NOAA Data Report, OAR AOML-42
doi:10.7289/V508638Z

HYDROGRAPHIC MEASUREMENTS COLLECTED ABOARD THE R.V. OCEANUS, APRIL-MAY 2001: WESTERN BOUNDARY TIME SERIES CRUISE 1 (ABACO 2001)

C. Fonseca
M. Baringer

Atlantic Oceanographic and Meteorological Laboratory
Miami, Florida

May 2009

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / Office of Oceanic and Atmospheric Research

NOAA Data Report OAR AOML-42
doi:10.7289/V508638Z

HYDROGRAPHIC MEASUREMENTS COLLECTED ABOARD THE R.V. OCEANUS, APRIL-MAY 2001: WESTERN BOUNDARY TIME SERIES CRUISE 1(ABACO 2001)

Carlos Fonseca
University of Miami/ Cooperative Institute for Marine and Atmospheric Studies, Miami, Florida

Molly Baringer
NOAA/ Atlantic Oceanographic and Meteorological Laboratory
Miami, Florida

May 2009

Disclaimer

NOAA does not approve, recommend, or endorse any proprietary product or material mentioned in this document. No reference shall be made to NOAA or to this document in any advertising or sales promotion, which would indicate or imply that NOAA approves, recommends, or endorses any proprietary product or proprietary material herein or which has as its purpose any intent to cause directly or indirectly the advertised product to be used or purchased because of this document.

The findings and conclusion on this report are those of the authors and do not necessarily represent the views of the funding agency.

Table of Contents

List of Tables

List of Figures

Abstract

Summaries of CTD/O_2 measurements and hydrographic data acquired on an oceanographic research cruise during the spring of 2001 aboard the R/V Oceanus are presented. Data acquisition and processing systems are described and calibration procedures are documented. Station location, CTD/O_2 data listings, and profiles are included for each station.

1. Introduction

The Abaco time series began in August 1984 when NOAA extended its Straits of Florida program to include measurements of western boundary current transports and watermass properties east of Abaco, the Bahamas. Since 1986, more than 21 hydrographic sections have been completed east of Abaco, most including direct velocity observations by Pegasus and/or Lowered Acoustic Doppler Current Profiler (LADCP). Transient tracer (CFC) measurements have been made on 7 of these sections, at roughly 2-year intervals. Current meter arrays were also maintained from April 1986 to April 1997.

The repeated hydrographic and tracer sampling at Abaco has established a high-resolution record of watermass properties in the Deep Water Boundary Current (DWBC) at 26^{o}N, which for temperature and salinity can be reasonably constructed back to about 1955 [*Molinari, et al.*, 1998; *Vaughan and Molinari*, 1997]. Events such as the intense convection period in the Labrador Sea and renewal of classical Labrador Sea Water in the 1980's are clearly reflected in the cooling and freshening of the DWBC waters off Abaco, and the arrival of a strong CFC pulse, approximately 10 years later. This array is unique in that it is not just a single time series site but also a transport section, of which very few are available in the ocean that approach a decade in length.

To achieve the goals of NOAA's strategic plan in terms of understanding the Atlantic Ocean's role in decadal and longer time scale climate variability, these continued time series observations at Abaco are seen as serving three main purposes:

1. Monitoring of the DWBC for watermass and transport signatures related to changes in the strengths and regions of high latitude water mass formation in the North Atlantic. Monitoring watermass properties in the DWBC at key locations is one part of an effort to track decadal changes in large-scale watermass properties.

2. Serving as a western boundary endpoint of a subtropical Meridional Overturning Circulation (MOC) heat flux monitoring system designed to measure the interior dynamic height difference across the Atlantic basin and the associated baroclinic heat transport.

3. Monitoring the intensity of the Antilles current as an index (together with the Florida Current) of inter-annual variability in the strength of the subtropical gyre. Variations in the strength of the subtropical gyre in relation to the North Atlantic Oscillation (NAO) has been proposed as an important mechanism in the atmosphere-ocean feedback within coupled models (e.g. [*Latif and Barnett*, 1996]

During the 2001 survey, a total of 33 hydrographic stations were occupied in the Florida Straits and East of Abaco Island, Bahamas (Figure 1-1) aboard the R/V Oceanus. Table 1.2 provides a summary of cast information. At each station, profiles of temperature, salinity (conductivity) and dissolved oxygen concentration were collected to within approximately 20 m of the bottom. Water samples for calibration of the salinity and dissolved oxygen profiles were collected at each station using 10L Niskin-type bottles.

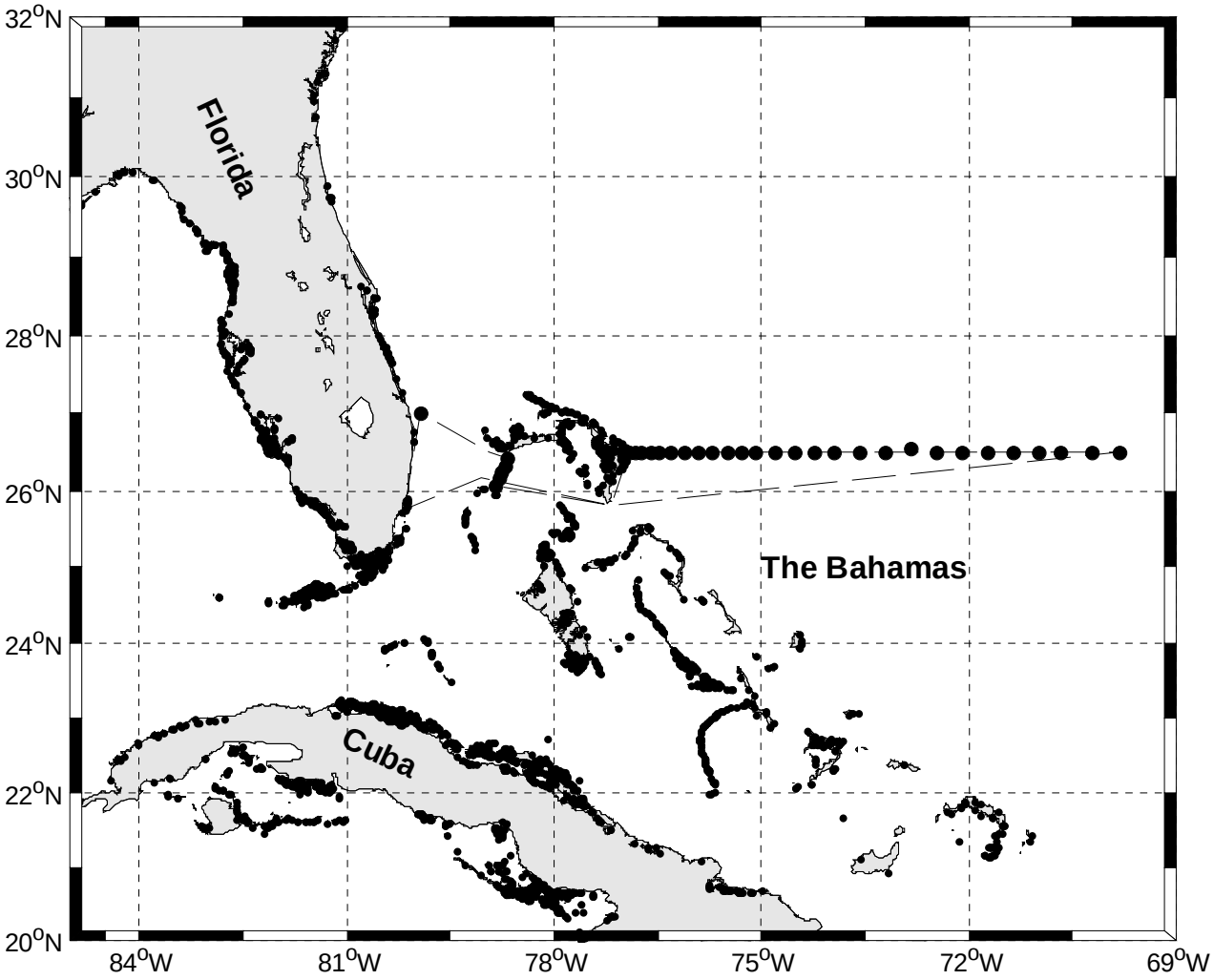


Figure 1-1 - ABACO-01 Cruise Track and CTD station locations.

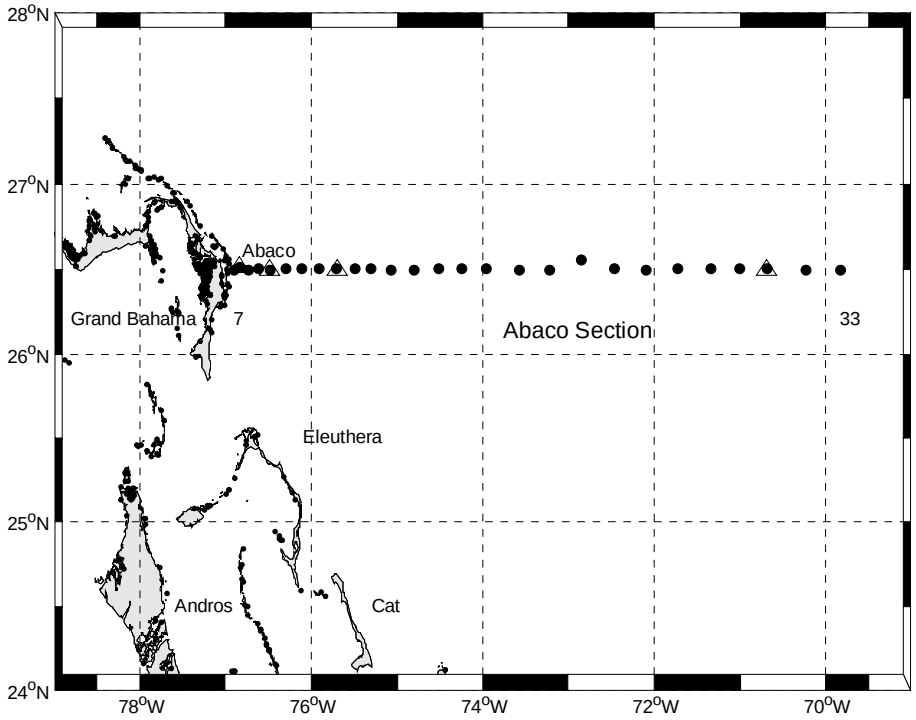


Figure 1-2 - Abaco section CTD station locations (7–33) and IES deployment locations.

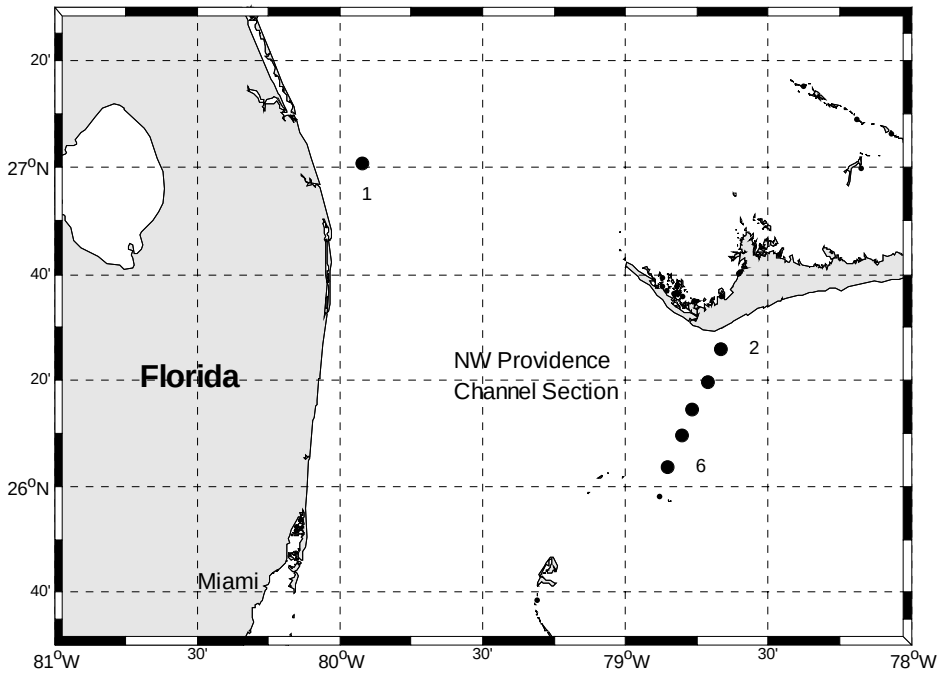


Figure 1-3 - Northwest Providence Channel section CTD station locations (2-6).

Table 1.1 – Cruise Participants of the Western Boundary Time Series Cruise (2001)

Name	Responsibility	Affiliation	Nationality
Molly Baringer	Principal Investigator, Chief Scientist	AOML	USA
David Bitterman	ET and LADCP watch	AOML	USA
Robert Roddy	Oxygen analysis	AOML	USA
Doug Anderson	ET and LADCP watch	AOML	USA
Sonia Bauer	CTD watch stander	AOML	USA

Table 1.2 – ABACO-01 CTD Cast Summary

Station	Date	Time (GMT)	Latitude N	Longitude W	Depth (m)
001	04/26/01	2031	27.024	79.919	157
002	04/27/01	1200	26.442	78.668	741
003	04/27/01	1321	26.325	78.713	656
004	04/27/01	1430	26.240	78.772	507
005	04/27/01	1544	26.161	78.806	443
006	04/27/01	1659	26.065	78.858	283
007	04/28/01	0649	26.501	76.914	978
008	04/28/01	1048	26.512	76.843	1005
009	04/28/01	1319	26.507	76.754	3913
010	04/28/01	1709	26.513	76.614	4729
011	04/28/01	2355	26.527	76.492	4842
012	04/29/01	0420	26.529	76.316	4828
013	04/29/01	0853	26.528	76.127	4807
014	04/29/01	1343	26.531	75.928	4748
015	04/29/01	2111	26.551	75.728	4690
016	04/29/01	0237	26.531	75.515	4683
017	04/30/01	0724	26.515	75.304	4636
018	04/30/01	1228	26.529	75.091	4603
019	04/30/01	1728	26.502	74.797	4508
020	04/30/01	2257	26.512	74.518	4496
021	05/01/01	0433	26.519	74.243	4536
022	05/01/01	0958	26.520	73.963	4642
023	05/01/01	1543	26.519	73.588	4920
024	05/01/01	2056	26.517	73.234	5058
025	05/02/01	1723	26.580	72.858	5107
026	05/02/01	0002	26.515	72.462	5138
027	05/03/01	0613	26.531	72.098	5278
028	05/03/01	1259	26.529	71.729	5373
029	05/03/01	1957	26.534	71.337	5465
030	05/04/01	0210	26.537	71.009	5470
031	05/04/01	1118	26.540	70.681	5470
032	05/04/01	1803	26.521	70.200	5471
033	05/04/01	0027	26.520	69.806	5483

2. Cruise Narrative

The cruise left Miami Thursday April 26th and proceeded northward to a test cast in the Florida Straits before reaching the first CTD cast on the west end of the 27^{o}N section. The weather leaving Miami was beautiful and calm, but steadily deteriorated as we moved northward. The first CTD cast was conducted in approximately 26 knot sustained winds from the north and 8-10 ft seas in the Florida Current moving in excess of 2 knots. The Captain decided it was too rough to reliably hold the CTD wire off the hull of the ship, so the 27^{o}N section was abandoned and we proceeded to the Northwest Providence Channel section. The weather forced the cancellation of the small piggyback project to measure stable isotopes in the Florida Straits (Dr. Jordan UC Santa Barbara). Thanks to coordination with the ship, the project was moved to another cruise.

Winds changed over the night to 15 knots out of the east and the CTD stations proceeded as planned until the weather started to decline on Monday April 30th and the transit time between stations slowed to about 6 knots. Over the evening and morning of May 1-2 the ship remained hove-to with 25-35 knot winds and 10-14 ft seas. The morning of May 2nd winds dropped to 20-25 knots and seas to about 8 ft and operations resumed. The last CTD station was completed along the 26.5^{o}N section on the evening of Friday May 4, 2008 and the ship docked back in Miami at the anticipated time Monday May 7. Returning to Miami downwind, the ship experienced 20-30 degree tilts athwart ship.

The ship collected standard VMDAS shipboard ADCP and the standard pingdata data files were stored with no on board processing or quality control. The LADCP system used included a 300 kHz RDI workhorse. The first unit used had flooded two months prior on a Windward Island Monitoring Program cruise (D. Wilson, pers. Comm.), but was quickly repaired and returned by RDI in time for this cruise. No problems were encountered until station 9, the first station over 1000 m. The LADCP flooded again and we swapped to a secondary unit on loan to AOML from RDI. For the secondary unit several communications problems prevented the data from being downloaded via any cables. After station 14 the data was successfully downloaded after removing the memory card from the unit and reading using a PCIMA memory slot on a portable laptop (further details in the LADCP Data Report).

The RV Oceanus has no dynamic positioning capabilities and limited ability to work in rough weather and hold station. Through most of the cruise the stations were held no better than about 1 nm from beginning to end of the CTD cast. Most of the displacements occurred in the north/south direction. It is our conclusion that use of a Class II ship for the Western Boundary Hydrographic Surveys should account for additional ship days (2 or more) in case of weather related problems. We would also recommend using Class II ships with dynamic positioning.

A total of 33 stations were completed including one station in the Florida Straits, five stations across the Northwest Providence Channel and 27 stations east of Abaco Island out to 69^{o} 50' W. Also four inverted Echo-Sounders (IES) were deployed east of Abaco Island. Deep western Boundary Current velocities were in the range of 20-40 cm/sec southward.

3. Inverted Echo-Sounder Operations

An inverted echo sounder is consisting mainly of a transducer, which can produce sound waves and hear sound waves, and a precise clock. The inverted echo sounders used here at AOML send out a series of 24 10kHz or 12kHz sound pulses each hour. These pulses reflect when they hit the ocean surface, and 1-8 seconds later the IES records the precise amount of time between when each pulse is sent out and when the pulse is heard returning to the IES. The median value of the 24 pulses is then taken as the travel time for that hour (multiple pulses are needed to average out the changes in travel time due to waves at the ocean surface and other sources of noise). Because the speed of sound in seawater is dependent on temperature, as the water temperatures (and salinities) above the IES change over time the travel time measurement of the IES changes. The travel time measurement of the IES is combined with other ocean measurements of temperature and salinity in order to estimate full-water-column profiles of temperature, salinity, and density. The result is a time series of profiles of these quantities at each IES site.

During the April 2001 cruise four inverted echo-sounders (University of Rhode Island URI model 6.1c) were deployed. Deployments were planned for two years.

Bathymetric surveys were used to triangulate over the projected area of IES deployment to find a location with a gentle slope (we aimed for slopes less than 5^o). The acoustic transmissions on the ship (possibly due to ambient ocean noise due to the harsh weather resulted in some problems recording IES ping transmissions on the LSR/PDR.

It is useful to monitor the IES deployment by tracking the IES descent and verifying the first travel time observation after deployment. Generally deployments went very well, ranging in time between 2.5 and 4 hours. Eventually we discovered that the PDR/LSR tracking was improved if the ship maintained a slow uniform speed, suggesting the poor transmissions were, in fact, due to environmental conditions.

Table 3.1 - Inverted echo-sounders deployment locations.

Instrument SN#	Latitude	Longitude
24	*26^o 30.700 N*	*76^o 50.412 W*
21	*26^o 29.986 N*	*76^o 28.788 W*
23	*26^o 30.070 N*	*75^o 42.224 W*
22	*26^o 30.171 N*	*70^o 41.101 W*

4. Standards and Pre-Cruise Calibrations

The CTD/O_2 system is a real-time data acquisition system with the data from a Sea-Bird Electronics, Inc. (SBE) 9plus underwater unit transmitted via a conducting cable to a SBE 11plus deck unit. The serial data from the underwater unit is sent to the deck unit in RS-232 NRZ format. The deck unit decodes the serial data and sends it to a personal computer for display and storage in a disk file using Sea-Bird Seasave software (version 4.22).

The SBE 911plus system transmits data from primary and auxiliary sensors in the form of binary numbers equivalent to the frequency or voltage outputs from those sensors. These are referred to as the raw data. The SBE software performs the calculations required to convert raw data to engineering units.

The SBE 911plus system is electrically and mechanically compatible with the standard, unmodified carousel water sampler, also made by Sea-Bird Electronics, Inc. A modem and carousel interface allows the 911plus system to control the operations of the carousel directly without interrupting the flow of data from the CTD.

The SBE 9plus underwater unit is configured with dual standard modular temperature (SBE 3) and conductivity (SBE 4) sensors, which are mounted near the lower end cap. The conductivity cell entrance is co-planar with the tip of the temperature sensor probe. The pressure sensor is mounted inside the underwater unit main housing. A centrifugal pump module flushes water through sensor tubing at a constant rate independent of the CTD's motion to improve dynamic performance. Dual dissolved oxygen sensors (YSI-type) are added to the pumped sensor configuration following the temperature-conductivity (TC) pair.

Table 4.1 - Equipment used during ABACO-01

Instrument	SN	Stations	Note
Sea-Bird SBE32 24-place Carousel Water Sampler	328531-0031	1-33	
Sea-Bird SBE9plus CTD	09P10779-363	0-1	
Sea-Bird SBE9plus CTD	09P8531-367	2-33	
Paroscientific Digiquartz Pressure Sensor	58808	0-1	
Paroscientific Digiquartz Pressure Sensor	50619	2-33	
Sea-Bird SBE3plus Temperature Sensor	1075	1-33	primary
Sea-Bird SBE3plus Temperature Sensor	1609	1-33	secondary
Sea-Bird SBE4C Conductivity Sensor	1346	1-33	primary
Sea-Bird SBE4C Conductivity Sensor	1347	1-33	secondary
Sea-Bird SBE13Y YSI Dissolved Oxygen Sensor	381	1-33	primary
Sea-Bird SBE13Y YSI Dissolved Oxygen Sensor	384	1-33	secondary
Sea-Bird SBE5T Pump	1211	1-33	primary
Sea-Bird SBE5T Pump	1072	1-33	secondary
Simrad 807 Altimeter	AOML	1-33	range 280m
AOML Pinger	7000-1	1-33	
RDI LADCP - 300 kHz Workhorse	Doug Wilson	1-33	Downward
RDI LADCP - 300 kHz Workhorse	UM	1-33	Downward

4.1 Conductivity

The flow-through conductivity-sensing element is a glass tube (cell) with three platinum electrodes (Seabird model SBE 4). The resistance measured between the center electrode and the end electrode pair is determined by the cell geometry and the specific conductance of the fluid within the cell, and controls the output frequency of a Wein Bridge circuit. The sensor has a frequency output of approximately 3 to 12 kHz corresponding to conductivity from 0 to 7 Siemens/meter (0 to 70 mmho/cm). The SBE

4 has a typical accuracy/stability of ±0.0003 S/m and resolution of 0.00004 S/m at 24 scans per second.

Table 4.2 – Calibration coefficients for the conductivity sensors.

s/n 1346 November 14, 2000	s/n 1347 November 14, 2000
g = -4.07585521e+00	*g = -3.71068959e+00*
h = 5.36912871e-01	*h = 4.88160793e-01*
I = -4.9006457e-05	*i =- 1.53920017e-04*
j = 3.37480389e-05	*j = 3.64058142e-05*
ctcor = 3.2500e-06	*ctcor = 3.2500e-06*
cpcor = -6.957e-08	*cpcor = -7.7600e-08*

Two conductivity sensors were used during ABACO-01, serial numbers (s/n) 1346 and 1347. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington on November 14, 2000. The coefficients show in Table 4.2 were entered into Seasave using the configuration file.

Conductivity calibration certificates show an equation containing the appropriate pressure-dependent correction term to account for the effect of hydrostatic loading (pressure) on the conductivity cell:

$$C(Siemens/meter) = \frac{\left(g + h \cdot f^2 + i \cdot f^3 + j \cdot f^4\right)}{\left[10 \cdot \left(1 + ctcor \cdot t + cpcor \cdot p\right)\right]}$$

where *g*, *h*, *i*, *j*, *ctcor,* and *cpcor* are the calibrations coefficients shown above, *f* is the instrument frequency (kHz), *t* is the water temperature (degrees Celsius), and *p* is the water pressure (dbar). SEASAVE® automatically implements this equation.

4.2 Temperature

The temperature-sensing element is a glass-coated thermistor bead, pressure protected by a stainless steel tube. The sensor output frequency ranges from 5-13 kHz corresponding to temperature from –5 to 35 °C. The output frequency is inversely proportional to the square root of the thermistor resistance, which controls the output of a patented Wein Bridge circuit. The thermistor resistance is exponentially related to temperature. The SBE 3 thermometer has a typical accuracy/stability of ±0.004°C per year and resolution of 0.0003 °C at 24 samples per second. The SBE 3 thermometer has a fast response time of 0.070 seconds.

The two temperature sensors used during ABACO-01 were s/n 1075 and 1609. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue,

Washington on November 14, 2000. The following (Table 4.3) coefficients were entered into SEASAVE® using the configuration file:

Table 4.3 - Calibration coefficients for the temperature sensors.

s/n 1075 November 14, 2000	s/n 1609 November 14, 2000
g = 4.81093723e-03	*g = 4.86579329e-03*
h = 6.68988344e-04	*h = 6.79748362e-04*
I = 2.51627419e-05	*i = 2.61064749e-05*
j = 1.99051925e-06	*j = 2.00700808e-06*
$f_0 = 1000.0$	$f_0 = 1000.0$

Temperature (ITS-90) is computed according to:

$$T(^oC) = \frac{1}{\left\{ g + h \cdot \left[\ln\left(\frac{f_0}{f} \right) \right] + i \cdot \left[\ln^2\left(\frac{f_0}{f} \right) \right] + j \cdot \left[\ln^3\left(\frac{f_0}{f} \right) \right] \right\}} - 273.15$$

where *g*, *h*, *i*, *j* and f_0 are the calibration coefficients above and *f* is the instrument frequency (kHz). SEASAVE® automatically implements this equation and converts between ITS-90 and IPTS-68 temperature scales as desired.

4.3 Pressure

The Paroscientific series 4000 Digiquartz high pressure transducer uses a quartz crystal resonator whose frequency of oscillation varies with pressure induced stress measuring changes in pressure as small as 0.01 parts per million with an absolute range of 0 to 10,000 psia (0 to 6885 dbar). Repeatability, hysteresis and pressure conformance are 0.002% FS. The nominal pressure frequency (0 to full scale) is 34 to 38 kHz. The nominal temperature frequency is 172 kHz + 50 ppm/°C.

The pressure sensor utilized during ABACO-01 was s/n 50619. Pre-cruise sensor calibrations were performed at Sea-Bird Electronics, Inc. in Bellevue, Washington on April 5, 1994. The coefficients (Table 4.4) were entered into SEASAVE® using the configuration file.

Pressure coefficients are first formulated into:

$$c = c_1 + c_2 \cdot U + c_3 \cdot U^2$$
$$d = d_1 + d_2 \cdot U$$
$$t_0 = t_1 + t_2 \cdot U + t_3 \cdot U^2 + t_4 \cdot U^3 + t_5 \cdot U^4$$

Where *U* is temperature in degrees Celsius. Pressure is computed according to:

$$P(psia) = c \cdot \left(1 - \frac{t_0^2}{t}\right) \cdot \left[1 - d \cdot \left(1 - \frac{t_0^2}{t}\right)\right]$$

Where *t* is pressure period (μs). SEASAVE® automatically implements this equation.

Table 4.4 - Calibration coefficients for the pressure sensor.

s/n 50619 April 5, 1994
c_1 = -4.010525e+04
c_2 = 6.815307e-01
c_3 = 1.288650e-02
d_1 = 3.974700e-02
d_2 = 0.0
t_1 = 3.029263e+01
t_2 = -5.273358e-05
t_3 = 4.378350e-06
t_4 = 2.065070e-09
t_5 = 0.0

4.4 Dissolved Oxygen

The SBE 13Y dissolved oxygen sensor Yellow Springs Instrument (YSI) uses a polarographic type element. Oxygen sensors determine the dissolved oxygen concentration by counting the number of oxygen molecules per second (flux) that diffuse through a membrane. By knowing the flux of oxygen and the geometry of the diffusion path, the concentration of oxygen can be computed. The permeability of the membrane to oxygen is a function of temperature and ambient pressure. The interface electronics output voltages proportional to membrane current (oxygen current) and membrane temperature (oxygen temperature). Oxygen temperature is used for internal temperature compensation. Initial computation of dissolved oxygen in engineering units is done in the software. The range for dissolved oxygen is 0 to 670 μmol/kg; nominal accuracy is 4.45 μmol/kg; resolution is 0.4 μmol/kg. Response times are roughly 2 seconds at 25°C and 5 seconds at 0°C.

Oxygen sensors 130381 and 130364 were used during ABACO-01. The oxygen calibrations (Table 4.5) were entered into SEASAVE® using the configuration file.

The use of these constants in linear equations of the form I = *m*V + *b* and T = *k*V + *c* yield sensor membrane current and temperature (with maximum error of about 0.5°C) as a function of sensor output voltage.

Dissolved oxygen concentration is calculated according to:

$$O(ml/l) = \left\{ Soc \cdot \left(O_c + tau \cdot \frac{dO_c}{dt} \right) + Boc \right\} \cdot e^{(tcor \cdot (T + wt \cdot (T_0 - T)) + pcor \cdot P)} \cdot OXSAT(T, S)$$

Where *Soc*, *Boc*, w*t*, *tcor, pcor,* and *tau* are the calibration coefficients above and *Oc* is the instrument current (µA) and *dOc/dt* (µA/s) is the slope of the current. *T, S* and *P* are the temperature, salinity and pressure measured by the CTD and OXSAT is the oxygen saturation value calculated according to:

A1 = -173.4292 *A2* = 249.6339 *A3* = 143.3483 *A4* = -21.8492

B1 = -0.033096 *B2*= 0.014259 *B3* = -0.00170

$$OXSAT(\theta,S) = \exp\left\{A1 + A2\cdot\left(\frac{100}{\theta}\right) + A3\cdot\ln\left(\frac{\theta}{100}\right) + A4\cdot\left(\frac{\theta}{100}\right) + S\cdot\left[B1 + B2\cdot\left(\frac{\theta}{100}\right) + B3\cdot\left(\frac{\theta}{100}\right)^2\right]\right\}$$

Where θ is the absolute temperature (K). SEASAVE® automatically implements this equation.

Table 4.5 - Calibration coefficients for the dissolved oxygen sensors.

s/n 130381 March 16, 2001	s/n 130364 March 16, 2001
M = 2.4496e-07	*M = 2.4614e-07*
B = -2.7680e-10	*B = -5.0212e-10*
Soc = 2.8062	*Soc = 2.7018*
Boc =- 0.0123	*Boc =- 0.0113*
tcor =- 0.033	*tcor =- 0.033*
pcor = 1.50e-04	*pcor = 1.50e-04*
tau= 2.0	*tau= 2.0*
wt= 0.67	*wt= 0.67*
k=9.0214	*k=9.0037*
c=-6.7355	*c=-6.8110*

5. Data Acquisition

CTD/O_2 measurements were made using a SBE 9plus CTD with dual sensor configuration. Each set of sensors included a temperature, conductivity, and dissolved oxygen sensor. The sets were placed as mirror images to each other mounted low in the CTD main housing with the intakes approximately 6-8 inches apart. The TC pairs were monitored for calibration drift and shifts by examining the differences between the two pairs on each CTD and comparing CTD salinity values with bottle salinity measurements.

AOML's SBE 9plus CTD/O_2 s/n 09P10779-0363 (sampling rate 24Hz) was mounted in a 24-position frame and employed as the primary package. Auxiliary sensors included a Lowered Acoustic Doppler Current Profiler (LADCP) and a Simrad altimeter. Water samples were collected using a SBE bottle carousel and 10-liter Niskin bottles. Data from the secondary sensor pair was determined to fit the sample data best and hence was used for all final data in this report.

The deck unit and CTD were powered on approximately 15 minutes before the start of each CTD cast with continuous data storage (to allow for on deck reading prior to the start of the cast and any deck unit transients to subside). The package entered the water from the starboard side of the ship and was held within 5 meters of the surface for 1 minute in order to activate the pump. The package was lowered at a rate of 30m/min to 100 m and 60 m/min generally to within 20 meters of the bottom, slowing on the approach. The altimeter monitored the position of the package relative to the bottom. The package was then brought back up to the surface stopping at intervals for the firing of the carousel and retrieval of water samples at pre-specified depths. The CTD was typically held at the depth of each water sample for no more than 20 seconds (several rolls of the ship). Upon completion of the cast, sensors were flushed repeatedly and stored with a dilute Triton-X solution in the tubing. Niskin bottles were then sampled first for oxygen and then salinity.

A SBE 11plus deck unit received the data signal from the CTD. Digitized data were forwarded to a personal computer equipped with Seasave acquisition and processing software SBEDataProc® version 5.27c. Preliminary temperature, salinity, and oxygen profiles were displayed in real time. Raw data files were archived to SyQuest 230mb removable drives as well to compact discs.

5.1 Data Acquisition/System Problems

The performance of the sensors was outstanding. Problems with the configuration of the oxygen sensors occurred during the test cast. Several issues arose with the lowered acoustic doppler current profiler (LADCP), which will be outlined in a separate report.

The 10L Niskin bottles all worked well, holding their water. We had substantial problems initially getting the PDR and altimeter to work and hence to track the CTD package, the first station in the west end of the Florida Straits was stopped well above the anticipated bottom (from the initial depth reading at the start of the cast).

Bottle confirmation problems were extensive during the test cast. The CTD cables were replaced and checked connectors to no avail. After the test cast and station one we changed from CTD2 to CTD1 and had no further problems with confirmations. Out of the Straits of Florida, the altimeter worked exceedingly well, typically targeting in on the bottom more than 350 m from the bottom. The PDR/LSR recording improved, but could not continuously track the descent of the CTD package or the bottom depth while underway.

5.2 Salinity Analyses

Bottle salinity analyses were performed in the ship's temperature-controlled salinity laboratory using a Guildline Model 8400B inductive autosalinometer, and a dedicated PC. Software allowed the user to standardize the autosalinometer. IAPSO Standard Seawater was used as the standard. The autosal was standardized before each case of samples was analyzed, or every 24 samples.

Duplicate samples were taken on several casts. Bottle salinities were compared with preliminary CTD salinity values to monitor CTD conductivity cell performance and drift. The expected precision of the autosalinometer is 0.001 PSS, with an accuracy of ±0.0003 PSS.

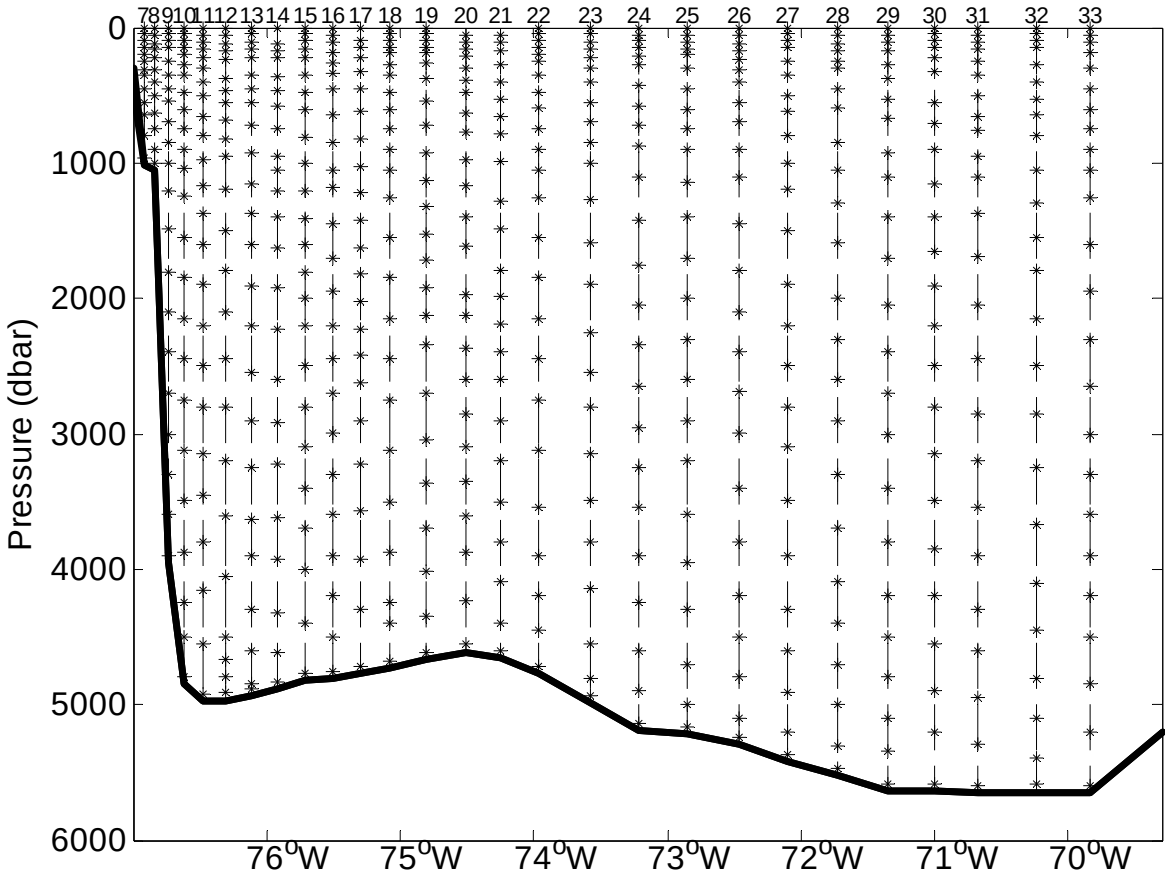


Figure 5-1 - Bottle locations for 26.5ºN Deep Western Boundary Current section east of Abaco Island (Abaco section).

5.3 Oxygen Analyses

Bottle oxygen analyses were also performed in the ship's temperature-controlled salinity laboratory using a photometric automatic Winkler method titration with a Carpenter modification, and a dedicated PC. The water samples are drawn (without air bubbles) from Niskin bottles immediately upon arrival on deck. Manganese sulfate (or chloride) is added to the sample, followed by the addition of an alkaline sodium hydroxide-sodium iodide solution. These solutions "pickle" the sample causing it to precipitate and react with the dissolved oxygen in the water sample. The sample is then dissolved and photometrically titrated to an end point with a standardized sodium thiosulphate solution.

The content of oxygen value is calculated utilizing the volume of the water sample bottle and the amount of added thiosulphate. Automated titrating systems can attain a precision of about ±4.46 μmol/kg [*Friederich, et al.*, 1991].

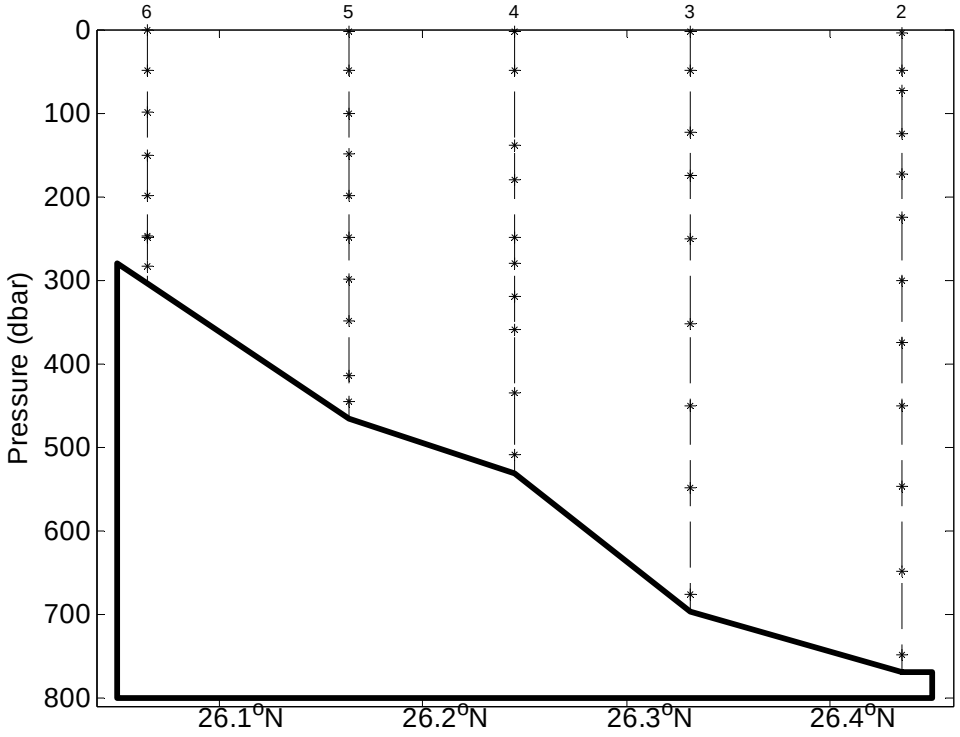


Figure 5-2 - Bottle locations for Northwest Providence Channel section.

6. Processing of CTD data

SBEDataProc consists of modular menu driven routines for acquisition, display, processing, and archiving of oceanographic data acquired with SBE equipment. The software is designed to work with a PC with Windows operational system. Raw data are acquired from the instruments and are stored unmodified. The conversion module DATCNV uses the instrument configuration and pre-cruise factory calibration coefficients to create a converted engineering unit data file that is utilized by all SBEDataProc® post processing modules. Unless otherwise noted, all calibration parameters given are factory default values recommended by Sea Bird Electronics, Inc. The following is the SBEDataProc® processing module sequence and specifications used in the reduction of CTD/O_2 data from this cruise:

- DATCNV converted the raw data to pressure, temperature, conductivity, oxygen current, and oxygen temperature, and computed salinity, the time rate of change of oxygen current, and preliminary oxygen. DATCNV also extracted bottle information where scans were marked with a bottle confirmation bit during acquisition.

• ALIGNCTD aligns conductivity, temperature and oxygen in time relative to pressure to ensure that all calculations are made using measurements from the same parcel of water, which minimizes salinity spiking and density errors. The SBE 11plus deck unit has factory settings to advance the primary conductivity cell; therefore, ALIGNCTD was not performed on this cell. The secondary conductivity cell, however, is not advanced in the deck unit and so was advanced 0.073 seconds in the ALIGNCTD module. Since the SBE3 temperature sensor response is fast, (0.06 seconds), it is not necessary to advance temperature relative to pressure. Oxygen sensors were not advanced

• CELLTM uses a recursive filter to remove conductivity cell thermal mass effects from measured conductivity. Both conductivity cells are epoxy coated and therefore the thermal anomaly amplitude (alpha) and the time constant (1/beta) were 0.03 and 9.0 respectively for each sensor.

• ROSSUM created a summary of the bottle data. Bottle position, date, and time were output automatically. Pressure, temperature, conductivity, salinity, oxygen current, oxygen temperature, time rate of change of oxygen current, and preliminary oxygen values were averaged over a 2 second interval from 5 to 3 seconds prior to the confirm bit. ROSSUM computed potential temperature and sigma-theta.

• WILDEDIT marked extreme outliers in the data files. The first pass of WILDEDIT obtained an accurate estimate of the true standard deviation of the data. The data were read in blocks of 200 scans. Data greater than two standard deviations were flagged. The second pass computed a standard deviation over the same 200 scans excluding the flagged values. Values greater than 16 standard deviations were marked as bad values.

• FILTER performed a low pass filter on pressure data with a time constant of 0.15 seconds. In order to produce no time shift, the filter first runs forward through the data file and then runs backwards through the data file.

• LOOPEDIT marks data scans where the CTD package was moving less than a minimum velocity of 0.25 m/s or traveling backwards due to ship roll.

• DERIVE was used to re-compute the time rate of change of oxygen current (dox/dt) and oxygen (μmol/kg) with a time window size of 2 seconds.

• BINAVG averages the data into 1 decibar (dbar) pressure bins starting at 1 dbar with no surface bin. The center value of the first bin was set to equal the bin size. The bin minimum and maximum values are the center values $\pm$ half the bin size. Scans with pressure values greater than the minimum and less than or equal to the maximum were averaged. Scans were interpolated so that a data record exists for every decibar. The number of points averaged in each bin was added to the variables listed in the data file.

• DERIVE recomputed salinity and calculates other oceanographic parameters (e.g. density, etc.).

- SPLIT data into up-cast (pressure decreasing) and down-cast (pressure increasing) files.

- TRANS converts the binary data file into ASCII format.

7. Post-Cruise Calibrations

Post cruise sensor calibrations were done at Sea-Bird Electronics, Inc. during June 2001. Primary TC pair T1609/C1347 and secondary oxygen sensor (s/n 130364) were selected for final data reduction for all stations. In addition to the Seasoft processing modules, a group of Matlab script files called AOML/CTDCAL Toolbox were used. These scripts were based in earlier work of different groups as well in modern statistical tools.

Table 7.1 - Calibration coefficients for the temperature sensors

s/n 1075 June 19, 2001	s/n 1609 June 19, 2001
g = 4.81077385e-03	*g = 4.86584016e-03*
h = 6.68822271e-04	*h = 6.79809001e-04*
I = 2.51066059e-05	*i = 2.61315502e-05*
j = 1.98467480e-06	*j = 2.01051410e-06*
f_0 *= 1000.0*	f_0 *= 1000.0*

Table 7.2 - Calibration coefficients for the conductivity sensors

s/n 1346 June 19, 2001	s/n 1347 June 19, 2001
g = -4.0734695e+00	*g = -3.70629517e+00*
h = 5.35702670e-01	*h = 4.87122911e-01*
i = 1.47891074e-04	*i =-5.16052716e-06*
j = 2.67641211e-05	*j = 3.06056848e-05*
ctcor = 3.2500e-06	*ctcor = 3.2500e-06*
cpcor = -6.957e-08	*cpcor = -7.7600e-08*

AOML/CTDCAL Toolbox covers all the steps of the CTD data processing from the preliminary comparisons between sensors or with bottle samples to data reductions and final sensors calibrations.

7.1 CTD Data Processing

By using the post cruise sensors calibrations; time drifts were estimated for the temperature and conductivity sensors (for estimated time drifts see the appropriate sections below). The processing module sequence used at sea is done again to include the time drifts as well the pressure correction. After this step the following Matlab scripts based on PMEL programs are applied to the CTD data:

• FILL_SURFACE was used to copy the first good value of salinity; potential temperature, oxygen and oxygen current back to the surface. The program then calculated temperature and conductivity, and zeroed doc/dt of oxygen current for those records.

• DESPIKE1 removed spikes from primary oxygen current and oxygen temperature data, as well as removing spikes from the primary conductivity sensor. Data were linearly interpolated over de-spiked records. Conductivity was back calculated, and sigma-theta and potential temperature were recomputed for the interpolated records.

• DESPIKE2 removed spikes from secondary sensors in the same method as DESPIKE1.

• Package slowdown and reversals due to ship roll can move mixed water in tow in front of the CTD sensors. This mixture can create artificial density inversions and other artifacts. In addition to SEASOFT module LOOPEDIT, PMEL program DELOOP computed values of density locally referenced between every 1 dbar of pressure to compute $N^2 = (- g/p) (dp/dz)$ and linearly interpolated measured parameters over those records where $N^2 \leq -1.0e -05s^{-2}$.

7.2 Pressure

Pressure sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw pressure data during each cast. On deck pressures were constantly monitored throughout the cruise and show an average value of 1 dbar, which was applied as and offset in the configuration file, and a variability of 0.1 dbar demonstrating that no other adjustments will be required.

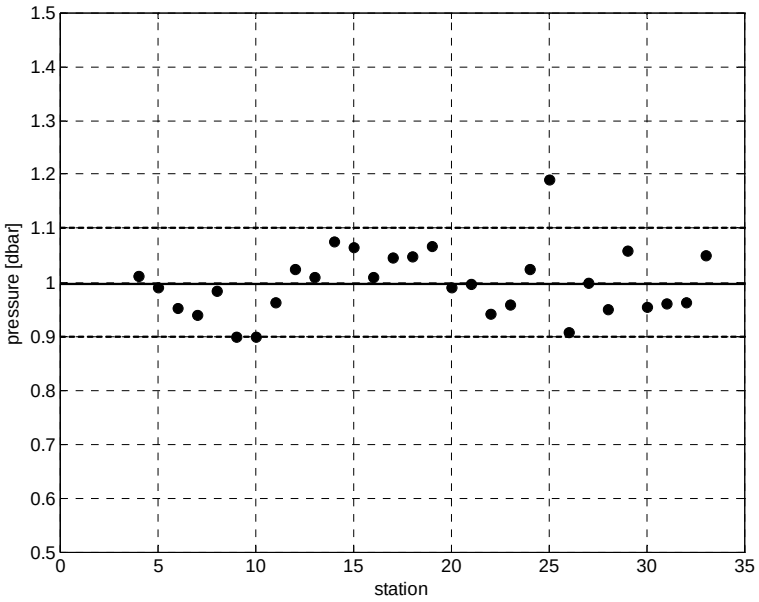


Figure 7-1 – Pressure recorded by the CTD on deck before cast

7.3 Temperature

Temperature sensor calibration coefficients derived from the pre-cruise calibrations were applied to raw primary and secondary temperature data during each cast. Usually the temperature sensors (SBE 3) drift by changing the offset. In order to correct this drift, the calibration coefficients from the post cruise calibration is necessary. Using the post-cruise calibration coefficients and the pre-cruise calibration data, a residual over the calibration temperature range is calculated. The mean residual is divided by the number of days since the pre-cruise calibration. This number is the offset per day. The offset per day is multiplied by the number of days between pre-cruise calibration and the day the data was collected to get the offset that should be entered into configuration file. Based on the post and pre calibrations time drifts were estimated for the sensors s/n 1075 and 1606 and were applied to the original configuration files.

Table 7.3 – Time drift correction for the temperature sensors

sensor s/n	temperature offset (^{o}C)	time interval between calibrations (days)	offset/day (^{o}C/day)	time interval between pre-cal and cruise (days)	offset (^{o}C)
1075	0.00072	216	3.33e-6	163-174	5.60e-4
1609	0.00020	216	9.26e-7	163-174	1.56e-4

Data accuracy, reproducibility and stability were examined by tabulating the difference between the two different temperature sensors over a range of pressures (bottle trip locations) for each cast. These comparisons are summarized in Figure 7-2. The median difference between the sensors for all data (below 500 dbar) was -0.00007 ^{o}C (-0.00008 ^{o}C) for all stations with one standard deviation of 0.0005 ^{o}C (0.0003 ^{o}C).

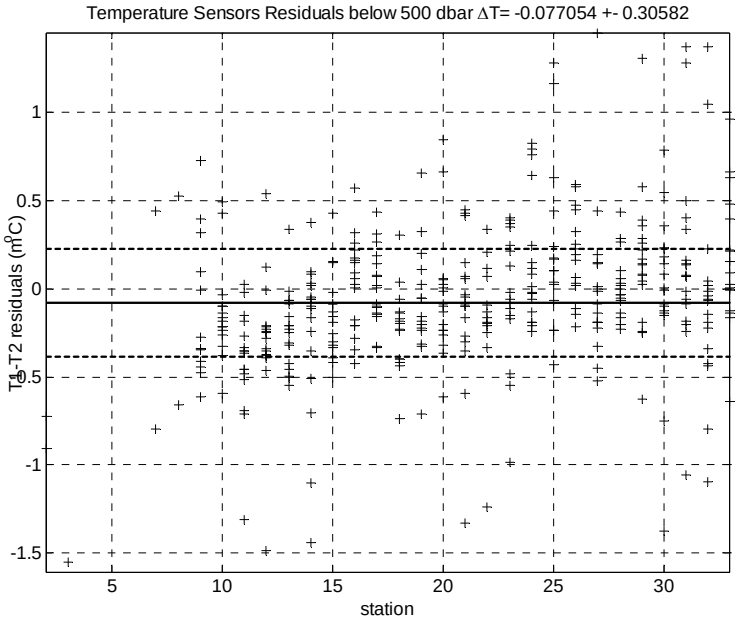


Figure 7-2 – Temperature differences between sensors by station number for p > 500 dbar.

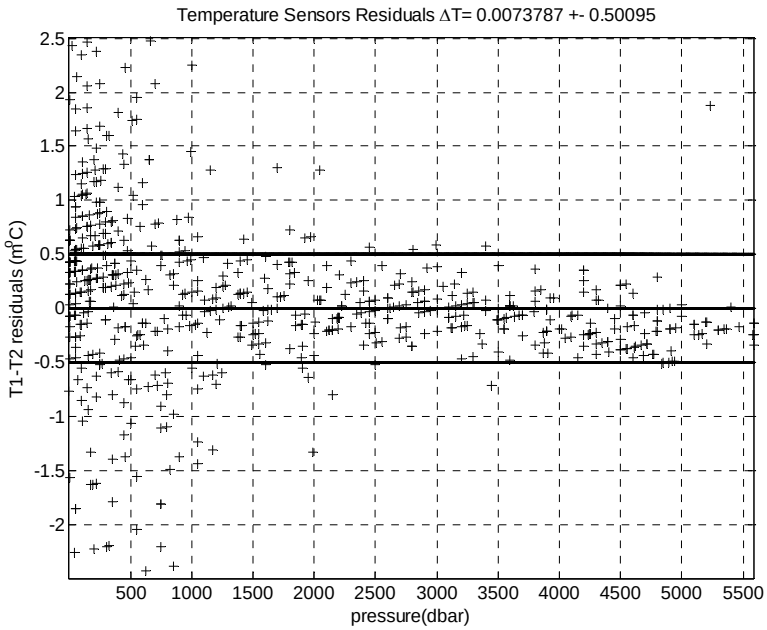


Figure 7-3 - Temperature differences between sensors at each bottle stop plotted vs. pressure.

7.4 Conductivity

The conductivity sensors (SBE 4) usually lose sensitivity as they drift, that way the drift takes a form of a slope. In order to correct this drift, the calibration coefficients from the post cruise calibration is necessary. By using the post-cruise calibration data and pre cruise calibrations coefficients together with the post cruise calibration coefficients a "postslope" is calculated. This postslope is then adjusted accordingly with the time interval between the calibrations and between the pre cruise calibration and the cruise period. Based on the post and pre calibrations time drifts were estimated for the sensors s/n 1346 and 1347 and were applied to the original configuration files.

Table 7.4 - Time drift correction for the conductivity sensors

sensor s/n	slope correction	time interval between calibrations (days)	time interval between pre-cal and cruise (days)	New slope
1346	0.999780	216	163-174	1.000171
1347	0.999434	216	163-174	1.000441

Comparisons between the primary and secondary sensors and between each of the sensors to conductivity calculated from bottle salinities were evaluated and the secondary pair was determined to contain the lowest residuals. The secondary sensor pair was thus used for all final data values. Based on the differences between the samples and the CTD sensor outliers were removed and initially 96.5% of the samples were kept to perform the calculations.

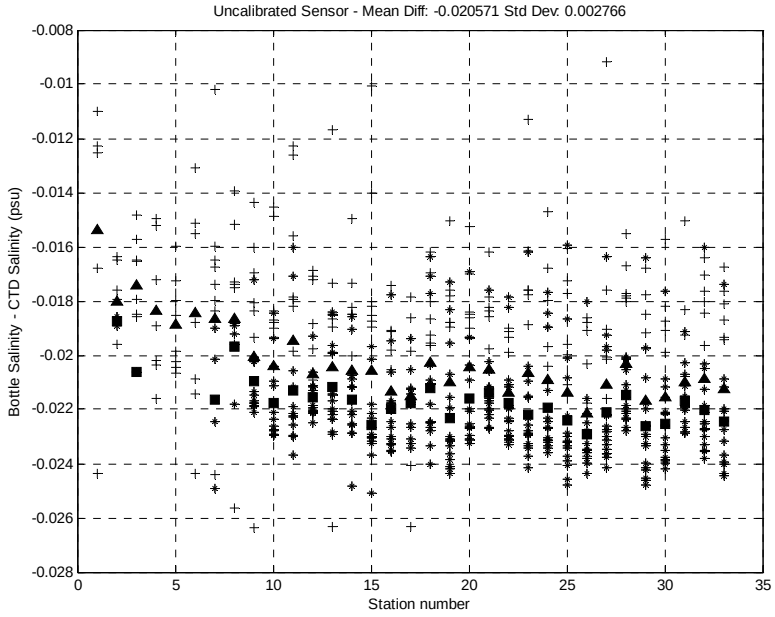


Figure 7-4 - Bottle - Uncalibrated CTD salinity differences plotted against station number. The crosses are data points above 500 dbar and the stars are the data points below 500 dbar. The average values for each group by station number are also plotted (squares and triangles respectively).

Despite the large variability of the data, in particular below 500 dbar, the samples of the first 6 casts were used for the final data reduction. Note also that the first six CTD stations were in the Florida Straits and Northwest Providence Channel where bottom depths do not exceed 800 m. The AOML/CTDCAL Toolbox automatically applies a quality control to the data based on comparison with a normal distribution. After these procedures 605 data points (91.8%) were used in the final calculations.

In order to calibrate the CTD conductivity data against the sample conductivity we assume a constant additive correction (offset), multiplicative correction (slope), time drift correction (represented by station number) and where needed, a linear pressure-dependent term. In this way the function to be minimized is

$$C_{bottle} - \left[m * C_{CTD} + b + \left(p_1 * station \right) + pcor * P \right]$$

where C_{bottle} is bottle conductivity (S/m), C_{CTD} is pre-cruise calibrated CTD conductivity (S/m), *m* is the conductivity slope, *b* is the offset (S/m), P is the pressure, *pcor* is the pressure correction coefficient, *station* is the station number and p_1 is the polynomial coefficient.

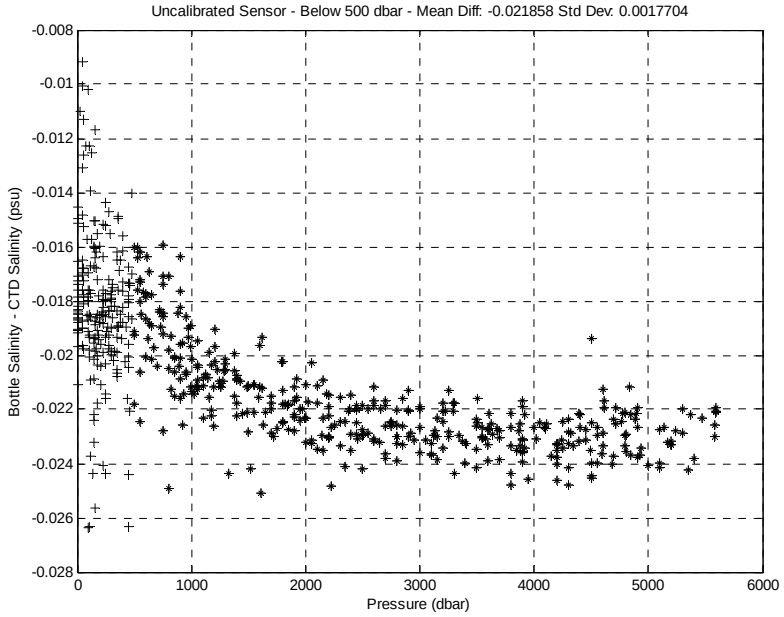


Figure 7-5 - Bottle - Uncalibrated CTD salinity differences plotted against pressure. The crosses are data points above 500 dbar and the stars are the data points below 500 dbar.

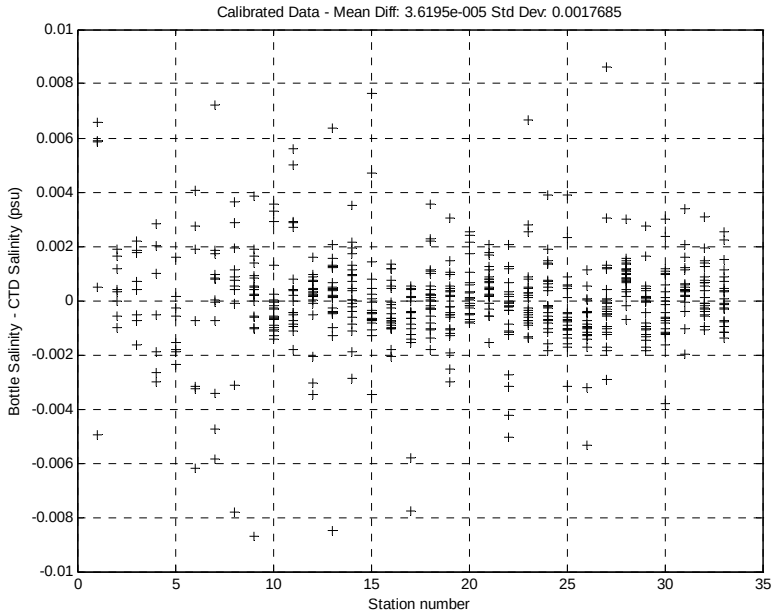


Figure 7-6 - Bottle - Calibrated CTD salinity differences plotted against station number

The coefficients estimated by the equation above were then applied to the CTD conductivities and the final results show a residual of $6.5.10^{-7}$ psu ($9.2.10^{-5}$ psu for the data below 500 dbar) and a standard deviation of 0.0017 psu (0.0011 psu for the data

below 500dbar). Also 85.9% of the residuals for the data are within the confidence limits determined by the WOCE (± 0.002 psu) and this number increase to 93.4% if we consider only the data below 500 dbar.

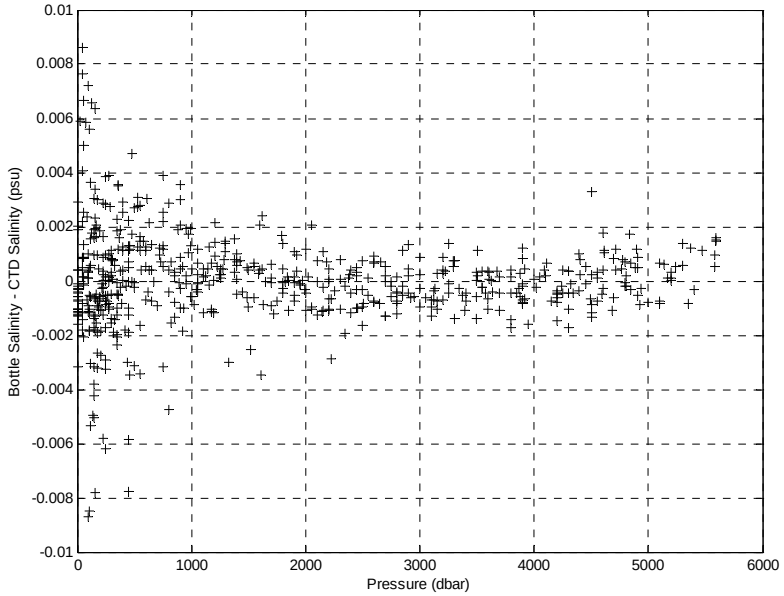


Figure 7-7 - Bottle - Calibrated CTD salinity differences plotted against pressure.

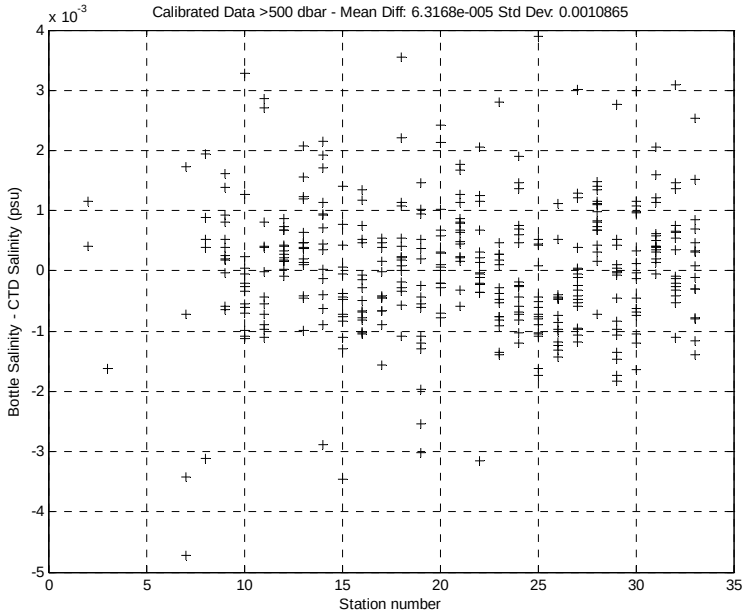


Figure 7-8 - Bottle - Calibrated CTD salinity differences plotted against station number (data below 500 dbar).

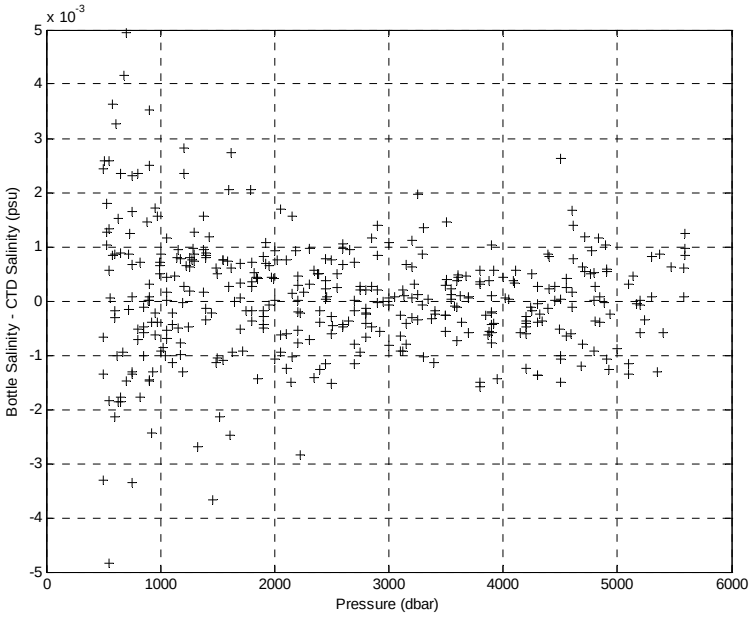


Figure 7-9 - Bottle - Calibrated CTD salinity differences plotted against pressure (data below 500 dbar).

Table 7.5 – Final statistics of the conductivity calibration. "Raw" values and "QC" values represent differences between uncalibrated CTD measurements and all unedited bottle values (Raw) and quality controlled (QC) bottle values. "Calibrated" statistics are for final processed and quality controlled CTD and bottle values. Note the QC bottle values are for large statistical outliers and represent only the first pass of QC for the bottle files. A small number of additional bottles are flagged as questionable during the CTD calibration process (hence the % data used is slightly lower for fully calibrated data).

Data	% data used	Residual (all)	Standard deviation (all)	Residual (>500dbar)	Standard deviation (>500dbar)	Residual (>3000dbar)	Standard deviation (>3000dbar)
Raw	100	-0.1320	0.1874	-0.0221	0.0298	-0.0266	0.0466
QC	92.4	-0.0206	0.0028	-0.0219	0.0018	-0.0229	0.0008
Calibrated	91.8	6.5e-7	0.0017	-9.2e-5	0.0011	1.7e-5	0.0008

A final verification about the quality of the data was made by comparing the results of this cruise with some historical data available at the location of the Northwest Providence Channel section (Figure 7-10) as well at the location of the Abaco section (Figure 7-11 and Figure 7-12). Water mass properties are very stable, specially for deeper layers of the ocean, that way by comparing these values we can have a very good estimative of the quality of these data.

