent that suitable spawning areas are very limited in mainstem and side channel areas. What appears to be suitable mainstem spawning substrate is highly cemented within only a few inches of the streambed surface. If spawning does occur in these areas or in areas similar to those examined during this field trip, it is doubtful that it is successful. Eggs would likely be washed away shortly after deposition since they could only be deposited 2 to 3 inches beneath the streambed.

This further underscores the importance of the spawning habitat which is available in the side sloughs. If existing salmon runs above Talkeetna are to be maintained then side slough spawning areas must be retained or we must undertake the necessary mitigative actions which would provide replacement spawning habitat in the mainstem. Based on aerial and foot surveys I conducted during September and October of 1981, in addition to those observations made during this winter field trip, it is most doubtful that spawning substrates currently exist in the main channel to offset the loss that might occur to spawning habitat in the slough areas.

Two locations were tentatively identified that could be studied to determine the feasibility of creating or improving mainstem spawning habitat. The sidechannel areas below Slough 8A and Slough 11 have acceptable size substrates for spawning, but the silt and sands which

have been deposited in the interstitial spaces cementing and compacting the substrates, preclude use of these areas by spawners.

A bulldozer could be used to scarify the streambed in these areas during late winter, allowing spring and summer stream flows to remove some of the lines. It would be advantageous to undertake such an activity on a small scale during the 1982 field season to ascertain the degree to which these areas might be improved (summer flows may completely wash away the scarified streambed), and to determine to what extent these disturbed streambed materials would be accepted as spawning areas by the returning salmon. The sites below the mouths of Slough 11 and Slough 8 would be ideal locations to undertake this type of work.

It is further suggested that field work be undertaken to determine the general range of substrate composition, and degree of cementation that is acceptable for successful mainstem spawning. A pilot field study should be outlined which integrates the use of grid surveys, freeze-coring, penetrometer tests, and sieve analysis to develop a substrate classification system based on an evaluation of biological results (spawning success and survival). It is also suggested that Mr. Jack Helle (NMF Lab Auke Bay) be contacted regarding his experiences with using thermal probes to locate upwelling zones within streams for possible application to the mainstem Susitna River.

Water temperature data obtained during this field trip and several selected photographs are attached.

Intergravel and surface water temperature (°C) measurements
obtained at established monitoring sites.
February 25-28, 1982

SLOUGH 21

Date	RM 143 Surface	Slough 21 Intergravel	Slough 21 Surface
2/27	1.5	1.3	1.8
2/28	1.5	1.7	---

SLOUGH 20

Date	Tributary Intergravel	Tributary Surface	Slough 20 Intergravel	Slough 20 Surface
2/25	3.2	3.2	2.0	2.0

SLOUGH 11

Date	RM 136.2 Intergravel	RM 136.2 Surface	Slough 11 Intergravel	Slough 11 Surface	RM 135 Intergravel	RM 135 Surface
2/27	2.5	1.1	2.1	2.0	3.9	2.2
2/28	2.6	1.1	2.3	1.2	3.1	1.7
2/28	---	---	---	---	3.0	2.0

SLOUGH 9

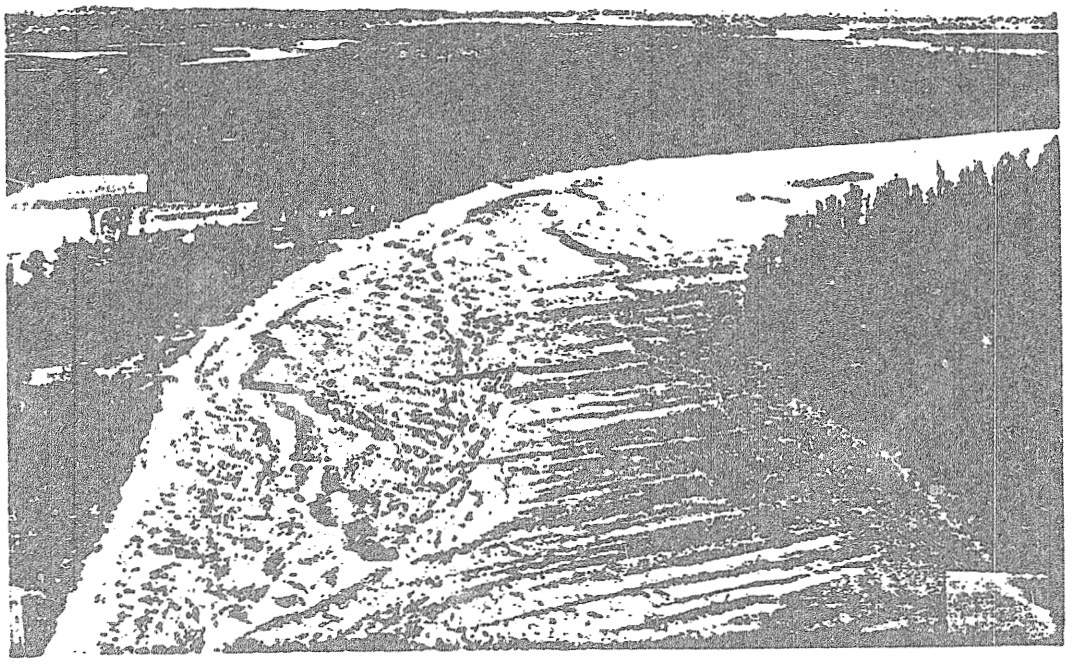
Date	Slough 9A Intergravel	Slough 9A Surface
2/25	4.5	1.5
2/27	4.5	1.8
2/28	4.4	2.8

