Chesapeake Bay Maryland (CBM) NERR Water Quality Metadata
January 2006-December 2006
Latest Update: September 20, 2019

I. Data Set and Research Descriptors

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2) Entry verification

Raw data were uploaded from the YSI 6600EDS data loggers to an IBM compatible Personal Computer. Using EcoWatch software, data plots were produced and data were visually examined after each deployment. Data files were then exported from EcoWatch in a comma-delimited format (.CDF) into Microsoft Excel (for Windows 2000). The .CDF file is then formatted using the EQWinFormat.xls macro designed by CDMO to reformat the header columns, insert station codes, insert a corrected time column, and remove any pre- and post-deployment data. This .CDF file was then saved in .CSV format and archived as raw data.

The raw data file is then processed using an Excel macro developed by Mark Trice of Maryland DNR. This macro is used to discover possible data set outliers. Data is identified as a potential outlier by the

following criteria: All negative data; Temp > 35 deg C; SpCond > 58mS/cm; Salinity > 35ppt; DO% > 200; DOconc > 17.5 mg/l; 2 > pH > 10.5; Turbidity > 150 NTU. Data meeting these criteria were highlighted in the data set by the macro, and then visually inspected to determine whether they should be retained, deleted, or listed as suspect. Potential outliers are investigated for validity based on weather data, field observations, QA/QC checks, and instrument post-calibration. If data is to be deleted, an error code is placed in the adjacent field. If data is to be listed as suspect, notes are made in a separate field which will not delete the data. Where deployment overlap occurs between files, the data from the newly calibrated sonde is discarded. After all data has been inspected, the data set is processed through another step of the macro which replaces any data marked by an error code with a blank field. The file is then saved as a .CSV file with a different filename and opened in Ecowatch for visual inspection. If this inspection yields any additional suspect data, the data may again be edited in Microsoft Excel. After the processed data is deemed acceptable, it is imported into EQWin database and submitted to CDMO. All raw .CSV files are also sent to the CDMO via FTP for archival. Stephanie Thompson and John Zimmerelli are responsible for these tasks.

3) Research Objectives

One of the objectives of the monitoring program at CBM NERR is to conform to the NERR System Wide Monitoring Program (SWMP) where the overall goal is a long-term dataset providing baseline water quality information capable of tracking trends and identifying changes in water quality over temporal and spatial scales. In addition to the aforementioned NERR wide research objectives, reserve specific objections include understanding how anthropogenic activities affect water quality and examining the effects of submerged macrophyte communities on water quality. To accomplish this, monitoring sites were selected that characterize the variety of habitat and water quality conditions existing at two of the three components that makes up the CBM NERR, the Jug Bay and Otter Point Creek Component. At the Jug Bay component, three sites were selected that span the range of conditions thought to be typical of this site. These sites include a reference site, an impaired site and a mainstem site; where the reference site is thought to have little anthropogenic induced affect on water quality, an impaired site where anthropogenic activities strongly influence local water quality and a mainstem site-thought to be highly representative of mainstem water quality conditions at the Jug Bay Component. The fourth and final site is located at the Otter Point Creek Component, a much smaller component, and is thought to represent typical water quality conditions at this site. All four sites span the range of habitat conditions at these components to include varying abundances of submerged macrophyte communities as well as varying depth and energy regimes from shallow tidal creeks to proportionately deep tidal river systems to shallow open water embayments. Additional monitoring, outside the scope of this effort, is being done at both the Jug Bay and Otter Point Creek Component. These efforts use comparable field sampling methods, with high spatial resolution to better understand the spatial variability between and around the sites monitored in this effort.

4) Research methods (YSI dataloggers)

Water quality measurements were taken every 15 minutes from January through December 2006 at each station, weather permitting. One YSI6600EDS data logger is deployed at each station. All data are recorded in Eastern Standard Time. When a datasonde is retrieved, another one is deployed at the same time to ensure a continuous data set. During transport to and from the sampling sites, dataloggers are wrapped in a damp towel and placed horizontally in a cooler. The cooler lid is kept slightly ajar, to allow the datalogger to be in equilibrium with the ambient barometric pressure.

Deployment apparatus' are constructed out of 4" diameter PVC pipe and suspended vertically in the water column. 2" diameter holes are cut into the PVC pipes at 2" intervals to guarantee free flow of water through the PVC pipe. The pipe was painted with Trinidad SR antifouling paint. The pipe is attached to a 2X4 using copper plated clevis hangers. The 2X4 is bolted to a piling with the bottom of the PVC pipe resting on the bottom of the river. A stop bolt was placed 0.25 meters from the bottom of the pipe to keep the YSI instrument at a constant depth above bottom.

Measurements for temperature, specific conductance, salinity, percent oxygen saturation, dissolved oxygen concentration, water depth, pH, turbidity, and Chlorophyll are recorded every 15 minutes. Deployments range from one to three weeks, depending on biofouling intensity (temperature dependent) and availability of field personnel. When a deployment concludes, dataloggers are replaced with newly serviced and calibrated instruments. At the time of replacement two (2) simultaneous overlapping readings are taken between the old and new YSI instruments, as well as an in situ reading with a series 3 and 4a Hydrolab sonde. All simultaneous overlapping readings are taken prior to the previously deployed sonde being disturbed in any way. Once retrieved, the sondes are wrapped in a damp towel and placed in a cooler for transport back to the lab. The sondes are then stored in the cooler overnight at the lab, continuing to log data every 15 minutes. DO post-calibration record is taken from this logged data the following morning, using the current barometric pressure reading from a mercury barometer. Logging is then stopped, and YSI sondes are post calibrated using the same standards as used in the calibration.

Deployment data is collected, data is uploaded into a PC, archived, and then visually examined. Efforts are made to relate sensor conditions to any apparent outliers or anomalies (eg. battery charge status, or normal DO data at the beginning of a deployment may be distinguished from erroneous data resulting from a known malfunction, such as a punctured DO membrane due to crabs). Data loggers and sensors are cleaned, serviced and calibrated according to the methods described in the YSI Operating Manual and SWMP Operating Procedures. Laboratory calibration procedures are carried out in accordance with the YSI operating manual methods. Standards for turbidity were purchased from YSI. Standards for pH and Chlorophyll were purchased from Fisher Scientific, a YSI approved vendor. Specific conductance standards were prepared in-house, from A.C.S. certified KCl. Data were reviewed and edited according to the YSI Data Review and Editing Protocol in Appendix B of the CDMO manual. After cleaning the data loggers, the dissolved oxygen (DO) membrane were replaced and allowed to stretch for at least 24 hours before calibration. The pH, specific conductance, depth, turbidity, and chlorophyll sensors were calibrated using the following methods: 2-point pH 7 and 10, specific conductance standard of the nearest concentration of river (with following standards 6.668 mS/cm and 24.82 mS/cm), zeroed depth in the air, 2-point turbidity standards of 0 (deionized water) and 123 NTUs for the 6136 turbidity sensor. The DO sensor was calibrated using the YSI recommended wet towel method. As a quality insurance check, YSI datalogger records during sonde deployment and retrieval are compared to the series 3 Hydrolab instrument. Post-deployment measurements of all the parameters are recorded before cleaning the data loggers. Sensors are immersed in the appropriate standard solutions (e.g., pH) and readings recorded using discreet sampling.

5) Site location and character

The Chesapeake Bay Maryland NERR is comprised of three components, Otter Point Creek, Jug Bay and Monie Bay, which are scattered throughout the Maryland portion of Chesapeake Bay. All three components are thought to represent the diverse estuarine environments of the Maryland portion of the Chesapeake Bay.

Otter Point Creek is a shallow, open water embayment located in the tidal headwaters of the Bush River-on the Upper Western Shore of the Chesapeake Bay. Otter Point Creek is the smallest and proportionately shallowest of the three components and consists of 672 acres of open water, tidal marshes, forested wetlands and upland hardwood forests surrounded by major highways, large residential communities, and heavy commercial and industrial development. The watershed draining into Otter Point Creek is rapidly being developed and urbanized. As such sediments are rapidly accreting into the marsh and are very fine and flocculent resulting in typically high turbidity when submerged macrophytes are not present. The non-native Hydrilla verticillata submerged macrophyte recently invaded the marsh in 2002 and has colonized most bottom substrates less then one half meter depth at low tide. There is one station (OC) located at the Otter Point Creek Component.

Jug Bay is located in the upper tidal reaches of the Patuxent River and represents a river dominated tidal freshwater marsh with expansive emergent vegetation communities. The Patuxent River is located on the western shore of the Chesapeake Bay and drains highly urbanized areas of the Washington Metropolitan area. Jug Bay is a 722-acre tidal estuary providing a narrow transition zone between brackish marshes and upland freshwater wetlands. The broad, shallow waters of Jug Bay support a profusion of freshwater plants

and animals. Emergent and submerged vegetation crowds the river channel and forms an interlaced pattern of tidal and nontidal marshes, swamps and forested wetlands surrounded by upland woods and fields. The component has deep water river dominated areas (>10m depth) as well as an extensive shallow water (<1m depth) network of tidal creeks and flooded mud flats. Submerged macrophytes are persistent along the shoreline of these creeks and within the flooded mud flats and the emergent marshes are extensive. There are three stations (MC, RR, IP) located at the Jug Bay Component.

Monie Bay is located on the lower Eastern Shore of the Chesapeake Bay at the mouth of the Wicomico River. The Monie Bay Component represents a mesohaline bay with primarily three tidal creeks representing a variety of agricultural input. The local area is largely undeveloped with varying agriculture and rural residential land use. The component is dominated by salt marshes with tidal fresh marshes in the upper tidal reaches of the tributaries. Shallow water habitats give way to fringing submerged macrophyte communities. Currently no monitoring sites are located at this component.

The following is a list of the 4 sites as well as site characteristics

Mataponi Creek (MC)
38° 44.599'N, 76° 42.446'W (NAD83)
38.74331667, -76.70743333 (GIS format)

Site MC is located in a small tributary off the upper tidal headwaters of the Patuxent River, Maryland. MC is 2.4 km upstream of the mouth, midchannel in the creek, which is approximately 7m wide. The southern bank is steep and covered mainly with hardwood trees while the Northern bank is tidal marsh. The sonde was deployed vertically in a perforated PVC pipe. Average depth at this site is roughly 0.7 meters with a mean tidal fluctuation of approximately 0.6 m. The YSI is deployed 0.25 m off of the creek bottom. Salinities at this site rarely exceed 0.1 ppt. The bottom habitat is soft sediment, and SAV grassbeds are abundant during the summer months. Because this site is located along the main channel of the Mataponi Creek, water quality is reflective of the general quality of water flowing along the main portion of the creek. The SAV community as this site is seasonally very dense and thus water quality is thought to be strongly influenced by the presence of SAV during the summer months. Freshwater inputs are not quantified. Any pollutants would be most likely due to agricultural runoff.

Railroad Bridge (RR)
38° 46.877'N, 76° 42.822'W (NAD 83)
38.78128333, -76.7137 (GIS format)

Site RR is located in the mainstem of the upper tidal headwaters of the Patuxent River, Maryland. The site is slightly upstream (roughly 0.3km) from Jackson's Landing at the Patuxent River Park (previous PR site 2002). This section of the Patuxent River is approximately 70m wide and average depth at the site is 1.4m. The YSI is deployed 0.25 m off of the river bottom. Bottom habitat is soft sediment, and grassbeds are evident in the area during summer months. Mean tidal fluctuation is approximately 0.6 m. Salinities are typically less than 1 ppt at this site throughout the year. . In 2003 this site was moved from 38° 46' 50.6" N, 76° 42' 29.1" W (Jug Bay) to its present location because of the shallow nature of the old site. The new site location (RR) is at the end of the old railroad bed and is deployed vertically in a perforated PVC pipe near midchannel of the Patuxent River. Because this site is located along the main channel of the Patuxent River, water quality is reflective of the general quality of water flowing along the main portion of the river. The site is roughly 1km downstream of the confluence of the Western Branch tributary and the Patuxent River Mainstem, thus water quality is influenced by Western Branch. A large wastewater treatment plant (averaging 10-20 mgd) discharges directly into the Western Branch tributary of the Patuxent River just upstream of IP. USGS streamflow for the closest gauge (Latitude 38°57’21.3”N, Longitude 76°41’37.3”W NAD83): yearly mean of approximately 200 – 350 cfs.

