VRI Linear
Prescription Software
Version 8.55

User Guide

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General Information

About this User Guide

This user guide illustrates the proper installation and use of the Linear Variable Rate Irrigation (VRI) Prescription software. This product works with the following 32- or 64-bit operating systems: Windows 7, Windows 8, or Windows 10.* And, it requires that Microsoft .NET, version 4.0 be installed.

All information in this manual is based on information available at the time of printing. Valmont Industries Inc. reserves the right to make changes at any time without notice and without incurring any obligation. Specifications are applicable to equipment sold within the United States, and may vary outside of the United States.

Minimum Hardware Requirements

- 8 GB RAM
- i5 Processor - 2.0 GHz
- Intel HD Graphics 4400
- 128 GB Hard Drive
- USB 2.0 port with USB to serial adaptor Valmont part no. 0178021
- Wi-Fi Capability
- Serial connection (USB to RS232 converter).

Valmont Recommended Laptop or Tablet Computer:

GETAC V110 or F110 preloaded with Valmont Applications available at www.integron.com/valley. This recommendation meets all the above minimum hardware requirements.

Software and Manuals

Flash Drive delivery of Prescription Software and User Guides.

- Insert flash drive into the USB port, go to Windows Explorer and select the flash drive to access:

> **NOTE**
>
> **•Uninstall all previous versions of VRI prescription software from the computer before installing the new version.**

  » Prescription Software, Open and run setup.exe

  » User Guides, Adobe Reader 8.0, or later, recommended for viewing User Guides.

* Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

Overview

Zone Control

Valley's Variable Rate Irrigation (VRI) operates with the sprinklers of the machine arranged in groups (zones); each zone is controlled independently. A prescription map assigns an application percentage to each zone for a sector of the field.

Prescriptions

VRI Prescription software creates the irrigation plan that tells the irrigation system when and where to adjust the application depth in each sector in the field. This plan can be based on topography information, soil data maps, yield data, and other user-defined information.

Introduction

Glossary of Terms and Acronyms

The following are definitions of terms and acronyms used in this manual.

AgSense ComanderVP – Remote monitoring and communication device used to report changes in equipment operation to the user and to communicate user-initiated control commands to the equipment control panel.

Base Station – The combination of a computer with control software and hardware that is used to remote control or monitor a device. (i.e. a pivot or pump controlled with a computer).

GPS (Global Positioning System) - A space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites.

Grid - Pattern of Sectors.

Irrigation Sector - A predetermined area of a field requiring a unique management plan comprised of one or more sectors.

Linear Irrigation System – Overhead irrigation system consisting of several segments of pipe joined together and supported by trusses, mounted on wheeled towers with sprinklers positioned along its length that moves in a straight line, termed Linear Move.

Linear Length - Length of the End Feed linear as measured from the cart to the end of the machine which includes the overhang.

Linear Project - Collection of all prescriptions related to a single linear. One project per linear.

Linear Run Length – Length of travel for the cart's path across the field.

Prescription - Irrigation plan that tells the linear when and where to adjust the application percentage (depth) in specific irrigation management sectors in the field.

Remote Telemetry - Measurement and transmission of data from a remote source.

RTU ID (Remote Telemetry Unit Identification) - Three-digit, user-defined number identifying the remote telemetry device associated with the linear.

Sector - A predetermined area of a field to be prescribed a water application percentage. A Linear Sector area is defined by zone length and length of run segment.

Segment –Defined/programmed lengths (ft.) along the Linear machine path that begins at the cart location starting point. Length of run is divided by 180 possible segments maximum then rounded to the next foot, creating equal distance segments.

Sprinkler Package - A group of sprinklers with each sprinkler designed to deliver a specific amount of water based upon the sprinklers position along the length of the machine. This package also includes pressure regulators and required components to install the sprinkler on top, on the side or below the span pipeline.

VRI - Variable Rate Irrigation.

Watering Rates – Percent of water application depth.

Zone – Bank of sprinklers grouped along a Linear machine controlled by a single control. End Feed zone numbering starts at cart location and continues along the Linear machine.

Zone Control - Variable rate irrigation where the sprinklers of the machine are arranged in groups (zones), each zone controlled independently. A prescription map assigns an application percentage to each zone for each sector in the field.

Create a Working Folder

Before you begin creating a linear project, you must create a working folder. The working folder is where all the new linear (projects), maps, images, and prescriptions, that you create or select with the Linear Variable Rate Irrigation (VRI) Prescription software, are stored. The suggested format is as follows. See Figure 7-1.

Drive

VRI Files

Folder <Name of Linear A>

Folder <Name of Linear B>

Folder <Name of Linear C>

Folder <Name of Linear D>

Images Folder

Maps Folder

Linears-Projects Folder

Prescriptions Folder

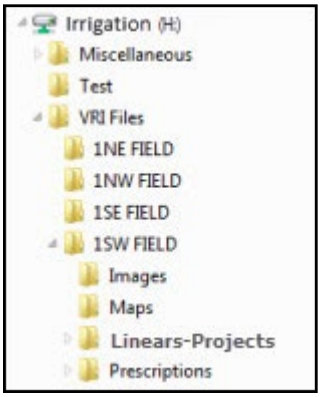


Figure 7-1 Folder format

Opening the VRI Application

To open the VRI application, double click on the VRI icon on your desktop. See Figure 7-2.

Figure 7-2 VRI Icon

The Project Selection screen appears. Choose Linear and click **OK**. The Variable Rate Irrigation screen for Linears appears. See Figure 7-3

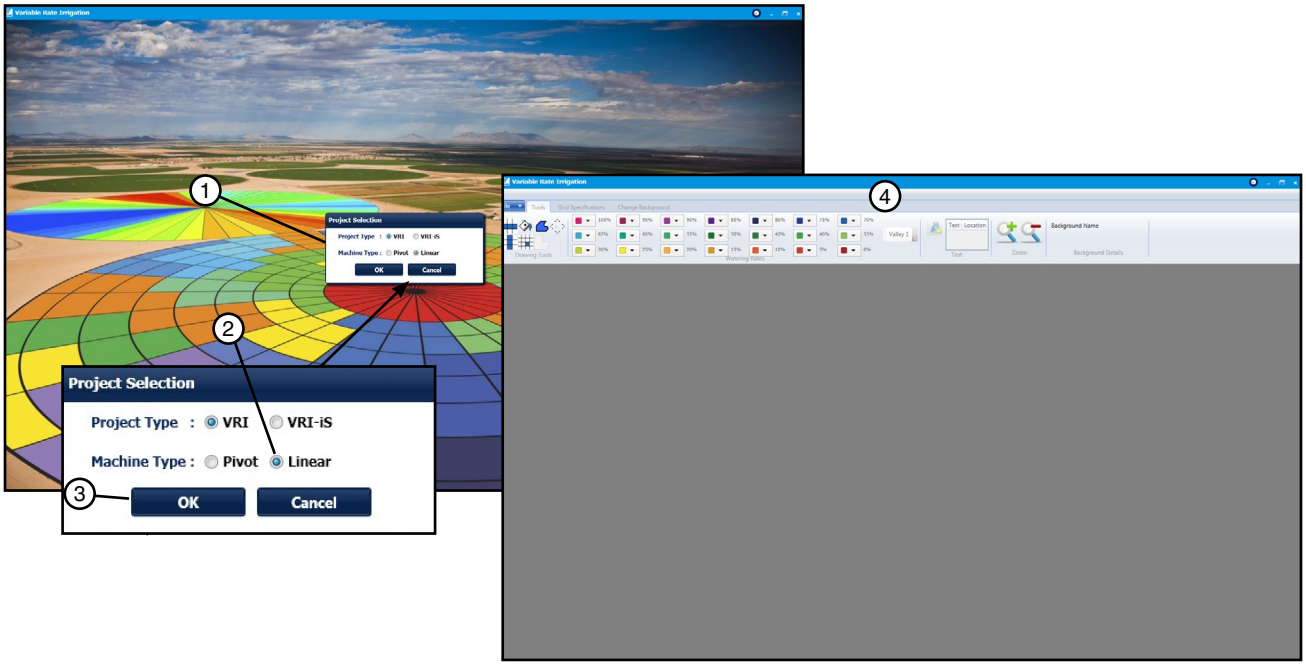


Figure 7-3 1. Project Selection screen 3. Click OK
2. Choose Linear 4. Variable Rate Irrigation screen appears

Create a Project and Prescription

Creating a Linear Project

Note: Within VRI, each project defines one linear. Each project can have multiple prescriptions.

To create a VRI project, select **New Project** from the VRI drop-down menu. See Figure 8-1.

The Add New Linear screen appears.

