Sample Custody, Preparation Labels and Worksheet Instructions for Bench Biology Samples

1. INTRODUCTION

1.1. This method provides instruction for getting samples into Bench Biology custody using the LIMS Custody module. Prior to analysis, the analyst checks out samples from the Receiving Room, prints appropriate labels for analyses and checks samples into Biology custody. The Bench Biology section handles microbiology, chlorophyll, sediment and biochemical oxygen demand (BOD) samples. The LIMS Analysis IDs include BOD-INHB, BOD-UNIN, ALGAE-AFDW, , CHLSUITE-W, DW-PLATECT, , ECOLI-18QT, , ENT-24-QT, FCOLI-MF, , , TCOLI-MF, , EN24-QT-CL, , E-MF-CL, EC-18QT-CL, FC-MF-CL, , TC-MF-CL, SED-PSZ-LS, SED-UNIF, SED-USDA, SED-WWTH, SDMNT-AFDW.

2. SAMPLE COLLECTION AND PRESERVATION

2.1. The Receiving Room staff is responsible for receiving samples shipped from the field personnel that collect water and soil samples throughout the state (SOP FS-1000). Bench Biology samples are logged into LIMS and stored at the correct temperatures (SOP RC-007). Analysts have access to the storage areas in order to obtain the samples for analysis.

3. SAMPLE CUSTODY AND LABELS

3.1. Samples approaching the end of holding times should be picked up by an analyst as soon as possible for immediate processing. These samples can be signed out of the Receiving Room if they have not been logged into the LIMS.

3.1.1. To sign out samples, match field IDs to the custody sheets and sign the bottom of each individual custody sheet with analyst name, date/time, sample type, and number of samples picked up.

3.2. SAMPLE CHECK OUT

3.2.1. Collect samples in the Receiving Room that have been logged in by the Receiving Room staff. Samples will have a large label with a Sample ID number, field information and barcode. Check out samples at a computer in the Receiving Room before bringing them back to the lab. Log into LIMS. Select **Laboratory → Receiving → Custody**.

3.2.2. In the window that appears, select the first button to **Check Out** samples.

3.2.3. Scan the barcode of each sample. Be sure that the number of samples corresponds to total number scanned, shown at the bottom of the screen.

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3.2.4. Click **OK** after scanning the barcodes. When prompted, the analyst will either scan his/her ID badge or type the five-digit ID number located on the badge. Repeat and click **OK**. Analyst must be a custodian in LIMS to be able to check out/in samples. Return to the Microbiology Lab with the samples and arrange them by analysis.

3.3. PREP WORKSHEETS

3.3.1. Log in to LIMS on the Microbiology Lab computer. Select **Laboratory → Technical → Prep Worksheet Manager**. Select the first shortcut button to **Create a prep worksheet**.

3.3.1.1.*Microbiological samples:*

3.3.1.1.1. In the first column labeled "Preparation ID…", select **MICRO-MF** or **MICRO-QT** as appropriate. Select the analyst's name from the column labeled "Assign to...". Ensure "BENCHBIO" is selected in the drop-down list box. Highlight all the micro samples that were just checked out of custody.

Note: As a shortcut, use the **Samples Checked Out** button to automatically highlight samples and analyst name, but this must be done before checking samples back in.

3.3.1.1.2. Click on the check mark button to **Create the new worksheet**. Press [Escape], or click on the Abort (ESC) icon. Click on the spreadsheet icon (**Open a prep worksheet logbook)** to view the worksheet.

3.3.1.2.*Chlorophyll samples:*

3.3.1.2.1. In the first column labeled "Preparation ID…", select **SOP-BB29**. Select the analyst's name from the column labeled "Assign to...". Ensure "BENCHBIO" is selected in the drop-down list box. Highlight all the chlorophyll samples that were just checked out of custody.

Note: As a shortcut, use the **Samples Checked Out** button to automatically highlight samples and analyst name, but this must be done before checking samples back in.

3.3.1.2.2. Click on the check mark button to **Create the new worksheet**. Press [Escape], or click on the Abort (ESC) icon. Click on the spreadsheet icon (**Open a prep worksheet logbook)** to view the worksheet.