A Sutron Sat-Link2 transmitter was installed at this station on 11/18/2005 and transmits data to the NOAA GOES satellite, NESDIS ID # 3B00629C. The transmissions are scheduled hourly and contain four (4) datasets reflecting fifteen minute data sampling intervals. The telemetry data is “Provisional” data and not

the “Authentic” dataset used for long term monitoring and study. This data can be viewed by going to http://cdmo.baruch.sc.edu.

Iron Pot Landing (IP)
38° 47.760'N, 76° 43.248' W (NAD 83)
38.796, -76.7208 (GIS Format)

Site IP is located 2.09km from the mouth of Western Branch. IP is attached vertically off of a small pier near midchannel of the river and has an average depth of 1.6m. The YSI is deployed 0.25 m off of the river bottom. The site is roughly 1km downstream of a large (10-20 mgd) wastewater treatment plant effluent. The river is approximately 15m wide and flows through extensive riparian buffers. Both banks of the river are flanked by hardwood flora. Tides are semi-diurnal and mean tidal fluctuation is approximately 0.6 m. Salinity at this site is generally 0.1 ppt. Bottom habitat is soft sediment, and grassbeds are evident during the summer months. USGS streamflow for the closest gauge (Latitude 38°48’51.2”N, Longitude 76°44’55.4”W NAD83): yearly mean of approximately 50 – 100 cfs. In addition, a wastewater treatment plantdischarges about 15 – 30 cfs about 1 km upstream of site.

Otter Point Creek (OC)
39° 27.047'N, 76° 16.474'W (NAD 83)
39.45078333, -76.27456667 (GIS Format)

Site OC is located approximately 0.3km from the Anita C. Leight Estuary Center. OC is deployed vertically in a perforated PVC pipe and has an average depth of 0.7m. The YSI is deployed 0.25 m off of the creek bottom. Bottom habitat is extremely soft sediment, and grass beds inundate the site during summer months. Salinity at this station rarely rises above 0.1 ppt. Tides in Otter Point Creek are semi-diurnal and have a mean range of about 0.3 m. The average water levels are generally lower in the winter due to north and northwest winds that increase the egress from Chesapeake Bay. The sonde was periodically exposed to very low tides, and sediments at the site are extremely fine and flocculent. Because of the shallowness of the tidal marsh, coupled with the dramatic daily changes in the depth and width of the stream, deployments at the site presented many problems. These problems included periodic exposure of the sonde, very high turbidity and sedimentation rates associated with tidal infiltration and wind and wave generated resuspension which caused severe fouling of the probes. Water quality at the site represents extreme shallow water habitats. Thus it is not uncommon to see very large fluctuations in temperature and dissolved oxygen at this site ranging from complete anoxia to full saturation, due in part to the shallow nature of the site and the effects of marsh processes on water quality. Additionally, the site was seasonally dominated by dense SAV communities from June-October 2004 and thus water quality conditions were likely influenced by the presence of these macrophytes. USGS streamflow for the closest gauge (Latitude 39°26’21.4”N, Longitude 76°18’21.7”W NAD83): no yearly mean available but daily means for 2005 range from 7 to over 1000 cfs. Site is in substantially urban environment which accounts for its flashiness. Pollutants would be mostly urban run-off, with some industrial discharge possible.

A Sutron Sat-Link2 transmitter was installed at this station on 09/25/2006 and transmits data to the NOAA GOES satellite, NESDIS ID # 3B03D61C. The transmissions are scheduled hourly and contain four (4) datasets reflecting fifteen minute data sampling intervals. The telemetry data is “Provisional” data and not the “Authentic” dataset used for long term monitoring and study. This data can be viewed by going to http://cdmo.baruch.sc.edu.

6) Data collection period
Long-term data collection using sondes at Railroad Bridge (Jug Bay Wetlands Sanctuary) (RR) began on April 4, 2003; Mataponi Creek (MTI) began April 22, 2003; Iron Pot Landing (IP) began April 4, 2003; and Otter Point Creek (OC) began April 15, 2003.

2006 collection dates and times are as follows. All times are in Eastern Standard Time (EST).

Datalogger deployments:

Jug Bay @ Railroad Bridge (RR):

Deployment		Retrieval	
Date	Time	Date	Time
01/01/06	00:00	01/04/06	15:00
01/04/06	15:15	01/18/06	13:15
01/18/06	13:30	02/01/06	09:15
02/01/06	09:30	02/14/06	10:00
02/14/06	10:15	03/07/06	10:15
03/07/06	10:30	03/21/06	13:15
03/21/06	13:30	04/04/06	13:00
04/04/06	13:15	04/18/06	12:45
04/18/06	13:00	05/02/06	12:30
05/02/06	12:45	05/16/06	10:45
05/16/06	11:00	05/30/06	10:30
05/30/06	10:45	06/13/06	10:30
06/13/06	10:45	06/29/06	09:00
06/29/06	09:15	07/11/06	10:00
07/11/06	10:15	07/27/06	09:15
07/27/06	09:30	08/08/06	08:45
08/08/06	09:00	08/22/06	07:45
08/22/06	08:00	09/08/06	12:45
09/08/06	13:00	09/19/06	08:00
09/19/06	08:15	10/03/06	09:30
10/03/06	09:45	10/17/06	07:15
10/17/06	07:30	10/30/06	13:45
10/30/06	14:00	11/13/06	13:30
11/13/06	13:45	11/27/06	13:00
11/27/06	13:15	12/11/06	13:00
12/11/06	13:15	12/27/06	12:45
12/27/06	13:00	12/31/06	23:45

Mataponi Creek
MC
YSI removed due to inclement weather from 01/01/06-01/04/06

01/04/06	13:30	01/18/06	16:15
01/18/06	16:30	02/01/06	11:45
02/01/06	12:00	02/14/06	14:45
02/14/06	15:00	03/07/06	11:45
03/07/06	12:00	03/21/06	15:30
03/21/06	15:45	04/04/06	16:00
04/04/06	16:15	04/18/06	15:45
04/18/06	16:00	05/02/06	15:00
05/02/06	15:15	05/16/06	13:15
05/16/06	13:30	05/30/06	13:15
05/30/06	13:30	06/13/06	13:00
06/13/06	13:15	06/29/06	11:45
06/29/06	12:00	07/11/06	12:45

07/11/06	13:00	07/27/06	12:00
07/27/06	12:15	08/08/06	10:45
08/08/06	11:00	08/22/06	10:00
08/22/06	10:15	09/05/06	09:30
09/05/06	09:45	09/19/06	10:15
09/19/06	10:30	10/03/06	12:00
10/03/06	12:15	10/17/06	09:45
10/17/06	10:00	10/30/06	16:00
10/30/06	16:15	11/13/06	15:45
11/13/06	16:00	11/27/06	15:15
11/27/06	15:30	12/11/06	15:15
12/11/06	15:30	12/27/06	15:00
12/27/06	15:15	12/31/06	23:45

Iron Pot Landing
IP

01/01/06	00:00	01/04/06	12:45
01/04/06	13:00	01/18/06	15:00
01/18/06	15:15	02/01/06	10:30
02/01/06	10:45	02/14/06	13:15
02/14/06	13:30	03/07/06	11:00
03/07/06	11:15	03/21/06	14:30
03/21/06	14:45	04/04/06	14:15
04/04/06	14:30	04/18/06	14:30
04/18/06	14:45	05/02/06	13:45
05/02/06	14:00	05/16/06	12:00
05/16/06	12:15	05/30/06	12:00
05/30/06	12:15	06/13/06	12:00
06/13/06	12:15	06/29/06	10:15
06/29/06	10:30	07/11/06	11:30
07/11/06	11:45	07/27/06	10:45
07/27/06	11:00	08/11/06	12:00
08/11/06	12:15	08/22/06	09:00
08/22/06	09:15	09/05/06	08:15
09/05/06	08:30	09/19/06	09:15
09/19/06	09:30	10/03/06	10:45
10/03/06	11:00	10/17/06	08:30
10/17/06	08:45	10/30/06	15:00
10/30/06	15:15	11/13/06	14:45
11/13/06	15:00	11/27/06	14:15
11/27/06	14:30	12/11/06	14:15
12/11/06	14:30	12/27/06	14:00
12/27/06	14:15	12/31/06	23:45

Otter Point Creek
OC

YSI removed due to inclement weather from 01/01/06-03/14/06

03/14/06	09:30	03/28/06	11:15
03/28/06	11:30	04/11/06	12:15
04/11/06	12:30	04/25/06	11:45
04/25/06	12:00	05/09/06	10:15
05/09/06	10:30	05/23/06	10:15
05/23/06	10:30	06/06/06	11:15
06/06/06	11:30	06/20/06	09:45
06/20/06	10:00	07/03/06	07:45
07/03/06	08:00	07/18/06	08:00
07/18/06	08:15	08/01/06	09:15
08/01/06	09:30	08/15/06	09:15
08/15/06	09:30	08/28/06	14:30
08/28/06	14:45	09/11/06	15:00
09/11/06	15:15	09/26/06	15:15
09/26/06	15:30	10/10/06	13:30
10/10/06	13:45	10/24/06	12:45
10/24/06	13:00	11/06/06	11:15
11/06/06	11:30	11/20/06	12:00
11/20/06	12:15	12/04/06	11:45
12/04/06	12:00	12/19/06	10:45
12/19/06	11:00	12/31/06	23:45

7) Distribution

NOAA/ERD retains the right to analyze, synthesize and publish summaries of the NERRS System-wide Monitoring Program data. The PI retains the right to be fully credited for having collected and processed the data. Following academic courtesy standards, the PI and 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 by the enclosed metadata reporting statement. The user bears all responsibility for its subsequent use/misuse in any further analyses or comparisons. The Federal government does not assume liability to the Recipient or third persons, nor will the Federal government 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 2.2-1 Principal investigators and contact persons), from the Data Manager at the Centralized Data Management Office (please see personnel directory under the general information link on the CDMO home page) and online at the CDMO home page http://cdmo.baruch.sc.edu/. Data are available in text tab-delimited format, Microsoft Excel spreadsheet format and comma-delimited format.

8) Associated researchers and projects

The Jug Bay Wetlands Sanctuary staff collects weekly to monthly temperature, salinity, dissolved oxygen, and nutrient samples at four additional sites throughout the Jug Bay marsh in an effort to explore the affects of marsh processes on nutrient cycling. This data provide additional spatial coverage at this component. Additionally, the Anita C. Leight Estuary Center at Otter Point Creek, in conjunction with CBNERR/MD

staff, collects bi-weekly temperature, salinity, dissolved oxygen, total suspended solids, chlorophyll a, and nutrient samples at the same location as datalogger OC, as well as 5 other sites throughout the OPC marsh. The goal of this effort is to provide enhanced spatial coverage at this component as well as provided ancillary data useful for submerged macrophyte related research. YSI vented depth sondes were also installed at sites RR and OC during 2004. This data can be made available via contacting the Principal Investigator.

Additional spatially explicit data is available through the Maryland Department of Natural Resources (MDNR), who conduct 'dataflow' cruises throughout the Bush and Patuxent Rivers (OC and JB components) in support of their Continuous Monitoring Program. These cruises employ the same YSI 6600 sondes that provide high resolution spatial data within these tributaries and include areas around the four CBM NERR stations (RR, IP, MC, OC). Cruises are conducted once monthly from April-October. In addition, MDNR also maintains nearly 40 other similar fixed stations throughout the Maryland portion of the Chesapeake Bay monitored and maintained in a similar fashion to CBM NERR sites from April 1-October 31. For more information about these additional sites or dataflow cruises, see www.eyesonthebay.net.

Additional SWMP monitoring datasets include meteorological and nutrient data. These data are available from the CBM Research Coordinator or online at http://cdmo.baruch.sc.edu/.

