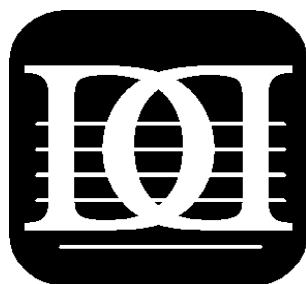


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User Guide

# Freezerworks 5



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# Introduction

Welcome to Freezerworks 5, a powerful relational database program for tracking your frozen and refrigerated samples.

Freezerworks 5 is the Windows and Mac version of the popular FreezerWorks for DOS. With Freezerworks 5, you will reach a new level of power and productivity in sample tracking, be it for short or long term use. With Freezerworks, you will always know **what** you are storing, **how** you are storing it, **how much** you are storing, **where** you are storing it, **when** you are storing or have stored it.

With the answers to these questions at your fingertips, your laboratory, clinic, or biotech firm has vital tools to help answer with more reliability and effectiveness that crucial question that gives your organization and your tasks their ultimate purpose: **Why** are you storing it?

Because you ask and ultimately answer that final question, people like us live longer, healthier lives. It is our fervent hope that your use of this product gives you greater power and an easier time in answering the **Whys** that gives your endeavors meaning, as it does ours.

**Dedication and Acknowledgments:** Freezerworks 5 is the fulfillment of a long anticipated dream, to bring the power and flexibility of DOS based FreezerWorks into the GUI environments of Windows, NT and Macintosh. To do this, it was necessary to rebuild and retrain the best research laboratory database design team ever assembled.

There is absolutely no way this team could have accomplished this task, without the power, strength, comfort, and guiding hand of God, through our Lord and Savior Jesus Christ. In particular, He gave us healing when we needed it and wisdom and knowledge when we asked for it. To Him be all the glory, for He gave us the power and ability to do everything we could accomplish.

We also wish to acknowledge the following people, without whom this product would not have been possible:

Oakley Fox, for her valuable help in the predevelopment process and for introducing us to 4D; Robert Coombs, M.D., Ph.D., and James Bremer, Ph.D., who both believed in and supported us - truer friends one cannot find in this world; Gayle and Eloise McDowell for use of their secluded cabin when it was necessary to escape to work and think uninterrupted; Walt Nelson for use of portions of his own 4D manual; the 4D User's Group for invaluable assistance time and again; and finally, to our many faithful FreezerWorks clients for their input, support, patience and dedication to the program.

Sincerely

The Dataworks Freezerworks 5 Team

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# Chapter 1

## Program Conventions

# Program Conventions

## Keys to understanding and using Freezerworks 5

In this section we discuss the language of database management. As is true with many professions, database management people have their own language — a set of terms that they use to describe the things that relational databases do. In this section, we define terms useful for understanding relational databases in general, and Freezerworks in particular.

### The Relational Database Model

The Relational Database Model is a theory for designing databases that was first developed by an IBM database theoretician named E.F. Codd. Codd developed his model by applying mathematical Set Theory to the problem of database design. In this section, we will discuss the practical application of the Relational Database Model, as it applies to the Freezerworks database.

Simply stated, the Relational Database Model is a collection of **tables** (also known as “flat files”) with the following characteristics:

**Specialization:** Each table “specializes” in storing a certain type of information. This information is stored in **fields**. When an item that contains field information is completed and stored in the table, this item becomes a **record** in that table.

**Key Fields:** Each table holds a **key field**. The data in this key field is unique — that is, no two records will have exactly the same data in this key field. (For example, there will only be one Sample with the Internal ID number 101). This unique quality is what makes it possible to distinguish one record in the table from all other records in the table.

**Indexed:** Each key field is **indexed** for fast searches. Other fields may be indexed as well.

**Relations:** So that they can share information, many of the tables are related to each other. Hence the term, “Relational Database Model.”

**Duplicated Related Fields:** To manage the relationships, we copy the Key Field data into the related records. For example, when we save a Sample, we copy the Internal ID number into the Internal ID field of the Aliquots record. This makes it possible for us to “match up” (relate) Sample information to Aliquot information (**figure a**).

### Where Freezerworks Stores the Data

Freezerworks stores all your data in a file called **Freezerworks.4dd**. To **backup** your data, make a copy of this file (you can use a compression utility to save space). Should you need to restore Freezerworks, you can always re-install it from your CD, and then copy your backup of Freezerworks.4dd into the Freezerworks directory.

---

## The Relational Model

The *Relational Database Model* looks like this:

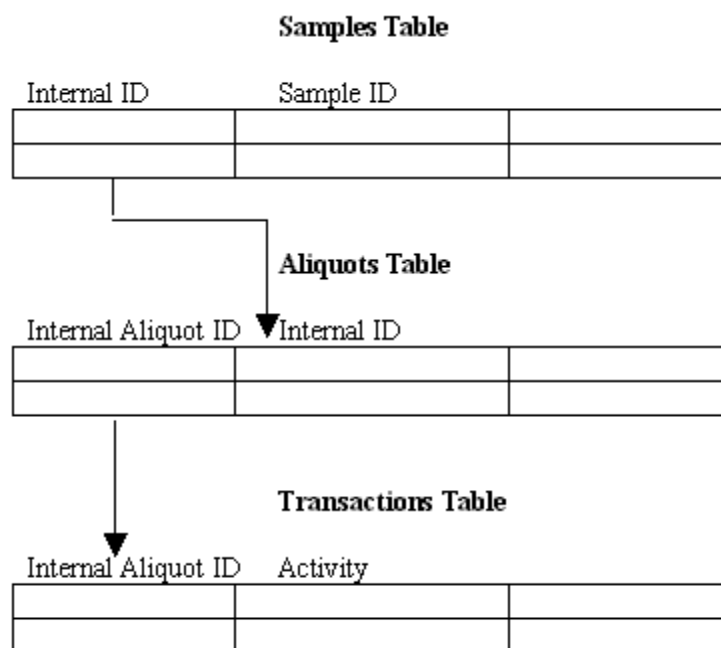


figure a

## Database Relationships

In Freezerworks tables we have the following relationships - *parent, child, grandchild*:

One Sample ID (parent) can relate to many Aliquots (children).

One Aliquot (child to the Sample ID) can relate to many Transactions (children to the Aliquot and grandchildren to the Sample ID).

For a more complete diagram of the Freezerworks tables, consult the **Setting Up Freezerworks 5** section.

## The Main Menu Screen

After loading Freezerworks, it will display the **Main Menu** screen (also called the *Top Level Screen or the Splash Screen*):

From the main menu screen, you can navigate to other files and screens within the database (**figure b**).

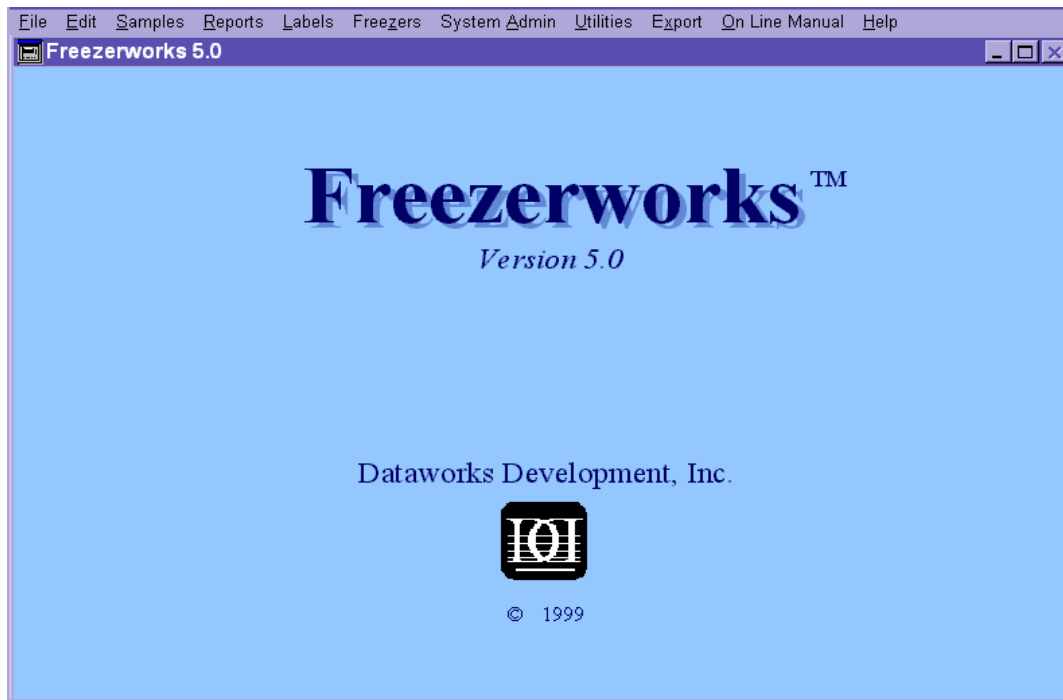
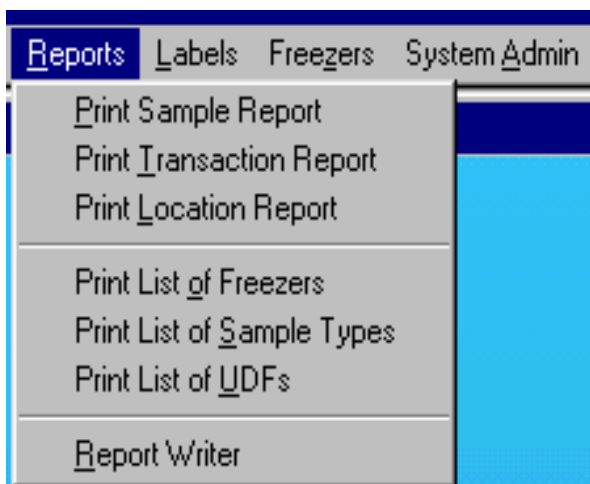


figure b - the Main Menu screen

## Pull Down Menus

A **pull-down menu** is a menu that you “pull down” in order to make a selection. Although there are other types of menus, the pull-down is the most common type of menu.

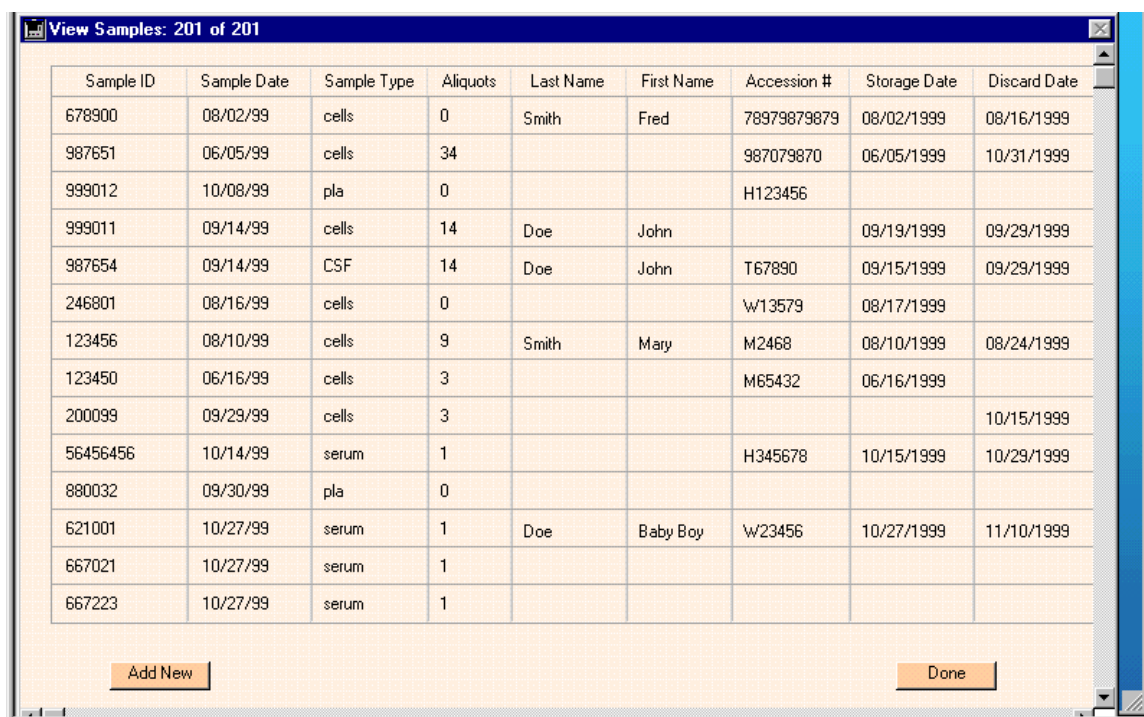


## Opening a View

The first thing you need to do in order to start working with Freezerworks is choose a menu option to open a window. In this manual section, we will refer to these windows as views.

A view is a window that contains a logical grouping of information. This information may be from one table, or from several related tables. The purpose of views is to make your work easier by presenting information to you in logical units. There are two general types of views: **List Views** and **Single-Record views**.

Here is an example of a list view.



Sample ID	Sample Date	Sample Type	Aliquots	Last Name	First Name	Accession #	Storage Date	Discard Date
678900	08/02/99	cells	0	Smith	Fred	78979879879	08/02/1999	08/16/1999
987651	06/05/99	cells	34			987079870	06/05/1999	10/31/1999
999012	10/08/99	pla	0			H123456		
999011	09/14/99	cells	14	Doe	John		09/19/1999	09/29/1999
987654	09/14/99	CSF	14	Doe	John	T67890	09/15/1999	09/29/1999
246801	08/16/99	cells	0			W13579	08/17/1999	
123456	08/10/99	cells	9	Smith	Mary	M2468	08/10/1999	08/24/1999
123450	06/16/99	cells	3			M65432	06/16/1999	
200099	09/29/99	cells	3					10/15/1999
56456456	10/14/99	serum	1			H345678	10/15/1999	10/29/1999
880032	09/30/99	pla	0					
621001	10/27/99	serum	1	Doe	Baby Boy	W23456	10/27/1999	11/10/1999
667021	10/27/99	serum	1					
667223	10/27/99	serum	1					

Add New Done

figure c

## Working with List Views

In Freezerworks, the usual way to view records is by first navigating to a screen that displays a list of records in a particular table. We refer to this type of screen as an **Output Layout** or an **Output Form**. A more appropriate name for this type of screen might be a **List View** (figure c).

## Interface Objects in a List View

A List View shows you a selection of records from a table; it also gives you several options of actions that you can perform on one or more of the records being displayed.

## Window Title

The window title tells you the name of the View and the Record Count for the records we selected. In this example, 201 of 201 indicates that we have selected 201 samples of the 201 total samples, i.e., all records in the database are listed:



## List of Fields

A list view usually contains a small percentage of the total fields in the table being viewed. The purpose of this list of fields is to help you decide if a particular record is the one you want to view.

## Sorting the List

Lists in Freezerworks may be sorted by most field headings. The lists may only be sorted by one field at a time. Click the field heading you wish to sort by. Clicking on the same heading multiple times will switch the sort from ascending to descending. The records will be restored to their original order when you leave the list view.

## Splitters

The Samples list view displays all the enterable fields. If you want to view all the fields you must use the horizontal scroll bar.

An alternative to scrolling is to reduce the column width for those fields you are not interested in viewing by using a splitter. A movable line called a splitter separates each column. To move the line, position the cursor over the line until you see a double arrow,



then click and drag the line in

either direction (**figure d**). The columns will be restored to their original positions when you leave the list view.

## Action Buttons in a List View

### The Add New button

The Add New button brings up a form that allows you to create a new record of the type that you are currently viewing.

### The Done button

The Done button returns you to the splash screen and the Main Menu.

## Viewing a Single Record

When you are in a List View, you can double-click a record to view and modify the data in that record.

When you are viewing a single record, you are viewing a Freezerworks Input Form. When you need to create or change an individual record, you will usually work with an **Input Form (figure e)**.

Sample ID	Sample Date	Sample Type	AI	Last Name	F	Accession #	S	D	vl	Physician	Deac
678900	08/02/99	cells	C	Smith	Fre	789798798798	08	08	F	Dr. Coombs	Deac
987651	06/05/99	cells	C			987079870	06	10		Dr. Smith	
999012	10/08/99	pla	C			H123456					
999011	09/14/99	cells	1	Doe	Jo		09	09		Dr. Smith	Child
987654	09/14/99	CSF	1	Doe	Jo	T67890	09	09	m	Dr. Smith	Child
246801	08/16/99	cells	C			W13579	08				

*figure d - movable column lines are called **splitters***



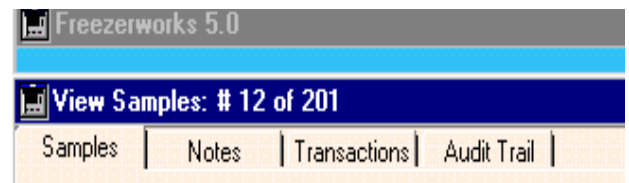
---

## Interface Objects in a Single-Record View

When you are in single-record view, you might have several different interface objects available for your use. Each form is different; here is a list of the possible types of objects that you might see in a single-record view:

### Tab Control

A tab control links together several pages of the same form. Additions and changes are maintained as you move between the pages, but you must press **Save** to permanently record the changes.

A screenshot of the 'View Samples: # 12 of 207' input form. The form has a tab control at the top with 'Samples', 'Notes', 'Transactions', and 'Audit Trail' tabs. The 'Samples' tab is active. The form contains various input fields for sample information, including Sample ID, Sample Date, Sample Type, Last Name, First Name, Accession #, Storage Date, Discard Date, M/F, Physician, Hospital, Signed Off, Test #1, Test #2, Test #3, and Time Edit. Below these fields is a section titled 'ALIQUOTS:' which includes a table for recording aliquot data. The table has columns for Tube, Freezer, Shelf, Rack, Row, Column, Initial ml, Current ml, and Thaws. The first row of data shows Tube 1, Refrigerator 1 West, Shelf 1, Rack 1, Row A, Column 1, Initial ml 3, Current ml 3, and Thaws 0. To the left of the table are buttons for 'Manual Add', 'Auto Assign', 'Modify', and 'Delete'. At the bottom of the form are 'Previous', 'Next', 'Save', and 'Cancel' buttons.

Tube	Freezer	Shelf	Rack	Row	Column	Initial ml	Current ml	Thaws
1	Refrigerator 1 West	1	1	A	1	3	3	0

figure e - the freezerworks samples input form

## Field

A field is a “container” for storing and retrieving a specific piece of information about a specific record. A field may contain date, numerical, or alpha-numerical information. The label, which is usually to the left of the field, tells you what kind of information is stored there :

Sample ID 621001

Last Name Doe

Sometimes a field displays data, but you may not edit it. This is called a **display only** field. Display only fields are sometimes located on multiple page forms (tabs), and are the same color as the background. You must be on the first page (tab) in order to enter or edit data in that field.

## Included Child Table

A table that serves as a child to the parent table is often displayed in a list view contained within a single-record view. The

included child table may or may not be double-clickable, depending on the type of information, and depending on whether or not there are additional fields of information that are stored “behind” the list view. **Figure f** below shows the child aliquots of its parent Sample ID displayed in a list table.

## Buttons

A Button is an object that you “push” or “click” with the mouse, in order to initiate an action.

Previous Next

Common buttons in Freezerworks are ***Previous, Next, Add, Modify, Delete, Save, OK and Cancel.***

**Previous:** Takes you from the current record in your selection to the previous record.

**Next:** Takes you from the current record in your selection to the next record.

**ALIQUOTS:**

# of Aliquots 0

Total Current Amount in ml: 12

Manual Add

Auto Assign

Modify

Delete

Previous Next

Vial	Freezer	Cansister	Cane	Position	Initial ml	Current ml	Thawed
1	Cryo Tank	A	2	6	1	1	0
2	Cryo Tank	A	2	7	1	1	0
3	Cryo Tank	A	2	8	1	1	0
4	Cryo Tank	A	2	9	1	1	0
5	Cryo Tank	A	2	10	1	1	0
6	Cryo Tank	A	3	1	1	1	0
7	Cryo Tank	A	3	2	1	1	0
8	Cryo Tank	A	3	3	1	1	0
9	Cryo Tank	A	3	4	1	1	0
10	Cryo Tank	A	3	5	1	1	0
11	Cryo Tank	A	3	6	1	1	0

Save Cancel

*figure f - the aliquots list view within the samples input form is an included child table of the samples table*

**Add:** Takes you to an entry screen to create a new record.

**Modify:** Take you to a screen to modify an existing record.

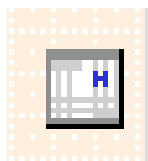
**Delete:** Deletes the current record(s) selected.

**Cancel:** “I changed my mind. Do not complete the action or save the changes.” or if you are adding records, and come to a blank screen after saving a record, press **Cancel** to leave the screen.

**Save:** “Go ahead and save the changes.”

**OK:** “Go ahead and complete the action.” OK is typically used to begin a search or to acknowledge an error or user confirmation.

**Calendar:** displays a pop-up calendar to select a date.



## Combo Box

A combo box is a **combination** of a data entry field and a popup menu. You can type text in the “box” of a combo box, or you can choose from a popup menu that is associated with the combo box.



Notice the small down-pointing arrow on the right side of the box. That is your visual clue that this is either a combo box or drop down box list (see next item).

## Drop Down List

A drop down box is similar to a combo box, but does not accept user input.

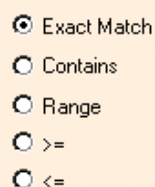
## Checkbox

A checkbox is a way to present and update boolean information (e.g., yes/no or true/false).



## Radio Buttons

Radio buttons usually come in sets, and radio buttons are mutually exclusive: when one is “on,” the others are “off.”



## The <F5> Repeat data entry hotkey:

If you are entering multiple samples with identical data field entries, press <F5> to repeat the same data entered in the sample data field from the previous record. The <F5> repeat key works for the Sample ID, Sample Type, Sample Date, and all User Defined Fields.

## The Current Selection

Whenever you go to a List View in Freezerworks, the selection of records that appears on the screen is called the Current Selection of records for that file.

## Browsing the Current Selection

When you are in a list view and you want to browse through the current selection, you use the scroll bar to move up and down the selection.

## The Record Navigation Buttons

When you double-click to view a record in the Current Selection, Freezerworks keeps track of where you were within the Current Selection when you double-clicked. Because Freezerworks knows exactly where you are, it is possible to move forward and backward in the current selection. Often, a single-record view will have two buttons that allow you to move forward (*Next*) and backward (*Previous*) in the current selection. These buttons are called **Record Navigation Buttons** (**figure g**).

In Freezerworks, record navigation buttons activate and dim as appropriate. When you are at the beginning of the current selection, the *Previous* Record button dims; when you are at the end of the current selection, the *Next* Record button dims; when you are adding a new record, both navigational buttons dim.

**User Tip:** Clicking a Record Navigation Button not only takes you to the next record, but it also saves the changes to the record that you were viewing when you clicked the button.



*figure g - record navigation buttons.*

Sample ID	Sample Date	Sample Type	Aliquots	Last Name	First Name	Accession	Storage Date	Discard Date
99000411	10/12/99	serum	3	Doe	John		10/13/1999	10/20/1999
1234567890123	09/17/99	serum	0	McDowell	Shannon	1234567890		3

figure h

## Knowing Where You Are in the Current Selection

When you are in a single-record view, you can always look at the Record Navigation information to know the number of records in the current selection, and where you are within the selection. In this example, a Search by Sample Date found 30 matching records out of a total of 201 records in the table (**figure h**).

When viewing an individual record, you can see how you obtained the record (Search by Sample Date), its position within the search results (#10) and the total number of records found (30). (**figure i**)

Since you are in the middle of the selection, both the record navigation buttons are active.

Search by Sample Date: # 10 of 30

Samples | Notes | Transactions | Audit Trail | Bar Code ID: 0

Sample ID: 621001 Sample Date: 10/27/1999 Sample Type: serum

Last Name: Doe First Name: Baby Boy Accession #: W23456

Storage Date: 10/27/1999 Discard Date: 11/10/1999 M/F:

Physician: Hospital: Signed Off:

Test #1: Num Result #1: Test #1 Date:

Test #2: Result #2: Test #2 Date:

Time Edit: Result #2: Test #3 Date:

**ALIQUOTS:**

# of Aliquots: 1 Total Current Amount in ml: 3

Manual Add Auto Assign Modify Delete

Tube	Freezer	Shelf	Rack	Row	Column	Initial ml	Current ml	Thaws
1	Refrigerator 1 West	1	1	A	1	3	3	0

Previous Next Save Cancel

figure i

## Hierarchical Lists

Freezerworks uses hierarchical lists to allow you to move around freezers in a visual fashion. Click the plus sign or double-click to expand freezers, and their subdivisions. (figure j).

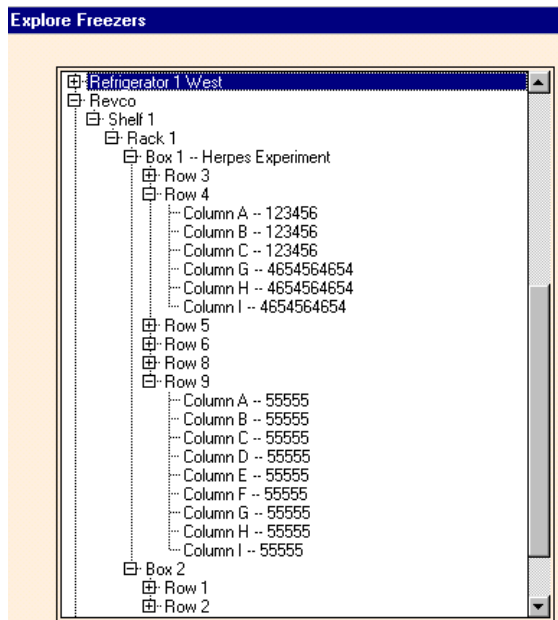


figure j - Explore Freezers uses a hierarchical list.

## The Windows Palette

As you move around the different Freezerworks options, you may find you have many different windows open.

Locate open windows quickly with the Windows Palette (figure k).

Activate the Windows Palette at the **File** pull down menu. The palette is a drop down box of open windows so you can tell quickly what windows you have open. This may be helpful when you are having trouble discerning what is still open.



figure k - The Windows Palette. When activated, it floats on your screen as a movable window, showing you what windows are open.

## The Online Manual (Help)

Freezerworks 5 is developed in a fourth generation language known as Fourth Dimension (4D). This language allows us to develop for both Windows and Macintosh. Unfortunately, 4D has a hardcoded help menu that fixes itself on all 4D applications but will only call the 4D help written primarily for developers. Since almost all topics covered in 4D help are of little use to Freezerworks end users, we provide the Online Manual option to take its place.

Located directly to the left of the **Help** menu, the Online Manual option accesses this manual in Adobe Reader® pdf format. It offers an extensive and hyperlinked index and table of contents system so that you can quickly locate the information you need for whatever topic you request.

For help in using Adobe Reader®, consult its own online help system.

## About Freezerworks

For information on your version of Freezerworks: version number, 4D version number, and Freezerworks serial number, go to **Help-About Freezerworks** at the **Main Menu**.

---

## Chapter 2

### Setting up Freezerworks 5

# Setting up Freezerworks 5

## Setup Checklist

After you install Freezerworks 5, follow this checklist to configure and use the program.

1. To begin, double click the Freezerworks icon on the desktop to start the program.
2. At the User Login screen, type **Admin** in the User Name field and leave the Password field blank. You may use this User Name for future logins, or you may configure individual User Names and Passwords for each user.
3. Before you begin extensive use of the program, you will want to spend some time configuring it to meet your particular needs. To help you with this task, the following is an exhaustive checklist of areas to configure. There are two main areas which need to be configured – System Administration and Freezers.

**The System Administration Menu** contains options for defining Users, Sample Types, User Defined Fields and Properties (steps 1 – 5; see *System Administration* section in the manual for more details).

**The Freezers Menu** contains the option to add new freezers and define their properties (step 6; see the *Create and View Freezers* section in the manual for more details).

### System Administration steps:

#### 1. Users - Define who will use the program

- ☐ Define users and passwords
- ☐ Set security levels for each user (System Administration, Data Entry, View Only)

#### 2. Sample Types - Define what you will store

- ☐ define types, default amount and storage units

#### 3. UDFs (User defined fields) - Define what sample information you are going to track

- ☐ Indicate which UDFs will be used.
- ☐ Define UDF labels, types, (alpha, numeric, date, time) and lengths.
- ☐ Indicate if and where choice lists will be used for UDFs. Determine whether users can modify lists.
- ☐ Define how and where the fields will be positioned on the sample input screen.
- ☐ Indicate if and where ranges (numeric or date) will be used for UDFs.

#### 5. System Admin Properties

- ☐ Set Uniqueness Check: will you allow for duplicate samples? Define what determines a duplicate entry.
- ☐ Define Sample ID Parameters: enter minimum and maximum lengths, edit type (right justified, left justified, numeric).
- ☐ CLIP Configuration: If you will use the Clinical Lab storage option, determine the UDF to hold the storage date, the UDF to hold the discard date, and if desired, the default number of days to hold specimens.



---

## 6. Freezers

- ☐ Define your freezer/refrigerator(s): what do you call it? What subdivisions is it broken down into and what are these subdivisions called? How many of each subdivision does it hold? Are they numbered or listed alphabetically, or both?
- ☐ Are there exceptions - subdivisions that don't meet the norm as defined above? Where will you begin to assign aliquots (the Next Assignable Position or NAP)?
- ☐ What do you call your aliquots? Vials? Bags? Something else?
- ☐ Do you want to give special names to certain freezer areas (e.g. Dr. Grimm's Rack). Assign freezer subdivision aliases where applicable.

## 7. Begin entering samples!

### Relationships between data storage tables in Freezerworks 5

Freezerworks 5 consists of data tables that work dynamically in relation with each other.

The Freezer table consists of the different freezers and/or refrigerators you create. Each record in the freezers table consists of one freezer.

The Samples table is where your sample records are entered and stored. Each record

will consist of a sample. The Samples table is a parent table. There are child tables that hold additional information regarding samples.

Aliquot records are child records to parent sample records.

Transaction records are child records to the aliquot records.

Notes entries are child records to the parent sample records.

Audit trail entries can be children of the parent sample, or of the child aliquots.

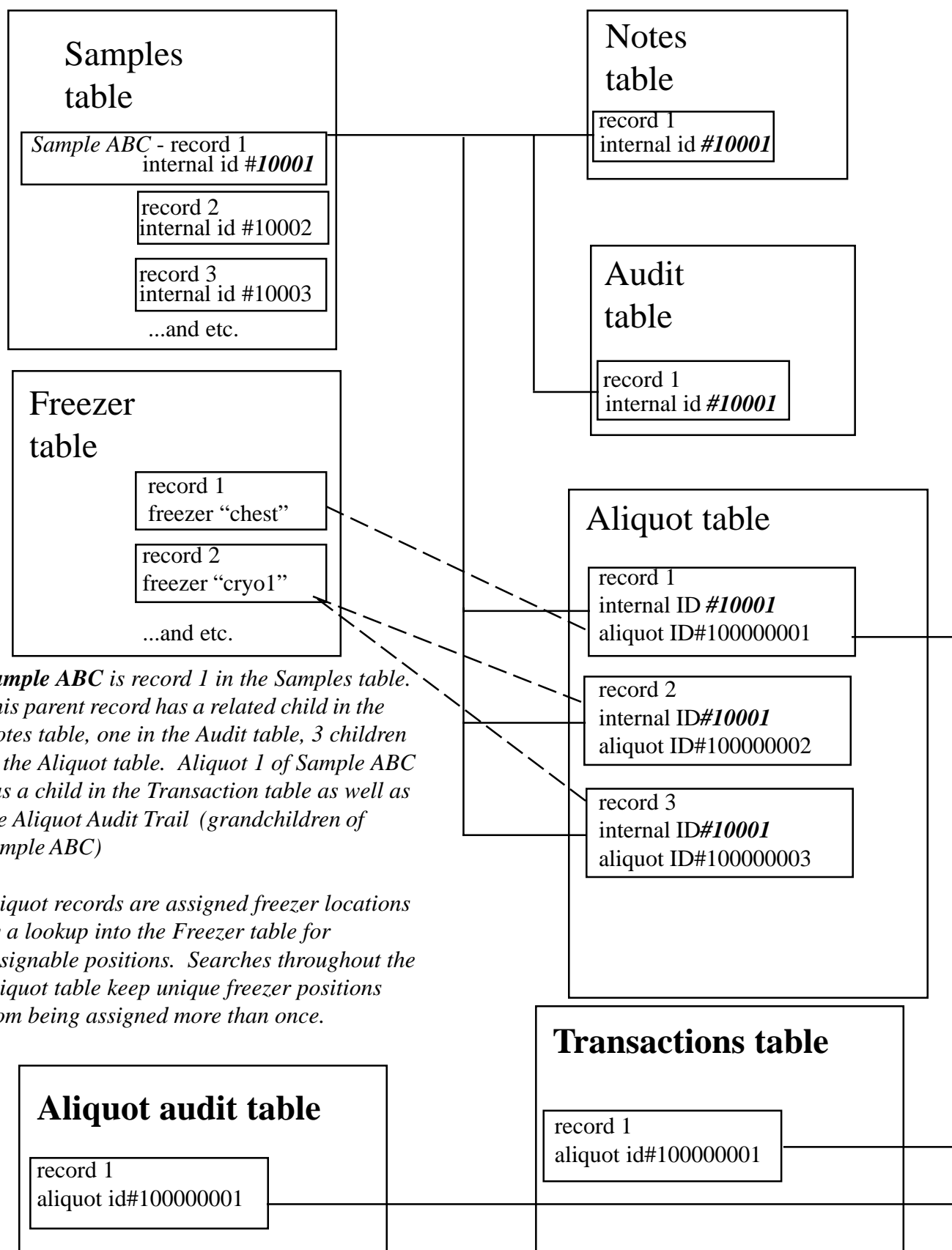
So when you take a specimen sample, and enter it into Freezerworks, you create a "parent" record. Freezerworks identifies this sample by giving it a unique "Internal ID" number.

When you assign aliquots to this parent, you are creating child records directly linked to the parent through the Internal ID. Aliquot children are assigned freezer locations that are pulled from the freezer locations you create and store in the Freezer table. Location data is not stored in the Freezer table - only vital configuration information regarding the freezers.

As aliquots are taken out, moved or exported, users can enter transaction records. These records are children to the aliquot records, linked to the aliquot parent through an internal Aliquot ID number.

As changes are made to records they are re-recorded in audit records for both the sample and aliquot records as applicable.

# Relations between data tables in Freezerworks 5



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# Chapter 3

## System Administration

# System Administration

This section covers the options grouped in the System Administration Menu. These are options you will likely want controlled by a system administrator. The areas are:

**Define Users** - who has access to the program and how much access they have.

**Sample Types** - what kind of samples get entered.

**User Defined Fields** - what information is gathered and stored for the samples

**Properties** - determining how the program is configured for use.

## Users

When logging into the program for the first time, you must enter “Admin” for the User Name (**Figure a**). You may use this default User Name for future logins, or you may configure individual User Names and Passwords for each user.

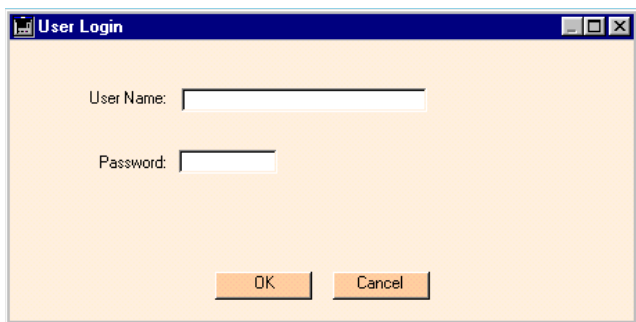


figure a

Configuring individual User Names is especially helpful for utilizing the **Audit Trail** feature in the Samples menu. The Audit Trail displays creation and modification information for each sample. When a new record is added to the database, the current User's name and the current date are displayed in the Audit Trail. Every time the record is modified, a new entry is added in the Audit Trail and the User's name and the date are displayed.

## Assign Users with One of Three Security Levels:

**System Administrator** - may access all menu options.

**Data Entry** - allowed to enter and modify data, but may not access the Freezer Configuration, Move Samples, System Admin or Utilities menu options.

**View Only** - may access only the viewing options; all options that write data (adding, modifying, deleting records) will be disabled for this user.

## To Enter a New User Name:

1. At the Freezerworks main menu, select **System Admin - Users**.
2. When the Users list appears, click **Add New**.
3. Enter a User Name and Password (**Figure b**). Alpha and numeric characters are allowed.

The screenshot shows a window titled "Users: New Record". Inside, there are four input fields: "User Name", "Password", "Security Level" (which is a dropdown menu currently showing "2 - Data Entry"), and "Account Disabled" (which is a checkbox). At the bottom of the window, there are four buttons: "Previous", "Next", "Save", and "Cancel".

figure b

4. Select the security level for this user.
5. When you are finished entering all information for the new User Name, click **Save**. A blank form will appear to enter another user. Click **Cancel** if you are finished entering users. Click **Done** on the **Users** list to return to the Freezerworks main menu.

### To Edit a User Name:

1. At the Freezerworks main menu, select **System Admin - Users**.
2. When the Users list appears, double click the User Name you want to edit.
3. If this user should no longer have access to Freezerworks, check the box beside the Account Disabled option.

4. After making all the appropriate changes, click **Save**. You will be returned to the Users list. If you want to move to another User record without going back to the list, click **Next** or **Previous** instead of clicking **Save**. Click **Done** on the Users list to return to the Freezerworks main menu.

### To Delete a User Name:

1. At the Freezerworks main menu, select **System Admin - Users**.
2. When the Users list appears, highlight the User Name(s) to delete.
3. Select **System Admin – Users**, then select the Delete option under the Users option.
4. Freezerworks will ask you to confirm that you want to remove the User(s). Click **OK** to permanently delete the User(s). Click **Done** on the Users list to return to the Freezerworks main menu.

**User Note:** You may not delete or disable the original user (Admin), but you may change its name and password.

### To Change the Current User without Closing Freezerworks:

1. At the Freezerworks main menu, select **File – Switch User**.
2. The login prompt will appear (**figure a**). Type in the new User Name and Password, then click **OK**.

## Sample Types

The Sample Types option allows you to define a list of the kinds of samples stored in your laboratory. Typical entries are “serum”, “plasma”, “DNA”, etc. The Sample Types defined here will be available in a drop down box on the Samples data entry screen.

### To enter a new Sample Type:

1. At the Freezerworks main menu, select **System Admin – Sample Types**.
2. When the Sample Type list appears, click **Add New** (**figure c**).
3. Enter a Sample Type (e.g., cord blood) (**figure d**). Alpha and numeric characters are allowed.
4. Enter a Default Amount for this sample type. This value will be displayed when you enter new records in the Samples menu option. You can modify this value in the Samples record if the actual amount differs from the default value.
5. Enter the Storage Unit to be displayed with the Default Amount (e.g., ml).
6. Enter a Description for this Sample Type. The description could contain information such as sample processing notes.
7. When you are finished entering the new Sample Type, click **Save**. A blank form will appear to enter another Sample Type. Click **Cancel** if you are finished entering Sample Types. Click **Done** on the Sample Type list to return to the Freezerworks main menu.

