Surfer 8.0

Chapter 1

Introducing Surfer

Introduction to Surfer

Surfer® is a grid-based graphics program. **Surfer** interpolates irregularly spaced XYZ data into a regularly spaced grid. Grids may also be imported from other sources, such as the United States Geological Survey (USGS). The grid is then used to produce different types of maps including contour, vector, wireframe, image, shaded relief, and surface maps. Many gridding and mapping options are available allowing you to produce the map that best represents your data.

Maps can be displayed and enhanced in **Surfer** by the addition of boundary information, posting data points, combining several maps, adding drawings, and annotating with text.

An extensive suite of gridding methods is available in **Surfer**. The variety of available methods provides different interpretations of your data, and allows you to choose the most appropriate method for your needs. In addition, data metrics allow you to gather information about your gridded data.

The grid files themselves can be edited, combined, filtered, sliced, queried, and mathematically transformed. For example, a color-filled contour map can be drawn from a grid of groundwater surface elevations. This grid can then be numerically differentiated, and a gradient-based vector map subsequently generated. The vector map can then be drawn as an overlay on the contour map. The resulting graphic shows not only the contours, but also the flow paths.

Surface area, projected planar area, and volumetric calculations can be performed quickly in **Surfer**. Cross-sectional profiles can also be computed and exported.

The **Scripter**™ Program, included with **Surfer,** is useful in creating, editing, and running script files that automate **Surfer** procedures. By writing and running script files, simple mundane tasks or complex system integration tasks can be performed precisely and repetitively without direct interaction. **Surfer** also supports ActiveX Automation using any compatible client, such as Visual BASIC. These two automation capabilities allow **Surfer** to be used as a data visualization and a map generation post-processor for any scientific modeling system.

New Features

General

- **Surfer** is designed for Windows 98, Me, 2000, and XP.
- A **Help | Check for Update** command is available to easily update **Surfer**.
- A new HTML-based help system allows advanced searching options.
- We have added several new scripting examples.

User Interface Features

- Bitmaps, image maps, and shaded relief maps can be rotated and transformed.
- Property dialogs are modeless. This means you can open a property dialog and continue working with **Surfer**. The property dialog updates when the selection changes.
- You can rotate, tilt, and change the field of view with the **Map | Trackball** command.
- **Edit | Paste** and **Edit | Paste Special** automatically pastes the object in the center of the page.
- The **View | Pan Realtime** allows you to easily move the contents of the plot window.
- The **Zoom Realtime** tool allows you to zoom in and out by dragging the mouse.
- Map scale, view, limits, and background have been moved to the map property dialog for easier access.
- Bitmaps are now compressed in [.SRF] files, resulting in smaller files and faster saving and loading times.
- Create maps quickly by selecting the map tool. The default map properties are used and these properties can be edited by opening the new property dialog.
- Use the **Help | Feedback** command to send a problem report, suggestion, or information request by e-mail.
- Multithreading allows for a smoother redraw and more responsive user interface.
- The arrow keys can now be used to "nudge" the selected objects one pixel at a time for precise positioning.

Surfaces

- 3D rendered surfaces have been added to **Surfer**.
- All planar map types and other surfaces can be overlaid on surfaces.
- Bitmaps can be overlaid on surfaces.
- Control the color, lighting, mesh, base, and overlay color blending of a surface.
- Added many new color spectrum files including, ChromaDepth.clr and Terrain.clr.

Gridding

- Filter grids using over 60 pre-defined filters or define your own filter.
- Load large data files faster when gridding (there is no pre-sorting or pre-duplicate checking).
- Use *Data Metrics* to gather information about the data and create a grid of this information.
- The **Grid I Mosaic** command combines multiple adjacent or overlapping grids.
- Use the new *Cross Validate* option to assess the quality of the selected gridding method.
- A map of the Delaunay triangulation can be created when gridding with the Triangulation with Linear Interpolation or Natural Neighbor methods.
- Added Moving Average and Local Polynomial gridding methods.
- Faults are retained in grids after blanking.
- Added Cubic and Pentaspherical variogram models.

Volume

Added a Z scale factor to volume calculations. This allows you to set a scaling factor when your XY units are not the same as the Z units.

Digital Elevation Models

- **Surfer** provides native support for the newest SDTS format.
- Digital Terrain Elevation Data (DTED) files can be used where grids are needed in the program.

Reports

- New reporting functionality has been added to grid info , **Grid I Data**, **Grid I Volume**, and **Grid I Variogram**.
- Reports now include numerous additional statistics on the data.

Import / Export

- A new set of import filters include Enhanced Metafile, Golden Software Interchange, and ESRI ArcInfo Export Format.
- A new set of export filters include Enhanced Metafile, MapInfo Interchange Format, Golden Software Interchange, and Golden Software Boundary.

Page Setup

- The 32-inch page limit has been eliminated under all operating systems.
- The resolution of graphics operations has been increased by 1000 times, resulting in more accurate output when zoomed in, and when the graphics are exported.

Worksheet

Up to one billion rows and columns are available in the worksheet.