II. Physical Structure Descriptors

9) Sensor Specifications

YSI 6600EDS data logger

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

Parameter: Specific Conductance
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 (range dependent)

Parameter: Salinity
Units: parts per thousand (ppt)
Sensor Type: Calculated from conductivity and temperature
Model#: 6560
Range: 0 to 70 ppt
Accuracy: +/- 1% 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 – 20 mg/L, +/- 2% of the reading or 0.2 mg/L, whichever is greater; 20 – 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
Model#: n/a
Range: 0 to 30 ft (9.1 m)
Accuracy: +/-0.06 ft (0.018 m)
Resolution: 0.001 ft (0.001m)

Parameter: pH probe for EDS sonde
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: nephlometric turbidity units (NTU)
Sensor Type: Optical, 90° scatter, with mechanical cleaning
Model#: 6136
Range: 0 to 1000 NTU
Accuracy: +/- 5% of the reading or 2 NTU (whichever is greater)
Resolution: 0.1 NTU

Depth qualifier: The NERR 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. Readings for both vented and non-vented sensors are automatically compensated for water density change due to variations in temperature and salinity; but for all non-vented depth measurements, changes in atmospheric pressure between calibrations appear as changes in water depth. The error is equal to approximately 1.03 cm for every 1 millibar change in atmospheric pressure, and is eliminated for level sensors because they are vented to the atmosphere throughout the deployment time interval.

Beginning in 2006, NERR SWMP standard calibration protocol calls for all non-vented depth sensors to read 0 meters at a (local) barometric pressure of 1013.25 mb (760 mm/hg). To achieve this, each site calibrates their depth sensor with a depth offset number, which is calculated using the actual atmospheric pressure at the time of calibration and the equation provided in the SWMP calibration sheet or Digital Calibration Log. This offset procedure standardizes each depth calibration for the entire NERR System. If accurate atmospheric pressure data are available, non-vented sensor depth measurements at any NERR site can be corrected. The Research Coordinator at the specific NERR site should be contacted in order to obtain information regarding atmospheric pressure data availability.

10) Coded variable indicator and variable code definitions

Sampling station:	Site code:	Station code:
Railroad Bridge	RR	cbmrrwq
Mattaponi Creek	MC	cbmmcwq
Iron Pot Landing	IP	cbmipwq
Otter Point Creek.	OC	cbmocwq

11) Anomalous/Suspect Data

Railroad Bridge
Turbidity data are elevated for the following periods due to storm events, readings appear reasonable.
06/26/06 19:15 – 06/28/06 05:15
11/16/06 13:00 – 11/18/06 11:30

Iron Pot Landing

DO data are suspect for the following period. Post cal values were elevated, and subsequent data were deleted, but these readings appear reasonable.
01/01/06 00:00 – 01/02/06 23:45

Increase in pH likely due to effluent from sewage plant upriver for the following period:
02/09/06 10:15 – 12:00

Time stamp error; Date and time recorded by sonde were 03/09/2006 at 16:20:33; data appear to coincide with surrounding data and appear to really be data from 03/11/2006 at 04:45:00.
03/11/06 16:45

Increase in pH possibly due to effluent from sewage plant upriver for the following period:
03/17/06 18:45 – 20:30

Intermittent high turbidity readings likely caused by storm event; readings seem reasonable for the following period:
07/22/06 08:15 to 07/23/06 06:45

Turbidity spikes inexplicable but diurnal pattern suggests effluent from upriver sewage plant may be cause. Readings seem reliable for the following period:
08/01/06 13:30 – 17:30
08/02/06 11:15 – 17:30
08/03/06 11:30 – 18:15
08/04/06 15:30 – 16:15
08/05/06 11:45

Mataponi Creek:

High pH readings likely due to flow from upriver marsh - readings seem reliable.
01/04/06 20:00 – 22:30
01/05/06 07:45 – 10:30
01/05/06 21:30 – 22:30

pH readings may be greater than true values – readings seem unreliable.
01/18/06 16:30 – 17:00

DO readings may be greater than true values – readings seem unreliable.
03/07/06 11:00 – 11:45

High DO readings for pre- and post-deployment matchups; readings about 0.5 mg/L higher than matchup data
05/02/06 15:15 to 05/16/06 13:15

High pH readings are likely due to an upriver effluent discharge for the following period.
05/02/06 19:45 – 22:15

Readings may be inaccurate due to low water level; sonde may have been out of water
05/30/06 13:00 – 13:15

Otter Point Creek

There is a discrepancy between pH readings for the deployment ending 11/20/06 at 12:00 (6.6) and the deployment beginning 11/20/06 12:15 (7.5). Post-calibration readings were fine for both sensors and data from each sensor appears valid. These data should be used with caution.

Elevated turbidity readings for the following period are likely due to a storm even and appear reasonable.
07/06/06 00:30 – 07/06/06 14:00

12) Deleted data

Outlier data were detected and considered for deletion from the edited data using combination of methods, including ECOWATCH graphical software, Microsoft Excel macros, and examination of field data and post-calibration results. All outliers are detailed below. According to the CDMO Operations Manual version 4.0, depth measurements taken with the non-vented level probe can be influenced by up to 0.39 m (1.3 ft) during some low-pressure hurricane events. Specific dates and time ranges of potentially influenced data are listed with each respective month.

January 1 – 31, 2006

Iron Pot Landing

DO data deleted for the following period. Readings flatline and there appears to be an issue with the probe. Post cal readings were elevated at 116%.
01/03/06 00:00 – 01/04/06 12:45

Turbidity spikes deleted - likely biological interference
01/03/06 13:00
01/23/06 04:45, 05:30
01/27/06 07:15

Mataponi Creek

High pH value deleted – probe probably emerged from water
01/04/06 13:30

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values
01/09/06 07:15 – 13:45, 19:45 to 01/10/06 01:30, 03:45 – 06:00

Instrument out of water due to low water level – all data deleted.
01/10/06 06:15 – 09:00

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

01/10/06	09:15 – 14:30,	19:00 to	01/11/06	03:00,	07:15 – 09:30
	13:15 – 15:30,	20:15 to	01/12/06	03:00,	08:15 – 16:30
01/12/06	21:00 – 21:30,	23:00 to	01/13/06	03:30,	07:45
01/13/06	08:45 – 09:15,	10:00,	10:45,	11:15 – 13:15,	14:45,
	15:15 – 17:15				

Negative depth values removed

01/13/06	22:00 to	01/14/06	00:00

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

01/13/06	22:45,	23:15 to	01/14/06	05:30

Negative depth values removed

01/14/06	10:30 – 11:45,	20:45 – 23:30

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

01/14/06	21:30 – 23:30

Instrument out of water due to low water level – all data deleted.

01/14/06	23:45 to	01/16/06	01:45

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

01/16/06	02:00 – 04:00
01/17/06	02:00 – 07:45
01/18/06	07:15

High pH values deleted – probe emerged from water due to low water level

01/19/06	09:30 – 13:00	14:15 - 20:30	
01/22/06	02:45,	04:45 – 04:45	16:00

High DO (percent and concentration) values removed - probe emerged from water due to low water level

01/19/06	09:45 – 13:00	14:15 - 21:45		
01/20/06	10:00 – 12:00	17:30 - 22:00		
01/22/06	02:45,	04:15 – 04:45	14:30 – 14:45	16:00

Depth port out of water due to low water level – depth data deleted.

01/19/06	11:15 –,13:00	14:15 - 16:15			
01/22/06	00:00 –,02:15	05:30 - 06:45	12:30 - 14:30	16:30 to	01/22/0617:15

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

01/22/06	02:30 – 2:45	04:15 - 05:15	14:45 – 14:45	16:00 – 16:15

All parameters deleted – temperature/conductivity probe emerged from water due to low water level

01/19/06	13:15 – 14:00,	23:45 to	01/20/06	04:15
01/20/06	12:15 – 17:15,	23:30 to	01/21/06 05:45	12:45 - 17:00
01/22/06	03:00 – 04:00,	15:00 – 15:45		

Turbidity values removed - probe emerged from water due to low water level

01/20/06	04:30 - 04:45

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values
01/22/06 07:15 – 07:30, 08:45

Instrument out of water due to low water level – all data deleted.
01/23/06 03:30 – 05:45, 17:15 – 18:15
01/24/06 03:45 – 07:15

High DO (percent and concentration) values removed - probe emerged from water due to low water level
01/24/06 12:45 – 17:15
01/25/06 13:30 – 16:30

Depth, DO (percent and concentration), pH, and turbidity values removed - probes emerged from water due to low water level
01/25/06 16:45 – 23:00

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
01/25/06 19:30 – 19:45
01/26/06 03:30 – 04:00,
01/28/06 21:45 to 01/29/06 00:15, 10:00 – 11:45

Depth port out of water due to low water level – depth data deleted.
01/26/06 01:30 – 03:15
01/28/06 09:45 - 11:00

Turbidity values removed - probe emerged from water due to low water level
01/26/06 03:30 – 04:00 14:30 – 14:45, 22:45 – 23:00
01/29/06 16:45

High DO (percent and concentration) values removed - probe emerged from water due to low water level
01/26/06 04:00, 14:30 – 14:45

High pH values deleted – probe emerged from water due to low water level
01/26/06 04:00,

All parameters deleted – temperature/conductivity probe emerged from water due to low water level
01/26/06 04:15 – 14:15, 15:00 – 22:30
01/27/06 05:30 – 09:45
01/28/06 21:45 to 01/29/06 00:15, 08:00 - 13:00

Instrument out of water due to low water level – all data deleted.
01/29/06 21:15 to 01/30/06 01:00

Depth port out of water due to low water level – depth data deleted.
01/30/06 10:15 – 13:00

Turbidity spike deleted - likely biological interference
01/30/06 17:30, 19:00

Depth port out of water due to low water level – depth data deleted.
01/30/06 22:30 to 01/31/06 01:45, 11:15 – 15:00, 23:30 – 23:45

February 1 – 28, 2006

Railroad Bridge

Turbidity spikes deleted - likely biological interference

02/12/06	12:15
02/17/06	11:45
02/20/06	00:00

Iron Pot Landing

Turbidity spikes deleted - likely biological interference

02/24/06	13:45
02/28/06	13:45

Mataponi Creek

Depth port out of water due to low water level – depth data deleted.

02/01/06	00:00 – 02:00			
02/07/06	15:00 – 21:30	02/08/06	03:15 - 04:15,	18:00 – 20:45
02/10/06	07:00 – 07:45	09:45 – 10:30		

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

02/07/06	04:00 – 05:30	07:45 - 10:30
02/08/06	08:30 – 11:00	
02/10/06	07:15 – 07:45,	09:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

02/07/06	04:30 –,05:30	07:30 - 07:45	17:00 – 17:30	19:45 – 20:00
02/08/06	04:45, 08:30			

High pH values deleted – probe emerged from water due to low water level

02/07/06	05:15 –,05:30,	07:30	19:45
02/08/06	09:00		

High DO (percent and concentration) values removed - probe emerged from water due to low water level

02/07/06	05:30, 07:30,	17:45, 19:45
02/08/06	05:00 – 08:15,	20:45

All parameters deleted – temperature/conductivity probe emerged from water due to low water level

02/07/06	05:45 – 07:15,	18:00 – 19:30
02/08/06	05:00 – 08:15	
02/10/06	08:00 – 09:30	

Negative depth values removed

02/11/06	21:00 to	02/12/06	00:00,	12:00 – 13:15

Turbidity spikes deleted - likely biological interference

02/12/06	10:15 – 10:30

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

02/14/06	21:45 to	02/15/06	14:00

02/15/06 22:00 to 02/16/06 02:45
02/18/06 00:00 – 01:45 03:15 – 04:00, 11:45 – 13:00 15:00 – 16:00
02/19/06 ,07:30 – 11:30 16:00 – 19:45

Depth port out of water due to low water level – depth data deleted.
02/14/06 22:00 to 02/15/06 02:15, 09:45 – 14:45
02/15/06 22:30 to 02/16/06 02:30, 11:15 – 14:30
02/17/06 00:45 – 01:45, 13:15 – 16:00, 23:15 to 02/18/06 05:00
02/18/06 11:00 – 12:15 15:00 – 16:30

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
02/14/06 23:30 to 02/15/06 01:15, 11:15 – 13:30
02/18/06 00:30 – 01:45, 03:15 – 03:45 12:30 – 15:00, 23:00
02/19/06 04:00 – 11:30 16:00

High pH values deleted – probe emerged from water due to low water level
02/15/06 11:15 – 13:30
02/18/06 01:30 – 01:45, 03:15, 15:00,
02/19/06 04:00 – 11:30

High DO (percent and concentration) values removed - probe emerged from water due to low water level
02/18/06 01:30 – 03:15, 13:00,
02/19/06 04:00 – 11:30 16:00

All parameters deleted - temperature/conductivity probe emerged from water due to low water level
02/18/06 02:00 – 03:00, 13:15 – 14:45, 23:15 to 02/19/06 03:45
02/19/06 11:45 – 15:45

Inaccurate depth values removed – depth port froze making readings deeper than true depth
02/18/06 22:30 – 23:00
02/09/06 04:00 – 11:30, 16:00 to 02/20/06 01:00

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
02/20/06 01:45 – 03:00

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values
02/20/06 09:15 – 16:45

Depth port out of water due to low water level – depth data deleted.
02/20/06 13:30 – 15:15, 16:15 – 17:15
02/21/06 01:00 – 02:00

Inaccurate depth values removed – depth port froze making readings deeper than true depth
02/21/06 02:15 – 07:00

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
02/20/06 15:30 – 16:00

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values
02/21/06 13:00 – 15:15, 18:00 – 18:15

Depth and turbidity data removed – port and probe emerged from water due to low water level

02/21/06	15:30 – 17:45

Depth port out of water due to low water level – depth data deleted.

