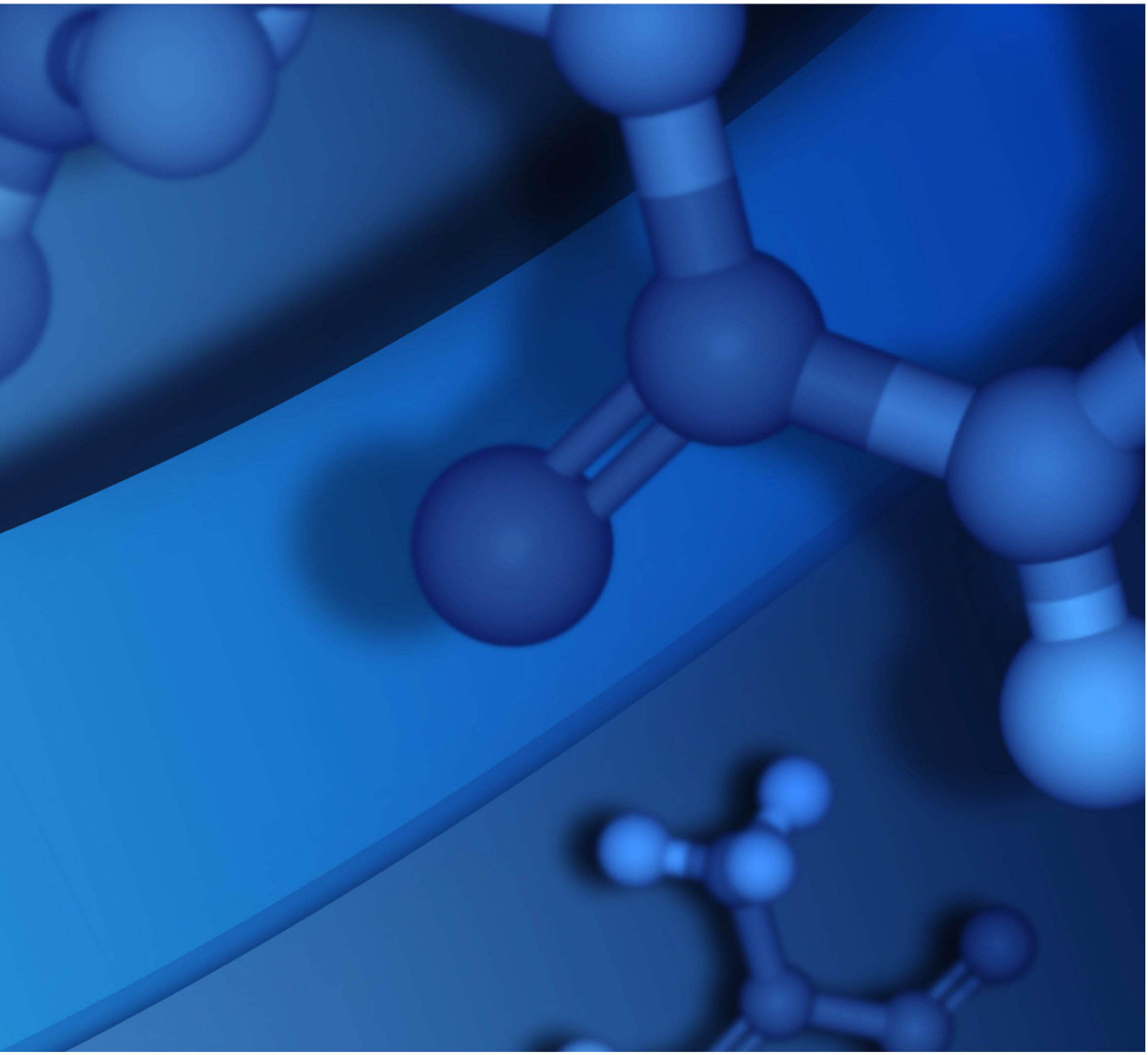
USER GUIDE

BIOVIA ENVIRONMENTAL MONITORING

1.1 SP3



Acknowledgments and References

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BIOVIA Support
5005 Wateridge Vista Drive, San Diego, CA 92121 USA

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Introduction to BIOVIA Environmental Monitoring

Intended Audience

This user guide is intended for users of the BIOVIA Environmental Monitoring module who are responsible for scheduling and managing samples groups as well as those who perform the actual environmental sampling at your site.

Accelrys Becomes BIOVIA

Accelrys and Dassault Systèmes have joined forces with the purpose of "providing business and people with 3DEXPERIENCE universes to imagine sustainable innovation capable of harmonizing Product, Nature & Life." BIOVIA continues to support those products previously released by Accelrys, but some products names have been re-branded as described in the following table.

Note: This release references the new product names. However, some areas of the user interface may not be updated until a future release.

Previous Accelrys Product Name	Current BIOVIA Product Name	Abbreviation
Accelrys Laboratory Information Management System	BIOVIA Laboratory Information Management System	LIMS
Accelrys Inventory Management	BIOVIA Inventory	IM
Accelrys Environmental Monitoring	BIOVIA Environmental Monitoring	EM
Accelrys Lab Execution System	BIOVIA Lab Execution System	LES
Accelrys Electronic Batch Records	BIOVIA Electronic Batch Records	EBR

Introduction

BIOVIA Environmental Monitoring (EM) is a web-based module of BIOVIA Laboratory Information Management System (LIMS) that allows you to schedule and execute various types of environmental sampling in your environment. The EM module provides two main areas of functionality for general users:

- **Sample Groups**

  A *Sample Group* is a collection of samples based on a pre-defined Sampling Plan. The Sampling Plan defines what type of sampling that will be done at its associated locations, as well as how frequently the sampling should be performed. Typically the schedule master will schedule the Sample Groups for specific dates and manage them as required. Refer to Chapter 2, *Scheduling Sample Groups*.

- **Samples**

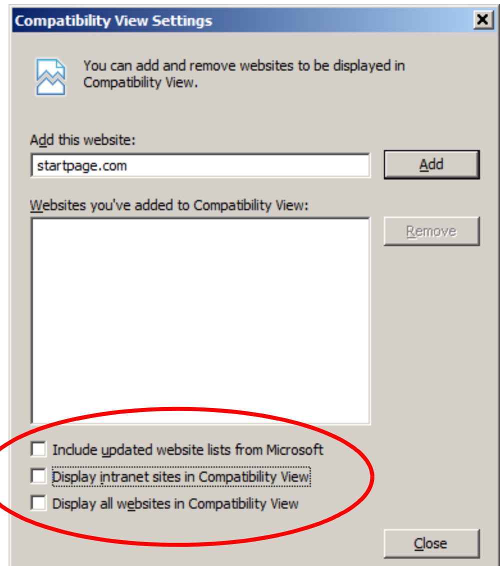
  A *sample* is one instance of testing performed on a specific location. At 12:00 am on the day the Sample Group is scheduled, one sample is released into the system for each location associated with that Sample Group. The sampling is then ready to be executed by the qualified laboratory personnel. Refer to Chapter 4, *Executing the Workflow of a Sample*.

Browser Requirements for BIOVIA LIMS Clients

Before you begin using BIOVIA Environmental Monitoring, verify the following options have been set correctly:

- If you will be accessing various Pipeline Project protocols while executing the workflow of your samples, verify that your browser's Pop-up Blocker Settings are set to "Allow pop-ups" from the BIOVIA LIMS site address. Refer to *Signing On* on page 1-4.
- Verify that the Internet Explorer Compatibility View settings are turned off:

  1. In the main menu bar of the IE browser window, select **Tools>Compatibility View settings**.
  2. In the *Compatibility View Settings* dialog, make sure all the check boxes in the lower part of the screen are cleared, as shown below.
  3. Click **Close**.



Turning Off Compatibility View

Required User Eligibilities for Environmental Monitoring

Some users may only be allowed to view the Sample Groups and samples in the system, while others will be able to schedule and manage Sample Groups and process the samples. Your access to these functions is determined by the user eligibilities granted to you by your system administrator. These global eligibilities are assigned to the User Role in which you belong.

Required eligibilities for managing Sample Groups:

- **Can View Sample Groups**—Allows users to view the scheduled Sample Groups in the calendar.
- **Can Administer Sample Groups**—Allows users to schedule Sample Groups in the calendar.
- **Can Cancel Sample Groups**—Allows users to cancel scheduled Sample Groups in the calendar.
- **Can Undo Cancelled Sample Groups**—Allows users to reinstate cancelled Sample Groups in the calendar.

Required eligibilities for managing samples:

- **Can View Samples**—Allows users to view the samples that have been released into the system.
- **Can Process Samples**—Allows users to process the workflows of the samples that have been released into the system. You may not be able to execute all of the actions if further access restrictions have been defined at the workflow level.

Required eligibilities for running and managing reports:

- **Can View Reports**—Allows users to view registered reports and run only those reports in the system whose status is “Active.”
- **Can Administer Reports**—Allows users to view and manage all of the reports in the system (all status codes).

Integrating with the BIOVIA Lab Execution System

You can use the BIOVIA Environmental Monitoring module in conjunction with the BIOVIA Lab Execution System (LES). For example, when a collected sample is found to exceed the allowable action limit of colony forming units (CFUs), you can execute an BIOVIA LES procedure session to identify the nature of the CFUs. Once the CFUs have been identified, that value is sent back to EM and stored in the “identification” property for that sample.

Signing On

To launch BIOVIA LIMS:

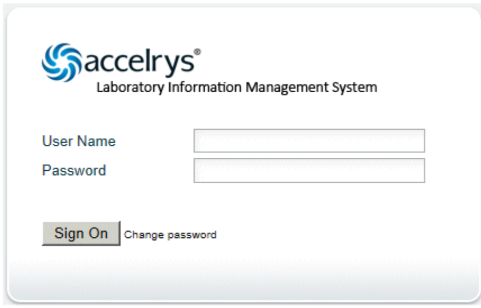
1 From an BIOVIA LIMS client machine, open an Internet Explorer browser and enter the following URL in the address bar:

   http://<*computer name*>:<*port number*>

   where *computer_name* is the name of the server on which the application is installed, and *port_number* is the port number specified during installation (typically port 80).

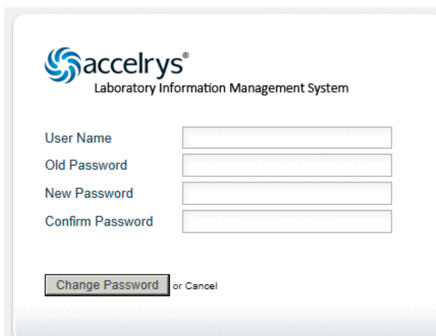
2 Once you have launched the application, your browser will load one of the following pages, depending on what type of authentication method your system is using:

   - **ePMC Authentication** (default)
     The browser loads the *Sign On* page. Enter your user name and password and click **Sign On**.



"Sign On" Screen

If you are signing in for the first time, you are required to change your password. Once you are successfully authenticated, you are directed to the BIOVIA LIMS *Home* page.



Changing the Default Password for Initial Sign On

- **Windows Authentication**:
  If your system is using Windows Authentication, the "Secondary Sign On Allowed" system setting determines if the *Sign On* screen is displayed.
  - **If the "Secondary Sign On Allowed" option is enabled:**
    The *Sign On s*creen is displayed. Enter your Windows domain and your user name (in the format *domain\user_name*), enter your password, and click **Sign On**.
  - **If the "Secondary Sign On Allowed" options is disabled:**
    The *Sign On s*creen is not displayed and you are immediately directed to the BIOVIA LIMS *Home* page.

  Once you have been successfully authenticated, the *Home* page of BIOVIA LIMS is displayed.

Note: Your system administrator has assigned your user account to at least one Site and one User Role. If that Site or User Role is inactive, you will receive an error message and will not be able to access the system. In this case, contact your system administrator.

About failed authentication attempts

If your system is using ePMC Authentication, your user account will be inactivated after three consecutive failed authentication attempts. A failed authentication will occur if you enter an invalid user name or password when logging in. It also will occur if you enter an invalid password three times in the *Reason Code Entry* dialog box while applying your electronic signature to a change of data. If your user account has been inactivated, contact your system administrator. In addition, if you are already logged onto the system, you will be logged off immediately after your third failed attempt.

If you attempt to sign on from different client machines, the login attempts are considered cumulative—that is, two failed logins on one client and one failed login on a different client will inactivate your user account.

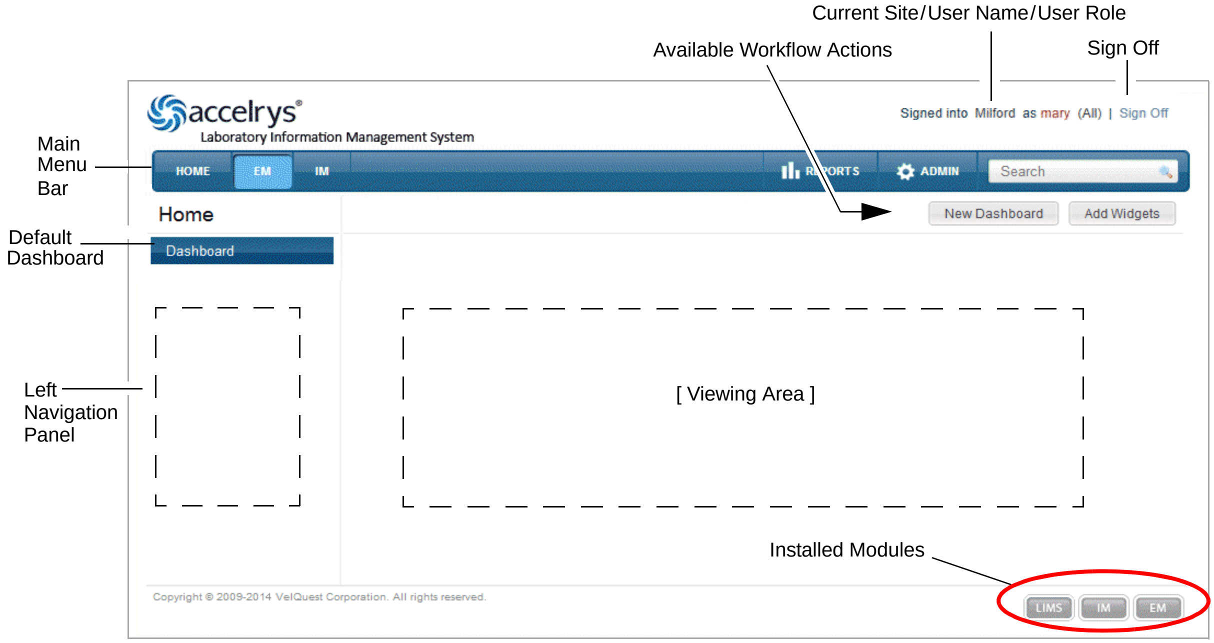
Note: If you are using the BIOVIA Lab Execution System (LES) system, the failed authentication counters are *not* connected between the two applications, thus three failed authentication attempts on LIMS will not inactivate your user account on the LES application.

Signing on from multiple computers

You cannot sign on to BIOVIA LIMS from multiple computers. If you are logged in on one computer and attempt to log in from a different computer, the system closes your original session and allows your current logon. Similarly, when you close the browser window without signing off and then try to sign on again, the system closes your original session and allows your current logon.

About the BIOVIA LIMS Home Page

The *Home* page of BIOVIA LIMS is shown below. This section describes the components of the user interface.



BIOVIA LIMS Home Page

Main Menu Bar—Displays individual tabs for the categories of functionality installed in the system. Only the tabs that you have eligibility to view will be displayed in the main menu bar.

- The installed modules such as BIOVIA Environmental Monitoring (EM) and BIOVIA Inventory (IM) have their own tabs that provide access to their primary functionality (for example, managing consumables and samples). In addition, for standalone systems, it is likely that your system administrator will have created custom tabs for specific entities at your company.
- The **REPORTS** tab allows eligible users to generate reports for various entities in the system.
- The **ADMIN** tab allows eligible users to manage system-wide configuration settings as well as the entities of BIOVIA LIMS and its associated modules.

The **Search** field allows eligible users to search for various entities in the system. *How the Search Function Works* on page 3-18.

The **Default Dashboard** is an area in which you can view and manage widgets, small programs that monitor specific entities in selective modules. This area is initially blank.

The **Left Navigation Panel** lists various categories of functionality that corresponds to each tab in the main menu bar.

The **Viewing Area**—Displays the content of the selected tab as well as the functionality selected from the left navigation panel.

The **Available Actions** command buttons represent actions that you can perform on the entity displayed in the Viewing Area below.

The **Current Site/Username/User Role** area displays your user name and the site and role in which you are currently signed into. Refer to *Signing On to Different Sites and User Roles* on page 1-8.

The **Sign Off** area allows you to sign off from any page in the system.

The small icons in the lower right corner of the page indicate which modules are currently installed on the system.

Signing On to Different Sites and User Roles

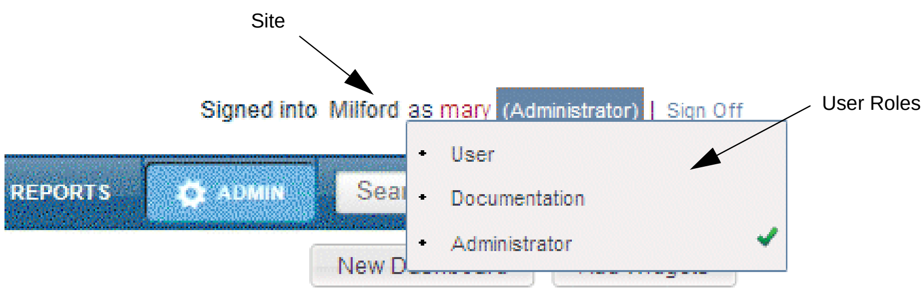
The sign on information area above the main menu bar displays your user name as well as the Site and User Role in which you are currently signed into. A *Site* is a specific view of the database configured by your system administrator (for example, a development or production Site). A *User Role* is defined for users who perform specific functions (for example, an administrator, supervisor, or general user) and dictates the areas of functionality that its members are eligible to access.

If you have access to only one Site or User Role, you are automatically signed into them.

If you belong to more than one Site or User Role:

- If this is the first time you are signing on, the first available active Site/Role will be used.
- If you have previously signed on, the last Site/Role that you used will be your current Site/Role.
- If your last used Site/Role is inactive, the next available active Site/Role will be used.
- You can select a different Site/Role from the drop-down lists. The Sites/Roles are displayed in alphanumeric order and the current Site/Role is indicated by a check mark.

IMPORTANT! It is recommended that you change Sites from the *Home* page of BIOVIA LIMS.



Signing On to a Different Site or Role

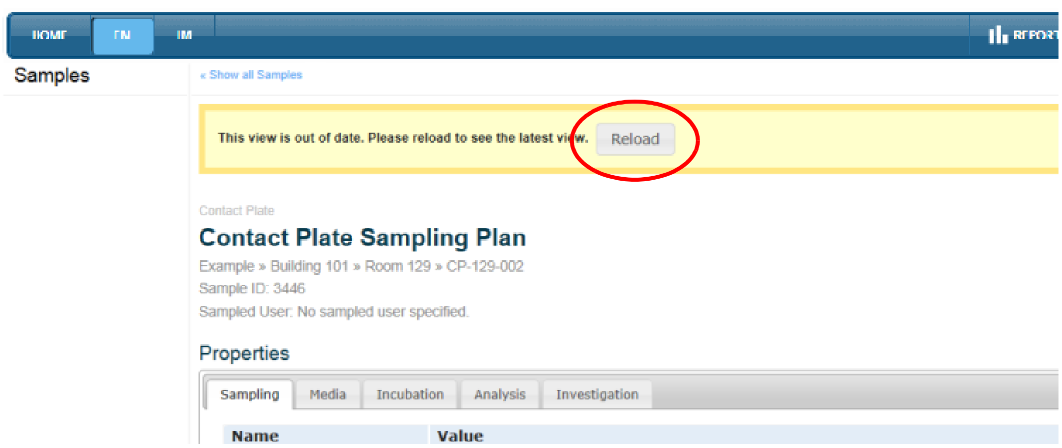
Preventing Concurrent Access to Samples

BIOVIA LIMS prevents more than one user from performing workflow actions on the same sample at the same time. A message is displayed in the sample's *View* page that states it is locked by another user. Once the locked sample is released and available for use, the system marks the sample's *View* page as outdated. Once you refresh the page, you will again be able to perform actions on that sample.

If your browser or system crashes while you are working on a sample, the sample is considered locked by you. In this case, an **Unlock** button will be displayed in the sample's *View* page that allows you to unlock it.

Viewing Out-of-Date Data

If an entity is updated by another user while you are viewing it, a yellow warning message will alert you that your current view is out-of-date. Click **Reload** to display the updated view.



Refreshing an Out-of-Date View

Notes Regarding User Input in the Interface

This section describes some specific information about various types of user input in the system.

Security restrictions for typing in text boxes

Both IIS and ASP have implemented security measures to prevent attacks on the web site caused through the use of bad input. These restrictions apply to any text box displayed throughout the entire BIOVIA LIMS system.

If you enter the offending text patterns listed below, the system displays the following exception message:

"A potentially dangerous Request.Form value was detected."

These patterns include the following combinations:

- **&#**
  You cannot enter the ampersand symbol (&) immediately followed by the pound symbol (#) in a text field. You must add a blank space between them.

  Unacceptable: text&#text

  Acceptable: text& #text

- **<text**
  You cannot enter the "less than" symbol (<) immediately followed by some text. You must add a blank space between the symbol and the text string. Note that this restriction does not apply to numbers. For example, <12 (with no space) is acceptable.

  Unacceptable: text<text

  Acceptable: text< text

  Acceptable: <12

Reserved keywords and characters

The following keywords and characters are reserved for use by the system. Therefore, it is recommended that you do not use them in any part of the SmartLab Automated Quality System. For example, do not assign these keywords or characters to names of Entity Types, properties, Location Types, Locations, Consumable Types, Consumable Templates, and Sample Types.

Reserved keywords:

- ACTIVATE
- ALL
- AND, and
- Barcode Group
- Barcode Label
- CAPTURE
- CONSUMABLE _TYPE
- DATE
- EIN
- END
- ENTITY_TYPE
- FORWARD
- FILE
- ID
- Image
- INT
- ITEMCOUNT
- LIMIT
- LISTONLY
- LOCATION
- MANUALENTRY
- NAME
- NODEFAULT
- NULL
- OR, or
- ORIGINAL_QUANTITY
- QUANTITY
- REPORT
- SAMPLE_TYPE
- SELECT
- SOONEST_EXPIRATION
- START
- SUBS
- SUBSAMPLE_PARENT_ID
- UDA
- UNIQUECOUNT
- UNITS
- XEIN

Reserved characters:

,	Comma	/	Division operator
&	Ampersand	+	Addition operator
^	Exponentiation operator	-	Subtraction operator
( )	Parentheses	>	Greater than
ABS	Absolute value operator	<	Less than
D	Used in the DATE statement	>=	Greater than, or equal to
(N)	The current array index character	<=	Less than, or equal to
’ "	Single and double quotes	=	Equal to
*	Multiplication operator		

Entering or selecting dates

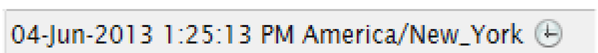
When you manually enter a date or select one from a calendar control, the date (in UTC) must be greater than January 1, 1900 and cannot exceed December 27, 9999.

How the System Records Date/Time Values

The system uses timestamps to record the date and time an event occurs. For example, timestamps are used to:

- Collect property values of various entities (for example, the date and time data was collected or a workflow action was performed on an entity instance, consumable, or sample)
- Generate audit trails
- Record password expiration dates

An example of a timestamp is shown below:



A timestamp is based on the following format:

dd-MMM-yyyy h:mm:ss tt time_zone <icon>

where:

dd-MMM-yyyy — This format displays the date on which the value was collected. The date value is always displayed in the format dd-MMM-yyyy and ignores the client's Short Date format. The collected date is not localized, however the month is displayed in the client's local language.

IMPORTANT! For languages that do not support the MMM format, the following date format is used instead:

yyyy-mm-dd

F*or example:* June 1, 2013 is recorded as 2013-06-01

h:mm:ss tt — This format displays the time at which the value was collected. If the client's locale setting supports a 12-hour clock, "AM" and "PM" are displayed accordingly. The timestamp is not localized to the client's time.

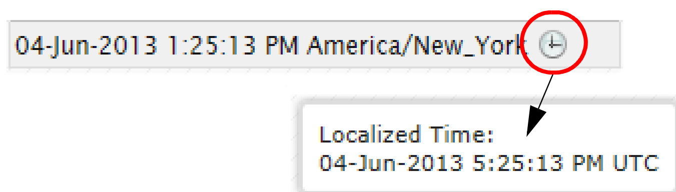
time_zone

This information is displayed for those records with recorded time zone information. The time zone is displayed in the format *area/location* and is based on the Olson Time Zone Standard. The Olson standard provides a uniform naming convention for the world's time zones and is commonly used in computer programming. The time zone is always displayed in English and ignores the client's language preferences.

Icon - Time zone information

This icon is displayed for a record that includes time zone information. When you mouse over the clock icon, the collected date and time is localized and is displayed in the time zone of the client.

For example:



Note that the clock icon is not displayed if the client is in the same time zone as the collected value.

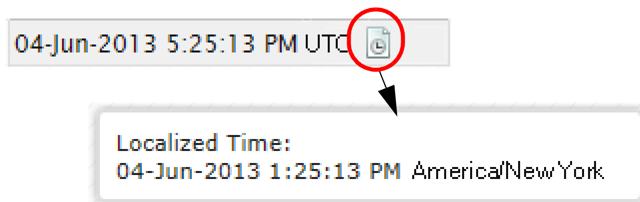
The following entities use the expanded timestamp:

Audit Trails (History table):

- Entity Types
- Entity instances
- Consumable Types (IM)
- Consumable Templates (IM)
- Consumables (IM)
- Sample Types (EM)
- Sampling Plans (EM)
- Samples (EM)

Time zone information is also displayed in the following areas of the user interface for entity instances, consumables (IM), and samples (EM):

- Grid view (entity instances, consumables (IM), samples (EM)
- Properties
- E-Signatures table on View page
- Dialog box for workflow actions

Icon - No time zone information 	This icon is displayed for a record that does not include time zone information. This is used by various entities in the system as well as legacy records that were created prior to the BIOVIA LIMS v4.2 SP1 release. The timestamp is displayed in Coordinated Universal Time (UTC). When you mouse over the clock icon, the collected date and time is localized and is displayed in the time zone of the client. For example: 

How date/time values are handled in legacy records

The data records generated prior to the BIOVIA LIMS 4.2 SP1 release did not support time zones. Therefore, this legacy data is considered “time zone-less” and behaves in the following manner:

- Web views and reports display the data and time in UTC.
- Web views display the “time zone-less” icon .
- During the upgrade to 4.2 SP1, report values are displayed in the language of the individual performing the upgrade.

How date/time values are recorded when adding Sampling Plans to the Calendar

The following model is used:

- Date/time values are obtained as entered by the operator and are converted to UTC values based on the client time zone offset.
- Sample Groups are added to the calendar based on UTC.
- Sample Groups are displayed on the calendar based on the client time zone bias.

How date/time values are recorded when adding samples to the system

The Sample Group trigger is executed every hour and processes those samples that are scheduled for that hour in UTC. Samples are displayed based on the client time zone.

How date/time values are recorded for Date properties

A date/time value is recorded for the following Date properties (applicable to Entity Types, Consumable Types, and Sample Types):

- Date and Time
- Date Interval

The date/time value is recorded using the following model:

1. The date/time value is obtained in one of these ways:
   - **"Date and Time" property**
     Based on the "Use Current Date and Time" option:

     Is restricted to current date/time ("now")—The value is obtained from the server.

     Is not restricted to current date/time ("now")—The value is entered by the user during workflow execution.
   - **"Date Interval" property**
     Based on the "Use Interval" option:

     Uses interval—The default value is calculated based on the current date and time (converted to UTC) plus the specified interval. This value is displayed to the user in the time zone of the server. The date and time value is obtained from the values entered by the user during workflow execution.

     Does not use interval—The value is entered by the user during workflow execution.
2. The value is converted to UTC and stored in the database.
3. The date and time value is displayed to the user in the time zone of the server.

How date/time values are recorded for Time Trigger activities

The current date and time in UTC is compared against the target property value (for example, End Incubation Time) as recorded in the database in UTC.

How date/time values are displayed in labels

If you add a date/time field to a label but do not specify its format, the system uses the standard format dd-MMM-yyyy and no time zone icons are displayed.

IMPORTANT! For languages that do not support the MMM format, the following date format is used instead:

yyyy-mm-dd

For example: June 1, 2013 is recorded as 2013-06-01

How date/time values are displayed in embedded reports

This section provides general notes on embedded reports:

- When you generate a Qualification Report or print the History table for anything other than entity instances, consumables, and samples, the generated report will display the date/time values in the local language and time zone in which the data was collected.
- When you print the History table for an entity instance, a consumable, or a sample, the generated report will display the date/time values in the corresponding column of the report:

  "Occurred On" column (consumables and samples)

  "Changed On" column (entity instances)

  Note that these columns will always display the date/time values in the English language in the following format:

  DD-MMM-YYYY HH:MM:SS
- For legacy data collected prior to the BIOVIA LIMS v4.2 SP1 release, the date/time values will be displayed in the language of the user performing the upgrade. There are no time zones associated with legacy data.

How date/time values are recorded for audit trails

The timestamp for an audit trail is recorded using the following model:

1. The date/time is obtained from the Server Clock at the time the record is created.
2. The value is converted to UTC and stored in the database.
3. The timestamp is displayed to the user in the time zone of the server.

Generating Audit Trails for Sample Groups and Samples

An *audit trail* is a complete history of changes made to stored data in BIOVIA LIMS. Audit trails cannot be changed—they contain unquestionable ties to the live data and no “rollback” facilities are available.

