Quick Feature Tour

Quick Feature Tour Overview

This chapter highlights some of the features available in the latest version of BioWin. These are demonstrated using the "An Example" configuration installed in the **Data** directory. The purpose of this chapter is to provide a brief introduction.

For specific examples on using BioWin, please see "*BioWin Tutorials*". You can find more BioWin examples as follows:

- Select **File|Open** and browse to the **Examples** directory. These systems are discussed in the Help section on BioWin Tutorials and Examples.
- On the BioWin main window toolbar, at the end on the right, click on the arrow next to the icon that looks like a filing cabinet. This brings down a list of pre-configured BioWin process files for a range of system configurations.



The Interface

 UNMAN INVESTIGATION
 INFORMATION INVESTIGATION

 INFORMATION Projection
 Influent

 Influent
 Anoxic

 Aerobic
 Sec Settler

 Effluent
 Value

 Value
 Type: Model dates

 Value
 1000 Model

 New: Sec Settler
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 States reacted on ASDD
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The example system shown below is a simple two-reactor activated sludge configuration.

A simple two-reactor activated sludge configuration

The BioWin main simulator window interface consists of:

- Menus
- Toolbars
- Drawing Board
- Summary Panes
- Status Bar

Setting up such a system is easy to do - it's a matter of minutes. Buttons on the toolbar at the top of the main simulator window represent the various unit processes available in BioWin. Simply click on a button, move your mouse cursor over the area on the drawing board where you want to place an element, and click the mouse button.

Most types of wastewater treatment systems can be configured in BioWin using the many process modules. These include:

- A range of activated sludge bioreactor modules suspended growth reactors (diffused air or surface aeration), various SBRs, media reactors for IFAS and MBBR systems, variable volume reactors.
- Anaerobic and aerobic digesters.
- Various settling tank modules primary, ideal and 1-D model settlers.
- Different input elements wastewater influent (COD- or BOD-based), user-defined (state variable concentrations), metal addition for chemical phosphorus precipitation (ferric or alum), methanol for denitrification.

• Other process modules – holding tanks, equalization tanks, dewatering units, flow splitters and combiners.

Note: A new Sidestream Reactor element can be included in configurations. This is mainly for convenience as it is easily distinguished from other activated sludge reactors on the drawing board. The model applied in a sidestream reactor is no different from the model used in other units. BioWin is based on a single integrated model for all biological and chemical reactions, and the same model is applied to any unit in a BioWin simulation. The only difference for a Sidestream Reactor is that the "seed" values selected by BioWin when a simulation starts differ from those for a standard activated sludge bioreactor.

A quick way to gain access to local menus which contain commands specific to a particular object is through the use of the right mouse button. For example, if you point to the influent element and right-click, you will get a local menu as shown below.



Using the right mouse button gives access to local menus

Element Information

Double-clicking on a drawing board icon for an element in a configuration gives access to all pertinent information for that element. For example, double-clicking on a bioreactor element allows access to physical and operational data, as well as the facility to set up data monitoring.

🗧 Editing Bioreactor0	×
Dimensions Operation Monitor items	
Specify by C Area and depth C Volume and depth Name: Bioreactor0 Element type: Bioreactor	Volume 20000.0000 m3 Area 4444.4444 m2 Depth 4.5 m Width 4.0 m
Press F1 for help	OK Cancel

Dialog box allows access to all bioreactor information

Once you've double-clicked on an element icon to gain access to this information, it's just a matter of clicking on the tab you are interested in. For example, clicking on the **Operation** tab will allow you to change the bioreactor operating parameters shown below.