02/22/06	03:15 – 06:15,	17:00 – 18:15		
02/23/06	04:30 – 07:15,	18:00 – 19:30		
02/24/06	06:30 – 08:45,	17:15 – 22:00		
02/25/06	05:15 – 06:15,	09:45 - 10:15	20:30 – 23:45	
02/26/06	13:30 – 14:45,	17:15 - 18:30		

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

02/22/06	17:15			
02/23/06	06:45			
02/24/06	06:45 – 09:30,	17:30 – 18:30		
02/25/06	06:30 – 06:45,	09:45 – 13:15		
02/26/06	00:00 – 00:30,	06:15,- 06:30	13:15 – 13:45	18:30 – 18:45
02/27/06	07:15 – 09:00	12:00 – 15:30		
02/28/06	09:15 – 11:15	12:30 – 14:45		

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

02/24/06	19:15 – 19:45			
02/25/06	06:30 – 06:45			
02/26/06	06:15 –,06:30,	13:15,	18:45	
02/27/06	08:00 – 09:00,	22:30 – 23:30		
02/28/06	11:00 – 11:15,	12:30,	23:30 – 23:45	

High pH values deleted – probe emerged from water due to low water level

02/24/06	19:15 – 19:45
02/25/06	06:45
02/27/06	08:45 – 09:00

High DO (percent and concentration) values removed - probe emerged from water due to low water level

02/25/06	06:45
02/26/06	13:15 – 18:45
02/27/06	08:45 – 09:00
02/28/06	12:30 – 17:45

All parameters deleted – temperature/conductivity probe emerged from water due to low water level

02/25/06	07:00 – 09:30			
02/26/06	06:45 – 13:00,	19:00 to	02/27/06	00:15
02/27/06	09:15 – 11:45			
02/28/06	11:30 – 12:15			

Inaccurate depth values removed – depth port froze making readings deeper than true depth

02/27/06	07:00 – 07:45	12:00 – 12:45	

Depth port out of water due to low water level – depth data deleted.

02/27/06	21:00 to	02/28/06	00:15	
02/28/06	09:30 – 11:15,	12:30 – 13:15,	22:00 – 23:45	

March 1 – 31, 2006

Railroad Bridge

Turbidity spikes deleted - likely biological interference

03/12/06	00:00					
03/31/06	12:45					

Iron Pot Landing

Negative turbidity values deleted

03/21/06	15:52,	16:52,	17:52,	18:52,	19:52,	
	20:52,	21:52,	22:52			
03/22/06	11:52,	12:52,	14:52	18:52,	19:52,	
	20:52,	21:52				
03/23/06	11:52	13:52,	14:52,	15:52,	16:52,	17:52,
	18:52,	19:52,	20:52,	21:52,	22:52,	
	23:52					
03/24/06	14:52,	15:52,	16:52,	17:52,	18:52,	
	19:52,	20:52,	22:52,	23:52		
03/25/06	00:52,	1:52,	15:52,	16:52,	17:52,	
	18:52,	19:52,	21:52,	22:52		
03/26/06	01:52,	15:52,	16:52,	17:52,	18:52,	
	19:52,	20:52,	21:52			
03/27/06	16:52,	17:52,	18:52,	19:52,	20:52,	
	21:52					
03/28/06	15:52,	16:52				
03/29/06	11:52,	18:52,	19:52			
03/30/06	12:52,	13:52,	18:52,	19:52		
03/31/06	12:52,	18:52				

Low pH and turbidity readings deleted – probes most likely emerged from water

03/22/06	13:52		
03/23/06	08:52,	12:52	
03/24/06	01:52,	08:52,	21:52
03/25/06	04:52,	20:52	
03/26/06	23:52		
03/27/06	00:52		
03/30/06	07:52,	08:52,	09:52

Low readings for all data deleted – probes most likely emerged from water

03/22/06	15:52,	16:52,	17:52
03/23/06	02:52,	03:52,	04:52

Mataponi Creek

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

03/01/06	00:00 – 00:30

Depth port out of water due to low water level – depth data deleted.

03/01/06	00:45 – 01:00,	11:00 – 13:15,	23:30 to	03/02/06	01:45

Negative depth values removed

03/02/06	11:15 – 11:45

Depth port out of water due to low water level – depth data deleted.

03/02/06	12:00 – 14:00

Negative depth values removed

03/02/06	14:15 – 14:45

Depth port out of water due to low water level – depth data deleted.

03/02/06	23:45 to	03/03/06	03:30,	11:15 – 15:45
03/03/06	23:15 to	03/04/06	04:30,	11:00 – 18:15
03/04/06	22:30 to	03/05/06	05:45,	11:15 – 17:45
03/06/06	01:15 – 04:30			
03/07/06	03:30 – 06:15,	15:30 – 18:45		
03/08/06	04:15 – 06:15			
03/11/06	06:45 – 10:45			

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

03/03/06	12:45 – 15:00				
03/04/06	00:30 – 03:15,	12:00 – 17:00,	23:45 to	03/05/06	04:45
03/05/06	12:15 – 16:30				
03/11/06	08:15 – 09:45				

High pH values deleted – probe emerged from water due to low water level

03/03/06	13:00 – 14:45	
03/04/06	00:45 – 03:15,	12:15 – 16:45
03/05/06	00:00 – 04:30,	12:30 – 16:15
03/11/06	08:45 – 09:30	

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

03/03/06	13:00 – 13:15				
03/04/06	01:00 – 04:00,	12:30,	14:15,	14:45,	15:15,
	16:30 – 18:15,	23:15			
03/05/06	00:00,	04:30,	12:45,	16:00	
03/06/06	02:00 – 04:15				
03/07/06	06:30 – 06:45				
03/11/06	06:45 – 10:15				

High DO (percent and concentration) values removed - probe emerged from water due to low water level

03/11/06	08:45 – 09:30

Depth port out of water due to low water level – depth data deleted.

03/11/06	19:30 – 22:45				
03/12/06	08:15 – 10:45,	20:45 – 23:30			
03/13/06	08:45 – 11:45,	21:30 – 23:45			
03/14/06	10:00 – 13:15,	20:15 - 21:30	23:45 to	03/15/06	00:45
03/15/06	08:15 –,08:45	14:15 -- 15:45	18:45 - 20:00	03/16/06	01:30 - 02:45
03/16/06	08:45 –,09:45	13:45 - 14:45	21:30 – 23:00	03/17/06	01:00 - 02:00,
03/17/06	10:30 – 14:30				

03/18/06	11:15 – 12:30,	15:00 - 16:00	22:45 to	03/19/06	00:00,
03/19/06	02:30 – 03:45	11:00 – 12:15,	15:15 – 16:30,		
03/19/06	23:45 to	03/20/06	02:30,	02:30 – 03:30	12:00 – 16:00
03/21/06	00:15 – 04:00				

Negative depth values removed

03/21/06	14:30 – 16:15
03/22/06	02:45 – 04:00

Depth port out of water due to low water level – depth data deleted.

03/22/06	18:45	
03/23/06	01:15 – 02:30	05:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

03/14/06	21:30,	23:45 to	03/15/06	00:00,	08:45,
03/15/06	14:45 – 14:30	19:45 - 20:00	03/16/06	01:30,	09:45
03/16/06	23:00	03/17/06	01:00,	12:15 – 13:15	
03/18/06	12:30,	23:45 to	03/19/06	00:00, 02:30,	12:15
03/20/06	01:15 –,02:00	02:30	13:30 – 14:15		
03/22/06	18:45				
03/23/06	02:30, 05:45				

All parameters deleted – temperature/conductivity probe emerged from water due to low water level

03/14/06	21:45 – 23:30				
03/15/06	09:00 – 14:00,	20:15 to	03/16/06	01:15,	10:00 – 13:30
03/16/06	23:15 to	03/17/06	00:45		
03/18/06	12:45 – 14:45				
03/19/06	00:15 – 02:15,	12:30 – 15:00			
03/20/06	02:15				
03/22/06	15:15 – 18:30				
03/23/06	02:45 – 05:30				

High DO (percent and concentration) values removed - probe emerged from water due to low water level

03/14/06	23:45	
03/17/06	01:00	
03/18/06	12:30	
03/22/06	18:45	

High pH values deleted – probe emerged from water due to low water level

03/14/06	23:45
03/22/06	18:45

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

03/15/06	03:15,	08:45, 14:15,
03/19/06	00:00,	02:30 – 03:00
03/20/06	02:00	

Turbidity spike deleted - likely biological interference

03/29/06	07:15,	08:00,	09:00

Otter Point Creek

Negative depth values removed

03/14/06	12:30 – 18:45,	19:30,	23:30 to	03/15/06	01:30
03/15/06	05:30 - 06:45,	11:30 – 12:30			

pH values deleted – probe emerged from water due to low water level

03/15/06	01:30 – 01:45,	
03/16/06	14:00 – 15:00,	17:45
03/17/06	15:45 – 16:30,	17:15
03/18/06	15:00 – 15:30	19:15
03/19/06	05:45,	16:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

03/15/06	01:45,	05:15,
03/16/06	14:30 – 15:00	
03/17/06	16:00 – 16:30,	17:15
03/18/06	19:15	
03/19/06	02:15 – 02:45	05:45 – 06:00
03/20/06	18:00 – 18:30	
03/22/06	17:00 -17:15	

All parameters deleted – temperature/conductivity probe emerged from water due to low water level

03/15/06	02:00 – 05:00,	12:45 to	03/16/06	05:45,	15:15 – 17:30
03/17/06	16:45 – 17:00				
03/18/06	15:45 – 19:00				
03/19/06	03:00 – 05:30,	17:00 – 19:00			
03/21/06	05:00 – 07:00				
03/22/06	17:30 to	03/23/06	09:30		

High DO (percent and concentration) values removed - probe emerged from water due to low water level

03/16/06	14:00 – 15:00,	17:45
03/17/06	15:45 – 16:30,	17:15
03/18/06	15:15 – 15:30,	19:15
03/19/06	02:45,,	05:45
03/20/06	18:00 – 18:30	
03/22/06	16:45 – 17:15	
03/23/06	09:45	

Depth port out of water due to low water level – depth data deleted.

03/17/06	15:00 – 1630	17:30 – 18:45			
03/18/06	03:45 – 05:30,	14:15 – 15:30,	19:15 to	03/19/06	07:30
03/19/06	15:45 – 16:45,	19:15 – 21:00			
03/20/06	02:45 – 07:15,	16:15 – 20:30			
03/21/06	03:30 – 04:45,	07:15 – 08:00			

Negative depth value removed

03/21/06	19:15

Depth port out of water due to low water level – depth data deleted.

03/22/06	06:30 – 11:00,	14:30 – 17:15
03/23/06	09:45 – 10:45,	20:00 – 22:15

Negative depth values removed

03/24/06	23:00 to	03/25/06	00:15

April 1 – 30, 2006

Railroad Bridge

Instrument out of water during meter switch– all data deleted.