SLOUGH 8A

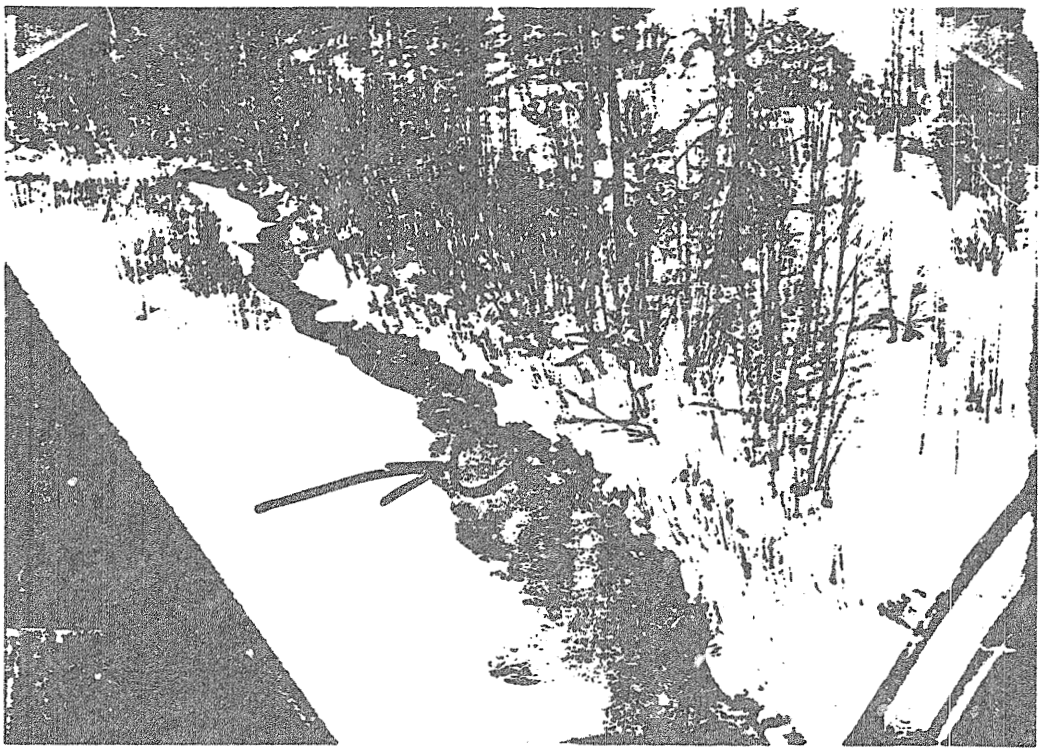
Date	Slough 8A Intergravel	Slough 8A Surface	RM 125 Intergravel	RM 125 Surface
2/25	---	---	2.2	1.0
2/27	2.9	1.8	1.9	1.1
2/28	3.0	1.7	2.0	1.1



