

## 2004 Gulf Jackson Lease Area, Levy 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! Dissolved oxygen discontinuities of +/- 25% or more coincident with sonde changes are noted as faulty if they do not fall within the actual rate of change occurring before and after the sonde change.
  - 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.
- 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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**JANUARY--2004**

Files: Data: GJ-0401-raw, GJ-0401-QAQC, GJ-0401

Deployments: (2); 12/12-1/8, 1/8-2/9

Condition of Sondes: 12/12-1/8 (No back-up log recorded; No post-deployment check; Very light fouling), 1/8-2/9 (heavy probe fouling)

Removed Data:

Parameter(s)	Problem	Data Points
Oxygen	FOUL	2/7 915-2/9
Turbidity	FOUL	2/3 1745-2/9
Chlorophyll	FOUL	2/3 1745-2/9

Corrected Data:

12/12-1/8

\*\*Not correctable, no post-deployment check performed (see below)

1/8-2/9

Specific Conductivity:

standard 12.88, probe 13.94

Formula: =(-(13.94-12.88)/(\$B\$2829-\$B\$1297))\*(B1297-\$B\$1297))+D1297

Salinity =(0.6996\*Q1297)-2.4271

Oxygen:

pre-deployment O2: 101.4

post-deployment O2: 56.7

standard 100, probe 59.5

\*\*Not correctable (see below)

Turbidity:

standard 0, probe 7.5; standard 123, probe 122.6

\*\*Not corrected (see below)

Chlorophyll:

standard 0.0, probe 2.2

\*\*Not corrected (see below)

Problems and Anomalies:

All Parameters 12/12-1/8: The back-up log was not recorded for this period, so real-time data was used. No post-deployment check was performed, so any calibration, drift or fouling problems could not be corrected and the data may be faulty. However, fouling was very light and the data near the end of this deployment period matched well with the data recorded by the new sonde deployed on 1/8. This suggests the recorded data is reliable.

Oxygen 2/7 915-2/9: When retrieved, probe read 56.7% in 100% standard and the probes were heavily fouled. The suspected fouled portion of the data record was deemed faulty and was deleted. The remaining portion of the original data record was retained but may be faulty due to fouling or drift.

Turbidity 2/3 1745-2/9: The probe was heavily fouled upon retrieval and the data record showed consistent spikes near the end of the deployment period. The remaining portion of the original data record was retained but may be faulty due to fouling or drift.

Chlorophyll 2/3 1745-2/9: The probe was heavily fouled upon retrieval and the data record showed consistent spikes near the end of the deployment period. The remaining portion of the original data record was retained

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but **may be faulty** due to fouling or drift.

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**FEBRUARY-2004**

Files: Data: GJ-0402-raw, GJ-0402-QAQC, GJ-0402

Deployments: (2); 1/8-2/9, 2/9-3/3

Condition of Sondes: 1/8-2/9 (heavy probe fouling), 2/9-3/3 (heavy probe fouling)

Removed Data:

Parameter(s)	Problem	Data Points
Oxygen	FOUL	2/7 915-2/9
Turbidity	FOUL	2/3 1745-2/9
Chlorophyll	FOUL	2/3 1745-2/9
Oxygen	FOUL	2/24 105-3/3

Corrected Data:

1/8-2/9

Specific Conductivity:

standard 12.88, probe 13.94

Formula: =(-(13.94-12.88)/(\$B\$2829-\$B\$1297))\*(B1297-\$B\$1297)+D1297

Salinity =(0.6996\*Q1297)-2.4271

Oxygen:

pre-deployment O2: 101.4

post-deployment O2: 56.7

standard 100, probe 59.5

\*\*Not correctable (see below)

Turbidity:

standard 0, probe 7.5; standard 123, probe 122.6

\*\*Not corrected (see below)

Chlorophyll:

standard 0.0, probe 2.2

\*\*Not corrected (see below)

2/9-3/3

Specific Conductivity:

standard 12.88, probe

Formula: =(-(10.47-12.88)/(\$B\$2638-\$B\$1535))\*(B1535-\$B\$1535)+D1535

Salinity =(0.707\*Q1535)-2.6825

Oxygen:

pre-deployment O2: 102.2

post-deployment O2: 51.6

standard 100, probe 47.5

\*\*Not correctable

Turbidity:

standard 0, probe 35.7; standard 123, probe 124.4

\*\*Normal correction not used (see below)

Chlorophyll:

standard 0.0, probe 2.1

Formula: =((2.1-0)/(\$B\$2638-\$B\$1535))\*(B1535-\$B\$1535)+K1535

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**Problems and Anomalies:**

Oxygen 2/7 915-2/9: When retrieved, probe read 56.7% in 100% standard and the probes were heavily fouled. The suspected fouled portion of the data record was deemed faulty and was deleted. The remaining portion of the original data record was retained but **may be faulty** due to fouling or drift.

Turbidity 2/3 1745-2/9: The probe was heavily fouled upon retrieval and the data record showed consistent spikes near the end of the deployment period. The remaining portion of the original data record was retained but **may be faulty** due to fouling or drift.

Chlorophyll 2/3 1745-2/9: The probe was heavily fouled upon retrieval and the data record showed consistent spikes near the end of the deployment period. The remaining portion of the original data record was retained but **may be faulty** due to fouling or drift.

Oxygen 2/24 105-3/3: When retrieved, probe read 51.6% in 100% standard and the probes were heavily fouled. The suspected fouled portion of the data record was deemed faulty and was deleted. The remaining portion of the original data record was retained but **may be faulty** due to fouling or drift.

Turbidity 2/9-3/3: Prior to deployment probe was reading “out of range”. Upon deployment probe read a baseline value of 32.7 (rather than near zero) and after deployment read 35.7 in a 0.0 standard. Typical correction was not applied; instead, all values were reduced by 32.7. Data **may be faulty** and should be