🗧 Editing Bioreactor0	×						
Dimensions Operation Monit	or items						
Specify aeration method	DO Setpoint						
O setpoint	Constant at 2.0000 mg/L						
C Air supply rate	O Scheduled Pattern						
C Un-aerated							
Uxygen transfer model must be switched on when aeration is specified by air supply rate. The specified air flowrate constraint is applicable only in dynamic simulations with the oxgen transfer modelling switched on. Mechanical mixing Power input (unaerated reactors) 5.0000 W/m3							
Local delation parameters							
Model parameters	Specify temperature by						
🦳 Model gas phase	Constant value or 20.0 [deg, C]						
	C Scheduled Pattern						
Press F1 for help	OK						

Influent Data

Setting up influent data is a quick and easy process. If you double-click on an influent element drawing board icon, you will see the following dialog box.

🟪 Editing COD Influent0	<u>×</u>			
Input Type WW Fractions N	onitor items			
Specify type © Constant © Variable	Note The user may specify a time-varying flow/composition pattern using one of the methods below.			
	From file			
Edit data	To file			
Check pH	and alkalinity settings			
Last file loaded/saved:				
Press F1 for help	OK Cancel			

Access the influent properties to set up influent data

Clicking the **Edit data** button as shown will open the **Influent itinerary editor**, as shown below.

100.0000	
100.0000	
500.0000	
40.0000	
10.0000	
0	
7.3000	
6.0000	
45.0000	
80.0000	
15.0000	
0	
	500.0000 40.0000 10.0000 0 7.3000 6.0000 45.0000 80.0000 15.0000 0

The variable influent itinerary editor

The **Influent itinerary editor** provides a spreadsheet-like interface for entering data. BioWin even offers several different strategies for filling in blanks in your data! It is very easy to import data into the itinerary editor from files or to copy it in from a spreadsheet – in fact, the data in the example shown above were pasted in from Microsoft ExcelTM!

Running A Simulation

🖉 Steady state balance tool

Dynamic simulation tool

Steady state and dynamic simulations are run from the main simulator window. Once you have taken a few minutes to specify information for the various elements in your configuration, commencing a simulation is simply a matter of clicking the appropriate button on the toolbar!

BioWin uses a powerful itinerary that allows the user to schedule many different operating conditions such as dissolved oxygen setpoints, air flowrates, and temperature. For example, suppose that you were simulating varying temperature conditions. With BioWin, you easily can set up a temperature schedule using the dialog box shown below.

nier va	alues	
Time D	20.0000	Cycle time 1 v v v v Cycle offset 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
		☐ Interpolate blank time cells Blank fill style (not time column) Interpolated value

Scheduling operating conditions is not a problem!

Help and Manual

BioWin comes with an extensive manual which is shipped as a series of Microsoft Word[™] documents each consisting of a chapter so you can easily print out the sections of specific interest.

👛 Help Contents & Index

? Help on using help

You may find this unnecessary as the contents of this manual are available via BioWin's online help. You can access this help system via the toolbar help buttons. Another useful feature that makes BioWin easy to learn is context-sensitive help. To get help that is relevant to a particular dialog box you are working in, simply hit the **F1** key and BioWin will access related topics from the help system and display them to you.

A screen shot of the help system is shown below.



A BioWin help window (Contents tab showing)

Viewing Simulation Results

The BioWin Album provides a fully integrated means to display simulation results. Using the album you can view data in the following formats:

- Tables
- Element-specific information displays
- Charts

Dens the album Activating the album is as simple as clicking the appropriate button on the main window toolbar. The album consists of a series of tabbed pages which may contain any or a combination of the above data display formats. Shown below is the album with the active page displaying a chart.



The album interface

Tables

Here is an example of an album page containing two tables.



An album page containing two tables

Element-Specific Information

Here are two examples of element-specific information displays; one for a bioreactor element and one for a settling tank element.

