ACE Basin National Estuarine Research Reserve
January-December 1997 Water Quality Metadata Report
Lastest Update: September 26, 2001

I. Data Set & Research Descriptors

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2. Entry verification:

The data are directly downloaded from the YSI Model 6000 sonde to a comma delimited file(*.csv) and PC6000 file (*.dat). The comma delimited file is imported into standardized Excel 5.0worksheet (*.xls) that was generated by a CDMO macro. Then, the data file is formatted and processed with other CDMO macros that will: 1) check data file for missing data points, 2) fill all cells which do not contain data with periods (.), 3) convert the data column to the CDMO-approved formats for time, date and numeric variables, and 4) find all data that are out of acceptable range for the data logger's sensors and out the anomalous data to an output file (*.dat).

The anomalous data are evaluated to determine whether to delete or flag the suspect data. Data are deleted if the anomalies are attributed to: 1) a sensor malfunction, 2) exposure of sensors during low tide, or 3) fouling of sensors by aquatic organisms, debris, or sediment. Data are flagged if the values are: 1)outside the range expected for the site, 2) outside the range established for the sensors, or 3) outside the range established for good water quality conditions (i.e. dissolved oxygen <28%). Corrections are made to the data file, and the file is exported as a tab-delimited file to the CDMO. Saundra Upchurch and Christopher Graffeo are responsible for these tasks.

3. Research Objectives:

Agriculture and silviculture are not major industries within the Reserve

boundaries but impacts due to development on Edisto Island may be a problem.
EPA-EMAP sampling in the South Edisto River indicated that contaminant levels
were higher than expected. Based on discussions with local CZM personnel and our
knowledge of land use within the Reserve, the South Edisto River drainage basin
appears to be best suited for studying contrasting hydrographic conditions and
land use patterns. One station is located by Edisto Island, within a tributary
off Big Bay Creek. Surrounded by residential and commercial development and
likely subject to non-point source pollution, this station is designated as the
"treatment" site. The second station is located by Bailey Island, within a
tributary off St. Pierre Creek. No urban development occurs in this area
surrounding the second station; thereby this station will serve as our "control"
site.

4. Research methods

The data loggers are programmed to record at 30-minute intervals. YSI
procedures are used to calibrate and clean the sondes. The following standards
are used to calibrate the sensors: pH 7 and 10;turbidity standards of 0 and 100
NTU; and conductivity standard of 58.64mS/cm; oxygen sensor in air-saturated
water; and depth in the air. The pH and oxygen sensors are calibrated before
each deployment, and the others are only calibrated if the post-check readings
are significantly different from standard. To determine if the readings drifted
significantly during deployment, sensor readings are compared to standard
readings and to in-situ readings that are taken at the beginning and at the end
of each deployment. The voltage output of each sensor is checked to determine
if the sensors are working properly. Other checks conducted on the sensors are:
1) DO membrane puncture and proper parking of turbidity pad. The results of the
data and sensors checks are used to evaluate the validity of the data (see Entry
Verification section).
Prior to the YSI deployment, a 12-foot galvanized pole was driven two feet into
the mud, and a 4-inch diameter PVC pipe, with precut holes, was bolted onto the

pole approximately one foot above the creek bottom. The holes, or windows, were cut out at the bottom of the pipes for the probes to have direct contact with the water column. Before being placed in the tubes the sondes are placed in net bags with 1/8inch mesh to keep out crabs and fish.

On February 7, the deployment method at the St. Pierre Creek site was changed. The sonde is now deployed in a pyramid shaped cage that is 2.5 feet long and 1.5 feet high. A PVC pipe, with pre-cut holes, is strapped horizontally across the top of the cage, which is about one foot off from the creek bottom. The cage is tethered to a galvanized pole to prevent any possible dragging by the tide. Before being placed in the tubes the sondes are placed in net bags with 1/8-inch mesh to keep out crabs and fish.

We modified the St. Pierre deployment apparatus several times during the year because the apparatus was trapping sediment. We drilled more and larger holes in the PVC pipe and orient the sensors away from the marsh bank and the general flow of the water to prevent sediment from collecting around the sensors. However, we need a more permanent solution to the sediment problem, so we will conduct an extensive investigation of the erosion problem at the site.

5. Site location and character:

The two sampling sites are located in two tributaries off South Edisto River. The descriptions of the sites are as follows:

Station A--this site is located in a tidal marsh creek off Big Bay Creek (GPS coordinates: 3229.662N and 80 19.427W). Surrounded by residential and commercial development and likely subject to non-point source pollution, this station is designated as the "treatment" site. Pollution sources include houses bordering the creek, many with little setback from the bordering Spartina marsh; 20 docks in the area constructed of creosote, concrete and Wolmanized pilings; boat dockage and heavy boat traffic through the creek; a paved road and three boat ramps off the creek; a marina with 75 slips, CCA treated bulkheads and fueling areas located about 0.5 miles downstream; two commercial seafood docks with8-10 commercial shrimp boats; and three restaurants. The creek is closed to

shellfish harvesting indicating a high concentration of fecal coliforms. Vegetation in the area includes salt marsh dominated by Spartina alterniflora
with isolated areas of Salicornia. Upland fringe areas consist of cabbage palmetto, live oak and cedars. Reefs of American oyster (Crassostrea virginica)
fringe the creek banks. At the time of reconnaissance, depth of the creek midway
through ebb tide was 5 feet and salinity was 23%.

Station B--this site is located in a tidal creek off St. Pierre Creek (GPS
coordinates: 32 31.724Nand 80 21.573W). It is surrounded by a wide expanse of
Spartina alterniflora marsh. Extensive mud flatsand oyster reefs fringe the
banks. Upland areas are dominated by maritime forest with wax myrtles, liveoaks,
and palmettos. No development and no agriculture occur in this portion of the
reserve. This creek is subject to little boat traffic. At the time of reconnaissance, depth at low tide was 2.5 feet and salinity was21%.

6. Data collection period:

BEGAN	ENDED
Big Bay	
01/01/97, 00:00:00	01/07/97, 09:00:00
01/14/97, 09:30:00	01/31/97, 23:30:00
02/01/97, 00:00:00	02/03/97, 12:30:00
02/05/97, 12:30:00	02/28/97, 23:30:00
03/01/97, 00:00:00	03/05/97, 10:30:00
03/07/97, 12:00:00	03/31/97, 23:30:00
04/01/97, 00:00:00	04/02/97, 09:00:00
04/04/97, 13:00:00	04/30/97, 23:30:00
05/01/97, 00:00:00	05/05/97, 14:00:00
05/08/97, 12:00:00	05/31/97, 23:30:00
06/01/97, 00:00:00	06/03/96, 12:00:00
06/04/97, 12:00:00	06/30/97, 10:30:00
07/02/97, 11:00:00	07/20/97, 21:00:00
07/24/97, 11:00:00	07/31/97, 23:30:00
08/01/97, 00:00:00	08/13/97, 09:30:00
08/15/97, 10:00:00	08/26/97, 09:00:00
08/28/97, 10:00:00	08/31/97, 23:30:00
09/01/97, 00:00:00	09/15/97, 09:00:00
09/17/97, 11:00:00	09/30/97, 23:30:00
10/01/97, 00:00:00	10/14/97, 09:00:00
10/16/97, 11:30:00	10/31/97, 23:30:00
11/01/97, 00:00:00	11/11/97, 09:30:00
11/13/97, 12:00:00	11/30/97, 23:30:00
12/01/97, 00:00:00	12/09/97, 09:00:00
12/13/97, 13:30:00	12/31/97, 23:30:00
St. Pierre	
01/01/97, 00:00:00	01/08/97, 11:00:00
01/10/97, 14:30:00	01/31/97, 23:30:00

02/01/97, 00:00:00	02/03/97, 11:30:00
02/07/97, 10:30:00	02/28/97, 23:30:00
03/01/97, 00:00:00	03/05/97, 10:30:00
03/07/97, 12:30:00	03/31/97, 23:30:00
04/01/97, 00:00:00	04/02/97, 09:30:00
04/04/97, 12:00:00	04/30/97, 23:30:00
05/01/97, 00:00:00	05/05/97, 13:00:00
05/08/97, 11:30:00	05/31/97, 23:30:00
06/01/97, 00:00:00	06/03/96, 11:00:00
06/04/97, 12:00:00	06/30/97, 10:00:00
07/02/97, 12:00:00	07/14/97, 14:00:00
07/29/97, 12:00:00	07/31/97, 15:30:00
08/28/97, 12:00:00	09/15/97, 11:00:00
08/15/97, 10:30:00	08/17/97, 19:00:00
08/28/97, 12:00:00	08/31/97, 23:30:00
09/01/97, 00:00:00	09/15/97, 11:00:00
09/17/97, 13:00:00	09/30/97, 23:30:00
10/01/97, 00:00:00	10/14/97, 10:30:00
10/16/97, 13:00:00	10/31/97, 23:30:00
11/01/97, 00:00:00	11/11/97, 08:30:00
11/13/97, 12:30:00	11/30/97, 23:30:00
12/01/97, 00:00:00	12/09/97, 09:30:00
12/11/97, 13:00:00	12/31/97, 23:30:00

7. Associated researchers and projects:

In 1993, the Reserve staff initiated a long-term survey of the decapod crustaceans and juvenile fish that utilize the estuarine waters of the Reserve as a nursery ground. Data collected during the survey over the long term will be utilized to assess temporal and spatial changes in species composition, diversity and biomass within the Reserve.

