

## **Old Woman Creek (OWC) NERR Site Water Quality Metadata**

March through December, 2005

Latest Update: August 13, 2020

### **1. Principal Investigator & contact person:**

Dr. David Klarer, Research Coordinator

E-mail: david.klarer@oldwomancreek.org

Old Woman Creek SNP and NERR

2514 Cleveland Road East

Huron, Ohio 44839

Phone: (419) 433-4601

### **2. Entry verification:**

The data were directly downloaded from the YSI PC6600 EDS data loggers into the YSI Ecowatch for Windows program in the PC. The data were graphed and visually checked for any obvious outliers. Notes are made of any unusual data or faulty probes. The data is then exported as a .csv file into an Excel spreadsheet. The data files were edited to remove headers, footers, and spaces. The CDMO cdmomac3.xls macro was used to QA/QC the data. The macro automatically formatted the column widths to the correct number of decimal places based on YSI sensor specifications. It also compiled a list of all data that fell outside the stated range of the different data logger probes and is used to check for missing times. Data that fall outside of the range of the probes was deleted. Any negative depth values were deleted, because it means that the depth sensor was out of water at that time. All sensor data were deleted any time the specific conductivity fell to zero, which indicated that the conductivity probe was out of water and it was assumed that the other sensor probes were likewise out of water. An explanation for the missing and the deleted data is included in this metadata report. Anomalous data not due to sensor malfunction or due to low water conditions were noted in the metadata, but not removed from the data set. The corrected data were then exported into a later version of Excel, where it was processed with the EQWinformat.xls macro that: inserts an identifying station code, inserts a correct time if required, and allows for the removal of pre- and post deployment data. Where deployment overlap occurs between files, the data produced by the newly calibrated sonde is accepted as being the most accurate. The data were then imported into the EQWin database and text files were then transferred along with the associated metadata electronically to the CDMO. The files are archived at OWC. Dr. David Klarer is responsible for both data logger deployment and data management.

### **3. Research Objectives:**

Measurements are taken every 15 minutes over two or three-week periods at four sites within the Old Woman Creek- three in the estuary proper- one in the upper reaches at State Route 2 (SU), one near the mouth, just south of State Route 6 (WM), and the third site upstream from the WM site (OL). The final site (BR) is just upstream of the first riffle zone above the estuary in Old Woman Creek proper. The purpose of this monitoring program is to document the

role of this Great Lakes estuary in the Lake Erie ecosystem, particularly the estuary's role in mitigating storm flow that passes through it. The role of the OL site is to document the degree of intrusion by lake water during northerly winds and subsequent seiche events.

#### **4. Research methods:**

The YSI monitoring program began on 17 March, 2005 at all four sites. The sampling at all sites ended for the year on 2 December, 2005, except for site SU, where the logger was out of the water on 21 November, 2005, when we stopped deployment for the year. Prior to deployment of the data loggers, a 4-inch diameter PVC pipe was bolted to an 8-foot long metal post that had been driven into the sediment. Each pipe had 4 rows of holes or 4 vertical slits  $\frac{3}{4}$ " wide drilled into it spanning the area of the probe guard on the data logger so that the probes would have direct contact with the surrounding waters. Additional field readings for dissolved oxygen, pH, temperature, turbidity, and specific conductance are taken when the instrument is pulled at each site (see the Other Remarks Section). The data loggers are replaced in the field after a two or three-week deployment, depending on temperature and degree of fouling of the data loggers. All data loggers were the extended deployment loggers. The data was retrieved from each data logger and each data logger was recalibrated (according to the directions in the YSI Operations Manual) before being returned to the field. Conductivity, pH (2 point calibration), and turbidity (2 point calibration) are calibrated using commercial standards. Formazin (Hach, 4000 NTU) was diluted to prepare the standards for turbidity. These standards were prepared prior to each deployment. The data loggers at sites WM and SU have vented water level sensors while the loggers at sites BR and OL have non-vented depth sensors.

#### **5. Site Location and Character:**

Old Woman Creek National Estuarine Research Reserve is located on the southern shore of Lake Erie, slightly east of the city of Huron, Ohio (Latitude 41° 23'N; Longitude 82° 33'W). Land use in the Old Woman Creek (OWC) watershed is primarily row crop agriculture. Other than the non-point source pollutants coming into the estuary from these agricultural practices and from the town of Berlin Heights, there are no other major pollution sources in the estuary. Salinity in Old Woman Creek is normally 1 ppt. or less, although it will rise, on occasion, to nearly 2 ppt. The tidal range in Lake Erie (and therefore in the estuary) is on the order of 4 cm or less. Water levels in the estuary and in the creek are extremely variable, with changes occurring daily, seasonally and annually.

The data logger at the State Route 6 (WM) site (Latitude 41° 22' 57" N, Longitude 82° 30'54" W) is very close to the mouth of Old Woman Creek. In this portion of the Reserve, the creek is very shallow but extends over a large surface area. This site frequently experiences influx of Lake Erie waters. The bottom sediments at this site are silty clay. At the beginning of the deployment for 2005, there was no rooted aquatic vegetation directly adjacent to the site, although there was both emergent and submerged vegetation within 3 meters of the site. By mid September, *Phragmites australis* had grown up around the data logger trap. The data logger is about .21 meters above the bottom sediments. On October 31 between 09:15 and 09:30, the trap was lowered 10 cm. On 18 November, the trap was lowered another 8 cm. The trap was raised 5 cm on 29 November at about 08:30. On 05/02/2005, at 07:45:00, when the datalogger was swapped out, the new logger had a short guard instead of the long guard, this effectively lowered the logger 5 cm within the trap. On 09/27/2005, at 08:00:00, when the logger was swapped out, the new logger had a long guard instead of a short guard, thus effectively raising the logger 5 cm. On 10/31/2005 at 09:00:00, when the logger was swapped out, the new logger had a short guard

thus effectively lowering the logger 5 cm.

The data logger at the State Route 2 (SU) site (Latitude 41° 22' 2" N, Longitude 82° 30'26" W) is very near the southern boundary of the Reserve. This site is in the upper reaches of the estuary. The data logger is sited near a concrete piling of the eastbound Ohio State Route 2 bridge. At this site, the creek is relatively deep and narrow. Although water direction and flow is influenced at this site by changes in Lake Erie water levels, this site doesn't have direct contact with Lake Erie waters. The bottom sediments at this site are silty clay. There is no rooted aquatic vegetation near or upstream from this site. The data logger is about .15 meters above the bottom at this site. The trap was lowered 8 cm on 10/31/2004 at about 10:00:00 when the loggers were swapped out. On 08/29/2005 at 08:30:00, when the data logger was swapped out, the new logger had a short guard, this effectively lowered the logger 5 cm within the trap.

The data logger at site OL (Latitude 41° 22' 55" N, Longitude 82° 30'51" W) is in the lower reaches of the estuary. This site is not in direct sight of the mouth, so northerly winds and resulting seiche activities should be less noticeable at this site. The bottom sediments are silty clay. This site is located about 5 meters north of a *Nelumbo lutea* bed, but, there were no plants immediately adjacent to the data logger. The base of data logger is about 38.5 cm above the sediment. On 10/31/2005, the trap was lowered 10 cm after changing the logger at about 09:30:00-09:45:00. On 11/18/2005 at about 09:45:00-10:00:00 the trap was further lowered 8.5 cm. On 08/29/2005 at 07:30:00, when the logger was swapped out, the new logger had a short guard, this lowering the logger 5 cm within the trap. On 09/12/2005 at 08:15:00, when the logger was swapped out, the new logger had a long guard, thus raising the logger 5 cm within the trap. On 11/18/2005 at 09:45:00 when the logger was swapped out, the new logger had a short guard, thus lowering the logger 5 cm within the trap

The data logger at site BR (Latitude 41° 20'54" N, Longitude 82° 30'30"W) is located in the lower portion of the creek proper. Just upstream from the data logger, Berlin Road crosses Old Woman Creek. The site is just upstream of the first riffle area above the estuary. Unlike the other three sites, Lake Erie water levels have no impact on this site. The bottom of the creek at this site is a combination of rocks interspersed with some clay-silt that has been washed in from upstream. There are no aquatic macrophytes at or near this site. The trap is 15 cm above the bottom at this site.

## **6. Data collection periods:**

Sampling at WM began on March 17, 2005 at 10:30:00. The logger was pulled for the year on 12/02/2005 at 10:00:00. Sampling at SU began on March 17, 2005 at 09:30:00. The logger was pulled for the year on 11/21/2005 at 10:45:00. Sampling at OL began on March 17, 2005 at 10:15:00, and ceased on 12/02/2004 at 09:30:00.. Sampling at BR began on March 17, 2005 at 09:45:00 and ceased on December 2, 2005 at 09:00:00. Specific deployment dates are listed below.

| Site | Deployed             | Pulled               |
|------|----------------------|----------------------|
| WM   | 3/17/2005 (10:30:00) | 4/4/2005 (8:45:00)   |
|      | 4/4/2005 (09:00:00)  | 5/2/2005 (07:30:00)  |
|      | 5/2/2005 (07:45:00)  | 5/23/2005 (07:15:00) |
|      | 5/23/2005 (07:30:00) | 6/12/2005 (07:45:00) |
|      | 6/12/2005 (08:00:00) | 7/5/2005 (07:15:00)  |
|      | 7/5/2005 (07:30:00)  | 7/19/2005 (07:45:00) |
|      | 7/19/2005 (08:00:00) | 8/1/2005 (07:45:00)  |
|      | 8/1/2005 (08:00:00)  | 8/15/2005 (08:45:00) |
|      | 8/15/2005 (09:00:00) | 8/29/2005 (07:15:00) |

|                       |                       |
|-----------------------|-----------------------|
| 8/29/2005 (07:30:00)  | 9/12/2005 (08:00:00)  |
| 9/12/2005 (08:15:00)  | 9/27/2005 (07:45:00)  |
| 9/27/2005 (08:00:00)  | 10/18/2005 (08:15:00) |
| 10/18/2005 (08:30:00) | 10/31/2005 (08:45:00) |
| 10/31/2005 (09:00:00) | 11/21/2005 (09:45:00) |
| 11/21/2005 (10:30:00) | 12/2/2005 (10:00:00)  |

SU

|                       |                       |
|-----------------------|-----------------------|
| 3/17/2005 (09:30:00)  | 4/4/2005 (07:45:00)   |
| 4/4/2005 (08:00:00)   | 5/2/2005 (09:00:00)   |
| 5/2/2005 (09:15:00)   | 5/23/2005 (08:15:00)  |
| 5/23/2005 (08:30:00)  | 6/12/2005 (10:15:00)  |
| 6/12/2005 (10:30:00)  | 7/5/2005 (08:00:00)   |
| 7/5/2005 (08:30:00)   | 7/19/2005 (08:45:00)  |
| 7/19/2005 (09:00:00)  | 8/1/2005 (08:15:00)   |
| 8/1/2005 (08:30:00)   | 8/15/2005 (08:00:00)  |
| 8/15/2005 (08:15:00)  | 8/29/2005 (08:15:00)  |
| 8/29/2005 (08:30:00)  | 9/12/2005 (07:15:00)  |
| 9/12/2005 (07:30:00)  | 9/27/2005 (08:45:00)  |
| 9/27/2005 (09:00:00)  | 10/18/2005 (09:00:00) |
| 10/18/2005 (09:30:00) | 10/31/2005 (09:45:00) |
| 10/31/2005 (10:00:00) | 11/21/2005 (10:45:00) |

OL

|                       |                       |
|-----------------------|-----------------------|
| 3/17/2005 (10:15:00)  | 4/4/2005 (08:45:00)   |
| 4/4/2005 (09:00:00)   | 5/2/2005 (07:15:00)   |
| 5/2/2005 (07:30:00)   | 5/23/2005 (07:15:00)  |
| 5/23/2005 (07:30:00)  | 6/12/2005 (07:45:00)  |
| 6/12/2005 (08:00:00)  | 7/5/2005 (07:15:00)   |
| 7/5/2005 (07:30:00)   | 7/19/2005 (07:30:00)  |
| 7/19/2005 (08:00:00)  | 8/1/2005 (07:30:00)   |
| 8/1/2005 (07:45:00)   | 8/15/2005 (08:45:00)  |
| 8/15/2005 (09:00:00)  | 8/29/2005 (07:00:00)  |
| 8/29/2005 (07:30:00)  | 9/12/2005 (08:00:00)  |
| 9/12/2005 (08:15:00)  | 9/27/2005 (07:45:00)  |
| 9/27/2005 (08:00:00)  | 10/18/2005 (08:00:00) |
| 10/18/2005 (08:30:00) | 10/31/2005 (08:45:00) |
| 10/31/2005 (09:00:00) | 11/21/2005 (09:30:00) |
| 11/21/2005 (09:45:00) | 12/2/2005 (09:30:00)  |

BR

|                      |                      |
|----------------------|----------------------|
| 3/17/2005 (09:45:00) | 4/4/2005 (16:15:00)  |
| 4/4/2005 (16:30:00)  | 5/2/2005 (09:15:00)  |
| 5/2/2005 (09:30:00)  | 5/23/2005 (08:30:00) |
| 5/23/2005 (08:45:00) | 6/12/2005 (10:45:00) |
| 6/12/2005 (11:00:00) | 7/5/2005 (08:30:00)  |
| 7/5/2005 (08:45:00)  | 7/19/2005 (09:00:00) |
| 7/19/2005 (09:15:00) | 8/1/2005 (08:30:00)  |
| 8/1/2005 (08:45:00)  | 8/15/2005 (08:15:00) |

|                       |                       |
|-----------------------|-----------------------|
| 8/15/2005 (08:30:00)  | 8/29/2005 (08:30:00)  |
| 8/29/2005 (08:45:00)  | 9/12/2005 (08:45:00)  |
| 9/12/2005 (09:00:00)  | 9/27/2005 (09:00:00)  |
| 9/27/2005 (09:30:00)  | 10/18/2005 (09:45:00) |
| 10/18/2005 (10:00:00) | 10/31/2005 (10:00:00) |
| 10/31/2005 (10:15:00) | 11/21/2005 (11:00:00) |
| 11/21/2005 (11:15:00) | 12/2/2005 (09:00:00)  |

## 7. Distribution

NOAA/ERD retains the right to analyze, synthesize, and publish summaries of the NERRS System-wide Monitoring Program data. The OWC Research Coordinator (RC) retains the right to be fully credited for having collected and processed the data. Following academic courtesy standard, the RC and the NERR site where the data were collected will be contacted and fully acknowledged in any subsequent publications in which any part of the data are used. Manuscripts resulting from this NOAA/OCRM supported research that are produced for publication in open literature, including refereed scientific journals, will acknowledge that the research was conducted under an award from the Estuarine Reserves Division, Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration.

The data set enclosed within this package/transmission is only as good as the quality assurance and quality control procedures outlined in the enclosed metadata reporting statement. The user bears all responsibility for its subsequent use/misuse in any further analyses or comparisons. The Federal government and the State of Ohio do not assume liability to the Recipient or third persons, nor will the Federal government or the State of Ohio reimburse or indemnify the Recipient for its liability due to any losses resulting in any way from the use of this data.

NERR water quality data and metadata can be obtained from the Research Coordinator at the individual NERR site (please see section 1, Principal Investigators and Contact Persons), from the Data Manager at the Centralized Data Management Office (please see personnel directory under general information link on CDMO homepage) and online at the CDMO homepage <http://cdmo.baruch.sc.edu/>. Data are available in text tab-delimited format.

## 8. Associated projects:

Replicate samples for chemical analysis of the water are collected at each site every time the data loggers are changed. Samples for phytoplankton determination are collected at the same time at sites near two of the data logger deployment sites (SU and WM). Additionally, a 26 hour sampling regime (samples are collected at 2 hour intervals over the 26 hours) is conducted at the WM site once during each month.