Barrier Alleren									ſ	
Album Database View									Ľ	
Parameters Cr	one (mg/L) Ma	∞ rate (ko/d)	Notes					181		
Volatile suspend	2219.00	437592.42	110100					6.	Uptions	
Total suspended	3170.00	625130.11								
Particulate COD	3287.47	648295.41								
Filtered COD	33.97	6698.70							Element : Aerobic	
Total COD	3321.44	654994.11							Volume : 30.0000	ML
Soluble PO4-P	0.54	105.88							A CCCC CCCT	-2
Total P	124.16	24484.24							Area : bbbb.coor	m2
Filtered TKN	2.06	406.99							Depth: 4.5	m
Particulate TKN	182.74	36036.51								
Total Kjeldahl Nit	184.80	36443.50							1 22	10
Filtered Carbona	1.31	258.64							Temperature 20.00	deg. C.
Total Carbonace	998.59	196923.18							Location : Output	
Total N	197.95	39035.26								
l otal inorganic in	13.94	2749.32								
Alkalinity	3.04	538.52	mmol/L and K	mol/d						
DH Malatila (atto anida	0.00	3.50								
Volatile ratty actus	0.02	0.00								
Total inorganic s	950.99	187537 70								
Ammonia N	0.90	157.56								
Nitrate N	13.14	2591.76								
Handle H	Tot 1	2001.10								
Parameter	Value	-								
Hudraulia residence time	2.7			bouro						
Hydraulic residence one	3.7			nours ML/d						
MISS	3170.00			me/u				100		
ML33 Dissolved ovugen	2.00			mg/L mg/L						
Total readily biodegradable	1.85			mg/L						
Total oxugen untake rate	40.34		mal	1/1 /hr						
Carbonaceous OUB	23.71		mal	1/L/hr						
Nitrogenous OUR	16.63		mat	J/L/hr				~		
RT Tables Influent In	to List COD /ROD		Inf Solide	Inf Flow/COD Load	Inf ROD /TN Load	Anovic Info	A such in late	Restor Sol	ide Aerobic OUR 0	TR al
init i ables i miluent ir	IIU I III COD7800	I'I INNOTE	mi Solius	IN FIOW/COD LOad	IN BOD/TN LOad	Anoxic milo	Aerobic Info	neatur su	ius Aerobic oon ju	110 4

A bioreactor element-specific information display

BioWin Album											
Ibum Database View				,				1.065			
Parameters C	.onc. (mg/L)	Mass rate (kg/d)	Notes						Options		
Volatile suspend	12.52	1216.99									
Total suspended	17.89	1738.56									
Particulate COD	18.55	1802.98							Element - Se	Settler	
Filtered COD	33.97	3301.83							Element, 56	s permer	
Total COD	52.52	5104.81							Volume : 20.	0000	ML
Soluble PO4-P	0.54	52.19							Area - 500	0000.00	
Total P	1.23	119.99							Alca. Ju	0.0006	III.2
Filtered TKN	2.06	200.61							Depth: 4.0		m
Particulate TKN	1.03	100.22									
Total Kjeldahl Nit	3.09	300.83							1. 2		
Filtered Carbona	1.31	127.48							emperature a	20.00	deg. Li.
Total Carbonace	6.34	6/4.43							Location : 1	Dutput	
Total N	16.24	15/8.33									
Total inorganic N	13.94	1355.16	DE SU AL SU AL SU AL								
Alkalinity	3.04	295.01	mmol/L and Kmol/d								
pH	6.75	1.75									
Volatile ratty acids	0.02	1.75									
Total precipitate	0.00 E 27	521 EC									
1 otal inuiganic s	0.57	021.00 77.00									
Ammonia N Marsha N	13.14	1277.49									
Nitrate N	Tacre	1411.90									
								S			
Parameter	Value		Units					<u>^</u>			
Hydraulic residence time	2.43		hours								
Effluent flow	97.20		ML/d								
Return activated sludge	100.00		ML/d								
Height of specified concer	itr 0.44	2	m								
Return activated sludge	6233.92	1. Contract (1997)	mg/L								
Effluent solids	17.89		mg/L								
Solids loading rate	125.03		kg/(m2 d)					~			
Surface overflow rate	19.44		m3/Im2 di	-				1000	1	10000	and the second
Inf Flow/COD Load Inf Br	JD/TN Load	Anoxic Info Aer	obic Info Reator Solids	Aerobic OUR	OTR	Mass Distribution	Settler Info	Settler Profile	WAS Info	WAS So	lids/ 4)

A settling tank element-specific information display

Charts

BioWin offers a wide variety of charting options. Here are some examples.