04/04/06	13:15

Turbidity spikes deleted - likely biological interference

04/15/06	09:00,	20:00,	21:45 – 22:00	
04/16/06	04:15 – 04:30,	11:15 – 11:30,	14:00,	18:00 – 18:30,
	19:30,	20:45		
04/17/06	10:45,	22:45		
04/18/06	09:30,	10:45,	12:45	
04/19/06	03:30			

Turbidity data appears falsely high, most likely due to fouling of wiper

04/27/06	08:00 to	04/30/06	23:45

Iron Pot Landing

Negative turbidity values deleted

04/01/06	13:52,	19:52			
04/02/06	11:52,	12:52,	13:52,	14:52,	15:52,
	16:52,	17:52			
04/03/06	14:52				
04/04/06	10:52,	11:52,	12:52,	13:52	

All parameters deleted – temperature/conductance probe emerged from water due to low water level

04/02/06	00:52,	01:52

Low readings for pH and turbidity deleted – probes most likely emerged from water

04/02/06	02:52
04/03/06	18:52
04/04/06	05:52

Turbidity spikes deleted - likely biological interference

04/30/06	16:45

Mataponi Creek

Negative depth values removed

04/01/06	14:00 – 14:30

Depth port out of water due to low water level – depth data deleted.

04/01/06	23:15 to	04/02/06	00:30,	02:45 – 03:30	12:00 – 15:30
04/02/06	23:45 to	04/03/06	03:30,	14:30 – 16:00	
04/04/06	02:00 – 05:30	13:30 – 16:00			

All parameters deleted – temperature/conductivity probe emerged from water due to low water level
04/02/06 00:45 – 02:30

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
04/02/06 02:45, 13:30 – 14:00

Negative depth values removed
04/04/06 16:15 – 18:30
04/05/06 02:00

Depth port out of water due to low water level – depth data deleted.
04/05/06 02:15 – 05:30

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
04/05/06 04:00 – 04:15

Negative depth value removed
04/05/06 05:45

Depth port out of water due to low water level – depth data deleted.
04/05/06 13:30 – 19:45
04/06/06 03:00 – 06:15

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
04/06/06 04:45 – 05:30

High DO (percent and concentration) values removed - probe emerged from water due to low water level
04/06/06 05:00 – 05:45

Negative depth values removed
04/08/06 07:00 – 09:00

Depth port out of water due to low water level – depth data deleted.
04/08/06 18:45 – 22:30
04/09/06 05:30 – 10:00

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values
04/08/06 19:15 – 22:00

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
04/08/06 20:15 – 21:15

Depth port out of water due to low water level – depth data deleted.
04/13/06 21:45 - 23:15 04/14/06 00:15 - 00:45, 10:00 – 13:15

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
04/13/06 23:00 – 23:15 04/14/06 00:15
04/15/06 00:00

High DO (percent and concentration) values removed - probe emerged from water due to low water level
04/13/06 23:15 04/14/06 00:15

All parameters deleted – temperature/conductivity probe emerged from water due to low water level
04/13/06 23:30 to 04/14/06 00:00

pH values deleted – probe emerged from water due to low water level
04/14/06 00:15

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values
04/14/06 11:15
04/15/06 11:30

Negative depth values removed
04/14/06 21:30 – 21:45

Depth port out of water due to low water level – depth data deleted.
04/14/06 22:00 to 04/15/06 01:30

Negative depth values removed
04/15/06 10:45 – 13:45, 23:00 to 04/16/06 01:30, 12:30 – 13:30
04/16/06 23:30 to 04/17/06 01:30

Turbidity data deleted – probe emerged from water due to low water level
04/15/06 15:30, 18:00, 18:30

Depth data deleted – due to low water conditions
04/19/06 01:45 – 03:00, 14:30 – 17:00
04/20/06 03:00 – 0345
04/25/06 21:00 – 22:15
04/26/06 09:15 – 11:00, 21:30 – 22:45
04/27/06 22:15 – 23:45
04/28/06 11:15 – 13:30, 20:45 – 23:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
4/28/06 22:00 – 22:15

Otter Point Creek

Negative depth values removed
04/01/06 16:30 – 19:30
04/03/06 05:45 – 06:00, 19:00 – 19:45
04/04/06 10:00, 17:15 – 17:45, 22:00 – 22:45
04/05/06 04:30 – 11:45
04/08/06 09:30 – 09:45

Depth port out of water due to low water level – depth data deleted.
04/02/06 00:45 – 03:15, 06:30 – 07:30 16:45 – 20:15
04/04/06 05:30 – 09:45, 18:00 – 21:45
04/05/06 16:45 – 19:30, 23:45 to 04/06/06 03:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level. DO% data were also deleted.

04/02/06 03:00 – 03:15, 06:30
04/05/06 19:45 – 23:30

All parameters deleted – temperature/conductivity probe emerged from water due to low water .
04/02/06 03:30 – 06:15

pH values deleted – probe emerged from water due to low water level
04/05/06 20:15 – 23:15

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values
04/05/06 23:00

Instrument out of water due to low water level –all data deleted.
04/08/06 10:00 to 04/09/06 13:30

Depth port out of water due to low water level – depth data deleted.
04/14/06 01:30 – 02:15 03:45 – 04:45 14:30 – 17:15
04/15/06 02:00 – 04:00
04/28/06 13:15 – 14:15, 18:00 – 18:15

Negative depth values removed
04/14/06 14:00 – 14:15, 17:30 – 17:45
04/15/06 00:45 – 01:45, 04:15 – 05:00, 14:45 – 18:30
04/16/06 02:45 – 04:30, 15:45 – 18:00
04/17/06 03:45 – 04:30, 16:45 – 19:00
04/18/06 17:30 – 19:30
04/19/06 17:45 – 20:30
04/25/06 23:30 to 04/26/06 00:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level. DO% data were also deleted.
04/14/06 02:30 – 03:30
04/28/06 14:30, 17:45

All parameters deleted – temperature/conductivity probe emerged from water due to low water .
04/28/06 14:45 – 17:30

May 1 – 31, 2006

Railroad Bridge

Turbidity data appears falsely high, most likely due to fouling of wiper
05/01/06 00:00 05/02/06 12:30

Depth values were removed for the following period. The data were erroneous due to a non-vented telemetry cable, which when coupled with the vented depth sensor, resulted in erroneous and often negative data. There is no way to correct these data; however they may be still be useful for trend analysis and are available directly from the Reserve.
05/16/06 11:00 – 05/30/06 10:30

Turbidity spike deleted - likely biological interference
05/17/06 22:00

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.

05/29/06 03:00 to 05/30/06 10:30

Iron Pot Landing

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.
05/11/06 21:00 – 21:15
05/12/06 22:30

Turbidity spike deleted - likely biological interference
05/13/06 11:45
05/15/06 10:30

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.
05/15/06 15:45, 16:15, 16:45 – 18:30, 20:15 – 20:30, 21:45 – 22:00, 22:30 – 23:30,
05/16/06 00:00

Turbidity spike deleted - likely biological interference
05/20/06 02:15

Mataponi Creek

Negative depth values removed
05/04/06 03:30 – 04:15

Turbidity spike deleted - likely biological interference
05/13/06 18:45

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.
05/16/06 13:30 to 05/30/06 13:15

Negative depth values removed
05/17/06 00:30 – 02:30, 14:00 – 15:30
05/18/06 01:00 – 03:45, 15:00 – 16:15
05/19/06 03:15 – 04:15, 15:30 – 17:30
05/20/06 03:30 – 05:00, 17:00 – 18:00
05/21/06 05:00 – 06:30, 17:15 – 18:45
05/22/06 06:15 – 08:30

High DO (percent and concentration) values removed - probe emerged from water due to low water level
05/22/06 14:30 – 18:00
05/23/06 20:15

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level
05/22/06 18:00, 20:00
05/23/06 20:15 – 20:30
05/24/06 20:00 – 20:15, 21:30

pH values deleted – probe emerged from water due to low water level
05/22/06 18:00, 20:00 – 20:15
05/23/06 20:15

All parameters deleted – temperature/conductivity probe emerged from water due to low water level

05/22/06	18:15 – 19:45			
05/23/06	18:45 – 20:00			
05/24/06	20:30 – 21:15			

Depth port out of water due to low water level – depth data deleted.

05/22/06	16:45 – 18:00	20:00 – 20:30		
05/23/06	07:15 – 09:30,	17:45 – 18:30	20:15 – 21:15	
05/24/06	07:45 – 09:30,	19:00 – 20:15	21:30 – 22:30	

Negative depth values removed

05/25/06	09:30 – 10:15

Depth port out of water due to low water level – depth data deleted.

05/25/06	20:30 – 22:30

Negative depth values removed

05/25/06	22:45			
05/26/06	21:15 – 21:30,	23:30 – 23:45		
05/27/06	12:45			

Depth port out of water due to low water level – depth data deleted.

05/26/06	21:45 – 23:15			
05/27/06	11:15 – 12:30,	22:00 to	05/28/06	00:30
05/28/06	22:45 to	05/29/06	01:15	
05/30/06	00:15 – 01:30			

Otter Point Creek

Negative depth values removed

05/16/06	16:30 – 18:15			
05/17/06	04:15 – 05:30,	17:15 – 19:45		
05/18/06	04:15 – 06:45,	18:45 – 19:00		
05/19/06	05:30 – 08:00,	20:15		
05/21/06	08:15 – 10:00			

Depth port out of water due to low water level – depth data deleted.

05/22/06	08:00 – 09:15	12:30 – 13:30		
05/23/06	10:30,	13:45		
05/24/06	11:45 – 13:45,	22:45 to	05/25/06	01:15

High DO (percent and concentration) values removed - probe emerged from water due to low water level

05/22/06	09:00 – 09:15,	12:30
05/24/06	12:00 – 14:45	
05/28/06	15:00 – 18:15	
05/29/06	16:00 – 18:45	

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level DO% data were also deleted.

05/22/06	09:30,	11:45 – 12:15
05/27/06	17:45 – 18:30	

All parameters deleted – temperature/conductivity probe emerged from water due to low water level.

05/22/06 09:45 – 11:30
05/23/06 10:45 – 13:30
05/27/06 14:15 – 17:30

pH values deleted – probe emerged from water due to low water level
05/24/06 12:00 – 18:30
05/27/06 17:45 – 18:00
05/28/06 15:00 to 05/29/06 19:30

Negative depth values removed
05/26/06 00:30 – 01:45
05/27/06 00:15 – 02:45

Depth port out of water due to low water level – depth data deleted.
05/28/06 01:15 – 03:30, 15:00 – 17:30

June 1 – 30, 2006

Railroad Bridge

pH post-calibrated off by > $\pm$ 0.2 units
06/05/06 14:00 to 06/13/06 10:30

Turbidity spikes deleted - likely biological interference
06/06/06 20:45, 22:15, 23:30

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.
06/07/06 21:45, 22:15, 22:45
06/08/06 00:00, 00:45
06/09/06 22:15, 23:15, 23:45
06/10/06 00:15, 01:00, 01:45 – 02:15, 05:00
06/11/06 02:00
06/12/06 01:30 – 01:45

Turbidity spikes deleted - likely biological interference
06/25/06 06:45
06/26/06 09:15
06/27/06 08:45, 09:15
06/29/06 01:30

Iron Pot Landing

Turbidity spikes deleted - likely biological interference
06/02/06 05:00
06/04/06 04:00
06/24/06 05:15
06/25/06 13:45
06/27/06 18:15

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.
06/28/06 01:15 to 06/29/06 10:15

Mataponi Creek

Negative depth values removed

06/02/06	15:30 – 17:00				
06/03/06	03:45 – 04:30,	15:45 – 17:45			
06/04/06	03:45 – 06:00,	16:00 – 17:45			
06/05/06	18:00 – 19:00				
06/09/06	21:00 – 21:15				
06/10/06	10:00 – 12:00				

Depth port out of water due to low water level – depth data deleted.