Screen Layout and Window Types

Surfer contains three document window types, the plot window, worksheet window, and grid node editor window. Maps are displayed and created in the plot window. The worksheet window is used to display, edit, transform, and save data in a tabular format. The grid node editor window is used to display and edit Z values for the selected grid.

Opening Windows

Selecting the **File | Open** command, or clicking the ▣ button opens any of the three window types, depending on the type of file selected. The **File | New** command, or clicking the ▣ button creates a new plot window or worksheet window. To open a new worksheet window directly, you can click the ▣ button.

Object Manager

When **Surfer** starts, the **Object Manager** is visible in the plot window by default. It contains a hierarchical list of the objects in the **Surfer** plot window. The **Object Manager** is initially docked at the side of the window, giving the window a split appearance; however, it can be dragged and placed anywhere on the screen.

Toolbars

All window types in **Surfer** include toolbars that contain buttons for many common commands. The toolbars are initially docked, but they too can be dragged and placed anywhere on the screen.

dow
dow

w

s a
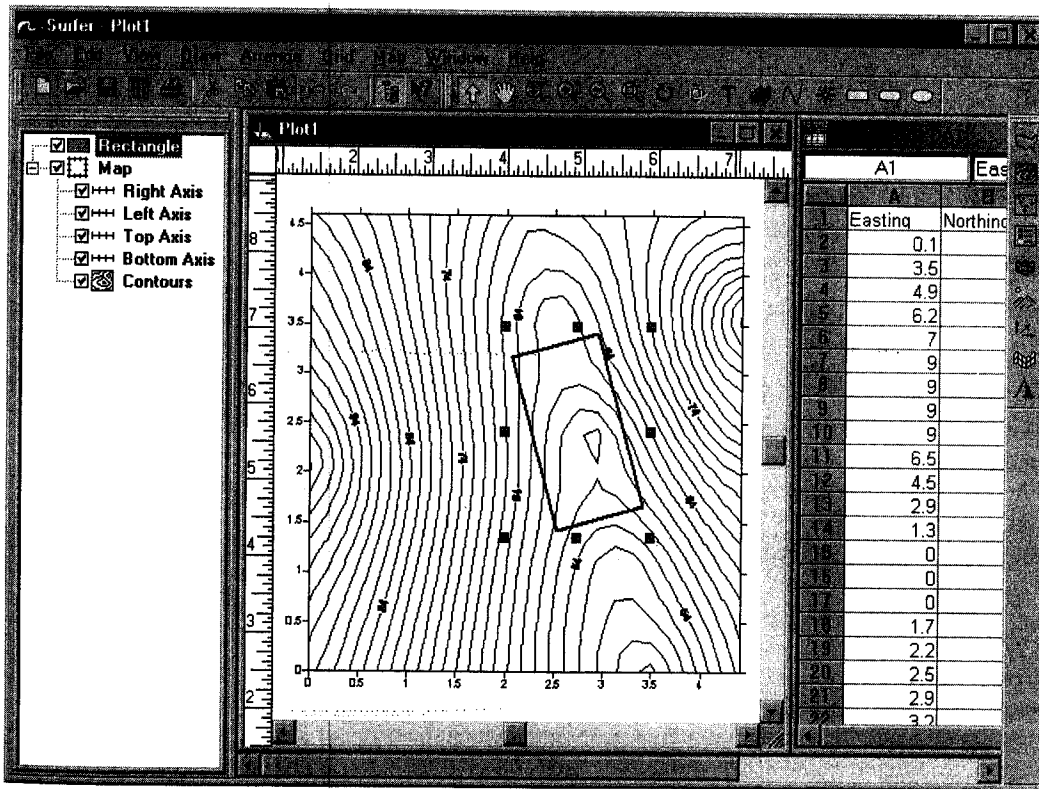
*This is the **Surfer** window with the **Object Manager** is on the left, the plot window in the center, and the worksheet window is on the right.*

Scripter

Tasks can be automated in **Surfer** using Golden Software's **Scripter** program or any ActiveX Automation-compatible client, such as Visual BASIC. A script is a text file containing a series of instructions for execution when the script is run. **Scripter** can be used to perform almost any task in **Surfer**. For more information, see *Chapter 22, Automating Surfer* in the User's Guide or use the **Help | Automation Help** command.

Using Surfer

The general steps to progress from a XYZ data set to a finished, grid-based map are as follows:

1. Create a XYZ data file. This file can be created in a **Surfer** worksheet window or outside of **Surfer** (using an ASCII text editor, for example).

2. Create a grid file [.GRD] from the XYZ data file using the **Grid | Data** command.

3. To create a map, select the map type from the **Map** menu and use the grid file from step two. Grid-based maps include contour, image, shaded relief, vector, wireframe, and surface maps.

4. Use **File | Save** to save the map as a **Surfer** file [.SRF] that contains all of the information needed to recreate the map, including the data file.

File Types

Surfer uses four basic file types: data, grid, boundary, and **Surfer** files [.SRF].