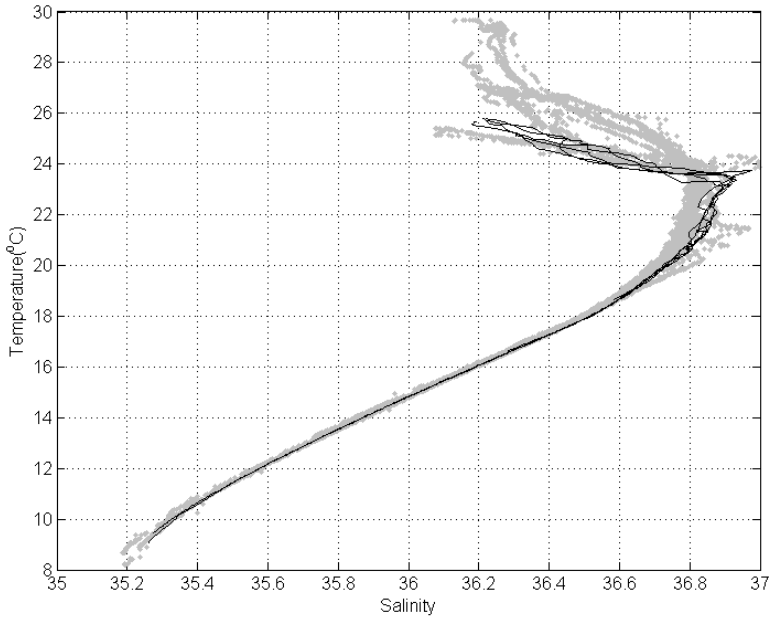


Figure 7-10 –Temperature – Salinity diagram for stations located on the Northwest Providence Channel section area. The solid black lines are the data collected during this cruise; the gray dots are data from the historical database.

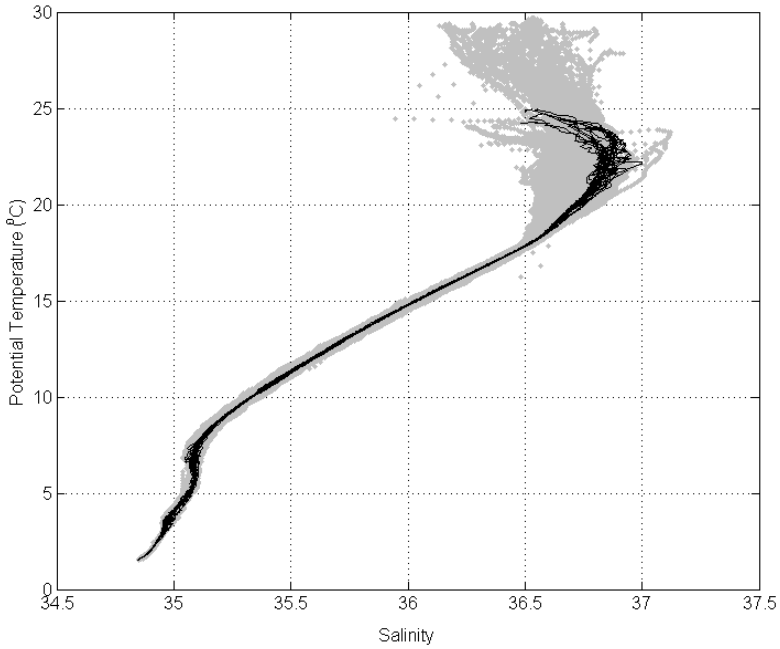


Figure 7-11 - Potential Temperature – Salinity diagram for stations located on the Abaco section area. The solid black lines are the data collected during this cruise; the gray dots are data from the historical database.

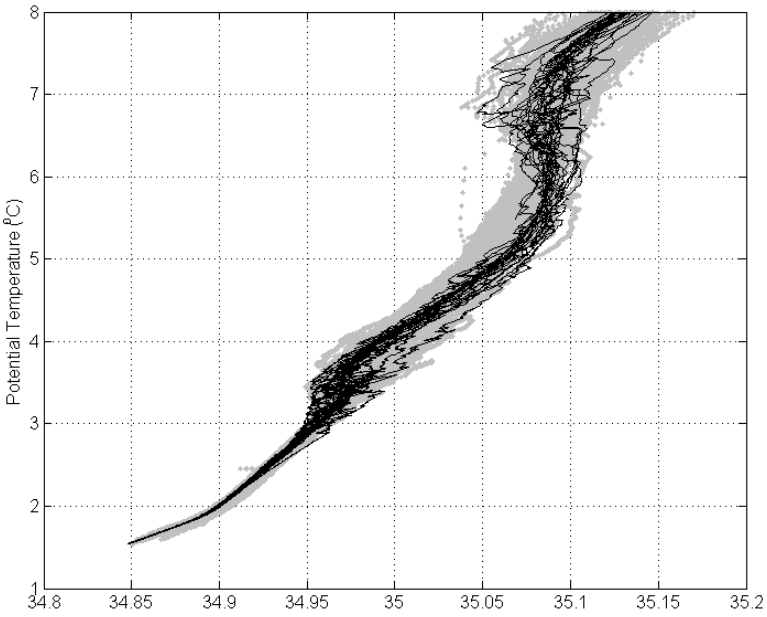


Figure 7-12 - Potential Temperature – Salinity diagram for stations located on the Abaco section area with emphasis on the properties of the deep water. The solid black lines are the data collected during this cruise; the gray dots are data from the historical database.

7.5 Dissolved Oxygen

Oxygen samples collected during CTD/O_2 profiles were used for calibration. Due to hysteresis problem with oxygen sensors, the CTD upcast data for each bottle stop was replaced with the corresponding processed downcast CTD/O_2 data at common neutral density levels

The algorithm used for converting oxygen sensor current and probe temperature measurements as described by [*Owens and Millard*, 1985] requires a non-linear least squares regression technique in order to determine the best fit coefficients of the model for oxygen sensor behavior to the water sample observations. A Matlab sub-routine called oxift.m from the AOML CTD/CAL TOOLBOX performs non-linear least squares regression using the Gauss-Newton algorithm with Levenberg-Marquardt modifications for global convergence. This algorithm is independent of the first coefficients guess and demonstrates excellent convergence. This oxfit.m routine includes an optional time drift term (related with the station number), allowing all stations to be calibrated without breaking into discrete groupings. The Owens and Millard (1985) algorithm was modified as follows:

$$O(ml/l) = \left\{ Soc \cdot \left(O_c + tau \cdot \frac{dO_c}{dt} \right) + Boc + \left(p_1 * sta + p_2 * sta^2 \right) \right\} \cdot e^{(tcor \cdot (T + wt.(T_0 - T)) + pcor \cdot P)} \cdot OXSAT(T,S),$$

where *Oc* is the instrument current (µA) and *dOc/dt* (µA/s) is the slope of the current and *Soc*, *Boc*, *wt*, *tcor, pcor, tau,* p_1, p_2, p_3 and p_4 are the estimated coefficients. The *T, S* and *P* are the temperature, salinity and pressure measured by the CTD, *sta* is the station number and OXSAT is the oxygen saturation (see section 4.4 Dissolved Oxygen).

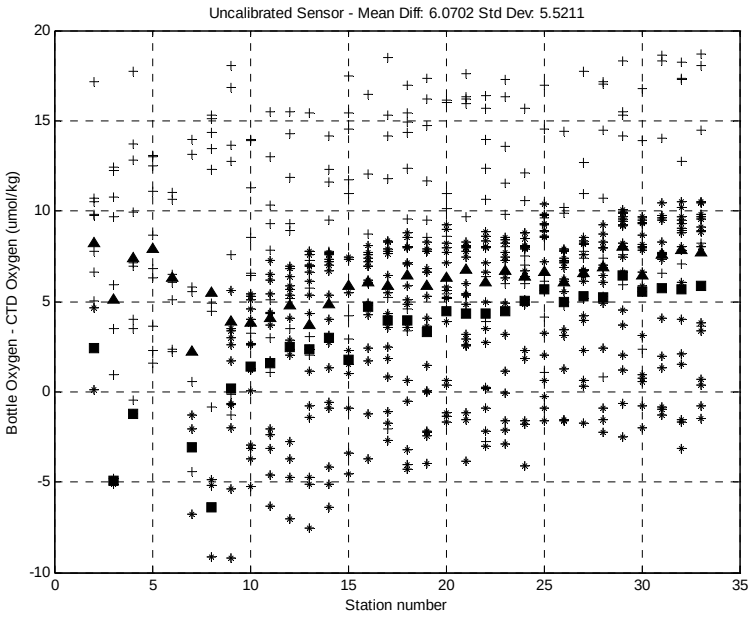


Figure 7-13 - Bottle - Uncalibrated CTD oxygen differences plotted against pressure. The crosses are data points above 500 dbar and the stars are the data points below 500 dbar. The average values for each group by station number are also plotted (squares and triangles respectively).

A comparison between the primary and secondary sensors and between each of the sensors to bottle oxygen were evaluated and the primary sensor was chose to perform the calibration. Based on the differences between the samples and the CTD sensor outliers were removed and initially 97% of the samples were kept to perform the calculations.

Despite the large variability of the data, in particular below 500 dbar, the samples of the first 8 casts were used for the final data reduction. Note that the first six stations were in the Florida Straits and Northwest Providence Channel (where bottom depths do not exceed 800m). Stations 7 and 8 were also in shallow water (less than about 1000 m depth). Also, analogous to the conductivity, AOML/CTDCAL Toolbox automatically applies a quality control to the data based on comparison with a normal distribution. After these procedures 616 data points (94.3%) were used in the final calculations.

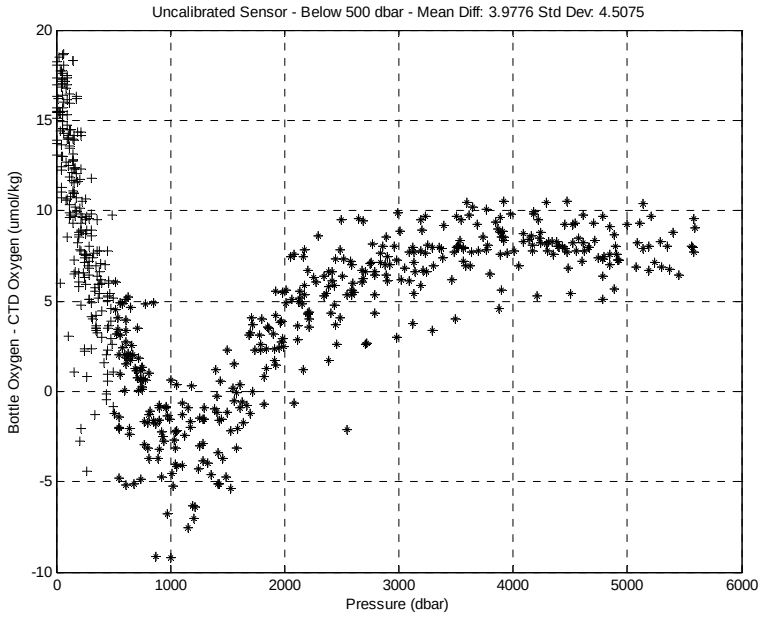


Figure 7-14 - Bottle - Uncalibrated CTD oxygen differences plotted against pressure. The crosses are data points above 500 dbar and the stars are the data points below 500 dbar.

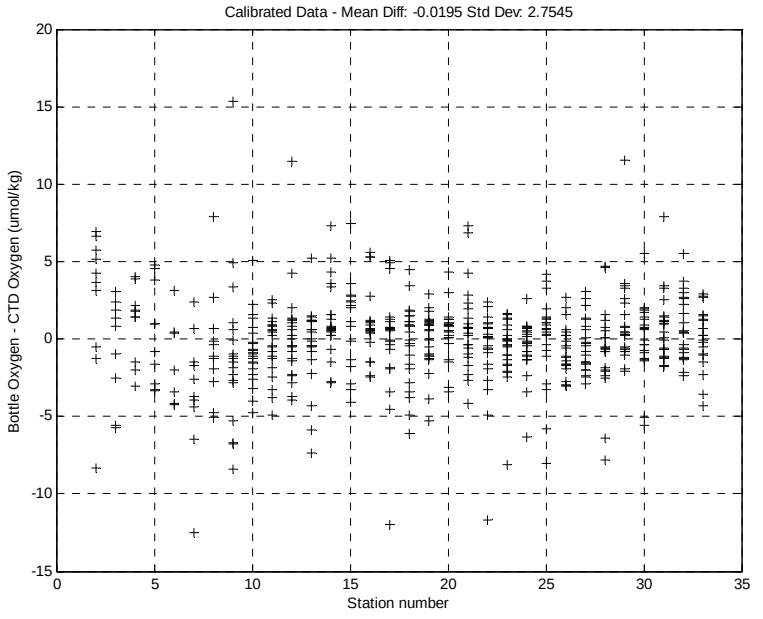


Figure 7-15 - Bottle - Calibrated CTD oxygen differences plotted against station number

By minimizing the differences between the oxygen samples and the CTD oxygen estimated from the equation described on this section, new coefficients were calculated and then applied to the CTD original data. The residual is –0.02 µmol/kg (–0.14 µmol/kg

for the data below 500 dbar) and the standard deviation 2.75 µmol/kg (–1.81 µmol/kg for the data below 500 dbar).). Also 68% of the residuals for the data are within the confidence limits determined by the WOCE (± 1% of the dissolved oxygen measured) and this number increase to 82% if we consider only the data below 500 dbar.

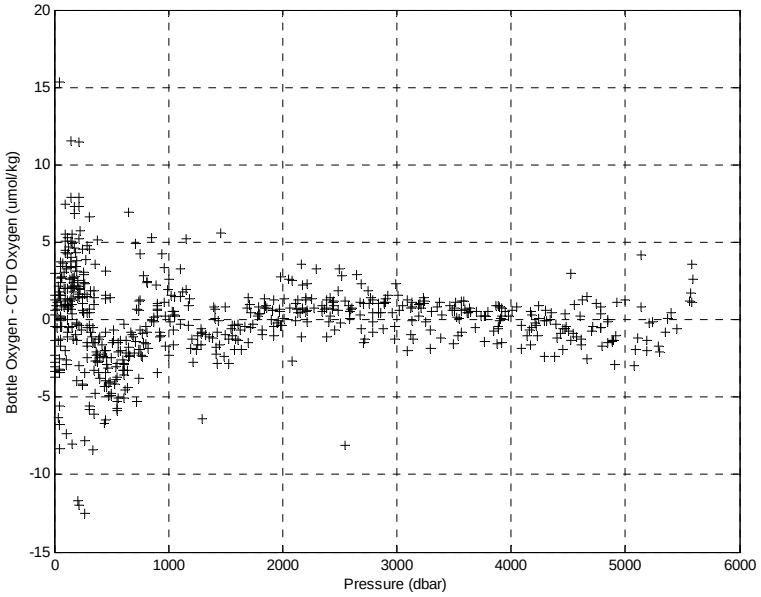


Figure 7-16 - Bottle - Calibrated CTD oxygen differences plotted against pressure

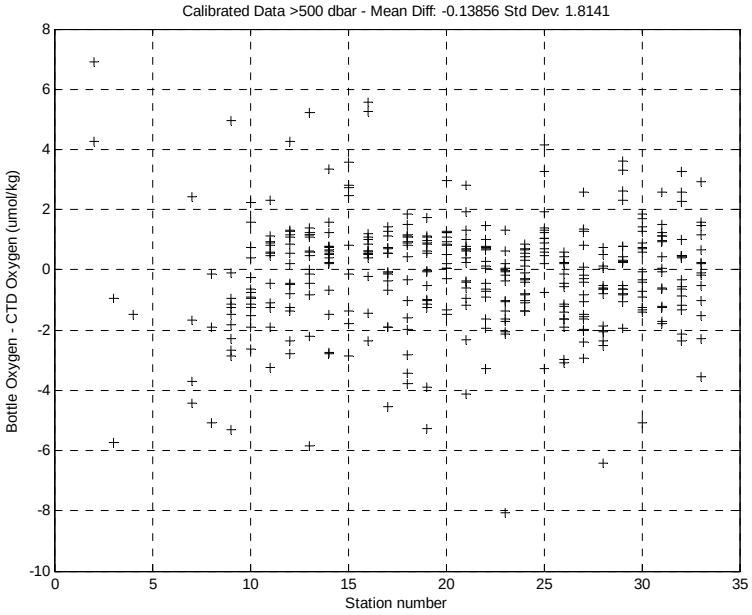


Figure 7-17 - Bottle - Calibrated CTD oxygen differences plotted against station number for data points below 500 dbar.

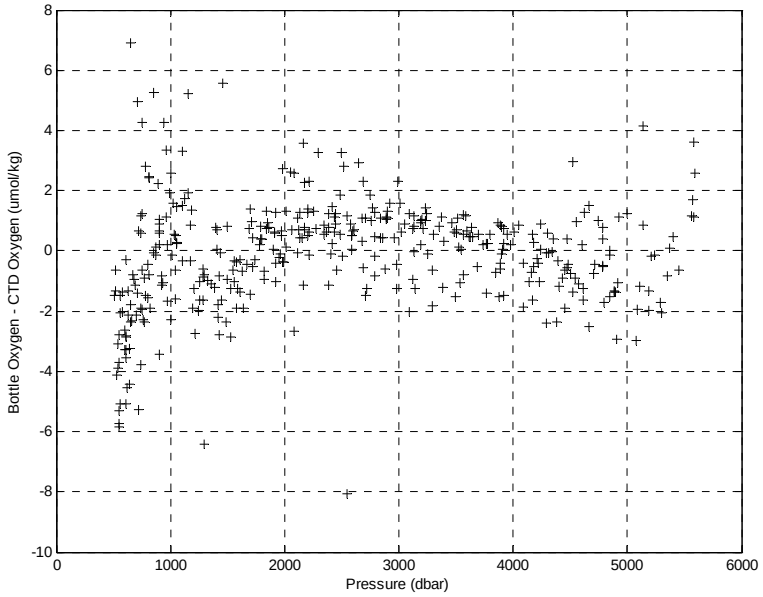


Figure 7-18 - Bottle - Calibrated CTD oxygen differences plotted against station number (data points below 500 dbar).

Table 7.6 – Final Statistics of the oxygen calibration (values in µmol/kg). "Raw" values and "QC" values represent differences between uncalibrated CTD measurements and all unedited bottle values (Raw) and quality controlled (QC) bottle values. "Calibrated" statistics are for final processed and quality controlled CTD and bottle values. Note the QC bottle values are for large statistical outliers and represent only the first pass of QC for the bottle files. A small number of additional bottles are flagged as questionable during the CTD calibration process (hence the % data used is slightly lower for fully calibrated data).

Data	% data used	Residual (all)	Standard deviation (all)	Residual (>500dbar)	Standard deviation (>500dbar)
Raw	100	6.18	6.68	3.87	5.52
QC	94.3	6.07	5.52	3.97	4.51
Calibrated	93.2	-0.02	2.75	-0.14	1.81

A final verification about the quality of the data, like in the salinity data, was made by comparing the results of this cruise with some historical data available at the location of the Abaco section (Figure 7-19 and Figure 7-20), unfortunately no dissolved oxygen data were available in the database in the area of the Northwest Providence Channel section. Again by investigating water mass properties, particularly for deeper layers of the ocean, we can have an estimative of the quality of these data.

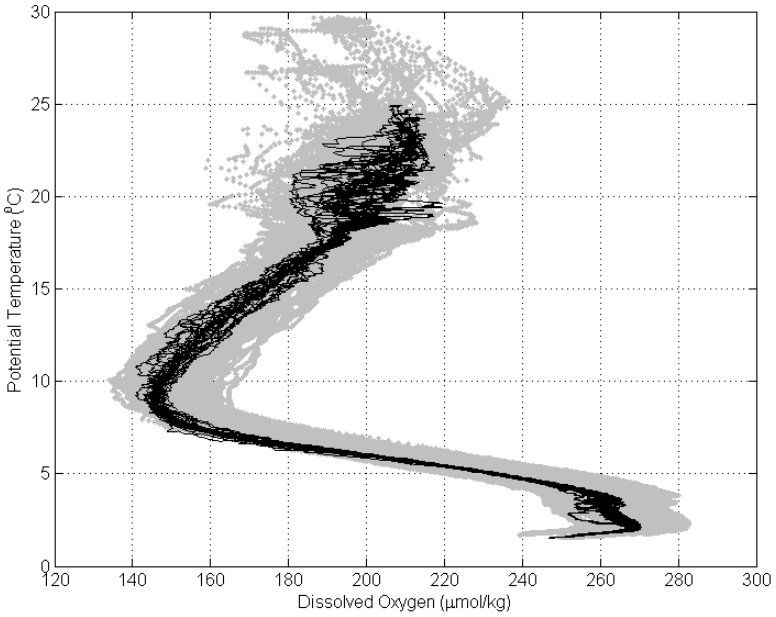


Figure 7-19 - Potential Temperature – Dissolved Oxygen diagram for stations located on the Abaco section area. The solid black lines are the data collected during this cruise; the gray dots are data from the historical database.

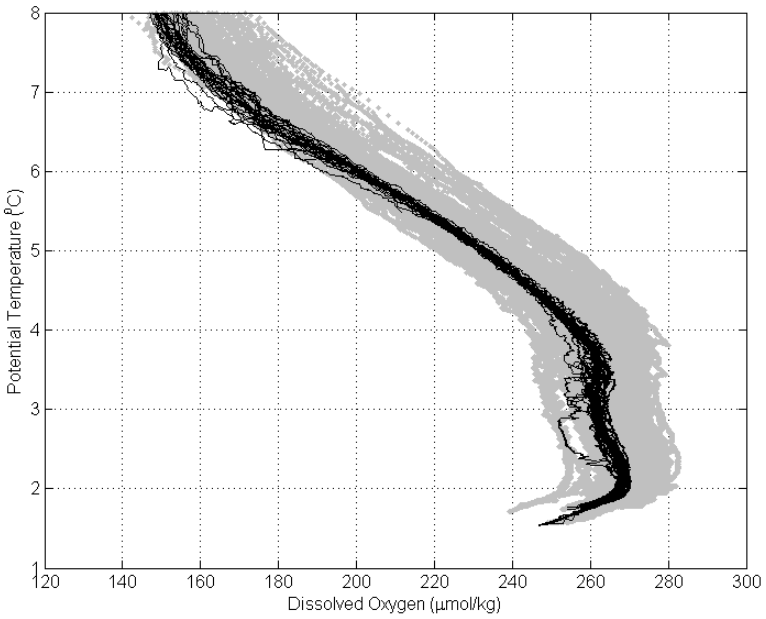


Figure 7-20 - Potential Temperature – Dissolved Oxygen diagram for stations located on the Abaco section area with emphasis on the properties of the deep water. The solid black lines are the data collected during this cruise; the gray dots are data from the historical database.

8. Final CTD Data Presentation

AOML/CTDCAL Toolbox processes finalized CTD/O_2 data and computes ITS-90 temperature, ITS-90 potential temperature and dynamic height. The final calibrated data files were used to produce the tables and station profile plots presented in Appendix B for each CTD station. The table on the left is in “standard depths” and its corresponding profile plot is shown on the facing page. Niskin bottle depths are presented on the right side of the profile plot. Bottle salinity and oxygen values are plotted as points in the three smaller plots.

Vertical sections of potential temperature, CTD salinity, neutral density, and CTD oxygen are contoured with pressure as the vertical axis and, for Abaco Sections longitude as horizontal axis (Figure 8-1 to Figure 8-4). Nominal vertical exaggerations are 100:1 below 1000 dbar (lower panels) and 40:1 above 1000 dbar (upper panels). For the Northwest Providence Channel Sections latitude is used as horizontal axis (Figure 8-5 to Figure 8-8)

Post-cruise calibrations were applied to CTD data associated with bottle data using Matlab sub-routines (apply_calibration.m). WOCE quality flags were appended to bottle data records. “Bad values” (WOCE quality control value = 4) were flagged if they bottle samples failed the initial quality control and were not used for the calibration (which meant they typically fell outside 5 standard deviations of the difference between samples and uncalibrated CTD values). Questionable flags (WOCE quality control value = 3) were defined by using the value of 2.8 times the standard deviation of the difference between calibrated CTD values and bottle samples.

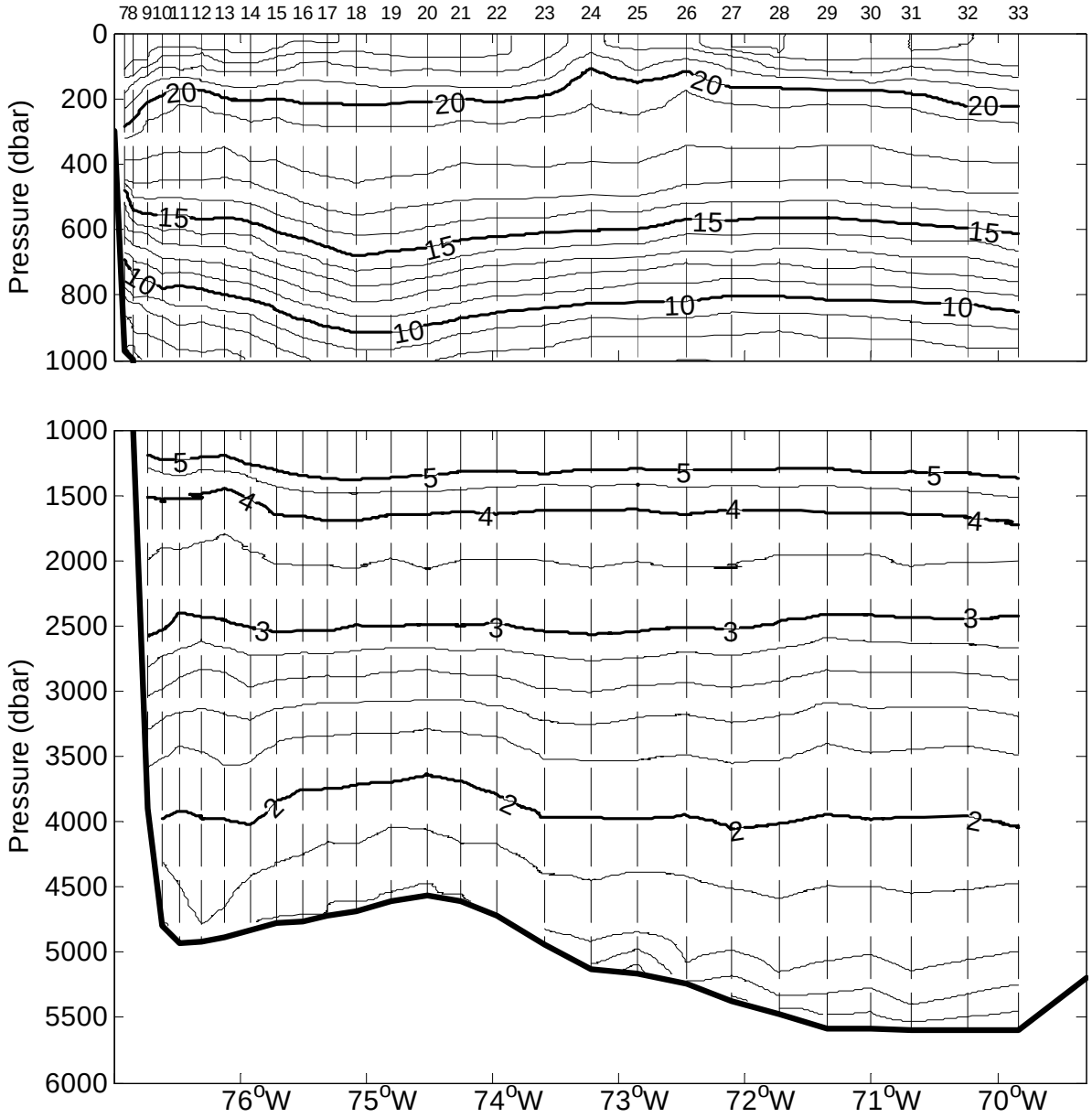


Figure 8-1 – Potential Temperature (^{o}C) section for the Abaco Section. Contour intervals are 0.1^{o}C from 1-2 ^{o}C, 0.2^{o}C from 2-3^{o}C, 0.5^{o}C from 3-5^{o}C and 1^{o}C for 5-35^{o}C. Dashed vertical lines are the CTD station locations.

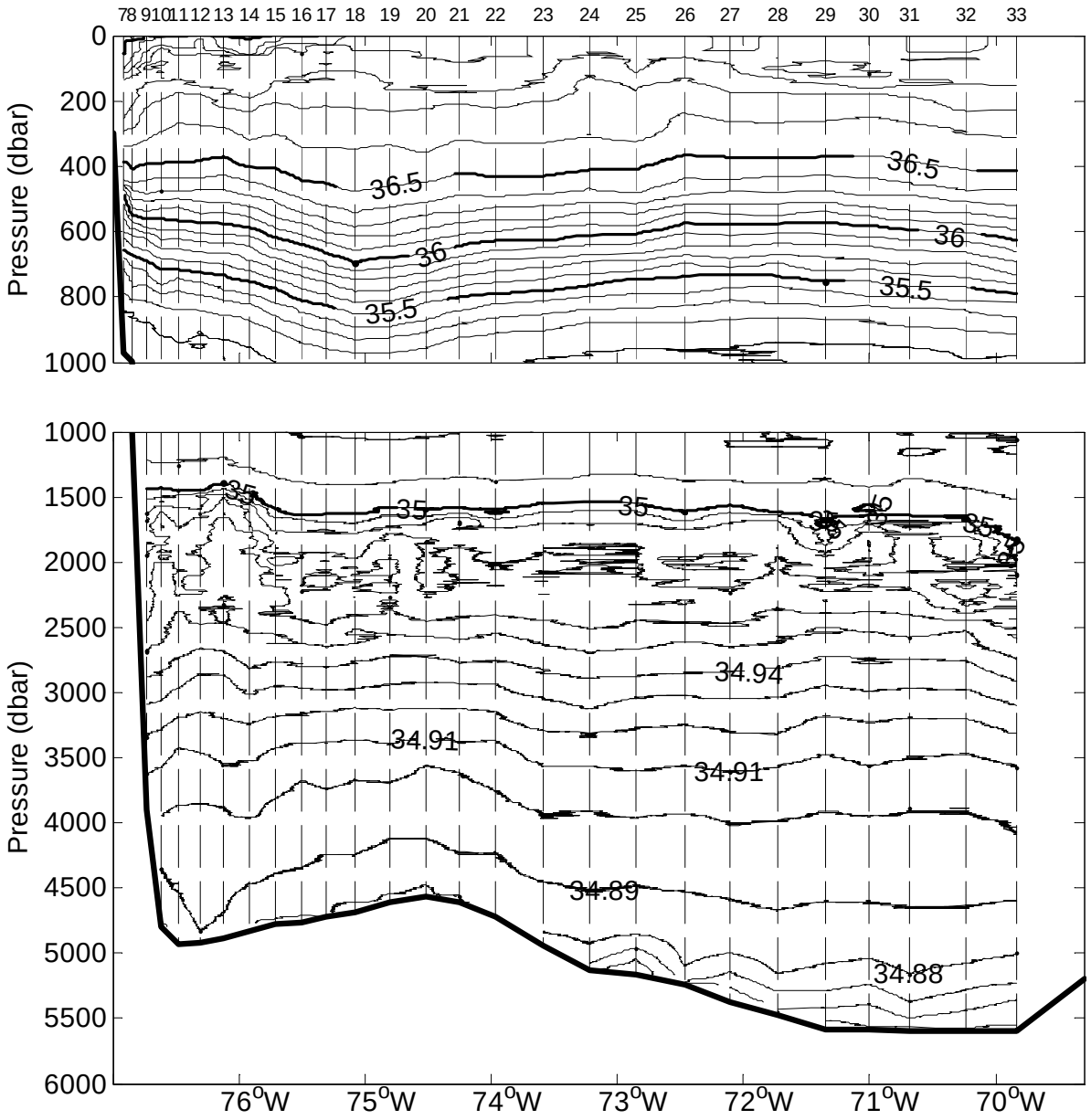


Figure 8-2 – Salinity (PSS 78) section for the Abaco section. Contour intervals are 0.01 from 34-35, 0.05 from 35-35.1and 0.1 from 35.1-38. Dashed vertical lines are the CTD station locations.

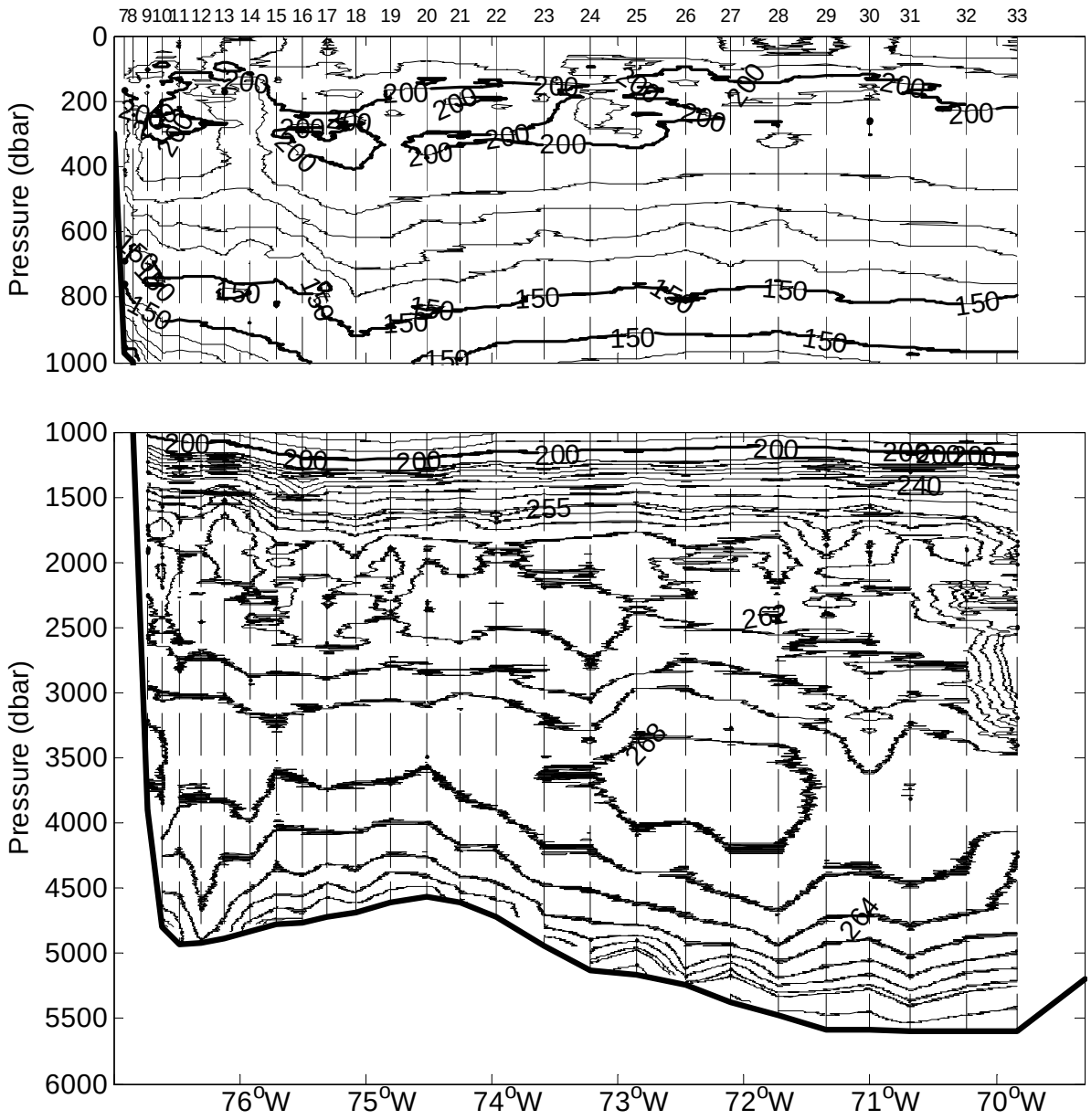


Figure 8-3 – Dissolved Oxygen (µmol/kg) section for the Abaco Section. Contour intervals are 10 µmol/kg from 100-300 µmol/kg in the upper panel. In the lower panel, contours are 20 µmol/kg from 100-220 µmol/kg and 5 µmol/kg form 220-255 µmol/kg and 2 µmol/kg from 256-270 µmol/kg. Dashed vertical lines are the CTD station locations.

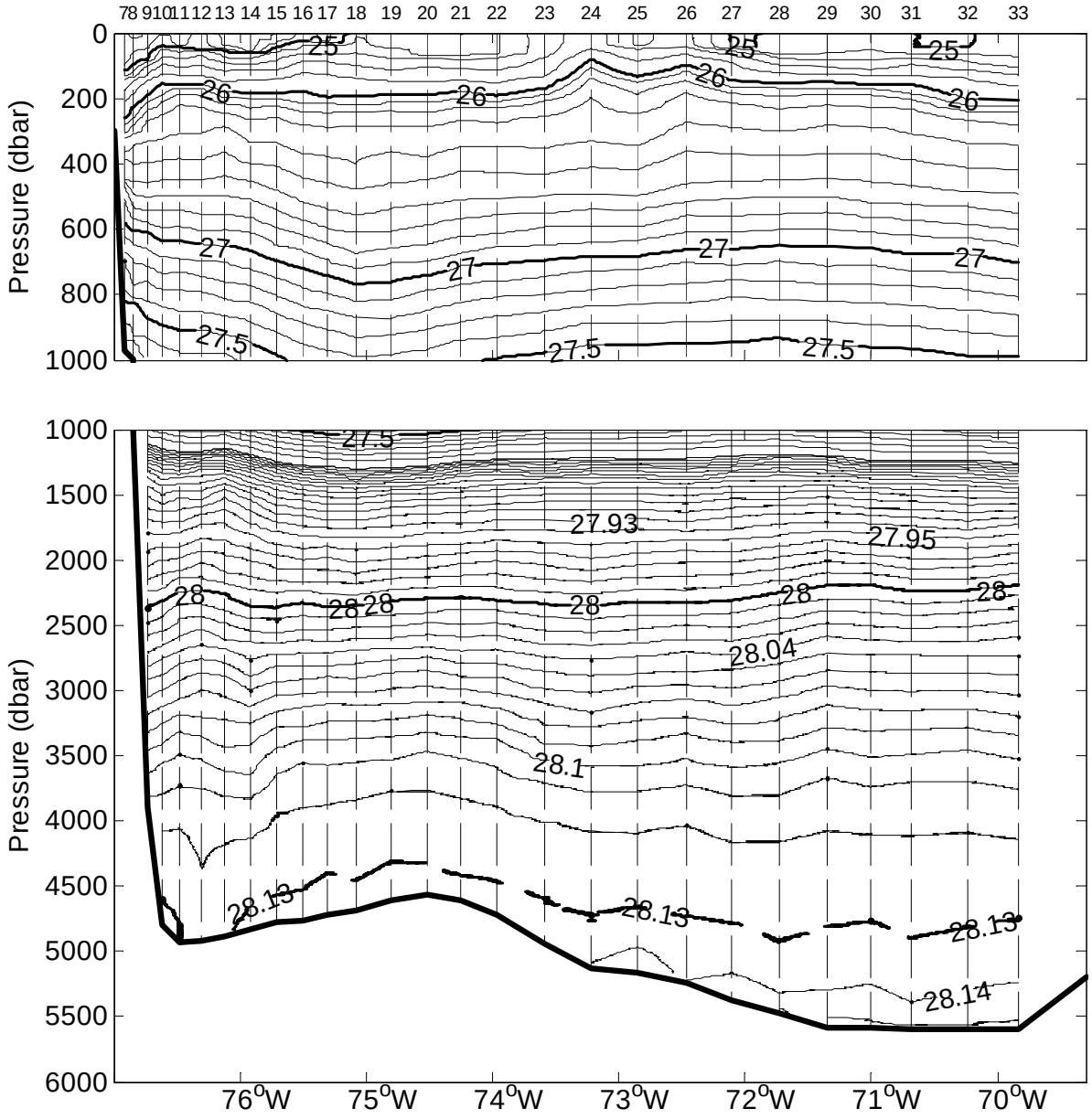


Figure 8-4 – Neutral density (kg/m^3) section for the Abaco Section. Contour intervals are 0.2 kg/m^3 for 24-26 kg/m^3, 0.1 kg/m^3 for 26-28 kg/m^3 in the upper panel. In the lower panel, contour intervals are 0.05 kg/m^3 for 27-27.8 kg/m^3 and 0.01 kg/m^3 to 27.8 to 29 kg/m^3. Dashed vertical lines are the CTD station locations.

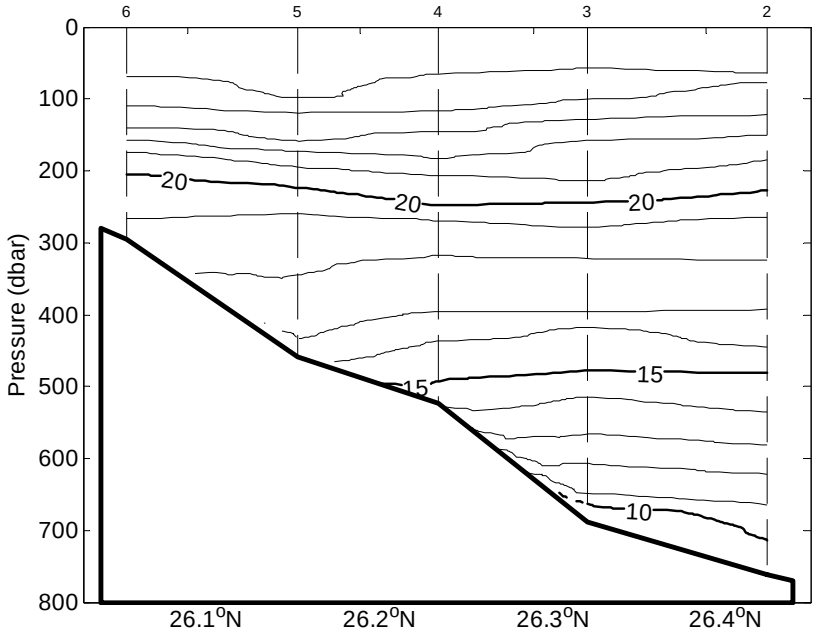


Figure 8-5 – Potential Temperature (^{o}C) section for the Northwest Providence Channel Section. Contour intervals are 0.1^{o}C from 1-2 ^{o}C, 0.2^{o}C from 2-3^{o}C, 0.5^{o}C from 3-5^{o}C and 1^{o}C for 5-35^{o}C. Dashed vertical lines are the CTD station locations.

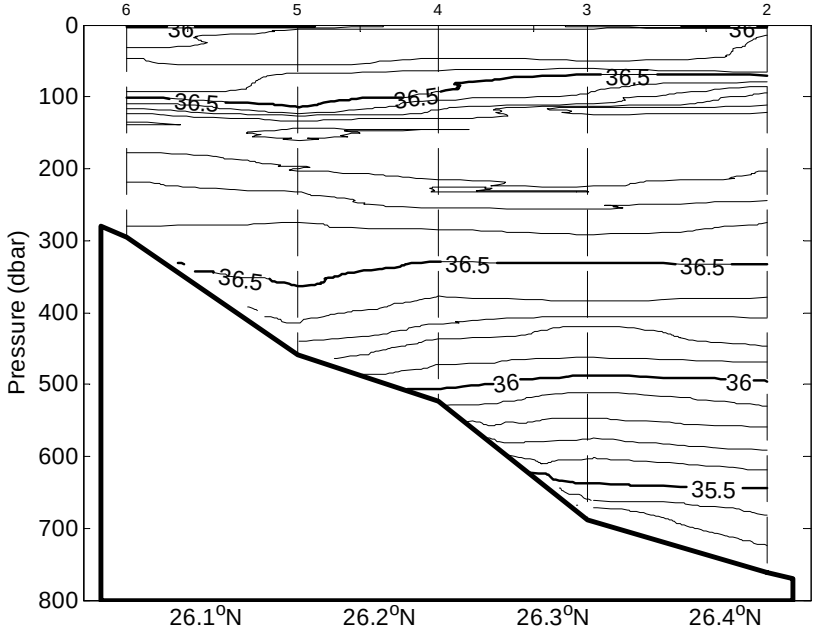


Figure 8-6 – Salinity (PSS 78) section for the Northwest Providence Channel section. Contour intervals are 0.01 from 34-35, 0.05 from 35-35.1and 0.1 from 35.1-38. Dashed vertical lines are the CTD station locations.

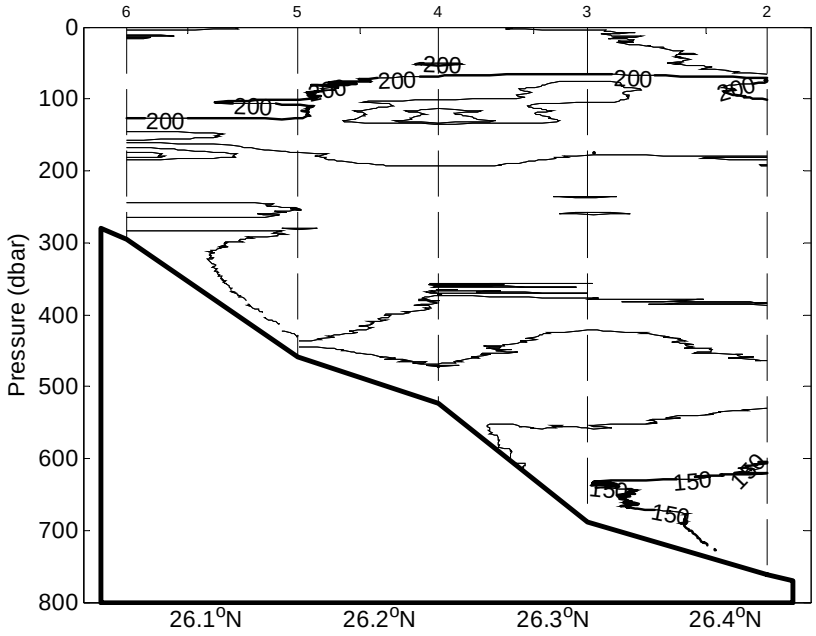


Figure 8-7 – Dissolved Oxygen (µmol/kg) section for the Northwest Providence Channel Section. Contour intervals are 10 µmol/kg. Dashed vertical lines are the CTD station locations.

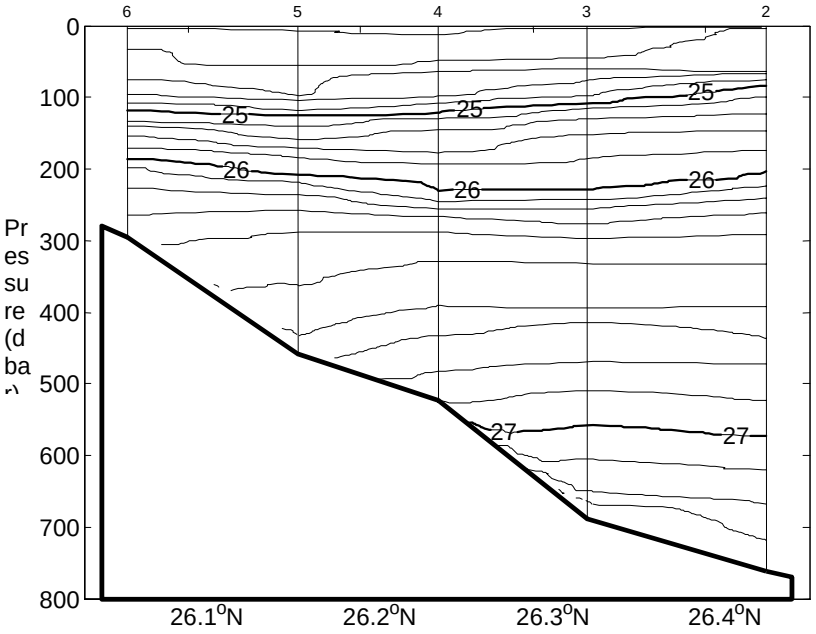


Figure 8-8 – Neutral density (kg/m^3) section for the Northwest Providence Channel Section. Contour intervals are 0.2 kg/m^3 for 24-26 kg/m^3, 0.1 kg/m^3 for 26-28 kg/m^3. Dashed vertical lines are the CTD station locations.

9. Acknowledgements

The assistance of the captain and the crew of the R/V Oceanus are gratefully acknowledged. This research was carried out [in part] under the auspices of the Cooperative Institute for Marine and Atmospheric Studies (CIMAS), a Joint Institute of the University of Miami and the National Oceanic and Atmospheric Administration (NOAA). The National Science Foundation and the National Oceanic and Atmospheric Administration provided funding for the Deep Western Current Climate Time Series. This cruise was sponsored by NOAA's Climate Program Office.

10. References

Benson, B. B., and D. Krause, Jr. (1984), The Concentration and Isotopic Fractionation of Oxygen Dissolved in Freshwater and Seawater in Equilibrium with the Atmosphere, *Limnology and Oceanography*, *29*, 620-632.

Carpenter, J. H. (1965a), The accuracy of the Winkler method for dissolved oxygen analysis, *Limnology and Oceanography*, *10*, 135-140.

Carpenter, J. H. (1965b), The Chesapeake Bay Institute Technique for the Winkler dissolved oxygen method, *Limnology and Oceanography*, *10*, 141-143.

Friederich, G., et al. (1991), An Easy-to-Construct Automated Winkler Titration System, *Monterey Bay Aquarium Research Institute Technical Report*, *91*, 31.

Kawano, T., et al. (2006), The latest batch-to-batch difference table of standard seawater and its application to the WOCE onetime sections, *J. Oceanogr.*, *62*, 777-792.

Latif, M., and T. P. Barnett (1996), Decadal climate variability over the North Pacific and North America: dynamics and predictability, *Journal of Climate, Boston, MA*, *9*, 2407-2423.

Molinari, R. L., et al. (1998), The arrival of recently formed Labrador Sea Water in the Deep Western Boundary Current at 26.5 degree N, *Geophysical Research Letters*, *25*, 2249-2252.

Owens, W., and R. C. Millard, Jr. (1985), New algorithm for CTD oxygen calibration, *Journal of Physical Oceanography, Boston*, *15*, 621-631.

Vaughan, S. L., and R. L. Molinari (1997), Temperature and salinity variability in deep western boundary current, *Journal of Physical Oceanography, Boston, MA*, *27*, 749-761.

Appendix A - WOCE Summary File

(This page is intentionally left blank)

SHIP/CRS	WOCE			CAST	CAST	UTC	EVENT	LATITUDE			LONGITUDE				UNC	HT ABOVE	WIRE	MAX	NO. OF	PARAMETERS	COMMENTS
EXPOCODE	SECT	STNNBR	CASTNO	TYPE	DATE	TIME	CODE	DEG	MIN		DEG	MIN		NAV	DEPTH	BOTTOM	OUT	PRESS	BOTTTLES		
OC365/9	AB01	1	1	ROS	42601	2019	BE	27	0.716	N	79	55.351	W	GPS							CTD2 NO CNFRM BTLS 2 5 8
OC365/9	AB01	1	1	ROS	42601	2031	BO	27	1.442	N	79	55.159	W	GPS	157			139.6	9	1,2	
OC365/9	AB01	1	1	ROS	42601	2048	EN	27	2.730	N	79	54.680	W	GPS							
OC365/9	AB01	2	2	ROS	42601	1125	BE	26	26.033	N	78	40.007	W	GPS							
OC365/9	AB01	2	2	ROS	42601	1200	BO	26	26.507	N	78	40.104	W	GPS	741			746.4	12	1,2	CTD2 BTL 3 NO FIRE
OC365/9	AB01	2	2	ROS	42601	1208	EN	26	26.610	N	78	40.102	W	GPS							
OC365/9	AB01	3	3	ROS	42701	1301	BE	26	19.887	N	78	42.841	W	GPS							
OC365/9	AB01	3	3	ROS	42701	1321	BO	26	19.519	N	78	42.786	W	GPS	656			660.4	9	1,2	CTD1 PSBL LEAK STOPPER ON SFC BOTTLE
OC365/9	AB01	3	3	ROS	42701	1339	EN	26	19.033	N	78	42.974	W	GPS							
OC365/9	AB01	4	4	ROS	42701	1417	BE	26	14.705	N	78	46.181	W	GPS							
OC365/9	AB01	4	4	ROS	42701	1430	BO	26	14.392	N	78	46.349	W	GPS	507			510.3	10		
OC365/9	AB01	4	4	ROS	42701	1451	EN	26	13.973	N	78	46.595	W	GPS							
OC365/9	AB01	5	5	ROS	42701	1533	BE	26	9.837	N	78	48.242	W	GPS							
OC365/9	AB01	5	5	ROS	42701	1544	BO	26	9.667	N	78	48.358	W	GPS	443			446.1	10	1,2	
OC365/9	AB01	5	5	ROS	42701	1600	EN	26	9.837	N	78	48.292	W	GPS							
OC365/9	AB01	6	6	ROS	42701	1652	BE	26	3.926	N	78	51.319	W	GPS							
OC365/9	AB01	6	6	ROS	42701	1659	BO	26	3.897	N	78	51.467	W	GPS	283			284.6	8	1,2	
OC365/9	AB01	6	6	ROS	42801	1708	EN	26	3.846	N	78	51.656	W	GPS							
OC365/9	AB01	7	7	ROS	42801	616	BE	26	29.932	N	76	54.704	W	GPS							
OC365/9	AB01	7	7	ROS	42801	649	BO	26	30.075	N	76	54.855	W	GPS	978	8	970	978.0	13	1,2	
OC365/9	AB01	7	7	ROS	42801	715	EN	26	30.183	N	76	54.720	W	GPS							
OC365/9	AB01	8	8	ROS	42801	1015	BE	26	30.646	N	76	50.453	W	GPS							
OC365/9	AB01	8	8	ROS	42801	1048	BO	26	30.724	N	76	50.585	W	GPS	1005	8.6	1000	997.7	12	1,2	
OC365/9	AB01	8	8	ROS	42801	1116	EN	26	30.853	N	76	50.668	W	GPS							
OC365/9	AB01	9	9	ROS	42801	1206	BE	26	30.039	N	76	44.046	W	GPS							
OC365/9	AB01	9	9	ROS	42801	1319	BO	26	30.394	N	76	45.219	W	GPS	3913	10.1	4102	3903.7	21	1,2	
OC365/9	AB01	9	9	ROS	42801	1439	EN	26	31.186	N	76	46.681	W	GPS							
OC365/9	AB01	10	10	ROS	42801	1546	BE	26	30.114	N	76	37.839	W	GPS							
OC365/9	AB01	10	10	ROS	42801	1709	BO	26	30.800	N	76	36.867	W	GPS	4729	7.3	4767	4788.6	24	1,2	
OC365/9	AB01	10	10	ROS	42801	1833	EN	26	31.862	N	76	37.968	W	GPS							
OC365/9	AB01	11	11	ROS	42801	2214	BE	26	30.093	N	76	28.922	W	GPS							
OC365/9	AB01	11	11	ROS	42801	2355	BO	26	31.624	N	76	29.541	W	GPS	4842	12.1	5074	4925.3	24	1,2	
OC365/9	AB01	11	11	ROS	42801	129	EN	26	33.276	N	76	30.156	W	GPS							
OC365/9	AB01	12	12	ROS	42901	242	BE	26	30.072	N	76	18.022	W	GPS							
OC365/9	AB01	12	12	ROS	42901	420	BO	26	31.738	N	76	18.977	W	GPS	4828	12.6	5055	4913.0	24	1,2	
OC365/9	AB01	12	12	ROS	42901	552	EN	26	33.434	N	76	19.982	W	GPS							
OC365/9	AB01	13	13	ROS	42901	717	BE	26	30.081	N	76	7.040	W	GPS							
OC365/9	AB01	13	13	ROS	42901	853	BO	26	31.704	N	76	7.637	W	GPS	4807	12.8	5320	4889.5	24	1,2	
OC365/9	AB01	13	13	ROS	42901	1044	EN	26	33.432	N	76	8.783	W	GPS							

OC365/9	AB01	14	14	ROS	42901	1205	BE	26	30.073	N	75	54.999	W	GPS								
OC365/9	AB01	14	14	ROS	42901	1343	BO	26	31.841	N	75	55.657	W	GPS	4748	10.3	5473	4834.0	24	1,2	2 FIRED AT 65M	
OC365/9	AB01	14	14	ROS	42901	1524	EN	26	33.592	N	75	56.265	W	GPS								
OC365/9	AB01	15	15	ROS	42901	1922	BE	26	30.303	N	75	42.373	W	GPS								
OC365/9	AB01	15	15	ROS	42901	2111	BO	26	33.038	N	75	43.689	W	GPS	4690	10.1	5967	4768.9	24	1,2		
OC365/9	AB01	15	15	ROS	42901	2306	EN	26	35.660	N	75	45.110	W	GPS								
OC365/9	AB01	16	16	ROS	42901	111	BE	26	30.443	N	75	30.111	W	GPS								
OC365/9	AB01	16	16	ROS	42901	237	BO	26	31.877	N	75	30.908	W	GPS	4683	9.8	5005	4762.5	24	1,2		
OC365/9	AB01	16	16	ROS	42901	405	EN	26	33.356	N	75	31.224	W	GPS								
OC365/9	AB01	17	17	ROS	43001	605	BE	26	30.051	N	75	18.138	W	GPS								
OC365/9	AB01	17	17	ROS	43001	724	BO	26	30.929	N	75	18.232	W	GPS	4636	6.6	4697	4718.6	23	1,2	BOTTLE 24 DID NOT FIRE	
OC365/9	AB01	17	17	ROS	43001	857	EN	26	32.133	N	75	18.448	W	GPS								
OC365/9	AB01	18	18	ROS	43001	1057	BE	26	30.025	N	75	5.000	W	GPS								
OC365/9	AB01	18	18	ROS	43001	1228	BO	26	31.720	N	75	5.450	W	GPS	4603	9.5	5011	4685.4	24	1,2		
OC365/9	AB01	18	18	ROS	43001	1401	EN	26	33.080	N	75	5.218	W	GPS								
OC365/9	AB01	19	19	ROS	43001	1608	BE	26	29.780	N	74	48.115	W	GPS								
OC365/9	AB01	19	19	ROS	43001	1728	BO	26	30.144	N	74	47.793	W	GPS	4508	8.1	4605	4612.5	24	1,2		
OC365/9	AB01	19	19	ROS	43001	1857	EN	26	30.291	N	74	48.206	W	GPS								
OC365/9	AB01	20	20	ROS	43001	2127	BE	26	30.064	N	74	30.906	W	GPS								
OC365/9	AB01	20	20	ROS	43001	2257	BO	26	30.715	N	74	31.106	W	GPS	4496	10	4580	4558.1	24	1,2		
OC365/9	AB01	20	20	ROS	43001	32	EN	26	31.844	N	74	30.938	W	GPS								
OC365/9	AB01	21	21	ROS	50101	306	BE	26	30.117	N	74	14.148	W	GPS								
OC365/9	AB01	21	21	ROS	50101	433	BO	26	31.112	N	74	14.555	W	GPS	4536	6.1	4836	4608.8	24	1,2		
OC365/9	AB01	21	21	ROS	50101	551	EN	26	31.826	N	74	13.851	W	GPS								
OC365/9	AB01	22	22	ROS	50101	822	BE	26	30.031	N	73	57.988	W	GPS								
OC365/9	AB01	22	22	ROS	50101	958	BO	26	31.081	N	73	57.766	W	GPS	4642	6.6	4827	4716.2	24	1,2		
OC365/9	AB01	22	22	ROS	50101	1134	EN	26	32.157	N	73	57.404	W	GPS								
OC365/9	AB01	23	23	ROS	50101	1411	BE	26	30.025	N	73	34.977	W	GPS								
OC365/9	AB01	23	23	ROS	50101	1543	BO	26	31.138	N	73	35.256	W	GPS	4920	6.8	5035	4937.5	24	1,2		
OC365/9	AB01	23	23	ROS	50101	1703	EN	26	31.951	N	73	35.750	W	GPS								
OC365/9	AB01	24	24	ROS	50101	1920	BE	26	30.002	N	73	13.100	W	GPS								
OC365/9	AB01	24	24	ROS	50101	2056	BO	26	31.030	N	73	14.011	W	GPS	5058	8.8	5202	5133.9	24	1,2		
OC365/9	AB01	24	24	ROS	50101	2233	EN	26	31.860	N	73	15.267	W	GPS								
OC365/9	AB01	25	25	ROS	50201	1540	BE	26	33.517	N	72	51.104	W	GPS								
OC365/9	AB01	25	25	ROS	50201	1723	BO	26	34.783	N	72	51.486	W	GPS	5107	8.4	5298	5164.0	24	1,2		
OC365/9	AB01	25	25	ROS	50201	1908	EN	26	35.925	N	72	51.873	W	GPS								
OC365/9	AB01	26	26	ROS	50201	2222	BE	26	30.036	N	72	27.946	W	GPS							BOTTLES 3 AND 23 MISFIRED	
OC365/9	AB01	26	26	ROS	50201	2	BO	26	30.904	N	72	27.742	W	GPS	5138	9.6	5262	5263.3	24	1,2	BOTTLE 14 LANYARD KEPT FROM SEALING	
OC365/9	AB01	26	26	ROS	50201	147	EN	26	32.305	N	72	28.040	W	GPS								
OC365/9	AB01	27	27	ROS	50301	422	BE	26	29.990	N	72	6.111	W	GPS								
OC365/9	AB01	27	27	ROS	50301	613	BO	26	31.859	N	72	5.894	W	GPS	5278	6.8	5606	5366.0	24	1,2		

OC365/9	AB01	27	27	ROS	50301	822	EN	26	34.004	N	72	5.727	W	GPS								
OC365/9	AB01	28	28	ROS	50301	1116	BE	26	30.118	N	71	43.939	W	GPS								
OC365/9	AB01	28	28	ROS	50301	1259	BO	26	31.742	N	71	43.718	W	GPS	5373	9.1	5622	5469.0		24	1,2	
OC365/9	AB01	28	28	ROS	50301	1450	EN	26	33.419	N	71	43.224	W	GPS								
OC365/9	AB01	29	29	ROS	50301	1800	BE	26	30.061	N	71	21.089	W	GPS								
OC365/9	AB01	29	29	ROS	50301	1957	BO	26	32.024	N	71	20.237	W	GPS	5465	9.1	5853	5586.8		24	1,2	
OC365/9	AB01	29	29	ROS	50301	2147	EN	26	33.899	N	71	19.098	W	GPS								
OC365/9	AB01	30	30	ROS	50401	30	BE	26	30.107	N	71	0.076	W	GPS								
OC365/9	AB01	30	30	ROS	50401	210	BO	26	32.248	N	71	0.536	W	GPS	5470	8.09	6020	5585.5		24	1,2	
OC365/9	AB01	30	30	ROS	50401	414	EN	26	34.255	N	71	0.596	W	GPS								
OC365/9	AB01	31	31	ROS	50401	926	BE	26	30.263	N	70	41.009	W	GPS								
OC365/9	AB01	31	31	ROS	50401	1118	BO	26	32.379	N	70	40.887	W	GPS	5470	7.3	6088	5591.3		24	1,2	
OC365/9	AB01	31	31	ROS	50401	1311	EN	26	34.191	N	70	40.057	W	GPS								
OC365/9	AB01	32	32	ROS	50401	1604	BE	26	29.993	N	70	14.021	W	GPS								
OC365/9	AB01	32	32	ROS	50401	1803	BO	26	31.264	N	70	11.994	W	GPS	5471	8.8	6194	5591.0		24	1,2	
OC365/9	AB01	32	32	ROS	50401	2014	EN	26	31.231	N	70	9.419	W	GPS								
OC365/9	AB01	33	33	ROS	50401	2236	BE	26	30.002	N	69	50.065	W	GPS								
OC365/9	AB01	33	33	ROS	50401	27	BO	26	31.194	N	69	48.341	W	GPS	5483	9.1	5997	5594.2		24	1,2	
OC365/9	AB01	33	33	ROS	50401	219	EN	26	32.309	N	69	46.618	W	GPS								

Appendix B – WOCE Bottle Summary File

(This page is intentionally left blank)

EXPOCODE	SECT_ID	STNNBR	CASTNO	SAMPNO	BTLNBR	BTLNBR FLAG	DATE	TIME	LATITUDE	LONGITUDE	DEPTH	CTDPRS DBARs	CTDTMP ITS-90	CTDSAL PSS-78	CTDSAL FLAG	SALNTY PSS-78	SALNTY FLAG	CTDOXY UMOL/KG	CTDOXY FLAG	OXYGEN UMOL/KG	OXYGEN FLAG
31WBTSOC	AB01	1	1	1	24	2	20010426	2022	27.0158	-79.9213	159	139.6	10.4301	35.3285	2	35.3199	2	126.3	2	-999	9
31WBTSOC	AB01	1	1	2	1	2	20010426	2022	27.0158	-79.9213	159	127.5	11.8637	35.5302	2	35.5321	2	132.9	2	-999	9
31WBTSOC	AB01	1	1	3	3	2	20010426	2022	27.0158	-79.9213	159	112	13.9258	35.8105	2	35.8263	3	135.3	2	-999	9
31WBTSOC	AB01	1	1	4	4	2	20010426	2022	27.0158	-79.9213	159	77.3	18.0814	36.2409	2	36.249	2	170.1	2	-999	9
31WBTSOC	AB01	1	1	5	6	2	20010426	2022	27.0158	-79.9213	159	49	23.8687	36.439	2	36.4411	2	224.2	2	-999	9
31WBTSOC	AB01	1	1	6	13	2	20010426	2022	27.0158	-79.9213	159	24.5	26.0002	36.2327	2	36.2403	2	214.4	2	-999	9
31WBTSOC	AB01	2	1	1	24	2	20010427	1127	26.4348	-78.6667	763	749	9.474	35.2761	2	35.2748	2	147.9	2	152	2
31WBTSOC	AB01	2	1	2	1	2	20010427	1127	26.4348	-78.6667	763	649.7	11.4486	35.5002	2	35.4984	2	154	2	154.4	2
31WBTSOC	AB01	2	1	3	2	2	20010427	1127	26.4348	-78.6667	763	547.8	13.8439	35.8431	2	-999	9	168.6	2	-999	9
31WBTSOC	AB01	2	1	4	3	2	20010427	1127	26.4348	-78.6667	763	449.9	15.9879	36.1857	2	36.1833	2	182.4	2	175.6	2
31WBTSOC	AB01	2	1	5	4	2	20010427	1127	26.4348	-78.6667	763	374.8	17.3085	36.4004	2	36.4019	2	192.8	2	188.1	2
31WBTSOC	AB01	2	1	6	5	2	20010427	1127	26.4348	-78.6667	763	300.7	18.2799	36.5474	2	36.5477	2	196.8	2	193.6	2
31WBTSOC	AB01	2	1	7	6	2	20010427	1127	26.4348	-78.6667	763	225.1	20.0271	36.7426	2	36.7448	2	193.7	2	190	2
31WBTSOC	AB01	2	1	8	12	2	20010427	1127	26.4348	-78.6667	763	173.6	21.5201	36.8389	2	-999	9	203.7	2	194.3	2
31WBTSOC	AB01	2	1	9	13	2	20010427	1127	26.4348	-78.6667	763	124.6	22.959	36.8877	2	36.8404	4	203.4	2	196.1	2
31WBTSOC	AB01	2	1	10	14	2	20010427	1127	26.4348	-78.6667	763	74	24.0485	36.5556	2	36.5756	4	205.6	2	203.1	2
31WBTSOC	AB01	2	1	11	15	2	20010427	1127	26.4348	-78.6667	763	49	25.1356	36.3057	2	36.3201	3	212.7	2	205	2
31WBTSOC	AB01	2	1	12	16	2	20010427	1127	26.4348	-78.6667	763	3.7	25.1114	36.3078	2	36.3086	2	209.5	2	205.6	2
31WBTSOC	AB01	3	1	1	24	2	20010427	1302	26.331	-78.7138	691	676.5	9.0961	35.2636	2	35.2677	2	157.8	2	156.9	2
31WBTSOC	AB01	3	1	2	1	2	20010427	1302	26.331	-78.7138	691	548.3	13.4185	35.7809	2	35.7761	2	166.9	2	156	2
31WBTSOC	AB01	3	1	3	2	2	20010427	1302	26.331	-78.7138	691	451.1	15.7061	36.1389	2	36.1384	2	182.2	2	170.9	2
31WBTSOC	AB01	3	1	4	3	2	20010427	1302	26.331	-78.7138	691	351.9	17.616	36.4524	2	36.4532	2	195	2	185.4	2
31WBTSOC	AB01	3	1	5	4	2	20010427	1302	26.331	-78.7138	691	251	19.7497	36.7115	2	36.7108	2	194.6	2	186.1	2
31WBTSOC	AB01	3	1	6	5	2	20010427	1302	26.331	-78.7138	691	174.3	21.791	36.855	2	36.8545	2	202.5	2	194.6	2
31WBTSOC	AB01	3	1	7	6	2	20010427	1302	26.331	-78.7138	691	123.9	23.3987	36.9121	2	36.9138	2	203.9	2	197.5	2
31WBTSOC	AB01	3	1	8	12	2	20010427	1302	26.331	-78.7138	691	48.9	25.2466	36.2959	2	36.2985	2	210.1	2	203.6	2
31WBTSOC	AB01	3	1	9	13	2	20010427	1302	26.331	-78.7138	691	2.8	25.7322	36.2192	2	36.2201	2	207	2	203.5	3
31WBTSOC	AB01	4	1	1	24	2	20010427	1418	26.2448	-78.7697	526	509.9	14.7271	35.9843	2	35.9869	2	165.6	2	164.3	2
31WBTSOC	AB01	4	1	2	1	2	20010427	1418	26.2448	-78.7697	526	434.3	16.2	36.2214	2	36.2165	2	182.8	2	174.2	2
31WBTSOC	AB01	4	1	3	2	2	20010427	1418	26.2448	-78.7697	526	359.2	17.4736	36.4317	2	36.43	2	193.4	2	183.9	2
31WBTSOC	AB01	4	1	4	3	2	20010427	1418	26.2448	-78.7697	526	319.2	18.0227	36.5174	2	36.5144	2	195.8	2	186.9	2
31WBTSOC	AB01	4	1	5	4	2	20010427	1418	26.2448	-78.7697	526	279.8	18.8647	36.6157	2	36.6159	2	197	2	188.6	2
31WBTSOC	AB01	4	1	6	5	2	20010427	1418	26.2448	-78.7697	526	249.9	19.9635	36.7233	2	36.7247	2	195.4	2	186.2	2

