2002 Body F Lease Area, Brevard County
Quality Assurance/Quality Control (QA/QC) Log

Key to Log:

File Name: Name of excel files containing the data for that month. File names have two or three parts: 1) the two-letter site abbreviation (GJ, HB, BA, etc.), 2) the year and month (ie. -0201), and 3) the nature of the file ("-raw" contains the raw, unaltered data; "-QAQC" contains the quality controlled data set as well as all corrections; the file name that ends with the year and month is the quality controlled file containing only the corrected and finalized data—this is the file sent to the archive)

Deployments: Number of different sondes that recorded data during the month and the periods of dates/times of each deployment.

Condition of Sonde: The post-deployment condition of each sonde deployed during the month. This includes information on fouling, equipment failures and whether post-deployment checks were performed.

Removed Data: Tabulation of all data points removed from a given month. "Trimming on ends of data sets" is a record of all data points removed from either the beginning or the end of the different files in order to create a seamless monthly record (most points removed here were data not recorded in the water, but rather, were point recorded prior to deployment or following retrieval); "Removal of bad data" is a record of data deemed to be of low quality (for example, data out of range of instrument, instrument or probe failures, etc… See Word file "QAQCGuidelines.doc" for criteria used). Table columns give the parameter values deleted, the reason for the deletion (see abbreviations) and the dates and times of points deleted.

Corrected data: This is a record of all data points that were corrected. This includes corrections due to instrument drift, fouling, incorrect instrument calibration, etc. Included are probe readings in the standard pre- and post-deployment and excel formulae used to calculate corrected values. Inability to correct data due to lack of proper post-deployment check procedures or substandard sonde condition (eg. heavily fouled) may also be noted here.

Missing data: This is a record of all missing data points not due to the QA/QC process (ie. not accounted for in "Removal of bad data"). A common cause for this missing data is a lag time between the retrieval of one sonde and the deployment of the second sonde or failure of the instrument to log data at a given time.

Problems and Anomalies: This is a record of troublesome trends or data points not removed from data set, but that could prove a problem in interpretation. Examples include sudden jumps in the data when sondes are changed out (reflecting drift in retrieved sonde or a lack of standardization between the two sondes). Notes regarding reliability of data (whether or not it is or may be faulty) may also be found here. **ALWAYS read this section before interpreting data.**

Abbreviations:

IF	=	Instrument Failure: Data logger returned values of –6999
PF	=	Probe Failure: Probe measuring individual parameter apparently malfunctioned.
ADL	=	Above Detection Limit: data logger returned a data point that is above the detection limit of the probe
BDL	=	Below Detection Limit: data logger returned a data point that is above the detection limit of the probe
SND	=	Sonde Not Deployed: evidence indicates that sonde was not in the water on-site when data was recorded
FOUL	=	Fouled: evidence indicates sonde was not functioning properly due to severe fouling
EXP	=	Exposed: Sonde was exposed to air due to low water level or some disturbance.
NMD	=	Next month's data: trimmed data belonged to next month
PMD	=	Previous month's data: trimmed data belonged to previous month

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General Notes on Reliability of Data:

1) In general, measurements of temperature and depth are very reliable unless otherwise noted in "Problems and Anomalies".
2) Salinity is typically reliable, but this data can be compromised by bad calibrations and fouling. These effects are most obvious as sudden discontinuities in the trend when sondes are changed. If the discontinuity that occurs with a sonde change is more than +/- 2 ppt in magnitude, the discontinuity is noted as a faulty trend.
3) Measurements of dissolved oxygen are often not reliable. Typically, oxygen measurements taken soon after a sonde is deployed are reliable, but reliability decreases during the deployment period due to instrument drift and fouling. The most unreliable oxygen data is that collected near the time the sonde is retrieved. ALWAYS read "Problems and Anomalies" before interpreting dissolved oxygen!
4) The reliability of turbidity measurements is much like that of oxygen. Turbidity measurements are best early and worst late in the deployment period.
5) The reliability of chlorophyll measurements is unknown. We do not currently know what the measurements mean in a biological context. Confirmation studies are underway.
6) If the word "**faulty**" appears regarding a trend or data period, the data should be considered highly unreliable. Do not use this data (if it wasn't deleted altogether) for anything but a general guideline to potential conditions. This designation is only used regarding data known to be of very poor quality.
7) If the phrase "**may be faulty**" appears regarding a trend or data period, the data may not be reliable. Typically, the data appears to be of reasonably good quality and probably does reflect the real trends in environmental condition, but very strict interpretation is not recommended.
8) If a proper post-deployment check was not performed, reliability of all data for that deployment period must be considered suspect.