## II. Physical Structure and Descriptors:

### 9. Sensor specifications:

YSI 6600EDS datalogger

Parameter: Temperature  
Units: Celsius (C)  
Sensor Type: Thermistor  
Model #: 6560  
Range: -5 to 45 °C  
Accuracy: +/-0.15 °C  
Resolution: 0.01 °C

Parameter: Conductivity  
Units: milli-Siemens per cm (mS/cm)  
Sensor Type: 4-electrode cell with autoranging  
Model #: 6560  
Range: 0 to 100 mS/cm  
Accuracy: +/-0.5% of reading + 0.001 mS/cm  
Resolution: 0.001 mS/cm to 0.1 mS/cm (range dependent)

Parameter: Salinity  
Units: parts per thousand (ppt)  
Sensor Type: Calculated from conductivity and temperature  
Range: 0 to 70 ppt  
Accuracy: +/- 1.0% of reading or 0.1 ppt, whichever is greater  
Resolution: 0.01 ppt

Parameter: Dissolved Oxygen % saturation  
Units: percent air saturation (%)  
Sensor Type: Rapid Pulse – Clark type, polarographic  
Model #: 6562  
Range: 0 to 500 % air saturation  
Accuracy: 0-200 % air saturation, +/- 2 % of the reading or 2 % air saturation, whichever is greater; 200-500 % air saturation, +/- 6 % of the reading  
Resolution: 0.1 % air saturation

Parameter: Dissolved Oxygen mg/L (Calculated from % air saturation, temperature and salinity)  
Units: milligrams per Liter (mg/L)  
Sensor Type: Rapid Pulse – Clark type, polarographic  
Model #: 6562  
Range: 0 to 50 mg/L  
Accuracy: 0 to 20 mg/L, +/- 2 % of the reading or 0.2 mg/L, whichever is greater; 20 to 50 mg/L, +/- 6 % of the reading  
Resolution: 0.01 mg/L

Parameter: Non-Vented Level – Shallow (Depth)  
Units: feet or meters (ft or m)  
Sensor Type: Stainless steel strain gauge  
Range: 0 to 30 ft (9.1 m)  
Accuracy: +/- 0.06 ft (0.018 m)  
Resolution: 0.001 ft (0.001 m)

Parameter: Vented Level – Shallow (Depth)

Units: feet or meters (ft or m)  
Sensor Type: Stainless steel strain gauge  
Range: 0 to 30 ft (9.1 m)  
Accuracy 0-10 ft: +/- 0.01 ft (0.003 m)  
Accuracy 10-30 ft: +/- 0.06 ft (0.018 m)  
Resolution: 0.001 ft (0.001 m)

Parameter: Vented Level – Deep (Depth)  
Units: feet or meters (ft or m)  
Sensor Type: Stainless steel strain gauge  
Range: 0 to 656 ft (200 m)  
Accuracy: +/- 1 ft (0.3 m)  
Resolution: 0.001 ft (0.001 m)

Parameter: pH (EDS probe)  
Units: units  
Sensor Type: Glass combination electrode  
Model #: 6561  
Range: 0 to 14 units  
Accuracy: +/- 0.2 units  
Resolution: 0.01 units

Parameter: Turbidity  
Units: nephelometric turbidity units (NTU)  
Sensor Type: Optical, 90 ° scatter, with mechanical cleaning  
Model #: 6136  
Range: 0 to 1000 NTU  
Accuracy: +/- 5 % reading or 2 NTU (whichever is greater)  
Resolution: 0.1 NTU

The reliability of the dissolved oxygen (DO) data after 96 hours post-deployment for non-EDS (Extended Deployment System) data sondes may be problematic due to fouling which forms on the DO probe membrane during some deployments (Wenner et al. 200\*). Many reserves have upgraded to YSI 6600 EDS data sondes, which increase DO accuracy and longevity by reducing the environmental effects of fouling. The user is therefore advised to consult the metadata and to exercise caution when utilizing the DO data beyond the initial 96-hour time period. However, this potential drift is not always problematic for some uses of the data, ie. periodicity analysis. It should be noted that the amount of fouling is site specific and that not all data are affected. The Research Coordinator at the specific NERR site should be contacted concerning the reliability of the DO data because of the site and seasonal variation in the fouling of the DO sensor. All data sondes used at OWC NERR sites in 2005 were EDS models.

The NERRS System-Wide Monitoring Program utilizes YSI data sondes that can be equipped with either depth or water level sensors. Both sensors measure water depth, but by convention, level sensors refer to atmospherically vented measurements and depth refers to non-vented measurements. Standard calibration protocols for the non-vented sensor use the atmosphere pressure at the time of calibration. Therefore, changes in atmospheric pressure between calibrations appear as changes in water depth. The error is equal to approximately 1.03 cm for every 1millibar change in atmospheric pressure. This error is eliminated for level sensors

because they are vented to the atmosphere throughout the deployment time interval. If proper atmospheric pressure data is available, non-vented sensor depth measurements can be corrected for deployments between calibrations. Readings for both vented and non-vented sensors are automatically compensated for water density changes due to variations in temperature and salinity. The Research Coordinator at the specific NERR site should be contacted in order to obtain information regarding atmospheric pressure data availability. At OWC NERR in 2005, sites SU and WM employed water level sensors and sites BR and OL employed non-vented depth sensors.

#### **10. Coded variable definitions:**

| Sampling Station | Sampling site code | Station code |
|------------------|--------------------|--------------|
| State Route 6    | WM                 | owcwmwq      |
| State Route 2    | SU                 | owcsuwq      |
| Lower Estuary    | OL                 | owcolwq      |
| Berlin Road      | BR                 | owcbrwq      |

#### **11. Anomalous/Suspect Data:**

**On 07/12/2019 this dataset was updated to include embedded QAQC flags for anomalous/suspect data.** System-wide monitoring data beginning in 2007 were processed to allow for QAQC flags and codes to be embedded in the data files rather than detailed in the metadata alone (as in the anomalous/suspect, deleted, and missing data sections above). Prior to 2006, rejected data were deleted from the dataset so they are unavailable to be used at all, but suspect data were only noted in the metadata document. Suspect data flags <1> were embedded retroactively in order to allow suspect data to be easily identified and filtered from the dataset if desired for analysis and reporting purposes. No other flags or codes were embedded in the dataset and users should still refer to the detailed explanations above for more information.

#### **March 2005**

None

#### **April 2005**

None

#### **May 2005**

None

#### **June 2005**

**WM:** None

**SU:** None

**OL:** Turbidity: The wide variability in values coupled with the high number of deleted values suggests that there may have been some problems with the wiper parking from 6/24/2005 (7:00:00) through 7/5/2005 (7:15:00)

**BR:** Dissolved Oxygen data are suspect from 6/9/2005 (15:00:00) through 6/12/2005

(10:45:00). There is a large spike in the data, borderline post-calibration readings, and a marked change in readings when the new sonde was deployed.

## **July 2005**

**WM:** None

**SU:** None

**OL:** Turbidity: The wide variability in values coupled with the high number of deleted values suggests that there may have been some problems with the wiper parking from 7/11/2005 (4:45:00) through 7/14/2005 (17:00:00)

**BR:** Oxygen data suspect due to a punctured membrane during deployment 7/24/2005 (21:00:00) through 7/25/2005 (05:00:00)

## **August 2005**

None

## **September 2005**

None

## **October 2005**

**WM:** None

**SU:** None

**OL:** None

**BR:** Dissolved oxygen data is suspect due to probe problems:  
10/9/2005 (06:00:00-11:15:00)  
10/10/05 (17:00:00) through 10/11/2005 (11:30:00)  
10/11/2005 (22:15:00) through 10/18/2005 (09:45:00)

## **November 2005**

**WM:** None

**SU:** None

**OL:** None

**BR:** Turbidity data are suspect from 11/4/2005 (03:45:00) through 11/21/2005 (11:00:00). Very high and erratic readings, some of which have been deleted.

## **December 2005**

None

## **12. Deleted Data:**

## **March 2005**

**WM:** Turbidity data deleted as sensor out of range  
3/19/2005 (06:30:00)

**SU:** Negative depths deleted as sensor out of water:

3/31/2005 18:45:00 through 3/31/2005 23:00:00

**OL:** Turbidity data deleted as sensor out of range  
3/29/2005 (21:00:00)

**BR:** Turbidity data deleted as sensor out of range:  
3/20/2005 19:00:00  
3/20/2005 19:15:00

#### **April 2005**

**WM:** Negative depths deleted as sensor out of water

4/4/2005 16:30:00  
4/4/2005 16:45:00  
4/4/2005 21:00:00  
4/4/2005 21:15:00  
4/5/2005 13:45:00  
4/5/2005 14:00:00  
4/5/2005 14:15:00  
4/5/2005 14:30:00  
4/5/2005 14:45:00  
4/5/2005 15:00:00  
4/5/2005 15:15:00  
4/5/2005 15:30:00  
4/5/2005 15:45:00  
4/5/2005 16:00:00  
4/5/2005 16:30:00  
4/5/2005 17:45:00  
4/5/2005 18:00:00  
4/5/2005 18:15:00  
4/5/2005 18:30:00  
4/5/2005 19:30:00 through 4/6/2005 02:30:00  
4/6/2005 11:15:00 through 4/6/2005 17:45:00  
4/6/2005 22:00:00 through 4/7/2005 08:30:00  
4/7/2005 9:30:00  
4/7/2005 11:45:00  
4/7/2005 12:00:00  
4/7/2005 12:15:00  
4/7/2005 12:30:00  
4/7/2005 12:45:00  
4/7/2005 14:30:00  
4/7/2005 14:45:00  
4/7/2005 15:00:00  
4/7/2005 15:15:00  
4/7/2005 15:30:00  
4/7/2005 17:30:00  
4/7/2005 17:45:00  
4/7/2005 18:00:00

|           |          |                            |
|-----------|----------|----------------------------|
| 4/8/2005  | 15:30:00 |                            |
| 4/8/2005  | 15:45:00 |                            |
| 4/8/2005  | 16:00:00 |                            |
| 4/8/2005  | 16:15:00 |                            |
| 4/8/2005  | 16:30:00 |                            |
| 4/8/2005  | 16:45:00 |                            |
| 4/8/2005  | 17:00:00 |                            |
| 4/8/2005  | 17:15:00 |                            |
| 4/8/2005  | 17:30:00 |                            |
| 4/8/2005  | 17:45:00 |                            |
| 4/8/2005  | 18:00:00 |                            |
| 4/9/2005  | 16:45:00 |                            |
| 4/9/2005  | 17:00:00 |                            |
| 4/9/2005  | 17:15:00 |                            |
| 4/9/2005  | 17:30:00 |                            |
| 4/9/2005  | 17:45:00 |                            |
| 4/9/2005  | 18:00:00 |                            |
| 4/9/2005  | 18:15:00 |                            |
| 4/9/2005  | 18:30:00 |                            |
| 4/9/2005  | 18:45:00 |                            |
| 4/9/2005  | 19:00:00 |                            |
| 4/9/2005  | 19:15:00 |                            |
| 4/9/2005  | 19:30:00 |                            |
| 4/9/2005  | 19:45:00 |                            |
| 4/9/2005  | 20:00:00 |                            |
| 4/9/2005  | 20:15:00 |                            |
| 4/9/2005  | 20:30:00 |                            |
| 4/10/2005 | 19:30:00 |                            |
| 4/10/2005 | 19:45:00 |                            |
| 4/10/2005 | 20:45:00 |                            |
| 4/10/2005 | 21:00:00 |                            |
| 4/10/2005 | 21:15:00 |                            |
| 4/10/2005 | 21:30:00 |                            |
| 4/10/2005 | 21:45:00 |                            |
| 4/10/2005 | 22:00:00 |                            |
| 4/14/2005 | 17:45:00 |                            |
| 4/14/2005 | 18:15:00 |                            |
| 4/14/2005 | 18:30:00 |                            |
| 4/14/2005 | 18:45:00 |                            |
| 4/14/2005 | 19:00:00 |                            |
| 4/14/2005 | 19:15:00 |                            |
| 4/14/2005 | 19:30:00 |                            |
| 4/14/2005 | 19:45:00 |                            |
| 4/14/2005 | 20:00:00 |                            |
| 4/17/2005 | 15:15:00 |                            |
| 4/17/2005 | 15:30:00 |                            |
| 4/17/2005 | 15:45:00 |                            |
| 4/17/2005 | 16:15:00 |                            |
| 4/17/2005 | 16:30:00 |                            |
| 4/18/2005 | 17:45:00 | through 4/20/2005 18:30:00 |
| 4/21/2005 | 23:00:00 |                            |
| 4/21/2005 | 23:15:00 |                            |
| 4/21/2005 | 23:30:00 |                            |

|           |          |
|-----------|----------|
| 4/22/2005 | 0:00:00  |
| 4/22/2005 | 0:15:00  |
| 4/22/2005 | 0:30:00  |
| 4/22/2005 | 0:45:00  |
| 4/22/2005 | 1:00:00  |
| 4/22/2005 | 1:15:00  |
| 4/22/2005 | 1:30:00  |
| 4/22/2005 | 1:45:00  |
| 4/22/2005 | 2:00:00  |
| 4/22/2005 | 2:15:00  |
| 4/22/2005 | 2:30:00  |
| 4/22/2005 | 10:00:00 |
| 4/22/2005 | 10:30:00 |
| 4/22/2005 | 10:45:00 |
| 4/22/2005 | 11:00:00 |
| 4/22/2005 | 11:15:00 |
| 4/22/2005 | 11:30:00 |
| 4/22/2005 | 11:45:00 |
| 4/22/2005 | 12:00:00 |
| 4/22/2005 | 12:15:00 |
| 4/22/2005 | 12:30:00 |
| 4/22/2005 | 12:45:00 |
| 4/22/2005 | 13:00:00 |
| 4/22/2005 | 13:15:00 |
| 4/22/2005 | 13:30:00 |
| 4/22/2005 | 13:45:00 |
| 4/22/2005 | 14:00:00 |
| 4/22/2005 | 14:15:00 |
| 4/22/2005 | 14:30:00 |
| 4/22/2005 | 14:45:00 |
| 4/22/2005 | 15:00:00 |
| 4/22/2005 | 15:15:00 |
| 4/25/2005 | 12:00:00 |
| 4/25/2005 | 12:30:00 |
| 4/25/2005 | 12:45:00 |
| 4/25/2005 | 13:00:00 |
| 4/25/2005 | 13:15:00 |
| 4/25/2005 | 13:30:00 |
| 4/25/2005 | 13:45:00 |
| 4/25/2005 | 14:00:00 |
| 4/25/2005 | 14:30:00 |
| 4/26/2005 | 16:15:00 |
| 4/26/2005 | 16:30:00 |
| 4/26/2005 | 16:45:00 |
| 4/26/2005 | 17:00:00 |
| 4/26/2005 | 17:15:00 |
| 4/26/2005 | 17:30:00 |
| 4/26/2005 | 17:45:00 |
| 4/26/2005 | 18:00:00 |
| 4/28/2005 | 12:30:00 |
| 4/28/2005 | 12:45:00 |
| 4/28/2005 | 13:15:00 |
| 4/28/2005 | 13:30:00 |

|           |          |
|-----------|----------|
| 4/28/2005 | 13:45:00 |
| 4/28/2005 | 14:00:00 |
| 4/29/2005 | 18:00:00 |
| 4/29/2005 | 18:15:00 |
| 4/29/2005 | 18:30:00 |
| 4/29/2005 | 18:45:00 |
| 4/30/2005 | 18:30:00 |
| 4/30/2005 | 18:45:00 |
| 4/30/2005 | 19:00:00 |
| 4/30/2005 | 19:15:00 |
| 4/30/2005 | 19:30:00 |
| 4/30/2005 | 19:45:00 |

Turbidity data deleted as sensor out of range

4/18/2005 (17:15:00)

4/19/2005 (04:45:00)

**SU:** Negative depths deleted as sensor out of water

4/1/2005 (00:15:00)

4/1/2005 (01:00:00 through 02:00:00)

Turbidity data deleted as sensor out of range

4/3/2005 1:00:00

4/3/2005 3:30:00

4/3/2005 4:30:00

4/3/2005 8:00:00

**OL:** Turbidity data deleted as sensor out of range

4/3/2005 16:45:00

4/24/2005 1:00:00

4/24/2005 2:30:00

4/24/2005 18:30:00

4/25/2005 19:00:00

4/26/2005 1:00:00

4/26/2005 3:15:00

4/26/2005 7:00:00

4/26/2005 20:30:00

4/27/2005 0:45:00

4/27/2005 1:15:00

4/27/2005 3:30:00

4/27/2005 7:30:00

4/27/2005 9:00:00

4/27/2005 9:30:00

4/27/2005 16:00:00

4/27/2005 19:45:00

4/27/2005 20:15:00

4/27/2005 20:45:00

4/27/2005 21:00:00

4/28/2005 0:45:00

4/28/2005 6:45:00

4/28/2005 9:45:00

4/28/2005 11:45:00  
4/29/2005 0:00:00

**BR:** Turbidity data deleted as sensor out of range:

4/2/2005 13:45:00  
4/2/2005 15:30:00  
4/2/2005 16:30:00  
4/2/2005 17:15:00  
4/2/2005 18:30:00  
4/2/2005 23:00:00  
4/3/2005 9:30:00  
4/3/2005 12:45:00  
4/3/2005 15:15:00  
4/3/2005 18:30:00  
4/3/2005 21:30:00  
4/3/2005 21:45:00  
4/4/2005 0:45:00  
4/20/2005 (1:45:00)  
4/23/2005 (10:00:00) and (12:00:00)  
4/23/2005 (15:30:00) through 5/2/2005 (09:15:00)

## **May 2005**

**WM:** Turbidity data deleted as sensor out of range:

5/9/2005 (09:00:00)  
5/17/2005 (15:00:00)  
5/23/2005 (02:30:00)  
5/28/2005 (07:15:00); (15:00:00)  
5/29/2005 (00:00:00); (23:00:00)

Negative depths deleted as sensor out of water:

5/23/2005 (07:30:00-14:00:00)  
5/25/2005 (14:00:00) through 6/3/2005 (07:15:00)

**SU:** Turbidity data deleted as sensor out of range: 5/30/2005 (20:30:00)

**OL:** Turbidity data deleted as sensor out of range: 5/22/2005 (01:00:00)

**BR:** Turbidity data deleted as sensor was out of range 5/18/2005 (14:15:00)

Negative depth data was deleted as sensor was out of water:

5/1/2005 (18:45:00)  
5/2/2005 (03:30:00); (04:00:00); (04:30:00-06:15:00)

## **June 2005**

**WM:** Negative depths deleted as sensor out of water:

5/25/2005 (14:00:00) through 6/3/2005 (07:15:00)  
6/3/2005 (08:15:00-17:15:00)  
6/4/2005 (06:15:00) through 6/12/2005 (07:45:00)  
6/14/2005 10:30:00  
6/14/2005 11:15:00

|           |          |
|-----------|----------|
| 6/14/2005 | 11:30:00 |
| 6/14/2005 | 11:45:00 |
| 6/14/2005 | 13:15:00 |
| 6/14/2005 | 13:30:00 |
| 6/14/2005 | 13:45:00 |
| 6/14/2005 | 14:00:00 |
| 6/14/2005 | 14:15:00 |
| 6/14/2005 | 14:30:04 |

Turbidity data deleted as sensor out of range:

6/8/2005 (23:45:00)

|           |          |
|-----------|----------|
| 6/13/2005 | 7:30:00  |
| 6/13/2005 | 9:45:00  |
| 6/15/2005 | 9:15:00  |
| 6/15/2005 | 10:00:00 |
| 6/15/2005 | 12:30:00 |
| 6/15/2005 | 21:45:05 |
| 6/15/2005 | 23:30:00 |
| 6/16/2005 | 2:15:00  |
| 6/16/2005 | 17:45:00 |
| 6/16/2005 | 18:00:00 |
| 6/16/2005 | 19:00:00 |
| 6/16/2005 | 19:45:00 |
| 6/17/2005 | 7:00:00  |
| 6/17/2005 | 12:15:00 |
| 6/17/2005 | 14:00:00 |
| 6/17/2005 | 14:15:00 |
| 6/18/2005 | 2:15:00  |
| 6/19/2005 | 15:30:00 |
| 6/21/2005 | 15:15:00 |
| 6/21/2005 | 15:30:00 |
| 6/21/2005 | 16:45:00 |
| 6/21/2005 | 17:30:00 |
| 6/21/2005 | 17:45:00 |
| 6/21/2005 | 18:15:00 |
| 6/21/2005 | 19:30:00 |
| 6/21/2005 | 19:45:00 |
| 6/21/2005 | 20:00:00 |
| 6/22/2005 | 4:45:00  |
| 6/22/2005 | 5:00:00  |
| 6/22/2005 | 11:15:00 |
| 6/22/2005 | 12:30:00 |
| 6/23/2005 | 17:15:00 |
| 6/23/2005 | 18:00:00 |
| 6/23/2005 | 18:15:00 |
| 6/23/2005 | 18:30:00 |
| 6/23/2005 | 18:45:00 |
| 6/23/2005 | 19:30:00 |
| 6/23/2005 | 19:45:00 |
| 6/23/2005 | 20:30:00 |
| 6/23/2005 | 20:45:00 |
| 6/23/2005 | 21:15:00 |
| 6/24/2005 | 1:45:00  |

|           |          |
|-----------|----------|
| 6/24/2005 | 2:00:00  |
| 6/24/2005 | 2:15:00  |
| 6/24/2005 | 2:45:00  |
| 6/24/2005 | 3:00:00  |
| 6/24/2005 | 4:30:00  |
| 6/24/2005 | 4:45:00  |
| 6/24/2005 | 5:00:00  |
| 6/24/2005 | 5:15:00  |
| 6/24/2005 | 5:30:00  |
| 6/24/2005 | 5:45:00  |
| 6/24/2005 | 7:00:00  |
| 6/24/2005 | 7:15:00  |
| 6/24/2005 | 7:30:00  |
| 6/24/2005 | 7:45:00  |
| 6/24/2005 | 8:00:00  |
| 6/24/2005 | 9:15:00  |
| 6/24/2005 | 9:30:00  |
| 6/24/2005 | 9:45:00  |
| 6/24/2005 | 10:00:00 |
| 6/24/2005 | 11:30:00 |
| 6/24/2005 | 11:45:00 |
| 6/24/2005 | 12:00:00 |
| 6/24/2005 | 12:15:00 |
| 6/24/2005 | 14:45:00 |
| 6/24/2005 | 21:45:00 |
| 6/26/2005 | 19:15:00 |
| 6/27/2005 | 22:30:00 |
| 6/27/2005 | 22:45:00 |
| 6/27/2005 | 23:00:00 |
| 6/28/2005 | 0:15:00  |
| 6/28/2005 | 0:30:00  |
| 6/28/2005 | 0:45:00  |
| 6/28/2005 | 1:45:00  |
| 6/28/2005 | 2:00:00  |
| 6/28/2005 | 2:15:00  |
| 6/28/2005 | 3:15:00  |
| 6/28/2005 | 3:30:00  |
| 6/28/2005 | 4:15:00  |
| 6/28/2005 | 4:45:00  |
| 6/28/2005 | 5:00:00  |
| 6/28/2005 | 6:00:00  |
| 6/28/2005 | 6:30:00  |

**SU:** Turbidity data deleted as sensor out of range:  
6/11/2005 (16:30:00)

**OL:** Turbidity data deleted as sensor out of range:

|          |          |
|----------|----------|
| 6/1/2005 | 16:45:00 |
| 6/1/2005 | 17:00:00 |
| 6/1/2005 | 19:15:00 |
| 6/2/2005 | 13:45:00 |
| 6/2/2005 | 21:45:00 |
| 6/2/2005 | 23:15:00 |

|           |          |
|-----------|----------|
| 6/3/2005  | 1:30:00  |
| 6/3/2005  | 1:45:00  |
| 6/3/2005  | 3:15:00  |
| 6/3/2005  | 10:00:00 |
| 6/3/2005  | 10:45:00 |
| 6/3/2005  | 11:30:00 |
| 6/3/2005  | 13:15:00 |
| 6/3/2005  | 13:30:00 |
| 6/3/2005  | 15:15:00 |
| 6/3/2005  | 16:00:00 |
| 6/3/2005  | 16:15:00 |
| 6/3/2005  | 17:15:00 |
| 6/4/2005  | 0:15:00  |
| 6/4/2005  | 0:30:00  |
| 6/4/2005  | 1:00:00  |
| 6/4/2005  | 2:30:00  |
| 6/4/2005  | 2:45:00  |
| 6/4/2005  | 3:30:00  |
| 6/4/2005  | 4:15:00  |
| 6/4/2005  | 5:45:00  |
| 6/4/2005  | 6:45:00  |
| 6/4/2005  | 7:30:00  |
| 6/4/2005  | 14:00:00 |
| 6/4/2005  | 14:30:00 |
| 6/4/2005  | 14:45:00 |
| 6/4/2005  | 19:30:00 |
| 6/4/2005  | 21:15:00 |
| 6/4/2005  | 22:15:00 |
| 6/5/2005  | 0:00:00  |
| 6/5/2005  | 2:00:00  |
| 6/5/2005  | 2:45:00  |
| 6/5/2005  | 4:15:00  |
| 6/5/2005  | 5:45:00  |
| 6/5/2005  | 8:30:00  |
| 6/5/2005  | 17:45:00 |
| 6/5/2005  | 18:30:00 |
| 6/6/2005  | 16:15:00 |
| 6/24/2005 | 7:00:00  |
| 6/24/2005 | 7:30:00  |
| 6/24/2005 | 10:00:00 |
| 6/24/2005 | 23:30:00 |
| 6/25/2005 | 0:00:00  |
| 6/26/2005 | 10:30:00 |
| 6/26/2005 | 12:45:00 |
| 6/26/2005 | 13:15:00 |
| 6/26/2005 | 14:45:00 |
| 6/26/2005 | 15:00:00 |
| 6/26/2005 | 16:15:00 |
| 6/26/2005 | 16:30:00 |
| 6/26/2005 | 17:45:00 |
| 6/26/2005 | 18:00:00 |
| 6/26/2005 | 19:15:00 |
| 6/26/2005 | 19:30:00 |

|           |          |
|-----------|----------|
| 6/26/2005 | 19:45:00 |
| 6/26/2005 | 21:00:00 |
| 6/26/2005 | 21:15:00 |
| 6/26/2005 | 22:30:00 |
| 6/26/2005 | 22:45:00 |
| 6/27/2005 | 0:00:00  |
| 6/27/2005 | 0:15:00  |
| 6/27/2005 | 1:30:00  |
| 6/27/2005 | 2:30:00  |
| 6/27/2005 | 3:00:00  |
| 6/27/2005 | 3:15:00  |
| 6/27/2005 | 4:45:00  |
| 6/27/2005 | 6:45:00  |
| 6/27/2005 | 9:00:00  |
| 6/27/2005 | 10:15:00 |
| 6/27/2005 | 11:45:00 |
| 6/27/2005 | 13:00:00 |
| 6/27/2005 | 13:15:00 |
| 6/27/2005 | 19:30:00 |
| 6/28/2005 | 7:45:00  |
| 6/28/2005 | 13:45:00 |
| 6/28/2005 | 19:30:00 |
| 6/28/2005 | 22:45:00 |
| 6/29/2005 | 0:30:00  |
| 6/29/2005 | 4:30:00  |
| 6/29/2005 | 14:00:00 |
| 6/29/2005 | 14:15:00 |
| 6/29/2005 | 15:15:00 |
| 6/29/2005 | 16:15:00 |
| 6/29/2005 | 16:45:00 |
| 6/29/2005 | 17:15:00 |
| 6/29/2005 | 20:30:00 |
| 6/29/2005 | 22:30:00 |
| 6/29/2005 | 23:45:00 |
| 6/30/2005 | 0:00:00  |
| 6/30/2005 | 5:15:00  |
| 6/30/2005 | 7:00:00  |
| 6/30/2005 | 9:00:00  |
| 6/30/2005 | 13:15:00 |
| 6/30/2005 | 14:15:00 |
| 6/30/2005 | 14:30:00 |
| 6/30/2005 | 15:00:00 |

**BR:** negative depths deleted as sensor out of water:

6/14/2005 (14:00:00-21:15:00)

6/15/2005 (02:15:00-22:15:00)

## **July 2005**

**WM:** Negative water level data deleted – this due to water in the vented line

7/5/2005 (07:45:00) through 7/20/2005 (10:30:00)

Turbidity data deleted as sensors out of range:

|          |          |
|----------|----------|
| 7/1/2005 | 12:30:00 |
| 7/1/2005 | 18:45:00 |
| 7/1/2005 | 19:15:00 |
| 7/1/2005 | 20:00:00 |
| 7/1/2005 | 20:15:00 |
| 7/1/2005 | 20:45:00 |
| 7/1/2005 | 21:00:00 |
| 7/1/2005 | 21:30:00 |
| 7/1/2005 | 23:45:00 |
| 7/2/2005 | 0:15:00  |
| 7/2/2005 | 0:45:00  |
| 7/2/2005 | 3:30:00  |
| 7/2/2005 | 3:45:00  |
| 7/2/2005 | 4:30:00  |
| 7/2/2005 | 4:45:00  |
| 7/2/2005 | 6:15:00  |
| 7/2/2005 | 6:30:00  |
| 7/2/2005 | 6:45:00  |
| 7/2/2005 | 7:45:00  |
| 7/2/2005 | 8:15:00  |
| 7/2/2005 | 8:30:00  |
| 7/2/2005 | 9:00:00  |
| 7/2/2005 | 9:45:00  |
| 7/2/2005 | 10:15:00 |
| 7/2/2005 | 10:30:00 |
| 7/2/2005 | 10:45:00 |
| 7/2/2005 | 11:15:00 |
| 7/2/2005 | 11:30:00 |
| 7/2/2005 | 12:00:00 |
| 7/2/2005 | 12:45:00 |
| 7/2/2005 | 13:00:00 |
| 7/2/2005 | 13:30:00 |
| 7/2/2005 | 13:45:00 |
| 7/2/2005 | 14:45:00 |
| 7/2/2005 | 15:45:00 |
| 7/2/2005 | 16:00:00 |
| 7/2/2005 | 18:45:00 |
| 7/2/2005 | 19:30:00 |
| 7/2/2005 | 20:45:00 |
| 7/2/2005 | 21:15:00 |
| 7/2/2005 | 22:00:00 |
| 7/4/2005 | 8:00:00  |
| 7/4/2005 | 10:45:00 |
| 7/4/2005 | 11:45:02 |
| 7/4/2005 | 12:00:00 |
| 7/4/2005 | 13:15:00 |
| 7/4/2005 | 13:30:00 |
| 7/4/2005 | 13:45:00 |
| 7/4/2005 | 14:00:00 |
| 7/4/2005 | 14:30:00 |
| 7/4/2005 | 14:45:00 |
| 7/4/2005 | 15:00:00 |
| 7/4/2005 | 15:30:00 |

|           |          |
|-----------|----------|
| 7/4/2005  | 16:00:00 |
| 7/4/2005  | 16:15:00 |
| 7/4/2005  | 16:30:00 |
| 7/4/2005  | 16:45:00 |
| 7/4/2005  | 17:00:00 |
| 7/4/2005  | 17:15:00 |
| 7/4/2005  | 17:30:00 |
| 7/4/2005  | 18:00:00 |
| 7/4/2005  | 18:15:00 |
| 7/4/2005  | 18:45:00 |
| 7/4/2005  | 19:00:00 |
| 7/4/2005  | 19:15:00 |
| 7/4/2005  | 19:45:00 |
| 7/4/2005  | 20:00:00 |
| 7/4/2005  | 20:15:00 |
| 7/4/2005  | 20:30:00 |
| 7/4/2005  | 20:45:00 |
| 7/4/2005  | 21:30:00 |
| 7/4/2005  | 22:00:00 |
| 7/4/2005  | 22:45:00 |
| 7/4/2005  | 23:45:00 |
| 7/5/2005  | 2:45:00  |
| 7/5/2005  | 5:00:00  |
| 7/5/2005  | 7:15:00  |
| 7/5/2005  | 19:00:00 |
| 7/5/2005  | 19:45:00 |
| 7/5/2005  | 20:15:00 |
| 7/5/2005  | 20:30:00 |
| 7/5/2005  | 20:45:00 |
| 7/5/2005  | 21:00:00 |
| 7/5/2005  | 21:30:00 |
| 7/5/2005  | 22:15:00 |
| 7/5/2005  | 22:45:05 |
| 7/6/2005  | 1:30:12  |
| 7/6/2005  | 1:45:00  |
| 7/6/2005  | 2:00:06  |
| 7/6/2005  | 2:15:00  |
| 7/6/2005  | 3:30:00  |
| 7/6/2005  | 6:30:06  |
| 7/6/2005  | 15:15:00 |
| 7/6/2005  | 15:45:05 |
| 7/6/2005  | 16:45:00 |
| 7/9/2005  | 9:15:00  |
| 7/10/2005 | 11:30:00 |
| 7/23/2005 | 15:15:00 |
| 7/23/2005 | 17:30:00 |
| 7/23/2005 | 18:00:00 |
| 7/23/2005 | 18:45:00 |
| 7/23/2005 | 19:00:00 |
| 7/23/2005 | 19:30:00 |
| 7/23/2005 | 20:00:00 |
| 7/23/2005 | 20:15:00 |

|           |          |
|-----------|----------|
| 7/23/2005 | 21:00:00 |
| 7/24/2005 | 1:15:00  |
| 7/24/2005 | 1:30:00  |
| 7/24/2005 | 3:00:00  |
| 7/24/2005 | 3:30:00  |
| 7/24/2005 | 4:00:00  |
| 7/24/2005 | 15:15:00 |
| 7/24/2005 | 15:45:00 |
| 7/24/2005 | 16:00:00 |
| 7/24/2005 | 16:15:00 |
| 7/24/2005 | 18:15:00 |
| 7/24/2005 | 19:30:00 |
| 7/24/2005 | 20:15:00 |
| 7/24/2005 | 20:30:00 |
| 7/24/2005 | 22:00:00 |
| 7/24/2005 | 22:15:00 |
| 7/24/2005 | 23:30:00 |
| 7/25/2005 | 0:45:00  |
| 7/25/2005 | 12:45:00 |
| 7/25/2005 | 14:00:00 |
| 7/25/2005 | 18:30:00 |
| 7/25/2005 | 19:00:00 |
| 7/26/2005 | 16:45:00 |
| 7/26/2005 | 17:00:00 |
| 7/26/2005 | 20:15:00 |
| 7/26/2005 | 20:30:00 |
| 7/26/2005 | 22:30:02 |
| 7/27/2005 | 2:00:00  |
| 7/27/2005 | 3:00:00  |
| 7/27/2005 | 6:30:00  |
| 7/27/2005 | 7:30:00  |
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| 7/31/2005 | 4:45:00  |
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| 7/31/2005 | 5:15:00  |
| 7/31/2005 | 5:45:00  |
| 7/31/2005 | 6:00:00  |
| 7/31/2005 | 6:15:00  |
| 7/31/2005 | 6:45:00  |
| 7/31/2005 | 7:00:00  |
| 7/31/2005 | 7:15:00  |
| 7/31/2005 | 7:45:00  |
| 7/31/2005 | 8:00:00  |
| 7/31/2005 | 8:15:00  |
| 7/31/2005 | 8:45:00  |
| 7/31/2005 | 9:00:00  |
| 7/31/2005 | 9:15:00  |
| 7/31/2005 | 9:45:00  |
| 7/31/2005 | 10:00:00 |
| 7/31/2005 | 10:15:00 |
| 7/31/2005 | 10:45:00 |
| 7/31/2005 | 11:00:00 |
| 7/31/2005 | 11:15:00 |
| 7/31/2005 | 11:45:00 |
| 7/31/2005 | 12:00:00 |
| 7/31/2005 | 12:15:00 |
| 7/31/2005 | 12:45:00 |
| 7/31/2005 | 13:00:00 |
| 7/31/2005 | 13:15:00 |
| 7/31/2005 | 13:45:00 |
| 7/31/2005 | 14:00:00 |
| 7/31/2005 | 14:15:00 |
| 7/31/2005 | 14:45:00 |
| 7/31/2005 | 15:00:00 |
| 7/31/2005 | 15:15:00 |
| 7/31/2005 | 15:45:00 |

|           |          |
|-----------|----------|
| 7/31/2005 | 16:00:00 |
| 7/31/2005 | 16:15:00 |
| 7/31/2005 | 16:45:00 |
| 7/31/2005 | 17:00:00 |
| 7/31/2005 | 17:45:00 |
| 7/31/2005 | 18:00:00 |
| 7/31/2005 | 18:15:00 |
| 7/31/2005 | 18:45:00 |
| 7/31/2005 | 19:45:00 |
| 7/31/2005 | 20:45:00 |
| 7/31/2005 | 21:45:00 |
| 7/31/2005 | 22:45:00 |
| 7/31/2005 | 23:45:00 |

**BR:** Negative depths deleted as sensor out of water

7/1/2005 (02:45:00-19:15:00)  
7/4/2005 (17:45:00-18:15:00)  
7/5/2005 (03:00:00)  
7/13/2005 (17:30:00)  
7/26/2005 (14:45:00-16:15:00)

Turbidity deleted as values exceeded range of sensor  
7/27/2005 (05:15:00; 06:00:00; 07:45:00-08:15:00)