Data Files

Data files contain the input data provided by the user, and are used to produce grid files, post data points on a map, or generate a residuals log. These files are generally referred to as "XYZ data files" or "data files" throughout the documentation. Data can be read from various file types, and must contain numeric XY location coordinates as well as numeric Z values. The Z values contain the variable to be modeled, such as elevation, concentration, rainfall, or similar types of values.

Grid Files

Grid files are used to produce several different types of grid-based maps, to perform calculations such as volume, residuals, and grid math, and to carry out blanking, smoothing, and slice operations. Grid files contain a regularly spaced rectangular array of Z data organized in columns and rows. **Surfer** can also use USGS digital elevation models and DTED files to perform most of the operations that can be performed with grid files.

Boundary Files

Boundary files contain XY areal data such as state boundaries, rivers, or point locations. Boundary files are used to overlay a base map on another map, or to specify the boundary limits for blanking, faults, breaklines, and slice calculations. Boundary files can be vector files, metafiles, or bitmap files.

Surfer Files

Surfer files [.SRF] preserve all the objects and object settings contained in a plot window. These files are called **Surfer** files [.SRF] throughout the documentation.

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Gridding

Gridding is the process of taking irregularly spaced XYZ data and producing a grid file that contains a *regularly* spaced array of Z data. **Surfer** has several different gridding methods. These gridding methods define the way in which the XYZ data are interpolated when producing a grid file. A mathematical formula can also be used to create a grid file. For more information, see *Chapter 4, Creating Grid Files*.

Grid Utilities

There are many ways to manipulate grid files in **Surfer**. The **Grid** menu contains several utilities used to convert, combine, mirror, limit, slice, rotate, and extract grids. In addition, volume calculations, smoothing, blanking, cross section creation, and residual calculations can all be performed in **Surfer** using these utilities. For more information, see *Chapter 18, Grid Operations*.

Map Types

Several different map types can be created, modified, and displayed with **Surfer**. These map types include contour, base, post, image, shaded relief, vector, wireframe, and surface maps.

Contour Map

A contour map is a two-dimensional representation of three-dimensional data. Contours define lines of equal Z values across the map extents. The shape of the surface is shown by the contour lines. Contour maps can display the contour lines; they can also display colors and patterns between the contour lines.
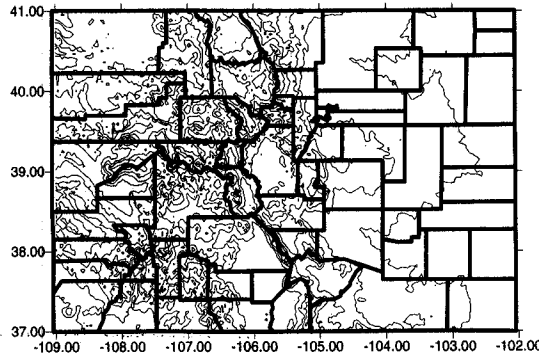

This is a filled contour map showing different colors for various Z levels.

Base Map

Base maps display boundaries on a map. Boundaries can include roads, buildings, streams, lakes, and so on. Base maps can be produced from several file formats. Refer to *Appendix C, File Formats* for more information.

A base map, consisting of Colorado county boundary lines, is displayed on top of a contour map of Colorado.

Post Maps

Post maps and classed post maps show data locations on a map. You can customize the symbols and text associated with each data location on the map.
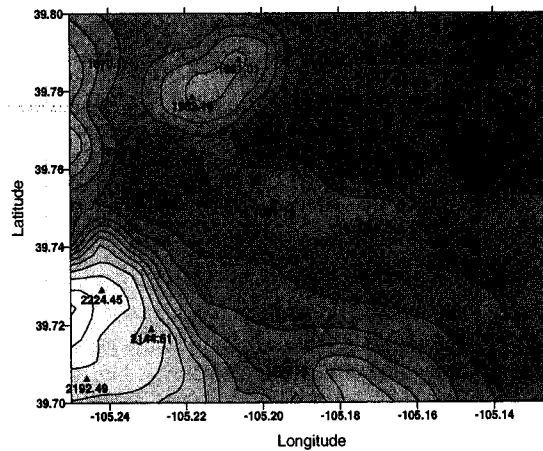
This is a post map combined with a filled contour map.

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Image Maps and Shaded Relief Maps

Image maps and shaded relief maps are raster images based on grid files. Image maps assign colors based on Z values from a grid file. Shaded relief maps assign colors based on slope orientation relative to a light source.
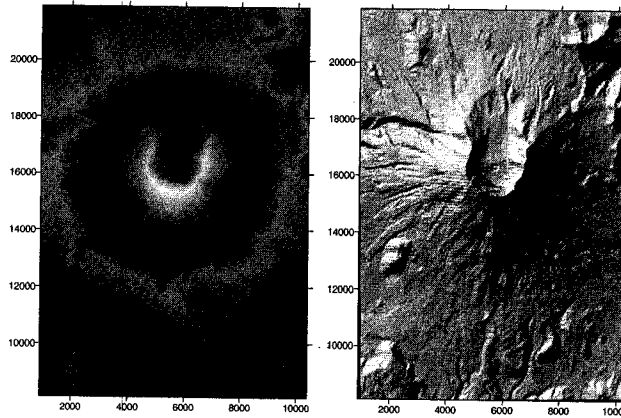
*The same DEM file was used to create the image map
on the left and the shaded relief map on the right.*