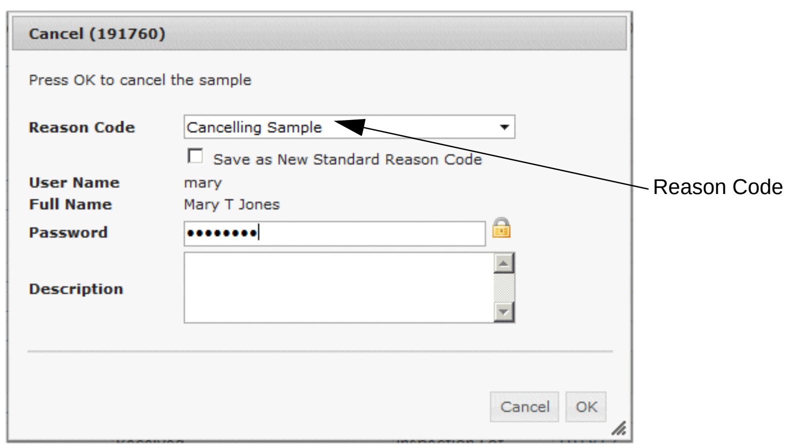
Electronic metadata is automatically generated for all user entries and activities. The metadata captures the following information:

- The user who performed the action (User ID and user’s full name)
- Date/time stamp when the change occurred

An electronic audit trail is automatically generated for selected user entries and activities (for example, collecting data or approving, reviewing, or attesting collected data). The audit trail captures the following information:

- Electronic signature consisting of all CFR Part 11 components—Reason Code, User Name, user's full name, and date/time stamp
- A link to the actual record that was modified

When a new entity is created in the system, its audit trail begins and its Reason Code defaults to “Initial Value.” Each time that entity is edited, the *Reason Code Entry* dialog box is displayed and the user is required to select a Reason Code to describe the reason for the change.



“Reason Code Entry” Dialog Box

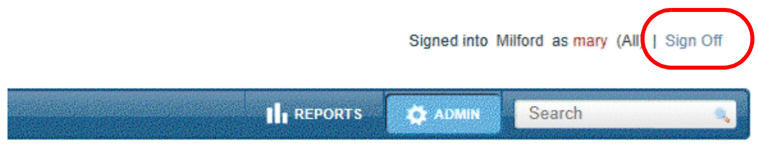
Based on their eligibilities, users may also be allowed to enter a new Reason Code. They may also be eligible to save the new Reason Code as a new Standard Reason Code which adds it to the list of Reason Codes making it is available to all users of the system. If the user does not check the check box, the Reason Code is considered “non-standard” and is not available to other users.

The *Reason Code Entry* dialog box also collects the user's electronic signature and an optional description. The audit trail for this entity will include all of this information for this change.

Note: You cannot use double quotes (“ ”) in the Description field.

Signing Off

You can sign off of BIOVIA LIMS from any page in the application. Click the **Sign Off** link in the upper right corner of the page. If your system is using ePMC Authentication, you are redirected to the *Sign On* screen and cannot access the system without signing on again.



Signing Off

What's Next?

Chapter 2 explains how to schedule and manage Sample Groups. To process the samples released into the system, proceed to Chapter 3.

2

Scheduling Sample Groups

What is a Sample Group?

A *Sample Group* is a collection of samples based on a pre-defined Sampling Plan. The Sampling Plan defines what type of sampling will be done at its associated locations, as well as how frequently the sampling will be performed. There are three types of testing you can specify for a Sample Group:

- **Routine Testing**

  *Routine testing i*s typically scheduled for areas that are not processing a filling or production batch. Routine testing is scheduled for one or more specified days, recurring every *N* number of weeks or months, according to the frequency defined in the Sampling Plan.

  For example, when you schedule a Sample Group whose testing frequency is on Monday every week, the Sample Group is displayed in the monthly calendar on the first scheduled Monday and every Monday thereafter. You can also specify the testing to start immediately, if necessary.

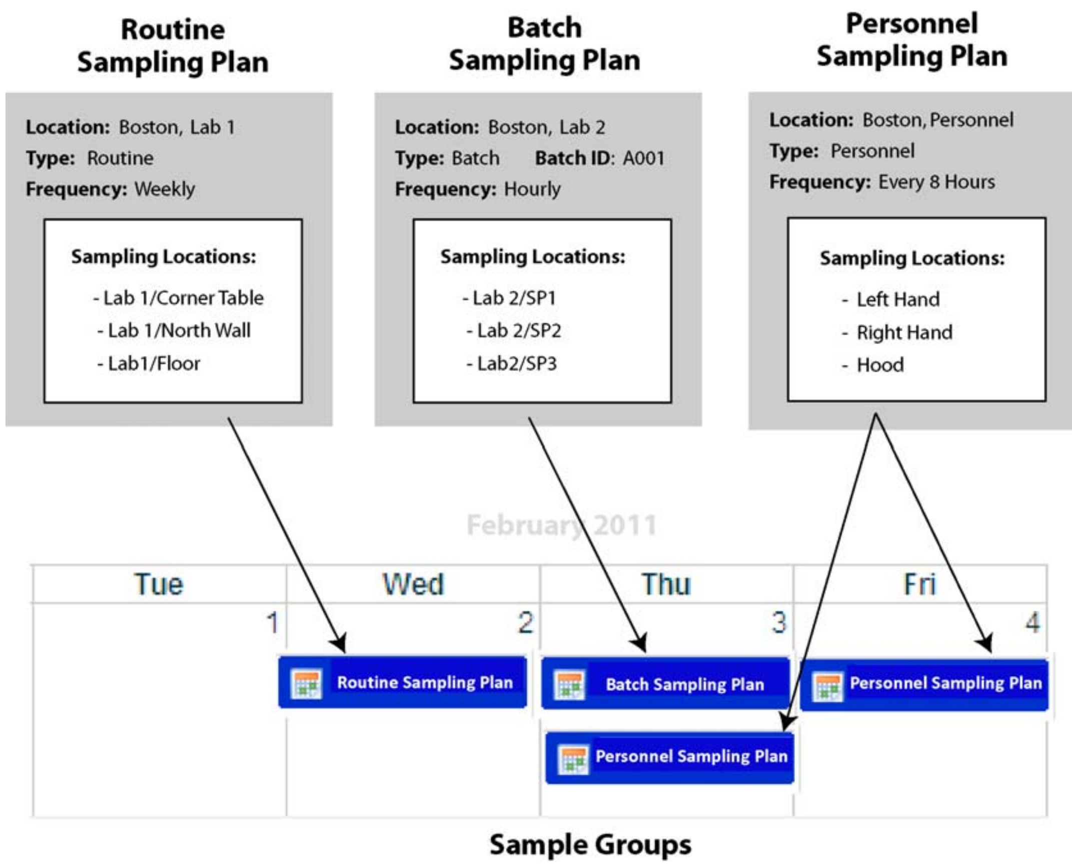
- **Batch Testing**

  Batch testing pertains to processing a filling or production batch. Batch testing is scheduled every *N* number of hours according to the frequency defined in the Sampling Plan on which the Sample Group is based. When you create a Sample Group based on a Batch Sampling Plan, you have the option to assign a unique Batch ID that will identify all of the samples in that group.

  Typically, batch testing is performed at the beginning of each 8-hour work shift. For example, if there are two shifts per day, the scheduled Sample Group will appear twice on its scheduled day in the calendar. You can also specify the testing to start immediately, if necessary.

- **Personnel Testing**
  Personnel testing pertains to taking samples on a person. When you create a Sample Group based on a "personnel" Sampling Plan, you can select the name of the registered user on which the testing will be performed or leave the field blank if the user is not known.

The following figure illustrates the relationship between Sampling Plans and Sample Groups.



Relationship between Sampling Plans and Sample Groups

Samples are only created for sampling locations whose status is "Active." The samples in the Sample Group are released for use at 12:00 am on the day they are scheduled and are automatically populated in the *Samples* home page with a status of "Scheduled." Laboratory personnel can then begin the actual sampling process.

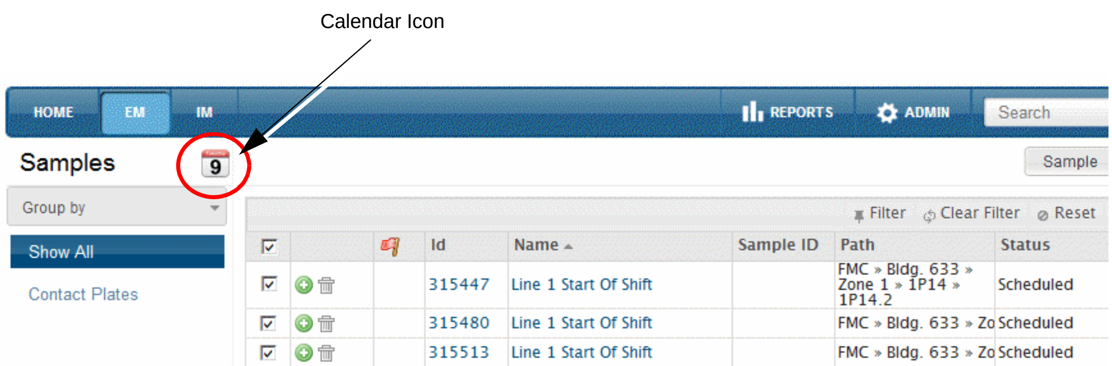
About the Calendar View

The calendar provides an easy way for eligible users to view, schedule, and manage Sample Groups.

To view the calendar function:

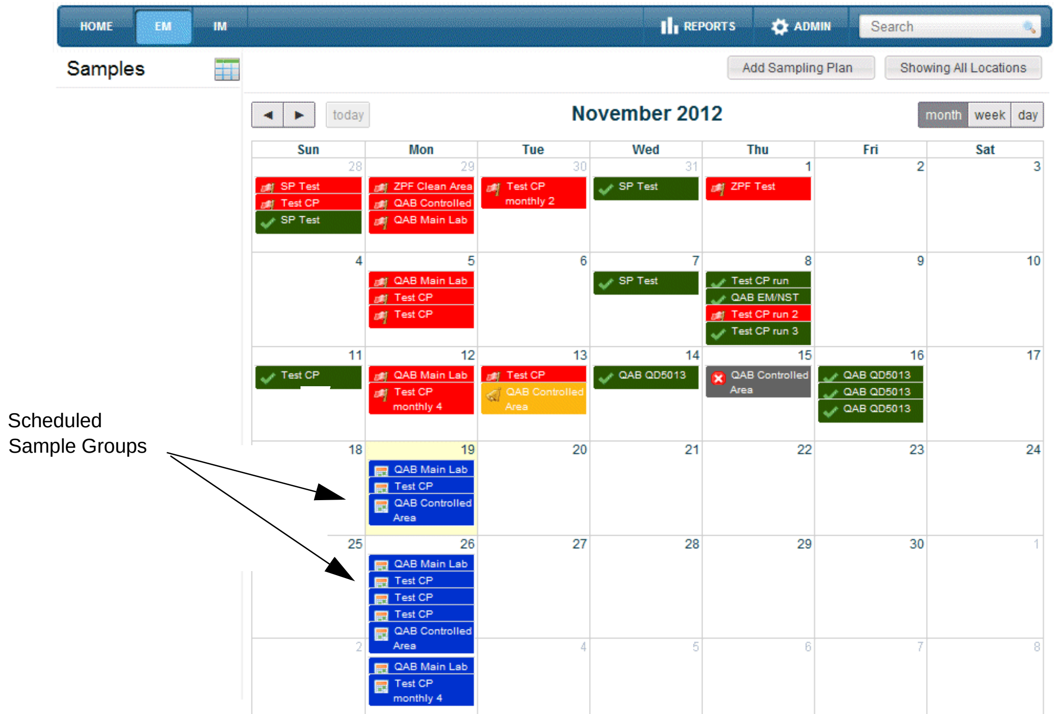
1 Click the **EM** tab in the main menu bar.

2 In the *Samples* home page, **Calendar** icon 9 above the grid.



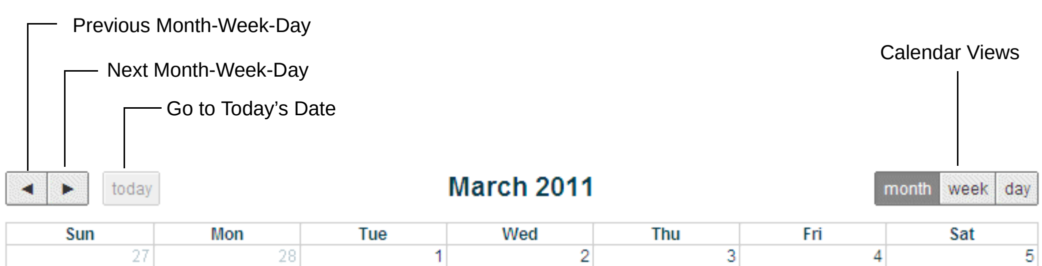
Viewing Calendar from Samples View

The monthly calendar view is the default view, as shown in the following figure.



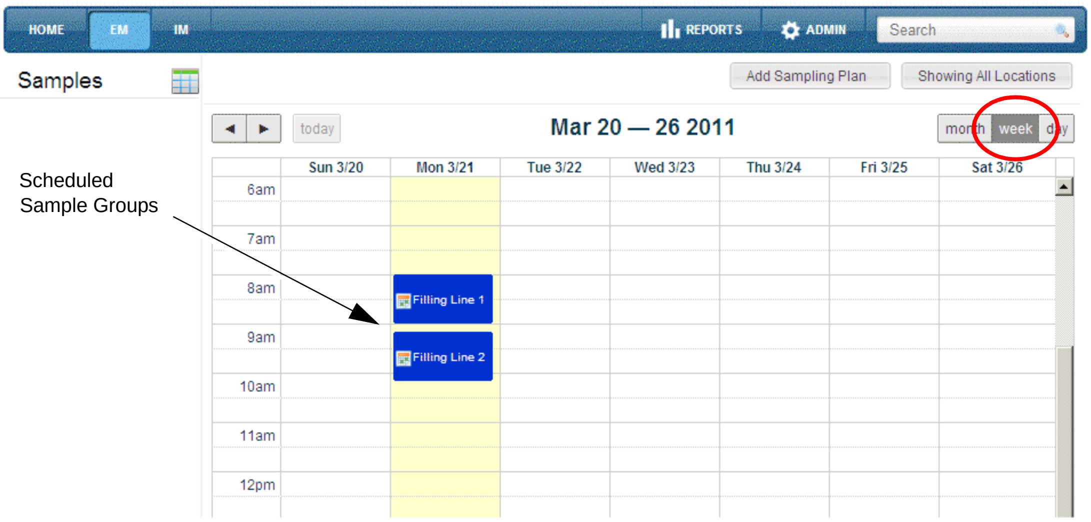
Monthly Calendar View

The controls above the calendar allow you to page through the calendar, go to today's date, and change the current calendar view to view by the month, week, or day.



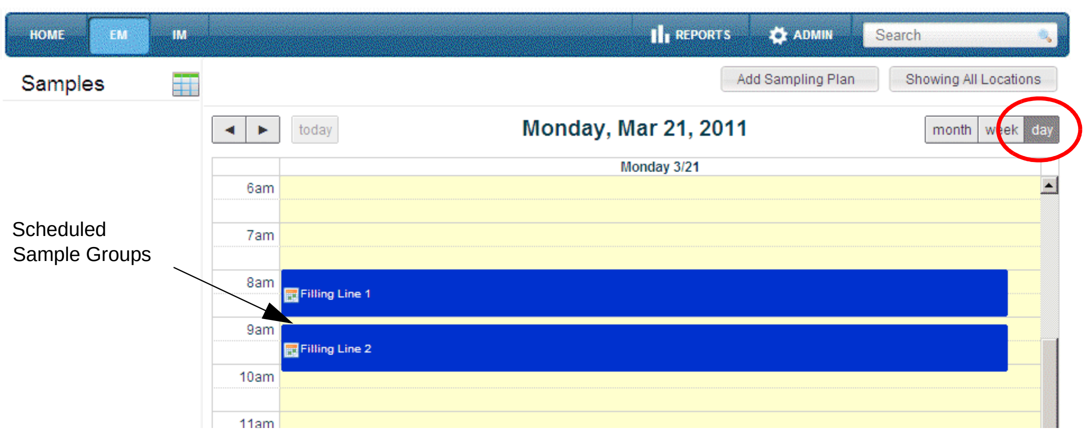
Calendar Page and View Controls

The weekly view displays the Sample Groups in a single week.



Weekly Calendar View

The daily view displays the Sample Groups in a single day. Each Sample Group is displayed as a 1/2 hour event starting at 8:00 am.



Daily Calendar View

In all three calendar views, each Sample Group is represented by a box whose title is the name of the Sampling Plan on which the group is based. Each Sample Group appears on the date for which it is scheduled. “Today’s date” is shaded with a yellow background to easily identify it.

The current state of the Sample Groups are represented by various colors and icons. This allows you to quickly identify groups that require attention. Click **Show Legend** below the calendar to view the meaning of the colors and icons.

Legend for Sample Group Colors and Icons

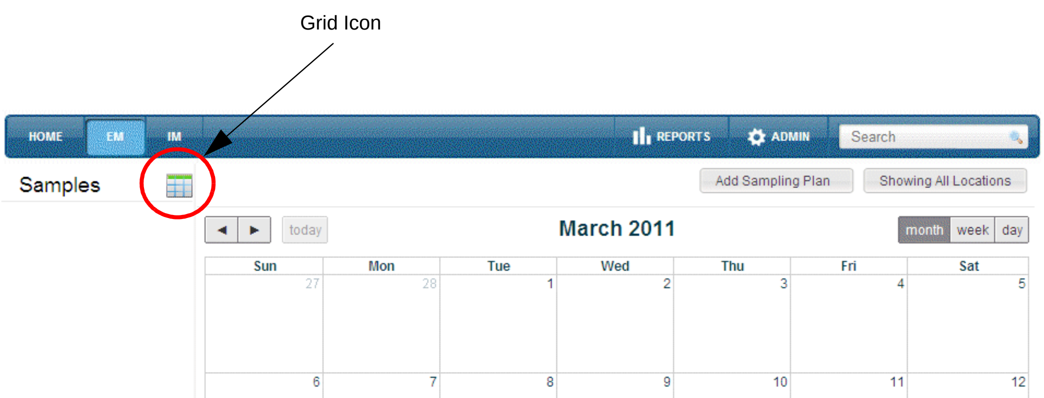
The following table explains the meaning of the colors and icons for the Sample Groups.

Table 2-1 Legend for Sample Groups

Name/Color	Icon	Description
Scheduled (dark blue)		Sample Group is scheduled and no samples have been collected. • Displayed for a Sample Group scheduled for today's date or a future date. • None of the Sample IDs have been scanned. • None of the samples have been annotated. • None of the samples have completed their workflow.
In Progress (light green)		Some samples have been collected and the group is not overdue. • Displayed for a Sample Group scheduled for today's date. • One or more Sample IDs have been scanned. • None of the samples have been annotated. • Some of the samples have completed their workflow.
OK (dark green)		All samples have been collected. • Displayed for a Sample Group scheduled for today's date or a past date. • All of the Sample IDs have been scanned. • Some of the samples have completed their workflow.
Alert (yellow)		Some samples have been collected, but the group is overdue and the missing samples are annotated. • Displayed for a Sample Group scheduled for a past date. • Some of the Sample IDs have been scanned. • Samples that have not been scanned have been annotated. • Some of the samples have completed their workflow.
Action (red)		Some samples have been collected, but the group is overdue and some missing samples are not annotated. • Displayed for a Sample Group scheduled for a past date. • Some of the Sample IDs have been scanned. • None of the samples have been annotated. • Some of the samples have completed their workflow.

Name/Color	Icon	Description
Authorized (light blue)		All samples are collected and have completed their workflows. • Displayed for a Sample Group scheduled for a past date. • All of the Sample IDs have been scanned. • None of the samples have been annotated. • All of the samples have completed their workflow.
Authorized with flags (dark gray)		All samples are collected and have completed their workflows, and all missing samples are annotated. • Displayed for a Sample Group scheduled for a past date. • Some Sample IDs have been scanned. • Samples that have not been scanned have been annotated. • All of the samples have completed their workflow.
Cancelled (light gray)		Sample Group is cancelled. No samples are available for this group. • Displayed for a cancelled Sample Group scheduled for any date. • None of the Sample IDs have been scanned. • None of the samples have been annotated. • None of the samples have completed their workflow.

To return to the *Samples* home page, click the **Grid** icon .



Returning to Samples Home Page

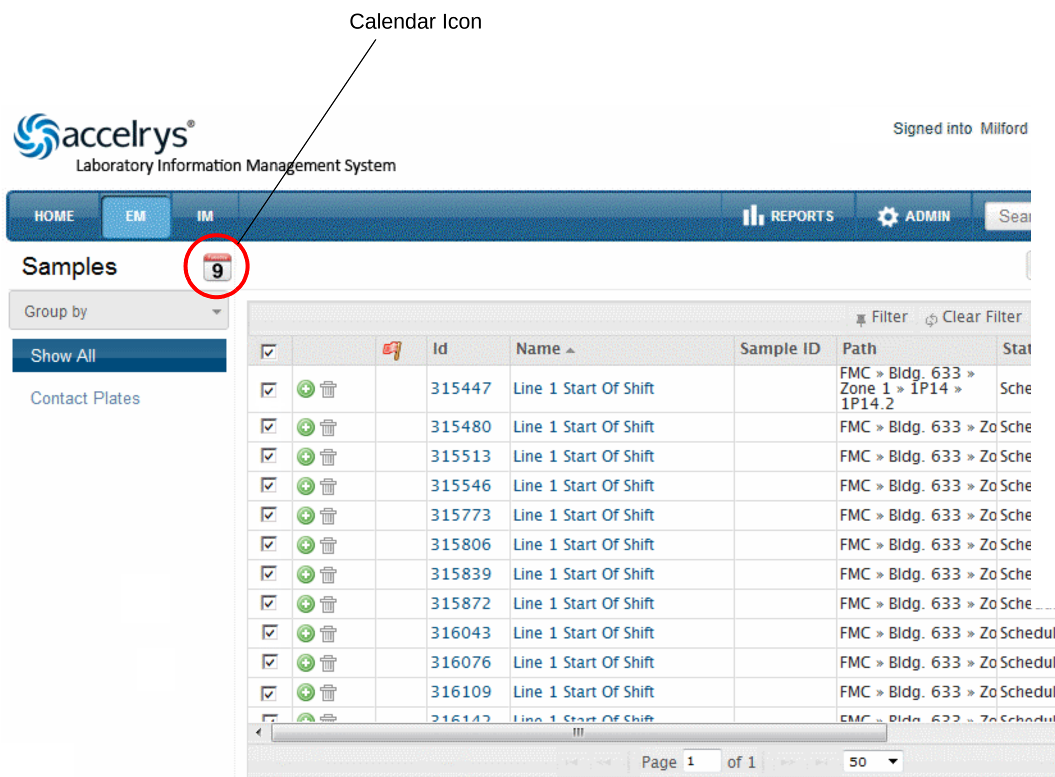
Scheduling a Sample Group

A Sample Group is automatically created when you add a Sampling Plan to the calendar. The Sampling Plan will determine what type of sampling is performed on its associated locations and how frequently the sampling will be performed.

To schedule a new Sample Group:

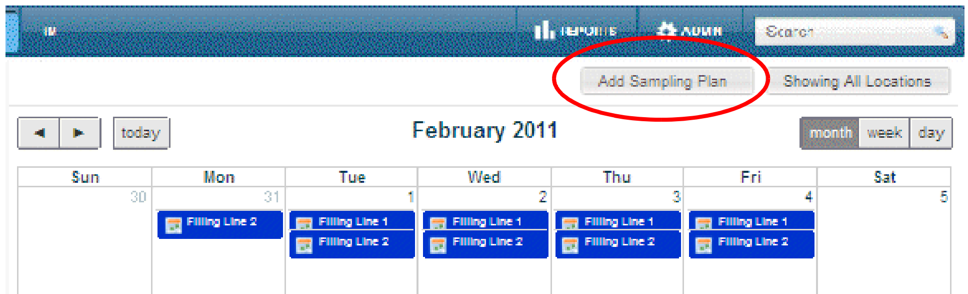
1 Click the **EM** tab in the main menu bar.

2 In the *Samples* home page, click the **Calendar** icon 9 above the grid.



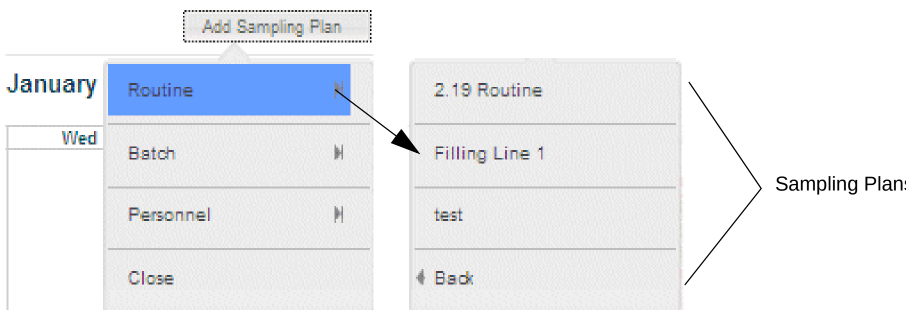
“Samples” Home Page

3 Click the **Add Sampling Plan** link above the calendar.



Adding a Sampling Plan

4 Select a Sampling Plan based on the type required for your sampling—Routine, Batch, or Personnel.



Selecting Sampling Plan

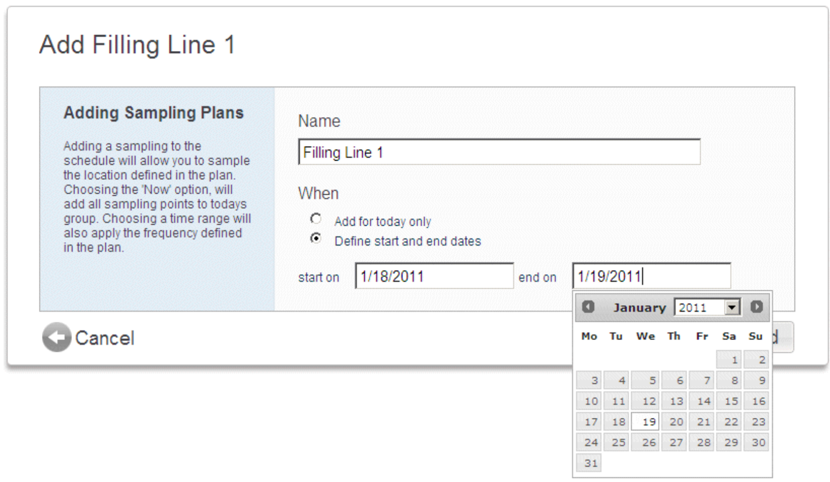
Note: By default, the list displays all of the sampling plans associated with every location. To show only those plans that are associated with a specific location, refer to *Filtering Sampling Plans by Location* on page 2-14.

---

5 Add a Sampling Plan for the specific type of sampling:

- **Routine Testing:**

    a. Enter a name for the Sample Group.

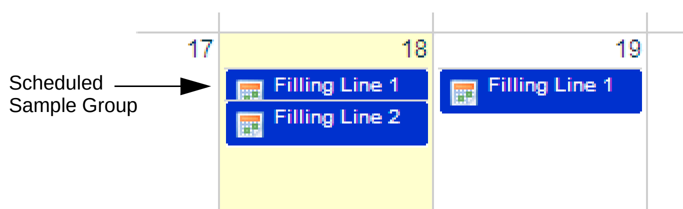


Adding a Sampling Plan for Routine Testing

b. Select an option for scheduling the samples:

- **Add for today only**—Applies the Sampling Plan to the current date only.
- **Define start and end dates**—Applies the Sampling Plans to the selected dates. The end date cannot be earlier than the start date.

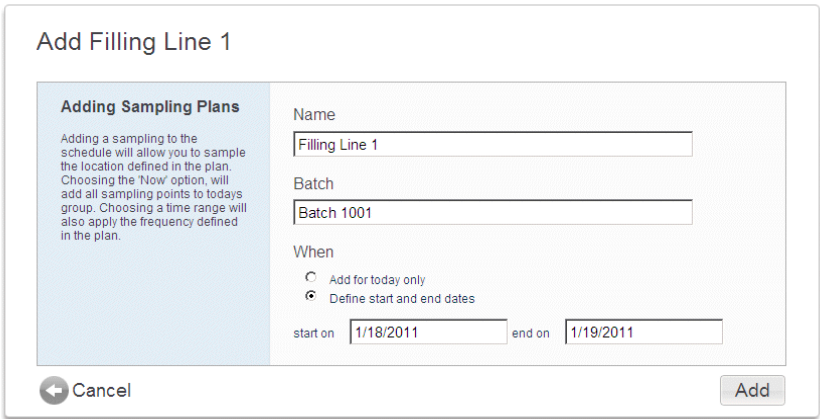
c. Click **Add**. The Sample Group is added to the calendar on the appropriate date(s). Its color is dark blue and the calendar icon indicates that it is currently scheduled .



Scheduled Sample Group for Routine Testing

- **Batch Testing:**

  a. Enter a name for the Sample Group.



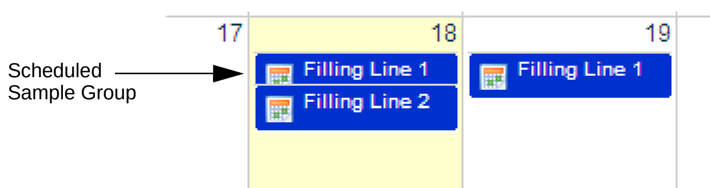
Adding a Sampling Plan for Batch Testing

  b. In the Batch field, enter an optional Batch ID which will identify all of the samples in this batch. There is a 100 character limit.

  c. Select an option for scheduling the samples:

  - **Add for today only**—Applies the Sampling Plan to the current date only.
  - **Define start and end dates**—Applies the Sampling Plans to the selected dates. The end date cannot be earlier than the start date.

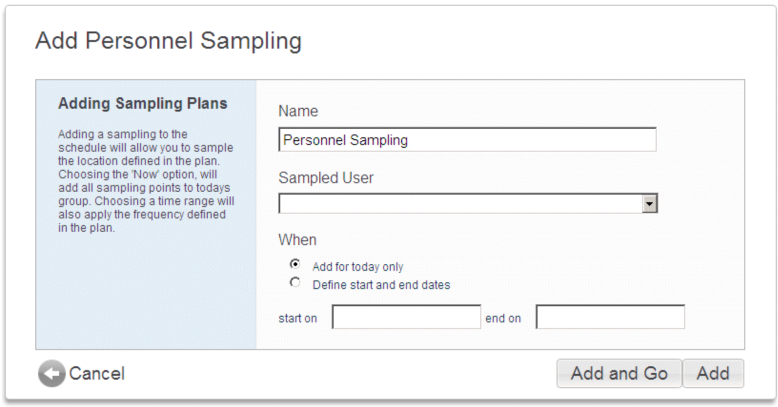
  d. Click **Add**. The Sample Group is added to the calendar on the appropriate date(s). Its color is dark blue and the calendar icon indicates it is currently scheduled.