Oxygen data deleted due to punctured membrane  
7/25/2005 (05:15:00) through 8/1/2005 (08:30:00)

## **August 2005**

**WM:** Turbidity deleted as values exceeded range of sensor

|           |          |
|-----------|----------|
| 8/1/2005  | 0:30:00  |
| 8/1/2005  | 0:45:00  |
| 8/1/2005  | 1:15:00  |
| 8/1/2005  | 2:00:00  |
| 8/1/2005  | 4:45:00  |
| 8/1/2005  | 5:45:00  |
| 8/1/2005  | 6:00:00  |
| 8/1/2005  | 7:30:00  |
| 8/15/2005 | 9:00:00  |
| 8/15/2005 | 9:30:00  |
| 8/15/2005 | 10:00:00 |
| 8/15/2005 | 10:30:00 |
| 8/15/2005 | 10:45:00 |
| 8/15/2005 | 11:00:00 |
| 8/15/2005 | 11:15:00 |
| 8/15/2005 | 11:30:00 |
| 8/15/2005 | 12:00:00 |
| 8/15/2005 | 12:15:00 |
| 8/15/2005 | 12:30:00 |
| 8/15/2005 | 12:45:00 |
| 8/15/2005 | 13:00:00 |
| 8/15/2005 | 13:30:00 |

|           |          |
|-----------|----------|
| 8/15/2005 | 14:00:00 |
| 8/15/2005 | 14:30:00 |
| 8/15/2005 | 15:15:00 |
| 8/15/2005 | 15:45:00 |
| 8/15/2005 | 16:15:00 |
| 8/15/2005 | 16:30:00 |
| 8/15/2005 | 16:45:00 |
| 8/15/2005 | 17:45:00 |
| 8/15/2005 | 18:00:00 |
| 8/15/2005 | 18:30:00 |
| 8/15/2005 | 18:45:00 |
| 8/15/2005 | 19:30:00 |
| 8/15/2005 | 19:45:00 |
| 8/15/2005 | 21:15:00 |
| 8/15/2005 | 22:15:00 |
| 8/15/2005 | 22:45:00 |
| 8/15/2005 | 23:00:00 |
| 8/15/2005 | 23:15:00 |
| 8/16/2005 | 0:00:00  |
| 8/16/2005 | 0:45:00  |
| 8/16/2005 | 1:15:00  |
| 8/16/2005 | 1:30:00  |
| 8/16/2005 | 2:15:04  |
| 8/16/2005 | 3:45:00  |
| 8/16/2005 | 4:00:00  |
| 8/16/2005 | 4:15:00  |
| 8/16/2005 | 6:45:00  |
| 8/16/2005 | 7:45:00  |
| 8/16/2005 | 8:15:00  |
| 8/16/2005 | 9:00:00  |
| 8/16/2005 | 9:30:00  |
| 8/16/2005 | 10:45:00 |
| 8/16/2005 | 11:15:00 |
| 8/16/2005 | 11:45:00 |
| 8/16/2005 | 12:00:00 |
| 8/16/2005 | 12:15:00 |
| 8/16/2005 | 13:00:00 |
| 8/16/2005 | 13:15:00 |
| 8/16/2005 | 13:30:00 |
| 8/16/2005 | 13:45:00 |
| 8/16/2005 | 14:45:00 |
| 8/16/2005 | 15:45:00 |
| 8/16/2005 | 16:15:00 |
| 8/16/2005 | 16:30:00 |
| 8/16/2005 | 17:00:00 |
| 8/16/2005 | 17:15:00 |
| 8/16/2005 | 20:45:00 |
| 8/16/2005 | 21:00:00 |
| 8/16/2005 | 21:15:00 |
| 8/16/2005 | 21:30:00 |
| 8/16/2005 | 21:45:00 |
| 8/16/2005 | 22:00:00 |
| 8/16/2005 | 22:15:00 |

|           |          |
|-----------|----------|
| 8/16/2005 | 22:30:00 |
| 8/16/2005 | 22:45:00 |
| 8/16/2005 | 23:00:00 |
| 8/16/2005 | 23:15:00 |
| 8/16/2005 | 23:30:00 |
| 8/16/2005 | 23:45:00 |
| 8/17/2005 | 0:45:00  |
| 8/17/2005 | 1:00:00  |
| 8/17/2005 | 1:15:00  |
| 8/17/2005 | 1:30:00  |
| 8/17/2005 | 1:45:00  |
| 8/17/2005 | 2:00:00  |
| 8/17/2005 | 2:15:00  |
| 8/17/2005 | 2:30:00  |
| 8/17/2005 | 2:45:00  |
| 8/17/2005 | 3:00:00  |
| 8/17/2005 | 3:15:00  |
| 8/17/2005 | 3:30:00  |
| 8/17/2005 | 3:45:00  |
| 8/17/2005 | 4:00:00  |
| 8/17/2005 | 4:15:00  |
| 8/17/2005 | 4:30:00  |
| 8/17/2005 | 4:45:00  |
| 8/17/2005 | 5:00:00  |
| 8/17/2005 | 5:15:00  |
| 8/17/2005 | 5:30:00  |
| 8/17/2005 | 5:45:00  |
| 8/17/2005 | 6:00:00  |
| 8/17/2005 | 6:15:00  |
| 8/17/2005 | 6:30:00  |
| 8/17/2005 | 6:45:00  |
| 8/17/2005 | 7:00:00  |
| 8/17/2005 | 7:15:00  |
| 8/17/2005 | 7:30:00  |
| 8/17/2005 | 7:45:00  |
| 8/17/2005 | 8:00:00  |
| 8/17/2005 | 8:15:00  |
| 8/17/2005 | 8:30:00  |
| 8/17/2005 | 8:45:00  |
| 8/17/2005 | 9:00:00  |
| 8/17/2005 | 9:15:00  |
| 8/17/2005 | 9:30:00  |
| 8/17/2005 | 9:45:00  |
| 8/17/2005 | 10:00:00 |
| 8/17/2005 | 10:15:00 |
| 8/17/2005 | 10:30:00 |
| 8/17/2005 | 10:45:00 |
| 8/17/2005 | 11:00:00 |
| 8/17/2005 | 11:15:00 |
| 8/17/2005 | 11:30:00 |
| 8/17/2005 | 11:45:00 |
| 8/17/2005 | 12:00:00 |
| 8/17/2005 | 12:15:00 |

|           |          |
|-----------|----------|
| 8/17/2005 | 12:30:00 |
| 8/17/2005 | 12:45:00 |
| 8/17/2005 | 13:00:00 |
| 8/17/2005 | 13:15:00 |
| 8/17/2005 | 13:30:00 |
| 8/17/2005 | 13:45:00 |
| 8/17/2005 | 14:00:00 |
| 8/17/2005 | 14:15:00 |
| 8/17/2005 | 14:30:00 |
| 8/17/2005 | 14:45:00 |
| 8/17/2005 | 15:00:00 |
| 8/17/2005 | 15:15:00 |
| 8/17/2005 | 15:30:00 |
| 8/17/2005 | 15:45:00 |
| 8/17/2005 | 16:00:00 |
| 8/17/2005 | 16:15:00 |
| 8/17/2005 | 16:30:00 |
| 8/17/2005 | 16:45:00 |
| 8/17/2005 | 17:00:00 |
| 8/17/2005 | 17:15:00 |
| 8/17/2005 | 17:30:00 |
| 8/17/2005 | 17:45:00 |
| 8/17/2005 | 18:00:00 |
| 8/17/2005 | 18:15:00 |
| 8/20/2005 | 0:45:00  |
| 8/20/2005 | 1:15:00  |
| 8/20/2005 | 1:30:00  |
| 8/20/2005 | 1:45:00  |
| 8/20/2005 | 2:00:00  |
| 8/20/2005 | 2:15:00  |
| 8/20/2005 | 2:30:00  |
| 8/20/2005 | 2:45:00  |
| 8/20/2005 | 3:00:00  |
| 8/20/2005 | 3:15:00  |
| 8/20/2005 | 3:45:00  |
| 8/20/2005 | 4:00:00  |
| 8/20/2005 | 4:15:00  |
| 8/20/2005 | 4:30:00  |
| 8/20/2005 | 4:45:00  |
| 8/20/2005 | 5:00:00  |
| 8/20/2005 | 5:15:00  |
| 8/20/2005 | 5:30:00  |
| 8/20/2005 | 5:45:00  |
| 8/20/2005 | 6:00:00  |
| 8/20/2005 | 6:15:00  |
| 8/20/2005 | 6:30:00  |
| 8/20/2005 | 6:45:00  |
| 8/20/2005 | 7:00:00  |
| 8/20/2005 | 7:15:00  |
| 8/20/2005 | 7:30:00  |
| 8/20/2005 | 7:45:00  |
| 8/20/2005 | 8:30:00  |
| 8/31/2005 | 1:00:00  |

8/31/2005 8:45:00  
8/31/2005 9:00:00  
8/31/2005 9:45:00

**SU:** Negative depths deleted as sensor out of water:

8/21/2005 (20:15:00) through (22:00:00)  
8/22/2005 6:00:00 through 8/23/2005 4:30:00  
8/23/2005 (06:15:00) through (07:15:00)  
8/23/2005 10:00:00 through 8/24/2005 19:30:00  
8/25/2005 (01:30:00) through (14:45:00)  
8/26/2005 (03:00:00) through (12:30:00)  
8/26/2005 20:30:00 through 8/27/2005 11:00:00  
8/27/2005 23:15:00 through 8/28/2005 11:45:00  
8/28/2005 23:00:00 through 8/29/2005 8:15:00

Turbidity deleted as values exceeded range of sensor

8/25/2005 (13:00:00)  
8/27/2005 (12:45:00)

**OL:** Turbidity deleted as values exceeded range of sensor:

8/1/2005 0:45:00  
8/1/2005 1:45:00  
8/1/2005 2:45:00  
8/1/2005 3:45:00  
8/1/2005 4:00:00  
8/1/2005 4:15:00  
8/1/2005 4:45:00  
8/1/2005 5:00:00  
8/1/2005 5:45:00  
8/1/2005 6:45:00  
  
8/8/2005 7:30:00  
8/8/2005 7:45:00  
8/8/2005 9:30:00  
8/8/2005 10:30:00  
8/8/2005 11:00:00  
8/8/2005 12:00:00  
8/8/2005 12:45:00  
8/8/2005 13:15:00  
8/8/2005 13:45:00  
8/8/2005 14:15:00  
8/8/2005 14:45:00  
8/8/2005 15:15:00  
8/8/2005 15:45:00  
8/8/2005 16:15:00  
8/8/2005 16:45:00  
8/8/2005 17:15:00  
8/8/2005 17:45:00  
8/8/2005 18:15:00  
8/8/2005 19:00:00  
8/8/2005 19:30:00  
8/8/2005 20:45:00

|           |          |
|-----------|----------|
| 8/8/2005  | 21:15:00 |
| 8/8/2005  | 21:45:00 |
| 8/8/2005  | 22:15:00 |
| 8/8/2005  | 22:45:00 |
| 8/8/2005  | 23:30:00 |
| 8/8/2005  | 23:45:00 |
| 8/9/2005  | 0:30:00  |
| 8/9/2005  | 0:45:00  |
| 8/9/2005  | 1:30:00  |
| 8/9/2005  | 2:15:00  |
| 8/9/2005  | 2:45:00  |
| 8/9/2005  | 3:15:00  |
| 8/9/2005  | 3:45:00  |
| 8/9/2005  | 4:15:00  |
| 8/9/2005  | 4:45:00  |
| 8/9/2005  | 5:15:00  |
| 8/9/2005  | 5:45:00  |
| 8/9/2005  | 6:45:00  |
| 8/9/2005  | 7:15:00  |
| 8/9/2005  | 7:45:00  |
| 8/9/2005  | 8:15:00  |
| 8/9/2005  | 8:45:00  |
| 8/9/2005  | 9:30:00  |
| 8/9/2005  | 10:00:00 |
| 8/9/2005  | 10:45:00 |
| 8/9/2005  | 11:15:00 |
| 8/9/2005  | 11:45:00 |
| 8/9/2005  | 12:15:00 |
| 8/9/2005  | 12:45:00 |
| 8/9/2005  | 13:15:00 |
| 8/9/2005  | 13:45:00 |
| 8/9/2005  | 14:15:00 |
| 8/9/2005  | 14:45:00 |
| 8/9/2005  | 15:15:00 |
| 8/9/2005  | 16:00:00 |
| 8/9/2005  | 16:30:00 |
| 8/9/2005  | 17:00:00 |
| 8/9/2005  | 17:15:00 |
| 8/9/2005  | 17:45:00 |
| 8/9/2005  | 18:15:00 |
| 8/9/2005  | 18:45:00 |
| 8/9/2005  | 19:15:00 |
| 8/9/2005  | 19:45:00 |
| 8/9/2005  | 20:15:00 |
| 8/9/2005  | 20:45:00 |
| 8/9/2005  | 21:15:00 |
| 8/9/2005  | 21:45:00 |
| 8/9/2005  | 22:15:00 |
| 8/9/2005  | 22:45:00 |
| 8/9/2005  | 23:15:00 |
| 8/9/2005  | 23:45:00 |
| 8/10/2005 | 0:15:00  |
| 8/10/2005 | 0:45:00  |

8/10/2005 1:30:00  
8/10/2005 2:00:00  
8/10/2005 2:30:00  
8/10/2005 3:00:00  
8/10/2005 3:30:00  
8/10/2005 4:00:00  
8/10/2005 4:30:00  
8/10/2005 5:00:00  
8/10/2005 5:30:00  
8/10/2005 6:15:00  
8/10/2005 6:45:00  
8/10/2005 7:15:00  
8/10/2005 7:45:00  
8/10/2005 9:30:00  
8/10/2005 11:00:00  
8/10/2005 13:45:00  
8/10/2005 14:15:00  
8/10/2005 14:45:00  
8/10/2005 15:30:00  
8/11/2005 1:00:00  
8/11/2005 3:30:00  
8/11/2005 8:45:00  
8/11/2005 10:00:00  
8/11/2005 12:45:00  
8/11/2005 17:15:00  
8/12/2005 0:30:00  
8/12/2005 13:00:00  
8/12/2005 14:45:00  
8/12/2005 15:15:00  
8/16/2005 02:15:00

**BR:** Negative depths deleted as sensor out of water

8/3/2005 (15:30:00) through 8/4/2005 (00:00:00)  
8/4/2005 (16:15:00) through 8/5/2004 (04:30:00)  
8/6/2005 (16:30:00) through 8/7/2005 (08:00:00)  
8/7/2005 (11:15:00) through 8/10/2005 (16:30:00)  
8/12/2005 (16:30:00-20:45:00)  
8/13/2005 (14:30:00) through 8/14/2005 (07:45:00)  
8/18/2005 (01:45:00) through 8/20/2005 (10:00:00)  
8/26/2005 (18:15:00-19:15:00); (20:30:00) through 8/28/2005 (01:30:00)  
8/28/2005 (17:15:00-19:15:00)  
8/30/2005 (14:00:00-15:30:00)

Turbidity deleted as values exceeded range of sensor 8/20/2005 (18:15:00-21:15:00) due to storm runoff:

8/25/2005 (13:00:00)

**September 2005**

**WM:** Negative depths deleted as sensor out of water

9/30/2005 (12:30:00)

Conductivity sensor out of water, SpCond and conductivity dependent parameters (Salinity, DO mg/L, depth) deleted.