06/10/06	19:15 – 20:45	22:00 – 23:30			
06/11/06	09:15 – 10:45,	11:45 – 12:45	20:15 -21:45	23:30 to	
06/12/06	00:15	10:15 – 12:45,	22:15 to	06/13/06	00:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level

06/10/06	22:00 – 22:30			
06/11/06	10:45,	11:45 – 12:00	21:30 – 21:45	23:30

All parameters deleted – temperature/conductivity probe emerged from water due to low water level

06/10/06	21:00 – 21:45	
06/11/06	11:00 – 11:30,	22:00 – 23:15

High DO (percent and concentration) values removed - probe emerged from water due to low water level

06/10/06	22:00 – 22:15		
06/11/06	10:30 – 10:45,	11:45 – 12:15	23:30

pH values deleted – probe emerged from water due to low water level

06/11/06	10:45, 11:45,	23:30

Negative depth values removed

06/15/06	01:00 – 01:30
06/19/06	17:00 – 18:00

Turbidity spike deleted - likely biological interference

06/19/06	18:30

Negative depth values removed

06/20/06	17:00 – 17:30

Turbidity spikes deleted - likely biological interference

06/22/06	19:00 – 19:15,	23:30 – 23:45			
06/23/06	00:15,	01:45 – 02:00,	02:30 – 02:45,	03:30 – 04:15,	06:00,
	07:15,	07:45,	18:45 – 19:00		
06/24/06	12:45 – 13:00,	18:00 – 18:15,	19:00 – 19:15,	22:00,	22:45 – 23:00
06/25/06	02:15,	09:45 – 10:00,	11:30,	15:00 – 15:15,	16:45,
	17:15,	18:15,	19:00		
06/28/06	17:15				

Otter Point Creek

High turbidity reading caused by storm event suspicious and deleted - may be true reading but most likely is a false high reading

06/01/06	08:30 to,	06/05/06	14:30	
06/05/06	17:30,	18:30,	19:30-19:45	
06/06/06	11:00			

Negative depth values removed

06/02/06	18:30 – 21:00			
06/03/06	19:00 – 19:30,	22:15 – 22:30		
06/04/06	09:30			
06/05/06	21:00 – 22:45			
06/10/06	00:00 – 01:00,	12:45,	17:15 – 18:30,	20:45 – 21:15
06/11/06	03:00			
06/20/06	09:45			

Depth port out of water due to low water level – depth data deleted.

06/03/06	19:45 – 22:00				
06/04/06	08:00 – 09:15,	20:00 – 21:30			
06/10/06	13:00 – 17:00,	21:30 to	06/11/06	02:45,	13:15 – 14:00
06/11/06	23:15 to	06/12/06	03:15,	14:30 – 17:00	
06/13/06	02:30 – 03:15,	16:15 – 17:15			
06/14/06	03:30 – 04:15				
06/15/06	03:30 – 05:15,	17:15 – 19:00			
06/16/06	04:45 – 06:30				
06/18/06	20:00 – 21:00				

All parameters deleted – temperature/conductivity probe emerged from water due to low water level .

06/11/06	14:15 – 16:45

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level DO% data were also deleted.

06/11/06	17:00 – 18:45

High DO (percent and concentration) values removed - probe emerged from water due to low water level

06/16/06	18:15 – 19:45
06/18/06	21:00 – 23:15

Negative turbidity value deleted

06/11/06	21:15				
06/13/06	22:15 – 23:00				
06/14/06	06:00,	12:15,	14:00 – 14:30,	15:00,	15:30,
	17:00 – 17:30,	18:30,	19:45,	22:15,	23:00
06/15/06	00:15,	21:45			
06/16/06	10:45 – 12:00,	16:45 – 18:30,	19:00 – 19:15,	20:15 – 20:30,	21:30
06/17/06	00:45 – 01:30,	03:30 – 04:15,	4:45,	8:00,	9:15 – 09:30,
	15:45 – 16:30,	17:00 – 17:15			
06/18/06	00:45 – 01:30,	07:45,	11:45,	13:00 – 13:30,	21:00
06/19/06	00:00,	05:30 – 05:45,	10:00,	14:00,	15:15,
	15:45 – 16:00,	20:30			
06/20/06	02:00,	06:30,	09:00		

pH values deleted – probe emerged from water due to low water level

06/16/06	18:15 – 19:45
06/18/06	21:00 – 23:15

Turbidity spikes deleted - likely biological interference

06/16/06	20:45		
06/19/06	06:00,	12:45	
06/25/06	16:15		
06/26/06	19:15		

July 1 – 31, 2006

Railroad Bridge

Turbidity spike deleted - likely biological interference

07/14/06	19:00

Turbidity wiper lost during deployment – inconsistent readings are unreliable and were deleted

07/18/06	12:45 to	07/27/06	09:15

Iron Pot Landing

Turbidity spikes deleted - likely biological interference

07/01/06	06:45
07/09/06	05:00
07/10/06	09:45

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

07/10/06	19:30 to	07/11/06	11:30

Turbidity spikes deleted - likely biological interference

07/13/06	10:15	07/30/06	09:45
07/17/06	13:30	07/30/06	14:30
07/19/06	16:30	07/30/06	15:15
07/29/06	17:00	07/31/06	16:30

Mataponi Creek

Turbidity spikes deleted - likely biological interference

07/21/06	23:00
07/22/06	20:15

Otter Point Creek

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.

07/13/06	10:15 to	07/15/06	21:30
07/16/06	08:15 – 18:15		

Depth port out of water due to low water level – depth data deleted.

07/19/06	19:45 – 22:45	
07/29/06	04:30 – 06:15,	16:45 – 18:45
07/30/06	17:30 – 18:30	

Negative depth values removed

07/23/06	13:15,	16:30,	21:15 to	07/24/06	00:00

07/24/06 02:00 – 03:00
07/29/06 16:30, 19:00
07/30/06 17:00 – 17:15, 18:45

All parameters deleted – temperature/conductivity probe emerged from water due to low water level.
07/23/06 13:30 – 16:15

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level DO% data were also deleted.
07/24/06 00:15 – 01:45

pH data deleted – probe emerged from the water due to low water level
07/24/06 00:45 – 01:15

August 1 – 31, 2006

Railroad Bridge

Turbidity spikes deleted - likely biological interference
08/02/06 10:15
08/05/06 08:15

High turbidity readings due to severe storm event deleted. Many readings exceeded probe's range.
08/06/06 10:45 to 08/08/06 08:45

Erratic turbidity readings deleted – large clump of sediment build-up at bottom of calibration cup likely skewed readings.
08/12/06 15:30 to 08/22/06 07:45

Mataponi Creek

Turbidity spikes deleted - likely biological interference
08/07/06 21:00
08/11/06 23:00
08/12/06 00:30, 01:30, 03:00, 03:45

Otter Point Creek

Depth port out of water due to low water level – depth data deleted.
08/04/06 20:15 – 22:30
08/08/06 13:00, 16:15 – 17:00, 22:15 to 08/09/06 00:00, 03:15 – 03:45
08/15/06 17:45 – 21:45
08/16/06 06:00 – 07:15, 11:30 – 18:30, 21:00 – 22:00
08/20/06 23:00 to 08/21/06 02:30, 10:45 – 12:15, 15:00– 16:45

Negative depth values removed.
08/11/06 15:00 – 17:15

High DO (percent and concentration) values removed - probe emerged from water due to low water level
08/04/06 20:15 – 22:30
08/15/06 19:00 – 21:30
08/16/06 17:30 – 18:00, 21:00– 21:15

pH values deleted – probe emerged from water due to low water level

08/04/06	20:15 – 22:45				
08/08/06	16:15 – 16:30				
08/15/06	19:30 – 21:30				
08/16/06	07:45,	20:45			
08/21/06	12:45				

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level DO% data were also deleted.

08/04/06	22:45 – 23:15			
08/09/06	00:00			
08/16/06	07:30 – 07:45,	11:00 – 11:15,	18:15 – 18:30,	20:45
08/21/06	12:30 – 12:45,	14:30 – 14:45		

All parameters deleted – temperature/conductivity probe emerged from water due to low water level.

08/08/06	13:15 – 16:00		
08/09/06	0:15 – 03:00		
08/16/06	08:00 – 10:45,	18:45 – 20:30	
08/21/06	13:00 – 14:15		

Turbidity spikes deleted - likely biological interference

08/25/06	21:00 – 21:15,	21:45 – 22:30	

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.

08/26/06	15:00 to	08/28/06	14:30

September 1 – 30, 2006

Railroad Bridge

Turbidity spikes deleted - likely biological interference

09/01/06	13:00,	19:15	

Erratic turbidity readings deleted - likely due to tropical storm event

09/02/06	04:15 to	09/08/06	12:45

Turbidity spikes deleted - likely biological interference

09/12/06	10:15,	11:30,	12:45		
09/16/06	21:30,	23:15 – 23:30			
09/17/06	01:30,	03:30,	04:30 – 04:45,	10:45,	15:30,
	16:45,	17:15,	19:00,	23:00	
09/18/06	00:30 – 01:00,	02:30,	05:00 – 05:15,	05:45 – 06:15,	07:00,
	07:45,	10:15,	16:15,	16:45 – 17:00,	17:45

Erratic turbidity readings deleted – large clump of sediment build-up at bottom of calibration cup likely skewed readings.

09/18/06	18:15 to	09/19/06	08:00

Iron Pot Landing

Turbidity spike deleted - likely biological interference

09/03/06	04:15

Negative turbidity value deleted

09/05/06 03:15

Turbidity spike deleted - likely biological interference
09/26/06 23:30

Otter Point Creek

Turbidity spikes deleted - likely biological interference
09/11/06 02:00, 02:30 – 03:00, 03:30, 04:15 – 04:30, 07:00, 10:00 – 10:15, 12:00
09/30/06 13:30

Negative depth values removed.
09/20/06 01:15 – 01:45, 11:45 – 15:45
09/24/06 03:45 – 04:30, 14:45 – 16:30
09/25/06 03:00 – 06:30, 12:45 – 17:45

October 1 – 31, 2006

Railroad Bridge

Turbidity spikes deleted - likely biological interference
10/01/06 07:45, 09:15
10/02/06 22:45 – 23:00
10/03/06 01:45

Erratic turbidity readings deleted – large clump of sediment build-up at bottom of calibration cup likely skewed readings.
10/03/06 08:30 – 09:30

DO data deleted due to tear in DO membrane
10/05/06 03:00 to 10/17/06 07:15

Turbidity spikes deleted - likely biological interference
10/16/06 09:30, 17:00, 22:00 – 22:15
10/17/06 07:00
10/18/06 21:00, 23:00
10/19/06 00:45, 02:00 – 02:45, 04:45, 14:15 – 14:30, 15:15
10/23/06 11:30

Iron Pot Landing

Turbidity spike deleted - likely biological interference
10/01/06 10:30, 14:15, 15:00, 15:30, 16:15, 17:00, 18:45, 20:00, 23:00
10/02/06 00:45, 03:00, 03:30
10/06/06 21:30
10/10/06 22:00
10/14/06 02:15
10/29/06 14:45, 18:15
10/30/06 03:45, 04:45

Otter Point Creek

Turbidity spikes deleted - likely biological interference

10/03/06	06:15				
10/05/06	21:30				
10/06/06	21:00				
10/07/06	01:30,	02:00,	03:00,	04:00,	05:30,
	07:15,	11:30,	12:00,	13:00	
10/08/06	14:45				
10/09/06	18:45				

Depth port out of water due to low water level – depth data deleted.

10/21/06	01:45 – 04:00		
10/23/06	12:45 – 14:30		
10/25/06	10:15 – 13:45	17:30– 18:30	
10/30/06	05:00 – 06:45	11:30 – 18:15	22:15 – 23:30
10/31/06	07:15 – 09:00	11:00 – 12:30	

Negative depth values removed

10/23/06	12:15 – 12:30,		
10/24/06	04:30 – 05:15,	12:30 – 14:45,	16:45 – 18:00
10/29/06	18:45 – 19:00		
10/31/06	21:45 – 22:15		

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level DO% data were also deleted.

10/23/06	14:45 – 15:30,	16:30 – 17:45	
10/24/06	15:00 – 16:30		
10/25/06	14:00 – 14:15,	17:00 – 17:15	
10/30/06	07:00 – 11:15,	18:30 – 19:15,	22:00
10/31/06	09:15 – 09:45	10:15 – 10:45	

High DO (percent and concentration) values removed - probe emerged from water due to low water level

10/30/06	11:30 – 18:15
10/31/06	11:00 – 11:15

All parameters deleted – temperature/conductivity probe emerged from water due to low water level.