During 1994, Drs. Judith and Peddrick Weis studied the impacts of Chromated Copper Arsenate(CCA)-treated wood on the surrounding benthic communities at several Reserve sites, including the ACE Basin and North Inlet-Winyah Bay. The objective of their study was to determine to what degree and over what distances benthic fauna may be adversely affected by the contaminants. In our Reserve, surface sediment grabs were collected near CCA-treated wood and concrete marine structures in Big Bay Creek and near an undisturbed salt marsh along St. Pierre Creek. The findings indicated that concentrations of the metals (Cr, Cu, and As) in sediments adjacent to pilings at the sites were generally not significantly elevated, and there were no consistent differences in the benthic communities. Thus, it appears that metalleachates from the pilings, even the new

ones, in reasonably flushed areas like the Reserve have negligible ecological
effects.
From 1994-1996, Drs. Geoff Scott and Tom Mathews studied the distribution of
contaminants (i.e.trace metals, PAHs, pesticides) in sediments within the river
systems the Reserve, including the creeks where the data loggers are located.
The findings of the three-year surface sediment contaminant study indicated that trace metal and PAH concentrations in the sediments did not
contain toxic concentrations(below levels that are toxic to estuarine organisms)
of either. Almost all samples were below the level of detection for persistent
pesticides and for PCBs, suggesting that the ACE is a relatively pristine system. However, highest values of PAHs encountered (299.0 ng/g) were in the
South Edisto at Big Bay Creek; this station also had detectable levels of PCBs,
concentrations are well.

In July 1997, the Reserve staff and The ACE Basin NERR Graduate Fellow,
Christopher T.Nietch, initiated nutrient studies. The objective of the Reserve's
study is to ascertain the annual and tidal fluctuations in nutrient levels near
our two data logger sites. Nutrient levels are measured during a complete tidal
cycle each month, and the samples are analyzed for ammonia, nitrite-nitrate, and
ortho-phosphate concentrations. Mr. Nietch will evaluate the relationship between surface water quality, and the carbon and nutrient cycling in tidal
marshes.

II. Physical Structure Descriptors

8. Variable sequence, range of measurements, units, resolution, and accuracy:

Variable Name	Range of Measurements (Units)	Resolution	Accuracy
DATE	1-12, 1-31, 00-99 (mo,day,yr)	1 mo, 1d, 1 y	N/A
HOUR	0-24, 0-60, 0-60 (hr,min,sec)	1 hr, 1 min, 1 s	N/A
TEMP	-5 to +45oC	0.01oC	+/- 0.15 C
SPCOND	0-100 mS/cm	0.01 mS/cm	+/-5% of reading + 0.001 mS/cm
SALINITY	0-70 parts per thousand (ppt)	0.01 ppt	+/- 1% of reading or 0.1 ppt or whichever is greater
DO	0-200 % air saturation (air sat)	0.1 % air sat	+/-2 % air sat
DO	200-500 % air saturation (air sat)	0.1 % air sat	+/-6 % air sat

DO	0-20 mg/L	0.1 mg/L	+/-0.2 mg/L
DO	20-50 mg/L	0.1 mg/L	+/-0.6 mg/L
DEPTH	0-9.1 meters	0.001 m	+/-0.018 m
PH	2-14 units	0.01 units	+/-0.2 units
TURBIDITY	0-1000 NTU	0.1 NTU	+/-5% of reading or 2 NTU or whichever is greater

9. Coded variable indicator and variable code definitions:
SP=St. Pierre BB=Big Bay

10. Data anomalies:

January 1-31, 1997 Sampling Period

Big Bay

From 00:00 on January 1 to 09:00 on January 7, the dissolved oxygen (DO) data were deleted because the DO membrane was damaged during deployment.

St. Pierre

a) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

1/04/97 22:30:00
1/16/97 11:30:00
1/31/97 19:30:00

b) The following records include dissolved oxygen readings that are less than 28% air sat. The low reading occurred during morning ebb tide.

1/04/96 08:30:00 09:30:00

c) The following records include low salinity readings that are less than 18 ppt. These readings are not within normal polyhaline/euhaline salinity range (18 and 40 ppt) for this site, therefore all data were deleted during these times. The low readings were probably due to extremely low tides or heavy rainfall events.

1/10/97 15:30:00-16:00:00
1/11/97 03:00:00-04:30:00 16:00:00-16:30:00

d) During the following periods, the dissolved oxygen (DO) data were deleted because the DO membrane was damaged during deployment.

1/10/97 THRU 1/31/97 14:30:00-23:30:00

February 1-28, 1997 Sampling Period

Big Bay

The following records include dissolved oxygen readings that are less than 28% air sat. The low readings occurred during early flood tides.

2/25/97 05:30:00-06:00:00
2/27/97 07:00:00 19:00:00

2/28/97 07:00:00-08:00:00 19:30:00-20:00:00

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the DO membrane was damaged during deployment.

2/01/97 THRU 2/03/97 00:00:00-11:30:00

b) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

2/01/97 21:00:00
2/02/97 21:30:00 23:00:00
2/08/97 05:30:00 08:00:00-08:30:00
2/12/97 09:30:00 10:30:00-11:00:00 12:00:00-13:00:00 15:00:00
2/13/97 10:30:00
2/19/97 05:30:00 07:30:00
2/23/97 07:00:00 09:30:00 15:00:00
2/24/97 07:30:00 09:30:00 11:30:00 20:30:00-23:30:00
2/25/97 00:30:00-01:30:00 03:00:00-04:00:00 05:00:00 06:00:00
08:30:00-11:30:00 12:30:00 13:30:00-14:30:00 15:30:00-23:30:00
2/26/97 00:00:00 01:00:00 02:00:00-04:00:00 05:00:00
07:30:00-12:30:00 13:30:00 15:30:00 17:00:00-17:30:00
18:30:00-19:00:00 20:30:00-23:30:00
2/27/97 00:00:00-04:30:00 06:30:00-07:30:00 09:00:00-11:30:00 13:30:00-15:00:00
16:00:00-16:30:00 17:30:00-20:30:00
2/28/97 00:30:00 01:30:00-03:00:00 04:00:00 05:30:00-08:00:00
09:00:0
12:00:00-13:30:00 14:30:00 15:30:00-16:30:00 19:30:00-20:00:00
21:30:00-23:30:00

c) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment by sediment from the nearby eroding bank. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (-0.25 and 5.0 mg/L, respectively). Post-deployment DO calibration check indicated that

the DO membrane was not damaged by the fouling. (see Research Methods section)
2/10/97 THRU 2/28/97 09:00:00-23:30:00
d) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. The data logger was moved away from the bank.
2/15/97 THRU 2/28/97 21:00:00-23:30:00

March 1-31, 1997
Big Bay
a) The following records include dissolved oxygen readings that are less than 28% air sat. The low readings occurred during late ebb and early flood tides.
3/01/97 07:30:00-09:00:00 20:30:00-21:00:00
3/02/97 07:00:00-10:00:00 21:30:00-22:00:00
3/03/97 07:30:00-10:30:00 20:30:00-23:30:00
3/04/97 08:00:00-08:30:00 09:30:00-11:30:00 20:30:00-23:30:00
3/05/97 00:00:00 01:30:00 02:30:00-03:30:00
3/21/97 03:30:00
b) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.
3/04/97 15:00:00
3/05/97 03:00:00 06:30:00
3/30/97 06:30:00-17:30:00 18:30:00 19:30:00-23:30:00
3/31/97 00:00:00 01:00:00 02:00:00-12:00:00 13:00:00-23:30:00
c) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (0.28 and 7.4 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling.
3/21/97 THRU 3/31/97 06:30:00-23:30:00
d) The following records include negative depth readings, but the data were not deleted because the conductivity and oxygen readings indicated that the sonde was submerged, so the data were not deleted. The negative depth values were due to low barometric pressure weather systems.
3/26/97 15:30:00-16:00:00
3/27/97 04:00:00
3/29/97 16:30:00-17:30:00

3/30/97 06:00:00
3/31/97 06:30:00-08:00:00 18:30:00-20:00:00

e) The following records include pH readings that are less than 6.

3/27/97 03:00:00-04:00:00 08:30:00-11:00:00 19:00:00-23:30:00
3/28/97 00:00:00-13:00:00 19:30:00-23:30:00
3/29/97 00:00:00-14:00:00 19:00:00-23:30:00
3/30/97 00:00:00-17:00:00 18:00:00-23:30:00
3/31/97 00:00:00-23:30:00

f) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data were not deleted.