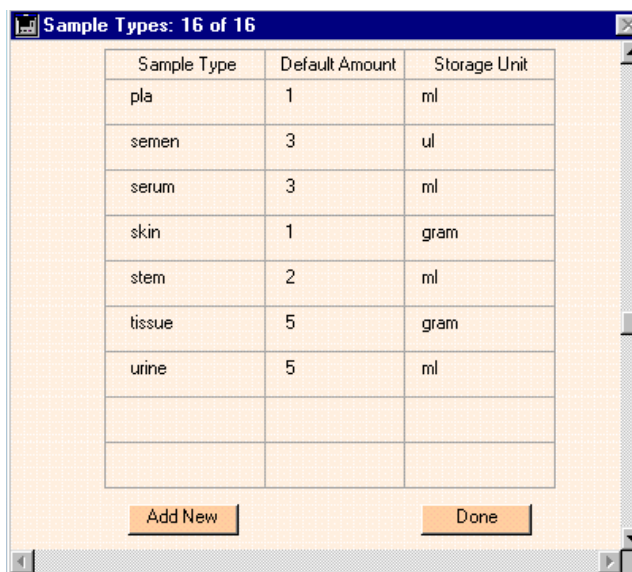


figure c

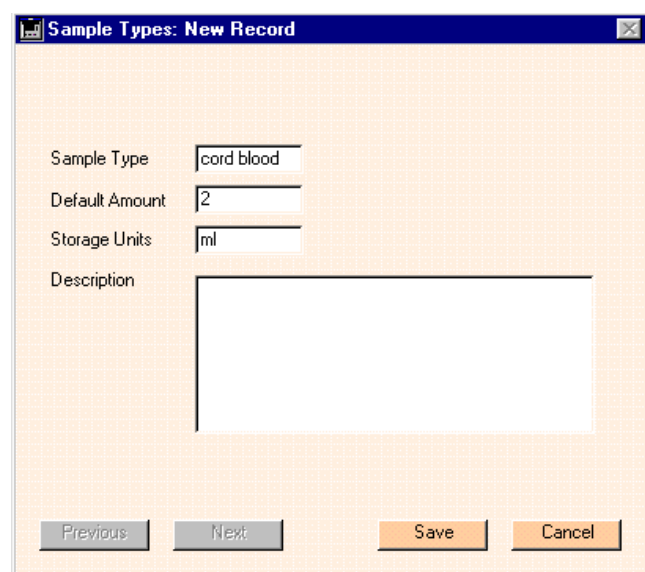


figure d

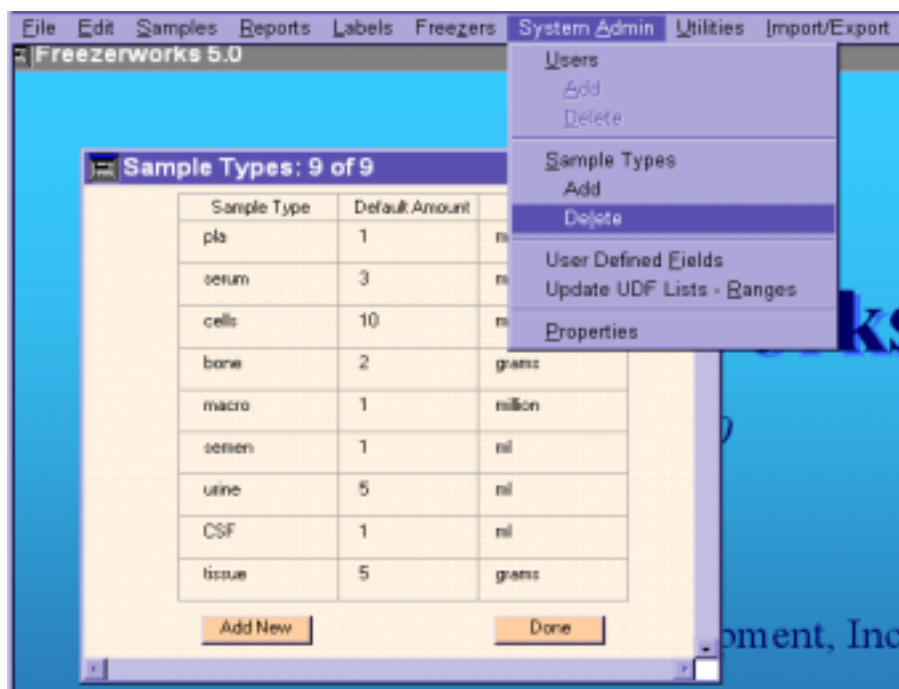
## To Edit a Sample Type:

1. At the Freezerworks main menu, select **System Admin – Sample Types**.
2. When the Sample Type list appears, double click the Sample Type you want to edit.
3. After making all the appropriate changes, click **Save**. You will be returned to the Sample Type list. If you want to move to another record without going back to the list, click **Next** or **Previous** instead of clicking **Save**. Click **Done** on the Sample Type list to return to the Freezerworks main menu.

## To Delete a Sample Type:

1. At the Freezerworks main menu, select **System Admin – Sample Types**.
2. When the Sample Type list appears, highlight the Sample Type to delete.
3. Select **System Admin – Sample Types**, then select the Delete option under the Sample Types option (**figure e**).
4. Freezerworks will display a confirmation message (**figure f**). Click **OK** if you wish to delete the Sample Type. Click **Done** on the Sample Type list to return to the Freezerworks main menu.

*figure e (right) - delete a sample type by first selecting it and then choosing **Delete** in the System Admin menu.*



*figure f (left) - deleted sample types will not be displayed in the sample entry screen, but will appear on reports and output forms*

## User Defined Fields - UDFs

There are eighteen User Defined Fields (UDFs) in Freezerworks. UDFs are data fields that you define to more accurately reflect the unique nature of your samples.

In a clinical setting, for example, UDFs could contain information such as Doctor's Name, Date of Birth, Test Results and Technician's Name. Researchers may use UDFs to provide epidemiological data about their subjects. UDFs may either be open to any values or limited to values in choice lists (sometimes known as "pick lists" or "data libraries").

The System Administrator can define the values in the choice lists or allow users to add values to the lists. The choice list values will be displayed on the Samples data entry screen.

### To Configure User Defined Fields:

1. At the Freezerworks main menu, select **System Admin – User Defined Fields**.
2. Indicate which UDFs will be displayed on the data entry screen by checking the box in the "Used?" column (**Figure g**).
3. Enter a Label for each UDF (e.g., *Last Name*, *Physician*). The Label will be

Used?	Label	Type	Length	Define Allowable Entries?	User Modify?
<input checked="" type="checkbox"/>	Last Name	Alpha	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Accession #	Alpha	15	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Discard Date	Date	10	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Physician	Alpha	9	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Signed Off	Alpha	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Result #1	Numeric	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Test #2	Alpha	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Test #2 Date	Date	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Result #3	Numeric	10	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	First Name	Alpha	20	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Storage Date	Date	10	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	M/F	Alpha	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Hospital	Alpha	15	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Test #1	Alpha	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Test #1 Date	Date	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Result #2	Numeric	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Test #3	Alpha	8	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Test #3 Date	Date	10	<input type="checkbox"/>	<input type="checkbox"/>

Save Cancel

figure g -the user defined fields entry screen, examples of field names are displayed, but are defined however necessary by the administrator.



displayed on the data entry screen to the left of its respective data field.

4. Select a Type for the data that will be entered (e.g., *Alpha*).

5. If you define the Type as **Alpha**, enter the maximum number of characters you will allow for this field in the Length column (e.g., 10). Freezerworks 5 allows a maximum 20 characters for Alpha fields.

If you define the Type as **Numeric**, **Date** or as one of the **Time** formats, you will not be allowed to change its length; the Length field will be dimmed.

**Date fields:** Freezerworks 5 will accept the same date format defined by your computer operating system. In Windows, go to **Start-Settings-Control Panel-Regional Settings** to change your date format.

**Time fields:** Three options are available:

**HH:MM AM :** Enter hours and minutes followed by an AM or PM to designate morning or afternoon/evening. For example: 9:20 AM for 9:20 in the morning. The program will remove leading zeroes in HH entries (09:02:AM becomes 9:02 AM).

**HH:MM:** For “military” time, in which AM/PM is not necessary.

figure h: as fields are defined, check to see where they are displayed on the entry screen by selecting the **View Layout** tab.

**HH:MM:SS:** allows 1-60 for “seconds” after the minute entry.

6. If you wish to define a set list of items or a range of numbers or dates allowed in this field, check the box in the **Define Allowable Entries?** column. To disable an existing list or range, uncheck the box. Details about entering or removing ranges and list items are discussed in the **Update UDF Lists and Ranges** section.

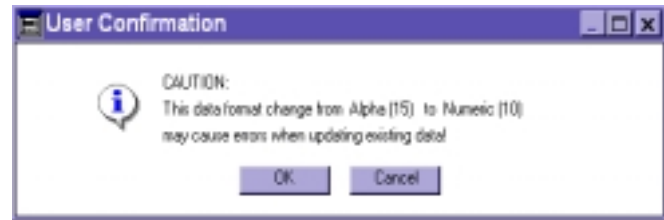
7. If you would like to allow all users to add an item to the list while entering samples, check the box in the **User Modifiable** column. If this box is not checked, only the System Administrator will be able to modify the list items.

8. Go to the View Layout tab to see where your UDFs will be located on the Samples screen (**Figure h**). Switch back to the Configure tab if you want to make any additions or changes.

9. After making all the appropriate changes, click **Save**. You will be returned to the Freezerworks main menu.

### To Edit User Defined Fields:

1. At the Freezerworks main menu, select **System Admin – User Defined Fields**.
2. If you change the **Type** or **Length** fields, Freezerworks will warn you if the change will affect your data. Click **OK** if you wish to proceed with the modification.



*Example 1: Changing from an **alpha** to **numeric** edit or vice versa will cause integrity check errors if the existing data entries do not meet the new edit conditions.*



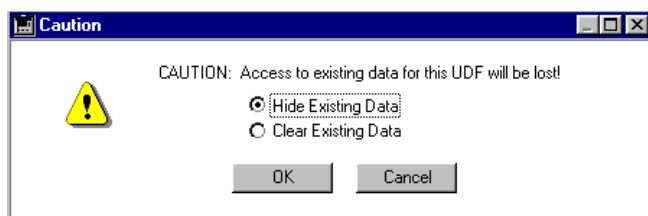
*Example 2: If the previous edit allowed 10 characters, and the new edit condition allows no more than 5 characters, entries of more than 5 characters will be truncated (the final 5 characters will be lost - e.g., "johnson" becomes "johns").*

3. After making all the appropriate changes, click **Save**. You will be returned to the Freezerworks main menu.

### To Delete User Defined Fields:

1. At the Freezerworks main menu, select **System Admin – User Defined Fields**.
2. Remove the check in the appropriate “Used?” column (see **Figure g**).

3. You will be warned that access to existing data in that field will be lost (**example 3 below**). Select either the Hide option or the Clear option. Hiding the data will save it in the event that you want to use the UDF again. Clearing the data will permanently delete the data from Freezerworks. Click **OK** to proceed with the deletion.



*Example 3: Data in UDFs no longer used can either be deleted entirely or hidden from view.*

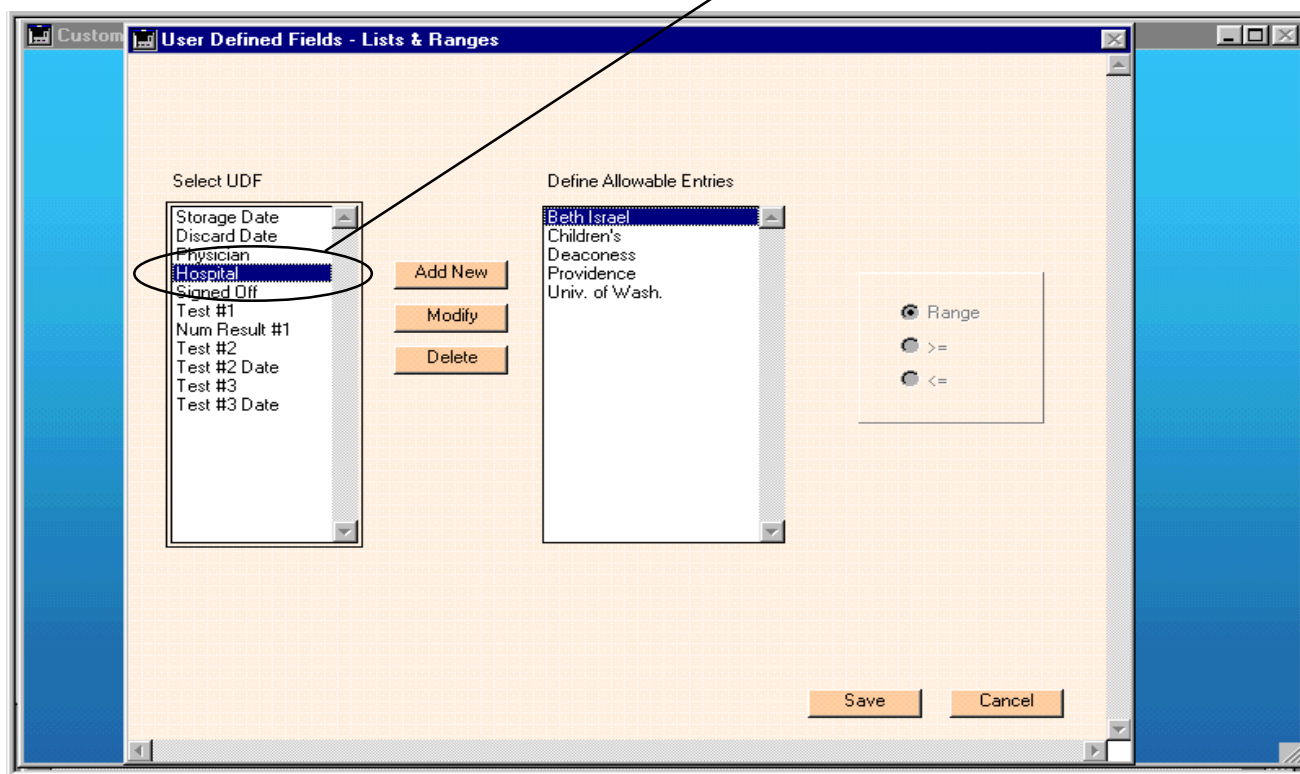
4. When you are finished making changes, click **Save**. You will be returned to the Freezerworks main menu.

## UDF Lists and Ranges

If you configured any of your UDFs as having Allowable Entries, then you must create the list of allowable entries. UDFs defined as **Alpha** may have a list of items (e.g., a UDF named *Hospital* could have a list of hospitals that send samples to you). UDFs defined as **Numeric** or **Date**, however, may have a minimum, maximum or range of allowable entries.

### To Create UDF Lists:

1. At the Freezerworks main menu, select **System Admin – Update UDF Lists - Ranges**.
2. For UDFs defined as Alpha, highlight the UDF Label to edit (e.g., Hospital) (**figure i**).



*figure i - creating a list of acceptable entries*

3. To add an entry to the Hospital list, click **Add New**.

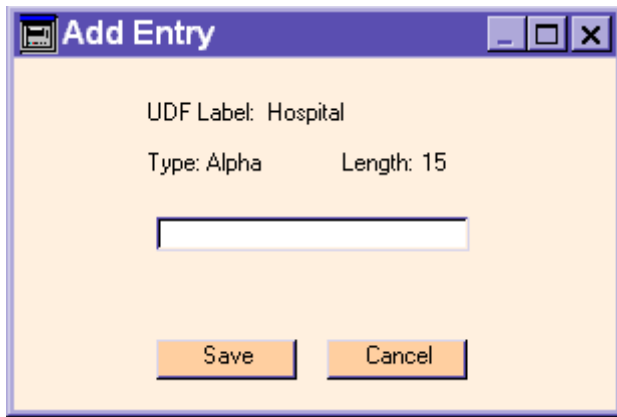


figure j

4. Enter the new list item (**figure j**). Click **Save** at the **Add Entry (figure j)** screen to add the item to the list.
5. When you are finished making list entries, press **Save** at the **UDF Lists - Ranges** screen to make a permanent save of all your additions. If you press **Cancel** here, all the additions and modifications you made during this session will be canceled. (**NOTE:** moving your cursor to another UDF will also make a permanent save of the entries made in a UDF field.)

## To Create UDF Ranges:

**Date UDF fields:** For UDFs defined as Date, highlight the Date Label to edit.

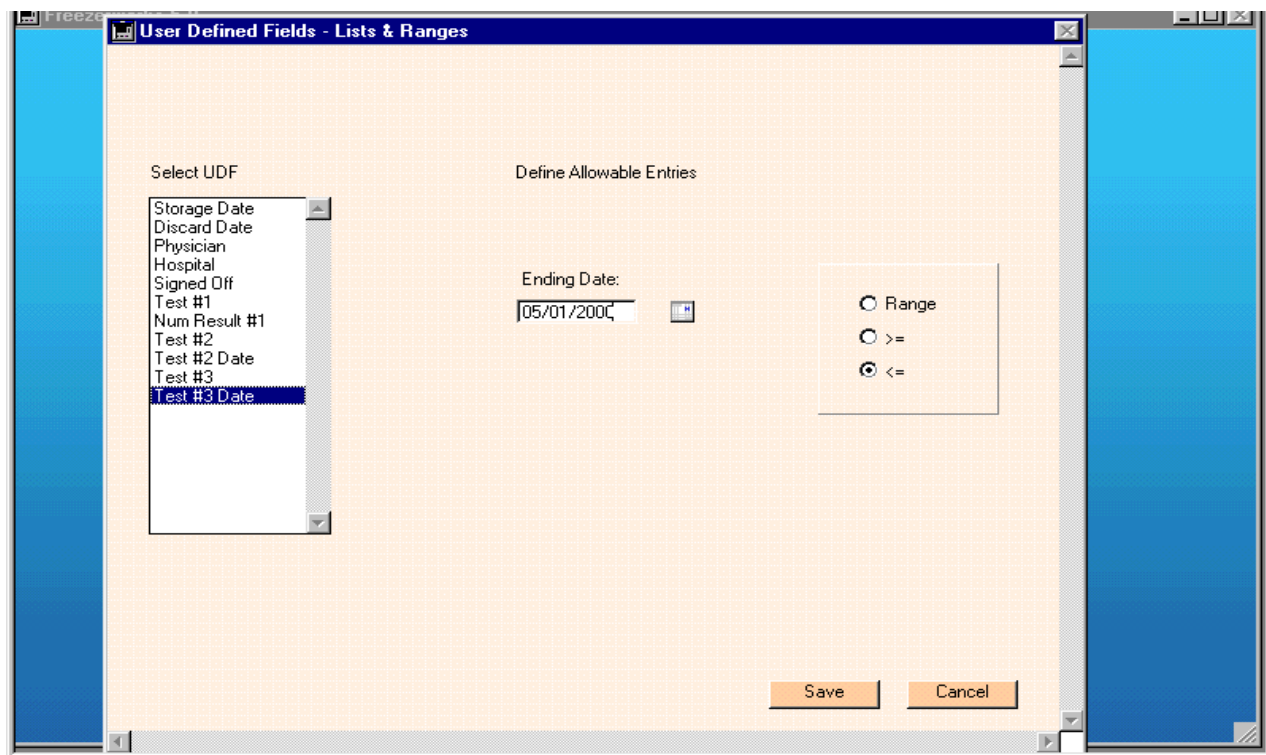
Date UDFs may be defined using one of three options: range, greater than or equal to, less than or equal to (**Figure k**). Use the calendar icon to select the date(s), or type it into the field. Select one of the options to the right (range, >=, <=).

For example, Test #3 Date in **figure k** has only an Ending Date of 05/01/2000 with the <= option. Dates prior to and including 05/01/2000 would be accepted as valid entries in the Test #3 Date field on the Samples screen.

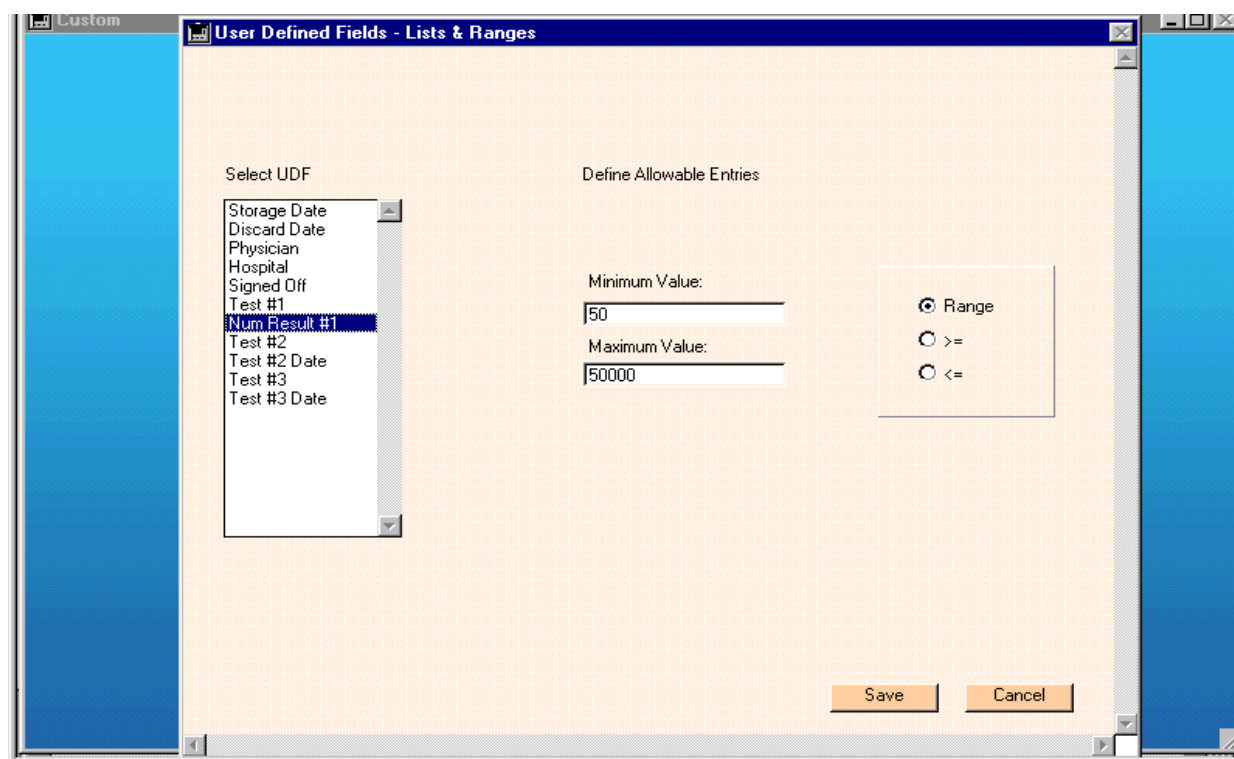
**Numeric UDF fields:** Numeric values are defined in a similar way. Highlight the Numeric Label to edit. Enter the Minimum and/or Maximum numeric value(s) and select one of the options to the right (**Figure l**). Num Result #1 in **figure l** is defined with a range from 50 – 50000. Values from 50 - 50000 would be accepted as valid entries in the Num Result #1 field on the Samples screen. The program will display an error message and disallow any entry a user gives that falls outside the range.

**Note:** Numeric values have a fixed length of 10. The cursor will prevent you from entering an 11th character.

**Saving UDF Ranges:** Each time you add to a list or range of a UDF, press **Save** to keep it. To undo your entry, press **Cancel**. Only the UDF you have selected to work on will be affected by your Save or Cancel. After making all the appropriate additions, click **Save**. You will be returned to the Freezerworks main menu.



*figure k - only dates earlier than or equal to 5/01/2000 are allowed in UDF field Test #3 Date.*



*figure l - Values between 50 and 50000 are acceptable for this field.*

## To Edit UDF Lists and Ranges:

1. At the Freezerworks main menu, select **System Admin – Update UDF Lists - Ranges**.
2. To modify a list item, highlight the appropriate UDF Label and the item in the Allowable Entries list and click **Modify**. You can also double click the list item. Click **Save** to record the changes, or **Cancel** to restore the original entry.
3. To modify a date or numeric value, highlight the appropriate UDF Label then click in the appropriate field and change the entry. Click **Save** to record the changes, or **Cancel** to restore the original entry.

## To Delete UDF List Items:

1. At the Freezerworks main menu, select **System Admin – Update UDF Lists - Ranges**.
2. To delete a list item, highlight the appropriate UDF Label and the item in the Allowable Entries list and click **Delete**. Freezerworks will display a confirmation message. Click **OK** if you wish to delete the item. Click **Save** to record the changes, or **Cancel** to restore the original entry. If you want to restore the original entry, you must click **Cancel** before highlighting another UDF Label. Once you have moved to another label, the changes will be saved.

## Properties

To access the Properties screen, select **System Admin – Properties** at the Freezerworks main menu. The Properties screen is divided into three sections: Uniqueness Check on Samples, Sample ID Parameters and CLIP Configuration (**figure m**).

### Uniqueness Check on Samples

This is an optional data integrity check. If you choose to check for duplicate Sample IDs, you must indicate which fields will be used to define each sample as a unique sample. These are known as the key fields. You may choose up to three key fields. The default settings are **Sample ID**, **Sample Date** and **Sample Type** for the key fields with **Check for Duplicates** set **off**.

When the **Check for Duplicates** is on, and fields are assigned as key fields, then Freezerworks will not allow users to enter more than one sample record with identical entries in these fields. For example, in **figure m**, no two records can have a completely identical Sample ID-Date-Type combination.

---

## Sample ID Parameters

For additional data integrity, you may want to control the length of the **Sample ID**. The Sample ID is the main identifier for a sample, and is thus the first data field displayed on the Samples entry screen. Sample IDs may range in length from 2 to 20 characters.

You can also limit the content and format of the Sample ID by setting the Edit Type here. The Numeric edit will accept only numbers. The Right Justified edit will accept numbers and alpha characters, and will right justify the entry. The Left Justified edit will accept numbers and alpha

characters, and will left justify the entry. The default settings are Minimum Length of 2, Maximum Length of 20 and Edit Type of Left Justified.

## CLIP Configuration

If you will be using the Clinical Laboratory Inventory Program (CLIP) feature, indicate which UDFs hold the storage and discard dates, and the default number of days to hold samples. For more information on the CLIP features, see the *Using the CLIP features* section of this manual.

**Set System Properties**

**Uniqueness Check on Samples**

☒ Check for Duplicates in Samples?

Select up to 3 fields which will constitute the key for a unique sample.

Sample ID

Sample Date

Sample Type

**Sample ID Parameters**

Enter Minimum Length of Sample ID: 6

Enter Maximum Length of Sample ID: 10

Enter Edit Type of Sample ID: Left justified

**CLIP Configuration**

UDF which holds the Storage Date: Storage Date

UDF which holds the Discard Date: Discard Date

Default number of days to hold samples: 14

Save Cancel

*figure m - the properties screen*





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## Chapter 4

### Create and View Freezers

# Create and View Freezers

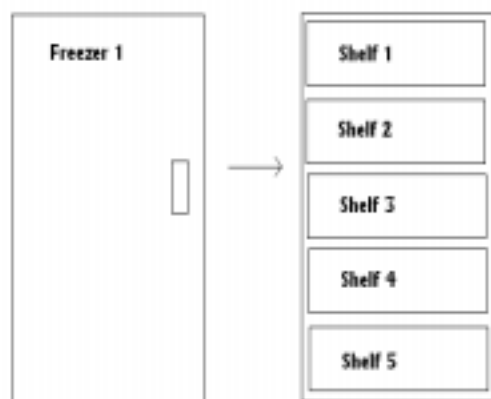
Freezerworks 5 allows tremendous flexibility for configuring different freezer setups, whether you use racks or towers, shelves or cannisters, or label your freezers using numerals, alphabetic characters, or a combination of both.

We will first demonstrate how to create a freezer, with very simple and standard subdivisions. Following this example, you should be able to configure 95% of the freezer racking systems available today.

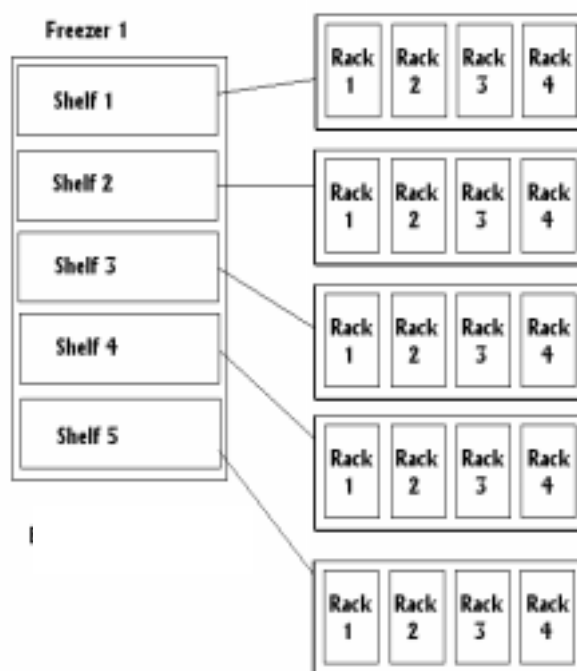
We will then give examples on how to configure the more difficult freezer racking systems, so that the remaining 5% of racking systems can be covered by Freezerworks 5 as well.

## Create a freezer.

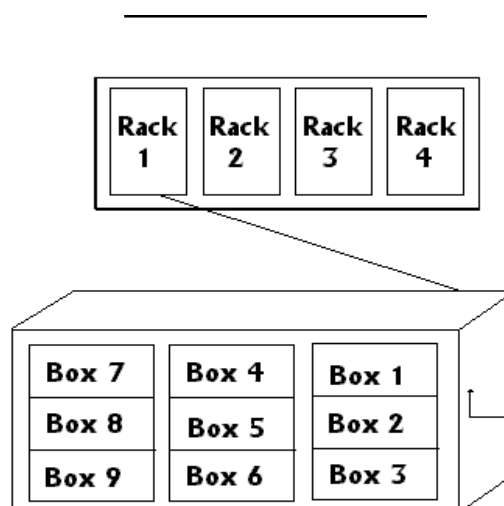
Example 1: **Freezer 1** - A standard upright freezer, with 5 shelves, each shelf holding 4 racks, each rack holding 9 boxes, each box holding 81 vials (see figures a-d):



*figure a - this upright freezer has 5 shelves*



*figure b - each Shelf has 4 Racks*



*figure c - each Rack has 9 boxes*

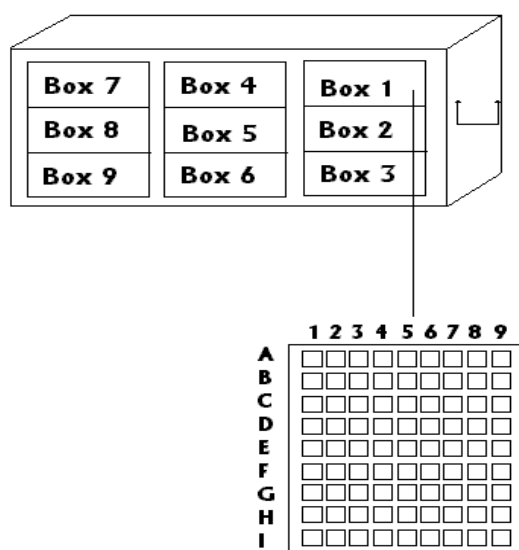


figure d - each Box holds 81 positions

## To Create this Freezer:

1. At the Freezerworks main menu, select **Freezers - Add New**.
2. Name the Freezer (e.g., Freezer 1).
3. Describe the freezer (e.g., Upright freezer in Room 302).
4. Enter the name of the first subdivision (e.g., Shelf).
5. For “Display as”, tell Freezerworks if your shelves will be labelled numerically or alphabetically (e.g., our shelves are numbered 1-5, so we select Numeric 1-999).

The screenshot shows a dropdown menu titled "Display As". The menu is open, showing four options: "Numeric (1-9)", "Numeric (1-999)", "1 Alpha (A-Z)", and "2 Alpha (AA-ZZ)". The "Numeric (1-999)" option is currently selected.

## Using *Display As*

Do you label your subdivision numerically? If so, choose “Numeric (1-999)”.

Do you label the freezer subdivision alphabetically A-Z? If so, choose “1 Alpha (A-Z)”.

Perhaps you wish to use alpha characters, but need more than the 26 allowable characters using single characters. You can then use the two-letter combination “2 Alpha (AA-ZZ)”. This would assign boxes in this fashion: AA, AB, AC....AZ; then BA, BB, BC....BZ; CA, CB, CC....CZ and so on up to ZA, ZB, ZC...ZZ.

6. For Quantity, enter the total number the freezer holds for this subdivision (e.g., 5 for five shelves).
7. For First Position, enter the number or alpha character that designates the label for the first subdivision (e.g., 1 for shelf 1).
8. In our example, our screen should look like this so far (see *figure e*):

figure e

9. Continue entering the subdivision names for the freezer until they are all defined:

Subdivisions    Display as    Quantity    First Pos.

Shelf	numeric	5	1
Rack	numeric	4	1
Box	numeric	9	1
Row	alpha A-Z	9	A
Column	numeric	9	1

**Note:** the **Display as**, **Quantity**, and **First Position** field boxes for each subdivision will appear on the screen as you enter subdivision names and hit <ENTER> or click your mouse to continue.

Our first position in the freezer is

Shelf 1, Rack 1, Box 1, Row A, Column 1

**Drop down boxes:**

You will find drop down boxes throughout Freezerworks. Click on the ▼ to see possible other valid entries, or enter your own by selecting the blank line at the top of the box. As new subdivision entries are added, they are stored in the program for use in creating other freezers.

Properties	
Label for "Aliquot"	Position Assignment
<input type="text" value="Vial"/>	<input checked="" type="checkbox"/> Assign each aliquot to a unique position?

**Label for “Aliquot”:** In this freezer, what are you storing your samples in? The default is “vial”, but you may be using something else: perhaps a “bag” or “straw” or “goblet”, a “tube” or “cassette”. In our example, we’ll use the default value **vial**.

**Position Assignment:** Freezerworks 5 has a uniqueness check that will not allow more than one sample vial to be placed in the very last subdivision you create, making your final position a “unique position”. In our example, each location we use to assign vials to is a “unique” location - only one vial is allowed for each complete location. So we place a check mark to agree that each final position is a unique position - only one vial can be assigned.

### *When is a position not unique?*

But suppose you aren’t interested in being quite so precise in your specimen tracking abilities. You don’t need to know which vial of the sample is in which box location. Perhaps you have a large batch of the same sample, and you only need to know which “box” it is located in. An example of this may be a laboratory storing a large reagent lot, perhaps 500 vials of the same lot, and it only

wants to know in which boxes they are stored.

If this is the case, the user would make the last subdivision entry “box” and not assign a unique position. This allows the user to assign as many vials to the final position as desired (e.g., 100 vials in Shelf 1, Rack 1, Box 1, 100 in Shelf 1, Rack 1, Box 2, 100 in Box 3, etc.).

Next Assignable Position				
Shelf	Rack	Box	Row	Column
<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="A"/>	<input type="text" value="1"/>
1-5	1-4	1-9		

### **Next Assignable Position (NAP):**

When the time comes to enter samples into a freezer, you have the option of using the automatic vial assignment engine of Freezerworks 5 to locate open positions and assign aliquot locations. The **NAP** serves as a pointer, telling the computer where to begin assigning aliquot locations when you use the **Auto Assign** option at the **Enter Samples** screen.

The default **NAP** will be the very first location of the freezer you create. As you auto assign samples into a freezer, the **NAP** moves to the next assignable position ( in sequential order if it is a unique position freezer), until the end of the freezer is reached. Unique positions already assigned will always be passed over by the **NAP**, so that multiple vials cannot be assigned the same unique position.

In a “non unique freezer” the NAP does not change, until you change it manually.

But remember the **NAP** is a floating pointer - you can reassign it anywhere you wish. If you clean out a box and wish to move the **NAP** back to reassign vials to the now empty box, you can change the **NAP** to the beginning of the box.

If you have emptied positions throughout your freezer and wish to reassign vials throughout these locations, simply move the **NAP** to the very beginning of the freezer, or anywhere you wish to reassign positions. Freezerworks 5 will tell you if the **NAP** you select is a valid empty position. If not, Freezerworks 5 will tell you where the Next Assignable Position after your entry resides.

You can begin to re-enter samples there, and Freezerworks 5 will skip over any positions still used.

With all our entries for our example freezer now complete, the first freezer screen looks like **figure f** below:

Since this freezer is uniform throughout - all shelves hold the same number of racks, all racks hold the same number of boxes, all boxes hold the same number of vials - there are no **exceptions** to define.

**10.** We can now click **Save** to record the new freezer.

Define Subdivisions		Define Defaults		
Subdivisions	Display As	Quantity		First Position
Shelf	Numeric (1-9...)	5	Shelf in Freezer 1	1
Rack	Numeric (1-9...)	4	Rack in each Shelf	1
Box	Numeric (1-9...)	9	Box in each Rack	1
Row	1 Alpha (A-Z)	9	Row in each Box	A
Column	Numeric (1-9...)	9	Column in each Row	1

Properties		Next Assignable Position				
Label for "Aliquot"	Position Assignment	Shelf	Rack	Box	Row	Column
Vial	<input checked="" type="checkbox"/> Assign each aliquot to a unique position?	1-5	1-4	1-9	A-1	1-9

figure f

### *Finding a freezer after it has been saved:*

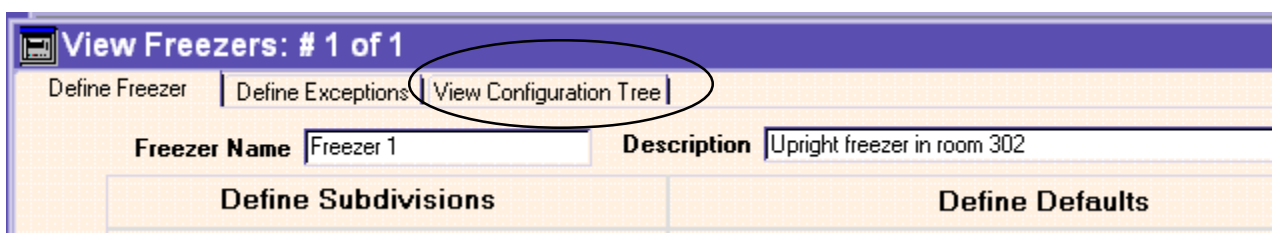
11. To find and view a freezer's setup after it has been saved, select **Freezer-View** at the **Main menu**. Scroll down the list of created freezers and double click the one you wish to view.