10/23/06	15:45 – 16:15
10/25/06	14:30 – 16:45
10/30/06	19:30 – 21:45
10/31/06	10:00

pH values deleted – probe emerged from water due to low water level

10/25/06	14:15,	17:00
10/30/06	07:00 – 11:15,	19:15
10/31/06	10:45 – 11:15	

Turbidity data deleted – probe emerged from water due to low water level

10/30/06	07:45 – 10:45

November 1 – 30, 2006

Railroad Bridge

Turbidity spikes deleted - likely biological interference
11/04/06 06:15
11/17/06 15:15
Erratic turbidity readings deleted – large clump of sediment build-up at bottom of calibration cup likely skewed readings.
11/18/06 11:45 to 11/27/06 13:00

Iron Pot Landing

Turbidity spikes deleted - likely biological interference
11/12/06 16:00
11/17/06 00:15

Mataponi Creek
Turbidity spikes deleted - likely biological interference
11/28/06 10:30 – 10:45

Otter Point Creek

Negative depth values removed
11/08/06 04:00 – 05:45

Depth port out of water due to low water level – depth data deleted.
11/12/06 09:00 – 16:00
11/13/06 11:15 – 14:15
11/21/06 13:45, 16:15 – 17:15
11/22/06 01:00 – 02:15 05:00 – 08:00

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level DO% data were also deleted.
11/12/06 16:15
11/22/06 02:30 – 04:00, 04:45

All parameters deleted – temperature/conductivity probe emerged from water due to low water level.
11/12/06 16:30 to 11/13/06 11:00
11/21/06 14:00 – 16:00
11/22/06 04:15 – 04:30

pH values deleted – probe emerged from water due to low water level
11/22/06 03:15 – 04:00

Turbidity data deleted – probe emerged from water due to low water level
11/22/06 02:00 – 04:00, 04:45– 6:00

December 1 – 31, 2006

Railroad Bridge

Turbidity spike deleted - likely biological interference
12/11/06 03:15

High DO reading deleted - probe may have emerged out of water during reading
12/13/06 04:45

Turbidity spikes deleted - likely biological interference

12/13/06	05:45	12/21/06	21:30		
12/15/06	20:45	12/24/06	11:15,	16:45	
12/17/06	23:15	12/26/06	06:15		
12/19/06	17:00	12/27/06	07:30		

Iron Pot Landing

Turbidity spike deleted – likely biological interference

12/29/06	01:30

Mataponi Creek

Depth port out of water due to low water level – depth data deleted.

12/02/06	07:30 – 11:30,	18:00 – 23:15			
12/03/06	06:00 – 11:00,	20:15 – 23:15			
12/04/06	07:45 – 13:15,	20:30 to	12/05/06	00:15	
12/05/06	09:30 – 12:15,	22:45 to	12/06/06	00:30,	11:30 – 12:00
12/07/06	12:15 – 14:00,	22:30 – 23:30			

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

12/02/06	17:45 – 23:30
12/03/06	05:00 – 13:00

Turbidity spikes deleted – likely biological interference

12/03/06	15:15 – 15:45

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

12/03/06	19:45 to	12/04/06	00:00		
12/04/06	07:00 – 14:45,	19:30 to	12/05/06	01:45	
12/05/06	07:30 – 13:30				

Low DO (percent and concentration) values deleted – disturbance of sediment likely skewed values

12/04/06	07:30 – 09:15

Turbidity spikes deleted – likely biological interference

12/05/06	17:15
12/06/06	04:30

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

12/05/06	21:30 to	12/06/06	02:00		
12/07/06	22:00 to	12/08/06	08:45		

Instrument out of water due to low water level – all data deleted

12/07/06	23:45 to	12/08/06	04:15

Inaccurate depth values removed – depth port froze making readings deeper than true depth

12/08/06	00:30 – 14:45

Depth data deleted due to low water conditions

12/08/06	16:15 – 23:15

Instrument out of water due to low water level – all data deleted

12/08/06	09:00 – 16:00,	23:30 to	12/09/06	03:30,	12:30 – 14:45	
12/10/06	02:15 – 03:00,	13:45 – 15:45				
12/11/06	02:15 – 04:45,	14:00 – 16:45				

Depth port out of water due to low water level – depth data deleted.

12/09/06	03:45 – 04:30,	11:15 – 12:15,	15:00 – 15:45	
12/10/06	00:00 – 01:15			

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

12/09/06	03:45 – 04:15

Turbidity spikes deleted – likely biological interference

12/09/06	08:15 – 09:00,	09:45

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

12/09/06	22:15 – 23:45

Inaccurate depth values removed – depth port froze making readings deeper than true depth

12/10/06	01:30 – 02:00,	03:15 – 06:45

Depth port out of water due to low water level – depth data deleted.

12/10/06	12:00 – 13:30,	16:00 – 17:15	
12/11/06	00:15 – 02:00,	05:00 – 06:45,	12:30 – 13:45

Turbidity spikes deleted – likely biological interference

12/10/06	12:15 – 12:30,	16:00

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

12/11/06	05:00 – 06:00,	07:15,	07:45 – 09:15,	10:45 ,	11:30 – 11:45
12/18/06	21:45 – 22:15				

Instrument out of water due to low water level – all data deleted

12/18/06	22:30 – 22:45
12/22/06	11:00 – 11:45

Turbidity data deleted – probe emerged from water due to low water level

12/22/06	10:45

Negative depth values removed

12/23/06	00:15 – 01:15
12/26/06	03:30 – 03:45

Instrument out of water due to low water level – all data deleted

12/27/06	15:15 – 16:45

Depth port out of water due to low water level – depth data deleted.

12/28/06	03:15 – 06:00,	17:00 – 18:15
12/29/06	04:15 – 07:15,	17:00 – 20:00
12/30/06	04:45 – 06:00,	07:30 – 08:00

Turbidity spikes deleted – likely biological interference

12/29/06	02:00,	03:45,	05:30

Turbidity spikes deleted – wiper experienced malfunction and blocked optic.

12/29/06	11:15 to	12/30/06	06:00

Instrument out of water due to low water level – all data deleted

12/30/06	06:15 – 07:15

Otter Point Creek

High pH readings deviate from match up by >0.5 units; pH readings unreliable and deleted.

12/01/06	12:30 to	12/04/06	11:45

Depth port out of water due to low water level – depth data deleted.

12/02/06	07:30 – 09:00,	15:45 – 17:00,	20:15 – 22:30
12/03/06	04:45 – 07:15,	14:00 – 15:15	
12/04/06	00:45 – 03:45,	17:15 – 18:00	
12/05/06	01:15 – 03:45,	13:15 – 16:00	
12/07/06	14:00 – 18:45		
12/08/06	01:00 – 01:30		

Specific conductance and affected salinity, DO mg/L and Depth parameters deleted - probes emerged from water due to low water level DO% data were also deleted.

12/02/06	09:15 – 9:30,	15:15 –15:30,,	22:45 – 23:00
12/03/06	04:15 – 04:30,	07:30 – 08:15	
12/04/06	09:45 – 10:00		

All parameters deleted – temperature/conductivity probe emerged from water due to low water level.

12/02/06	09:45 – 15:00,	23:15 to	12/03/06	04:00,	08:30 – 13:45
12/04/06	10:15 – 17:00				

High DO (percent and concentration) values removed - probe emerged from water due to low water level

12/02/06	08:15

Turbidity spike deleted – likely biological interference

12/06/06	16:15

Instrument out of water due to low water level – all data deleted

12/07/06	15:45 – 17:15	
12/08/06	01:45 – 21:00	
12/09/06	04:00 – 08:15	
12/10/06	06:15 – 08:30,	18:00 – 20:00
12/11/06	05:30 – 10:30,	18:15 – 21:15
12/12/06	06:30 – 09:45	
12/19/06	01:15 – 04:00,	12:15 – 14:00
12/22/06	04:30 – 05:15,	14:00 – 16:45
12/27/06	07:30 – 10:00	
12/29/06	08:30 – 10:15	
12/30/06	09:45 – 10:30	

High turbidity readings deleted – resuspension of bottom sediment in shallow water skewed values

12/08/06	00:15 – 01:30
12/19/06	14:15 – 15:15

Negative depth values removed

12/25/06	16:30 – 20:00
12/27/06	05:45 – 07:15

13) Missing data

Data are missing due to equipment or associated specific probes not being deployed, equipment failure, maintenance/calibration of equipment, or temporary removal of sampling station platform. For more details on deleted data, see the Deleted Data Section (12). To find out more details about missing data, contact the Research Coordinator at the reserve submitting the data.

Iron Pot Landing

Sonde logging error – no data was logged. Only hourly data taken 45 minutes after the hour pulled from RASSL telemetry is available for the following period:

03/21/06 15:45 to 04/04/06 13:45

*No data were recoverable even from RASL telemetry for the following times:

03/24/06	13:45	
04/01/06	14:45,	18:45
04/02/06	03:45	

Mataponi Creek

Sampling equipment was removed due to inclement weather and for annual maintenance. No data during the following period:

01/01/06 00:00 to 01/04/06 13:15

Data are missing for the following dates/times due to a date/time stamp error

11/19/06 21:45
11/20/06 12:45

Intermittent power failure – no data

11/04/06	00:45					
11/05/06	03:45,	15:45 – 17:00				
11/07/06	16:45 – 22:00					
11/09/06	08:45					
11/11/06	01:45,	03:15				
11/19/06	15:45,					
12/11/06	18:45 to	12/12/06	13:15			
12/12/06	17:15 to	12/13/06	13:00			
12/13/06	13:45 – 14:30,	15:30 – 16:15,	17:15 – 20:00,	20:45 to	12/14/06	09:45
12/14/06	10:30 – 12:15,	13:00 – 13:45,	15:00 – 15:30,	17:00 – 21:15,	22:15 – 23:15	
12/15/06	00:00 – 13:15,	14:00 – 14:45,	16:15 – 16:45,	17:45 to	12/16/06	10:45
12/16/06	11:30 – 13:15,	14:00 – 14:45,	16:00 – 16:15,	17:00 to	12/17/06	15:15
12/17/06	16:30 – 17:15,	18:30 to	12/18/06	02:15		
12/18/06	03:00 – 09:30,	13:45 – 15:15,	17:15 – 17:45,	23:30 to	12/19/06	00:45
12/19/06	01:30 – 11:30,	12:15 – 12:45,	13:45 – 15:15,	16:15 to	12/22/06	09:00
12/22/06	09:45 – 10:30,	12:00 – 13:15,	14:15 – 18:00,	18:45 – 20:30,	21:15 – 21:45	
12/23/06	03:00 – 06:45,	07:45 – 09:15,	10:15 – 11:00,	15:15 – 16:30,	17:30 – 19:00,	
	20:00 to	12/24/06	13:15			
12/24/06	14:45 – 15:15,	16:30 to	12/26/06	01:30		
12/26/06	02:15 – 03:15,	04:15 – 08:15,	09:00 – 10:30,	11:15 – 12:15,	13:15 – 14:00,	
	15:30 – 16:00,	17:00 – 18:30,	19:30 – 21:00,	22:00 to	12/27/06	13:00

12/27/06 14:00 – 15:00

Otter Point Creek
Sampling equipment was removed due to inclement weather and for annual maintenance. No data during the following period:
01/01/06 00:00 to 03/14/06 09:15

14) Post Deployment Information
End of deployment Post-calibration Readings in Standard Solutions:
NA = no data available for that particular standard