3.4. PRINT LABELS

3.4.1. Go back to the "Prep Worksheet Manager" window and select the icon "Print Prep Labels". Deselect the "Micro Petri Dish" and "Chlorophylls" tabs that are

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already highlighted in **Figure 3** by double-clicking on each of the shortcut label buttons (text appears when mouse hovers over selection). To print the appropriate labels for each type of analysis, follow steps below. If there are samples of several different analyses, print labels for bacterial samples first due to short holding times, then chlorophyll, BOD and sediment samples.

Note: Alternatively, go to the top of the screen and select **Laboratory → Receiving → Print Preparation Labels** to access the "Print Prep Labels" window,

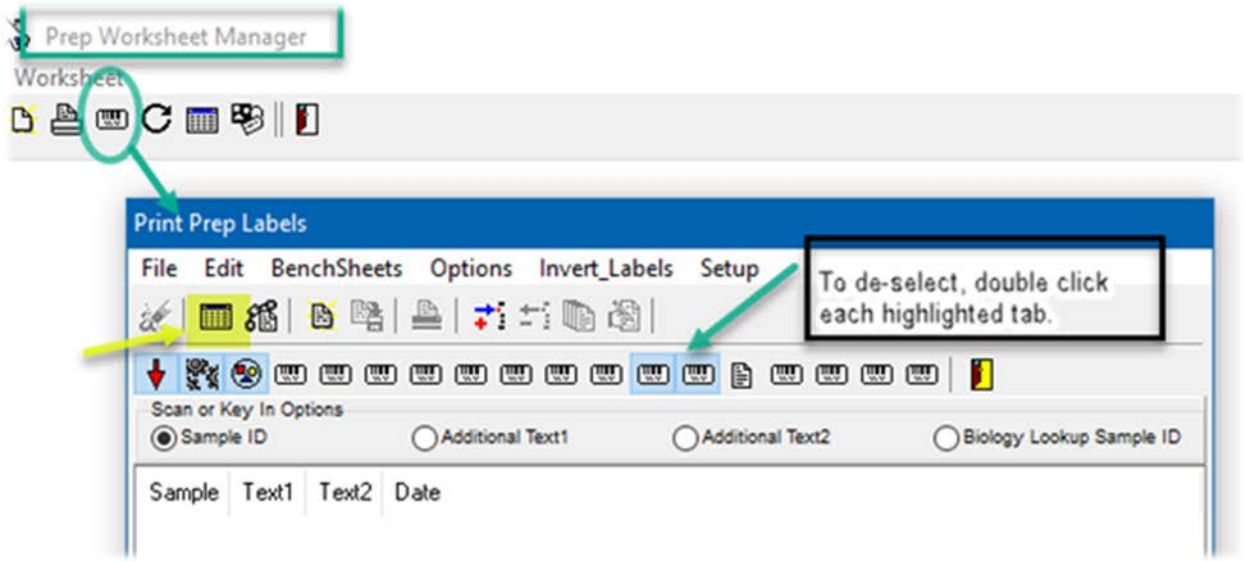


Figure 3

3.4.2. *Microbiological samples*:

3.4.2.1. Click on the button marked **Micro Petri Dish**.

3.4.2.2. Click on the second highlighted shortcut button in Figure 3 to **Load Sample IDs from prep worksheet**. Select Worksheet that was just created from the drop-down list box and click **OK**. Verify that the samples shown correspond to the samples that you checked out. There will be one line for each analysis that has been scheduled for each sample.

3.4.2.3. Select the printer button to **Print List**. Select Generic/Text printer. The number of copies to print varies depending on the number of dilutions per analysis. For example, print three copies for analyses with three dilutions. For Quanti-Tray tests print two labels per sample. Click **OK** to print. Print an extra label for lab duplicates for one out of every ten samples per analysis. (There should always be at least one duplicate per analysis received per day.)

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3.4.2.4. Leave labels on microbiology lab bench to be used for sample prep.