### **Viewing a Freezer using the Hierarchical Display (View Configuration Tree)**

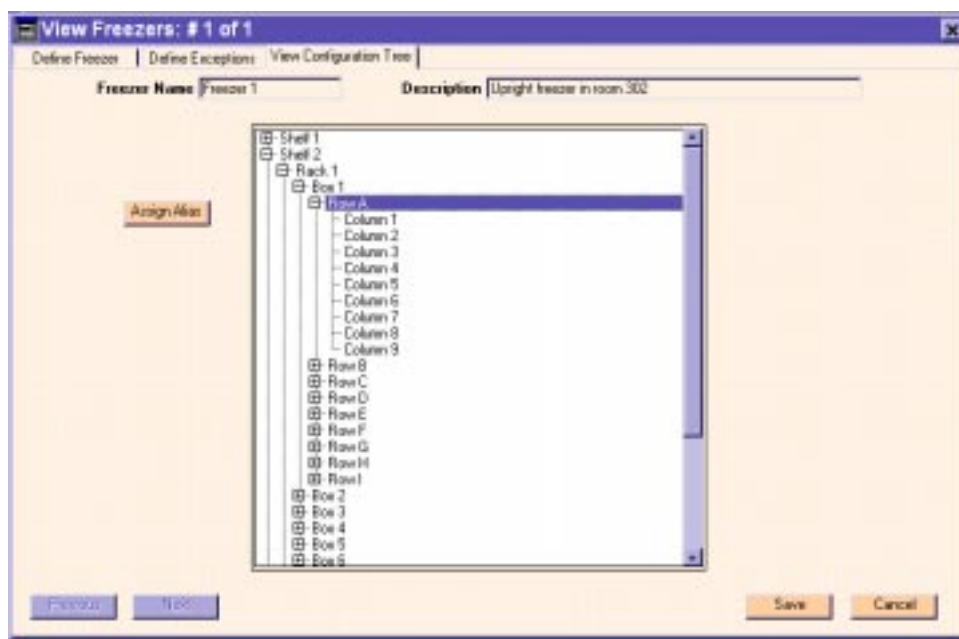
Once a freezer is created, you can view your configuration in a "Windows Explorer" kind of tree structure, expanding and contracting subdivisions to make sure they are correct.

### **Using the Hierarchical Display:**

1. With your freezer selected, click the **View Configuration Tree** tab on the top of the screen. (**figure g**)
2. Freezerworks will display the freezer subdivision names in a top to bottom listing, beginning with the first subdivision (e.g., "Shelf" in Freezer 1 - see **figure h**). Each subdivision will have a little box to the left of it. Click on the "+" inside the box of a subdivision to display the next subdivision, or double click on the subdivision name.



*figure g*



*figure h*

In our example “freezer 1” has 5 shelves.

**Figure h** displays the subdivisions available for Shelf 2. Clicking on the “+” for Rack 1 (converting the “+” to a “-”) displays all the boxes available for Rack 1. Clicking on the “+” for Box 1 displays all the Rows available for Box 1, and clicking on Row 1 displays all the columns available for Row 1.

## Other options for creating a freezer:

### Define Exceptions

Not every freezer has a uniform shelf, rack, box, row, column setup like Freezer 1. Some shelves may have a different number of racks, some racks may have a different number of boxes, some boxes may have more positions than other boxes. Freezerworks allows an unlimited number of

exceptions for any freezer.

For example, suppose the first shelf of **Freezer 1** held larger-sized vials than the other shelves. Say shelf 1 holds **6 boxes per rack** instead of the 9 that the racks in shelves 2-5 hold. To define this exception, follow these steps:

1. With your freezer selected, click the **Define Exceptions** tab.
  2. See **figure i**. On the left side are the default subdivision values. On the right side are the exceptions to the default values:
- Since Shelf 1 has an exception at the *Rack* level, it needs an exception. To create an exception, click the **Add** button:
3. At the Add Exception entry box (**figure i**), enter the exception “1”, for **Shelf**.

**View Freezers: # 1 of 1**

Define Freezer | Define Exceptions | View Configuration Tree

**Freezer Name:** Freezer 1 **Description:** Upright freezer in room 302

Default Subdivision Values:	Exception In:	There Are:					
	Shelf	Rack	Box	Row	Qty	Subdivision	First Position
5 Shelf in Freezer 1							
4 Rack in each Shelf							
9 Box in each Rack							
9 Row in each Box							
9 Column in each Row							

**Add Exception**

**Exception In:**

Shelf	Rack	Box	Row
1	ALL		
1-5	1-4	1-9	A-I

**There Are:**

Qty	Subdivision	First Position
6	Box	1
		1-999

Buttons: Add, Modify, Delete, Save, Cancel

*figure i - Define exceptions screen with the Add Exception box selected.*



4. Since all racks in **Shelf 1** are to have this exception, enter “all” for **Rack**.

5. For **There Are**, define what that exception is: enter “6”, for 6 boxes in all **Shelf 1** racks.

6. For **First Position**, enter the label of Box 1. A “1” entry would continue to make each Rack in Shelf 1 begin with Box 1. Click **Save**. (figure j)

Default Subdivision Values:	Except In:			
	Shelf	Rack	Box	Row
5 Shelf in Freezer 1	1	all		
4 Rack in each Shelf				

figure j

7. To see that your exceptions are correct, use the **View Configuration Tree Tab**. Click the “+” box on Racks in Shelf 1 to see six boxes assigned per rack. Click on the “+” boxes of Racks on the other shelves to see nine boxes per rack. (figure k)

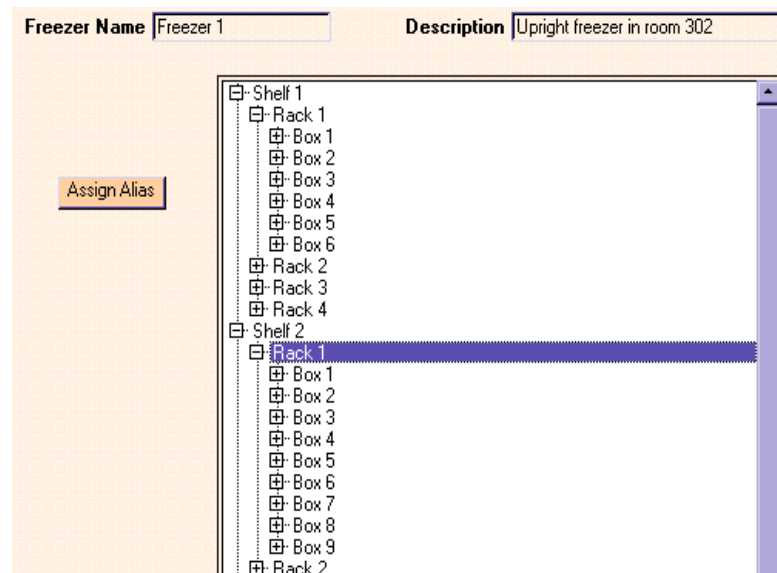


figure k

### Differences between Exceptions in Freezerworks 5 and previous versions of FreezerWorks for DOS

“Exceptions” in the DOS version indicated areas in a defined freezer in which the program would not assign vials. Users could make racks, boxes or positions “off limits”. DOS users who upgrade may need to be aware of the limitation Freezerworks 5 has in marking areas off limits.

Freezerworks 5 will only allow for an area in the front, or at the end, of a subdivision to be marked “off limits” (for example, if racks have 10 boxes but say in Rack 5 you don’t want anything entered in the first two boxes, you can create an exception of 8 boxes in rack 5, with 3 as the first position. Or if the last 2 boxes are off limits, you can create an exception of 8 boxes, first position 1.

What you cannot do in Freezerworks 5 but could do in the DOS version is mark an area within the middle area of the freezer subdivision as off limits (e.g., Box 3 of our example in the paragraph above).

### Creating consecutive and uniquely numbered subdivisions

Simply put, suppose we have four Racks per Shelf *but* we want the first rack in Shelf 2 to be Rack 5 instead of Rack 1, then the next rack, Rack 6, then Rack 7, etc.

Or suppose we wanted each box to be uniquely numbered, so that the first box of Shelf 1, Rack 2 is Box 10 (if the last box of Rack 1 was Box 9) then the next box is Box 11, then Box 12, etc.

This can be done by renaming the First Position in the Exceptions screen.

Let’s create the first example above, with uniquely numbered racks across all shelves. We want each rack to be uniquely numbered throughout the freezer, beginning with Rack 1 and ending with Rack 20, the last rack on the last Shelf, Shelf 5. To do this:

1. While viewing the freezer, select the **Define Exceptions** screen tab.
2. Click **Add**. Create the first exception: Except in Shelf: 2, There are 4 Racks, First Position 5. Press <SAVE> (see figure 1).

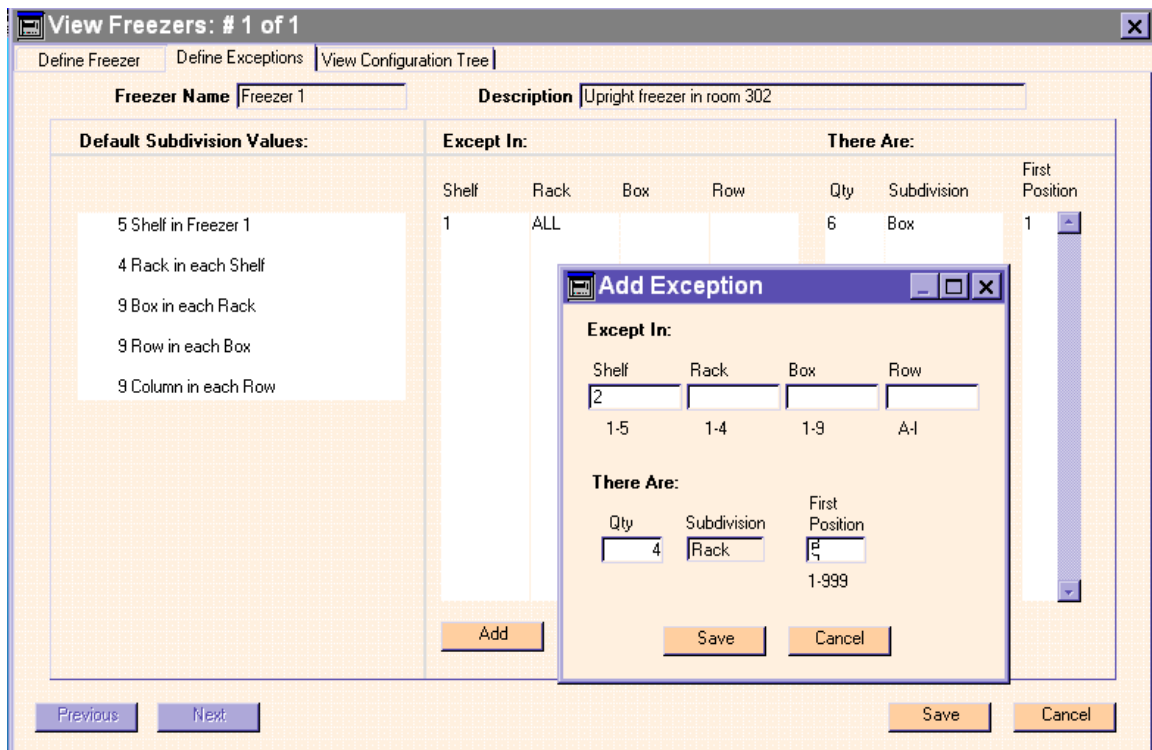


figure l

3. Create the next exception: Except in Shelf 3, there are 4 Racks, First Position 9.
4. Create the exception in Rack 4 as you did in the previous two steps, making the First Position 13.
5. Create the last exception with the First Position as Rack 17.
6. Your completed Define Exceptions screen should look like **figure m**:

**View Freezers: # 1 of 1**

Define Freezer | Define Exceptions | View Configuration Tree

Freezer Name:  Description:

**Default Subdivision Values:**

- 5 Shelf in Freezer 1
- 4 Rack in each Shelf
- 9 Box in each Rack
- 9 Row in each Box
- 9 Column in each Row

**Except In:**

Shelf	Rack	Box	Row
2			
3			
4			
5			
1	ALL		

**There Are:**

Qty	Subdivision	First Position
4	Rack	5
4	Rack	9
4	Rack	13
4	Rack	17
6	Box	1

Buttons: Previous, Next, Add, Modify, Delete, Save, Cancel

figure m

7. At the **View Configuration Tree Tab**, we can expand all the shelves to see that the racks are all numbered properly (**figure n**):

Freezer 1

Assign Alias

- Shelf 1
  - Rack 1
  - Rack 2
  - Rack 3
  - Rack 4
- Shelf 2
  - Rack 5
  - Rack 6
  - Rack 7
  - Rack 8
- Shelf 3
  - Rack 9
  - Rack 10
  - Rack 11
  - Rack 12
- Shelf 4
  - Rack 13
  - Rack 14
  - Rack 15
  - Rack 16
- Shelf 5
  - Rack 17
  - Rack 18
  - Rack 19
  - Rack 20

figure n

---

## More on Define Exceptions

### Using the term “ALL”

When defining an exception to a freezer configuration, there are two steps. The first is to define where the exception occurs. The second is to define what the exception is.

In the first step, defining an exception, use the term **all** to include every subdivision in your exception sentence.

**Example 1 use of ALL:** In a Rack/Box/Position configuration, suppose all boxes in Rack 3 have 81 vials rather than 100 vials. Our Exception sentence would read:

Except in: Rack 3 Box **All**  
There are: 81 vials

**Example 2 use of ALL:** Suppose in a Shelf/Rack/Box/Position configuration you have a situation in which every box in every Rack 3 of every shelf has an exception of 100 positions. In this case the exception sentence would read:

Except in: Shelf **All** Rack 3 Box **All**  
There are: 100 position.

**Example 2a - Using ALL to expand Row/Column box setup:**

Suppose in Example 2 above we went from 81 position boxes using alpha/numeric (A1, A2, A3..to I9) to a 100 position box (A1-J10). We would need to create 2 exception sentences. One sentence to expand the number of Rows to 10, the other to expand

the number of Columns to 10:

*Sentence 1:*

Except in: Shelf **All** Rack 3 Box **All**  
There are: 10 Row (First Position A)

*Sentence 2:*

Except in: Shelf **All** Rack 3 Box **All** Row **All**  
There are: 10 Column (First Position 1)

**Note:** *Each subdivision level can only have one name. In the above example, you cannot change row/column boxes (A1, A2, A3) in one area of a freezer to position boxes (Position 1, Position 2, Position 3) elsewhere in the same freezer.*

### Using Row/Column to define pie shaped box positions.

Many laboratories storing vials in pie shaped boxes in liquid nitrogen tanks prefer to number the box positions using an alpha/numeric row/column grid. This is because locating a position like 47 in a pie shaped box can be a bothersome task.

**Figure o** is an example of a 102 position pie shaped box. **Figure p** is an example of how the Exception screen could be written to match this box.

Each pie box in the tank will have 14 rows. But each row will have a different number of columns. When defining the box, select a default row size (in this example, the default is the largest possible row, or 12 columns).

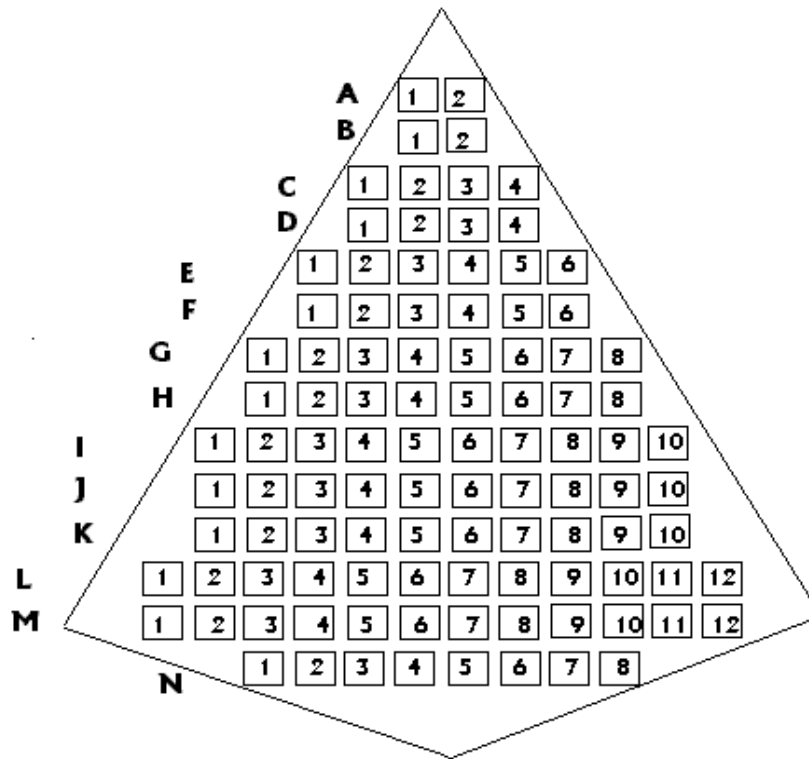


figure o

At the **Define Exceptions** screen, we need to define all the exceptions to the 12 column row, which is every row except Rows L and M:

Define Freezer | Define Exceptions | View Configuration Tree | Audit Trail

Freezer Name: Cryo Pies Description: racks with pie shaped boxes

Default Subdivision Values:	Except In:	There Are:				
	Rack	Pie	Row	Qty	Subdivision	First Position
5 Rack in Cryo Pies	ALL	ALL	A	2	Column	1
5 Pie in each Rack	ALL	ALL	B	2	Column	1
14 Row in each Pie	ALL	ALL	C	4	Column	1
12 Column in each Row	ALL	ALL	D	4	Column	1
	ALL	ALL	E	6	Column	1
	ALL	ALL	F	6	Column	1
	ALL	ALL	G	8	Column	1
	ALL	ALL	H	8	Column	1
	ALL	ALL	I	10	Column	1
	ALL	ALL	J	10	Column	1
	ALL	ALL	K	10	Column	1
	ALL	ALL	N	8	Column	1

Add Modify Delete

figure p

## Using Aliases for Freezer locations

It is possible to name a freezer subdivision by something other than its formal name. Suppose Shelf 2 is also the Chemistry Lab's shelf. You may want to name it *Chemistry shelf* as well as Shelf 2. Or perhaps you have a box in the freezer that belongs to a particular researcher. You may want to name this box for the researcher. To do this, assign an **Alias**.

**Aliases** are useful for quick searches, locating areas in the freezer easily, by a name that differentiates it from the rest of the freezer.

## To give a freezer subdivision an alias:

1. Select the freezer and click on the **View Configuration Tree Tab**.
2. Locate in the configuration tree the subdivision you want to give an alias to. Highlight the subdivision.
3. Click the **Assign Alias** button. In the dialog box, enter the alias for the subdivision you selected. (**figure q**)
4. The alias will be displayed next to the formal name of the subdivision, in the configuration tree (see inset in **figure q**).

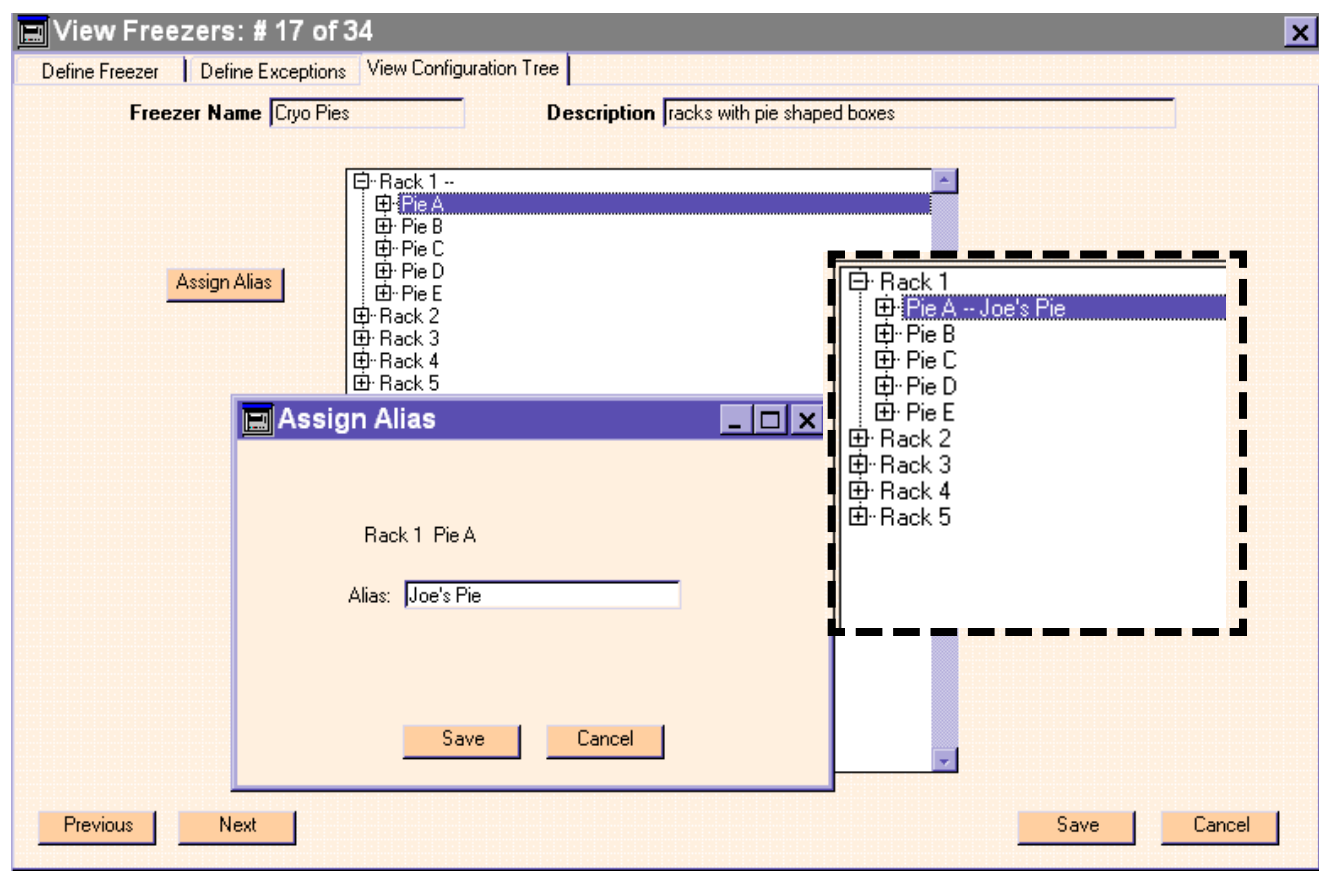


figure q

## Bone Marrow or Stem Cell storage:

**View Freezers: # 16 of 34**

Define Freezer | Define Exceptions | View Configuration Tree

**Freezer Name** Bone Marrow Tank **Description** LN2

Define Subdivisions		Define Defaults	
Subdivisions	Display As	Quantity	First Position
Frame	Numeric (1-9...)	134	1
Place	Numeric (1-9...)	4	1

Properties		Next Assignable Position	
Label for "Aliquot"	Position Assignment	Frame	Place
bag	<input checked="" type="checkbox"/> Assign each aliquot to a unique position?	5	2

Previous Next Save Cancel

figure r

**Figures r and s** show an example of a liquid nitrogen tank setup, a large 38K cryostorage tank holding 134 four place frames for a total of 536 bags. Naturally, your system may require any number of frames and places, but whatever your racking system calls for, Freezerworks 5 is ready to handle the data management for it.

**View Configuration Tree**

Bone Marrow Tank **Description** LN2

- [-] Frame 1
  - [-] Place 1
  - [-] Place 2
  - [-] Place 3
  - [-] Place 4
- [-] Frame 2
  - [-] Place 1
  - [-] Place 2
  - [-] Place 3
  - [-] Place 4
- [-] Frame 3
  - [-] Place 1
  - [-] Place 2
  - [-] Place 3
  - [-] Place 4
- [+] Frame 4 (Selected)
- [+] Frame 5
- [+] Frame 6
- [+] Frame 7
- [+] Frame 8
- [+] Frame 9
- [+] Frame 10
- [+] Frame 11
- [+] Frame 12
- [+] Frame 13
- [+] Frame 14
- [+] Frame 15
- [+] Frame 16
- [+] Frame 17
- [+] Frame 18
- [+] Frame 19

figure s



## Handling other unique configurations.

### Different subdivision names for different parts of a freezer.

Suppose, in our Freezer 1 example, we are utilizing the first rack to store microtiter plates, while the other racks are storing the boxes and vials.

Although there is great freedom in creating exceptions to the number of subdivisions throughout a freezer, Freezerworks 5 will only allow one set of subdivision names per freezer.

Figures t, u and v show the situation:

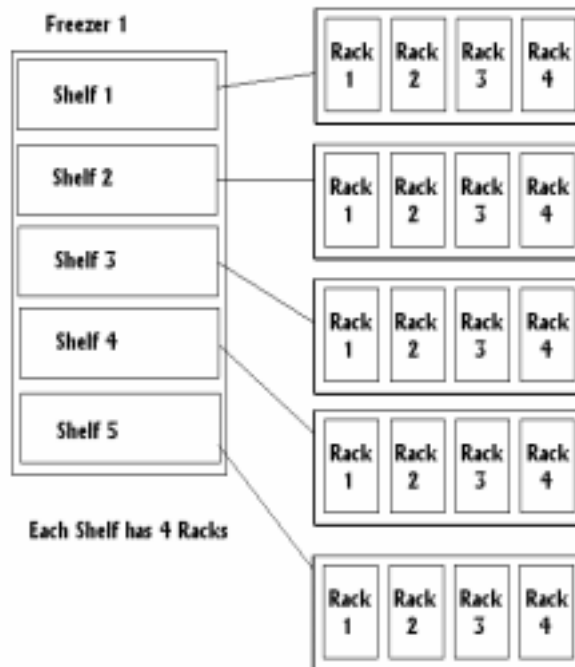


figure u

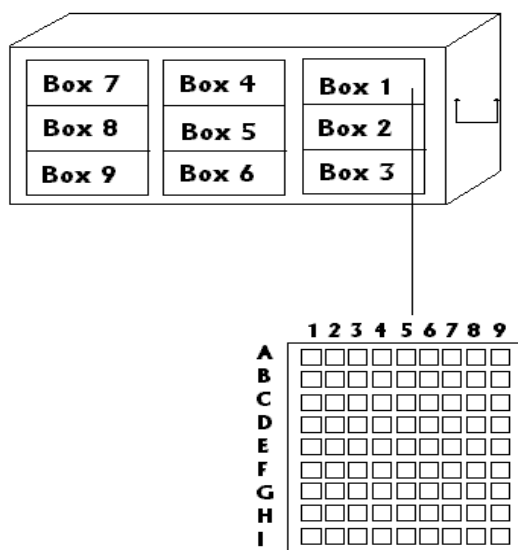


figure t

All racks in shelves 2-5 hold boxes with vials  
BUT.....

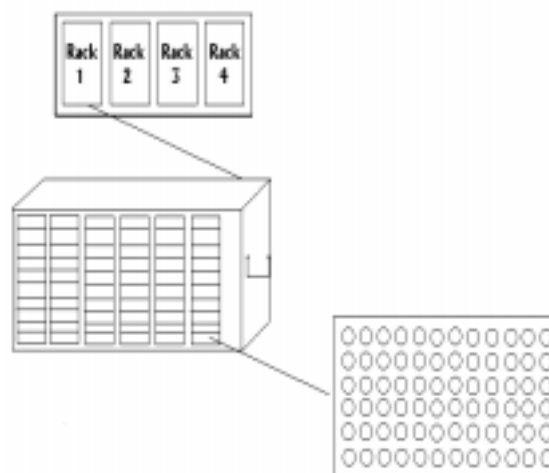


figure v

....Shelf 1 holds 4 racks with each containing 6  
“stacks” of microtiter plates, 11 per stack for  
66 plates total per rack.

In a freezer setup like this, treat the freezer (**Freezer 1**) as two separate freezers, and create two separate freezer records. Here we create a separate freezer for Rack 1 and a freezer for the remaining racks, giving the two

freezers each a descriptive name, e.g.,: **Freezer 1 - shelves 2-5** and **Freezer 1 - shelf 1 (shelf holding microtiter plates)**.

Here are examples of how we may want to configure the two freezers (**figures w and x**):

**View Freezers: # 28 of 34**

Define Freezer | Define Exceptions | View Configuration Tree

**Freezer Name** Freezer 1 - shelf 1 **Description** Shelf holding microtiter plates

Define Subdivisions		Define Defaults	
Subdivisions	Display As	Quantity	First Position
Rack	Numeric (1-9...)	4	1
Stack	Numeric (1-9...)	6	1
Plate	Numeric (1-9...)	11	1

Properties		Next Assignable Position		
Label for "Aliquot"	Position Assignment	Rack	Stack	Plate
Plate	<input checked="" type="checkbox"/> Assign each aliquot to a unique position?	1	1	1

Previous Next Save Cancel

**Figure w - Freezer 1 - Shelf 1** is defined as a separate freezer, each rack holds 6 stacks (or columns) of 11 plates. Notice we use the term "Plate" for aliquot rather than vial. Note: if we were tracking the sample in each individual cell in the plate, we would define additional subdivisions: **Rack, Stack, Plate, Row, Column**.

**View Freezers: # 24 of 34**

Define Freezer | Define Exceptions | View Configuration Tree

Freezer Name: Freezer 1 - 2 thru 5      Description: Shelves 2-5 of Freezer 1

Define Subdivisions		Define Defaults		
Subdivisions	Display As	Quantity	First Position	
Shelf	Numeric (1-9...)	4	Shelf in Freezer 1 - 2 thru 5	2
Rack	Numeric (1-9...)	4	Rack in each Shelf	1
Box	Numeric (1-9...)	9	Box in each Rack	1
Position	Numeric (1-9...)	81	Position in each Box	1

Properties		Next Assignable Position			
Label for "Aliquot"	Position Assignment	Shelf	Rack	Box	Position
Vial	<input checked="" type="checkbox"/> Assign each aliquot to a unique position?	2	1	3	78

Previous      Next      Save      Cancel

**Figure x - Freezer 1 shelves 2-5** has a conventional shelf, rack, box, position setup, with the first position starting at shelf 2. Nothing can be assigned on shelf 1 here.



---

## Chapter 5

### Enter Samples

# Enter Samples

There are two ways to enter samples in Freezerworks. The first way is to enter and save one sample at a time. This is a good way if you need to add User Defined Field information and/or Notes in addition to the freezer location information.

The second way to enter samples is by using the Batch Entry (**CLIP**) option. CLIP, the Clinical Laboratory Inventory Program, is a stand-alone product by **Dataworks Development** that is now incorporated into Freezerworks. Using the keyboard or a bar code reader, you can quickly enter a large batch of samples and assign freezer locations. This is a good way to enter samples if you only need to know where to find them and you don't need detailed information about each sample. See the section **Using the CLIP Features** for information on how to set up and use this option.

Before entering samples and storage locations, make sure you have configured your Freezers, User Defined Fields and any associated Allowable Entries, Sample Types and the System Properties.

The Samples screen has four tabs: **Samples**, **Notes**, **Transactions** and **Audit Trail**. The **Samples** tab is for storing identification and freezer location information. The **Notes** tab is similar to a large piece of paper where you may store additional information and comments that will not fit on the Samples tab. Activities such as shipping to another location or keeping notes on sample processing can be tracked on the **Transactions** tab. Multiple transactions may be entered for each aliquot. The **Audit Trail** tab will display

who created the record and who last modified the record along with the respective dates.

## The Samples Tab

### Enter a New Sample

1. At the Freezerworks main menu, select **Samples – Add New**.
2. Enter Sample identification information (ID, Date, Type and User Defined Fields) in the upper portion of the Samples screen (**figure a**).
3. Enter freezer location information in the lower portion of the Samples screen. See instructions below.
4. When you are finished entering the identification and location information, click **Save**. If you do not wish to save the information, click **Cancel**.

### Field information

**Bar Code ID** - This number uniquely identifies each specimen record in Freezerworks and is also known as the **Internal Bar Code ID**. Sometimes a Specimen number can be used for multiple records (one record may be serum, the other plasma, another DNA, etc.) but each sample record is given a unique Bar Code ID number by Freezerworks. This acts as a “license plate” for that sample, it cannot be modified in any way by the user. **DO NOT** confuse the Bar Code number with any bar codes assigned to your samples by outside programs.

**Sample ID** – Enter alphanumeric characters as defined in Sample ID Parameters of the **System Admin – Properties** menu option. An entry is required in this field.

**Sample Date** – Enter a date, or select a date by clicking on the calendar icon beside this field.

**Sample Type** – Choose a sample type from the drop-down list. Sample types are defined in the **System Admin – Sample Types** menu option. An entry is required in this field.

**User Defined Fields (UDFs)** – There are eighteen fields available for your use. These fields are defined in the **System Admin – User Defined Fields** menu option. In **Figure a**, the UDFs are *Last Name*, *First Name*, *Accession #*, etc. UDFs with a calendar icon beside them are defined as Date fields, and those with a **drop-down box** are defined with a choice list. If there is a

blank line at the top of a drop-down list, then you have the ability to add a new item to the list. A drop-down box without a blank line indicates that only users with System Administrator privileges may modify the list for that UDF through the System Administration Menu.

## Assigning Freezer Locations - Aliquots

Freezer locations may be assigned manually or automatically. **Manual assignment** involves assigning aliquots one at a time to a designated location. **Automatic assignment** allows multiple aliquots to be assigned to one freezer starting at that freezer's Next Assignable Position (NAP). In either method Freezerworks will alert you if a location has already been used, if the last position has been defined as unique (see **Create and View Freezers** for information on unique position freezers).

The screenshot shows the 'Add Samples: New Record' window. It has tabs for 'Samples', 'Notes', 'Transactions', and 'Audit Trail'. The 'Samples' tab is active. Fields include: Sample ID, Sample Date (with a calendar icon), Sample Type (drop-down), Last Name, First Name, Accession #, Storage Date (with a calendar icon), Discard Date (with a calendar icon), M/F, Physician (drop-down), Hospital (drop-down), Signed Off (drop-down), Test #1, Num Result #1, Test #1 Date (with a calendar icon), Test #2, Result #2, Test #2 Date (with a calendar icon), Time Edit, and Test #3 Date (with a calendar icon). Below these is the 'ALIQUOTS' section with a table. The table has columns: # of Aliquots, Freezer, Initial, Current, and Thaws. The # of Aliquots is 0. Below the table are buttons: Manual Add, Auto Assign, Modify, and Delete. At the bottom are buttons: Previous, Next, Save, and Cancel.

# of Aliquots	Freezer	Initial	Current	Thaws
0				

figure a - the samples entry screen

**# of Aliquots:** This field is useful if you are logging in sample information now and will assign aliquot locations later. If you are printing bar code labels, Freezerworks will use this field to determine how many to print for this sample.

As aliquots are assigned to a sample, **# of Aliquots** will be automatically updated to match the total number of aliquots assigned. The next step is to tell Freezerworks where to place these aliquots.

4. Enter the Initial and Current volumes, and the Number of Thaws.

5. Click **Save** to record the entry. Freezerworks will display another Add Aliquots box for your next aliquot. Click **Cancel** when you are finished entering aliquots. Remember to click **Save** on the Samples screen to permanently store the new aliquot information.

## Using Auto Assign

1. On the Samples screen, click the **Auto Assign** button near the bottom of the screen.

2. In the **Auto Assign Positions** box, select the freezer where you will store this aliquot.

3. After selecting the freezer, the freezer's Next Assignable Position or NAP (*Start Assigning At*) will be displayed (**Figure c**). Freezerworks will begin assigning aliquots at this position. If you want to assign aliquots starting at a different location, click into any subdivision field and edit the value.

figure b

## Using Manual Add

1. On the Samples screen, click the **Manual Add** button near the bottom of the screen.

2. In the **Add Aliquots** box, select the freezer where you will store this aliquot.

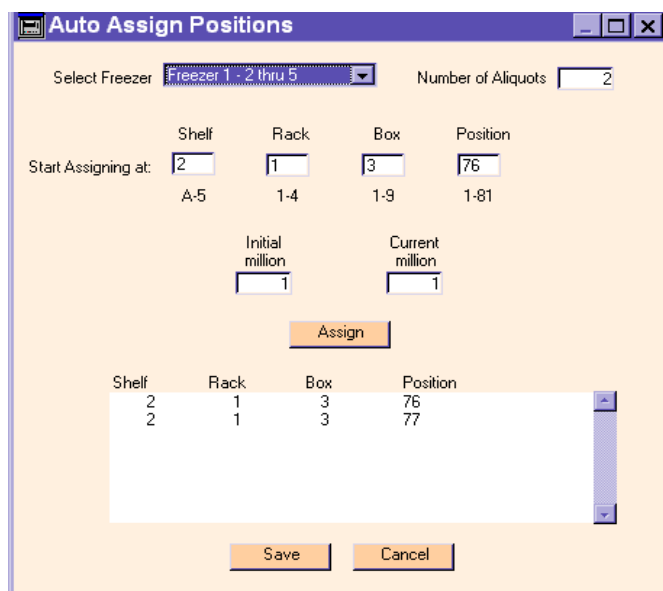
3. After selecting the freezer, blank fields will appear corresponding to that freezer's subdivisions (**figure b**). Enter the aliquot location in the appropriate fields. As you click in each field, the range of allowable entries will be displayed for each subdivision.

figure c



4. Enter the number of aliquots to assign.

5. Click **Assign**. You will see the freezer location assignments for each numbered aliquots in the display box (**figure d**). Click **Save** to record the positions. Freezerworks will assign aliquots to these positions and update the NAP. If this is a non unique positions freezer (i.e., more than one aliquot can occupy an identical location) all your aliquots will have identical positions and the NAP will not update but remain the same until you manually change it.



The 'Auto Assign Positions' dialog box is shown. It has a title bar with a standard icon and window controls. The main area is light orange. At the top, 'Select Freezer' is a dropdown menu showing 'Freezer 1 - 2 thru 5'. To its right is 'Number of Aliquots' with a text box containing '2'. Below these are four input fields: 'Shelf' (2), 'Rack' (1), 'Box' (3), and 'Position' (76). Under 'Shelf' is the label 'A-5', under 'Rack' is '1-4', under 'Box' is '1-9', and under 'Position' is '1-81'. Below these are 'Initial million' (1) and 'Current million' (1) text boxes. An 'Assign' button is centered below these. At the bottom is a table with columns 'Shelf', 'Rack', 'Box', and 'Position'. The table contains two rows: (2, 1, 3, 76) and (2, 1, 3, 77). At the very bottom are 'Save' and 'Cancel' buttons.

Shelf	Rack	Box	Position
2	1	3	76
2	1	3	77

figure d

6. Freezerworks will then display another Auto Assign Positions box for more aliquots. Click **Cancel** when you are finished entering aliquots. Remember to click **Save** on the Samples screen to permanently store the new aliquot information.