Scheduled Sample Group for Batch Testing

- **Personnel Testing:**

  a. Enter a name for the Sample Group.



Adding a Sampling Plan for Personnel Testing

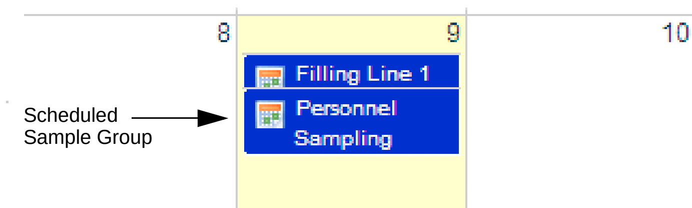
  b. In the Sampled User field, select the name of the user on which the sampling will be performed. The list contains all of the users in the system whose status is “Active.” If you do not know the name of the user, leave this field blank.

  c. Select an option for scheduling the samples:

     - **Add for today only**—Applies the Sampling Plan to the current date only.
     - **Define start and end dates**—Applies the Sampling Plans to the selected dates. The end date cannot be earlier than the start date.

  d. Click one of the following:

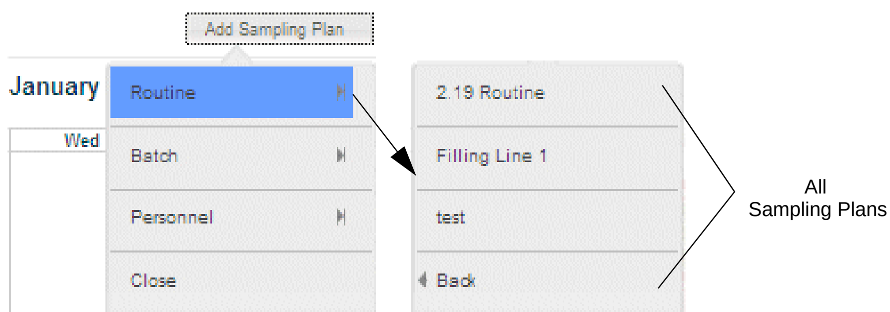
     - **Add and Go**—Pertains to a Sample Group scheduled for today. Adds the Sample Group to the calendar and immediately displays these samples *Samples* home page so you can immediately perform the sampling.
     - **Add**—Adds the Sample Group to the calendar on its scheduled day(s). The Sample Group is added to the calendar on the appropriate date. Its color is dark blue and the calendar icon  indicates it is currently scheduled.



Scheduled Sample Group for Personnel Testing

Filtering Sampling Plans by Location

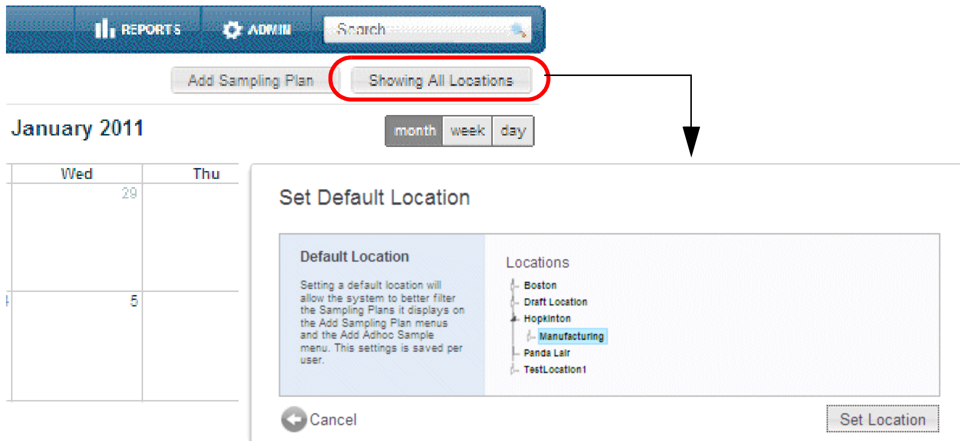
When you create a Sample Group based on routine or batch testing, the sub-menu displays the Sampling Plans associated with every sampling location in the system. To further filter the list, you can set a default location so that only those Sampling Plans associated with the specified location (or any of its child locations) are displayed in the sub-menus. In addition, only Sample Groups associated to that location will be displayed in the calendar view.



List of Sampling Plans

To set a default location:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon above the grid.
3. Click the **Showing All Locations** link above the calendar.



Setting a Default Location

4 Select the default Location from the list.

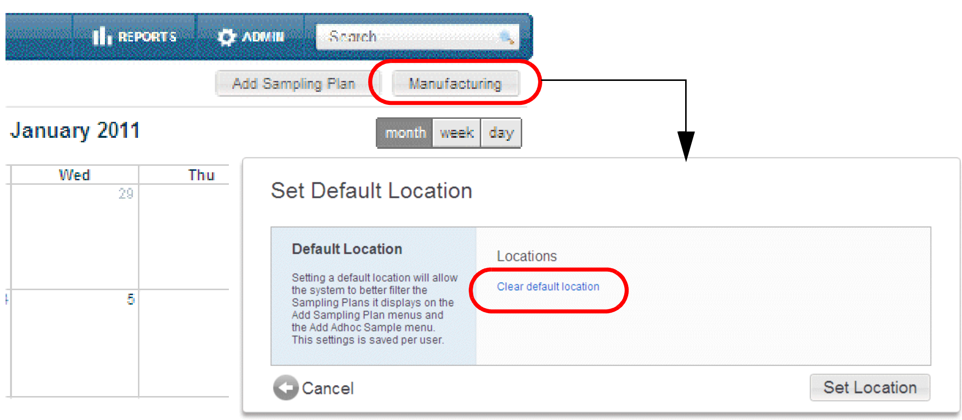
5 Click **Set Location**. Once the page is submitted, the **Showing All Locations** link will display the name of the default location you have chosen.

To clear the default location:

1 Click the name of the default location link above the calendar.

2 Click **Clear the default location**.

3 Click **Set Location**. Once the page is submitted, the default location link returns to “Showing All Locations.”



Clearing the Default Location

Moving a Sample Group to a New Day

There are two ways to move a scheduled (dark blue) Sample Group to a new day:

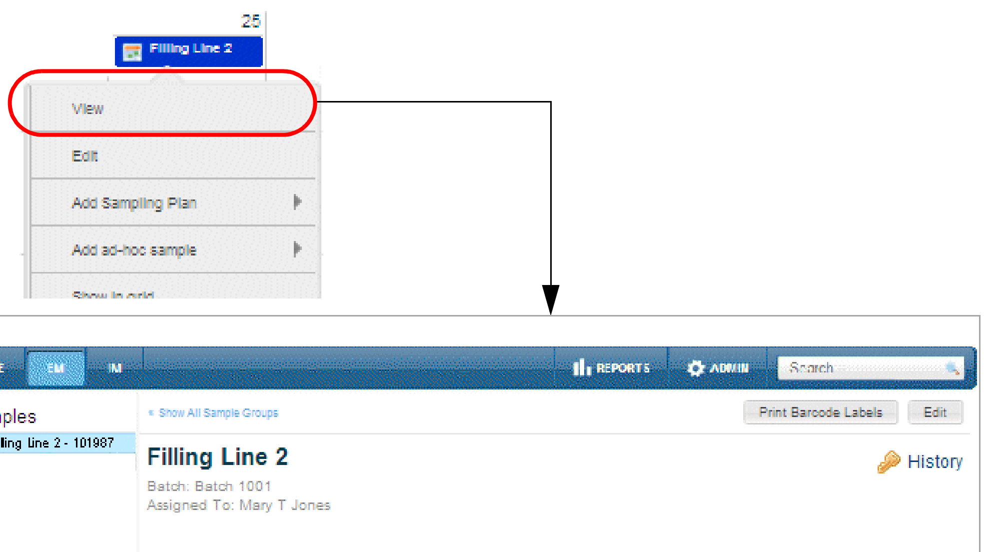
- Drag and drop the Sample Group to a new day or hour.
- Click the Sample Group, select **Edit** from the drop-down menu, and use the date picker to select a new day or hour.

Note that you cannot move the Sample Group to a date in the past. In addition, you cannot move a Sample Group once a sample in the group has been collected.

Viewing Details of a Sample Group

To view the details of a Sample Group:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon above the grid.
3. In the Calendar view, click the Sample Group and select **View** from the drop-down menu.



Sample Group's "View" Page

4. Perform any of the following functions:
   - If available, print the barcode labels for all of the samples in the group. Refer to *Printing Barcode Labels for a Sample Group* on page 2-22.
   - Edit the Sample Group. Refer to *Editing a Sample Group* on page 2-17.

- View the audit trails and the history of revisions for this Sample Group. Refer to *Viewing Audit Trails for Sample Groups* on page 2-25.

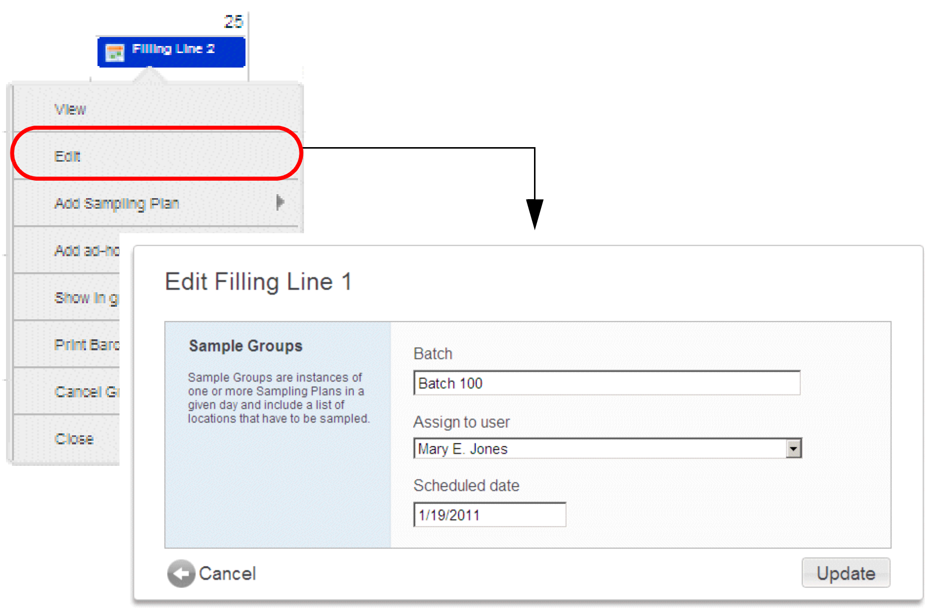
Editing a Sample Group

Eligible users can edit a Sample Group to:

- Change or assign a new Batch ID (for Sampling Plans based on batch testing).
- Assign a user to the Sample Group or change/delete an assigned user.
- Reschedule the Sample Group by changing its start date.

To edit a Sample Group:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon above the grid.
3. In the Calendar view, click the Sample Group and select **Edit** from the drop-down menu.

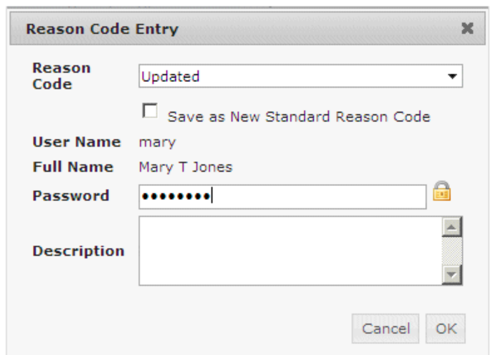


Editing a Sample Group

4. Change any of the fields, as necessary. Note that if you are changing the start date, you cannot select a date in the past. If a new date is outside the frequency defined for that group, a warning message will be displayed.

5 Click **Update**.

6 In the *Reason Code Entry* dialog box, select a Reason Code and type your password.



"Reason Code Entry" Dialog Box

Note: You can also edit the Sample Group from the Sample Group's *View* page (page 2-16).

Adding Additional Sampling Plans to a Sample Group

Eligible users can add additional Sampling Plans to a scheduled Sample Group. When you add another Sampling Plan to a group whose scheduled date is today's date, its samples are immediately released into the system.

Note: When you add another Sampling Plan to a scheduled Sample Group, the name of the group maintains its original name (assigned at the time of creation).

To add another Sampling Plan to a Sample Group:

1 Click the **EM** tab in the main menu bar.

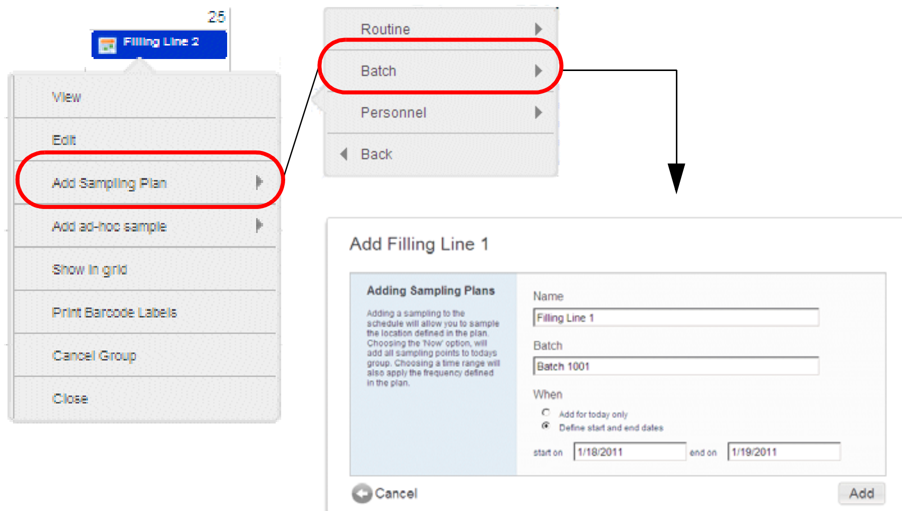
2 In the *Samples* home page, click the **Calendar** icon  above the grid.

3 In the Calendar view, click the Sample Group and select **Add Sampling Plan** from the drop-down menu.

4 Select the type of Sampling Plan you want to add:

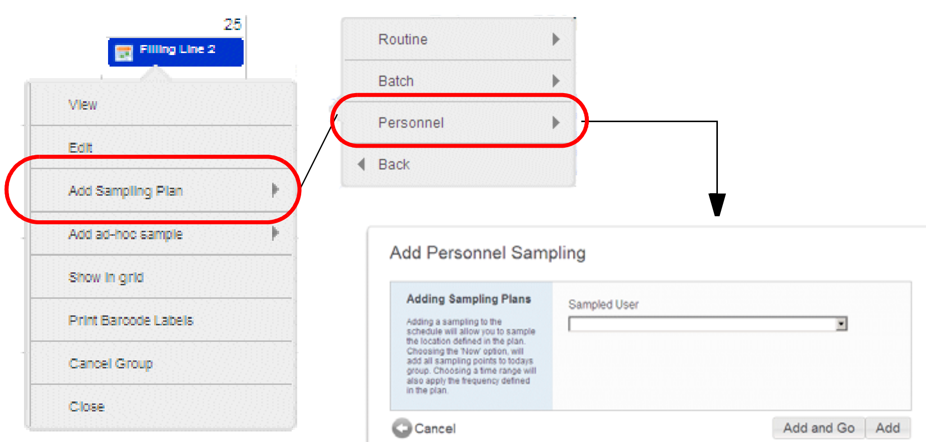
- **Routine**—The Sampling Plan is added to the Sample Group and a confirmation message is displayed at the top of the calendar page.

- **Batch—**In the *Add Sampling Plan* page, enter a Batch ID to identify all of the samples in the Sample Group and click **Add**.



Adding a Batch Sampling Plan to a Scheduled Sample Group

- **Personnel**—Select the name of a user to be sampled from the list. The list is populated with the names of all registered users whose status is “Active.” Click **Add** to add the plan to the scheduled group, or **Add and Go** to add it and go directly to these samples in the *Samples* home page .



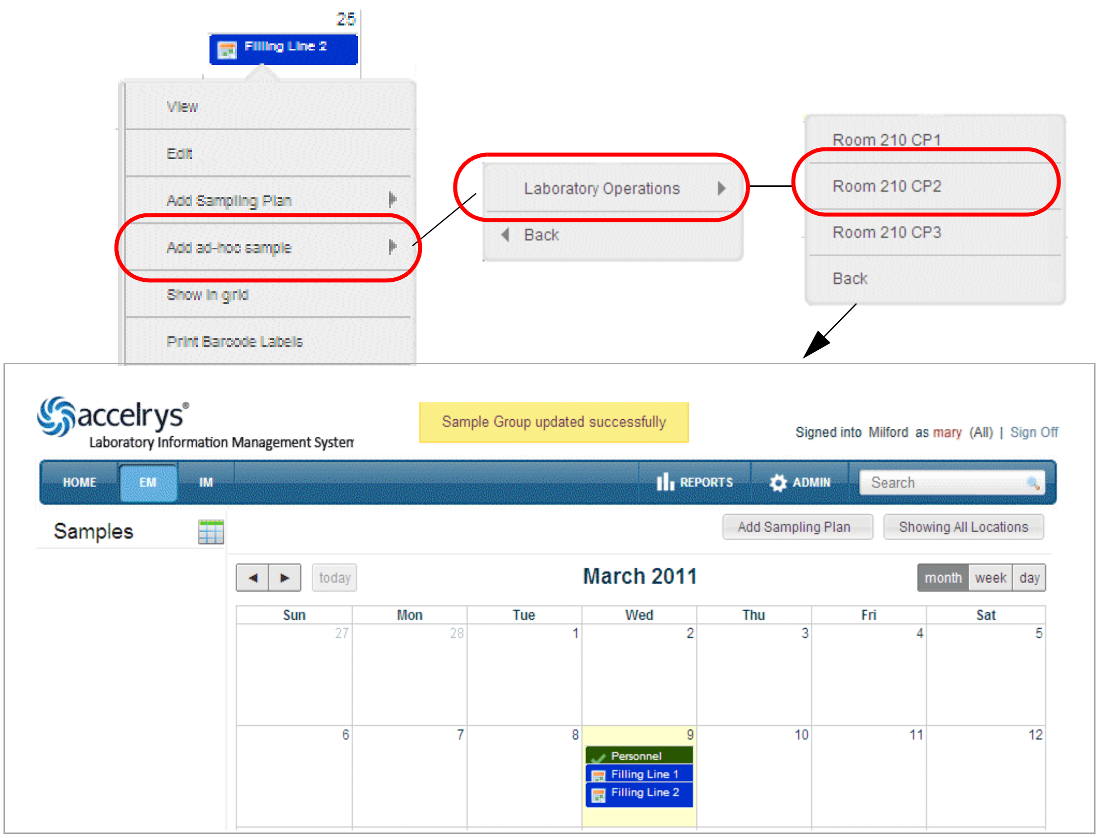
Adding a Personnel Sampling Plan to a Scheduled Sample Group

Adding Ad Hoc Samples to a Scheduled Sample Group

Eligible users can add "ad hoc" samples to a Sample Group. An *add hoc* sample is a sample that is not part of a predefined Sampling Plan. Ad hoc samples are always released into the system at the time they are added, even if the scheduled date of the Sample Group has not yet arrived.

To add an ad hoc sample to a Sample Group:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon 9 above the grid.
3. In the Calendar view, click the Sample Group and select **Add Ad Hoc Sample** from the drop-down menu.
4. Select a sampling location. A new ad hoc sample is immediately released for that location and a confirmation message is displayed in yellow above the menu bar.



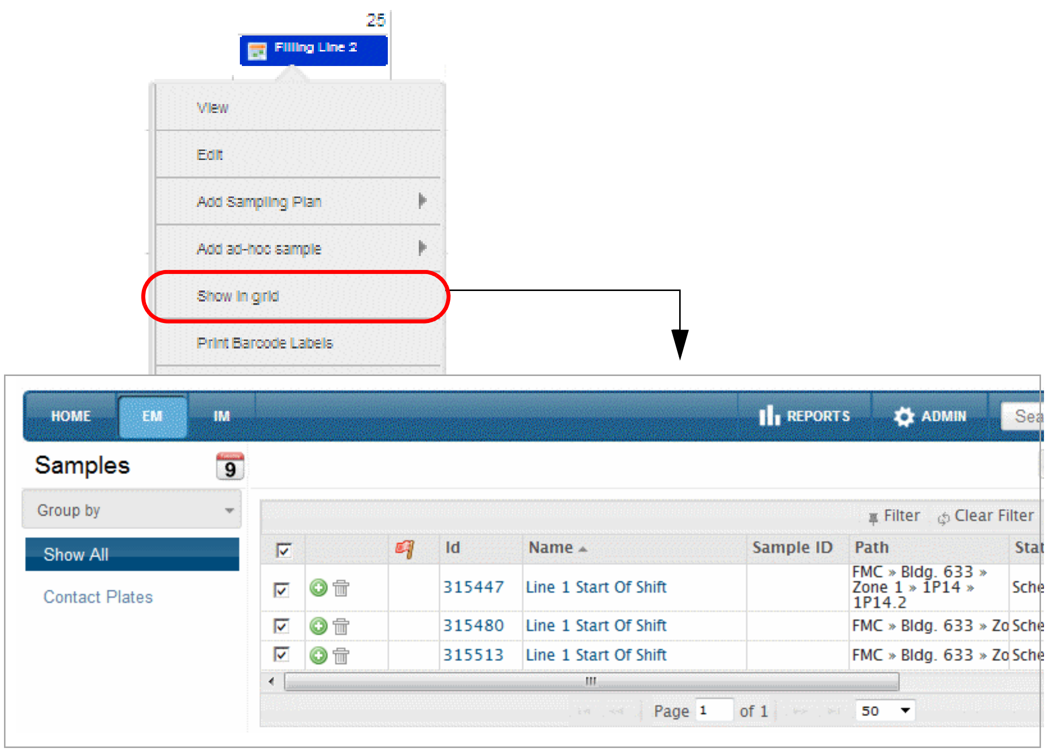
Adding an Ad Hoc Sampling Plan to a Sample Group

Viewing the Samples in a Sample Group

Eligible users can load the *Samples* home page and filter the grid view to display only those samples in the selected Sample Group. This option is only available for groups scheduled for the same day or groups there were scheduled for a past date. This function is not supported for Sample Groups scheduled a future date.

To view the samples in a Sample Group:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon above the grid.
3. In the calendar view, click the Sample Group and select **Show in Grid** from the drop-down menu. The *Samples* home page displays only those samples that belong to the group.



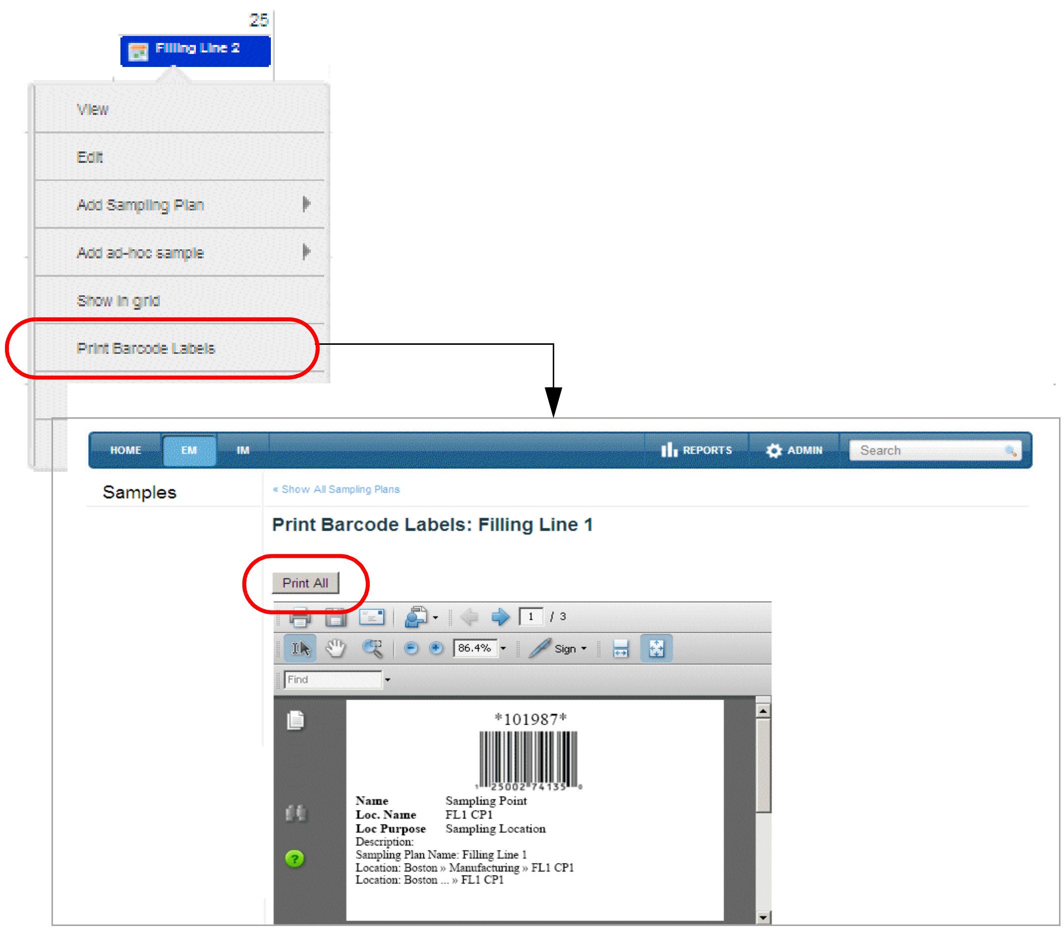
Viewing Samples in Selected Sample Group

Printing Barcode Labels for a Sample Group

Eligible users can print a batch of barcode labels for all of the samples in a Sample Group. This options is only available if your system administrator has previously configured the labels.

To print barcode labels for a Sample Group:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon above the grid.
3. In the calendar view, click the Sample Group and select **Print Barcode Labels** from the drop-down menu. The *Print Barcode Labels* page displays a thumbnail view of the associated label(s).



Printing Barcode Labels for a Sample Group

4 Click **Print All**.

5 In the *Print* dialog box, enter the number of copies and click **OK**. Note that you can also print barcode labels from the Sample Group's *View* page (page 2-16).

Cancelling a Scheduled Sample Group

Eligible users can cancel a scheduled Sample Group.

- You can only cancel a Sample Group if it does not have any collected Sample IDs.
- You cannot move a cancelled Sample Group to another day on the calendar.
- You cannot edit a cancelled Sample Group.
- A cancelled Sample Group will not release its samples when the scheduled date has been reached.
- When you cancel a Sample Group, all of the existing samples in that group are cancelled.

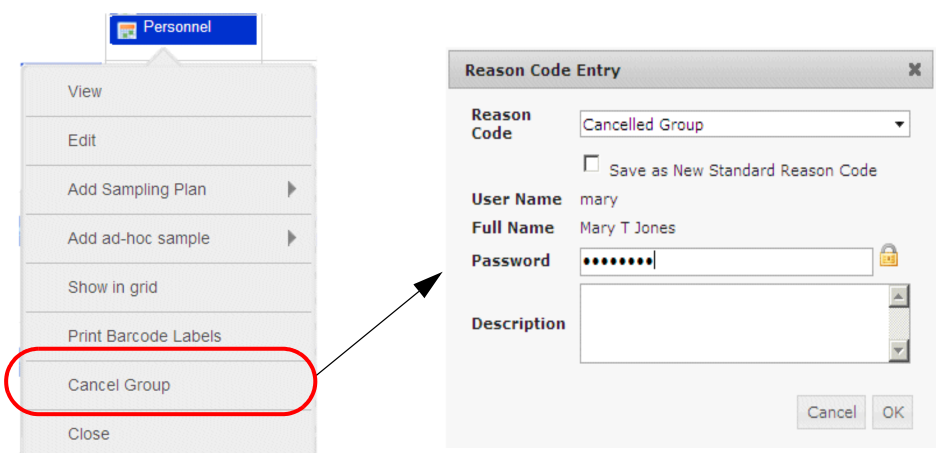
To cancel a scheduled Sample Group:

1 Click the **EM** tab in the main menu bar.

2 In the *Samples* home page, click the **Calendar** icon above the grid.

3 In the calendar, click the Sample Group that you want to cancel and select **Cancel Group** from the drop-down menu.

4 In the *Reason Code Entry* dialog box, select a Reason Code and enter your password.



Cancelling a Scheduled Sample Group

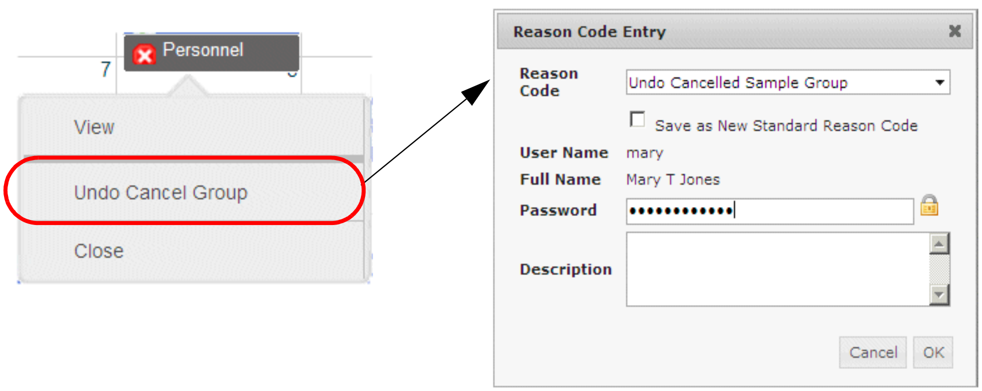
The Sample Group is cancelled and its color changes to dark gray and displays a red "**X**" icon to indicate that it has been cancelled:

Reinstating a Cancelled Sample Group

Eligible users to undo and reinstate a previously cancelled Sample Group. Once the Sample Group is reinstated, its samples are released on their scheduled date.