3.4.3. *Chlorophyll samples*:

3.4.3.1. Click on the button marked **Chlorophylls**.

3.4.3.2. Click on the second highlighted shortcut button in Figure 3 to **Load Sample IDs from prep worksheet**. Select Worksheet that was just created from the drop-down list box. Click **OK**. Verify that the samples shown correspond to the samples that you checked out.

3.4.3.3. Highlight the list of chlorophyll samples. Select the radio button for "**Additional Text 1"** and Type "A 500" in the text box at the bottom of the window labeled "**Enter Additional Text (A/B)",** press [Enter]. A column should appear with an "A 500" for each sample.

3.4.3.4. Select the printer button to **Print List**. Select Generic/Text printer. Click **OK** to print one copy of each label.

3.4.3.5. Highlight and delete the list of chlorophyll samples, keeping one sample listed out of every 10 to have a "B 500" label printed for lab duplicates. This is to ensure that there is at least one duplicate available per batch. (There should always be at least one duplicate per day.)

3.4.3.6. Highlight remaining samples, select **Additional Text 1**, type "B 500" in the **Enter Additional Text (A/B)** field (located at the bottom of the window) and press [Enter].

3.4.3.7. Select the printer button to **Print List**. Select Generic/Text printer. Click **OK** to print one copy of each label.

3.4.3.8. Stick each label to the top of the matching chlorophyll bottle.

3.4.4. *BOD and Sediment samples*:

Note: All samples scheduled for analyses other than BOD and Sediment must be checked in prior to printing labels for the BOD and Sediment samples. See Section 3.5 to check in samples. The labels for these samples are not printed from a prep worksheet and therefore must be loaded into the Print Prep Labels window by selecting all the samples that an operator has checked out.

3.4.4.1. Click on the button marked **Chlorophylls** (uses same template as chlorophylls).

3.4.4.2. Click on the third shortcut button circled in Figure 4 to **Load Sample IDs checked out by operator**. Select Operator ID and click **OK**. Verify that the samples shown correspond to the samples that you checked out.

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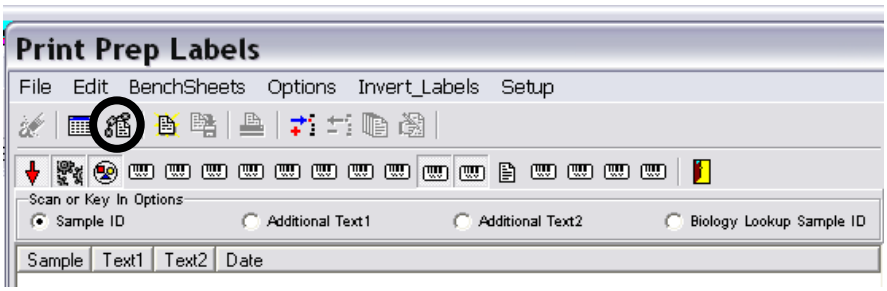


Figure 4

3.4.4.3. Select the printer button to **Print List**. Select Generic/Text printer. Click **OK** to print one copy of each label.

3.4.4.4. *BOD samples*: Put labels in the *BOD Run Log*. BOD samples are stored at 4 °C until analyzed within a 48-hour holding time.

3.4.4.5. *Sediment samples*: Put labels in the *Sediment Run Log* and leave a page for one lab duplicate per 20 samples and at least one per batch. Sediment sample holding time is 28 days for percent organics and 6 months for laser particle size. Store samples in the biology refrigerator at 4 °C in white plastic bin labeled with Job ID and number of samples.

3.4.5. Click on the door graphic (last icon in the row with the label templates) to **Exit label printing** and see Section 3.5 to check in samples.

3.5. SAMPLE CHECK IN

3.5.1. Go to **Laboratory → Receiving → Custody**. In the window that appears labeled **DEP Central Laboratory Custody**, select the second button to **Check In** samples. Scan the barcode of each sample and be sure that the total number checked in corresponds to the original number of samples.

3.5.2. Click **OK** after scanning the barcodes. When prompted, the analyst will scan his/her ID badge, or type the five digit ID number located on the badge. Repeat and click **OK**.