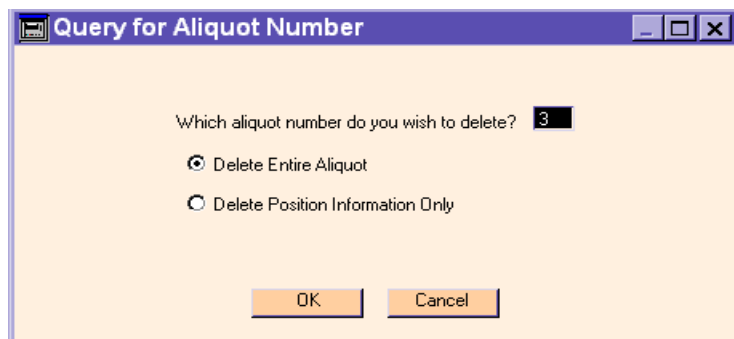
## Modify Aliquots

Aliquot information (position, volume and number of thaws) may be modified by double clicking directly on the aliquot on the Samples screen, or by highlighting the aliquot and clicking **Modify**. Either method will display the Modify Aliquot box where you can change the location, aliquot amount or number of thaws. Remember to click **Save** on the Samples screen to permanently save your changes.

## Delete Aliquots

To delete an aliquot (not the entire sample record, but an aliquot assigned to the record), highlight the appropriate aliquot and click **Delete**. Freezerworks will confirm the aliquot number to delete (**figure e**). Click **OK** to delete the aliquot or **Cancel** to abort from this process.

You have the option of either deleting all aliquot data on this aliquot (transactions, thaws, notes) as well as the location, or just the location. In this way you can free up aliquot positions for reuse in your freezer, while keeping historical and research information on these aliquots.



The 'Query for Aliquot Number' dialog box is shown. It has a title bar with a standard icon and window controls. The main area is light orange. It contains the text 'Which aliquot number do you wish to delete?' followed by a text box containing '3'. Below this are two radio buttons: 'Delete Entire Aliquot' (selected) and 'Delete Position Information Only'. At the bottom are 'OK' and 'Cancel' buttons.

figure e

**Important:** Remember to click **Save** on the **Samples** screen to permanently save your changes.

**The Notes Tab**

The **Notes** tab is a place to store any additional information you want to record for a sample (figure f). You can search by words or phrases

placed in notes using the **Generic Search** option.

**The Transactions Tab**

The Transactions tab stores and lists multiple activities and notes for each aliquot (Figure g).

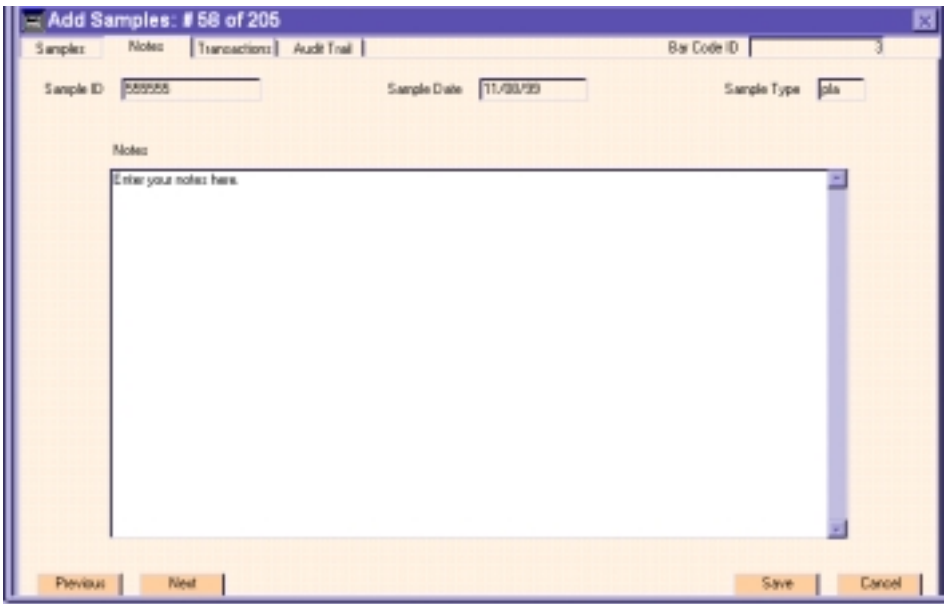


figure f - The Notes Tab

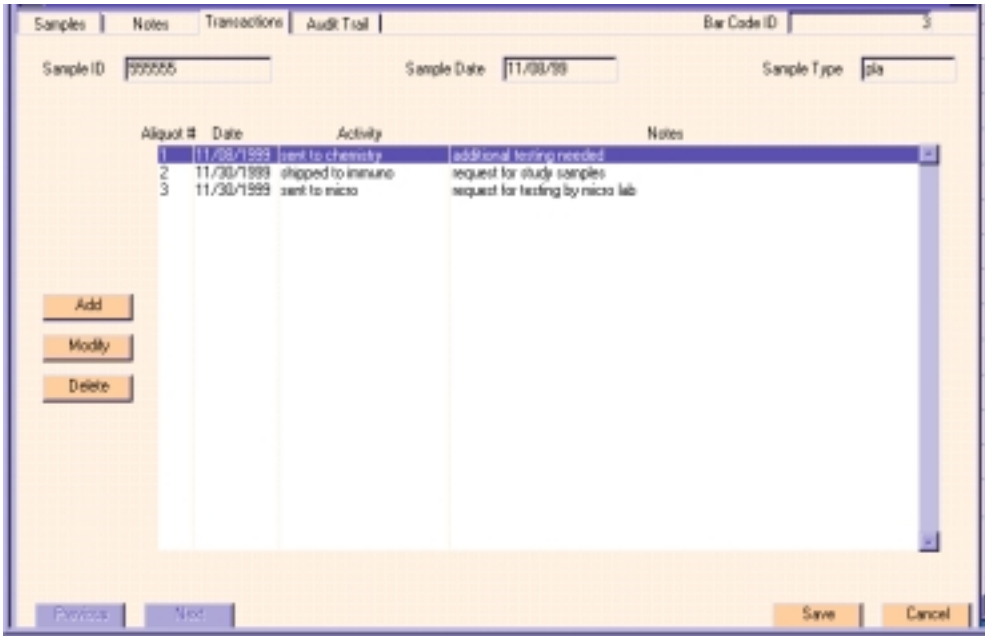
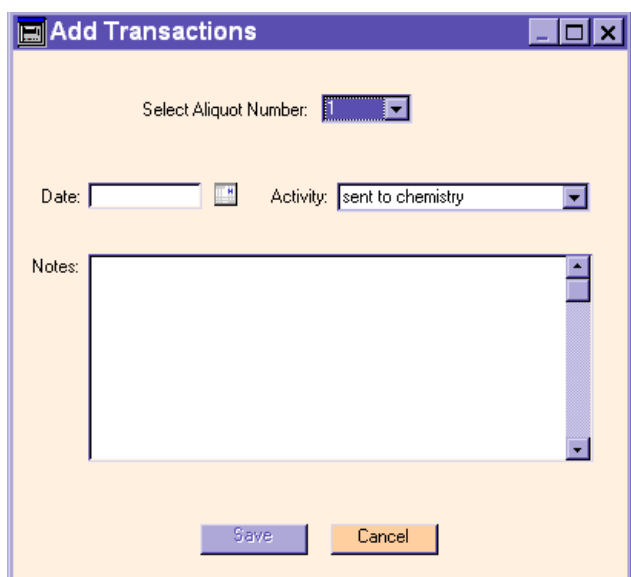


figure g - the transactions tab, tracking movement of aliquots

---

## Enter Transactions

1. Click **Add** on the Transactions tab.
2. Select an aliquot number from the drop down box on the Add Transactions screen (**Figure h**).



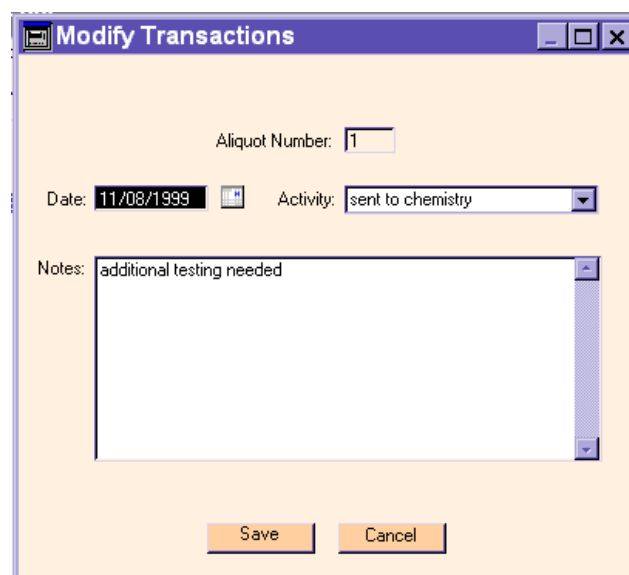
*figure h - adding a transaction*

3. Enter a Date for the transaction, or select it using the calendar icon.
4. Enter an Activity (e.g., shipped to Dr. Jones). If you have already entered some activities, you may select an activity from the drop-down list. If none of the choices are acceptable, you may enter a new activity by selecting the blank entry in the drop-down box and typing in the new activity. You can search by activity using the **Search by Transactions** option.
5. Enter additional information in the Notes field if you need to track more than the Activity.

6. Click **Save** to record the transaction. A blank record will appear for your next transaction. Click **Cancel** when you are finished entering transactions.

## Modify Transactions

1. Double click the appropriate transaction or highlight it and click **Modify**.
2. Update the information on the Modify Transactions screen, then click **Save** to record the information (**figure i**).



*figure i - modifying a transaction*

## Delete Transactions

1. Highlight the transaction to delete, then click **Delete**. Freezerworks will ask you to confirm you want to delete this transaction.
2. Click **OK** if you are certain this is the correct transaction to delete. Press **Cancel** if you need to cancel the deletion. Remember to click **Save** on the Transactions tab to permanently record your changes.

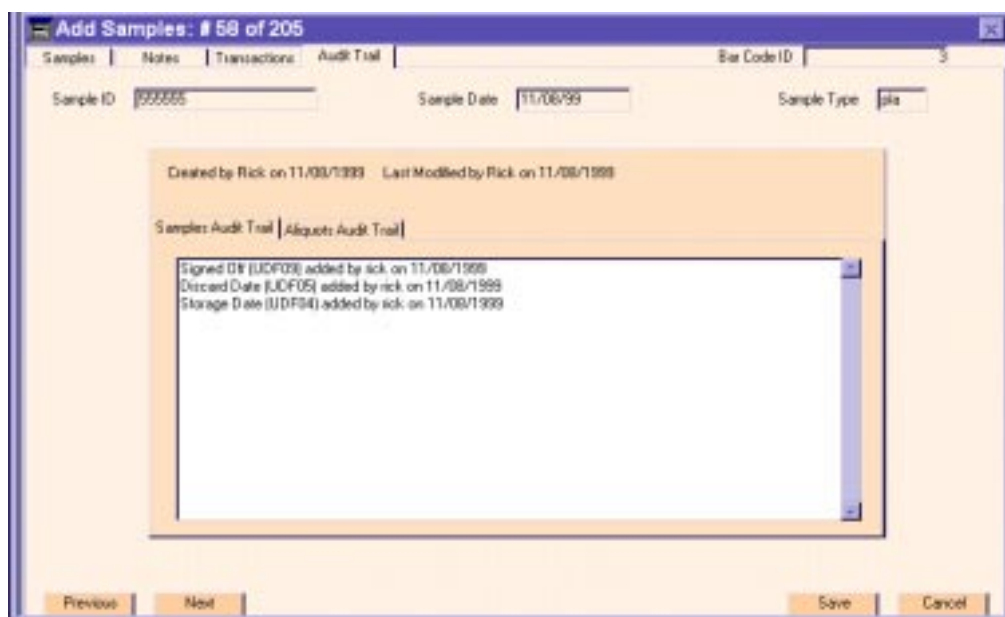
## The Audit Trail Tab

The Audit Trail tab displays who created the sample record and who last modified the record along with the respective dates (**figure j**). Every addition or modification made to the record is stored as well with the name of the user involved. For information on creating Users, see the **System Administration** section.

## Batch Entering Samples (CLIP)

CLIP, the Clinical Laboratory Inventory Program, is a stand-alone product now incorporated into Freezerworks. Using the keyboard or a bar code reader, you can quickly enter a large batch of samples and assign freezer locations. This is a good way to enter samples if all you need to know is where to find them and you don't need to enter detailed information about each sample.

For information on entering samples using the CLIP method, see the section titled *Using the Clinical Lab (CLIP) Features* in this manual.



*figure j - the audit trail*

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## Chapter 6

# Using the Clinical Lab (CLIP) Features

# Using the Clinical Lab (CLIP) Features

Clinical laboratories will often have very different sample storage needs than the research or production lab. The clinical lab may have hundreds of patient samples it needs to store in refrigerator racks for a short term basis (perhaps for one week to one month).

## *No more tube by tube sample hunting*

With the CLIP feature and the lab's existing bar code accessioning system, the clinical lab can use Freezerworks 5 to quickly assign a refrigerator location to each sample. Should a physician ask the lab to perform an additional test (or "add-on") on the sample, any lab technician can instantly find the exact location for the sample without the need to hunt, tube by tube, through an entire rack. Normally, assigning sample locations is done after the initial test, but a high volume lab may wish to use Freezerworks to find samples prior to the initial test as well.

What the CLIP features offer are a way to store samples quickly, find samples quickly, and discard expired samples easily.

## Step 1: Configuring your Refrigerators

The section Create and View Freezers describes how to configure the program to match your freezer/refrigerator racking systems. Most clinical labs will have one or more refrigerators with shelves and tube racks. You may want to simply assign a name or number to each shelf, and to each rack on each shelf. For example, say Refrigerator 1 is a double door model, holding 8 shelves numbered 1-8, each shelf holding up to 6 racks, numbered 1-6, each rack holding 72 tubes in a 12x6 grid.

An example of just such a setup is shown in **figure a**.

Any exceptions to a rack size, etc. can be made at the Exceptions tab, also covered in the **Create and View Freezers** section.

**Add Freezers: New Record**

Define Freezer | Define Exceptions | View Configuration Tree

Freezer Name: Refrigerator 1      Description: Refrigerator on the west wall

Define Subdivisions		Define Defaults	
Subdivisions	Display As	Quantity	First Position
Shelf	Numeric (1-9...)	8	Shelf in Refrigerator 1: 1
Rack	Numeric (1-9...)	6	Rack in each Shelf: 1
Row	1 Alpha (A-Z)	6	Row in each Rack: A
Column	Numeric (1-9...)	12	Column in each Row: 1

Properties		Next Assignable Position			
Label for "Aliquot"	Position Assignment	Shelf	Rack	Row	Column
Vial	<input checked="" type="checkbox"/> Assign each aliquot to a unique position?	1	1	A	1

Previous    Next    Save    Cancel

figure a

## Naming Refrigerator locations by days of the week

Many Clinical labs need to keep track of samples by the day of the week the sample was processed. This method can be incorporated into Freezerworks as well. For example, in Refrigerator 1, suppose our lab keeps **Monday's** samples on shelf 1, **Tuesday's** on shelf 2, **Wednesday's** on shelf 3, etc.

There are two ways to do this. The first is to create 7 (or 8) "logical refrigerators" out of this one refrigerator. Using the same double door refrigerator in our example, we could create a Freezer called Monday, which is actually shelf 1, a Freezer called Tuesday,

which is actually shelf 2, etc. **Figure b** is an example of how the Monday refrigerator is set up. Because shelf 1 *is* our refrigerator **Monday**, we only need to define the racks and rack locations for our subdivisions.

The other, and more easily understood, way to utilize our day of the week designations is to assign these days as "aliases". This is done on the **View Configuration Tree** tab, after saving our freezer/refrigerator. Again, this is explained in the Create and View Freezers section. **Figure c** shows an example of how each shelf can be named for a day of the week as well.

Define Subdivisions		Define Defaults	
Subdivisions	Display As	Quantity	First Position
Rack	Numeric (1-9...)	6	Rack in Monday
Row	1 Alpha (A-Z)	6	Row in each Rack
Column	Numeric (1-9...)	12	Column in each Row

Properties		Next Assignable Position		
Label for "Aliquot"	Position Assignment	Rack	Row	Column
Tube	<input checked="" type="checkbox"/> Assign each aliquot to a unique position?	1	A	1
		1-6	A-F	1-12

figure b - here a refrigerator shelf is defined as a freezer called "Monday".

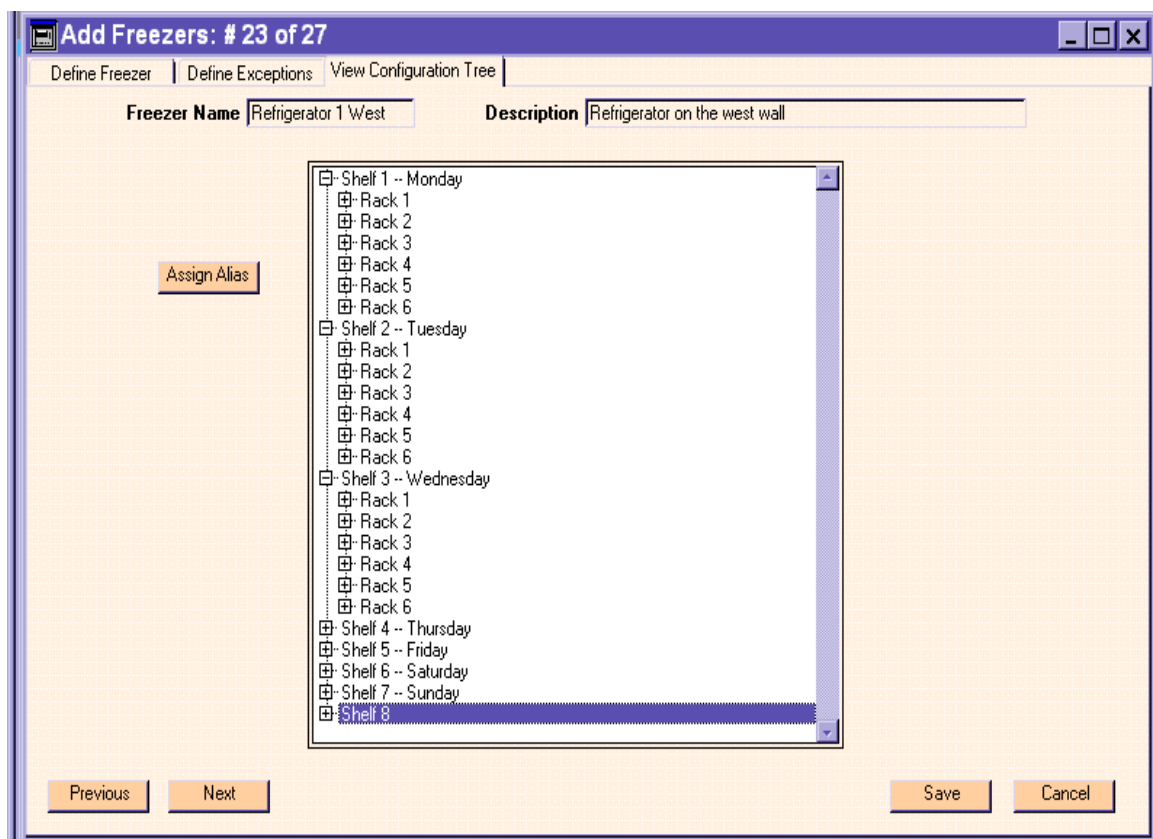


figure c - each shelf is given an alias for the day of the week samples stored there.

## Step 2: Set System Properties

Clinical laboratories normally have a schedule for throwing away samples. Perhaps the chemistry samples are saved for one week, the hematology samples are saved for perhaps two weeks, and so forth. Freezerworks 5 gives you many ways to select samples for deletion, including two methods designed specifically for CLIP users: by **freezer location** and/or **discard date**.

Should you wish to use the discard date method, it is necessary to select a user

defined field to serve as the discard date, and another to serve as the storage date.

To configure for CLIP, follow these steps:

1. Select a user defined field to serve as the Storage Date, and another to serve as the Discard Date. To do this, go to the **System Admin** pull down menu, then select **User Defined Fields (UDFs)**.

**Figure d** shows an example of two UDFs selected as such. **Figure e** shows how the UDFs are displayed on the **Sample Entry** screen where samples are viewed and updated.



**Configure User Defined Fields**

Configure | **View Layout**

	Used?	Label	Type	Length	Define Allowable Entries?	User Modify?
#1	<input checked="" type="checkbox"/>	Storage Date	Date	10	<input type="checkbox"/>	<input type="checkbox"/>
#2	<input checked="" type="checkbox"/>	Discard Date	Date	10	<input type="checkbox"/>	<input type="checkbox"/>
#3	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#4	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#5	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#6	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#7	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#8	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#9	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#10	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#11	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#12	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#13	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#14	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#15	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#16	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#17	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>
#18	<input type="checkbox"/>			0	<input type="checkbox"/>	<input type="checkbox"/>

Save Cancel

figure d (above) - click **View Layout** to see how these fields are displayed on the **Samples** screen (figure e below).

**Configure User Defined Fields**

Configure | **View Layout**

Bar Code ID

Sample ID  Sample Date  Sample Type

Storage Date  Discard Date

ALIQUOTS:

# of Aliquots	Freezer	Initial	Current	Thaws
<input type="text"/>				

Manual Add  
Auto Assign  
Modify  
Delete

Previous Next Save Cancel

figure e

2. Save your date field setups, and go to **System Admin - Properties (figure f)**.
3. Under CLIP configuration, select **“Storage Date”** and **“Discard Date”** from the corresponding pull down menus.
4. For the **Default number of days to hold sample**, you can define a default discard date any number of days after the storage date. If you normally discard samples a week after storage, enter a 7. If it varies widely and often, you may wish to leave this field blank.
5. **Sample ID Parameters:** You will also need to consider the length of your Sample ID. Be sure you allow enough characters under **Maximum Length** so that the entire ID number can be entered here.

6. **Sample Types** - You must have at least one sample type defined in order to enter samples using the CLIP Batch Entry screen. See the **System Administration** section for information on defining Sample Types.

### Step 3: Entering Samples Using the CLIP Batch Entry Screen

Using the keyboard or a bar code reader, you can quickly enter a large batch of samples and assign freezer locations. This is a good way to enter samples if all you need to know is where to find them and you don't need to enter detailed information about each sample.

**Set System Properties**

**Uniqueness Check on Samples**

☒ Check for Duplicates in Samples?

Select up to 3 fields which will constitute the key for a unique sample.

Sample ID

Sample Date

Sample Type

**Sample ID Parameters**

Enter Minimum Length of Sample ID: 6

Enter Maximum Length of Sample ID: 10

Enter Edit Type of Sample ID: Left justified

**CLIP Configuration**

UDF which holds the Storage Date: Storage Date

UDF which holds the Discard Date: Discard Date

Default number of days to hold samples: 14

Save Cancel

figure f

## Enter Samples

1. At the Freezerworks main menu, select **Samples – Batch Enter (CLIP)**.
2. Select a freezer from the drop-down list.
3. After selecting the freezer, Freezerworks will display the Starting Position and the next thirty Assignable Positions (*figure g*). If you want to start assigning locations beginning at a different location, click **Change NAP**. Enter a new starting position.
4. The Dates may be changed by typing in the fields or by selecting new dates using the calendar icon. The Dates and the Default Number of Days to Hold Samples are defined in **System Admin - Properties**.

5. Select a **Sample Type** for ALL samples being entered. If you have defined a default amount, the **Amount** field will display it.

6. Enter Sample IDs by using the keyboard or a bar code reader. The number of characters allowed for a Sample ID is controlled at the **System Administration - Properties** screen.

7. **Inserting spaces:** If you notice that you skipped one or more Sample IDs, place the cursor in the field where you need a blank field(s) and click **Insert**. One blank field will be inserted every time you click the button.

8. **Removing spaces:** If you notice that you added an incorrect Sample ID or you inserted too many blank fields, place the cursor in the appropriate field and click **Delete**. One field will be deleted every time you click the button.

The screenshot shows the 'Batch Entry - CLIP' window. At the top, there's a 'Please select Freezer:' dropdown menu with 'Beth's 5 - 8/17/99' selected. Below this are 'Storage Date:' (09/08/1999) and 'Discard Date:' (09/15/1999) fields, each with a calendar icon. To the right, 'Start Assigning at NAP:' is set to 1, and 'Next Filled Position:' is NONE. There are also 'Sample Type:' and 'Amount:' fields, and a 'Change NAP' button. The main area contains two tables of assignable positions. The left table has 15 rows, and the right table has 15 rows. Each row has columns for Sample ID, Shelf, Rack, Box, Row, and Column. The bottom of the window has 'Insert', 'Delete', 'Save', and 'Cancel' buttons.

Sample ID	Shelf	Rack	Box	Row	Column
	1	1	1	7	B
	1	1	1	7	C
	1	1	1	7	D
	1	1	1	7	E
	1	1	1	7	F
	1	1	1	7	G
	1	1	1	7	H
	1	1	1	7	I
	1	1	1	8	A
	1	1	1	8	B
	1	1	1	8	C
	1	1	1	8	D
	1	1	1	8	E
	1	1	1	8	F
	1	1	1	8	G

Sample ID	Shelf	Rack	Box	Row	Column
	1	1	1	8	H
	1	1	1	8	I
	1	1	1	9	A
	1	1	1	9	B
	1	1	1	9	C
	1	1	1	9	D
	1	1	1	9	E
	1	1	1	9	F
	1	1	1	9	G
	1	1	1	9	H
	1	1	1	9	I
	1	1	2	1	A
	1	1	2	1	B
	1	1	2	1	C
	1	1	2	1	D

*figure g*

## Using the Bar Code scanner to enter Sample IDs

Freezerworks 5 requires the user to press <ENTER> or <TAB> to move the cursor from one Sample ID field to the next. To maximize use of your bar code scanner, you will want to program it to place an <ENTER> command after each read. All standard scanners have the capability to be programmed this way. Consult your scanner manual or contact the manufacturer's customer support department for instructions on how to do this.

9. Click **Save** to store the sample and location information. One Sample record will be saved for each ID. This means that even if you enter 30 aliquots for the same Sample ID, you will have 30 separate sample records.

10. After the records are saved, the Batch Entry screen will display the next thirty

consecutive positions available. Click **Cancel** when you are finished entering samples.

You don't have to fill all thirty Sample IDs. You also don't have to fill the Sample IDs consecutively. If you skip some locations, those locations will be left empty when you save the samples.

The screenshot shows the 'Batch Entry - CLIP' window. At the top, there are fields for 'Please select Freezer:' (set to 'Batch 5 - 8/17/99'), 'Storage Date:' (03/08/1999), and 'Discard Date:' (03/15/1999). Below these are 'Sample Type:' and 'Start Assigning at NAP:' (1, 1, 1, 7, 8). A 'Change NAP' dialog box is open in the center, allowing the user to change the 'Start Assigning at' position. The dialog box has fields for 'Shelf', 'Rack', 'Box', 'Row', and 'Column', with values 1, 1, 1, 7, and 8 respectively. The main window displays a table of sample locations with columns for Sample ID, Shelf, Rack, Box, Row, and Column. The table is currently empty, and the 'Change NAP' dialog box is open over it.

figure h - changing the next assignable position

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## Step 4: Locating Saved Samples

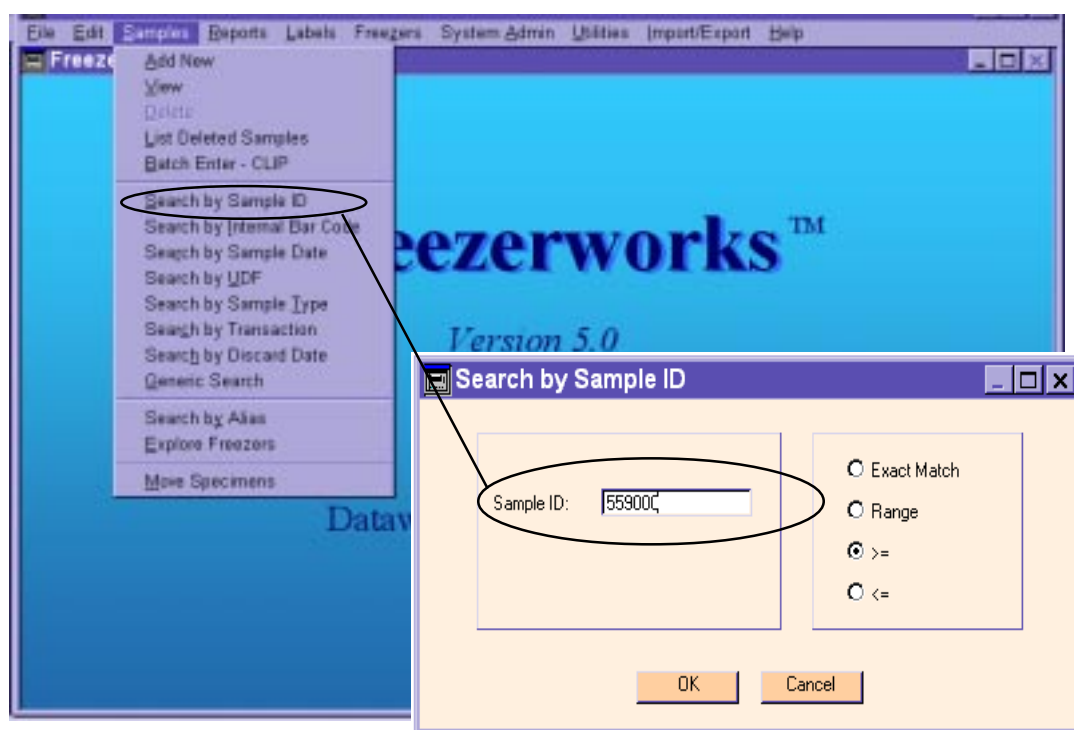
Use the Samples pull down menu to find many ways to search and locate samples after you store them. See the section on **Search Options** for the available methods.

The most likely way a CLIP user will need to search and find is by using the **Search by Sample ID (figure i)** option.

**Note:** CLIP users should be careful not to confuse *Search by Sample ID* with *Search by Internal Bar Code*. The latter refers to bar coded ID numbers assigned by Freezerworks. This does not refer to bar coded IDs assigned outside of Freezerworks but inputted into Freezerworks as the Sample ID.

When Freezerworks locates the sample you request, it places it into the Samples Output Form (**figure j**).

Double click on a Sample ID to call up the Entry screen, where you can find the freezer/refrigerator location and make any updates to the sample.



*figure i* - The preferred method to find a clinical sample is by using the Search by Sample ID option. A search for all Sample IDs greater than or equal to 559000 gave us the following display of samples in the Samples Output form (**figure j**). **Double click** on a sample to see the entry screen and the sample's storage location.



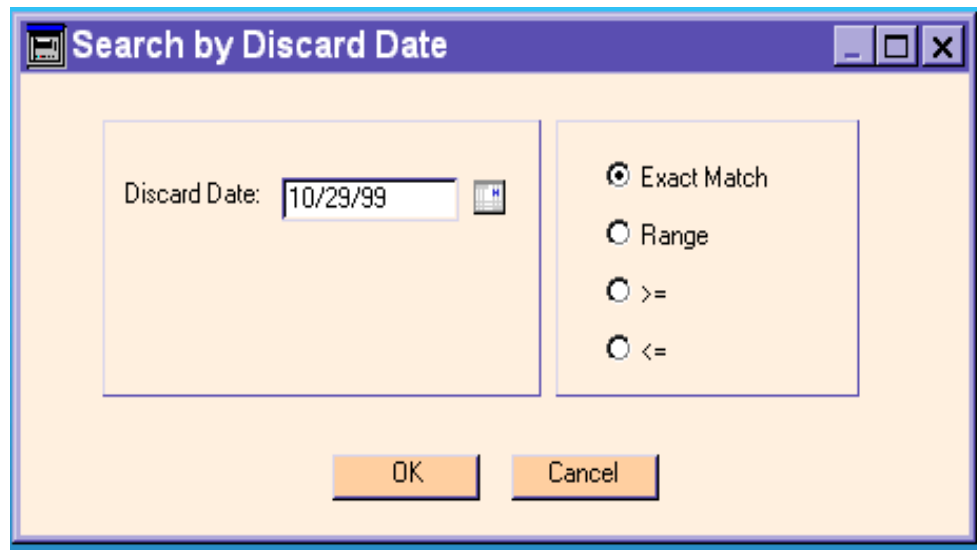


figure k

**Above**, searching for samples based on a discard date.

**Below**, selecting the samples found with that discard date to delete.

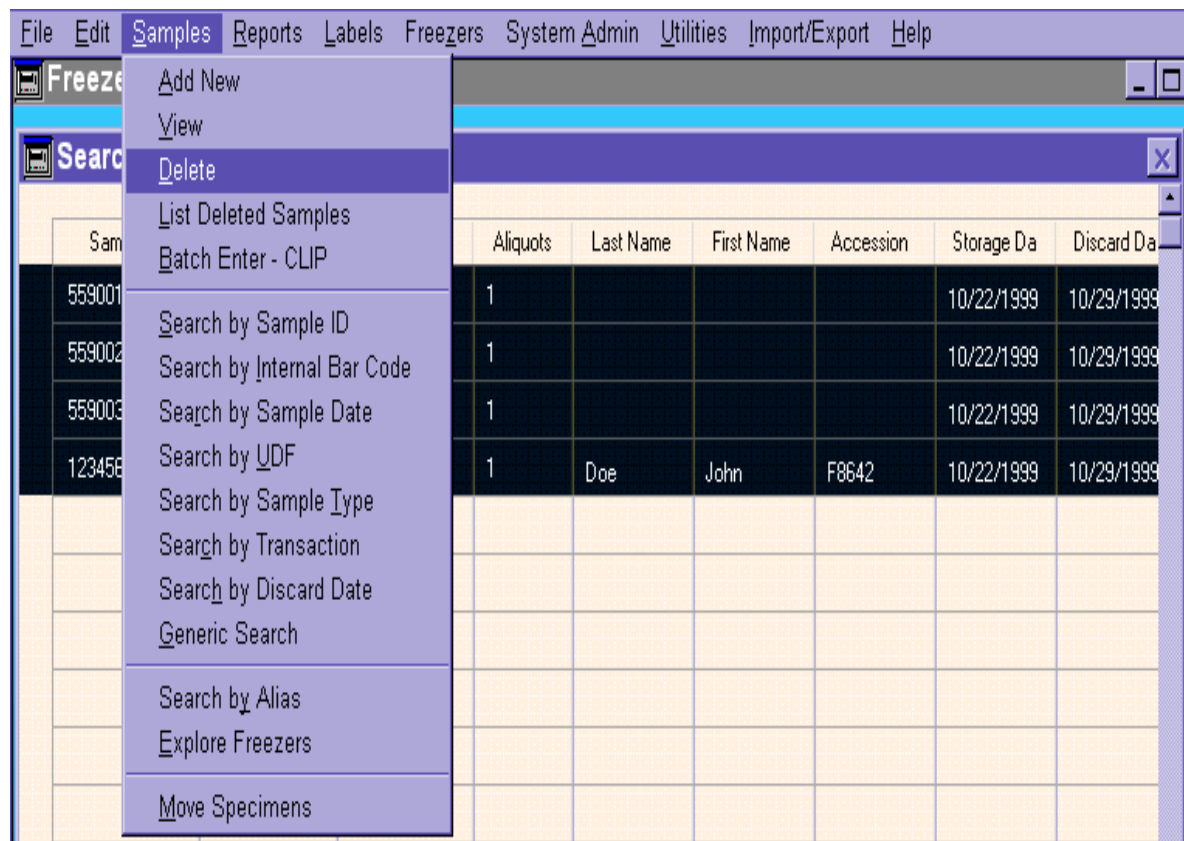


figure l



4. To delete all selected samples, highlight them and select **Samples - Delete (figure l)**. To select them all, or to select a large subset, click on the first sample, then scroll down to the last one, hold down the shift key, and click on the last sample you want selected. This will highlight all selected as we see in **figure l**.

5. Before deleting the samples, you may want a report of the samples for a paper backup. A user confirmation prompt will give you the option of printing a verification report of samples selected for deletion. Click the **Print Verification Report First** box to print this report.

6. After printing the report, Freezerworks will prompt you

*Do you still want to delete the selected samples?*

Select <OK> to delete, <Cancel> to cancel the deletion.

## Removing Samples by Location:

You may prefer to delete an entire rack of specimens by choosing that rack. With Freezerworks you can empty positions within a freezer by choosing the **Samples - Explore Freezers** option, and use the Explorer tree structure to scroll and view a freezer. A freezer subdivision can be emptied by highlighting it and then clicking <Delete> (**figure m**).

This will empty the positions in the freezer subdivision you selected, but the Sample ID information will remain in the database (minus the location). Only the location of the samples are deleted with this method, not the sample records themselves.

This may be a preferred method for labs that wish to keep the freezer locations up to date, clearing and reusing racks and shelves, yet would like to keep Sample ID records for a while longer, for a history of samples once logged in but now gone. These samples can later be deleted from the sample database entirely using the other **Search and Delete** options (see the **Searching for Samples** section of this manual for more information).

Another way to select samples by location for deletion purposes is to use the **Samples - Search by Location** option. Select the freezer and subdivision (see the **Searching for Samples** section of this manual) and then select **Samples - Delete** for remove the samples from the freezer.

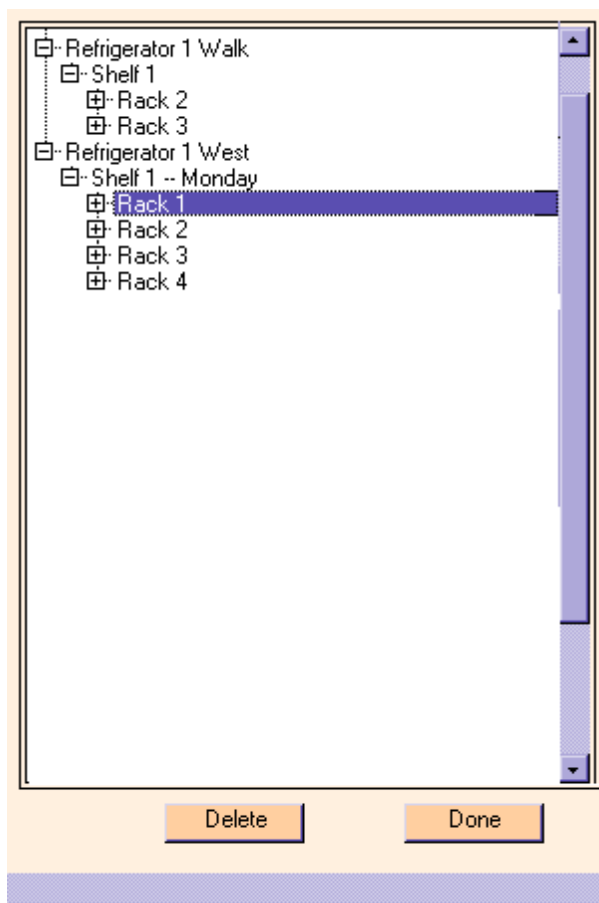


figure m



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## Chapter 7

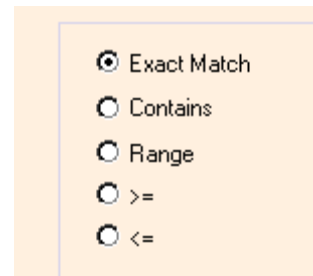
# Searching for Samples

# Searching for Samples



## Search Parameters

Some search options have five search parameters to choose from: **Exact Match** (finds records that exactly match your entry), **Greater than or Equal To, Less Than or Equal To, Contains** (all records that include a string of characters in a field - e.g., all samples with a “991” included anywhere in the data field), and **Range** (all samples with values between two data points, e.g., between 01/01/1999 and 01/01/2000).