Vector Maps

Vector maps display direction and magnitude data using individually oriented arrows. For example, at any grid node on the map, the arrow points in the direction of steepest descent ("downhill") and the arrow length is proportional to the slope magnitude. In **Surfer**, vector maps can be created using the information in one grid file (i.e. a numerically computed gradient) or two different grid files (i.e. each grid giving a component of the vectors).
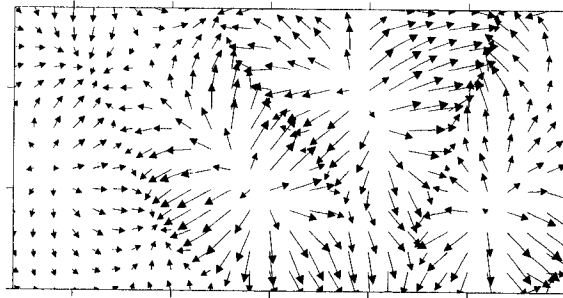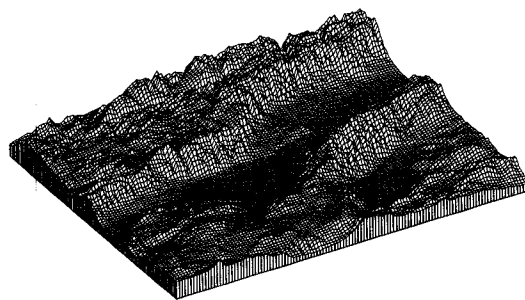
*This is an example of a vector map.*

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Wireframes

Wireframes are three-dimensional representations of a grid file. Lines of equal Z values can be displayed on a wireframe, creating a stacked contour map.

A wireframe displays a grid's rows and columns.

Surfaces

Surfaces are color three-dimensional representations of a grid file. The colors, lighting, overlays, and mesh can be altered on a surface.
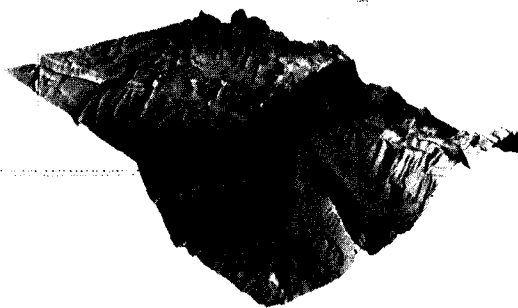
Surfaces show grids in 3D color.

Reports

You can gather information about your data by:

- clicking the *Statistics* button in the **Grid Data** dialog to obtain a Data Statistics Report,

- checking the *Grid Report* option in the **Grid Data** dialog to create a Gridding Report,

- clicking the *Report* button in the **Variogram Properties** dialog to create a Variogram Grid Report,

- checking the *Generate Report* option in the **New Variogram** dialog to create a Variogram Grid Report,

- clicking the button in a map properties dialog to generate Grid Information,

- or checking the *Report* option in the **Cross Validation** dialog to create a Cross Validation Report.

If you make changes to the data selection (e.g. changing a data column or changing the data filtering method), you can generate a new report by repeating one of the processes listed above. Review the *Reports* topic in online help for details on the report contents.

System Requirements

- Operating System: Windows 98, Me, XP, 2000, or higher
- Monitor Resolution: 800 X 600 X 256 colors minimum
- Hard Disk: At least 25 MB of free hard disk space
- RAM: 32 MB free minimum, 64 MB free recommended
- CPU: 100 MHz Pentium processor minimum

A Note about the User's Guide and Online Help

Various font styles are used throughout the **Surfer** User's Guide and online help. **Bold** text indicates menu commands, dialog names, and page names. *Italic* text indicates items within a dialog such as group box names, options, and field names. For example, the **Import File** dialog contains a *Look in* drop-down list. Bold and italic text may occasionally be used for emphasis.

Also, menu commands appear as **Map | Base Map**. This means, "click on the **Map** menu at the top of the plot window, then click on **Base Map** within the **Map** menu list." The first word is always the menu name, followed by the commands within the menu list.

Installation Directions

Golden Software does not recommend installing **Surfer 8** over any previous version of **Surfer**. **Surfer** version 4 (DOS), 5, 6, 7, and 8 can coexist on the same computer as long as they are installed in separate directories.

To install **Surfer 8** on Windows XP or 2000, you need to have administrator rights for that computer.

To install **Surfer**:
1. Insert the **Surfer** CD in the CD-ROM drive. The install program automatically begins on most computers.
2. Choose **Install Surfer** from the **Setup Options** window to begin the installation.

If the installation does not begin automatically, double-click on setup.exe in Windows Explorer.

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Network Installation

An administrative install may be performed in order to install files to a network server. Once installed on the network server, individual workstation installations can be performed. The server software must support long file names.