3/31/97 01:30:00

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment by sediment from the nearby eroding bank. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (-0.25 and 5.0 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

3/01/97 THRU 3/05/97 00:00:00-10:30:00

b) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. The data logger was moved away from the bank.

3/01/97 THRU 3/05/97 00:00:00-10:30:00

c) The following records include negative turbidity data. The negative readings were caused by sediment on the lens. The negative readings were the result of fouling of the turbidity sensor by sediments that had accumulated in the PVC tube because the new deployment apparatus sunk about a foot into the mud (see Research Methods section).

3/01/97 00:00:00-00:30:00 02:30:00-05:00:00 06:00:00-06:30:00 07:30:00
09:00:00-11:30:00 13:30:00-18:30:00 19:30:00 20:30:00
21:30:00 22:30:00-23:30:00
3/02/97 00:00:00 04:30:00 05:30:00 06:30:00-
07:00:00
08:00:00-09:00:00
10:00:00-10:30:00 12:30:00-13:00:00 14:00:00-16:30:00

17:30:00
18:30:00-19:30:00 21:30:00-23:00:00
3/03/97 00:00:00-02:30:00 03:30:00 04:30:00-07:00:00
08:00:00-08:30:00
09:30:00-10:30:00 12:00:00 13:00:00-13:30:00
16:00:00-18:00:00
19:30:00-20:00:00 22:00:00-23:30:00
3/04/97 00:00:00-05:30:00 09:00:00 10:00:00
11:00:00-
12:00:00
13:00:00-14:00:00 15:00:00 16:00:00
17:00:00
18:00:00 19:30:00-20:00:00 22:00:00
23:00:00
3/05/97 00:00:00-01:30:00 02:30:00 04:00:00
05:30:00
07:00:00 08:00:00
3/08/97 17:30:00
3/10/97 02:30:00 18:30:00
3/12/97 21:30:00
3/21/97 05:00:00-06:30:00 17:00:00-19:00:00 20:00:00
3/22/97 06:00:00 17:00:00
3/23/97 04:30:00 06:30:00 18:30:00
3/24/97 19:00:00-19:30:00
3/25/97 20:30:00-21:00:00
3/26/97 02:30:00 08:30:00
3/27/97 21:30:00
3/28/97 22:00:00-23:30:00
3/29/97 00:00:00
3/30/97 00:00:00 01:00:00-02:30:00 05:00:00
20:00:00-
23:30:00
3/31/97 00:00:00-01:30:00 03:00:00-12:00:00

d) The following records include low dissolved oxygen readings (<28% air sat). The low readings occurred primarily during early flood tides.

3/09/97 08:00:00-09:00:00 19:30:00-21:00:00
3/10/97 04:00:00 08:30:00-09:30:00

e) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data were not deleted.

3/10/97 07:30:00
3/22/97 06:30:00
3/24/97 20:00:00-20:30:00
3/26/97 11:00:00
3/29/97 23:30:00
3/30/97 18:30:00-19:00:00
3/31/97 02:30:00

f) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than the in-situ Winkler DO check (0.12 and 6.7 mg/L,

respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)
3/10/97 THRU 3/31/97 15:00:00-23:30:00
g) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. More holes were drilled into the PVC holding the data logger, and the deployment cage was moved further away from the bank.
3/10/97 THRU 3/31/97 15:00:00-23:30:00

April 1-30, 1997 Sampling Period
Big Bay
a) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.
4/01/97 THRU 4/02/97 00:00:00-09:00:00
b) The following records include low salinity readings that are less than 18 ppt. These readings are not within normal polyhaline/euhaline salinity range (18 and 40 ppt) for this site. The low readings were probably due to extremely low tides or heavy rainfall events.
4/28/97 15:00:00-18:00:00
c) From 13:00 on April 4 to 23:30 on April 30, the pH data were deleted because the pH sensor malfunctioned during deployment. The pH checks in pH 7 and 10 standards were less than 6.0.

St. Pierre
a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than the in-situ Winkler DO check (0.12 and 6.7 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)
4/01/97 THRU 4/02/97 00:00:00-09:30:00
b) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low

readings. (see Research Methods section)
4/01/97 THRU 4/02/97 00:00:00-09:30:00
c) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal
interference.
4/02/97 02:30:00-03:00:00 04:00:00
4/06/97 16:30:00-17:00:00
4/07/97 00:00:00 02:00:00 03:00:00-04:00:00 09:30:00
4/09/97 09:00:00 23:00:00
4/10/97 00:00:00
4/15/97 13:00:00
4/20/97 21:00:00
4/26/97 09:00:00
d) The following records include low dissolved oxygen data (<28% air sat).
The low readings occurred during an ebb tide.
4/05/97 17:30:00-20:30:00
e) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data
were not deleted.
4/02/97 03:30:00
4/06/97 18:00:00-19:00:00 21:00:00
4/07/97 01:00:00-01:30:00 02:30:00 05:00:00-05:30:00 10:30:00
13:00:00
16:30:00 20:30:00
4/08/97 16:00:00
4/10/97 11:30:00
4/18/97 15:30:00
4/22/97 02:30:00 04:30:00
4/27/97 23:30:00
4/28/97 00:30:00 01:30:00
f) During the following periods, the dissolved oxygen (DO) data were deleted
because the sensor was fouled during deployment. DO readings drifted downward
during the deployment, and the final YSI's DO reading was significantly lower
than a in-situ Winkler DO check (0.5 and 6.6 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)
4/13/97 THRU 4/30/97 19:30:00-23:30:00
g) During the following periods, the specific conductance and salinity data
were deleted because the sensor was fouled during deployment. The readings
drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. (see Research Methods section)
4/13/97 19:30:00-23:30:00
4/14/97 THRU 4/30/97 00:00:00-23:30:00

May 1-31, 1997 Sampling Period

Big Bay

From 00:00 on May to 14:00 on May 5, the pH data were deleted because the pH sensor malfunctioned during deployment. The pH checks in pH 7 and 10 standards were less than 6.0.

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (0.5 and 6.6 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

5/01/97 THRU 5/05/97 00:00:00-13:00:00

b) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. (see Research Methods section)

5/01/97 THRU 5/05/97 00:00:00-13:00:00

c) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

5/03/97	07:00:00	19:30:00	
5/10/97	23:30:00		
5/15/97	19:00:00		
5/17/97	02:30:00	10:00:00	16:30:00
20:00:00			
5/18/97	18:00:00		
5/19/97	13:30:00	21:00:00	22:30:00
23:30:00			
5/20/97	08:30:00	11:00:00	17:00:00
22:30:00-23:30:00			
5/21/97	02:00:00	13:00:00	18:00:00
19:00:00			
	21:30:00		
5/22/97	06:00:00	10:30:00	13:00:00
	15:30:00	19:00:00-19:30:00	21:00:00
5/23/97	06:00:00	19:00:00	
5/26/97	15:30:00		
5/27/97	00:00:00	23:00:00	
5/29/97	14:00:00		
5/30/07	14:00:00		
5/31/97	00:00:00	03:30:00-04:00:00	

d) The following records include low dissolved oxygen data (<28% air sat).

The low readings occurred during early and late flood tides.

5/21/97 19:00:00-20:30:00
5/22/97 02:30:00-03:00:00
5/23/97 03:30:00
5/24/97 04:00:00
5/27/07 06:00:00 23:00:00-23:30:00
5/31/97 23:00:00-23:30:00

e) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data were not deleted.

5/20/97 03:30:00 20:30:00
5/21/97 18:30:00 20:00:00
5/22/97 00:30:00 03:30:00 20:00:00-20:30:00
5/29/97 09:00:00
5/30/07 16:00:00

June 1-30, 1997 Sampling Period

Big Bay

a) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

6/05/97 02:00:00
6/06/97 02:00:00-02:30:00
6/11/97 00:00:00-00:30:00
6/14/97 10:00:00-13:00:00
6/18/97 02:30:00
6/20/97 01:30:00-03:00:00 19:30:00-21:00:00
6/21/97 05:30:00-06:00:00
6/22/97 17:00:00-22:30:00
6/23/97 00:00:00
6/25/97 15:00:00-22:30:00
6/28/97 01:00:00-02:30:00 23:00:00
6/29/97 06:00:00

b) The following records include low dissolved oxygen data (<28% air sat).

The low readings occurred during early flood tides.