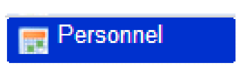
To undo a cancelled Sample Group:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon above the grid.
3. In the calendar, click the Sample Group that you want to reinstate and select **Undo Canceled Group**.
4. In the *Reason Code Entry* dialog box, select a Reason Code and enter your password.



Undoing a Cancelled Sample Group

The cancelled Sample Group is reinstated and its color changes back to dark blue and displays the calendar icon to indicate it is currently scheduled:

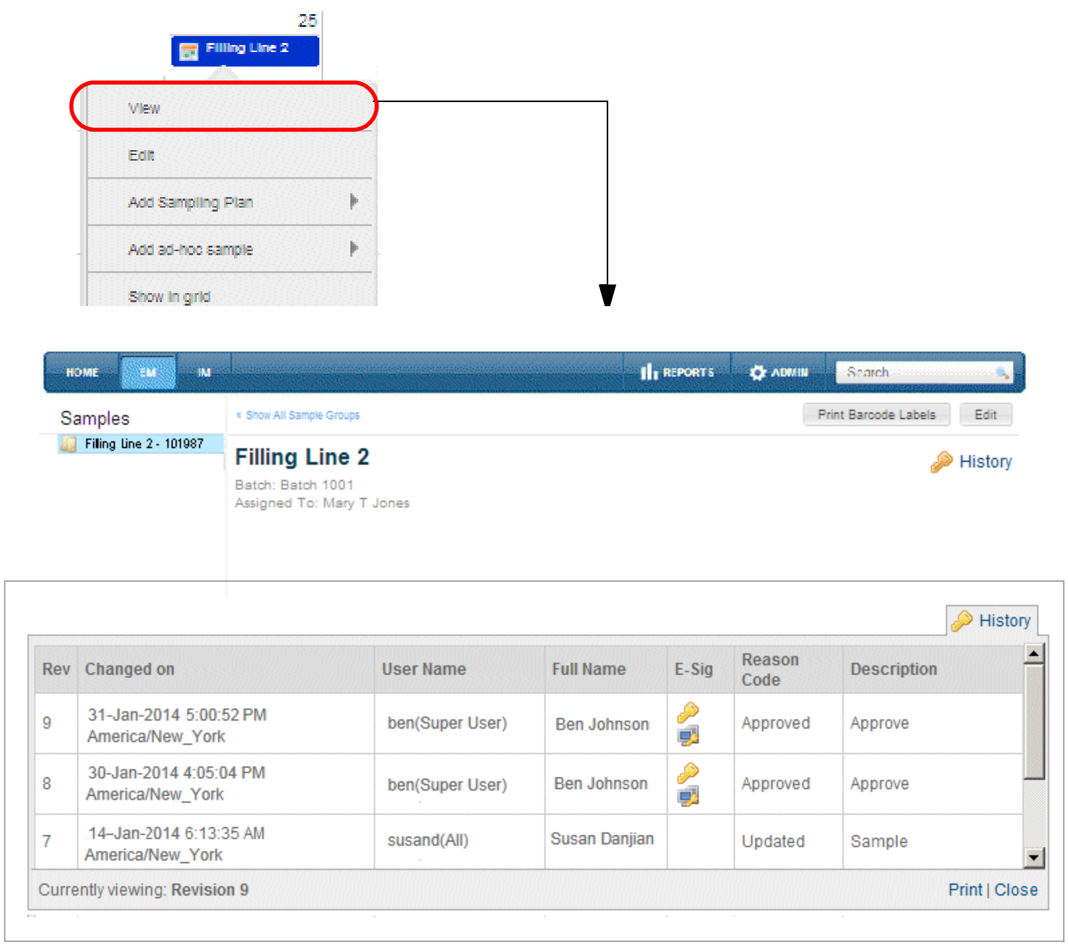


Viewing Audit Trails for Sample Groups

Every change made to a Sample Group is recorded in its audit trail.

To view the audit trails for a Sample Group:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the **Calendar** icon above the grid.
3. In the calendar view, click the Sample Group whose history you want to view and select **View** from the menu.
4. In the Sample Group's *View* page, click the **History** link in the upper right side of the page.



Viewing Audit Trail for a Sample Group

The History table displays the complete list of revisions made to that group. Each row represents one record identified by its revision number. The most recent revision is displayed in the first row of the History table. When you click a row, the details at the time of that revision are displayed.

The columns in the History table are explained below:

- **Rev—**Displays the number of each revision. New Sample Groups are set to version “1”when they are scheduled.
- **Changed on**—Displays the recorded timestamp of the change. Refer to *How the System Records Date/Time Values* on page 1-12.
- **User Name**—Displays the user name of the user who made the change. The User Role to which that user belongs is shown in parenthesis—for example: Mary (Admin).
- **Full Name**—Displays the full name of the user who made the change.
- **E-Sig**—May contain one or two icons:

   Indicates an electronic signature has been applied directly by the user. This occurs anytime the user is prompted to enter his password anywhere in the system.

   Indicates that the Reason Code was applied automatically by the system. This applies only to specific signature types (that is, Attest, Review, Approve, Annotation).
- **Reason Code**—Displays the reason the change was made.
- **Description**—Displays the description entered by the user who made the change (optional).

Click the **Print** link to print the contents of the history table***.***

Click **Close** to close the table.

What’s Next?

Chapter 3 explains how to view the samples once they are released into the system.

3

Viewing Samples in the System

What is a Sample?

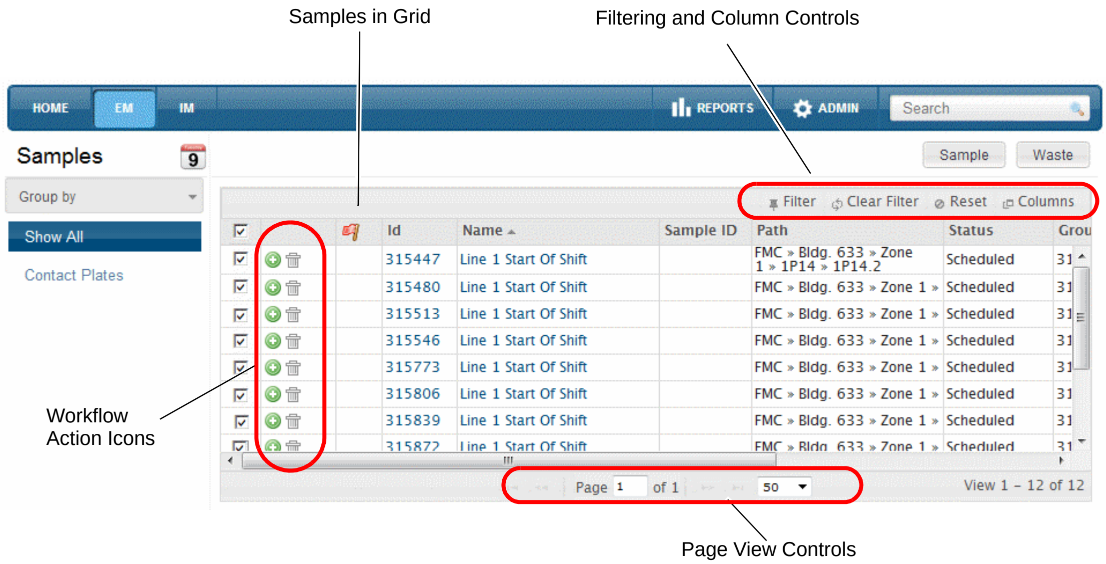
A *sample* is one type of sampling that is performed at a specific location on a specified date—for example, a surface sample is collected for Filling Room 1, North Corner Table on February 14, 2013. The sampling is performed according to the frequency specified in the Sampling Plan on which the sample is based—for example, once every 8-hour shift for a filling batch process.

The actions that you can perform on a sample are dictated by the type of sampling that you are performing (for example, a contact plate or air sample). Each sampling type is based on a workflow that consists of a sequence of actions that can be performed on the sample from the beginning of its life cycle when it is released into the system to the end of its life cycle when the sample has been approved.

A *Sample Group* is a collection of samples that is scheduled for a specific day. The schedule master at your site has created and scheduled Sample Groups for routine, batch, and personnel sampling purposes.The samples contained in a Sample Group are released into the system at 12:00 am on their scheduled day and are automatically populated in the *Samples* home page grid with a status of “Scheduled.” The samples are now ready to be collected either individually or as a group.

The Samples Home Page

To view the samples in the Environmental Monitoring System, click the **EM** tab in the main menu bar. The samples that have been released in the system are displayed in the *Samples* home page.



Samples Home Page

The elements of the Samples home page are described below.

Rows—Each row in the grid represents one sample. The columns in the grid are described below:

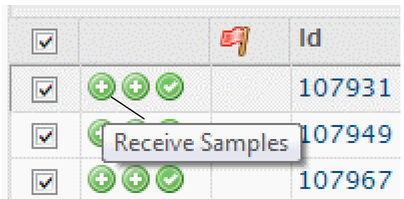
- **Check boxes**—All of the check boxes  in the first column are enabled by default. You can use the check boxes to perform workflow actions of a selected group of samples. Refer to *Performing Workflow Actions on One or More Samples* on page 4-8 for more information.
- **Workflow Action Icons**—The icons in the second column represent workflow actions that you can perform on that item. These correspond to the command buttons above the grid. The available actions are displayed according to the workflow state in which that sample resides, as well as your user eligibilities.

   **User Defined**—Named for a specific action in the workflow and displays a dialog box containing the activities required for that action.

   **Approve**—Displays the *Approve* dialog box which collects an electronic signature for approving the current state of the sample.

   **Waste**—Deletes the sample from the grid.

If you mouse over an icon, a tool tip displays its name:



Note: If an sample does not have any available workflow actions, it is not displayed in the grid.

-  —A red flag icon in the third column indicates the sample contains an out-of-limit value.
- **ID**—A unique identifier that is assigned when the sample is created. The ID is a hyperlink to the sample's *View* page.
- **Name**—The name of the sample.
- **Sample ID**—The unique identifier of the sample.
- **Path**—The full path name of the sampling location.
- **Status**—The workflow state in which the sample currently resides.
- **Group ID**—The name of the Sample Group from which the sample was released.
- **Location**—The actual sampling location.
- **Sampled User**—The name of the user who performed the sampling.
- **Sampled User ID**—The unique identifier of the user who performed the sampling.

Filtering and Column Controls—You can customize the default view of the samples through the filtering options and column controls. Refer to the following section.

How the Grid Control Works

The grid control is used to display the samples in the EM module. You can customize the default view of the samples in the grid through the filtering options and column controls. The changes you make to the default view of the entities are stored as your personal user preferences—when you leave and return to that page, the changes to the view will remain persistent until you change the grid back to its default view.

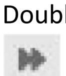
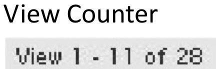
Page View controls

The Page View controls below the grid allows you to page through the samples in the current data set.

Page View Controls

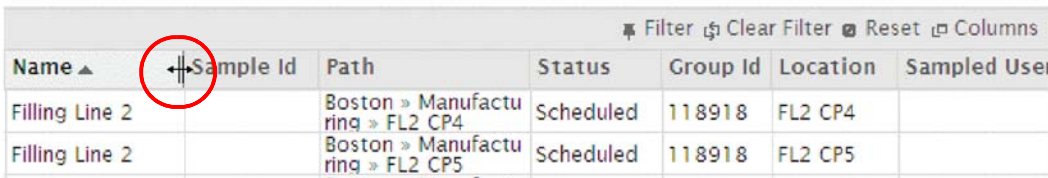
The following table describes each of the paging controls.

Table 3-1 Paging Controls for Viewing the Grid

Grid Control	Description
Double left arrows 	Reloads the first page of samples in the data set.
Single left arrow 	Reloads the previous page of samples in the data set.
Current Page control 	Displays the number of the page that is currently loaded in the grid, as well as the total number of pages in the data set. To reload the grid with the selected page, enter a number and press the **Enter** key.
Single right arrow 	Loads the next page of samples in the data set.
Double right arrows 	Reloads the last page of samples in the data set.
Row Counter 	Displays the number of rows currently displayed in the grid. You can change the number of samples displayed in each page (10, 20, 50, 100, 200, 500).
View Counter 	Displays the number of samples currently displayed in the grid, as well as the total number of samples in the data set.

Resizing columns

All of the columns in the grid can be resized except for the first and second columns (that is, the check boxes and workflow action icons). To resize a column, place the cursor next to a column heading and drag it to the left or right.



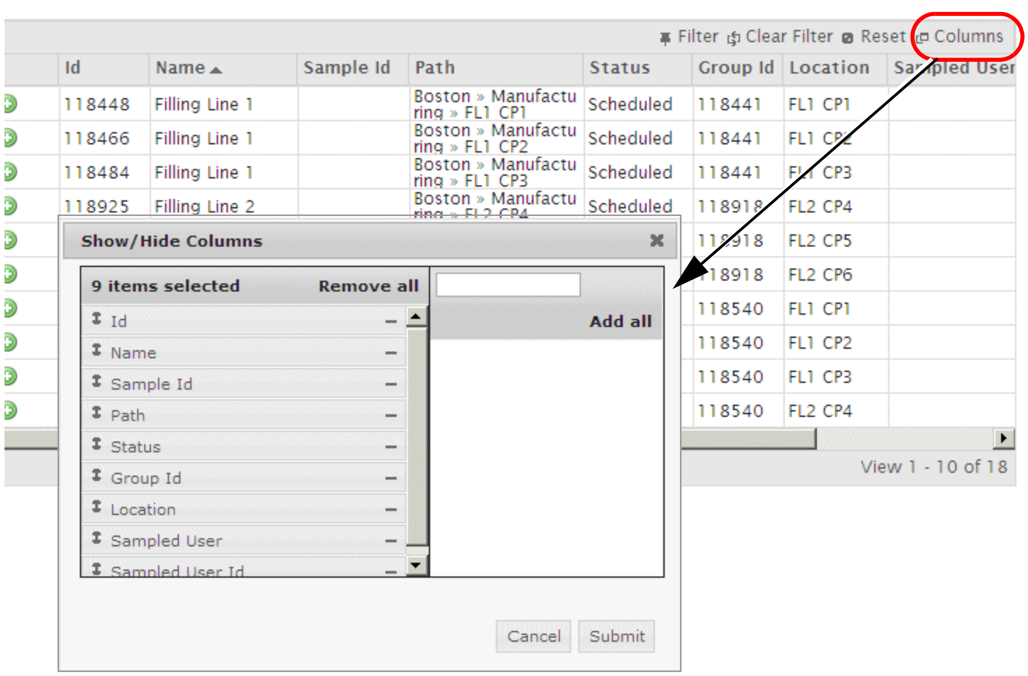
Resizing Columns in Grid

Sorting columns

To sort the contents of a column, click its column heading. The contents are sorted in ascending/descending alphanumeric order.

Hiding and reordering columns

To hide selected columns or to reorder the columns, click **Columns** in the upper right corner of the grid control. The *Show/Hide Columns* dialog box is displayed.

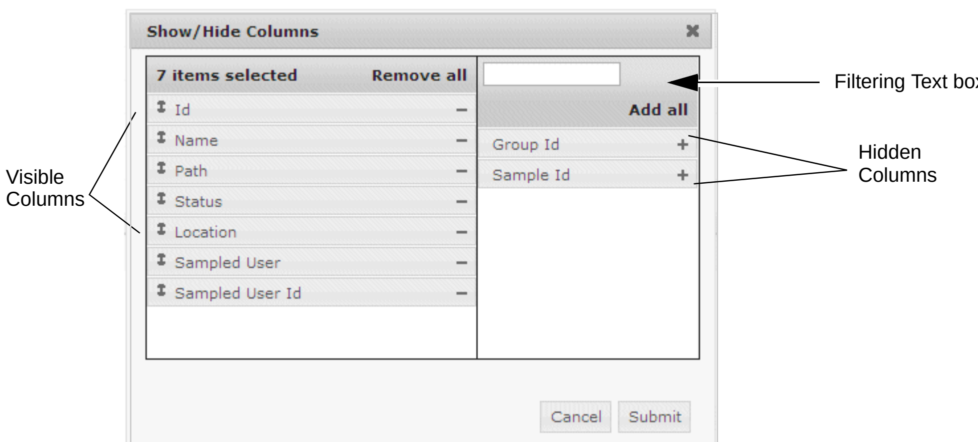


“Show/Hide Columns” Dialog Box

Hiding columns

The left side of the *Show/Hide Columns* dialog box lists the names of the columns that are currently being displayed in the grid. The right side of the dialog box displays the names of the columns that are hidden.

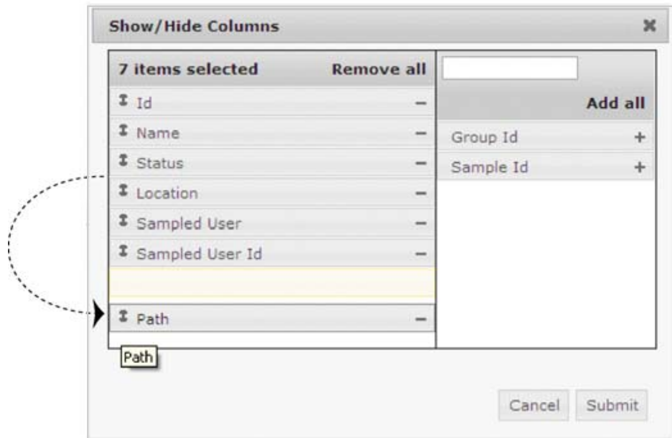
- To hide a visible column, click **−** (minus symbol) to move it to the right side of the dialog box.
- To display a hidden column, click **+** (plus symbol) move it left to the visible columns.
- To hide all of the visible columns, click **Remove all** to move them to the right.
- To display all hidden columns, click **Add all** to move them back to the left column.
- To filter the list of columns, enter the name in the blank text box in the upper right corner of the dialog box. When you start typing, the list will only display columns that contain the string that you have entered.



Showing/Hiding Columns

Reordering columns

You can change the order of any of the columns listed on the left side of the dialog box. To reorder the column positions, drag and drop the row to a new location in the list. The first position will be displayed in the fourth column in the grid, the last column will be displayed furthest to the right side of the grid.

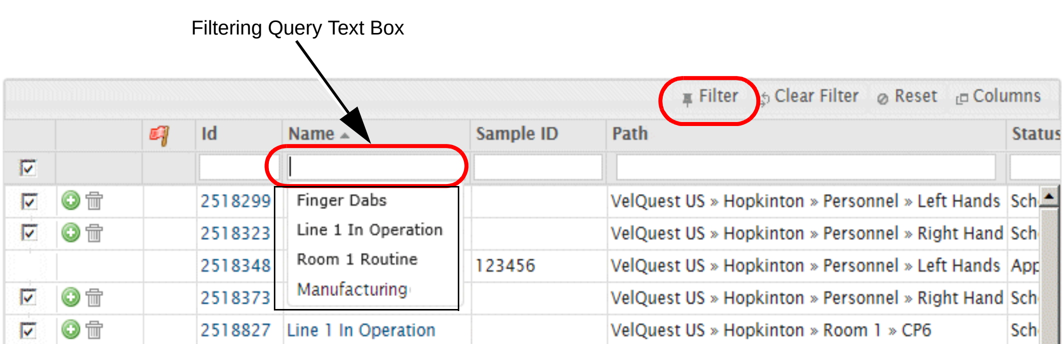


Reordering Column Positions

Applying filters

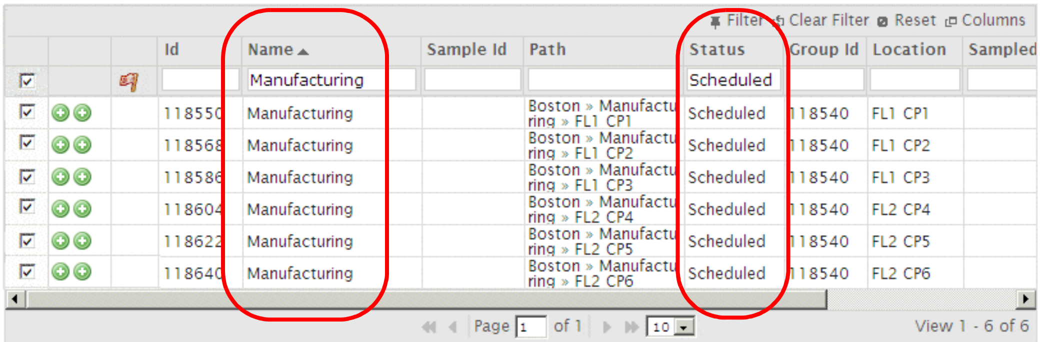
You can enter one or more filtering queries to filter the items in the grid. This is useful when you want to perform group workflow actions on a selected subset of items in the grid.

Click the **Filter** button in the upper right corner of the grid and click the appropriate filter query text box below. A drop-down list displays the types of instances in the corresponding column. Select an item from the list or start typing your query in the text box. Press **Enter** after each entry. The filtering query text boxes are displayed for any grid in which filtering has been applied.



Applying Filters to the Grid

For example, the following figure shows the grid filtered by samples for “Manufacturing” whose status is “Scheduled.”



Filtering Result

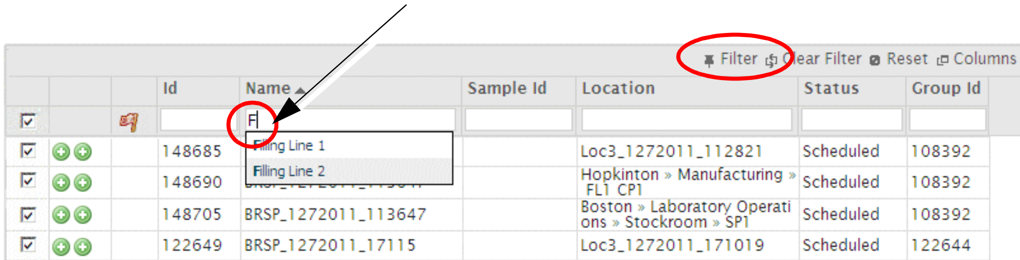
The filtered results will encompass all of the relevant data in the data set. For example, if there are only three samples relevant to a particular query on one page, but additional relevant samples on a different page, the query will return as many samples as available that will fit within the number of items displayed on the page. Adjust the number in the Row Counter control to view the additional relevant items.

"Auto-Complete" sub-filtering

The filtering text boxes support an auto-complete functionality. This allows you to select or enter a query on which to filter the grid. Click the **Filter** button above the column headings and put the cursor's focus in a text box (you can also tab into the field) and start typing your query.

The auto-complete list displays the entire data set for that particular grid, not just the current page. As you start typing in the text box, the list is further filtered to show only those entries that match your search query.

Auto-Complete Sub-filtering List



Auto-Complete Sub-filtering List

The auto-complete sub-filtering function works a bit differently on the “Status” column in the ADMIN grids listed below. When you filter on “Active” entities, only the active items will be returned, as opposed to both active and inactive.

BIOVIA LIMS grids:

- Users
- User Roles
- User Groups
- Sites
- Location Types
- Entity Types

Inventory grids:

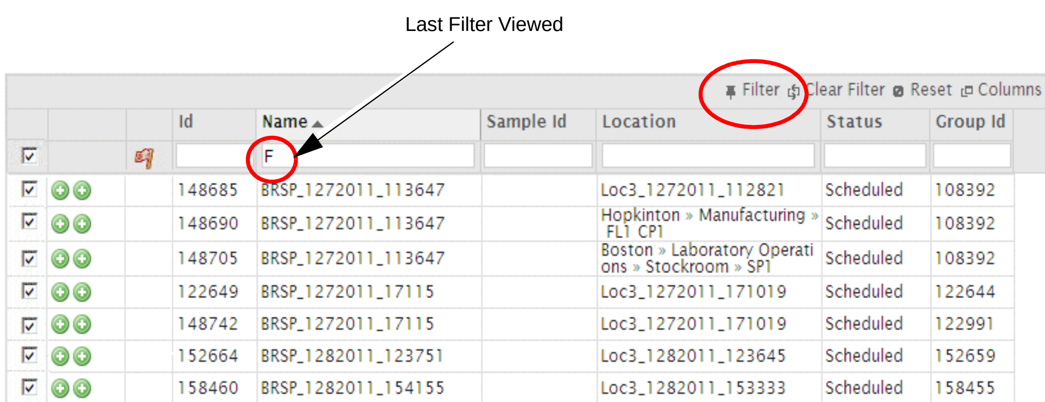
- Consumable Types
- Consumable Templates
- Measuring Scales

Environmental Monitoring grids:

- Sampling Plans
- Sample Types

Last filter viewed

The “Last Filter Viewed” function allows you to view the grid with the same filter parameters that were last used. Note that these filters are not immediately visible—you must select the **Filter** button above the column headings to view the text that was used to filter the grid.



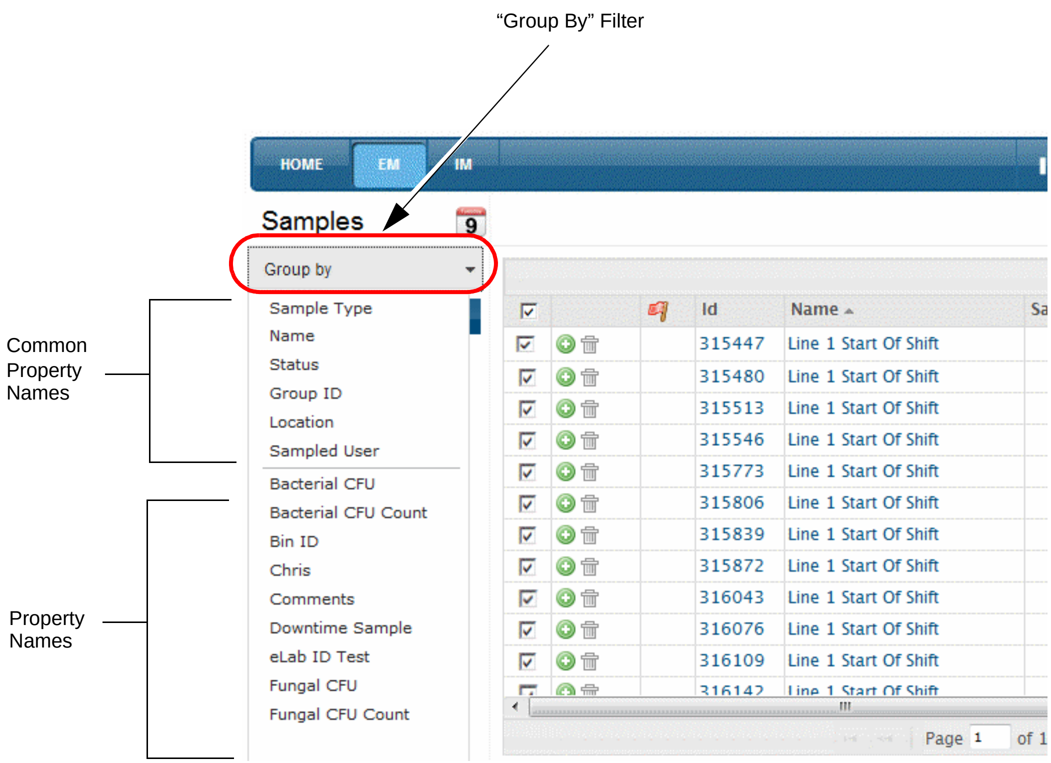
“Last Filter Viewed” Function

“Group By” filter

The **Group By** filter allows you to locate only those samples that share a common property or status. When you click **Group By** in the left menu panel:

- The properties common to all samples are listed above the line. These include:
    - Sample Type
    - Name (Sample Group)
    - Status
    - Group ID
    - Location
    - Sampled User
- Any property that exists for a sample is displayed below the line.

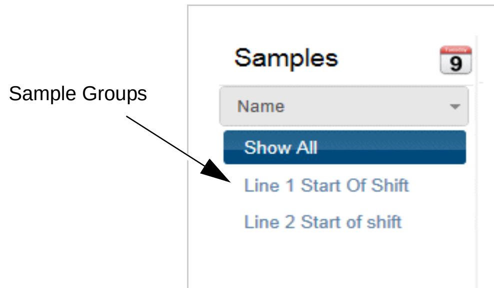
The Group By filter is especially useful when creating saved views. Refer to *Saved Views—Creating Customized Views of the Grid* on page 3-16.



Grouping Samples by Selected Properties

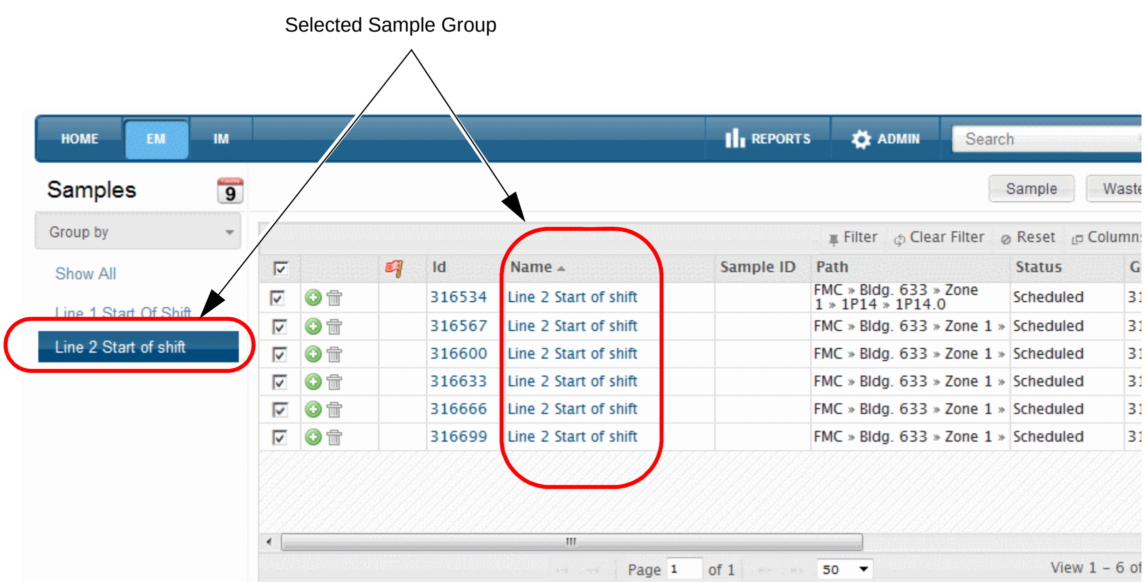
When you select a common property, the list below displays all of the unique values of that property contained in the current view of the grid. For example, if you grouped the samples by “Name,” the list below displays all of the Sample Group names that exist in the current view of the grid.