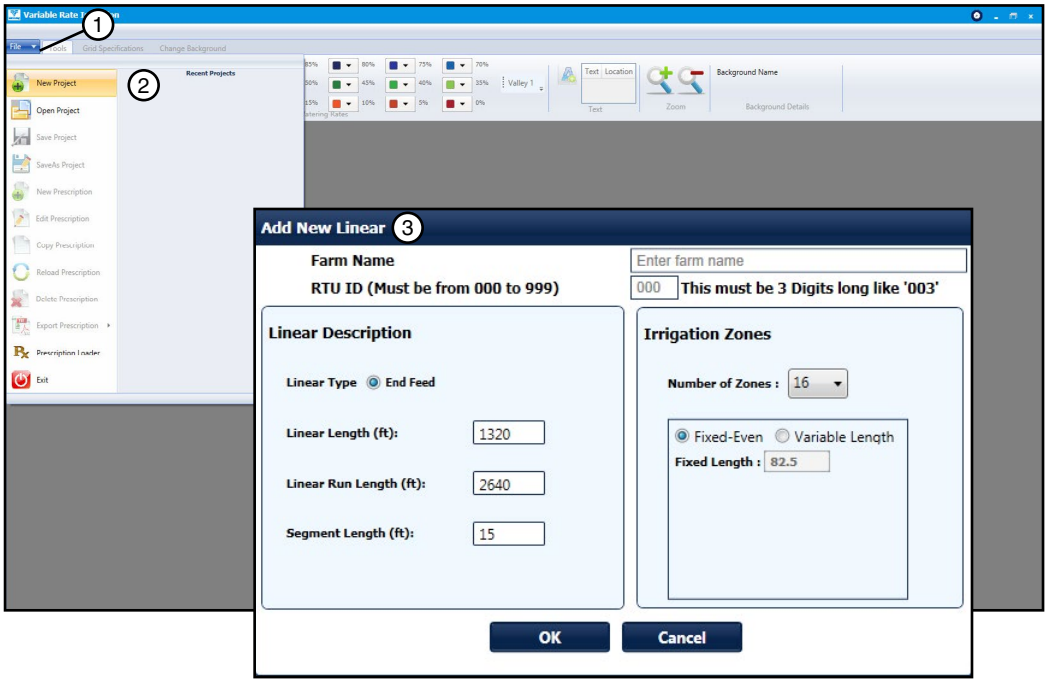


Figure 8-1 1. VRI Drop-Down Menu 2. Select New Project 3. Add New Linear Screen

The Add New Linear screen provides basic information regarding the layout of the field covered by the linear machine. The following are examples of terms used in this section. See Figure 8-2.

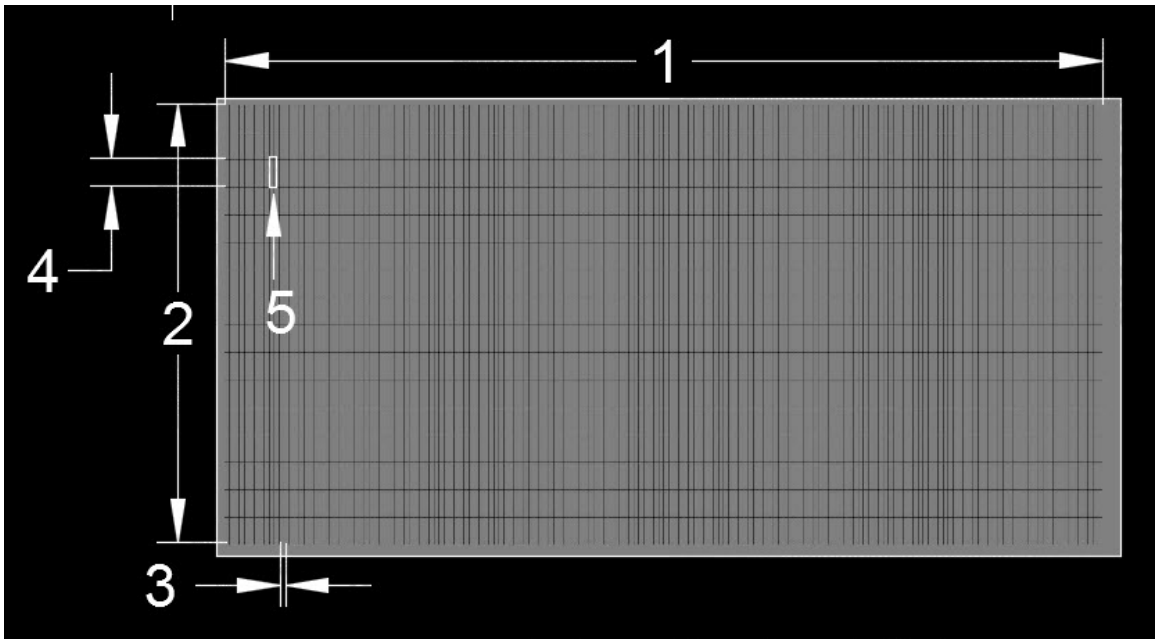


Figure 8-2 1. Linear Run Length
2. Linear Length
3. Linear Segment
4. Zone Length
5. Sector

Creating a Linear Project

Linear Parameters

The Linear Parameters section of the Add New Linear screen provides fundamental information about the linear machine. See Figure 9-1.

Figure 9-1 Linear Parameters

1. Enter the farm name in the **Farm Name** field.
2. Enter the linear's Remote Telemetry Unit (RTU) number in the **RTU ID** field. This is a user-defined number, and must be three digits long.

Linear Description

The Linear Description section of the Add New Linear screen provides the physical and logistical information about the linear. See Figure 9-2.

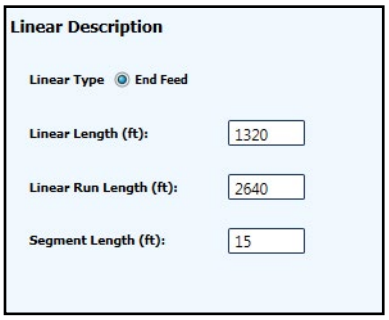


Figure 9-2

1. Currently **Linear Type** cannot be changed from End Feed in the design program.
2. Enter the linear's total length in feet in the **Linear Length (ft)** field. The length of the linear for VRI Prescriptions is from the cart to the end of the machine, which includes the overhang. The default length is 1320 feet. The range is from 150 to 3,300 feet.
3. Enter the run length in the **Linear Run Length (ft)** field. The linear run length is from the machine start point to the machine stop point. The default value is 2640. The linear run length can be up to 20,000 feet.
4. The individual segment lengths are automatically calculated and displayed in the **Segment Length (ft)** field. This is equal to the linear run length divided by 180 (the maximum number of segments allowed) and rounded up in feet. You can enter the segment length in this field, if you want to. In this case, the segment length cannot be less than the default segment length displayed.

Irrigation Zones

The Irrigation Zones section of the Add New Linear screen provides information on the number of zones and their lengths. See Figure 9-3.

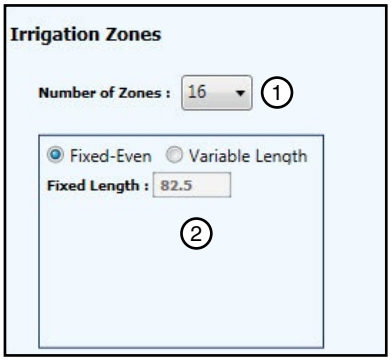


Figure 9-3 1. Linear Zones
2. Linear Zone Lengths

See the Irrigation Zones section of the Appendix for more information.

1. In the Irrigation Zones section, select the number of zones in the **Number of Zones** drop-down menu. The maximum number of zones allowed is 30. See Figure 9-4.

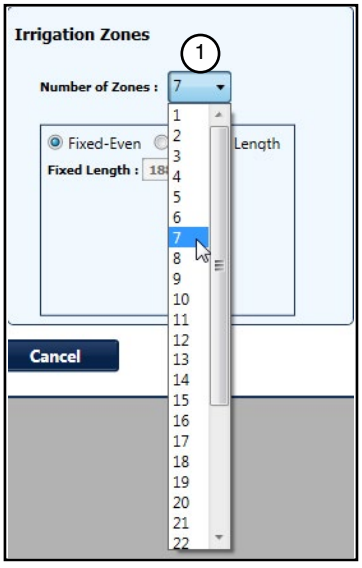


Figure 9-4 1. Menu

Create a Project and Prescription

Creating a Linear Project

Zone Length

2. Select either **Fixed Even** or **Variable Length** to describe the irrigation zone length.
   - If you select **Fixed-Even**, the fixed length is equal to the linear length divided by the number of zones. See Figure 10-1.
   - If you select **Variable Length**, enter the individual lengths for each zone shown in the drop-down list box, beginning with zone 1 (closest to the cart). As each zone length is entered, it is deducted from the total linear length. See Figure 10-2.
3. Click **OK** on the Add New Linear screen once all selections are filled out correctly. See Figure 10-3.

   If any of the fields on the Add New Linear screen have been left blank or need to be corrected, the List of Errors screen appears on the errors identified. The errors must be corrected before continuing.

   If there are no errors, the Prescription Name Entry Screen appears. See Figure 10-4.
4. Enter the name of the linear's prescription in the **Prescription Name** field.
5. Click **OK**.