A bar chart



A three-dimensional line plot



A two-dimensional point plot



A surface plot







Place pictures (or your company's logo!) in the chart background for presentations

Creating Reports

Printing Reports

BioWin incorporates a powerful automatic report generation feature. With a single click, BioWin can generate a detailed printed report.

Customizing Reports

The type of information that appears in the report is completely customizable. The general information that can be included in a report may be:

- Project information (user name, plant name, project name, etc.);
- A picture of the project flowsheet;
- Global model parameter values;
- Global temperature setting;
- Album pages (charts, tables, etc.);
- The SRT for the system (if one is available);
- Any notes that have been entered in the BioWin Notes editor;

The reporting can be customized to include element-specific information on an element-type basis. Users can choose whether or not they want to include information for element types (e.g. Bioreactor) in the report. The type of information included in the report for each type of element can be different and may include:

- Physical data (volume, area, depth, # of diffusers, etc.);
- Operating data (average or flow-weighted average);
- Local settling parameters (if available);
- Local biological model parameters (if available);
- Aeration parameters (if available);

Generating Reports in Microsoft Word[™]

If you prefer an electronic version, BioWin also can generate your report as a Microsoft WordTM document. Like the printed report, the information contained in the electronic version is completely customizable and may include many different forms. Once BioWin has generated the document for you, you may use it as a basis for an engineering report, or cut and paste its contents into another document.

Related functionality includes the ability to print out all or ranges of the album pages. You can also set the number of album pages per printed page.

Additionally, BioWin has its own internal **Notes** editor (shown below) to help keep track of project details.

Simulation	1 Notes								
Notes Edit Vi	ew								
₿ ∽ %	₿ ₿ 2	U Tor Arial	• 14 •		£ ; =				
<u> </u>	1 1	1 1	1 1 1	+	1 1	1		1 1	+ 1
Analysis	of Nitrific	ation Rate							
Runs conduc	ted for the follov	ving maximum s	pecific growth rate	is:					
	.45/	d d							
	.65/	ď							
Paramet	er Values								
Name	Default	Value	Arrhenius						
Mu Max	0.50000	0.45000	1.0960						
Ba Ba	0.04000	0.04000	1.0290						
Case 1:	MuMax =	0.45/d							
Elements	NH3-N	NO3-N	P04-P	VSS	TSS		CODt	т	KNs
Influent	30.00	0.00	6.64	201.01	246.	01	500.00	32	2.79
Unaerated	18.44	0.03	17.46	3024.48	4410	0.27	4483.73	18	3.88
Aerobic	2.99	11.91	0.25	29/6.58	441L 2.01	1.71	24 20	3.	45 45
Lindent	2.55	11.01	0.23	2.J/	5.01		54.55	Э.	40
ine: 8 Col: 18	3 Modified	-							

BioWin's internal simulation notes editor

Exporting Results to a Word Processor or Spreadsheet

It also is very easy to get results from BioWin into your word processor or spreadsheet. Charts, tables, system configuration layouts, etc. can be copied and pasted from BioWin to your reports. Tables can be exported as tabbed text and then quickly converted to tables, such as the one below which is a section of a Word[™] document.

