



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

*3rd
generation*

GRDM Quick Start Guide

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1 INTRODUCCION

This document serves as a quick reference to the GRDM software. No detail explanations are presented on methodologies used, please consult the Software Design Document for information on methodologies applied.

2 FILE MENU

Icon	Function	Description
File Function		File
	New	Create a new project file and clear the workspace from any exiting project data.
	Open	Open a saved project file.
	Save	Save the current project to the name given. If no name exists yet you will be prompted for a project name.
	Save As..	Save the current project to a specified name and location.
	Export	Export the project to a Zip file for distribution. It is therefore recommended that a dedicated folder be used for a project.
Database Function		File
	Connect	Connect to the Excel monitoring database specified.
	Disconnect	Disconnect from the Excel monitoring database.
Help Function		File
	About	Shows the splash screen to view the software version number.
	Online	Directs the user to the GRDM web page: www.waterscience.co.za/grdm.html

3 SPATIAL RIBBON

Icon	Function	Description
View Function		Spatial
	North Arrow	Toggles the display of the North Arrow on the map.
	Scale Bar	Toggles the display of the Scale Bar on the map.
	Mini Map	Toggles the display of the Mini Map on the map.
Hint Function		Spatial
	Field	Field (attribute) selection of selected shape file to be used as hint.
	Show Hints	Toggles the display of Hints on the map.
Search Function		Spatial
	Field	Field (attribute) selection of selected shape file to be used in the search function.
	Operator	Select the logical operator to apply in the search criteria.
	Value	Specify the value to be used in the search criteria.
	Extent	When selected the whole GIS extent will be used in the search, otherwise on the visible extent will be searched.
	Zoom	When selected, the GIS map will auto zoom to the feature(s) identified by the search criteria.
	Find	Execute the search based on given search criteria.
Export Function		Spatial
	Clipboard	Copy visible part of map to the clipboard.

4 MONITORING RIBBON

Icon	Function	Description
Parameter Function		Monitoring
	Filter	Select the parameter of interest from the monitoring database (Excel File).
	Minimum	Display the minimum value of the selected parameter.
	Maximum	Display the maximum value of the selected parameter.
	Average	Display the average value of the selected parameter.
	Last	Display the last value of the selected parameter.
	Label	Enable/disable display labels for monitoring sites.
	Date	Enable/disable the date range to be used in filtering the specified monitoring parameter.
Evaluate Function		Monitoring
	Standard	Evaluate the selected monitoring parameter against the standard, if a standard exists for that particular parameter.
	Relative	Display the monitoring site symbol proportional to the current values selected for the parameter.
$f(x)$	Value	Display the current value of the parameter at each site as a label.
Chart Function		Monitoring
<i>Line and Bar Graph</i>		
	Line / Bar	Draw a line or bar chart of the current parameter for the selected sites.
	Standard	Display the standard (if a standard is available) as background. Since only one background can exist the standard of the first site selected is used.

	Add	Add a secondary parameter to the line or bar chart.
<i>Pie Graph</i>		
	Pie	Draw a pie chart of multiple selected parameters e.g. chemistry.
	Percentage	When selected the % will be displayed on the pie graph instead of the actual value.
	Spatial View	When selected the map symbols for the selected sites will turn into small pie charts.
<i>Radar</i>		
	Radar	Draw a radar chart of multiple selected parameters e.g. chemistry.
<i>Piper</i>		
	Piper	Draw a Piper diagram of selected sites. The Piper diagram will only display if a site has all the required parameters.
	Grid Lines	Toggle grid lines on and off on the Piper diagram. Once selected the Piper diagram must be regenerated for the grid lines to appear.
	Proportional Electrical Conductivity	Display the site symbols in the Piper diagram proportional to the EC value associated with each site. Once selected the Piper diagram must be regenerated for the grid lines to appear.

5 AQUIFER YIELD RIBBON

Icon	Function	Description
Model Functions		Aquifer Yield
	Settings	Set the calibration settings for the Aquifer Yield model.
	Calibrate	Run the Aquifer Yield calibration. Note the Quaternary or Integrated Unit of Analysis must be selected.
	Run	Run the Aquifer Yield model. Note the Quaternary or Integrated Unit of Analysis must be selected.
	Reset	Reset the model run. Note the Quaternary or Integrated Unit of Analysis must be selected.
Chart Functions		Aquifer Yield
	Water Balance	Display the Aquifer Yield model water balance results. Note the unconfined or confined aquifer must be selected.

6 WELL FIELD RIBBON

Icon	Function	Description
Model Function		Well Field
	Run	Run the Wellfield model. Note the Wellfield must be selected.
Result Function		Well Field
$f(x)$	Value	Display the drawdown as a label for each of the boreholes in the Wellfield.
Zone Function		Well Field
	Radius of Influence	Display the radius of influence for each borehole.
	Fracture Radius	Display the fracture radius for each borehole.
	River Buffer	Display the river protection zone.
	Wetland Buffer	Display the wetland protection zone.
	Refresh Zones	Redraw the protection zones.