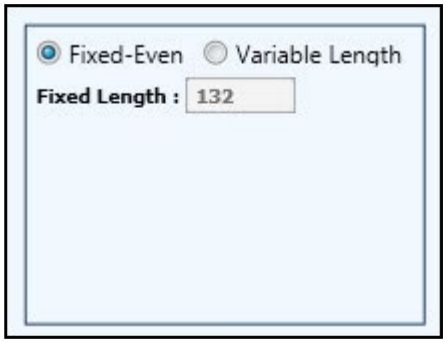


Figure 10-1 Fixed Length Selection

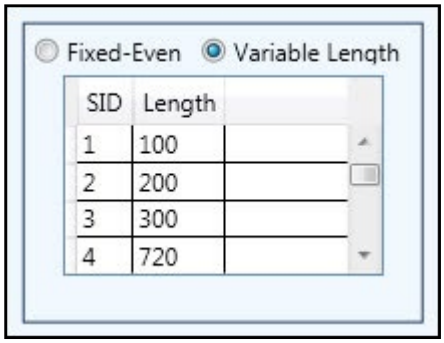


Figure 10-2 Variable Length Selection

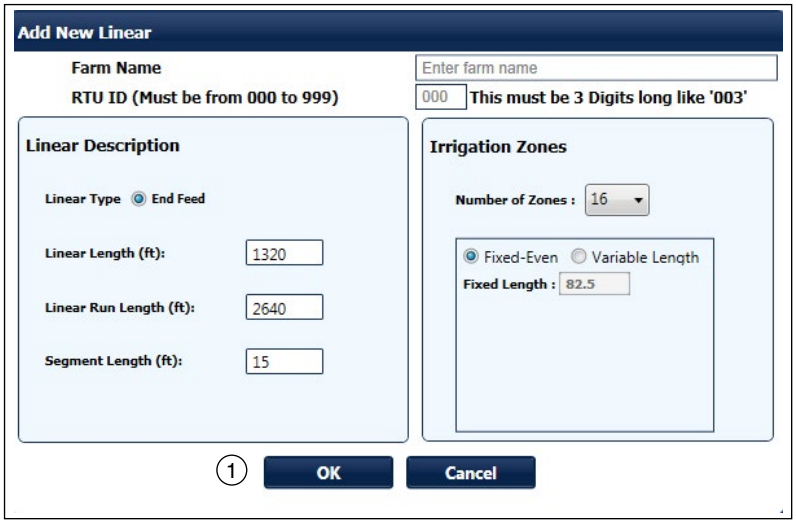


Figure 10-3 **1. OK** button

Figure 10-4 Prescription Name Entry Screen

Creating a Linear Project

The Tools screen appears with a popup window which states “By default the machine path is from Top Left to Top Right.” This means that if the user does not select and place the grid on a Background image, the cart location is in the upper left corner and the machine path segments start there and move to the right. Also the machine orientation will start in the same corner and is configured down the left side of the screen starting with zone 1. Select **OK**. See Figure 11-1.

You will use this screen to create a linear prescription.

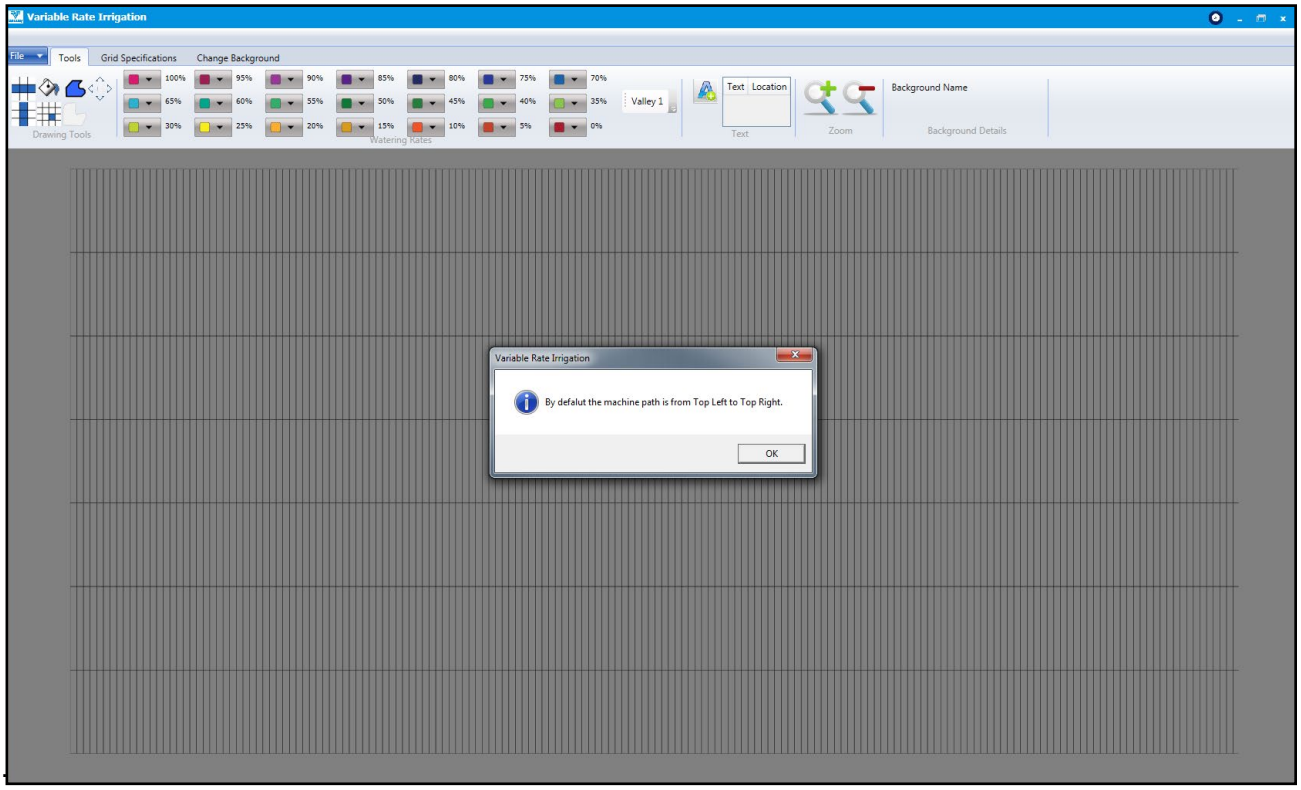


Figure 11-1

NOTE

- **When creating VRI Zone Prescriptions, a good understanding of the overall hydraulics of the linear, pipeline (if any), and pump is necessary to ensure equipment is not damaged by shutting off too many zones at once, thereby decreasing flow to less than the minimum flow rate.**
- **Most pumps will experience an increase in pressure as the flow is decreased. The minimum flow rate must be determined in order to calculate the maximum changes that can be made.**
- **A variable speed pump is a good option.**

Zone Control Tools Grid

The grid for the Zone Control linear is either a rectangle or a square, depending on the lengths of the linear and the linear run. See Figure 11-2. You can designate up to 30 zones for the linear, and up to 180 segments (depending on how the Segment Length calculates the minimum length). It is possible that you could establish as many as 5400 single segments in the linear grid.

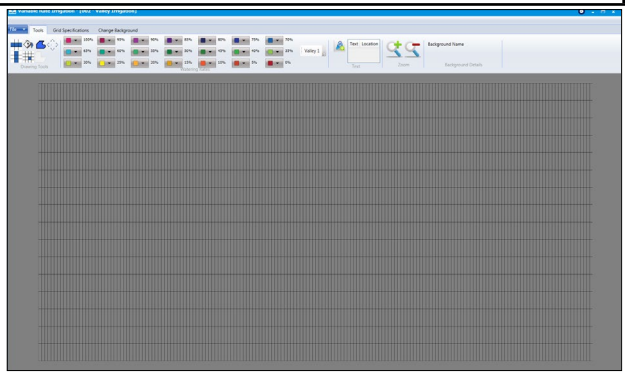


Figure 11-2 Zone Control Tools Grid

Create a Project and Prescription

Selecting a Background Field Image

Background Field Image

The first thing to do when creating a linear prescription is to select the image of the field to be used as the map's background.

1. Click the **Change Background** tab on the Variable Rate Irrigation screen. See Figure 12-1.

   The Change Background screen appears.