6/20/97 02:30:00-03:00:00
6/21/97 04:00:00
6/22/97 05:00:00
6/23/97 05:30:00-06:00:00
6/24/97 06:00:00-06:30:00
6/25/97 07:30:00
6/27/97 21:00:00-21:30:00
6/28/97 09:30:00-10:00:00 22:00:00-22:30:00

St. Pierre

a) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

6/01/97 16:30:00

6/03/97 02:00:00 03:30:00 04:30:00
10:00:00
6/26/97 14:00:00
6/28/97 09:00:00 11:30:00-12:30:00
6/29/97 04:00:00 17:00:00

b) The following record includes a low dissolved oxygen datum (<28% air sat).
The low reading occurred during early flood tide.
6/03/97 00:30:00

c) During the following periods, the dissolved oxygen (DO) data were deleted
because the DO membrane was damaged.
6/17/97 THRU 6/30/97 06:00:00-10:00:00

d) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data
were not deleted.
6/01/97 22:00:00
6/02/97 01:30:00 19:00:00
6/27/97 02:00:00
6/28/97 03:30:00

July 1-31, 1997 Sampling Period

Big Bay

a) During the following periods, dissolved oxygen (DO) data were deleted
because DO membrane was damaged during deployment.
7/03/97 02:30:00-23:30:00
7/04/97 THRU 7/19/97 00:00:00-23:30:00
7/20/97 00:00:00-21:00:00

b) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal
interference.
7/16/97 06:00:00
7/18/97 23:30:00
7/19/97 00:00:00
7/20/97 06:00:00 07:00:00-08:30:00

c) The following records include low dissolved oxygen data (<28% air sat).
The low readings occurred during early flood tides.
7/30/97 00:30:00
7/31/97 00:30:00

d) The following records include low salinity readings that are less than 18
ppt. The readings are not within normal polyhaline/euhaline salinity range (18
and 40 ppt) for this site. The low readings were probably due to extremely low
tides or heavy rainfall events.
7/31/97 12:00:00-12:30:00

St. Pierre

a) The following records include low dissolved oxygen data (<28% air sat).
The low readings occurred during ebb and early flood tides.

7/02/97 18:00:00-19:30:00
7/04/97 23:30:00
7/05/97 00:00:00-04:30:00 23:00:00-23:30:00
7/06/97 00:00:00-06:00:00
7/07/97 01:00:00-01:30:00 04:00:00
7/08/97 00:00:00-07:30:00
7/09/97 01:00:00-03:30:00 04:30:00
7/10/97 01:30:00 03:00:00 05:30:00-06:00:00 07:00:00-07:30:00
7/11/97 03:00:00-05:00:00 06:30:00-08:00:00
7/12/97 03:00:00-03:30:00 06:30:00-08:30:00
7/14/97 08:00:00-08:30:00
7/31/97 05:00:00-06:30:00 08:30:00-15:30:00

b) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

7/05/97 15:30:00
7/07/97 14:30:00-15:00:00 16:00:00 17:30:00
7/09/97 08:00:00
7/10/97 11:00:00
7/29/97 13:00:00
7/30/97 21:00:00-23:30:00
7/31/97 00:00:00 02:30:00 03:30:00-04:00:00 09:00:00

c) During the following periods, the temperature data were deleted because the sensor malfunctioned during deployment. The readings were above the normal upper limit (38 degrees Celsius) expected for the site. Specific conductance, salinity and dissolved oxygen, expressed as mg/L, were also deleted because the values are based on ambient water temperature.

7/04/97 THRU 7/14/97 16:30:00-14:00:00
7/29/97 THRU 7/31/97 19:00:00-15:30:00

d) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data were not deleted.

7/10/97 15:00:00
7/30/97 20:00:00
7/31/97 01:30:00-02:00:00 03:00:00 04:30:00-05:30:00 07:30:00-08:30:00

August 1-31, 1997 Sampling Period

Big Bay

a) During the following periods, the dissolved oxygen (DO) data were deleted

because the DO membrane was damaged during deployment. The DO readings were
abnormally high (>200 % air sat), and the final in-situ DO checks indicated that
the high values were erroneous. The final YSI's DO readings at the site were
more than double the in-situ Winkler DO readings taken before retrieving the
sondes.

8/01/97 THRU 8/13/97	00:00:00-11:00:00	
8/16/97 THRU 8/26/97	13:30:00-09:00:00	
8/28/97 THRU 8/3197	12:30:00-23:30:00	

b) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal
interference.

8/02/97 10:00:00			
8/07/97 15:00:00-21:00:00			
8/08/97 11:00:00-12:00:00	15:30:00-17:00:00	19:00:00-23:00:00	
8/09/97 04:00:00-11:00:00	12:30:00	16:00:00-23:30:00	
8/10/97 00:00:00-00:30:00	03:00:00-18:00:00		
8/28/97 23:30:00			
8/29/97 00:30:00			
8/30/97 06:30:00			

c) The following records include salinity readings that are greater than 40
ppt. The readings are not within normal polyhaline/euhaline salinity range (18
and 40 ppt) for this site. The cause of the high readings were not known at this
time.

8/15/97 18:00:00-19:00:00			
8/16/97 17:30:00-21:00:00			
8/17/97 19:00:00-22:00:00			
8/18/97 08:00:00-08:30:00	19:30:00-23:00:00		
8/19/97 07:30:00-11:00:00	19:30:00-23:30:00		
8/20/97 00:00:00-01:00:00	07:30:00-13:30:00	20:30:00-23:30:00	
8/21/97 00:00:00-02:00:00	09:00:00-14:00:00	21:30:00-23:30:00	
8/22/97 00:00:00-02:00:00	10:00:00-14:30:00	22:30:00-23:30:00	
8/23/97 00:00:00-02:00:00	10:30:00-15:30:00		
8/24/97 00:30:00-03:00:00	15:30:00-16:00:00		
8/25/97 16:30:00-17:30:00			
8/26/97 02:00:00-04:00:00			

d) The following records include low dissolved oxygen data (<28% air sat).
The low readings occurred during early flood tide.

8/16/97 01:00:00-01:30:00	

e) The following records include pH readings that are less than 6.

8/23/97	03:30:00-08:30:00	19:30:00-20:00:00
8/24/97 THRU 8/26/97	00:00:00-09:00:00	

f) During the following periods, pH data were deleted because the sensor
malfunctioned during deployment. The pH checks in pH 7 and 10 standards were

negative.
8/28/97 THRU 8/31/97 10:00:00-23:30:00

St. Pierre

a) The following records include low salinity readings that are less than 18 ppt. The readings are not within normal polyhaline/euhaline salinity range (18 and 40 ppt) for this site. The low readings were probably due to extremely low tides or heavy rainfall events.

8/15/97 10:30:00-14:00:00

b) The following records include low dissolved oxygen data (<28% air sat). The low readings occurred during late ebb tides and early flood tides.

8/15/97 22:30:00-23:30:00
8/16/97 00:00:00-01:00:00 17:30:00 23:30:00
8/17/97 00:00:00-02:00:00

c) The following records include salinity readings that are greater than 40 ppt. The readings are not within normal polyhaline/euhaline salinity range (18 and 40 ppt) for this site. The cause of the high readings are not known at this time.

8/15/97 16:30:00-19:00:00

d) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

8/16/97 17:00:00-18:30:00
8/17/97 11:00:00-16:00:00 17:00:00

e) During the following periods, dissolved oxygen (DO) data were deleted because the readings were negative. Cause of anomalous readings is not known at this time.

8/16/97 18:00:00-18:30:00

f) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data were not deleted.

8/16/97 19:00:00
8/31/97 19:30:00

g) At 16:30 on August 17, the temperature reading was 45.9 C which is significantly higher than previous readings recorded at this site. The reason for the high reading is not known at this time.

September 1-30, 1997 Sampling Period

Big Bay

a) During the following periods, the dissolved oxygen (DO) data were deleted

because the DO membrane was damaged during deployment. The DO readings were
abnormally high (>200 % air sat), and the final in-situ DO checks indicated that
the high values were erroneous. The final YSI's DO readings at the site were
more than double the in-situ Winkler DO readings taken before retrieving the
sondes.

9/01/97 THRU 9/15/97 00:00:00-09:00:00

b) During the following periods, pH data were deleted because the sensor malfunctioned. The pH checks in pH 7 and 10 standards were negative.

9/01/97 THRU 9/15/97 00:00:00-09:00:00
9/17/97 THRU 9/30/97 11:00:00-23:00:00

c) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal
interference.

9/05/97 15:00:00-18:00:00 19:30:00 20:30:00-23:30:00
9/06/97 00:00:00-01:30:00 02:30:00-06:00:00 14:00:00-14:30:00
9/07/97 21:00:00-22:00:00
9/08/97 11:00:00-11:30:00 21:30:00 23:30:00
9/09/97 09:30:00-10:30:00 22:30:00-23:30:00
9/10/97 00:00:00 01:30:00-03:00:00 10:00:00 11:00:00-23:30:00
9/11/97 00:00:00-16:00:00 19:00:00-19:30:00
9/13/97 01:30:00-03:30:00 06:00:00-06:30:00
9/14/97 03:00:00-04:00:00 06:00:00-06:30:00 14:30:00-15:00:00
9/22/97 05:30:00 11:00:00-11:30:00
9/24/97 19:00:00-23:30:00
9/25/97 00:00:00-02:00:00 04:00:00-08:00:00 18:30:00-23:30:00
9/26/97 00:00:00-00:30:00 04:00:00 06:00:00 07:00:00-10:00:00
11:00:00
9/27/97 08:00:00-10:00:00 22:30:00-23:30:00
9/28/97 00:00:00-01:30:00 09:00:00-10:00:00
9/30/97 02:00:00-11:30:00 14:30:00-23:30:00

d) The following records include low salinity readings that are less than 18
ppt. The readings are not within normal polyhaline/euhaline salinity range (18
and 40 ppt) for this site. The low readings were probably due to extremely low
tides or heavy rainfall events.