9/29/2005 (10:45:00),

Dissolved oxygen data deleted 9/3/2005 (00:00:00) through 9/12/2005 (08:00:00) due to punctured membrane

**SU:** All data deleted because sensors out of water

9/29/2005 (08:45:00-09:15:00) and (11:15:00-11:30:00)

Negative depths deleted as sensor out of water

9/2/2005 (05:15:00) through (08:00:00)

9/2/2005 (15:15:00) through (16:00:00)

9/3/2005 (15:15:00)

9/3/2005 21:30:00 through 9/4/2005 1:15:00

9/18/2005 17:00:00 through 9/21/2005 15:45:00

9/21/2005 16:30:00 through 9/22/2005 14:45:00

9/22/2005 17:15:00 through 9/23/2005 6:15:00

Turbidity deleted as values exceeded range of sensor:

9/6/2005 (12:45:00)

Dissolved oxygen data deleted due to punctured membrane

9/29/2005 (20:15:00) through 10/18/2005 (09:00:00)

**OL:** Turbidity deleted as values exceeded range of sensor:

9/5/2005 (12:45:00)

9/13/2005 (15:15:00); (16:00:00)

9/21/2005 (13:45:00)

9/25/2005 (23:15:00)

9/30/2005 (17:00:00)

Negative depth readings deleted as sensor out of water:

9/28/2005 15:00:00

9/28/2005 15:15:00

9/28/2005 15:30:00

9/28/2005 15:45:00

9/28/2005 16:00:00

9/28/2005 19:00:00

9/28/2005 19:15:00

9/28/2005 19:30:00

9/28/2005 19:45:00

9/28/2005 20:00:00

9/28/2005 20:15:00

9/28/2005 20:30:00

9/28/2005 20:45:00

9/28/2005 21:00:00

9/28/2005 21:15:00

9/28/2005 21:30:00

9/28/2005 21:45:00

|           |          |
|-----------|----------|
| 9/28/2005 | 22:00:00 |
| 9/28/2005 | 22:15:00 |
| 9/28/2005 | 22:30:00 |
| 9/28/2005 | 22:45:00 |
| 9/28/2005 | 23:00:00 |
| 9/28/2005 | 23:15:00 |
| 9/28/2005 | 23:30:00 |
| 9/28/2005 | 23:45:00 |
| 9/29/2005 | 0:00:00  |
| 9/29/2005 | 0:15:00  |
| 9/29/2005 | 0:30:00  |
| 9/29/2005 | 0:45:00  |
| 9/29/2005 | 1:00:00  |
| 9/29/2005 | 1:15:00  |
| 9/29/2005 | 1:30:00  |
| 9/29/2005 | 1:45:00  |
| 9/29/2005 | 2:00:00  |
| 9/29/2005 | 2:15:00  |
| 9/29/2005 | 3:00:00  |
| 9/29/2005 | 3:15:00  |
| 9/29/2005 | 3:30:00  |
| 9/29/2005 | 3:45:00  |
| 9/29/2005 | 4:00:00  |
| 9/29/2005 | 4:15:00  |
| 9/29/2005 | 4:30:00  |
| 9/29/2005 | 4:45:00  |
| 9/29/2005 | 5:00:00  |
| 9/29/2005 | 5:15:00  |
| 9/29/2005 | 5:30:00  |
| 9/29/2005 | 5:45:00  |
| 9/29/2005 | 6:00:00  |
| 9/29/2005 | 6:15:00  |
| 9/29/2005 | 6:30:00  |
| 9/29/2005 | 6:45:00  |
| 9/29/2005 | 7:00:00  |
| 9/29/2005 | 7:15:00  |
| 9/29/2005 | 7:30:00  |
| 9/29/2005 | 7:45:00  |
| 9/29/2005 | 8:00:00  |
| 9/29/2005 | 8:15:00  |
| 9/29/2005 | 8:30:00  |
| 9/29/2005 | 8:45:00  |
| 9/29/2005 | 9:00:00  |
| 9/29/2005 | 9:30:00  |
| 9/29/2005 | 9:45:00  |
| 9/29/2005 | 10:00:00 |
| 9/29/2005 | 10:15:00 |
| 9/29/2005 | 10:30:00 |
| 9/29/2005 | 10:45:00 |
| 9/29/2005 | 11:00:00 |
| 9/29/2005 | 21:00:00 |
| 9/29/2005 | 21:15:00 |
| 9/29/2005 | 21:30:00 |

9/29/2005 21:45:00  
9/29/2005 22:00:00  
9/29/2005 22:15:00  
9/29/2005 22:30:00  
9/29/2005 22:45:00  
9/29/2005 23:00:00  
9/29/2005 23:15:00  
9/30/2005 13:45:00  
9/30/2005 14:00:00  
9/30/2005 14:15:00  
9/30/2005 14:30:00

**BR:** Turbidity deleted as values exceeded range of sensor

9/1/2005 (04:15:00)  
9/26/2005 (04:45:00); (06:00:00); (07:45:00-08:00:00); (08:30:00); (09:15:00-09:45:00);  
(10:15:00-10:45:00); (12:15:00); (18:15:00)

Negative depths deleted as sensor out of water

9/12/2005 (11:00:00) through 9/16/2005 (07:00:00)  
9/21/2005 (22:30:00) through 9/23/2005 (01:15:00)

Dissolved oxygen data deleted due to punctured membrane on sensor

9/20/2005 (05:30:00) through 9/27/2005 (09:00:00)

## **October 2005**

**WM:** All data deleted because sensors out of water

10/31/2005 (04:15:00-05:30:00)

Negative depths deleted as sensor out of water:

10/15/2005 (01:00:00)  
10/26/2005 (18:30:00-20:00:00); (20:30:00-22:45:00)  
10/27/2005 (09:00:00-16:15:00); (17:00:00-17:30:00); (19:00:00-19:15:00)  
10/27/2005 (19:45:00) through 10/28/2005 (06:15:00)  
10/28/2005 (16:45:00-17:15:00)  
10/28/2005 (22:30:00) through 10/31/2005 (08:45:00)

**SU:** All data deleted because sensors out of water

10/1/2005 (03:00:00-05:15:00)  
10/15/2005 (02:30:00-05:45:00)  
10/29/2005 (09:00:00) through 10/31/2005 (9:45:00)

Dissolved oxygen data deleted due to punctured membrane

9/29/2005 (20:15:00) through 10/18/2005 (09:00:00)  
10/26/2005 (09:30:00) through 10/29/2005 (08:45:00)

Negative depths deleted as sensor out of water

10/15/2005 (10:15:00-15:15:00)  
10/26/2005 (21:45:00) through 10/29/2005 (08:45:00)  
10/31/2005 (10:00:00-19:15:00)

Conductivity and salinity values deleted as sensor partially out of water. DO mg/L values were also deleted as they are conductivity dependent.

10/31/2005 (10:00:00-19:15:00)

**OL:** Negative depths deleted as sensor out of water:

|            |          |
|------------|----------|
| 10/1/2005  | 1:30:00  |
| 10/1/2005  | 1:45:00  |
| 10/1/2005  | 2:00:00  |
| 10/1/2005  | 2:15:00  |
| 10/1/2005  | 2:30:00  |
| 10/1/2005  | 2:45:00  |
| 10/1/2005  | 3:00:00  |
| 10/1/2005  | 3:15:00  |
| 10/1/2005  | 3:30:00  |
| 10/1/2005  | 3:45:00  |
| 10/1/2005  | 4:00:00  |
| 10/1/2005  | 4:15:00  |
| 10/1/2005  | 4:30:00  |
| 10/1/2005  | 4:45:00  |
| 10/6/2005  | 13:45:00 |
| 10/6/2005  | 14:00:00 |
| 10/6/2005  | 14:15:00 |
| 10/6/2005  | 14:30:00 |
| 10/6/2005  | 15:15:00 |
| 10/6/2005  | 15:30:00 |
| 10/6/2005  | 15:45:00 |
| 10/6/2005  | 16:00:00 |
| 10/6/2005  | 16:30:00 |
| 10/6/2005  | 16:45:00 |
| 10/14/2005 | 22:30:00 |
| 10/14/2005 | 22:45:00 |
| 10/14/2005 | 23:00:00 |
| 10/14/2005 | 23:15:00 |
| 10/14/2005 | 23:30:00 |
| 10/14/2005 | 23:45:00 |
| 10/15/2005 | 0:00:00  |
| 10/15/2005 | 0:15:00  |
| 10/15/2005 | 0:30:00  |
| 10/15/2005 | 0:45:00  |
| 10/15/2005 | 1:00:00  |
| 10/15/2005 | 1:15:00  |
| 10/15/2005 | 1:30:00  |
| 10/15/2005 | 1:45:00  |
| 10/15/2005 | 2:00:00  |
| 10/15/2005 | 2:15:00  |
| 10/15/2005 | 2:30:00  |
| 10/15/2005 | 2:45:00  |
| 10/15/2005 | 3:00:00  |
| 10/15/2005 | 3:15:00  |
| 10/15/2005 | 3:30:00  |
| 10/15/2005 | 3:45:00  |
| 10/15/2005 | 4:00:00  |

|            |          |
|------------|----------|
| 10/15/2005 | 4:15:00  |
| 10/15/2005 | 4:30:00  |
| 10/15/2005 | 4:45:00  |
| 10/15/2005 | 5:00:00  |
| 10/15/2005 | 5:15:00  |
| 10/15/2005 | 5:30:00  |
| 10/15/2005 | 5:45:00  |
| 10/15/2005 | 6:00:00  |
| 10/15/2005 | 6:15:00  |
| 10/15/2005 | 6:30:00  |
| 10/15/2005 | 6:45:00  |
| 10/15/2005 | 7:00:00  |
| 10/15/2005 | 7:15:00  |
| 10/15/2005 | 7:30:00  |
| 10/15/2005 | 7:45:00  |
| 10/15/2005 | 8:00:00  |
| 10/15/2005 | 8:15:00  |
| 10/15/2005 | 8:30:00  |
| 10/15/2005 | 8:45:00  |
| 10/15/2005 | 9:00:00  |
| 10/15/2005 | 11:15:00 |
| 10/15/2005 | 11:30:00 |
| 10/15/2005 | 11:45:00 |
| 10/15/2005 | 12:00:00 |
| 10/15/2005 | 12:15:00 |
| 10/15/2005 | 12:30:00 |
| 10/15/2005 | 12:45:00 |
| 10/15/2005 | 13:00:00 |
| 10/15/2005 | 13:15:00 |
| 10/15/2005 | 13:30:00 |
| 10/15/2005 | 13:45:00 |
| 10/15/2005 | 14:00:00 |
| 10/15/2005 | 15:00:00 |
| 10/15/2005 | 15:15:00 |
| 10/15/2005 | 15:30:00 |
| 10/15/2005 | 15:45:00 |
| 10/15/2005 | 16:00:00 |
| 10/15/2005 | 16:15:00 |
| 10/15/2005 | 16:30:00 |
| 10/15/2005 | 16:45:00 |
| 10/15/2005 | 17:00:00 |
| 10/15/2005 | 17:15:00 |
| 10/15/2005 | 17:30:00 |
| 10/15/2005 | 17:45:00 |
| 10/15/2005 | 18:00:00 |
| 10/15/2005 | 18:15:00 |
| 10/15/2005 | 18:30:00 |
| 10/15/2005 | 18:45:00 |
| 10/31/2005 | 9:00:00  |
| 10/31/2005 | 9:15:00  |
| 10/31/2005 | 9:30:00  |
| 10/31/2005 | 14:15:00 |
| 10/31/2005 | 14:30:00 |

|            |          |
|------------|----------|
| 10/31/2005 | 14:45:00 |
| 10/31/2005 | 15:00:00 |
| 10/31/2005 | 15:15:00 |
| 10/31/2005 | 15:30:00 |
| 10/31/2005 | 15:45:00 |
| 10/31/2005 | 16:00:00 |
| 10/31/2005 | 16:15:00 |
| 10/31/2005 | 16:30:00 |
| 10/31/2005 | 16:45:00 |
| 10/31/2005 | 17:00:00 |
| 10/31/2005 | 17:15:00 |
| 10/31/2005 | 17:30:00 |
| 10/31/2005 | 17:45:00 |
| 10/31/2005 | 18:00:00 |
| 10/31/2005 | 18:15:00 |
| 10/31/2005 | 18:30:00 |
| 10/31/2005 | 18:45:00 |

Turbidity deleted as values exceeded range of sensor:  
10/30/2005 (11:15:00)

Dissolved oxygen data deleted from 10/8/2005 (09: 15:00) through 10/18/2005 (08:00:00)  
due to punctured membrane

**BR:** Turbidity data deleted as it was out of range (probe failure?)  
10/8/2005 (12:00:00) through 10/18/2005 (09:45:00)

Dissolved oxygen data deleted due to being out of range  
10/8/2005 (23:00:00 through 10/9/2005 (05:45:00)  
10/9/2005 (11:30:00) through 10/10/2005 (16:45:00)  
10/11/2005 (11:45:00-22:00:00)

## November 2005

**WM:** Dissolved oxygen data deleted because the sensor membrane had a puncture:  
11/22/2005 (22:15:00) through 12/2/2005 (10:00:00) - end of deployment

Erroneous depth data deleted due to ice  
11/24/2005 (22:30:00) through 11/25/2005 (10:30:00)  
11/25/2005 (16:00:00) through 11/26/2005 (00:15:00)

Conductivity sensor out of water, SpCond and conductivity dependent parameters (Salinity, DO mg/L, depth) deleted.  
11/6/2005 (16:45:00-17:30:00)  
11/20/2005 (03:45:00-04:30:00)

Water level data deleted as sensor out of water

|           |         |
|-----------|---------|
| 11/3/2005 | 1:45:00 |
| 11/3/2005 | 3:00:00 |
| 11/3/2005 | 3:30:00 |
| 11/3/2005 | 4:45:00 |
| 11/3/2005 | 5:00:00 |

|            |          |         |            |          |
|------------|----------|---------|------------|----------|
| 11/3/2005  | 5:45:00  |         |            |          |
| 11/3/2005  | 6:15:00  |         |            |          |
| 11/3/2005  | 7:45:00  |         |            |          |
| 11/3/2005  | 14:45:00 |         |            |          |
| 11/4/2005  | 3:00:00  | through | 11/4/2005  | 10:15:00 |
| 11/4/2005  | 12:15:00 |         |            |          |
| 11/4/2005  | 12:45:00 | through | 11/4/2005  | 13:45:00 |
| 11/4/2005  | 14:15:00 | through | 11/4/2005  | 15:15:00 |
| 11/4/2005  | 17:30:00 |         |            |          |
| 11/6/2005  | 10:00:00 | through | 11/6/2005  | 21:45:00 |
| 11/7/2005  | 9:45:00  |         |            |          |
| 11/7/2005  | 10:15:00 |         |            |          |
| 11/7/2005  | 12:00:00 |         |            |          |
| 11/7/2005  | 12:15:00 |         |            |          |
| 11/7/2005  | 12:30:00 |         |            |          |
| 11/7/2005  | 20:15:00 | through | 11/8/2005  | 4:15:00  |
| 11/9/2005  | 11:30:00 | through | 11/9/2005  | 12:45:00 |
| 11/9/2005  | 13:30:00 |         |            |          |
| 11/9/2005  | 14:00:00 |         |            |          |
| 11/9/2005  | 14:15:00 |         |            |          |
| 11/9/2005  | 14:45:00 |         |            |          |
| 11/9/2005  | 15:15:00 |         |            |          |
| 11/9/2005  | 15:30:00 |         |            |          |
| 11/9/2005  | 17:45:00 | through | 11/9/2005  | 18:45:00 |
| 11/9/2005  | 19:30:00 | through | 11/10/2005 | 0:30:00  |
| 11/14/2005 | 5:15:00  |         |            |          |
| 11/14/2005 | 5:30:00  |         |            |          |
| 11/16/2005 | 10:45:00 | through | 11/16/2005 | 14:45:00 |
| 11/16/2005 | 15:15:00 |         |            |          |
| 11/16/2005 | 15:45:00 | through | 11/16/2005 | 18:00:00 |
| 11/16/2005 | 18:45:00 |         |            |          |
| 11/16/2005 | 19:15:00 |         |            |          |
| 11/16/2005 | 19:30:00 |         |            |          |
| 11/16/2005 | 20:15:00 |         |            |          |
|            |          |         |            |          |
| 11/24/2005 | 20:45:00 |         |            |          |
| 11/24/2005 | 21:00:00 |         |            |          |
| 11/24/2005 | 21:15:00 |         |            |          |
| 11/25/2005 | 12:00:00 |         |            |          |
| 11/25/2005 | 12:15:00 |         |            |          |
| 11/25/2005 | 12:30:00 |         |            |          |
| 11/25/2005 | 12:45:00 |         |            |          |
| 11/25/2005 | 13:00:00 |         |            |          |
| 11/25/2005 | 13:15:00 |         |            |          |
| 11/25/2005 | 13:30:00 |         |            |          |
| 11/25/2005 | 13:45:00 |         |            |          |
| 11/25/2005 | 14:00:00 |         |            |          |
| 11/25/2005 | 14:15:00 |         |            |          |
| 11/25/2005 | 14:30:00 |         |            |          |
| 11/25/2005 | 14:45:00 |         |            |          |
| 11/25/2005 | 15:00:00 |         |            |          |
| 11/26/2005 | 4:30:00  |         |            |          |
| 11/26/2005 | 4:45:00  |         |            |          |

|            |          |
|------------|----------|
| 11/26/2005 | 5:00:00  |
| 11/26/2005 | 5:15:00  |
| 11/26/2005 | 5:30:00  |
| 11/30/2005 | 3:15:00  |
| 11/30/2005 | 9:00:00  |
| 11/30/2005 | 9:15:00  |
| 11/30/2005 | 9:30:00  |
| 11/30/2005 | 9:45:00  |
| 11/30/2005 | 10:00:00 |
| 11/30/2005 | 10:15:00 |
| 11/30/2005 | 10:30:00 |
| 11/30/2005 | 10:45:00 |
| 11/30/2005 | 11:00:00 |
| 11/30/2005 | 11:15:00 |
| 11/30/2005 | 11:30:00 |
| 11/30/2005 | 11:45:00 |
| 11/30/2005 | 12:00:00 |
| 11/30/2005 | 12:15:00 |
| 11/30/2005 | 12:30:00 |
| 11/30/2005 | 12:45:00 |
| 11/30/2005 | 13:00:00 |
| 11/30/2005 | 13:15:00 |
| 11/30/2005 | 13:30:00 |
| 11/30/2005 | 13:45:00 |
| 11/30/2005 | 14:00:00 |
| 11/30/2005 | 14:15:00 |
| 11/30/2005 | 14:30:00 |
| 11/30/2005 | 14:45:00 |
| 11/30/2005 | 15:00:00 |
| 11/30/2005 | 15:15:00 |
| 11/30/2005 | 15:30:00 |
| 11/30/2005 | 15:45:00 |
| 11/30/2005 | 16:00:00 |
| 11/30/2005 | 16:15:00 |
| 11/30/2005 | 16:30:00 |
| 11/30/2005 | 16:45:00 |
| 11/30/2005 | 17:00:00 |
| 11/30/2005 | 17:15:00 |
| 11/30/2005 | 17:30:00 |
| 11/30/2005 | 17:45:00 |
| 11/30/2005 | 18:00:00 |
| 11/30/2005 | 18:15:00 |
| 11/30/2005 | 18:30:00 |