3.6. PREP WORKSHEET DATA

3.6.1. Log into LIMS on workstation computer. Select **Laboratory → Technical → Prep Worksheet Manager**. Select the shortcut button to **Open a prep worksheet logbook** (spreadsheet icon).

3.6.2. In the **Active** worksheet status menu, double click on the corresponding worksheet for the samples being analyzed.

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3.6.2.1. *Chlorophyll samples*: Enter **Prepared By, Prep Start Date/Time and the** prep serial number for the reagent in the header. Right click the duplicate samples to add **Duplicate Row** and then add "_dup" to the **Sample ID**. The right click function can also be used to add extra lines or delete lines. BLK_1 is a default line on the worksheet. Using the up/down arrows at the bottom, move this blank below the sample ID after which it is filtered. Any more blanks filtered will be added to the worksheet in its filtered position using the right click function. To add samples to a worksheet, click the **Add Sample(s)** button at the bottom of the page, highlight the samples to be added and click **OK.** After filtering, enter the **Filtration Volume (mL)** for each sample and the **Date/Time Frozen** in the header. Click **Complete** at the bottom to complete the prep worksheet. The worksheet can now be viewed in the **Completed** worksheet menu.

3.6.2.2. *Microbiological samples*: Enter **Prep Start Date/Time** and **Prepared By** in the header. In the **Reagent 1** box, enter the rinse water serial number for **MICRO-MF** samples. In the **Media** boxes, enter the prep serial number for the media used. Right click the duplicate samples to add **Duplicate Row** and then add "_dup" to the **Sample ID**. The right click function can also be used to add extra lines or delete lines. For **MICRO-MF** samples, Blk_A and Blk_B will appear as default lines in the worksheet. A blank set needs to be added for every Test ID. For **MICRO-QT** samples, BLK_1 will need to be added to the worksheet after every batch of samples. To add samples to a worksheet, click the **Add Sample(s)** button at the bottom of the page, highlight the samples to be added and click **OK.** Enter the **Date/Time Incubated** and **Incubator ID** in the worksheet column. Enter conductivity values for each **MICRO-QT** sample, except blanks, in the "Lab Salinity" column. Enter the **RECORD_NUMBER** from the **Lab Logbook/LAB_SUPPLIES_QC** and/or **PIPET-FUN_CAL_LOG** for the QC associated with each consumable used during analysis in the appropriate field (**Filter QC ID**, **Petri Dish QC ID**, **Mixing Vessel QC ID**, etc). Click **Save.** When the plates/trays have been read, add **Date/Time Plates Read** and **Plates Read By** to the worksheet column. Verify the data is correct then proceed to enter the **Date/Time Reviewed** and select the analyst's name from the drop-down list box labeled "**Reviewed By**". If samples are suspected of having chlorine (analysis ID with -CL suffix), enter information on the chlorine check (including chlorine strip lot number and result) in the **Chlorine Residual** column. Click **Complete.** The worksheet can now be viewed in the **Completed** worksheet menu.

4. REFERENCES

4.1. DEP SOP, *FS 1000 General Sampling Procedures*

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4.2. DEP SOP, *RC-007 Chemistry Section Receiving Room: Standard Operating Procedure for the Receipt and Log-in of Samples by the DEP Central Laboratory*

Appendix of Changes

06/11/2009	SOP reviewed and edited to update according to current procedures. Changes were made regarding the creation of prep worksheets for microbiological samples in Section 3.5
07/13/2010	Changed Prep Worksheet template to updated version for new report style.
06/13/2011	Added instruction to print labels for lab duplicates for microbiological samples.
06/02/2012	Added directions to check out samples in the Receiving Room prior to returning to the Microbiology Lab. Moved instructions to print prep worksheets to occur before printing prep labels.
04/11/2013	Added comments to label instructions to make sure there is at least one duplicate made per day per analysis received.
12/12/2013	Added instructions for Quanti-Tray tests.
01/14/2015	Added information about the electronic prep worksheets.
11/17/2015	Added information to 3.6.2.2
09/21/2017	Changes made to the Introduction in section 1 and Sample Custody and Labels in section 3.

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