Ice Cover at the Susitna - Chulitna Confluence



Ice Cover on Susitna at RM 102.8

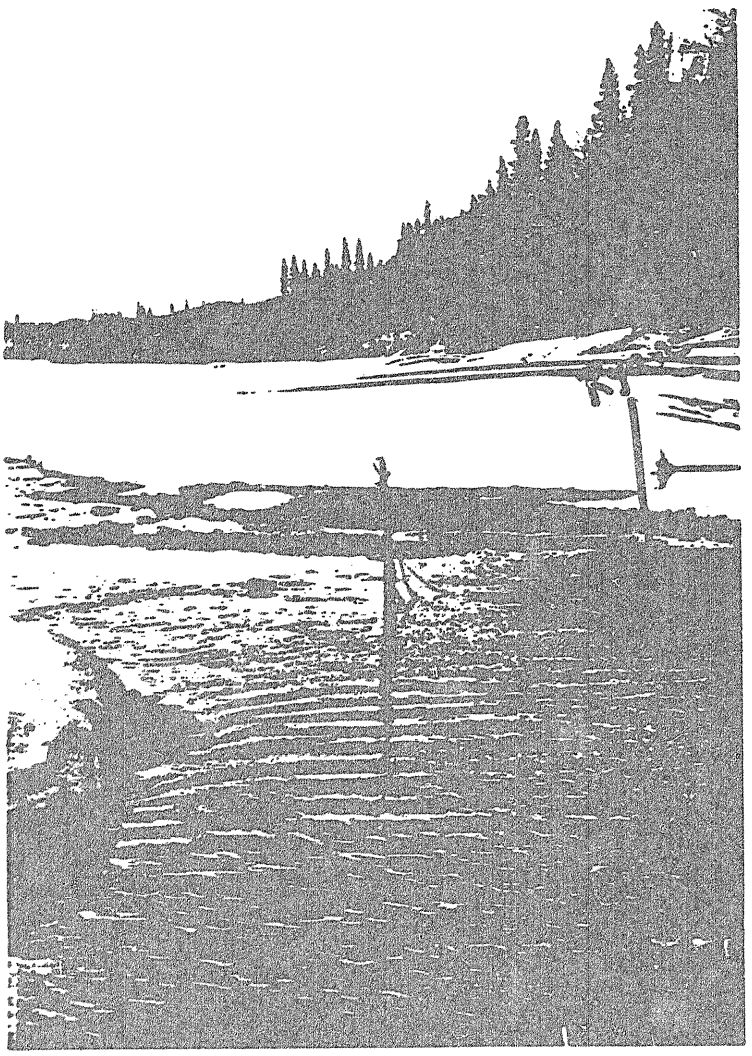


Datapod recording station in Slough 8 A

Continuous surface and intergravel water temperature data being recorded