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MARCH 2002

Files: Sondes: Bf020320, Bf020328; Data: BF-0203-raw, BF-0203-QAQC, BF-0203

Deployments: (2); 3/21-3/28, 3/28-4/5

Condition of Sondes: 3/21-3/28 (no post-deployment condition information; no post-deployment check); 3/28-4/5 (no post-deployment condition information)

Removed Data:

Trimming on ends of data sets:

File	Reason	Data Points
Bf020320	SND	3/27/2002 10:55
Bf020328	NMD	4/1/2002 0:00 to 4/5/2002 11:30

Removal of bad data:

Parameter(s)	Problem	Data Points
NONE		

Corrected Data:

3/21-3/28

**No corrections possible due to lack of post-deployment information.

3/28-4/5:

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

Missing Data:

1) 3/28/2002 11:00-11:30 No sonde in water due to lag time between retrieval and deployment/datalogger start

Problems and Anomalies:

Salinity and Oxygen 3/28-3/31: Cleaning of the sondes prior to the post-deployment checks prevents proper correction of data. Original uncorrected data is retained but **may be faulty** due to the effects of instrument drift and biofouling.

Salinity 3/28-4/5: Salinity values seem unreasonably high. This data record is not continuous with end of previous record or with beginning of next record. This suggests a calibration problem. Data for this period **may be faulty** and discontinuity at end of record is a **faulty** trend resulting from sonde change.

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APRIL 2002

Files: Sondes: Bf020328, Bf020405, Bf020415, Bf020424; Data: BF-0204-raw, BF-0204-QAQC, BF-0204

Deployments: (4); 3/28-4/5, 4/5-4/15, 4/15-4/24, 4/24-5/1

Condition of Sondes: 3/28-4/5 (no post-deployment condition information); 4/5-4/15 (no post-deployment condition information); 4/15-4/24 (no post-deployment condition information; post-deployment check performed incorrectly); 4/24-5/1 (no post-deployment condition information; post-deployment check performed incorrectly)

**Some sondes were calibrated in standards following retrieval, so no post-deployment corrections could be performed. Even those sondes that were not immediately calibrated were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

Removed Data:

Trimming on ends of data sets:

File	Reason	Data Points
Bf020328	PMD	3/27/2002 10:55 to 3/31/2002 23:30
Bf020328	SND	4/5/2002 10:00 to 11:30
Bf020405	SND	4/15/2002 9:00 to 9:30
Bf020415	SND	4/24/2002 10:00 to 11:30
Bf020424	NMD	5/1/2002 0:00 to 8:30

Removal of bad data:

Parameter(s)	Problem	Data Points
NONE		

Corrected Data:

4/1-4/5

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

4/5-4/15

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

4/15-4/24

** Sondes were calibrated in standards prior to performing post-deployment check. All parameters for this deployment period were not correctable due to lack of correct post-deployment check procedure.

4/24-5/1

** Sondes were calibrated in standards prior to performing post-deployment check. All parameters for this deployment period were not correctable due to lack of correct post-deployment check procedure.

Missing Data:

1) 4/15/2002 9:00 to 9:30 sonde recording file Bf020415 did not start until one hour after deployment

Problems and Anomalies:

Salinity and Oxygen 4/1-4/15: Cleaning of the sondes prior to the post-deployment checks prevents proper correction of data. Original uncorrected data is retained but **may be faulty** due to the effects of instrument drift and biofouling.

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Salinity 4/1-4/5: Salinity values seem unreasonably high. This data record is not continuous with end of previous record or with beginning of next record. This suggests a calibration problem. Data for this period **may be faulty** and discontinuities at either end of record are **faulty** trends resulting from sonde changes.

Oxygen 4/1-4/5: End of this record is not continuous with next record. Suggests that either probes were not correctly calibrated or were not post-deployment checked properly. The discontinuity is a **faulty** data trend resulting from sonde change.