Turbidity values deleted as out of sensor range:

|                       |          |
|-----------------------|----------|
| 11/16/2005 (05:00:00) |          |
| 11/21/2005            | 10:30:00 |
| 11/22/2005            | 3:45:00  |
| 11/22/2005            | 5:00:00  |
| 11/22/2005            | 5:45:00  |
| 11/22/2005            | 6:00:00  |
| 11/22/2005            | 6:15:00  |
| 11/22/2005            | 7:30:00  |

|            |          |
|------------|----------|
| 11/22/2005 | 8:00:00  |
| 11/22/2005 | 8:15:00  |
| 11/22/2005 | 9:30:00  |
| 11/22/2005 | 10:45:00 |
| 11/22/2005 | 11:30:00 |
| 11/22/2005 | 12:45:00 |
| 11/22/2005 | 13:30:00 |
| 11/22/2005 | 15:15:00 |
| 11/22/2005 | 17:00:00 |
| 11/22/2005 | 19:00:00 |
| 11/22/2005 | 19:15:00 |
| 11/22/2005 | 19:30:00 |
| 11/22/2005 | 20:00:00 |
| 11/22/2005 | 20:15:00 |
| 11/22/2005 | 20:30:00 |
| 11/22/2005 | 20:45:00 |
| 11/23/2005 | 9:45:00  |
| 11/23/2005 | 10:00:00 |
| 11/23/2005 | 10:15:00 |
| 11/23/2005 | 10:30:00 |
| 11/23/2005 | 10:45:00 |
| 11/23/2005 | 11:00:00 |
| 11/23/2005 | 11:15:00 |
| 11/23/2005 | 11:30:00 |
| 11/23/2005 | 11:45:00 |
| 11/23/2005 | 12:00:00 |
| 11/23/2005 | 12:15:00 |
| 11/23/2005 | 12:30:00 |
| 11/23/2005 | 12:45:00 |
| 11/23/2005 | 13:00:00 |
| 11/23/2005 | 13:15:00 |
| 11/23/2005 | 13:30:00 |
| 11/23/2005 | 13:45:00 |
| 11/23/2005 | 14:00:00 |
| 11/23/2005 | 14:15:00 |
| 11/23/2005 | 14:30:00 |
| 11/23/2005 | 14:45:00 |
| 11/23/2005 | 15:00:00 |
| 11/23/2005 | 15:15:00 |
| 11/23/2005 | 15:30:00 |
| 11/23/2005 | 15:45:00 |
| 11/23/2005 | 16:00:00 |
| 11/23/2005 | 16:15:00 |
| 11/23/2005 | 16:30:00 |
| 11/23/2005 | 16:45:00 |
| 11/23/2005 | 17:00:00 |
| 11/23/2005 | 17:15:00 |
| 11/23/2005 | 17:30:00 |
| 11/23/2005 | 17:45:00 |
| 11/23/2005 | 18:00:00 |
| 11/23/2005 | 18:15:00 |
| 11/23/2005 | 18:30:00 |
| 11/23/2005 | 18:45:00 |

|            |          |
|------------|----------|
| 11/23/2005 | 19:00:00 |
| 11/23/2005 | 19:15:00 |
| 11/23/2005 | 19:30:00 |
| 11/23/2005 | 19:45:00 |
| 11/23/2005 | 20:00:00 |
| 11/23/2005 | 20:15:00 |
| 11/23/2005 | 20:30:00 |
| 11/23/2005 | 20:45:00 |
| 11/23/2005 | 21:00:00 |
| 11/23/2005 | 21:15:00 |
| 11/23/2005 | 21:30:00 |
| 11/23/2005 | 21:45:00 |
| 11/23/2005 | 22:00:00 |
| 11/23/2005 | 22:15:00 |
| 11/23/2005 | 22:30:00 |
| 11/23/2005 | 22:45:00 |
| 11/23/2005 | 23:00:00 |
| 11/28/2005 | 13:00:00 |
| 11/28/2005 | 13:45:16 |
| 11/28/2005 | 14:00:01 |
| 11/28/2005 | 14:15:00 |
| 11/28/2005 | 14:30:00 |
| 11/28/2005 | 14:45:00 |
| 11/28/2005 | 15:00:00 |
| 11/28/2005 | 15:15:00 |
| 11/28/2005 | 16:45:00 |
| 11/28/2005 | 18:15:00 |
| 11/28/2005 | 18:30:00 |
| 11/28/2005 | 18:45:00 |
| 11/28/2005 | 21:00:00 |
| 11/28/2005 | 21:15:00 |
| 11/28/2005 | 21:30:00 |
| 11/29/2005 | 8:45:00  |

Dissolved oxygen data deleted due to punctured membrane:  
11/4/2005 (03:15:00) through 11/5/2005 (14:15:00)

**SU:** All data were deleted as the sonde was out of the water.  
11/3/2005 (02:15:00-18:00:00)  
11/19/2005 (15:45:00) through 11/21/2005 (10:45:00) (end of deployment)

Erroneous depth data deleted due to ice  
11/17/2005 (19:15:00) through 11/18/2005 (12:00:00)

Turbidity values deleted as value out of sensor range:  
11/6/2006 (14:00:00)

Conductivity data deleted as sensor only partially in water. DO mg/L values were also deleted as they are conductivity dependent.  
11/4/2005 (03:00:00-21:00:00)  
11/5/2005 (04:15:00-10:15:00)  
11/6/2005 (04:45:00-17:15:00)

11/13/2005 (02:45:00) through 11/14/2005 (07:15:00)  
11/18/2005 (16:00:00) through 11/19/2005 (15:30:00)

Water level data deleted as sensor out of water

11/4/2005 (03:00:00-21:00:00)  
11/5/2005 (04:15:00-10:15:00)  
11/6/2005 (04:45:00-17:15:00)  
11/13/2005 (02:45:00) through 11/14/2005 (07:15:00)  
11/17/2005 (12:45:00-17:30:00)  
11/18/2005 (16:00:00) through 11/19/2005 (15:30:00)

**OL:** Negative depths deleted as sensor out of water:

|            |          |         |            |          |
|------------|----------|---------|------------|----------|
| 11/1/2005  | (2:15:00 | through | 13:45:00 ) |          |
| 11/1/2005  | 22:45:00 | through | 11/2/2005  | 0:00:00  |
| 11/2/2005  | 23:30:00 | through | 11/3/2005  | 17:45:00 |
| 11/3/2005  | 23:45:00 | through | 11/4/2005  | 21:45:00 |
| 11/5/2005  | 0:45:00  | through | 11/5/2005  | 10:45:00 |
| 11/5/2005  | 14:45:00 | through | 11/6/2005  | 22:30:00 |
| 11/7/2005  | 9:45:00  | through | 11/7/2005  | 11:00:00 |
| 11/7/2005  | 12:00:00 | through | 11/7/2005  | 15:00:00 |
| 11/7/2005  | 19:30:00 | through | 11/8/2005  | 5:30:00  |
| 11/9/2005  | 6:45:00  | through | 11/10/2005 | 4:30:00  |
| 11/12/2005 | 12:45:00 | through | 11/12/2005 | 17:30:00 |
| 11/12/2005 | 23:15:00 | through | 11/13/2005 | 23:00:00 |
| 11/15/2005 | 9:45:00  | through | 11/15/2005 | 12:30:00 |
| 11/15/2005 | 19:00:00 | through | 11/17/2005 | 0:00:00  |
| 11/18/2005 | 13:45:00 | through | 11/19/2005 | 5:00:00  |
| 11/19/2005 | 6:45:00  | through | 11/21/2005 | 19:30:00 |
| 11/23/2005 | 6:30:00  | through | 11/24/2005 | 9:30:00  |
| 11/24/2005 | 20:00:00 | through | 11/24/2005 | 23:15:00 |
| 11/28/2005 | 14:45:00 | through | 11/28/2005 | 15:15:00 |
| 11/28/2005 | 16:30:00 | through | 11/28/2005 | 22:30:00 |
| 11/29/2005 | 0:30:00  | through | 11/29/2005 | 9:30:00  |
| 11/30/2005 | 12:45:00 | through | 11/30/2005 | 15:15:00 |

**BR:** Turbidity values deleted as out of range of sensor

|           |          |         |           |          |
|-----------|----------|---------|-----------|----------|
| 11/4/2005 | 19:15:00 | through | 11/5/2005 | 18:30:00 |
| 11/6/2005 | 1:00:00  | through | 11/6/2005 | 4:45:00  |
| 11/6/2005 | 12:00:00 |         |           |          |
| 11/6/2005 | 12:15:00 |         |           |          |
| 11/6/2005 | 16:15:00 |         |           |          |
| 11/6/2005 | 16:45:00 |         |           |          |
| 11/6/2005 | 17:00:00 |         |           |          |
| 11/6/2005 | 17:15:00 |         |           |          |
| 11/6/2005 | 18:15:00 |         |           |          |
| 11/6/2005 | 21:30:00 |         |           |          |
| 11/6/2005 | 21:45:00 |         |           |          |
| 11/6/2005 | 23:30:00 |         |           |          |
| 11/7/2005 | 0:15:00  |         |           |          |
| 11/7/2005 | 1:00:00  |         |           |          |
| 11/7/2005 | 1:30:00  |         |           |          |
| 11/7/2005 | 1:45:00  |         |           |          |

|            |          |         |                   |
|------------|----------|---------|-------------------|
| 11/7/2005  | 2:00:00  |         |                   |
| 11/7/2005  | 2:15:00  |         |                   |
| 11/7/2005  | 8:15:00  |         |                   |
| 11/8/2005  | 2:00:00  |         |                   |
| 11/8/2005  | 2:15:00  |         |                   |
| 11/8/2005  | 3:45:00  |         |                   |
| 11/8/2005  | 4:15:00  | through | 11/8/2005 5:30:00 |
| 11/8/2005  | 6:00:00  |         |                   |
| 11/8/2005  | 6:45:00  |         |                   |
| 11/8/2005  | 7:30:00  |         |                   |
| 11/8/2005  | 8:00:00  |         |                   |
| 11/8/2005  | 8:30:00  |         |                   |
| 11/8/2005  | 9:15:00  |         |                   |
| 11/8/2005  | 10:15:00 |         |                   |
| 11/8/2005  | 10:45:00 |         |                   |
| 11/8/2005  | 14:45:00 |         |                   |
| 11/10/2005 | 12:00:00 |         |                   |
| 11/15/2005 | 17:15:00 |         |                   |
| 11/15/2005 | 18:15:00 |         |                   |
| 11/15/2005 | 19:15:00 |         |                   |
| 11/15/2005 | 19:30:00 |         |                   |
| 11/15/2005 | 19:45:00 |         |                   |
| 11/15/2005 | 20:00:00 |         |                   |
| 11/15/2005 | 20:15:00 |         |                   |
| 11/15/2005 | 20:30:00 |         |                   |
| 11/15/2005 | 20:45:00 |         |                   |
| 11/15/2005 | 21:30:00 |         |                   |
| 11/15/2005 | 22:15:00 |         |                   |
| 11/15/2005 | 22:30:00 |         |                   |
| 11/15/2005 | 23:15:00 |         |                   |
| 11/15/2005 | 23:45:00 |         |                   |
| 11/16/2005 | 0:15:00  |         |                   |
| 11/16/2005 | 0:30:00  |         |                   |
| 11/16/2005 | 0:45:00  |         |                   |
| 11/16/2005 | 1:00:00  |         |                   |
| 11/16/2005 | 1:15:00  |         |                   |
| 11/16/2005 | 1:30:00  |         |                   |
| 11/16/2005 | 1:45:00  |         |                   |
| 11/16/2005 | 2:00:00  |         |                   |
| 11/16/2005 | 2:15:00  |         |                   |
| 11/16/2005 | 3:00:00  |         |                   |
| 11/16/2005 | 3:15:00  |         |                   |
| 11/16/2005 | 3:30:00  |         |                   |
| 11/16/2005 | 4:00:00  |         |                   |
| 11/16/2005 | 4:15:00  |         |                   |
| 11/16/2005 | 4:45:00  |         |                   |
| 11/16/2005 | 5:00:00  |         |                   |
| 11/16/2005 | 5:15:00  |         |                   |
| 11/16/2005 | 6:00:00  |         |                   |
| 11/16/2005 | 7:30:00  |         |                   |
| 11/16/2005 | 8:45:00  |         |                   |
| 11/16/2005 | 10:00:00 |         |                   |
| 11/16/2005 | 10:15:00 |         |                   |

|            |          |
|------------|----------|
| 11/16/2005 | 11:00:00 |
| 11/16/2005 | 11:45:00 |
| 11/16/2005 | 12:00:00 |
| 11/16/2005 | 12:15:00 |
| 11/16/2005 | 12:30:00 |
| 11/16/2005 | 12:45:00 |
| 11/16/2005 | 13:00:00 |
| 11/16/2005 | 13:15:00 |
| 11/16/2005 | 14:15:00 |
| 11/16/2005 | 14:30:00 |
| 11/16/2005 | 14:45:00 |
| 11/16/2005 | 15:15:00 |
| 11/16/2005 | 16:15:00 |
| 11/16/2005 | 16:30:00 |
| 11/16/2005 | 16:45:00 |
| 11/16/2005 | 17:00:00 |
| 11/16/2005 | 17:30:00 |
| 11/16/2005 | 17:45:00 |
| 11/16/2005 | 18:00:00 |
| 11/16/2005 | 18:30:00 |
| 11/16/2005 | 19:45:00 |
| 11/16/2005 | 20:15:00 |
| 11/16/2005 | 21:00:00 |
| 11/16/2005 | 21:30:00 |
| 11/16/2005 | 22:00:00 |
| 11/16/2005 | 22:30:00 |
| 11/16/2005 | 23:00:00 |
| 11/17/2005 | 0:00:00  |
| 11/17/2005 | 0:45:00  |
| 11/17/2005 | 1:30:00  |
| 11/17/2005 | 3:15:00  |
| 11/17/2005 | 4:15:00  |
| 11/17/2005 | 5:30:00  |
| 11/17/2005 | 7:00:00  |
| 11/17/2005 | 8:15:00  |
| 11/17/2005 | 9:45:00  |
| 11/17/2005 | 10:00:00 |
| 11/17/2005 | 10:45:00 |
| 11/17/2005 | 11:30:00 |
| 11/17/2005 | 11:45:00 |
| 11/17/2005 | 12:00:00 |
| 11/17/2005 | 13:45:00 |
| 11/17/2005 | 14:15:00 |
| 11/17/2005 | 15:15:00 |
| 11/17/2005 | 15:45:00 |
| 11/17/2005 | 18:45:00 |
| 11/17/2005 | 19:00:00 |
| 11/17/2005 | 21:15:00 |
| 11/17/2005 | 22:45:00 |
| 11/17/2005 | 23:15:00 |
| 11/18/2005 | 0:30:00  |
| 11/18/2005 | 1:00:00  |
| 11/18/2005 | 1:15:00  |

|            |          |
|------------|----------|
| 11/18/2005 | 2:45:00  |
| 11/18/2005 | 3:45:00  |
| 11/18/2005 | 4:00:00  |
| 11/18/2005 | 4:15:00  |
| 11/18/2005 | 5:30:00  |
| 11/18/2005 | 6:45:00  |
| 11/18/2005 | 7:45:00  |
| 11/18/2005 | 8:30:00  |
| 11/18/2005 | 9:00:00  |
| 11/18/2005 | 9:45:00  |
| 11/18/2005 | 12:30:00 |
| 11/18/2005 | 12:45:00 |
| 11/18/2005 | 16:15:00 |
| 11/18/2005 | 17:00:00 |
| 11/18/2005 | 17:30:00 |
| 11/18/2005 | 17:45:00 |
| 11/18/2005 | 18:00:00 |
| 11/18/2005 | 19:15:00 |
| 11/18/2005 | 21:30:00 |
| 11/18/2005 | 23:00:00 |
| 11/18/2005 | 23:15:00 |
| 11/19/2005 | 1:00:00  |
| 11/19/2005 | 1:15:00  |
| 11/19/2005 | 1:45:00  |
| 11/19/2005 | 2:00:00  |
| 11/19/2005 | 2:15:00  |
| 11/19/2005 | 2:45:00  |
| 11/19/2005 | 3:00:00  |
| 11/19/2005 | 3:15:00  |
| 11/19/2005 | 3:30:00  |
| 11/19/2005 | 4:15:00  |
| 11/19/2005 | 5:00:00  |
| 11/19/2005 | 7:00:00  |
| 11/19/2005 | 11:45:00 |
| 11/19/2005 | 12:15:00 |
| 11/19/2005 | 12:45:00 |
| 11/19/2005 | 14:15:00 |
| 11/19/2005 | 15:00:00 |
| 11/19/2005 | 18:30:00 |
| 11/19/2005 | 18:45:00 |
| 11/19/2005 | 21:30:00 |
| 11/19/2005 | 22:30:00 |
| 11/19/2005 | 23:00:00 |
| 11/19/2005 | 23:45:00 |
| 11/20/2005 | 0:15:00  |
| 11/20/2005 | 0:30:00  |
| 11/20/2005 | 0:45:00  |
| 11/20/2005 | 1:00:00  |
| 11/20/2005 | 1:15:00  |
| 11/20/2005 | 4:00:00  |
| 11/20/2005 | 4:30:00  |
| 11/20/2005 | 4:45:00  |
| 11/20/2005 | 5:45:00  |

|            |          |
|------------|----------|
| 11/20/2005 | 8:30:00  |
| 11/20/2005 | 12:15:00 |
| 11/20/2005 | 12:45:00 |
| 11/20/2005 | 14:15:00 |
| 11/20/2005 | 14:30:00 |
| 11/20/2005 | 15:15:00 |
| 11/20/2005 | 16:30:00 |
| 11/20/2005 | 17:45:00 |
| 11/20/2005 | 18:45:00 |
| 11/20/2005 | 20:00:00 |
| 11/20/2005 | 22:00:00 |
| 11/20/2005 | 22:15:00 |
| 11/20/2005 | 23:30:00 |
| 11/21/2005 | 0:00:00  |
| 11/21/2005 | 0:15:00  |
| 11/21/2005 | 0:30:00  |
| 11/21/2005 | 0:45:00  |
| 11/21/2005 | 2:45:00  |
| 11/21/2005 | 4:15:00  |
| 11/21/2005 | 4:30:00  |
| 11/21/2005 | 5:00:00  |
| 11/21/2005 | 5:30:00  |
| 11/21/2005 | 5:45:00  |
| 11/21/2005 | 7:15:00  |
| 11/21/2005 | 10:00:00 |
| 11/21/2005 | 11:00:00 |

|            |          |          |          |          |
|------------|----------|----------|----------|----------|
| 11/29/2005 | 6:45:00  | through  | 7:30:00  |          |
| 11/29/2005 | 8:15:00  | 9:30:00  | 10:00:00 | 10:15:00 |
| 11/29/2005 | 11:00:00 | 11:15:00 | 11:30:00 | 12:00:00 |
| 11/29/2005 | 13:00:00 | 15:00:00 | 15:15:00 | 15:30:00 |
| 11/29/2005 | 16:15:00 | 17:00:00 | 17:15:00 |          |