31WBTSOC	AB01	4	1	7	6	2	20010427	1418	26.2448	-78.7697	526	180	22.1968	36.8549	2	36.8521	2	210.5	2	200.3	2
31WBTSOC	AB01	4	1	8	12	2	20010427	1418	26.2448	-78.7697	526	139.3	23.1781	36.9066	2	36.885	4	203.9	2	196.9	2
31WBTSOC	AB01	4	1	9	13	2	20010427	1418	26.2448	-78.7697	526	48.9	25.4683	36.3309	2	36.3543	4	206.4	2	200.3	2
31WBTSOC	AB01	4	1	10	14	2	20010427	1418	26.2448	-78.7697	526	3.1	25.8169	36.2134	2	36.2158	2	207.4	2	203.5	2
31WBTSOC	AB01	5	1	1	24	2	20010427	1533	26.1638	-78.804	462	445.1	16.6594	36.2881	2	36.2842	2	169.4	2	168.8	2
31WBTSOC	AB01	5	1	2	1	2	20010427	1533	26.1638	-78.804	462	415	17.2887	36.4002	2	36.3963	2	187.9	2	183.3	2
31WBTSOC	AB01	5	1	3	2	2	20010427	1533	26.1638	-78.804	462	348.9	18.0517	36.5241	2	36.5201	2	195.3	2	187.5	2
31WBTSOC	AB01	5	1	4	3	2	20010427	1533	26.1638	-78.804	462	299	18.5155	36.5826	2	36.5796	2	195.7	2	187.4	2
31WBTSOC	AB01	5	1	5	4	2	20010427	1533	26.1638	-78.804	462	249.1	19.2552	36.6595	2	36.6587	2	195.1	2	187.2	2
31WBTSOC	AB01	5	1	6	5	2	20010427	1533	26.1638	-78.804	462	198.7	20.8387	36.7873	2	36.7858	2	199.8	2	190.1	2
31WBTSOC	AB01	5	1	7	6	2	20010427	1533	26.1638	-78.804	462	149.9	23.3493	36.9126	2	36.914	2	207.4	2	196.3	2
31WBTSOC	AB01	5	1	8	12	2	20010427	1533	26.1638	-78.804	462	101.1	24.6527	36.4088	2	36.4369	4	203.1	2	196.1	2
31WBTSOC	AB01	5	1	9	13	2	20010427	1533	26.1638	-78.804	462	49.6	25.7753	36.2218	2	36.2363	3	209.5	2	202.3	2
31WBTSOC	AB01	5	1	10	14	2	20010427	1533	26.1638	-78.804	462	2.2	25.8041	36.2205	2	36.2207	2	207.1	2	202.7	2
31WBTSOC	AB01	6	1	1	24	2	20010427	1652	26.0653	-78.8552	301	282.8	18.6941	36.59	2	36.5889	2	176.3	2	177	2
31WBTSOC	AB01	6	1	2	1	2	20010427	1652	26.0653	-78.8552	301	247.8	19.275	36.6541	2	36.6462	2	185	2	179.8	2
31WBTSOC	AB01	6	1	3	2	2	20010427	1652	26.0653	-78.8552	301	248.4	19.2725	36.6539	2	36.6488	2	185.4	2	179.6	2
31WBTSOC	AB01	6	1	4	3	2	20010427	1652	26.0653	-78.8552	301	198.8	19.9882	36.7258	2	36.7241	2	194.2	2	186.8	2
31WBTSOC	AB01	6	1	5	4	2	20010427	1652	26.0653	-78.8552	301	150.9	22.1631	36.8333	2	36.8289	2	196.1	2	186.1	2
31WBTSOC	AB01	6	1	6	5	2	20010427	1652	26.0653	-78.8552	301	99.3	24.2938	36.4626	2	36.4975	4	215.9	2	205.7	2
31WBTSOC	AB01	6	1	7	6	2	20010427	1652	26.0653	-78.8552	301	48.9	25.1788	36.3105	2	36.3143	2	213	2	205.4	2
31WBTSOC	AB01	6	1	8	12	2	20010427	1652	26.0653	-78.8552	301	1.7	25.6711	36.188	2	36.1894	2	208.6	2	204.5	3
31WBTSOC	AB01	7	1	1	24	2	20010428	618	26.4988	-76.9127	980	968.6	6.112	35.0837	2	35.0834	2	201.9	2	200.5	2
31WBTSOC	AB01	7	1	2	1	2	20010428	618	26.4988	-76.9127	980	798.6	8.0739	35.1459	2	35.1395	2	160.2	2	158.2	2
31WBTSOC	AB01	7	1	3	2	2	20010428	618	26.4988	-76.9127	980	647.7	11.4967	35.5075	2	35.5057	2	155.9	2	148.5	2
31WBTSOC	AB01	7	1	4	3	2	20010428	618	26.4988	-76.9127	980	549.5	13.6815	35.8193	2	35.8138	2	167.1	2	159.3	2
31WBTSOC	AB01	7	1	5	4	2	20010428	618	26.4988	-76.9127	980	448.8	16.9884	36.3438	2	36.3357	2	193.3	2	181.2	2
31WBTSOC	AB01	7	1	6	5	2	20010428	618	26.4988	-76.9127	980	346.5	18.7792	36.6037	2	36.604	2	199.9	2	190.7	2
31WBTSOC	AB01	7	1	7	6	2	20010428	618	26.4988	-76.9127	980	306.4	19.4811	36.6678	2	36.6694	2	197	2	-999	9
31WBTSOC	AB01	7	1	8	7	2	20010428	618	26.4988	-76.9127	980	248.5	20.5316	36.7704	2	36.7707	2	199.7	2	181	2
31WBTSOC	AB01	7	1	9	8	2	20010428	618	26.4988	-76.9127	980	200.1	21.8498	36.8715	2	36.8735	2	198.7	2	191.7	2
31WBTSOC	AB01	7	1	10	9	2	20010428	618	26.4988	-76.9127	980	148.9	22.7944	36.8468	2	36.8491	2	215.3	2	207	2
31WBTSOC	AB01	7	1	11	10	2	20010428	618	26.4988	-76.9127	980	99.3	24.0719	36.6284	2	36.6361	2	215.8	2	207.7	2
31WBTSOC	AB01	7	1	12	11	2	20010428	618	26.4988	-76.9127	980	47.9	24.2036	36.477	2	36.4781	2	211.6	2	-999	9
31WBTSOC	AB01	7	1	13	12	2	20010428	618	26.4988	-76.9127	980	1.9	24.1599	36.4651	2	-999	9	208.6	2	206.2	3
31WBTSOC	AB01	8	1	1	24	2	20010428	1026	26.5112	-76.8418	1007	996.1	5.794	35.0748	2	35.0755	2	213.9	2	209.4	2

31WBTSOC	AB01	8	1	2	1	2	20010428	1026	26.5112	-76.8418	1007	900	7.1283	35.0978	2	35.0964	2	175.4	2	171.2	2
31WBTSOC	AB01	8	1	3	2	2	20010428	1026	26.5112	-76.8418	1007	750.7	10.1411	35.3325	2	35.3312	2	151.9	2	145.4	2
31WBTSOC	AB01	8	1	4	3	2	20010428	1026	26.5112	-76.8418	1007	625.9	12.872	35.697	2	35.6951	2	160.3	2	151.8	2
31WBTSOC	AB01	8	1	5	4	2	20010428	1026	26.5112	-76.8418	1007	500.5	16.147	36.2054	2	36.2021	2	189.9	2	178.1	2
31WBTSOC	AB01	8	1	6	5	2	20010428	1026	26.5112	-76.8418	1007	399.4	17.9522	36.5075	2	36.508	2	197	2	186.7	2
31WBTSOC	AB01	8	1	7	6	2	20010428	1026	26.5112	-76.8418	1007	309.5	19.085	36.6422	2	36.6426	2	196	2	188	2
31WBTSOC	AB01	8	1	8	7	2	20010428	1026	26.5112	-76.8418	1007	224.3	20.6644	36.7708	2	36.7737	2	212.5	2	204	2
31WBTSOC	AB01	8	1	9	8	2	20010428	1026	26.5112	-76.8418	1007	160.4	21.8493	36.823	2	36.8164	2	216.2	2	209	2
31WBTSOC	AB01	8	1	10	9	2	20010428	1026	26.5112	-76.8418	1007	119.4	23.2314	36.7842	2	36.7884	2	215.9	2	208.3	2
31WBTSOC	AB01	8	1	11	10	2	20010428	1026	26.5112	-76.8418	1007	60.8	24.2821	36.5751	2	36.5905	3	215.5	2	208.4	2
31WBTSOC	AB01	8	1	12	11	2	20010428	1026	26.5112	-76.8418	1007	2.6	24.6943	36.5601	2	36.56	2	208.7	2	206.5	3
31WBTSOC	AB01	9	1	1	24	2	20010428	1208	26.5	-76.7345	3861	3902.1	2.3649	34.9006	2	34.9007	2	267	2	266.6	2
31WBTSOC	AB01	9	1	2	1	2	20010428	1208	26.5	-76.7345	3861	3599.4	2.5038	34.9113	2	-999	9	266	2	-999	9
31WBTSOC	AB01	9	1	3	2	2	20010428	1208	26.5	-76.7345	3861	3297.1	2.677	34.9226	2	34.9226	2	263.2	2	267	2
31WBTSOC	AB01	9	1	4	3	2	20010428	1208	26.5	-76.7345	3861	3000.9	2.8797	34.9342	2	34.9342	2	259.8	2	265	2
31WBTSOC	AB01	9	1	5	4	2	20010428	1208	26.5	-76.7345	3861	2698.2	3.115	34.9489	2	34.9487	2	256.4	2	263.2	2
31WBTSOC	AB01	9	1	6	5	2	20010428	1208	26.5	-76.7345	3861	2398.5	3.3671	34.9621	2	34.9619	2	254.5	2	262	2
31WBTSOC	AB01	9	1	7	6	2	20010428	1208	26.5	-76.7345	3861	2100.8	3.6198	34.9708	2	34.9702	2	253.7	2	261.9	2
31WBTSOC	AB01	9	1	8	7	2	20010428	1208	26.5	-76.7345	3861	1802.2	3.7444	34.9675	2	34.9682	2	253.5	2	262.4	2
31WBTSOC	AB01	9	1	9	8	2	20010428	1208	26.5	-76.7345	3861	1486.6	4.0591	34.9861	2	34.9849	2	248.1	2	257.8	2
31WBTSOC	AB01	9	1	10	9	2	20010428	1208	26.5	-76.7345	3861	1200.7	4.9812	35.0543	2	35.0546	2	227.1	2	235.2	2
31WBTSOC	AB01	9	1	11	10	2	20010428	1208	26.5	-76.7345	3861	1005.4	6.2774	35.079	2	35.078	2	182.6	2	188.5	2
31WBTSOC	AB01	9	1	12	11	2	20010428	1208	26.5	-76.7345	3861	854.2	7.9064	35.1142	2	35.1137	2	148.1	2	151.7	2
31WBTSOC	AB01	9	1	13	12	2	20010428	1208	26.5	-76.7345	3861	701.8	11.1485	35.464	2	35.4704	2	152.1	2	151.5	2
31WBTSOC	AB01	9	1	14	13	2	20010428	1208	26.5	-76.7345	3861	546.3	15.1375	36.0468	2	36.0474	2	171.6	2	164.7	2
31WBTSOC	AB01	9	1	15	14	2	20010428	1208	26.5	-76.7345	3861	450.7	17.3042	36.3991	2	36.3987	2	192.7	2	184.6	2
31WBTSOC	AB01	9	1	16	15	2	20010428	1208	26.5	-76.7345	3861	349.7	18.458	36.5724	2	36.5689	2	196.1	2	189.3	2
31WBTSOC	AB01	9	1	17	16	2	20010428	1208	26.5	-76.7345	3861	249.8	19.3016	36.6442	2	36.6482	2	207.1	2	202.2	2
31WBTSOC	AB01	9	1	18	17	2	20010428	1208	26.5	-76.7345	3861	150.3	21.3603	36.7825	2	36.7844	2	219.3	2	213	2
31WBTSOC	AB01	9	1	19	18	2	20010428	1208	26.5	-76.7345	3861	99.6	22.9455	36.875	2	36.87	2	216.6	2	210.8	3
31WBTSOC	AB01	9	1	20	19	2	20010428	1208	26.5	-76.7345	3861	49.3	24.5513	36.6409	2	36.642	2	212.8	2	207.7	2
31WBTSOC	AB01	9	1	21	20	2	20010428	1208	26.5	-76.7345	3861	3	24.6451	36.6022	2	36.602	2	206.9	2	207	2
31WBTSOC	AB01	10	1	1	24	2	20010428	1548	26.502	-76.6135	4726	4790.4	2.2035	34.8771	2	34.8761	2	255.5	2	256.8	2
31WBTSOC	AB01	10	1	2	1	2	20010428	1548	26.502	-76.6135	4726	4500.2	2.2771	34.8896	2	34.8923	2	260.2	2	263	2
31WBTSOC	AB01	10	1	3	2	2	20010428	1548	26.502	-76.6135	4726	4246.9	2.2874	34.8929	2	34.8881	3	259.8	2	264.7	2
31WBTSOC	AB01	10	1	4	3	2	20010428	1548	26.502	-76.6135	4726	3869.6	2.3698	34.9025	2	34.9019	2	260.8	2	266.9	2

31WBTSOC	AB01	10	1	5	4	2	20010428	1548	26.502	-76.6135	4726	3496.6	2.51	34.9132	2	34.9129	2	260	2	267.5	2
31WBTSOC	AB01	10	1	6	5	2	20010428	1548	26.502	-76.6135	4726	3120.4	2.741	34.9278	2	34.9269	2	257.6	2	265.9	2
31WBTSOC	AB01	10	1	7	6	2	20010428	1548	26.502	-76.6135	4726	2747	3.0453	34.9444	2	34.9434	2	254.1	2	263.4	2
31WBTSOC	AB01	10	1	8	7	2	20010428	1548	26.502	-76.6135	4726	2446.8	3.2561	34.9532	2	34.9521	2	253.2	2	263.1	2
31WBTSOC	AB01	10	1	9	8	2	20010428	1548	26.502	-76.6135	4726	2147	3.4484	34.9552	2	34.9537	2	254.6	2	264.3	2
31WBTSOC	AB01	10	1	10	9	2	20010428	1548	26.502	-76.6135	4726	1849.8	3.6974	34.961	2	34.9596	2	253.8	2	264	2
31WBTSOC	AB01	10	1	11	10	2	20010428	1548	26.502	-76.6135	4726	1550.9	4.0299	34.9784	2	34.9773	2	248.6	2	258.9	2
31WBTSOC	AB01	10	1	12	11	2	20010428	1548	26.502	-76.6135	4726	1247.4	4.9799	35.0506	2	35.0501	2	227	2	226.7	4
31WBTSOC	AB01	10	1	13	12	2	20010428	1548	26.502	-76.6135	4726	1046.4	6.2539	35.0883	2	35.0873	2	188.8	2	194.3	2
31WBTSOC	AB01	10	1	14	13	2	20010428	1548	26.502	-76.6135	4726	896.7	7.7348	35.1052	2	35.1052	2	151.1	2	154.8	2
31WBTSOC	AB01	10	1	15	14	2	20010428	1548	26.502	-76.6135	4726	749.8	10.3582	35.3678	2	35.3678	2	148.8	2	148.2	2
31WBTSOC	AB01	10	1	16	15	2	20010428	1548	26.502	-76.6135	4726	600.7	14.0575	35.8719	2	35.877	2	168.7	2	163.9	2
31WBTSOC	AB01	10	1	17	16	2	20010428	1548	26.502	-76.6135	4726	485	16.4019	36.2505	2	36.2601	2	183.8	2	179.5	2
31WBTSOC	AB01	10	1	18	17	2	20010428	1548	26.502	-76.6135	4726	355.7	18.1624	36.5382	2	36.5427	2	193.7	2	189.7	2
31WBTSOC	AB01	10	1	19	18	2	20010428	1548	26.502	-76.6135	4726	276.9	18.7808	36.6039	2	36.6042	2	205	2	201.1	2
31WBTSOC	AB01	10	1	20	19	2	20010428	1548	26.502	-76.6135	4726	200.7	19.7284	36.6794	2	36.6789	2	203.7	2	200.1	2
31WBTSOC	AB01	10	1	21	20	2	20010428	1548	26.502	-76.6135	4726	151.4	20.6365	36.7587	2	36.758	2	209.9	2	205.9	2
31WBTSOC	AB01	10	1	22	21	2	20010428	1548	26.502	-76.6135	4726	100.6	22.3793	36.9216	2	36.921	2	198.6	2	194.8	2
31WBTSOC	AB01	10	1	23	22	2	20010428	1548	26.502	-76.6135	4726	49.2	23.6756	36.866	2	36.8654	2	209.1	2	205.6	2
31WBTSOC	AB01	10	1	24	23	2	20010428	1548	26.502	-76.6135	4726	3.6	24.239	36.6921	2	36.6954	2	211.6	2	208.7	2
31WBTSOC	AB01	11	1	1	24	2	20010428	2224	26.5002	-76.48	4855	4923.4	2.3021	34.8863	2	34.885	2	260.5	2	261.6	2
31WBTSOC	AB01	11	1	2	1	2	20010428	2224	26.5002	-76.48	4855	4549.1	2.291	34.8895	2	-999	9	260.1	2	-999	9
31WBTSOC	AB01	11	1	3	2	2	20010428	2224	26.5002	-76.48	4855	4149.3	2.3038	34.8945	2	-999	9	259.7	2	-999	9
31WBTSOC	AB01	11	1	4	3	2	20010428	2224	26.5002	-76.48	4855	3800.5	2.3674	34.901	2	34.9013	2	259	2	266.9	2
31WBTSOC	AB01	11	1	5	4	2	20010428	2224	26.5002	-76.48	4855	3449.1	2.4596	34.9088	2	34.3192	4	258.3	2	268.2	2
31WBTSOC	AB01	11	1	6	5	2	20010428	2224	26.5002	-76.48	4855	3149.5	2.6766	34.923	2	34.9226	2	257.2	2	267.1	2
31WBTSOC	AB01	11	1	7	6	2	20010428	2224	26.5002	-76.48	4855	2800.9	2.9214	34.9386	2	34.9383	2	253.5	2	264.3	2
31WBTSOC	AB01	11	1	8	7	2	20010428	2224	26.5002	-76.48	4855	2500.6	3.168	34.9478	2	34.9472	2	252.9	2	263.8	2
31WBTSOC	AB01	11	1	9	8	2	20010428	2224	26.5002	-76.48	4855	2200.1	3.3618	34.9557	2	34.956	2	251.9	2	263.3	2
31WBTSOC	AB01	11	1	10	9	2	20010428	2224	26.5002	-76.48	4855	1901.5	3.6634	34.965	2	34.9645	2	251.7	2	263.8	2
31WBTSOC	AB01	11	1	11	10	2	20010428	2224	26.5002	-76.48	4855	1602.9	3.9995	34.9802	2	34.9804	2	248.2	2	259.4	2
31WBTSOC	AB01	11	1	12	11	2	20010428	2224	26.5002	-76.48	4855	1374.8	4.4979	35.0145	2	35.0154	2	237.3	2	247.9	2
31WBTSOC	AB01	11	1	13	12	2	20010428	2224	26.5002	-76.48	4855	1174.3	5.2842	35.0609	2	35.0599	2	218.7	2	227.1	2
31WBTSOC	AB01	11	1	14	13	2	20010428	2224	26.5002	-76.48	4855	978.9	6.8101	35.0701	2	35.1546	4	166.1	2	158.5	4
31WBTSOC	AB01	11	1	15	14	2	20010428	2224	26.5002	-76.48	4855	803.7	9.6314	35.2756	2	35.278	2	144.8	2	146	2
31WBTSOC	AB01	11	1	16	15	2	20010428	2224	26.5002	-76.48	4855	652.2	13.0774	35.7274	2	35.7399	3	161.8	2	160	2

31WBTSOC	AB01	11	1	17	16	2	20010428	2224	26.5002	-76.48	4855	503.2	16.2138	36.2103	2	36.2128	2	183.8	2	177.1	2
31WBTSOC	AB01	11	1	18	17	2	20010428	2224	26.5002	-76.48	4855	402.1	17.7832	36.4788	2	36.4819	2	195.8	2	189.7	2
31WBTSOC	AB01	11	1	19	18	2	20010428	2224	26.5002	-76.48	4855	301.8	18.634	36.5854	2	36.5861	2	205.5	2	200.7	2
31WBTSOC	AB01	11	1	20	19	2	20010428	2224	26.5002	-76.48	4855	224.4	19.1891	36.6329	2	36.6343	2	203.7	2	199.9	2
31WBTSOC	AB01	11	1	21	20	2	20010428	2224	26.5002	-76.48	4855	160.3	20.7266	36.7745	2	36.7735	2	219	2	213.7	2
31WBTSOC	AB01	11	1	22	21	2	20010428	2224	26.5002	-76.48	4855	110.4	21.92	36.8723	2	36.8785	2	201.4	2	196.7	2
31WBTSOC	AB01	11	1	23	22	2	20010428	2224	26.5002	-76.48	4855	54.4	23.4655	36.8177	2	36.8219	2	217.4	2	212.8	2
31WBTSOC	AB01	11	1	24	23	2	20010428	2224	26.5002	-76.48	4855	3.5	24.4553	36.6369	2	36.6379	2	210.5	2	208.2	2
31WBTSOC	AB01	12	1	1	24	2	20010429	252	26.504	-76.3028	4840	4907.8	2.3164	34.8878	2	34.8883	2	262.2	2	262.1	2
31WBTSOC	AB01	12	1	2	1	2	20010429	252	26.504	-76.3028	4840	4794.6	2.333	34.8904	2	34.8909	2	262.4	2	263.7	2
31WBTSOC	AB01	12	1	3	2	2	20010429	252	26.504	-76.3028	4840	4668.5	2.3407	34.8925	2	-999	9	263	2	-999	9
31WBTSOC	AB01	12	1	4	3	2	20010429	252	26.504	-76.3028	4840	4498	2.3476	34.8944	2	34.8944	2	261.8	2	264.8	2
31WBTSOC	AB01	12	1	5	4	2	20010429	252	26.504	-76.3028	4840	4046.9	2.3354	34.8974	2	34.8974	2	259.6	2	265.7	2
31WBTSOC	AB01	12	1	6	5	2	20010429	252	26.504	-76.3028	4840	3600.1	2.4339	34.9062	2	34.9066	2	259.4	2	267.9	2
31WBTSOC	AB01	12	1	7	6	2	20010429	252	26.504	-76.3028	4840	3199.3	2.6382	34.9198	2	34.9198	2	257.8	2	267.3	2
31WBTSOC	AB01	12	1	8	7	2	20010429	252	26.504	-76.3028	4840	2797.3	2.8595	34.933	2	34.9332	2	255	2	265.5	2
31WBTSOC	AB01	12	1	9	8	2	20010429	252	26.504	-76.3028	4840	2449.7	3.1308	34.9495	2	34.9497	2	252.2	2	262.9	2
31WBTSOC	AB01	12	1	10	9	2	20010429	252	26.504	-76.3028	4840	2099.1	3.404	34.9543	2	34.955	2	253	2	263.9	2
31WBTSOC	AB01	12	1	11	10	2	20010429	252	26.504	-76.3028	4840	1799.8	3.6443	34.9601	2	34.9603	2	252.4	2	264.2	2
31WBTSOC	AB01	12	1	12	11	2	20010429	252	26.504	-76.3028	4840	1500	4.1771	34.9919	2	34.9924	2	244.9	2	255.6	2
31WBTSOC	AB01	12	1	13	12	2	20010429	252	26.504	-76.3028	4840	1198.3	5.1086	35.0497	2	35.0497	2	222.3	2	230.7	2
31WBTSOC	AB01	12	1	14	13	2	20010429	252	26.504	-76.3028	4840	950.1	7.3677	35.1007	2	35.1005	2	161.7	2	165.6	2
31WBTSOC	AB01	12	1	15	14	2	20010429	252	26.504	-76.3028	4840	825.3	9.4671	35.2564	2	35.2571	2	144.1	2	145.4	2
31WBTSOC	AB01	12	1	16	15	2	20010429	252	26.504	-76.3028	4840	678.4	12.4547	35.6367	2	35.6562	3	159.8	2	148.7	2
31WBTSOC	AB01	12	1	17	16	2	20010429	252	26.504	-76.3028	4840	551.9	15.3304	36.0708	2	36.0777	2	177.2	2	172.9	2
31WBTSOC	AB01	12	1	18	17	2	20010429	252	26.504	-76.3028	4840	460.7	17.0087	36.345	2	36.3428	2	187.1	2	182.3	2
31WBTSOC	AB01	12	1	19	18	2	20010429	252	26.504	-76.3028	4840	371	17.9952	36.5073	2	36.5096	2	194.1	2	191	2
31WBTSOC	AB01	12	1	20	19	2	20010429	252	26.504	-76.3028	4840	230	19.0776	36.6232	2	36.6234	2	201.5	2	199	2
31WBTSOC	AB01	12	1	21	20	2	20010429	252	26.504	-76.3028	4840	176.4	20.0402	36.7129	2	36.7152	2	201.7	2	199.4	3
31WBTSOC	AB01	12	1	22	21	2	20010429	252	26.504	-76.3028	4840	120.1	21.8598	36.8691	2	36.8668	2	199.2	2	195.8	2
31WBTSOC	AB01	12	1	23	22	2	20010429	252	26.504	-76.3028	4840	60.3	23.1095	36.8272	2	36.8271	2	215.4	2	212.8	2
31WBTSOC	AB01	12	1	24	23	2	20010429	252	26.504	-76.3028	4840	2.8	24.2519	36.714	2	36.7156	2	210.5	2	209.1	2
31WBTSOC	AB01	13	1	1	24	2	20010429	720	26.5022	-76.1175	4821	4888.3	2.3073	34.8872	2	34.8872	2	262	2	262	2
31WBTSOC	AB01	13	1	2	1	2	20010429	720	26.5022	-76.1175	4821	4848.5	2.3022	34.8871	2	34.8872	2	261.3	2	261.9	2
31WBTSOC	AB01	13	1	3	2	2	20010429	720	26.5022	-76.1175	4821	4600.8	2.3207	34.8914	2	-999	9	261.8	2	-999	9
31WBTSOC	AB01	13	1	4	3	2	20010429	720	26.5022	-76.1175	4821	4298.5	2.314	34.8937	2	34.8936	2	259.8	2	265.1	2

31WBTSOC	AB01	13	1	5	4	2	20010429	720	26.5022	-76.1175	4821	3898.7	2.3687	34.9003	2	-999	9	260.5	2	-999	9
31WBTSOC	AB01	13	1	6	5	2	20010429	720	26.5022	-76.1175	4821	3634	2.461	34.9076	2	34.9072	2	259.8	2	267.7	2
31WBTSOC	AB01	13	1	7	6	2	20010429	720	26.5022	-76.1175	4821	3249.2	2.6196	34.9182	2	34.9178	2	258.1	2	267.6	2
31WBTSOC	AB01	13	1	8	7	2	20010429	720	26.5022	-76.1175	4821	2898	2.7916	34.9293	2	34.9295	2	255.7	2	266.3	2
31WBTSOC	AB01	13	1	9	8	2	20010429	720	26.5022	-76.1175	4821	2549.8	3.13	34.9465	2	34.9468	2	253.4	2	263.8	2
31WBTSOC	AB01	13	1	10	9	2	20010429	720	26.5022	-76.1175	4821	2199.5	3.3726	34.953	2	34.9535	2	253.4	2	264.1	2
31WBTSOC	AB01	13	1	11	10	2	20010429	720	26.5022	-76.1175	4821	1902.5	3.571	34.9527	2	34.9525	2	254	2	265.2	2
31WBTSOC	AB01	13	1	12	11	2	20010429	720	26.5022	-76.1175	4821	1599.6	3.7318	34.9593	2	34.9613	2	251.5	2	263.6	2
31WBTSOC	AB01	13	1	13	12	2	20010429	720	26.5022	-76.1175	4821	1377.7	4.2196	34.9971	2	34.9987	2	243.2	2	253.8	2
31WBTSOC	AB01	13	1	14	13	2	20010429	720	26.5022	-76.1175	4821	1150.8	5.3472	35.0673	2	35.0682	2	216.7	2	225	2
31WBTSOC	AB01	13	1	15	14	2	20010429	720	26.5022	-76.1175	4821	928	7.7772	35.113	2	35.1117	2	151	2	155.1	2
31WBTSOC	AB01	13	1	16	15	2	20010429	720	26.5022	-76.1175	4821	724.6	11.4175	35.4896	2	35.4905	2	149.1	2	152	2
31WBTSOC	AB01	13	1	17	16	2	20010429	720	26.5022	-76.1175	4821	560.1	15.318	36.0628	2	36.0628	2	177.6	2	171.6	2
31WBTSOC	AB01	13	1	18	17	2	20010429	720	26.5022	-76.1175	4821	450.4	17.0494	36.3607	2	36.3615	2	184.4	2	180.3	2
31WBTSOC	AB01	13	1	19	18	2	20010429	720	26.5022	-76.1175	4821	349	18.0915	36.5303	2	36.5298	2	193.1	2	188.7	2
31WBTSOC	AB01	13	1	20	19	2	20010429	720	26.5022	-76.1175	4821	219.3	19.7243	36.7212	2	36.7212	2	186.3	2	182.8	2
31WBTSOC	AB01	13	1	21	20	2	20010429	720	26.5022	-76.1175	4821	160	21.0358	36.7754	2	36.7799	2	205.2	2	200.4	2
31WBTSOC	AB01	13	1	22	21	2	20010429	720	26.5022	-76.1175	4821	109.3	22.5834	36.911	2	36.9043	2	195.5	2	193.6	2
31WBTSOC	AB01	13	1	23	22	2	20010429	720	26.5022	-76.1175	4821	48.2	24.8366	36.6016	2	36.6498	4	210.4	2	206	2
31WBTSOC	AB01	13	1	24	23	2	20010429	720	26.5022	-76.1175	4821	2.4	24.8784	36.5419	2	36.5417	2	206.5	2	206.3	2
31WBTSOC	AB01	14	1	1	24	2	20010429	1209	26.5027	-75.9167	4767	4831.8	2.2453	34.8813	2	34.8824	2	257.4	2	258.6	2
31WBTSOC	AB01	14	1	2	1	2	20010429	1209	26.5027	-75.9167	4767	4618.2	2.2653	34.8864	2	34.8872	2	258.8	2	261.5	2
31WBTSOC	AB01	14	1	3	2	2	20010429	1209	26.5027	-75.9167	4767	4317.7	2.2906	34.8925	2	34.8923	2	260.1	2	264.7	2
31WBTSOC	AB01	14	1	4	3	2	20010429	1209	26.5027	-75.9167	4767	3922.1	2.3703	34.9015	2	34.9021	2	260.8	2	267.3	2
31WBTSOC	AB01	14	1	5	4	2	20010429	1209	26.5027	-75.9167	4767	3624	2.4808	34.9091	2	34.9092	2	260.1	2	267.9	2
31WBTSOC	AB01	14	1	6	5	2	20010429	1209	26.5027	-75.9167	4767	3224	2.6675	34.9215	2	34.9218	2	258.3	2	267.2	2
31WBTSOC	AB01	14	1	7	6	2	20010429	1209	26.5027	-75.9167	4767	2923.3	2.8816	34.9351	2	34.9346	2	255.1	2	265.5	2
31WBTSOC	AB01	14	1	8	7	2	20010429	1209	26.5027	-75.9167	4767	2599.4	3.1514	34.95	2	34.9511	2	252.8	2	263	2
31WBTSOC	AB01	14	1	9	8	2	20010429	1209	26.5027	-75.9167	4767	2225.3	3.4185	34.9534	2	34.9505	2	253.7	2	264.3	2
31WBTSOC	AB01	14	1	10	9	2	20010429	1209	26.5027	-75.9167	4767	1924.3	3.5815	34.9555	2	34.9566	2	252.8	2	264.6	2
31WBTSOC	AB01	14	1	11	10	2	20010429	1209	26.5027	-75.9167	4767	1626.9	3.9471	34.9745	2	34.9735	2	249.3	2	260.6	2
31WBTSOC	AB01	14	1	12	11	2	20010429	1209	26.5027	-75.9167	4767	1400.9	4.4502	35.0156	2	35.0164	2	238.6	2	248.8	2
31WBTSOC	AB01	14	1	13	12	2	20010429	1209	26.5027	-75.9167	4767	1203.9	5.342	35.072	2	35.0743	2	215.7	2	223.5	2
31WBTSOC	AB01	14	1	14	13	2	20010429	1209	26.5027	-75.9167	4767	1051.2	6.6153	35.088	2	35.0875	2	177.3	2	182.8	2
31WBTSOC	AB01	14	1	15	14	2	20010429	1209	26.5027	-75.9167	4767	953.3	7.5817	35.0954	2	35.0971	2	152	2	160.3	2
31WBTSOC	AB01	14	1	16	15	2	20010429	1209	26.5027	-75.9167	4767	751.3	11.4349	35.4941	2	35.5076	3	148.8	2	156.5	2

31WBTSOC	AB01	14	1	17	16	2	20010429	1209	26.5027	-75.9167	4767	576.5	15.2863	36.0651	2	36.0688	2	174.9	2	173	2
31WBTSOC	AB01	14	1	18	17	2	20010429	1209	26.5027	-75.9167	4767	460.2	17.1252	36.3734	2	36.3755	2	184.1	2	185.1	2
31WBTSOC	AB01	14	1	19	18	2	20010429	1209	26.5027	-75.9167	4767	362.4	18.337	36.5616	2	36.5653	2	189.3	2	190	2
31WBTSOC	AB01	14	1	20	19	2	20010429	1209	26.5027	-75.9167	4767	228.6	19.7483	36.7144	2	36.7152	2	188.8	2	189.9	2
31WBTSOC	AB01	14	1	21	20	2	20010429	1209	26.5027	-75.9167	4767	228.8	19.7451	36.7143	2	36.7148	2	188.9	2	187.7	2
31WBTSOC	AB01	14	1	22	21	2	20010429	1209	26.5027	-75.9167	4767	173.1	20.6808	36.8103	2	36.8088	2	186.2	2	185.9	2
31WBTSOC	AB01	14	1	23	22	2	20010429	1209	26.5027	-75.9167	4767	124	21.6709	36.8753	2	-999	9	192.2	2	-999	9
31WBTSOC	AB01	14	1	24	23	2	20010429	1209	26.5027	-75.9167	4767	3.7	24.9026	36.4966	2	36.4965	2	208.5	2	215.4	4
31WBTSOC	AB01	15	1	1	24	2	20010429	1930	26.5088	-75.7067	4706	4769.9	2.1939	34.8756	2	34.8765	2	253.7	2	260.2	4
31WBTSOC	AB01	15	1	2	1	2	20010429	1930	26.5088	-75.7067	4706	4394.9	2.2707	34.8898	2	34.8897	2	259.2	2	265.7	4
31WBTSOC	AB01	15	1	3	2	2	20010429	1930	26.5088	-75.7067	4706	3996.8	2.3	34.896	2	34.8964	2	259.6	2	274	4
31WBTSOC	AB01	15	1	4	3	2	20010429	1930	26.5088	-75.7067	4706	3696	2.3604	34.9026	2	34.9027	2	259.3	2	280	4
31WBTSOC	AB01	15	1	5	4	2	20010429	1930	26.5088	-75.7067	4706	3398.7	2.4762	34.9108	2	34.9106	2	258.4	2	274.3	4
31WBTSOC	AB01	15	1	6	5	2	20010429	1930	26.5088	-75.7067	4706	3100.6	2.6727	34.9224	2	34.9218	2	257.4	2	280.1	4
31WBTSOC	AB01	15	1	7	6	2	20010429	1930	26.5088	-75.7067	4706	2802	2.9104	34.937	2	34.9367	2	254.3	2	265.6	2
31WBTSOC	AB01	15	1	8	7	2	20010429	1930	26.5088	-75.7067	4706	2501.4	3.2259	34.9518	2	34.9513	2	252.7	2	263.9	2
31WBTSOC	AB01	15	1	9	8	2	20010429	1930	26.5088	-75.7067	4706	2203.1	3.4884	34.9536	2	34.9531	2	254	2	265	2
31WBTSOC	AB01	15	1	10	9	2	20010429	1930	26.5088	-75.7067	4706	2003.1	3.6841	34.9664	2	34.9664	2	252.3	2	262.8	2
31WBTSOC	AB01	15	1	11	10	2	20010429	1930	26.5088	-75.7067	4706	1804.1	3.876	34.9726	2	34.9729	2	250.9	2	261.2	2
31WBTSOC	AB01	15	1	12	11	2	20010429	1930	26.5088	-75.7067	4706	1603.6	4.2217	35.0002	2	34.9977	2	244.6	2	254.5	2
31WBTSOC	AB01	15	1	13	12	2	20010429	1930	26.5088	-75.7067	4706	1409.8	4.6782	35.033	2	35.0359	3	234.4	2	243.5	2
31WBTSOC	AB01	15	1	14	13	2	20010429	1930	26.5088	-75.7067	4706	1207.7	5.6841	35.0849	2	35.0877	2	205.7	2	199.6	4
31WBTSOC	AB01	15	1	15	14	2	20010429	1930	26.5088	-75.7067	4706	1006.2	7.4148	35.0912	2	35.092	2	155.8	2	160.2	2
31WBTSOC	AB01	15	1	16	15	2	20010429	1930	26.5088	-75.7067	4706	805.9	10.9455	35.4381	2	35.4439	2	149.8	2	150.3	2
31WBTSOC	AB01	15	1	17	16	2	20010429	1930	26.5088	-75.7067	4706	605.1	15.0335	36.0303	2	36.0419	3	167.3	2	163.7	2
31WBTSOC	AB01	15	1	18	17	2	20010429	1930	26.5088	-75.7067	4706	483	17.0949	36.3663	2	36.3708	2	184.6	2	181	2
31WBTSOC	AB01	15	1	19	18	2	20010429	1930	26.5088	-75.7067	4706	354.9	18.3824	36.5569	2	36.557	2	195.3	2	190	2
31WBTSOC	AB01	15	1	20	19	2	20010429	1930	26.5088	-75.7067	4706	222.6	19.781	36.6881	2	36.69	2	205.7	2	201.7	2
31WBTSOC	AB01	15	1	21	20	2	20010429	1930	26.5088	-75.7067	4706	154.3	21.1015	36.7752	2	36.7757	2	215	2	211.5	2
31WBTSOC	AB01	15	1	22	21	2	20010429	1930	26.5088	-75.7067	4706	89.7	22.5436	36.8304	2	36.8309	2	219.2	2	219.1	2
31WBTSOC	AB01	15	1	23	22	2	20010429	1930	26.5088	-75.7067	4706	45.5	23.3788	36.8042	2	36.813	2	215.7	2	213.7	2
31WBTSOC	AB01	15	1	24	23	2	20010429	1930	26.5088	-75.7067	4706	3.2	24.4865	36.6194	2	36.62	2	209.6	2	207.8	2
31WBTSOC	AB01	16	1	1	24	2	20010430	113	26.5077	-75.5022	4697	4760.3	2.1727	34.8733	2	34.8738	2	253.7	2	255.2	2
31WBTSOC	AB01	16	1	2	1	2	20010430	113	26.5077	-75.5022	4697	4496.8	2.2546	34.8871	2	34.8866	2	259	2	261.7	2
31WBTSOC	AB01	16	1	3	2	2	20010430	113	26.5077	-75.5022	4697	4199.5	2.2734	34.8918	2	34.8913	2	259.5	2	264.2	2
31WBTSOC	AB01	16	1	4	3	2	20010430	113	26.5077	-75.5022	4697	3899.1	2.2948	34.8962	2	34.8956	2	259.4	2	266	2

31WBTSOC	AB01	16	1	5	4	2	20010430	113	26.5077	-75.5022	4697	3599.9	2.3605	34.9024	2	34.9023	2	259.4	2	267.4	2
31WBTSOC	AB01	16	1	6	5	2	20010430	113	26.5077	-75.5022	4697	3301	2.5313	34.9151	2	34.9165	2	258.7	2	267.5	2
31WBTSOC	AB01	16	1	7	6	2	20010430	113	26.5077	-75.5022	4697	2999.9	2.7342	34.927	2	34.9271	2	256.7	2	265.9	2
31WBTSOC	AB01	16	1	8	7	2	20010430	113	26.5077	-75.5022	4697	2698.5	3.0457	34.9459	2	34.9466	2	253.2	2	263	2
31WBTSOC	AB01	16	1	9	8	2	20010430	113	26.5077	-75.5022	4697	2450.9	3.2974	34.9605	2	34.9605	2	251.3	2	261.2	2
31WBTSOC	AB01	16	1	10	9	2	20010430	113	26.5077	-75.5022	4697	2202	3.5293	34.968	2	34.9678	2	251.4	2	261.3	2
31WBTSOC	AB01	16	1	11	10	2	20010430	113	26.5077	-75.5022	4697	1951.4	3.7656	34.9711	2	34.9718	2	251.5	2	261.6	2
31WBTSOC	AB01	16	1	12	11	2	20010430	113	26.5077	-75.5022	4697	1701.1	4.1141	34.9946	2	34.995	2	246.3	2	256.3	2
31WBTSOC	AB01	16	1	13	12	2	20010430	113	26.5077	-75.5022	4697	1452.8	4.6765	35.0327	2	35.029	2	234.6	2	243.4	2
31WBTSOC	AB01	16	1	14	13	2	20010430	113	26.5077	-75.5022	4697	1176.1	6.1322	35.0857	2	35.0849	2	191.8	2	197.7	2
31WBTSOC	AB01	16	1	15	14	2	20010430	113	26.5077	-75.5022	4697	1051.6	7.2975	35.096	2	35.0971	2	161.3	2	165.4	2
31WBTSOC	AB01	16	1	16	15	2	20010430	113	26.5077	-75.5022	4697	851.3	10.6271	35.3917	2	35.3907	2	147.8	2	147.6	2
31WBTSOC	AB01	16	1	17	16	2	20010430	113	26.5077	-75.5022	4697	649.3	14.6002	35.957	2	35.9579	2	166	2	161.5	2
31WBTSOC	AB01	16	1	18	17	2	20010430	113	26.5077	-75.5022	4697	458.1	17.808	36.4806	2	36.4817	2	196	2	190.1	2
31WBTSOC	AB01	16	1	19	18	2	20010430	113	26.5077	-75.5022	4697	344.1	18.6503	36.587	2	36.5859	2	204.7	2	201.1	2
31WBTSOC	AB01	16	1	20	19	2	20010430	113	26.5077	-75.5022	4697	259.5	19.213	36.6288	2	36.6283	2	202.6	2	199.8	2
31WBTSOC	AB01	16	1	21	20	2	20010430	113	26.5077	-75.5022	4697	180.2	20.6145	36.7685	2	36.7686	2	214.4	2	210.4	2
31WBTSOC	AB01	16	1	22	21	2	20010430	113	26.5077	-75.5022	4697	109.8	21.5934	36.8071	2	36.8065	2	213.2	2	210.7	2
31WBTSOC	AB01	16	1	23	22	2	20010430	113	26.5077	-75.5022	4697	55	23.2231	36.7926	2	-999	9	217.6	2	-999	9
31WBTSOC	AB01	16	1	24	23	2	20010430	113	26.5077	-75.5022	4697	2.5	23.9683	36.7248	2	-999	9	211	2	-999	9
31WBTSOC	AB01	17	1	1	24	2	20010430	607	26.503	-75.3027	4654	4716.4	2.2206	34.8799	2	34.8805	2	257.6	2	258.3	2
31WBTSOC	AB01	17	1	2	1	2	20010430	607	26.503	-75.3027	4654	4297.6	2.2445	34.8891	2	34.8887	2	259.2	2	262.9	2
31WBTSOC	AB01	17	1	3	2	2	20010430	607	26.503	-75.3027	4654	3921.4	2.2906	34.8964	2	34.896	2	260.5	2	266	2
31WBTSOC	AB01	17	1	4	3	2	20010430	607	26.503	-75.3027	4654	3571.1	2.3732	34.904	2	34.9039	2	260.3	2	267.9	2
31WBTSOC	AB01	17	1	5	4	2	20010430	607	26.503	-75.3027	4654	3224.8	2.5348	34.9149	2	34.934	4	259	2	267.9	2
31WBTSOC	AB01	17	1	6	5	2	20010430	607	26.503	-75.3027	4654	2901.6	2.8301	34.9341	2	34.9521	4	255.4	2	264.8	2
31WBTSOC	AB01	17	1	7	6	2	20010430	607	26.503	-75.3027	4654	2621.7	3.1369	34.9515	2	34.9623	4	252.9	2	262.1	2
31WBTSOC	AB01	17	1	8	7	2	20010430	607	26.503	-75.3027	4654	2424.7	3.3514	34.9626	2	34.9694	4	251.8	2	261	2
31WBTSOC	AB01	17	1	9	8	2	20010430	607	26.503	-75.3027	4654	2223.2	3.5408	34.9704	2	34.9702	2	251.7	2	261.1	2
31WBTSOC	AB01	17	1	10	9	2	20010430	607	26.503	-75.3027	4654	2025.5	3.7139	34.9702	2	34.971	2	252.5	2	262	2
31WBTSOC	AB01	17	1	11	10	2	20010430	607	26.503	-75.3027	4654	1824.5	3.9018	34.9754	2	34.9759	2	250.9	2	260.6	2
31WBTSOC	AB01	17	1	12	11	2	20010430	607	26.503	-75.3027	4654	1623.1	4.2438	34.9997	2	35.0003	2	244.7	2	254.2	2
31WBTSOC	AB01	17	1	13	12	2	20010430	607	26.503	-75.3027	4654	1424.9	4.8391	35.044	2	35.0859	2	231	2	205.1	3
31WBTSOC	AB01	17	1	14	13	2	20010430	607	26.503	-75.3027	4654	1223.8	5.9736	35.0853	2	35.0859	2	199.3	2	205.1	3
31WBTSOC	AB01	17	1	15	14	2	20010430	607	26.503	-75.3027	4654	1027.7	7.8241	35.1071	2	35.1062	2	150	2	153.6	2
31WBTSOC	AB01	17	1	16	15	2	20010430	607	26.503	-75.3027	4654	825.3	11.4616	35.4994	2	35.4976	2	153.7	2	152.5	2

31WBTSOC	AB01	17	1	17	16	2	20010430	607	26.503	-75.3027	4654	622.8	15.6365	36.1167	2	36.1156	2	179	2	173.3	2
31WBTSOC	AB01	17	1	18	17	2	20010430	607	26.503	-75.3027	4654	448.6	18.0008	36.5101	2	36.5027	2	196.1	2	191.5	2
31WBTSOC	AB01	17	1	19	18	2	20010430	607	26.503	-75.3027	4654	325.8	18.8742	36.6115	2	36.6107	2	207.5	2	203.9	2
31WBTSOC	AB01	17	1	20	19	2	20010430	607	26.503	-75.3027	4654	224.6	19.9773	36.697	2	36.692	2	209.7	2	193.2	2
31WBTSOC	AB01	17	1	21	20	2	20010430	607	26.503	-75.3027	4654	150.8	20.9131	36.7777	2	36.7775	2	215.3	2	212.9	2
31WBTSOC	AB01	17	1	22	21	2	20010430	607	26.503	-75.3027	4654	99.7	21.9376	36.7989	2	36.7991	2	216.7	2	213.1	2
31WBTSOC	AB01	17	1	23	22	2	20010430	607	26.503	-75.3027	4654	2.8	24.2747	36.6877	2	36.6878	2	210.5	2	208.5	2
31WBTSOC	AB01	18	1	1	24	2	20010430	1059	26.5008	-75.0832	4624	4684.7	2.2032	34.8785	2	34.8773	2	257	2	257.6	2
31WBTSOC	AB01	18	1	2	1	2	20010430	1059	26.5008	-75.0832	4624	4400.1	2.2456	34.8875	2	34.8877	2	259.4	2	261.9	2
31WBTSOC	AB01	18	1	3	2	2	20010430	1059	26.5008	-75.0832	4624	4249.5	2.2527	34.8898	2	34.8903	2	259.8	2	264.1	2
31WBTSOC	AB01	18	1	4	3	2	20010430	1059	26.5008	-75.0832	4624	3872.6	2.2748	34.8954	2	34.8948	2	259.6	2	265.8	2
31WBTSOC	AB01	18	1	5	4	2	20010430	1059	26.5008	-75.0832	4624	3499.4	2.3714	34.9043	2	34.9047	2	260	2	268.2	2
31WBTSOC	AB01	18	1	6	5	2	20010430	1059	26.5008	-75.0832	4624	3127.3	2.6082	34.9193	2	34.9194	2	258.8	2	267.6	2
31WBTSOC	AB01	18	1	7	6	2	20010430	1059	26.5008	-75.0832	4624	2749.3	2.9607	34.9418	2	34.942	2	254	2	264.1	2
31WBTSOC	AB01	18	1	8	7	2	20010430	1059	26.5008	-75.0832	4624	2448.4	3.297	34.9599	2	34.9599	2	252.2	2	262.2	2
31WBTSOC	AB01	18	1	9	8	2	20010430	1059	26.5008	-75.0832	4624	2153.2	3.5974	34.9696	2	34.9712	2	251.8	2	261.6	2
31WBTSOC	AB01	18	1	10	9	2	20010430	1059	26.5008	-75.0832	4624	1850.1	3.878	34.9755	2	34.9759	2	250.8	2	261.1	2
31WBTSOC	AB01	18	1	11	10	2	20010430	1059	26.5008	-75.0832	4624	1549.3	4.459	35.0176	2	35.0184	2	239.8	2	249.1	2
31WBTSOC	AB01	18	1	12	11	2	20010430	1059	26.5008	-75.0832	4624	1251.9	5.8678	35.0859	2	35.0865	2	202.2	2	208.5	2
31WBTSOC	AB01	18	1	13	12	2	20010430	1059	26.5008	-75.0832	4624	1049.8	7.7304	35.0966	2	35.0967	2	149.8	2	153.7	2
31WBTSOC	AB01	18	1	14	13	2	20010430	1059	26.5008	-75.0832	4624	900.5	10.4381	35.3671	2	35.3706	2	147.8	2	147.5	2
31WBTSOC	AB01	18	1	15	14	2	20010430	1059	26.5008	-75.0832	4624	749.8	13.6597	35.8072	2	35.8095	2	166	2	162.7	2
31WBTSOC	AB01	18	1	16	15	2	20010430	1059	26.5008	-75.0832	4624	601.5	16.2197	36.2115	2	36.2124	2	183	2	179.5	2
31WBTSOC	AB01	18	1	17	16	2	20010430	1059	26.5008	-75.0832	4624	475.4	17.8883	36.493	2	36.4932	2	193.6	2	190.4	2
31WBTSOC	AB01	18	1	18	17	2	20010430	1059	26.5008	-75.0832	4624	350.9	18.7004	36.5943	2	36.5974	2	202.2	2	200.2	2
31WBTSOC	AB01	18	1	19	18	2	20010430	1059	26.5008	-75.0832	4624	276.2	19.0266	36.6206	2	36.6198	2	205.5	2	203.2	2
31WBTSOC	AB01	18	1	20	19	2	20010430	1059	26.5008	-75.0832	4624	183.7	20.5487	36.765	2	36.7646	2	215.3	2	211.6	2
31WBTSOC	AB01	18	1	21	20	2	20010430	1059	26.5008	-75.0832	4624	148.4	20.9099	36.7802	2	36.7799	2	213	2	211.8	2
31WBTSOC	AB01	18	1	22	21	2	20010430	1059	26.5008	-75.0832	4624	99.5	22.0584	36.8166	2	36.8184	2	217.4	2	215.6	2
31WBTSOC	AB01	18	1	23	22	2	20010430	1059	26.5008	-75.0832	4624	48.2	23.1307	36.8653	2	36.8644	2	215.4	2	214	2
31WBTSOC	AB01	18	1	24	23	2	20010430	1059	26.5008	-75.0832	4624	3.5	23.3266	36.7886	2	36.7892	2	212	2	212.4	2
31WBTSOC	AB01	19	1	1	24	2	20010430	1612	26.497	-74.8017	4550	4609.1	2.1952	34.8781	2	34.8795	2	256.9	2	257.6	2
31WBTSOC	AB01	19	1	2	1	2	20010430	1612	26.497	-74.8017	4550	4344.7	2.2178	34.8852	2	34.8848	2	258.3	2	260.9	2
31WBTSOC	AB01	19	1	3	2	2	20010430	1612	26.497	-74.8017	4550	4019.5	2.2444	34.8912	2	34.8913	2	259.3	2	264.1	2
31WBTSOC	AB01	19	1	4	3	2	20010430	1612	26.497	-74.8017	4550	3695.1	2.3028	34.8992	2	34.8986	2	259.6	2	266.6	2
31WBTSOC	AB01	19	1	5	4	2	20010430	1612	26.497	-74.8017	4550	3369.9	2.4445	34.9105	2	34.9102	2	259.8	2	268	2

31WBTSOC	AB01	19	1	6	5	2	20010430	1612	26.497	-74.8017	4550	3050.1	2.6697	34.9233	2	34.9234	2	258.1	2	266.7	2
31WBTSOC	AB01	19	1	7	6	2	20010430	1612	26.497	-74.8017	4550	2701.1	2.9727	34.9403	2	34.9395	2	254.7	2	264.5	2
31WBTSOC	AB01	19	1	8	7	2	20010430	1612	26.497	-74.8017	4550	2342.5	3.3382	34.9578	2	34.9564	2	252.6	2	262.7	2
31WBTSOC	AB01	19	1	9	8	2	20010430	1612	26.497	-74.8017	4550	2123.1	3.5686	34.9635	2	34.9564	3	253.2	2	263.5	2
31WBTSOC	AB01	19	1	10	9	2	20010430	1612	26.497	-74.8017	4550	1921.6	3.7475	34.965	2	34.9657	2	253	2	263	2
31WBTSOC	AB01	19	1	11	10	2	20010430	1612	26.497	-74.8017	4550	1722	4.0368	34.9823	2	34.9814	2	248.9	2	258.6	2
31WBTSOC	AB01	19	1	12	11	2	20010430	1612	26.497	-74.8017	4550	1522.1	4.4419	35.014	2	35.0119	2	240.3	2	249.6	2
31WBTSOC	AB01	19	1	13	12	2	20010430	1612	26.497	-74.8017	4550	1321.9	5.2835	35.0668	2	35.0641	2	219.9	2	227.6	2
31WBTSOC	AB01	19	1	14	13	2	20010430	1612	26.497	-74.8017	4550	1126.3	6.7781	35.0809	2	35.0814	2	171.8	2	176.3	2
31WBTSOC	AB01	19	1	15	14	2	20010430	1612	26.497	-74.8017	4550	921.5	9.8075	35.2935	2	35.2931	2	145	2	145.4	2
31WBTSOC	AB01	19	1	16	15	2	20010430	1612	26.497	-74.8017	4550	724.2	13.9137	35.8448	2	35.8446	2	169.2	2	163.9	2
31WBTSOC	AB01	19	1	17	16	2	20010430	1612	26.497	-74.8017	4550	548.7	17.1051	36.3597	2	36.3611	2	190.3	2	183.4	2
31WBTSOC	AB01	19	1	18	17	2	20010430	1612	26.497	-74.8017	4550	381.4	18.4405	36.5673	2	36.5679	2	195	2	191.2	2
31WBTSOC	AB01	19	1	19	18	2	20010430	1612	26.497	-74.8017	4550	263.1	19.2596	36.645	2	36.6456	2	196.9	2	194.8	2
31WBTSOC	AB01	19	1	20	19	2	20010430	1612	26.497	-74.8017	4550	191.3	20.3919	36.7496	2	36.7503	2	198.9	2	198.3	2
31WBTSOC	AB01	19	1	21	20	2	20010430	1612	26.497	-74.8017	4550	144.5	21.5846	36.821	2	36.8241	2	206.7	2	204.5	2
31WBTSOC	AB01	19	1	22	21	2	20010430	1612	26.497	-74.8017	4550	91.8	22.5076	36.8146	2	36.8154	2	214.8	2	213.1	2
31WBTSOC	AB01	19	1	23	22	2	20010430	1612	26.497	-74.8017	4550	45.6	23.4297	36.7806	2	36.7819	2	213	2	212.1	2
31WBTSOC	AB01	19	1	24	23	2	20010430	1612	26.497	-74.8017	4550	3	23.5002	36.7768	2	36.7767	2	210.8	2	211.7	2
31WBTSOC	AB01	20	1	1	24	2	20010430	2132	26.5017	-74.5148	4500	4557.4	2.1923	34.8791	2	34.8795	2	257.1	2	258.3	2
31WBTSOC	AB01	20	1	2	1	2	20010430	2132	26.5017	-74.5148	4500	4235.5	2.2335	34.8883	2	34.8881	2	259.6	2	262.7	2
31WBTSOC	AB01	20	1	3	2	2	20010430	2132	26.5017	-74.5148	4500	3873.6	2.2667	34.8947	2	34.895	2	260.1	2	265.7	2
31WBTSOC	AB01	20	1	4	3	2	20010430	2132	26.5017	-74.5148	4500	3600	2.311	34.8989	2	34.8994	2	260.1	2	271	3
31WBTSOC	AB01	20	1	5	4	2	20010430	2132	26.5017	-74.5148	4500	3347.8	2.4353	34.9099	2	34.91	2	259.8	2	267.9	2
31WBTSOC	AB01	20	1	6	5	2	20010430	2132	26.5017	-74.5148	4500	3097.8	2.6233	34.9215	2	34.9212	2	258.4	2	267.1	2
31WBTSOC	AB01	20	1	7	6	2	20010430	2132	26.5017	-74.5148	4500	2847.7	2.8275	34.9339	2	34.9342	2	255.5	2	264.7	2
31WBTSOC	AB01	20	1	8	7	2	20010430	2132	26.5017	-74.5148	4500	2598.7	3.0882	34.9494	2	34.9489	2	253.1	2	262.5	2
31WBTSOC	AB01	20	1	9	8	2	20010430	2132	26.5017	-74.5148	4500	2373.2	3.3264	34.9632	2	34.9637	2	251.5	2	260.8	2
31WBTSOC	AB01	20	1	10	9	2	20010430	2132	26.5017	-74.5148	4500	2123.4	3.5835	34.9724	2	34.959	4	251.2	2	261.4	2
31WBTSOC	AB01	20	1	11	10	2	20010430	2132	26.5017	-74.5148	4500	1973.9	3.7314	34.9719	2	34.9723	2	252	2	262	2
31WBTSOC	AB01	20	1	12	11	2	20010430	2132	26.5017	-74.5148	4500	1620.8	4.2098	34.9978	2	35.0005	2	245.7	2	255.1	2
31WBTSOC	AB01	20	1	13	12	2	20010430	2132	26.5017	-74.5148	4500	1400.2	4.8424	35.0398	2	35.0406	2	230.9	2	240	2
31WBTSOC	AB01	20	1	14	13	2	20010430	2132	26.5017	-74.5148	4500	1173.8	6.3001	35.0885	2	35.0893	2	189.5	2	194.9	2
31WBTSOC	AB01	20	1	15	14	2	20010430	2132	26.5017	-74.5148	4500	976.4	8.7057	35.1769	2	35.1785	2	144.3	2	146.6	2
31WBTSOC	AB01	20	1	16	15	2	20010430	2132	26.5017	-74.5148	4500	778.3	12.4198	35.6282	2	35.6377	2	157.3	2	156.1	2
31WBTSOC	AB01	20	1	17	16	2	20010430	2132	26.5017	-74.5148	4500	628.8	15.4662	36.0896	2	36.0911	2	175.8	2	171.9	2

31WBTSOC	AB01	20	1	18	17	2	20010430	2132	26.5017	-74.5148	4500	477	17.7425	36.4673	2	36.4688	2	193.3	2	189.1	2
31WBTSOC	AB01	20	1	19	18	2	20010430	2132	26.5017	-74.5148	4500	386.1	18.4582	36.5676	2	36.5667	2	195.7	2	193.7	2
31WBTSOC	AB01	20	1	20	19	2	20010430	2132	26.5017	-74.5148	4500	294.6	18.946	36.6189	2	36.6188	2	203.3	2	202.1	2
31WBTSOC	AB01	20	1	21	20	2	20010430	2132	26.5017	-74.5148	4500	212.6	20.1217	36.7203	2	36.7208	2	199.6	2	197.7	2
31WBTSOC	AB01	20	1	22	21	2	20010430	2132	26.5017	-74.5148	4500	162.4	21.2286	36.7992	2	36.7993	2	204.9	2	203.7	2
31WBTSOC	AB01	20	1	23	22	2	20010430	2132	26.5017	-74.5148	4500	109.9	22.2151	36.8381	2	36.8382	2	210.1	2	209.3	2
31WBTSOC	AB01	20	1	24	23	2	20010430	2132	26.5017	-74.5148	4500	60.1	23.4068	36.792	2	36.7952	2	212.9	2	211.4	2
31WBTSOC	AB01	21	1	1	24	2	20010501	311	26.503	-74.2487	4549	4608	2.206	34.8798	2	34.8815	2	258.4	2	258.5	2
31WBTSOC	AB01	21	1	2	1	2	20010501	311	26.503	-74.2487	4549	4397.1	2.2382	34.8865	2	34.8874	2	260.5	2	261.6	2
31WBTSOC	AB01	21	1	3	2	2	20010501	311	26.503	-74.2487	4549	4097.3	2.263	34.8921	2	34.8925	2	261.1	2	264.6	2
31WBTSOC	AB01	21	1	4	3	2	20010501	311	26.503	-74.2487	4549	3795.3	2.2892	34.8962	2	34.8968	2	260.7	2	265.9	2
31WBTSOC	AB01	21	1	5	4	2	20010501	311	26.503	-74.2487	4549	3499.3	2.3617	34.9028	2	34.9043	2	260.7	2	267.9	2
31WBTSOC	AB01	21	1	6	5	2	20010501	311	26.503	-74.2487	4549	3197.7	2.5548	34.9169	2	34.918	2	259.4	2	267.4	2
31WBTSOC	AB01	21	1	7	6	2	20010501	311	26.503	-74.2487	4549	2900.5	2.7994	34.9308	2	34.9316	2	257.4	2	265.9	2
31WBTSOC	AB01	21	1	8	7	2	20010501	311	26.503	-74.2487	4549	2598.2	3.1089	34.9509	2	34.9519	2	252.4	2	261.7	2
31WBTSOC	AB01	21	1	9	8	2	20010501	311	26.503	-74.2487	4549	2388	3.3275	34.9636	2	34.9641	2	251.7	2	260.7	2
31WBTSOC	AB01	21	1	10	9	2	20010501	311	26.503	-74.2487	4549	2187.1	3.4969	34.9671	2	34.968	2	252.2	2	261.7	2
31WBTSOC	AB01	21	1	11	10	2	20010501	311	26.503	-74.2487	4549	1988.9	3.6867	34.9713	2	34.9718	2	251.9	2	261.7	2
31WBTSOC	AB01	21	1	12	11	2	20010501	311	26.503	-74.2487	4549	1791.2	3.8817	34.9727	2	34.9747	2	251.6	2	261	2
31WBTSOC	AB01	21	1	13	12	2	20010501	311	26.503	-74.2487	4549	1488.3	4.5138	35.0233	2	35.0239	2	239.2	2	247.9	2
31WBTSOC	AB01	21	1	14	13	2	20010501	311	26.503	-74.2487	4549	1289.1	5.2757	35.068	2	35.069	2	220.6	2	227.6	2
31WBTSOC	AB01	21	1	15	14	2	20010501	311	26.503	-74.2487	4549	989.6	7.9335	35.1126	2	35.1131	2	149.2	2	151.8	2
31WBTSOC	AB01	21	1	16	15	2	20010501	311	26.503	-74.2487	4549	788.3	11.7831	35.543	2	35.6831	4	155.7	2	158.5	2
31WBTSOC	AB01	21	1	17	16	2	20010501	311	26.503	-74.2487	4549	662.3	14.4863	35.9313	2	35.945	2	173.1	2	168.3	2
31WBTSOC	AB01	21	1	18	17	2	20010501	311	26.503	-74.2487	4549	529.5	16.8245	36.3151	2	36.3161	2	185	2	180.7	2
31WBTSOC	AB01	21	1	19	18	2	20010501	311	26.503	-74.2487	4549	400.8	18.1796	36.5331	2	36.534	2	193.8	2	190.5	2
31WBTSOC	AB01	21	1	20	19	2	20010501	311	26.503	-74.2487	4549	272.7	19.0137	36.6224	2	36.6234	2	201.4	2	200.1	2
31WBTSOC	AB01	21	1	21	20	2	20010501	311	26.503	-74.2487	4549	170.5	20.7481	36.7803	2	36.7809	2	206.4	2	205.2	2
31WBTSOC	AB01	21	1	22	21	2	20010501	311	26.503	-74.2487	4549	171.3	20.7085	36.774	2	36.7783	2	207.3	2	204.8	2
31WBTSOC	AB01	21	1	23	22	2	20010501	311	26.503	-74.2487	4549	113	22.0809	36.8414	2	36.8416	2	209.3	2	207.9	2
31WBTSOC	AB01	21	1	24	23	2	20010501	311	26.503	-74.2487	4549	54.6	23.5125	36.7471	2	36.7477	2	212.4	2	211.2	2
31WBTSOC	AB01	22	1	1	24	2	20010501	827	26.5015	-73.9658	4655	4716.7	2.2285	34.8805	2	34.8817	2	259.4	2	258.9	2
31WBTSOC	AB01	22	1	2	1	2	20010501	827	26.5015	-73.9658	4655	4448	2.2433	34.8864	2	34.8864	2	260.3	2	261.8	2
31WBTSOC	AB01	22	1	3	2	2	20010501	827	26.5015	-73.9658	4655	4198.4	2.2602	34.8904	2	34.8901	2	260.7	2	264	2
31WBTSOC	AB01	22	1	4	3	2	20010501	827	26.5015	-73.9658	4655	3898.5	2.2913	34.8966	2	34.8964	2	261.2	2	266.1	2
31WBTSOC	AB01	22	1	5	4	2	20010501	827	26.5015	-73.9658	4655	3547.6	2.3894	34.9053	2	34.9055	2	261	2	267.6	2

