Bioassay Sample Log-In Procedure

1. SCOPE AND APPLICATION

    1.1. This method is used to document the receipt and the physical-chemical characteristics of bioassay samples received in the bioassay laboratory.

2. SUMMARY OF METHOD

    2.1. The transfer of bioassay samples from the Laboratory Receiving room to the bioassay lab is documented on the chain of custody form (sample submittal form). Bioassay sample collection and receipt information is logged into the *Bioassay Sample Log-in* book. Physical-chemical parameters are measured on an aliquot of the bioassay sample. The results of these measurements are entered in the *Bioassay Sample Log-in* book and LIMS. Labels are applied to the sample containers. The LIMS Custody module is used to track sample custody.

3. EQUIPMENT AND SUPPLIES

    3.1. Thermo Scientific Orion Star A213 Benchtop RDO/DO Meter (SOP TA-06.39)

    3.2. Fisherbrand Traceable Bench Conductivity Meter (SOP TA-06.36)

    3.3. Beaker or specimen cups

    3.4. Digital thermometer (SOP TA-06.13)

    3.5. Fisherbrand FE150 pH Meter (SOP TA-06.37)

    3.6. Hach Pocket Colorimeter Test Kit for total residual chlorine (SOP TA-06.22)

    3.7. Hach Ammonia Nitrogen Pocket Colorimeter II Test Kit (SOP TA-06.35)

    3.8. Titration Kits and reagents for alkalinity and hardness (SOP TA-06.08)

    3.9. Bucket for water bath

    3.10. Black, waterproof pen

    3.11. Computer with access to the Laboratory Information Management System (LIMS)

    3.12. *Bioassay Sample Log-in* logbook

    3.13. *Bioassay bench sheets* logbooks

4. REAGENTS AND STANDARDS

    4.1. Aliquot of bioassay sample

5. METHOD

    5.1. Sample Receipt

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5.1.1. Sign the chain-of-custody form (sample submittal form) when picking up a sample from Laboratory Receiving Room. Scan the employee badge of the Receiving Room staff that transfers the sample.

5.1.2. Record the following in *Bioassay Sample Log-in* book:

a. Facility name

b. LIMS Job number and LIMS Sample ID (both are usually obtained the day after the sample is received in the bioassay lab). This can be found in the receiving Bizhub scan folder.

5.1.3. Record time and date the sample was collected.

5.1.4. Rinse the thermometer with DI water and place it in the sample bottle. Record the temperature per SOP TA-06.13 once it stabilizes. Remove and rinse thermometer.

5.1.4.1. The required temperature for a bioassay sample after having adequate time to chill is ≤ 6 °C.

5.1.4.2. The temperature of a bioassay sample when received in the Toxicology laboratory might be >6° C due to sitting in ambient conditions during login and transfer. Analyst should measure sample temperature as soon as possible. For compliance purposes, the temperature of the sample as recorded in the Receiving Room is used. (If the temperature is >6° C, make a comment in the logbook and notify supervisor).

5.1.4.3. After the receiving temperature is taken, place the sample bottles in a warm-water bath (sink or bucket). Allow the sample to warm to the appropriate test temperature (usually 25 ±1 °C).

5.1.5. Record the date and time sample was received in the Toxicity section.

5.1.6. Record the name of the Biology staff member who transferred the sample from the Receiving Room.

5.1.7. After warming, pour ~150 mL of the sample into a specimen cup and measure the following:

a. Temperature

b. DO

c. pH

d. Conductivity

e. Salinity

f. Chlorine

5.1.7.1. When chlorine is above 0.1 mg/L dechlorinate the sample according to SOP TA-09.18

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g. Ammonia

h. Alkalinity

i. Hardness

5.1.8. Record temperature, DO, pH, conductivity and salinity in the *Bioassay Sample Log-in* book and LIMS. Record chlorine, ammonia, alkalinity, and hardness in their respective log books and LIMS.

5.1.9. Conversely, a cup of sample can be poured from the bioassay jug prior to the jug being warmed and then warmed separately to speed up the login process.

5.2. Sample Label Receipt

5.2.1. Job Folders are no longer prepared by Receiving Staff. Biology staff can get sample labels from the Biology Box in the Receiving Room. Request that the receiving room staff print a label (containing identical information) for each bioassay sample container from the same facility. These can also be found by using LIMS browser.

5.2.2. Record Sample ID and Job numbers from the Sample Label in the *Bioassay Sample Log-in* book and on the appropriate bioassay bench sheets. Place one label on each of the sample containers.

5.2.3. Review field sheet. Verify the date and time of sample collection.

5.2.3.1. Field sheets are now scanned by Receiving Staff. To view the field sheet, go to BizhubScans Look for name of District and name of facility.