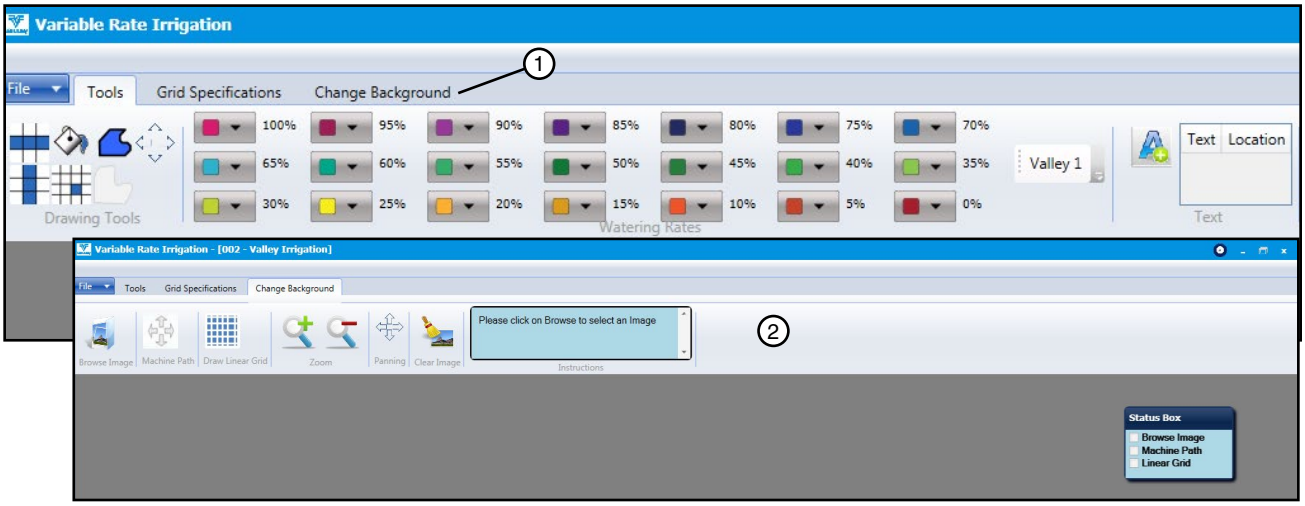
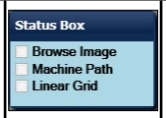


Figure 12-1 1. Change Background Tab
2. Change Background Screen

Following are descriptions of the buttons and boxes found on the Change Background screen.

	Browse Image - Opens the Images folder for the selection of the image of the field for which you are creating a prescription.			**Clear Image** - Clears the selected image from the screen.
	Machine Path- Used to select your cart location starting point, direction of travel and machine orientation.			**Multiple Images** - Lists and displays all images related to the project/linear. Choosing different images will change the background image of you prescription. Individual images can be deleted from this list with the use of the X button.
	Draw Linear Grid – Places grid over field based off of Zones and Segments to create Sectors.			**Delete All Images** - Deletes all images from this list.
	Zoom In - Increases the detail of the image.			**Instructions** - Provides instructions for the Browse Image, Machine Path, and Draw Linear Grid buttons.
	Zoom Out - Decreases the detail of the image.			**Status Box** - Indicates which actions (Browse Image, Machine Path, and Linear Grid) have been completed..
	Panning - Used in conjunction with the **Zoom In** button to move the image around the screen.			

Selecting a Background Field Image

Background Field Image (continued)

2. Click the **Browse Image** button on the Tools screen, select the image of the field for which the prescription is being created, and click **Open**. See Figure 13-1.

   The image appears on the screen.

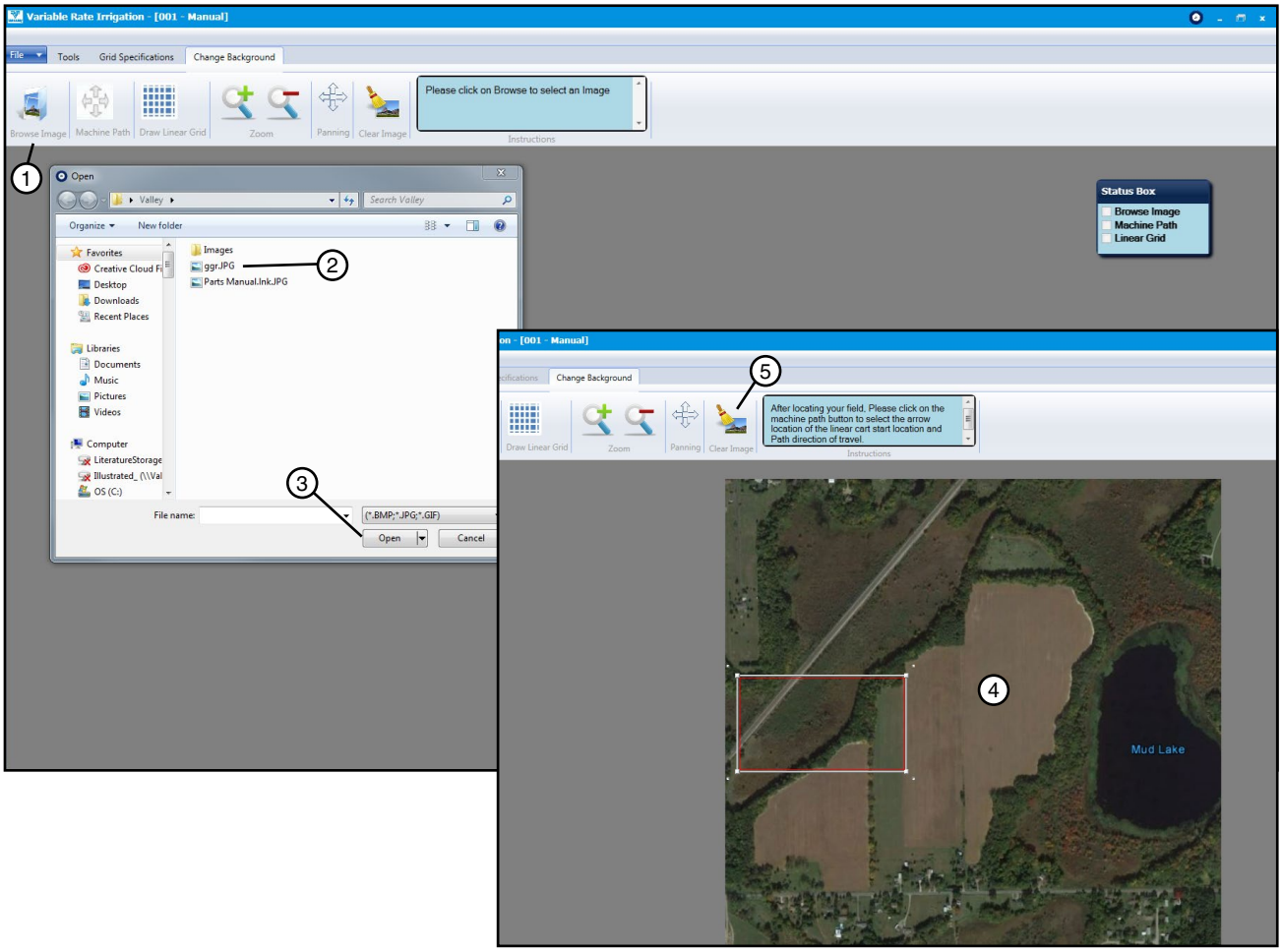


Figure 13-1
1. Browse Image button
2. Image Selection
3. Open
4. Background Image
5. Clear Image button

At any point in the Change Background process, you may remove the image from the screen and start over with a different image by clicking the **Clear Image** button.

Create a Project and Prescription

Selecting a Background Field Image

Background Field Image (continued)

3. The image will appear with a white rectangle just outside a red rectangle. See Figure 14-1.

   Position these rectangles on the field with the red rectangle as the field outline.

   - Move the rectangle by grabbing the center with the mouse. See Figure 14-2.
   - Change the size of the rectangle by grabbing one of the white square corners of the white rectangle and dragging it in and out to adjust the size smaller or larger. See Figure 14-3.
   - Rotate the rectangle by grabbing one of the white squares just outside of the rectangle corners and moving it in the desired direction to rotate the square. See Figure 14-4.

   Be sure the field boundary is correctly oriented as it is not changeable once proceeding onto the next step unless the image is cleared and these steps are repeated with the image. Once the red rectangle is lined up with the field boundary proceed to the next step.

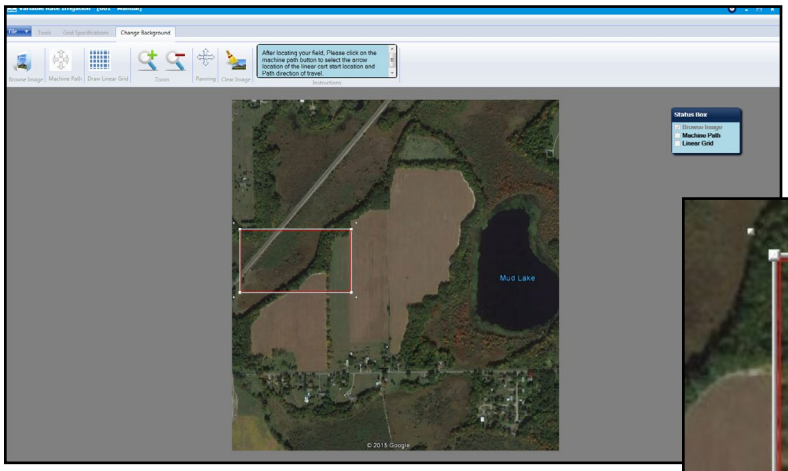


Figure 14-1

Figure 14-2

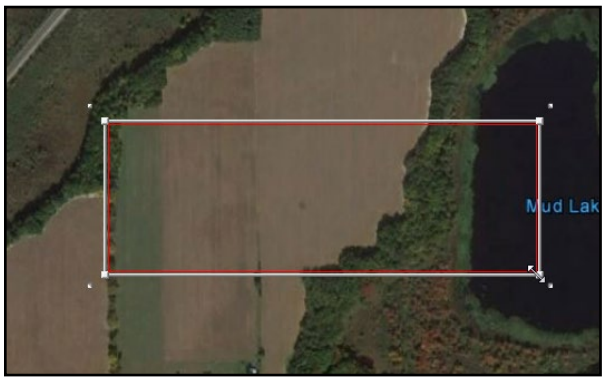


Figure 14-3

Figure 14-4

Selecting a Background Field Image

Background Field Image (continued)

4. With the field displayed, click the **Machine Path** button. See Figure 15-1.

   Once the button is selected green outlined arrows will appear in the corners of the rectangle. Figure 15-2

   - Select the arrow that is the location of your cart starting point. The green arrow selected should be pointing the Path direction of travel from the starting point. See Figure 15-2.
   - Once an arrow is selected a yellow arrow will appear that represents the Linear span orientation from the cart and the start point for the first zone along the machine. See Figure 15-3.
   - You will have the ability to change the selection until you select the next step **Draw Linear Grid**. Once that is selected the Path and Linear direction is not changeable unless you clear the image and start over with the image.