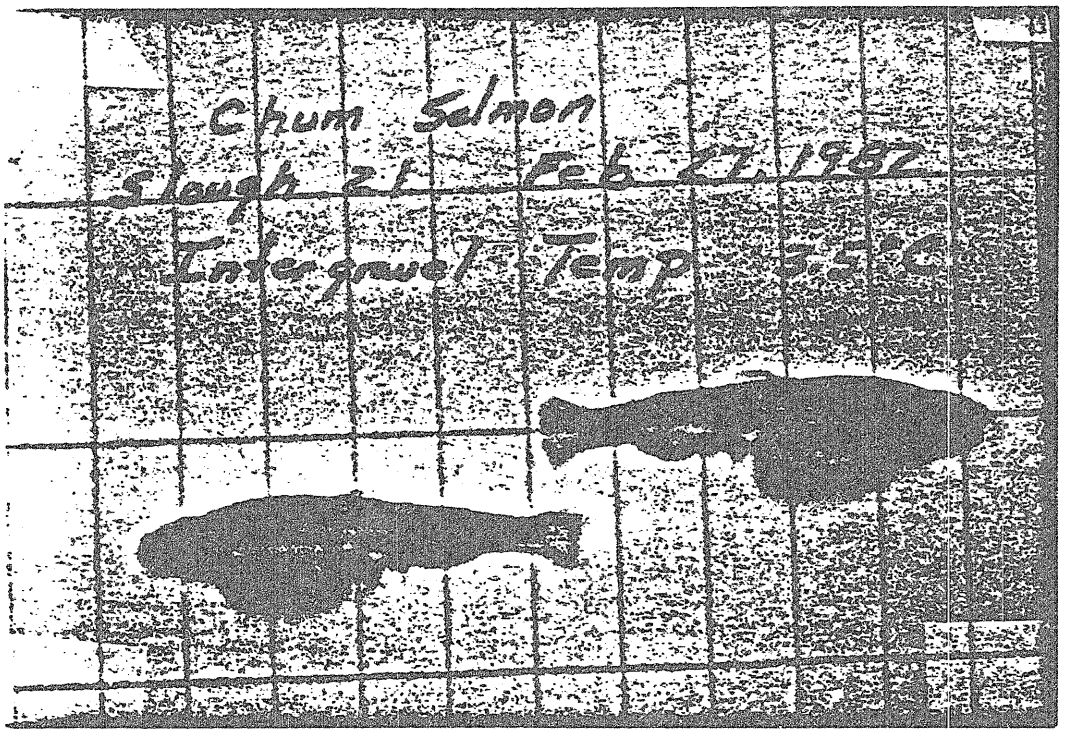


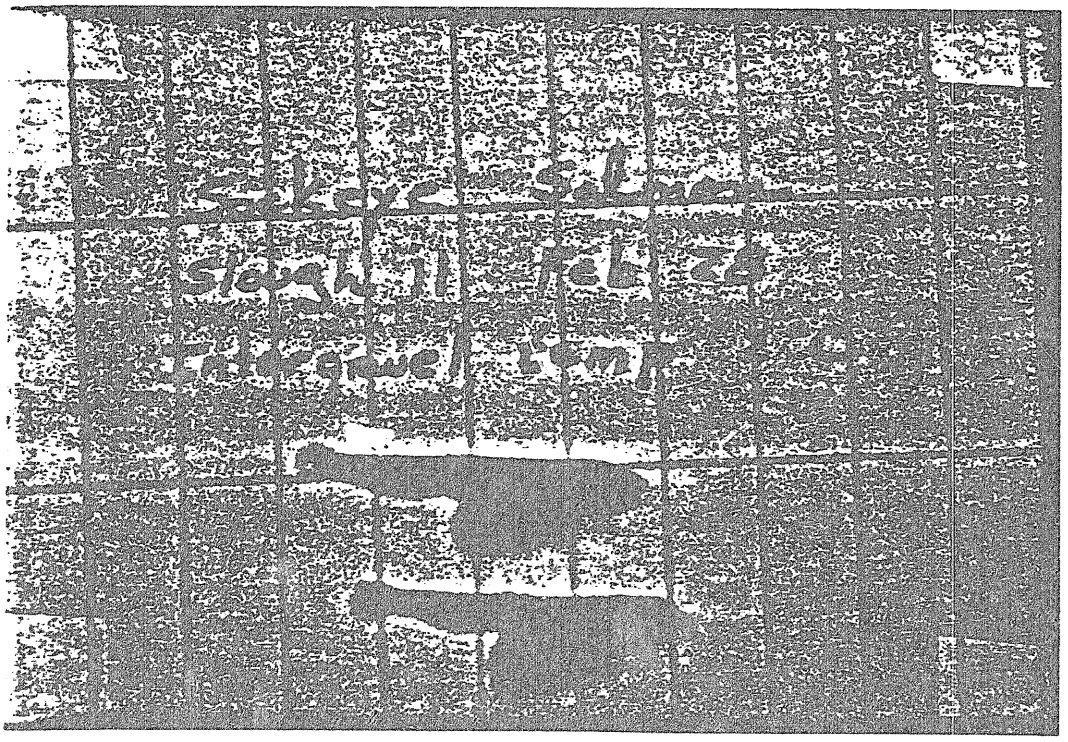


Slough 11 Monitoring Station

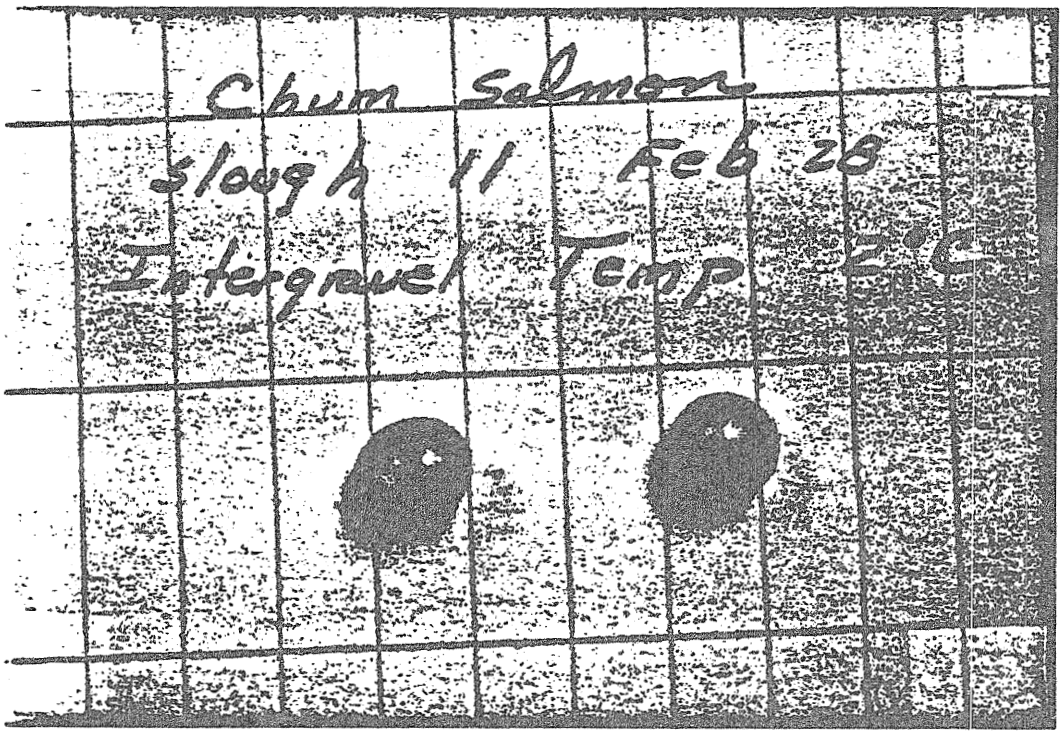
YSI probes for surface and intergravel water temperatures.

Ryan thermograph monitoring continuous surface temperatures.