9/17/97 14:00:00
9/23/97 06:30:00
9/24/97 20:00:00-23:30:00
9/25/97 06:00:00-08:00:00
9/28/97 13:00:00
9/30/97 11:30:00

e) During the following periods, data were deleted because the sonde went
dry.

9/17/97 14:30:00-15:30:00
9/18/97 02:30:00-04:00:00 15:00:00-16:30:00
9/19/97 03:00:00-04:30:00 16:00:00-17:00:00
9/20/97 04:00:00-05:30:00 17:00:00-17:30:00
9/21/97 04:00:00-06:30:00 17:30:00-18:00:00
9/23/97 07:00:00-07:30:00
9/24/97 07:30:00-08:30:00
9/25/97 08:30:00-09:30:00
9/28/97 11:30:00-12:30:00 23:00:00-23:30:00
9/29/97 00:00:00-01:00:00 11:00:00-13:30:00 23:30:00
9/30/97 00:00:00-01:30:00 12:00:00-14:00:00

f) The following records include negative depth readings, but the data were not deleted because the conductivity and oxygen readings indicated that the sonde was submerged, so the data were not deleted. The negative depth values were due to low barometric pressure weather systems.

9/20/97 18:00:00
9/28/97 11:00:00 22:30:00
9/29/97 01:30:00 14:00:00
9/30/97 02:00:00 14:30:00 23:30:00

g) The following records include low dissolved oxygen data (<28% air sat). The low readings occurred during late ebb tides.

9/24/97 07:00:00
9/25/97 07:00:00-08:00:00 18:30:00

h) During the following periods, dissolved oxygen (DO) data were deleted because DO membrane was damaged during deployment. Periods of exposure appear to be the cause of the too low or too high DO readings. The sensor appeared to recover near the end of the deployment (final readings were within the normal range, and a normal DO periodicity pattern was observed), but the data were suspect and deleted.

9/25/97 THRU 9/30/97 19:00:00-23:30:00

i) The following records include turbidity data greater than 1000 NTU. Although the high readings exceed the sensor's range of measurements, the data were not deleted.

9/05/97 03:30:00-04:00:00 19:00:00
9/06/97 12:00:00-12:30:00 15:30:00-16:00:00
9/07/97 20:30:00 23:00:00-23:30:00
9/08/97 00:00:00 08:00:00-09:00:00 10:00:00-10:30:00 12:00:00
15:30:00-16:00:00 23:00:00
9/09/97 11:00:00-11:30:00 12:30:00-14:30:00 17:00:00-17:30:00
9/10/97 01:00:00 04:00:00-09:30:00
9/11/97 18:00:00 20:30:00-21:00:00
9/12/97 02:30:00-03:30:00 21:30:00-22:00:00
9/13/97 00:30:00-01:00:00 04:00:00 05:00:00 07:30:00

09:30:00-11:00:00 13:00:00
9/14/97 00:00:00-00:30:00 10:00:00-13:00:00 14:00:00

St. Pierre

a) The following records include low dissolved oxygen data (<28% air sat).
The low readings occurred primarily during early flood tides; on September 11,
DO remained low from early to maximum flood tide, and the cause of the anomalous
event is not known at this time.

9/09/97 08:00:00
9/10/97 09:30:00
9/11/97 07:30:00-17:00:00

b) During the following periods, the dissolved oxygen (DO) data were deleted
because the sensor was fouled during deployment by sediment from the nearby
eroding bank. DO readings were extremely low (<1.0 mg/L), indicating that the DO
membrane was blocked by debris or sediment. (see Research Methods section)

9/21/97 THRU 9/26/97 04:00:00-16:00:00

c) During the following periods, the specific conductance and salinity data
were deleted. The readings drifted downward during a similar time period as the
DO downward drift, suggesting that the sediment from the eroding bank was the
cause of the low readings. (see Research Methods section)

9/21/97 THRU 9/26/97 04:00:00-16:00:00

October 1-31, 1997 Sampling Period

Big Bay

a) During the following periods, dissolved oxygen (DO) data were deleted
because DO membrane was damaged during deployment. Periods of exposure appear to
be the cause of the too low or too high DO readings. The sensor appeared to
recover near the end of the deployment (final readings were within the normal
range, and a normal DO periodicity pattern was observed), but the data were
suspect and deleted.

10/01/97 THRU 10/05/97 00:00:00-09:30:00
10/06/97 13:30:00-15:30:00

b) From 00:00 on October 1 to 09:00 on October 14, pH data were deleted
because the pH sensor malfunctioned during the deployment.

c) During the following periods, the data were deleted because the sonde went
dry.

10/01/97 00:00:00-03:00:00 12:30:00-14:30:00

10/02/97	01:00:00-02:30:00	13:30:00-15:00:00	
10/03/97	02:00:00-03:00:00	14:30:00-15:30:00	
10/04/97	02:30:00-03:30:00	15:00:00-16:30:00	
10/05/97	02:30:00-04:30:00	15:00:00-17:00:00	
10/06/97	03:00:00-05:00:00	16:00:00-18:00:00	
10/07/97	04:00:00-06:00:00	17:00:00-18:30:00	
10/08/97	05:00:00-06:00:00		
10/09/97	06:30:00-07:00:00		
10/10/97	07:00:00-08:30:00	20:00:00-21:30:00	
10/11/97	08:00:00-09:30:00	21:00:00-22:30:00	
10/12/97	09:00:00-10:30:00	22:30:00-23:30:00	
10/13/97	10:30:00-12:00:00	23:30:00	
10/14/97	00:00:00-01:00:00		
10/27/97	22:30:00-23:30:00		
10/28/97	00:00:00-00:30:00		

d) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

10/01/97	03:30:00-12:00:00	15:00:00-23:30:00	
10/02/97	00:00:00-00:30:00	03:00:00-13:00:00	15:30:00-23:30:00
10/03/97	00:30:00-01:30:00	03:30:00-14:00:00	16:00:00-23:30:00
10/04/97	00:00:00-02:00:00	04:00:00-14:30:00	17:00:00-23:30:00
10/05/97	00:00:00-02:00:00	05:00:00-14:30:00	17:30:00-23:30:00
10/06/97	00:00:00-02:30:00	05:30:00-15:30:00	18:30:00-23:30:00
10/07/97	00:00:00-03:30:00	06:30:00-16:30:00	19:00:00-23:30:00
10/08/97	00:00:00-04:30:00	06:30:00-23:30:00	
10/09/97	00:00:00-06:00:00	09:00:00	
10/11/97	20:30:00		
10/12/97	05:30:00		

e) The following records include low dissolved oxygen data (<28% air sat).
The low readings occurred during late ebb and early flood tides.

10/05/97	10:30:00-11:00:00	18:00:00-18:30:00	
10/06/97	02:30:00	06:00:00-08:00:00	13:00:00
10/07/97	06:30:00-14:00:00		
10/08/97	19:30:00-20:00:00		
10/09/97	06:00:00	07:30:00	21:00:00
10/10/97	22:00:00		
10/11/97	20:00:00		
10/21/97	07:00:00		
10/22/97	08:00:00		
10/24/97	09:30:00	22:00:00	
10/25/97	11:00:00	22:00:00-23:30:00	

f) During the following periods, there was a spike in the dissolved oxygen (DO); and many of the DO readings were greater than 200% air sat. The spikes in

DO were not due to a membrane puncture. The high readings appear to be linked to
periods of low water levels; however, at this time, we have no conclusive evidence that indicates a correlation between the two events.

	10/07/97 THRU 10/08/97	14:30:00-07:30:00

g) The following records include negative depth readings, but the data were
not deleted because the conductivity and oxygen readings indicated that the
sonde was submerged, so the data were not deleted. The negative depth values
were due to low barometric pressure weather systems.

	10/17/97	03:00:00
	10/18/97	03:30:00

h) During the following periods, the following turbidity was deleted because
the sensor gear box jammed, preventing the wiper from clearing the lens.

	10/19/97 THRU 10/31/97	03:00:00-23:30:00

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted
because the sensor was fouled during deployment by sediment from the nearby
eroding bank. DO readings were extremely low (<1.0 mg/L), indicating that the DO
membrane was blocked by debris or sediment. Post- deployment DO calibration
check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

	10/09/97 THRU 10/14/97	09:00:00-10:30:00

b) During the following periods, the specific conductance and salinity data
were deleted. The readings drifted downward during a similar time period as the
DO downward drift, suggesting that the sediment from the eroding bank was the
cause of the low readings. (see Research Methods section)

	10/09/97 THRU 10/14/97	09:00:00-10:30:00

c) The following records include low dissolved oxygen data (<28% air sat).
The low readings occurred during late ebb tides.