31WBTSOC	AB01	22	1	6	5	2	20010501	827	26.5015	-73.9658	4655	3124.7	2.6372	34.9206	2	34.9208	2	259.1	2	267.3	2
31WBTSOC	AB01	22	1	7	6	2	20010501	827	26.5015	-73.9658	4655	2747.3	2.9464	34.94	2	34.9403	2	254.7	2	264.1	2
31WBTSOC	AB01	22	1	8	7	2	20010501	827	26.5015	-73.9658	4655	2447.8	3.2559	34.9566	2	34.9574	2	252.7	2	261.7	2
31WBTSOC	AB01	22	1	9	8	2	20010501	827	26.5015	-73.9658	4655	2149.4	3.5535	34.9689	2	34.969	2	251.7	2	261.7	2
31WBTSOC	AB01	22	1	10	9	2	20010501	827	26.5015	-73.9658	4655	1841.8	3.7869	34.9717	2	34.9721	2	251.6	2	261.6	2
31WBTSOC	AB01	22	1	11	10	2	20010501	827	26.5015	-73.9658	4655	1549.5	4.3449	35.011	2	35.0117	2	242	2	251.4	2
31WBTSOC	AB01	22	1	12	11	2	20010501	827	26.5015	-73.9658	4655	1252.1	5.3378	35.0723	2	35.0731	2	217.1	2	224.2	2
31WBTSOC	AB01	22	1	13	12	2	20010501	827	26.5015	-73.9658	4655	1049.6	7.1041	35.0934	2	35.0934	2	167.7	2	170.6	2
31WBTSOC	AB01	22	1	14	13	2	20010501	827	26.5015	-73.9658	4655	899.9	9.183	35.2201	2	35.2204	2	142.8	2	144.8	2
31WBTSOC	AB01	22	1	15	14	2	20010501	827	26.5015	-73.9658	4655	750.1	12.217	35.5968	2	35.5935	2	154.9	2	153.2	2
31WBTSOC	AB01	22	1	16	15	2	20010501	827	26.5015	-73.9658	4655	599.2	15.3561	36.0699	2	36.0696	2	177.2	2	173.1	2
31WBTSOC	AB01	22	1	17	16	2	20010501	827	26.5015	-73.9658	4655	473.4	17.3847	36.4088	2	36.5669	2	188.9	2	185.7	2
31WBTSOC	AB01	22	1	18	17	2	20010501	827	26.5015	-73.9658	4655	351.1	18.442	36.5677	2	36.6373	2	193.1	2	191.3	2
31WBTSOC	AB01	22	1	19	18	2	20010501	827	26.5015	-73.9658	4655	248.1	19.1641	36.6377	2	36.7325	2	197.7	2	196	2
31WBTSOC	AB01	22	1	20	19	2	20010501	827	26.5015	-73.9658	4655	202.2	20.1873	36.7343	2	36.8116	2	196.1	2	183.2	2
31WBTSOC	AB01	22	1	21	20	2	20010501	827	26.5015	-73.9658	4655	150.9	21.2736	36.8153	2	36.8124	2	200	2	198.8	2
31WBTSOC	AB01	22	1	22	21	2	20010501	827	26.5015	-73.9658	4655	100.7	22.3391	36.8371	2	36.836	2	213.3	2	211.5	2
31WBTSOC	AB01	22	1	23	22	2	20010501	827	26.5015	-73.9658	4655	49.9	23.2501	36.727	2	36.7263	2	212.6	2	212.1	2
31WBTSOC	AB01	22	1	24	23	2	20010501	827	26.5015	-73.9658	4655	3.7	23.2329	36.7282	2	36.1499	4	210.2	2	211.8	2
31WBTSOC	AB01	23	1	1	24	2	20010501	1417	26.501	-73.5823	4868	4936	2.2089	34.8748	2	34.8746	2	256.8	2	256.2	2
31WBTSOC	AB01	23	1	2	1	2	20010501	1417	26.501	-73.5823	4868	4800	2.2431	34.8812	2	34.8815	2	258.7	2	259.1	2
31WBTSOC	AB01	23	1	3	2	2	20010501	1417	26.501	-73.5823	4868	4550.4	2.2684	34.8879	2	34.8881	2	260.2	2	262.5	2
31WBTSOC	AB01	23	1	4	3	2	20010501	1417	26.501	-73.5823	4868	4145.9	2.2969	34.8946	2	34.894	2	261.1	2	265.5	2
31WBTSOC	AB01	23	1	5	4	2	20010501	1417	26.501	-73.5823	4868	3799.6	2.3821	34.903	2	34.9033	2	261.6	2	267.8	2
31WBTSOC	AB01	23	1	6	5	2	20010501	1417	26.501	-73.5823	4868	3497.8	2.4999	34.9122	2	34.9119	2	260.2	2	267.3	2
31WBTSOC	AB01	23	1	7	6	2	20010501	1417	26.501	-73.5823	4868	3149.8	2.7237	34.9264	2	34.9271	2	257.6	2	265.6	2
31WBTSOC	AB01	23	1	8	7	2	20010501	1417	26.501	-73.5823	4868	2799.7	2.9795	34.9412	2	34.9411	2	254.8	2	263.6	2
31WBTSOC	AB01	23	1	9	8	2	20010501	1417	26.501	-73.5823	4868	2551.2	3.187	34.9524	2	34.9529	2	253.5	2	253.4	3
31WBTSOC	AB01	23	1	10	9	2	20010501	1417	26.501	-73.5823	4868	2251	3.4637	34.9645	2	34.9647	2	252.2	2	262	2
31WBTSOC	AB01	23	1	11	10	2	20010501	1417	26.501	-73.5823	4868	1899.4	3.7678	34.9722	2	34.9718	2	251.5	2	261.7	2
31WBTSOC	AB01	23	1	12	11	2	20010501	1417	26.501	-73.5823	4868	1584.3	4.1912	34.9938	2	34.9946	2	245.3	2	255.2	2
31WBTSOC	AB01	23	1	13	12	2	20010501	1417	26.501	-73.5823	4868	1273	5.3478	35.0808	2	35.0816	2	215.9	2	223	2
31WBTSOC	AB01	23	1	14	13	2	20010501	1417	26.501	-73.5823	4868	999.2	7.6108	35.1155	2	-999	9	157.9	2	-999	9
31WBTSOC	AB01	23	1	15	14	2	20010501	1417	26.501	-73.5823	4868	850.6	9.8838	35.299	2	35.2985	2	143.7	2	144.7	2
31WBTSOC	AB01	23	1	16	15	2	20010501	1417	26.501	-73.5823	4868	699.1	13.1705	35.7341	2	35.7326	2	160	2	156.1	2
31WBTSOC	AB01	23	1	17	16	2	20010501	1417	26.501	-73.5823	4868	550.7	16.1351	36.2031	2	36.2057	2	180.8	2	175.5	2

31WBTSOC	AB01	23	1	18	17	2	20010501	1417	26.501	-73.5823	4868	400.3	18.1221	36.5277	2	36.5302	2	195.2	2	190.5	2
31WBTSOC	AB01	23	1	19	18	2	20010501	1417	26.501	-73.5823	4868	299.6	18.9115	36.6203	2	36.622	2	207.2	2	203.6	2
31WBTSOC	AB01	23	1	20	19	2	20010501	1417	26.501	-73.5823	4868	226.4	19.3852	36.6564	2	36.6583	2	196.4	2	195.7	2
31WBTSOC	AB01	23	1	21	20	2	20010501	1417	26.501	-73.5823	4868	160.5	20.8193	36.7875	2	36.788	2	198.4	2	196.9	2
31WBTSOC	AB01	23	1	22	21	2	20010501	1417	26.501	-73.5823	4868	110.2	21.6972	36.8123	2	36.814	2	218.1	2	216	2
31WBTSOC	AB01	23	1	23	22	2	20010501	1417	26.501	-73.5823	4868	50.5	22.5556	36.8479	2	36.8553	2	215.6	2	214.7	2
31WBTSOC	AB01	23	1	24	23	2	20010501	1417	26.501	-73.5823	4868	2	22.5624	36.8467	2	36.8585	3	213.5	2	214.7	2
31WBTSOC	AB01	24	1	1	24	2	20010501	1924	26.5002	-73.2195	5059	5133	2.1232	34.8615	2	34.862	2	251	2	251.9	2
31WBTSOC	AB01	24	1	2	1	2	20010501	1924	26.5002	-73.2195	5059	4901.7	2.2531	34.8809	2	34.8815	2	257.7	2	259.3	2
31WBTSOC	AB01	24	1	3	2	2	20010501	1924	26.5002	-73.2195	5059	4601.9	2.2821	34.8884	2	34.8883	2	259.8	2	262.7	2
31WBTSOC	AB01	24	1	4	3	2	20010501	1924	26.5002	-73.2195	5059	4249.1	2.3044	34.894	2	34.8938	2	260.2	2	265.1	2
31WBTSOC	AB01	24	1	5	4	2	20010501	1924	26.5002	-73.2195	5059	3899.2	2.3507	34.9004	2	34.8999	2	260.4	2	267.2	2
31WBTSOC	AB01	24	1	6	5	2	20010501	1924	26.5002	-73.2195	5059	3548.3	2.4825	34.9103	2	34.9104	2	260	2	267.6	2
31WBTSOC	AB01	24	1	7	6	2	20010501	1924	26.5002	-73.2195	5059	3250.8	2.6684	34.9224	2	34.9243	2	257.1	2	265.7	2
31WBTSOC	AB01	24	1	8	7	2	20010501	1924	26.5002	-73.2195	5059	2950	2.8746	34.936	2	34.9359	2	254.5	2	263.6	2
31WBTSOC	AB01	24	1	9	8	2	20010501	1924	26.5002	-73.2195	5059	2651.3	3.102	34.9511	2	34.9507	2	251.7	2	261.6	2
31WBTSOC	AB01	24	1	10	9	2	20010501	1924	26.5002	-73.2195	5059	2348.6	3.4022	34.9653	2	34.9659	2	251.2	2	261.2	2
31WBTSOC	AB01	24	1	11	10	2	20010501	1924	26.5002	-73.2195	5059	2049.7	3.6547	34.969	2	34.9684	2	251.8	2	262	2
31WBTSOC	AB01	24	1	12	11	2	20010501	1924	26.5002	-73.2195	5059	1751.3	3.9495	34.9774	2	34.9773	2	249.8	2	260	2
31WBTSOC	AB01	24	1	13	12	2	20010501	1924	26.5002	-73.2195	5059	1426.7	4.6133	35.0296	2	35.0308	2	235.8	2	245	2
31WBTSOC	AB01	24	1	14	13	2	20010501	1924	26.5002	-73.2195	5059	1102.9	6.3165	35.0855	2	35.0843	2	184.7	2	190.9	2
31WBTSOC	AB01	24	1	15	14	2	20010501	1924	26.5002	-73.2195	5059	877.7	9.0908	35.2176	2	35.219	2	144.6	2	146.3	2
31WBTSOC	AB01	24	1	16	15	2	20010501	1924	26.5002	-73.2195	5059	727.6	12.3998	35.6327	2	35.6339	2	161.9	2	159.3	2
31WBTSOC	AB01	24	1	17	16	2	20010501	1924	26.5002	-73.2195	5059	575.7	15.3939	36.077	2	36.0779	2	178.4	2	173.9	2
31WBTSOC	AB01	24	1	18	17	2	20010501	1924	26.5002	-73.2195	5059	424.8	17.7512	36.4708	2	36.4706	2	193.2	2	189	2
31WBTSOC	AB01	24	1	19	18	2	20010501	1924	26.5002	-73.2195	5059	276.5	18.8396	36.6119	2	36.6165	2	211.1	2	208.7	2
31WBTSOC	AB01	24	1	20	19	2	20010501	1924	26.5002	-73.2195	5059	211	19.0863	36.6443	2	36.643	2	214.4	2	213.3	2
31WBTSOC	AB01	24	1	21	20	2	20010501	1924	26.5002	-73.2195	5059	148.6	19.5674	36.6827	2	36.6696	3	220	2	219.2	2
31WBTSOC	AB01	24	1	22	21	2	20010501	1924	26.5002	-73.2195	5059	99.8	20.3247	36.7343	2	36.7348	2	202.4	2	202.9	2
31WBTSOC	AB01	24	1	23	22	2	20010501	1924	26.5002	-73.2195	5059	51.5	21.5469	36.8121	2	36.814	2	220.1	2	210.7	2
31WBTSOC	AB01	24	1	24	23	2	20010501	1924	26.5002	-73.2195	5059	2.8	22.0238	36.8226	2	36.8219	2	218.4	2	216.5	2
31WBTSOC	AB01	25	1	1	24	2	20010502	1544	26.5595	-72.8512	5089	5163.8	2.0469	34.8516	2	34.8516	2	247.9	2	252.3	2
31WBTSOC	AB01	25	1	2	1	2	20010502	1544	26.5595	-72.8512	5089	4998.2	2.1333	34.8652	2	34.8643	2	250.9	2	255.6	2
31WBTSOC	AB01	25	1	3	2	2	20010502	1544	26.5595	-72.8512	5089	4698.9	2.2646	34.886	2	34.8852	2	258.9	2	263.3	2
31WBTSOC	AB01	25	1	4	3	2	20010502	1544	26.5595	-72.8512	5089	4299.8	2.2956	34.8934	2	34.8921	2	261.3	2	270.4	4
31WBTSOC	AB01	25	1	5	4	2	20010502	1544	26.5595	-72.8512	5089	3948.7	2.3382	34.8998	2	34.8984	2	261.4	2	268.6	2

31WBTSOC	AB01	25	1	6	5	2	20010502	1544	26.5595	-72.8512	5089	3596.6	2.4571	34.9093	2	34.9086	2	260.9	2	269.7	2
31WBTSOC	AB01	25	1	7	6	2	20010502	1544	26.5595	-72.8512	5089	3199	2.6619	34.9229	2	34.9226	2	258.3	2	268.3	2
31WBTSOC	AB01	25	1	8	7	2	20010502	1544	26.5595	-72.8512	5089	2900.1	2.9053	34.9385	2	34.9385	2	254.8	2	265.7	2
31WBTSOC	AB01	25	1	9	8	2	20010502	1544	26.5595	-72.8512	5089	2600.7	3.17	34.9541	2	34.9537	2	252.7	2	263.2	2
31WBTSOC	AB01	25	1	10	9	2	20010502	1544	26.5595	-72.8512	5089	2302.7	3.4167	34.966	2	34.9653	2	251.6	2	264.7	2
31WBTSOC	AB01	25	1	11	10	2	20010502	1544	26.5595	-72.8512	5089	2000.6	3.6577	34.9681	2	34.967	2	252.9	2	263.9	2
31WBTSOC	AB01	25	1	12	11	2	20010502	1544	26.5595	-72.8512	5089	1700	3.9804	34.9807	2	34.9802	2	249.7	2	261.4	2
31WBTSOC	AB01	25	1	13	12	2	20010502	1544	26.5595	-72.8512	5089	1400.4	4.6333	35.0292	2	35.0288	2	235.5	2	247.1	2
31WBTSOC	AB01	25	1	14	13	2	20010502	1544	26.5595	-72.8512	5089	1148.1	6.0048	35.0875	2	35.0883	2	195.6	2	203.8	2
31WBTSOC	AB01	25	1	15	14	2	20010502	1544	26.5595	-72.8512	5089	900.2	8.4357	35.1615	2	35.1615	2	147.7	2	150.4	2
31WBTSOC	AB01	25	1	16	15	2	20010502	1544	26.5595	-72.8512	5089	748.8	11.5168	35.5034	2	35.5041	2	152.3	2	151.5	2
31WBTSOC	AB01	25	1	17	16	2	20010502	1544	26.5595	-72.8512	5089	601.7	15.1291	36.0375	2	36.0373	2	174.7	2	169.9	2
31WBTSOC	AB01	25	1	18	17	2	20010502	1544	26.5595	-72.8512	5089	452.9	17.5164	36.4293	2	36.4278	2	191.5	2	186.8	2
31WBTSOC	AB01	25	1	19	18	2	20010502	1544	26.5595	-72.8512	5089	301	18.8084	36.608	2	36.6067	2	206.4	2	204	2
31WBTSOC	AB01	25	1	20	19	2	20010502	1544	26.5595	-72.8512	5089	202.1	19.3573	36.6659	2	36.665	2	208.9	2	208.2	2
31WBTSOC	AB01	25	1	21	20	2	20010502	1544	26.5595	-72.8512	5089	155.2	19.9467	36.7043	2	36.7079	2	197.2	2	196.8	2
31WBTSOC	AB01	25	1	22	21	2	20010502	1544	26.5595	-72.8512	5089	111.6	20.878	36.7799	2	36.7805	2	206.3	2	205	2
31WBTSOC	AB01	25	1	23	22	2	20010502	1544	26.5595	-72.8512	5089	60.5	21.8242	36.8031	2	36.8041	2	217.6	2	215.9	2
31WBTSOC	AB01	25	1	24	23	2	20010502	1544	26.5595	-72.8512	5089	3.1	23.0434	36.8381	2	36.8352	2	213.8	2	213.6	2
31WBTSOC	AB01	26	1	1	24	2	20010502	2227	26.5015	-72.4652	5158	5234.9	2.1077	34.8588	2	34.8584	2	251.7	2	251.6	2
31WBTSOC	AB01	26	1	2	1	2	20010502	2227	26.5015	-72.4652	5158	5098.9	2.2676	34.8804	2	34.8793	2	259.2	2	258.7	2
31WBTSOC	AB01	26	1	3	2	2	20010502	2227	26.5015	-72.4652	5158	4799.4	2.2762	34.8859	2	-999	9	260.7	2	-999	9
31WBTSOC	AB01	26	1	4	3	2	20010502	2227	26.5015	-72.4652	5158	4498.8	2.289	34.8905	2	34.8895	2	260.8	2	263.5	2
31WBTSOC	AB01	26	1	5	4	2	20010502	2227	26.5015	-72.4652	5158	4195.5	2.2913	34.8936	2	34.8933	2	260.5	2	265	2
31WBTSOC	AB01	26	1	6	5	2	20010502	2227	26.5015	-72.4652	5158	3799.2	2.3741	34.903	2	34.9015	2	261.2	2	267.5	2
31WBTSOC	AB01	26	1	7	6	2	20010502	2227	26.5015	-72.4652	5158	3400.6	2.5358	34.9149	2	34.9147	2	259.7	2	267.4	2
31WBTSOC	AB01	26	1	8	7	2	20010502	2227	26.5015	-72.4652	5158	2998.4	2.8031	34.9317	2	34.9308	2	256.8	2	265.4	2
31WBTSOC	AB01	26	1	9	8	2	20010502	2227	26.5015	-72.4652	5158	2692.9	3.0411	34.9471	2	34.946	2	253.2	2	262.6	2
31WBTSOC	AB01	26	1	10	9	2	20010502	2227	26.5015	-72.4652	5158	2400	3.3216	34.9642	2	34.9629	2	251.2	2	261.1	2
31WBTSOC	AB01	26	1	11	10	2	20010502	2227	26.5015	-72.4652	5158	2100.8	3.5739	34.973	2	34.9718	2	250.8	2	261	2
31WBTSOC	AB01	26	1	12	11	2	20010502	2227	26.5015	-72.4652	5158	1798.7	3.8959	34.9776	2	34.9775	2	250.4	2	260.6	2
31WBTSOC	AB01	26	1	13	12	2	20010502	2227	26.5015	-72.4652	5158	1449.5	4.603	35.0346	2	35.0343	2	236.3	2	245.5	2
31WBTSOC	AB01	26	1	14	13	2	20010502	2227	26.5015	-72.4652	5158	1099.5	6.1941	35.078	2	-999	9	185.7	2	-999	9
31WBTSOC	AB01	26	1	15	14	2	20010502	2227	26.5015	-72.4652	5158	902	8.391	35.1522	2	35.1507	2	146.3	2	148.9	2
31WBTSOC	AB01	26	1	16	15	2	20010502	2227	26.5015	-72.4652	5158	698.6	12.2903	35.6075	2	35.6124	2	153.4	2	153.6	2
31WBTSOC	AB01	26	1	17	16	2	20010502	2227	26.5015	-72.4652	5158	549.3	15.5899	36.1026	2	36.1008	2	176.7	2	171.8	2

31WBTSOC	AB01	26	1	18	17	2	20010502	2227	26.5015	-72.4652	5158	400.6	17.798	36.4816	2	36.4807	2	195.8	2	190.7	2
31WBTSOC	AB01	26	1	19	18	2	20010502	2227	26.5015	-72.4652	5158	311.4	18.4087	36.5656	2	36.5651	2	194.9	2	191.8	2
31WBTSOC	AB01	26	1	20	19	2	20010502	2227	26.5015	-72.4652	5158	242.1	18.7464	36.5944	2	36.5923	2	200.1	2	198.3	2
31WBTSOC	AB01	26	1	21	20	2	20010502	2227	26.5015	-72.4652	5158	178.6	19.1002	36.6195	2	36.6165	2	197.8	2	196.5	2
31WBTSOC	AB01	26	1	22	21	2	20010502	2227	26.5015	-72.4652	5158	119.6	20.0368	36.7146	2	36.7083	2	197.3	2	194.9	2
31WBTSOC	AB01	26	1	23	22	2	20010502	2227	26.5015	-72.4652	5158	55.5	21.594	36.8046	2	-999	9	218.7	2	-999	9
31WBTSOC	AB01	26	1	24	23	2	20010502	2227	26.5015	-72.4652	5158	4.4	22.408	36.8603	2	36.859	2	215.7	2	215.6	2
31WBTSOC	AB01	27	1	1	24	2	20010503	427	26.5002	-72.1017	5284	5365.2	2.0638	34.8505	2	34.8514	2	248.8	2	248.7	2
31WBTSOC	AB01	27	1	2	1	2	20010503	427	26.5002	-72.1017	5284	5199.2	2.1699	34.8665	2	34.8659	2	251.7	2	253.6	2
31WBTSOC	AB01	27	1	3	2	2	20010503	427	26.5002	-72.1017	5284	4903.6	2.2757	34.8851	2	34.884	2	258.6	2	260.5	2
31WBTSOC	AB01	27	1	4	3	2	20010503	427	26.5002	-72.1017	5284	4597.1	2.2908	34.8899	2	34.8893	2	260.2	2	263.7	2
31WBTSOC	AB01	27	1	5	4	2	20010503	427	26.5002	-72.1017	5284	4298	2.3153	34.8954	2	34.894	2	261	2	265.6	2
31WBTSOC	AB01	27	1	6	5	2	20010503	427	26.5002	-72.1017	5284	3899.4	2.3675	34.9019	2	34.9017	2	260.9	2	267.7	2
31WBTSOC	AB01	27	1	7	6	2	20010503	427	26.5002	-72.1017	5284	3497.9	2.495	34.9121	2	34.9115	2	259.7	2	267.9	2
31WBTSOC	AB01	27	1	8	7	2	20010503	427	26.5002	-72.1017	5284	3098.5	2.7608	34.9296	2	34.9287	2	255.6	2	264.6	2
31WBTSOC	AB01	27	1	9	8	2	20010503	427	26.5002	-72.1017	5284	2801.3	2.9684	34.9426	2	34.9422	2	253.4	2	262.7	2
31WBTSOC	AB01	27	1	10	9	2	20010503	427	26.5002	-72.1017	5284	2499.1	3.2388	34.9598	2	34.9596	2	251.4	2	261	2
31WBTSOC	AB01	27	1	11	10	2	20010503	427	26.5002	-72.1017	5284	2199.9	3.4758	34.9678	2	34.9678	2	251.7	2	261.6	2
31WBTSOC	AB01	27	1	12	11	2	20010503	427	26.5002	-72.1017	5284	1898.5	3.773	34.9783	2	34.9781	2	250.3	2	260.6	2
31WBTSOC	AB01	27	1	13	12	2	20010503	427	26.5002	-72.1017	5284	1496.2	4.3828	35.0161	2	35.0151	2	240.9	2	250.7	2
31WBTSOC	AB01	27	1	14	13	2	20010503	427	26.5002	-72.1017	5284	1199.7	5.6398	35.0878	2	35.0865	2	209.4	2	216.2	2
31WBTSOC	AB01	27	1	15	14	2	20010503	427	26.5002	-72.1017	5284	997	7.1423	35.0992	2	35.0999	2	167.3	2	171.3	2
31WBTSOC	AB01	27	1	16	15	2	20010503	427	26.5002	-72.1017	5284	803.8	10.112	35.3319	2	35.3314	2	145.7	2	146.9	2
31WBTSOC	AB01	27	1	17	16	2	20010503	427	26.5002	-72.1017	5284	614.3	14.2118	35.8951	2	35.8984	2	170.2	2	169.2	2
31WBTSOC	AB01	27	1	18	17	2	20010503	427	26.5002	-72.1017	5284	501.9	16.3419	36.2392	2	36.2385	2	181.6	2	178.2	2
31WBTSOC	AB01	27	1	19	18	2	20010503	427	26.5002	-72.1017	5284	354.5	18.0022	36.5132	2	36.5136	2	193.6	2	191.3	2
31WBTSOC	AB01	27	1	20	19	2	20010503	427	26.5002	-72.1017	5284	249.8	18.8033	36.6083	2	36.6048	2	199.4	2	197.9	2
31WBTSOC	AB01	27	1	21	20	2	20010503	427	26.5002	-72.1017	5284	149.5	20.2531	36.7269	2	36.7241	2	201	2	199.4	2
31WBTSOC	AB01	27	1	22	21	2	20010503	427	26.5002	-72.1017	5284	101	21.3891	36.8011	2	36.7989	2	215.1	2	213.6	2
31WBTSOC	AB01	27	1	23	22	2	20010503	427	26.5002	-72.1017	5284	49.3	23.9096	36.7836	2	36.7912	2	213.7	2	211.6	2
31WBTSOC	AB01	27	1	24	23	2	20010503	427	26.5002	-72.1017	5284	3.3	23.9602	36.7886	2	36.787	2	208.6	2	209.4	2
31WBTSOC	AB01	28	1	1	24	2	20010503	1121	26.5033	-71.7317	5383	5467.4	2.0726	34.8501	2	34.8508	2	248	2	248.8	2
31WBTSOC	AB01	28	1	2	1	2	20010503	1121	26.5033	-71.7317	5383	5300.5	2.2102	34.87	2	34.8708	2	254.3	2	254.7	2
31WBTSOC	AB01	28	1	3	2	2	20010503	1121	26.5033	-71.7317	5383	4996.7	2.2946	34.8847	2	-999	9	260	2	-999	9
31WBTSOC	AB01	28	1	4	3	2	20010503	1121	26.5033	-71.7317	5383	4698.4	2.3092	34.8901	2	34.8907	2	260.9	2	263.3	2
31WBTSOC	AB01	28	1	5	4	2	20010503	1121	26.5033	-71.7317	5383	4395.7	2.3118	34.8932	2	34.894	2	260.8	2	265.2	2

31WBTSOC	AB01	28	1	6	5	2	20010503	1121	26.5033	-71.7317	5383	4092.8	2.3359	34.8986	2	34.899	2	261.2	2	267.1	2
31WBTSOC	AB01	28	1	7	6	2	20010503	1121	26.5033	-71.7317	5383	3697.2	2.4274	34.9064	2	34.9064	2	260.6	2	268.4	2
31WBTSOC	AB01	28	1	8	7	2	20010503	1121	26.5033	-71.7317	5383	3297.4	2.6178	34.9203	2	34.9212	2	257.3	2	265.8	2
31WBTSOC	AB01	28	1	9	8	2	20010503	1121	26.5033	-71.7317	5383	2899.5	2.8718	34.9371	2	34.9385	2	253.9	2	263.1	2
31WBTSOC	AB01	28	1	10	9	2	20010503	1121	26.5033	-71.7317	5383	2600.2	3.0935	34.9516	2	34.9523	2	252	2	261.8	2
31WBTSOC	AB01	28	1	11	10	2	20010503	1121	26.5033	-71.7317	5383	2300.6	3.3722	34.9639	2	34.9649	2	251.4	2	261.8	2
31WBTSOC	AB01	28	1	12	11	2	20010503	1121	26.5033	-71.7317	5383	2000.4	3.6035	34.9697	2	34.9706	2	251.7	2	262.4	2
31WBTSOC	AB01	28	1	13	12	2	20010503	1121	26.5033	-71.7317	5383	1594.9	4.1646	35.0035	2	35.0771	2	244.8	2	230.8	3
31WBTSOC	AB01	28	1	14	13	2	20010503	1121	26.5033	-71.7317	5383	1299.8	5.1225	35.0762	2	35.0775	2	223.1	2	231.3	3
31WBTSOC	AB01	28	1	15	14	2	20010503	1121	26.5033	-71.7317	5383	1052.4	6.6495	35.1044	2	35.1048	2	179.3	2	184.3	2
31WBTSOC	AB01	28	1	16	15	2	20010503	1121	26.5033	-71.7317	5383	850.5	9.2174	35.2324	2	35.2322	2	144.6	2	138	4
31WBTSOC	AB01	28	1	17	16	2	20010503	1121	26.5033	-71.7317	5383	599.7	14.6423	35.9636	2	35.9614	2	172	2	167.1	2
31WBTSOC	AB01	28	1	18	17	2	20010503	1121	26.5033	-71.7317	5383	450.9	17.0385	36.3535	2	36.3535	2	190	2	185.5	2
31WBTSOC	AB01	28	1	19	18	2	20010503	1121	26.5033	-71.7317	5383	299.7	18.4036	36.5692	2	36.5695	2	190.3	2	188.3	2
31WBTSOC	AB01	28	1	20	19	2	20010503	1121	26.5033	-71.7317	5383	250.8	18.8043	36.6022	2	36.6024	2	194.5	2	192.9	2
31WBTSOC	AB01	28	1	21	20	2	20010503	1121	26.5033	-71.7317	5383	174	19.7963	36.6902	2	36.6926	2	200.1	2	199.7	2
31WBTSOC	AB01	28	1	22	21	2	20010503	1121	26.5033	-71.7317	5383	117.8	21.4463	36.8332	2	36.8329	2	210.5	2	207.9	2
31WBTSOC	AB01	28	1	23	22	2	20010503	1121	26.5033	-71.7317	5383	59.1	23.9901	36.8164	2	36.8257	2	214.1	2	210.8	2
31WBTSOC	AB01	28	1	24	23	2	20010503	1121	26.5033	-71.7317	5383	2.6	23.9792	36.8206	2	36.8202	2	208.4	2	210.5	2
31WBTSOC	AB01	29	1	1	24	2	20010503	1808	26.5027	-71.3513	5495	5582.8	2.0701	34.848	2	34.848	2	246	2	249.5	2
31WBTSOC	AB01	29	1	2	1	2	20010503	1808	26.5027	-71.3513	5495	5346.9	2.1844	34.8664	2	34.8651	2	251.6	2	254.2	2
31WBTSOC	AB01	29	1	3	2	2	20010503	1808	26.5027	-71.3513	5495	5102.4	2.2629	34.8799	2	34.8785	2	256.2	2	259.1	2
31WBTSOC	AB01	29	1	4	3	2	20010503	1808	26.5027	-71.3513	5495	4799.2	2.2898	34.8871	2	34.8872	2	258.3	2	262.7	2
31WBTSOC	AB01	29	1	5	4	2	20010503	1808	26.5027	-71.3513	5495	4498.2	2.301	34.8922	2	34.8907	2	259.7	2	264.5	2
31WBTSOC	AB01	29	1	6	5	2	20010503	1808	26.5027	-71.3513	5495	4198.8	2.3091	34.8955	2	34.8942	2	259.6	2	266	2
31WBTSOC	AB01	29	1	7	6	2	20010503	1808	26.5027	-71.3513	5495	3798.6	2.3603	34.9023	2	34.9007	2	259.4	2	267.5	2
31WBTSOC	AB01	29	1	8	7	2	20010503	1808	26.5027	-71.3513	5495	3397.9	2.4865	34.9129	2	34.9117	2	257.9	2	267.4	2
31WBTSOC	AB01	29	1	9	8	2	20010503	1808	26.5027	-71.3513	5495	3000.8	2.7079	34.9268	2	34.9237	3	255.2	2	265.5	2
31WBTSOC	AB01	29	1	10	9	2	20010503	1808	26.5027	-71.3513	5495	2698	2.937	34.9416	2	34.9417	2	252.7	2	263.5	2
31WBTSOC	AB01	29	1	11	10	2	20010503	1808	26.5027	-71.3513	5495	2398.5	3.2317	34.9611	2	34.9607	2	249.8	2	260.2	2
31WBTSOC	AB01	29	1	12	11	2	20010503	1808	26.5027	-71.3513	5495	2051.7	3.5317	34.9719	2	34.971	2	250.1	2	261.3	2
31WBTSOC	AB01	29	1	13	12	2	20010503	1808	26.5027	-71.3513	5495	1699.6	4.0095	35.0024	2	35.0025	2	245.8	2	256.1	2
31WBTSOC	AB01	29	1	14	13	2	20010503	1808	26.5027	-71.3513	5495	1400.4	4.6906	35.0408	2	35.0406	2	234.1	2	243.8	2
31WBTSOC	AB01	29	1	15	14	2	20010503	1808	26.5027	-71.3513	5495	1100.6	6.3383	35.1039	2	35.1036	2	190	2	196.8	2
31WBTSOC	AB01	29	1	16	15	2	20010503	1808	26.5027	-71.3513	5495	923.9	8.026	35.1173	2	35.1149	2	145.7	2	149.2	2
31WBTSOC	AB01	29	1	17	16	2	20010503	1808	26.5027	-71.3513	5495	674.4	12.897	35.7119	2	35.7109	2	166.3	2	163.5	2

31WBTSOC	AB01	29	1	18	17	2	20010503	1808	26.5027	-71.3513	5495	526	15.8412	36.1573	2	36.1586	2	184.7	2	181.1	2
31WBTSOC	AB01	29	1	19	18	2	20010503	1808	26.5027	-71.3513	5495	375.8	17.8833	36.4949	2	36.4944	2	194.6	2	192	2
31WBTSOC	AB01	29	1	20	19	2	20010503	1808	26.5027	-71.3513	5495	275.2	18.645	36.585	2	36.5833	2	199.5	2	197.7	2
31WBTSOC	AB01	29	1	21	20	2	20010503	1808	26.5027	-71.3513	5495	166.6	20.4421	36.7488	2	36.7497	2	211.8	2	208.5	2
31WBTSOC	AB01	29	1	22	21	2	20010503	1808	26.5027	-71.3513	5495	110.3	22.3801	36.9194	2	41.6036	4	211.8	2	209.8	2
31WBTSOC	AB01	29	1	23	22	2	20010503	1808	26.5027	-71.3513	5495	54.6	23.7272	36.8611	2	36.8606	2	210.5	2	210.7	2
31WBTSOC	AB01	29	1	24	23	2	20010503	1808	26.5027	-71.3513	5495	4.1	23.7326	36.8566	2	36.8547	2	208.2	2	211.1	2
31WBTSOC	AB01	30	1	1	24	2	20010504	38	26.5042	-71.002	5496	5583.3	2.0749	34.8484	2	34.849	2	246.7	2	248.6	2
31WBTSOC	AB01	30	1	2	1	2	20010504	38	26.5042	-71.002	5496	5197.2	2.22	34.8729	2	34.8728	2	253.3	2	256.4	2
31WBTSOC	AB01	30	1	3	2	2	20010504	38	26.5042	-71.002	5496	4897.2	2.2735	34.8842	2	34.8852	2	256.9	2	260.6	2
31WBTSOC	AB01	30	1	4	3	2	20010504	38	26.5042	-71.002	5496	4548.7	2.2932	34.8908	2	34.8901	2	258.6	2	263.9	2
31WBTSOC	AB01	30	1	5	4	2	20010504	38	26.5042	-71.002	5496	4198.1	2.3103	34.896	2	34.8956	2	259.1	2	265.6	2
31WBTSOC	AB01	30	1	6	5	2	20010504	38	26.5042	-71.002	5496	3850.7	2.3613	34.9024	2	34.9021	2	257.9	2	266.1	2
31WBTSOC	AB01	30	1	7	6	2	20010504	38	26.5042	-71.002	5496	3496.9	2.4756	34.9119	2	34.9121	2	256	2	265.3	2
31WBTSOC	AB01	30	1	8	7	2	20010504	38	26.5042	-71.002	5496	3148.9	2.6579	34.9249	2	34.9241	2	252	2	262.3	2
31WBTSOC	AB01	30	1	9	8	2	20010504	38	26.5042	-71.002	5496	2802.8	2.8931	34.9398	2	34.9391	2	251.8	2	262	2
31WBTSOC	AB01	30	1	10	9	2	20010504	38	26.5042	-71.002	5496	2499.4	3.1228	34.9526	2	34.9511	2	251.2	2	262.3	2
31WBTSOC	AB01	30	1	11	10	2	20010504	38	26.5042	-71.002	5496	2200.3	3.4397	34.9737	2	34.9729	2	248.6	2	259.5	2
31WBTSOC	AB01	30	1	12	11	2	20010504	38	26.5042	-71.002	5496	1903.8	3.679	34.9705	2	34.9714	2	251.3	2	262.8	2
31WBTSOC	AB01	30	1	13	12	2	20010504	38	26.5042	-71.002	5496	1653.2	4.0014	34.9893	2	34.9893	2	247.7	2	258.6	2
31WBTSOC	AB01	30	1	14	13	2	20010504	38	26.5042	-71.002	5496	1401.6	4.6699	35.0437	2	35.0446	2	234.9	2	244.2	2
31WBTSOC	AB01	30	1	15	14	2	20010504	38	26.5042	-71.002	5496	1151.9	5.9387	35.1004	2	35.0999	2	199.4	2	206	2
31WBTSOC	AB01	30	1	16	15	2	20010504	38	26.5042	-71.002	5496	898.9	8.6001	35.1695	2	35.172	2	144.3	2	146.9	2
31WBTSOC	AB01	30	1	17	16	2	20010504	38	26.5042	-71.002	5496	704.2	12.2812	35.6225	2	35.6331	2	161.4	2	160.4	2
31WBTSOC	AB01	30	1	18	17	2	20010504	38	26.5042	-71.002	5496	553.9	15.3555	36.079	2	36.0842	2	179.9	2	177.2	2
31WBTSOC	AB01	30	1	19	18	2	20010504	38	26.5042	-71.002	5496	327.6	18.36	36.5544	2	36.5546	2	195.8	2	194.4	2
31WBTSOC	AB01	30	1	20	19	2	20010504	38	26.5042	-71.002	5496	225.2	19.0179	36.6162	2	36.6143	2	198.9	2	197.7	2
31WBTSOC	AB01	30	1	21	20	2	20010504	38	26.5042	-71.002	5496	148.5	20.8987	36.8446	2	36.84	2	197	2	194.8	2
31WBTSOC	AB01	30	1	22	21	2	20010504	38	26.5042	-71.002	5496	89.5	22.93	36.9052	2	36.9069	2	216.2	2	212.5	2
31WBTSOC	AB01	30	1	23	22	2	20010504	38	26.5042	-71.002	5496	43.5	23.6607	36.8615	2	36.8604	2	212.3	2	211.7	2
31WBTSOC	AB01	30	1	24	23	2	20010504	38	26.5042	-71.002	5496	3.1	23.6569	36.8616	2	36.8602	2	209.4	2	211.6	2
31WBTSOC	AB01	31	1	1	24	2	20010504	929	26.5052	-70.6832	5504	5591.5	2.0823	34.849	2	34.85	2	247.1	2	248.8	2
31WBTSOC	AB01	31	1	2	1	2	20010504	929	26.5052	-70.6832	5504	5297.3	2.2457	34.8743	2	34.8744	2	255.4	2	257.2	2
31WBTSOC	AB01	31	1	3	2	2	20010504	929	26.5052	-70.6832	5504	4948	2.296	34.8859	2	-999	9	259.7	2	-999	9
31WBTSOC	AB01	31	1	4	3	2	20010504	929	26.5052	-70.6832	5504	4599.1	2.3036	34.8911	2	34.8913	2	259.8	2	264.1	2
31WBTSOC	AB01	31	1	5	4	2	20010504	929	26.5052	-70.6832	5504	4297.6	2.3137	34.8949	2	34.8952	2	259.9	2	266.2	2

31WBTSOC	AB01	31	1	6	5	2	20010504	929	26.5052	-70.6832	5504	3898.4	2.3475	34.9007	2	34.9017	2	259.6	2	267.2	2
31WBTSOC	AB01	31	1	7	6	2	20010504	929	26.5052	-70.6832	5504	3548	2.4436	34.9092	2	34.9094	2	258.7	2	267.6	2
31WBTSOC	AB01	31	1	8	7	2	20010504	929	26.5052	-70.6832	5504	3199.8	2.6084	34.9202	2	34.9208	2	256.1	2	266.2	2
31WBTSOC	AB01	31	1	9	8	2	20010504	929	26.5052	-70.6832	5504	2851.3	2.8514	34.9373	2	34.9385	2	251.8	2	262.4	2
31WBTSOC	AB01	31	1	10	9	2	20010504	929	26.5052	-70.6832	5504	2449.5	3.1971	34.9584	2	34.9588	2	250.1	2	261.2	2
31WBTSOC	AB01	31	1	11	10	2	20010504	929	26.5052	-70.6832	5504	2048.7	3.5672	34.9738	2	34.9755	2	249.7	2	260.8	2
31WBTSOC	AB01	31	1	12	11	2	20010504	929	26.5052	-70.6832	5504	1696.5	4.0129	34.9935	2	34.9942	2	246.9	2	258	2
31WBTSOC	AB01	31	1	13	12	2	20010504	929	26.5052	-70.6832	5504	1374.1	4.8357	35.0521	2	35.0523	2	230.9	2	240.3	2
31WBTSOC	AB01	31	1	14	13	2	20010504	929	26.5052	-70.6832	5504	1101.9	6.5159	35.1062	2	35.1058	2	183	2	189	2
31WBTSOC	AB01	31	1	15	14	2	20010504	929	26.5052	-70.6832	5504	949.7	7.6595	35.0846	2	35.0839	2	147.2	2	151.3	2
31WBTSOC	AB01	31	1	16	15	2	20010504	929	26.5052	-70.6832	5504	755.4	11.6233	35.5348	2	35.5414	2	157.4	2	156.5	2
31WBTSOC	AB01	31	1	17	16	2	20010504	929	26.5052	-70.6832	5504	651.3	13.7362	35.8281	2	35.8334	2	169.1	2	167.9	2
31WBTSOC	AB01	31	1	18	17	2	20010504	929	26.5052	-70.6832	5504	502.3	16.7449	36.3068	2	36.3054	2	190.4	2	185.6	2
31WBTSOC	AB01	31	1	19	18	2	20010504	929	26.5052	-70.6832	5504	349.1	18.3446	36.5533	2	36.5501	2	194.1	2	192.2	2
31WBTSOC	AB01	31	1	20	19	2	20010504	929	26.5052	-70.6832	5504	248.3	18.9733	36.6115	2	37.2716	4	198	2	197.3	2
31WBTSOC	AB01	31	1	21	20	2	20010504	929	26.5052	-70.6832	5504	160.7	20.7026	36.7695	2	36.7719	2	207.5	2	205.7	2
31WBTSOC	AB01	31	1	22	21	2	20010504	929	26.5052	-70.6832	5504	110	21.9796	36.8294	2	36.8275	2	214.6	2	212.7	2
31WBTSOC	AB01	31	1	23	22	2	20010504	929	26.5052	-70.6832	5504	57.7	23.9592	36.804	2	36.8136	3	213	2	210.3	2
31WBTSOC	AB01	31	1	24	23	2	20010504	929	26.5052	-70.6832	5504	3.4	23.9509	36.8063	2	36.8053	2	207.8	2	209.9	2
31WBTSOC	AB01	32	1	1	24	2	20010504	1607	26.5003	-70.2323	5503	5591.5	2.0755	34.8484	2	34.8492	2	246.2	2	248.6	2
31WBTSOC	AB01	32	1	2	1	2	20010504	1607	26.5003	-70.2323	5503	5397.1	2.1656	34.8628	2	34.8622	2	249.6	2	253.2	2
31WBTSOC	AB01	32	1	3	2	2	20010504	1607	26.5003	-70.2323	5503	5097.5	2.2553	34.879	2	34.8793	2	255.3	2	258.5	2
31WBTSOC	AB01	32	1	4	3	2	20010504	1607	26.5003	-70.2323	5503	4800.9	2.286	34.8869	2	34.8866	2	257.6	2	265.8	2
31WBTSOC	AB01	32	1	5	4	2	20010504	1607	26.5003	-70.2323	5503	4450.6	2.3002	34.893	2	34.8933	2	259	2	265.1	2
31WBTSOC	AB01	32	1	6	5	2	20010504	1607	26.5003	-70.2323	5503	4104.5	2.3213	34.8974	2	34.898	2	258.9	2	266.8	2
31WBTSOC	AB01	32	1	7	6	2	20010504	1607	26.5003	-70.2323	5503	3673.4	2.3959	34.9052	2	34.9056	2	258.8	2	267.9	2
31WBTSOC	AB01	32	1	8	7	2	20010504	1607	26.5003	-70.2323	5503	3251.3	2.5795	34.9187	2	34.9188	2	255.8	2	266.3	2
31WBTSOC	AB01	32	1	9	8	2	20010504	1607	26.5003	-70.2323	5503	2851.6	2.8369	34.9366	2	34.9361	2	251.4	2	262.4	2
31WBTSOC	AB01	32	1	10	9	2	20010504	1607	26.5003	-70.2323	5503	2498.5	3.121	34.9523	2	34.9531	2	251	2	262.4	2
31WBTSOC	AB01	32	1	11	10	2	20010504	1607	26.5003	-70.2323	5503	2151.6	3.5577	34.9877	2	34.9867	2	245	2	256.8	2
31WBTSOC	AB01	32	1	12	11	2	20010504	1607	26.5003	-70.2323	5503	1799.8	3.9006	34.9851	2	34.9847	2	248.6	2	259.5	2
31WBTSOC	AB01	32	1	13	12	2	20010504	1607	26.5003	-70.2323	5503	1553.9	4.3596	35.0159	2	35.0202	3	241.1	2	250.8	2
31WBTSOC	AB01	32	1	14	13	2	20010504	1607	26.5003	-70.2323	5503	1297.6	5.3064	35.0783	2	35.079	2	219.1	2	226.5	2
31WBTSOC	AB01	32	1	15	14	2	20010504	1607	26.5003	-70.2323	5503	1050	6.9913	35.089	2	35.0883	2	168.3	2	173	2
31WBTSOC	AB01	32	1	16	15	2	20010504	1607	26.5003	-70.2323	5503	798.3	11.3044	35.4888	2	35.4881	2	154.3	2	153.9	2
31WBTSOC	AB01	32	1	17	16	2	20010504	1607	26.5003	-70.2323	5503	650	14.124	35.8871	2	35.8895	2	174.5	2	170.8	2

31WBTSOC	AB01	32	1	18	17	2	20010504	1607	26.5003	-70.2323	5503	527.3	16.482	36.2654	2	36.2672	2	190.2	2	186.5	2
31WBTSOC	AB01	32	1	19	18	2	20010504	1607	26.5003	-70.2323	5503	402.2	18.0738	36.5194	2	36.5193	2	194.8	2	192.2	2
31WBTSOC	AB01	32	1	20	19	2	20010504	1607	26.5003	-70.2323	5503	280.6	19.0305	36.6168	2	36.6153	2	198.9	2	197.1	2
31WBTSOC	AB01	32	1	21	20	2	20010504	1607	26.5003	-70.2323	5503	151.4	21.2787	36.8062	2	36.8061	2	210.8	2	210	2
31WBTSOC	AB01	32	1	22	21	2	20010504	1607	26.5003	-70.2323	5503	98.8	22.6087	36.8654	2	36.8638	2	215.9	2	215.7	2
31WBTSOC	AB01	32	1	23	22	2	20010504	1607	26.5003	-70.2323	5503	50.2	23.9202	36.8011	2	36.8011	2	211	2	210.5	2
31WBTSOC	AB01	32	1	24	23	2	20010504	1607	26.5003	-70.2323	5503	3.8	24.0186	36.7699	2	36.7682	2	207.4	2	209.9	2
31WBTSOC	AB01	33	1	1	24	2	20010504	2241	26.5007	-69.8323	5504	5592.4	2.0808	34.8485	2	34.8498	2	246.5	2	248.5	2
31WBTSOC	AB01	33	1	2	1	2	20010504	2241	26.5007	-69.8323	5504	5199.4	2.2083	34.8714	2	34.8714	2	252.2	2	256.4	2
31WBTSOC	AB01	33	1	3	2	2	20010504	2241	26.5007	-69.8323	5504	4847.6	2.2717	34.8842	2	34.8838	2	256.6	2	260.7	2
31WBTSOC	AB01	33	1	4	3	2	20010504	2241	26.5007	-69.8323	5504	4499.1	2.2957	34.892	2	34.8909	2	257.1	2	247.7	3
31WBTSOC	AB01	33	1	5	4	2	20010504	2241	26.5007	-69.8323	5504	4199.7	2.3239	34.8972	2	34.8966	2	256.8	2	263.8	2
31WBTSOC	AB01	33	1	6	5	2	20010504	2241	26.5007	-69.8323	5504	3900.7	2.361	34.9019	2	34.9011	2	258.9	2	267.4	2
31WBTSOC	AB01	33	1	7	6	2	20010504	2241	26.5007	-69.8323	5504	3599.9	2.445	34.9088	2	34.9092	2	258.5	2	268	2
31WBTSOC	AB01	33	1	8	7	2	20010504	2241	26.5007	-69.8323	5504	3299.1	2.5804	34.9193	2	34.9182	2	252.2	2	261.7	2
31WBTSOC	AB01	33	1	9	8	2	20010504	2241	26.5007	-69.8323	5504	3000.2	2.7735	34.9349	2	34.9359	2	244.7	2	255.6	2
31WBTSOC	AB01	33	1	10	9	2	20010504	2241	26.5007	-69.8323	5504	2652.2	3.0292	34.9551	2	34.956	2	243.1	2	254.5	2
31WBTSOC	AB01	33	1	11	10	2	20010504	2241	26.5007	-69.8323	5504	2300.4	3.2791	34.9661	2	34.9664	2	248.2	2	259.2	2
31WBTSOC	AB01	33	1	12	11	2	20010504	2241	26.5007	-69.8323	5504	1949.9	3.7891	35.0023	2	35.0023	2	244	2	255.3	2
31WBTSOC	AB01	33	1	13	12	2	20010504	2241	26.5007	-69.8323	5504	1601.7	4.4149	35.0358	2	35.0658	4	238.3	2	238.7	3
31WBTSOC	AB01	33	1	14	13	2	20010504	2241	26.5007	-69.8323	5504	1252.7	5.5898	35.0885	2	35.0887	2	210	2	217.6	2
31WBTSOC	AB01	33	1	15	14	2	20010504	2241	26.5007	-69.8323	5504	1051.7	7.2134	35.1049	2	35.1107	3	165	2	169.6	2
31WBTSOC	AB01	33	1	16	15	2	20010504	2241	26.5007	-69.8323	5504	900.9	9.1024	35.2175	2	35.2175	2	144.2	2	146.3	2
31WBTSOC	AB01	33	1	17	16	2	20010504	2241	26.5007	-69.8323	5504	751.1	12.1297	35.5997	2	35.6014	2	158.9	2	157.3	2
31WBTSOC	AB01	33	1	18	17	2	20010504	2241	26.5007	-69.8323	5504	602.4	15.221	36.0572	2	36.0658	2	182.1	2	177.4	2
31WBTSOC	AB01	33	1	19	18	2	20010504	2241	26.5007	-69.8323	5504	451.6	17.5255	36.4341	2	36.4351	2	193	2	188.9	2
31WBTSOC	AB01	33	1	20	19	2	20010504	2241	26.5007	-69.8323	5504	302.4	18.7867	36.6004	2	36.6014	2	202.3	2	200.2	2
31WBTSOC	AB01	33	1	21	20	2	20010504	2241	26.5007	-69.8323	5504	183.1	20.7992	36.7904	2	36.789	2	207.3	2	203.4	2
31WBTSOC	AB01	33	1	22	21	2	20010504	2241	26.5007	-69.8323	5504	108.8	22.614	36.8631	2	36.8618	2	214.2	2	212.7	2
31WBTSOC	AB01	33	1	23	22	2	20010504	2241	26.5007	-69.8323	5504	54.6	23.7377	36.8438	2	36.8432	2	211.5	2	211	2
31WBTSOC	AB01	33	1	24	23	2	20010504	2241	26.5007	-69.8323	5504	2.9	23.7214	36.8453	2	36.8438	2	208.4	2	210.9	2

Appendix C - Hydrographic - CTD Data

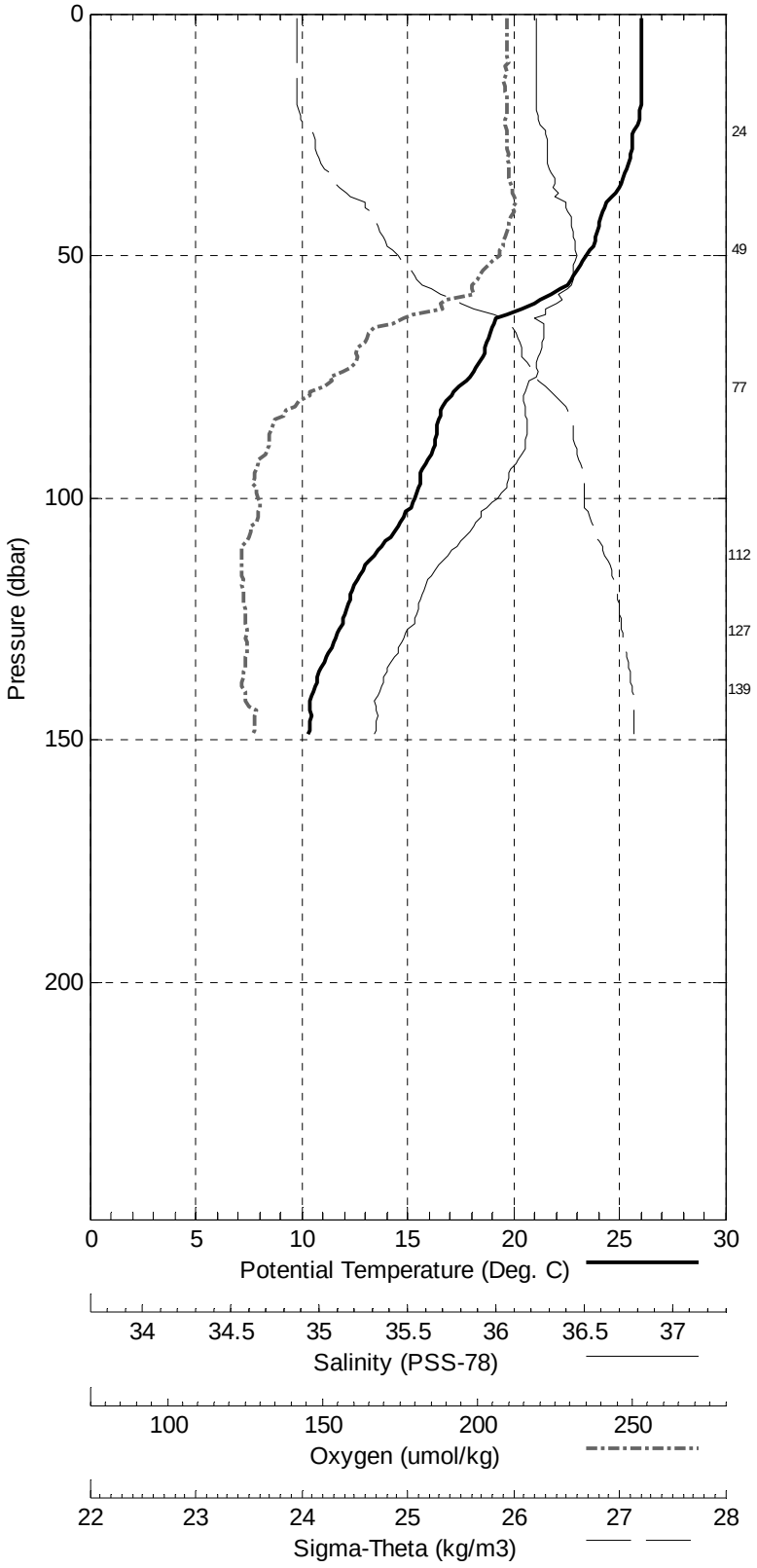
(This page is intentionally left blank)

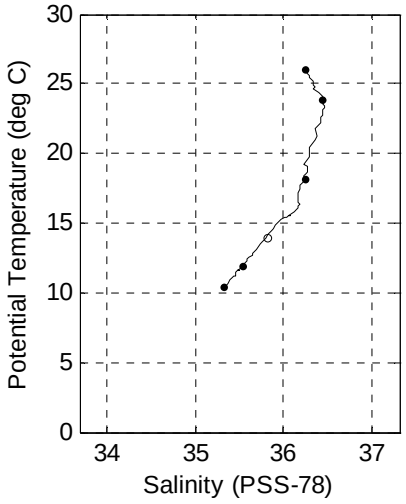
ABACO-01 R.V. Oceanus
CTD Station 1 (CTD001)
Latitude 27.024N Longitude 79.919W
26-Apr-2001 20:31Z

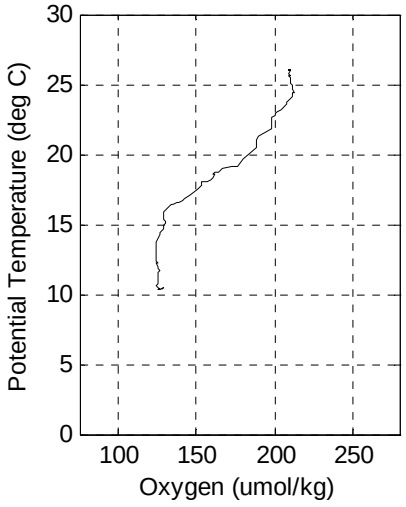
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	26.019	26.018	36.228	209.6	0.004	23.954
10	26.020	26.017	36.229	210.2	0.039	23.955
20	25.987	25.983	36.234	209.8	0.079	23.970
30	25.497	25.490	36.298	209.7	0.117	24.172
50	23.451	23.440	36.456	207.0	0.185	24.910
75	18.003	17.990	36.233	152.7	0.243	26.220
100	15.361	15.345	36.007	129.3	0.280	26.672
125	11.994	11.978	35.537	125.2	0.311	27.011

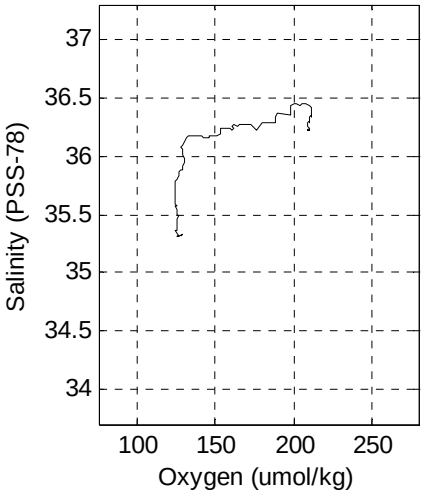
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
140	24	10.433	10.416	35.320	NaN
127	1	11.874	11.858	35.532	NaN
112	3	13.927	13.911	35.826	NaN
77	4	18.088	18.075	36.249	NaN
49	6	23.865	23.855	36.441	NaN
25	13	25.998	25.992	36.240	NaN

Abaco 2001 R.V. Oceanus
CTD Station 1 (CTD001)
Latitude 27.024 N Longitude 79.919 W
26-Apr-2001 20:31 Z







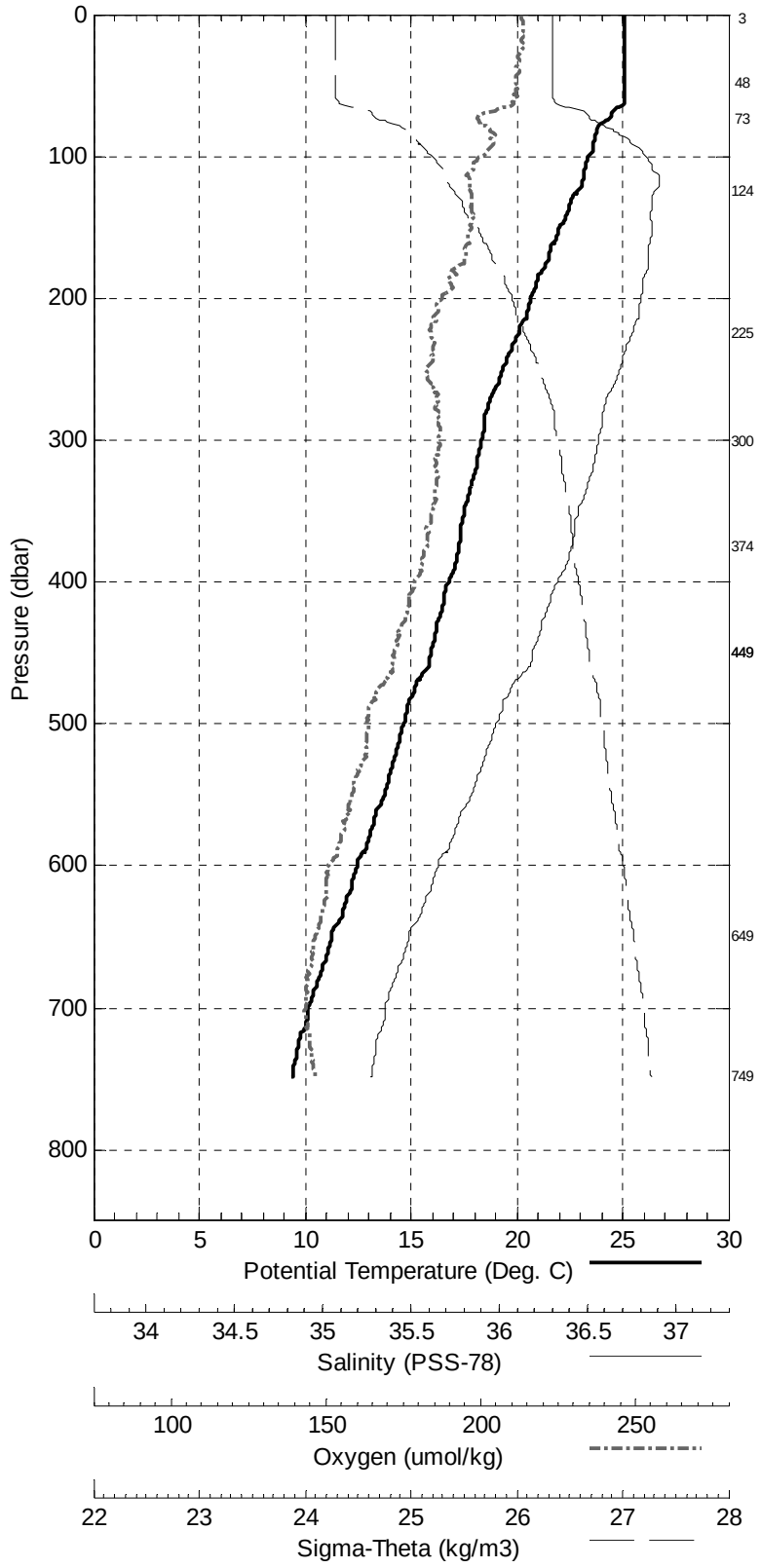


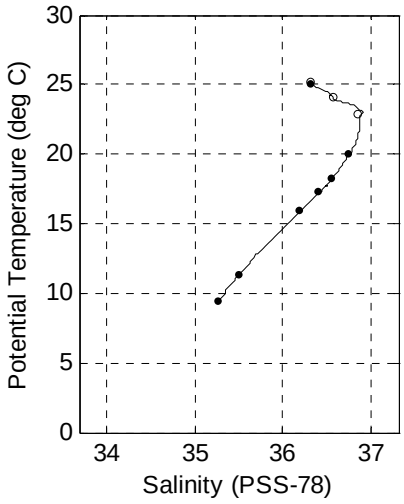
ABACO-01 R.V. Oceanus
CTD Station 2 (CTD002)
Latitude 26.442N Longitude 78.668W
26-Apr-2001 12:00Z

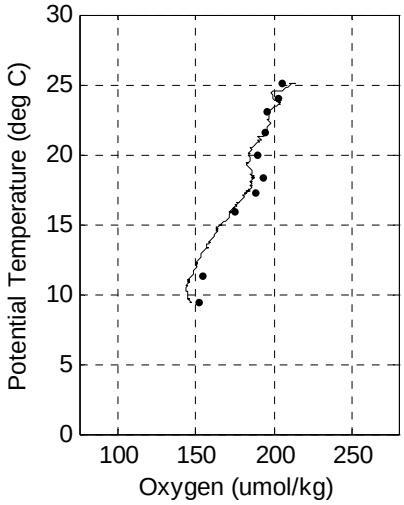
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	25.109	25.109	36.304	213.3	0.004	24.294
10	25.111	25.109	36.304	213.7	0.036	24.294
20	25.124	25.120	36.305	213.5	0.073	24.291
30	25.129	25.123	36.305	211.9	0.109	24.291
50	25.135	25.124	36.306	211.9	0.182	24.291
75	24.197	24.181	36.547	199.2	0.269	24.759
100	23.423	23.403	36.838	200.4	0.343	25.211
125	22.850	22.824	36.877	196.9	0.411	25.409
150	22.038	22.008	36.866	197.0	0.474	25.634
200	20.699	20.661	36.805	187.3	0.587	25.961
250	19.389	19.343	36.683	182.3	0.687	26.220
300	18.391	18.338	36.564	186.6	0.777	26.386
400	16.855	16.789	36.331	178.9	0.944	26.587
500	14.722	14.646	35.984	163.3	1.093	26.809
600	12.542	12.459	35.654	150.9	1.224	27.008
700	10.228	10.143	35.351	144.2	1.336	27.202

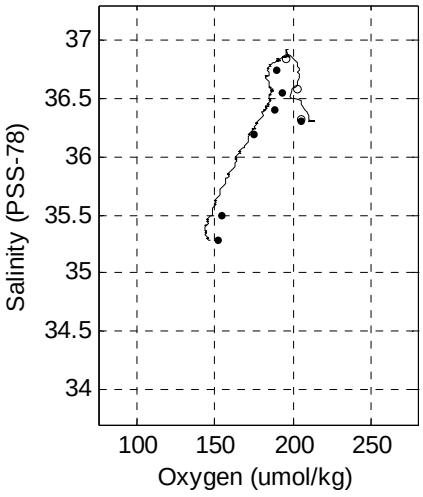
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
749	24	9.475	9.388	35.275	152.0
650	1	11.449	11.365	35.498	154.4
450	3	15.989	15.916	36.183	175.6
450	3	15.989	15.916	36.184	175.6
375	4	17.308	17.245	36.402	188.1
301	5	18.280	18.227	36.548	193.6
225	6	20.026	19.983	36.745	190.0
125	13	22.965	22.940	36.840	196.1
74	14	24.049	24.033	36.576	203.1
49	15	25.135	25.124	36.320	205.0
4	16	25.111	25.110	36.309	205.6

Abaco 2001 R.V. Oceanus
CTD Station 2 (CTD002)
Latitude 26.442 N Longitude 78.668 W
26-Apr-2001 12:00 Z