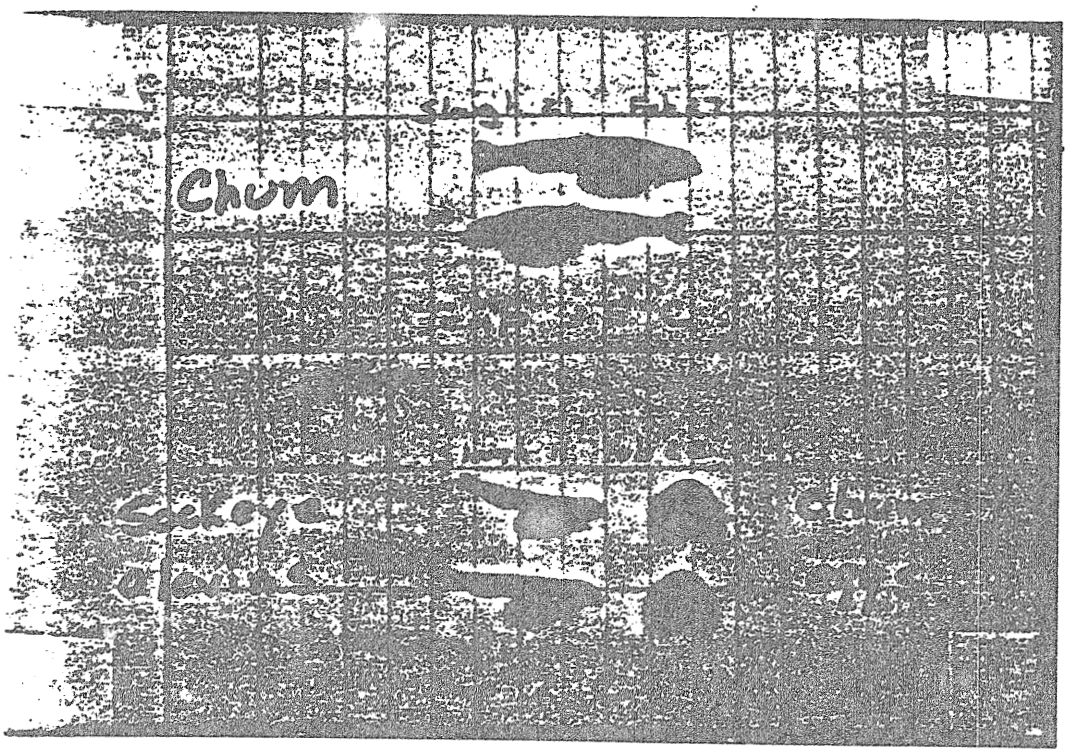




Fry extracted from Redds with the aid of a shovel

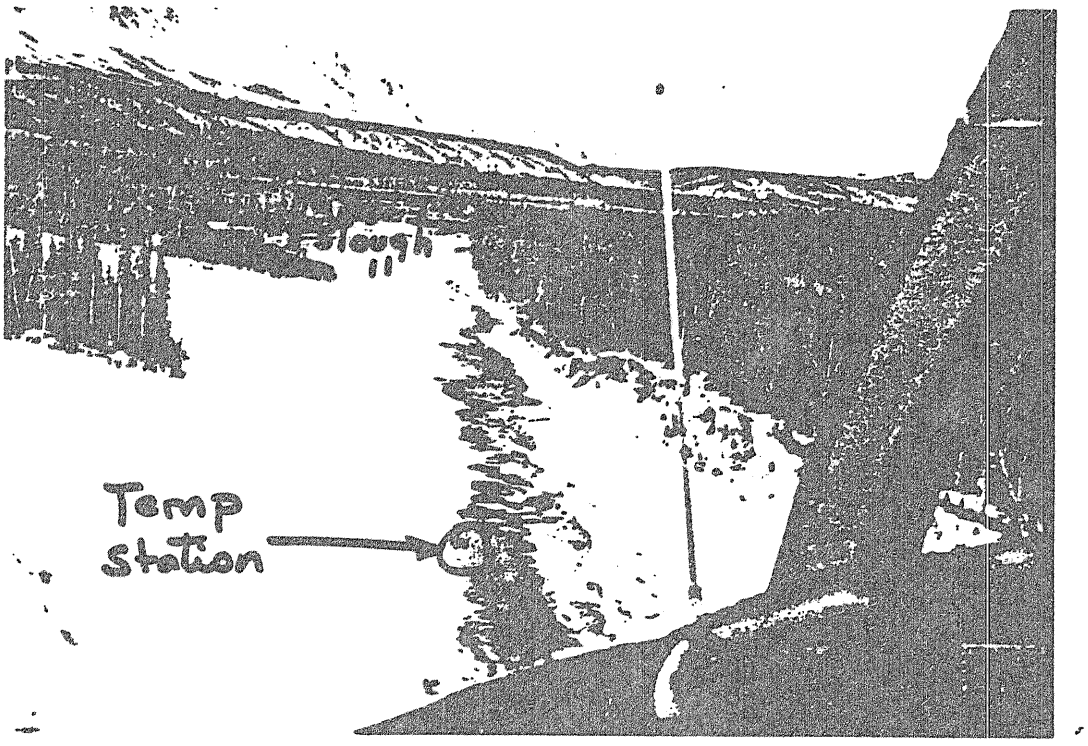


Eyed Chum salmon eggs from Slough 11



Comparison of alevins from SL 21 and 11

(Date of deposition unknown thus difference in development cannot be attributed to temperature even though temperature comparison would support such a statement)