Table	. 1
Table	1

Elements	рН []	Volatile suspended solids [mgVSS/L]	Total suspended solids [mgTSS/L]	Total COD [mg/L]	Total Carbonaceous BOD [mg/L]	Total N [mgN/L]	Total P [mgP/L]
Influent	7.30	186.02	231.02	500.01	248.26	40.08	8.02
Anoxic	7.27	2265.64	3129.55	3411.66	1049.87	198.48	124.16
Aerobic	6.79	2219.00	3170.00	3321.44	998.59	197.95	124.16
Sec Settler	6.79	12.52	17.89	52.52	6.94	16.24	1.23
WAS	6.79	4363.75	6233.92	6498.89	1962.49	374.57	243.64
Effluent	6.79	12.52	17.89	52.52	6.94	16.24	1.23

A BioWin table exported to a word processing application

Customizing

There are a variety of features that can be customized in BioWin. These are outlined briefly below.

Customizing Environment Settings

BioWin offers users the ability to customize a number of environment settings to suit their needs. For example, some of the customizable features include:

• Printing options

- Report Options
- Automatic Logging
- File Locations
- Explorer Options
- System Settings

Access to the customizable features is managed through a central location, shown below.

General Explorer options Printing options Report options Seneral settings 3 ★ entries Printing options Report options Recent file list 3 ★ entries Suppress alarms in dynamic simulations ✓ Autosave dynamic runs every 50 ★ days ✓ Pre-allocate database memory for dynamic simulations ✓ Pre-allocate database memory for dynamic simulations ✓ Check for updates on exit (if connection exists) State variable naming ✓ Activated primary setting tank ✓ Activated primary setting tank ✓ Abbreviated (cryptic) Parameter defaults ✓ Boreactor Ø BD Influent ✓ Effluent ✓ Model Cairlier. ✓ Effluent ✓ Model Builder unit	Automatic logging	Í F	ile locations	System settings
Explorer options Immung options Import options Seneral settings 3 # entries Immung options Recent file list 3 # entries Suppress alarms in dynamic simulations ✓ Autosave dynamic runs every 50 # days ✓ Pre-allocate database memory for dynamic simulations ✓ Pre-allocate database memory for dynamic simulations ✓ Check for updates on exit (if connection exists) Element ✓ Activated primary setting tank ✓ Astrobic Digester ✓ Anaerobic Digester ✓ Variable volume bioreactor ✓ Bioreactor Ø Bioreactor Ø Model Carifier. ✓ Effluent ✓ Model Carifier. ✓ Model Carifier. ✓ Model Builder unit	General Explorer options		Printing options	Benort ontions
Recent file list 3 g entries Narm list 25 g entries V Autosave dynamic runs every 50 g days V Autosave dynamic runs every 50 g days V Pre-allocate database memory for dynamic simulations V Check for updates on exit (if connection exists) State variable naming Check for updates on exit (if connection exists) State variable naming Check for updates on exit (if connection exists) State variable naming Check for updates on exit (if connection exists) Element Show names for : Aerobic Digester Variable volume bioreactor W diable volume bioreactor W diable volume bioreactor W Methanol Model Carifier. W Methanol Model Carifier. W Methanol Model Builder unit W State variable naming Reset BioWrin Defaults		orer options		
Recent file list 3 entries Narm list 25 entries Suppress alarms in dynamic simulations Autosave dynamic runs every 50 days Pre-allocate database memory for dynamic simulations Pre-allocate database memory for dynamic simulations Check for updates on exit (if connection exists) Element Show names for : Activated primary setting tank Activated primary setting tank Arotic Digester Anaerobic Digester Bioreactor Bioreactor Bioreactor Bioreactor Model clarifier. Model clarifier. Model builder unit Continuent Reset BioWrin Defaults	reneral settings			