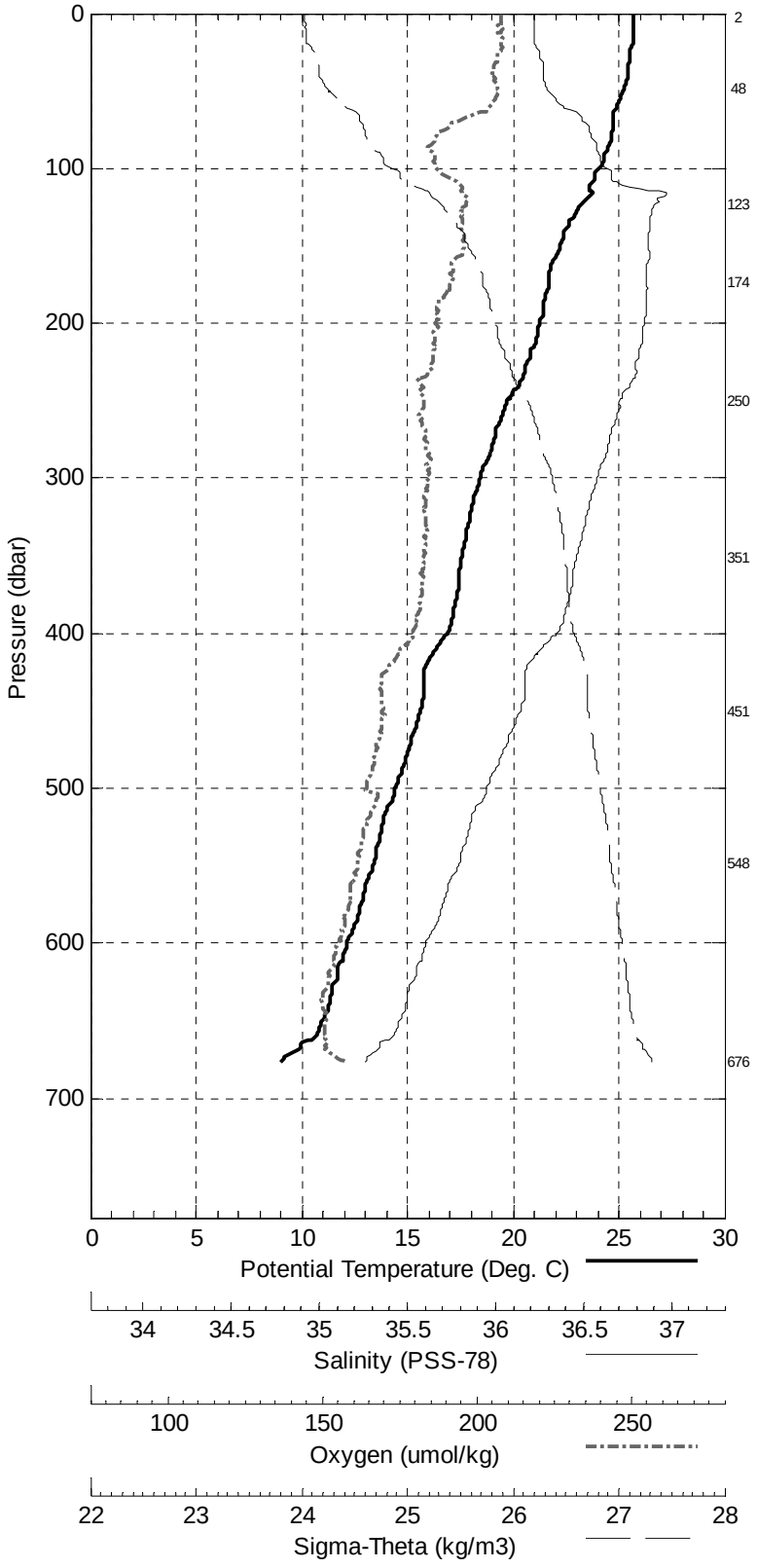


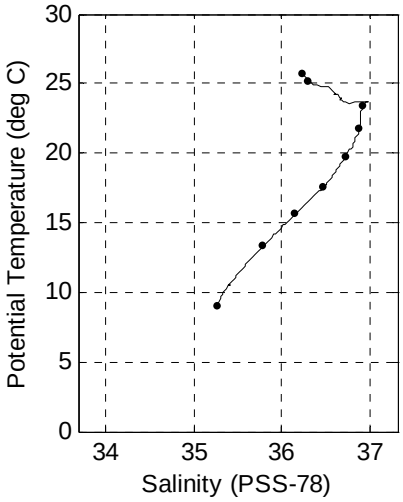
ABACO-01 R.V. Oceanus
CTD Station 3 (CTD003)
Latitude 26.325N Longitude 78.713W
27-Apr-2001 13:21Z

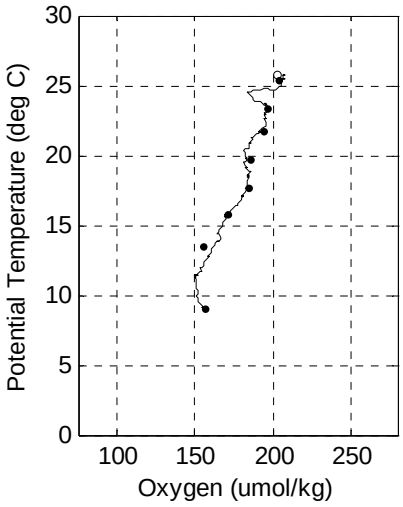
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	25.735	25.735	36.217	208.0	0.004	24.035
10	25.740	25.737	36.219	208.4	0.039	24.035
20	25.670	25.665	36.224	208.0	0.077	24.061
30	25.522	25.516	36.258	206.7	0.115	24.134
50	25.227	25.216	36.299	207.1	0.190	24.257
75	24.719	24.703	36.537	189.5	0.277	24.594
100	24.093	24.071	36.642	187.0	0.359	24.863
125	23.115	23.089	36.894	195.4	0.431	25.345
150	22.261	22.231	36.867	196.0	0.495	25.572
200	21.286	21.247	36.845	186.6	0.612	25.831
250	19.762	19.716	36.702	183.0	0.718	26.136
300	18.496	18.443	36.578	183.5	0.811	26.370
400	16.944	16.877	36.346	179.6	0.978	26.577
500	14.504	14.429	35.948	164.2	1.125	26.829
600	12.204	12.123	35.604	155.2	1.252	27.034

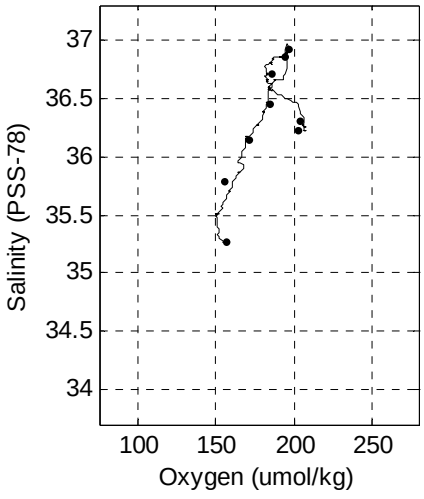
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
676	24	9.099	9.022	35.268	156.9
548	1	13.420	13.341	35.776	156.0
451	2	15.710	15.638	36.138	170.9
352	3	17.617	17.556	36.453	185.4
251	4	19.750	19.704	36.711	186.1
174	5	21.791	21.756	36.854	194.6
124	6	23.398	23.373	36.914	197.5
49	12	25.246	25.235	36.298	203.6
3	**13**	**25.731**	**25.731**	**36.220**	**203.5**

Abaco 2001 R.V. Oceanus
CTD Station 3 (CTD003)
Latitude 26.325 N Longitude 78.713 W
27-Apr-2001 13:21 Z







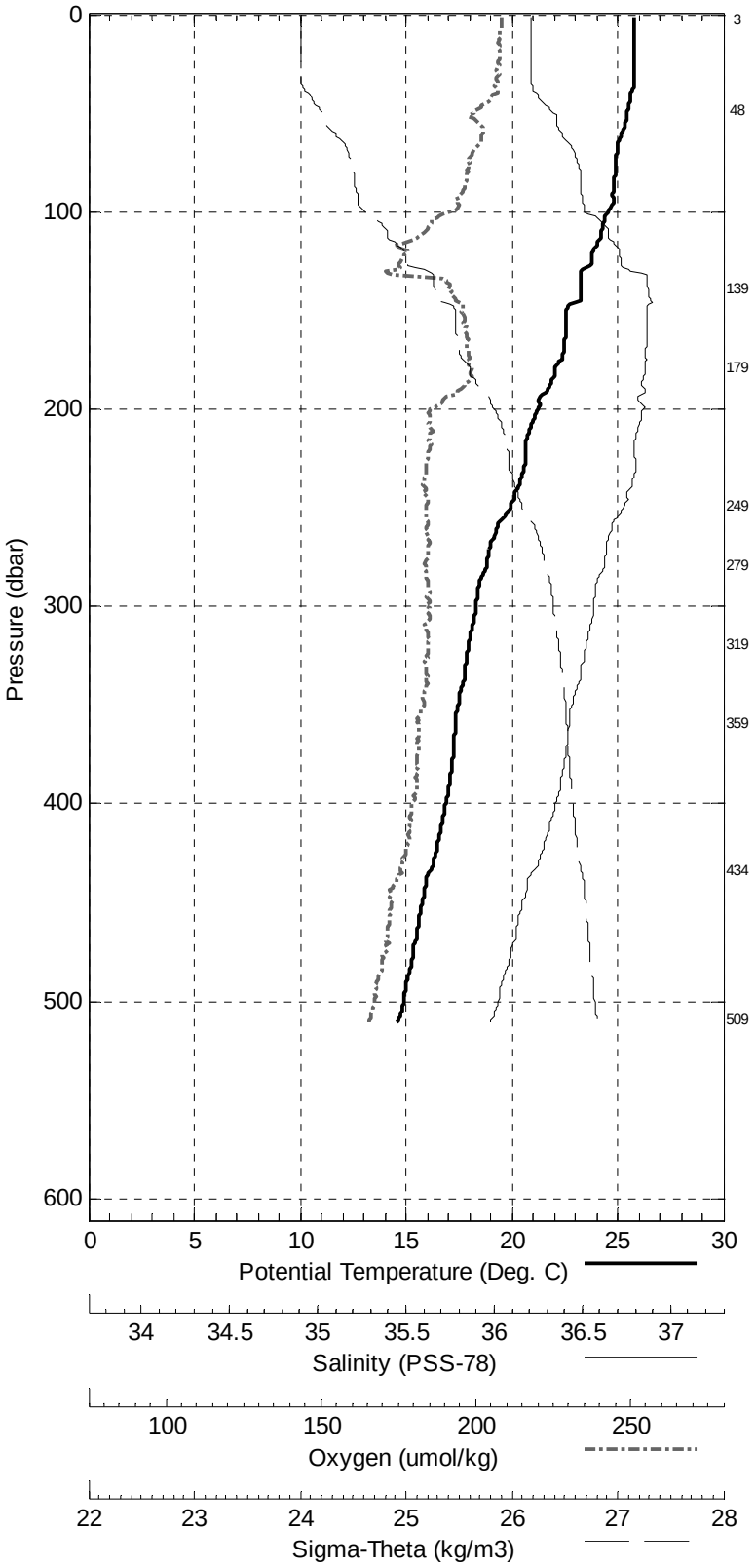


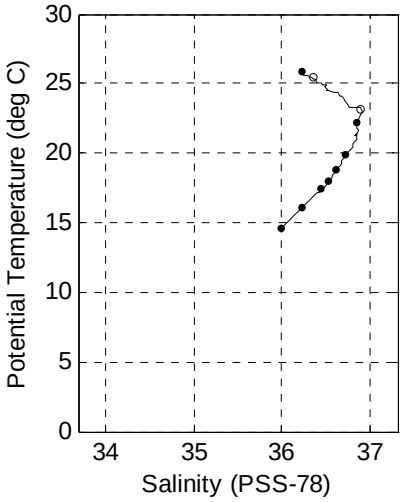
ABACO-01 R.V. Oceanus
CTD Station 4 (CTD004)
Latitude 26.240N Longitude 78.772W
27-Apr-2001 14:30Z

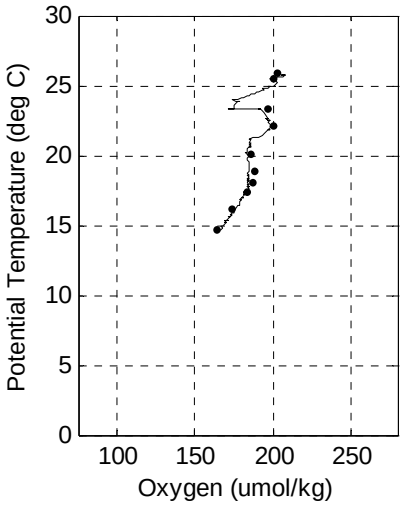
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	25.813	25.812	36.212	208.2	0.004	24.007
10	25.814	25.812	36.213	207.5	0.039	24.008
20	25.814	25.810	36.213	207.6	0.078	24.008
30	25.817	25.810	36.213	207.6	0.117	24.008
50	25.457	25.446	36.339	199.3	0.194	24.216
75	24.929	24.913	36.474	198.3	0.283	24.482
100	24.578	24.556	36.509	191.3	0.369	24.617
125	23.795	23.769	36.717	175.5	0.448	25.011
150	22.636	22.606	36.866	195.8	0.516	25.464
200	21.261	21.222	36.845	185.2	0.640	25.838
250	19.988	19.941	36.736	184.0	0.745	26.103
300	18.371	18.318	36.566	184.1	0.837	26.392
400	16.943	16.877	36.348	179.2	1.002	26.579
500	14.983	14.906	36.025	167.6	1.152	26.783

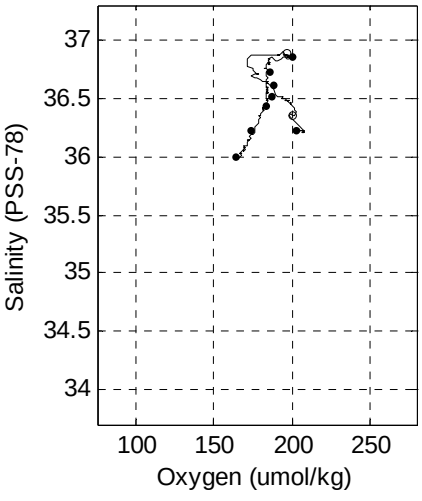
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
510	24	14.725	14.648	35.987	164.3
434	1	16.199	16.128	36.217	174.2
359	2	17.473	17.412	36.430	183.9
319	3	18.022	17.966	36.514	186.9
280	4	18.864	18.814	36.616	188.6
250	5	19.961	19.915	36.725	186.2
180	6	22.196	22.160	36.852	200.3
139	12	23.177	23.148	36.885	196.9
49	13	25.468	25.458	36.354	200.3
3	14	25.816	25.815	36.216	203.5

Abaco 2001 R.V. Oceanus
CTD Station 4 (CTD004)
Latitude 26.240 N Longitude 78.772 W
27-Apr-2001 14:30 Z







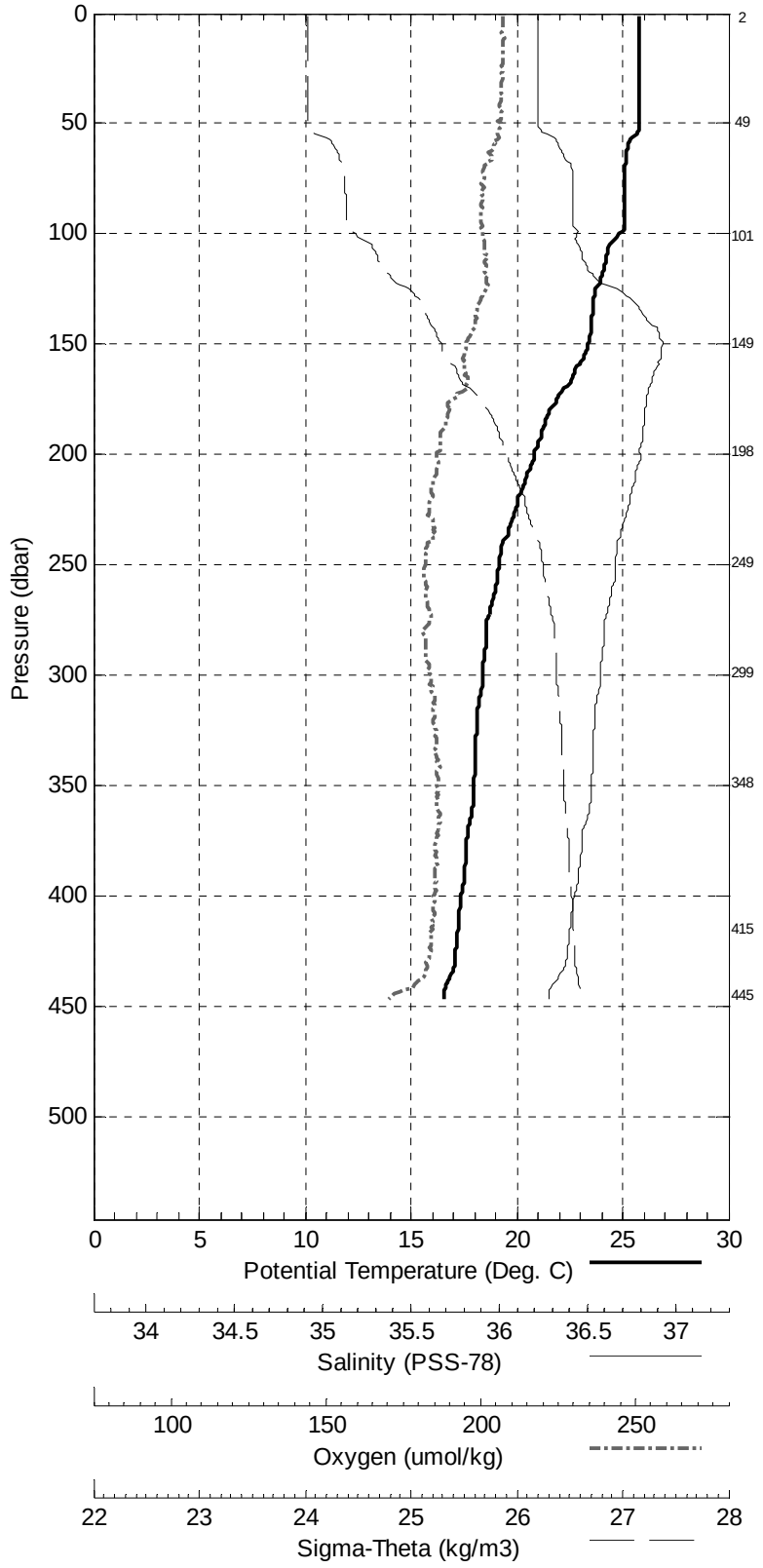


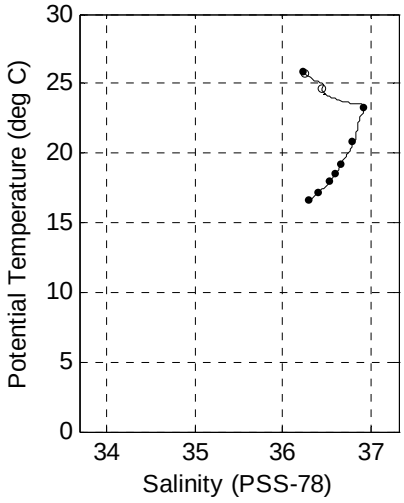
ABACO-01 R.V. Oceanus
CTD Station 5 (CTD005)
Latitude 26.161N Longitude 78.806W
27-Apr-2001 15:44Z

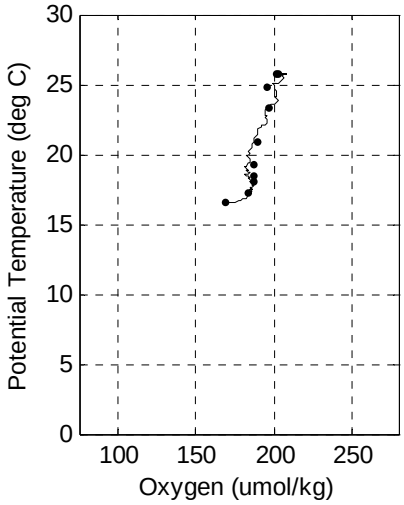
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	25.789	25.789	36.221	207.2	0.004	24.021
10	25.788	25.786	36.222	207.2	0.039	24.022
20	25.787	25.783	36.221	207.0	0.078	24.023
30	25.784	25.777	36.221	207.0	0.117	24.024
50	25.781	25.769	36.223	206.4	0.195	24.028
75	25.123	25.107	36.416	201.1	0.286	24.379
100	24.863	24.841	36.437	200.6	0.376	24.476
125	23.756	23.730	36.671	201.9	0.457	24.988
150	23.386	23.355	36.927	195.5	0.529	25.292
200	20.865	20.826	36.803	186.0	0.650	25.915
250	19.218	19.173	36.661	182.3	0.750	26.246
300	18.453	18.400	36.577	183.8	0.839	26.380
400	17.435	17.367	36.426	184.9	1.009	26.521

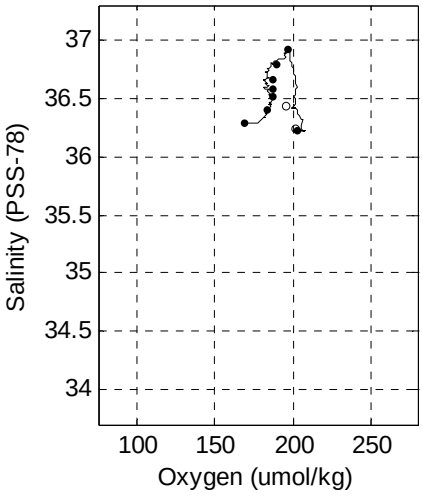
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
445	24	16.660	16.586	36.284	168.8
415	1	17.289	17.219	36.396	183.3
349	2	18.052	17.991	36.520	187.5
299	3	18.516	18.463	36.580	187.4
249	4	19.254	19.209	36.659	187.2
199	5	20.838	20.800	36.786	190.1
150	6	23.349	23.318	36.914	196.3
101	12	24.649	24.627	36.437	196.1
50	13	25.775	25.764	36.236	202.3
2	14	25.804	25.804	36.221	202.7

Abaco 2001 R.V. Oceanus
CTD Station 5 (CTD005)
Latitude 26.161 N Longitude 78.806 W
27-Apr-2001 15:44 Z







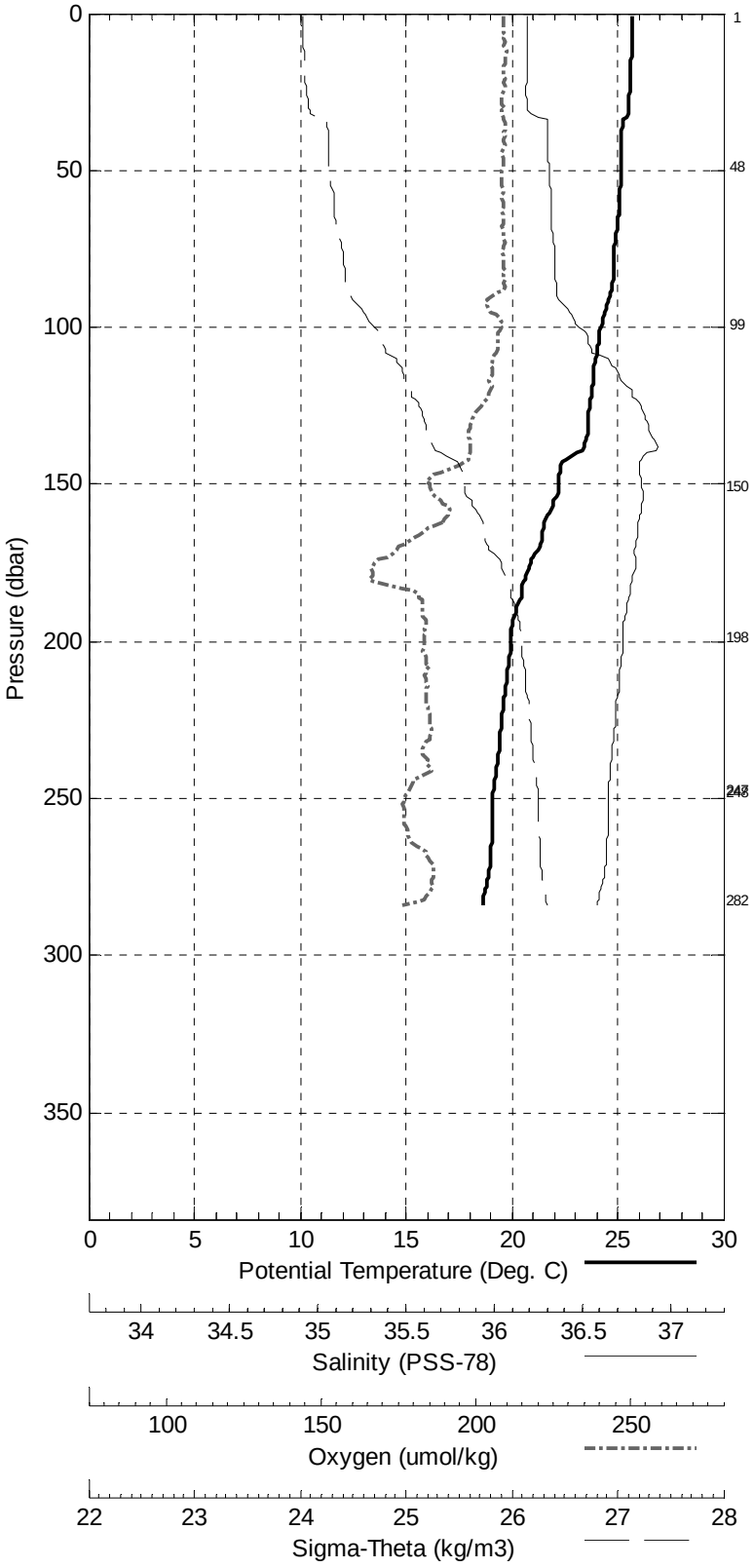


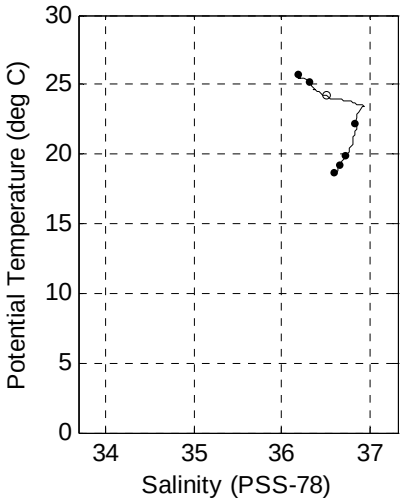
ABACO-01 R.V. Oceanus
CTD Station 6 (CTD006)
Latitude 26.065N Longitude 78.858W
27-Apr-2001 16:59Z

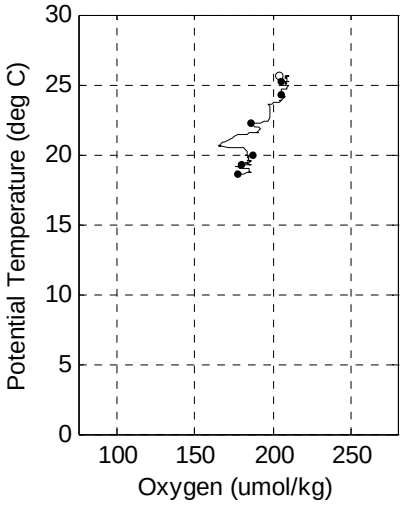
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	25.685	25.684	36.190	208.9	0.004	24.030
10	25.686	25.684	36.193	209.2	0.039	24.032
20	25.639	25.634	36.186	209.1	0.077	24.043
30	25.517	25.510	36.191	209.4	0.116	24.085
50	25.184	25.173	36.310	208.5	0.190	24.279
75	24.875	24.859	36.342	209.0	0.280	24.399
100	24.247	24.225	36.484	208.1	0.367	24.698
125	23.698	23.672	36.835	201.8	0.443	25.129
150	22.240	22.210	36.836	185.3	0.511	25.554
200	19.988	19.951	36.728	183.4	0.621	26.093
250	19.163	19.118	36.647	177.0	0.717	26.250

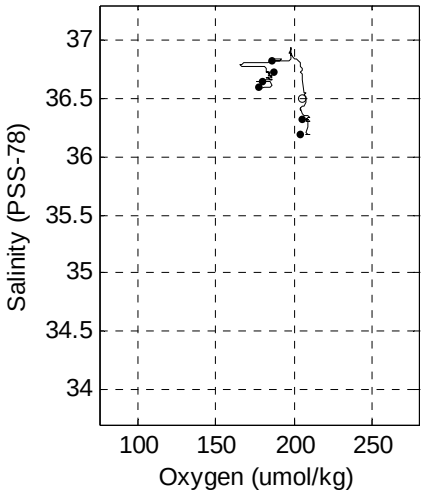
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
283	24	18.688	18.638	36.589	177.0
248	1	19.275	19.230	36.646	179.8
248	2	19.273	19.228	36.649	179.6
199	3	19.990	19.953	36.724	186.8
151	4	22.163	22.133	36.829	186.1
99	5	24.295	24.273	36.498	205.7
49	6	25.179	25.168	36.314	205.4
2	12	25.672	25.671	36.189	204.5

Abaco 2001 R.V. Oceanus
CTD Station 6 (CTD006)
Latitude 26.065 N Longitude 78.858 W
27-Apr-2001 16:59 Z







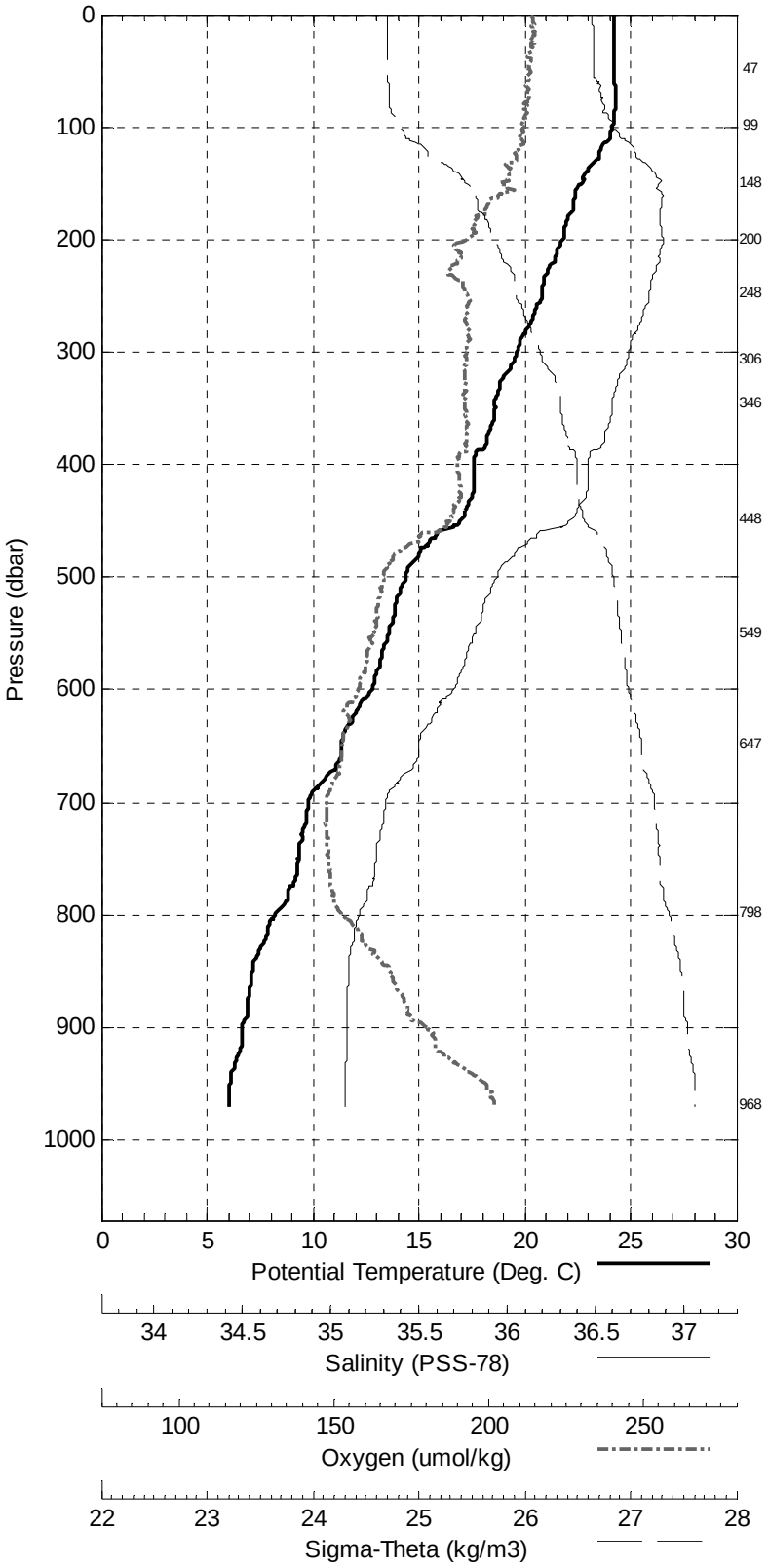


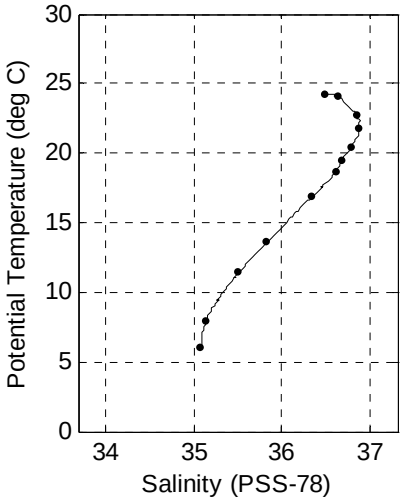
ABACO-01 R.V. Oceanus
CTD Station 7 (CTD007)
Latitude 26.501N Longitude 76.914W
28-Apr-2001 06:49Z

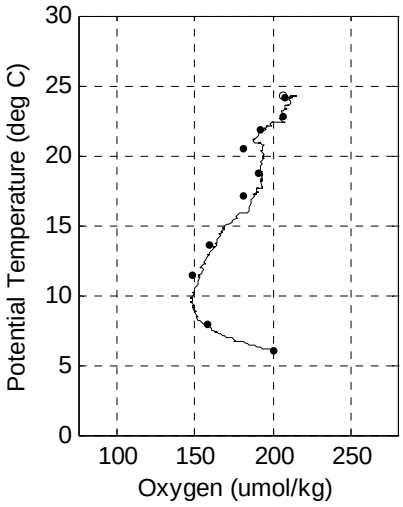
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.196	24.196	36.482	214.0	0.003	24.705
10	24.209	24.207	36.486	214.2	0.032	24.705
20	24.235	24.231	36.490	214.0	0.065	24.701
30	24.230	24.223	36.490	213.8	0.097	24.703
50	24.243	24.233	36.491	213.9	0.162	24.701
75	24.299	24.282	36.540	213.0	0.243	24.723
100	24.138	24.117	36.589	211.5	0.324	24.810
125	23.555	23.528	36.730	208.8	0.400	25.092
150	22.704	22.673	36.864	203.5	0.468	25.443
200	21.831	21.791	36.888	193.1	0.591	25.712
250	20.858	20.810	36.807	193.6	0.703	25.922
300	19.703	19.648	36.692	193.2	0.806	26.147
400	17.686	17.617	36.464	190.2	0.988	26.488
500	14.462	14.386	35.945	166.0	1.144	26.835
600	12.833	12.749	35.696	157.9	1.274	26.982
700	9.895	9.812	35.314	147.8	1.386	27.229
800	8.322	8.236	35.161	152.4	1.481	27.365
900	6.740	6.653	35.092	180.3	1.556	27.539

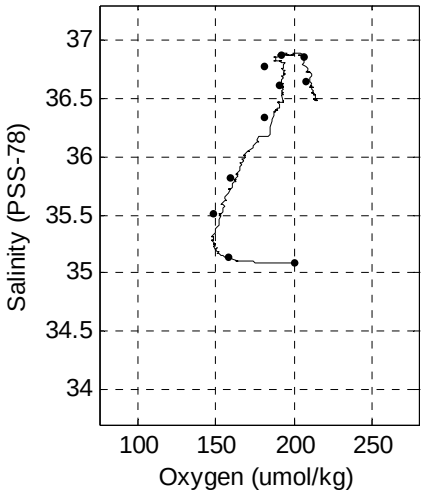
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
969	24	6.111	6.022	35.083	200.5
799	1	8.075	7.990	35.139	158.2
648	2	11.499	11.415	35.506	148.5
550	3	13.683	13.604	35.814	159.3
449	4	16.985	16.910	36.336	181.2
347	5	18.779	18.717	36.604	190.7
306	6	19.483	19.427	36.669	NaN
248	7	20.530	20.483	36.771	181.0
200	8	21.865	21.825	36.874	191.7
149	9	22.790	22.759	36.849	207.0
99	10	24.071	24.050	36.636	207.7
48	11	24.203	24.193	36.478	NaN

Abaco 2001 R.V. Oceanus
CTD Station 7 (CTD007)
Latitude 26.501 N Longitude 76.914 W
28-Apr-2001 06:49 Z







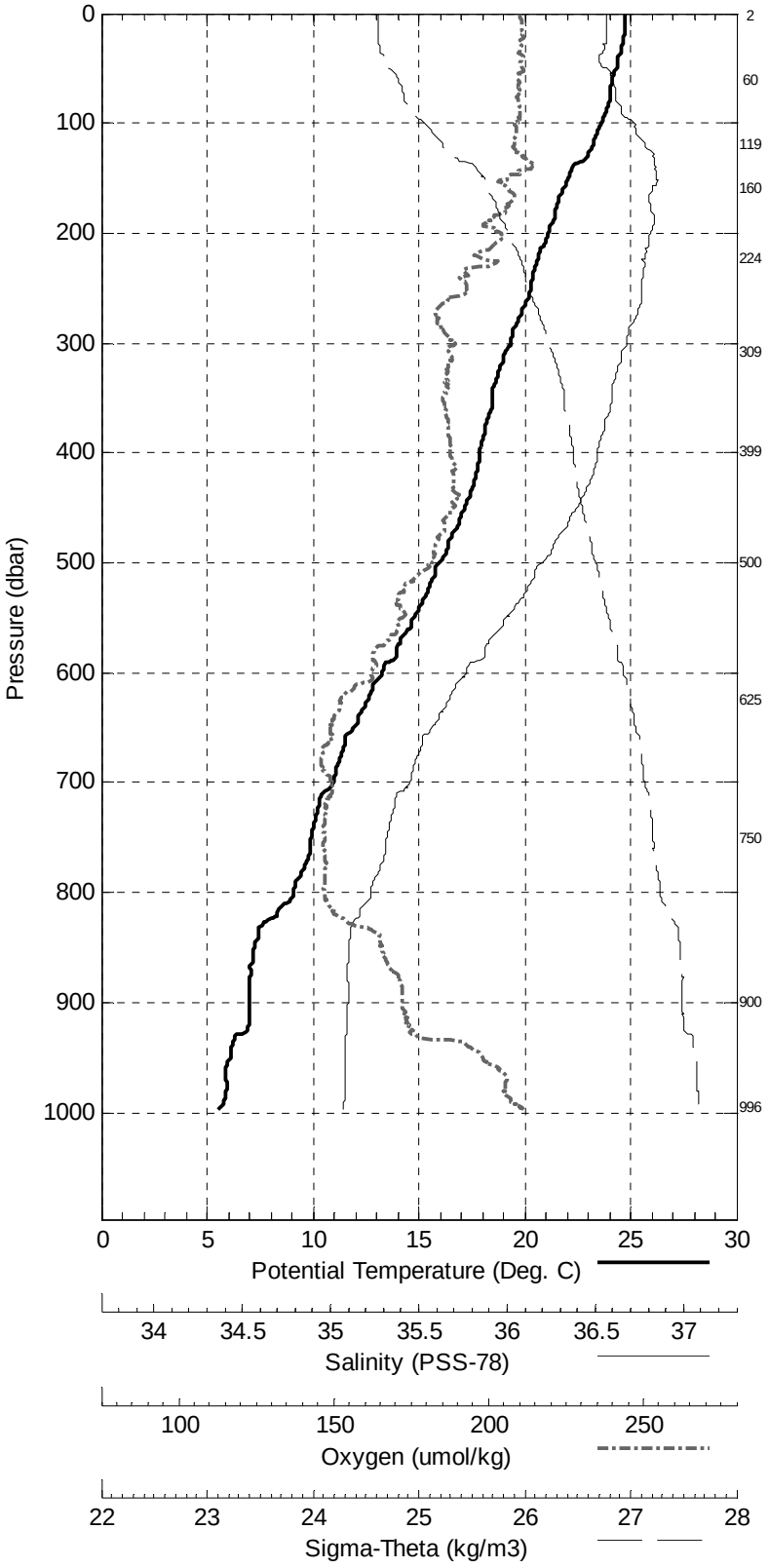


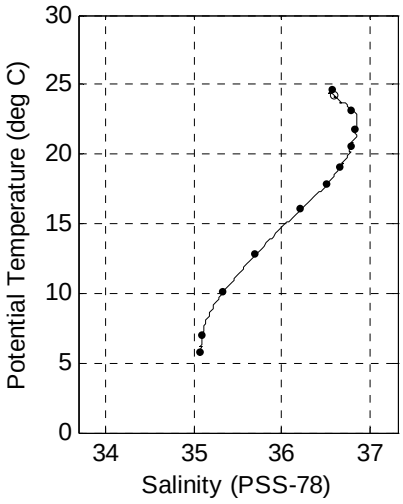
ABACO-01 R.V. Oceanus
CTD Station 8 (CTD008)
Latitude 26.512N Longitude 76.843W
28-Apr-2001 10:48Z

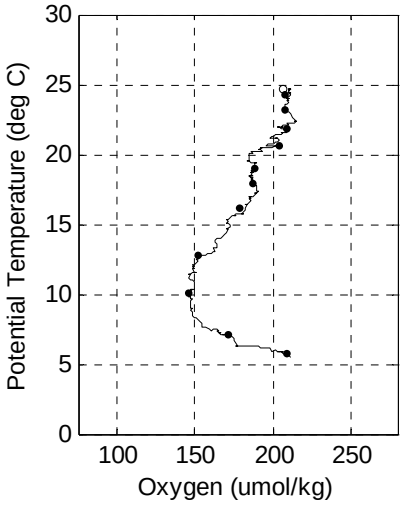
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.698	24.698	36.560	210.3	0.003	24.613
10	24.700	24.698	36.560	210.6	0.033	24.613
20	24.704	24.700	36.569	210.7	0.066	24.619
30	24.608	24.601	36.550	210.4	0.100	24.635
50	24.391	24.380	36.565	211.0	0.165	24.713
75	24.051	24.035	36.616	209.8	0.244	24.855
100	23.621	23.600	36.731	208.2	0.320	25.072
125	23.098	23.072	36.824	208.7	0.391	25.296
150	22.047	22.017	36.850	206.0	0.455	25.620
200	21.148	21.109	36.810	204.0	0.571	25.843
250	20.328	20.281	36.760	193.0	0.678	26.030
300	19.442	19.387	36.681	189.3	0.777	26.206
400	17.947	17.878	36.511	187.8	0.956	26.460
500	16.075	15.994	36.198	181.8	1.120	26.671
600	13.386	13.300	35.776	162.3	1.261	26.933
700	11.053	10.964	35.449	149.2	1.379	27.132
800	9.196	9.105	35.232	147.1	1.481	27.283
900	7.127	7.038	35.099	172.4	1.560	27.491

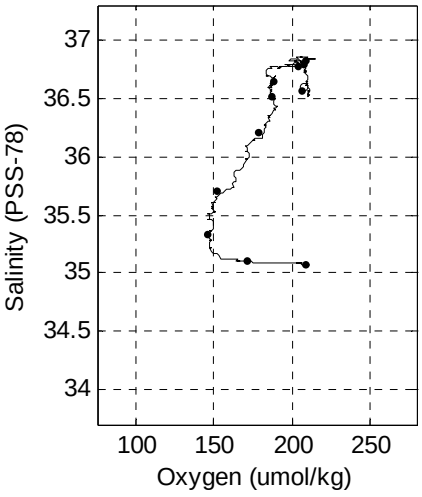
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
996	24	5.777	5.688	35.075	209.4
900	1	7.128	7.038	35.096	171.2
751	2	10.143	10.053	35.331	145.4
626	3	12.874	12.787	35.695	151.8
501	4	16.148	16.066	36.202	178.1
399	5	17.953	17.883	36.508	186.7
310	6	19.083	19.027	36.643	188.0
224	7	20.665	20.622	36.774	204.0
160	8	21.849	21.817	36.816	209.0
119	9	23.231	23.207	36.788	208.3
61	10	24.282	24.269	36.590	208.4
3	11	24.695	24.694	36.560	206.5

Abaco 2001 R.V. Oceanus
CTD Station 8 (CTD008)
Latitude 26.512 N Longitude 76.843 W
28-Apr-2001 10:48 Z







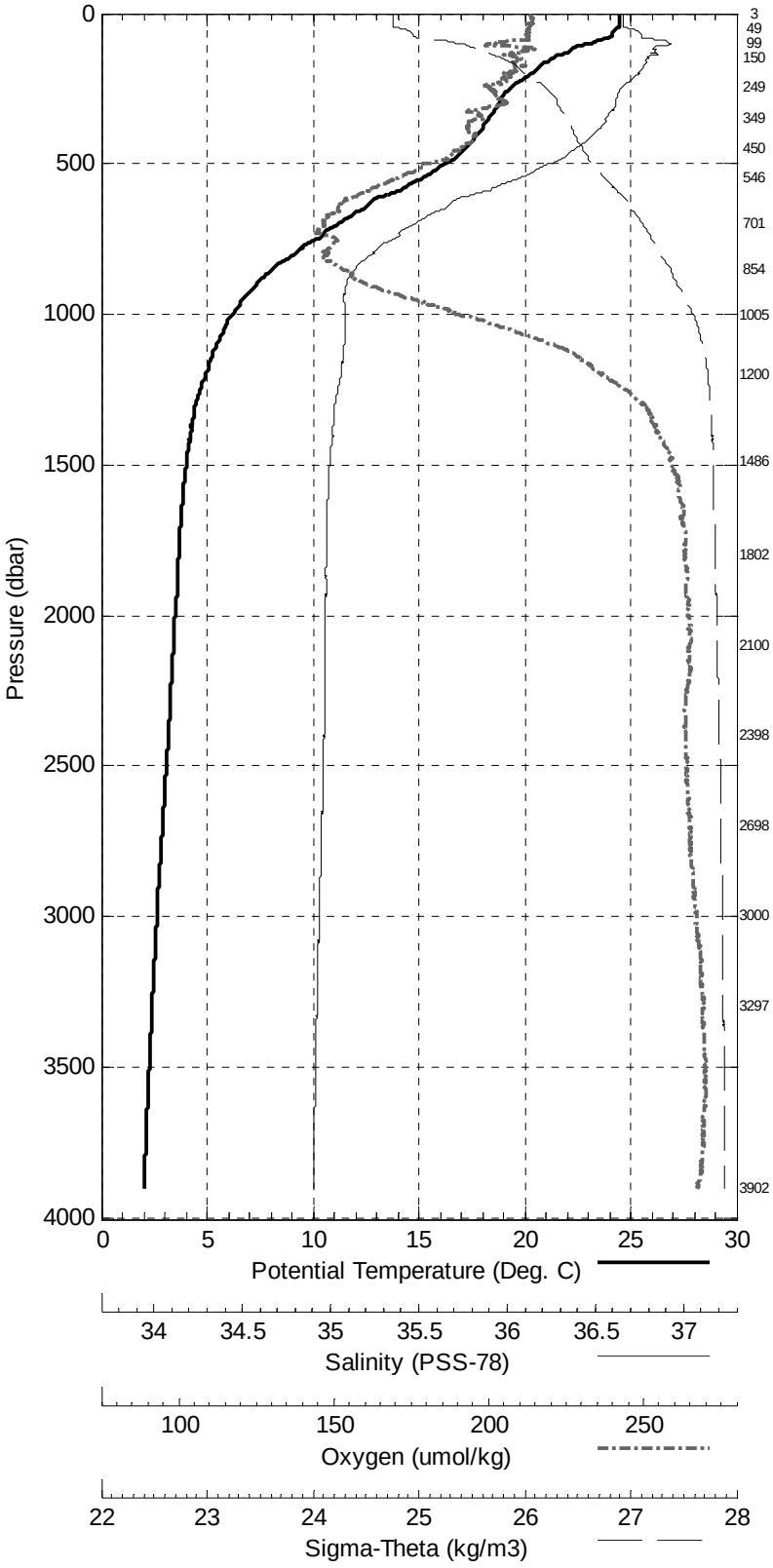


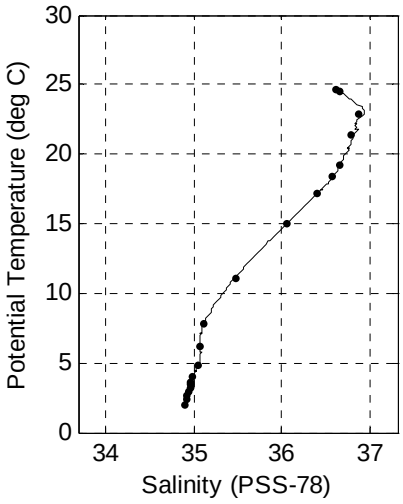
ABACO-01 R.V. Oceanus
CTD Station 9 (CTD009)
Latitude 26.507N Longitude 76.754W
28-Apr-2001 13:19Z

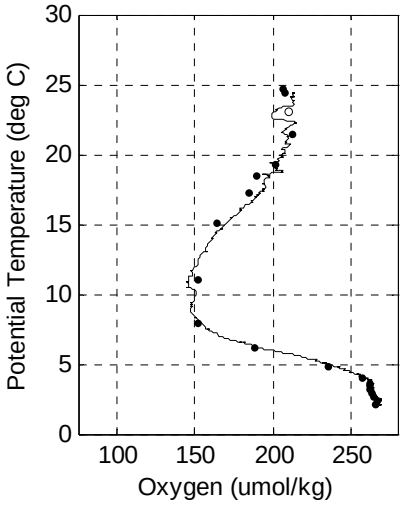
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.440	24.439	36.656	213.4	0.003	24.764
10	24.441	24.439	36.656	213.7	0.032	24.764
20	24.448	24.444	36.657	213.6	0.064	24.764
30	24.449	24.443	36.657	213.3	0.095	24.764
50	24.307	24.296	36.709	213.0	0.159	24.847
75	24.100	24.084	36.760	212.6	0.235	24.950
100	23.078	23.057	36.929	201.1	0.306	25.381
125	22.112	22.087	36.835	211.3	0.369	25.588
150	21.285	21.255	36.795	210.4	0.427	25.791
200	20.311	20.274	36.745	206.3	0.535	26.020
250	19.310	19.265	36.646	200.5	0.633	26.212
300	18.828	18.774	36.613	205.6	0.726	26.313
400	17.834	17.765	36.487	195.8	0.901	26.470
500	16.277	16.195	36.235	180.6	1.065	26.653
600	13.668	13.581	35.818	158.0	1.210	26.907
700	11.214	11.125	35.465	146.8	1.331	27.115
800	9.191	9.100	35.230	148.1	1.434	27.282
900	7.408	7.316	35.092	161.4	1.520	27.447
1000	6.293	6.199	35.078	190.1	1.591	27.589
1100	5.535	5.437	35.077	220.6	1.650	27.684
1200	5.032	4.929	35.058	237.0	1.703	27.730
1300	4.537	4.429	35.022	250.3	1.753	27.757
1400	4.336	4.221	35.013	255.7	1.800	27.773
1500	4.125	4.003	34.993	259.6	1.847	27.781
1750	3.857	3.715	34.980	263.6	1.963	27.799
2000	3.647	3.484	34.967	264.6	2.079	27.812
2500	3.281	3.076	34.959	263.9	2.309	27.845
3000	2.877	2.629	34.936	267.0	2.533	27.867
3500	2.557	2.263	34.915	269.9	2.753	27.882

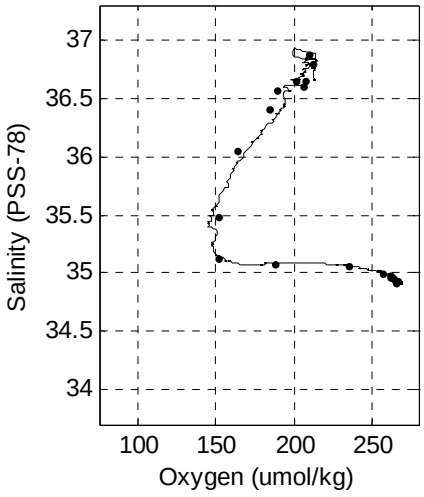
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
3902	24	2.365	2.032	34.901	266.6
3297	2	2.677	2.403	34.923	267.0
3001	3	2.880	2.631	34.934	265.0
2698	4	3.115	2.893	34.949	263.2
2398	5	3.367	3.171	34.962	262.0
2101	6	3.619	3.448	34.970	261.9
1802	7	3.744	3.599	34.968	262.4
1487	8	4.059	3.940	34.985	257.8
1201	9	4.981	4.878	35.055	235.2
1005	10	6.275	6.181	35.078	188.5
854	11	7.906	7.816	35.114	151.7
702	12	11.149	11.059	35.470	151.5
546	13	15.138	15.053	36.047	164.7
451	14	17.305	17.229	36.399	184.6
350	15	18.449	18.387	36.569	189.3
250	16	19.301	19.255	36.648	202.2
150	17	21.363	21.333	36.784	213.0
100	18	22.943	22.923	36.870	210.8
49	19	24.551	24.540	36.642	207.7
3	20	24.645	24.644	36.602	207.0

Abaco 2001 R.V. Oceanus
CTD Station 9 (CTD009)
Latitude 26.507 N Longitude 76.754 W
28-Apr-2001 13:19 Z







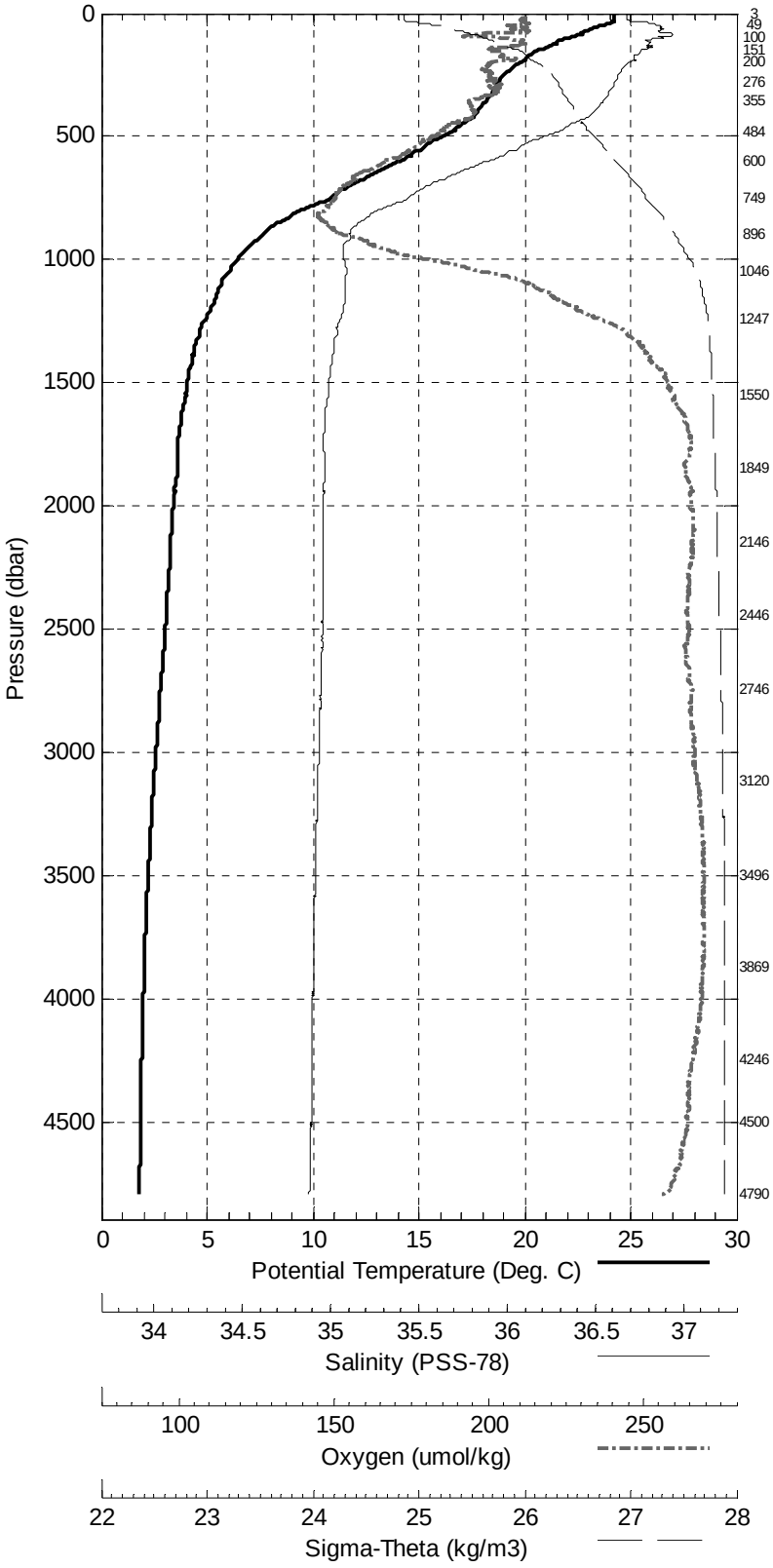


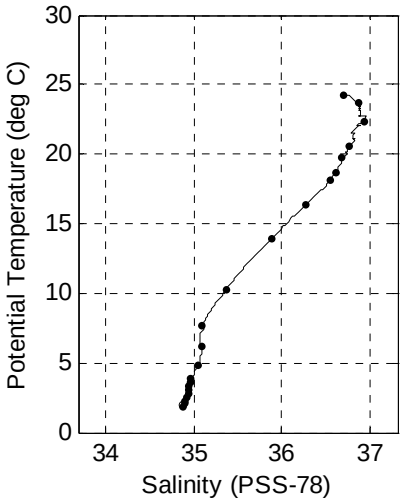
ABACO-01 R.V. Oceanus
CTD Station 10 (CTD010)
Latitude 26.513N Longitude 76.614W
28-Apr-2001 17:09Z

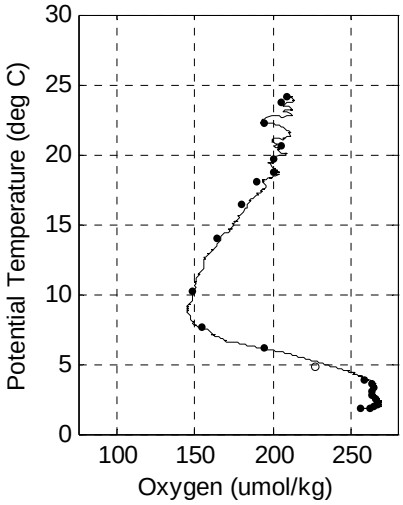
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.183	24.182	36.684	211.4	0.003	24.862
10	24.179	24.177	36.685	211.7	0.031	24.865
20	24.168	24.164	36.684	210.8	0.062	24.868
30	24.174	24.168	36.703	210.9	0.092	24.882
50	23.488	23.478	36.866	206.2	0.151	25.210
75	22.746	22.730	36.870	212.7	0.218	25.431
100	22.077	22.057	36.873	205.7	0.280	25.625
125	21.371	21.346	36.802	211.3	0.338	25.771
150	20.597	20.568	36.756	200.0	0.392	25.949
200	19.784	19.747	36.690	199.7	0.494	26.119
250	19.022	18.977	36.624	200.7	0.589	26.269
300	18.697	18.644	36.599	200.8	0.680	26.335
400	17.827	17.758	36.488	195.7	0.854	26.473
500	16.107	16.026	36.200	181.4	1.017	26.665
600	14.175	14.086	35.893	166.1	1.162	26.859
700	11.756	11.663	35.541	153.5	1.289	27.074
800	9.465	9.373	35.260	147.3	1.397	27.261
900	7.679	7.586	35.112	153.7	1.486	27.424
1000	6.494	6.398	35.079	180.2	1.561	27.563
1100	5.749	5.649	35.084	213.7	1.623	27.663
1200	5.282	5.177	35.075	228.5	1.678	27.714
1300	4.760	4.650	35.038	244.7	1.729	27.745
1400	4.442	4.326	35.013	252.1	1.778	27.762
1500	4.202	4.079	34.991	257.9	1.826	27.771
1750	3.780	3.639	34.964	265.3	1.944	27.795
2000	3.595	3.433	34.962	264.8	2.059	27.814
2500	3.233	3.029	34.953	264.5	2.287	27.845
3000	2.830	2.583	34.933	266.8	2.509	27.869
3500	2.507	2.214	34.913	269.4	2.726	27.885
4000	2.336	1.993	34.900	268.6	2.942	27.892
4500	2.279	1.878	34.890	264.3	3.164	27.893

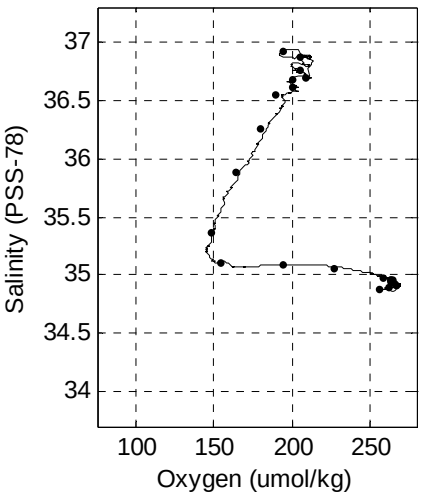
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4790	24	2.204	1.770	34.876	256.8
4500	1	2.277	1.877	34.892	263.0
4247	2	2.288	1.917	34.888	264.7
3870	3	2.370	2.040	34.902	266.9
3497	4	2.510	2.218	34.913	267.5
3120	5	2.741	2.483	34.927	265.9
2747	6	3.045	2.820	34.943	263.4
2447	7	3.256	3.057	34.952	263.1
2147	8	3.448	3.275	34.954	264.3
1850	9	3.697	3.549	34.960	264.0
1551	10	4.030	3.905	34.977	258.9
1247	11	4.980	4.873	35.050	226.7
1046	12	6.254	6.156	35.087	194.3
897	13	7.734	7.641	35.105	154.8
750	14	10.358	10.266	35.368	148.2
601	15	14.061	13.972	35.877	163.9
485	16	16.402	16.323	36.260	179.5
356	17	18.164	18.102	36.543	189.7
277	18	18.780	18.731	36.604	201.1
201	19	19.727	19.690	36.679	200.1
151	20	20.635	20.606	36.758	205.9
101	21	22.379	22.358	36.921	194.8
49	22	23.676	23.665	36.865	205.6
4	23	24.239	24.238	36.695	208.7

Abaco 2001 R.V. Oceanus
CTD Station 10 (CTD010)
Latitude 26.513 N Longitude 76.614 W
28-Apr-2001 17:09 Z







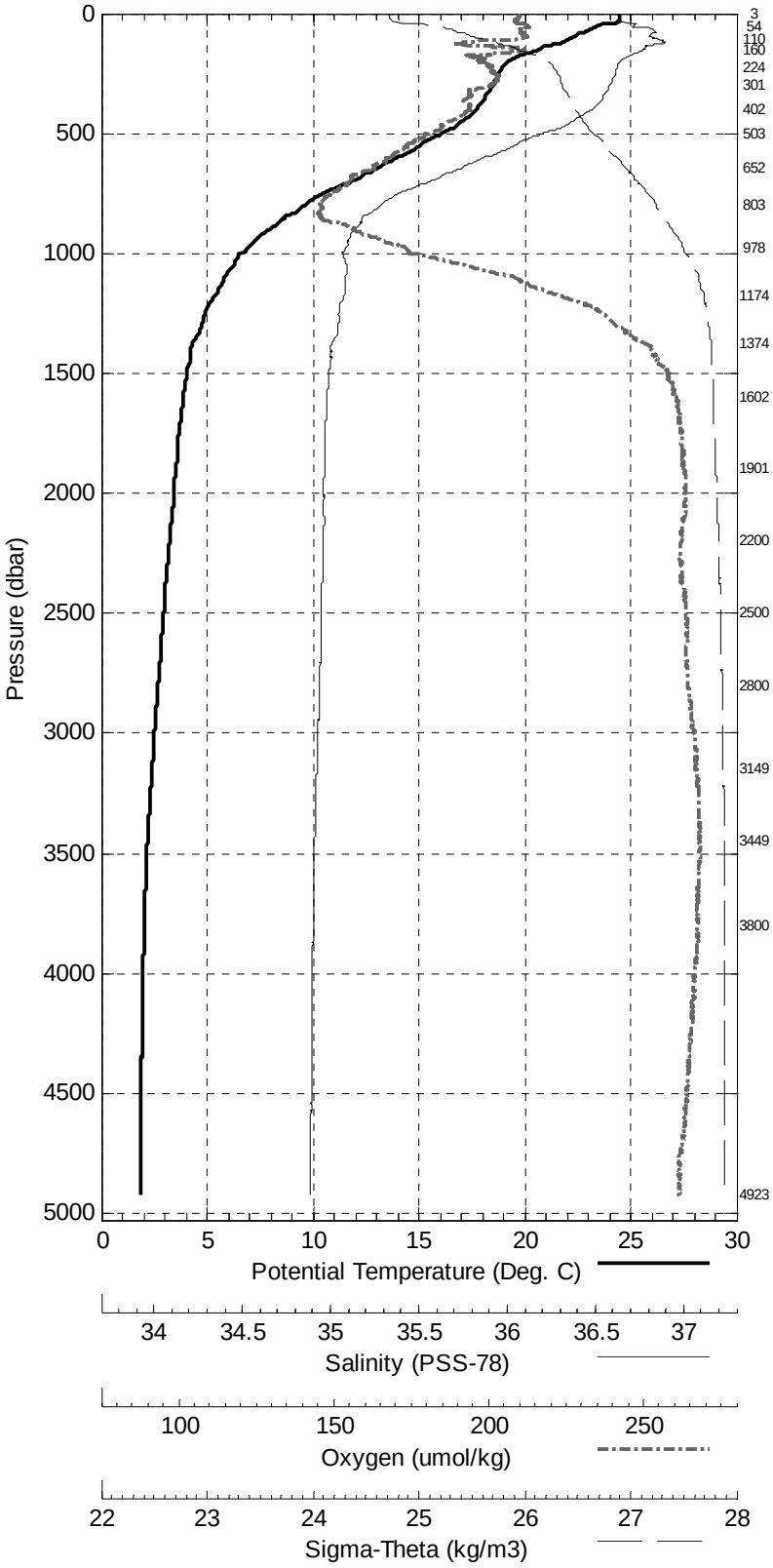


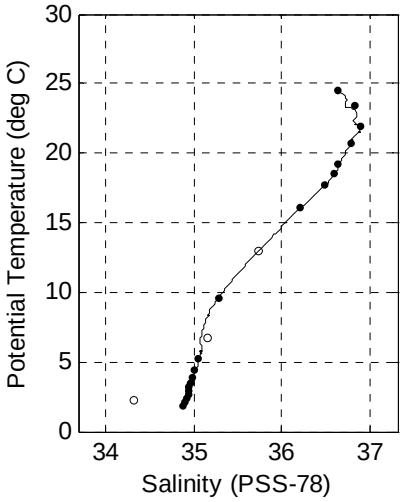
ABACO-01 R.V. Oceanus
CTD Station 11 (CTD011)
Latitude 26.527N Longitude 76.492W
28-Apr-2001 23:55Z