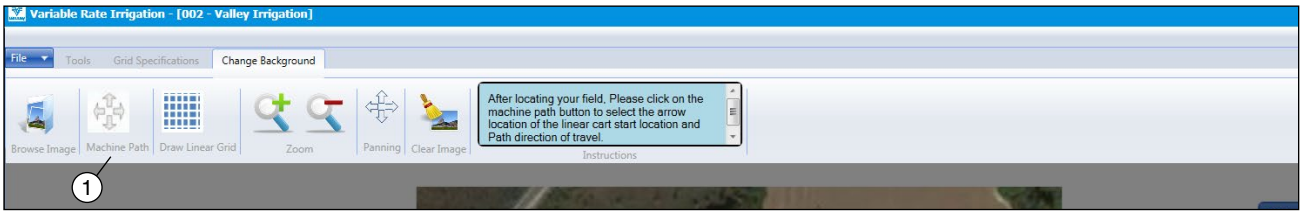


Figure 15-1 1. Machine Path Button

Figure 15-2

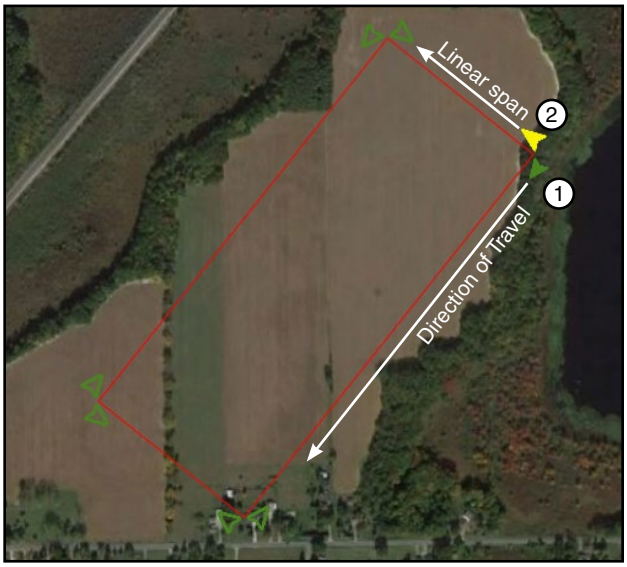


Figure 15-3 1. Green Arrow - Direction of Travel
2. Yellow Arrow - Linear Span Orientation From Cart and Start Point for First Zone

Create a Project and Prescription

Selecting a Background Field Image

Background Field Image (continued)

5. Click the **Draw Linear Grid** button. See Figure 16-1.

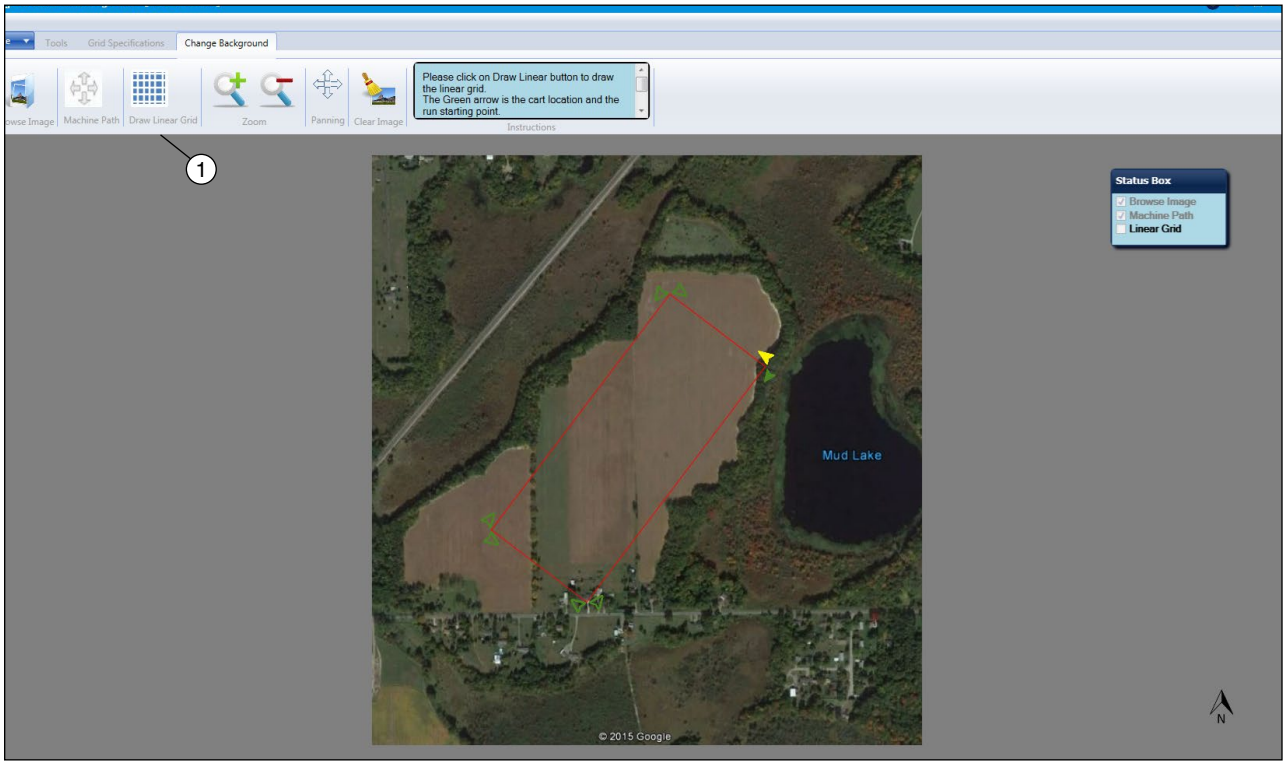


Figure 16-1 1. Draw Linear Grid

6. The Grid will appear over the image with the orientation that was specified. See Figure 16-2.

Figure 16-2

Building a Prescription

After selecting the image of the field on the Change Background screen, you now use the Tools screen to create the linear's prescription.

Note that the RTU or Tracker Device ID and prescription name appear at the top of the screen.

1. Click the **Tools** tab on the menu bar. See Figure 17-1.

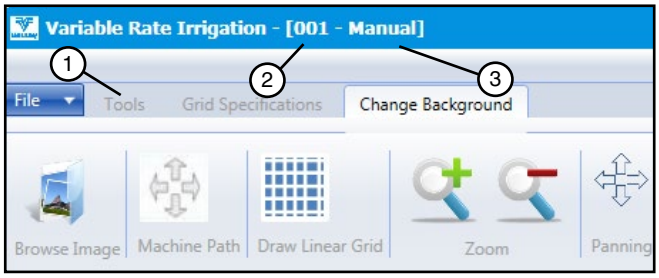


Figure 17-1 1. Tools Tab 2. RTU ID 3. Prescription Name

The Tools screen appears with the prescription grid overlaid on the image of the field. See Figure 17-2. The Tools screen is used to create a new Linear VRI-Zone (VRI-Z) map, or to edit an existing map. The lines on the map outline sectors.