	10/09/97	07:00:00-08:30:00

d) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal
interference.

	10/19/97	15:00:00
	10/20/97	16:00:00
	10/26/97	21:00:00
	10/28/97	12:00:00
	10/29/97 THRU 10/30/97	22:30:00-03:00:00

November 1-30, 1997 Sampling Period

Big Bay

a) The following records include low salinity readings that are less than 18 ppt. The readings are not within normal polyhaline/euhaline salinity range (18 and 40 ppt) for this site. The low readings were probably due to extremely low tides or heavy rainfall events.

11/01/97	01:00:00-03:30:00

b) During the following periods, the turbidity data were deleted because the sensor gear box jammed, preventing the wiper from clearing the lens.

11/01/97 THRU 11/11/97	00:00:00-09:30:00

c) The following records include negative depth readings, but the data were not deleted because the conductivity and oxygen readings indicated that the sonde was submerged, so the data were not deleted. The negative depth values were due to low barometric pressure weather systems.

11/01/97	14:00:00-15:30:00
11/02/97	01:30:00-03:30:00 14:00:00 16:30:00
11/03/97	02:00:00
11/08/97	20:00:00-20:30:00
11/09/97	21:00:00-22:00:00
11/10/97	22:00:00 23:30:00
11/13/97	13:30:00-14:00:00
11/14/97	00:30:00-01:00:00 14:00:00-14:30:00
11/15/97	13:30:00
11/30/97	00:30:00-02:00:00 13:30:00-15:00:00

d) During the following periods, the data were deleted because the sonde went dry.

11/02/97	14:30:00-16:00:00
11/03/97	02:30:00-03:30:00 15:30:00-16:30:00
11/04/97	03:00:00-04:00:00 16:00:00-17:00:00
11/10/97	22:30:00-23:00:00
11/14/97	01:30:00-02:00:00 15:00:00
11/15/97	00:30:00-03:30:00 14:00:00-16:00:00
11/16/97	01:00:00-04:00:00 14:30:00-16:30:00
11/17/97	02:00:00-04:00:00 16:00:00-16:30:00
11/18/97	03:30:00-04:30:00
11/19/97	05:00:00-05:30:00
11/26/97	23:00:00-23:30:00
11/28/97	12:30:00-13:00:00
11/29/97	00:00:00-01:30:00 13:00:00-14:00:00

e) The following record includes low dissolved oxygen data (<28% air sat). The low readings occurred during a morning ebb tide.

11/02/97	03:30:00-04:00:00

f) During the following periods, the pH data were deleted because the pH sensor malfunctioned during the deployment.

11/13/97 THRU 11/30/97	12:00:00-23:30:00

St. Pierre

a) The following records include low salinity readings that are less than 18 ppt. The readings are not within normal polyhaline/euhaline salinity range (18 and 40 ppt) for this site. The low readings were probably due to extremely low tides or heavy rainfall events.

11/01/97 01:30:00-02:30:00

b) The following records include negative turbidity data. The negative readings were caused by debris on the lens, a wiper malfunction, or animal interference.

11/01/97 01:00:00-06:00:00 12:30:00-18:00:00 22:30:00-23:30:00

11/02/97 00:00:00-08:00:00 11:00:00-23:30:00

11/03/97 00:00:00-05:30:00 09:00:00-11:30:00

11/05/97 13:30:00-14:00:00

c) During the following periods, the turbidity data were deleted because the sensor's gear box jammed, preventing the wiper from clearing the lens.

11/13/97 THRU 11/30/97 12:30:00-23:30:00

d) The following records include low dissolved oxygen data (<28% air sat). The low reading occurred during late ebb and early flood tides.

11/16/97 16:30:00 22:00:00

11/17/97 03:30:00-05:30:00

11/18/97 05:00:00-06:00:00 17:00:00-18:30:00

11/19/97 05:30:00-06:30:00

11/20/97 06:30:00-07:30:00

e) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment. (see Research Methods section)

11/21/97 THRU 11/30/97 17:30:00-23:30:00

f) During the following periods, the specific conductance and salinity data were deleted. The readings drifted downward during a similar time period as the DO downward drift, suggesting that the sediment from the eroding bank was the cause of the low readings. (see Research Methods section)

11/21/97 THRU 11/30/97 17:30:00-23:30:00

December 1-31, 1997 Sampling Period

Big Bay

a) During the following periods, the pH data were deleted because the pH sensor malfunctioned during deployment.

12/01/97 THRU 12/09/97 00:00:00-09:00:00

b) During the following periods, the data were deleted because the sonde went

dry.

12/01/97	01:30:00-03:00:00	14:00:00-15:30:00
12/02/97	16:00:00	
12/04/97	16:30:00-18:00:00	
12/05/97	04:30:00-06:30:00	17:00:00-19:00:00
12/06/97	05:00:00-07:30:00	18:00:00-20:00:00
12/07/97	06:30:00-08:00:00	19:00:00-21:00:00
12/08/97	08:00:00-09:00:00	20:30:00-22:00:00

c) The following records include negative depth readings, but the data were not deleted because the conductivity and oxygen readings indicated that the sonde was submerged. The negative depth values were due to low barometric pressure weather systems.

12/01/97	01:00:00	03:30:00	13:30:00
12/02/97	02:30:00		
12/04/97	04:00:00-04:30:00	16:30:00	
12/05/97	04:00:00	16:30:00	19:30:00
12/09/97	09:00:00		

d) The following records include low salinity reading that is less than 18 ppt. The readings are not within normal polyhaline/euhaline salinity range (18 and 40 ppt) for this site. The low readings were probably due to extremely low tides or heavy rainfall events.

12/03/97	03:30:00	16:30:00		
12/05/97	19:30:00			
12/24/97	09:30:00	20:00:00-22:00:00		
12/25/97	08:00:00-11:00:00			
12/30/97	05:30:00	18:00:00-18:30:00	22:30:00-23:30:00	
12/31/97	00:00:00-01:00:00	05:00:00-07:00:00	11:30:00-16:00:00	17:30:00-21:00:00
	22:00:00-23:30:00			

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment by sediment from the nearby eroding bank. DO readings were extremely low (<1.0 mg/L), indicating that the DO membrane was blocked by debris or sediment. Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

12/01/97 THRU 12/0897	00:00:00-09:30:00
12/12/97 THRU 12/31/97	10:30:00-23:30:00

b) During the following periods, the specific conductance and salinity data

were deleted. The readings drifted downward during similar time periods as the
DO downward drift, suggesting that the sediment from the eroding bank was the
cause of the low readings. (see Research Methods section)
12/01/97 THRU 12/0897 00:00:00-09:30:00
12/30/97 THRU 12/31/97 03:30:00-23:30:00
c) During the following periods, the turbidity data were deleted because the
sensor gear box jammed, preventing the wiper from clearing the lens.
12/01/97 THRU 12/31/97 00:00:00-23:30:00

11. Missing data
January 1-31, 1997 Sampling Period
Big Bay
a) From 00:00 on January 1 to 09:00 on January 7, the dissolved oxygen (DO)
data were deleted because the DO membrane was damaged during deployment.
b) From 09:30 on January 7 to 09:00 on January 14, no data are available due
to downtime for servicing and calibrating of data loggers and sampling
conflicts.

St. Pierre
a) From 11:30 on January 8 to 14:00 on January 10, no data are available due
to downtime for servicing and calibrating of data loggers.
b) During the following periods, the dissolved oxygen (DO) data were deleted
because the DO membrane was damaged during deployment.
1/10/97 THRU 1/31/97 14:30:00-23:30:00
c) The following records include low salinity readings that are less than 18
ppt. These readings are not within normal polyhaline/euhaline salinity range (18
and 40 ppt) for this site, therefore all data were deleted during these times.
The low readings were probably due to extremely low tides or heavy rainfall events.
1/10/97 15:30:00-16:00:00
1/11/97 03:00:00-04:30:00 16:00:00-16:30:00

February 1-28, 1997 Sampling Period
Big Bay
From 13:00 on February 3 to 12:00 on February 5, no data are available due
to downtime for servicing and calibrating of data loggers.

St. Pierre
a) During the following periods, the dissolved oxygen (DO) data were deleted
because the DO membrane was damaged during deployment.
2/01/97 THRU 2/03/97 00:00:00-11:30:00

b) From 12:00 on February 3 to 10:00 on February 7, no data are available due to downtime for servicing and calibrating of data loggers.
c) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment by sediment from the nearby eroding bank. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (-0.25 and 5.0 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

2/10/97 THRU 2/28/97 09:00:00-23:30:00

d) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. The data logger was moved away from the bank.