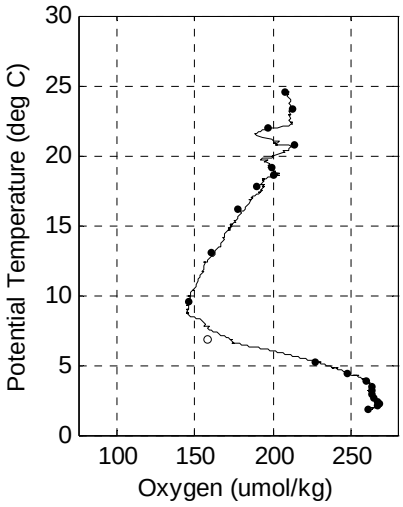
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.518	24.518	36.637	209.5	0.003	24.726
10	24.516	24.514	36.638	209.9	0.032	24.728
20	24.515	24.511	36.640	209.5	0.064	24.730
30	24.448	24.441	36.643	208.8	0.096	24.753
50	23.405	23.395	36.716	212.3	0.158	25.120
75	22.920	22.905	36.842	211.0	0.226	25.359
100	22.238	22.218	36.831	211.5	0.290	25.548
125	21.661	21.636	36.883	189.1	0.349	25.752
150	20.680	20.651	36.773	211.2	0.404	25.940
200	19.214	19.178	36.635	197.1	0.502	26.226
250	18.825	18.780	36.614	202.3	0.593	26.312
300	18.557	18.504	36.581	200.3	0.683	26.357
400	17.785	17.716	36.484	193.7	0.856	26.479
500	16.127	16.046	36.199	180.5	1.018	26.660
600	14.009	13.921	35.867	167.7	1.164	26.874
700	11.888	11.795	35.561	155.1	1.290	27.064
800	9.700	9.606	35.283	146.3	1.398	27.240
900	7.961	7.866	35.130	156.8	1.490	27.396
1000	6.682	6.585	35.070	174.5	1.568	27.531
1100	5.891	5.791	35.084	208.5	1.632	27.646
1200	5.279	5.173	35.062	228.4	1.690	27.704
1300	4.857	4.746	35.044	241.4	1.742	27.740
1400	4.365	4.249	35.004	252.8	1.791	27.763
1500	4.147	4.025	34.991	258.0	1.838	27.776
1750	3.797	3.656	34.968	262.3	1.955	27.796
2000	3.590	3.429	34.962	263.4	2.070	27.814
2500	3.146	2.944	34.948	263.4	2.295	27.849
3000	2.756	2.511	34.927	266.4	2.514	27.871
3500	2.451	2.160	34.908	267.6	2.727	27.885
4000	2.320	1.977	34.897	266.4	2.942	27.891
4500	2.296	1.895	34.891	264.0	3.165	27.892

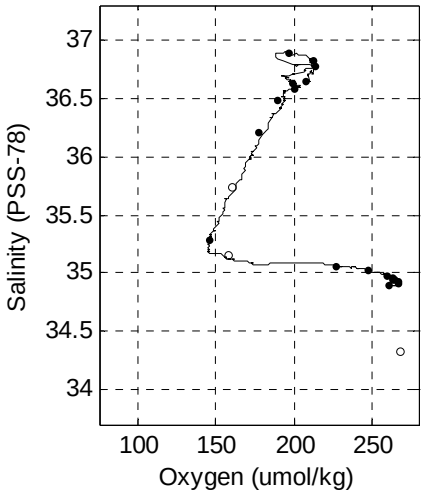
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4923	24	2.303	1.849	34.885	261.6
3801	3	2.368	2.046	34.901	266.9
3449	4	2.460	2.178	34.319	268.2
3149	5	2.677	2.417	34.923	267.1
2801	6	2.922	2.693	34.938	264.3
2501	7	3.168	2.965	34.947	263.8
2200	8	3.362	3.185	34.956	263.3
1901	9	3.664	3.511	34.964	263.8
1603	10	4.000	3.870	34.980	259.4
1375	11	4.498	4.384	35.015	247.9
1174	12	5.285	5.183	35.060	227.1
979	13	6.810	6.714	35.155	158.5
804	14	9.632	9.538	35.278	146.0
652	15	13.072	12.980	35.740	160.0
503	16	16.214	16.132	36.213	177.1
402	17	17.782	17.713	36.482	189.7
302	18	18.634	18.580	36.586	200.7
224	19	19.188	19.147	36.634	199.9
160	20	20.726	20.696	36.774	213.7
110	21	21.923	21.901	36.878	196.7
54	22	23.456	23.445	36.822	212.8
3	23	24.455	24.454	36.638	208.2

Abaco 2001 R.V. Oceanus
CTD Station 11 (CTD011)
Latitude 26.527 N Longitude 76.492 W
28-Apr-2001 23:55 Z







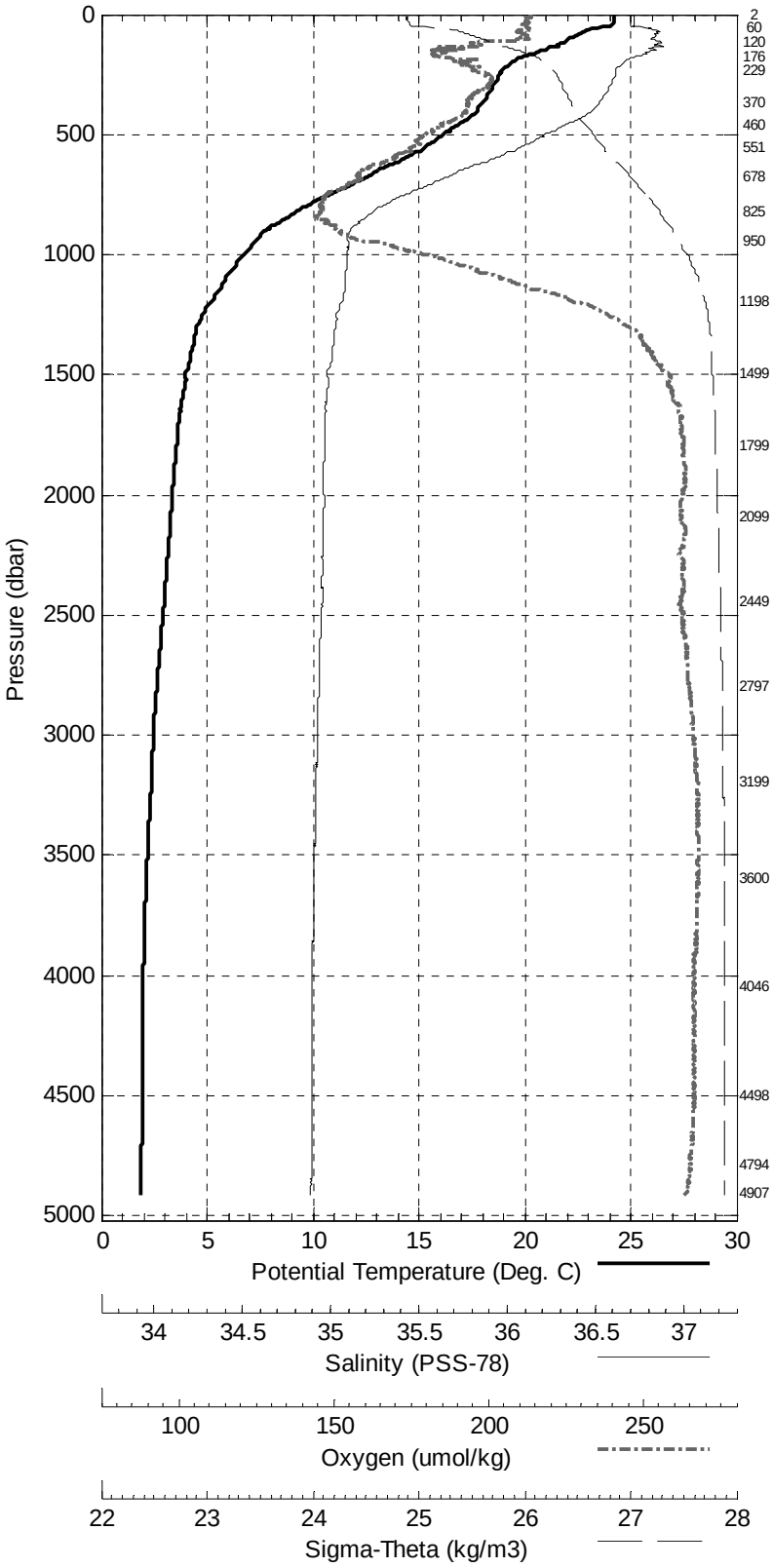


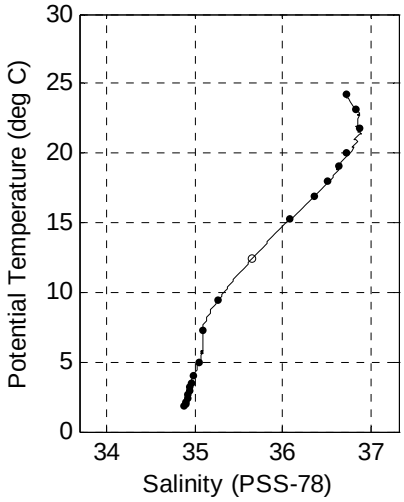
ABACO-01 R.V. Oceanus
CTD Station 12 (CTD012)
Latitude 26.529N Longitude 76.316W
29-Apr-2001 04:20Z

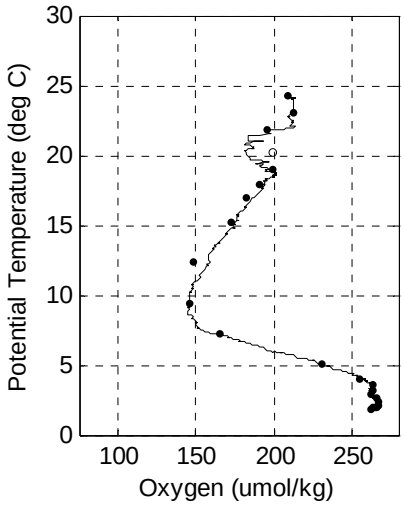
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2		SigTh kg/m^3
1	24.180	24.180	36.717	213.4	0.003	24.888	
10	24.187	24.185	36.718	213.3	0.031	24.887	
20	24.190	24.186	36.718	213.3	0.061	24.887	
30	24.192	24.186	36.719	213.0	0.092	24.888	
50	23.998	23.988	36.717	211.9	0.153	24.946	
75	22.723	22.708	36.853	209.3	0.220	25.425	
100	22.039	22.019	36.815	213.1	0.283	25.592	
125	21.624	21.599	36.837	196.9	0.342	25.727	
150	20.877	20.849	36.832	181.4	0.397	25.931	
200	19.380	19.343	36.657	192.1	0.496	26.199	
250	18.869	18.824	36.617	199.4	0.588	26.303	
300	18.554	18.501	36.581	200.1	0.678	26.357	
400	17.816	17.747	36.485	193.1	0.851	26.473	
500	16.174	16.093	36.211	180.1	1.014	26.658	
600	14.397	14.307	35.924	169.0	1.162	26.836	
700	12.066	11.972	35.585	155.5	1.291	27.049	
800	9.625	9.531	35.277	146.4	1.400	27.248	
900	7.775	7.681	35.104	151.3	1.492	27.403	
1000	6.784	6.686	35.093	180.3	1.570	27.535	
1100	5.992	5.890	35.088	204.8	1.635	27.636	
1200	5.210	5.105	35.064	229.3	1.692	27.714	
1300	4.643	4.534	35.028	245.4	1.743	27.751	
1400	4.376	4.261	35.008	252.0	1.792	27.765	
1500	4.094	3.973	34.980	258.5	1.839	27.773	
1750	3.742	3.602	34.967	262.3	1.955	27.801	
2000	3.542	3.382	34.963	262.6	2.068	27.819	
2500	3.113	2.911	34.947	263.2	2.291	27.851	
3000	2.708	2.463	34.924	266.3	2.507	27.873	
3500	2.469	2.177	34.909	267.7	2.722	27.884	
4000	2.340	1.996	34.898	266.4	2.937	27.890	
4500	2.347	1.945	34.895	266.2	3.162	27.892	

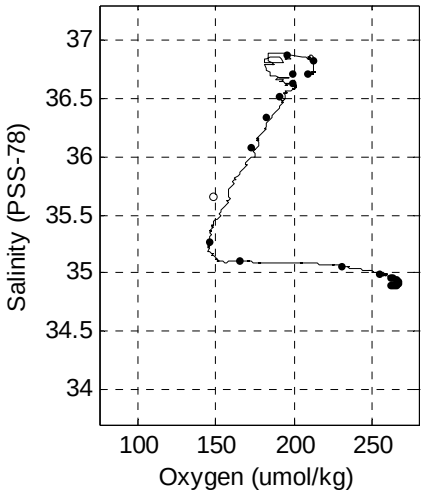
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4908	24	2.317	1.865	34.888	262.1
4795	1	2.333	1.895	34.891	263.7
4498	3	2.348	1.946	34.894	264.8
4047	4	2.336	1.987	34.897	265.7
3600	5	2.434	2.132	34.907	267.9
3199	6	2.639	2.375	34.920	267.3
2797	7	2.860	2.633	34.933	265.5
2450	8	3.131	2.934	34.950	262.9
2099	9	3.404	3.236	34.955	263.9
1800	10	3.645	3.501	34.960	264.2
1500	11	4.177	4.055	34.992	255.6
1198	12	5.109	5.005	35.050	230.7
950	13	7.367	7.271	35.100	165.6
825	14	9.469	9.373	35.257	145.4
678	15	12.460	12.367	35.656	148.7
552	16	15.331	15.244	36.078	172.9
461	17	17.009	16.932	36.343	182.3
371	18	17.995	17.931	36.510	191.0
230	19	19.077	19.035	36.623	199.0
176	20	20.041	20.009	36.715	199.4
120	21	21.859	21.835	36.867	195.8
60	22	23.107	23.095	36.827	212.8
3	23	24.252	24.251	36.716	209.1

Abaco 2001 R.V. Oceanus
CTD Station 12 (CTD012)
Latitude 26.529 N Longitude 76.316 W
29-Apr-2001 04:20 Z







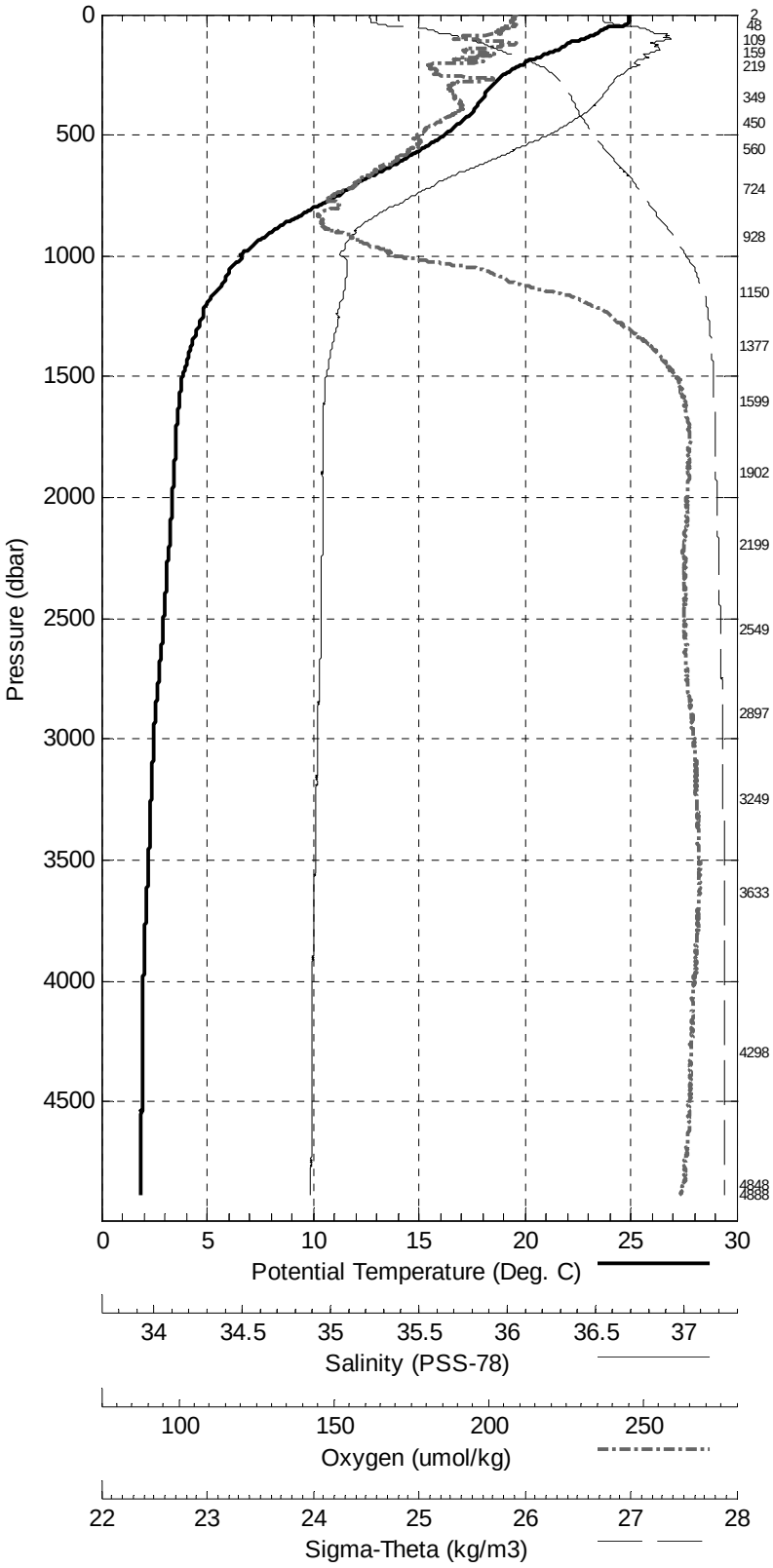


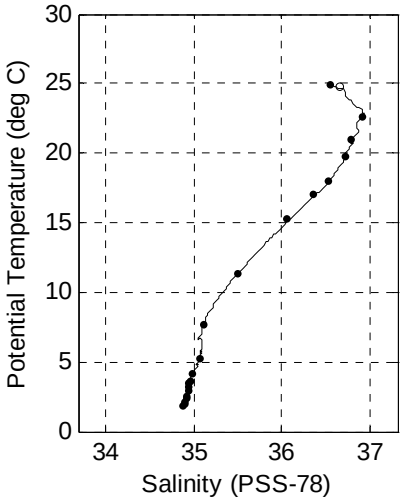
ABACO-01 R.V. Oceanus
CTD Station 13 (CTD013)
Latitude 26.528N Longitude 76.127W
29-Apr-2001 08:53Z

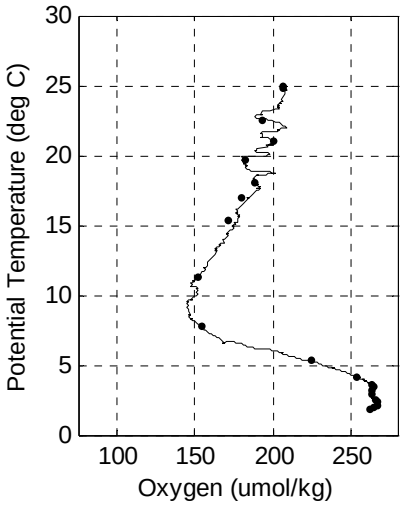
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.908	24.908	36.545	208.3	0.003	24.538
10	24.910	24.907	36.547	208.1	0.034	24.539
20	24.910	24.905	36.546	208.5	0.068	24.539
30	24.910	24.904	36.554	207.2	0.102	24.545
50	24.354	24.344	36.721	207.3	0.168	24.842
75	23.460	23.445	36.832	203.9	0.240	25.193
100	22.878	22.858	36.928	189.6	0.307	25.438
125	21.970	21.945	36.852	205.0	0.369	25.641
150	21.506	21.477	36.855	192.2	0.427	25.775
200	20.014	19.976	36.722	193.4	0.533	26.082
250	19.007	18.962	36.640	183.7	0.628	26.285
300	18.433	18.380	36.579	187.4	0.717	26.386
400	17.602	17.534	36.455	189.7	0.888	26.502
500	16.218	16.136	36.225	176.9	1.049	26.659
600	14.309	14.220	35.915	170.9	1.196	26.848
700	12.170	12.075	35.600	156.7	1.326	27.041
800	10.055	9.958	35.326	151.3	1.438	27.214
900	8.125	8.029	35.140	151.0	1.534	27.379
1000	6.720	6.623	35.068	170.1	1.612	27.524
1100	5.920	5.819	35.083	206.4	1.677	27.641
1200	5.060	4.957	35.047	233.1	1.732	27.718
1300	4.667	4.558	35.029	245.4	1.783	27.749
1400	4.256	4.142	35.000	254.5	1.831	27.771
1500	3.935	3.816	34.971	260.9	1.877	27.782
1750	3.667	3.528	34.953	264.6	1.991	27.797
2000	3.493	3.333	34 .953	264.0	2.105	27.816
2500	3.152	2.949	34.947	263.4	2.330	27.847
3000	2.722	2.477	34.925	266.4	2.549	27.872
3500	2.521	2.228	34.912	268.0	2.765	27.882
4000	2.336	1.992	34.898	266.2	2.982	27.890
4500	2.319	1.917	34.892	265.0	3.206	27.892

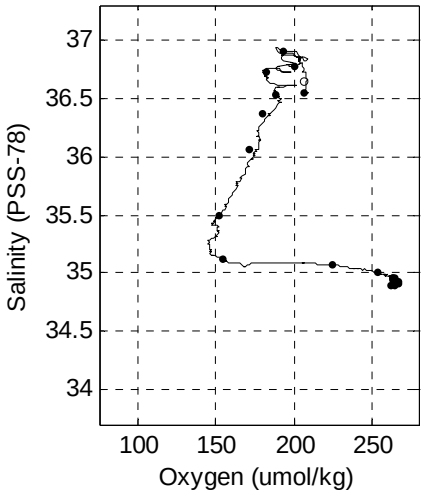
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4888	24	2.308	1.859	34.887	262.0
4848	1	2.303	1.859	34.887	261.9
4299	3	2.314	1.937	34.894	265.1
3634	5	2.461	2.155	34.907	267.7
3249	6	2.620	2.351	34.918	267.6
2898	7	2.792	2.556	34.929	266.3
2550	8	3.130	2.923	34.947	263.8
2200	9	3.373	3.195	34.953	264.1
1902	10	3.571	3.420	34.952	265.2
1600	11	3.732	3.606	34.961	263.6
1378	12	4.219	4.108	34.999	253.8
1151	13	5.347	5.246	35.068	225.0
928	14	7.777	7.680	35.112	155.1
725	15	11.418	11.324	35.490	152.0
560	16	15.318	15.230	36.063	171.6
450	17	17.049	16.974	36.361	180.3
349	18	18.091	18.030	36.530	188.7
219	19	19.725	19.684	36.721	182.8
160	20	21.025	20.994	36.780	200.4
109	21	22.582	22.560	36.904	193.6
48	22	24.839	24.828	36.650	206.0
2	23	24.878	24.878	36.542	206.3

Abaco 2001 R.V. Oceanus
CTD Station 13 (CTD013)
Latitude 26.528 N Longitude 76.127 W
29-Apr-2001 08:53 Z







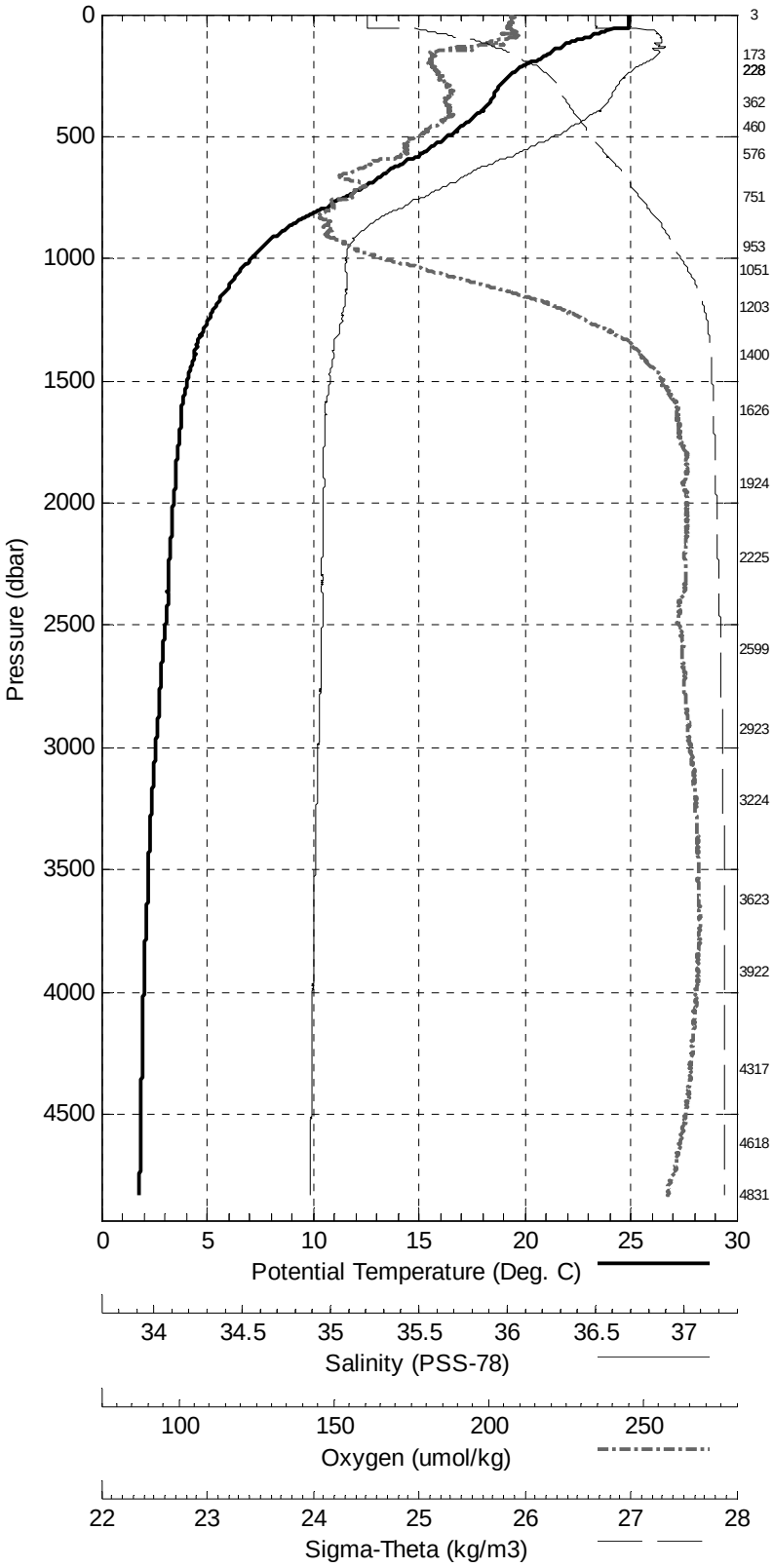


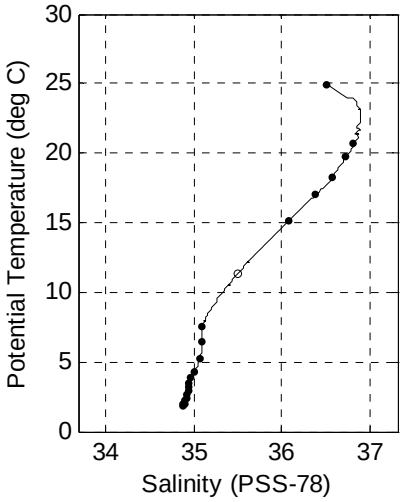
ABACO-01 R.V. Oceanus
CTD Station 14 (CTD014)
Latitude 26.531N Longitude 75.928W
29-Apr-2001 13:43Z

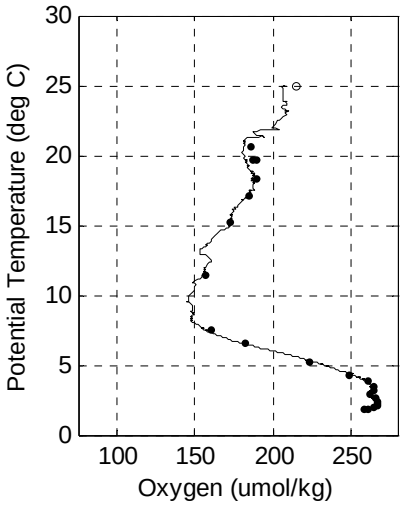
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.878	24.878	36.502	207.7	0.003	24.514
10	24.889	24.887	36.503	207.5	0.034	24.512
20	24.895	24.891	36.503	207.0	0.068	24.511
30	24.902	24.895	36.503	207.9	0.103	24.510
50	24.903	24.892	36.504	206.3	0.171	24.512
75	23.636	23.620	36.851	208.9	0.248	25.156
100	22.672	22.652	36.880	205.4	0.315	25.461
125	21.831	21.806	36.857	201.8	0.376	25.685
150	21.329	21.300	36.871	184.0	0.433	25.836
200	20.159	20.122	36.762	181.0	0.539	26.074
250	19.318	19.273	36.674	185.2	0.636	26.230
300	18.816	18.762	36.619	186.3	0.728	26.320
400	17.913	17.843	36.504	187.5	0.905	26.463
500	16.369	16.287	36.253	176.9	1.068	26.645
600	14.422	14.332	35.934	163.5	1.217	26.838
700	12.565	12.468	35.655	160.3	1.349	27.007
800	10.427	10.328	35.369	149.3	1.464	27.183
900	8.415	8.317	35.150	147.5	1.562	27.343
1000	7.165	7.065	35.089	166.0	1.645	27.480
1100	6.201	6.098	35.095	196.6	1.715	27.615
1200	5.444	5.337	35.076	222.3	1.774	27.695
1300	4.897	4.786	35.048	239.8	1.827	27.738
1400	4.512	4.395	35.018	249.3	1.877	27.758
1500	4.200	4.078	34.994	256.2	1.925	27.774
1750	3.825	3.683	34.969	262.2	2.043	27.794
2000	3.559	3.398	34.954	263.9	2.158	27.811
2500	3.219	3.015	34.953	261.4	2.387	27.846
3000	2.819	2.572	34.932	265.2	2.609	27.869
3500	2.506	2.214	34.911	267.9	2.826	27.883
4000	2.350	2.006	34.899	267.1	3.044	27.890
4500	2.281	1.881	34.890	263.6	3.267	27.893

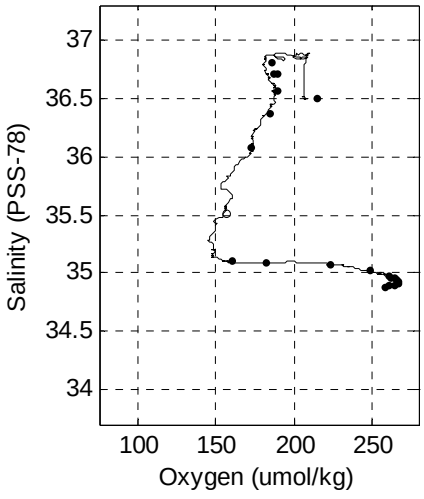
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4832	24	2.246	1.806	34.882	258.6
4618	1	2.266	1.851	34.887	261.5
4318	2	2.290	1.911	34.892	264.7
3922	3	2.370	2.034	34.902	267.3
3624	4	2.481	2.175	34.909	267.9
3224	5	2.668	2.401	34.922	267.2
2923	6	2.881	2.641	34.935	265.5
2599	7	3.151	2.939	34.951	263.0
2225	8	3.418	3.238	34.951	264.3
1924	9	3.581	3.427	34.957	264.6
1627	10	3.947	3.816	34.974	260.6
1401	11	4.450	4.334	35.016	248.8
1204	12	5.343	5.236	35.074	223.5
1051	13	6.617	6.515	35.087	182.8
953	14	7.582	7.483	35.097	160.3
751	15	11.436	11.338	35.508	156.5
577	16	15.286	15.196	36.069	173.0
460	17	17.127	17.049	36.376	185.1
362	18	18.337	18.273	36.565	190.0
229	19	19.748	19.706	36.715	189.9
229	20	19.745	19.702	36.715	187.7
173	21	20.681	20.648	36.809	185.9
4	23	24.902	24.901	36.497	215.4

Abaco 2001 R.V. Oceanus
CTD Station 14 (CTD014)
Latitude 26.531 N Longitude 75.928 W
29-Apr-2001 13:43 Z







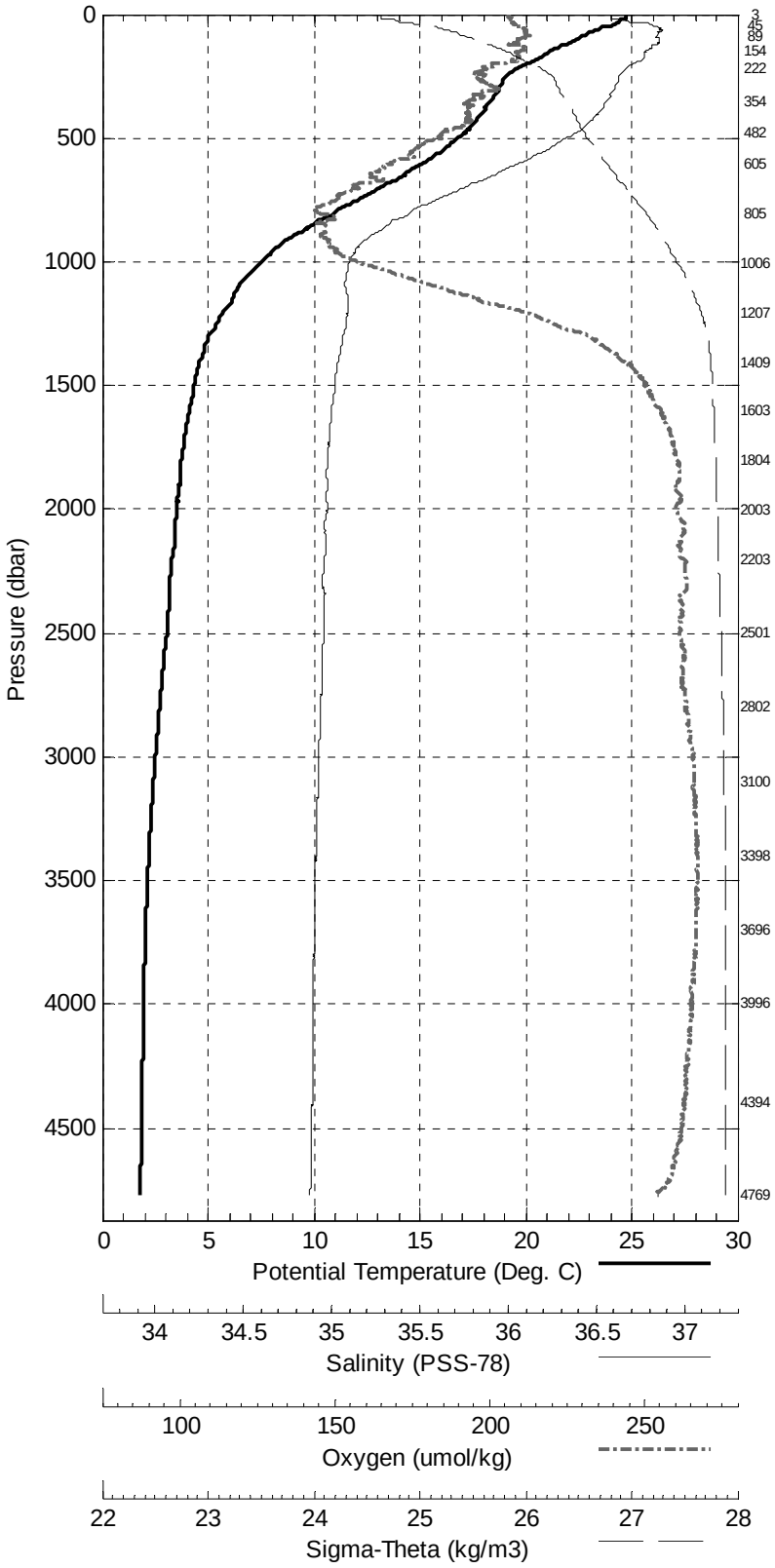


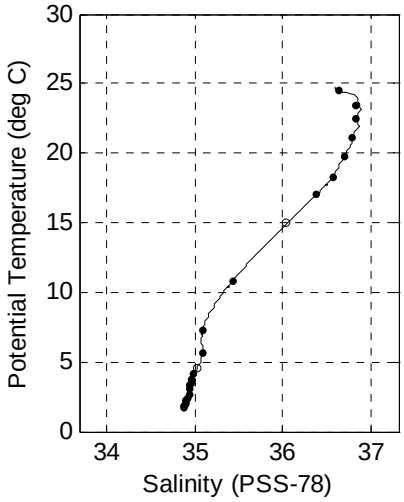
ABACO-01 R.V. Oceanus
CTD Station 15 (CTD015)
Latitude 26.551N Longitude 75.728W
29-Apr-2001 21:11Z

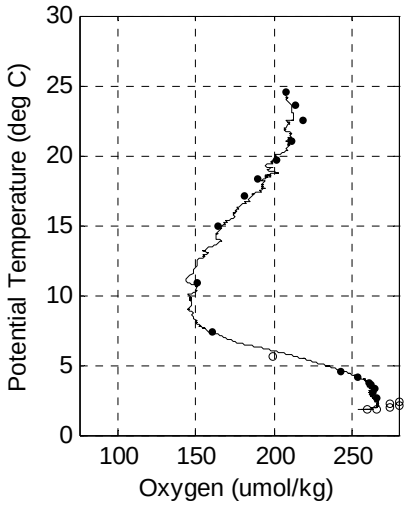
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.714	24.714	36.585	206.5	0.003	24.627
10	24.707	24.705	36.587	207.0	0.033	24.631
20	24.700	24.695	36.590	206.5	0.066	24.636
30	24.383	24.377	36.689	207.4	0.098	24.808
50	23.717	23.706	36.853	210.3	0.158	25.132
75	22.937	22.922	36.850	211.8	0.226	25.361
100	22.460	22.440	36.867	208.3	0.290	25.512
125	21.696	21.672	36.805	209.9	0.351	25.682
150	21.096	21.067	36.778	209.3	0.408	25.830
200	20.050	20.013	36.706	200.8	0.515	26.060
250	19.119	19.074	36.634	197.0	0.611	26.251
300	18.794	18.740	36.602	202.8	0.702	26.313
400	17.972	17.903	36.510	193.3	0.879	26.453
500	16.813	16.729	36.322	184.6	1.046	26.594
600	15.250	15.157	36.067	168.6	1.201	26.760
700	13.174	13.075	35.740	156.9	1.340	26.951
800	10.990	10.889	35.435	144.8	1.462	27.135
900	9.043	8.941	35.212	146.2	1.566	27.294
1000	7.612	7.508	35.101	157.2	1.655	27.426
1100	6.520	6.414	35.079	183.7	1.730	27.561
1200	5.823	5.712	35.088	210.7	1.795	27.659
1300	5.141	5.028	35.064	232.5	1.851	27.723
1400	4.736	4.617	35.036	243.0	1.903	27.748
1500	4.466	4.340	35.018	250.1	1.953	27.764
1750	3.981	3.838	34.983	259.7	2.074	27.789
2000	3.702	3.539	34.973	260.2	2.192	27.812
2500	3.268	3.064	34.957	261.3	2.422	27.845
3000	2.748	2.503	34.926	265.8	2.643	27.871
3500	2.430	2.139	34.908	266.9	2.855	27.886
4000	2.295	1.952	34.895	265.1	3.068	27.892
4500	2.264	1.864	34.888	261.9	3.290	27.893

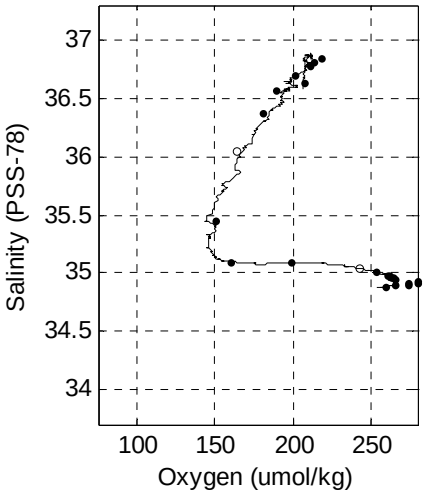
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4770	24	2.194	1.764	34.877	260.2
4395	1	2.271	1.883	34.890	265.7
3997	2	2.300	1.958	34.896	274.0
3696	3	2.361	2.050	34.903	280.0
3399	4	2.476	2.195	34.911	274.3
3101	5	2.673	2.419	34.922	280.1
2802	6	2.910	2.682	34.937	265.6
2501	7	3.226	3.022	34.951	263.9
2203	8	3.488	3.309	34.953	265.0
2003	9	3.684	3.521	34.966	262.8
1804	10	3.875	3.729	34.973	261.2
1604	11	4.226	4.093	34.998	254.5
1410	12	4.678	4.559	35.036	243.5
1208	13	5.685	5.575	35.088	199.6
1006	14	7.415	7.312	35.092	160.2
806	15	10.946	10.844	35.444	150.3
605	16	15.034	14.940	36.042	163.7
483	17	17.095	17.013	36.371	181.0
355	18	18.382	18.319	36.557	190.0
223	19	19.783	19.741	36.690	201.7
154	20	21.102	21.072	36.776	211.5
90	21	22.543	22.525	36.831	219.1
45	22	23.378	23.369	36.813	213.7
3	23	24.487	24.486	36.620	207.8

Abaco 2001 R.V. Oceanus
CTD Station 15 (CTD015)
Latitude 26.551 N Longitude 75.728 W
29-Apr-2001 21:11 Z







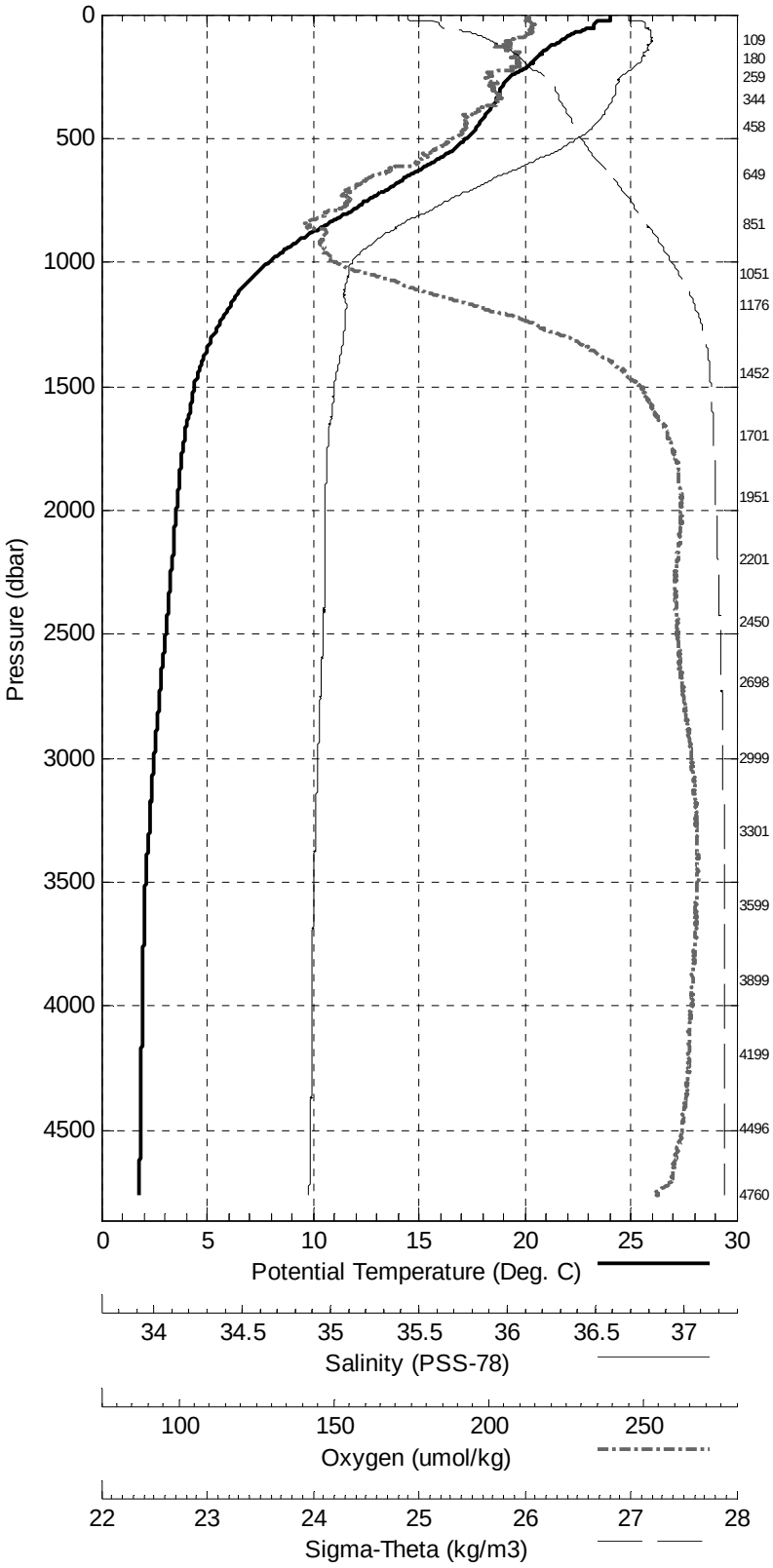


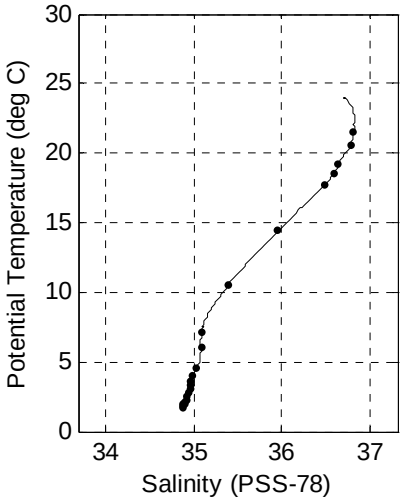
ABACO-01 R.V. Oceanus
CTD Station 16 (CTD016)
Latitude 26.531N Longitude 75.515W
29-Apr-2001 02:37Z

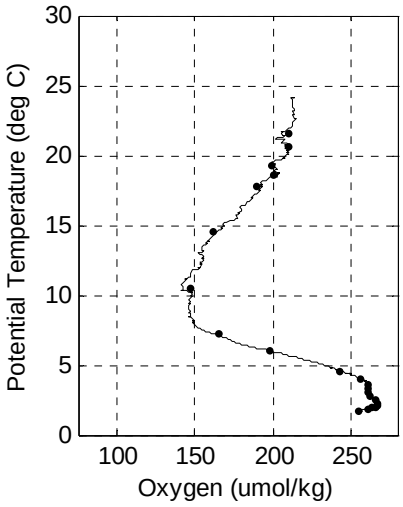
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.068	24.068	36.686	212.8	0.003	24.898
10	24.067	24.065	36.688	213.1	0.030	24.900
20	24.075	24.070	36.687	212.1	0.061	24.898
30	23.383	23.377	36.781	214.8	0.090	25.175
50	23.241	23.230	36.780	213.8	0.146	25.217
75	22.352	22.337	36.822	213.7	0.212	25.507
100	21.819	21.799	36.817	208.1	0.272	25.656
125	21.296	21.271	36.804	202.9	0.330	25.793
150	20.864	20.835	36.782	208.8	0.385	25.897
200	20.246	20.209	36.730	209.9	0.490	26.026
250	19.322	19.276	36.643	199.6	0.590	26.206
300	18.937	18.883	36.619	201.5	0.683	26.289
400	18.279	18.208	36.551	194.5	0.864	26.409
500	17.320	17.235	36.398	188.1	1.036	26.531
600	15.699	15.604	36.129	177.3	1.197	26.707
700	13.716	13.614	35.823	155.8	1.340	26.905
800	11.755	11.649	35.536	147.3	1.466	27.072
900	9.680	9.574	35.283	146.1	1.577	27.246
1000	8.010	7.903	35.126	150.3	1.671	27.387
1100	6.768	6.660	35.079	174.8	1.751	27.528
1200	6.018	5.906	35.087	201.8	1.818	27.633
1300	5.358	5.242	35.073	225.0	1.877	27.704
1400	4.882	4.761	35.047	239.7	1.931	27.740
1500	4.512	4.386	35.019	248.9	1.982	27.760
1750	3.993	3.849	34.982	259.4	2.104	27.787
2000	3.712	3.549	34.969	262.2	2.222	27.808
2500	3.247	3.042	34.958	260.9	2.452	27.848
3000	2.750	2.505	34.928	265.4	2.672	27.872
3500	2.381	2.091	34.905	267.5	2.883	27.888
4000	2.278	1.936	34.894	265.7	3.094	27.892
4500	2.252	1.853	34.887	262.3	3.315	27.893

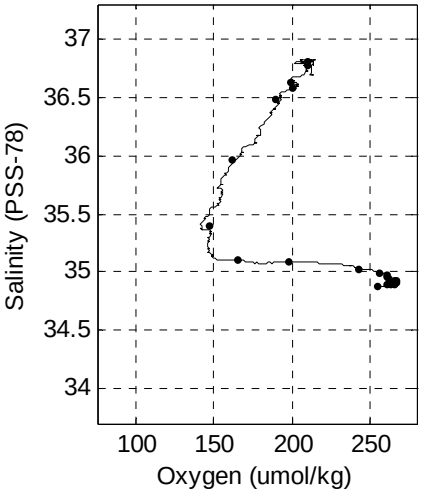
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4760	24	2.173	1.744	34.874	255.2
4497	1	2.255	1.855	34.887	261.7
4200	2	2.274	1.909	34.891	264.2
3899	3	2.295	1.964	34.896	266.0
3600	4	2.360	2.061	34.902	267.4
3301	5	2.531	2.259	34.916	267.5
3000	6	2.734	2.489	34.927	265.9
2699	7	3.046	2.825	34.947	263.0
2451	8	3.297	3.096	34.961	261.2
2202	9	3.529	3.349	34.968	261.3
1951	10	3.765	3.606	34.972	261.6
1701	11	4.114	3.974	34.995	256.3
1453	12	4.676	4.553	35.029	243.4
1176	13	6.132	6.022	35.085	197.7
1052	14	7.297	7.190	35.097	165.4
851	15	10.627	10.521	35.391	147.6
649	16	14.600	14.501	35.958	161.5
458	17	17.806	17.726	36.482	190.1
344	18	18.649	18.588	36.586	201.1
260	19	19.210	19.163	36.628	199.8
180	20	20.614	20.579	36.769	210.4
110	21	21.592	21.570	36.806	210.7

Abaco 2001 R.V. Oceanus
CTD Station 16 (CTD016)
Latitude 26.531 N Longitude 75.515 W
29-Apr-2001 02:37 Z







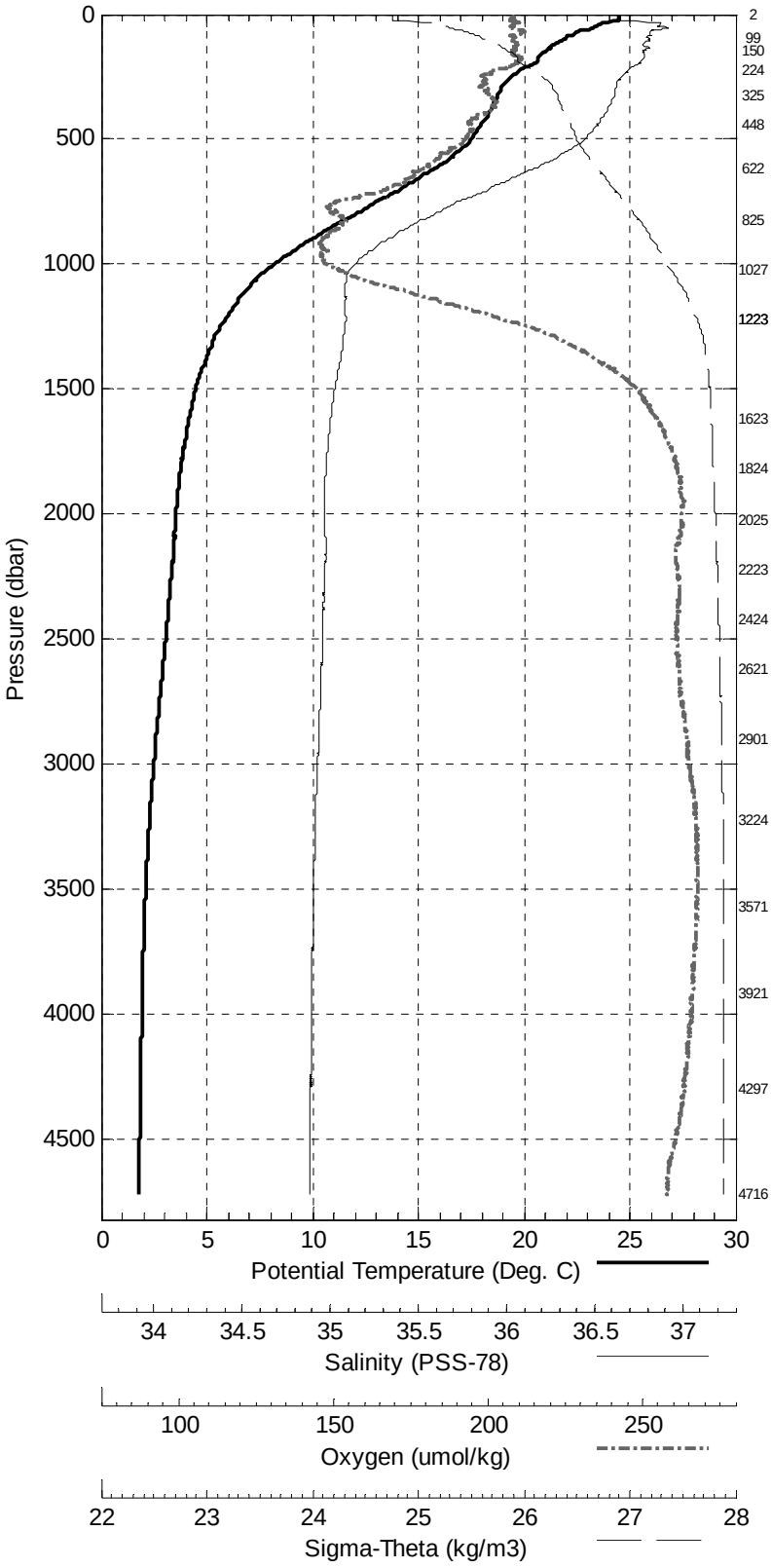


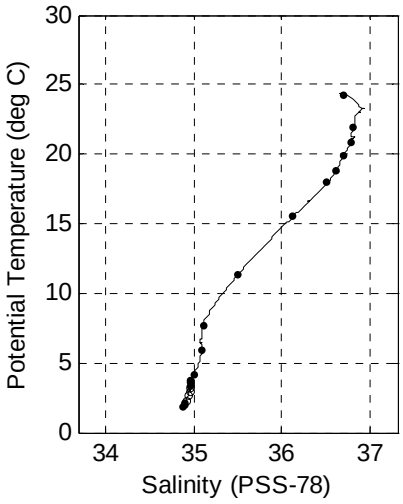
ABACO-01 R.V. Oceanus CTD
Station 17 (CTD017)
Latitude 26.515N Longitude 75.304W
30-Apr-2001 07:24Z

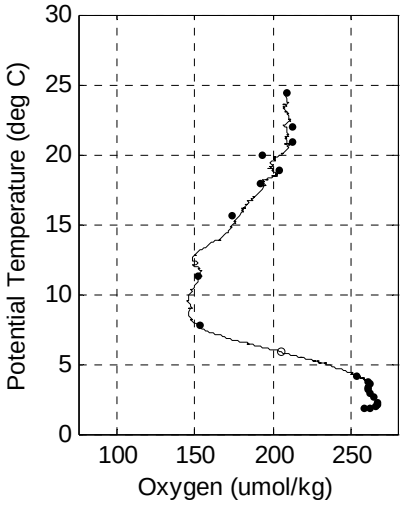
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.438	24.437	36.650	207.9	0.003	24.760
10	24.445	24.443	36.651	207.6	0.032	24.759
20	24.456	24.452	36.649	208.2	0.064	24.755
30	23.941	23.935	36.804	209.4	0.095	25.027
50	23.361	23.350	36.919	207.7	0.151	25.287
75	22.403	22.388	36.829	209.9	0.216	25.498
100	21.842	21.822	36.809	208.0	0.277	25.643
125	21.309	21.284	36.777	208.7	0.335	25.769
150	20.967	20.938	36.779	208.2	0.391	25.866
200	20.410	20.372	36.740	208.4	0.497	25.991
250	19.441	19.395	36.650	198.5	0.597	26.181
300	18.942	18.888	36.620	199.6	0.691	26.289
400	18.373	18.302	36.557	198.2	0.872	26.389
500	17.576	17.490	36.442	192.4	1.046	26.503
600	16.190	16.093	36.210	180.4	1.210	26.657
700	14.230	14.125	35.898	166.6	1.359	26.855
800	12.089	11.981	35.585	151.5	1.491	27.047
900	10.033	9.925	35.319	146.3	1.604	27.214
1000	8.298	8.189	35.139	147.8	1.702	27.354
1100	6.955	6.845	35.085	171.6	1.785	27.507
1200	6.147	6.034	35.087	200.2	1.854	27.617
1300	5.436	5.320	35.075	223.6	1.914	27.697
1400	4.975	4.854	35.053	237.8	1.969	27.734
1500	4.575	4.448	35.025	248.6	2.020	27.758
1750	4.008	3.864	34.981	259.5	2.143	27.785
2000	3.701	3.538	34.970	262.4	2.262	27.809
2500	3.256	3.051	34.959	261.0	2.492	27.848
3000	2.743	2.498	34.929	265.0	2.712	27.873
3500	2.395	2.105	34.905	267.7	2.922	27.887
4000	2.278	1.936	34.895	265.6	3.133	27.892
4500	2.222	1.824	34.884	260.6	3.353	27.893

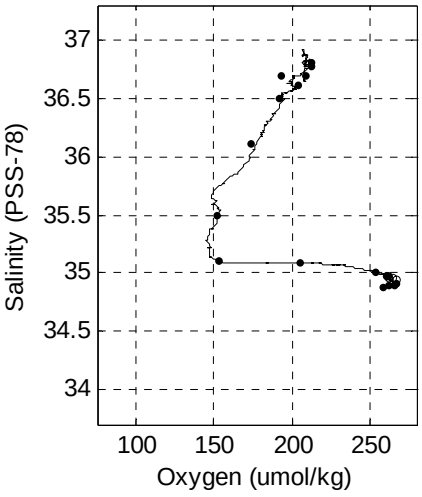
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4716	24	2.221	1.796	34.880	258.3
4298	1	2.245	1.869	34.889	262.9
3921	2	2.291	1.957	34.896	266.0
3571	3	2.373	2.076	34.904	267.9
3225	4	2.535	2.271	34.934	267.9
2902	5	2.830	2.593	34.952	264.8
2622	6	3.137	2.922	34.962	262.1
2425	7	3.351	3.152	34.969	261.0
2223	8	3.541	3.358	34.970	261.1
2025	9	3.714	3.548	34.971	262.0
1824	10	3.901	3.752	34.976	260.6
1623	11	4.244	4.109	35.000	254.2
1224	13	5.974	5.860	35.086	205.1
1224	13	5.974	5.860	35.086	205.1
1028	14	7.824	7.716	35.106	153.6
825	15	11.461	11.353	35.498	152.5
623	16	15.636	15.537	36.116	173.3
449	17	18.000	17.922	36.503	191.5
326	18	18.873	18.814	36.611	203.9
225	19	19.976	19.934	36.692	193.2
151	20	20.912	20.883	36.777	212.9
100	21	21.934	21.914	36.799	213.1
3	22	24.276	24.276	36.688	208.5

Abaco 2001 R.V. Oceanus
CTD Station 17 (CTD017)
Latitude 26.515 N Longitude 75.304 W
30-Apr-2001 07:24 Z







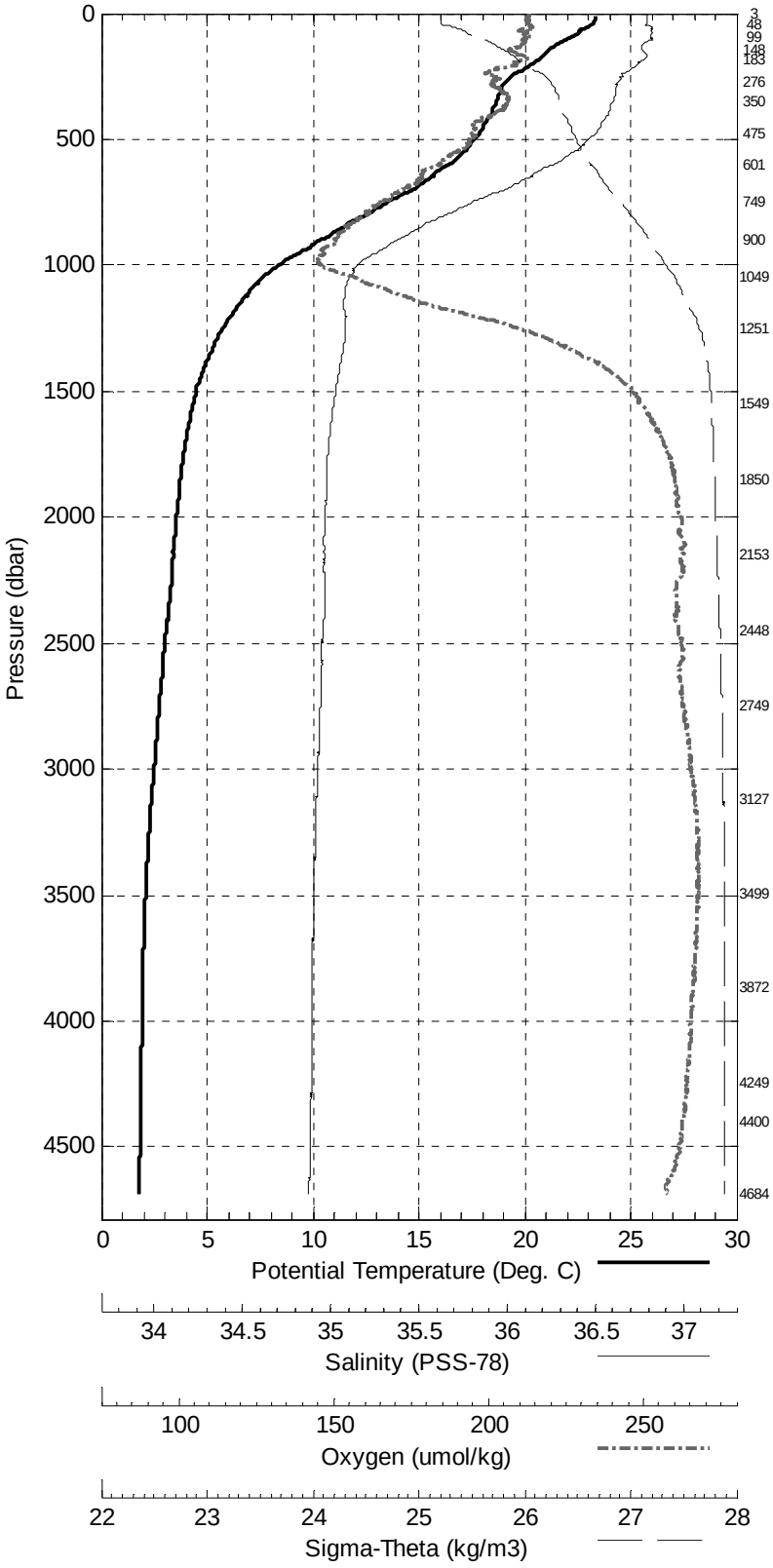


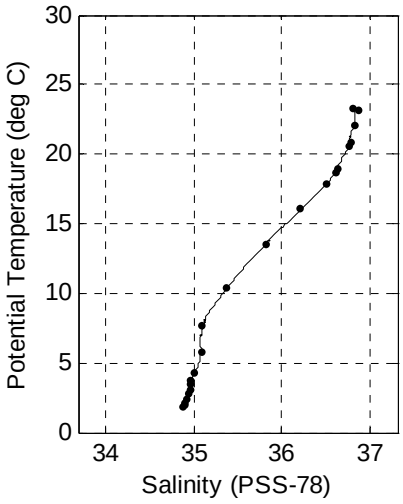
ABACO-01 R.V. Oceanus
CTD Station 18 (CTD018)
Latitude 26.529N Longitude 75.091W
30-Apr-2001 12:28Z

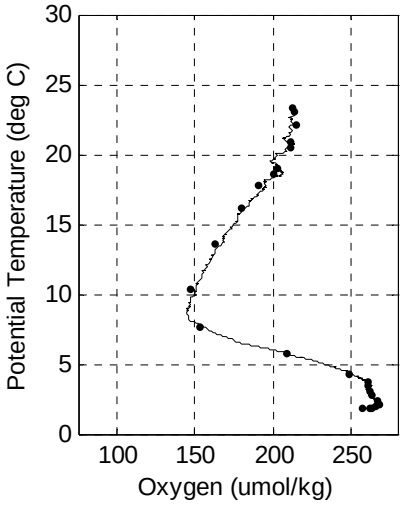
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.301	23.300	36.789	213.5	0.003	25.203
10	23.309	23.307	36.790	212.6	0.028	25.202
20	23.311	23.307	36.791	211.9	0.055	25.203
30	23.308	23.302	36.790	212.7	0.083	25.204
50	23.108	23.097	36.827	213.2	0.138	25.292
75	22.535	22.520	36.824	212.3	0.203	25.457
100	22.065	22.045	36.823	211.2	0.265	25.591
125	21.451	21.426	36.767	210.1	0.324	25.722
150	21.105	21.075	36.776	207.6	0.381	25.826
200	20.396	20.358	36.745	208.9	0.489	25.997
250	19.377	19.332	36.651	202.6	0.588	26.198
300	18.957	18.902	36.618	203.9	0.682	26.284
400	18.530	18.459	36.575	202.4	0.864	26.364
500	17.624	17.538	36.450	193.9	1.040	26.497
600	16.486	16.387	36.258	184.8	1.207	26.626
700	14.796	14.689	35.984	172.9	1.361	26.800
800	12.565	12.454	35.650	159.8	1.497	27.006
900	10.414	10.302	35.370	150.8	1.615	27.189
1000	8.447	8.337	35.145	146.0	1.716	27.337
1100	7.138	7.027	35.085	168.0	1.800	27.482
1200	6.259	6.145	35.088	195.0	1.873	27.603
1300	5.536	5.419	35.078	220.9	1.934	27.687
1400	5.006	4.884	35.052	236.9	1.989	27.730
1500	4.601	4.474	35.027	246.9	2.041	27.757
1750	4.020	3.876	34.983	258.1	2.164	27.786
2000	3.702	3.539	34.964	262.3	2.284	27.805
2500	3.197	2.993	34.952	262.1	2.515	27.847
3000	2.746	2.500	34.929	265.3	2.733	27.873
3500	2.380	2.090	34.905	267.3	2.943	27.888
4000	2.271	1.929	34.894	265.6	3.154	27.892
4500	2.238	1.839	34.886	261.8	3.374	27.893