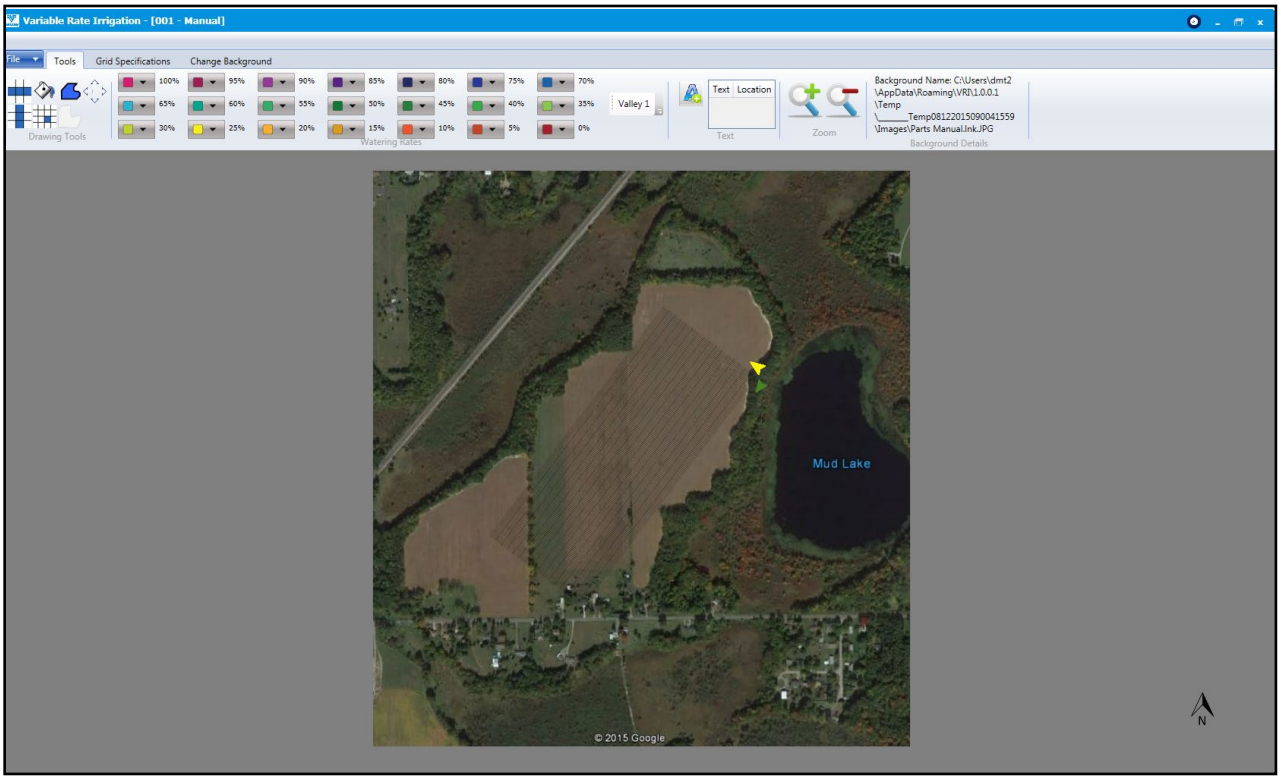


Figure 17-2 Tools Screen

Create a Project and Prescription

Building a Prescription (continued)

Drawing Tools

The Drawing Tools section contains buttons that are used to define the area in which the watering rates are to be applied. See Figure 18-1.

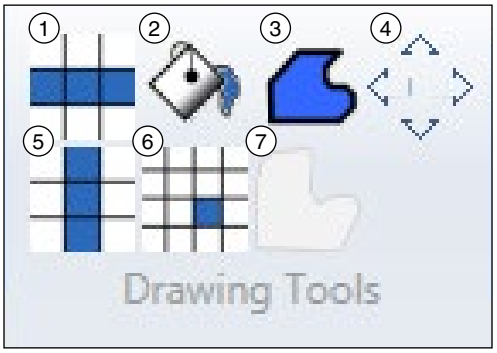


Figure 18-1
1. Horizontal Sector Tool
2. Adjacent Sector Tool
3. Polygon Tool
4. Panning Tool
5. Vertical Sector Tool
6. Single Sector Tool
7. Hide Polygon Lines

2. Select one of the following tools to identify a watering area:

   (1) **Horizontal Sector Tool** - Click on a sector to fill all sectors horizontally with the desired watering rate.

   (2) **Adjacent Sector Tool** - Click anywhere on the map to fill all connecting sectors not already selected by any of the other tools with the desired watering rate, or to change a block of sectors to a different watering rate.

   (3) **Polygon Tool** - Draw a multi-sided shape by left-clicking the mouse button at each position, then right-click the mouse button to close and complete the shape and fill in the desired watering rate.

   (4) **Panning Tool** - Click and hold the left mouse button on the grid after zooming in to move the grid around the screen.

   (5) **Vertical Sector Tool** - Click on a sector to fill all sectors vertically with the desired watering rate.

   (6) **Single Sector Tool** - Click on a single sector to fill it with the desired watering rate.

   (7) **Hide Polygon Lines Tool** - Click to hide the lines of the polygon. Selecting it again will unhide the polygons.

Building a Prescription (continued)

Watering Rate

The Watering Rate buttons are used with any of the Drawing Tools buttons to describe the amount of water to be applied to sectors. The color-coded buttons range in 5 percent increments from 0 to 100 percent. This is the percent of application depth. See Figure 19-1. For example: If the application rate (base rate) is 1 in (0.0254 mm) and the water rate is 50% the applied rate would be 1/2 in (0.0127 mm) or AR x WR = Applied Rate.

As you may have noticed in Figure 19-1 there is an open drop down menu that can be used to select 3 possible Watering Rate Color pallets.

(1) **Valley 1** (Figure 19-1) which is based off of a gradient system similar to that of a soil map.

Figure 19-1

(2) **Valley 2** (Figure 19-2) designed with varying high contrast colors.

Figure 19-2

(3) **Custom Color** (Figure 19-3) a user definable and savable color pallet.

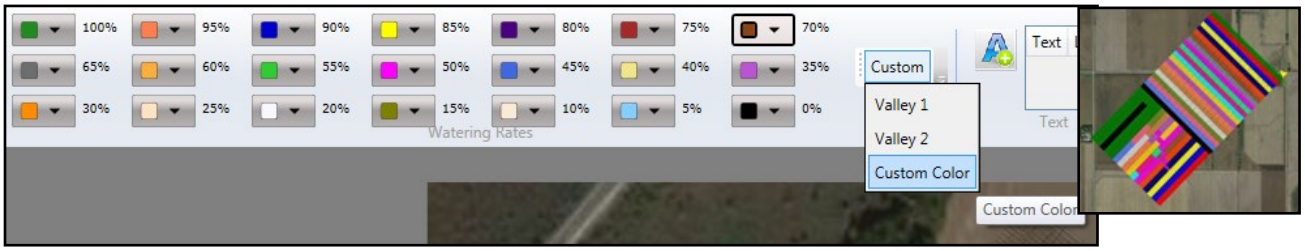


Figure 19-3

Create a Project and Prescription

Building a Prescription (continued)

Watering Rate (continued)

To make your Custom Color pallet See Figure 20-1:

1) Select **Custom Color** in the drop-down menu. **Note**: You can change colors in Valley 1 and Valley 2 but the program will ask you if you want to save this as your Custom Color pallet.
2) At each watering rate there is a drop-down arrow. Select it and color options will appear.
3) Choose the desired colors for your Custom Color pallet from the **Default Colors**
4) Or select **More Colors**
5) The **More Colors** screen will appear if selected. Choose a color shade then click on the watering rate drop-down arrow to exit color selection.
6) Once you have chosen your colors try selecting **Valley 1** or **Valley 2**
7) A pop-up window will appear asking “Do you want to save the color palette in Custom Colors.” Click **Yes** if you would like to save.