## Search Options

There are several predefined search options in the Freezerworks Samples menu option. If you wish to search by one field at a time (e.g., **Sample ID** or **Sample Date**), then these options provide a quick and easy way to locate your specimen(s). They can also be used to narrow a search. For example, you can first select samples by a **Sample Type**, then narrow it to select those records that fall within a certain date range.

Alternatively, the **Generic Search** option is useful if you wish to search by a combination of fields (e.g., **Sample Date AND Sample Type**).

## The Wildcard Character (@)

A Wildcard is a character that can substitute for one or more missing characters.

If you don't know the exact word or number you are looking for, then you can use the wildcard character (@) after the value to be searched for (e.g., “9@” for all Sample IDs beginning with the number 9, or “S@” for all Last Names beginning with the letter S).

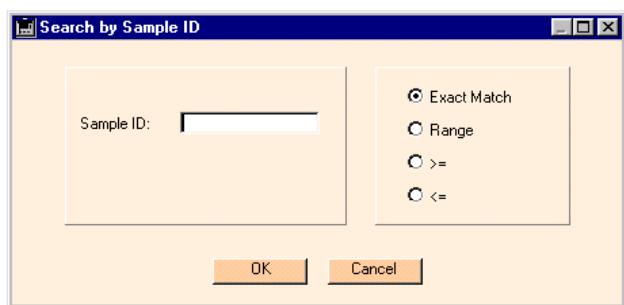


figure a

## Search by Sample ID

1. At the Freezerworks main menu, select **Samples – Search by Sample ID**.
2. In the Search By Sample ID screen, enter the Sample ID (or beginning Sample ID if you are searching for a range of samples) you want to find (**figure a**).
3. Click a radio button to choose the search parameter. If you choose Range, an additional field will be displayed for you to enter the ending Sample ID.
4. Click **OK**. Freezerworks will display all the matching records. Double click on a record to display its sample information.

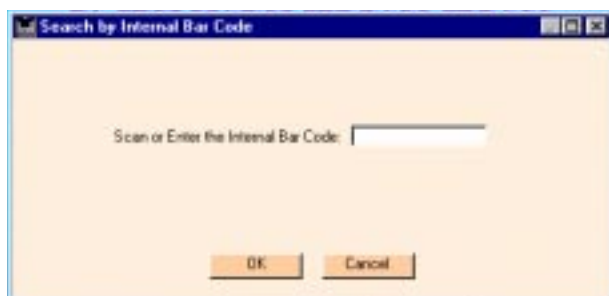


figure b

## Search by Bar Code

1. At the Freezerworks main menu, select **Samples – Search by Internal Bar Code**.
2. In the Search by Internal Bar Code screen, scan or type the bar code number you want to find (**figure b**).
3. Click **OK**. Freezerworks will display all the matching records. Double click on a record to display its sample information.

## Search by Sample Date

1. At the Freezerworks main menu, select **Samples – Search by Sample Date**.
2. In the Search by Date screen, select a date from the calendar or type one into the field (**figure c**).

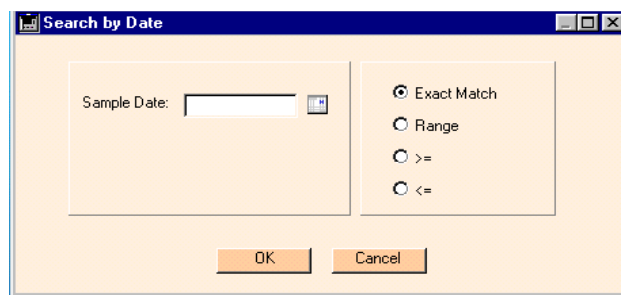


figure c

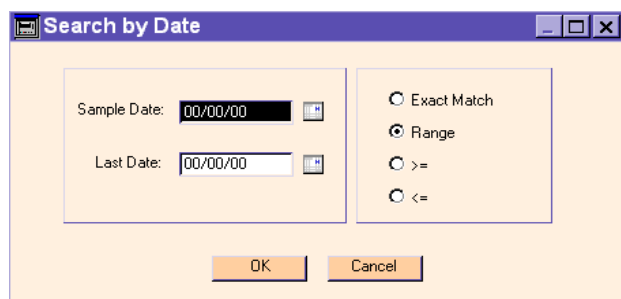


figure d

3. Click a radio button to choose the search parameter. If you choose **Range**, an additional field will be displayed for you to enter the ending Sample Date (**figure d**).

4. Click **OK**. Freezerworks will display all the matching records. Double click on a record to display its sample information.

## Search by UDF

1. At the Freezerworks main menu, select **Samples – Search by UDF**.

2. In the Search by UDF screen, highlight the UDF you wish to search by.

3. a) If the UDF has an associated **Allowable Entries** list, then the list will be displayed for you to choose one of the entries (**figure e**). Select the list item you wish to search by.

b) If the UDF does not have an Allowable Entries list, then you may enter a string to search by (**figure f**). Remember to use the Wildcard Character if you do not know the exact spelling or number, or use the **Contains** search parameter. Freezerworks will search for all samples containing that string in the selected UDF.

c) If the UDF is a date, select a date from the calendar or type one into the field (**figure g**).

4. Click a radio button to choose the search parameter. If you choose **Range**, an additional field will be displayed for you to enter the ending value.

5. Click **OK**. Freezerworks will display all the matching records. Double click on a record to display its sample information.

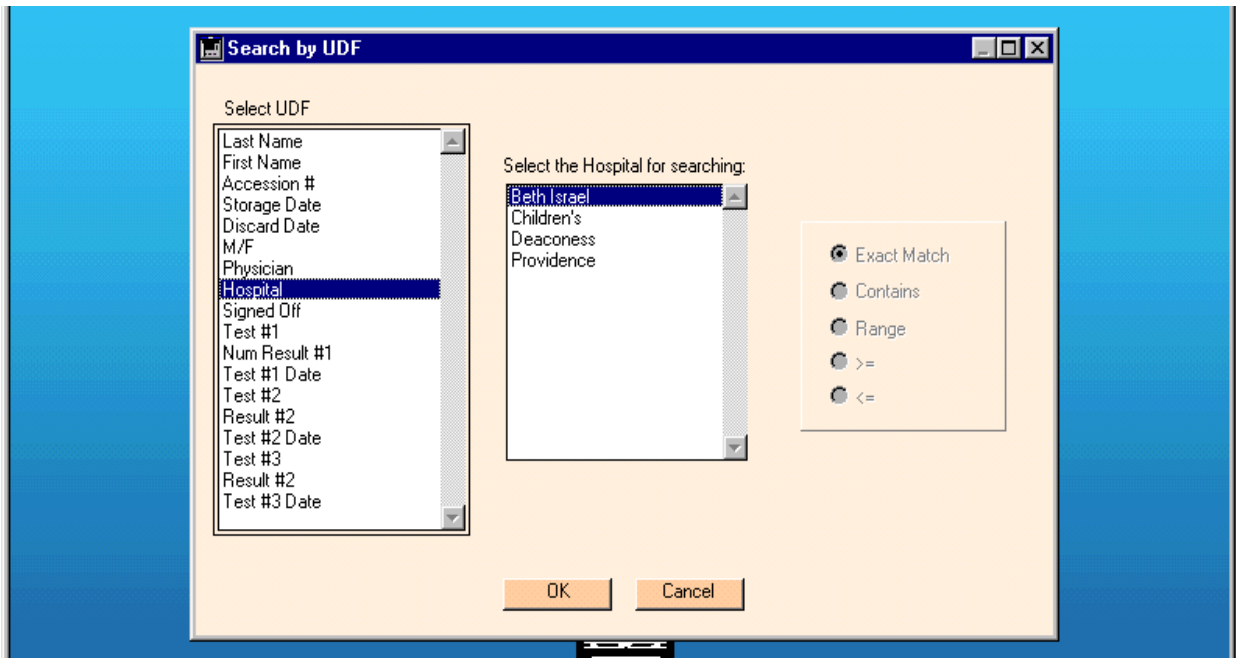


figure e

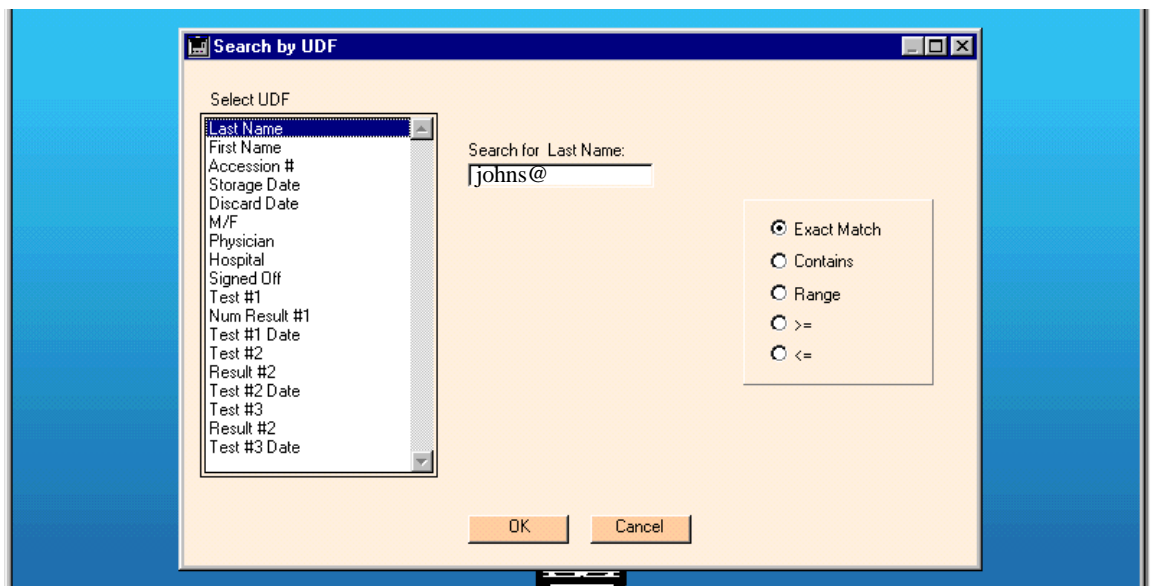


figure f - a **UDF** without allowable entries - you may want to enter an **exact match** search, or use **the wildcard** (e.g., is it Johnson or Johnsen? A johns@ entry will search for both).

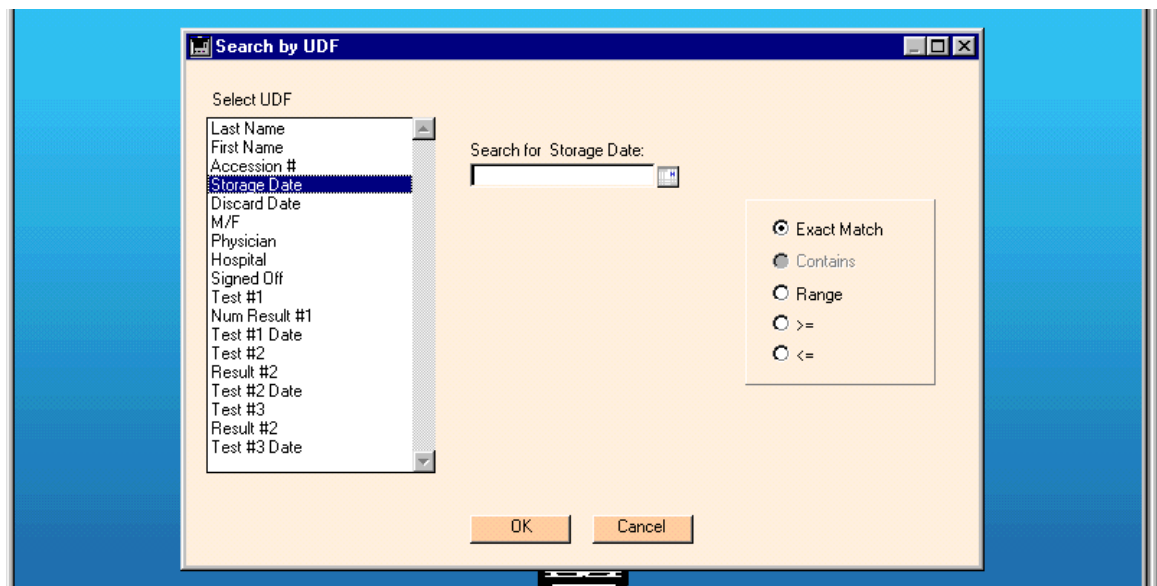


figure g - a **date UDF**. To search for records with a certain date, either type it in or click and select from the **calendar icon**. Or, select a date range - dates before or equal to a certain date ( $\leq$ ), dates after or equal to a certain date ( $\geq$ ), or dates that fall within a range between two dates (**Range**).

## Search by Sample Type

1. At the Freezerworks main menu, select **Samples – Search by Sample Type**.
2. In the Search by Sample Type screen, choose a sample type from the drop-down box.
3. Click **OK**. Freezerworks will display all the matching records. Double click on a record to display its sample information.

## Search by Transaction

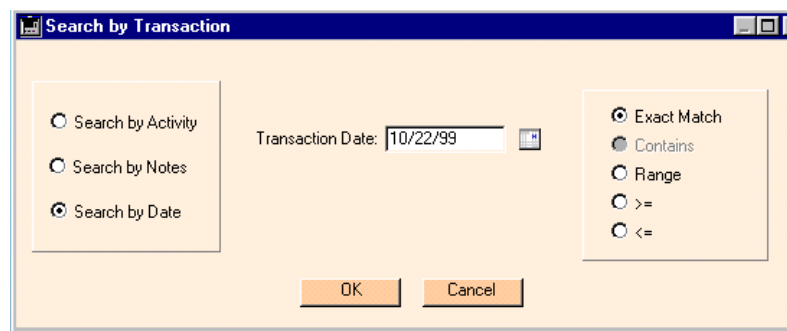
1. At the Freezerworks main menu, select **Samples – Search by Transaction**.
2. In the Search by Transaction screen, choose one of three searching options: Activity, Notes or Date (figure h). The

middle of the screen will display information specific to the type of search you choose. Search by Activity will display a drop-down box from which you can choose an Activity. Search by Notes will display a text box; Freezerworks will search for transactions containing the text you enter here. Search by Date will enable the search parameters on the right-hand side of the screen (Exact Match, Range, etc.).

3. Click **OK**. Freezerworks will display all the matching records. Double click on a record to display its sample information.

## Search by Discard Date

See the **Using the CLIP features** section for detailed information on searching by Discard Date.



*figure h*

---

## Search by Location

To locate and list samples in a freezer area, use the Search by Location option. Here you can list all samples in an entire freezer, or narrow your search to the very lowest subdivision level.

1. At the Main Menu, select **Samples - Search by Location**.

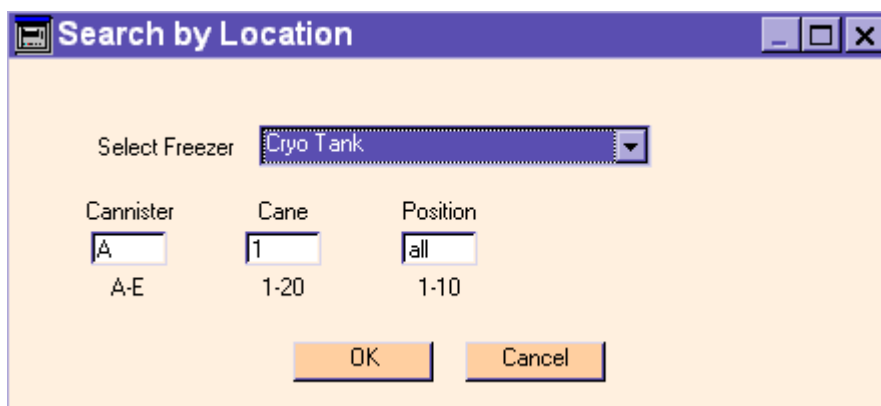
2. At the blank entry screen, click the drop down list arrow to display the available freezers.

3. Highlight a freezer. The program will then display an entry box for each subdivision. Valid entries for each subdivision will appear below each box as the cursor enters it.

4. To view all samples in a subdivision, enter the word **ALL** or leave blank.

5. In the **Example 1** below, the request is for a listing of all samples located in Cryo Tank, Cannister A, Cane 1.

6. In **Example 2**, the request is for all samples in Refrigerator 1 West.



**Search by Location**

Select Freezer: Cryo Tank

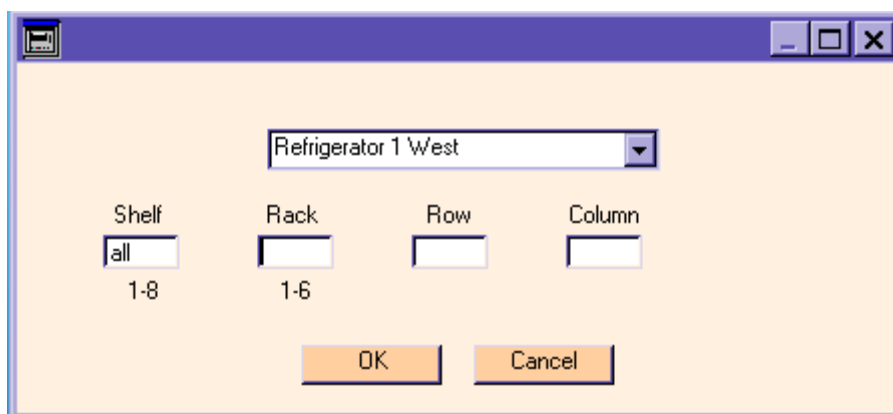
Cannister: A (A-E)

Cane: 1 (1-20)

Position: all (1-10)

OK Cancel

Example 1



**Search by Location**

Refrigerator 1 West

Shelf: all (1-8)

Rack: (1-6)

Row:

Column:

OK Cancel

Example 2

## New Search or Narrow Search

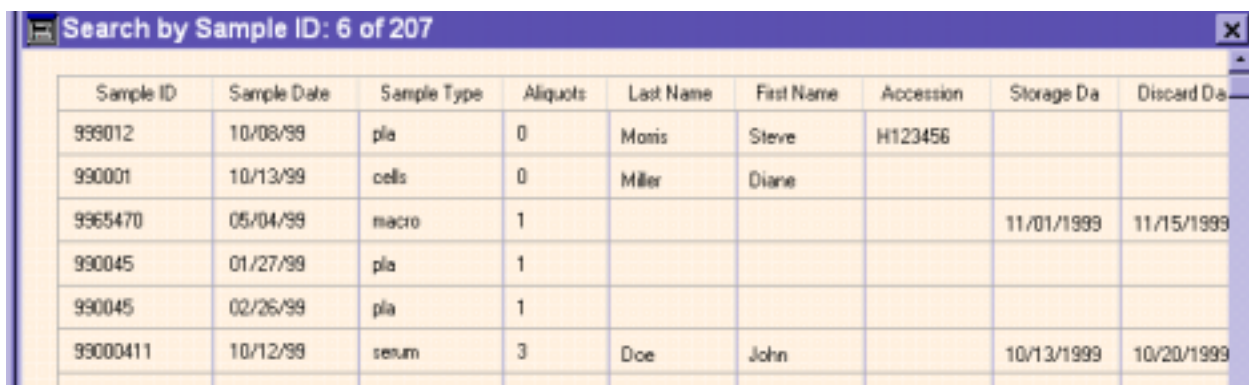
After completing a search, Freezerworks displays a listing of records selected. Your next step depends on why you are searching. From here, you can double click to view all data of a record, or perhaps select a report to print, print labels, or create an ASCII export file of this selection.

If you need to continue your search, you also have the option to either start a new search, or narrow your current search selection.

1. Suppose you used **Search by Sample ID** to find all records with Sample IDs beginning with “99” (Exact Match for Sample ID=99@), and the search found the following records (**figure i**):

2. Suppose you want to narrow the search down to those samples having “plasma” (*pla*) as the Sample Type.

3. When you choose **Samples – Search by Sample Type**, you will have the option to do a new search or narrow the existing search (**figure j**); choose the Narrow Search option and click **OK**.



Sample ID	Sample Date	Sample Type	Aliquots	Last Name	First Name	Accession	Storage Da	Discard Da
999012	10/08/99	pla	0	Morris	Steve	H123456		
990001	10/13/99	cells	0	Miller	Diane			
9965470	05/04/99	macro	1				11/01/1999	11/15/1999
990045	01/27/99	pla	1					
990045	02/26/99	pla	1					
99000411	10/12/99	serum	3	Doe	John		10/13/1999	10/20/1999

figure i

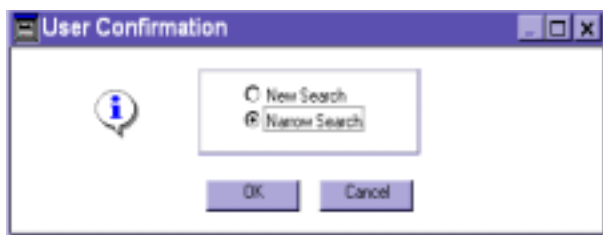
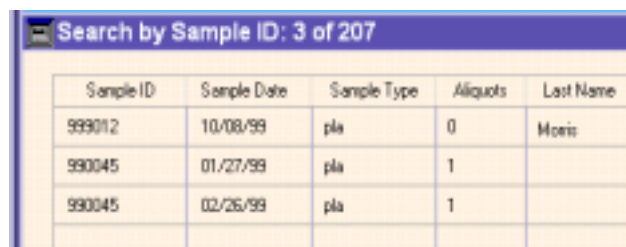


figure j

4. Then the Search by Sample Type dialog will appear. Select *pla* from the drop down list, and click **OK**. This search narrows the results down to 3 records (**figure k**).

There is no limit to the number of times you can narrow the search.



Sample ID	Sample Date	Sample Type	Aliquots	Last Name
999012	10/08/99	pla	0	Morris
990045	01/27/99	pla	1	
990045	02/26/99	pla	1	

figure k



## Explore by Alias

An *Alias* is an alternate name assigned to a freezer subdivision (see the **Create and View Freezers** section). You may search for samples by choosing the Alias from a drop down list of all aliases assigned to all freezers. The search results will be displayed in an explorer style tree structure.

1. At the Freezerworks main menu, select **Samples – Explore by Alias**.

2. In the **Search by Alias** screen, choose an alias from the drop-down box by clicking on the arrow. (**figure l**).

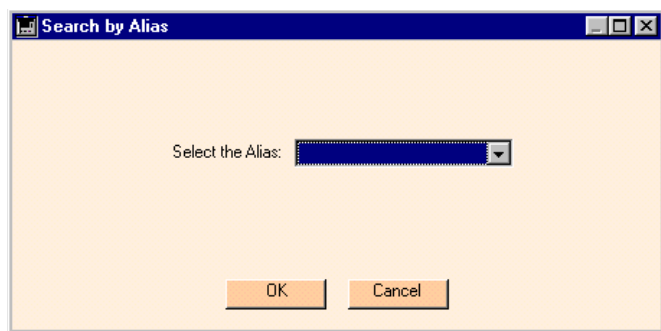


figure l

3. Click **OK**. Freezerworks will display the matching records (**figure m**). Click on the plus sign beside any subdivision to display its contents.

4. Double-click on a Sample ID to display its complete record. You may update the record, then click **Save** to save your changes and return to the **Explore by Alias** screen.

Click **Cancel** if you want to restore the record to its original state and return to the **Explore by Alias** screen.

5. To delete a subdivision or sample, highlight it and click **Delete**. Freezerworks will ask you to confirm this action.

Click **OK** if you wish to continue with the deletion. If you are deleting a subdivision, another confirmation message will appear with the option to print a verification report. If you choose to print the report, Freezerworks will present a final confirmation message before deleting the subdivision. Click **Cancel** at any time to return to the **Explore by Alias** screen.

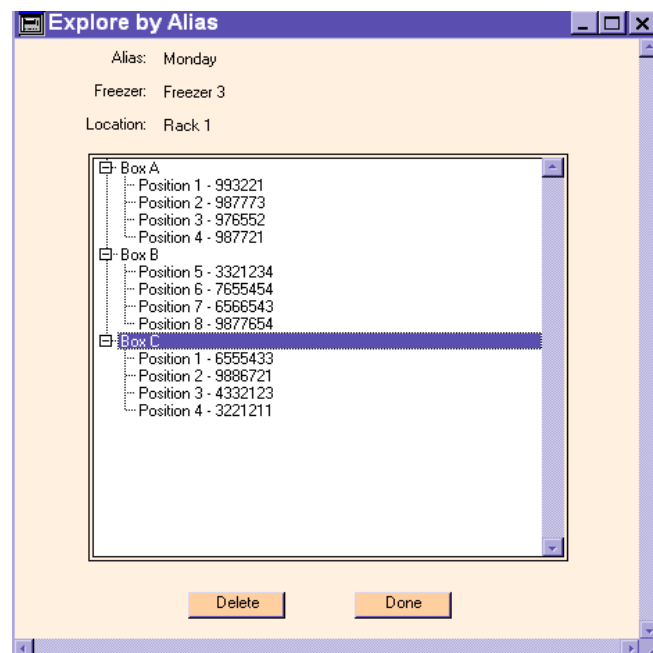


figure m

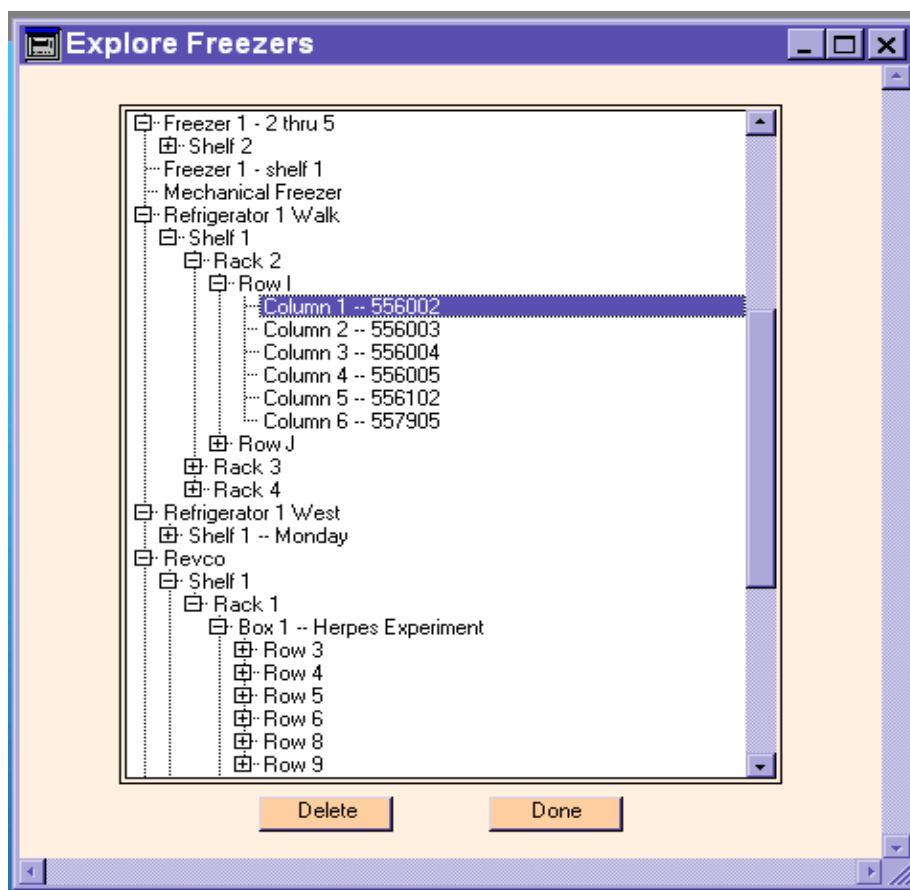
## Explore Freezers

The Explore Freezers option in the Samples menu is a hierarchical list view of your freezers and their contents. You can view a listing of samples, or double-click on any sample to view its complete record.

1. At the Freezerworks main menu, select **Samples – Explore Freezers**.
2. Click on the plus sign beside any freezer and its subdivisions to display the contents of that freezer. Aliases and Sample IDs will be displayed.
3. Double-click on a Sample ID to display

its complete record. You may update the record, then click **Save** to save your changes and return to the Explore Freezers screen. Click **Cancel** if you want to restore the record to its original state and return to the Explore Freezers screen.

4. To Delete a subdivision or sample, highlight it and click **Delete**. Freezerworks will ask you to confirm this action. Click **OK** if you wish to continue with the deletion. If you are deleting a subdivision, another confirmation message will appear with the option to print a verification report. If you choose to print the report, Freezerworks will present a final confirmation message before deleting the subdivision. Click **Cancel** at any time to return to the Explore Freezers screen.



# The Verification Steps in Deleting Samples via Explore Aliases and Explore Freezers

**Step 1:** Highlight the subdivision or sample you wish to delete, and click Delete.

First confirmation message appears.  
(figure n1)

**Step 2:** Continue with deletion by clicking **OK** (or **Cancel** to quit)

**Step 3:** If you are deleting more than one sample, a second confirmation message appears. (figure n2)

For a paper backup, click the **Print Verification Report** box (or to verify by viewing the report, select print preview rather than print when selecting your printer).

**Step 4:** View the Verification report.  
(figure n3) and answer final prompt.

Answer the final confirmation prompt  
“Do you wish to continue with the deletion?”.  
(figure n4)

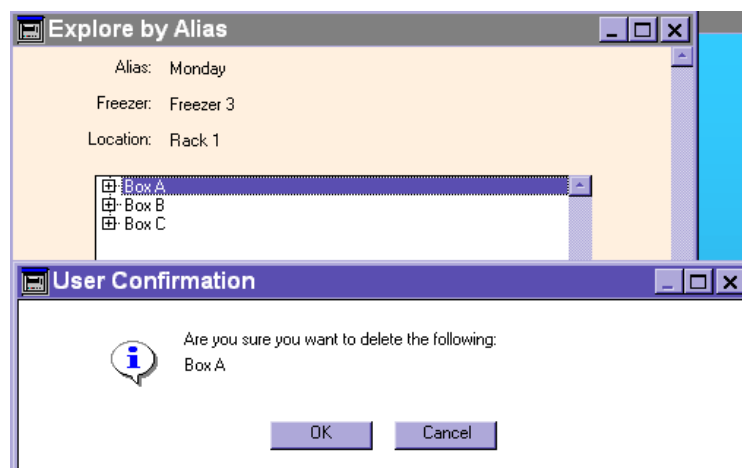


figure n1

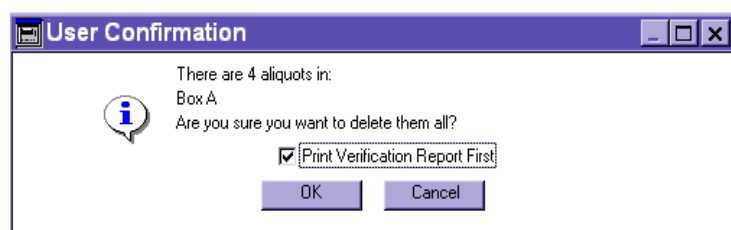


figure n2

Aliquots Deleted in: freezer 3 Rack 1 Box A			12/07/99
SampleID	SampleType	AliquotNumber	
9544001	serum	1	
9544328	serum	1	
9677430	serum	1	
9584336	serum	1	

figure n3

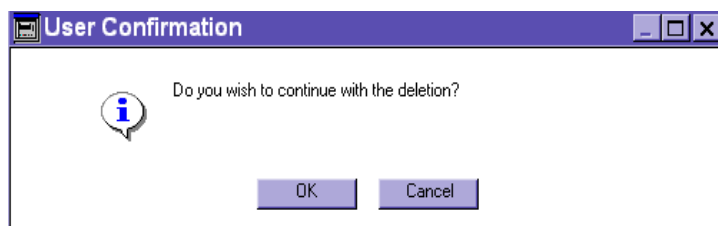


figure n4

## List Deleted Samples

As part of the Audit Trail feature, Freezerworks maintains a list of deleted samples. This option displays a list of Sample IDs, the date they were deleted and the user who deleted them.

1. At the Freezerworks main menu, select **Samples – List Deleted Samples**.
2. Click a button above one of the columns to sort the deleted samples list. You can sort by Sample ID, Date deleted, and User who deleted (**figure o**).
3. Click **Done** to return to the Freezerworks main menu.

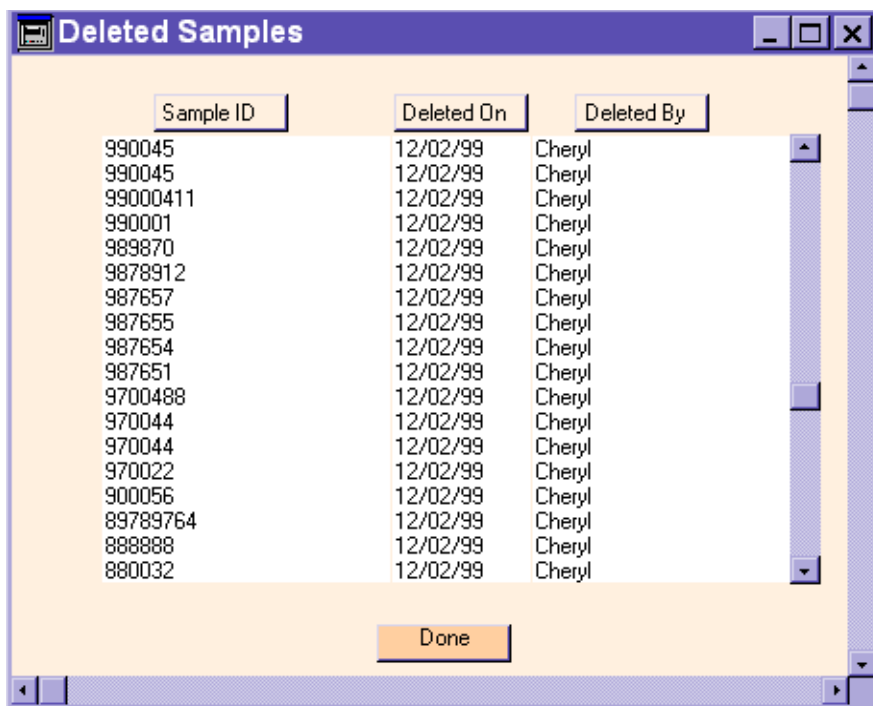


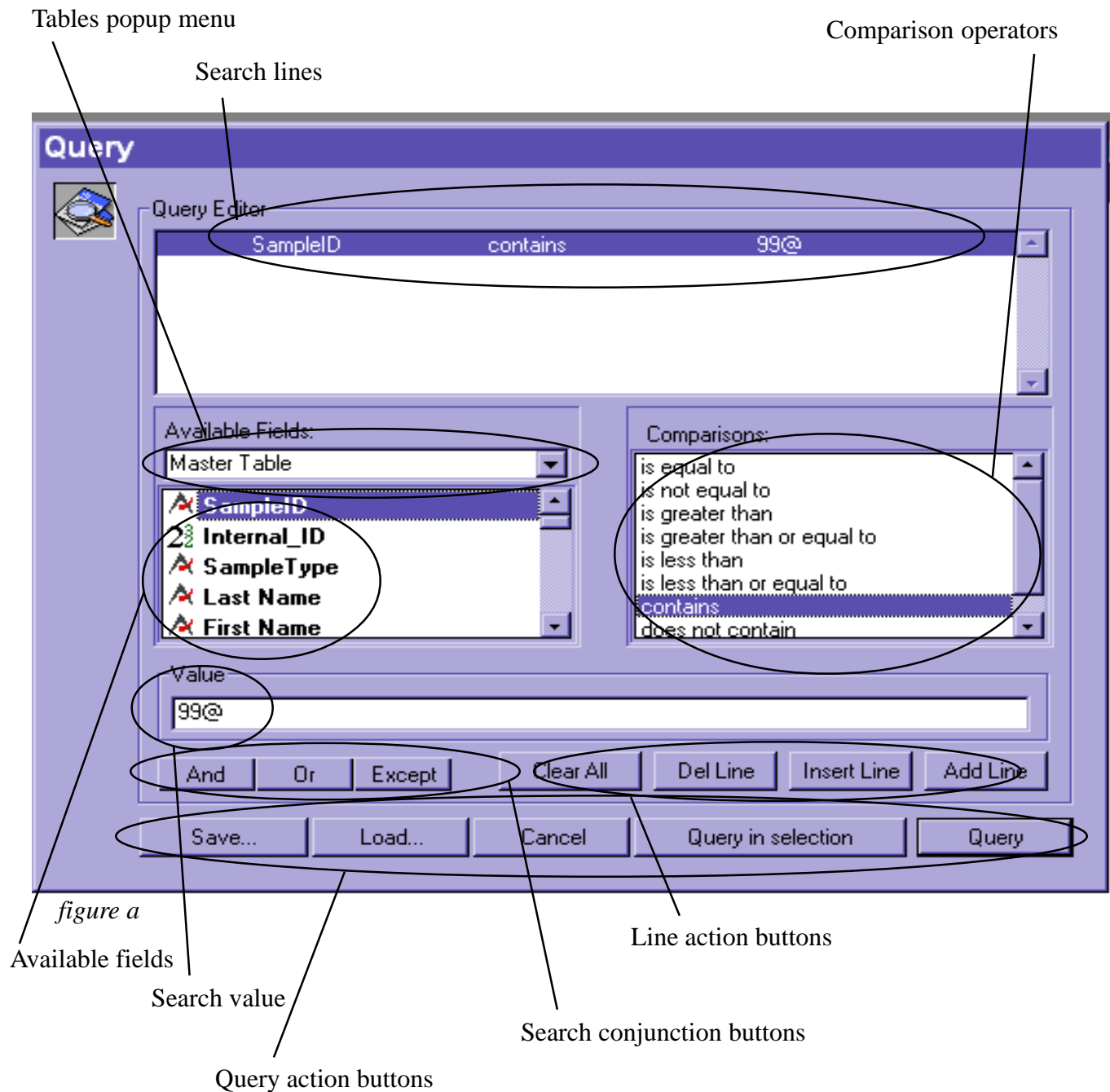
figure o

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## Chapter 8

# Using Generic Search

## Components of the Generic Search Query Editor



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# Using Generic Search

The Generic Search option uses the **Query Wizard** provided by the 4<sup>th</sup> Dimension programming language. It is useful if you wish to search by a combination of fields (e.g., Sample Date AND Sample Type).

The **Query Wizard** allows you to do a multiple-field *Or* search, as well as a multiple-field *Except* search. As we shall see, this capability can be very useful.

Going from left to right, top to bottom, let's look at the parts of the Query Wizard (**figure a**).

## Search Lines

The top of the Query Wizard contains the Search Lines, where you build the query. First you choose a **Field**, then you choose a **Comparison Operator** (e.g., is not equal to), and then you type in a search **Value**.