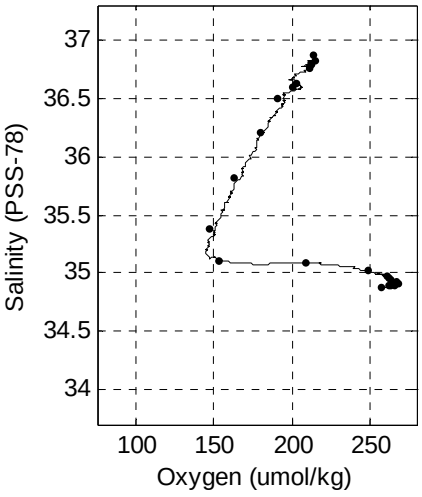
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4685	24	2.204	1.783	34.877	257.6
4400	1	2.246	1.858	34.888	261.9
4249	2	2.253	1.883	34.890	264.1
3873	3	2.275	1.948	34.895	265.8
3499	4	2.372	2.083	34.905	268.2
3127	5	2.608	2.353	34.919	267.6
2749	6	2.961	2.736	34.942	264.1
2448	7	3.297	3.097	34.960	262.2
2153	8	3.598	3.421	34.971	261.6
1850	9	3.878	3.727	34.976	261.1
1549	10	4.459	4.329	35.018	249.1
1252	11	5.867	5.752	35.087	208.5
1050	12	7.731	7.621	35.097	153.7
900	13	10.438	10.327	35.371	147.5
750	14	13.661	13.552	35.809	162.7
601	15	16.220	16.122	36.212	179.5
475	16	17.888	17.805	36.493	190.4
351	17	18.702	18.639	36.597	200.2
276	18	19.026	18.976	36.620	203.2
184	19	20.548	20.513	36.765	211.6
148	20	20.911	20.882	36.780	211.8
100	21	22.058	22.038	36.818	215.6
48	22	23.130	23.120	36.864	214.0
4	23	23.326	23.325	36.789	212.4

Abaco 2001 R.V. Oceanus
CTD Station 18 (CTD018)
Latitude 26.529 N Longitude 75.091 W
30-Apr-2001 12:28 Z







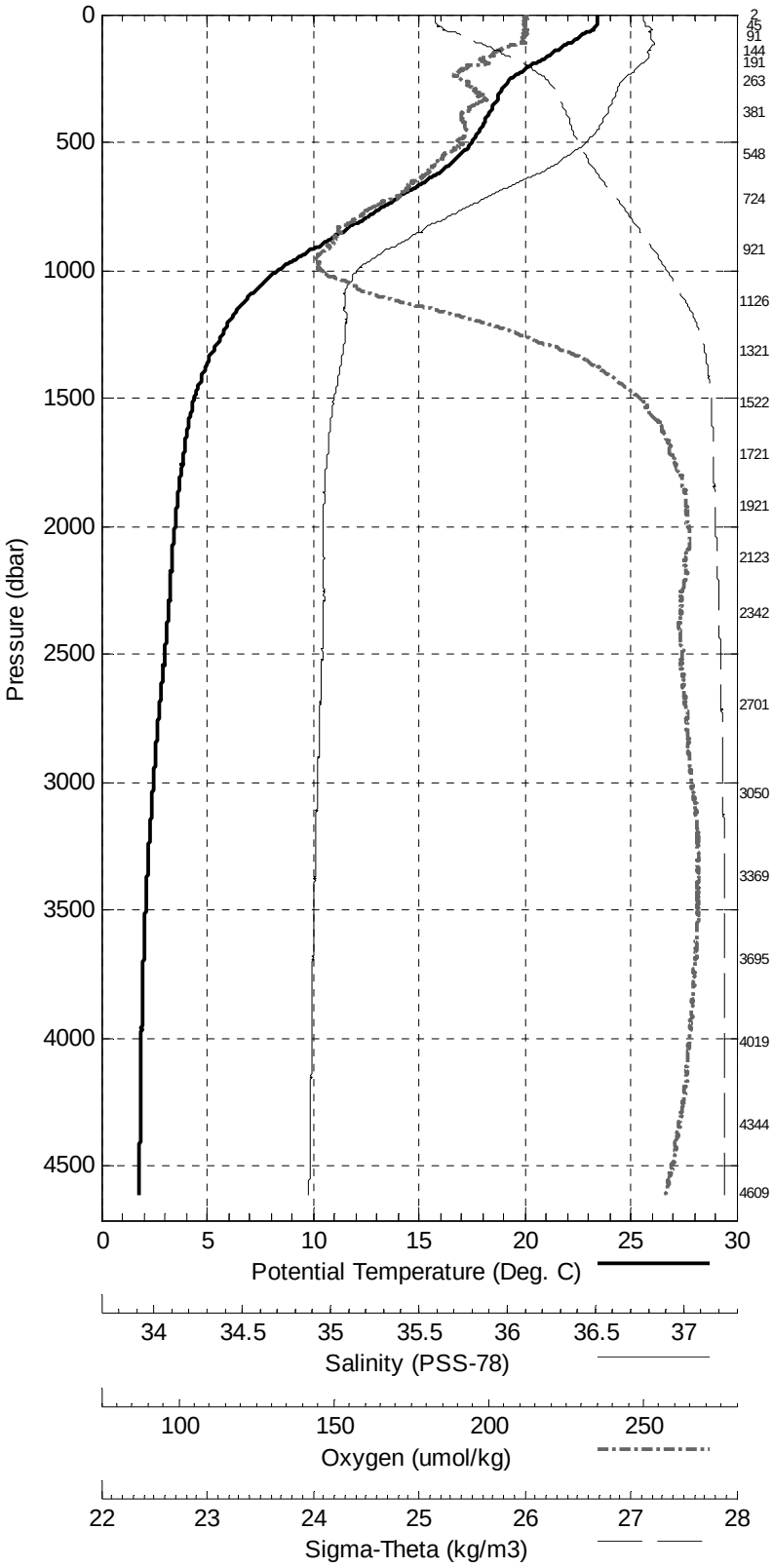


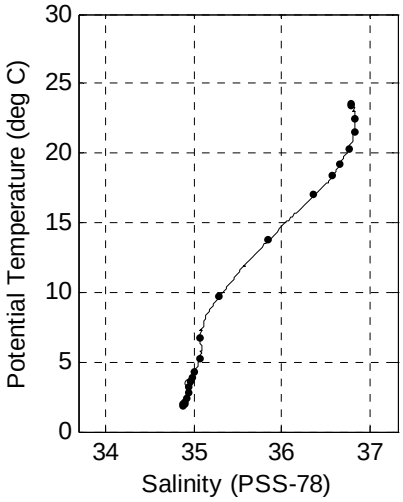
ABACO-01 R.V. Oceanus
CTD Station 19 (CTD019)
Latitude 26.502N Longitude 74.797W
30-Apr-2001 17:28Z

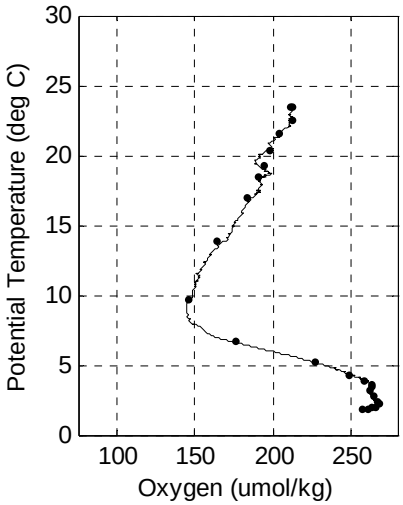
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.413	23.413	36.775	211.8	0.003	25.160
10	23.416	23.414	36.777	211.6	0.028	25.161
20	23.418	23.414	36.777	212.4	0.056	25.161
30	23.412	23.406	36.779	211.8	0.084	25.165
50	23.323	23.313	36.814	211.7	0.140	25.219
75	22.769	22.753	36.803	212.3	0.208	25.373
100	22.368	22.348	36.823	211.5	0.272	25.505
125	21.789	21.764	36.817	206.8	0.333	25.666
150	21.310	21.281	36.801	202.1	0.391	25.788
200	20.263	20.226	36.746	193.1	0.499	26.034
250	19.375	19.330	36.658	191.2	0.598	26.204
300	18.911	18.857	36.619	195.7	0.691	26.296
400	18.267	18.197	36.551	191.7	0.871	26.412
500	17.581	17.495	36.444	190.6	1.045	26.503
600	16.312	16.214	36.234	181.4	1.210	26.648
700	14.385	14.279	35.922	171.8	1.361	26.841
800	12.519	12.409	35.644	156.2	1.495	27.010
900	10.510	10.398	35.378	148.3	1.613	27.178
1000	8.457	8.347	35.152	145.6	1.714	27.341
1100	7.094	6.983	35.080	164.6	1.799	27.484
1200	6.158	6.044	35.089	197.6	1.870	27.617
1300	5.473	5.356	35.075	221.5	1.930	27.693
1400	4.954	4.833	35.048	237.7	1.985	27.733
1500	4.493	4.367	35.017	249.3	2.036	27.760
1750	3.989	3.846	34.979	260.2	2.158	27.786
2000	3.643	3.481	34.957	264.8	2.277	27.805
2500	3.206	3.002	34.953	262.6	2.505	27.847
3000	2.719	2.474	34.927	265.6	2.723	27.874
3500	2.384	2.094	34.906	267.5	2.933	27.889
4000	2.246	1.905	34.892	264.8	3.142	27.893
4500	2.205	1.807	34.882	259.4	3.361	27.892

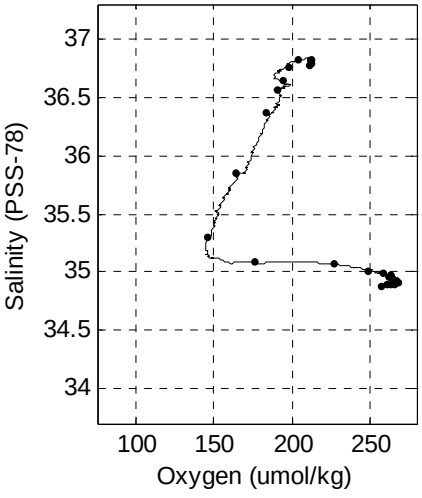
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4609	24	2.195	1.784	34.879	257.6
4345	1	2.218	1.838	34.885	260.9
4020	2	2.245	1.901	34.891	264.1
3695	3	2.303	1.994	34.899	266.6
3370	4	2.445	2.168	34.910	268.0
3050	5	2.669	2.421	34.923	266.7
2701	6	2.972	2.753	34.939	264.5
2343	7	3.338	3.148	34.956	262.7
2123	8	3.569	3.396	34.956	263.5
1922	9	3.747	3.591	34.966	263.0
1722	10	4.037	3.895	34.981	258.6
1522	11	4.442	4.315	35.012	249.6
1322	12	5.283	5.166	35.064	227.6
1126	13	6.778	6.667	35.081	176.3
921	14	9.803	9.693	35.293	145.4
724	15	13.914	13.807	35.845	163.9
549	16	17.108	17.016	36.361	183.4
381	17	18.440	18.373	36.568	191.2
263	18	19.258	19.210	36.646	194.8
191	19	20.392	20.356	36.750	198.3
145	20	21.583	21.554	36.824	204.5
92	21	22.508	22.489	36.815	213.1
46	22	23.430	23.420	36.782	212.1
3	23	23.500	23.500	36.777	211.7

Abaco 2001 R.V. Oceanus
CTD Station 19 (CTD019)
Latitude 26.502 N Longitude 74.797 W
30-Apr-2001 17:28 Z







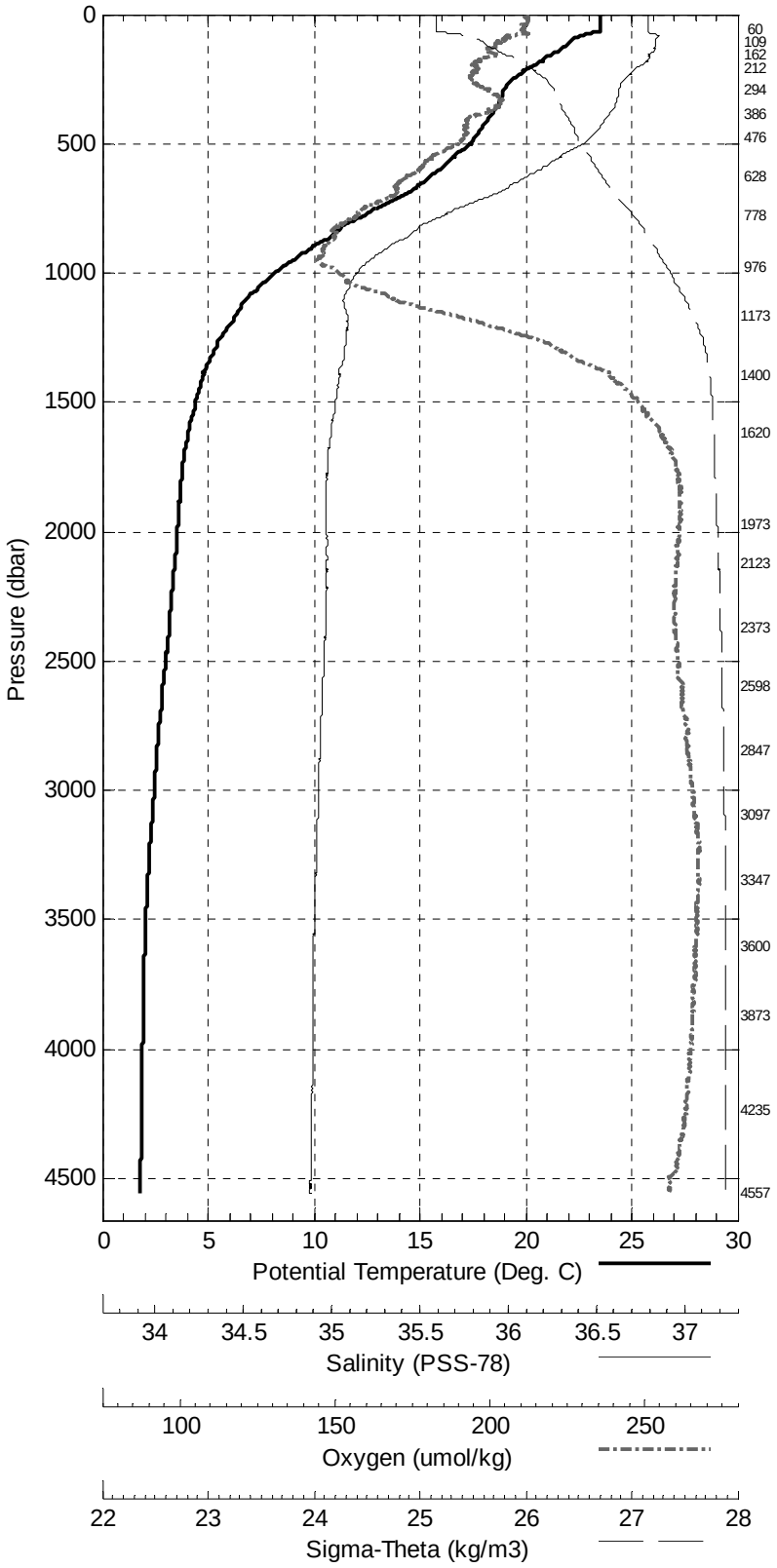


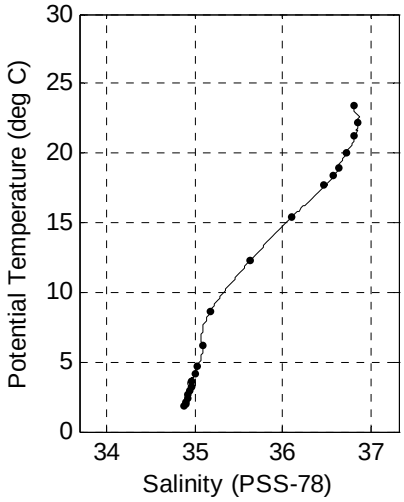
ABACO-01 R.V. Oceanus
CTD Station 20 (CTD020)
Latitude 26.512N Longitude 74.518W
30-Apr-2001 22:57Z

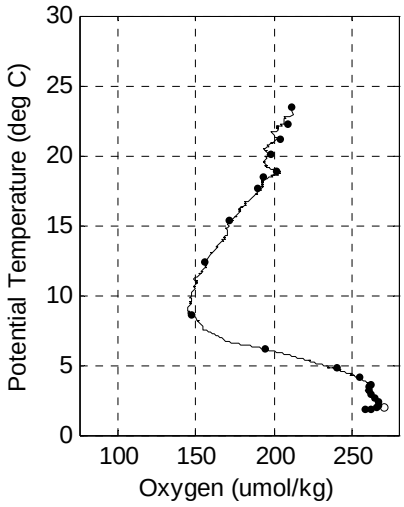
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.488	23.488	36.793	211.9	0.003	25.152
10	23.496	23.494	36.795	212.3	0.028	25.151
20	23.500	23.496	36.795	212.2	0.056	25.151
30	23.502	23.496	36.795	211.4	0.084	25.151
50	23.502	23.491	36.796	210.5	0.141	25.152
75	22.844	22.829	36.818	210.7	0.211	25.363
100	22.183	22.163	36.834	205.1	0.274	25.566
125	21.878	21.853	36.834	202.2	0.334	25.653
150	21.297	21.268	36.800	201.7	0.392	25.791
200	20.316	20.278	36.737	195.4	0.499	26.013
250	19.407	19.361	36.655	194.4	0.599	26.194
300	18.992	18.938	36.623	200.8	0.692	26.279
400	18.332	18.262	36.557	193.6	0.874	26.400
500	17.461	17.376	36.423	189.2	1.047	26.516
600	16.009	15.912	36.180	176.9	1.210	26.676
700	14.274	14.169	35.903	168.3	1.359	26.849
800	11.861	11.754	35.553	153.7	1.489	27.066
900	9.964	9.856	35.313	146.4	1.602	27.221
1000	8.176	8.068	35.140	151.9	1.699	27.374
1100	6.869	6.761	35.067	168.9	1.782	27.505
1200	6.100	5.987	35.088	199.3	1.851	27.624
1300	5.386	5.270	35.072	223.4	1.911	27.701
1400	4.891	4.770	35.046	238.9	1.965	27.738
1500	4.519	4.392	35.022	248.4	2.015	27.762
1750	3.934	3.792	34.975	260.3	2.137	27.788
2000	3.708	3.545	34.972	261.2	2.255	27.811
2500	3.185	2.982	34.955	260.8	2.483	27.851
3000	2.695	2.451	34.926	265.5	2.699	27.875
3500	2.334	2.046	34.901	266.8	2.907	27.889
4000	2.251	1.910	34.892	264.7	3.116	27.893
4500	2.186	1.788	34.879	258.2	3.335	27.892

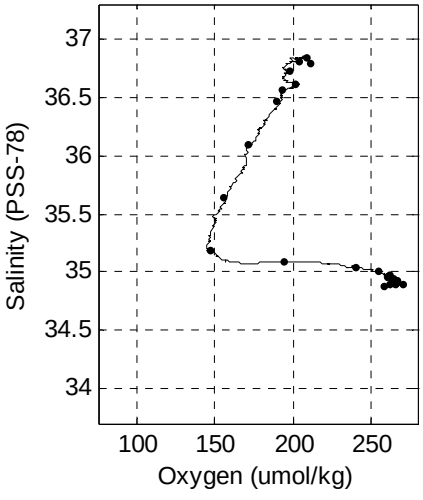
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4557	24	2.193	1.788	34.879	258.3
4236	1	2.234	1.866	34.888	262.7
3874	2	2.267	1.939	34.895	265.7
3600	3	2.311	2.012	34.899	271.0
3348	4	2.435	2.161	34.910	267.9
3098	5	2.623	2.371	34.921	267.1
2848	6	2.827	2.596	34.934	264.7
2599	7	3.088	2.877	34.949	262.5
2373	8	3.326	3.133	34.964	260.8
2123	9	3.584	3.410	34.959	261.4
1974	10	3.731	3.570	34.972	262.0
1621	11	4.210	4.076	35.000	255.1
1400	12	4.843	4.722	35.041	240.0
1174	13	6.301	6.189	35.089	194.9
976	14	8.705	8.596	35.178	146.6
778	15	12.420	12.313	35.638	156.1
629	16	15.466	15.367	36.091	171.9
477	17	17.742	17.659	36.469	189.1
386	18	18.458	18.390	36.567	193.7
295	19	18.945	18.892	36.619	202.1
213	20	20.120	20.080	36.721	197.7
162	21	21.228	21.197	36.799	203.7
110	22	22.215	22.193	36.838	209.3
60	23	23.406	23.394	36.795	211.4

Abaco 2001 R.V. Oceanus
CTD Station 20 (CTD020)
Latitude 26.512 N Longitude 74.518 W
30-Apr-2001 22:57 Z







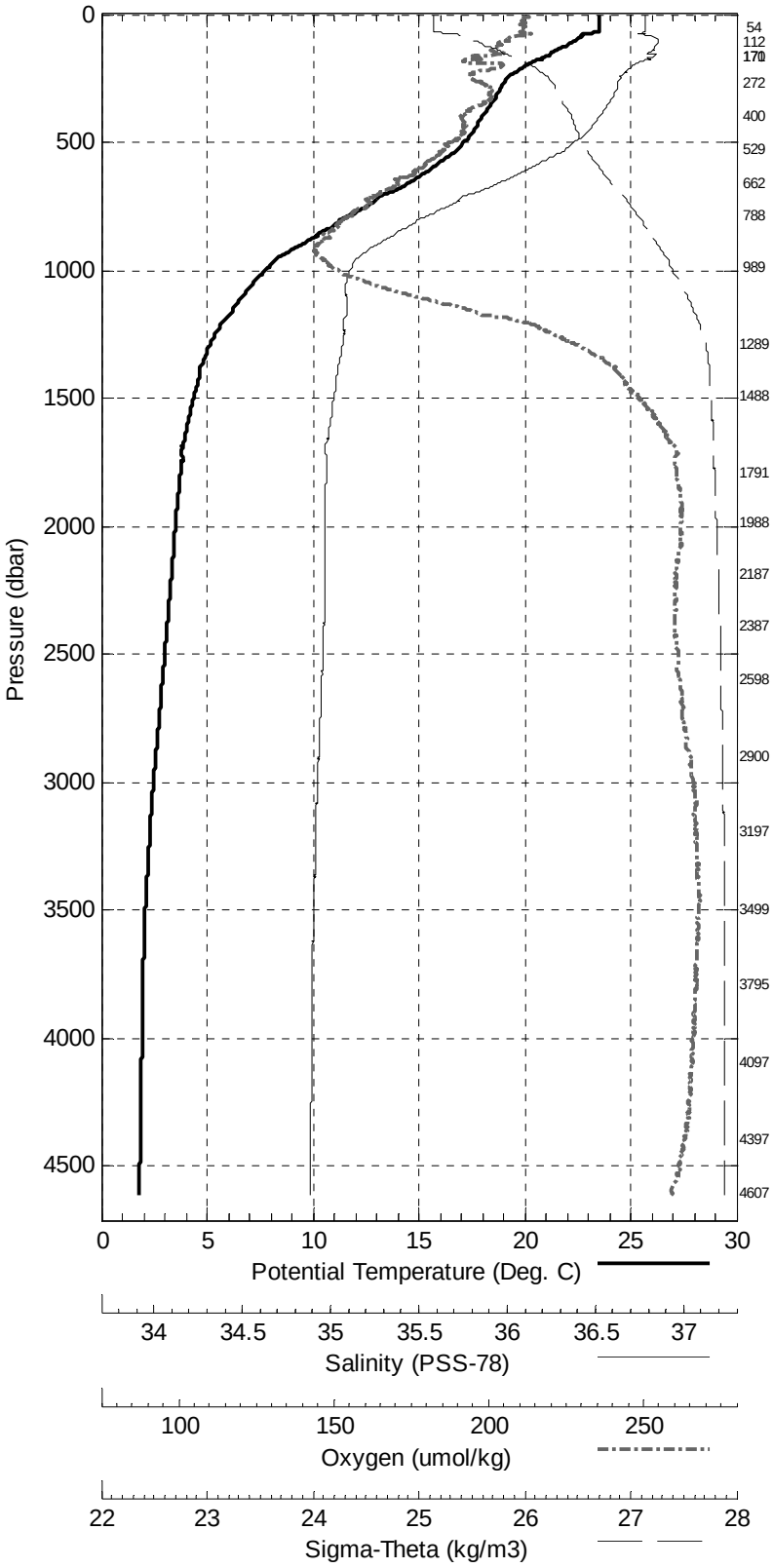


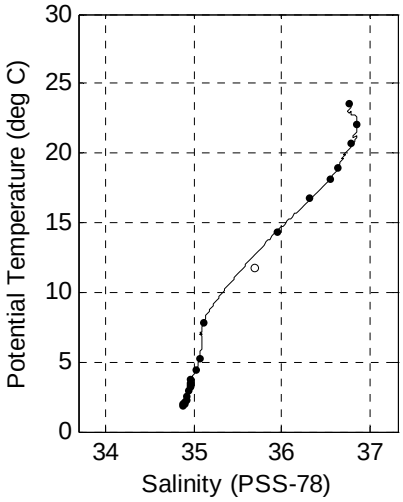
ABACO-01 R.V. Oceanus
CTD Station 21 (CTD021)
Latitude 26.519N Longitude 74.243W
01-May-2001 04:33Z

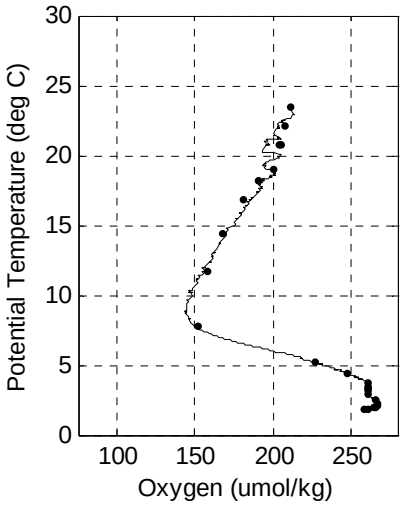
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.509	23.509	36.782	212.4	0.003	25.137
10	23.516	23.514	36.783	211.5	0.028	25.136
20	23.516	23.512	36.783	211.1	0.056	25.137
30	23.519	23.512	36.784	212.0	0.085	25.138
50	23.521	23.511	36.784	210.4	0.141	25.138
75	22.966	22.950	36.782	213.8	0.212	25.300
100	22.439	22.419	36.852	205.9	0.276	25.507
125	21.921	21.896	36.846	203.3	0.337	25.650
150	21.252	21.222	36.799	205.5	0.395	25.803
200	20.021	19.983	36.711	204.1	0.501	26.072
250	19.205	19.160	36.640	194.9	0.597	26.234
300	18.852	18.799	36.616	200.4	0.689	26.309
400	18.056	17.986	36.521	191.3	0.867	26.441
500	17.179	17.095	36.375	187.5	1.037	26.547
600	15.684	15.589	36.128	177.6	1.197	26.710
700	13.562	13.461	35.795	164.1	1.342	26.915
800	11.454	11.350	35.502	152.8	1.467	27.102
900	9.486	9.381	35.254	144.7	1.576	27.255
1000	7.827	7.722	35.108	151.8	1.668	27.400
1100	6.774	6.666	35.090	176.2	1.747	27.536
1200	5.829	5.719	35.073	210.9	1.814	27.646
1300	5.183	5.069	35.064	230.2	1.871	27.718
1400	4.769	4.650	35.038	241.8	1.923	27.746
1500	4.467	4.341	35.017	248.5	1.973	27.763
1750	3.935	3.792	34.978	260.2	2.094	27.790
2000	3.658	3.495	34.968	261.7	2.212	27.812
2500	3.198	2.994	34.955	261.3	2.438	27.850
3000	2.707	2.463	34.925	266.4	2.656	27.873
3500	2.361	2.072	34.903	267.8	2.866	27.888
4000	2.266	1.924	34.893	266.2	3.076	27.892
4500	2.223	1.824	34.884	261.6	3.296	27.892

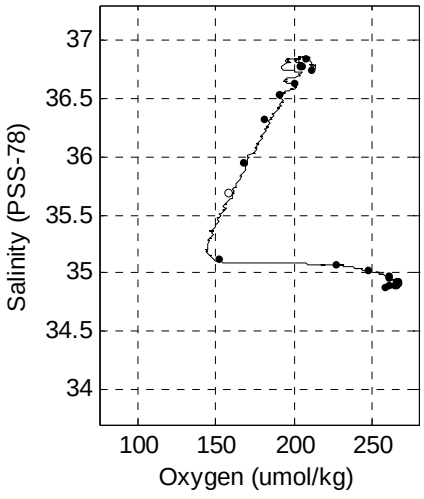
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4608	24	2.206	1.795	34.881	258.5
4397	1	2.238	1.851	34.887	261.6
4097	2	2.263	1.910	34.892	264.6
3795	3	2.289	1.970	34.897	265.9
3499	4	2.362	2.073	34.904	267.9
3198	5	2.555	2.293	34.918	267.4
2901	6	2.799	2.563	34.932	265.9
2598	7	3.109	2.897	34.952	261.7
2388	8	3.327	3.133	34.964	260.7
2187	9	3.497	3.319	34.968	261.7
1989	10	3.688	3.526	34.972	261.7
1791	11	3.881	3.735	34.975	261.0
1488	12	4.514	4.389	35.024	247.9
1289	13	5.275	5.161	35.069	227.6
990	14	7.933	7.828	35.113	151.8
788	15	11.784	11.679	35.683	158.5
662	16	14.484	14.384	35.945	168.3
529	17	16.824	16.736	36.316	180.7
401	18	18.179	18.109	36.534	190.5
273	19	19.014	18.965	36.623	200.1
170	20	20.748	20.715	36.781	205.2
171	21	20.713	20.681	36.778	204.8
113	22	22.080	22.058	36.842	207.9
55	23	23.512	23.500	36.748	211.2

Abaco 2001 R.V. Oceanus
CTD Station 21 (CTD021)
Latitude 26.519 N Longitude 74.243 W
01-May-2001 04:33 Z







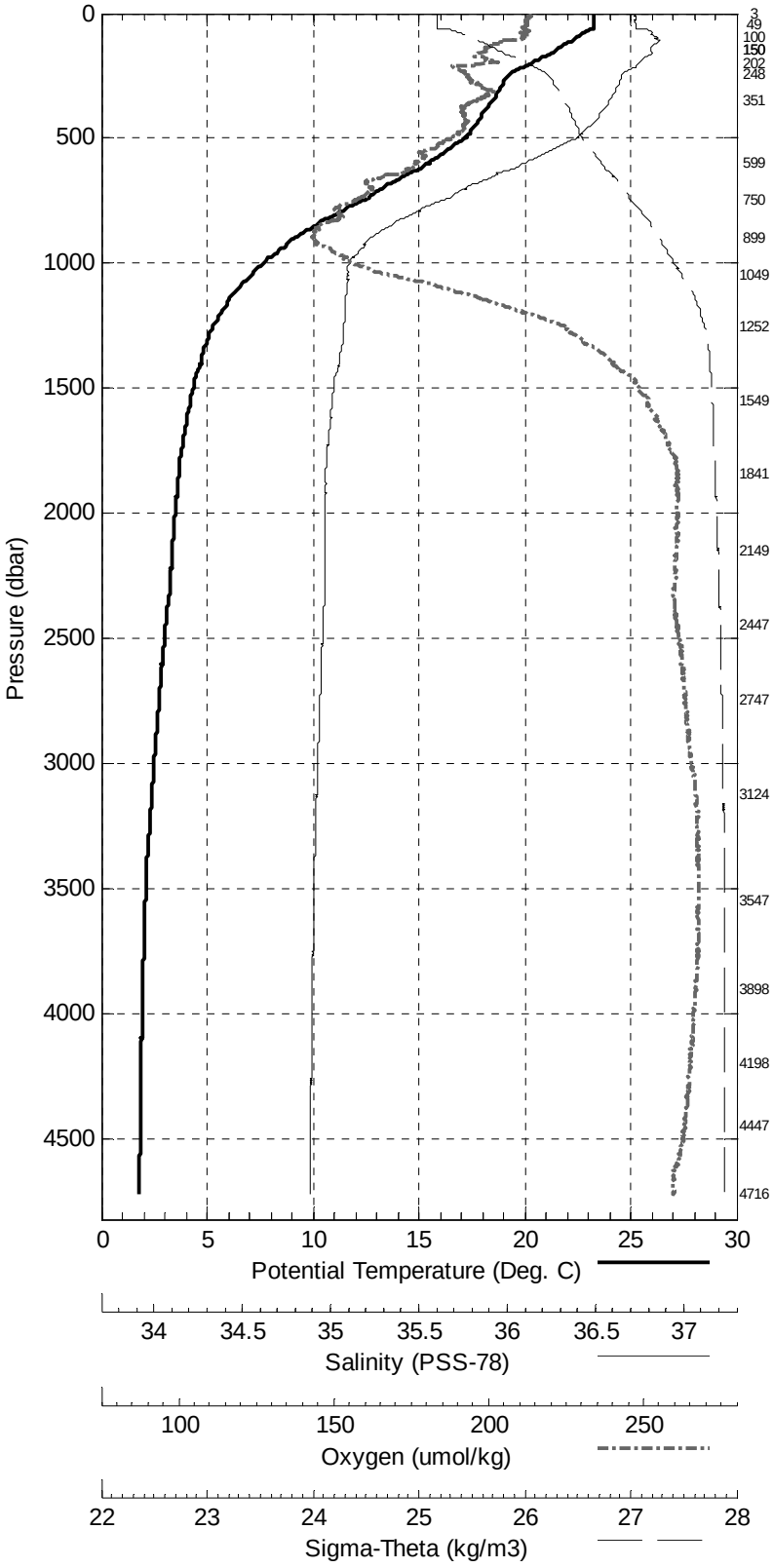


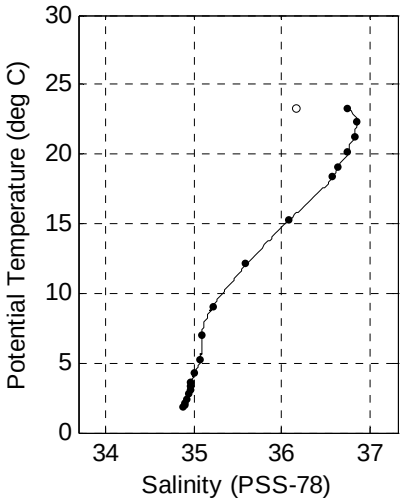
ABACO-01 R.V. Oceanus
CTD Station 22 (CTD022)
Latitude 26.518N Longitude 73.963W
01-May-2001 09:58Z

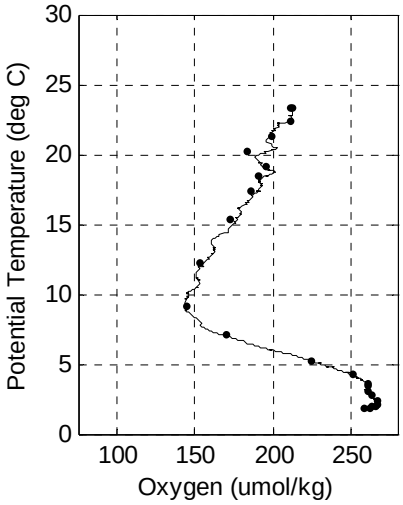
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.243	23.242	36.726	213.2	0.003	25.172
10	23.254	23.251	36.727	213.7	0.028	25.170
20	23.262	23.258	36.726	212.9	0.056	25.168
30	23.264	23.258	36.726	212.2	0.084	25.168
50	23.264	23.253	36.727	212.3	0.140	25.170
75	22.825	22.810	36.827	210.2	0.208	25.376
100	22.404	22.383	36.848	210.8	0.272	25.514
125	21.836	21.811	36.829	201.7	0.333	25.662
150	21.446	21.416	36.816	200.0	0.391	25.762
200	20.284	20.246	36.742	196.3	0.500	26.025
250	19.226	19.180	36.648	193.5	0.597	26.235
300	18.876	18.822	36.618	197.7	0.690	26.305
400	18.074	18.004	36.528	191.9	0.868	26.442
500	17.201	17.116	36.383	187.4	1.038	26.548
600	15.482	15.387	36.095	177.0	1.196	26.730
700	13.366	13.266	35.764	162.4	1.337	26.931
800	11.211	11.108	35.467	151.8	1.460	27.120
900	9.142	9.039	35.217	144.1	1.566	27.282
1000	7.717	7.612	35.108	156.6	1.656	27.416
1100	6.545	6.438	35.091	186.0	1.732	27.567
1200	5.753	5.643	35.085	212.7	1.796	27.665
1300	5.159	5.045	35.068	229.9	1.851	27.724
1400	4.817	4.697	35.048	240.3	1.903	27.749
1500	4.471	4.345	35.021	248.7	1.953	27.766
1750	3.928	3.786	34.977	259.1	2.073	27.791
2000	3.653	3.490	34.970	261.0	2.190	27.814
2500	3.177	2.973	34.953	261.7	2.416	27.850
3000	2.741	2.496	34.928	265.6	2.635	27.873
3500	2.399	2.109	34.906	267.7	2.846	27.888
4000	2.276	1.934	34.895	266.4	3.058	27.892
4500	2.238	1.839	34.886	262.7	3.278	27.893

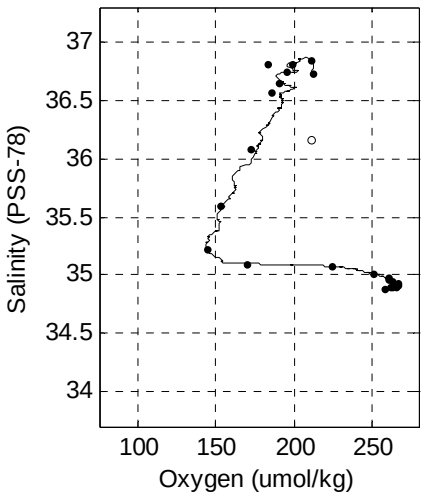
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4717	24	2.229	1.804	34.882	258.9
4448	1	2.243	1.850	34.886	261.8
4198	2	2.260	1.896	34.890	264.0
3898	3	2.291	1.961	34.896	266.1
3548	4	2.389	2.095	34.905	267.6
3125	5	2.637	2.381	34.921	267.3
2747	6	2.946	2.723	34.940	264.1
2448	7	3.256	3.056	34.957	261.7
2149	8	3.554	3.378	34.969	261.7
1842	9	3.786	3.637	34.972	261.6
1550	10	4.345	4.216	35.012	251.4
1252	11	5.338	5.227	35.073	224.2
1050	12	7.105	7.000	35.093	170.6
900	13	9.172	9.069	35.220	144.8
750	14	12.219	12.117	35.593	153.2
599	15	15.352	15.258	36.070	173.1
351	17	18.441	18.379	36.567	185.7
248	18	19.163	19.118	36.637	191.3
202	19	20.189	20.151	36.732	196.0
151	20	21.272	21.243	36.812	183.2
151	20	21.272	21.243	36.812	198.8
101	21	22.340	22.319	36.836	211.5
50	22	23.250	23.240	36.726	212.1
4	23	23.233	23.232	36.150	211.8

Abaco 2001 R.V. Oceanus
CTD Station 22 (CTD022)
Latitude 26.518 N Longitude 73.963 W
01-May-2001 09:58 Z







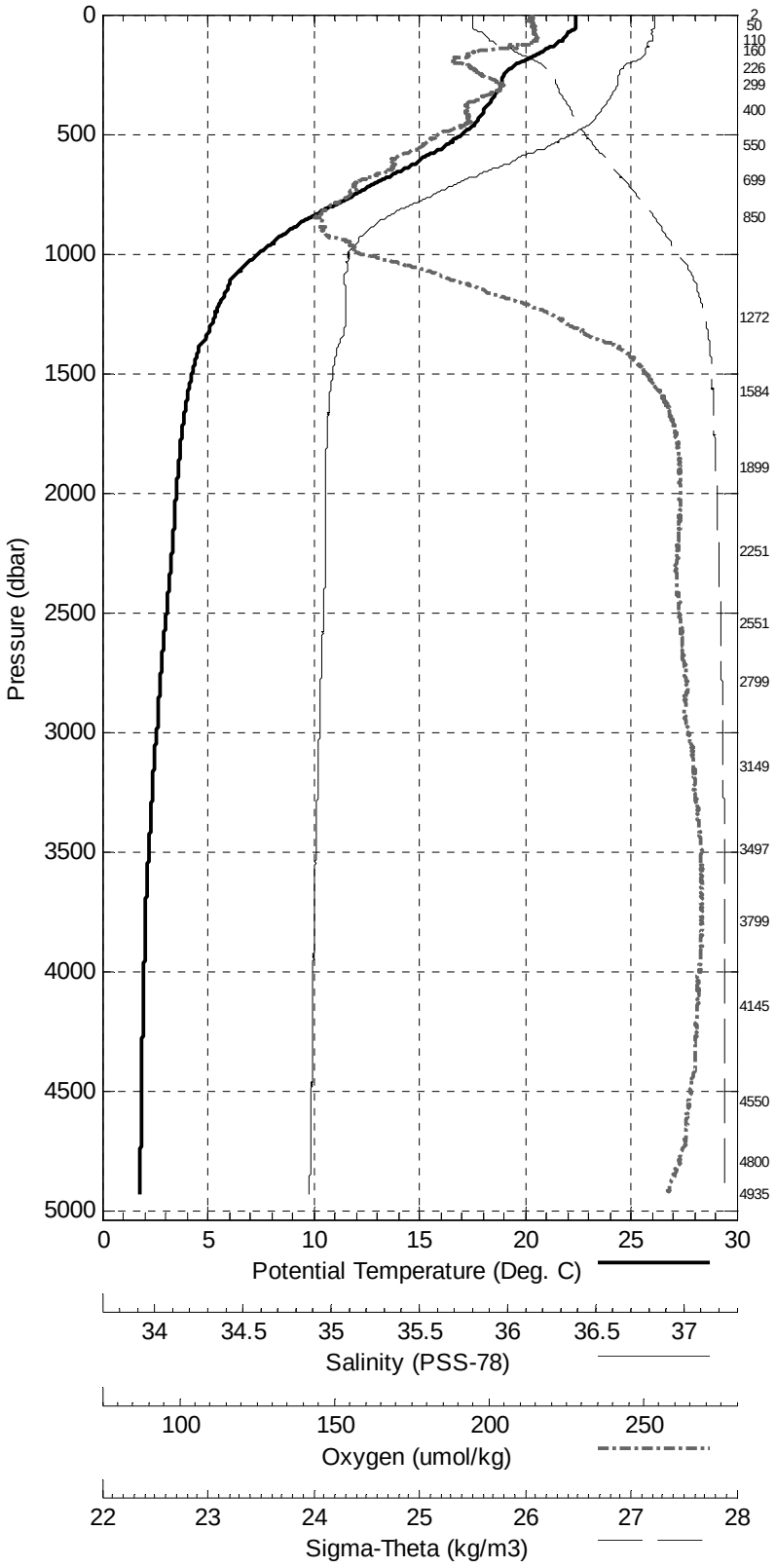


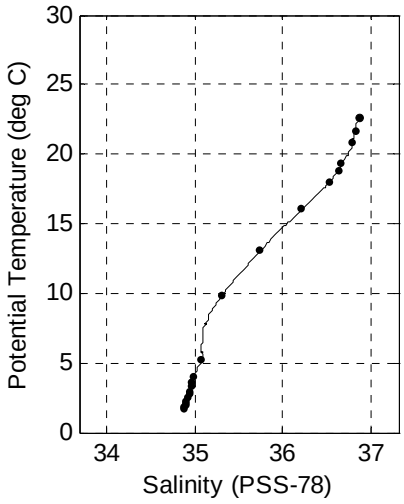
ABACO-01 R.V. Oceanus
CTD Station 23 (CTD023)
Latitude 26.519N Longitude 73.588W
01-May-2001 15:43Z

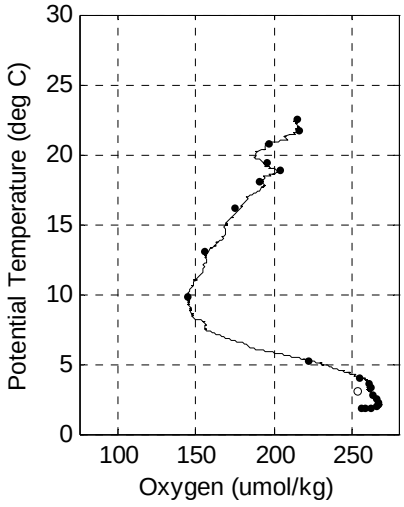
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	22.381	22.381	36.837	213.9	0.002	25.506
10	22.387	22.385	36.839	213.8	0.025	25.506
20	22.389	22.385	36.839	214.1	0.049	25.506
30	22.392	22.386	36.839	213.2	0.074	25.506
50	22.387	22.377	36.838	215.0	0.124	25.508
75	22.039	22.024	36.813	214.6	0.185	25.589
100	21.857	21.837	36.823	215.9	0.245	25.650
125	21.482	21.457	36.807	210.6	0.304	25.744
150	20.882	20.854	36.793	197.2	0.359	25.900
200	19.764	19.727	36.700	188.2	0.462	26.132
250	19.091	19.046	36.634	196.9	0.557	26.259
300	18.873	18.819	36.620	203.8	0.648	26.307
400	18.109	18.039	36.531	192.6	0.827	26.435
500	17.109	17.024	36.371	183.6	0.997	26.561
600	15.209	15.115	36.057	169.2	1.154	26.761
700	13.101	13.002	35.728	157.2	1.293	26.957
800	11.015	10.913	35.442	148.6	1.414	27.136
900	8.965	8.863	35.205	146.5	1.517	27.301
1000	7.445	7.342	35.097	158.5	1.605	27.447
1100	6.240	6.137	35.071	186.4	1.678	27.592
1200	5.722	5.612	35.086	209.1	1.740	27.669
1300	5.274	5.159	35.078	225.8	1.795	27.718
1400	4.682	4.563	35.032	242.7	1.848	27.751
1500	4.377	4.252	35.009	250.8	1.897	27.766
1750	3.911	3.769	34.976	260.6	2.017	27.791
2000	3.659	3.497	34.969	261.8	2.134	27.813
2500	3.250	3.046	34.957	261.3	2.364	27.846
3000	2.825	2.578	34.933	264.4	2.586	27.870
3500	2.498	2.205	34.912	268.7	2.802	27.885
4000	2.317	1.974	34.898	267.9	3.017	27.892
4500	2.268	1.868	34.889	265.3	3.239	27.893

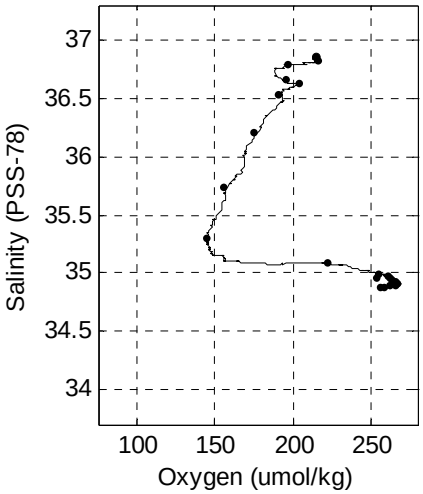
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
4936	24	2.209	1.758	34.875	256.2
4800	1	2.243	1.807	34.881	259.1
4550	2	2.268	1.862	34.888	262.5
4146	3	2.297	1.938	34.894	265.5
3800	4	2.382	2.059	34.903	267.8
3498	5	2.499	2.207	34.912	267.3
3150	6	2.724	2.463	34.927	265.6
2800	7	2.979	2.750	34.941	263.6
2551	8	3.187	2.978	34.953	253.4
2251	9	3.464	3.280	34.965	262.0
1899	10	3.768	3.613	34.972	261.7
1584	11	4.191	4.061	34.995	255.2
1273	12	5.348	5.235	35.082	223.0
851	14	9.885	9.783	35.298	144.7
699	15	13.168	13.069	35.733	156.1
551	16	16.135	16.045	36.206	175.5
400	17	18.122	18.052	36.530	190.5
300	18	18.911	18.857	36.622	203.6
226	19	19.383	19.341	36.658	195.7
161	20	20.818	20.787	36.788	196.9
110	21	21.696	21.674	36.814	216.0
51	22	22.555	22.544	36.855	214.7
2	23	22.562	22.561	36.858	214.7

Abaco 2001 R.V. Oceanus
CTD Station 23 (CTD023)
Latitude 26.519 N Longitude 73.588 W
01-May-2001 15:43 Z







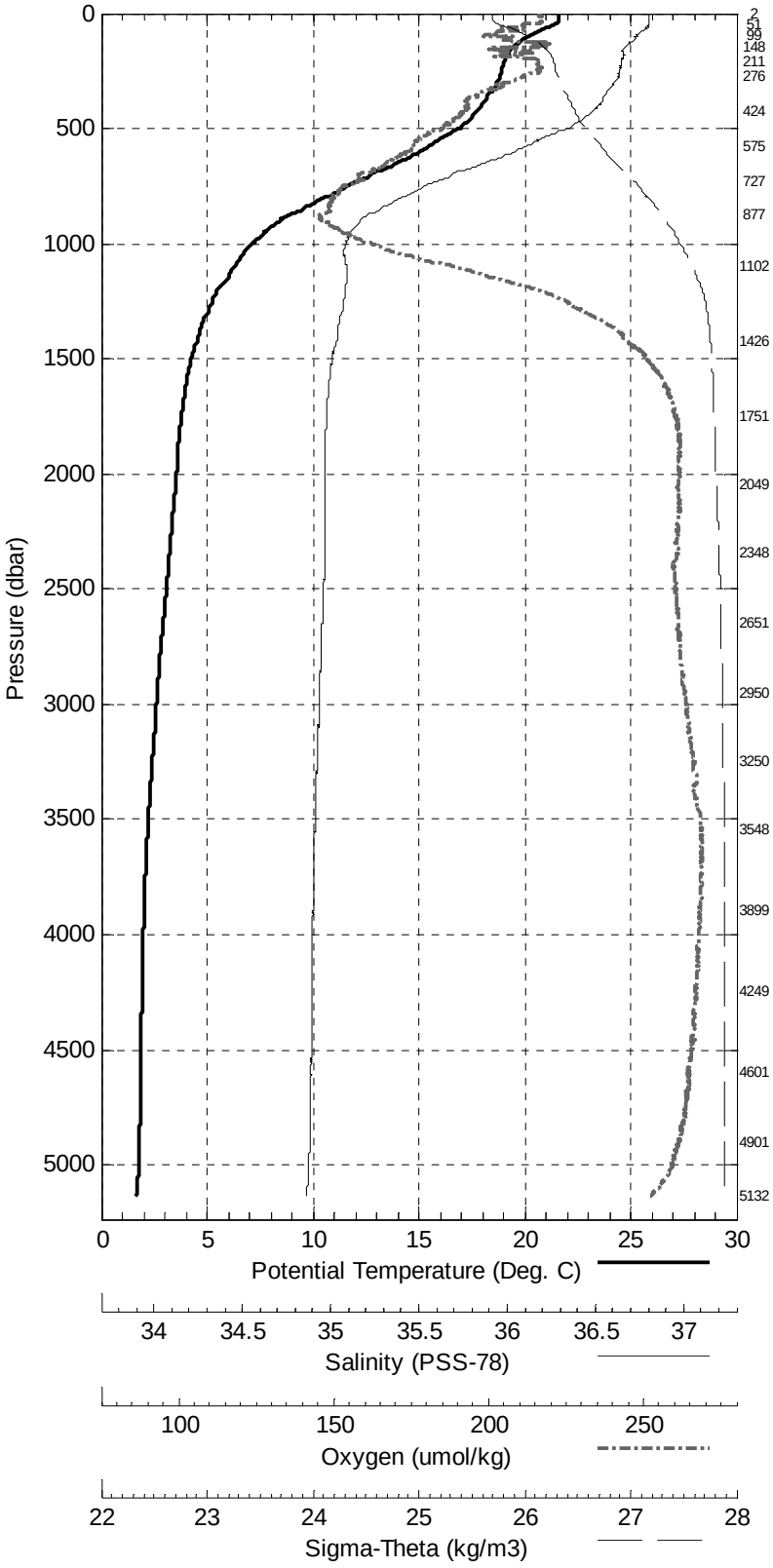


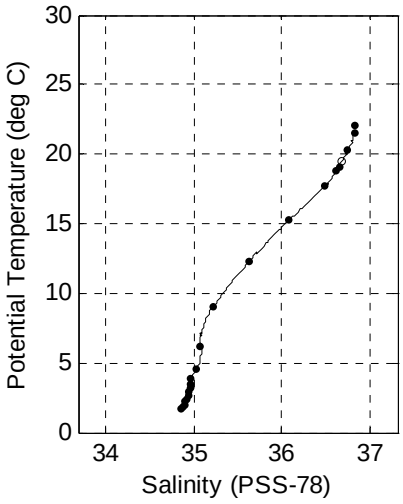
ABACO-01 R.V. Oceanus
CTD Station 24 (CTD024)
Latitude 26.517N Longitude 73.234W
01-May-2001 20:56Z

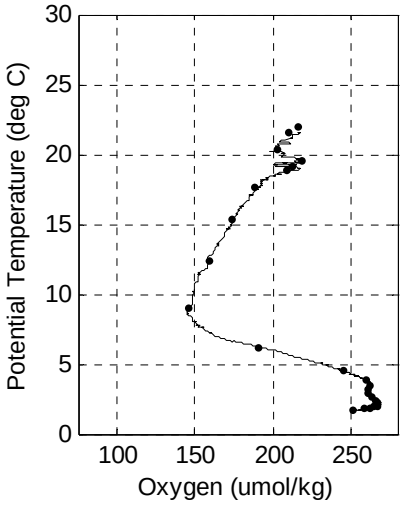
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	21.608	21.607	36.805	216.5	0.002	25.701
10	21.608	21.606	36.807	216.7	0.023	25.702
20	21.610	21.606	36.807	217.4	0.046	25.702
30	21.592	21.586	36.808	217.3	0.069	25.709
50	21.228	21.218	36.797	211.2	0.114	25.802
75	20.672	20.658	36.764	204.2	0.167	25.931
100	20.101	20.082	36.719	207.9	0.218	26.052
125	19.706	19.683	36.694	214.7	0.267	26.139
150	19.383	19.355	36.659	207.9	0.314	26.197
200	19.090	19.054	36.652	215.9	0.406	26.271
250	18.967	18.922	36.638	216.1	0.497	26.294
300	18.731	18.677	36.605	205.2	0.588	26.331
400	17.992	17.922	36.514	193.0	0.764	26.451
500	17.008	16.924	36.348	185.0	0.932	26.568
600	15.130	15.037	36.038	173.5	1.087	26.764
700	12.767	12.670	35.680	158.1	1.224	26.986
800	10.597	10.498	35.392	149.8	1.342	27.171
900	8.534	8.435	35.170	147.7	1.441	27.341
1000	7.193	7.092	35.082	162.4	1.525	27.470
1100	6.379	6.275	35.087	189.1	1.597	27.585
1200	5.625	5.516	35.081	215.6	1.659	27.677
1300	5.136	5.022	35.065	231.5	1.714	27.724
1400	4.710	4.591	35.039	243.3	1.765	27.753
1500	4.371	4.247	35.009	251.3	1.815	27.767
1750	3.929	3.786	34.976	260.3	1.935	27.789
2000	3.706	3.543	34.970	261.7	2.053	27.809
2500	3.273	3.068	34.960	260.5	2.283	27.847
3000	2.852	2.604	34.935	263.8	2.506	27.869
3500	2.516	2.223	34.913	268.3	2.725	27.883
4000	2.329	1.986	34.898	268.0	2.941	27.891
4500	2.288	1.887	34.890	265.5	3.164	27.893
5000	2.229	1.769	34.877	259.4	3.397	27.892

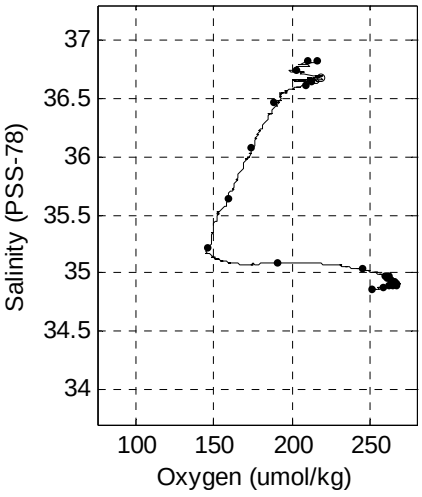
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5133	24	2.123	1.650	34.862	251.9
4902	1	2.253	1.805	34.881	259.3
4602	2	2.282	1.869	34.888	262.7
4249	3	2.305	1.933	34.894	265.1
3899	4	2.351	2.018	34.900	267.2
3548	5	2.483	2.185	34.910	267.6
3251	6	2.668	2.398	34.924	265.7
2950	7	2.875	2.632	34.936	263.6
2651	8	3.102	2.885	34.951	261.6
2349	9	3.402	3.210	34.966	261.2
2050	10	3.655	3.487	34.968	262.0
1751	11	3.949	3.806	34.977	260.0
1427	12	4.613	4.492	35.031	245.0
1103	13	6.316	6.212	35.084	190.9
878	14	9.090	8.990	35.219	146.3
728	15	12.399	12.299	35.634	159.3
576	16	15.393	15.303	36.078	173.9
425	17	17.751	17.678	36.471	189.0
277	18	18.839	18.789	36.616	208.7
211	19	19.086	19.047	36.643	213.3
149	20	19.567	19.539	36.670	219.2
100	21	20.323	20.305	36.735	202.9
51	22	21.545	21.535	36.814	210.7
3	23	22.024	22.023	36.822	216.5

Abaco 2001 R.V. Oceanus
CTD Station 24 (CTD024)
Latitude 26.517 N Longitude 73.234 W
01-May-2001 20:56 Z







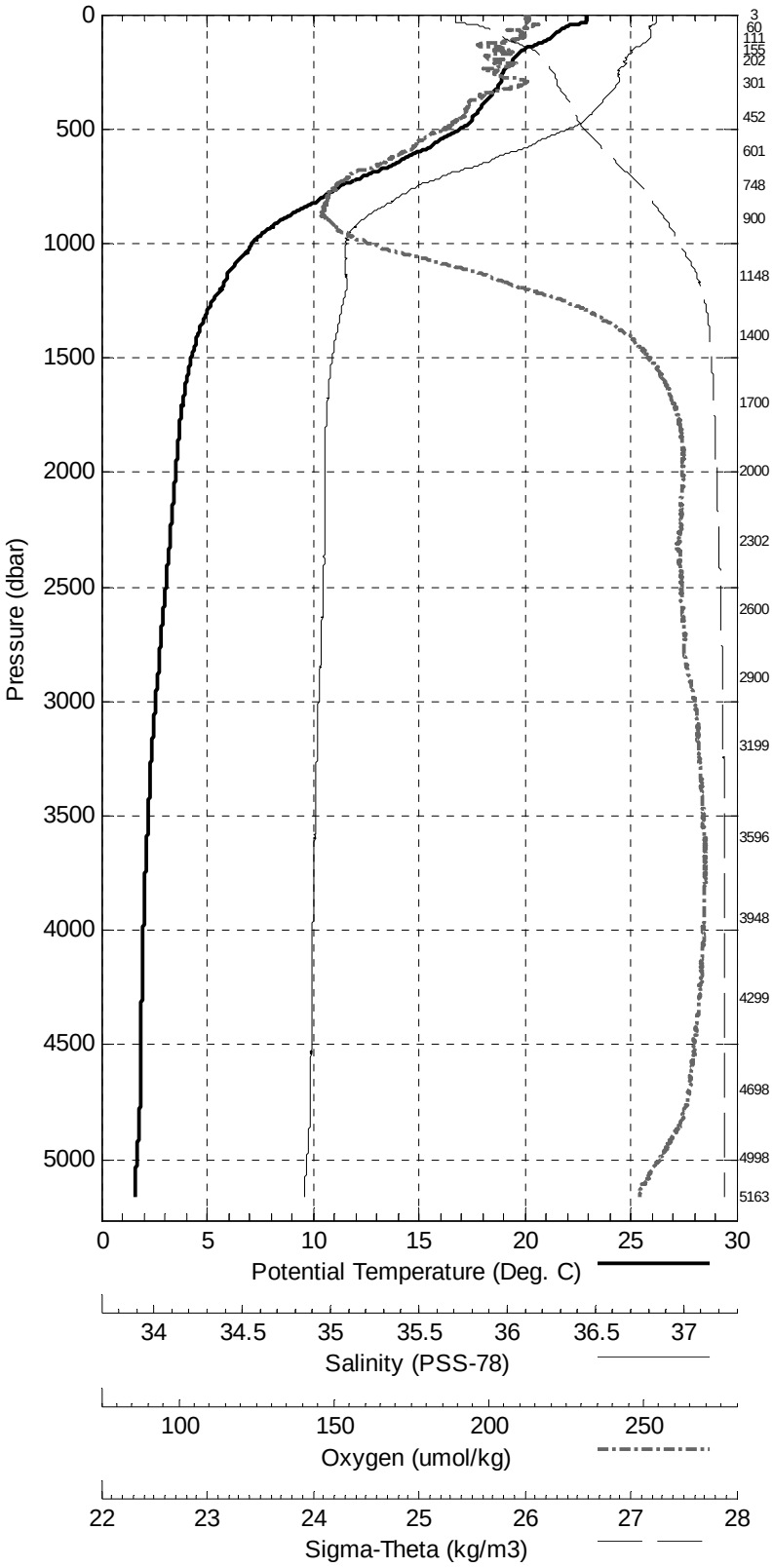


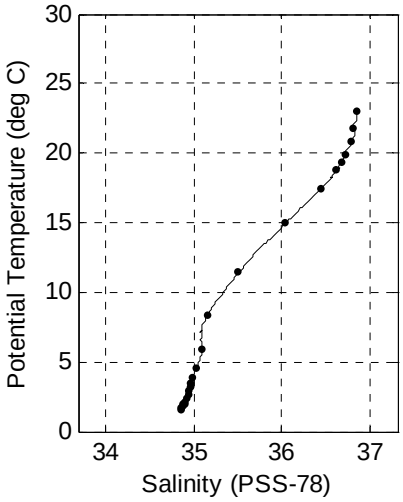
ABACO-01 R.V. Oceanus
CTD Station 25 (CTD025)
Latitude 26.580N Longitude 72.858W
02-May-2001 17:23Z

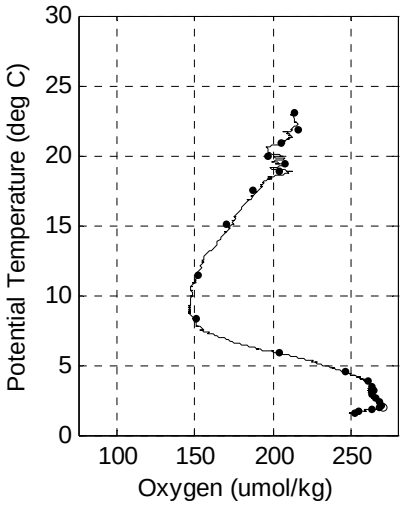
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	22.934	22.933	36.843	212.7	0.003	25.351
10	22.933	22.931	36.844	212.6	0.026	25.353
20	22.935	22.931	36.844	212.5	0.052	25.353
30	22.932	22.926	36.845	212.5	0.079	25.355
50	22.054	22.044	36.809	213.4	0.129	25.581
75	21.574	21.559	36.804	209.8	0.188	25.713
100	21.259	21.239	36.812	210.6	0.244	25.808
125	20.732	20.709	36.776	199.2	0.299	25.926
150	20.052	20.024	36.716	205.6	0.350	26.065
200	19.478	19.442	36.673	202.6	0.447	26.186
250	19.040	18.994	36.632	202.5	0.540	26.270
300	18.885	18.831	36.629	211.0	0.632	26.310
400	18.013	17.944	36.511	193.5	0.809	26.444
500	16.983	16.899	36.340	186.1	0.979	26.567
600	14.999	14.907	36.020	173.0	1.134	26.779
700	12.636	12.539	35.660	154.8	1.270	26.997
800	10.471	10.372	35.377	147.8	1.386	27.182
900	8.553	8.454	35.173	148.6	1.485	27.340
1000	7.235	7.134	35.088	162.5	1.569	27.469
1100	6.338	6.234	35.082	188.8	1.642	27.587
1200	5.760	5.650	35.087	212.3	1.704	27.666
1300	5.103	4.990	35.058	232.9	1.759	27.723
1400	4.667	4.549	35.031	244.9	1.810	27.751
1500	4.366	4.242	35.009	251.9	1.860	27.767
1750	3.910	3.767	34.976	261.0	1.980	27.791
2000	3.681	3.518	34.971	262.5	2.097	27.812
2500	3.254	3.049	34.959	262.0	2.325	27.848
3000	2.808	2.562	34.932	266.5	2.547	27.870
3500	2.500	2.207	34.913	269.1	2.763	27.885
4000	2.334	1.990	34.899	269.3	2.979	27.892
4500	2.276	1.876	34.890	266.5	3.201	27.893
5000	2.136	1.679	34.866	255.2	3.433	27.889

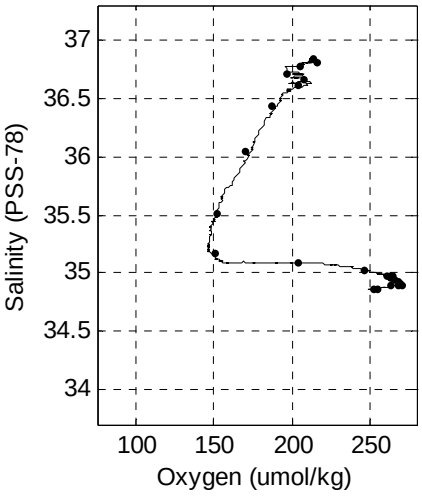
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5164	24	2.047	1.573	34.852	252.3
4998	1	2.133	1.677	34.864	255.6
4699	2	2.265	1.841	34.885	263.3
4300	3	2.295	1.918	34.892	270.4
3949	4	2.338	2.000	34.898	268.6
3597	5	2.457	2.155	34.909	269.7
3199	6	2.662	2.398	34.923	268.3
2900	7	2.905	2.667	34.939	265.7
2601	8	3.170	2.957	34.954	263.2
2303	9	3.416	3.228	34.965	264.7
2001	10	3.658	3.496	34.967	263.9
1700	11	3.980	3.842	34.980	261.4
1400	12	4.633	4.515	35.029	247.1
1148	13	6.003	5.897	35.088	203.8
900	14	8.435	8.337	35.162	150.4
749	15	11.504	11.406	35.504	151.5
602	16	15.128	15.034	36.037	169.9
453	17	17.517	17.439	36.428	186.8
301	18	18.808	18.754	36.607	204.0
202	19	19.356	19.319	36.665	208.2
155	20	19.948	19.919	36.708	196.8
112	21	20.878	20.856	36.780	205.0
60	22	21.823	21.811	36.804	215.9
3	23	23.043	23.042	36.835	213.6

Abaco 2001 R.V. Oceanus
CTD Station 25 (CTD025)
Latitude 26.580 N Longitude 72.858 W
02-May-2001 17:23 Z