Name list 25 for entries Suppress alarms in dynamic simulations Image: Autosave dynamic runs every 50 for days Image: Pre-allocate database memory for dynamic simulations Pre-allocate database memory for dynamic simulations Check for updates on exit (if connection exists) Element Show names for : Image: Activated primary setting tank Activated primary setting tank Activated primary setting tank Image: Activate on the primary setting tank	Recent file list	3 💼 entries		
Autosave dynamic runs every 50 to days Pre-allocate database memory for dynamic simulations Check for updates on exit (if connection exists) Check for updates on exit (if connection exists) Element Show names for : Activated primary setting tank A Aerobic Digester Anaerobic Digester Anaerobic Digester Anaerobic Digester W Arabele volume bioreactor Bioreactor Bioreactor Bioreactor Bioreactor Model clarifier. Effluent Model clarifier. Model builder unit Cost T suck Bioreactor <	Alarm list	25 🚖 entries	Suppress alarms in dynamic	simulations
 Autosave dynamic runs every 30	-			
 ✓ Pre-allocate database memory for dynamic simulations ✓ Check for updates on exit (if connection exists) ✓ Iteration is the second straight of the second straight of	 Autosave dynamic runs every 		Jou 💌 days	
Check for updates on exit (if connection exists) Element Show names for : Activated primary setting tank Activated Primar	Pre-allocate database memory	y for dynamic simulati	ons	
Element Show names for :	Check for undates on exit (if c	connection exists)		
Ilement Show names for : Activated primary settling tank Activ	 Check for updates of exit (if c 	connection exists)		
lement Show names for : Acrobic Digester Variable volume bioreactor Model clarifier. Model clarifier. Model Builder unit Model Builder unit Model Builder unit Model Builder unit				
Element Show names for :				
Ilement State variable naming Show names for : Matchina and the second se				
Show names for : Activated primary setting tank Activated pr	lement	1	State variable naming	
Activated primary setting tank Activated primary setting tank Acatobic Digester Anaerobic Digester Anaerobic Digester Abbreviated (cryptic) Abbreviated (cryptic) Abbreviated (cryptic) Bob Influent Model Califier Edit parameter defaults Edit parameter defaults Edit parameter defaults Cod T set	Show names for :		Full names	
A charchic Digester Anarchic Digester Anarchic Digester Anarchic Digester Boll Influent Model Califier Model Califier Model Builder unit Gai T sele	Activated primary settling tar	nk	C Although the d (annula)	
Anaerobic Digester W Variable volume bioreactor Ø Bioreactor Ø BOD Influent M Methanol M Model Califier Ø Effluent Ø Model Builder unit	Aerobic Digester		Appreviated (cryptic)	
✓ Bioreactor ✓ BDD Influent ✓ Mobel clarifier ✓ Effluent ✓ Model Builder unit ✓ Geb T set/	Variable volume bioreactor		Parameter defaults	
BUD Influent Methanol Model clarifier. Effluent Model Ruilder unit Model Builder unit Gest Track	Bioreactor			100 DV
Model Clarifier Model Builder unit Grid Task	BUD Influent		Edit parameter	defaults
Model Builder unit	Model clarifier			
	Effluent	_	Reset BioWin	Defaults
	Crit T sole	<u> </u>		