If a particular Sample Group is defined in the system, but none of the samples in the current view contain that name, that Sample Group name is not displayed in the list.



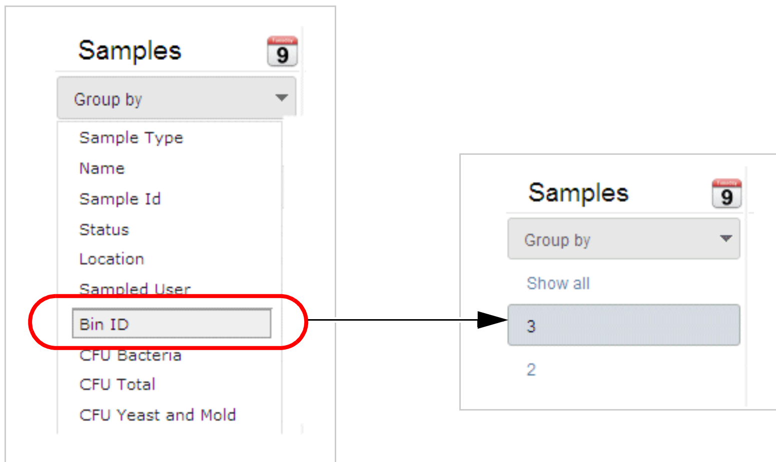
Filtering on Sample Group Name

Select a value on which to filter the grid. For example, if you grouped by “Name” and selected “Line 2 Start of shift,” only those samples that belong to the Sample Group ““Line 2 Start of shift” are displayed in the grid.



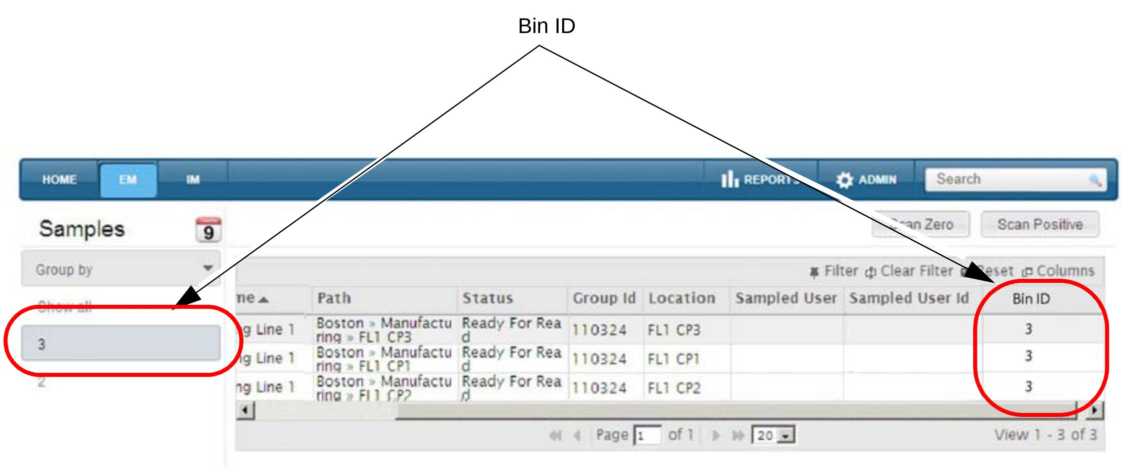
Grouping Samples by Sample Group

When you group by a unique property, the list below displays all of the values of that property contained in the current view of the samples. For example, if you grouped the samples by “Bin ID,” the list below displays all of the Bin IDs that exist in the current view of the grid.



Selecting a Bin ID

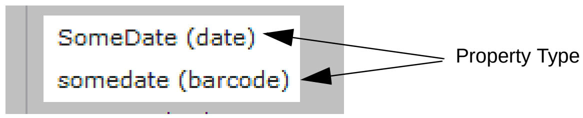
When you select a property value, an additional column named for that property is added to the grid, and the samples are further filtered on the selected value. For example, if you filtered on a Bin ID of “3,” the grid will add a new column called “Bin ID” and the view will be filtered to show only those samples that are associated with Bin 3.



Grouping Samples by Bin ID Property

Notes on "Group By" filter:

- If the samples in the grid contain unique properties that have the same name but are based on a different property type, the property type is appended to the name.



Different Property Types with the Same Name

- If two unique properties share the same name and have the same value but are based on a different property type, the samples are filtered first by the property name and then by the property value, even though their property types are different.

  For example, for two properties that have the same name "Vendor" and the same value "ABC Corporation," but are based on a different property type (for example, Text and Text Multi-line), the samples are grouped by "Vendor" and then by "ABC Corporation" even though their property types are different.

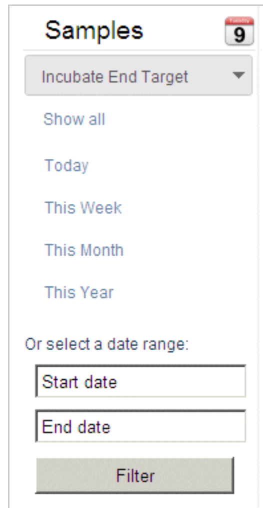
Note: Property names are case-insensitive, therefore "Vendor" and "vendor" are considered to be the same value.

Special groupings

A special type of grouping applies to Date properties. For a Date property, you can filter the grid by predefined queries—today's date or the current week, month, or year.

- **Today**—Displays any item whose date property value is the current date.
- **This Week**—Displays any item whose date property value is within the range of current date to current date +7.
- **This Month**—Displays any item whose date property value is within the range of current date to current date +30.
- **This Year**—Displays any item whose date property value is within the current year.

You can also enter a range of dates using the date picker controls.



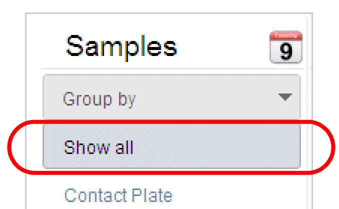
Grouping by Date Properties

Last group viewed

When the grid is filtered by groups, the last page viewed is the view that persists. This applies specifically to grids with “Group By” items, which can easily be navigated but can be difficult to retrace once you leave the page. For this reason, when you click the **Show All Samples** link in a sample’s *View* page, you will return to the last viewed grid page.

Resetting a grouped view

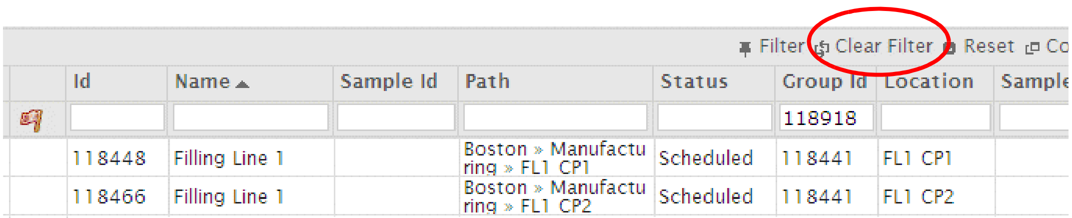
To reset the grid and removed the Group By filter, click **Show all** in the left navigation panel.



Resetting the Grouping Filter

Clearing all filters

To clear the applied filtering, click the **Clear Filter** button above the column headings in the grid. The grid reloads and displays the original unfiltered list of samples.



Clearing the Applied Filtering

Saving user preferences in the grid

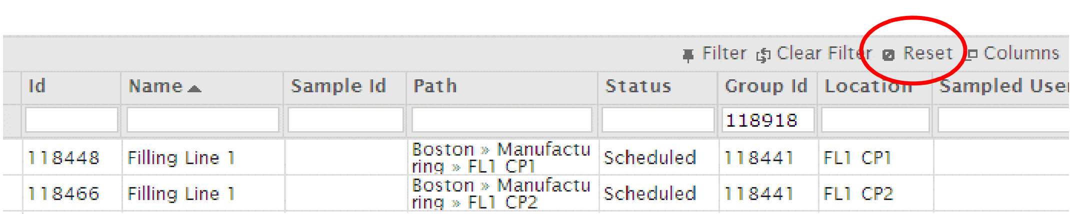
The changes you make to the default grid view are saved as part of your user preferences and remain in effect until the next time you return to that page. Your user preferences are persistent until you reset the grid back to its default view. These include:

- Number of items shown on the current page
- Reordered columns
- Hidden columns
- Sorted columns
- Resized column widths
- The page in which the changes were made

For grids that have been filtered by groups, the grid is saved per value. For example, if a particular grouping is based on a Sample Type and there are two unique Sample Types A and B, when you click on A or B, the grid will render two different layouts based on your user preferences.

Resetting the grid to its default view

To reset the grid back to its original default view, click the **Reset** button in the upper right corner of the grid. This will remove all filtering and column reordering.



Resetting Grid to Original View

Saved Views—Creating Customized Views of the Grid

You can customize the view of the samples in the grid and then save the views so they are persistent each time you access that page.

You can configure a saved view to prompt you for specific values on which to filter the view. For example, you may want to filter the samples by today's date or by a particular user's name. You can create any number of saved views in order to view only that data which is relevant to the task you are currently performing.

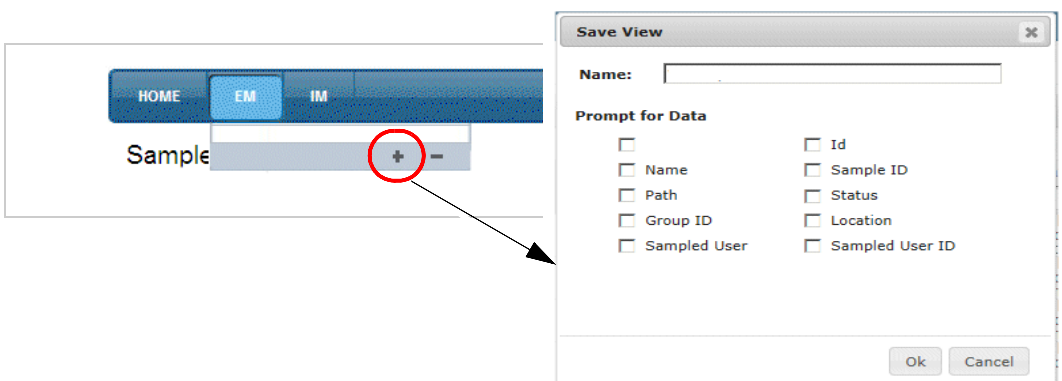
The system supports two types of saved views:

- **Role-based views**—These are views created by administrators and cannot be deleted by the general users. A role-based view is displayed to all members of that User Role. You must have “Can Administer Saved Views” eligibility in order to save a view for a User Role.
- **User-based views—**These are views created by general users and only they have access to them. Users can add and delete their own user-based views as necessary.

Creating a saved view

To create a saved view:

1. Click the **EM** tab in the main menu bar to open the *Samples* home page.
2. Customize the view of the grid using the filtering, grouping, and column options.
3. Place your cursor on the **EM** tab in the main menu bar and click the **+** icon.

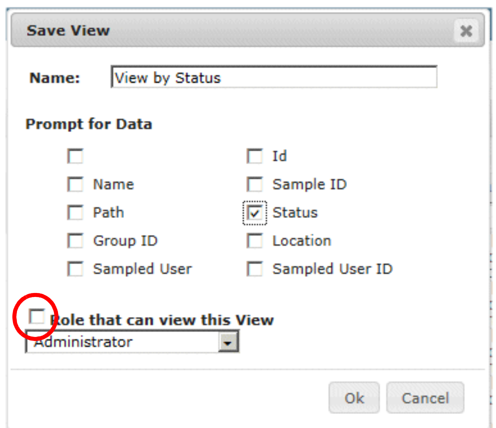


Creating a Saved View

4. In the *Save View* dialog box, enter a name for this view. The name does not have to be unique.

5 In the "Prompt for Data" area, the name of each column in the current view of the grid is preceded by a check box. To allow users to further filter the grid on specific values in the columns when they access this view, click the appropriate check boxes.

6 If you have eligibility to limit this view to members of a specific User Role, click the **Role that can view this View** check box and select the name of that Role. In the following example, only the users who belong to the "Administrator" role will be able to access this view and they will be able to further filter the view based on a selected status.



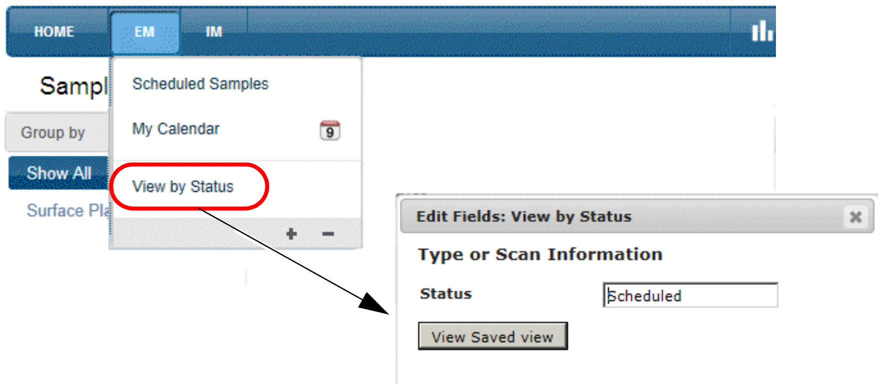
Creating a Saved View for a User Role

7 Click **OK** when you are done, then click **OK** in the confirmation dialog box. The new saved view is displayed in the Saved Views menu.

Accessing a saved view

To access a saved view, place your cursor over the **EM** tab in the main menu bar and select the name of a view.

- If you configured the view to prompt for a value, a dialog box opens. Enter the value(s) on which you want to filter the view and click **View Saved View**. The grid will filter the view based on your current input.
- If you did not configure the view with a prompt, the dialog box is not displayed and the grid immediately loads the saved view.



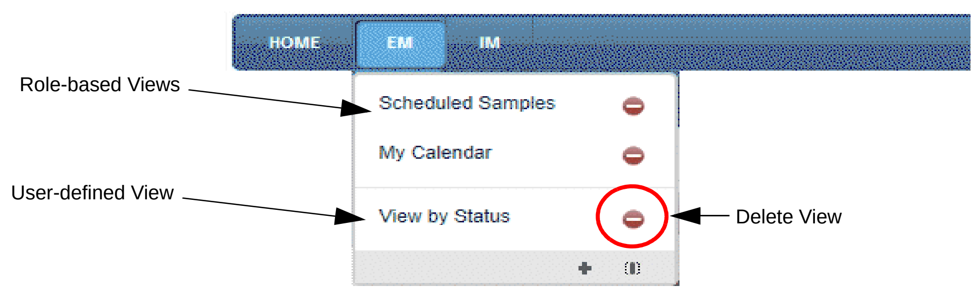
Accessing a Saved View that Prompts for Input

Editing a saved view

You cannot directly edit a saved view. Instead, make your changes in that view and then save it as a new view. You can then delete the previous version of the view.

Deleting a saved view

Click the minus (**-**) icon under the Saved Views menu. Click the delete icon for the view that you want to delete. Note that only administrators can delete a Role-based View.

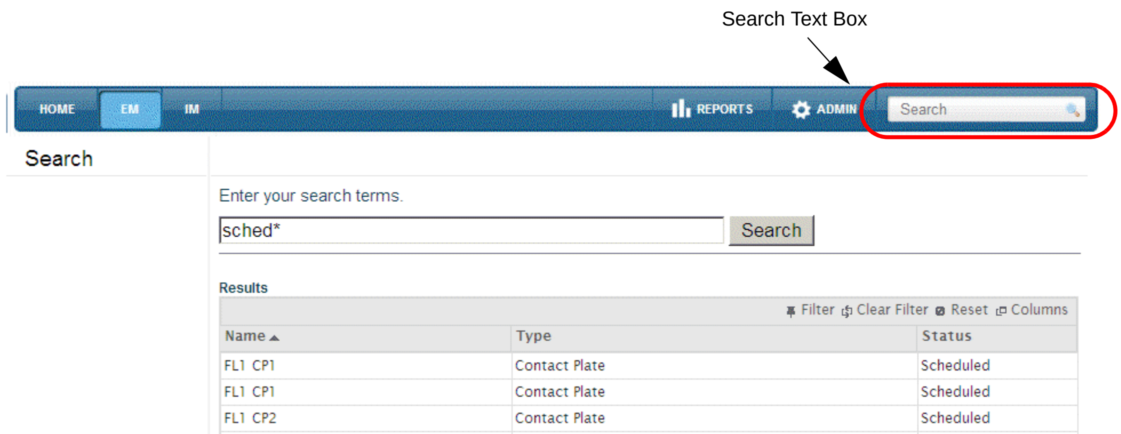


Deleting Saved Views

How the Search Function Works

The search function allows you to search for samples in the EM module. Your search criteria can be based on a specific ID or one or more properties.

The search results display only that data that you have eligibility to view. To perform a search, enter your search query in the Search text box and click **Enter**.



Example—Searching for Scheduled Samples

This is how the search function works:

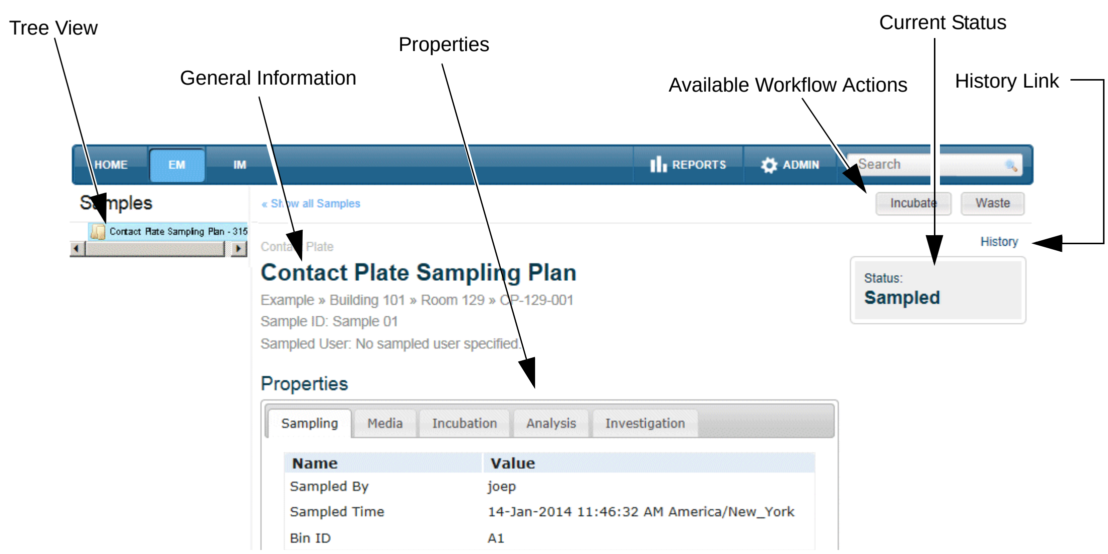
- Searches are not case-sensitive.
- Searches are Site-specific. You can only search within the Site that you are currently logged into.
- Searches are not module-specific. If you perform a search for a consumable in the EM module, the results will include items from the BIOVIA LIMS and IM modules as well.
- The search query can consist of a whole word (for example, Approved) or a partial word if you add the wildcard characters (* or %) as the last character in the query (for example, App*).
- You cannot enter a wildcard character as the first character in the query.
- You cannot use a single wildcard character without at least one other character.
- A single character with a wildcard character does not work on the status column. The search criteria will only be applied to the other columns.
- If you use two words in one query, they must be enclosed in quotes. Without the quotes, a separate search is performed on each word and the results are merged. For example, “Inspection Lot” will return only those records that contain the words “Inspection Lot.” Without the quotes, the search returns all records that contain the word “Inspection” and all of the records that contain the word “Lot.”
- Boolean expressions are supported for advance searching capability—for example, AND, OR, NOT. Note that the Boolean expressions must be entered in uppercase characters.
- You can search on a date based on any format that can be parsed in your native language (for example, 3/20/2013 or 3/20/13).

Viewing Details of a Sample

To view the details of an individual sample:

1 Click the **EM** tab in the main menu bar.

2 In the *Samples* home page, click the name of the sample whose details you want to view. The sample's *View* page is displayed.



Viewing Details of a Sample

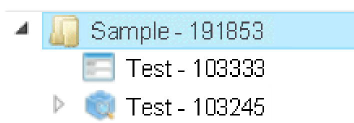
The details of the sample's *View* page are described below:

- **Tree View**—An expandable tree view of the selected sample and its related entities is displayed in the left navigation panel. This allows you to quickly view all of the child instances and related entities of the selected sample. Refer to *About the Tree View* on page 3-21.
- **General Information**—The details of the sample are shown in the upper left corner of the page (name, sampling location, Sample ID, and sampled user).
- **Properties**—The sample's properties and their collected values are shown below in the *Properties* area. Any property that is related to the property of another Entity Instance is a hyperlink to its own *View* page. Properties may also include a link to a specified URL page.
- **Workflow Actions**—The command buttons represent workflow actions that you can perform on the sample.

- **History** link—Displays the audit trails and the history of revisions for this sample. Refer to *Viewing audit trails for samples* on page 3-25.
- **Status**—The current status (that is, the workflow state in which this sample currently resides) is displayed below the History link (for example, “Scheduled”).

About the Tree View

When you select a sample in the Samples home page, the sample’s *View* page is displayed. An expandable tree view of the selected sample and its related entities is displayed in the left navigation panel, as shown in the example below.



Expanded Tree View for Samples

The icons in the Tree View represent the following types of entities:

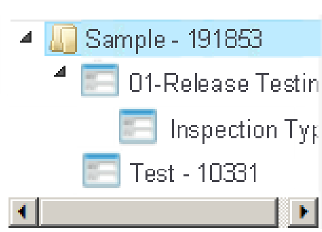
Top-Level Folder—Displays the name and ID of the current (parent) sample. Click the arrow preceding the folder icon to expand and close the tree.

Child Instance—Displays the name and ID of the Entity Instance created by the workflow of the parent sample. Click the name to load the *View* page of the child instance.

Related Entities—Displays the value of the Entity Instance that is related to the parent sample through a “Relationship” property type. Click the name to load the *View* page of the related instance.

Notes on the Tree View:

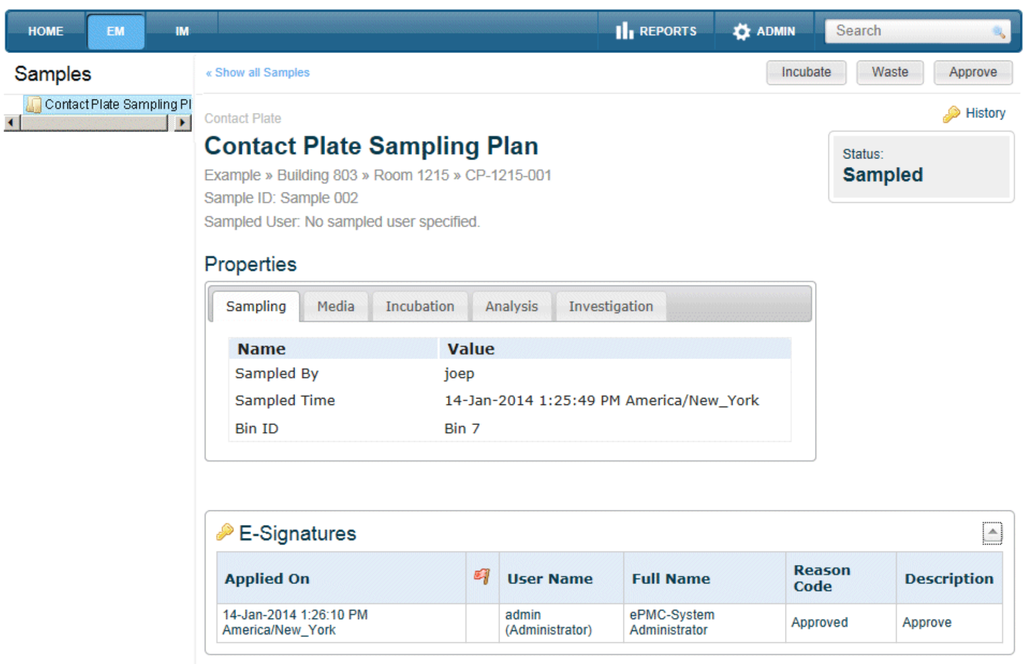
- A scroll bar is displayed when there are node names that are wider than the left navigation panel.



- When you navigate within the Tree View (that is, you click any of the child nodes in the left navigation panel), the original parent sample stays at the top of the tree.
- When you click the link for a child instance or a related entity from within an entity's *View* page, the system loads the appropriate page. Since the new entity is now considered the parent, its name is displayed at the top of the tree.

Viewing samples containing e-Signatures

The View page for samples that have associated electronic signatures includes an "E-Signature" section. When you expand this section, the table displays the pertinent information about the signature(s)—the revision number of the sample when it was signed, the date, user name, Reason Code, and description of the signature.



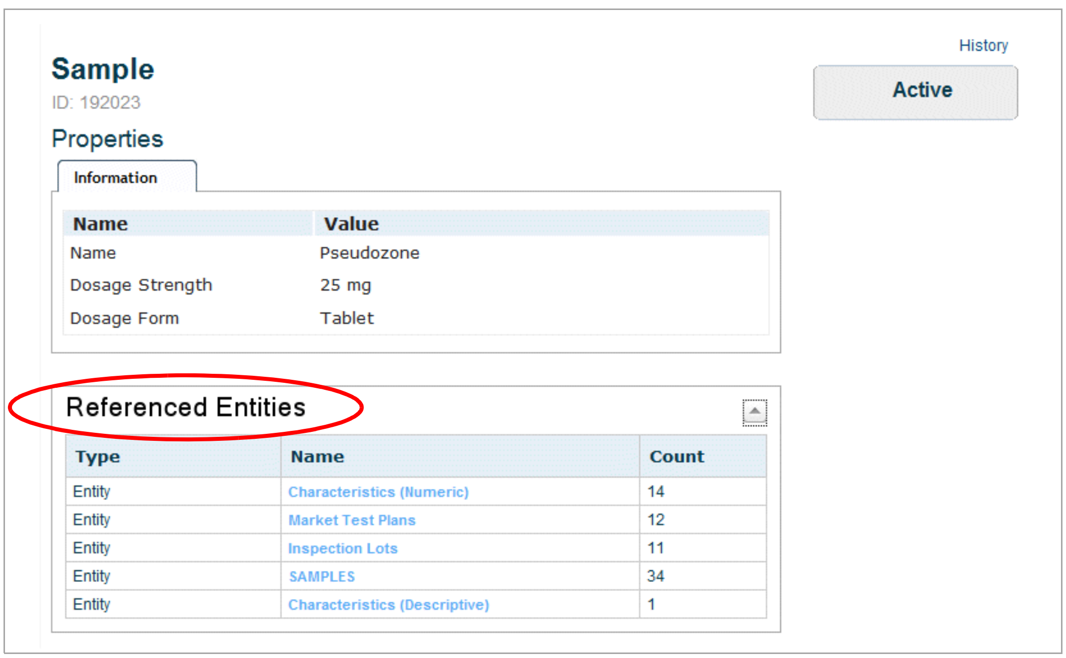
Sample with Electronic Signatures

Viewing samples with referenced entities

Some samples are referenced by other instances in the system. In this case, the related instances are displayed under the parent sample in the left navigation panel's Tree View. In addition, the *View* page of the parent sample includes a section called "Referenced Entities." When you expand this section, the table lists all of the other instances in the system that are related to the parent sample. This is accomplished through a "Relationship" property in the parent sample that points to another instance in the system.

The columns in the Referenced Entities table are described below:

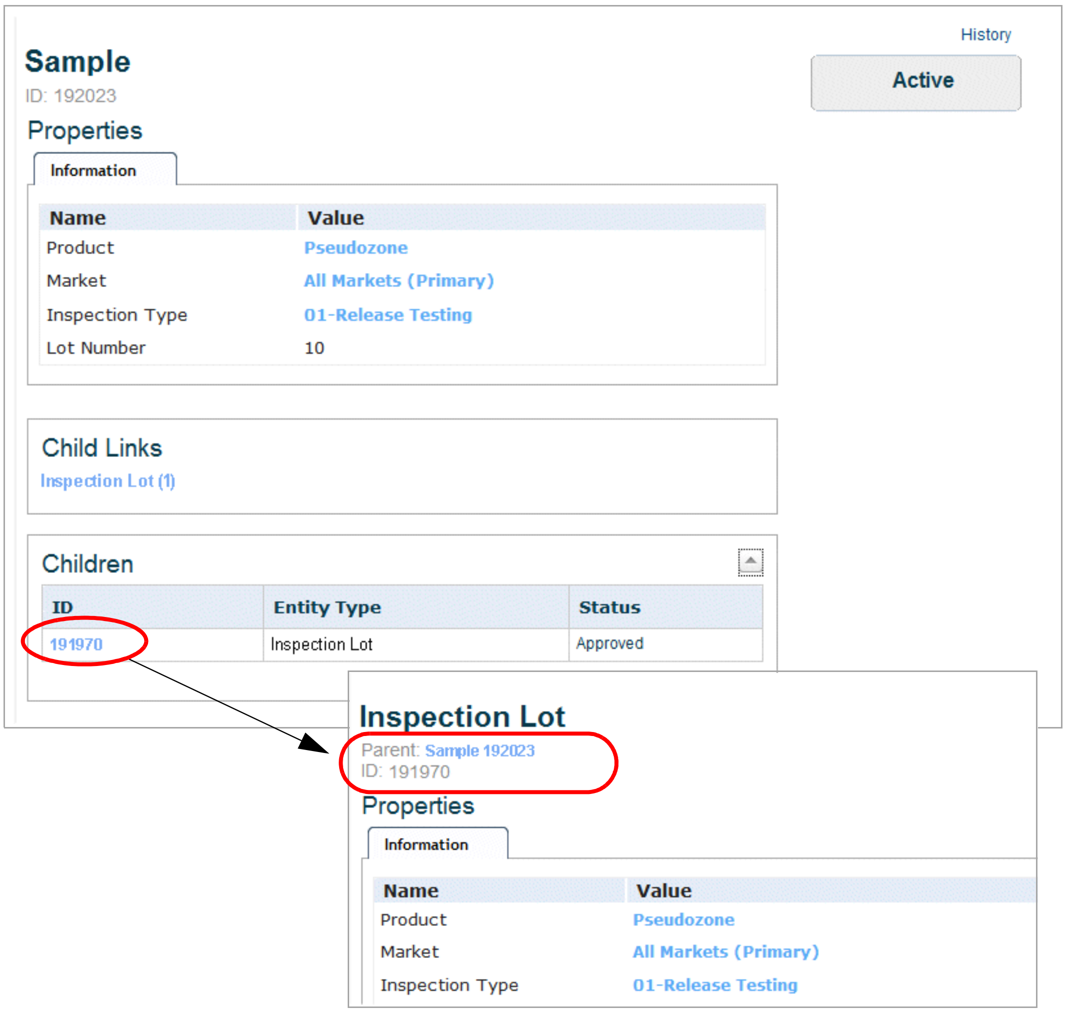
- **Type—**Lists the Entity Type on which the related instances are based.
- **Name**—Lists the category to which the parent Entity Type belongs. The name is a hyperlink to the grid view of the related instances.
- **Count—**Displays the number of Entity Instances of the corresponding type currently in the system.