ATTENTION: You may use **Surfer** on a networked system if the number of **Surfer** users on the network at one time does not exceed the number of licensed copies of **Surfer**.

To install **Surfer** on the server:

1. Log on to the file server with administrator rights.
2. Click **Start | Run**.
3. Enter the path to SETUP.EXE followed by /a. For example, r:\Setup.exe /a
4. When setup asks for a destination folder, choose one on the file server (e.g. C:\SurferServer). This should be a new, empty directory. Setup copies all the **Surfer** files plus the setup program and its associated files to the server drive.
5. We recommend flagging the server folder contents as read-only.

NOTE: If you wish to run **Surfer** on a Windows server itself, you will need to run setup again without the /a switch and install **Surfer** normally to a new directory.

Next, install **Surfer** at each workstation:

1. Log on to the file server from each workstation that will run **Surfer**.
2. Start Windows and run the copy of SETUP.EXE located in the server folder. DO NOT RUN SETUP FROM THE CD-ROM!
3. When the setup asks for a destination folder, choose one on the local hard drive.

You will need to enter a **Surfer** serial number the first time **Surfer** is run on each workstation.

Troubleshooting Installations

If you are experiencing errors with the installation, please install **Surfer** with error logging.

To create an installation error log:

1. In Windows, go to **Start | Run**.

2. Type [drive letter]:\[path]\setup.exe" /V"/L* [drive letter]:\[path]\S8.log

   Replace the [drive letter] and [path] with a drive letter and path on your computer. The path to the log file cannot contain spaces.

3. Click OK. After the installation process terminates, the log file is created in the path you specify. Please send the log file to technical support along with the installation message text.

Updating Surfer

To update your version of **Surfer**, open the program and select **Help | Check for Update**.

Do not install a newer FULL version of **Surfer 8** over a previous version of **Surfer 8**. This does not update the software. (i.e. Do not install 8.02 over 8.00.) If for some reason you need to do a full installation of **Surfer 8**, uninstall the previous version before installing the updated version.

Uninstalling Surfer

To uninstall **Surfer**, use Add/Remove Programs in the Control Panel. You can access the Control Panel by clicking the Windows Start button, clicking on Settings, and then clicking on Control Panel.

Getting Help

Online Help

The User's Guide is just one part of the documentation for **Surfer**. Extensive additional information about **Surfer** is located in the online help. To access online help, choose **Help | Contents** for a hierarchical arrangement of help topics. By clicking on the topic of interest, information regarding the topic appears.

Context-Sensitive Help

Surfer also contains context-sensitive help. Highlight a menu command, window region, or dialog box, press the F1 key, and help is displayed for the highlighted item. Another way to access context-sensitive help is by clicking on the context-sensitive help button. After clicking the

button, the cursor appears with a ? next to it. Simply select the item for which help is desired with the modified pointer and a help window appears.

In addition, the dialog boxes contain a help button. When you have an open dialog, click the button in the dialog title bar to obtain help for that dialog. Many dialog details are contained in online help.

Internet

There are several Web resources available for help.

- Click the *Forum* button in online help to research a **Surfer** question or to post a question.
- You can use the **Help | Feedback** command to send a problem report, suggestion, or information request by e-mail.

Technical Support

Golden Software's technical support is free to registered users of Golden Software products. Our technical support staff is trained to help you find answers to your questions quickly and accurately. We are happy to answer any of your questions about any of our products, both before and after your purchase. We also welcome suggestions for improvements to our software and encourage you to contact us with any ideas you may have for adding new features and capabilities to our programs.

Technical support is available Monday through Friday 8:00 AM to 5:00 PM Mountain Time, excluding major United States holidays. We respond to e-mail and fax technical questions within one business day. When contacting us with your question, have the following information available:

- Your **Surfer** serial number (located in the front cover of this User's Guide or in **Help I About Surfer**)
- Your **Surfer** version number, found in **Help I About Surfer**
- The operating system you are using (Windows 98, Me, XP, or 2000)
- The exact wording of the first error message that appears (if any)

Contact Information

Telephone: 303-279-1021

Fax: 303-279-0909

E-mail: surfersupport@goldensoftware.com

Web: www.goldensoftware.com (includes FAQs and support forum)

Mail: Golden Software, Inc., 809 14th Street, Golden, Colorado, 80401-1866, USA

Chapter 2

Tutorial

Tutorial Introduction

This tutorial is designed to introduce you to some of **Surfer's** basic features. After you have completed the tutorial, you should be able to begin creating your own grids and maps.
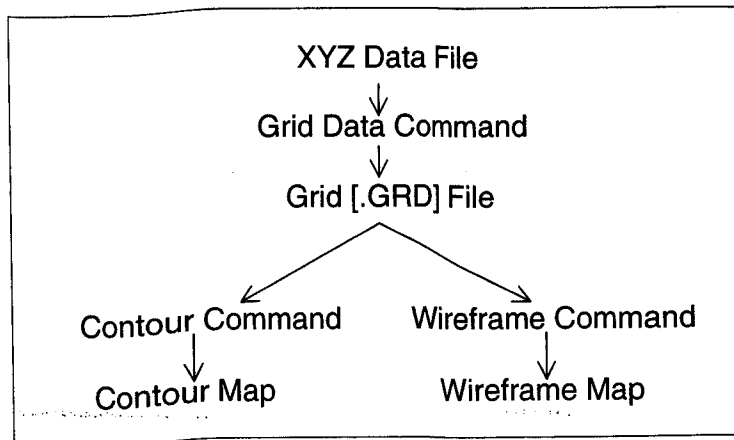
Tutorial Lessons

The following is an overview of lessons included in the tutorial.