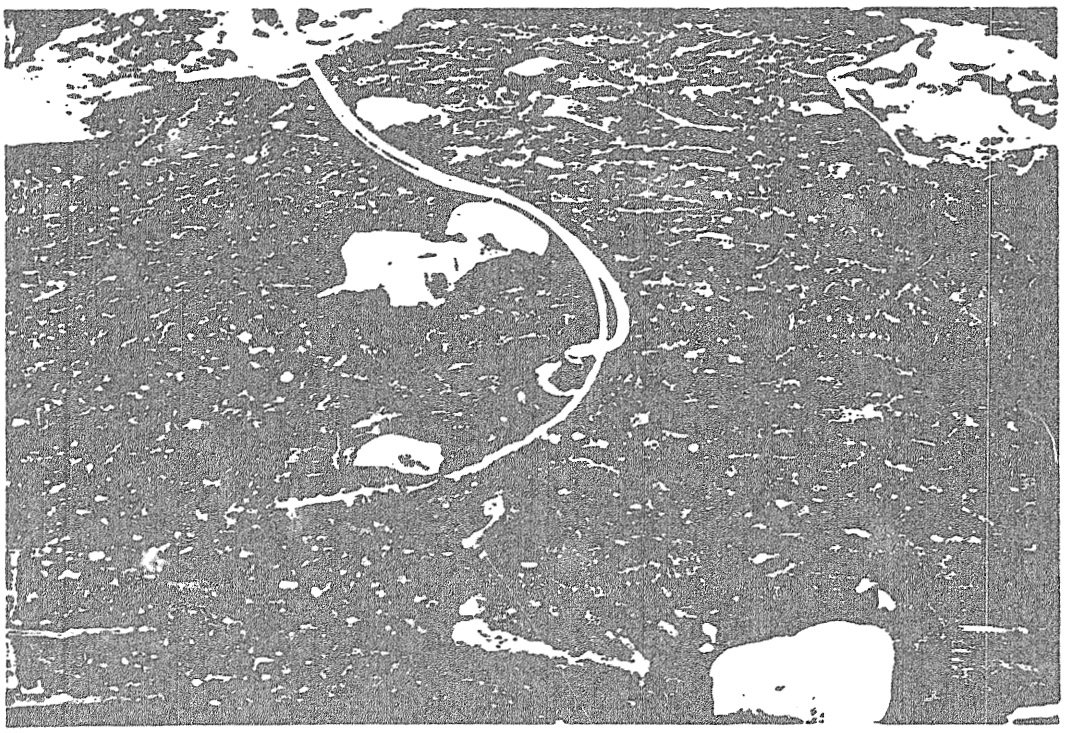


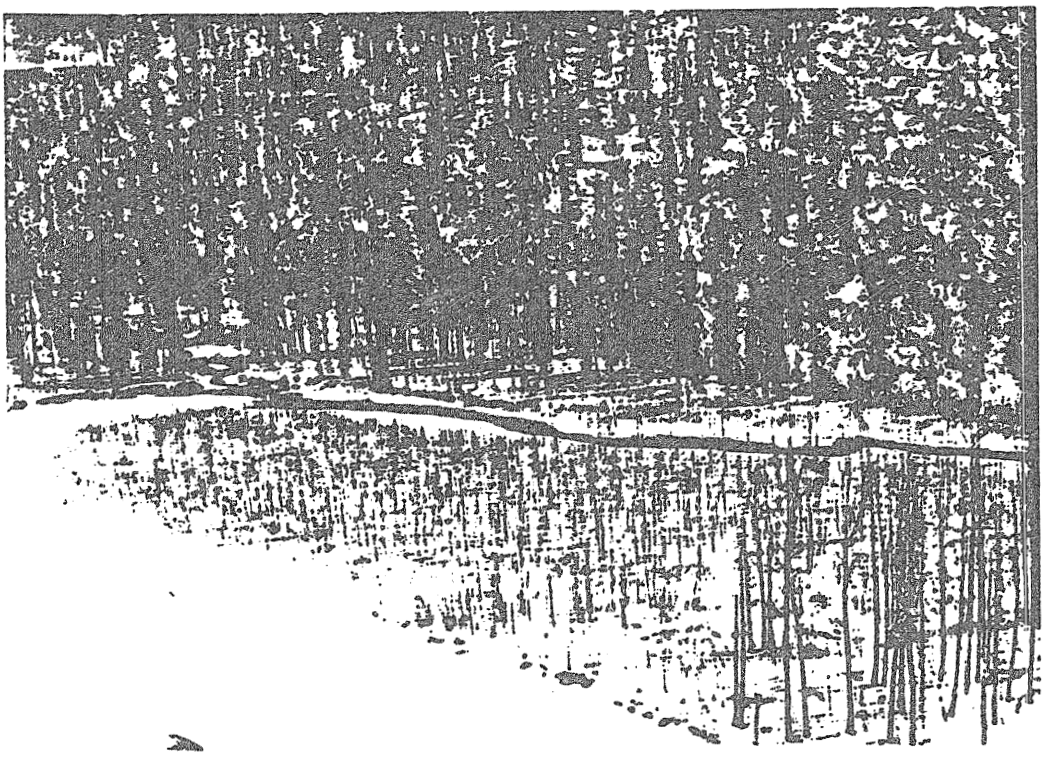
Thermal lead in the side channel below the mouth of Slough 11 (Approximately RM 135.4).