Example of Referenced Entities

Viewing samples with child instances

Some samples may be configured to create other entities during workflow execution. This is accomplished through the “Create Entity” workflow activity in the Sample Type on which the samples are based. The *View* page for the parent entity will include sections called “Child Links” and “Children.”



Parent Entity with Child Links

- **Child Links**—Lists the related Entity Type and the number of its instances currently in the system. The Child Links are a hyperlink to the grid view of the related Entity Instances.

- **Children**—Lists the individual Entity Instances that were created from this entity's workflow. The ID is a hyperlink to the child's *View* page.

Viewing audit trails for samples

Every change made to a sample is recorded in its audit trail. Refer to *Generating Audit Trails for Sample Groups and Samples* on page 1-17 for more information.

To view the audit trails for a sample:

1. Click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click the name of the sample whose audit trails you want to view.
3. In the sample's *View* page, click the **History** link to expand the table. The icon preceding the History link (History) indicates there is one or more electronic signatures associated with the revisions. In this case, you can view details of the signatures in the "E-Signature" section below the details. Refer to *Viewing samples containing e-Signatures* on page 3-22.

Each revision of the sample is identified by a separate row, identified by the date/time/time zone the action was performed on that sample. The columns in the History table for a sample are explained below:

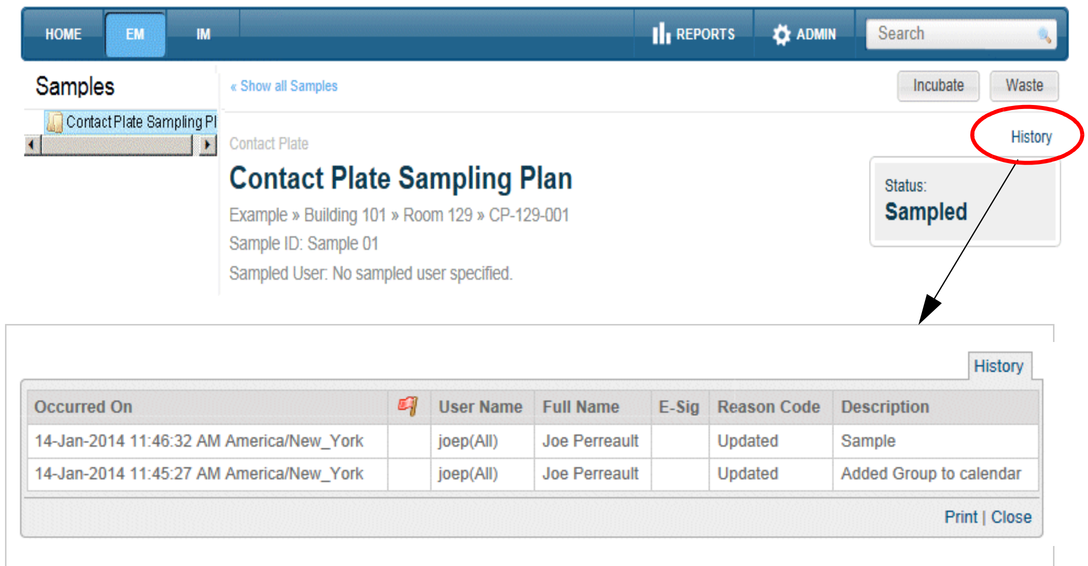
- **Occurred On**—Displays the timestamp of when the action occurred. Refer to *How the System Records Date/Time Values* on page 1-12.
- A flag icon in this column indicates that a property value is out of limit (that is, it does not meet the assigned Limit Specifications). The number beside the flag indicates how many out-of-limit properties exist.
- **User Name**—Displays the user name of the user who performed the activity. The User Role to which that user belongs is shown in parenthesis—for example: Mary (Admin).
- **Full Name**—Displays the full name of the user.
- **E-Sig**—May contain one or two icons:

  Indicates an electronic signature has been applied directly by the user. This occurs anytime the user is prompted to enter his password anywhere in the system.

  Indicates that the Reason Code was applied automatically by the system. This applies only to specific signature types (that is, Attest, Review, Approve, Annotation).

- **Reason Code**—Displays the reason for the activity.

- **Description**—Displays the description that was entered by the user who made the change or that was automatically entered by the system during workflow execution.

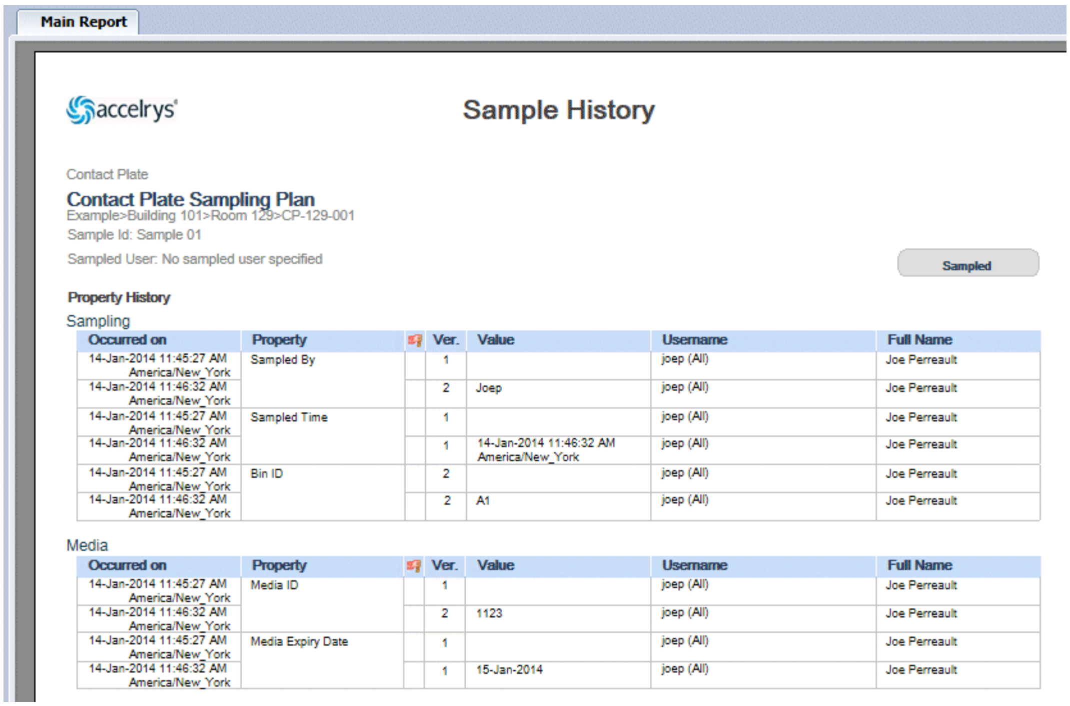


Viewing Audit Trail of a Sample

To generate a report of the History table, click **Print** in the lower right corner of the History table.

The report lists the complete history of changes made to the sample's properties as well as to the sample itself. Note that the time values in the report may differ from the values stored in the database by one second. This is the result of the translation that is performed on the serial value stored in the database by the Crystal Report Template.

To close the History table, click **Close** in the lower right corner of the table.



Main Report

accelrys

Sample History

Contact Plate

Contact Plate Sampling Plan
Example>Building 101>Room 129>CP-129-001
Sample Id: Sample 01
Sampled User: No sampled user specified

Sampled

Property History

Sampling

Occurred on	Property		Ver.	Value	Username	Full Name
14-Jan-2014 11:45:27 AM America/New_York	Sampled By		1		joep (All)	Joe Perreault
14-Jan-2014 11:46:32 AM America/New_York			2	Joep	joep (All)	Joe Perreault
14-Jan-2014 11:45:27 AM America/New_York	Sampled Time		1		joep (All)	Joe Perreault
14-Jan-2014 11:46:32 AM America/New_York			1	14-Jan-2014 11:46:32 AM America/New_York	joep (All)	Joe Perreault
14-Jan-2014 11:45:27 AM America/New_York	Bin ID		2		joep (All)	Joe Perreault
14-Jan-2014 11:46:32 AM America/New_York			2	A1	joep (All)	Joe Perreault

Media

Occurred on	Property		Ver.	Value	Username	Full Name
14-Jan-2014 11:45:27 AM America/New_York	Media ID		1		joep (All)	Joe Perreault
14-Jan-2014 11:46:32 AM America/New_York			2	1123	joep (All)	Joe Perreault
14-Jan-2014 11:45:27 AM America/New_York	Media Expiry Date		1		joep (All)	Joe Perreault
14-Jan-2014 11:46:32 AM America/New_York			1	15-Jan-2014	joep (All)	Joe Perreault

Integrated Report of Sample’s History

What’s Next?

Chapter 4 explains how to execute the workflow of a sample in order to process it.

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4

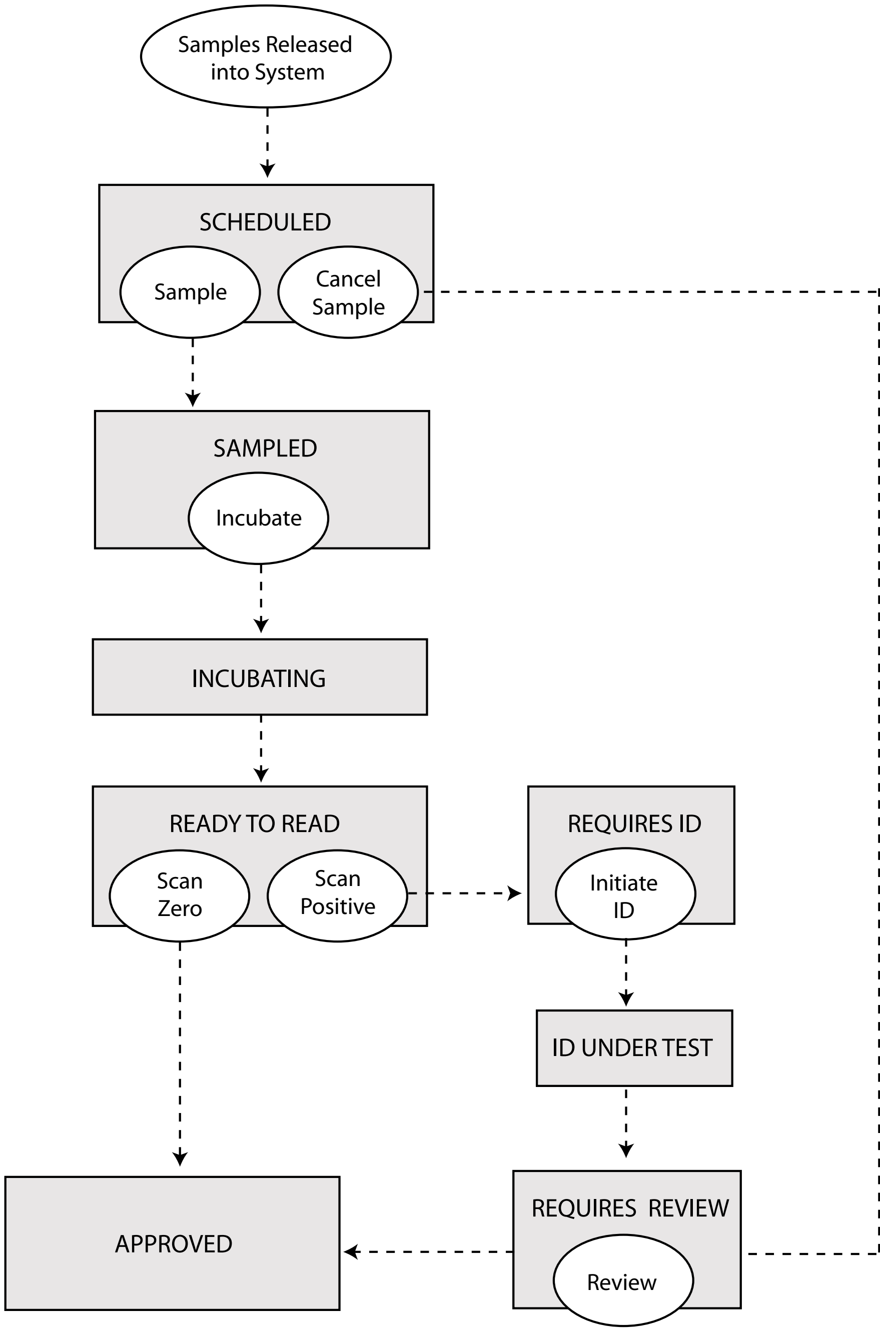
Executing the Workflow of a Sample

What is a Workflow?

The life cycle of a sample in the Environmental Monitoring system starts when the sample is released for use on its scheduled date and ends when a defined series of sequential actions have been completed. These actions are referred to as the sample's *workflow.* The workflow defines which actions you can perform on a sample at any given stage in which it exists in the system. A workflow is comprised of the following three items:

- **Workflow States**
  A workflow *state* corresponds to the current state of the sample. For example, a "Scheduled" state applies to a sample that has been made available in the system on its scheduled date, is based on a specified Sampling Plan, and is associated with a specific sampling location, but no actions have yet been taken (for example, the sampling has not been performed).
- **Workflow Actions**
  A workflow *action* represents something you can do to a sample in its current state. A workflow action is identified by a verb, such as "sample," "incubate," or "approve." For example, a sample in the "Scheduled" state typically contains two workflow actions—"Sample" and "Cancel Sample."
- **Workflow Activities**
  A workflow action is comprised of one or more activities. A workflow *activity* describes the things you can do when that action is performed on a sample. For example, a workflow action "Approve" will typically have an "E-Signature" activity that will collect the electronic signature of the person who approved the action.

The following figure is an example of a workflow based on a Sample Type for a contact plate. The workflow states are depicted as gray boxes. The workflow actions that can be performed in each state are listed in the white ovals. Once the sample enters the "Approved" state, its life cycle has ended and it cannot return to a previous state.



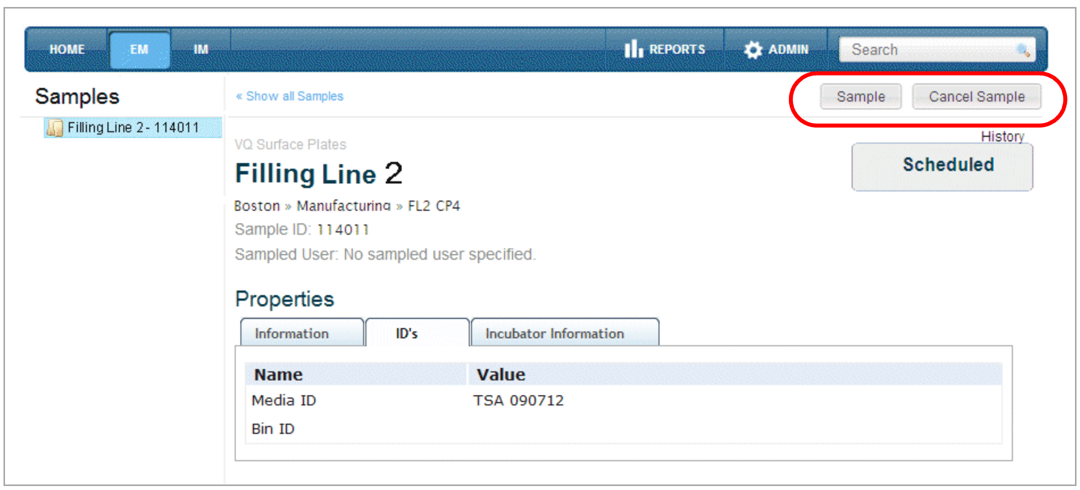
Workflow for a Sample Type based on a Contact Plate

User Eligibilities for Executing Workflows

The global eligibilities "Can View Samples" and "Can Process Samples" determine whether you can view and process the workflows of samples in the system. However, your system administrator can also place further access restrictions on specific workflow actions by limiting the actions to specified User Groups. This ensures that only the appropriate groups of users will be eligible to perform those actions on a sample. For example, only members of the "Lab Supervisors" group will be able to approve a completed sample.

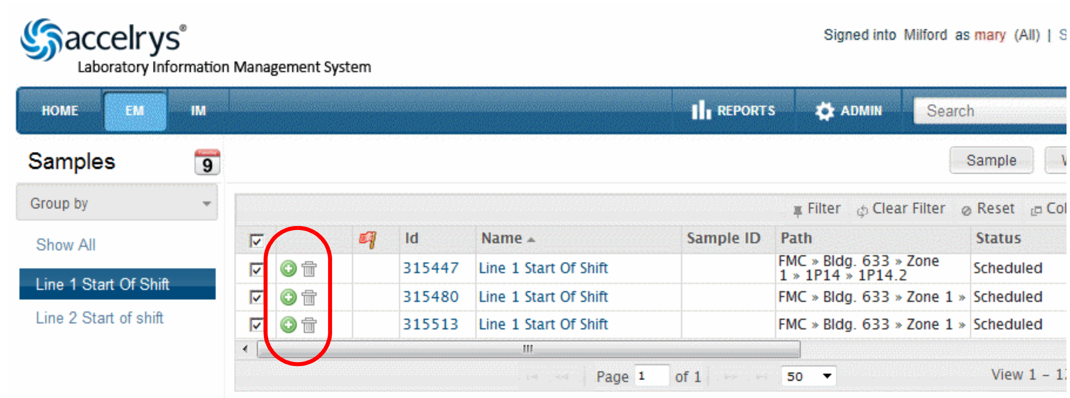
Starting a Workflow

Once a sample is released into the system, its configured workflow will dictate what actions you can perform on it in order to process it. The workflow actions are represented by the command buttons above the **History** link in the sample's *View* page, as shown below.



Workflow Actions in Sample's "View" Page

Workflow actions are also represented by the icons in the second column of the grid of the *Samples* home page.



Workflow Actions in “Samples” Home Page

The action icons in the second column include:

 Approve

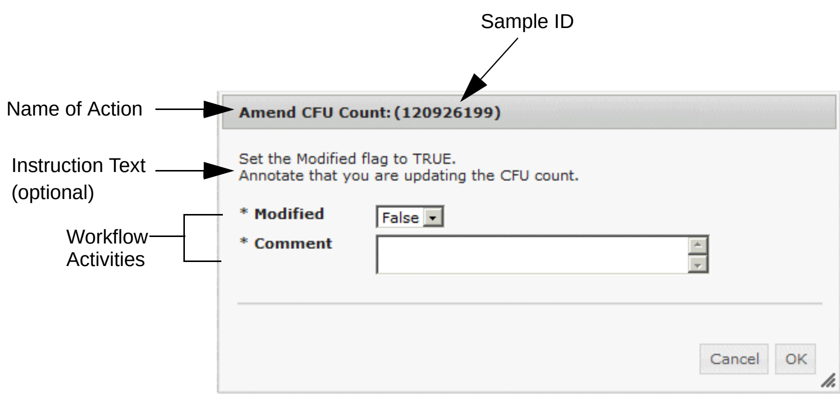
 User Defined

 Waste

When you click a workflow command button or action icon in the grid, what happens next depends on how the workflow is configured. Some actions will display a dialog box requiring user input while others will perform another type of function (for example, launch a Pipeline Pilot protocol or initialize a time trigger).

For actions that require user input, an example of the action dialog box is shown below. The contents of each dialog box will be unique and its title bar will reflect the name of the workflow action that is being executed (for example, “Amend CFU Count”). The ID of the sample on which the action is being performed is displayed in parenthesis.

Your system administrator may have included some instructional text on the first line for clarification purposes. One or more input fields will be displayed below which represent the workflow activities configured for this action. An asterisk (*) indicates the fields that require a value.



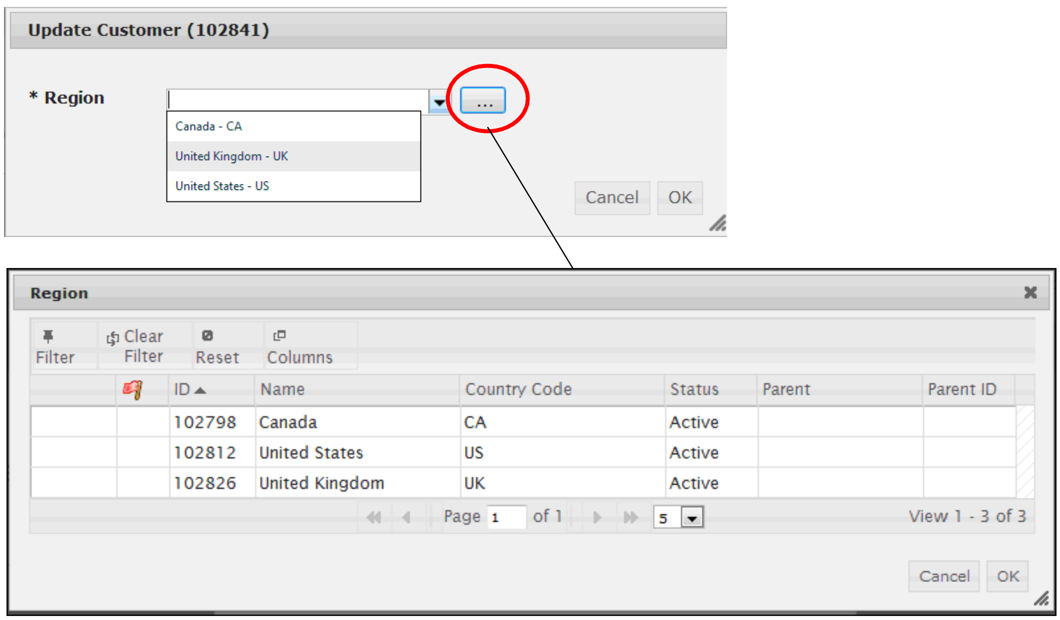
Dialog Box for Executing a Specific Workflow Action

The properties of the sample determine what type of input fields appear in the workflow action's dialog box. For example, a Numeric property provides a data input field that only accepts a numeric value, whereas a Date property presents a date picker control that allows you to select a date from a calendar.

For properties configured as a "Relationship" property that have a one-to-one relationship to another Entity Instance, a drop-down list displays all of the related instances. The instances are identified according to their configured display pattern with multiple fields separated by hyphens. For example, the figure below displays the related instances of a "Region" Entity Type, each identified by its name and corresponding Country Code.

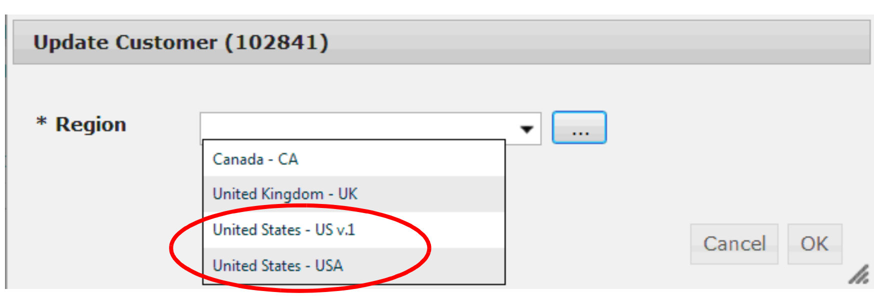
Selection List of Related Entity Instances

You can select an instance from the drop-down list or click the browse button to open the "advanced mode" grid. The related Entity Instances are listed in alphanumeric order and you can view their other properties as well. You can use the standard grid controls to filter the grid and reorder the columns. Click the row of the instance you want and click **OK** to commit the selection.



Selecting a Related Instance in the “Advanced Mode” Grid

If the property is based on a “By Value” relationship type, it inherits the same value as the property of its related instance. If the original value of the related instance is recollected, the drop-down list will display the current value as well as the new value and all of the values matching the condition(s). You can then select the new value from the list to update your current instance. Note that in this case, the updated value is only displayed in the drop-down selection list—the “advanced mode” grid will always display the most current value.



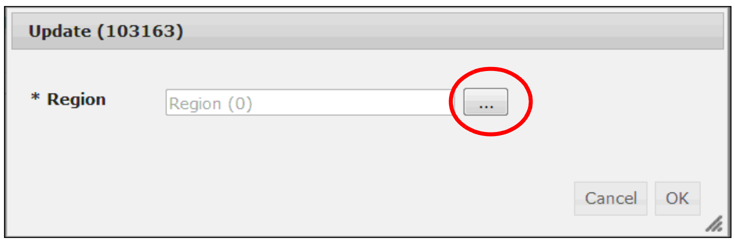
Selection List of Related Entities

If the property is based on a “By Reference” or “By Reference, Clone” relationship type, its value is updated dynamically every time the property of its related instance is recollected.

In addition, a Relationship property can be configured to reference a “collection” of Entity Instances—that is, a one-to-many relationship. In this case, the drop-down list is not displayed. Instead, the field displays the name of the property and the number of instances it is currently related to (initially zero).

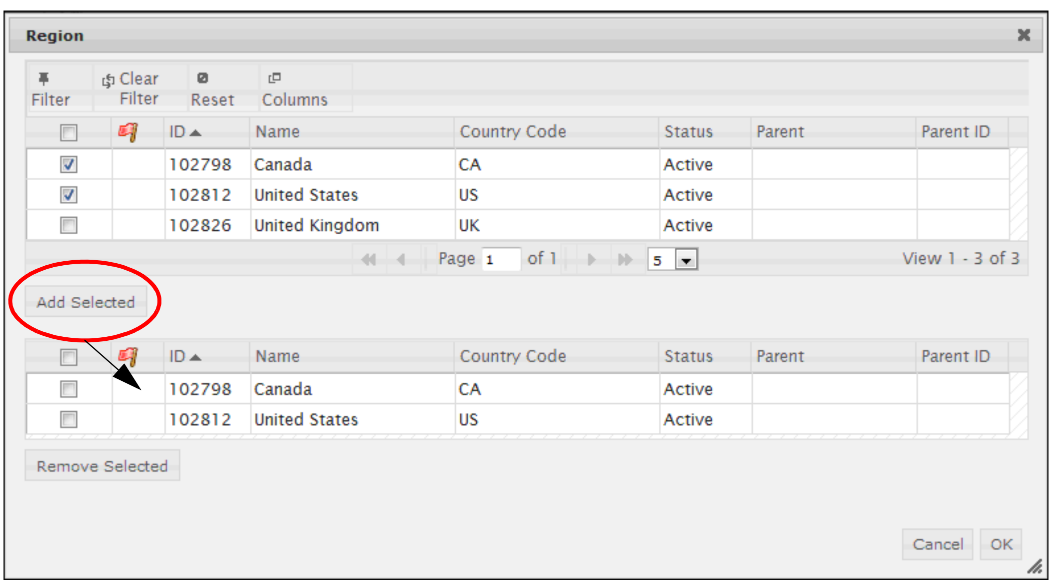
To select one or more instances in a collection:

1. Click the browse button to the right of the field to open the advanced mode grid.



Selecting One or More Values from a Collection of Instances

2. Click the check boxes of individual instances in the collection or click the check box at the top of the column to select all of the instances at once. You can use the standard grid controls to filter the grid view and reorder the columns.
3. Click **Add Selected** to move the selected instances to the grid below. To delete a selected instance, select its check box and click **Remove Selected** to move it back to the list above.



Selecting Value s from a Collection of Instances

4 Once the correct instances are listed in the lower grid, click OK to submit the selections and close the list.

5 Click OK in the action's dialog box to commit the value(s).

IMPORTANT! Once the data is committed, you may decide to change the selections in the referenced collection. If the property is based on a "By Reference, Clone" relationship type, when you recollect the property (that is, remove the original value and choose a different value), the link to the original instance is removed. In this case, if the original instance is not referenced by any other entities in the system, it is considered "orphaned." Although an orphaned instance is no longer displayed in the grid, its data remains intact in the database.

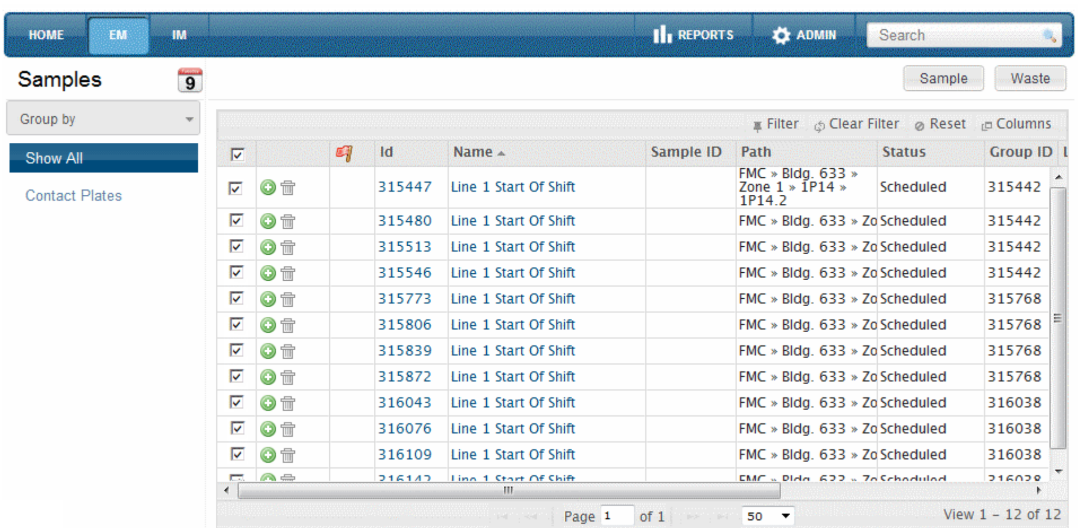
Performing Workflow Actions on One or More Samples

Eligible users can execute a workflow action on a single sample or on a group of "like" samples. These methods are explained in the following sections.