Every search line except the first line has a fourth element, the Query Conjunction (AND, OR, EXCEPT).

## The Tables Popup Menu

The Tables popup menu allows you to navigate and include in your searches data stored in the Notes and Aliquot tables.

Normally, you would only use fields from the Master Table, which is the Samples table. Generic searches through the other tables of Freezerworks can be done by selecting **All Tables**.

This is particularly useful for searching for records according to data stored in the **Samples Text** (Notes) table or the **Aliquots** table.

## Available Fields

To add a field to a search line, double-click the field.

## Comparison Operators

Comparison operators (is equal to, is greater than, etc.) help to qualify the search.

## Search Value

This area is where you type the value that you want to compare against when conducting a search. The Query Wizard does not automatically add a Wildcard; therefore, if you need a wildcard search, you have to remember to manually add the wildcard when you type the value.

## Search Conjunction Buttons AND, OR, EXCEPT

### The Conjunction And

When two search lines are joined by the conjunction **And**, this means that the search result will be records that have both Condition 1 **And** Condition 2.

**User Tip:** When two search lines are joined by the conjunction **And**, the resulting current selection of records *will always be equal to or smaller than* the current selection that

would have resulted from just doing one line of the search.

### The Conjunction Or

When two search lines have the conjunction **Or**, this means that the search result will be records that have either Condition 1 **Or** Condition 2 **Or** both conditions simultaneously.

**User Tip:** When two search lines are joined by the conjunction **Or**, the resulting current selection of records *will always be equal to or larger than* the selection that would have resulted from just doing one line of the search.

### The Conjunction Except

When two search lines have the conjunction **Except**, this means that the search result will be all records that have Condition 1 — *except* those records that also have Condition 2.

**User Tip:** When two query lines are joined by the conjunction **Except**, the resulting current selection of records *will always be equal to or smaller than* the selection that would have resulted from just doing one line of the search.

### Line Action Buttons

When you want to clear, add, or delete a line in your query, click one of the Line Action buttons: ***Clear All***, ***Del Line***, ***Insert Line***, ***Add Line***.

### Query Action Buttons

When you want to save, load, execute, or cancel the query instructions, you click one of the Query Action Buttons: ***Save...***, ***Load...***, ***Cancel***, ***Query in selection***, ***Query***.

## Searching by Notes Entries

For example, perhaps you want to select all records that contain the word “contaminated” in the notes. To do this:

1. At the Samples - Generic Search option, Select ***All Tables*** at the tables pop up menu
2. Scroll to the **Samples Text** table. Click the “+” box or double click on Samples Text to get a listing of fields.
3. Click on **Notes**, and then click on “contains” in the **Comparisons box**.
4. For value, enter “contaminated”.

See figure b.

5. Click ***Query*** to get a list of applicable samples.



---

## Adding Lines to a Query

Often, you will want to qualify the search even more by adding more lines to the query. We are going to find all contaminated pla(sma) samples. To do this, let's add an additional line to our “contaminated” samples search line: **AND sample type equal to pla.**

1. To add a second line to the query, click **Add Line**.
2. Click the **And** search conjunction button.
3. Find the **Samples** table in the Tables popup menu. Expand it to locate and select **Sample Type**.

**User tip:** If the field that you want to search on is not visible, you will have to scroll down the list.

4. Select **is equal to** for your comparison operation.

5. Enter **pla** for your search value. See **figure c**.

6. Click **Query**. The program will search for and select the matching sample records: all pla(sma) samples that contain the word “contaminated” in the notes field.

## Saving a Query Template

After you have created a query, you may want to do the same query again later. You can reuse your queries by saving them to your hard disk and later reloading them from your hard disk.

1. To begin the process of saving a query template, click the **Save Query** action button.

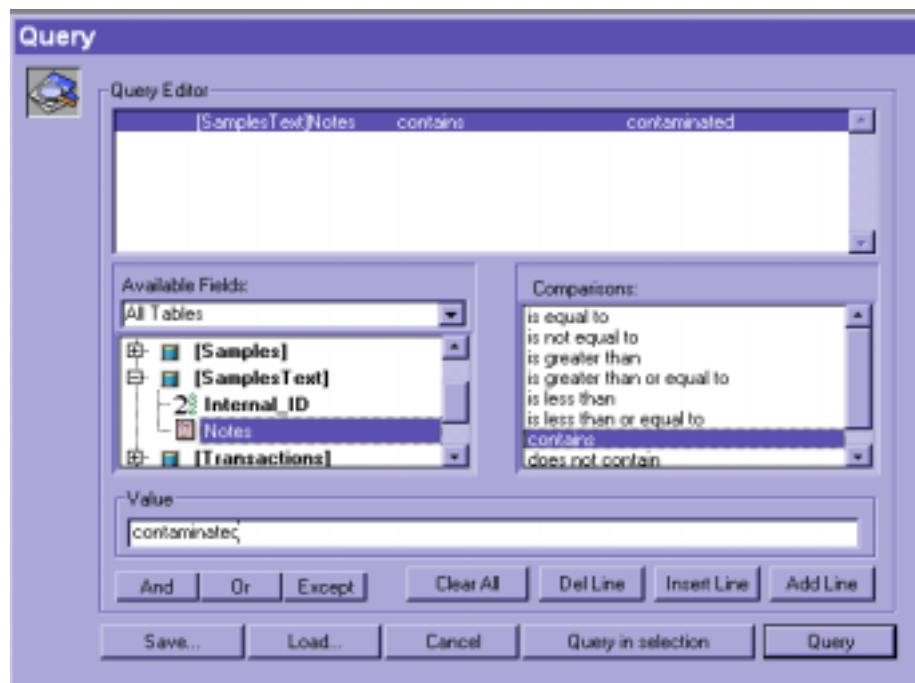


figure b - a one line query using the Notes table (officially called the *Samples text* table)

**User Tip:** So that you will always know where you saved your queries, create a folder called **Query Templates** and keep that folder inside your main database folder.

2. The operating system's *Save File...* dialog appears. Make sure it is pointing to the folder where you want to save the query.
3. Name the query selection as prompted. Freezerworks will give it a *.4d* extension (Windows users).
4. To Save your query template, click *Save*.

## Loading a Saved Query Template

If you want to use a saved query template, you simply reload it from disk.

1. To load a saved query template, click *Load*.
2. The operating system's *Open File...* dialog appears. If you have not performed any other operations in-between, you should still be pointing to the same folder where you saved your query.
3. Double-click the query template that you want to load.

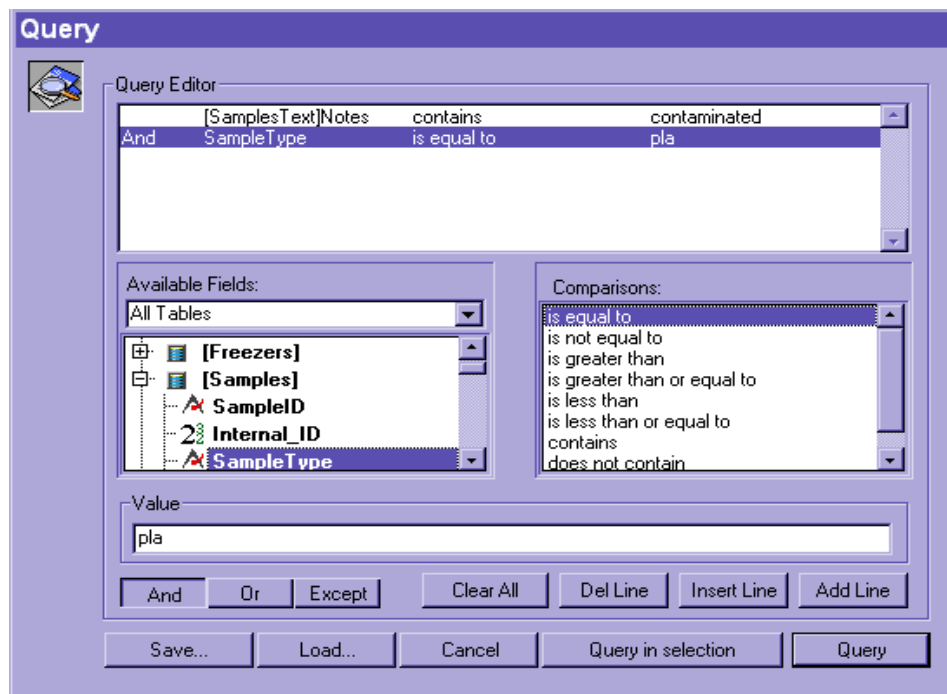


figure c

## A Three-Line Query

When you load a previously saved query, you always have the option to add more lines to the query. You can turn our two-line query into three lines, by clicking the **Add Line** button and filling in the additional search instructions.

Suppose you want to narrow the selection even further, to include only those **pla** samples with **aliquots** that have a **current amount** of 2.0 ml or greater.

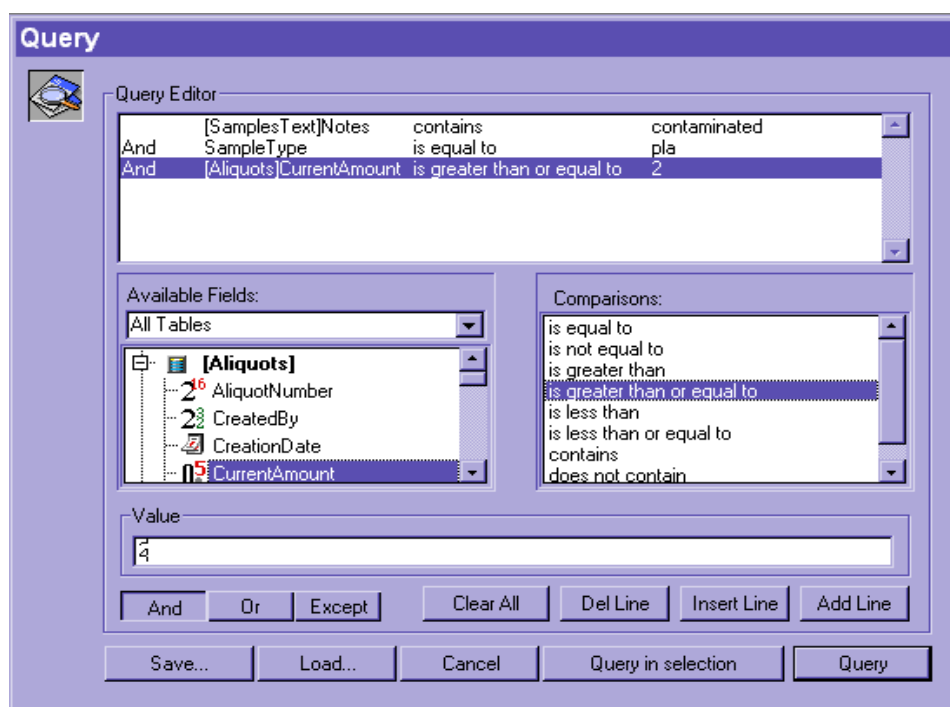
1. After either loading or recreating the contaminated samples query, click **Add Line** with **And** for our Search conjunction button .

2. You need to select from the **Aliquot** table and double click it. Find and click the **Current Amount** field.

3. Select **is greater than or equal to** in the **Comparisons** box.

4. Enter “2” for the value. See **figure d**.

5. Click **Query**.



*figure d - A 3 sentence query search, using three tables. The Notes table (Samples text) is where we are searching for the term “contaminated”. The Samples table is where the field Sample Type is stored. The Aliquots table is where we find current aliquot amount levels.*

## Using Query in Selection

For elaborate queries like our two and three sentence examples in the previous pages, it is not necessary to always write the conditions in one large selection sentence. By using the **Query in Selection** query action button, you can select all samples that match one search line. Then, after these are selected and listed, return to the Generic search option, create the next selector sentence, and click **Query in Selection**. This will narrow your selection list to those that met your first selection, and then your second selection.

You can continue to narrow your search in this way.

## Limitations in the Generic Search

It is not possible to search for samples in Generic search using Transaction or Freezer table data fields. To search for samples using transaction fields, use the **Search by Transaction** option. To search for records by Freezer fields, use the **Search by Location** option.

## Generic Search Quick Guide

1. At the Freezerworks main menu, select **Samples – Generic Search**. The Query Editor will appear.
2. Select a field from the **Available Fields** list. Freezerworks will display the field name and “is equal to” in the box at the top of the form.
3. If you don’t want to use “is equal to”, choose a different operator from the **Comparisons** list.
4. Type the information you want to find in the **Value** area.
5. Click **Add Line** if you want to build a compound query. Freezerworks will add a new line and use *And* as the operator. If you need more than two queries, a third query may either be added to the end or inserted between two existing queries. To insert a query, highlight the last query, click **Insert Line**, then select a field and enter a value.
6. If you want to use *Or* or *Except* as the operator, click the appropriate button.
7. If you need to modify a query, highlight the line you want to change and click a new field or operator, or type a new value. Click **Del Line** if you want to completely remove the highlighted query.
8. Click **Save** if you want to use this query again in the future. Click **Load** to retrieve a saved query.
9. Click **Query** to search the database.

---

## Chapter 9

### Move Samples

# Move Samples

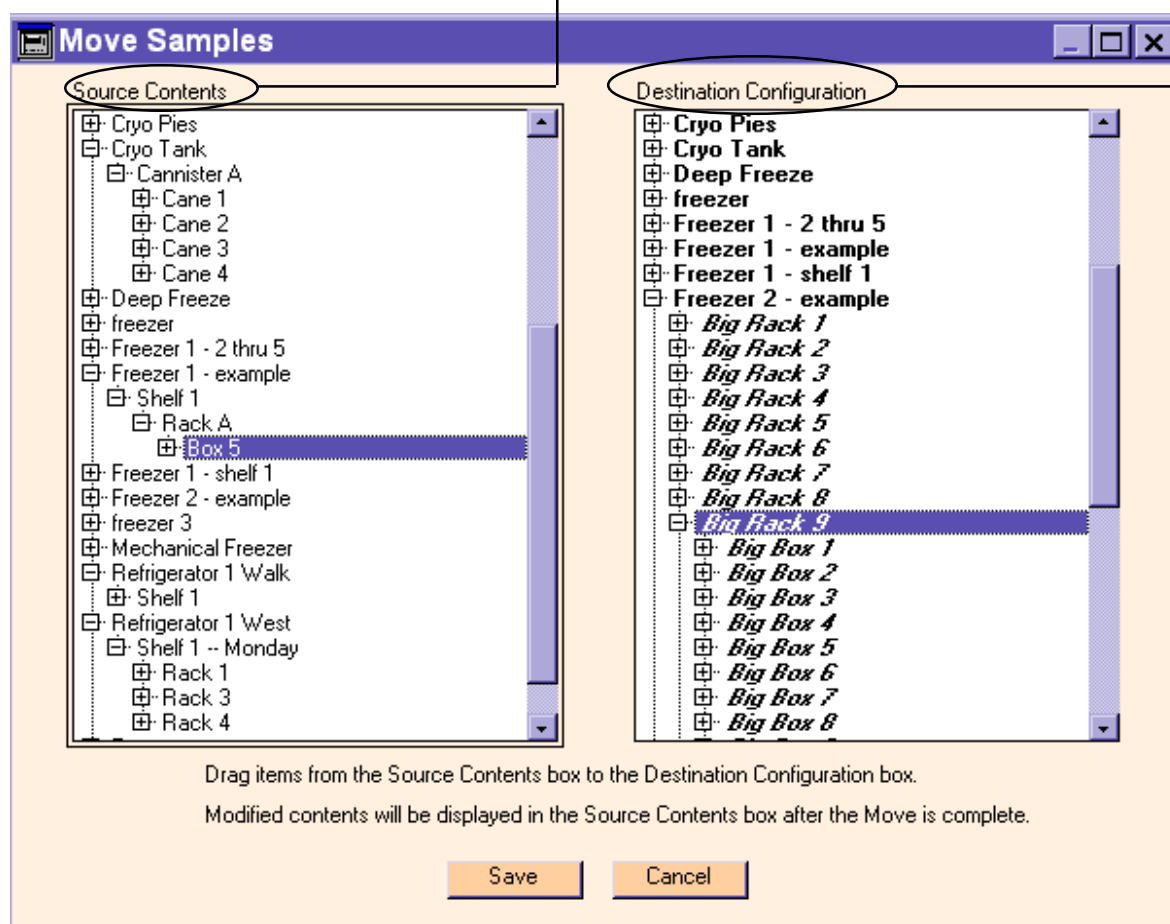
The Move Samples option provides the user with the ability, using **drag and drop**, to select groups of samples and move them - either from one freezer to another, or to a different area of the same freezer.

To access Move Samples, select the **Samples-Move Samples** option . A double paned screen is displayed (*figure a*).

The left pane is labeled **Source Contents** and displays all of the samples entered in Freezerworks in an *explorer style* tree,

organized by Freezer and Subdivision. All freezers are displayed. For each freezer displayed, however, only those subdivisions containing samples are displayed. **Sample IDs are displayed next to their location and can be accessed by a double click.**

The right pane is labeled **Destination Configuration** and displays all of the freezers configured in Freezerworks and all subdivisions configured for each freezer, also in an explorer type tree. There is no indication on the configuration tree which subdivisions have samples stored in them and which do not.



*figure a - the move samples screen. To move from source to destination, click to highlight, hold the click and drag the "outline" of the highlight to the destination subdivision*

---

To move samples, the user selects a subdivision or an individual aliquot on the left side and drags it to the destination panel, dropping it on the desired destination subdivision. There are two basic types of moves.

**Parallel Move:** The user can drag a subdivision and drop it onto a *parallel* subdivision in a destination freezer.

**Parent Move:** The user can drag a subdivision and drop it onto a *parent* subdivision in a destination freezer.

## Parallel Subdivisions

**Parallel subdivisions** are two subdivisions in the same relative position from the bottom of their respective freezer configurations. To illustrate, suppose you have two freezers configured as follows:

### Freezer 1

Subdivision 1 – Shelf  
Subdivision 2 – Rack  
Subdivision 3 – Box  
Subdivision 4 – Position

### Freezer 2

Subdivision 1 – Big Rack  
Subdivision 2 – Big Box  
Subdivision 3 – My Position

### See figure b

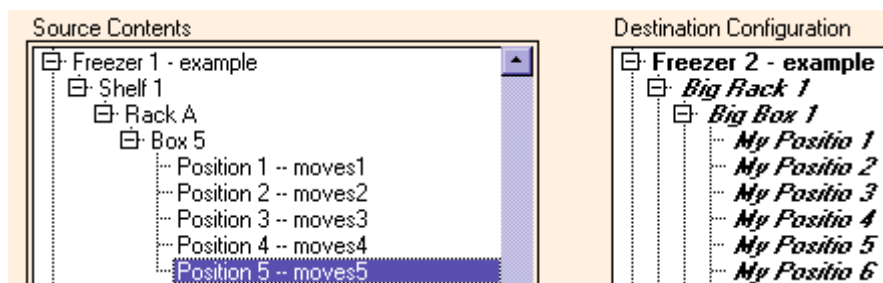
The *parallel* subdivisions in these freezers would be

- Position and My Position
- Box and Big Box
- Rack and Big Rack

respectively.

These are parallel because each pair are in the same relative position from the bottom of the freezer configuration. Position and My Position are both the last subdivisions defined. Box and Big Box are both one up from the bottom. And, likewise, Rack and Big Rack are both two up from the bottom.

Note that the subdivisions do not have to be named the same in order to be parallel.



*figure b - freezers 1 and 2 in the Move Samples option. Source screen will display only those subdivisions that have samples stored in them. Destination screen displays all subdivisions, but will not show any actual samples stored there*

## Parent Subdivisions

A **Parent subdivision** is one subdivision higher than the relative subdivision. In the example above, the “parent” subdivision for Position in Freezer 1 is Box. In a move to Freezer 2, the “parent” subdivision would be Big Box.

It is important to understand the difference because the move operation functions differently in each case.

## To Make a Move:

1. In the Source screen, click and highlight the subdivision you want to move.
2. Find the Destination freezer in the Destination screen and open the tree to the destination subdivision. Both subdivisions, Source and Destination, should be displayed.
3. Click and highlight the Source subdivision, holding the mouse button down, and drag it to the Destination subdivision. You will notice a tiny “box” next to the mouse

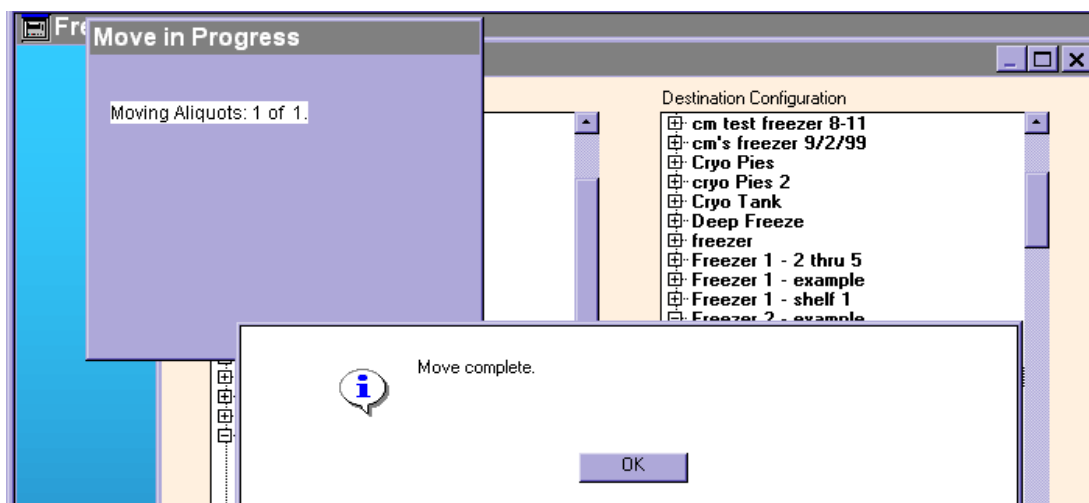
arrow. The box indicates a successful capture of your subdivision.

Continue to hold the mouse key until you reach the destination. You will see an “outline” of a highlight bar. Drop the highlighted bar onto your destination - either onto the parent subdivision for a parent move, or onto the subdivision the samples will now occupy.

4. Once the proper destination is highlighted, unclick. The move will either then take place, or it will not be acceptable and an error message will inform you of the error and why the move was not accepted.

5. Check to make sure the move was successful.

If the move is successful, a prompt will tell you this (**figure c**). You can double check by opening up the destination freezer in the Source screen and see whether your moved samples are indeed out of the Source freezer and subdivision and into the Destination freezer and subdivision.



*figure c - signs of a successful move. Now, double check the move in the Source window, and press **Save** to finalize it.*



---

**6. Important: You must *save* to finalize the move.**

When the move looks successful, click Save. Click OK at the confirmation prompt to complete the move.

If anything looks wrong, press *Cancel*, look for the error, and try again.

**Example 1: A Parallel Move:**

In a *parallel* move, the **source subdivision** aliquots are moved *directly* to the **destination subdivision** and the position information is changed accordingly.

For example, if we were to move

Freezer 1, Shelf 1, Rack A, **Box 5**  
into  
Freezer 2, Big Rack 9, **Big Box 15**

then all aliquots that **were** in

Freezer 1, Shelf 1, Rack A, **Box 5**

would **now** be stored in

Freezer 2, Big Rack 9, **Big Box 15**

**See figure d**

The Position information would not change unless the display types in the source and destination freezer were different. For example,

if the display type for Position in Freezer 1 was “**numeric**” and the display type for My Position in Freezer 2 was “**alpha**”, the position information would be converted as follows: **1** would become **A**, **2** would become **B**, and so on.

For more on this, see **Example 3**.

**Example 2: A Parent Move:**

In a *Parent* move, the **source subdivision** aliquots are moved to the **destination subdivision** but only the parent subdivision values are changed.

For example, if we were to move:

Freezer 1, Shelf 1, Rack A, **Box 5**  
into  
Freezer 2, Big Rack 9

then all aliquots that **were** in

Freezer 1, Shelf 1, Rack A, Box 5

would **now** be stored in

Freezer 2, Big Rack 9, **Big Box 5**

In this case, the Box information would not change.

Notice that in a parent move, subdivision order is maintained - Box 5 is moved to Big Box 5.

**See figure e**

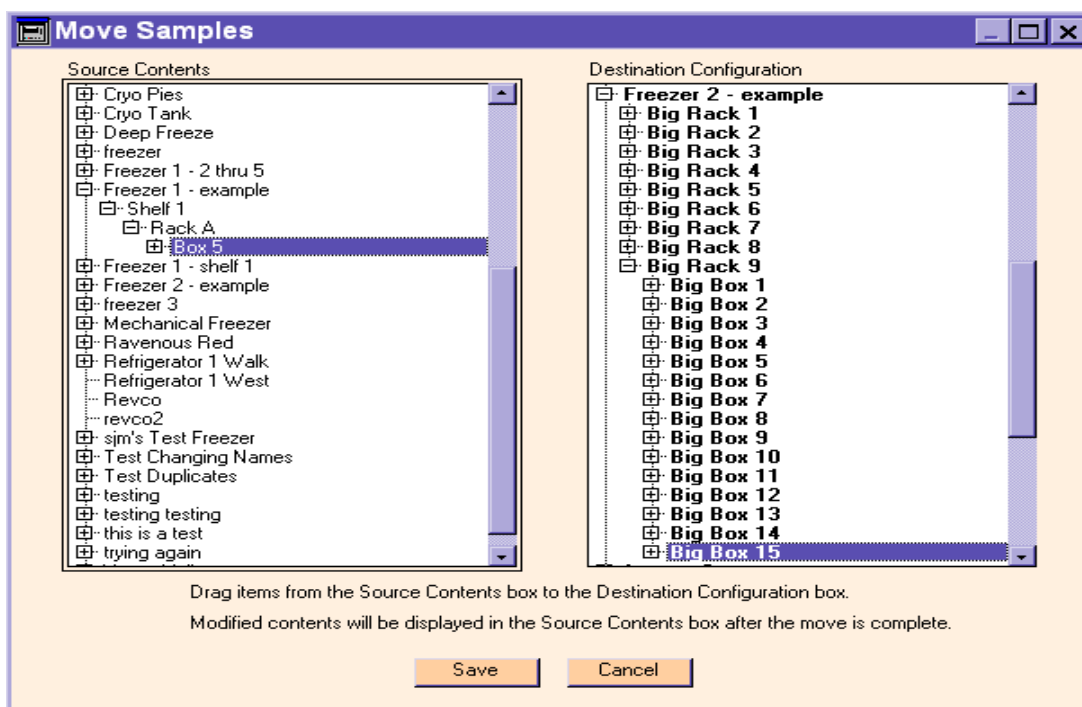


figure d above - **Example 1:** a parallel move of a box 5 in Freezer 1 to a Big Box 15 in Freezer 2. To make the move, drag and drop from source to destination accordingly.

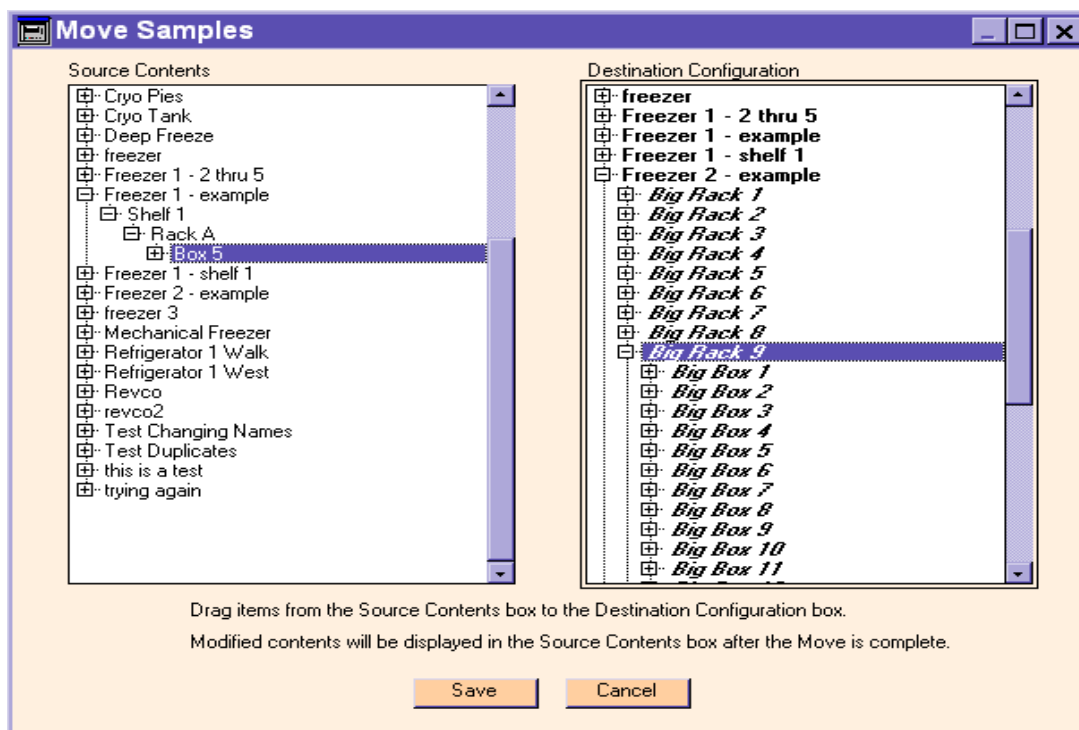


figure e - **Example 2 - a Parent Move** - click and hold and drag Box 5 of Freezer 1, Shelf A and drop it onto Big Rack 9 (**Parent**) of Freezer 2. Samples are now stored in Big Box 5 in Freezer 2 Big Rack 9.

### Example 3:

Here, we are moving samples in differently configured freezers.

In this example, we have a freezer called Cryo Pies. This is a liquid nitrogen freezer with pie shaped racks holding pie shaped wedge boxes.

(See **Create and View freezers** for the example of how this freezer is configured.)

We want to move the vials in Pie A Row A column 1 and 2 to our other Cryo tank, which has a cannister/cane setup:

#### Cryo Pies:

Subdivision 1: Rack

Subdivision 2: Pie

Subdivision 3: Row

Subdivision 4: **Column** (where vial is uniquely placed).

#### Cryo Tank:

Subdivision 1: Cannister

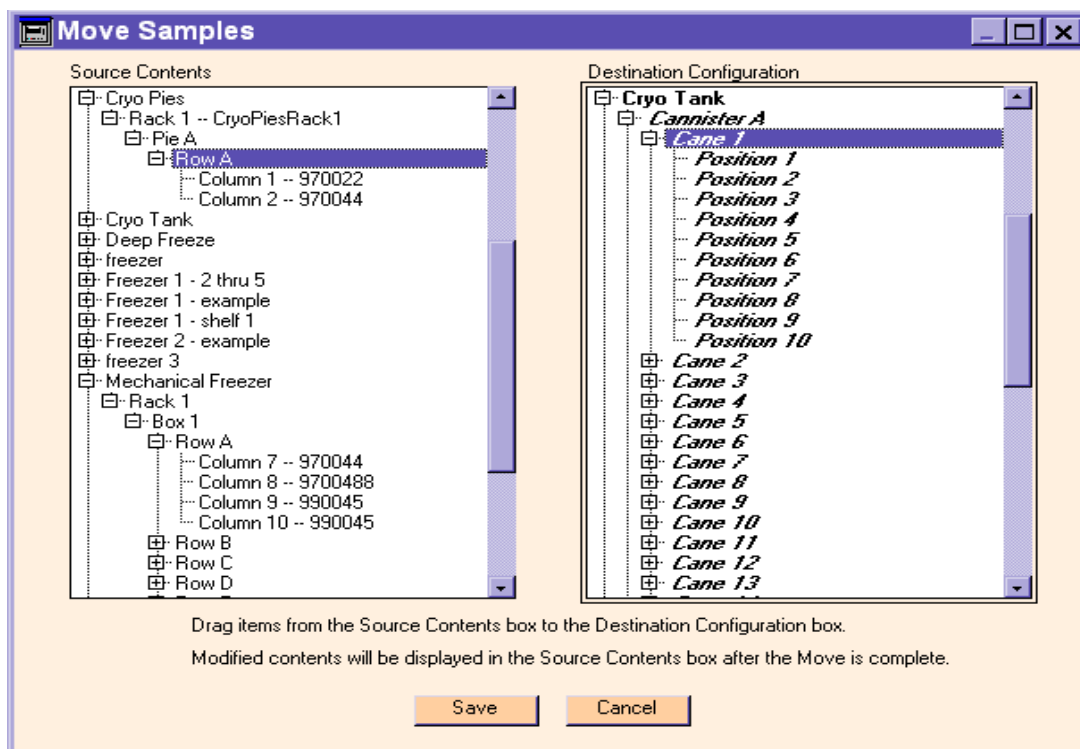
Subdivision 2: Cane

Subdivision 3: **Position** (where vial is uniquely placed).

We have 2 vials in Cryo Pies Rack 1, Pie A, Row A (Samples **970022** and **970044**). We want to move these into Cryo Tanks Cannister A, Cane 1.

When we drag Row A from Cryo Pies to Cane 1 of Cryo Tank's Cannister A, this is a parallel move (Row is to Cryo pies what Cane is to Cryo Tank, and column is to Cryo Pies what Position is to Cryo Tank).

See figure e



*figure e - moving vials from rows in a pie from one freezer to positions in a cane in another freezer.*

And when the move is complete, we check Cryo Tank in the Source Window, and indeed see that vials 970022 and 970044 are now out of columns 1 and 2 of Row A and in Positions 1 and 2 of Cane 1. See figure f

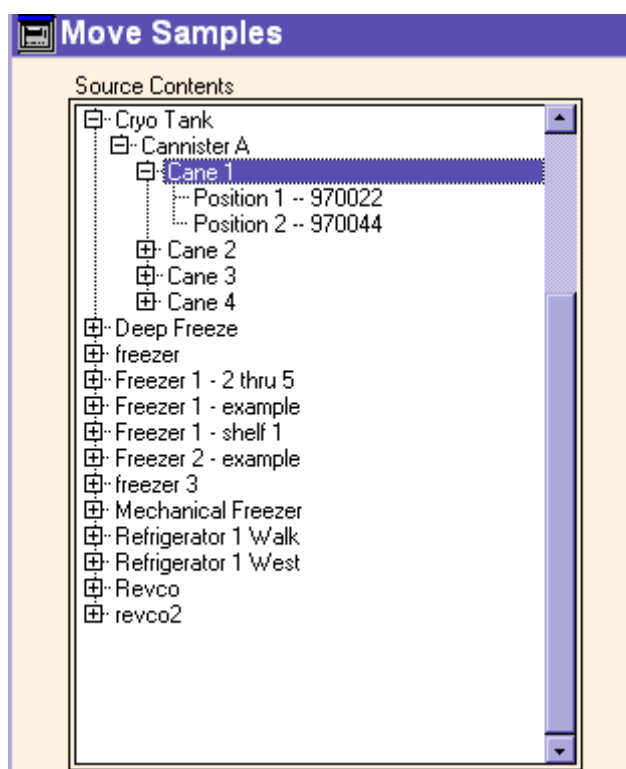
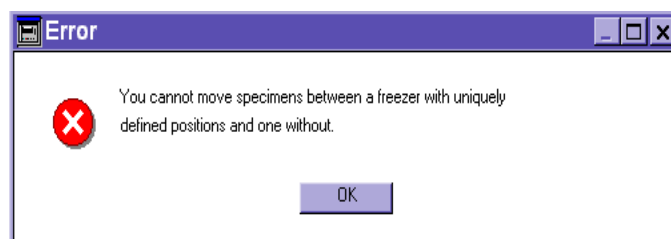


figure f

## What Prevents a Move?

There are a number of requirements that must be met in order for the move to take place.

1. The **source** and **destination** freezer must **both** be defined as **either** “**unique**” or “**not unique**” on the **Freezer definition** screen.



Aliquots from a source freezer in which the user has checked **ON** the Position Assignment query “*Assign each aliquot to a unique position?*” can only be moved to a destination freezer which has been defined the same way. Likewise, aliquots from a source freezer in which the user has checked **OFF** the Position Assignment query “*Assign each aliquot to a unique position?*” can only be moved to a destination freezer which has been defined the same way.

---

**2. In a *parallel* move, the destination subdivision selected must be empty.** No aliquots can be already stored in it (in the example 1 above this would be Freezer 2, Big Rack 9, Big Box 15). In a *parent* type move, the parallel subdivision in which the aliquots will be placed must be empty.



**3. In a *parallel* move, the destination subdivision selected must be configured to at least the same size as the source subdivision.** The destination subdivision may be bigger, but it cannot be smaller than the source.



In a parent type move, the parallel subdivision in which the aliquots will be placed (in the above example this would be Freezer 2, Big Rack 9, Box 5) must be configured to at least the same size as the source subdivision. The destination subdivision may be bigger. To illustrate this point using the example above, suppose Freezer 1, Shelf 1, Rack A, Box 5 has nine aliquots stored in Positions 1 – 9 respectively. If Freezer 2, Big Rack 9, Big Box 15 is config-

ured with at least 9 My Positions, the move is allowed. If Big Box 15 is configured with only 8 My Positions, the move would not be allowed.

## Other points to consider:

1. The destination subdivision can only be parallel to the source subdivision or a parent to the source subdivision. No other moves are allowed.
2. The aliquots in the source subdivision must not be in use by any other process or user. An error message will be displayed if any of the aliquots or samples are in use giving the user the option to move just those samples not in use, or to abort the move.

## Suppose my subdivisions don't meet the requirements? How can I move samples?

As a last resort, you can always move one aliquot position into another aliquot position. Although time consuming, it will work.

## What If I Change My Mind?

While all moves are immediately displayed on the left-hand side of the window when completed, and are visible to other users on the system, they are not “committed” until the user clicks the **Save** button on the **Move Samples** form. Only then are the aliquot records permanently changed. If the user clicks the **Cancel** button on the **Move Samples** form, all moves performed during that session are lost.



---

## Chapter 10

### Printing Labels

# Printing Labels

The Freezerworks Labels menu has two options for printing labels. The Barcode Label option will generate a pre-configured barcode label in code 128 with human readable characters. The Label Editor option will take you to the Freezerworks Label Editor where you can use any of the pre-configured label templates, or you can design your own labels.

## Print Barcode Labels - the Freezerworks Bar Code Module

This option will only operate with the Freezerworks bar code package - which includes the **Eltron 2642** or **2742** Thermal Transfer printer loaded with Dataworks Development's cryogenic-safe "wraparound" labels. **Note: the bar code package is not available for Macintosh at this time.**

**NOTE:** Be sure to install your Eltron printer to a **serial (com)** port, and not a parallel port.

1. Select the samples you want to print labels for. If you have just entered a sample, and want to print labels for it, then select **Labels – Print Barcode Labels** at the Freezerworks main menu.
2. At the prompt, enter the number of barcode labels you wish to generate per aliquot.
3. Freezerworks will print aliquot labels based on your entry in the **# of aliquots** field. For example, if you have a 6 entered there, labels will be printed for 6 aliquots. Each label will have the **Bar Code ID** number in bar code symbology (code 128) as well as

human readable. It will also display in human readable form the *Sample ID* (the first 12 characters only), the *Sample Type*, the *Sample Date*, and the *aliquot number*.