- *Lesson 1 - Creating an XYZ Data File* shows you how to import a data file and how to create a new data file.

- *Lesson 2 - Creating a Grid File* shows you how to create a grid file, the basis for most map types in **Surfer**.

- *Lesson 3 - Creating a Contour Map* shows you how to create a contour map and change the contour map properties.

- *Lesson 4 - Creating a Wireframe* shows you how to create a wireframe and set the wireframe properties.

- *Lesson 5 - Posting Data Points and Working with Overlays* shows you how to create a post map and overlay it with a contour map so that both maps share the same axes.

- *Lesson 6 - Introducing Surfaces* shows you some of the features associated with the new surface maps.

The lessons should be completed in order, however, they do not need to be completed in one session.

Understanding How to Use Surfer

The most common application of **Surfer** is to create a grid-based map from an XYZ data file. The **Grid | Data** command uses an XYZ data file to produce a grid file. The grid file is then used by most of the **Map** menu commands to produce maps. Post maps and base maps do not use grid files.

XYZ Data File
↓
Grid Data Command
↓
Grid [.GRD] File
↙ ↘
Contour Command   Wireframe Command
↓   ↓
Contour Map   Wireframe Map

This flow chart illustrates the relationship between XYZ data files, grid files, contour maps, and wireframes.

The flow chart to the right illustrates the relationship between XYZ data files, grid files, contour maps, and wireframes.

Starting Surfer

To begin a **Surfer** session:

1. Click on the Windows **Start** button.
2. Navigate to **Programs | Golden Software Surfer 8** and click **Surfer 8**.
3. **Surfer** starts with a new empty plot window. This is the work area where you can produce grid files, maps, and modify grids. If this is the first time that you have opened **Surfer**, you will be prompted for your serial number. Your serial number is located on the inside front cover of this **User's** Guide.

Lesson 1 - Creating an XYZ Data File

An XYZ data file is a file containing at least three columns of data values. The first two columns are the X and Y coordinates for the data points. The third column is the Z value assigned to the XY point. Although it is not required, entering the X coordinate in Column A, the Y coordinate in Column B, and the Z value in Column C is a good idea. **Surfer** looks for these coordinates in these columns by default.

	A	B	C
1	X Data	Y Data	Z Data
2	0.1	0	90
3	9	3	48
4	1.3	7	52
5	4.7	1	66
6	1.7	5.6	75
7	6	1	50
8	2.5	3.6	60

This is a simple XYZ data file. Notice that the X, Y, and Z data are placed in Columns A, B, and C, respectively.

See *Chapter 3, Data Files and the Worksheet* for a complete description of XYZ data files, worksheet windows, and how to manipulate data in the worksheet.

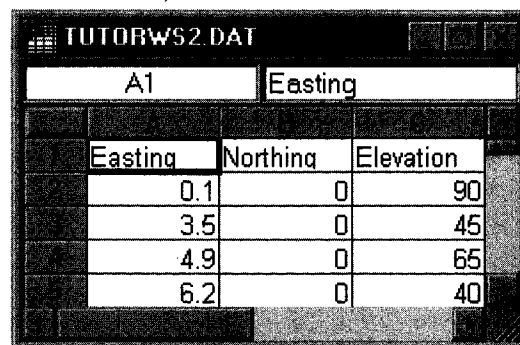## Opening an Existing Data File

To look at an example of an XYZ data file, open TUTORWS2.DAT into a worksheet window:

1. Choose the **File | Open** command, or click the ▨ button to select the XYZ data file to display in the worksheet window.
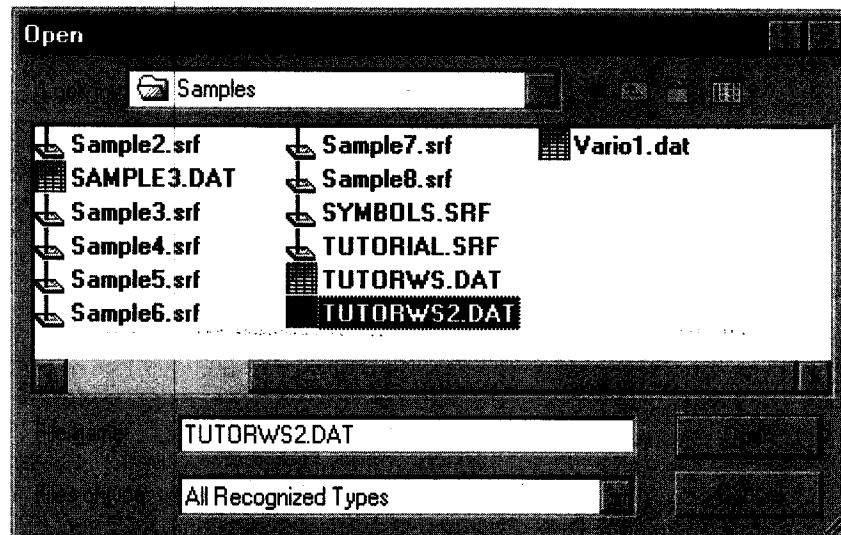
*In the **Open** dialog, select the sample file TUTORWS2.DAT included with **Surfer**.*