5.2.4. Verify that all samples are listed on field sheets.

5.2.5. Verify that all samples have a LIMS sample ID assigned.

5.2.5.1. Write the LIMS sample ID on the bench sheet.

5.2.6. Verify that all samples received have the correct analysis or analyses requested and are logged into LIMS.

5.2.6.1. Notify Receiving Room Staff as soon as practical to make corrections if an error or omission is found.

5.2.7. Verify that all samples received had the correct sample and station ID's assigned to them during log-in as listed on the field sheet.

5.2.7.1. Notify Receiving Room Staff to make corrections.

5.2.8. Verify that all samples have a sample date and time listed.

5.2.8.1. Make sure the sample date/ time are the end date/time it was collected if it was a composite sample. Record sample date/time in the *Bioassay Sample Log-in* book.

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5.2.9. Record any changes made by Biology staff to the LIMS information (such as altered analyses, added sample numbers, added tests, etc.) so that the sample numbers and analyses can be traced back to the samples and analyses that were requested on the field sheets.

5.3. Sample Disposal

5.3.1. When a sample is depleted or a test is completed, rinse the sample containers with tap water, remove the labels and place on a dirty glassware cart in Room B246 for cleaning.

6. DATA ARCHIVAL

6.1. Use a black, waterproof pen for all bench sheets and logbooks.

6.2. Record information in *Bioassay Sample Log-in* book and appropriate *Bioassay bench sheets* logbooks.

6.3. FDEP Laboratory Information Management System (LIMS)

6.4. To correct raw data entries, place a single line through the incorrect or illegible entry, write the corrected entry near the error, date and initial the correction. Do not overwrite entries.

6.4.1. The corrected entry is written as near as possible to the error or in the comment box on the appropriate bench sheet.

6.4.2. If the correction requires an explanation, write a comment and reference the error with a letter. Initial and date the explanation. Do not attempt to put all information (correction and comments) into a small space.

6.4.3. Use sequential alphabetical annotation to identify errors and corresponding comments (use A for first error and use A for corresponding explanatory comment; use B for second error, etc.).

7. QUALITY CONTROL

7.1. Refer to DEP Laboratory Quality Manual for corrective action and handling out-of-control data.

7.2. Due to the short-hold time of the bioassay samples, organism age constraints, sample manipulation and preparation, among other issues, initial sample custody by Biology staff begins when the samples are transferred to Biology staff as noted by Biology staff signing the Sample Submittal forms (aka field sheets or chain of custody forms) and noting the number of bioassay sample jugs taken. Samples are taken directly to the bioassay lab for preparation. Excess sample and/or sample containers are placed into the walk-in refrigerator in Room B227.

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8. SAFETY/HAZARDOUS WASTE MANAGEMENT

8.1. Proper laboratory protection, including lab hood or ventilation system, lab coat, gloves and safety glasses, is required when working with chemicals and unprocessed samples.

8.2. Refer to Laboratory Quality Manual for sample disposal.

8.3. Refer to the Laboratory Health and Safety Manual and Hazardous Waste Management.

9. REFERENCES

9.1. DEP SOP TA-06.08, *Measuring Total Alkalinity and Hardness*

9.2. DEP SOP TA-06.13, *Thermometer Calibration and Use*

9.3. DEP SOP TA-06.22, *Measuring Total Residual Chlorine using the Hach Pocket Colorimeter and Colorimeter II Test Kits*

9.4. DEP SOP TA-06.35, *Measuring Total Ammonia using Ammonia Nitrogen Pocket Colorimeter II Test Kit*

9.5. DEP SOP TA-06.36-1.0, *Calibration and Use of the Fisherbrand Traceable™ Bench Conductivity Meter for Conductivity and Salinity*

9.6. DEP SOP TA-06.37-1.0, *Calibration and Use of Accumet Model FE150 pH Benchtop Meter*.

9.7. DEP SOP TA-09.18, *Dechlorination Procedure using Sodium Thiosulfate*

9.8. Laboratory Quality Manual for sample disposal https://floridadep.gov/dear/florida-dep-laboratory/content/dep-laboratory-quality-assurance-manual-and-sops

9.9. Laboratory Health and Safety Manual and Hazardous Waste Management https://fldepnet.org/content/dear/bureau-laboratories-safety-documents

APPENDIX OF CHANGES

01/02/2008 Added Scope and Application; Summary of Method; and Appendix of Changes.

12/03/2008 Added References.

08/12/2013 Reformatted SOP.

01/30/2015 Formatted for SOP compliance.

07/09/2015 Updated links.

07/11/2016 Updated links.

08/28/2018 Updated links and changed font to Calibri.

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09/13/2018 Added new SOPs to references and new pH and conductivity meters in equipment list. Renewed Bizhubscans link. (M. Faircloth 09/13/18)

07/31/2019 Updated meters and SOPs. Added section on checking sample collection end date and time on field sheet. Added section on measuring chlorine, ammonia, alkalinity and hardness. Renewed Bizhubscans link.

09/01/2020 Updated equipment section. Added LIMS mentions. Updated data archival section with universal language.

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