Performing workflow actions on a single sample

To perform a workflow action on a single sample:

1 Click the **EM** tab in the main menu bar to load the *Samples* home page.



Samples Home Page

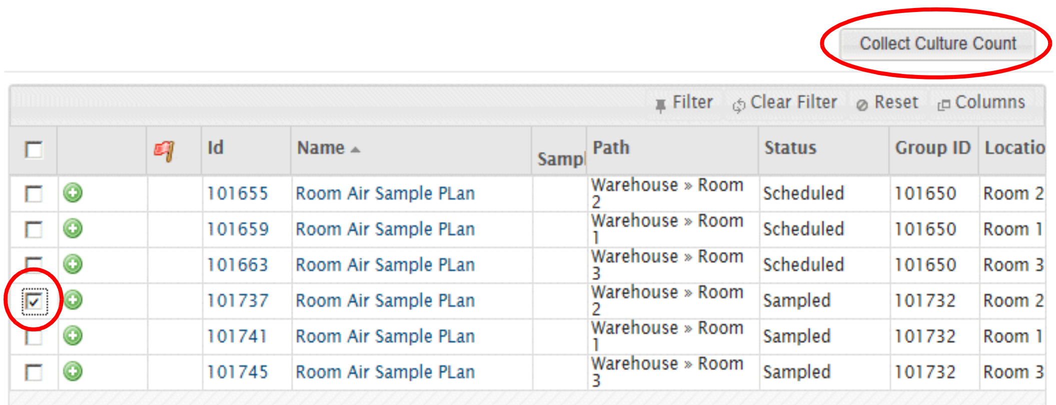
2 You can perform a workflow action on a single sample in several ways:

- **Click the sample's check box**—In the first column of the grid, all of the check boxes are checked by default:

  a. Click the top check box above the column to clear the check boxes below.

  b. Click the check box of the sample you want to process.

  c. Click the command button above the grid for the appropriate workflow action, as shown below.

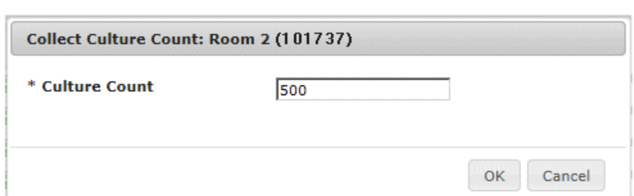


Performing a Workflow Action on a Single Sample

- **Click the sample's workflow action icon**—In the second column of the grid, click the appropriate action icon for the sample that you want to process. You can leave all of the check boxes checked.

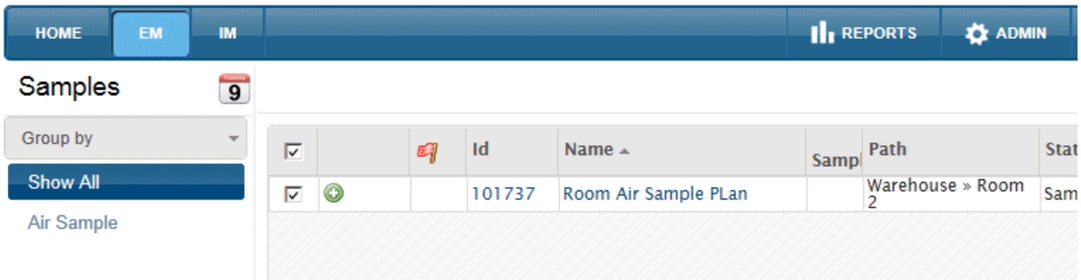
- **Click the sample's identifier—**In the **Id** column of the grid, click the unique identifier for the sample that you want to process. The sample's *View* page opens and displays the current state of the workflow. Click the appropriate command button above the *History* link to perform the action.

3 When you click the command button for the workflow action, a dialog box may be displayed if the action requires user input. Set the required values for the each consumable and then submit the form.



Dialog Box for Executing an Action that Requires User Input

Once you submit the dialog box, the grid reloads and displays the individual sample. You can then perform additional workflow actions on the sample, if available.



Completed Workflow Action on Single Sample

4 To return to the Samples home page, do one of the following:

- Click the **EM** tab in the main menu bar.
- Press **F5** to refresh the page.
- Click any of the links in the left navigation panel.

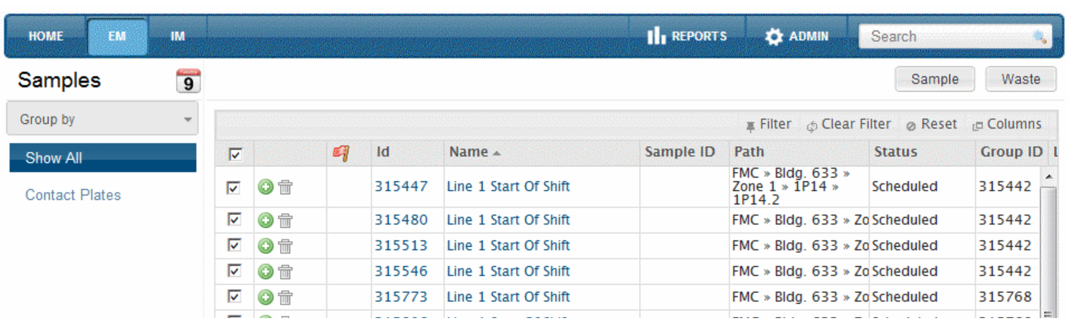
Performing workflow actions on a group of samples

In order to perform a workflow action on a group of samples at the same time, all of the following conditions must be true:

- All of the samples must be based on the same parent Sample Type.
- The workflows of all of the samples must be based on the same workflow version.
- All of the samples must reside in the same workflow state.

To perform a workflow action on a group of samples:

1 Click the **EM** tab in the main menu bar to load the *Samples* home page.



Samples Home Page

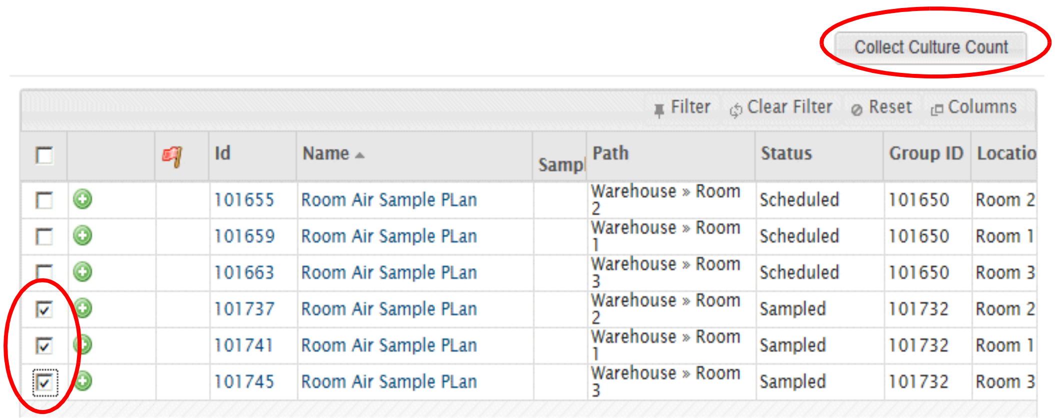
2 Select the samples you want to process using one of these two methods:

- **If the samples you want to process are visible in the current page:**

  a. Click the top check box above the column to clear all of the check boxes below.

  b. Click the check boxes of the samples you want to process.

  c. Click the appropriate command button above the grid.



Performing a Workflow Action on a Selected Group of Samples

- **If the samples you want to process span multiple pages in the data set:**

  a. Filter the samples in the grid using the following methods:

     - Standard grid filtering options (refer to page 3-7)
     - Group By filter (refer to page 3-10)
     - Saved Views (refer to page 3-16)

  b. Once the grid is filtered, you can perform a workflow action on all of the samples or just a selected subset from the list:

     - **Performing a workflow action on all of the samples**

       Keep the check boxes checked for each sample and click the appropriate command button above the grid to perform the workflow action on the entire group. Note that although the filtered data set may span multiple pages of samples, the action is performed on only those instances displayed in your current page.

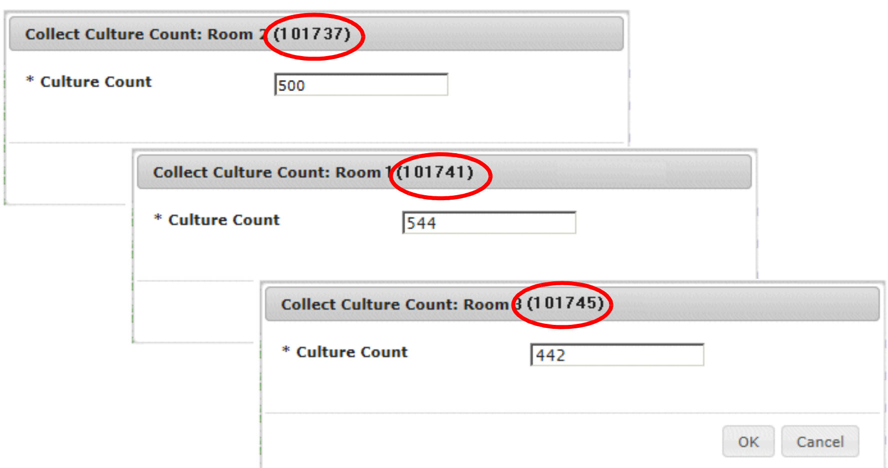
- **Performing a workflow action on a subset of samples**

  In the first column of the grid, click the check box above the consumables to clear all of the check boxes below. Then click the appropriate check boxes to limit the workflow action to only that subset of selected samples.

  Note: The check box selection does not persist and will be cleared when you navigate away from the page or refresh it.

3 When you click the command button for the workflow action, a dialog box may be displayed if the action requires user input. Set the required values for the each sample and then submit the form(s). For example, the following figure shows the dialog boxes that are displayed when you collect the culture count of three samples.

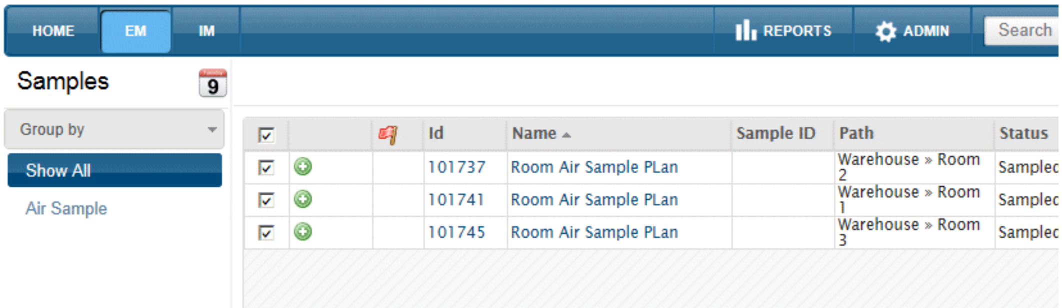
Note: To understand the behavior of the dialog box for group workflow actions, refer to *How the action's dialog box is displayed for group actions* on page 4-13.



Workflow Action Dialog Boxes

4 Once you complete the action, the grid refreshes to display only those samples in the group or the subset. You can now continue the workflow on all of the samples or you can use the check boxes to select a new subset from the list.

Note: The Filtering and Column Reordering functions above the grid are hidden in this view. When you refresh the view, these functions will be re-displayed.



Completed Workflow Action on a Group of Samples

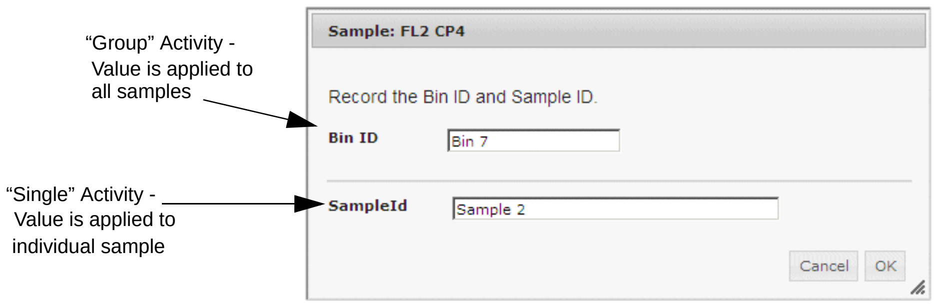
5 To return to the Samples home page, do one of the following:

- Click the **EM** tab in the main menu bar.
- Press **F5** to refresh the page
- Click any of the links in the left navigation panel

How the action's dialog box is displayed for group actions

The activities in each workflow action will support either single activities, group activities, or both. For actions that require user input, the action dialog box behaves differently for each scenario:

- **"Single" activities**
  For workflow actions consisting of a "single" activity (for example, Print Label, Scan ID), the workflow action is applied to each individual sample. The system presents a separate dialog box for each sample in the group and the values you enter are assigned to the specific sample referenced in the dialog box's title bar.
- **"Group" activities**
  For workflow actions consisting of a "group" activity (for example, an E-Signature for approval), the workflow action is applied to all of the samples in the group. The system presents a single dialog box and the values you enter are assigned to all of the samples in the group in a single step.
- **"Single" and "Group" activities**
  For workflow actions consisting of both "single" and "group" activities, the system presents a single dialog box. The group activities are listed above the line and the value you enter is applied to all of the samples in the group. For example, in the following figure, all of the samples are being pulled from Bin 7, but the Sample ID of each sample is assigned individually (for example, Sample 1, Sample 2, Sample 3).



Workflow Action Dialog Box with "Single" and "Group" Activities

Performing Actions that Initiate BIOVIA LES Procedure Sessions

Some samples may be configured to initiate a BIOVIA LES procedure session in which the collected property value of an sample can be sent to a specified data collection field in a BIOVIA LES procedure session. You can also collect data in a BIOVIA LES procedure session and apply its value to a specified property of a sample in the EM application.

This is accomplished by a "Accelrys LES Procedure" activity used in a "Accelrys LES Session Complete" action in the instance's workflow. When the Accelrys LES Procedure activity is activated, a BIOVIA LES procedure session is created based on the test method specified in its workflow. You can then log into BIOVIA LES and execute the test method to collect the data. Depending on how your system administrator has configured the workflow, the values can be sent as a single value or an array of values, and the data will be transferred to or from BIOVIA LES when the status of the procedure session is set to the "complete" status defined in the workflow (typically the "Completed" status).

Note the following:

- When executing group workflow activities, the Accelrys LES Procedure activity applies to all samples in the group.
- When combining the Accelrys LES Procedure activity with any other activity in the same action, the Accelrys LES Procedure activity will always be executed last.

For a property related to a collection of instances (that is, a Relationship property set to "Collection"), the value sent to BIOVIA LES will be the total number of samples selected for that property.

Performing Actions that Contain a Time Trigger

Some workflow actions may contain a “Time Trigger” activity which is used to automatically trigger another type of activity when a certain point in time has been reached. For example, if a batch of samples requires an incubation period during a testing procedure, the time trigger activity is in effect during its “Incubation in Process” state. Once the targeted incubation date and time is reached, a “Set State” activity changes the workflow state to “Ready to Read” in which you can report the test results.

A workflow action can have any number of Time Trigger activities or none at all. For an action without a Time Trigger activity, the command buttons are displayed normally for the action in the given state during workflow execution. For an action with one or more triggers, the command buttons are omitted as that action will be triggered by any of the triggers contained in the action.

When the trigger is executed on a large number of records, a slight delay may occur since a periodic review of each record is required. Most workflows using a Time Trigger do not require precision greater than a few minutes.

Performing Actions that Invoke BIOVIA Pipeline Pilot Protocols

Important! In order to successfully process a protocol during workflow execution, make sure your browser’s Pop-up Blocker Settings are configured to “Allow pop-ups” from the BIOVIA LIMS site address.

The workflow of some samples may be configured to execute a protocol on a platform protocol server during workflow execution. This applies to the BIOVIA Pipeline Pilot protocols stored on the Accelrys Enterprise Platform Server. When you execute an action configured with the “Execute Platform Protocol” activity, you will specify parameters relevant to that specific protocol. These parameters are then passed to the protocol server where the requests are processed.

The Execute Platform Protocol workflow activity supports both synchronous and asynchronous communication between the protocol server and BIOVIA LIMS. Synchronous transmissions return the requested data immediately—for example when the specified protocol is to run a report, the workflow waits for the report to be returned. For an asynchronous transmission, the workflow will not wait for a response—for example, when the protocol initiates an email to another system.

- When you execute a protocol that returns an HTML file, the page is loaded in a new browser window.
- When you execute a protocol that produces a file, it is displayed in a secondary web browser window/tab.

- When the protocol contains the Entity ID, Entity Type, and Terminal GUID parameters, the values are displayed for the current sample when the protocol is completed.
- If a workflow action creates new samples and also executes a Pipeline Pilot protocol, the protocol will be executed once the instances are created. However, if the protocol generates any files (for example, reports), the files are not displayed in a new window because the browser is redirected to the filtered view of the children entities once they are created.
- The following parameter values are populated dynamically each time the activity is executed:

  Entity ID—Contains the ID of the current instance executing the workflow action.

  Entity Type—Includes the name of the Template or the Type of the entity executing the workflow.

  Terminal Guid—Contains the terminal session GUID of the user executing the protocol.

When executing the Pipeline Protocol activity in a batch, the system executes the activity once rather than executing it for each sample. If there is an “Entity ID” parameter, the system passes in a list of all of the Entity IDs separated by commas.

Collecting e-Signatures During Workflow Execution

A workflow of a sample may include actions that collect a user’s electronic signature at various states of the workflow in order to review, attest, or approve some data or an action. A workflow may also include actions that allow eligible users to apply their e-signature to an annotation at a particular state in the workflow. Users may also be required to apply their e-signatures for reasons other than to review, attest, approve, or annotate. The different ways of collecting e-signatures are described in the following sections.

Applying your e-Signature to review, attest, or approve

A workflow action can include an activity that allows users *other* than the one who is currently logged in to apply their e-signatures in order to review, attest, or approve collected data or other actions performed on one or more samples. The system enforces that the signing user is both *eligible* and *valid* to review, attest, or approve:

- An eligible user must have the appropriate “Can Review/Attest/Approve” eligibility.
- A valid user is defined as a user who has not performed any workflow actions on the sample that collected or changed existing data in any way during its life cycle in the system.

In addition, if your system administrator has configured further restrictions on the review/attest/approve action, the signing user must also belong to the User Group(s) that are allowed to execute the action.

You can review, attest, or approve in several ways:

- In the sample's *View* page, click the appropriate command button (Review, Attest, Approve) above the instance's details.
- In the *Samples* home page, click the appropriate button above the grid (Review/Attest/Approve) or the appropriate icon in the second row of the grid:

  Review, Attest   Approve

  Note that your system administrator may have used a different name for the review and attest actions.

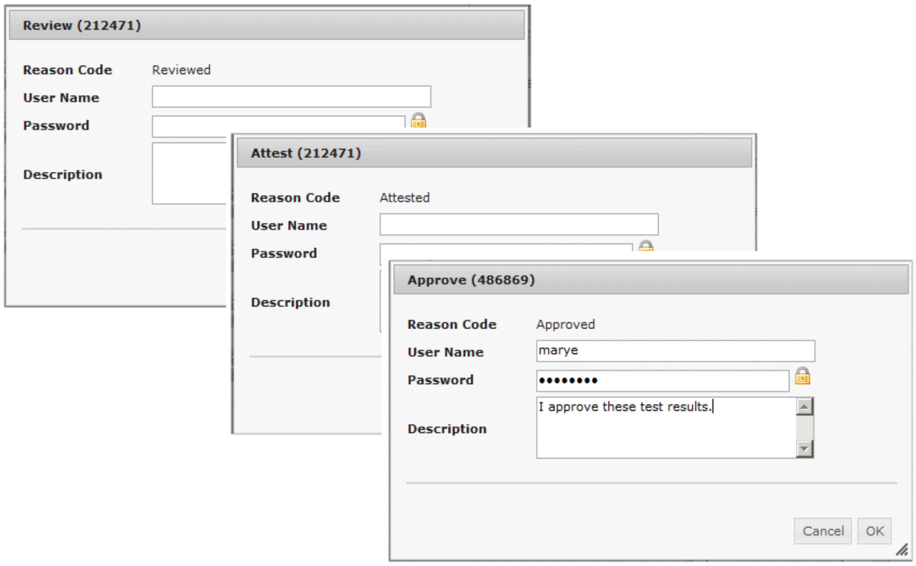
Notes on Signing (Review/Attest/Approve):

- The action icons and command buttons for the review/attest/approve actions are always visible and active on the sample's *Samples* and *View* pages. Invalid or ineligible users will receive an error message when they submit this page.
- There are no restrictions for users who have previously applied their e-signature to review, attest, or approve. For example, if you have previously reviewed, you can also attest and approve.
- If you belong to a different Windows domain than the domain of the logged in user, you must enter your domain and user name in this format:

  domain \ *user_name*

- If an e-signature is applied to a group of samples, you are only required to enter your signature once—the signing will apply to all of the samples in the group.
- The e-Signatures will be displayed in the E-Signatures area of the sample's *View* page, as well as in its History table.

The signing screens for the review, attest, and approve actions are shown below. The title bar reflects the corresponding name of the action and the ID of the instance to which the signing is being applied is shown in parenthesis. The appropriate Reason Code is hard-coded and cannot be changed. You are required to enter your user name and password and can optionally add a description.



Signing Dialog Boxes for Review/Attest/Approve Actions

Applying your e-Signature to an annotation

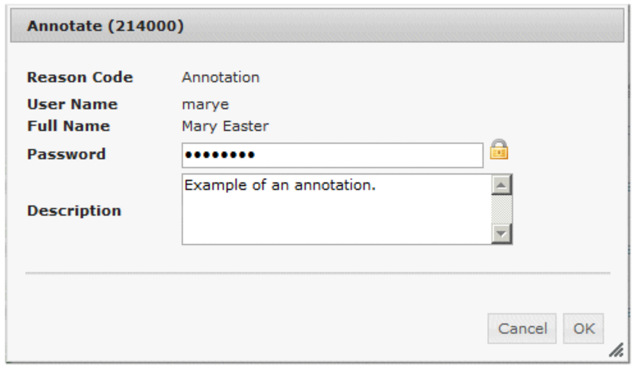
A workflow action may allow eligible users who are currently logged in to enter an annotation and apply their e-signatures in order to officially document or clarify a specific action or observation. The annotation applies to the entire workflow state in which the sample currently resides. The actual text of the annotation can be viewed in the History table's "Description" column for that sample.

You can add an annotation in several ways:

- In the sample's *View* page, click the **Annotate** command button above the instance's details.
- In the *Samples* home page, click either **Annotate** button above the grid or the corresponding user-defined action icon in the second column of the grid.

Note that your system administrator may have used a different name for the annotate action.

The signing screen for an annotation is shown below. The title bar reflects the corresponding name of the action and the ID of the instance to which the annotation is being applied is shown in parenthesis. The Reason Code is hard-coded and the user name and full name of the user who is currently logged in are displayed. You are required to enter your password and the text of the annotation.



Signing Screen for an Annotation

Applying your e-Signature for other reasons

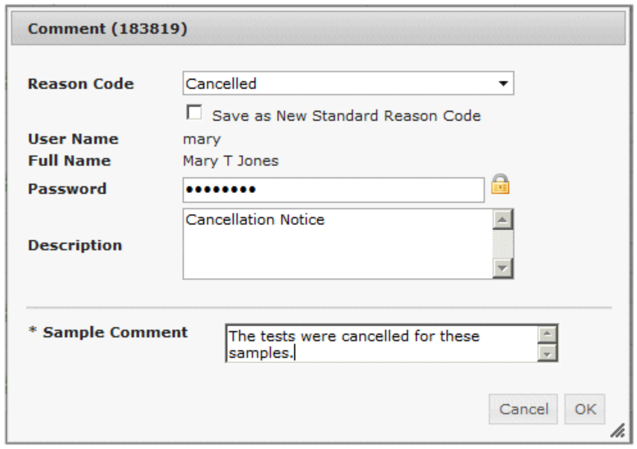
You can apply your electronic signature to an sample for reasons other than to review, attest, approve, or annotate. For example, you may be required to apply your e-signature when cancelling the tests scheduled for some samples.

You can apply your e-signature in several ways:

- In the sample's *View* page, click the "signing" command button above the instance's details (for example, Comment).
- In the *Samples* home page, click either the "signing" button above the grid or the corresponding user-defined action icon in the second column of the grid.

The signing screen for applying your e-signature for reasons other than to review, attest, approve, or annotate is shown below. The title bar reflects the corresponding name of the action and the ID of the instance to which the signing is being applied is shown in parenthesis.

You must select a Reason Code or enter a new one if you have eligibility. Your user name and full name are displayed and you are required to enter your password. You can optionally enter a description, and your system administrator may have configured additional properties below the line—for example, a required Comment text field.



Signing Dialog Box for an Electronic Signature

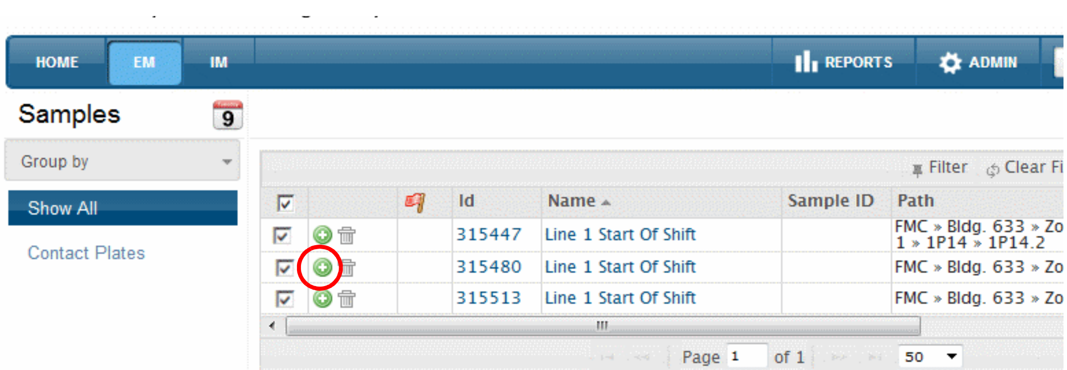
Note that if an e-signature is applied to a group of samples, you are only required to enter your signature once—the signing will apply to all of the samples in the group.

Cancelling a Scheduled Sample

Eligible users can cancel a scheduled sample. You cannot cancel a sample once it has been collected.

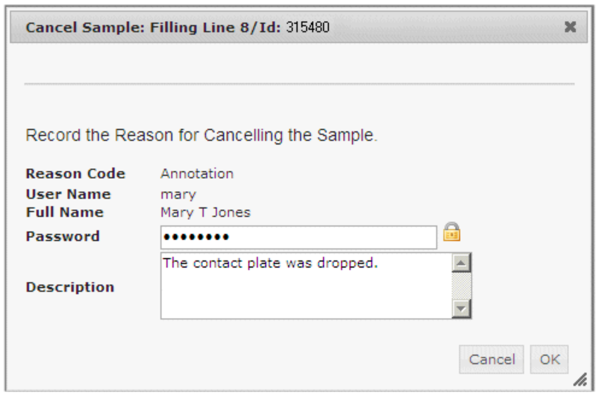
To cancel a scheduled sample:

1. On the home page of the BIOVIA LIMS, click the **EM** tab in the main menu bar.
2. In the *Samples* home page, click first icon in second column of a scheduled sample.



Selecting the User-Defined “Cancel” Action

3 Enter your password and the reason you are cancelling the sample, then click **OK** . The cancelled sample will be removed from the grid.



Cancelling a Scheduled Sample

Discarding Depleted or Expired Samples

The **Waste** action allows you to delete samples from the grid in the *Samples* home page. This marks the end of the sample's life cycle in the system.

You can delete an instance in several ways:

- Click **Delete** in the second column of the grid for the sample you want to delete.
- Click the **Delete** command button above the grid. Note that your system administrator may have used a different name for the delete action.

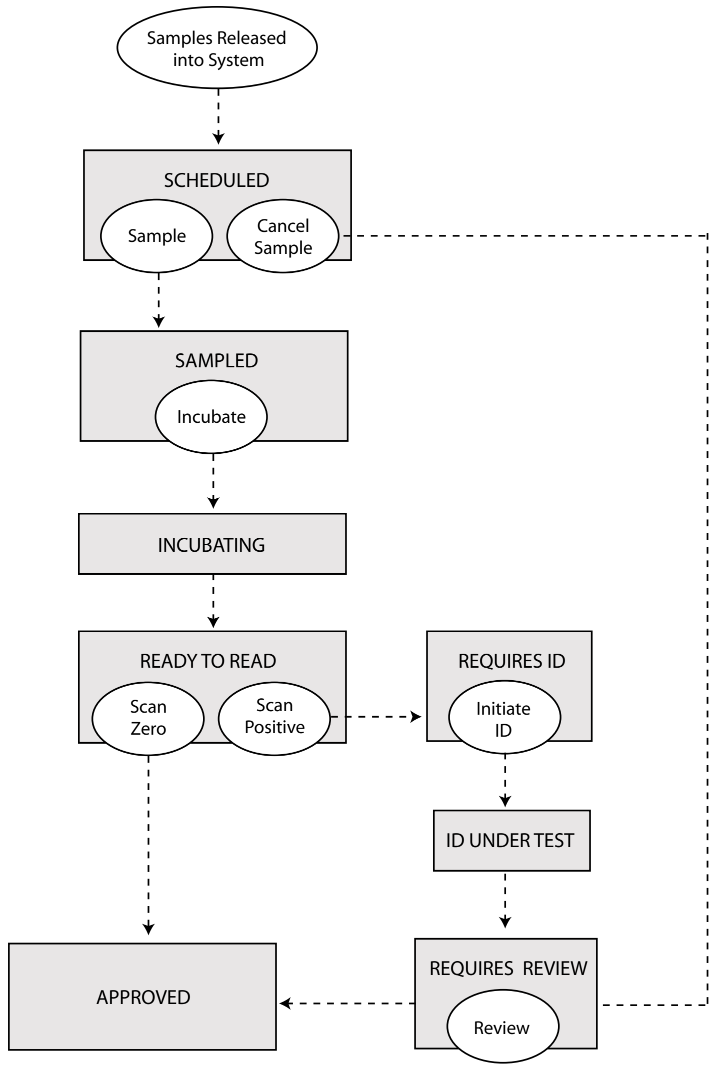
Once the sample is deleted, it is no longer displayed in the *Samples* home page, however, the BIOVIA LIMS database continues to store information for all discarded samples. You can search for deleted samples by adding the boolean "AND" and the text to a search query.