2. Double-click on the SAMPLES folder. In the list of files, click TUTORWS2.DAT and then click the *Open* button to display the file in the worksheet window.

3. Notice that the X coordinate (Easting) is in Column A, the Y coordinate (Northing) is in Column B, and the Z value (Elevation) is in Column C. Although it is not required, the header text (the text in row 1) is helpful in identifying the type of data in the column, and this information is used in dialog boxes when selecting worksheet columns.

| A1	Easting	
Easting	Northing	Elevation
0.1	0	90
3.5	0	45
4.9	0	65
6.2	0	40

When a data file is displayed, the name of the file is shown in the title bar of the worksheet window. In this file, row 1 contains descriptive information about each column of data.

Creating a New Data File

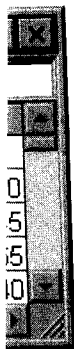The **Surfer** worksheet can also be used to create a data file.

To open a blank worksheet window and begin entering data:

1. Choose the **File | New** command or click the ▓▓ button.

2. Click the *Worksheet* option in the **New** dialog and then click the OK button to display a new empty worksheet window.
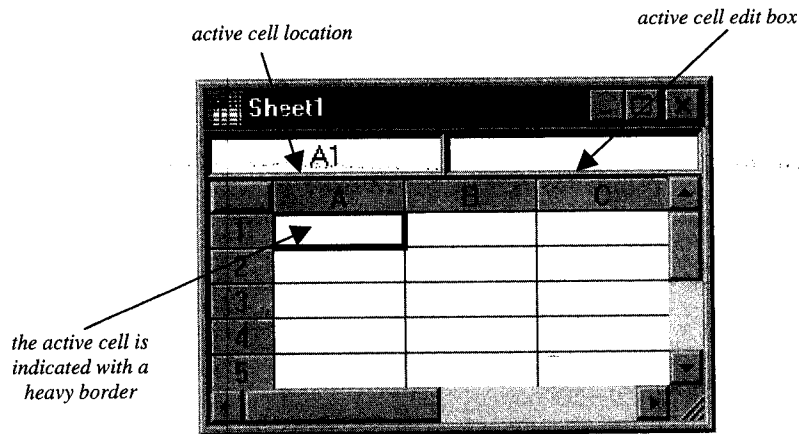
Data are entered into the active cell of the worksheet.

3. The active cell is selected by clicking on the cell or by using the arrow keys to move between cells. The active cell is indicated by a heavy border and the contents of the active cell are displayed in the active cell edit box.

4. When a cell is active, enter a value or text, and the information is displayed in both the active cell and the active cell box.

5. The BACKSPACE and DELETE keys can be used to edit data as you type.

6. Press the ENTER key. The data are entered into the cell and the active cell moves down one row.
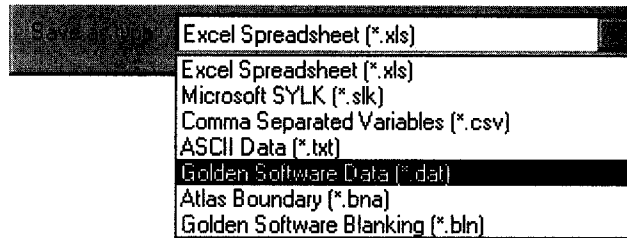
Saving the Data File

When you have completed entering all of the data:

1. Choose the **File | Save** command, or click the ▨ button. The **Save As** dialog is displayed if you have not previously saved the data file.

2. In the *Save as type* list, choose the *Golden Software Data (*.dat)* option.

3. Type the name of the file into the *File name* box.

4. Click *Save* and a **GSI Data Export Options** dialog opens.

5. Accept the defaults in the **GSI Data Export Options** dialog by clicking the OK button.

Save as type	Excel Spreadsheet (*.xls)
	Excel Spreadsheet (*.xls)
	Microsoft SYLK (*.slk)
	Comma Separated Variables (*.csv)
	ASCII Data (*.txt)
	Golden Software Data (*.dat)
	Atlas Boundary (*.bna)
	Golden Software Blanking (*.bln)

Click the down arrow to select Golden Software Data (*.dat) *for the file type.*

The file is saved in the Golden Software Data [.DAT] format with the file name you specified. The name of the data file appears at the top of the worksheet window.