Negative depths deleted as sensor out of water

11/6/2005 (00:45:00-10:30:00)  
 11/9/2005 (12:15:00-15:00:00)  
 11/21/2005 (11:45:00) through 11/24/2005 (18:00:00  
 11/28/2005 (16:15:00) through 11/29/2005 (2:45:00)

Erroneous depth data deleted due to ice

11/17/2005 (01:30:00-07:45:00) and (09:30:00-19:45:00)  
 11/18/2005 (06:30:00-12:15:00)  
 11/25/2005 (00:00:00-10:00:00) and 19:30:00-23:00:00)

## December 2005

WM: Negative depths deleted as sensor out of water:

|           |         |
|-----------|---------|
| 12/1/2005 | 5:00:00 |
| 12/1/2005 | 5:15:00 |
| 12/1/2005 | 5:30:00 |
| 12/1/2005 | 5:45:00 |
| 12/1/2005 | 6:00:00 |
| 12/1/2005 | 6:15:00 |

|           |          |
|-----------|----------|
| 12/1/2005 | 6:30:00  |
| 12/1/2005 | 7:00:00  |
| 12/1/2005 | 18:00:00 |
| 12/1/2005 | 18:15:00 |
| 12/1/2005 | 20:15:00 |
| 12/1/2005 | 20:30:00 |
| 12/1/2005 | 20:45:00 |
| 12/1/2005 | 21:00:00 |
| 12/1/2005 | 21:15:00 |
| 12/1/2005 | 21:30:00 |
| 12/1/2005 | 21:45:00 |
| 12/1/2005 | 22:00:00 |
| 12/1/2005 | 22:45:00 |
| 12/1/2005 | 23:00:00 |
| 12/1/2005 | 23:45:00 |
| 12/2/2005 | 0:00:00  |
| 12/2/2005 | 0:15:00  |
| 12/2/2005 | 0:30:00  |
| 12/2/2005 | 1:15:00  |
| 12/2/2005 | 1:30:00  |
| 12/2/2005 | 2:00:00  |
| 12/2/2005 | 2:15:00  |
| 12/2/2005 | 2:30:00  |
| 12/2/2005 | 2:45:00  |
| 12/2/2005 | 3:00:00  |
| 12/2/2005 | 3:15:00  |
| 12/2/2005 | 3:30:00  |
| 12/2/2005 | 3:45:00  |
| 12/2/2005 | 4:00:00  |
| 12/2/2005 | 4:15:00  |
| 12/2/2005 | 4:30:00  |
| 12/2/2005 | 4:45:00  |

Dissolved oxygen data deleted because the sensor membrane had a puncture:  
 11/22/2005 (22:15:00) through 12/2/2005 (10:00:00) - end of deployment

**SU:** No data collected at this site in December

**OL:** Negative depths deleted as sensor out of water:

|           |            |            |                    |
|-----------|------------|------------|--------------------|
| 12/1/2005 | (18:00:00) | (18:15:00) | (19:30:00)         |
| 12/1/2005 | 20:15:00   | through    | 12/1/2005 22:15:00 |
| 12/1/2005 | 22:45:00   | through    | 12/1/2005 23:00:00 |
| 12/1/2005 | 23:45:00   | through    | 12/2/2005 05:45:00 |

Depths deleted as sensor frozen:  
 12/2/2005 (06:00:00-09:30:00)

**BR:** None

### 13. Missing data:

Data are missing due to equipment or associated specific probes not being deployed,

equipment failure, time of maintenance or calibration of equipment, or repair/replacement of a sampling station platform. For more details on deleted data, see the Deleted Data Section (12). If additional information on missing data is needed, contact the Research Coordinator at the reserve submitting the data.

**March 2005**

None

**April 2005**

None

**May 2005**

None

**June 2005**

None

**July 2005**

**WM:** None

**SU:** All data is missing 07/5/2005 (08:15:00) due to changing data logger

**OL:** All data is missing 07/19/2005 (07:45:00) due to changing data logger

**BR:** None

**August 2005**

**WM:** None

**SU:** None

**OL:** All data is missing 08/29/2005 (07:15:00) due to changing data logger

**BR:** None

**September 2005**

None

**October 2005**

**WM:** None

**SU:** None

**OL:** All data is missing 10/18/2005 (08:15:00) due to changing data logger

**BR:** Entire deployment is missing 10/18 10:00:00 to 10/31 10:00:00. The calibration log notes a buildup of leaves in logger trap light dirt on the sonde/guard, Temp/Cond, DO, pH, and Turbidity probes after a storm event.

**November 2005****WM:** All data is missing 11/21/2005 (10:00:00-10:15:00) due to changing data logger**SU:** None**OL:** None**BR:** None**December 2005**

None

**14. Post deployment information:**

End of Deployment Post-calibration Readings in Standard Solutions: Dissolved oxygen standard is 100%, unless noted. Depth is always 0.0 meters. The specific conductivity standard is 1.413 mS/cm. The pH standard is 7.00. Turbidity standard is zero, and if a second standard is used, it will be in parentheses after the second turbidity reading.

| Site | Date       | Sp. Cond. | DO(%)                    | pH   | Turb                  | Depth |
|------|------------|-----------|--------------------------|------|-----------------------|-------|
| WM   | 4/4/2005   | 1.460     | 101.4                    | 7.05 | 0.1                   |       |
|      | 5/2/2005   | 1.420     | 101.4                    | 7.05 | 0.9                   | -.005 |
|      | 5/23/2005  | 1.410     | 127.1                    | 7.03 | 1.8                   | .001  |
|      | 6/12/2005  | 1.413     | 111.6                    | 7.02 | 6.2                   | .001  |
|      | 7/5/2005   | 1.392     | 41(105*)                 | 6.91 | 2.7                   | -.019 |
|      |            |           | *after cleaning membrane |      |                       |       |
|      | 7/19/2005  | 1.433     | 3486.9*                  | 6.90 | -0.3, 142.6(135)      | .002  |
|      |            |           | *after cleaning membrane |      |                       |       |
|      | 8/1/2005   | 1.344     | 108                      | 6.84 | 1.2, 100(105)         | -.033 |
|      | 8/15/2005  | 1.356     | 74.9                     | 7.01 | 1.8, 243 (234)        | .000  |
|      | 8/29/2005  | 1.161     | 111.6                    | 6.95 | 1.1, 96.7 (101)       | -.012 |
|      | 9/12/2005  | 1.366     | 13.3*                    | 7.02 | 25.1(8.0*) 100.5(102) | .002  |
|      |            |           | *ruptured membrane       |      | *after cleaning       |       |
|      | 9/27/2005  | 1.372     | 102                      | 6.92 | 0.8, 93.8 (100)       | -.005 |
|      | 10/18/2005 | 1.397     | 101.9                    | 6.94 | 1.0, 90.3 (101)       | .001  |
|      | 10/31/2005 | 1.380     |                          | 6.93 | 2.4, 95.7 (97.9)      | -.007 |
|      | 11/21/2005 | 1.377     | 87.8                     | 6.99 | 2.7, 94 (99.4)        | .006  |
|      | 12/2/2005  | 1.439     | 96.3                     | 7.01 | 0.6, 101.7 (99.6)     | .016  |

| Site | Date      | Sp. Cond. | DO(%) | pH   | Turb           | Depth |
|------|-----------|-----------|-------|------|----------------|-------|
| SU   | 4/4/2005  | 1.436     | 98.7  | 6.80 | -0.1           |       |
|      | 5/2/2005  | 1.378     | 92.6  | 7.10 | 1.7            | -.002 |
|      | 5/23/2005 | 1.413     | 96.8  | 7.11 | 0.6            | -.002 |
|      | 6/12/2005 | 1.436     | 108   | 7.09 | 2.3            |       |
|      | 7/5/2005  | 1.249     | 108   | 7.11 | 2.0            | -.008 |
|      | 7/19/2005 | 1.410     | 87    | 7.23 | -0.1, 138(135) | .001  |
|      | 8/1/2005  | 1.384     | 94.8  | 7.16 | 0.2, 105 (105) | -.002 |

|      | 8/15/2005  | 1.422     | 64.4               | 7.07 | 1.0, 200 (234)      | .000   |
|------|------------|-----------|--------------------|------|---------------------|--------|
|      | 8/29/2005  | 1.382     | 91.5               | 7.07 | 0.2, 101.2 (101)    | -.001  |
|      | 9/12/2005  | 1.119     | 96                 | 6.95 | 0.9, 101.6 (102)    | .001   |
|      | 9/27/2005  | 1.402     | 101.2              | 7.08 | 0.2, 98.3 (100)     |        |
|      | 10/18/2005 | 1.490     | 1.6*               | 7.03 | 9.9, 89.9 (101)     | .004   |
|      |            |           | membrane puncture  |      |                     |        |
|      | 10/31/2005 | 1.349     | 7.3*               | 7.14 | 3.2, 98.8 (97.7)    | .001   |
|      |            |           | membrane puncture  |      |                     |        |
|      | 11/21/2005 | 1.397     | 96.5               | 7.00 | -0.7, 79.8 (99.4)   | .007   |
| Site | Date       | Sp. Cond. | DO(%)              | pH   | Turb                | Depth  |
| OL   | 4/4/2005   | 1.466     | 108                | 6.99 | 1.9                 |        |
|      | 5/2/2005   | 1.413     | 103.6              | 7.10 | 3.0                 |        |
|      | 5/23/2005  | 1.408     | 109.7              | 7.07 | 1.9                 | -.144  |
|      | 6/12/2005  | 1.395     |                    | 7.08 |                     |        |
|      | 7/5/2005   | 1.335     | 109                | 7.06 | 19.6                | -.008  |
|      | 7/19/2005  | 1.350     | 78.9               | 7.15 | .01, 137.2 (135)    | .047   |
|      | 8/1/2005   | 1.384     | 112.8              | 6.95 | 0.4, 103 (105)      | .095   |
|      | 8/15/2005  | 1.404     |                    | 7.10 | -0.1, 240 (232)     | -.011  |
|      | 8/29/2005  | 1.384     | 113.2              | 7.00 | 1.2, 96.5 (101)     | -.045  |
|      | 9/12/2005  | 1.425     | 99.8               | 7.03 | 3.6, 99.7 (102)     | .053   |
|      | 9/27/2005  | 1.370     | 83                 | 7.01 | 0.4, 97.6 (100)     |        |
|      | 10/18/2005 | 1.287     | 21.6*              | 6.84 | 1.1, 81.7 (101)     | -.136  |
|      |            |           | membrane puncture  |      |                     |        |
|      | 10/31/2005 | 1.408     |                    | 6.91 | 2.7, 91.6 (97.7)    | -.023  |
|      | 11/21/2005 | 1.362     | 102.2              | 6.98 | 1.0, 92.5 (99.4)    | -.21   |
|      | 12/2/2005  | 1.405     | 96.2               | 7.05 | 0.7, 102.8 (99.6)   | .002   |
| Site | Date       | Sp. Cond. | DO(%)              | pH   | Turb                | Depth  |
| BR   | 4/4/2005   | 1.395     | 98.7               | 6.97 | 1.7                 |        |
|      | 5/2/2005   | 1.379     | 94.1               | 7.04 | -112*               |        |
|      |            |           |                    |      | turb sensor failed  |        |
|      | 5/23/2005  | 1.391     | 104.4              | 7.17 | 1.1                 | -.150  |
|      | 6/12/2005  | 1.411     | 121.5              | 7.13 | -0.2                |        |
|      | 7/5/2005   | 1.366     | 102.8              | 7.13 | -0.5                | -.007  |
|      | 7/19/2005  | 1.377     | 114.6              | 7.09 | 0.9, 142(135)       | 0.44   |
|      | 8/1/2005   | 1.418     | *                  | 7.10 | 0.4, 101 (103)      | .090   |
|      |            |           | *membrane puncture |      |                     |        |
|      | 8/15/2005  | 1.388     | 78.7               | 7.03 | 0.6, 223 (234)      | -.016  |
|      | 8/29/2005  | 1.419     | 99.8               | 7.10 | 0.9, 94.5 (101)     | -.053  |
|      | 9/12/2005  | 1.442     | 106.2              | 7.08 | 0.7, 101.5 (102)    | .051   |
|      | 9/27/2005  | 1.475     | 2.8*               | 6.97 | 0.3, 98.7 (100)     |        |
|      |            |           | membrane puncture  |      |                     |        |
|      | 10/18/2005 | 1.388     | 106                | 7.06 | -5.6, 11.6 (101)*   | -.1.09 |
|      |            |           |                    |      | turb sensor failure |        |
|      | 10/31/2005 | 1.408     | 102.2              | 6.99 | 0.0, 97.6 (97.7)    | -.008  |
|      | 11/21/2005 | 1.332     | 100.6              | 7.04 | -0.1, 83.6 (99.4)   | -.229  |

|           |       |      |      |                   |       |
|-----------|-------|------|------|-------------------|-------|
| 12/2/2005 | 1.400 | 91.7 | 7.03 | 0.4, 100.9 (99.6) | -.042 |
|-----------|-------|------|------|-------------------|-------|

## 15. Other Remarks:

**On 08/13/2020 this dataset was updated to include embedded QAQC flags for anomalous/suspect data.** System-wide monitoring data beginning in 2007 were processed to allow for QAQC flags and codes to be embedded in the data files rather than detailed in the metadata alone (as in the anomalous/suspect, deleted, and missing data sections above). Prior to 2006, rejected data were deleted from the dataset so they are unavailable to be used at all, but suspect data were only noted in the metadata document. Suspect data flags <1> were embedded retroactively in order to allow suspect data to be easily identified and filtered from the dataset if desired for analysis and reporting purposes. No other flags or codes were embedded in the dataset and users should still refer to the detailed explanations above for more information.

Field data collected at time of data logger swap is reported below. Specific conductivity was taken in the laboratory immediately after returning from the field. Temperature is reported in Degrees C, specific conductivity in millimhos, and oxygen in milligrams/liter.

| Site | Date       | Temp | Sp. Cond. | DO(mg/l) | pH   |
|------|------------|------|-----------|----------|------|
| WM   | 3/17/2005  | 3.0  | .672      | 13.8     | 7.59 |
|      | 4/4/2005   | 6.4  | .318      | 8.5      | 7.88 |
|      | 5/2/2005   | 9.7  | .494      | 8.1      | 7.90 |
|      | 5/23/2005  | 15.4 | .442      | 9.56     | 7.66 |
|      | 6/12/2005  | 25.6 | .395      | 3.82     | 7.65 |
|      | 7/5/2005   | 26.6 | .606      | 2.95     | 7.07 |
|      | 7/19/2005  | 28.1 | .636      | 3.1      | 7.50 |
|      | 8/1/2005   | 24.8 | .610      | 3.9      | 7.46 |
|      | 8/15/2005  | 25.5 | .620      | 2.9      | 7.48 |
|      | 8/29/2005  | 24.3 | .407      | 6.05     | 7.52 |
|      | 9/12/2005  | 22.7 | .344      | 4.98     | 7.73 |
|      | 9/27/2005  | 18.8 | .376      | 6.66     | 7.51 |
|      | 10/18/2005 | 14.0 | .473      | 7.72     | 7.84 |
|      | 10/31/2005 | 9.2  | .647      | 9.92     | 7.91 |
|      | 11/21/2005 | 5.4  | .650      | 11.18    | 7.98 |
|      | 12/2/2005  | 1.7  | .615      | 12.18    | 8.02 |

| Site | Date      | Temp | Sp. Cond. | DO(mg/l) | pH   |
|------|-----------|------|-----------|----------|------|
| SU   | 3/17/2005 | 2.5  | .697      | 13.6     | 7.71 |
|      | 4/4/2005  | 6.0  | .290      | 10.92    | 7.84 |
|      | 5/2/2005  | 9.3  | .573      | 9.64     | 8.09 |
|      | 5/23/2005 | 15.7 | .674      | 7.6      | 7.65 |
|      | 6/12/2005 | 27.8 | .780      | 7.2      | 7.68 |
|      | 7/5/2005  | 25.1 | .805      | 4.0      | 7.51 |
|      | 7/19/2005 | 29.7 | .777      | 4.2      | 7.70 |

|            |      |      |       |      |
|------------|------|------|-------|------|
| 8/1/2005   | 24.9 | .584 | 5.6   | 7.80 |
| 8/15/2005  | 24.6 | .666 | 3.4   | 7.50 |
| 8/29/2005  | 23.2 | .535 | 6.53  | 7.61 |
| 9/12/2005  | 20.6 | .634 | 7.19  | 7.89 |
| 9/27/2005  | 19.2 | .408 | 8.00  | 7.65 |
| 10/18/2005 | 13.5 | .680 | 7.5   | 7.80 |
| 10/31/2005 | 11.2 | .652 | 10.10 | 7.98 |
| 11/21/2005 | 6.4  | .655 | 10.78 | 7.96 |

| Site | Date       | Temp | Sp. Cond. | DO(mg/l) | pH   |
|------|------------|------|-----------|----------|------|
| OL   | 3/17/2005  | 3.1  | .735      | 13.9     | 7.82 |
|      | 4/4/2005   | 6.1  | .296      | 9.34     | 7.86 |
|      | 5/2/2005   | 9.4  | .556      | 9.25     | 7.81 |
|      | 5/23/2005  | 15.5 | .434      | 7.85     | 7.64 |
|      | 6/12/2005  | 25.8 | .397      | 5.25     | 7.72 |
|      | 7/5/2005   | 26.3 | .590      | 3.2      | 7.13 |
|      | 7/19/2005  | 27.1 | .625      | 2.85     | 7.44 |
|      | 8/1/2005   | 24.6 | .610      | 4.3      | 7.50 |
|      | 8/15/2005  | 25.5 | .614      | 2.6      | 7.43 |
|      | 8/29/2005  | 23.7 | .418      | 5.85     | 7.51 |
|      | 9/12/2005  | 21.7 | .342      | 5.46     | 7.89 |
|      | 9/27/2005  | 18.2 | .385      | 6.54     | 7.47 |
|      | 10/18/2005 | 13.4 | .502      | 7.62     | 7.93 |
|      | 10/31/2005 | 9.2  | .644      | 9.96     | 7.91 |
|      | 11/21/2005 | 4.9  | .655      | 11.00    | 8.01 |
|      | 12/2/2005  | 1.0  | .606      | 12.71    | 8.04 |

| Site | Date       | Temp | Sp. Cond. | DO(mg/l) | pH   |
|------|------------|------|-----------|----------|------|
| BR   | 3/17/2005  | 2.5  | .618      | 14.00    | 7.89 |
|      | 4/4/2005   | 10.7 | .560      | 11.75    | 7.83 |
|      | 5/2/2005   | 9.9  | .555      | 10.9     | 8.21 |
|      | 5/23/2005  | 15.4 | .669      | 8.8      | 7.77 |
|      | 6/12/2005  | 24.9 | .777      | 6.5      | 7.74 |
|      | 7/5/2005   | 22.1 | .983      | 5.6      | 7.52 |
|      | 7/19/2005  | 25.4 | .964      | 6.5      | 7.67 |
|      | 8/1/2005   | 21.8 | .722      | 5.7      | 7.74 |
|      | 8/15/2005  | 22.8 | .640      | 6.5      | 7.67 |
|      | 8/29/2005  | 21   | .690      | 6.94     | 7.62 |
|      | 9/12/2005  | 19.3 | .736      | 6.37     | 7.70 |
|      | 9/27/2005  | 18.8 | .417      | 8.67     | 7.74 |
|      | 10/18/2005 | 14.0 | .686      | 9.02     | 7.95 |
|      | 10/31/2005 | 10.8 | .646      | 10.42    | 7.99 |
|      | 11/21/2005 | 6.7  | .656      | 11.32    | 7.97 |
|      | 12/2/2005  | 2.9  | .638      | 12.05    | 7.86 |