Salinity 4/5-4/15: Salinity values seem unreasonably high and worse than previous bad record. This data record is not continuous with end of previous record or with beginning of next record. This suggests a calibration problem. Data for this period **may be faulty** and discontinuities at either end of record are **faulty** trends resulting from sonde changes.

Salinity and Oxygen 4/15-4/24: Post-deployment check procedure not performed correctly, so data could not be corrected for drift or fouling. All original data was retained. Data do not vary in any substantial way that would suggest it is faulty; however, because post-deployment condition of sonde is unknown, data in this record **may be faulty.**

Salinity and Oxygen 4/24-5/1: Post-deployment check procedure not performed correctly, so data could not be corrected for drift or fouling. All original data was retained. Data do not vary in any substantial way that would suggest it is faulty; however, because post-deployment condition of sonde is unknown, data in this record **may be faulty.**

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MAY 2002

Files: Sondes: Bf020424, Bf020501, Bf020508; Data: BF-0205-raw, BF-0205-QAQC, BF-0205

Deployments: (3); 4/24-5/1, 5/1-5/8, 5/8-5/17

Condition of Sondes: 4/24-5/1 (no post-deployment condition information; post-deployment check performed incorrectly); 5/1-5/8 (no post-deployment condition information; post-deployment check performed incorrectly); 5/8-5/17 (Piling and sonde were laying on seafloor when sonde was retrieved)

Removed Data:

Trimming on ends of data sets:

File	Reason	Data Points
Bf020424	PMD	4/24/2002 10:00 to 4/30/2002 23:30
Bf020501	SND	5/8/2002 10:00 to 11:00
Bf020508	SND	5/17/2002 9:30 to 10:00

Removal of bad data:

Parameter(s)	Problem	Data Points
All	IF-piling	5/8 1000 – 5/17 900

Corrected Data:

4/24-5/1

** Sondes were calibrated in standards prior to performing post-deployment check. All parameters for this deployment period were not correctable due to lack of correct post-deployment check procedure.

5/1-5/8

** Sondes were calibrated in standards prior to performing post-deployment check. All parameters for this deployment period were not correctable due to lack of correct post-deployment check procedure.

Missing Data:

1) 5/1/2002 9:00 to 9:30: sonde recording file Bf020424 stopped at 8:30, and sonde recording file Bf020501 started recording at 10:00
2) 5/17/2002 to 5/31/2002: piling was broken-off and no sondes could be deployed until 6/4/2002

Problems and Anomalies:

Salinity and Oxygen 4/24-5/1: Post-deployment check procedure not performed correctly, so data could not be corrected for drift or fouling. All original data was retained. Data do not vary in any substantial way that would suggest it is faulty; however, because post-deployment condition of sonde is unknown, data in this record **may be faulty.**

Salinity and Oxygen 5/1-5/8: Post-deployment check procedure not performed correctly, so data could not be corrected for drift or fouling. All original data was retained. Data do not vary in any substantial way that would suggest it is faulty; however, because post-deployment condition of sonde is unknown, data in this record **may be faulty.**

All parameters 5/8-5/17: Piling fell at some point during this deployment period (exact time of collapse unknown). Because sonde would be on the bottom, data recorded would not be consistent with other deployment periods. Entire record must be considered **faulty**.

All parameters 5/17-5/31: Because piling was down, sonde was not deployed during this period.

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JUNE 2002

Files: Sondes: Bf020604, Bf020613, Bf020621; Data: BF-0206-raw, BF-0206-QAQC, BF-0206

Deployments: (3); 6/4-6/13, 6/13-6/21, 6/21-7/1

Condition of Sondes: 6/4-6/13 (no post-deployment condition information; post-deployment check performed incorrectly), 6/13-6/21 (no post-deployment condition information; post-deployment check performed incorrectly), 6/21-7/1 (no post-deployment condition information; post-deployment check performed incorrectly))

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

Removed Data:

Trimming on ends of data sets:

File	Data Points	Reason
Bf020604	6/13/2002 10:00 to 11:00	Sonde retrieved and not in water
Bf020613	6/21/2002 10:30 to 14:00	Sonde retrieved and not in water
Bf020621	7/1/2002 0:00 to11:00	July data