## How to Use the Bar Code Module to Streamline your Laboratory Work

The Bar Code ID is assigned by Freezerworks to uniquely identify the Sample record from all other samples without any possibility of duplication (the bar code ID number is displayed at the top of the Samples entry screen). For each label, an aliquot number is placed in human readable form that identifies each aliquot within the sample record.

## Print Labels Now, Store Aliquots Later...

Since the labels are printed using the **# of aliquots field**, it is possible to print labels without assigning aliquot freezer positions. In this way, you can print labels ahead of time. Make your basic sample data entries and make an educated guess on the number of aliquots you will save from the sample when it is time to store them. Affix the labels during sample preparation, and then return to the Samples entry screen to store aliquots later (using your Search by Internal Bar Code to scan and locate the entry screen quickly).

## Print Labels for Notebooks, Paper Forms

Print extra labels for a logbook or other paper forms. You can then scan the label in your logbook or form to call up the precise sample record and aliquot locations.



---

**Note:** Due to label constraints, Sample IDs longer than 12 characters will only display the first 12 characters on the bar code label.

## Utilities - Label Printer Dump

This option on the Main Menu will print the codes being sent to the Eltron printer. This is for use when troubleshooting Eltron label print problems with Dataworks customer support.

## The Label Editor

When you are designing your labels, you should first work with a small selection of records. You may need to print and preview your labels many times before you are satisfied with them. Having a small set of records speeds up the printing and print preview process. Use one of the Search options on the Freezerworks Samples menu to obtain a small selection of records.

## Loading a Saved Label Template

To give you an idea of the types of labels that you can create with the Label Editor, we will first load a saved label template. The pre-configured label templates provided in Freezerworks are Cryo-Tags for laser printers (**lcry-1100.4LB**, **lcry-1200.4LB** – labels provided by **Diversified Biotech** of Boston, MA - phone 800-796-9199) and Shamrock labels for dot matrix printers (**shamrock.4LB** – formatted for the actg-1 label supplied by **Shamrock Scientific Specialty Systems, Inc.** of Bellwood, Illinois - phone 800-2481907). You may modify these templates to meet your own needs.

1. While viewing a sample record or a list of selected samples, select **Labels – Label Editor** at the Freezerworks main menu.
2. To load a label template that has already been designed and saved, click **Load** at the bottom of the Label Editor window (figure a).

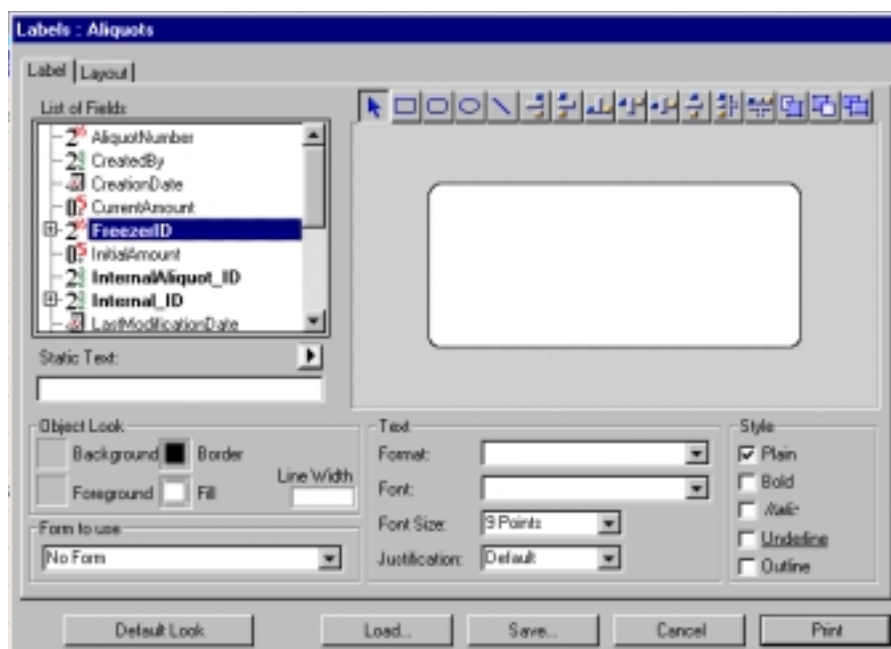


figure a

3. When the **Open file...** dialog appears, navigate to the **Label Templates** folder (**figure b**).

4. Open the **Label Templates** folder, then double-click on **Example lcry-1200.4LB** to open the template (**figure c**). Notice that we have placed several fields on the label, and that some of the fields overlap each other. Sometimes the field names will overlap on the template, but the actual data will print correctly on the label if the fields are positioned and sized correctly (**figure d**).

**IMPORTANT:** Unlike the bar code print option, the Label Editor will not print a label for each aliquot. Instead, you will need to tell it how many labels to print for each sample selected. To do this, click the **Layout** tab. At **Labels per Record**, enter a number of labels (e.g., if you have 8 aliquots for this sample, enter "8").

5. Click **Print** to send the labels to the printer, or check the **Print Preview** box and then **Print** to preview the labels before printing them. Note that some of the fields on this example label are specific to our database; your UDF fields will be displayed as you have defined them.

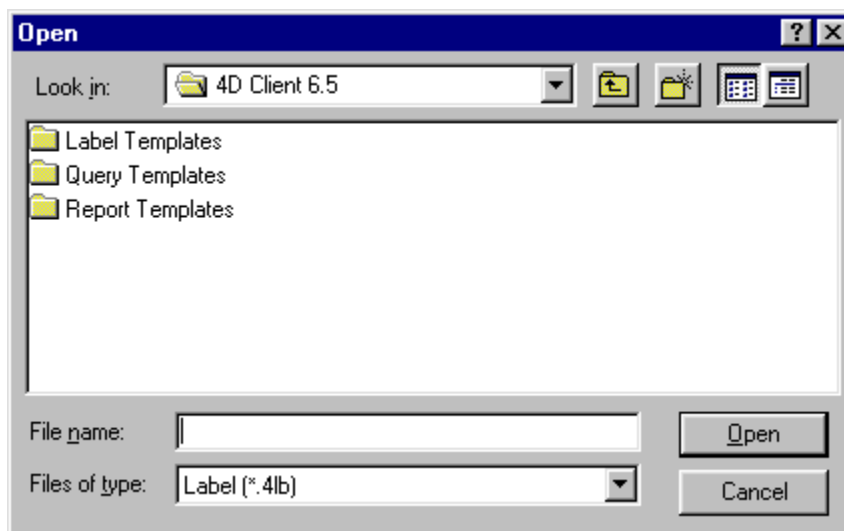


figure b

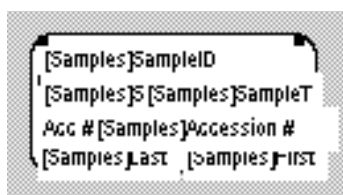


figure c

678900 08/02/99 cells Acc # 789798798798 Smith Fred	678900 08/02/99 cells Acc # 789798798798 Smith Fred	678900 08/02/99 cells Acc # 789798798798 Smith Fred
678900 08/02/99 cells Acc # 789798798798 Smith Fred	678900 08/02/99 cells Acc # 789798798798 Smith Fred	678900 08/02/99 cells Acc # 789798798798 Smith Fred

figure d

The remainder of this section will describe how to create your own labels.

## Label Layout Alignment Options

Before you place text on the label, you should first set the layout alignment options. Otherwise, you will not get a true picture of how the text will fit on the label.

To view the layout alignment options, click the Layout tab (**figure e**).

Let's go from left to right, top to bottom, and discuss the settings. As you will see, you have a great deal of control over every aspect of label alignment and printing.

## Orientation

This is the page orientation when you are printing labels. If the little man is pointing up, you have Portrait orientation; if he is lying on his side, you have Landscape orientation.

## Label (Print) Order

You can print labels from left to right, top to bottom; or from top to bottom, left to right.

## Number of Labels Across & Number of Labels Down

You can tell Freezerworks how many labels to print across the page, and how many labels down the page.

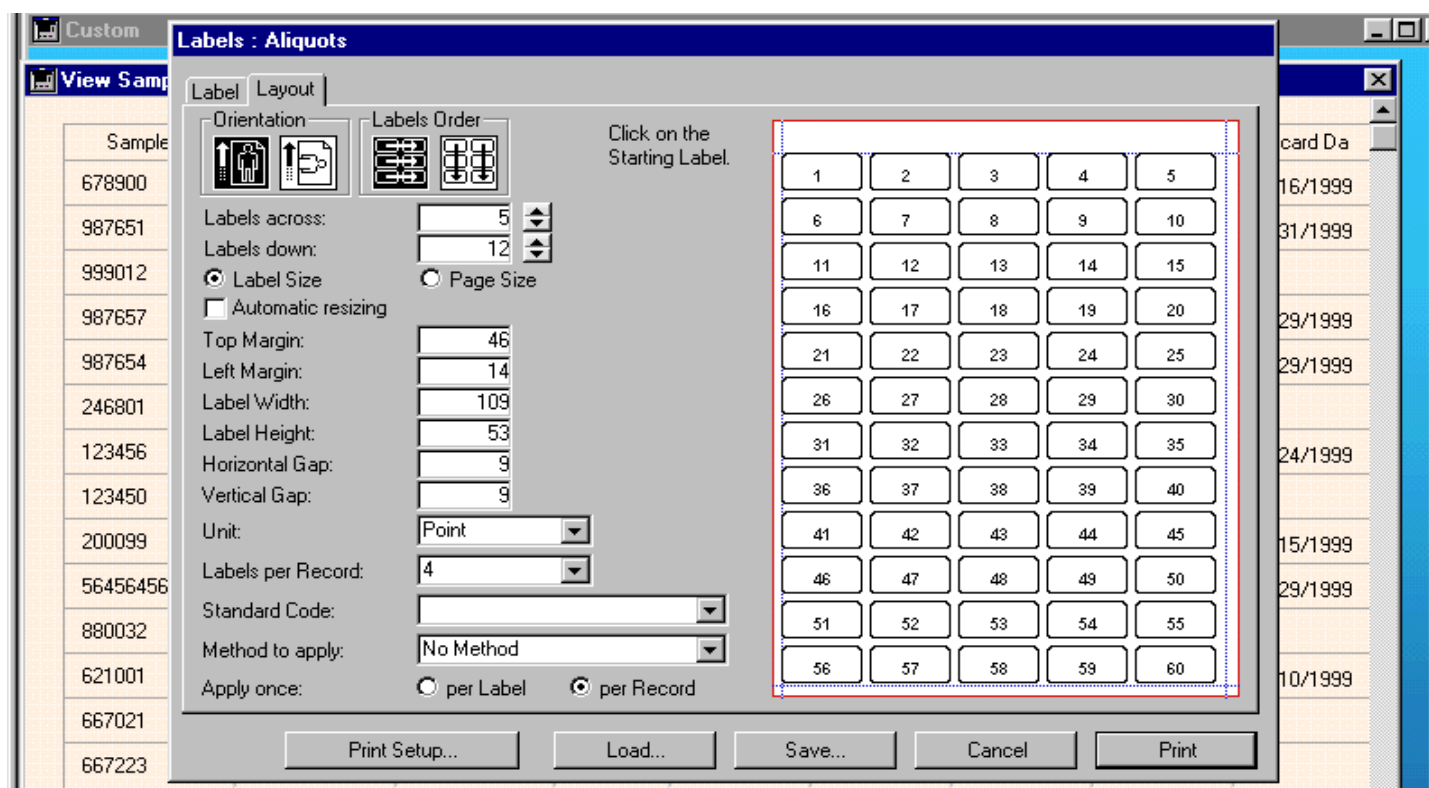


figure e

## Label Size Radio Button & Page Size Radio Button

Use these radio buttons to tell Freezerworks which dimensions you want to define: the size of each label, or the right margin and bottom margin of the page. Depending on which radio button is checked, the Label Editor will adjust dimensions accordingly. If you have set the Automatic Sizing checkbox (see below) and you are setting label dimensions, the margins will be automatically adjusted; if you are setting page margins, the label size will be automatically adjusted.

## Automatic Re-sizing Checkbox

If you have set the Automatic Sizing checkbox and you are setting label dimensions, the margins will be automatically adjusted; if you are setting page margins, the label size will be automatically adjusted.

## Top Margin

If the Page Size radio button is on, you will be able to manually adjust the top page margin; if the Label Size radio button is on, the top page margin will adjust automatically when you change the label height.

## Left Margin

If the Page Size radio button is on, you will be able to manually adjust the left margin; if the Label Size radio button is on, the left margin will adjust automatically when you change the label width.

## Label Width

If the Label Size radio button is on, you will be able to manually adjust the label width; if the Page Size radio button is on, the label width will adjust automatically when you change the left or right margin.

## Label Height

If the Label Size radio button is on, you will be able to manually adjust the label height; if the Page Size radio button is on, the label height will adjust automatically when you change the top or bottom page margin.

## Horizontal Gap

By changing this number, you change the amount of space between label columns.

## Vertical Gap

By changing this number, you change the amount of space between label rows.

## Unit

This is a drop-down list that allows you to change the units of measurement in your page and label settings: points, millimeters, centimeters, or inches.

---

## Labels Per Record

This is a combo box that allows you to designate how many labels will be printed for each record. Although this combo box only goes up to 10 copies per record, you can manually type higher numbers.

## Standard Code

If you have standard label templates, such as Avery templates, you can use those templates with the Label Editor.

## Method to Apply

This option is not used in Freezerworks.

## Apply once Per Label, Per Record

This set of two radio buttons is related to the previous option, Method to Apply, and is not used in Freezerworks

## Label Preview

The label preview on the right side of the screen allows you to see the results each time you make a change in your alignment options. This is also the area where you indicate to the printer where it should start printing the first label. For example, if you used three rows of labels in a previous print job, you would want the printer to begin with the first label of the fourth row. Click on the first label in the fourth row, and a “1” will be displayed in that position. The printer will begin the next print job on that label.

## Label Editor Buttons

### Print Setup... button

Set your page setup options. It is important to choose the printer before loading a label template. If you load a template and then change the selected printer, the layout settings will default to the new printer.

### Load... button

Load a saved label template. Highlight the template you wish to use (look for the .4lb extension) and click Open.

### Save... button

Save a label template. Using the **Save As** dialog box, give your label template a name. Freezerworks will add to it a .4lb extension.

### Cancel button

Close the Label Editor and don't save your changes.

### Print button

Print the selected labels using the loaded template.

## Label Design Tools in the Layout Editor

When you are satisfied with the alignment of the label, you are ready to begin the actual design.

To begin the label design, click the **Label** tab (**figure f, next page**).

### Drawing Tools

Most of the drawing tools are self-explanatory. From left to right, you have:

Selection arrow, Rectangle object drawing tool, Rounded object drawing tool, Oval and Circle object drawing tool, Line object drawing tool, Object right alignment tool, Object left alignment tool, Object bottom alignment tool, Object top alignment tool, Object center horizontal alignment tool, Object vertical center alignment tool.

We want to give a more detailed explanation of the next five drawing tools, because you may not be familiar with them.

### Vertical Distribution Tool & Horizontal Distribution Tool

Sometimes, you need to evenly space objects. The vertical and horizontal distribution tools make it easy for you to do so.



**Vertical and  
horizontal  
distribution tools**

To use the distribution tools, select three or more objects and then click one of the tools. The Label Editor will evenly space those objects for you—either vertically or horizontally.

---

## Move to Front, Move to Back

The Move to front and Move to back tools allow you to control which objects are in front.



Move to front, Move to back tools

## Duplication Tool

Use this tool if you need to make a duplicate copy of an object in your label layout.



Duplication tool

## List of Fields

This will display all the fields from the Samples Table. When you want to include a field in your label, you simply drag it from the **List of Fields** into the label on the right-hand side of the window.

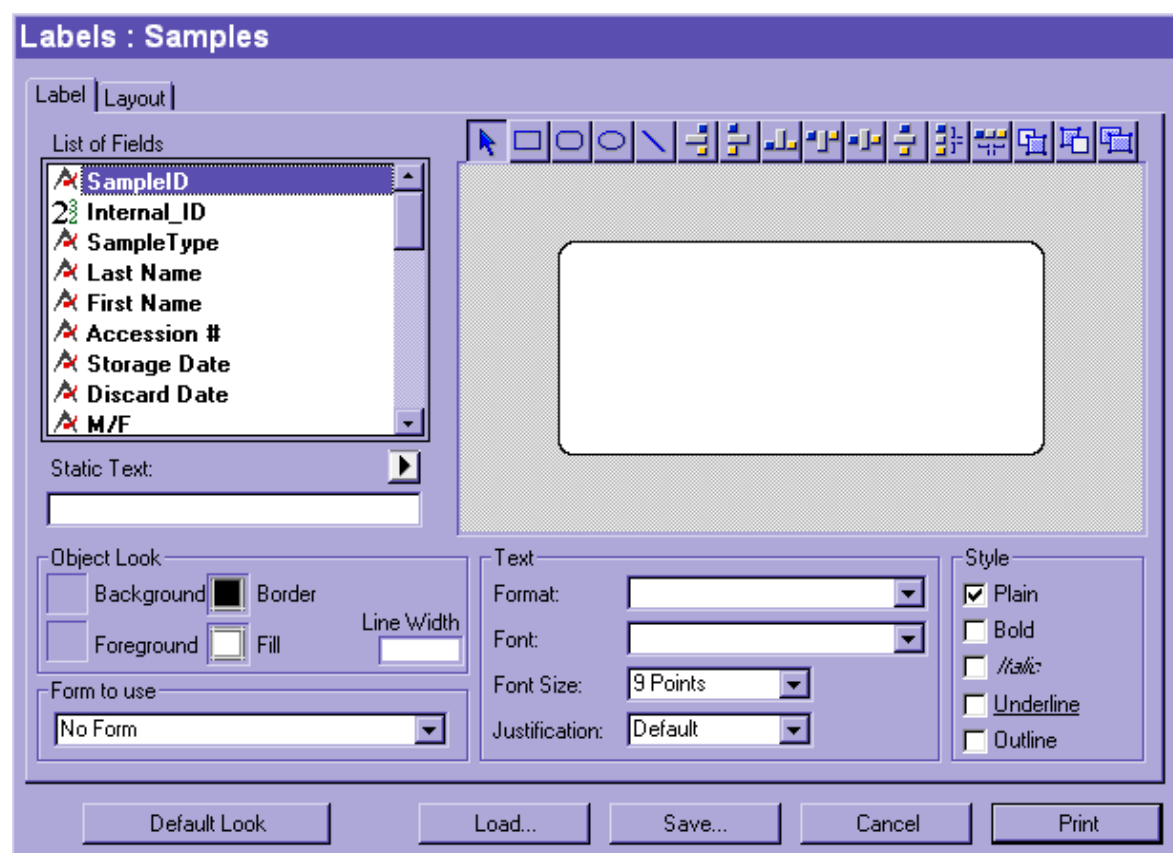
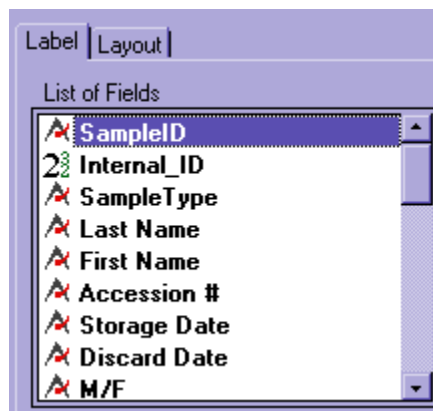


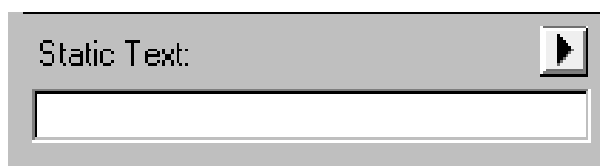
figure f

To remove a field entry, click to select it and press **Delete**.

## Static Text

Entering static text is the one part of the Label Editor that you might feel is “not intuitive.” To add text to your label, you must move the cursor to the static text box, type the text, click the “move text” arrow to move the text out of the box, and then drag the text to the desired location. Later, if you want to edit the text, you will not be able to do so; you must repeat the process all over again, retyping the text.

In the **lery-1200.4LB** template we opened earlier in this section, the text “Acc#” was placed on the label using the Static Text box.



## Object Look

These tools allow you to control the border, fill, and line width.

## Form to Use

This option is not used in Freezerworks.

## Text and Style Formatting Options

If you have used any drawing tool or word processor, you will recognize these tools:

Format, Font, Font Size, Justification, Plain, Bold, Italic, Underline, and Outline.

## Fine-Tuning the Label Alignment

Sometimes when you are printing labels, you will notice that the alignment is just a slight bit “off.” This is even more noticeable if you are printing several pages of labels in one print job. Whenever you are creating a new label design, you should follow this procedure to find out if you need to make any fine-tuning adjustments:

1. Print three pages of labels on plain white paper.
2. Find a strong light, and use it to “look through” a sheet of your label paper and check the alignment of the first printed page.
3. Hold the two sheets up to the light together, with the blank sheet of labels in front and your printed sample in the back. Make sure the edges of the two pages are exactly even. You might want to use paper clips to hold the pages together. Look at the pages in the light. If there is an alignment problem, you will notice that the alignment of the print is not consistent all the way from the top to the bottom of the page.
4. Check the alignment of the second and third pages of printed labels in the same way.
5. If you need to make fine-tuning adjustments, change the settings in small increments. Keep in mind that the Label Editor allows you to enter negative numbers, if necessary, to get the alignment exactly the way you want it.

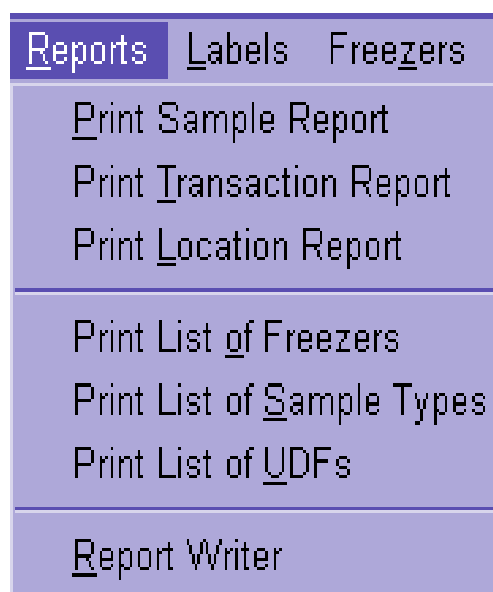


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## Chapter 11

# Printing Reports

# Printing Reports



The Reports Menu is divided into three sections.

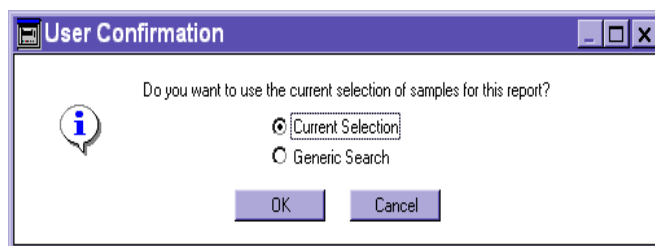
- **Pre-configured reports** for Samples, Transactions and Locations.
- **List reports** for Freezers, Sample Types and UDFs.
- **Customized Reports** using the **Report Writer** option to configure and save templates for customized reports.

## Preconfigured Reports

Pre-configured reports may be generated for an existing query selection or a new query (see **Searching for Samples** and **Using Generic Search** for information on how to select records to print).

If these report options are selected after a query has been made, Freezerworks will confirm if you want a report for the **Current Selection** or if you want to

perform a **Generic search**. The **Generic Search** option uses the **Query Editor** as described in the **Generic Search** section. If a report option is selected without records selected, then these menu options will take you directly to the **Query Editor**.



## List Reports

List reports do not rely on an existing query selection. All records specific to the selected report option are printed in a list format.

## Customized Reports

Customized reports may be generated using the Report Writer. This report option allows you to choose which fields will appear on the report and how they will be sorted. You can also add statistical information such as counts, sums and averages.

## Print Sample Report

This report contains the **Sample ID**, **Sample Type**, **Sample Date**, **UDFs 1-3** and **Aliquot Locations**.

Let's say you want to print a report for all samples from 10/27/99 (example only, your data will vary).

At the Freezerworks main menu, select **Samples – Search by Sample Date**. Enter 10/27/99 and choose **Exact Match**. Our search finds three samples (**figure a**).






**Note:** These search results and the UDFs displayed here are specific to our database.

At the Freezerworks main menu, select **Reports – Print Sample Report**. When the User Confirmation appears, select **Current Selection**. The Sample Report lists the sample identifying information along with all aliquot information (**figure b**).

Search by Sample Date: 3 of 202							
Sample ID	Sample Date	Sample Type	Aliquots	Last Name	First Name	Accession #	Storage Date
621001	10/27/99	serum	1	Doe	Baby Boy	W23456	10/27/1999
667021	10/27/99	cells	1	Smith	Sally		
667223	10/27/99	serum	1				

*figure a*

Print Preview



# Freezerworks Sample Report

Printed: 11/16/99

Sample ID	Type	Date	Last Name	First Name	Accession #
621001	serum	10/27/1999	Doe	Baby Boy	W23456

<u>Freezer</u>						<u>Initial ml</u>	<u>Current ml</u>	<u>Thaws</u>
Tube	Refrigerator 1 West	Shelf	Rack	Row	Column			
1	Refrigerator 1 West	1	1	A	1	3	3	0

Sample ID	Type	Date	Last Name	First Name	Accession #
667021	cells	10/27/1999	Smith	Sally	

<u>Freezer</u>				<u>Initial million</u>	<u>Current million</u>	<u>Thaws</u>
Vial	Cryo Tank	Cannister Cane	Position			
2	Cryo Tank	A 4	1	10	10	0
3	Cryo Tank	A 4	2	10	10	0
4	Cryo Tank	A 4	3	10	10	0

*figure b - the Sample Report in Print Preview*

## Print Transaction Report

The Transaction report will display information from the Samples Transaction Tab of the Sample records you select.

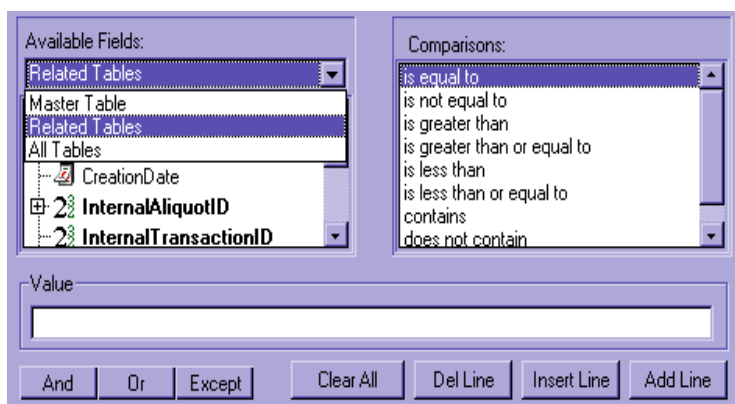
At the Freezerworks main menu, select **Reports – Print Transaction Report**.

If you do not have samples selected yet, Freezerworks will display the Query Editor. See the section on Generic Search for help in selecting records using this screen.

If you already have samples selected, a prompt will ask whether you wish to print from the **Current Selection**, or whether you wish to select other records for the report instead using **Generic Search**.

If you select Generic Search, the Query Editor will offer three tables from which to select fields and create sentences to search and select samples. (**figure c**)

The **Master Table** and **Related Tables** will offer you the Transactions fields for selecting.



*figure c - Three tables under Available Fields offer fields to use for selecting samples.*

You could, for example, select all records within a range of **Transactions Dates** and with a certain **Activity**. Or you could search on key words in the transaction Notes.

If you wish to select records using the Samples Table, select All Tables, and expand the Samples Table. Again, see the **Generic Search** section for details on selecting records using the **Query Editor**.

The Transaction report will display transaction information for the samples you select. (**figure d**)

Freezerworks Transactions				Printed:	12/16/99
SampleID	Aliquot	Date	Activity		
667021	1	12/07/1999	moved to another lab		
667223	1	12/05/1999	thawed		
667433	1	12/02/1999	re-test		
667433	2	12/03/1999	re-test		

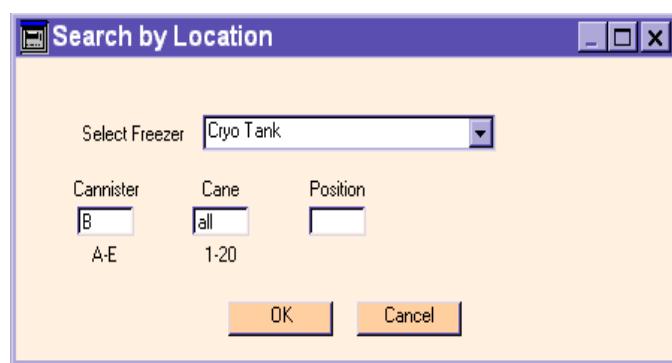
*figure d - the Transactions Report*

---

## Print Location Report

This report lists all aliquots in a specific location.

1. At the Freezerworks main menu, select **Reports – Print Location Report**.
2. At the **Search by Location** prompt, select a freezer from the drop-down list.



*figure e*

3. Enter the subdivisions you want in the report. For example, if you want a report of all samples located in the freezer Cryo Tank, Cannister B, *All* Canes, you would enter that information in the subdivision boxes (**figure e**).

4. Click **OK** to print the report. The report will be sorted in location order, and will display the Sample ID, Sample Type, Aliquot Number and volume information. (**figure f**)

If Freezerworks does not find any aliquots in the desired location, then it will ask if you want to perform a new search or to cancel the search.

### Freezerworks Location Report

Printed: 12/16/99

Cryo Tank			Sample ID	Type	Aliquot	Initial	Current
Cannister	Cane	Position					
B	1	1	770988a	cells	1	10	10
B	1	2	770988a	cells	2	10	10
B	1	3	770988a	cells	3	10	10
B	1	4	770988a	cells	4	10	10
B	1	5	770988a	cells	5	10	10
B	1	6	770683a	cells	1	10	10
B	1	7	770683a	cells	2	10	10
B	1	8	770683a	cells	3	10	10
B	1	9	770683a	cells	4	10	10

*figure f - the Location report*

## Print List of Freezers

This report prints a list of all freezers with their Descriptions and Next Available Positions (**figure g**).

At the Freezerworks main menu, select Reports – **Print List of Freezers**.

For more detailed reports of freezer configuration information, use the **File-Print** option (see next page).

## Print List of Sample Types

This report prints a list of all Sample Types with their Descriptions, Default Amounts and Default Units (**figure h**).

At the Freezerworks main menu, select **Reports** – **Print List of Sample Types**.

### List of Freezerworks Freezers

Printed: 11/02/99

Freezer Name	Description				
Refrigerator 1 West	Refrigerator on the west wall				
Next Available Position:	Shelf 1	Rack 4	Row C	Column 1	
Revco	5 subdivisions				
Next Available Position:	Shelf 5	Rack 5	Box 11	Row 7	Column A

*figure g - list of Freezers report.*

### List of Freezerworks Sample Types

Printed: 11/02/99

Type	Description	Default Amount	Default Units
bone		3	grams
cells		10	million
CSF		1	ml
macro	macrophages	1	million
pla	ACD plasma	1	ml
semen		1	ml
serum		3	ml
tissue		5	grams
urine		5	ml

*figure h - list of Sample Types*

---

## Print List of UDFs

This report prints a list of all User Defined Fields and their characteristics (**figure i**).

At the Freezerworks main menu, select **Reports – Print List of UDFs**.

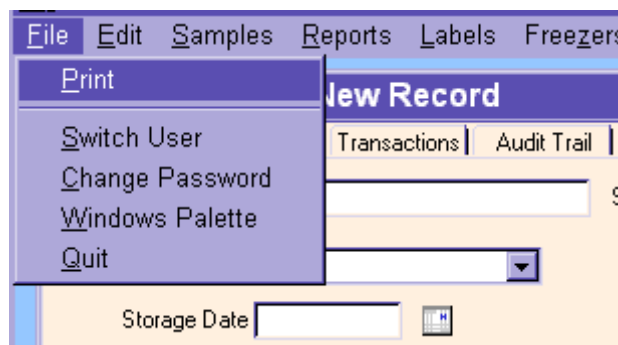
List of Freezerworks User Defined Fields

Printed: 01/11/2000

Field	Used?	User Defined Name	Type	Length	Defined Entries?	Modify?
UDF01	Yes	Last Name	Alpha	20	Yes	Yes
UDF02	Yes	First Name	Alpha	20	No	No
UDF03	Yes	Accession #	Alpha	15	No	No
UDF04	Yes	Storage Date	Date	10	No	No
UDF05	Yes	Discard Date	Date	10	No	No
UDF06	Yes	M/F	Alpha	1	Yes	No
UDF07	Yes	Physician	Alpha	9	Yes	No
UDF08	Yes	Hospital	Alpha	15	Yes	No
UDF09	Yes	Signed Off	Alpha	3	Yes	No
UDF10	Yes	Test #1	Alpha	10	Yes	No
UDF11	Yes	Result #1	Numeric	10	Yes	No
UDF12	Yes	Test #1 Date	Date	10	Yes	No
UDF13	Yes	Test #2	Alpha	5	Yes	No
UDF14	Yes	Result #2	Numeric	10	Yes	No
UDF15	Yes	Test #2 Date	Date	10	Yes	No
UDF16	Yes	Test #3	Alpha	8	No	No
UDF17	Yes	Result #3	Numeric	10	No	No
UDF18	Yes	Test #3 Date	Date	10	No	No

*figure i*

## File-Print (a quick print option)



If, while viewing selected data, you would like a report of what you have selected or are currently viewing, a quick way to print/print preview a report is to go **File - Print** option from the **Main Menu**. If the Print option is not dimmed, this means a report is available for the data you are viewing or have selected. Use **File-Print** for the following needs:

### Sample Information

- Print the **Sample Report** for selected records or while in a single record
- Print **Notes, Transactions or Audit Trail** reports while viewing these at a single record

### System Admin Information

- Print **Users, Sample Types, UDFs**

### Freezer information

- Print a **Freezer Report** for selected freezers or for a single record
- Print **Exceptions Report** while viewing a freezer's exceptions

## Report Writer (Quick Report Editor)

Virtually every database involves some type of reporting. When your database is designed, you will already know that there are certain reports that you will need on a daily, weekly, monthly, or annual basis.

However, rarely can a design team predict, ahead of time, every report that you will ever need. As times and conditions change, you will need to look at the data in different ways.

The **Quick Report Editor** allows you to quickly produce new reports from a fresh perspective, and to save report formats for future recall.

The Quick Report Editor is made up of these areas:

- **The fields area** - select fields to include in the report
- **The sort area** - define how to sort the fields in the report
- **The report area** - design the report.
- **The cell area** - select math functions to use on field totals
- **The column area** - define how data are displayed in columns

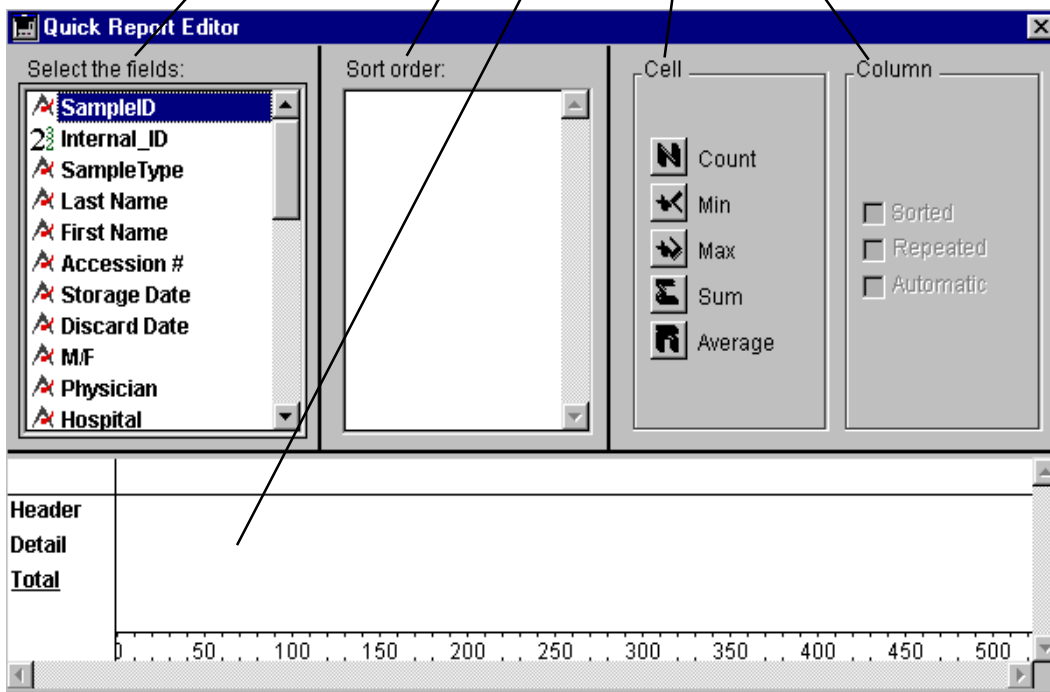


figure j - the Quick Report editor



---

## Creating a Simple Report

When you are designing your reports, you should first work with a small selection of records. The reason for this is that you will need to print and preview your report many times before you are satisfied with it. Having a small set of records speeds up the printing and print preview process.

Let's start with a simple Quick Report, just a few columns with no formatting. In Freezerworks, take the following steps to create a simple Quick Report:

1. You must create a current selection for the report. At the Freezerworks main menu, select one of the Search options on the **Samples** menu to find some records. Or, select all records using **Samples-View**.
2. At the Freezerworks main menu, select **Reports – Report Writer**.

The Quick Report Editor appears. (**figure j**)

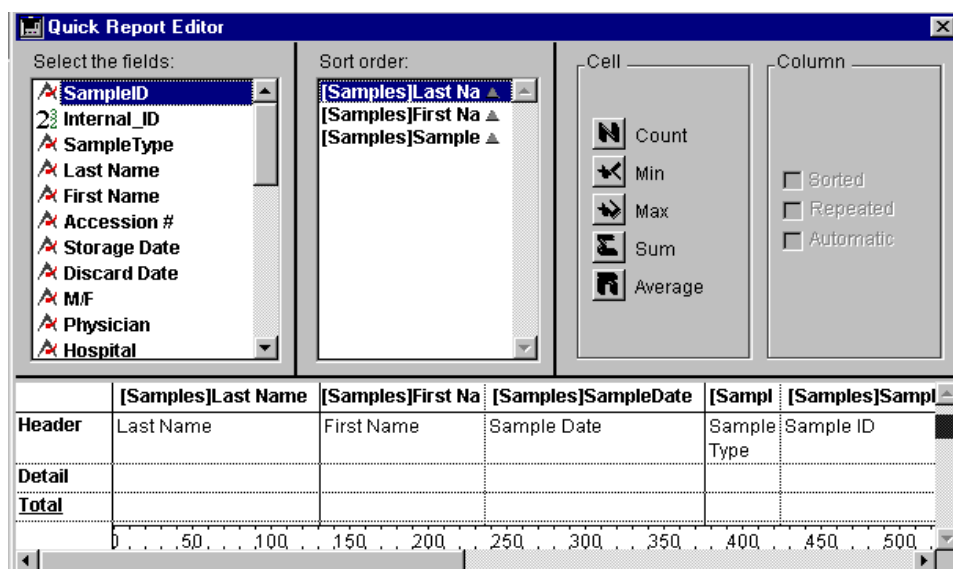
The **fields area** lists the fields from the Samples table.