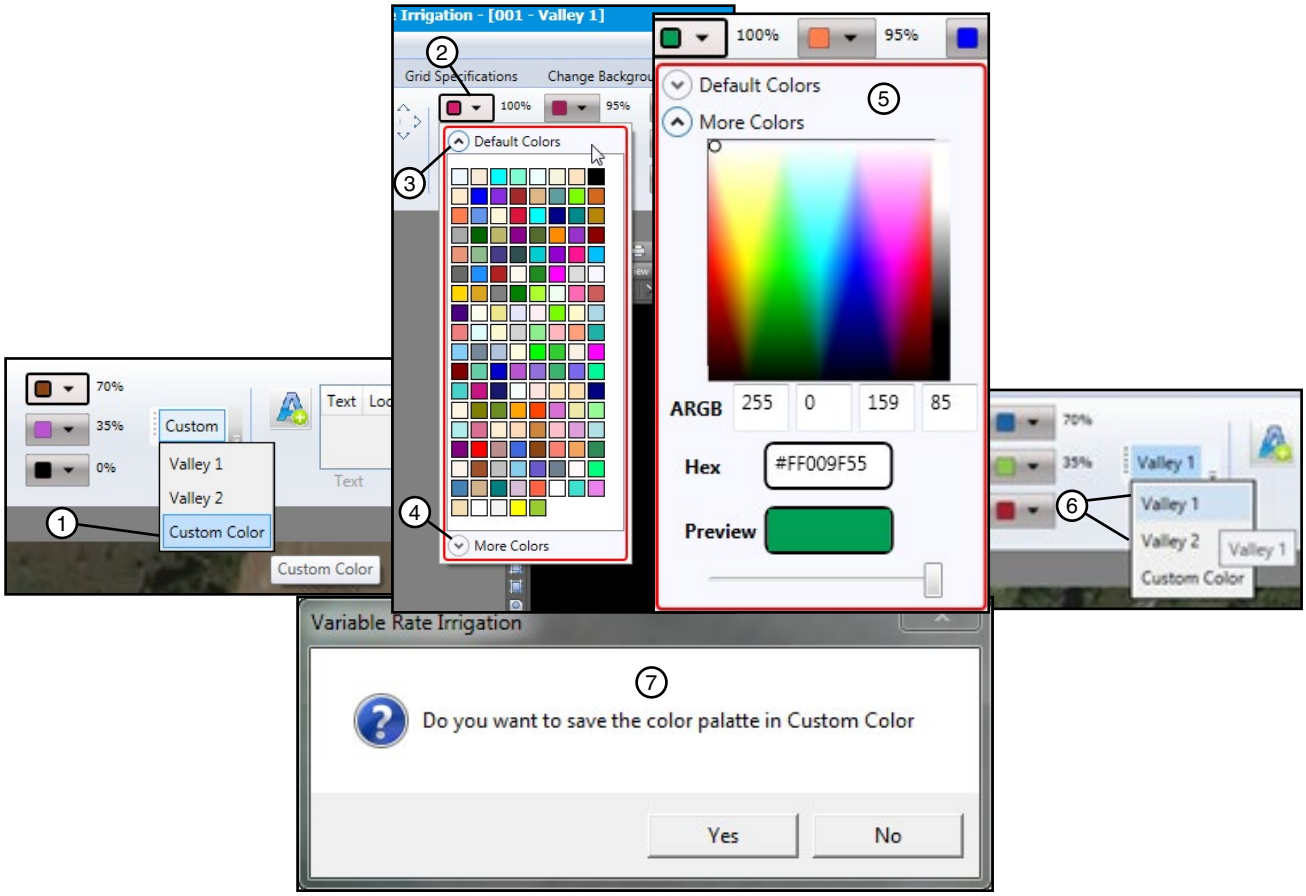


Figure 20-1
1. Custom Color
2. Watering rate drop-down arrow
3. Default Color
4. More Colors
5. More Colors Screen
6. Valley 1 or Valley 2
7. Save popup window

Building a Prescription (continued)

Watering Rate (continued)

3. Click the appropriate Watering Rate button (**0-100%**).
4. Select the areas of the Zone Control prescription grid on which to apply the watering rate. Figure 21-1.

   The example in Figure 21-1 displays the effect of using each of the drawing tools. Note that when you apply the **Vertical Sector tool** (2) after first applying the **Horizontal Sector tool** (1), the Vertical overrides the Horizontal. Also note that the polygon lines can be removed with the **Hide Polygon Lines tool.**

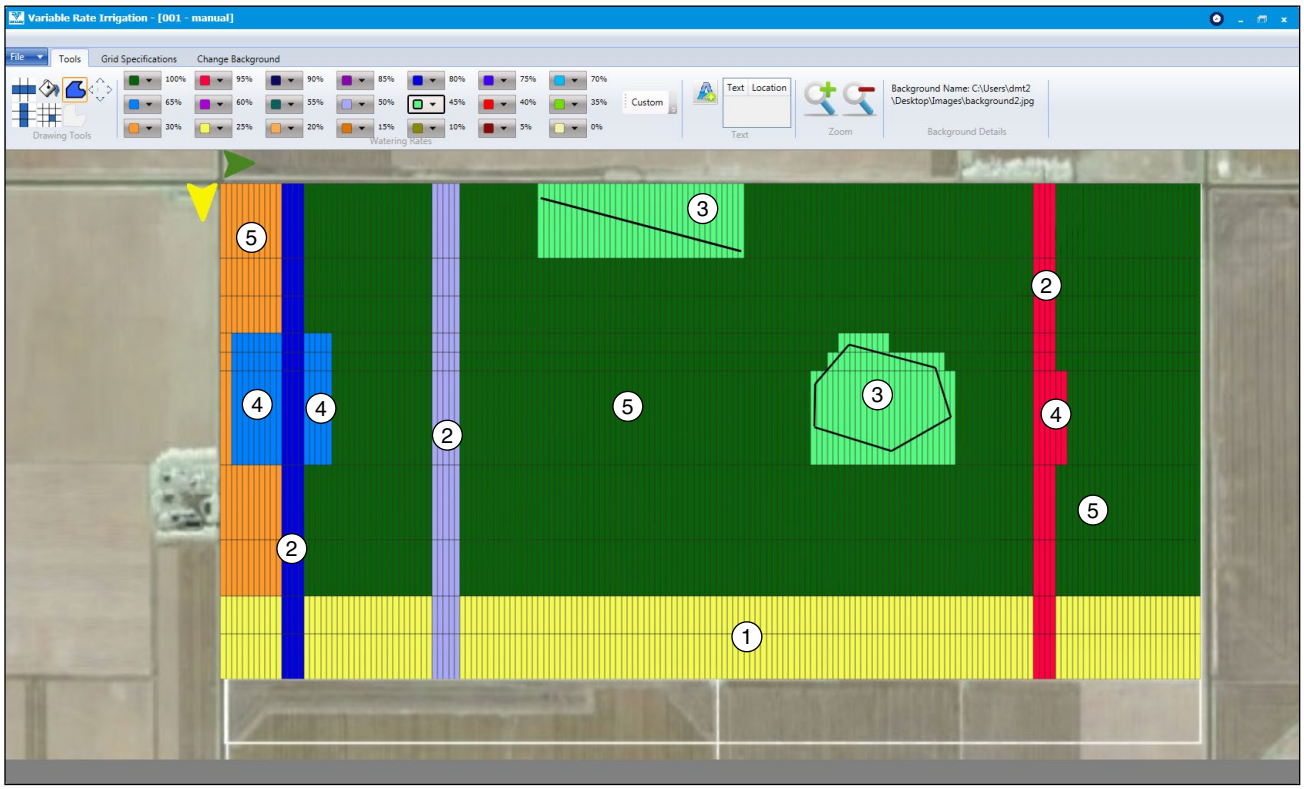


Figure 21-1
1. Horizontal Sector Tool Applied
2. Vertical Sector Tool Applied
3. Polygon Tool Applied
4. Single Sector Tool Applied
5. Adjacent Sector Tool Applied

NOTE

- **When creating VRI Zone Prescriptions, a good understanding of the overall hydraulics of the linear, pipeline (if any), and pump is necessary to ensure equipment is not damaged by shutting off too many zones at once, thereby decreasing flow to less than the minimum flow rate.**
- **Most pumps will experience an increase in pressure as the flow is decreased. The minimum flow rate must be determined in order to calculate the maximum changes that can be made.**
- **A variable speed pump is a good option.**

When determining water rates throughout the field be sure to keep in mind the note above as to not damage the irrigation system.

Create a Project and Prescription

Building a Prescription (continued)

Text

The **Text tool** is used to add text to the grid, and to edit or delete the text. See Figure 22-1.

Do the following to add text to the image.

1. Click the **text icon**.
2. Click on the area of the grid in which you want to place the text.

   The Enter Text pop-up screen appears. See Figure 22-2.
3. Enter the text you want displayed on the grid.
4. Click the **Font** button to change the appearance of the text.

   The Font pop-up screen appears. See Figure 22-3.
5. Select the **Font**, **Font Style**, and **Size** you want applied to the text.
6. Click **OK**.

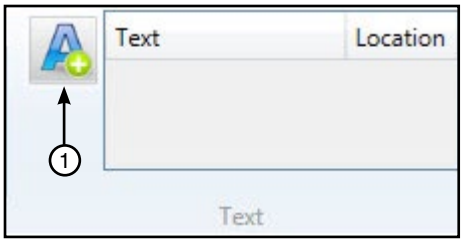


Figure 22-1 1. Text Icon

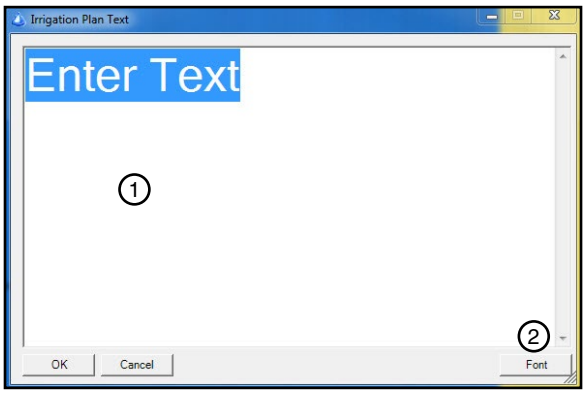


Figure 22-2 1. Enter Text Box 2. Font Button

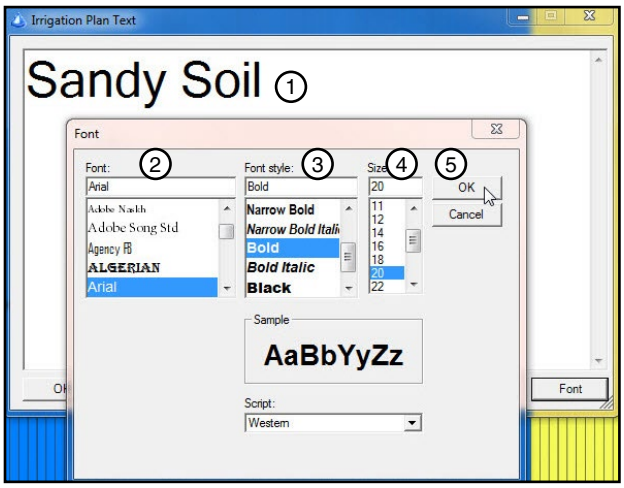


Figure 22-3 1. Desired Text 2. Font 3. Font Style 4. Font Size 5. OK Button

Building a Prescription (continued)

Text (continued)

The **Irrigation Plan Text** box now displays the text as you want it to appear on the grid. See Figure 23-1.