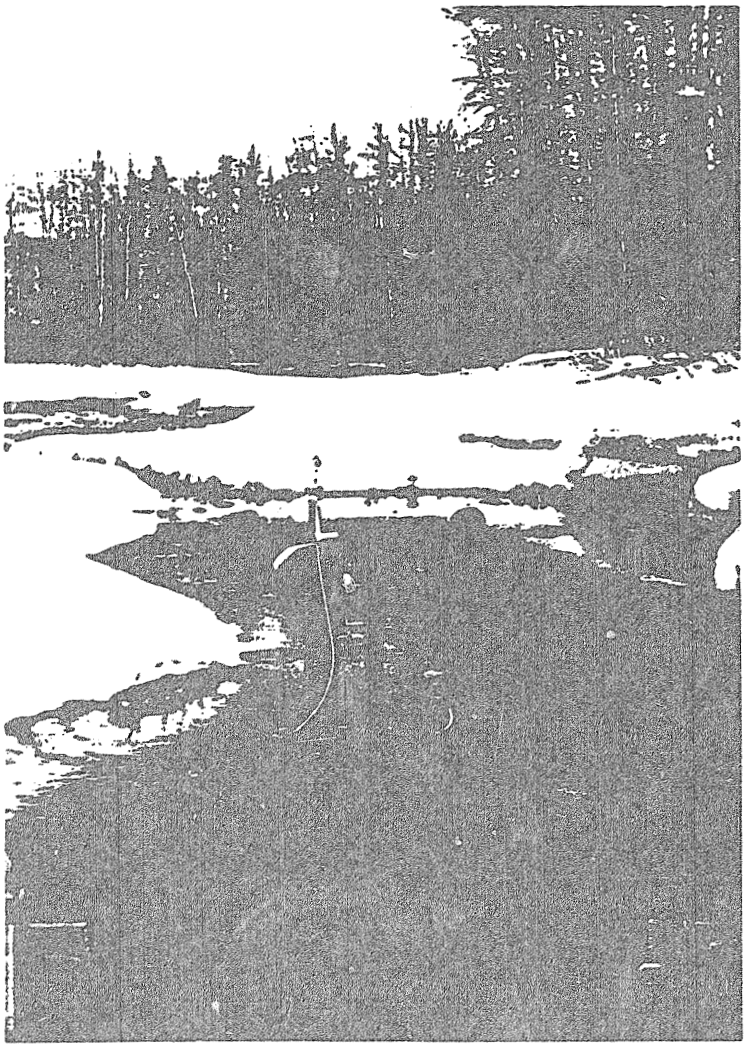
Recommended study site for spawning habitat improvement for mitigation. Idea is to scarify existing substrate or place spawning sized gravel. Rely on reduction of summer flows to prevent scouring of gravel.



Datapod site in mainstem below Gold Creek Bridge. Continuous surface and intergravel water temperature data is being obtained at a known spawning site (RM 136.2)