2/15/97 THRU 2/28/97 21:00:00-23:30:00

March 1-31, 1997

Big Bay

a) From 11:00 on March 5 to 11:30 on March 7, no data are available due to downtime for servicing and calibrating of data loggers.
b) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (0.28 and 7.4 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling.

3/21/97 THRU 3/31/97 06:30:00-23:30:00

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment by sediment from the nearby eroding bank. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (-0.25 and 5.0 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

3/01/97 THRU 3/05/97 00:00:00-10:30:00

b) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. The data logger was moved away from the bank.

3/01/97 THRU 3/05/97 00:00:00-10:30:00

c) From 11:00 on March 5 to 12:00 on March 7, no data are available due to downtime for servicing and calibrating of data loggers.

d) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than the in-situ Winkler DO check (0.12 and 6.7 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

3/10/97 THRU 3/31/97 15:00:00-23:30:00

e) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. More holes were drilled into the PVC holding the data logger, and the deployment cage was moved further away from the bank.

3/10/97 THRU 3/31/97 15:00:00-23:30:00

April 1-30, 1997 Sampling Period

Big Bay

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final DO reading was significantly lower than a in-situ Winkler DO check (0.28 and 7.4 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling.

4/01/97 THRU 4/02/97 00:00:00-09:00:00

b) From 09:30 on April 2 to 12:30 on April 4, no data are available due to downtime for servicing and calibrating of data loggers.

c) From 13:00 on April 4 to 23:30 on April 30, the pH data were deleted because the pH sensor malfunctioned during deployment. The pH checks in pH 7 and

10 standards were less than 6.0.

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than the in-situ Winkler DO check (0.12 and 6.7 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

4/01/97 00:00:00-23:30:00
4/02/97 00:00:00-09:30:00

b) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. (see Research Methods section)

4/01/97 THRU 4/02/97 00:00:00-09:30:00

c) From 10:00 on April 2 to 11:30 on April 4, no data are available due to downtime for servicing and calibration.

d) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (0.5 and 6.6 mg/L, respectively). Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

4/13/97 THRU 4/30/97 19:30:00-23:30:00

e) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. (see Research Methods section)

4/13/97 THRU 4/30/97 19:30:00-23:30:00

May 1-31, 1997 Sampling Period

Big Bay

a) From 00:00 on May 1 to 14:00 on May 5, the pH data were deleted because the pH sensor malfunctioned during deployment. The pH checks in pH 7 and 10 standards were less than 6.0.

b) From 14:30 on May 5 to 11:30 on May 8, no data are available due to downtime for servicing and calibrating of data loggers.

c) From 12:00 on May 8 to 23:30 on May 31, pH sensor was not installed.

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment. DO readings drifted downward during the deployment, and the final YSI's DO reading was significantly lower than a in-situ Winkler DO check (0.5 and 6.6 mg/L, respectively).

Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

5/01/97 THRU 5/05/97 00:00:00-13:00:00

b) During the following periods, the specific conductance and salinity data were deleted because the sensor was fouled during deployment. The readings drifted downward during a similar time period as the DO downward drift, suggesting the sediment from the eroding bank was the cause of the low readings. (see Research Methods section)

5/01/97 THRU 5/05/97 00:00:00-13:00:00

c) From 13:30 on May 5 to 11:00 on May 8, no data are available due to downtime for servicing and calibrating of data loggers.

June 1-30, 1997 Sampling Period

Big Bay

a) From 00:00 on June 1 and 12:00 on June 3, the pH sensor was not installed.

b) From 12:30 on June 3 to 11:30 on June 4, no data are available due to downtime for servicing and calibrating of data loggers.

c) From 11:00 on June 30 to 23:30 and June 30, no data are available due to downtime for servicing and calibrating of data loggers.

St. Pierre

a) From 11:30 on June 3 to 11:30 on June 4, no data are available due to downtime for servicing and calibrating of data loggers.

b) During the following periods, the dissolved oxygen (DO) data were deleted because the DO membrane was damaged.

6/17/97 THRU 6/30/97 06:00:00-10:00:00

c) From 10:30 on June 30 to 23:30 on June 30, no data are available due to downtime for servicing and calibrating of data loggers.

July 1-31, 1997 Sampling Period

Big Bay

a) From 00:00 on July 1 to 10:30 on July 2, no data are available due to downtime for servicing and calibrating of data loggers.

b) During the following periods, dissolved oxygen (DO) data were deleted
because DO membrane was damaged during deployment.
7/03/97 THRU 7/20/97 02:30:00-21:00:00
c) From 21:30 on July 20 to 10:30 on July 24, no data are available due to
downtime for servicing and calibrating of data loggers.

St. Pierre
a) From 00:00 on July 1 to 11:30 on July 2, no data are available due to
downtime for servicing and calibrating of data loggers.
b) During the following periods, the temperature data were deleted because
the sensor malfunctioned during deployment. The readings were above the normal
upper limit (38 degrees Celsius) expected for the site. Specific conductance,
salinity and dissolved oxygen, expressed as mg/L, were also deleted because the
values are based on ambient water temperature.
7/04/97 THRU 7/14/97 16:30:00-14:00:00
7/29/97 THRU 7/31/97 19:00:00-15:30:00
c) From 14:30 on July 14 to 20:00 on July 20, no data are available because
water seeped into battery chamber and shorted out the batteries.
d) From 20:30 on July 20 to 11:30 on July 29, no data are available due to
downtime for servicing and calibrating of data loggers and conflicts with other
sampling efforts.
e) From 16:00 to 23:30 on July 31, no data are available because water seeped
into battery chamber and shorted out the batteries.

August 1-31, 1997 Sampling Period
Big Bay
a) During the following periods, the dissolved oxygen (DO) data were deleted
because the DO membrane was damaged during deployment. The DO readings were
abnormally high (>200 % air sat), and the final in-situ DO checks indicated that
the high values were erroneous. The final YSI's DO readings at the site were
more than double the in-situ Winkler DO readings taken before retrieving the
sondes.
8/01/97 THRU 8/13/97 00:00:00-11:00:00
8/16/97 THRU 8/26/97 13:30:00-09:00:00
8/28/97 THRU 8/3197 12:30:00-23:30:00
b) From 11:30 on August 13 to 09:30 on August 15, no data are available due
to downtime for servicing and calibrating of data loggers.

c) From 09:30 on August 26 to 09:30 on August 28, no data are available due to downtime for servicing and calibrating of data loggers.
d) During the following periods, pH data were deleted because the sensor malfunctioned during deployment. The pH checks in pH 7 and 10 standards were negative.

8/28/97 THRU 8/31/97 10:00:00-23:30:00

St. Pierre

a) From 00:00 on August 1 to 10:30 on August 13, no data are available because water seeped into battery chamber and shorted out the batteries.
b) From 09:30 on August 13 to 10:00 on August 15, no data are available due to downtime for servicing and calibrating of data loggers.
c) During the following periods, dissolved oxygen (DO) data were deleted because the readings were negative. Cause of anomalous readings is not known at this time.

8/16/97 18:00:00-18:30:00

c) From 19:30 on August 17 to 11:30 on August 28, no data are available because water seeped into battery chamber and shorted out the batteries. The data logger was sent to YSI for repairs because a fracture in the battery chamber was allowing water to seep into the compartment. Another data logger was deployed at the site for the next deployment.

September 1-30, 1997 Sampling Period

Big Bay

a) During the following periods, the dissolved oxygen (DO) data were deleted because the DO membrane was damaged during deployment. The DO readings were abnormally high (>200 % air sat), and the final in-situ DO checks indicated that the high values were erroneous. The final YSI's DO readings at the site were more than double the in-situ Winkler DO readings taken before retrieving the sondes.

9/01/97 THRU 9/15/97 00:00:00-09:00:00

b) During the following periods, pH data were deleted because the sensor malfunctioned. The pH checks in pH 7 and 10 standards were negative.

9/01/97 THRU 9/15/97 00:00:00-09:00:00
9/17/97 THRU 9/30/97 11:00:00-23:00:00

c) From 09:30 on September 15 to 10:30 on September 17, no data are available due to downtime for servicing and calibrating of data loggers.
d) During the following periods, data were deleted because the sonde went dry.

9/17/97 14:30:00-15:30:00

9/18/97 02:30:00-04:00:00 15:00:00-16:30:00
9/19/97 03:00:00-04:30:00 16:00:00-17:00:00
9/20/97 04:00:00-05:30:00 17:00:00-17:30:00
9/21/97 04:00:00-06:30:00 17:30:00-18:00:00
9/23/97 07:00:00-07:30:00
9/24/97 07:30:00-08:30:00
9/25/97 08:30:00-09:30:00
9/28/97 11:30:00-12:30:00 23:00:00-23:30:00
9/29/97 00:00:00-01:00:00 11:00:00-13:30:00 23:30:00
9/30/97 00:00:00-01:30:00 12:00:00-14:00:00

e) During the following periods, dissolved oxygen (DO) data were deleted because DO membrane was damaged during deployment. Periods of exposure appear to be the cause of the too low or too high DO readings. The sensor appeared to recover near the end of the deployment (final readings were within the normal range, and a normal DO periodicity pattern was observed), but the data were suspect and deleted.