All customizable environment settings accessed through one dialog box

Customizing Project Settings

BioWin offers users the ability to customize a number of new project settings to suit their needs. For example, some of the customizable features include:

- Drawing board appearance
- Pipe Settings
- Unit System Settings
- Template Settings for the Album

Access to the customizable features is managed through a central location, shown below.

- New Project default options	×
Drawing board Pipe Unit system T	emplates
Drawing board appearance	
Font	ample of current font
Drawing board size	
Width 6000 🚖	Minimum zoom 10 🛫
Height 2000 🚖	Maximum zoom 1000 🛫
Drawing board snap	
Snap in X direction 👖 🗲	Snap in Y direction 👖 🗲
	Close

All customizable new project settings accessed through one dialog box

Customizing Charts

Finally, you can customize how BioWin generates new charts using the **Chart Master** and chart templates as shown below.



Chart Master

Model Information

BioWin is not only a slick simulator package. The user has ready access to detailed model features for the many operations. Model parameters may be accessed conveniently from a single **Model parameter editor**, shown below.

BioWin offers many utilities to facilitate process analysis. These include:

- Adjusting kinetic parameters and temperature in individual units;
- Simulation of biological activity in secondary clarifiers;
- Scheduling of many different operating parameters such as temperature, dissolved oxygen setpoint, air flowrate, and flow routing/splitting.

ame	Default	Value	Arrhenius	-	
ax, spec, growth rate [1/d]	0.90000	0.90000	1.0720		
ubstrate (NH4) half sat. [mgN/L]	0.70000	0.70000	1.0000		
erobic decay rate [1/d]	0.17000	0.17000	1.0290		
noxic/anaerobic decay rate [1/d]	0.08000	0.08000	1.0290		
UNDO fermal // 1	0.00000	0.00000			
mnoz (ilino/c)	10.00500		1.0000		

Model parameters may be changed through a single editor

Getting Help In BioWin

2.

Using The BioWin Help System

BioWin's help system may be accessed with one of two methods:

The main simulator window menu command Help|Contents and index;

🗳 Help Contents & Index 🛛

Index button on the main toolbar of the main simulator window.

Clicking the Help Contents and

When the help system is opened, you will see a two-paned window with the right pane showing the contents of the currently selected topic (or a default start topic if one is not selected) and the left pane showing the **Contents**, **Search**, and **Favorites** tab, depending on which tab was active when the help system was last exited. Note that the relative size of the panes can be changed by dragging the pane dividing bar. The two-paned window is shown below.



The Windows 98/HTML Help two-paned window

The buttons at the top of the two paned window have the following functions:

Button	Function
Hide / Show	Used to toggle the left pane between hidden and visible states.
Locate	Clicking this button will display the contents tab in the left pane and highlight the topic that you currently are viewing. This button is useful for locating related topics when using the Index or Search tab.
Back	Moves one topic back in your <i>browse history</i> . Takes you to the last topic that you viewed.
Forward	Moves one topic forward in your <i>browse history</i> . Takes you to the previous topic you viewed.
Print	A dialog box opens that allows you to choose whether you want the current topic or the current topic and all its sub-topics to be printed.
Options	Sets display options for your help system – it is recommended that these options be left set to their defaults.

Note that at the bottom of each topic there are two arrows. These are the **Browse Sequence** arrows, which may be used to move through the help system topic hierarchy one topic at a time.

Help Contents Tab

One advantage of the BioWin help is that when the **Contents** tab is selected, it is possible to view topics and the help system outline structure simultaneously, as shown in the picture below.



The Help Contents Tab

You can expand and collapse levels of the help system outline by clicking on the book icons or titles of the levels. If there is text associated with a level, it will be displayed in the right pane. When you locate the topic you wish to view, click on it and the topic contents will be displayed in the right pane.

Help Search Tab

When the Windows 98/HTML style help **Search** tab is selected, it is possible to view your search results and topics simultaneously, as shown in the picture below.

💕 BioWin Help	
Hide Locate Back Forward Print Options	
Contents Search Favorites	Activated Primary Settler
Type in the word(s) to search for: settler	The activated primary Settler (clarifier) element is used to model settlement of particulate material in a wastewater stream which does not contain activated sludge mixed liquor (e.g. a raw influent stream). The aspect which differentiates the activated primary Settler element from the ideal primary Settler element from the ideal primary Settler element from the ideal primary Settler element is the former is capable of modeling biological activity which may take place in a primary Settler. You may specify the physical characteristics, the flow split method, the solids separation operation, and the model details of the activated primary Settler. For information on monitoring parameters/variables for this element, please see Monitoring Data.
	UK Cancel

The Help Search tab

To use the search utility, type in the keyword(s) or phrase that you are searching for, and click the **List Topics** button. This will display the list of topics containing the keyword(s) or phrase that you searched for. To view a topic, you can either doubleclick on the topic title or click topic title and then click the **Display** button, and the topic contents with your search term(s) highlighted will be displayed in the right pane.

Help Favorites Tab

Another feature of the BioWin help is the **Favorites** tab, shown below.