Removal of bad data:

Parameter(s)	**Problem**	**Data Points**
NONE		

Corrected Data:

6/4-6/13

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

6/13-6/21

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

6/21-7/1

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

Missing Data:

6/1/2002 0:00 to 6/4/2002 9:00: piling was broken-off and no sondes could be deployed until 6/4/2002

Problems and Anomalies:

Salinity and oxygen 6/4-6/30: Cleaning of the sondes prior to the post-deployment checks prevents proper correction of data. Original uncorrected data is retained but **may be faulty** due to the effects of instrument drift and biofouling. Decreases in salinity and dissolved oxygen near end of deployment periods likely reflect biofouling and not changes in the environment.

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JULY 2002

Files: Sondes: Bf020621, BF020701, Bf020712, Bf020718
Data: BF-0207-raw, BF-0207-QAQC, BF-0207

Deployments: (4); 6/21-7/1, 7/1-7/12, 7/12-7/18, 7/18-7/29

Condition of Sondes: 6/21-7/1 (no post-deployment condition information; post-deployment check performed incorrectly); 7/1-7/12 (no post-deployment condition information; post-deployment check performed incorrectly); 7/12-7/18 (no post-deployment condition information; post-deployment check performed incorrectly); 7/18-7/29 (no post-deployment condition information; post-deployment check performed incorrectly)

Removed Data:

Trimming on ends of data sets:

File	Reason	Data Points
Bf020621	PMD	6/21 1030-6/30 2330
Bf020621	SND	7/1 1000-1100
Bf020701	SND	7/12 930-1030
Bf020712	SND	7/18 1030-1130
Bf020718	SND	7/18 1000
Bf020718	SND	7/29 900-930

Removal of bad data:

Parameter(s)	Problem	Data Points

Corrected Data:

6/21-7/1

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

7/1-7/12

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

7/12-7/18

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

7/18-7/29

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

Missing Data:

All parameters 7/29 900-7/31 2330: No Data. No sonde deployed or not functioning.

Problems and Anomalies:

Salinity and oxygen 7/1-7/29: Cleaning of the sondes prior to the post-deployment checks prevents proper correction of data. Original uncorrected data is retained but **may be faulty** due to the effects of instrument drift and biofouling. Decreases in salinity and dissolved oxygen near end of deployment periods likely reflect biofouling and not changes in the environment.

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JULY 2002

Salinity 7/12: When sondes changed salinity increased 2.5ppt either because of drift in Ba020701 (no post-deployment information available) or because of bad calibration in Ba020712. This sudden discontinuity is **faulty**.

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AUGUST 2002

Files: Sondes: Bf020802, Bf020812, Bf020822

Deployments: (3); 8/2-8/12, 8/12-8/22, 8/22-9/3

Condition of Sondes: 8/2-8/12 (no post-deployment condition information; post-deployment check performed incorrectly); 8/12-8/22 (no post-deployment condition information; post-deployment check performed incorrectly); 8/22-9/3 (no post-deployment condition information; post-deployment check performed incorrectly)

Removed Data:

Trimming on ends of data sets:

File	Reason	Data Points
Bf020802	SND	8/12 1230-1330
Bf020812	SND	8/12 1200
Bf020812	SND	8/22 1000-1130
Bf020822	NMD	9/1 000-9/3 1200

Removal of bad data:

Parameter(s)	Problem	Data Points
NONE		

Corrected Data:

8/2-8/12

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

8/12-8/22

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

8/22-9/3

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

Missing Data:

All parameters 8/1 000-8/2 1030: No Data. No sonde deployed or sonde not functioning.

All parameters 8/22 1000: No data. Sonde for deployment period 8/22-9/3 did not start recording until 40 minutes after deployment.

Problems and Anomalies:

Salinity and oxygen 8/2-8/31: Cleaning of the sondes prior to the post-deployment checks prevents proper correction of data. Original uncorrected data is retained but **may be faulty** due to the effects of instrument drift and biofouling. Decreases in salinity and dissolved oxygen near end of deployment periods likely reflect biofouling and not changes in the environment.