7 OPTIONS RIBBON

Icon	Function	Description
Config Functions		Options
	Settings	Set the general settings of the application e.g. evaluation colours and water balance units.

8 SPATIAL LEGEND

Icon	Function	Description
	Clear	Clear all loaded layers. This excludes system managed layers.
	Add	Load a GIS layer.
	Remove	Remove selected GIS layer.
	Export	Export the selected layer to specified GIS file format.
	Add Mini Map	Add the selected layer as a mini map to the main GIS map.
	Remove Mini Map	Remove the current mini map.

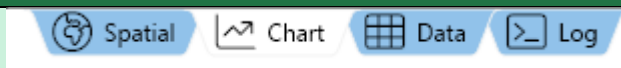
Note: Double click legend to access the GIS Wizard.

9 SPATIAL TAB

Icon	Function	Description
Toolbar Mode		 Spatial  Chart  Data  Log
	Zoom	Set the spatial system in Zoom mode.
	Pan	Set the spatial system in Zoom mode.
	Measure Distance	Set the spatial system in Measure Distance mode. A path is digitized for which the total distance is displayed.
	Measure Area	Set the spatial system in Measure Area mode. A polygon is digitized for which the area and perimeter is displayed.
	Information	Set the spatial system in Information mode. Used to query the attributes of shape files.
	Select	Set the spatial system in Select mode.
Select Operations		 Spatial  Chart  Data  Log
	Deselect All	Deselect all features selected on the current shape file.
	Select All	Select all features on the current shape file.
	Refresh	Refresh selected features if required.
Zoom Operations		 Spatial  Chart  Data  Log
	Zoom Extent	When in Zoom mode, zoom to the full extent of all layers loaded.
	Zoom Layer	When in Zoom mode, zoom to the full extent of the current selected layer.
	Zoom In	Zoom in by a factor of 2.
	Zoom Out	Zoom out by a factor of 2.

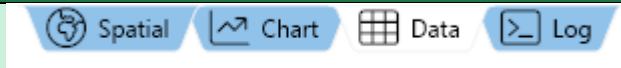
	Previous Zoom Extent	Zoom to previous extent(s) (order of zoom extents are saved).
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10 CHART TAB

Icon	Function	Description
		
	Export	When a chart is displayed it can be exported to be modified later through a third party application TeeChartOffice, also deployed with the install.

Note: Double click the chart to access the Chart Wizard.

11 DATA TAB

Icon	Function	Description
		
N/A	Select Table	 Select table to be displayed in the grid editor.

12 LOG TAB

Icon	Function	Description
		
	Clear	Clear the content of the current log.
	Save	Save the contents of the current log.
	Open	Open a text file in the log.

13 TREE MENU

Icon	Function	Description
	Study Area	Tree node representing a study area and serves as the highest parent node of all subsequent tree nodes to be added.
	Quaternary	Quaternary representing a quaternary catchment being assessed.
	Integrated Unit of Analysis	Integrated Unit of Analysis representing an area comprising of partial quaternary catchments being assessed.
	Unconfined Aquifer	Tree node representing the unconfined aquifer.
	Confined Aquifer	Tree node representing the confined aquifer.
	Wellfield	The wellfield node serves as the parent node for all elements that can be added to a wellfield. An aquifer needs to exist to create a wellfield.
	Quality Objectives	Water quality objectives for the Quaternary or Integrated Unit of Analysis based on available monitoring data.
	Borehole	A borehole element that can be added to a wellfield. Boreholes are created in the Excel monitoring database.
	No-Flow Boundary	A no-flow boundary that can be added to a wellfield. The boundary is based on a vector representation loaded in the GIS system.
	River Boundary	A river boundary that can be added to a wellfield. The boundary is based on a vector line representation loaded in the GIS system.
	Wetland Boundary	A wetland boundary that can be added to a wellfield. The boundary is based on a vector polygon representation loaded in the GIS system.
	Chloride Recharge Method	Chloride Mass Balance recharge method for the Quaternary or Integrated Unit of Analysis.
	EARTH Recharge Method	EARTH recharge method for the Quaternary or Integrated Unit of Analysis.

SVF 	Saturated Volume Fluctuation	Saturated Volume Fluctuation recharge method for the Quaternary or Integrated Unit of Analysis.
SVFL 	SVF Limited Recharge	Saturated Volume Fluctuation (with recharge threshold) recharge method for the Quaternary or Integrated Unit of Analysis.
	Isotope Recharge Method	Isotope recharge method for the Quaternary or Integrated Unit of Analysis.
	Herold Baseflow Separation	Baseflow calculation based on the Herold baseflow separation for the Quaternary or Integrated Unit of Analysis.
	Baseflow Mass Balance	Baseflow calculation based on a mass-balance assessment for the Quaternary or Integrated Unit of Analysis.