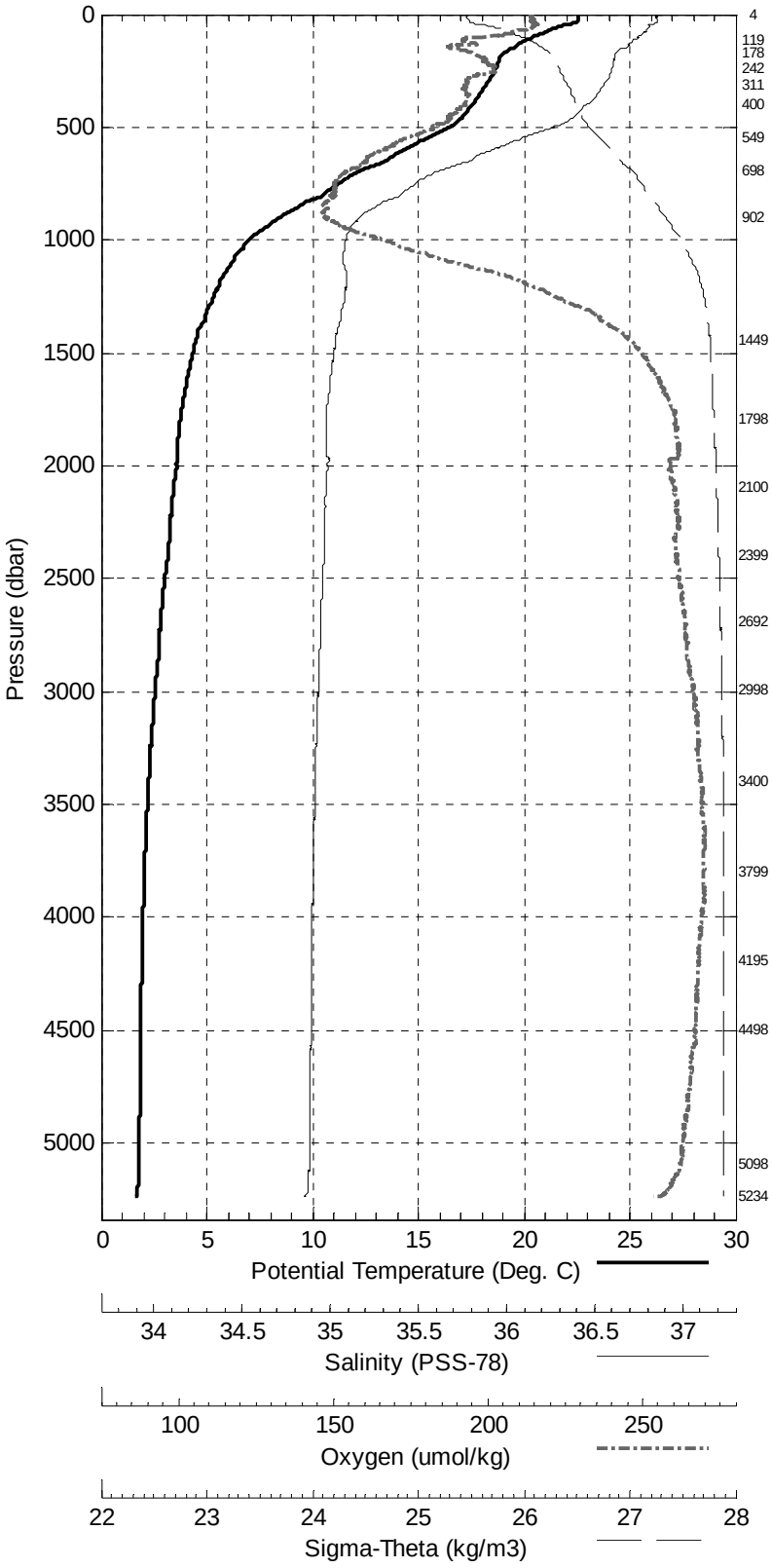


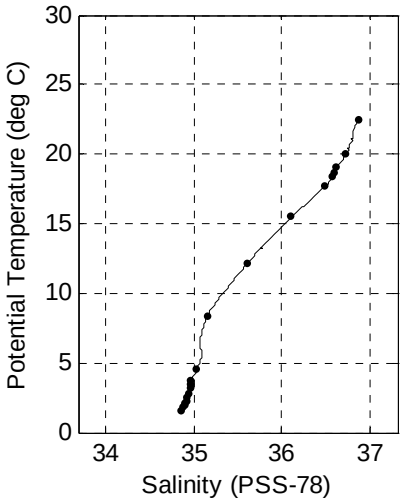
ABACO-01 R.V. Oceanus
CTD Station 26 (CTD026)
Latitude 26.515N Longitude 72.462W
02-May-2001 00:02Z

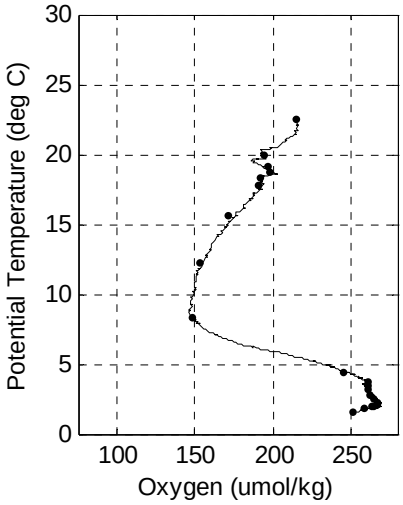
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	22.574	22.573	36.849	214.5	0.003	25.460
10	22.579	22.577	36.851	213.6	0.025	25.461
20	22.574	22.570	36.851	214.9	0.050	25.463
30	22.547	22.541	36.852	214.1	0.075	25.472
50	21.736	21.726	36.810	214.7	0.124	25.671
75	21.108	21.093	36.788	208.0	0.180	25.830
100	20.421	20.402	36.746	198.5	0.233	25.986
125	19.903	19.879	36.706	194.2	0.283	26.096
150	19.446	19.418	36.662	187.7	0.331	26.184
200	18.889	18.853	36.614	199.1	0.422	26.293
250	18.642	18.597	36.594	201.8	0.511	26.343
300	18.326	18.273	36.560	192.9	0.599	26.399
400	17.586	17.517	36.448	192.7	0.769	26.501
500	16.534	16.452	36.272	181.2	0.933	26.621
600	14.350	14.260	35.906	167.0	1.082	26.832
700	12.119	12.025	35.590	154.5	1.213	27.043
800	10.518	10.419	35.387	149.8	1.327	27.182
900	8.516	8.417	35.164	147.5	1.426	27.339
1000	7.054	6.955	35.086	166.8	1.509	27.493
1100	6.292	6.188	35.077	189.4	1.579	27.589
1200	5.666	5.558	35.089	214.0	1.640	27.679
1300	5.146	5.033	35.066	231.2	1.695	27.724
1400	4.739	4.620	35.040	242.6	1.747	27.751
1500	4.453	4.328	35.021	249.5	1.797	27.768
1750	3.945	3.802	34.980	259.9	1.917	27.791
2000	3.748	3.584	34.989	258.9	2.034	27.820
2500	3.210	3.006	34.957	261.7	2.262	27.851
3000	2.794	2.548	34.931	266.3	2.482	27.871
3500	2.481	2.190	34.912	269.4	2.697	27.886
4000	2.321	1.977	34.898	269.0	2.912	27.892
4500	2.287	1.887	34.891	267.2	3.134	27.893
5000	2.273	1.811	34.883	263.2	3.367	27.893

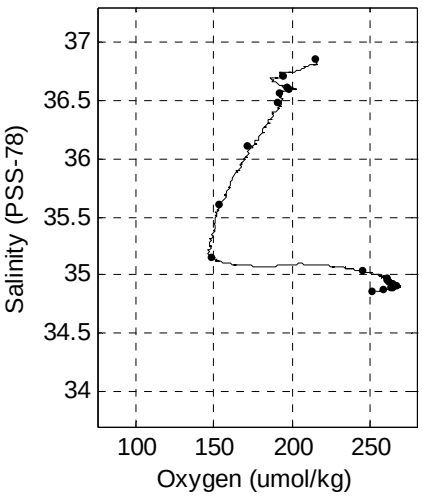
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5235	24	2.106	1.620	34.858	251.6
5099	1	2.268	1.794	34.879	258.7
4499	3	2.289	1.888	34.890	263.5
4195	4	2.291	1.926	34.893	265.0
3799	5	2.374	2.052	34.902	267.5
3401	6	2.535	2.253	34.915	267.4
2998	7	2.802	2.556	34.931	265.4
2693	8	3.041	2.821	34.946	262.6
2400	9	3.321	3.125	34.963	261.1
2101	10	3.574	3.403	34.972	261.0
1799	11	3.895	3.749	34.977	260.6
1449	12	4.602	4.480	35.034	245.5
902	14	8.391	8.293	35.151	148.9
699	15	12.290	12.195	35.612	153.6
549	16	15.588	15.501	36.101	171.8
401	17	17.797	17.728	36.481	190.7
311	18	18.408	18.353	36.565	191.8
242	19	18.746	18.703	36.592	198.3
179	20	19.100	19.068	36.616	196.5
120	21	20.034	20.012	36.708	194.9
4	23	22.407	22.407	36.859	215.6

Abaco 2001 R.V. Oceanus
CTD Station 26 (CTD026)
Latitude 26.515 N Longitude 72.462 W
02-May-2001 00:02 Z







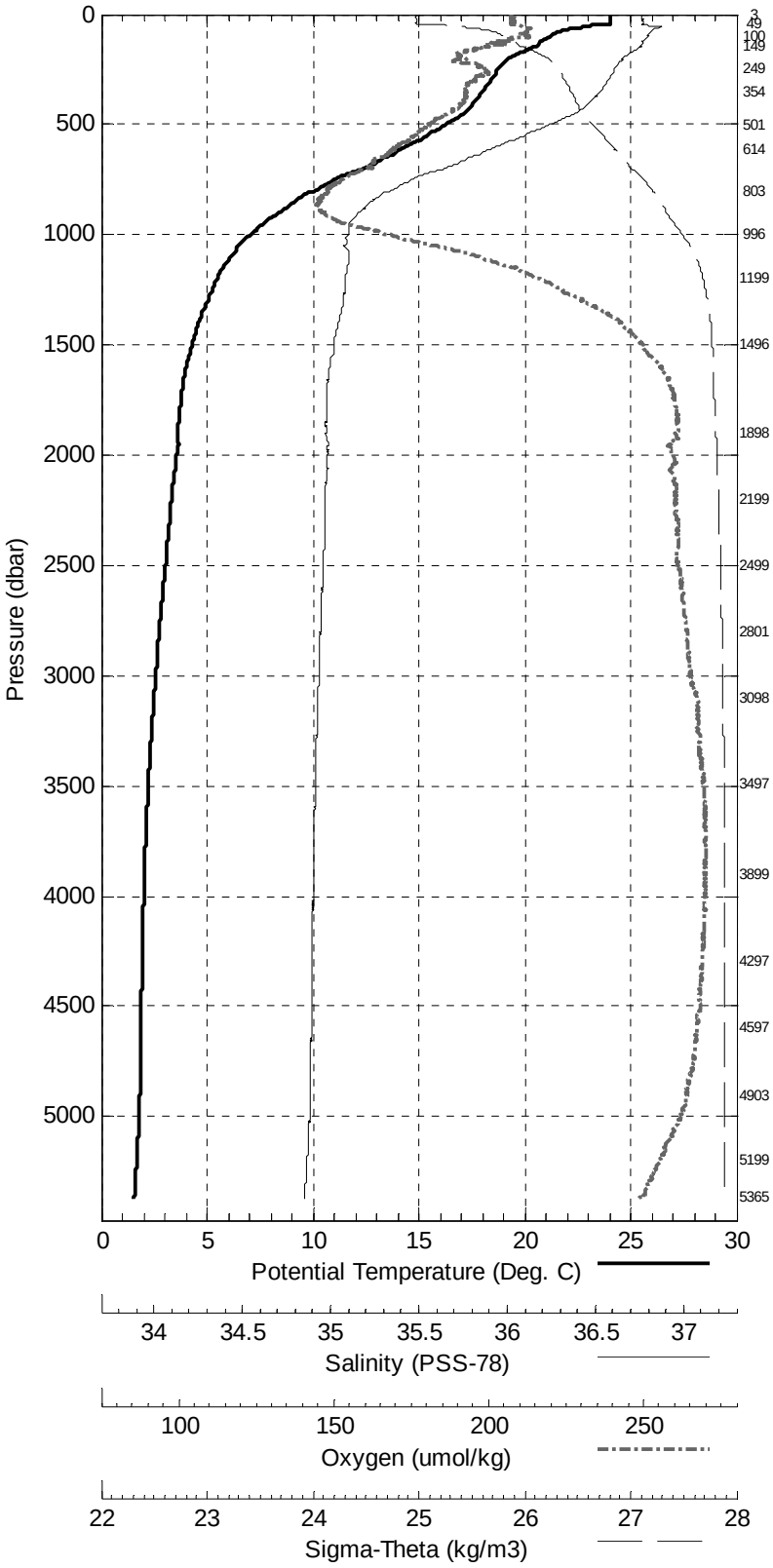


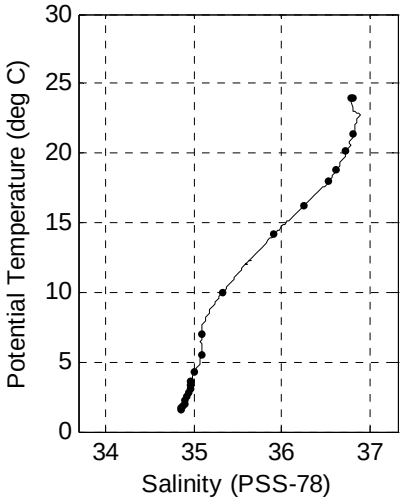
ABACO-01 R.V. Oceanus
CTD Station 27 (CTD027)
Latitude 26.531N Longitude 72.098W
03-May-2001 06:13Z

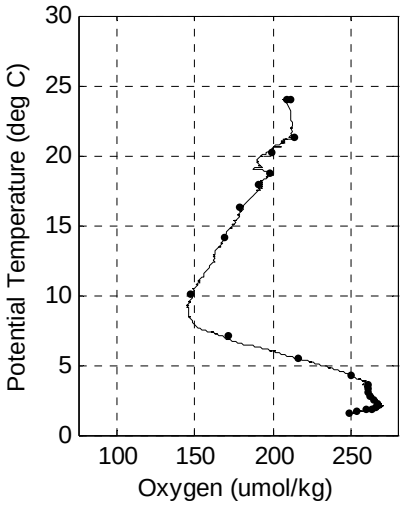
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.018	24.018	36.758	206.7	0.003	24.968
10	24.021	24.019	36.767	207.6	0.030	24.974
20	24.020	24.016	36.768	207.7	0.060	24.976
30	24.024	24.018	36.767	207.8	0.089	24.975
50	23.182	23.171	36.803	210.9	0.148	25.252
75	21.775	21.760	36.818	212.4	0.211	25.667
100	21.205	21.185	36.793	212.4	0.267	25.809
125	20.726	20.702	36.771	201.8	0.321	25.924
150	20.361	20.332	36.745	198.8	0.374	26.004
200	19.244	19.208	36.645	192.7	0.471	26.225
250	18.768	18.723	36.610	199.2	0.562	26.323
300	18.433	18.380	36.571	195.6	0.651	26.380
400	17.655	17.586	36.460	191.8	0.822	26.493
500	16.311	16.229	36.236	180.5	0.985	26.645
600	14.435	14.345	35.933	170.0	1.133	26.835
700	12.433	12.338	35.637	160.3	1.265	27.019
800	10.186	10.089	35.343	148.3	1.377	27.205
900	8.413	8.315	35.152	146.8	1.473	27.345
1000	7.128	7.027	35.096	168.6	1.556	27.491
1100	6.235	6.131	35.103	196.9	1.625	27.617
1200	5.555	5.447	35.084	216.7	1.684	27.688
1300	5.158	5.044	35.073	230.3	1.738	27.728
1400	4.714	4.595	35.045	242.8	1.789	27.757
1500	4.413	4.288	35.021	249.5	1.839	27.772
1750	3.910	3.768	34.977	260.0	1.957	27.792
2000	3.693	3.530	34.978	259.3	2.074	27.817
2500	3.240	3.035	34.959	261.0	2.302	27.849
3000	2.825	2.578	34.934	265.3	2.522	27.871
3500	2.519	2.226	34.914	269.5	2.739	27.884
4000	2.354	2.010	34.901	269.5	2.956	27.891
4500	2.302	1.900	34.892	267.8	3.179	27.893
5000	2.253	1.792	34.880	262.2	3.413	27.892

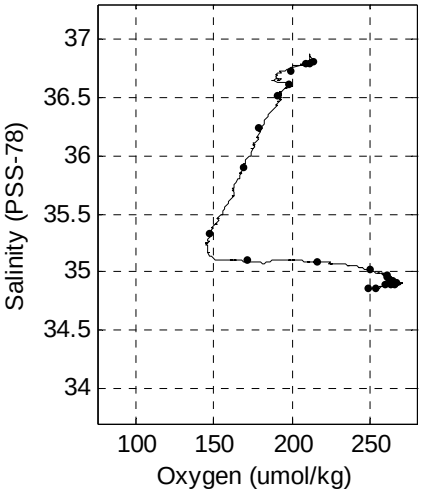
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5365	24	2.064	1.563	34.851	248.7
5199	1	2.170	1.687	34.866	253.6
4904	2	2.276	1.826	34.884	260.5
4597	3	2.291	1.878	34.889	263.7
4298	4	2.315	1.938	34.894	265.6
3899	5	2.367	2.034	34.902	267.7
3498	6	2.495	2.203	34.912	267.9
3098	7	2.761	2.505	34.929	264.6
2801	8	2.968	2.739	34.942	262.7
2499	9	3.239	3.035	34.960	261.0
2200	10	3.476	3.297	34.968	261.6
1898	11	3.773	3.619	34.978	260.6
1496	12	4.383	4.259	35.015	250.7
1200	13	5.640	5.531	35.087	216.2
997	14	7.141	7.041	35.100	171.3
804	15	10.112	10.015	35.331	146.9
614	16	14.217	14.125	35.898	169.2
502	17	16.341	16.259	36.239	178.2
354	18	18.002	17.940	36.514	191.3
250	19	18.803	18.758	36.605	197.9
149	20	20.251	20.222	36.724	199.4
101	21	21.389	21.369	36.799	213.6
49	22	23.909	23.898	36.791	211.6
3	23	23.960	23.959	36.787	209.4

Abaco 2001 R.V. Oceanus
CTD Station 27 (CTD027)
Latitude 26.531 N Longitude 72.098 W
03-May-2001 06:13 Z







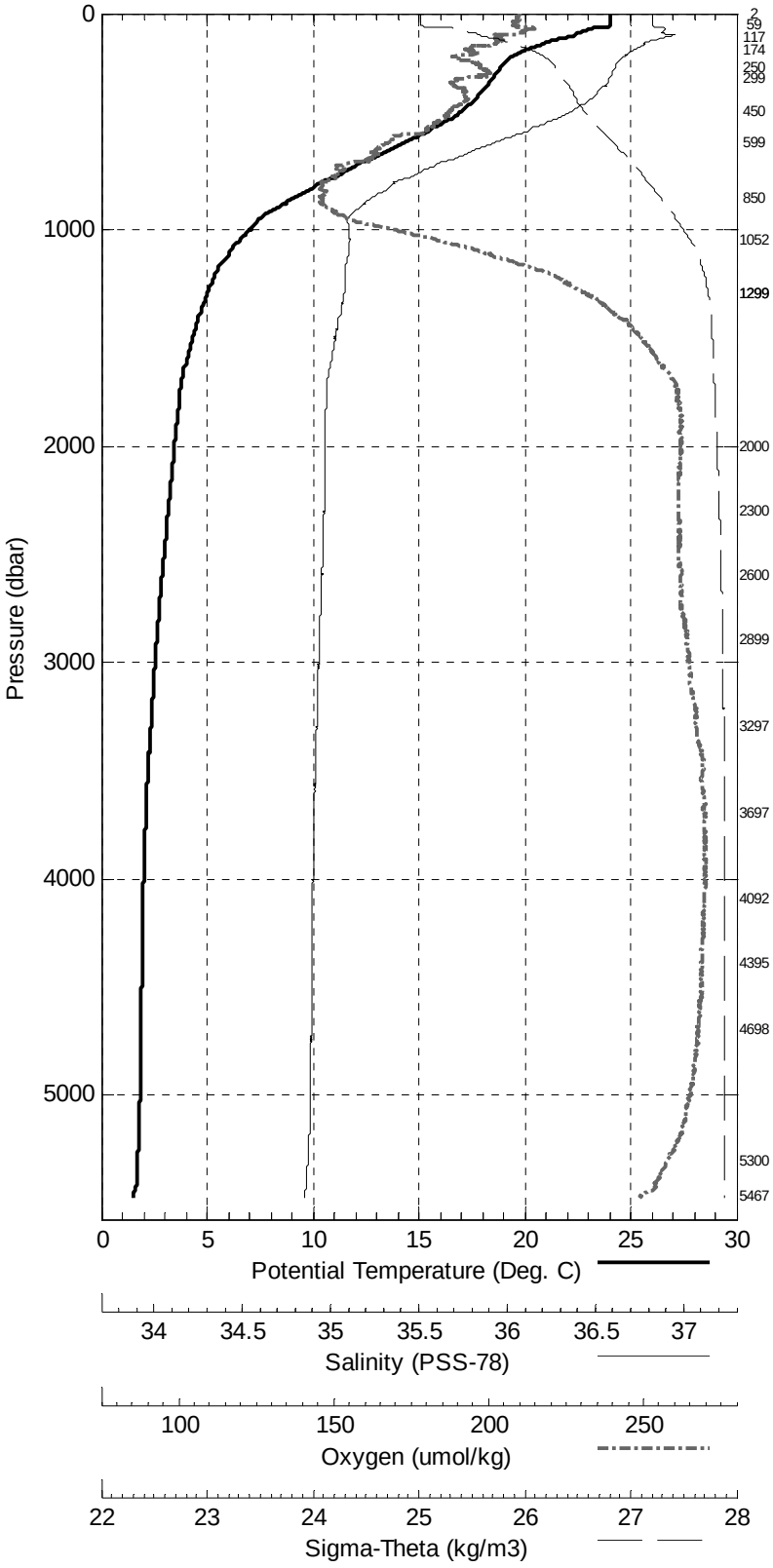


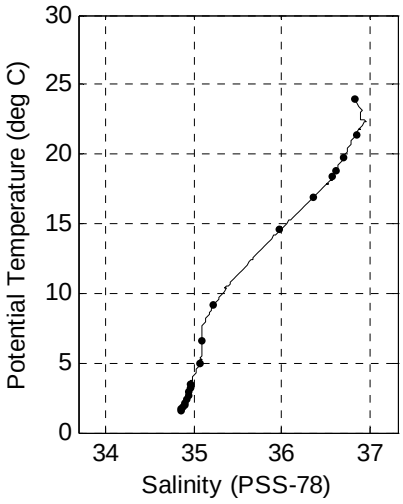
ABACO-01 R.V. Oceanus
CTD Station 28 (CTD028)
Latitude 26.529N Longitude 71.729W
03-May-2001 12:59Z

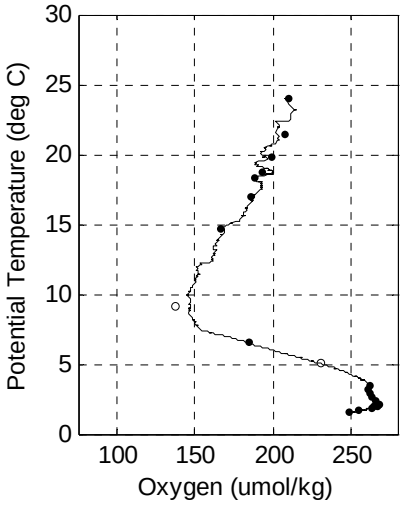
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.021	24.021	36.820	209.9	0.003	25.014
10	24.022	24.020	36.822	209.8	0.029	25.015
20	24.022	24.018	36.822	209.5	0.059	25.016
30	24.024	24.018	36.822	208.7	0.088	25.016
50	24.028	24.017	36.823	209.7	0.147	25.017
75	22.993	22.978	36.890	212.3	0.217	25.375
100	22.392	22.371	36.949	202.0	0.280	25.594
125	21.289	21.265	36.810	204.0	0.339	25.799
150	20.586	20.558	36.756	197.1	0.393	25.952
200	19.417	19.380	36.658	188.9	0.492	26.191
250	18.916	18.871	36.611	197.5	0.585	26.286
300	18.537	18.484	36.583	189.6	0.675	26.363
400	17.657	17.588	36.460	192.8	0.847	26.493
500	16.262	16.181	36.229	184.1	1.009	26.651
600	14.305	14.216	35.914	166.6	1.157	26.848
700	12.105	12.011	35.589	151.4	1.286	27.045
800	10.137	10.041	35.332	146.0	1.398	27.205
900	8.345	8.247	35.156	148.7	1.495	27.358
1000	7.098	6.998	35.105	169.6	1.576	27.502
1100	6.204	6.101	35.103	197.4	1.644	27.622
1200	5.487	5.380	35.083	219.6	1.703	27.696
1300	5.107	4.993	35.075	231.8	1.756	27.735
1400	4.731	4.612	35.049	241.8	1.807	27.759
1500	4.434	4.308	35.026	249.7	1.856	27.774
1750	3.856	3.715	34.975	261.1	1.974	27.796
2000	3.612	3.450	34.970	262.0	2.090	27.818
2500	3.176	2.973	34.956	261.1	2.314	27.853
3000	2.777	2.531	34.932	264.5	2.532	27.873
3500	2.512	2.220	34.913	269.3	2.748	27.884
4000	2.348	2.004	34.900	269.7	2.964	27.891
4500	2.313	1.912	34.893	268.7	3.188	27.893
5000	2.295	1.832	34.885	264.8	3.423	27.893

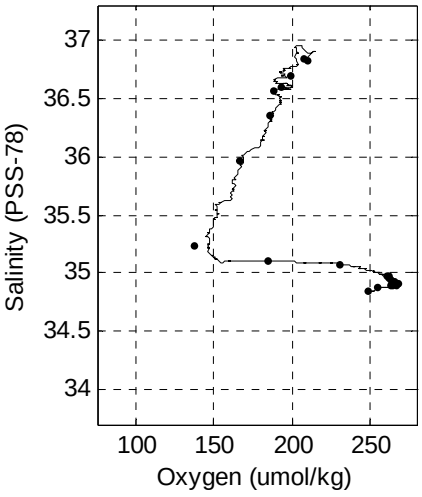
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5467	24	2.073	1.558	34.851	248.8
5300	1	2.210	1.712	34.871	254.7
4698	3	2.309	1.884	34.891	263.3
4396	4	2.312	1.923	34.894	265.2
4093	5	2.336	1.982	34.899	267.1
3697	6	2.427	2.115	34.906	268.4
3297	7	2.618	2.344	34.921	265.8
2900	8	2.872	2.634	34.939	263.1
2600	9	3.093	2.882	34.952	261.8
2301	10	3.372	3.185	34.965	261.8
2000	11	3.604	3.442	34.971	262.4
1300	13	5.122	5.009	35.077	230.8
1300	13	5.122	5.009	35.077	231.3
1052	14	6.649	6.547	35.105	184.3
850	15	9.220	9.122	35.232	138.0
600	16	14.642	14.551	35.961	167.1
451	17	17.038	16.963	36.354	185.5
300	18	18.403	18.350	36.569	188.3
251	19	18.803	18.758	36.602	192.9
174	20	19.796	19.763	36.693	199.7
118	21	21.441	21.418	36.833	207.9
59	22	23.989	23.977	36.826	210.8
3	23	23.979	23.979	36.820	210.5

Abaco 2001 R.V. Oceanus
CTD Station 28 (CTD028)
Latitude 26.529 N Longitude 71.729 W
03-May-2001 12:59 Z







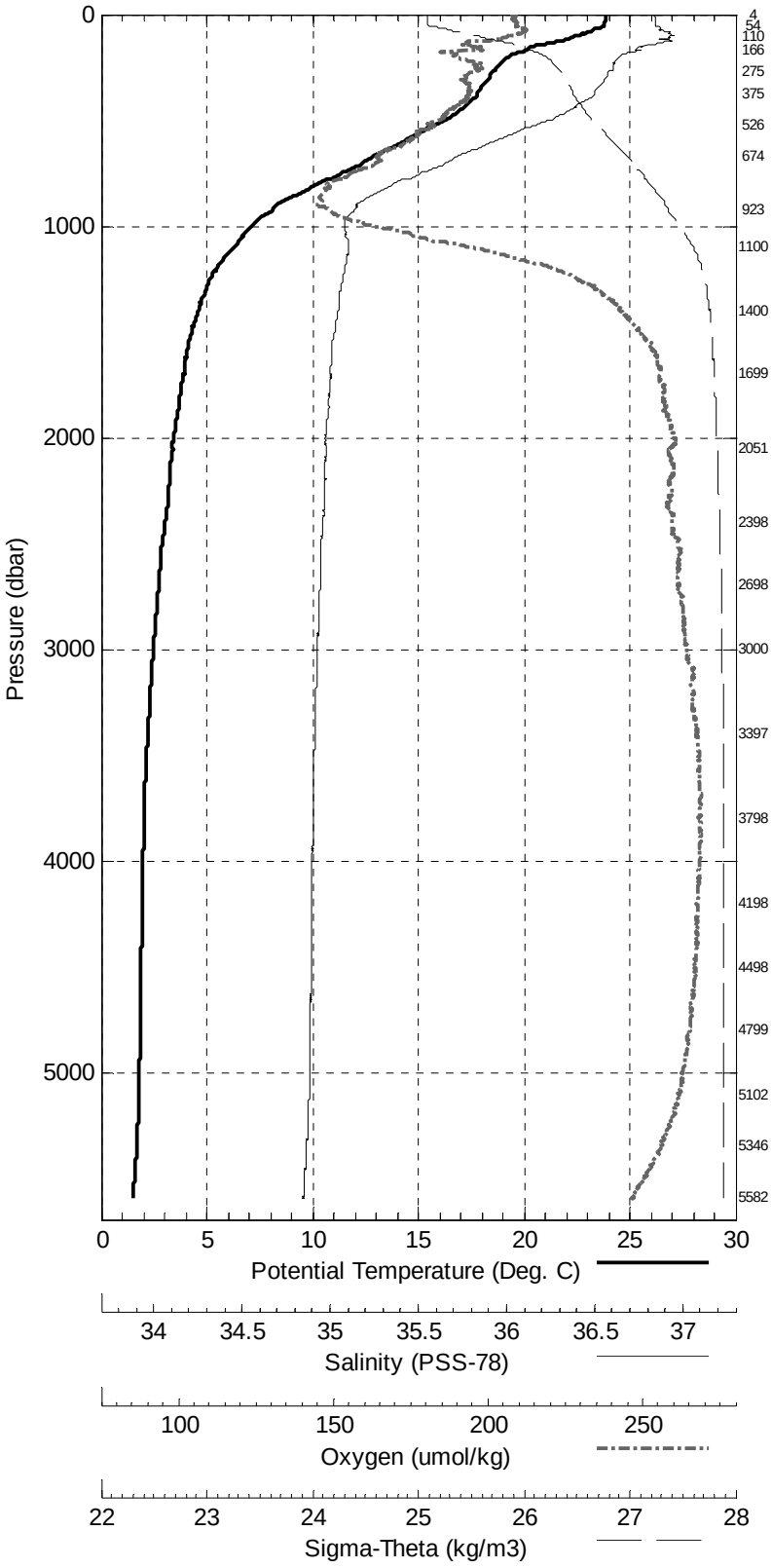


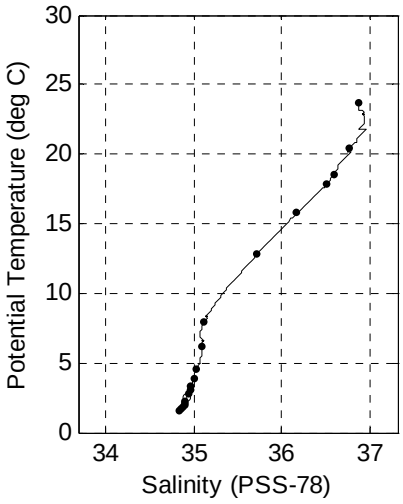
ABACO-01 R.V. Oceanus
CTD Station 29 (CTD029)
Latitude 26.534N Longitude 71.337W
03-May-2001 19:57Z

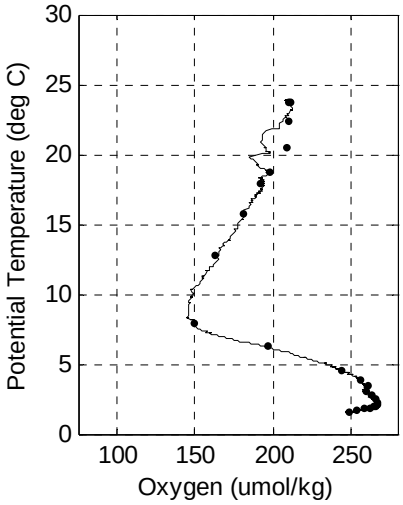
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.843	23.842	36.841	209.0	0.003	25.083
10	23.841	23.839	36.842	208.2	0.029	25.085
20	23.836	23.831	36.842	208.3	0.057	25.087
30	23.831	23.825	36.841	208.8	0.086	25.088
50	23.809	23.799	36.844	209.1	0.144	25.098
75	23.214	23.198	36.873	211.7	0.213	25.297
100	22.498	22.478	36.938	206.1	0.278	25.555
125	21.776	21.751	36.937	195.6	0.337	25.761
150	20.484	20.455	36.766	196.3	0.392	25.987
200	19.265	19.228	36.638	190.3	0.490	26.214
250	18.780	18.736	36.610	198.1	0.581	26.320
300	18.420	18.367	36.566	192.3	0.669	26.380
400	17.622	17.554	36.457	193.4	0.840	26.499
500	16.323	16.241	36.240	184.6	1.002	26.646
600	14.357	14.267	35.926	174.0	1.149	26.846
700	12.433	12.337	35.652	163.8	1.279	27.030
800	10.299	10.201	35.358	148.0	1.392	27.197
900	8.421	8.323	35.151	144.3	1.490	27.343
1000	7.156	7.056	35.082	163.1	1.574	27.475
1100	6.372	6.267	35.104	195.1	1.645	27.600
1200	5.562	5.454	35.085	221.5	1.705	27.688
1300	5.079	4.966	35.062	234.7	1.759	27.728
1400	4.689	4.571	35.043	243.3	1.810	27.759
1500	4.411	4.286	35.025	249.1	1.859	27.776
1750	3.943	3.800	34.995	256.6	1.976	27.803
2000	3.573	3.411	34.971	260.3	2.091	27.823
2500	3.088	2.887	34.951	260.9	2.311	27.857
3000	2.709	2.464	34.928	263.7	2.526	27.876
3500	2.441	2.150	34.910	268.3	2.737	27.887
4000	2.326	1.982	34.899	268.4	2.951	27.892
4500	2.297	1.896	34.892	267.0	3.173	27.893
5000	2.274	1.812	34.883	262.5	3.407	27.893
5500	2.104	1.584	34.854	250.4	3.650	27.887

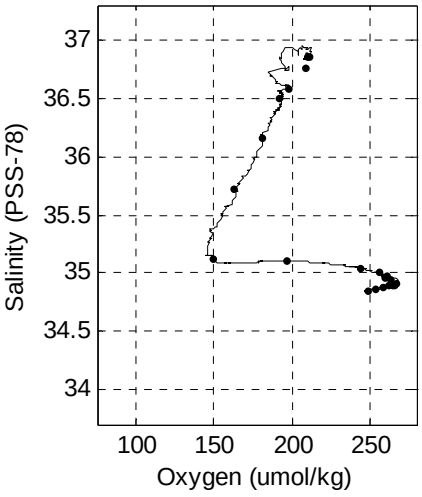
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5583	24	2.070	1.541	34.848	249.5
5347	1	2.184	1.682	34.865	254.2
5102	2	2.263	1.789	34.879	259.1
4799	3	2.289	1.852	34.887	262.7
4498	4	2.301	1.900	34.891	264.5
4199	5	2.309	1.943	34.894	266.0
3799	6	2.360	2.038	34.901	267.5
3398	7	2.486	2.205	34.912	267.4
3001	8	2.707	2.463	34.924	265.5
2698	9	2.937	2.718	34.942	263.5
2398	10	3.231	3.037	34.961	260.2
2052	11	3.532	3.366	34.971	261.3
1700	12	4.008	3.869	35.002	256.1
1400	13	4.690	4.572	35.041	243.8
1101	14	6.339	6.234	35.104	196.8
924	15	8.026	7.928	35.115	149.2
674	16	12.896	12.802	35.711	163.5
526	17	15.841	15.757	36.159	181.1
376	18	17.883	17.818	36.494	192.0
275	19	18.644	18.595	36.583	197.7
167	20	20.441	20.410	36.750	208.5
110	21	22.379	22.357	41.604	209.8
55	22	23.727	23.715	36.861	210.7
4	23	23.732	23.731	36.855	211.1

Abaco 2001 R.V. Oceanus
CTD Station 29 (CTD029)
Latitude 26.534 N Longitude 71.337 W
03-May-2001 19:57 Z







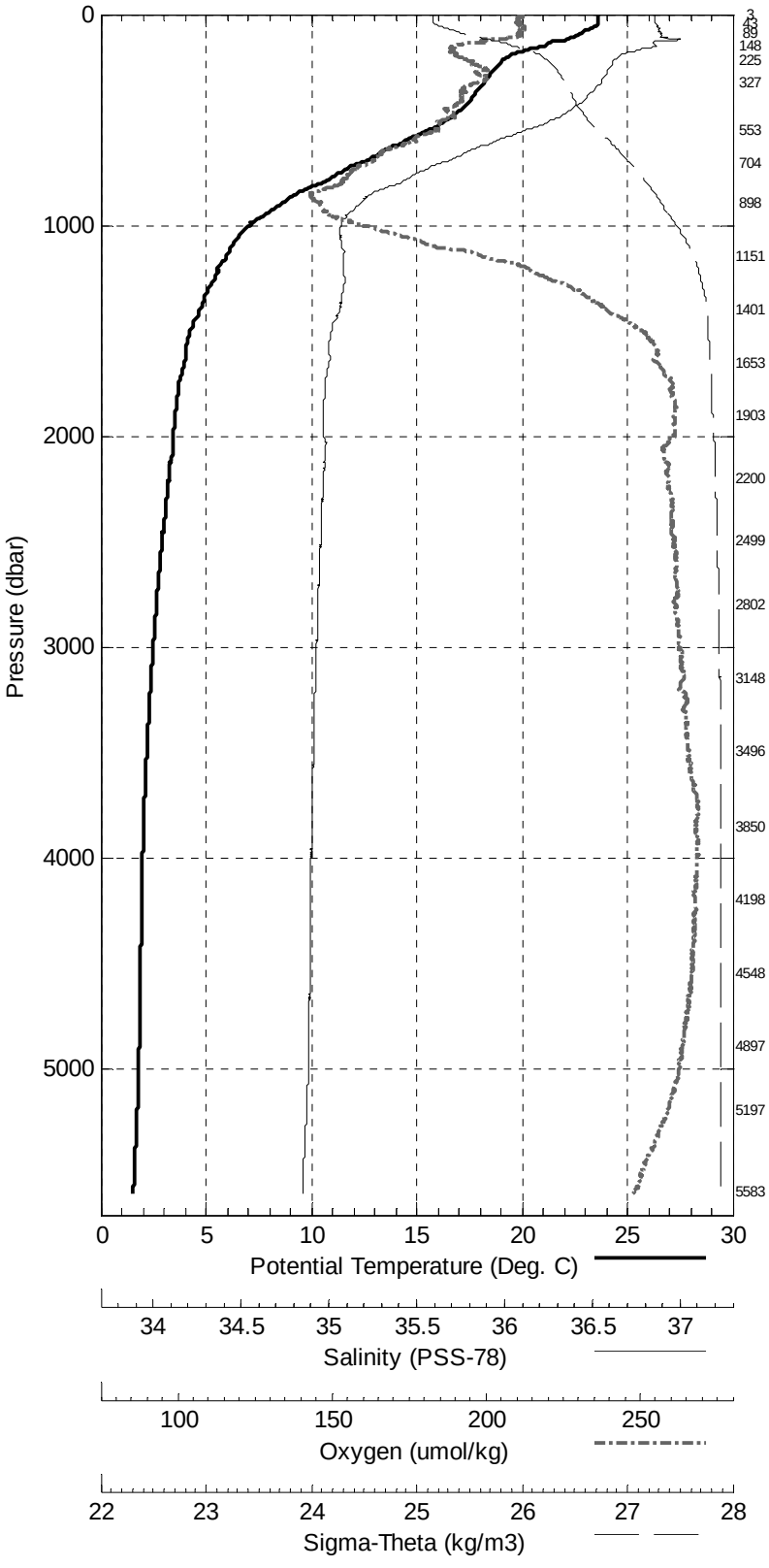


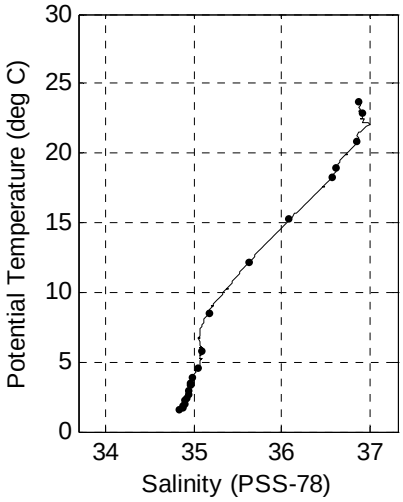
ABACO-01 R.V. Oceanus
CTD Station 30 (CTD030)
Latitude 26.537N Longitude 71.009W
04-May-2001 02:10Z

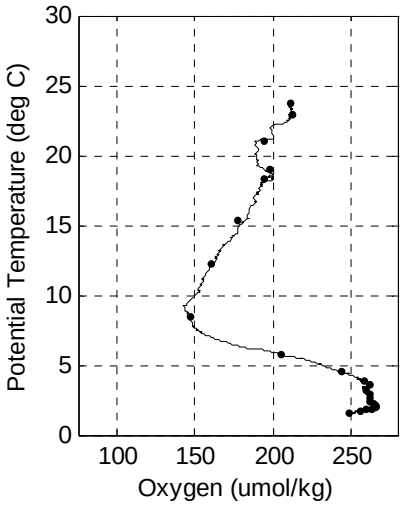
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.632	23.632	36.855	211.3	0.003	25.156
10	23.636	23.634	36.857	211.7	0.028	25.157
20	23.640	23.636	36.856	210.4	0.056	25.156
30	23.640	23.634	36.857	210.3	0.084	25.157
50	23.588	23.578	36.871	211.3	0.140	25.184
75	23.042	23.026	36.875	211.6	0.208	25.348
100	22.642	22.621	36.892	210.9	0.273	25.479
125	21.747	21.722	36.915	199.0	0.333	25.752
150	21.075	21.046	36.867	188.5	0.388	25.903
200	19.343	19.306	36.647	191.2	0.488	26.201
250	18.773	18.728	36.599	198.7	0.579	26.314
300	18.394	18.341	36.562	199.8	0.668	26.384
400	17.671	17.603	36.464	192.0	0.839	26.492
500	16.461	16.379	36.262	185.9	1.003	26.631
600	14.490	14.399	35.947	177.4	1.152	26.834
700	12.539	12.442	35.659	162.4	1.283	27.015
800	10.529	10.430	35.399	153.1	1.397	27.189
900	8.608	8.509	35.170	145.8	1.496	27.329
1000	7.132	7.032	35.069	160.1	1.581	27.468
1100	6.345	6.241	35.074	183.8	1.653	27.580
1200	5.690	5.581	35.085	213.0	1.715	27.673
1300	5.255	5.140	35.081	228.5	1.771	27.723
1400	4.834	4.713	35.061	239.3	1.823	27.757
1500	4.393	4.269	35.016	250.6	1.872	27.771
1750	3.853	3.711	34.975	260.3	1.991	27.796
2000	3.591	3.430	34.970	261.0	2.106	27.820
2500	3.119	2.917	34.953	261.0	2.327	27.856
3000	2.735	2.490	34.930	262.6	2.542	27.875
3500	2.477	2.186	34.912	265.5	2.755	27.886
4000	2.336	1.992	34.900	268.3	2.970	27.892
4500	2.297	1.896	34.892	266.8	3.193	27.894
5000	2.264	1.802	34.882	262.7	3.427	27.893
5500	2.098	1.579	34.853	250.1	3.669	27.887

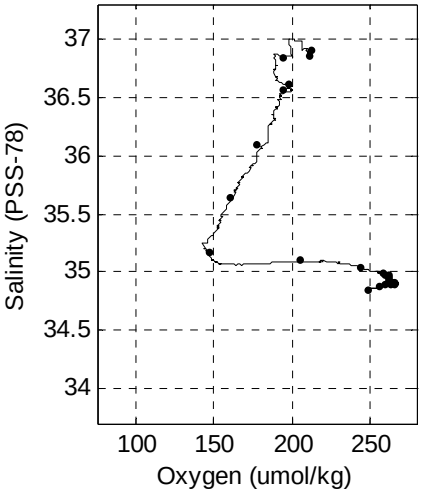
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5583	24	2.075	1.545	34.849	248.6
5197	1	2.220	1.735	34.873	256.4
4897	2	2.273	1.825	34.885	260.6
4549	3	2.293	1.886	34.890	263.9
4198	4	2.310	1.944	34.896	265.6
3851	5	2.361	2.034	34.902	266.1
3497	6	2.476	2.184	34.912	265.3
3149	7	2.658	2.399	34.924	262.3
2803	8	2.892	2.664	34.939	262.0
2499	9	3.123	2.920	34.951	262.3
2200	10	3.440	3.261	34.973	259.5
1904	11	3.679	3.525	34.971	262.8
1653	12	4.001	3.867	34.989	258.6
1402	13	4.670	4.551	35.045	244.2
1152	14	5.935	5.828	35.100	206.0
899	15	8.601	8.502	35.172	146.9
704	16	12.280	12.185	35.633	160.4
554	17	15.356	15.269	36.084	177.2
328	18	18.362	18.304	36.555	194.4
225	19	19.018	18.977	36.614	197.7
149	20	20.897	20.868	36.840	194.8
90	21	22.930	22.912	36.907	212.5
44	22	23.660	23.650	36.860	211.7
3	23	23.656	23.656	36.860	211.6

Abaco 2001 R.V. Oceanus
CTD Station 30 (CTD030)
Latitude 26.537 N Longitude 71.009 W
04-May-2001 02:10 Z







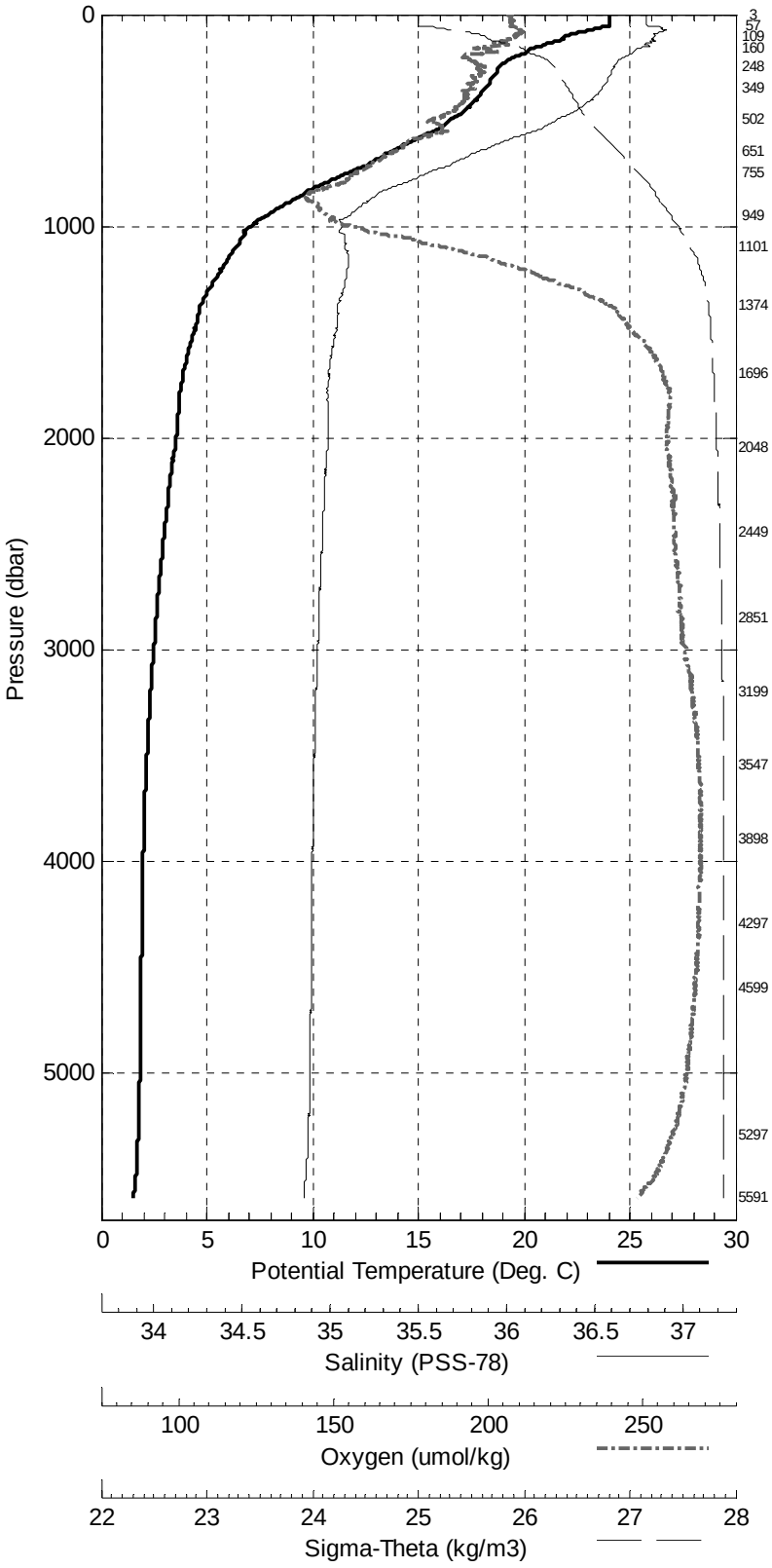


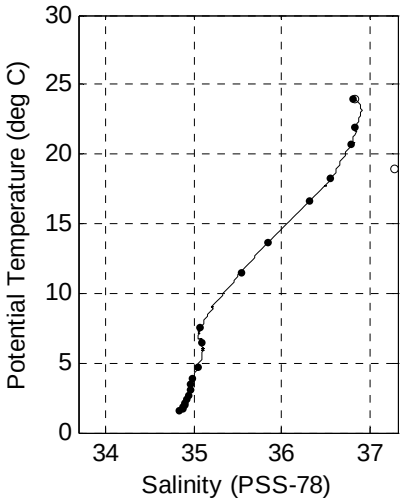
ABACO-01 R.V. Oceanus
CTD Station 31 (CTD031)
Latitude 26.540N Longitude 70.681W
04-May-2001 11:18Z

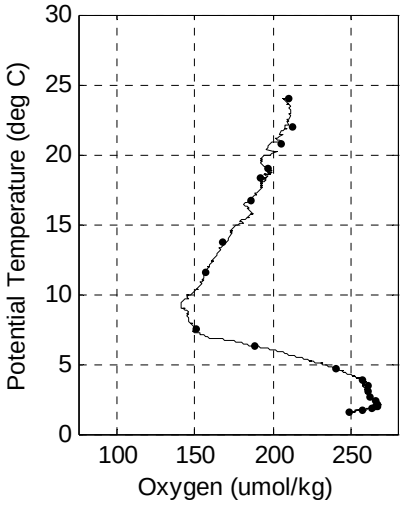
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.018	24.018	36.795	206.7	0.003	24.996
10	24.015	24.013	36.797	207.2	0.030	24.999
20	24.024	24.020	36.797	207.4	0.059	24.997
30	24.023	24.016	36.797	208.3	0.089	24.998
50	24.026	24.015	36.798	206.9	0.148	24.999
75	23.173	23.157	36.903	211.6	0.219	25.332
100	22.084	22.064	36.847	208.7	0.281	25.604
125	21.561	21.536	36.829	204.2	0.340	25.738
150	20.810	20.781	36.810	198.1	0.395	25.933
200	19.551	19.515	36.666	191.7	0.497	26.161
250	18.876	18.831	36.611	199.8	0.590	26.296
300	18.556	18.503	36.580	195.4	0.679	26.357
400	17.820	17.751	36.487	192.7	0.853	26.473
500	16.565	16.483	36.274	181.3	1.018	26.615
600	14.757	14.665	35.985	173.8	1.169	26.805
700	12.852	12.754	35.703	164.0	1.303	26.987
800	10.592	10.493	35.403	151.6	1.420	27.181
900	8.659	8.559	35.175	145.4	1.520	27.325
1000	7.192	7.091	35.061	156.3	1.606	27.454
1100	6.453	6.347	35.080	185.3	1.679	27.571
1200	5.795	5.685	35.092	210.4	1.742	27.666
1300	5.180	5.066	35.068	229.2	1.798	27.721
1400	4.756	4.637	35.044	242.2	1.850	27.752
1500	4.509	4.383	35.031	246.8	1.900	27.770
1750	3.950	3.807	34.989	257.4	2.019	27.797
2000	3.716	3.553	34.987	257.9	2.135	27.821
2500	3.134	2.932	34.954	260.5	2.358	27.855
3000	2.736	2.491	34.929	264.1	2.574	27.874
3500	2.460	2.169	34.910	267.9	2.786	27.886
4000	2.332	1.989	34.899	268.7	3.001	27.892
4500	2.307	1.906	34.893	267.5	3.224	27.893
5000	2.294	1.832	34.885	264.0	3.459	27.893
5500	2.152	1.630	34.860	253.3	3.704	27.888

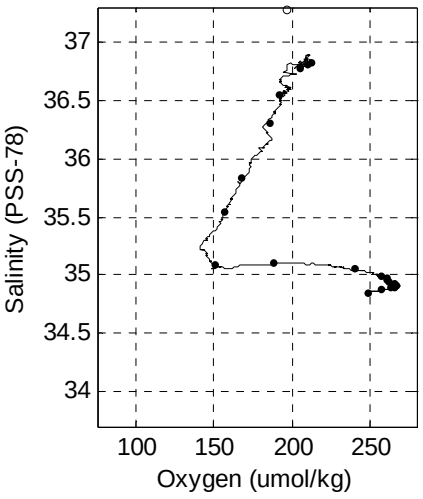
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5592	24	2.082	1.551	34.850	248.8
5297	1	2.246	1.747	34.874	257.2
4599	3	2.304	1.890	34.891	264.1
4298	4	2.313	1.936	34.895	266.2
3898	5	2.347	2.015	34.902	267.2
3548	6	2.444	2.147	34.909	267.6
3200	7	2.608	2.345	34.921	266.2
2851	8	2.851	2.619	34.939	262.4
2449	9	3.197	2.998	34.959	261.2
2049	10	3.566	3.400	34.975	260.8
1696	11	4.012	3.874	34.994	258.0
1374	12	4.836	4.718	35.052	240.3
1102	13	6.516	6.410	35.106	189.0
950	14	7.659	7.561	35.084	151.3
755	15	11.623	11.523	35.541	156.5
651	16	13.735	13.640	35.833	167.9
502	17	16.746	16.662	36.305	185.6
349	18	18.344	18.282	36.550	192.2
248	19	18.973	18.928	37.272	197.3
161	20	20.702	20.672	36.772	205.7
110	21	21.979	21.957	36.827	212.7
58	22	23.959	23.946	36.814	210.3
3	23	23.951	23.950	36.805	209.9

Abaco 2001 R.V. Oceanus
CTD Station 31 (CTD031)
Latitude 26.540 N Longitude 70.681 W
04-May-2001 11:18 Z







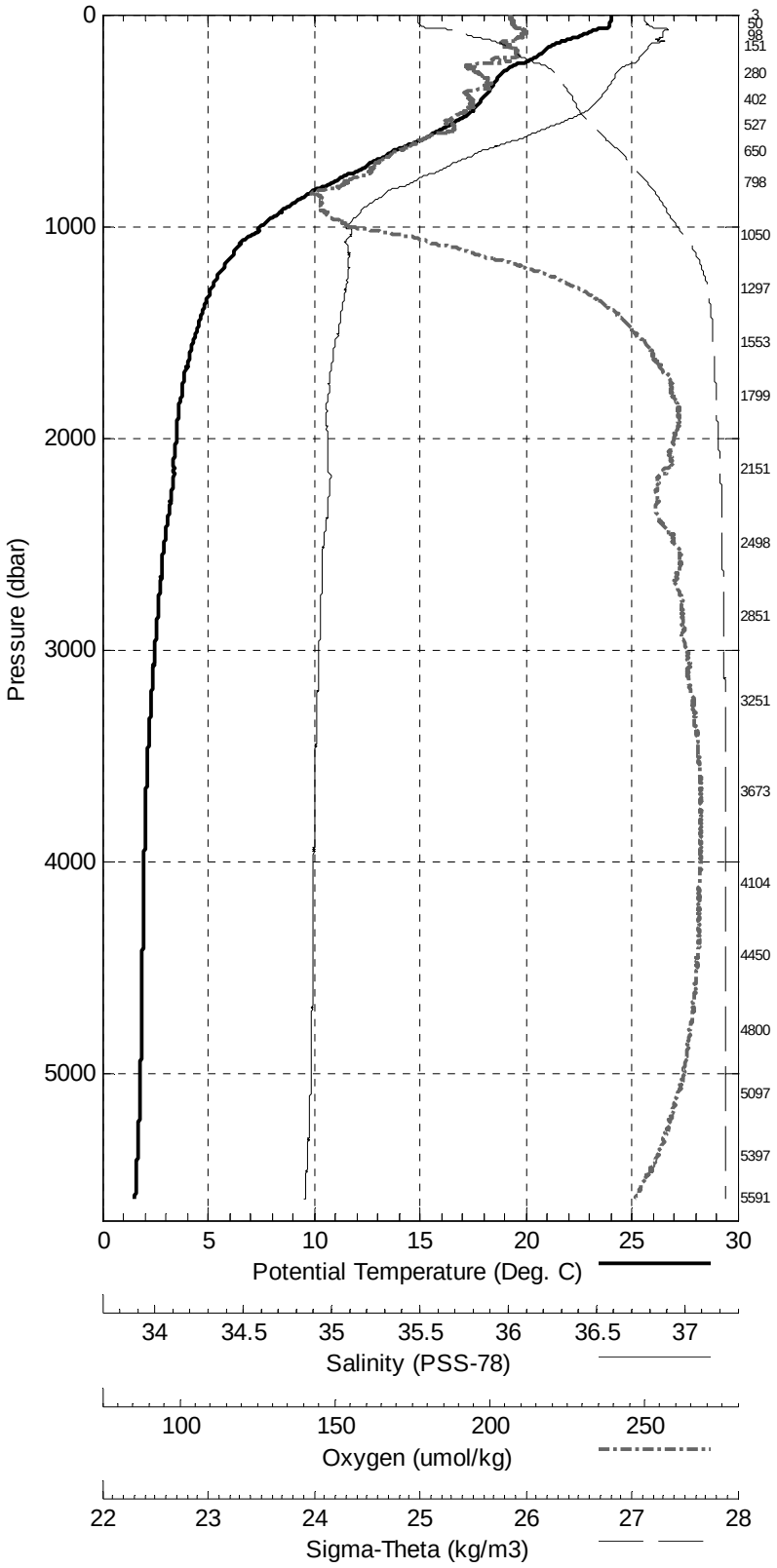


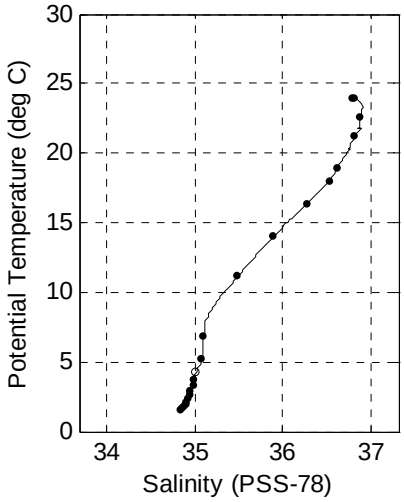
ABACO-01 R.V. Oceanus
CTD Station 32 (CTD032)
Latitude 26.521N Longitude 70.200W
04-May-2001 18:03Z

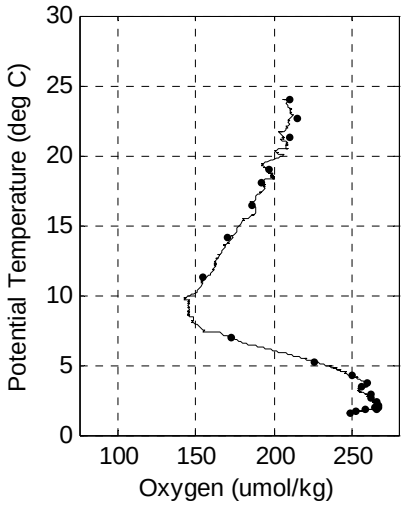
Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	24.017	24.016	36.773	205.8	0.003	24.979
10	24.021	24.019	36.774	207.1	0.030	24.980
20	24.019	24.015	36.775	207.8	0.059	24.981
30	24.010	24.004	36.775	207.9	0.089	24.985
50	23.983	23.972	36.800	207.8	0.149	25.013
75	23.189	23.173	36.891	211.2	0.220	25.318
100	22.599	22.579	36.877	209.9	0.285	25.480
125	21.769	21.744	36.846	206.6	0.346	25.693
150	21.156	21.127	36.797	204.9	0.403	25.827
200	20.532	20.494	36.747	208.6	0.511	25.963
250	19.243	19.197	36.640	194.9	0.611	26.224
300	18.751	18.697	36.603	198.5	0.703	26.325
400	18.002	17.932	36.514	193.8	0.880	26.449
500	16.850	16.766	36.326	187.6	1.048	26.589
600	14.939	14.846	36.014	176.0	1.201	26.788
700	12.765	12.667	35.691	164.0	1.336	26.995
800	10.877	10.776	35.438	153.0	1.453	27.157
900	8.967	8.866	35.205	145.3	1.555	27.301
1000	7.550	7.447	35.090	155.4	1.644	27.426
1100	6.487	6.382	35.093	188.9	1.719	27.576
1200	5.800	5.690	35.096	212.1	1.782	27.668
1300	5.248	5.133	35.078	229.7	1.838	27.722
1400	4.854	4.733	35.055	240.2	1.890	27.750
1500	4.572	4.445	35.039	246.7	1.940	27.769
1750	3.953	3.811	34.984	258.5	2.061	27.793
2000	3.673	3.510	34.979	259.5	2.177	27.819
2500	3.130	2.927	34.955	259.6	2.400	27.856
3000	2.728	2.483	34.929	263.5	2.615	27.874
3500	2.444	2.153	34.909	267.5	2.827	27.887
4000	2.329	1.986	34.899	267.9	3.042	27.892
4500	2.302	1.901	34.893	266.8	3.264	27.894
5000	2.275	1.813	34.883	262.6	3.499	27.893
5500	2.111	1.591	34.854	250.3	3.742	27.887

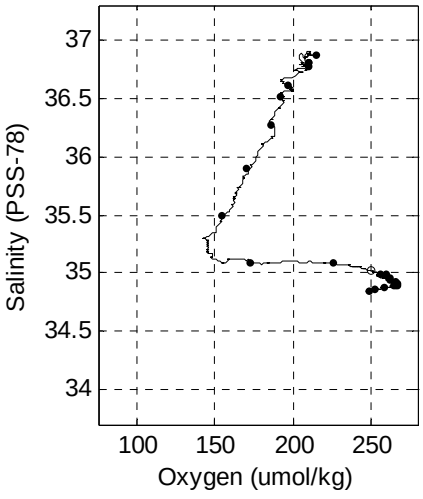
Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5591	24	2.076	1.545	34.849	248.6
5397	1	2.165	1.657	34.862	253.2
5098	2	2.255	1.782	34.879	258.5
4801	3	2.286	1.849	34.887	265.8
4451	4	2.300	1.905	34.893	265.1
4104	5	2.321	1.966	34.898	266.8
3673	6	2.396	2.087	34.906	267.9
3251	7	2.579	2.312	34.919	266.3
2852	8	2.837	2.605	34.936	262.4
2499	9	3.121	2.919	34.953	262.4
2152	10	3.558	3.383	34.987	256.8
1800	11	3.900	3.753	34.985	259.5
1554	12	4.360	4.230	35.020	250.8
1298	13	5.309	5.194	35.079	226.5
1050	14	6.992	6.887	35.088	173.0
798	15	11.305	11.202	35.488	153.9
650	16	14.123	14.026	35.889	170.8
527	17	16.481	16.394	36.267	186.5
402	18	18.072	18.002	36.519	192.2
281	19	19.029	18.978	36.615	197.1
151	20	21.277	21.247	36.806	210.0
99	21	22.612	22.592	36.864	215.7
50	22	23.920	23.909	36.801	210.5
4	23	24.018	24.018	36.768	209.9

Abaco 2001 R.V. Oceanus
CTD Station 32 (CTD032)
Latitude 26.521 N Longitude 70.200 W
04-May-2001 18:03 Z









ABACO-01 R.V. Oceanus
CTD Station 33 (CTD033)
Latitude 26.520N Longitude 69.806W
04-May-2001 00:27Z

Pressure dbar	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg	DynHt m^2/s^2	SigTh kg/m^3
1	23.814	23.813	36.837	208.7	0.003	25.089
10	23.813	23.810	36.839	207.9	0.029	25.091
20	23.818	23.814	36.839	209.0	0.057	25.090
30	23.820	23.813	36.839	209.5	0.086	25.090
50	23.824	23.813	36.839	208.8	0.144	25.090
75	23.558	23.542	36.895	210.7	0.215	25.213
100	23.073	23.052	36.884	211.7	0.284	25.349
125	22.309	22.284	36.860	210.7	0.348	25.551
150	21.601	21.571	36.810	205.3	0.408	25.714
200	20.597	20.559	36.763	208.1	0.519	25.957
250	19.388	19.342	36.649	191.9	0.619	26.194
300	18.872	18.818	36.606	199.2	0.712	26.296
400	18.046	17.977	36.520	193.1	0.890	26.443
500	16.971	16.887	36.343	186.4	1.059	26.573
600	15.371	15.277	36.085	181.0	1.215	26.747
700	13.384	13.283	35.778	167.8	1.355	26.938
800	11.130	11.027	35.458	149.2	1.478	27.127
900	9.167	9.064	35.226	145.4	1.583	27.285
1000	7.609	7.505	35.091	153.2	1.673	27.418
1100	6.728	6.620	35.095	179.4	1.750	27.546
1200	5.869	5.758	35.092	208.1	1.816	27.657
1300	5.379	5.263	35.083	225.9	1.873	27.710
1400	5.026	4.904	35.076	234.9	1.927	27.746
1500	4.673	4.545	35.055	243.0	1.977	27.771
1750	4.048	3.903	35.009	253.6	2.097	27.804
2000	3.720	3.556	34.996	254.6	2.212	27.828
2500	3.130	2.928	34.961	254.8	2.432	27.861
3000	2.779	2.533	34.935	254.3	2.647	27.875
3500	2.483	2.191	34.912	267.7	2.862	27.886
4000	2.350	2.006	34.901	268.7	3.077	27.892
4500	2.294	1.893	34.892	265.0	3.300	27.894
5000	2.255	1.794	34.880	261.6	3.534	27.892
5500	2.100	1.580	34.853	249.4	3.775	27.886

Pressure dbar	Niskin	Temp90 °C	PoTemp90 °C	Salinity PSS-78	Oxygen µmol/kg
5592	24	2.081	1.550	34.850	248.5
5199	1	2.208	1.724	34.871	256.4
4848	2	2.272	1.829	34.884	260.7
4499	3	2.295	1.895	34.891	247.7
4200	4	2.324	1.957	34.897	263.8
3901	5	2.361	2.028	34.901	267.4
3600	6	2.445	2.143	34.909	268.0
3299	7	2.580	2.307	34.918	261.7
3000	8	2.773	2.527	34.936	255.6
2652	9	3.029	2.813	34.956	254.5
2300	10	3.279	3.094	34.966	259.2
1950	11	3.790	3.630	35.002	255.3
1602	12	4.414	4.280	35.066	238.7
1253	13	5.590	5.476	35.089	217.6
1052	14	7.213	7.106	35.111	169.6
901	15	9.102	8.999	35.217	146.3
751	16	12.129	12.028	35.601	157.3
602	17	15.220	15.126	36.066	177.4
452	18	17.524	17.447	36.435	188.9
302	19	18.786	18.732	36.601	200.2
183	20	20.795	20.760	36.789	203.4
109	21	22.613	22.590	36.862	212.7
55	22	23.737	23.726	36.843	211.0
3	23	23.721	23.720	36.844	210.9

Abaco 2001 R.V. Oceanus
CTD Station 33 (CTD033)
Latitude 26.520 N Longitude 69.806 W
04-May-2001 00:27 Z