For example:

Filling Line 2 AND wasted

Example—Executing the Workflow for a Group of Contact Plates

This section steps you through the life cycle of a typical sample in order to demonstrate how to perform workflow actions on it. The sample that is used is a contact plate.



Example—Workflow for a Contact Plate

The workflow consists of the following states in which the sample can reside:

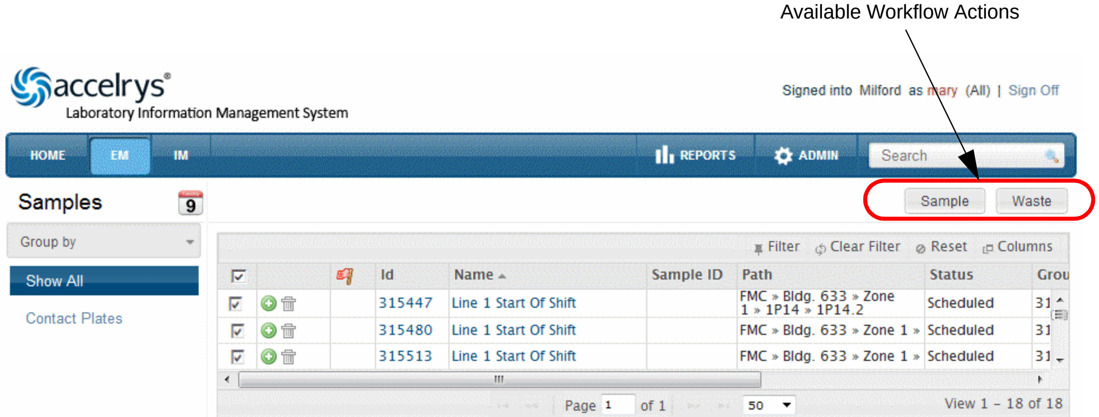
- Scheduled
- Sampled
- Incubating
- Ready for Read
- Requires ID
- ID Under Test
- Requires Review
- Complete

To start the workflow tasks on a group of contact plate samples:

1. In the *Samples* home page, locate the group of samples using any of the three methods described in *Performing workflow actions on a single sample* on page 4-8. When the samples in the grid qualify for group actions, the command buttons are displayed above the grid. These represent the workflow actions that you can perform on the samples at the current workflow state.

   Note: If the command buttons are not visible, the grid needs further filtering to meet the required criteria.

Available Workflow Actions



"Scheduled" Workflow State

2. The "Scheduled" state is the first state of the workflow. To start the sampling, click **Sample** above the grid.

3 In the *Sample* dialog box:

a. Enter the unique ID of the bin in which you will place the collected samples.

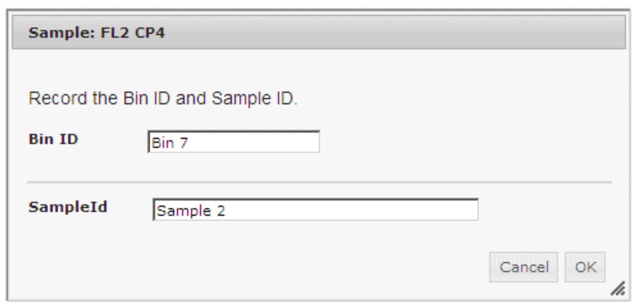
b. Take your first contact plate and either scan its barcode or manually enter its unique Sample ID.

c. Perform the sampling and place the collected plate in your bin.

d. Repeat Steps 3b and 3c for each remaining sample.

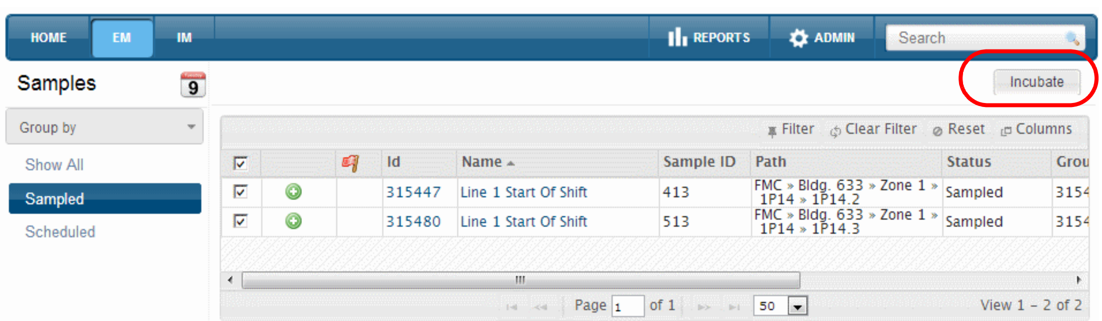
e. When you are done, click OK to submit the *Sample* dialog box.

Once the dialog box is submitted, samples move to the next state of their workflow.



“Sample” Dialog Box

4 The “Sampled” state is the second state of the workflow. Click **Incubate** above the grid.



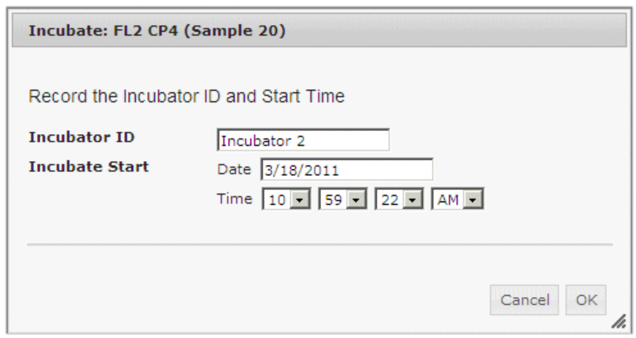
“Sampled” Workflow State

5 In the *Incubate* dialog box:

a. Enter the unique ID of the incubator in which you will place the bin of samples.

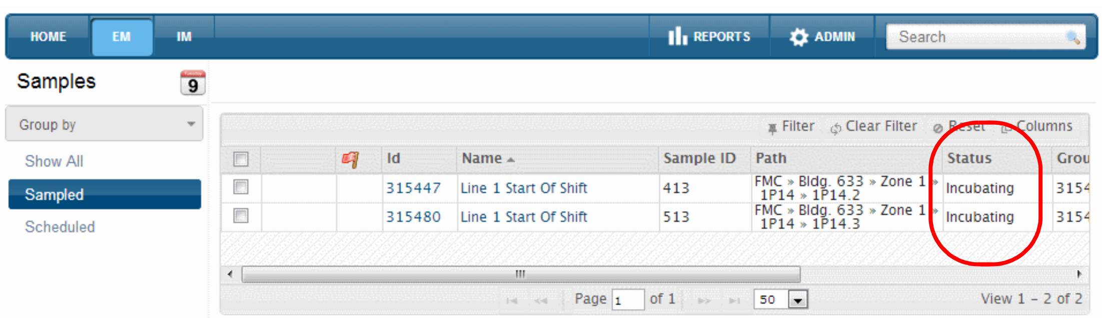
b. You can leave the current date and time if you are incubating the samples immediately, or change the date and time if you will incubate at a future time.

c. Click **OK**.



“Incubate” Dialog Box

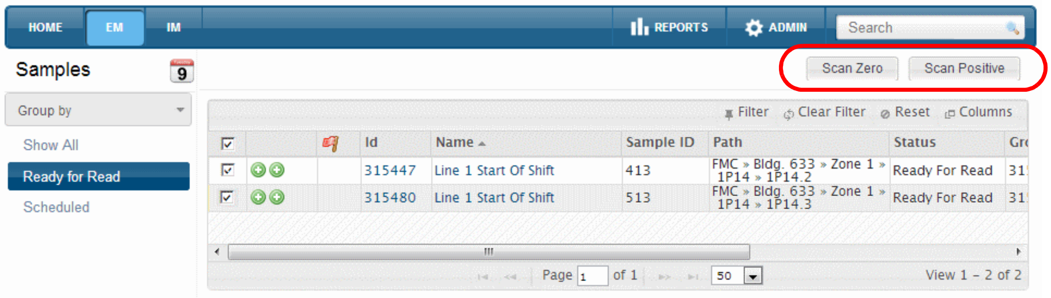
Once the *Incubate* dialog box is submitted, the samples move to the “Incubating” state, the third state in the workflow. The Status column in the grid indicates that the samples are currently incubating.



“Incubating” Workflow State

Once the incubation is complete, the “time trigger” event is invoked and the samples are ready to read. When you log back into the system, these samples will have moved to the “Ready For Read” state, the is fourth state in the workflow.

There are two available actions—**Scan Zero** and **Scan Positive**.



"Ready For Read" Workflow State

6 Read the plates and divide them into two groups—those that are clean and those that contain CFUs.

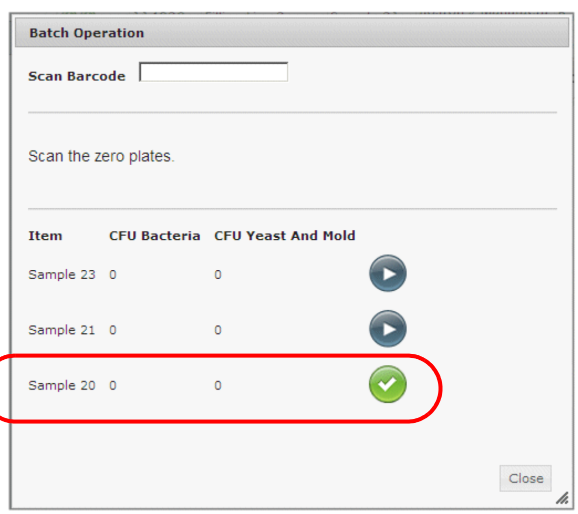
7 For the clean plates, click **Scan Zero** to display the *Batch Operation* dialog box:

a. Scan the barcode of the first clean plate and press **Enter**.

When the value is accepted, the sample is highlighted in the dialog box and the collect button changes to the check mark icon.

b. Click **Collect** .

c. Repeat this step for each clean plate, then click **Close**.



"Batch Operation" Dialog Box for Scan Zero

   d. These clean samples are now complete and automatically move to the “Approved” state, the last state in the workflow. This marks the end of the life cycle of the samples in the system.

8 For the positive plates, click **Scan Positive** to display the *Batch Operation* dialog box:

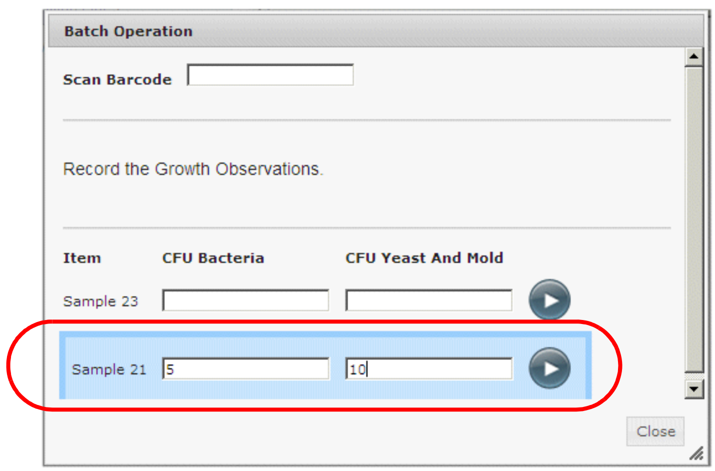
   a. Scan the barcode of the first plate and press **Enter**. When the value is accepted, the sample is highlighted in the dialog box.

   b. Enter the numbers of Bacteria CFUs for Yeast and Mold CFUs.

   c. Click **Collect** .

   d. When the values have been accepted, the check mark icon is displayed.

   e. Repeat this step for each plate, then click **Close**.



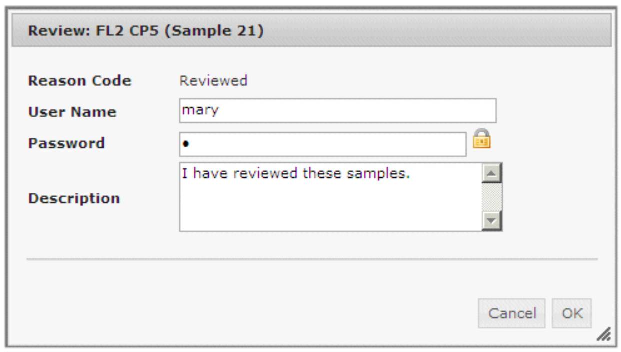
“Batch Operation” Dialog Box for Scan Positive

Once the dialog box is submitted, the samples move to the “Requires ID” state, the fifth state in the workflow for a positive plate. There is one available action, “Initiate ID” which will initiate an BIOVIA LES procedure session to allow an analyst to execute a test to identify the type of bacteria, mold, or yeast found on the positive plates.

While the BIOVIA LES tests are being conducted, the samples move to the “ID Under Test” state, the sixth state in the workflow for a positive plate.

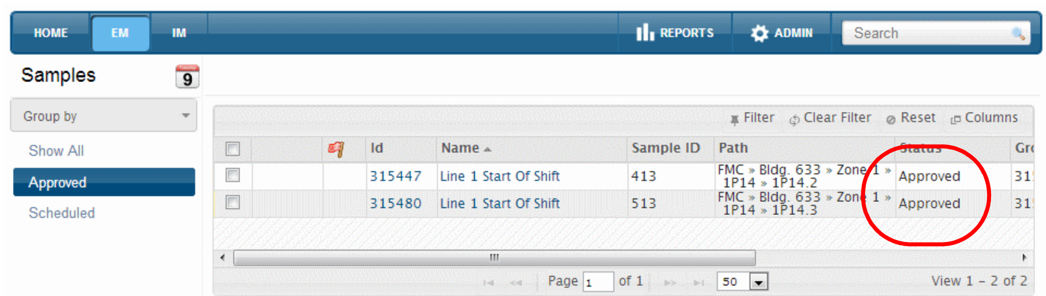
Once the results are identified and the BIOVIA LES procedure session has been completed, the resulting value is sent back to the Environmental Monitoring system and is stored in the “Identification” property for each of the positive samples. The samples then move to the “Required Review” state, the seventh state in the workflow for a positive plate.

The “Requires Review” state contains one action to review the samples. Since you cannot review samples that you have collected, another user must sign on and review these samples. The *Review* dialog box contains a pre-defined Reason Code (“Reviewed”), and requires the reviewer to enter her user name, password, an optional description.



“Review” Dialog Box

9 Once the reviewer’s signature has been accepted, the samples have reached the “Approved” state, marking the end of the samples’ life cycle in the system. No further actions are available.



“Approved” Workflow State

5

Registering and Running Reports

Introduction

Eligible users can create, edit, and run reports to generate data on various entities in the system. Once a report is run, you can also print it. You must associate a Crystal Report template with a registered report in order to perform these functions.

Required Eligibility for Managing Reports

In order to manage reports, users must belong to a User Role that has the following eligibilities:

- **Can View Reports**—Allows users to view registered reports and run only those reports in the system whose status is "Active."
- **Can Administer Reports**—Allows users to run and manage all of the reports (all status codes) in the system.

Status Codes for Reports

Status codes represent the current state of a report in the system. A report can reside in one of four states:

- **Draft**—When you create a new report, its status is set to "Draft" by default. It is not available for use in the system until you set its status to "Active."
- **Active**—The report is available for use in the system.
- **Upgrading**—The report is unavailable for use in the system. However, existing dependencies will use the last "Active" version of this report.
- **Inactive**—The report is unavailable to users and other dependencies. Existing dependencies cannot use any version of the report.

The following table summarizes the actions that are allowed at each state.

Table 5-1 Allowed Actions for the States of a Report

Action	Status			
	"Draft"	"Active"	"Upgrading"	"Inactive"
Can view reports in system	Administrator only [2]	All users[1]	Administrator only [2]	Administrator only [2]
Can run reports	Administrator only [2]	Yes [1, 2]	Administrator only [2]	No
Can edit reports	Yes [2]	Yes [2]	Administrator only [2]	Yes [2]
Can delete reports	Yes [2]	No	No	No
Can change status to:	Active	Upgrading Inactive	Active	Active
Versioning enforced for changes	Yes	Yes	Yes	Yes
Reason Code required for changes	By system	By user	By user	By user
Can export reports to other systems	No	No	No	No

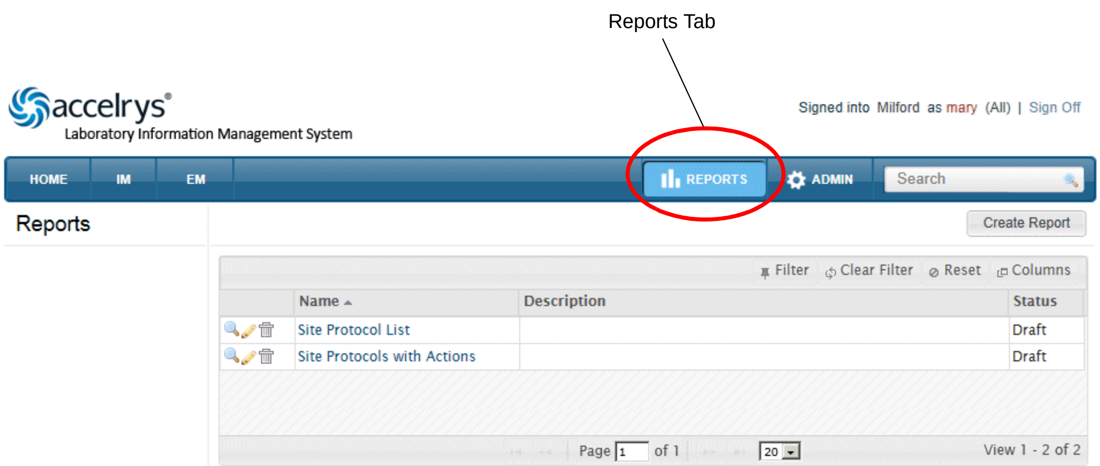
[1] Requires "Can View" eligibility.

[2] Requires "Can View" and "Can Administer" eligibility.

Viewing Configured Reports

To view the configured reports in the system:

1 Click the **REPORTS** tab in the main menu bar. The *Reports* home page is displayed.



“Reports” Home Page

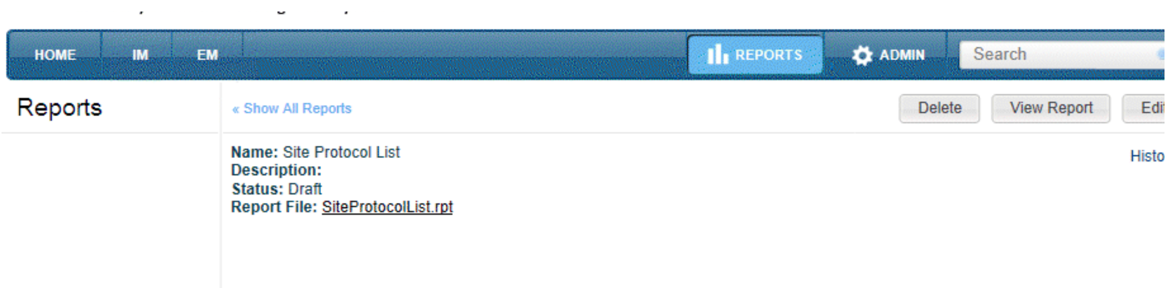
The grid lists all of the reports that are registered in the system. Each report is identified by its name, description, and current status.

The icons in the first column represent actions that you can perform on the Report. These are determined by your user eligibilities as well as the current status of the Report.

- **Run**—Allows eligible users to run the corresponding report.
- **Edit**—Allows eligible users to edit the corresponding report.
- **Delete**—Allows eligible users to delete a report. This icon is only displayed for reports whose status is “Draft.”

You can filter the view of the grid as necessary. Refer to *How the Grid Control Works* on page 3-3.

2 To view the details of a report, click the name of a report to open its *View* page.



Viewing Details of a Report

The report's *View* page displays the name, description, and the current status of the report.

- Click the report file link to open and download the Crystal Report file on which this report is based.
- Click the **Delete** button to delete the report. This option is only available for reports whose status is "Draft."
- Click **Edit** to edit the definition of the report. Refer to *Editing a Report* on page 5-5.
- Click **View Report** to run the report. Refer to *Running a Report* on page 5-6.
- Click the **History** link to view the audit trails for this report. Refer to *Viewing Audit Trails for a Report* on page 5-8.

3 To return to *Reports* home page, click **Show All Reports** above the name.

Creating a New Report

To create a new report:

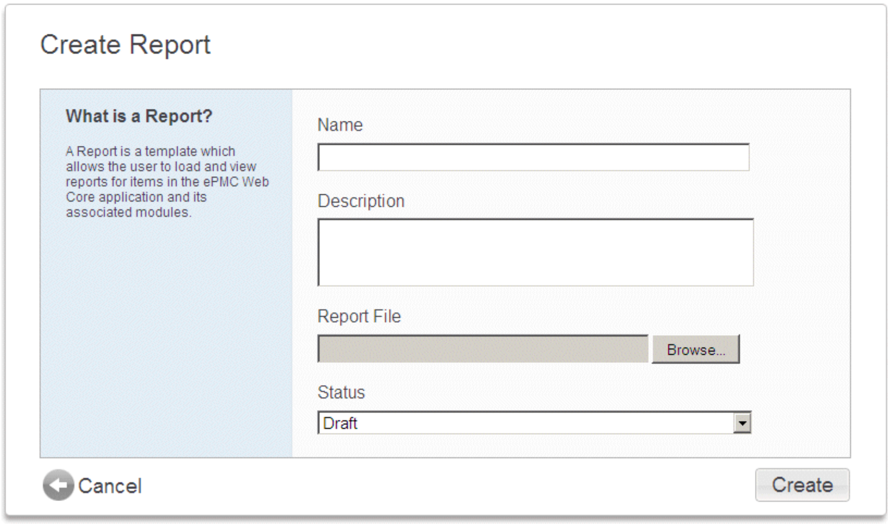
1 Click the **REPORTS** tab in the main menu bar.

2 In the *Reports* home page, click **Create Report**.

3 In the *Create Report* page:

a. Enter a name for the new report.

b. Enter a description (optional).



Creating a New Report

c. Click the **Browse** button and select the associated Crystal Report file.

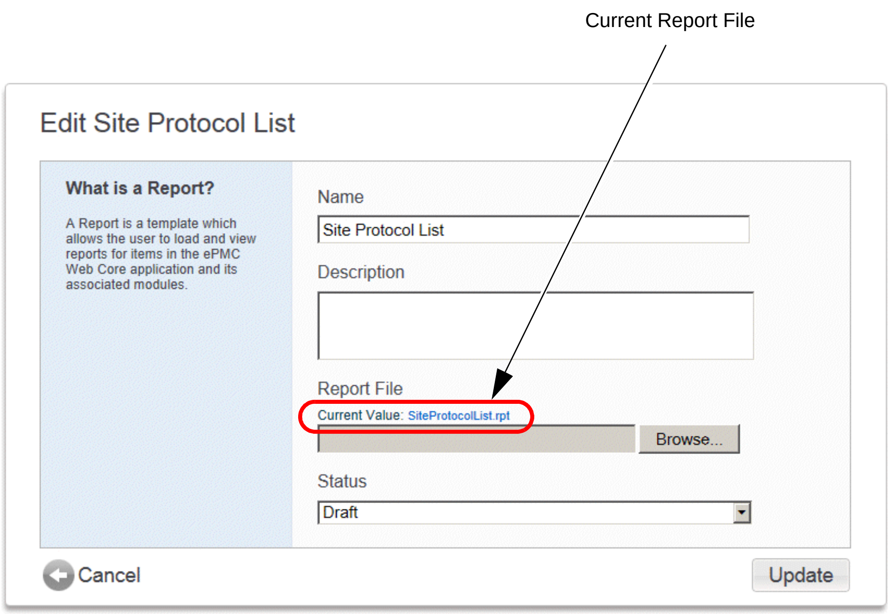
d. Click **Create**.

The new report is displayed in the *Reports* home page with a status of "Draft." When this report is ready to be used in the system, edit the report and set its status to "Active."

Editing a Report

To edit a registered report:

1. Click the **REPORTS** tab in the main menu bar.
2. In the *Reports* home page, do one of the following:
   - Click **Edit** preceding the report.
   - Click the name of the report to open the report's *View* page, then click **Edit**.
3. In the *Edit Report* page, edit the configured fields as necessary. The current report file is displayed above the Report File field, as shown below. You can browse to a different report, if necessary.



Editing a Report

4 Click **Update**.

5 In the *Reason Code Entry* dialog box, select a Reason Code and enter your password. The dialog is not displayed for reports whose status is "Draft."

Running a Report

To run a report:

1 Click the **REPORTS** tab in the main menu bar.

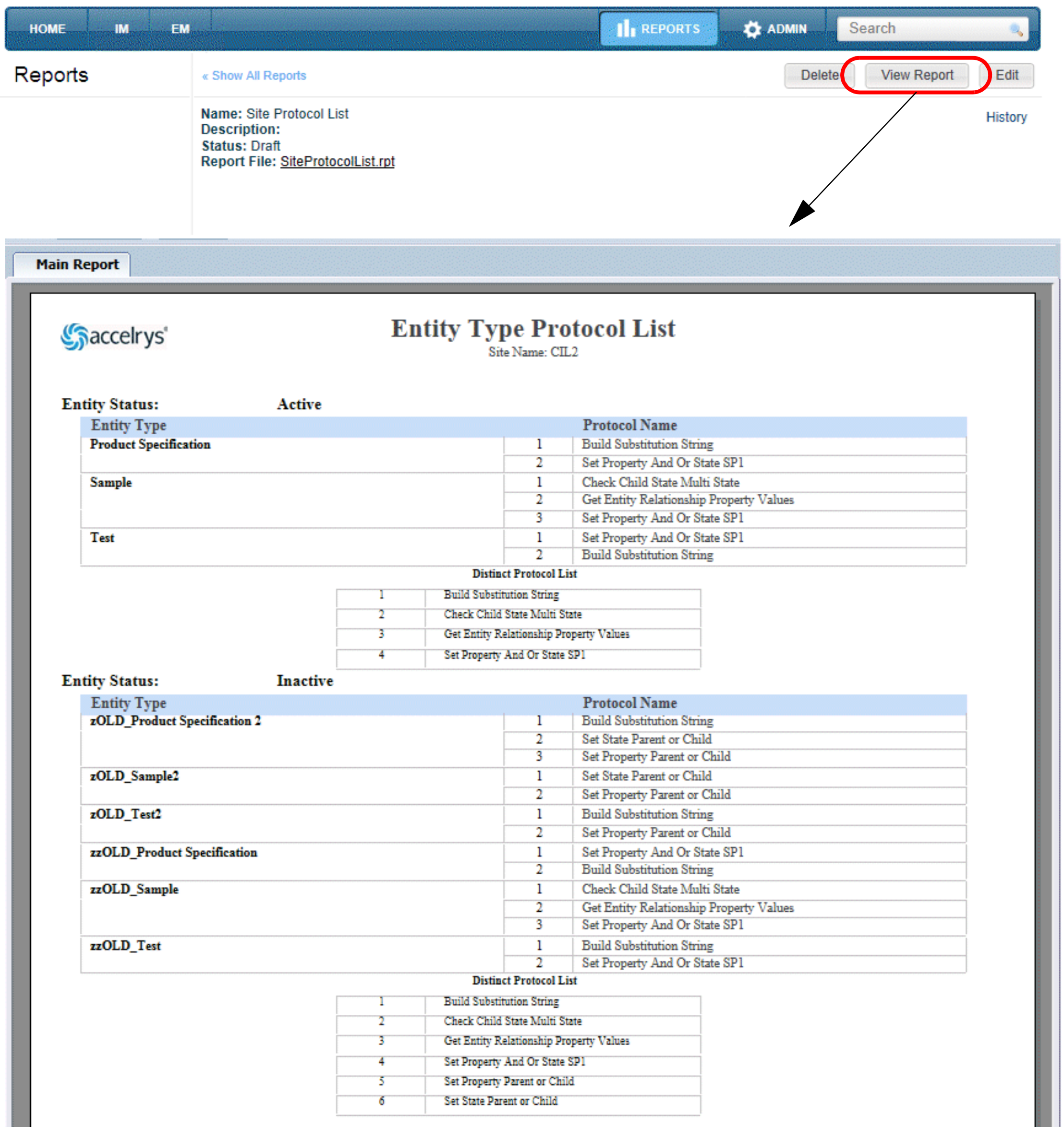
2 In the *Reports* home page, do one of the following:

- Click **View** preceding the report.
- Click the name of the report, and in the report's *View* page, click **View Report**.

3 If the report requires user input, configure its parameters and click OK.

The Crystal Report Viewer displays the results of the report.

Note: The time values in registered reports may differ from the values stored in the database by one (1) second. This is caused by the translation that is performed by the Crystal Report Template on the serial value stored in the database.



Viewing a Report in the Crystal Report Viewer

Use the functions in the Crystal Report Viewer toolbar to export, print, or search for specific criteria in the report.

Upgrading a Report

To make a report temporarily unavailable while you edit it, set its status to “Upgrading.” Its dependencies will use the last active version of the report. Refer to *Editing a Report* on page 5-5.

Inactivating a Report

To make a report permanently unavailable, set its status to “Inactive.” Its dependencies in the system will not be able to use this report. Refer to *Editing a Report* on page 5-5.

Exporting a Report

The export function is not supported for reports.

Deleting a Report

You can only delete a reports if its status is “Draft.”

To delete a report:

1. Click the **REPORTS** tab in the main menu bar.
2. In the *Reports* home page, do one of the following:
   - Click **Delete** preceding the report.
   - Click the name of the report, and in the *Report View* page, click **Delete**.
3. In the confirmation dialog, click OK to delete the report.

Viewing Audit Trails for a Report

Every change made to a report is recorded in its audit trail.

To view the audit trails for a report.

1. Click the **REPORTS** tab in the main menu bar.
2. In the *Reports* home page, click the report whose history you want to view.
3. In the report’s *View* page, click **History** to expand the table of revisions.
4. Select the row that corresponds to the revision you want to view. The selected version is displayed under the table.
5. Click **Print** to print the entire table of revisions.
6. Click **Close** to close the table.