Railroad Bridge

Date	Depth (offset/meter)	SpCond (6.668)	DO	pH (7 / 10)	Turbid (0 / 123)
Mm/dd/yy	m	mS/cm	%Air Sat	units	NTU
01/05/2006	-0.129	0.744	103.4	6.99 / 9.97	0.7 / 122
01/19/2006	N/A / 0.171	* 0.717	104.4	7.00 / 10.04	1.3 / 120.2
02/02/2006	N/A / -0.009	** 0.298	104.9	7.01 / 10.02	2.9 / 129.1
02/15/2006	N/A / 0.134	** 0.308	107.4	7.03 / 10.00	-0.1 / 123.2
03/08/2006	N/A	** 0.285	98.7	6.99 / 10.04	0.1 / 123.3
03/22/2006	0.0 / -0.002	*** 2.745	102.6	7.03 / 10.08	1.6 / 118.3
04/07/2006	-0.054 / -0.059	* 0.727	97.3	7.00 / 10.03	4.4 / 130.3
04/21/2006	0.054 / 0.049	*** 2.822	102.6	7.03 / 10.03	1.3 / 118.4
05/05/2006	N/A	** 0.287	100.0	7.17 / 10.09	2.8 / 123.6
05/19/2006	N/A / -0.110	6.586	95.6	6.99 / 9.91	5.3 / 125.6
06/02/2006	-0.027 / 0.001	6.598	100.9	7.02 / 9.92	-0.5 / 125.0
06/14/2006	0.014 / 0.014	6.597	98.9	6.87 / 9.79	0.5 / 118.5
06/30/2006	0.027 / 0.017	6.751	108.2	6.99 / 9.93	0.3 / 142.3
07/14/2006	0.041 / -0.148	6.642	99.7	6.95/ /9.97	0.6 / 124.9
07/28/2006	0.027 / 0.013	6.594	105.4	7.00 / 9.99	5.0 / 100.4
08/09/2006	0.054 / 0.040	6.027	105.6	7.02 / 10.04	1.2 / 122.4
08/23/2006	N/A / 0.023	6.207	103.1	7.03 / 9.98	0.0 / 127.3
09/12/2006	0.122 / 0.117	6.816	107.5	6.91 / 9.89	3.9 / 122.5
09/22/2006	-0.054 / -0.108	6.636	99.1	6.75 / 9.80	2.3 / 137.1
10/04/2006	0.054 / 0.050	6.100	100.5	7.02 / 10.04	-0.2 / 126.1
10/20/2006	-0.177 / -0.190	6.623	7.2	6.93 / 9.86	2.8 / 126.3
10/31/2006	0.000 / -0.022	7.185	102.5	6.98 / 9.94	2.1 / 124.2
11/15/2006	-0.054 / -0.057	6.576	98.8	6.89 / 9.88	1.8 / 121.7
11/29/2006	0.136 / 0.140	7.138	104.2	6.98 / 10.00	2.1 / 117.9
12/13/2006	0.068 / 0.048	6.672	102.4	6.85 / 9.81	0.1 / 120.3
01/02/2007	0.068 / 0.061	6.659	106.5	7.04 / 10.05	0.5 / 122.1

* Meter calibrated at 0.720 mS/cm
** Meter calibrated at 0.294 mS/cm
*** Meter calibrated at 2.767 mS/cm

Iron pot Landing

Date	Depth (offset/meter)	SpCond (6.668)	DO	pH (7 / 10)	Turbid (0 / 123)
Mm/dd/yy	m	mS/cm	%Air Sat	units	NTU

01/05/2006	-0.126	0.752	116.1	7.07 / 10.05	0.2 / 122.8
01/19/2006	N/A / 0.024	* 0.754	103.5	7.02 / 10.0	0.7 / 120.2
02/02/2006	N/A 0.000	** 0.300	104.5	7.05 / 10.04	2.2 / 129.0
02/15/2006	N/A / 0.150	** 0.318	102.0	7.05 / 9.99	0.6 / 122.5
03/08/2006	N/A	** 0.288	107.8	7.04 / 10.02	0.8 / 123.4
03/22/2006	0.000 / 0.005	*** 2.764	101.6	7.09 / 10.11	2.9 / 118.4
04/07/2006	-0.054 / -0.081	* 0.729	101.2	7.01 / 10.00	0.3 / 129.4
04/20/2006	N/A / -0.017	*** 2.778	97.6	7.00 / 10.01	1.5 / 120.4
05/05/2006	-0.054 / -0.079	** 0.290	100.8	7.18 / 10.17	0.1 / 121.8
05/19/2006	-0.095 / -0.097	6.585	100.6	6.95 / 9.89	0.9 / 125.8
06/02/2006	N/A / -0.037	6.488	103.9	6.89 / 9.84	0.2 / 123.2
06/14/2006	0.014 / 0.016	6.632	105.7	7.06 / 10.08	1.5 / 122.0
06/30/2006	0.027 / 0.035	6.440	102.5	6.99 / 9.93	1.3 / 127.0
07/14/2006	0.014 / 0.009	6.559	101.7	6.97 / 9.92	0.0 / 133.9
07/28/2006	0.027 / 0.018	6.566	103.8	7.07 / 10.04	1.8 / 134.1
08/14/2006	N/A / -0.012	6.489	107.0	7.10 / 10.14	3.2 / 129.0
08/23/2006	N/A / 0.023	6.367	101.6	7.07 / 10.04	1.0 / 127.0
09/06/2006	0.014 / 0.020	6.398	98.4	6.93 / 9.92	-0.2 / 119.5
09/22/2006	-0.054 / -0.125	6.600	100.9	7.07 / 9.98	0.6 / 125.5
10/04/2006	0.054 / 0.046	6.656	102.0	7.06 / 10.05	0.5 / 127.3
10/20/2006	-0.177 / -0.193	6.608	103.1	6.97 / 9.91	3.7 / 124.3
10/31/2006	0.000 / -0.027	6.557	101.9	7.04 / 10.00	3.4 / 132.5
11/15/2006	-0.054 / -0.061	6.653	101.6	6.98 / 9.96	0.1 / 120.9
11/29/2006	0.136 / 0.132	6.608	102.0	7.00 / 10.03	0.2 / 120.8
12/13/2006	0.068 / 0.049	6.652	100.0	6.96 / 9.97	-1.9 / 123.3
01/02/2007	0.068 / 0.075	6.613	104.4	7.01 / 10.03	1.0 / 124.7
01/09/2007	N/A	6.611	102.7	7.08 / 10.03	2.5 / 124.3

* Meter calibrated at 0.720 mS/cm
** Meter calibrated at 0.294 mS/cm
*** Meter calibrated at 2.767 mS/cm

Mataponi Creek

Date	Depth (offset/meter)	SpCond (6.668)	DO	pH (7 / 10)	Turbid (0 / 123)
Mm/dd/yy	m	mS/cm	%Air Sat	units	NTU
01/19/2006	N/A / 0.178	** 0.309	101.2	6.96 / 9.98	3.9 / 117.5
02/02/2006	N/A / -0.007	** 0.295	101.7	6.90 / 9.89	3.2 / 121.2
02/15/2006	N/A / 0.139	** 0.307	103.1	7.05 / 9.97	1.7 / 122.7
03/08/2006	N/A	** 0.285	103.6	7.09 / 10.09	1.5 / 124.7
03/22/2006	0.000 / 0.015	*** 2.835	98.9	7.03 / 10.05	0.5 / 118.5
04/07/2006	-0.054 / 0.019	* 0.714	98.5	7.01 / 9.98	4.3 / 129.3
04/21/2006	0.054 / 0.056	*** 2.787	102.7	7.07 / 10.00	0.0 / 117.7
05/05/2006	-0.054 / -0.084	** 0.282	103.0	7.00 / 9.95	-0.1 / 120.6
05/19/2006	-0.095 / -0.103	6.469	107.4	7.03 / 10.00	1.1 / 125.6
06/02/2006	-0.041 / -0.063	6.541	105.2	7.03 / 9.96	-0.3 / 115.5
06/14/2006	0.014 / 0.007	6.610	100.1	7.04 / 9.99	-2.1 / 103.7
06/30/2006	0.041 / 0.040	6.595	103.5	6.98 / 9.98	3.3 / 132.8
07/14/2006	0.014 / 0.009	6.503	101.7	6.93 / 9.88	3.2 / 133.7

07/28/2006	0.027 / 0.008	6.556	103.0	6.99 / 9.96	5.4 / 127.6
08/09/2006	0.054 / 0.041	6.497	103.2	7.04 / 10.10	0.0 / 126.5
08/23/2006	0.027 / 0.019	6.416	101.7	7.04 / 10.05	0.4 / 109.0
09/06/2006	0.014 / 0.003	6.736	104.7	6.93 / 9.93	0.0 / 124.2
09/22/2006	-0.054 / -0.046	6.648	100.8	7.01 / 10.01	1.4 / 121.4
10/04/2006	0.054 / 0.053	6.614	102.1	7.07 / 10.07	0.4 / 124.1
10/20/2006	N/A / -0.046	6.626	99.1	7.03 / 10.01	2.3 / 124.0
10/31/2006	0.000 / -0.029	6.599	108.1	7.02 / 10.00	-0.1 / 124.7
11/15/2006	-0.054 / -0.060	6.640	98.1	6.75 / 9.73	-0.2 / 121.8
11/29/2006	0.136 / 0.126	6.639	103.9	6.98 / 10.02	6.5 / 123.0
12/13/2006	0.068 / 0.047	6.685	101.6	6.97 / 9.97	1.4 / 123.4
01/02/2007	0.068 / 0.079	6.686	106.5	6.99 / 10.00	-0.7 / 122.0
01/09/2007	-0.054 / -0.059	6.549	100.0	7.03 / 10.01	0.4 / 121.6

* Meter calibrated at 0.720 mS/cm
** Meter calibrated at 0.294 mS/cm
*** Meter calibrated at 2.767 mS/cm

Otter Point Creek

Date	Depth (offset/meter)	SpCond (6.668)	DO	pH (7 / 10)	Turbid (0 / 123)
Mm/dd/yy	m	mS/cm	%Air Sat	units	NTU
03/29/2006	0.082 / 0.109	*** 2.759	100.3	7.10 / 10.18	0.0 / 116.9
04/13/2006	0.054 / 0.011	6.540	102.7	7.01 / 9.97	0.8 / 118.1
04/26/2006	0.027 / 0.016	6.502	102.6	6.94 / 9.89	1.3 / 124.4
05/11/2006	-0.014 / -0.009	6.609	102.6	7.09 / 10.04	-1.0 / 128.3
05/24/2006	0.041 / 0.030	6.414	107.7	6.98 / 10.00	0.4 / 125.7
06/08/2006	-0.054 / -0.055	6.459	109.2	7.03 / 10.02	0.9 / 119.4
06/23/2006	0.041 / 0.043	6.506	103.1	7.01 / 10.07	2.2 / 136.0
07/05/2006	0.000 / -0.009	6.721	102.1	7.03 / 10.00	-0.6 / 121.2
07/19/2006	0.054 / 0.045	6.420	107.1	7.05 / 9.91	6.8 / 126.2
08/02/2006	-0.014 / -0.035	6.608	100.7	6.97 / 9.98	3.8 / 128.4
08/18/2006	0.054 / 0.048	6.568	109.1	6.87 / 9.86	-0.4 / 123.3
08/29/2006	-0.068 / -0.055	6.653	105.5	6.94 / 10.00	0.1 / 123.1
09/12/2006	0.127 / 0.125	6.562	102.5	7.02 / 9.98	2.0 / 127.1
09/29/2006	-0.054 / -0.047	6.513	105.9	7.00 / 9.97	2.7 / 116.7
10/13/2006	0.000 / 0.000	6.395	101.9	6.94 / 9.90	2.6 / 122.5
10/27/2006	0.068 / 0.067	6.534	107.4	7.14 / 10.15	0.9 / 124.7
11/09/2006	-0.122 / -0.125	6.684	102.7	7.00 / 9.95	1.0 / 128.6
11/21/2006	0.109 / 0.172	6.662	102.4	7.02 / 9.995	1.1 / 122.4
12/05/2006	0.122 / 0.121	** 0.291	102.4	7.11 / 10.10	-0.2 / 125.1
12/21/2006	0.190 / 0.192	**** 24.540	103.2	6.99 / 9.96	1.1 / 126.1
01/05/2007	0.014 / 0.020	6.618	102.2	7.02 / 9.98	0.0 / 122.1

* Meter calibrated at 0.720 mS/cm
** Meter calibrated at 0.294 mS/cm
*** Meter calibrated at 2.767 mS/cm
**** Meter calibrated at 6.668 mS/cm but post-calibrated at 24.820 mS/cm

15) Other Remarks/Notes

On 09/20/2019 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.

Hurrican Ernesto hit the CBM Reserve in September of 2006, dropping a significant amount of rainfall and and subsequent runoff.

In addition to the sampling described above, several other data sets were collected. These include chlorophyll and fluorescence data collected with the YSI6600EDS datasonde, using a 6025 optical probe. Photosynthetically active Radiation (PAR) was also collected using a LiCor 1400 display two sensors: one underwater quantum sensor and one ambient quantum sensor along with secchi depth. Additional nutrient samples were also collected during the months of April through October. This data is available through the Maryland Department of Natural Resources. Visit www.eyesonthebay.net for more information.