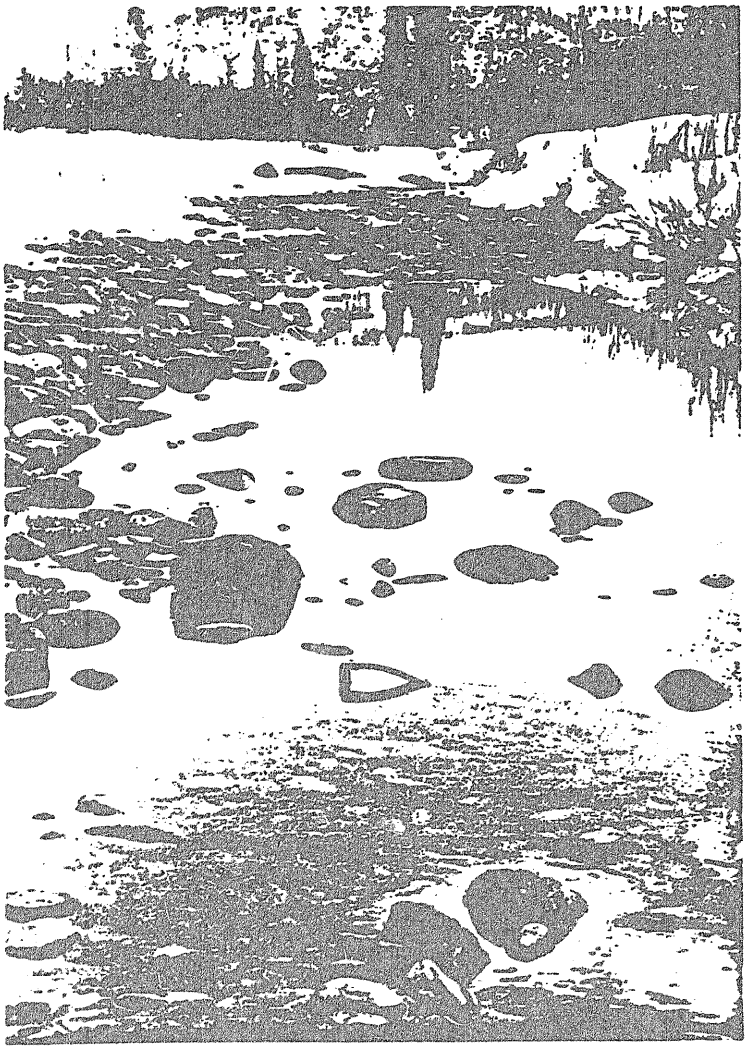




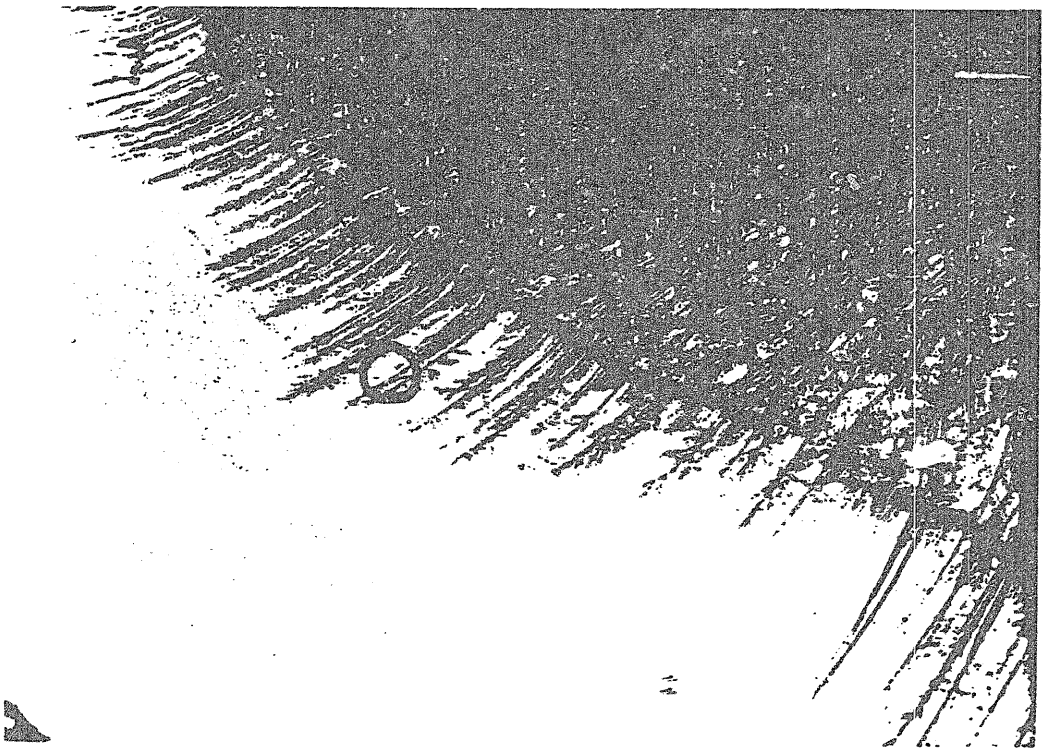


Slough 20 -
YSI Series 400 thermister probe for obtaining inter-gravel water temperatures from periodic sampling.





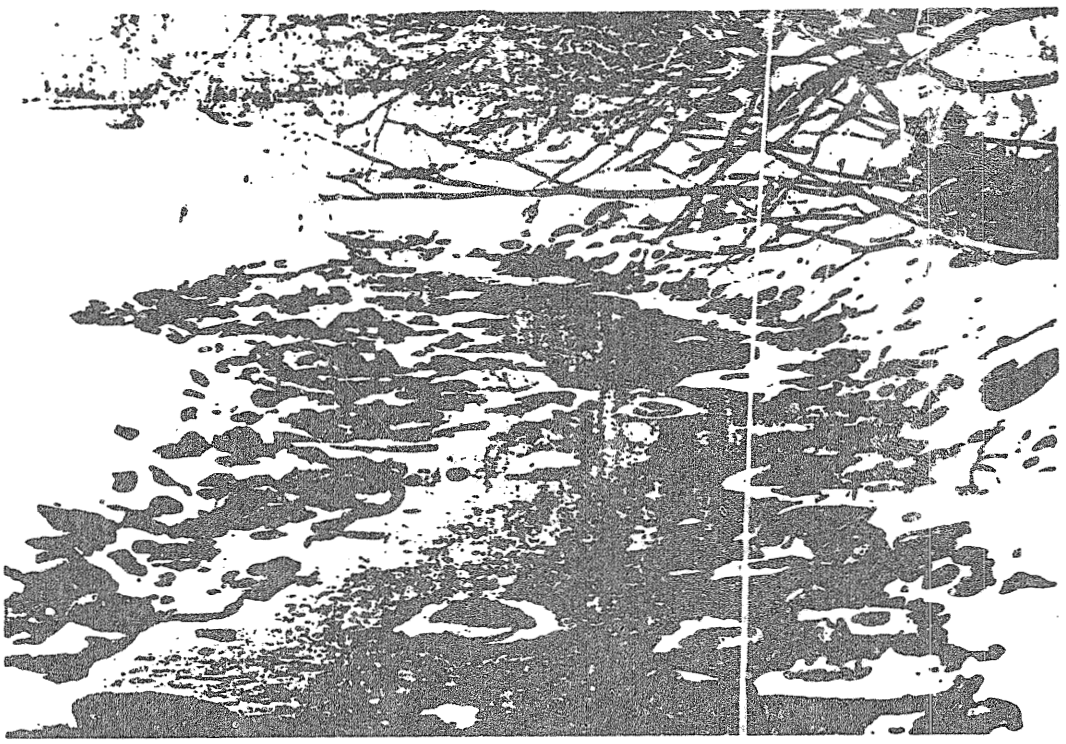
Obtaining intergravel water temperature data from Slough 21



Mainstem monitoring station RM 143.0. Ice thickness approximately 4 ft.

YSI series 400 thermister inserted through the ice for monitoring instantaneous mainstem water temperatures.





Mid-winter conditions Slough 22
Approximately RM 144.5