If you open the Report Writer while you are viewing Freezer configurations, you will have access to all fields in the Freezers table.

3. Double-click (or drag and drop) the appropriate fields in the left-hand column to add them to the **report area**.

**Note:** The fields “Last Name” through “Hospital” shown here are User Defined Fields. Your own User Defined Fields will be displayed in this column.

4. The report may be sorted by one or more fields. Drag-and-drop the fields into the **sort order area**. If you wanted to create a report of Last Names (UDF #1), First Names (UDF #2), Sample Dates and Sample IDs, and sort it by Last Name, First Name and Sample Date, the Quick Report Editor would look like this (**figure k**):



*figure k - completed Quick Report screen.*

## Previewing a Quick Report On-Screen

To check your report format, you can preview it on the screen.

**1. Select File – Page Setup.** The Print Setup dialog appears. Make sure you have the correct printer selected, then click **OK**.

**2. Select File - Print Preview.**

**User Tip:** When you are designing a report, you will need to do many sample printings to see the result of your efforts. You can save time and paper by previewing on screen whenever you just want to get a quick look at the results.

After a delay of a few seconds, the Print

Preview screen appears (**figure 1**).

To get a close-up look at your report, click the **Zoom** button.



**3. Notice in the example below that John Doe's First and Last Names are only printed once, and that we received two Sample Types from him on 09/14/1999 but the Sample Date is only printed once. "John Doe" and "09/14/1999" are printed once**

Last Name	First Name	SampleDate	Sample Type	SampleID
Cole Doe	Paula	07/13/1999	cells	900056
	John	08/02/1999	CSF	987654
		09/14/1999	cells	987655
			serum	987657
Lee Miller Morris Smith	Larry	10/12/1999	serum	99000411
		10/13/1999	cells	9700488
	Diane	10/13/1999	cells	990001
	Steve	10/08/1999	pla	999012
	Andrew Mary	11/01/1999	serum	9878912
		06/05/1999	cells	987651
		09/17/1999	serum	989870

figure 1

---

because these sorted values remained the same. If you want these values to be printed for each record, click on the column heading for each field and check the **Repeated** box in the Column area.

Here are the other buttons on the Print Preview screen.



You may guess the function of these buttons just by looking at them. They are, from top to bottom: **Print**, **Stop**, **Previous page**, **Next page**, and **Zoom**.

## More Quick Report examples:

### Example 1

Suppose you need an inventory count - a report of samples based on the different types of samples stored. This report will display SampleTypes received with the number of samples per Sample Type.

The report will be subtotaled by Sample Type, with a grand total of samples at the end. The report will also display the As-of date and time for the report.

Freezerworks includes a report template for this report. Let's load and view it:

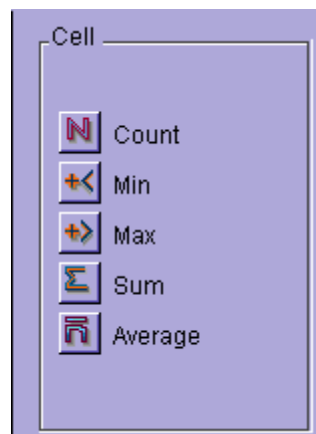
1. In the Quick Report Editor, select **File – Open**.
2. Double click **Report Templates** in the 4D database folder.

**User Tip:** You will probably create many quick report templates. You can save your templates in the **Report Templates** folder so that you will always know where to find them.

3. Double-click **manual example 1.4QR** to open the template. See figure m.

Notice the inclusion of cells that give Sample Type subtotals and total number of samples. These are included by highlighting a cell and pressing the button for the appropriate math function.

The math function button options are:



**Count**-gives a total of records selected

**Min** - when reporting on numeric fields, will

display the smallest figure

**Max** - when listing numeric fields, displays the largest figure

**Sum** - gives a total for all applicable numeric fields selected

**Average**- gives average figure based on the numeric fields selected

To include a math function, highlight the area in which you want it displayed (e.g., a **Total** line) and click the appropriate button. Math function buttons will be grayed out when a row is highlighted in which a math function would be inappropriate (e.g., headers and detail rows).

In this example, notice the **Detail** line is **hid** (hiding is explained later in this section).

Hiding this line won't print multiple lines with the same Sample Type (one for every record). By inserting a Pound sign (#) on the **Break** line (Break lines and the # are explained later in this section) of the blank column, the Sample Type is printed every time its value changes in the sorted list. With a hidden detail line, you need the # sign or no Sample Type categories will be displayed anywhere on the report.

Use the **Count** formula both in the **Break** line and the **Total** line. To get a count of samples subtotaled by Sample Type, place **Count** in the **Break** line. To total all Samples for all Sample Types, place it in the **Total** line.

Create headers with the title and the date using the Header option, explained later in this section.

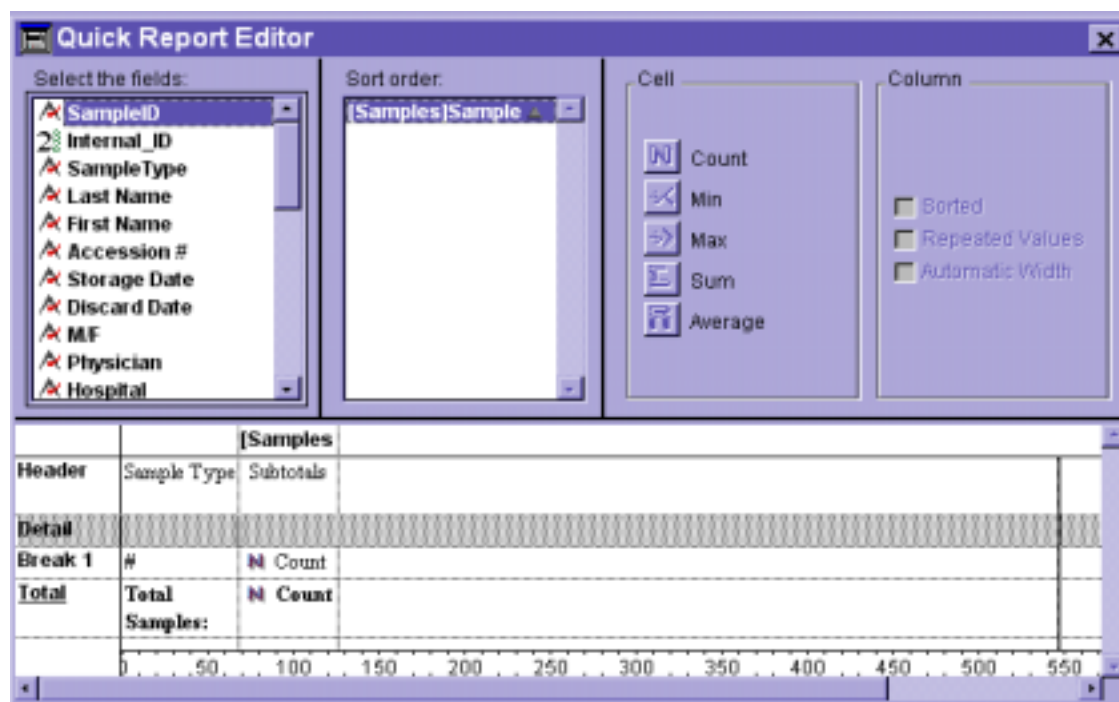


figure m - Manual Example 1.4QR Quick Report template shown here. The Quick Editor above creates the report displayed below.

Samples Received		As of Monday, November 08, 1999 9:36:43 AM
Sample Type	Subtotals	
bone	1	
cells	104	
CSF	13	
macro	10	
pla	19	
semen	10	
serum	45	
urine	2	
<b>Total</b>	<b>204</b>	
<b>Samples:</b>		

figure n

4. After opening the saved report template, preview it to make sure that everything is the way you want it. Here is a print preview of the report based on all samples in your database (**figure n**):

## Example 2:

In this report, expand the Example 1 report to include and list the Sample ID numbers.

1. Select samples and then select **Reports – Report Writer**.

2. Open the Reports folder as in the previous example and double-click **Manual Example 2.4QR**. (**figure o**)

Here, use a **Break** line again, to separate totals by Sample Type. The report is sorted by Sample Type. “Sample Type” is truncated in the **Sort Area**, but to verify the report will

be sorted by this field, click to highlight the Sample Type column and you will see the box for “Sorted” selected in the Column box located on the far right of the Quick Report. The first column is where you display the Sample ID of the samples selected.

Using the **Sum** function, the report will total the number of aliquots for all samples by Sample Type under the **# of Aliquots** column. The **Sum** function is adding up all entries in the **# of Aliquots** fields. If you were using the **Count** function, it would be merely totaling and reporting the number of Sample records per Sample Type. Each Sample would count as “1” regardless of how many aliquots are stored for it. At the end, the report will display a grand total of aliquots for all samples listed in the report, using the **Sum** function.

**Figure p** shows how the report will look when printed.

**Quick Report Editor**

Select the fields:

- ☒ SampleID
- ☒ Internal\_ID
- ☒ SampleType
- ☒ Last Name
- ☒ First Name
- ☒ Accession #
- ☒ Storage Date
- ☒ Discard Date
- ☒ MF
- ☒ Physician
- ☒ Hospital

Sort order:

[Samples]Sample

Cell

- ☐ Count
- ☐ Min
- ☐ Max
- ☐ Sum
- ☐ Average

Column

- ☐ Sorted
- ☐ Repeated
- ☐ Automatic Width

	[Samples]SampleID	[Samples]SampleType	[Samples]Nu
<b>Header</b>	Sample ID	Sample Type	# Aliquots
<b>Detail</b>			
<b>Break 1</b>		<b>Total aliquots - #</b>	<b>Σ Sum</b>
<b>Total</b>		<b>Grand Total Aliquots</b>	<b>Σ Sum</b>

figure o






			
			
			
			
			
	Sample ID	Sample Type	# Aliquots
	770683a	cells	6
	771605a		2
	770988a		5
	<b>Total aliquots - cells</b>		<b>13</b>
	784431a	CSF	3
	776554b		1
	<b>Total aliquots - CSF</b>		<b>4</b>
	772331c	serum	8
	774556c		5
	<b>Total aliquots - serum</b>		<b>13</b>
	<b>Grand Total Aliquots</b>		<b>30</b>

figure p

### Example 3:

This report will use both the Sum and Count functions, giving you both the number of samples per Sample type, as well as the number of aliquots per Sample Type.

1. Select samples and then select **Reports – Report Writer**.

2. Open the Reports folder as in the previous example and double-click **Manual Example 3.4QR**. (figure q)

Insert two columns to indicate Total Samples and Total Aliquots. As in example two, Total Samples uses the **Count** function, Total Aliquots uses the **Sum** function.

To right justify the # Samples and # Aliquots columns, we highlighted the columns, then used the **Right Mouse Click** to get a pop up menu of editing functions. We select Alignment to modify the justification. We also used this pop up menu to change fonts to bold. More on these features on the following pages.

See **figure r** for a printout of this report.

Now that you've seen some specific examples of reports, following are the features of the Quick Report in more detail .

The screenshot shows the 'Quick Report Editor' window. It has several sections: 'Select the fields:' with a list of fields including SampleID, Internal\_ID, SampleType, Last Name, First Name, Accession #, Storage Date, Discard Date, M/F, Physician, and Hospital; 'Sort order:' with a dropdown menu showing '[Samples]Sample'; 'Cell' with buttons for Count, Min, Max, Sum, and Average; and 'Column' with checkboxes for Sorted, Repeated, and Automatic. Below these sections is a preview of the report layout with columns for Sample Type, # Samples, and # Aliquots. The preview includes a header row, a detail row, a break row, and a total row. The total row shows 'Total Samples' and 'Total Aliquots' with corresponding Count and Sum functions.

Header	Sample Type	[Samples]	[Samples]Num
Detail		# Samples	# Aliquots
Break 1	#	N Count	Σ Sum
Total	Total Samples:	N Count	Σ Sum

figure q

**Samples Received****As of December 09, 1999 10:57:14 .**

Sample Type		# Samples		# Aliquots
cells		3		13
CSF		2		4
serum		2		13
	<b>Total Samples:</b>	<b>7</b>	<b>Total Aliquots:</b>	<b>30</b>

*figure r*

## Working with Columns in Quick Reports

Since it is a tool for creating columnar, spreadsheet-style reports, the Quick Report Editor offers many options for creating, modifying, and formatting columns.

- To insert a query for records that will be used in other columns of the report.

To hide a column in a Quick Report, click on the column and select **Edit - Hide**.

## Hidden Columns or Rows in a Quick Report

Sometimes we want to hide a column or a row in a quick report. A hidden column contains information that is relevant to the report, but the information in the column will not be printed. If a column is hidden, it will appear “grayed out” in the report format.

There are three reasons that you might want to place a hidden column in a quick report:

- To sort on a value that you do not want to display in the report.
- To calculate information that is used by other columns in the report.

Edit	Font	Style	Help
Undo			⌘Z
Cut			⌘X
Copy			⌘C
Paste			⌘V
Clear			
Insert Column			⌘I
Delete Column			
Edit Column...			
Add Break			
Duplicate Break			⌘B
Delete Break			
Hide			⌘H
Set Page Break			



---

In the Samples Received report template (**Manual Example 1.4QR - figure m**), notice that the Detail line is hid. This kept multiple lines with the same Sample Type (one for every record) off the report. By inserting a Pound sign (#) on the Break Line of the blank column, the Sample Type is printed every time its value changes in the sorted list. See the Break Levels explanation later in this section.

## Resizing Columns in a Quick Report

If you hide a column in a quick report, it is also a good idea to resize that column to a very small size. Since it will not appear in the report, you don't want the column to mislead you as to the width of your report.

Before you resize the column, it is also a good idea to shorten or remove the column header. Here are the steps for shortening the header and resizing a column:

**1.** Double-click just to the right of the column header name on the *Header Line*. After you double-click, you have a blinking cursor just to the right of the text, so you can edit it.

**User Tip:** Your editing must be on the Header line. The line above the Header line is the **Column Name line**, which you cannot edit.

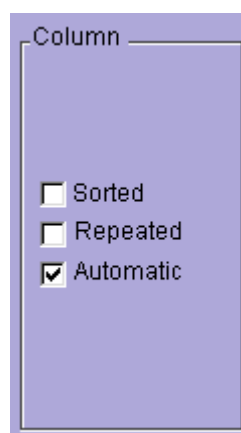
**2. *Backspace*** to delete as many characters as you want to delete.

You are now ready to *Select* the entire column and change its size.

**3.** Click in the area below the Total line to highlight the entire column.

**User Tip:** Your visual cue that the entire column is selected will be that the entire column will turn black.

**4.** Click the Automatic column width checkbox to turn off the fixed width.



**5.** Move the cursor to the top right border of the column until the cursor turns into a *column-resizing cursor*.

**User Tip:** To resize a column, you must have the cursor located **above** the header line.

**6.** Drag the column to the left or the right, as desired.

**User Tip:** It does not matter in which order you change the column header name, resize, or hide the column. You can do them in any order and the end result will be the same.

## Inserting a Column in a Quick Report

Sometimes you may want to add a column in front of an existing column.

1. Highlight a column. To highlight a column, click at the top of the column above the header, or at the bottom of the column below the Total line.

2. Select **Edit – Insert Column**.

3. The 4D Formula Editor will appear. We will not address the Formula Editor in this version of Freezerworks. Click **OK**. Your new column appears to the left of the original column. You can now drag a field from the **fields area** into this column.

## Creating a Blank Column in a Quick Report

Sometimes you need a column that is simply blank. It may be for making notes, or it may be strictly for appearance. We used blank columns in our **Manual Example 3.4QR. (figure q)** report template to display the words Total Samples and Total Aliquots. Creating a blank column is the same as the steps for inserting a column, except that you do not drag a field into it.

1. Highlight a column.

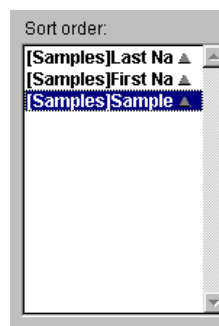
2. Select **Edit - Insert Column**.

3. The 4D Formula Editor will appear. We will not address the Formula Editor in this version of Freezerworks. Click **OK**. A new column will appear as a blank column in your report.

4. Resize the column to the width that you want.

## Sort Levels and Sort Order

You can sort on fields. Your visual clue that your report has sort levels is the list of fields in the **Sort order box**.



There are two ways that you can add a column to the Sort order box:

- Drag and drop a field from the Fields list into the Sort order box.
- Highlight a field and click Sorted in the Column area.



You can change any sort order to Descending by clicking on the sort direction arrow. Each time you click the arrow, it “toggles” between ascending and descending.



## Break Levels

A Break Level is a place in a report where you pause to show **Average, Total, Minimum, Maximum, or Count** information. To have a break level, you must have a corresponding sort level.

To insert a break level, select **Edit – Add Break**.

Notice also that you can **Duplicate Break, Delete Break, Hide Break, and Set Page Break**. A Break is hidden if it is grayed out.

If desired, you can set one of your break levels as a Page Break.

For each Break that is not hidden, the Quick Report will print any summary information that you have included in your report.

## Summary Information at Break Levels

As mentioned earlier, a Break Level is a place in a report where you pause to show Average, Total, Minimum, Maximum, and Count information. There are two ways that you add summary information to a break level:

- Highlight an entire column and click one or more of the Cell-Summary buttons.
- Highlight a break level cell and click one of the summary buttons.

We used the **Count** function in our example reports to calculate subtotals and grand totals.

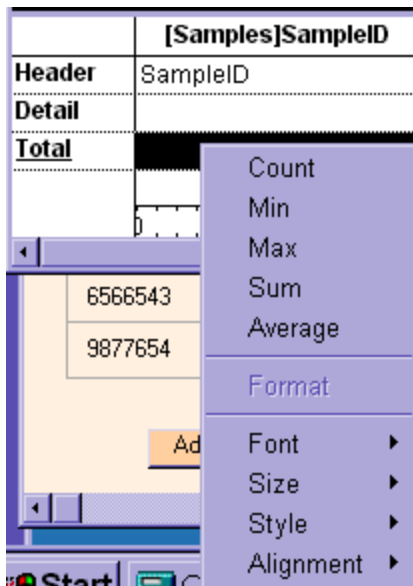
## Formatting Text in Quick Reports

The Quick Report Editor gives you options for formatting text. In this section, we will take a quick look at some of your options.

### Contextual Menus in the Quick Report Editor

When you are formatting the header line, detail line, and break lines of your Quick Reports, you can use Contextual Menus to speed up the task. A contextual menu is a “smart menu” that changes the options available, depending on which object was clicked when you brought up the menu.

To bring up contextual menus, click the Right Mouse (Windows), or click and hold the Mouse (Macintosh).



## Formatting the Detail Line

The Quick Report Editor offers you a wealth of ways to fine-tune the formatting of your reports to give them just the look that you want.

### Formatting Font, Size, and Style

You can change the font, size, or style of an entire row, an entire column, or a single cell.

To change the font of an entire row, click on the name of that row. To change the font of a column, click on the name of a column. To change the font of a single cell, click directly on that cell.

To select a font, you can select it from the Font pulldown menu or you can use the Contextual menu. To activate a contextual menu, right-click the mouse (Windows) or click the mouse and hold it down (Macintosh).

### Formatting Time and Date Columns

When you want the data displayed a certain way, you put those formatting instructions on the detail line. You can format a time column by putting a single number in the cell of the detail line. Here are the number symbols for the Freezerworks time formats:

#	Format	Example

---

1	HH:MM:SS.	18:48:35
2	HH:MM.	18:49
3	Hour Min Sec.	18 Hours 48 Minutes and Seconds.
4	Hour Min.	18 Hours 49 Minutes
5	HH:MM AM/PM.	6:49 PM

Here are the number symbols for two of Freezerworks' date formats:

#	Name	Example
1	Short	1/1/98
7	Forced	01/01/1998

## Formatting Alphanumeric Columns

Normally, you will not need to format alphanumeric columns. However, when you do want to control the formatting of an Alpha field, you can use pound signs (#) as place holders. The #'s tell the Quick Report Editor to display no more characters in the cell than the number of pound signs that you typed in the cell.

**User Tip:** If you want to show only part of a field, you can limit the number of characters by creating a format that has the correct number of #'s.

Also, you can control whether the characters displayed are from the left side or the right side of the field, by the alignment that you assign to the detail line. Right justify, right-hand characters;

Left justify, left-hand characters.

## Formatting Numerical Columns

If you are familiar with formatting numbers in spreadsheets, you will feel at home with formatting in the Quick Report Editor. Like alphanumeric fields, numerical fields can have #'s as placeholders. You can also use zeros (0) as place holders in numerical fields.

The difference between zeros (0) and #'s is this: A # is an "optional" placeholder but a zero is a "mandatory" placeholder. In other words, the # will be printed as a "nothing" or a number. The zero will be printed as a "zero" or a number.

**User Tip:** In formats, used in Quick Reports and other places, you can add any characters that you want at the beginning or the end of the format. An obvious example is the dollar sign in currency. Other examples might be *yrs* as an abbreviation for age, or *ml* as an abbreviation for milliliters.

## Formatting Break Lines

You have several options for formatting break lines. Let's look at the most important options.

### The # Sign

Just as it has a role in formatting the detail line, the # has a role in formatting break lines. On a Break line, the # tells the Quick Report Editor to replace the # with the current value for that sort level. For example,

current value for that sort level. For example, if we are sorting by Day Name and the current day is Wednesday, then the # will be replaced by the word *Wednesday*.

## Summarizing Numerical and Date Columns

As we mentioned earlier, during the discussion of sort levels and break lines, you can place summary information on the break line. You can display the *Minimum* value in a column, *Maximum* value, *Average* value, *Sum* of the values, or *Count* the number of records in the selection.

Note: whatever formatting you entered on the Detail line - e.g. money with a dollar sign (\$), will also apply to the Break line.

## Formatting Headers and Footers

The Quick Report Editor gives you several options for formatting headers and footers. You can set up a report title, as-of date and time, page number, and so on.

1. To bring up the headers and footers formatting dialog, select **File – Headers & Footers**.
2. Quick Report brings up the Page Setup dialog. Click **OK**, and the Headers & Footers Setup dialog appears.

**Figure s (next page)** displays the dialog from our Samples Received report with the formatting filled in.

## Switching Between Header and Footer

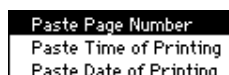
To switch back and forth between formatting for Header and Footer, use the Header/Footer popup menu.



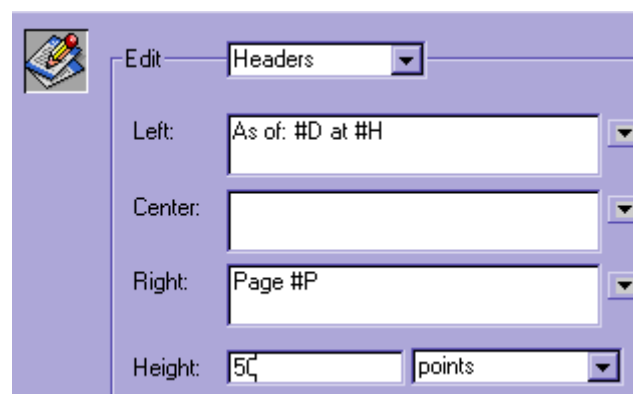
## Inserting Date, Time, and Page Number

The Editor also gives you popup menus that help you to insert information such as Date and Page Number.

Here are your options in those popup menus:



Here is an example of how to use the page/date/time popup menus:



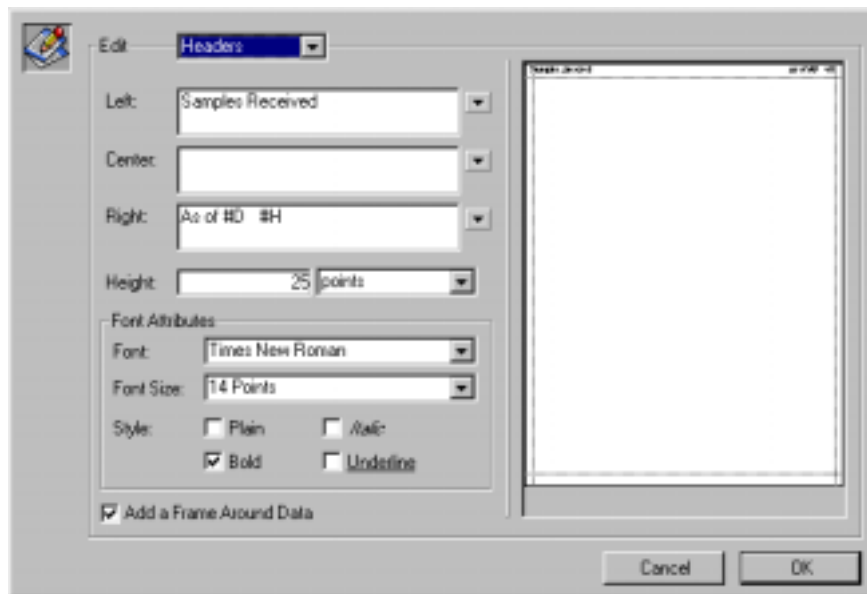


figure 5 - the headers and footers formatting dialog

To insert the page number in the right side of the footer, for example, we typed Page and a space; then we chose Paste Page Number in the popup menu.

The Quick Report Editor automatically inserted #P.

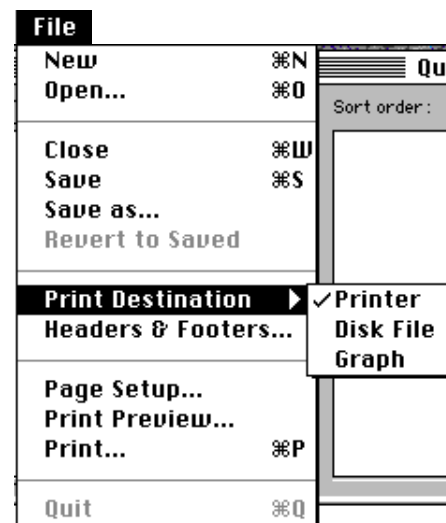
**User Tip:** The #P tells the Quick Report Editor to print the page number in the position that you designate. Here are the other # shortcuts:

#D Date  
#H Time

## Output Options for Quick Reports

In addition to printing to a printer or to the screen, you have other output options for Quick Reports. Let's take a look at those options.

Choose Print Destination in the File menu.



The Printer option is the default. It is the option that you have been using when you printed to screen and to hardcopy.

- Select the Disk File option when you

want to save the report as a text file and then open the report with some other program such as a Spreadsheet or Word Processor.

- Select the Graph option when you want to display the report as a graph. You should only use this option (Graph) when your report only has a few columns and the columns would be appropriate to be displayed in a graph.

## Page Setup in a Quick Report

In the Quick Report Editor, printing expands downward, but not to the right. If there is anything to the right of what you can't see on the screen, that information may not print in the Quick Report.

To make everything visible, you need to change your *Page Setup*. In this case, we need to change the *page orientation* from

portrait to landscape. You may also need to reduce the scale of printing so that all the columns fit on the page.

To step through the Page Setup process.

1. Select **File – Page Setup**. The Page Setup dialog appears.
2. Click the Horizontal Orientation icon.
3. Click **OK**. The Print Setup dialog box appears. Change the Orientation from Portrait to Landscape to change from a tall to wide page layout.



---

## Chapter 12

### Exporting Data

# Exporting Data

Moving data from Freezerworks to a data file, for import into another program (e.g., a spreadsheet, another database, a text document) is done using the **Export Data** option, located in the **Export** pull down menu on the Main Menu.

To create a data export file of selected samples:

1. First select the samples you want to include in the export file. See the **Searching in Freezerworks 5** and/or **Using the Generic Search** sections of this manual for help in selecting sample records for export.

2. For our example, I have selected all samples with a **Sample ID** that begins with **99**, and with a **Storage Date** of **11/16/1999**.

3. With our samples selected, go to **Export - Export Data (figure a)**.

4. At the **Export Data** entry screen, select the fields to be included in the export files. On the left side are the fields to select. Highlight each field and click **Append** to include it in the export file.

If you want a complete export of all fields that are linked to the Samples table, select **Copy All**. This will include all **aliquot**,

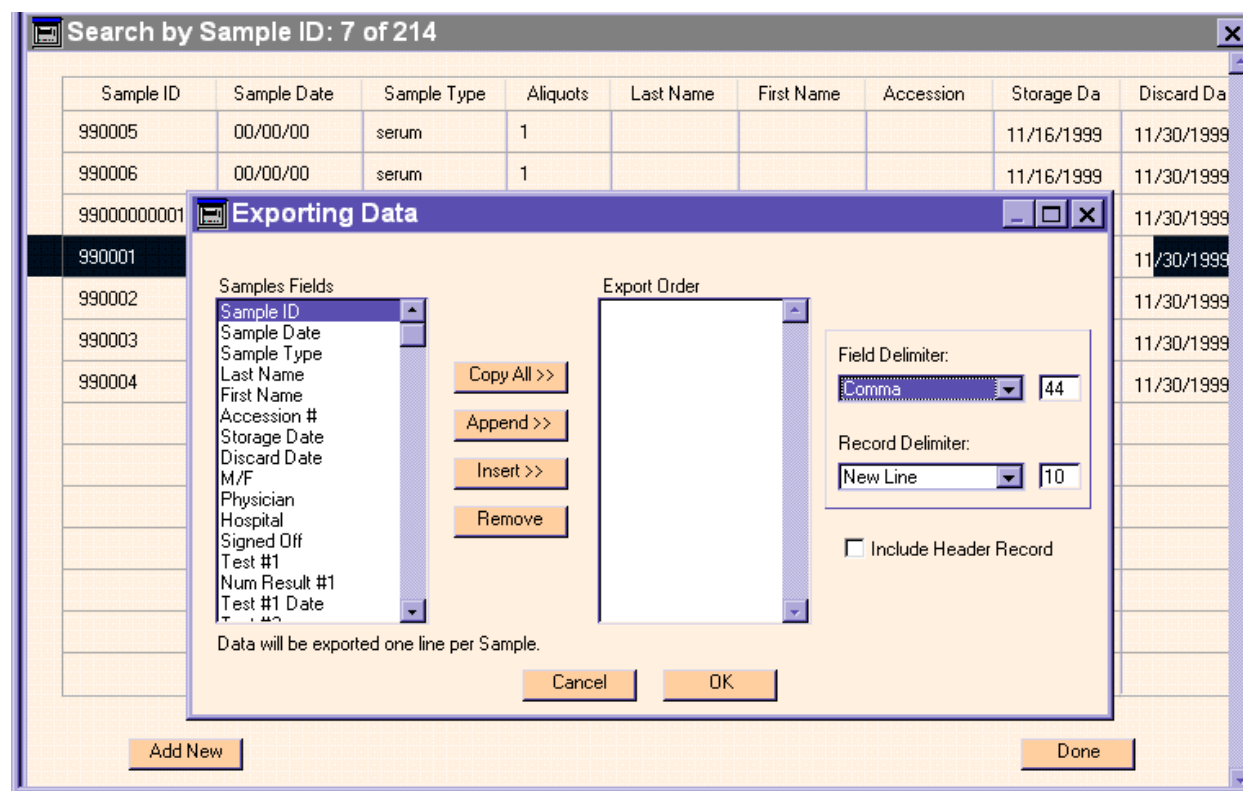


figure a - with seven samples selected for export, use the export screen to select which data fields will be exported, in what order, and in what format.

---

**location, transactions, and notes.** Most likely, you will want to be more selective in choosing fields.

**5.** But in this example, you are creating an export data file to include in a shipment of vials in a box. You need to include pertinent sample data, and since all your samples are located in the same box, you need to ship the box with the data file. Thus you will include the aliquot position information in the export file. This way, the laboratory receiving the box can link the box position of each vial, with the sample data.

The fields you want to include in the shipping export file are:

*Sample ID, Storage Date, Sample type, Subdivisions 4, and 5* (which correspond to *row*, and *column* of the box they are located in).

Thus you select the fields accordingly (see **figure b, next page**).

## **6. Selecting records across relational tables.**

The total number of records and their structure will be determined by the fields selected for export.

Because you are including Aliquot table fields per record, each record will be exported one line per aliquot. For each new aliquot, there will be a new record, each consisting of the same data fields selected. See **figure c, next page**, to view a printout of the export file.

*(continued on next page)*

## **Export Screen Commands:**

Use the **Insert** button to place a field in front of a highlighted field in **Export Order**.

Use **Remove** to take a highlighted field out of the **Export Order**.

Use **Append** to place a highlighted field at the end of the **Export Order**.

**Field Delimiter** refers to how each field is separated from the next in each sample record. **Comma delimited**, a very common delimiter, places a “comma” between each field. Other options include **Tab**, **Semicolon**, **Space**, **Comma and Quotation marks**, or **None**.

The number to the right of the **Field Delimiter** as well as the **Record Delimiter** is the **ASCII** value of the corresponding delimiter. Should you wish to choose a different delimiter from the options given, choose **Other**, and enter the ASCII value.

**Record Delimiter** refers to how each sample record is separated from each other. **New line** separates each record with a new line. Other options are separation by a **Return**, a **Return and New Line**, **None**, and **Other**.

Check the **Include Header Record** box if you would like the first record in the export file to be the name of the field displayed in the export order. This is very useful for viewing the export file and identifying the data fields.

Were you to only choose Sample table fields, the data records would consist of one line per sample record.

If Transaction fields were included, a new

record would be created for each transaction.

7. Click **OK** to save your export file. Freezerworks will prompt to give it a name, and a folder in which to store it.

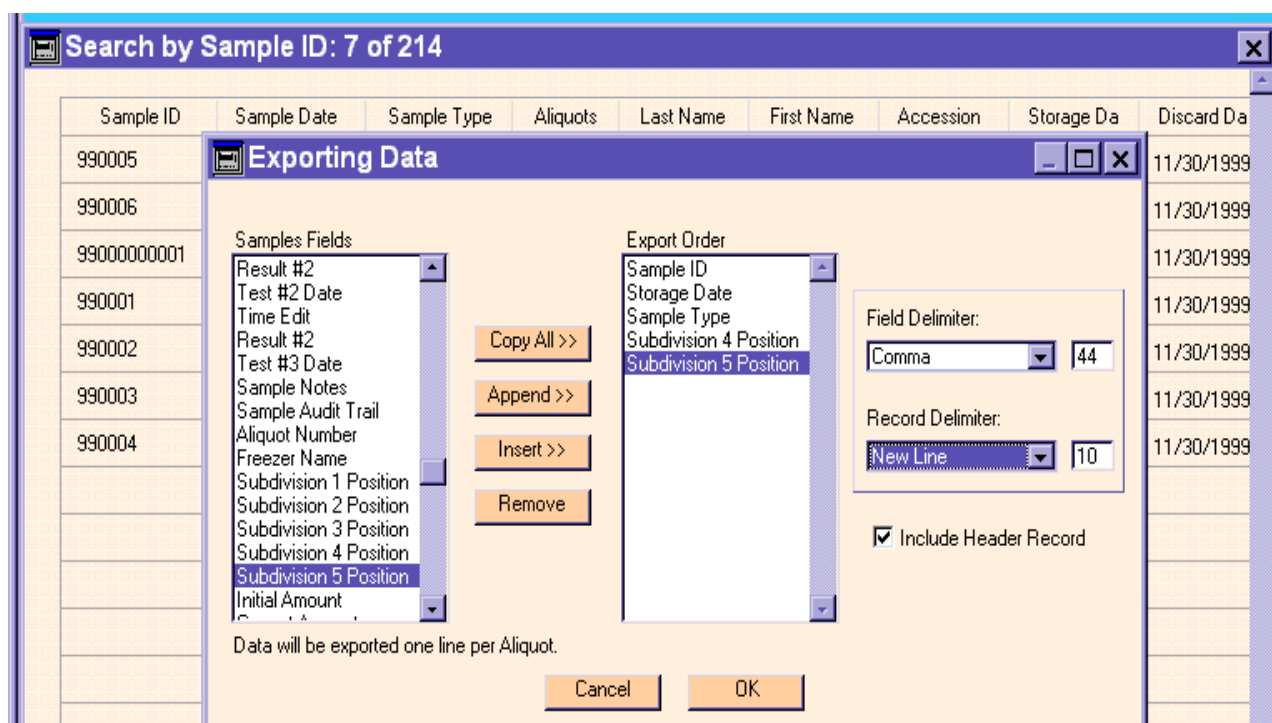


figure b - designing the ASCII export file with the above selections will create the export file shown on figure c below:

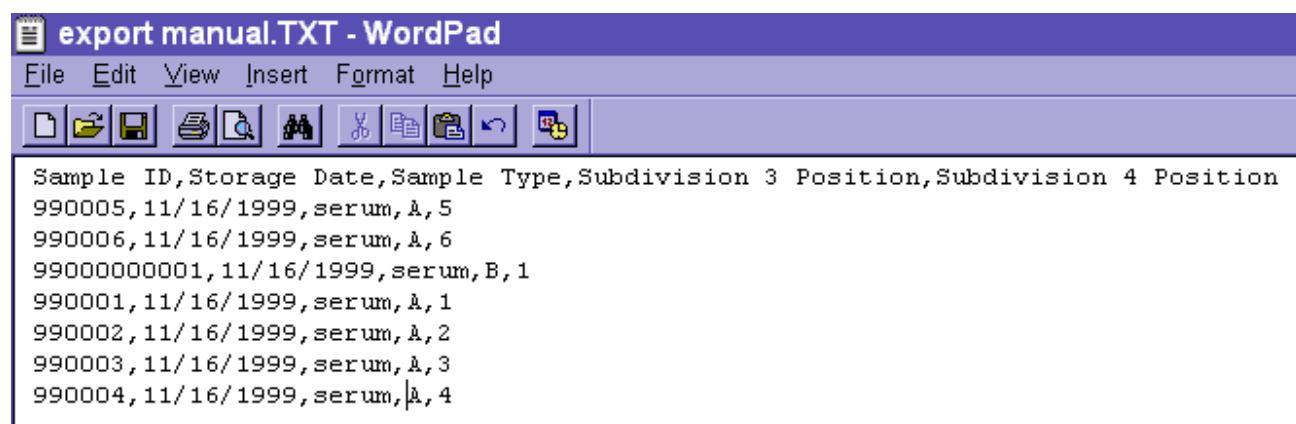


figure c - viewing the export file in Windows 95's WordPad

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