9/25/97 THRU 9/30/97 19:00:00-23:30:00

St. Pierre

a) From 11:30 on September 15 and 12:30 on September 17, no data are available due to downtime for servicing and calibrating of data loggers.

b) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment by sediment from the nearby eroding bank. DO readings were extremely low (<1.0 mg/L), indicating that the DO membrane was blocked by debris or sediment. (see Research Methods section)

9/21/97 THRU 9/26/97 04:00:00-16:00:00

c) During the following periods, the specific conductance and salinity data were deleted. The readings drifted downward during a similar time period as the DO downward drift, suggesting that the sediment from the eroding bank was the cause of the low readings. (see Research Methods section)

9/01/97 THRU 9/15/97 00:00:00-09:00:00

October 1-31, 1997 Sampling Period

Big Bay

a) During the following periods, dissolved oxygen (DO) data were deleted because DO membrane was damaged during deployment. Periods of exposure appear to be the cause of the too low or too high DO readings. The sensor appeared to

recover near the end of the deployment (final readings were within the normal range, and a normal DO periodicity pattern was observed), but the data were suspect and deleted.

10/01/97 THRU 10/05/97	00:00:00-09:30:00	
10/06/97	13:30:00-15:30:00	

b) From 00:00 on October 1 to 09:00 on October 14, pH data were deleted because the pH sensor malfunctioned during the deployment.

c) During the following periods, the data were deleted because the sonde went dry.

10/01/97	00:00:00-03:00:00	12:30:00-14:30:00
10/02/97	01:00:00-02:30:00	13:30:00-15:00:00
10/03/97	02:00:00-03:00:00	14:30:00-15:30:00
10/04/97	02:30:00-03:30:00	15:00:00-16:30:00
10/05/97	02:30:00-04:30:00	15:00:00-17:00:00
10/06/97	03:00:00-05:00:00	16:00:00-18:00:00
10/07/97	04:00:00-06:00:00	17:00:00-18:30:00
10/08/97	05:00:00-06:00:00	
10/09/97	06:30:00-07:00:00	
10/10/97	07:00:00-08:30:00	20:00:00-21:30:00
10/11/97	08:00:00-09:30:00	21:00:00-22:30:00
10/12/97	09:00:00-10:30:00	22:30:00-23:30:00
10/13/97	10:30:00-12:00:00	23:30:00
10/14/97	00:00:00-01:00:00	
10/27/97	22:30:00-23:30:00	
10/28/97	00:00:00-00:30:00	

d) From 09:30 on October 14 to 11:00 on October 16, no data are available due to downtime for servicing and calibrating of data loggers.

e) During the following periods, the following turbidity was deleted because the sensor gear box jammed, preventing the wiper from clearing the lens.

10/19/97 THRU 10/31/97	03:00:00-23:30:00

St. Pierre

a) During the following periods, the dissolved oxygen (DO) data were deleted because the sensor was fouled during deployment by sediment from the nearby eroding bank. DO readings were extremely low (<1.0 mg/L), indicating that the DO membrane was blocked by debris or sediment. Post-deployment DO calibration check indicated that the DO membrane was not damaged by the fouling. (see Research Methods section)

10/09/97 THRU 10/14/97	09:00:00-10:30:00

b) During the following periods, the specific conductance and salinity data were deleted. The readings drifted downward during a similar time period as the

DO downward drift, suggesting that the sediment from the eroding bank was the
cause of the low readings. (see Research Methods section)
10/09/97 THRU 10/14/97 09:00:00-10:30:00
c) From 11:00 on October 14 to 12:30 on October 16, no data are available due
to downtime for servicing and calibrating of data loggers.

November 1-30, 1997 Sampling Period
Big Bay
a) During the following periods, the turbidity data were deleted because the
sensor gear box jammed, preventing the wiper from clearing the lens.
11/01/97 THRU 11/11/97 00:00:00-09:30:00
b) During the following periods, the data were deleted because the sonde went
dry.

11/02/97	14:30:00-16:00:00	
11/03/97	02:30:00-03:30:00	15:30:00-16:30:00
11/04/97	03:00:00-04:00:00	16:00:00-17:00:00
11/10/97	22:30:00-23:00:00	
11/14/97	01:30:00-02:00:00	15:00:00
11/15/97	00:30:00-03:30:00	14:00:00-16:00:00
11/16/97	01:00:00-04:00:00	14:30:00-16:30:00
11/17/97	02:00:00-04:00:00	16:00:00-16:30:00
11/18/97	03:30:00-04:30:00	
11/19/97	05:00:00-05:30:00	
11/26/97	23:00:00-23:30:00	
11/28/97	12:30:00-13:00:00	
11/29/97	00:00:00-01:30:00	13:00:00-14:00:00

c) From 10:00 on November 11 to 11:30 on November 13, no data are available
due to downtime for servicing and calibrating of data loggers.
d) During the following periods, the pH data were deleted because the pH
sensor malfunctioned during the deployment.
11/13/97 THRU 11/30/97 12:00:00-23:30:00
e) During the following periods, the turbidity probe was not installed.
11/13/97 THRU 11/31/97 12:00:00-23:30:00

St. Pierre
a) From 09:00 on November 11 to 12:00 on November 13, no data are available
due to downtime for servicing and calibrating of data loggers.
b) During the following periods, the dissolved oxygen (DO) data were deleted
because the sensor was fouled during deployment. DO readings drifted downward
during the deployment. (see Research Methods section)
11/21/97 17:30:00-23:30:00
c) During the following periods, the specific conductance and salinity data

were deleted. The readings drifted downward during a similar time period as
the DO downward drift, suggesting that the sediment from the eroding bank was
the cause of the low readings. (see Research Methods section)
11/21/97 17:30:00-23:30:00

December 1-31, 1997 Sampling Period
Big Bay
a) During the following periods, the pH data were deleted because the pH
sensor malfunctioned during deployment.
12/01/97 THRU 12/09/97 00:00:00-09:00:00
b) During the following periods, the data were deleted because the sonde went
dry.

12/01/97	01:30:00-03:00:00	14:00:00-15:30:00
12/02/97	16:00:00	
12/04/97	16:30:00-18:00:00	
12/05/97	04:30:00-06:30:00	17:00:00-19:00:00
12/06/97	05:00:00-07:30:00	18:00:00-20:00:00
12/07/97	06:30:00-08:00:00	19:00:00-21:00:00
12/08/97	08:00:00-09:00:00	20:30:00-22:00:00

c) During the following periods, the turbidity probe was not installed.
12/01/97 THRU 12/09/97 00:00:00-09:00:00
12/11/97 THRU 12/31/97 13:30:00-23:30:00
d) From 09:30 on December 9 to 13:00 on December 11, no data are available
due to downtime for servicing and calibrating of data loggers and other sampling
conflicts.
e) During the following periods, the pH sensor was not installed.
12/11/97 THRU 12/31/97 13:30:00-23:30:00

St. Pierre
a) During the following periods, the dissolved oxygen (DO) data were deleted
because the sensor was fouled during deployment by sediment from the nearby
eroding bank. DO readings were extremely low (<1.0 mg/L), indicating that the DO
membrane was blocked by debris or sediment. Post-deployment DO calibration check
indicated that the DO membrane was not damaged by the fouling.
(see Research Methods section)
12/01/97 THRU 12/08/97 00:00:00-09:30:00
12/12/97 THRU 12/31/97 10:30:00-23:30:00
b) During the following periods, the specific conductance and salinity data
were deleted. The readings drifted downward during similar time periods as the
DO downward drift, suggesting that the sediment from the eroding bank was the

cause of the low readings. (see Research Methods section)

12/01/97 THRU 12/08/97	00:00:00-09:30:00
12/30/97 THRU 12/31/97	03:30:00-23:30:00

c) During the following periods, the turbidity data were deleted because the sensor gear box jammed, preventing the wiper from clearing the lens.

12/01/97	06:30:00	10:00:00-10:30:00	19:30:00
12/02/97	10:00:00		
12/03/97	11:30:00-12:30:00		
12/04/97	09:30:00		
12/05/97	03:30:00		
12/09/97	07:30:00		
12/12/97	06:30:00	22:00:00	
12/13/97	18:30:00-23:30:00		
12/14/97	00:00:00-06:00:00	18:30:00	
12/15/97	01:30:00	05:00:00-05:30:00	14:00:00-14:30:00
			18:30:00
12/16/97	00:30:00-02:00:00	19:00:00	
12/17/97	09:30:00-23:30:30		
12/18/97 THRU 12/31/97	00:00:00-23:30:00		

d) From 10:00 on December 9 to 12:30 on December 11, no data are available due to downtime for servicing and calibrating of data loggers and other sampling conflicts.