Daily rainfall for 2005 is presented below. Values are in mg rainfall rain gauge after mid

November was not working.

| Date       | TotPrcp |
|------------|---------|
| 01/01/2005 | 03.6    |
| 01/02/2005 | 01.3    |
| 01/03/2005 | 08.1    |
| 01/04/2005 | 22.1    |
| 01/05/2005 | 01.8    |
| 01/06/2005 | 06.6    |
| 01/07/2005 | 06.4    |
| 01/08/2005 | 00.8    |
| 01/09/2005 | 02.0    |
| 01/10/2005 | 12.2    |
| 01/11/2005 | 07.6    |
| 01/12/2005 | 18.3    |
| 01/13/2005 | 16.5    |
| 01/14/2005 | 22.1    |
| 01/15/2005 | 01.5    |
| 01/16/2005 | 00.0    |
| 01/17/2005 | 00.0    |
| 01/18/2005 | 00.0    |
| 01/19/2005 | 00.0    |
| 01/20/2005 | 00.0    |
| 01/21/2005 | 00.0    |
| 01/22/2005 | 00.0    |
| 01/23/2005 | 00.0    |
| 01/24/2005 | 00.0    |
| 01/25/2005 | 00.0    |
| 01/26/2005 | 04.1    |
| 01/27/2005 | 02.3    |
| 01/28/2005 | 00.0    |
| 01/29/2005 | 00.0    |
| 01/30/2005 | 00.0    |
| 01/31/2005 | 02.3    |
| 02/01/2005 | 00.0    |
| 02/02/2005 | 00.0    |
| 02/03/2005 | 00.0    |
| 02/04/2005 | 00.0    |
| 02/05/2005 | 00.0    |
| 02/06/2005 | 00.0    |
| 02/07/2005 | 05.6    |
| 02/08/2005 | 07.6    |
| 02/09/2005 | 00.3    |
| 02/10/2005 | 00.0    |
| 02/11/2005 | 00.0    |
| 02/12/2005 | 04.6    |
| 02/13/2005 | 00.3    |
| 02/14/2005 | 01.5    |
| 02/15/2005 | 01.8    |
| 02/16/2005 | 06.4    |
| 02/17/2005 | 00.0    |
| 02/18/2005 | 00.0    |
| 02/19/2005 | 00.0    |
| 02/20/2005 | 14.2    |
| 02/21/2005 | 00.0    |
| 02/22/2005 | 01.8    |
| 02/23/2005 | 00.8    |
| 02/24/2005 | 00.0    |
| 02/25/2005 | 00.0    |
| 02/26/2005 | 00.0    |

|            |      |
|------------|------|
| 02/27/2005 | 00.0 |
| 02/28/2005 | 05.3 |
| 03/01/2005 | 01.3 |
| 03/02/2005 | 00.0 |
| 03/03/2005 | 00.0 |
| 03/04/2005 | 00.0 |
| 03/05/2005 | 00.0 |
| 03/07/2005 | 01.0 |
| 03/08/2005 | 00.0 |
| 03/09/2005 | 00.0 |
| 03/10/2005 | 01.8 |
| 03/11/2005 | 03.0 |
| 03/12/2005 | 02.8 |
| 03/13/2005 | 00.0 |
| 03/14/2005 | 00.0 |
| 03/15/2005 | 00.0 |
| 03/16/2005 | 00.0 |
| 03/17/2005 | 00.0 |
| 03/18/2005 | 00.0 |
| 03/19/2005 | 07.4 |
| 03/20/2005 | 06.6 |
| 03/21/2005 | 00.0 |
| 03/22/2005 | 00.0 |
| 03/23/2005 | 05.8 |
| 03/24/2005 | 03.3 |
| 03/25/2005 | 00.8 |
| 03/26/2005 | 00.0 |
| 03/27/2005 | 00.0 |
| 03/28/2005 | 00.3 |
| 03/29/2005 | 00.0 |
| 03/30/2005 | 00.0 |
| 03/31/2005 | 00.0 |
| 04/01/2005 | 03.3 |
| 04/02/2005 | 42.2 |
| 04/03/2005 | 00.0 |
| 04/04/2005 | 00.0 |
| 04/05/2005 | 00.0 |
| 04/06/2005 | 00.0 |
| 04/07/2005 | 04.3 |
| 04/08/2005 | 00.0 |
| 04/09/2005 | 00.0 |
| 04/10/2005 | 00.0 |
| 04/11/2005 | 00.0 |
| 04/12/2005 | 00.0 |
| 04/13/2005 | 00.0 |
| 04/14/2005 | 00.0 |
| 04/15/2005 | 00.0 |
| 04/16/2005 | 00.0 |
| 04/17/2005 | 01.0 |
| 04/18/2005 | 00.0 |
| 04/19/2005 | 00.0 |
| 04/20/2005 | 08.9 |
| 04/21/2005 | 00.0 |
| 04/22/2005 | 12.2 |
| 04/23/2005 | 35.8 |
| 04/24/2005 | 23.4 |
| 04/25/2005 | 10.9 |
| 04/26/2005 | 15.5 |
| 04/27/2005 | 00.8 |

|            |      |
|------------|------|
| 04/28/2005 | 00.5 |
| 04/29/2005 | 01.8 |
| 04/30/2005 | 00.8 |
| 05/01/2005 | 00.5 |
| 05/02/2005 | 00.0 |
| 05/03/2005 | 00.5 |
| 05/04/2005 | 00.0 |
| 05/05/2005 | 00.0 |
| 05/06/2005 | 00.0 |
| 05/07/2005 | 00.0 |
| 05/08/2005 | 00.0 |
| 05/09/2005 | 00.0 |
| 05/10/2005 | 01.8 |
| 05/11/2005 | 01.3 |
| 05/12/2005 | 00.0 |
| 05/13/2005 | 11.4 |
| 05/14/2005 | 06.9 |
| 05/15/2005 | 00.0 |
| 05/16/2005 | 00.0 |
| 05/17/2005 | 00.0 |
| 05/18/2005 | 00.0 |
| 05/19/2005 | 00.5 |
| 05/20/2005 | 00.0 |
| 05/21/2005 | 00.0 |
| 05/22/2005 | 05.1 |
| 05/23/2005 | 08.9 |
| 05/24/2005 | 00.8 |
| 05/25/2005 | 00.0 |
| 05/26/2005 | 00.0 |
| 05/27/2005 | 00.5 |
| 05/28/2005 | 05.3 |
| 05/29/2005 | 00.3 |
| 05/30/2005 | 00.5 |
| 05/31/2005 | 00.0 |
| 06/01/2005 | 00.0 |
| 06/02/2005 | 01.5 |
| 06/03/2005 | 00.5 |
| 06/04/2005 | 00.0 |
| 06/05/2005 | 01.8 |
| 06/06/2005 | 00.0 |
| 06/07/2005 | 00.0 |
| 06/08/2005 | 00.0 |
| 06/09/2005 | 01.5 |
| 06/10/2005 | 00.5 |
| 06/11/2005 | 00.0 |
| 06/12/2005 | 00.0 |
| 06/13/2005 | 00.5 |
| 06/14/2005 | 00.0 |
| 06/15/2005 | 01.5 |
| 06/16/2005 | 09.1 |
| 06/17/2005 | 00.0 |
| 06/18/2005 | 00.0 |
| 06/19/2005 | 00.0 |
| 06/20/2005 | 00.0 |
| 06/21/2005 | 00.3 |
| 06/22/2005 | 00.0 |
| 06/23/2005 | 00.0 |
| 06/24/2005 | 00.0 |
| 06/25/2005 | 00.0 |

|            |      |
|------------|------|
| 06/26/2005 | 00.0 |
| 06/27/2005 | 00.0 |
| 06/28/2005 | 02.3 |
| 06/29/2005 | 00.0 |
| 06/30/2005 | 02.3 |
| 07/01/2005 | 00.0 |
| 07/02/2005 | 00.0 |
| 07/03/2005 | 00.0 |
| 07/04/2005 | 00.0 |
| 07/05/2005 | 00.0 |
| 07/06/2005 | 00.0 |
| 07/07/2005 | 00.0 |
| 07/08/2005 | 00.0 |
| 07/09/2005 | 00.0 |
| 07/10/2005 | 00.0 |
| 07/11/2005 | 00.0 |
| 07/12/2005 | 00.0 |
| 07/13/2005 | 01.0 |
| 07/14/2005 | 00.8 |
| 07/15/2005 | 00.5 |
| 07/16/2005 | 08.1 |
| 07/17/2005 | 00.0 |
| 07/18/2005 | 08.4 |
| 07/19/2005 | 00.0 |
| 07/20/2005 | 00.0 |
| 07/21/2005 | 10.4 |
| 07/22/2005 | 00.0 |
| 07/23/2005 | 00.0 |
| 07/24/2005 | 01.5 |
| 07/25/2005 | 00.0 |
| 07/26/2005 | 27.2 |
| 07/27/2005 | 20.6 |
| 07/28/2005 | 00.0 |
| 07/29/2005 | 00.0 |
| 07/30/2005 | 00.0 |
| 07/31/2005 | 00.0 |
| 08/01/2005 | 00.0 |
| 08/02/2005 | 00.0 |
| 08/03/2005 | 00.0 |
| 08/04/2005 | 00.0 |
| 08/05/2005 | 00.0 |
| 08/06/2005 | 08.1 |
| 08/07/2005 | 00.0 |
| 08/08/2005 | 21.8 |
| 08/09/2005 | 00.0 |
| 08/10/2005 | 01.5 |
| 08/11/2005 | 00.0 |
| 08/12/2005 | 14.7 |
| 08/13/2005 | 05.1 |
| 08/14/2005 | 00.0 |
| 08/15/2005 | 00.0 |
| 08/16/2005 | 00.0 |
| 08/17/2005 | 00.0 |
| 08/18/2005 | 03.3 |
| 08/19/2005 | 00.0 |
| 08/20/2005 | 54.4 |
| 08/21/2005 | 00.3 |
| 08/22/2005 | 00.0 |
| 08/23/2005 | 00.0 |

|            |      |
|------------|------|
| 08/24/2005 | 00.0 |
| 08/25/2005 | 00.0 |
| 08/26/2005 | 00.0 |
| 08/27/2005 | 00.8 |
| 08/28/2005 | 00.3 |
| 08/29/2005 | 00.0 |
| 08/30/2005 | 32.8 |
| 08/31/2005 | 03.8 |
| 09/01/2005 | 00.0 |
| 09/02/2005 | 00.0 |
| 09/03/2005 | 00.0 |
| 09/04/2005 | 00.0 |
| 09/05/2005 | 00.3 |
| 09/06/2005 | 00.0 |
| 09/07/2005 | 00.0 |
| 09/08/2005 | 01.3 |
| 09/09/2005 | 00.0 |
| 09/10/2005 | 00.3 |
| 09/11/2005 | 00.0 |
| 09/12/2005 | 00.0 |
| 09/13/2005 | 00.0 |
| 09/14/2005 | 00.0 |
| 09/15/2005 | 00.0 |
| 09/16/2005 | 23.6 |
| 09/17/2005 | 44.2 |
| 09/18/2005 | 00.0 |
| 09/19/2005 | 00.0 |
| 09/20/2005 | 00.0 |
| 09/21/2005 | 00.3 |
| 09/22/2005 | 12.2 |
| 09/23/2005 | 06.1 |
| 09/24/2005 | 00.3 |
| 09/25/2005 | 11.4 |
| 09/26/2005 | 28.4 |
| 09/27/2005 | 00.0 |
| 09/28/2005 | 00.0 |
| 09/29/2005 | 04.3 |
| 09/30/2005 | 00.0 |
| 10/01/2005 | 00.0 |
| 10/02/2005 | 00.0 |
| 10/03/2005 | 00.0 |
| 10/04/2005 | 00.0 |
| 10/05/2005 | 00.0 |
| 10/06/2005 | 00.0 |
| 10/07/2005 | 00.0 |
| 10/08/2005 | 00.0 |
| 10/09/2005 | 00.0 |
| 10/10/2005 | 00.0 |
| 10/11/2005 | 00.0 |
| 10/12/2005 | 00.0 |
| 10/13/2005 | 00.0 |
| 10/14/2005 | 00.0 |
| 10/15/2005 | 00.0 |
| 10/16/2005 | 00.0 |
| 10/17/2005 | 00.0 |
| 10/18/2005 | 00.0 |
| 10/19/2005 | 00.0 |
| 10/20/2005 | 00.0 |
| 10/21/2005 | 00.0 |

|            |      |
|------------|------|
| 10/22/2005 | 00.0 |
| 10/23/2005 | 00.0 |
| 10/24/2005 | 00.0 |
| 10/25/2005 | 00.0 |
| 10/26/2005 | 00.0 |
| 10/27/2005 | 00.0 |
| 10/28/2005 | 00.0 |
| 10/29/2005 | 00.0 |
| 10/30/2005 | 00.0 |
| 10/31/2005 | 00.0 |
| 11/01/2005 | 00.0 |
| 11/02/2005 | 00.0 |
| 11/03/2005 | 00.0 |
| 11/04/2005 | 00.0 |
| 11/05/2005 | 00.0 |
| 11/06/2005 | 00.0 |
| 11/07/2005 | 00.0 |
| 11/08/2005 | 00.0 |
| 11/09/2005 | 00.0 |
| 11/10/2005 | 00.0 |
| 11/11/2005 | 00.0 |
| 11/12/2005 | 00.0 |
| 11/13/2005 | 00.0 |
| 11/14/2005 | 00.0 |
| 11/15/2005 | 00.0 |
| 11/16/2005 | 00.0 |
| 11/17/2005 | 00.0 |
| 11/18/2005 | 00.0 |
| 11/19/2005 | 00.0 |
| 11/20/2005 | 00.0 |
| 11/21/2005 | 00.0 |
| 11/22/2005 | 00.0 |
| 11/23/2005 | 00.0 |
| 11/24/2005 | 00.0 |
| 11/25/2005 | 00.0 |
| 11/26/2005 | 00.0 |
| 11/27/2005 | 00.0 |
| 11/28/2005 | 00.0 |
| 11/29/2005 | 00.0 |
| 11/30/2005 | 00.0 |
| 12/01/2005 | 00.0 |
| 12/02/2005 | 00.0 |
| 12/03/2005 | 00.0 |
| 12/04/2005 | 00.0 |
| 12/05/2005 | 00.0 |
| 12/06/2005 | 00.0 |
| 12/07/2005 | 00.0 |
| 12/08/2005 | 00.0 |
| 12/09/2005 | 00.0 |
| 12/10/2005 | 00.0 |
| 12/11/2005 | 00.0 |
| 12/12/2005 | 00.0 |
| 12/13/2005 | 00.0 |
| 12/14/2005 | 00.0 |
| 12/15/2005 | 00.0 |
| 12/16/2005 | 00.0 |
| 12/17/2005 | 00.0 |
| 12/18/2005 | 00.0 |
| 12/19/2005 | 00.0 |

|            |      |
|------------|------|
| 12/20/2005 | 00.0 |
| 12/21/2005 | 00.0 |
| 12/22/2005 | 00.0 |
| 12/23/2005 | 00.0 |
| 12/24/2005 | 00.0 |
| 12/25/2005 | 00.0 |
| 12/26/2005 | 00.0 |
| 12/27/2005 | 00.0 |
| 12/28/2005 | 00.0 |
| 12/29/2005 | 00.0 |
| 12/30/2005 | 00.0 |
| 12/31/2005 | 00.0 |