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Lesson 2 - Creating a Grid File

Grid files are required to produce a grid-based map. Grid-based maps include contour maps, image maps, shaded relief maps, 1-grid vector maps, 2-grid vector maps, wireframes, and surfaces. Grid files are created using the **Grid | Data** command. The **Data** command requires data in three columns, one column containing X data, one column containing Y data, and one column containing Z data. We have included a sample XYZ data file (TUTORWS.DAT) with **Surfer** for you to see how to produce a grid file. After completing the tutorial, if you need to produce an XYZ data file of your data for your work, see *Creating a New Data File* on page 21.

To produce a grid file from TUTORWS.DAT:

1. If you have the worksheet window open, click on the **Window** menu and choose **Plot1**. Alternatively, you can create a new plot window with **File | New** (select *Plot Document* and then click OK).

2. Choose the **Grid | Data** command.

3. In the **Open** dialog, select TUTORWS.DAT (located in **Surfer's** SAMPLES folder). The name appears in the *File name* box below the list of data files.

4. Click *Open* and the **Grid Data** dialog is displayed. Alternatively, you can double-click the data file name to display the **Grid Data** dialog.

*Select TUTORWS.DAT from **Surfer's** SAMPLES folder to create a grid file.*

5. The **Grid Data** dialog allows you to control the gridding parameters. Take a moment to look over the various options in the dialog. Do not make changes at this time, as the default parameters create an acceptable grid file.

- The *Data Columns* group is used to specify the columns containing the X and Y coordinates, and the Z values in the data file.
- The *Grid Line Geometry* group is used to specify the XY grid limits, grid spacing, and number of grid lines (also referred to as rows and columns) in the grid file.
- The *Gridding Method* group is used to specify the interpolation method and interpolation options. The *Gridding Method* is *Kriging* by default.
- The *Output Grid File* group is used to specify the path and file name for the grid file.
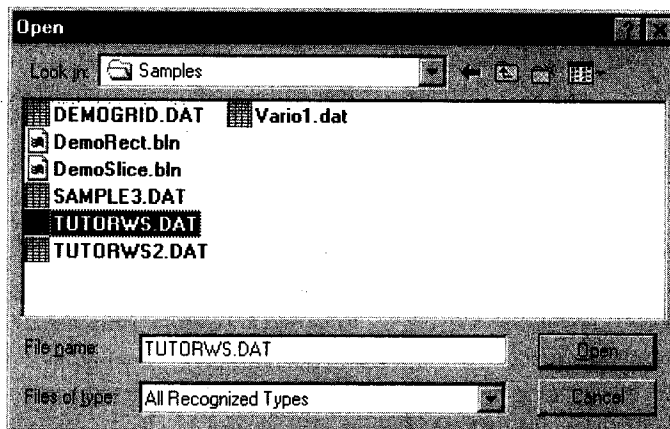
- The *Grid Report* option is used to specify whether to create a statistical report for the data.
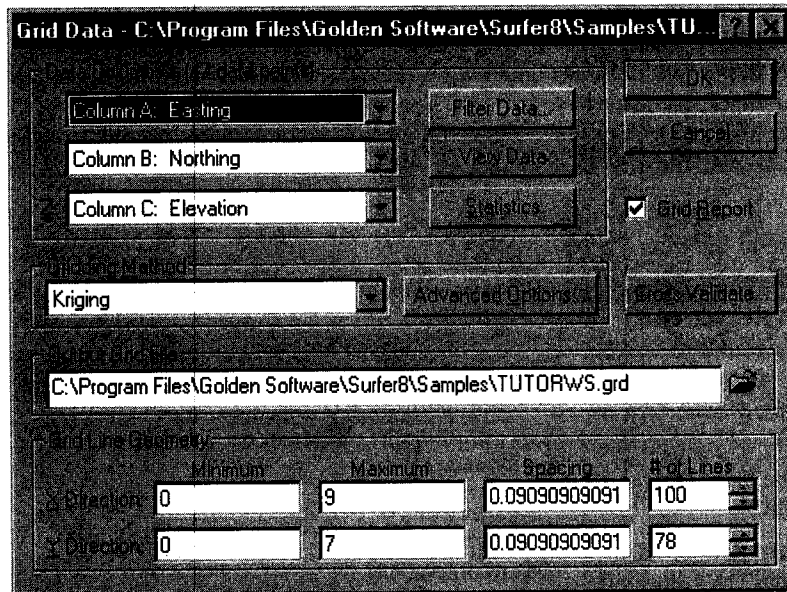
*The **Grid Data** dialog allows you to specify the gridding parameters to use when creating the grid file.*

6. Click OK. In the status bar at the bottom of the window, a display indicates the progress of the gridding procedure. By accepting the defaults, the grid file uses the same path and file name as the data file, but the grid file has a [.GRD] extension.

The status bar indicates the progress of the gridding procedure.

7. By default, a message appears after gridding the data. Click OK in the grid file has been created message box.

8. If *Grid Report* is checked, a report is displayed. You can minimize or close this report.