Salinity 8/2-8/12: Salinity data recorded by this sonde is highly erratic. This erratic behavior is specific to this particular sonde deployment period so there is a high probability that this data is **faulty** due to a malfunctioning conductivity probe. However, no information is provided in the post-deployment check that indicates there was a problem with the probe. Consequently, the function of the probe is uncertain, and the data could not be deleted with proper justification and was retained. Strict interpretation of this record is discouraged.

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AUGUST 2002

Salinity 8/12: When sondes changed salinity increased 4.4ppt either because of drift in Ba020802 (no post-deployment information available) or because of bad calibration in Ba020812. This sudden discontinuity is **faulty**.
Salinity 8/22: When sondes changed salinity increased 4.4ppt either because of drift in Ba020812 (no post-deployment information available) or because of bad calibration in Ba020822. This sudden discontinuity is **faulty**.

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SEPTEMBER 2002

Files: Sondes: Bf020822, Bf020903, Bf020909, Bf020919, Bf020925
Data: BF-0209-raw, BF-0209-QAQC, BF-0209

Deployments: (5); 8/22-9/3, 9/3-9/9, 9/9-9/19, 9/19-9/25, 9/25-10/3

Condition of Sondes: 8/22-9/3 (no post-deployment condition information; post-deployment check performed incorrectly); 9/3-9/9 (no post-deployment condition information; post-deployment check performed incorrectly); 9/9-9/19 (no post-deployment condition information; post-deployment check performed incorrectly); 9/19-9/25 (no post-deployment condition information); 9/25-10/3 (no post-deployment condition information)

Removed Data:

Trimming on ends of data sets:

File	Reason	Data Points
Bf020822	PMD	8/22 1030-8/31 2330
Bf020822	SND	9/3 1000-1200
Bf020903	SND	9/9 1130-1300
Bf020909	SND	9/9 1000-1100
Bf020909	SND	9/19 930-1030
Bf020919	SND	9/25 930-1030
Bf020925	SND	9/25 800-900
Bf020925	NMD	10/1 000-10/3 1300

Removal of bad data:

Parameter(s)	Problem	Data Points

Corrected Data:

8/22-9/3

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

9/3-9/9

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

9/9-9/19

**Sondes were typically cleaned prior to post-deployment check. This practice is not proper and results in inaccurate corrections.

9/19-9/25

Specific Conductivity:

standard 10, probe 9.951
Formula: =(-((9.951-10)/(B1172-B885))*(B885-B885))+D885
Salinity =(0.7254*K885)-3.6586

Oxygen:

pre-deployment O2: None
post-deployment O2: 103.9, 101.6, 100.6
standard 100, probe 101.3; O2 correction = 101.7
Formula: =(-((101.7-100)/(B1172-B885))*(B885-B885))+F885
Conversion for O2 concentration:
=3.92-(0.0986*C885)-(0.0326*L885)+(0.0642*I885)

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SEPTEMBER 2002

9/25-10/3

Specific Conductivity:

standard 10.00, probe 12.25
Formula: =(-((9.951-10)/(B1172-B885))*(B885-B885))+D885
Salinity =(0.7254*K885)-3.6586

Oxygen:

pre-deployment O2: 96.8, 100.7, 97.8
post-deployment O2: 106.4, 103.5, 103.3
standard 100, probe 102.2; O2 correction = 103.3
Formula: =(-((101.7-100)/(B1172-B885))*(B885-B885))+F885
Conversion for O2 concentration:
=3.92-(0.0986*C885)-(0.0326*L885)+(0.0642*I885)

Missing Data:

NONE

Problems and Anomalies:

Salinity and oxygen 9/1-9/19: Cleaning of the sondes prior to the post-deployment checks prevents proper correction of data. Original uncorrected data is retained but **may be faulty** due to the effects of instrument drift and biofouling. Decreases in salinity and dissolved oxygen near end of deployment periods likely reflect biofouling and not changes in the environment.

Oxygen 9/1-9/3: The low and somewhat erratic oxygen concentrations during this period came near the end of the deployment period for a sonde (8/22-9/3). These low concentrations **may be fault**y, however, when the sonde was changed on 9/3, oxygen did not climb immediately, but rather increased slowly over a couple of hours. We have no evidence to suggest this is not a real trend, but the association between the low concentrations and the end of a deployment period is suspicious.