7. Click **OK**.

   The Text tool now displays the text that was inserted, and its location on the screen. See Figure 23-2.

   If you want to remove the text first select the text in the tool bar (See Figure 23-3) then the Irrigation Plan Text box will appear (See Figure 23-1). Delete the text from the box and click **OK**. The text now is removed from the screen.

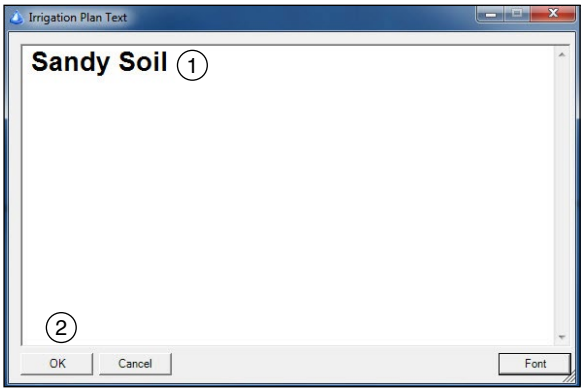


Figure 23-1 1. Desired Text 2. OK Button

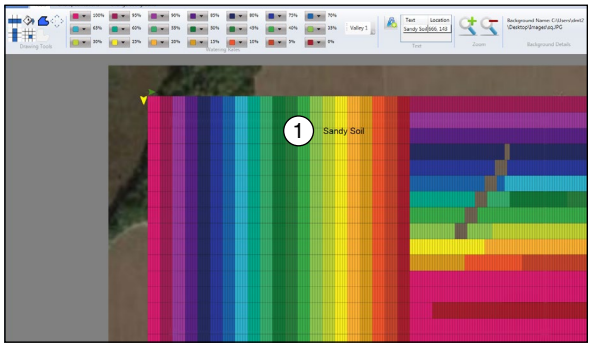


Figure 23-2 1. Inserted Text

Zoom

Use the **+** button to increase the size of the image, and use the **-** button to decrease it. See Figure 23-4.

Background Details

The **Background Details tool** provides the file name and location of the background image being used for this grid. See Figure 23-5.

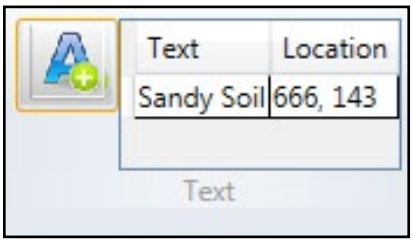


Figure 23-3 Text Tool with Text and Location

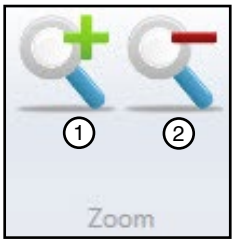


Figure 23-4 1. In
2. Out

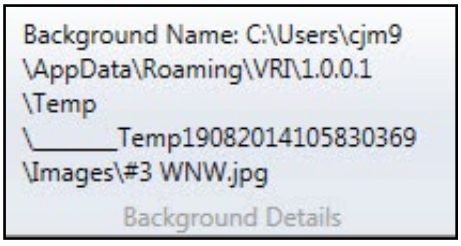


Figure 23-5 Background Details

Create a Project and Prescription

Building a Prescription (continued)

Grid Specification

The **Grid Specification** tab provides the means to change the appearance of the grid, the grid's transparency, transparency level, grid line color, and segment details. See Figure 24-1.

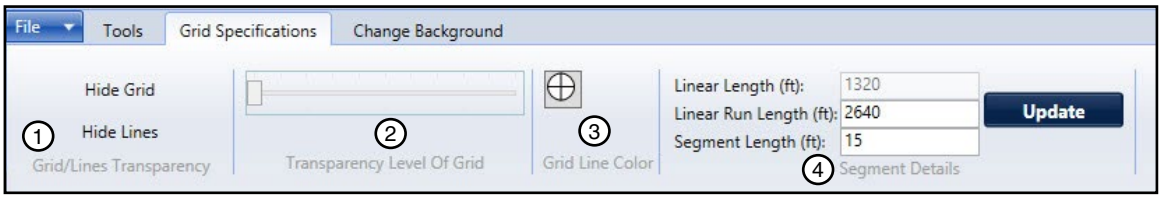


Figure 24-1 1. Grid/Lines Transparency 3. Grid Line Color
2. Transparency Level of Grid 4. Segment Details

Grid/Lines Transparency

Hide/Show Grid - This feature allows you to hide the grid and watering level colors, leaving only the image of the field and any polygons you have drawn on the image. Clicking on **Show Grid** returns the grid and colors to view. See Figures 24-2 and 24-3. To hide the polygon lines, click on the **Hide Polygon Lines** drawing tool.

Figure 24-2

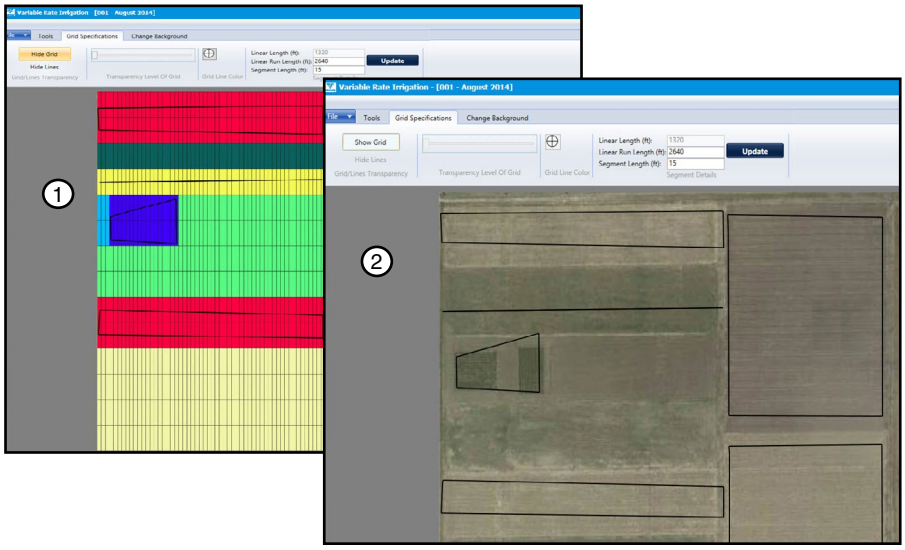


Figure 24-3 1. Show Grid 2. Hide Grid

Building a Prescription (continued)

Grid/Lines Transparency (continued)

Hide/Show Lines - You can hide the lines from view by clicking the **Hide Lines** button. You will still see any text you have added to the grid and any polygon lines you may have drawn. See Figure 25-1.

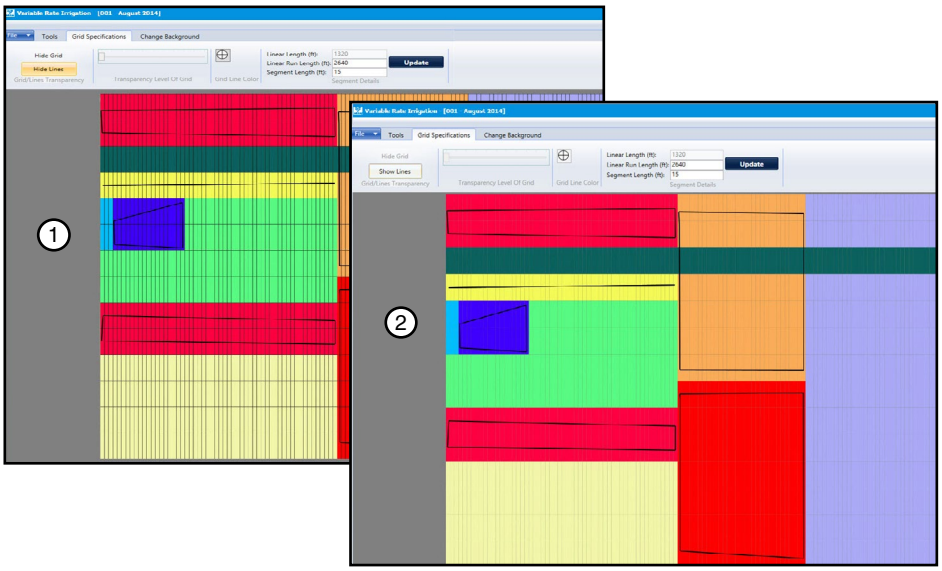


Figure 25-1 1. Before 2. After

Create a Project and Prescription

Building a Prescription (continued)

Transparency Level Of Grid

At some point you may want to increase the transparency of the grid to view it in relation to the image behind it. To do this, click on the slider and move it to the right as far as you need. See Figure 26-1. The before and after affects of this can be seen in Figure 26-2.

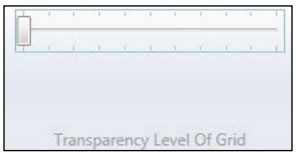


Figure 26-1

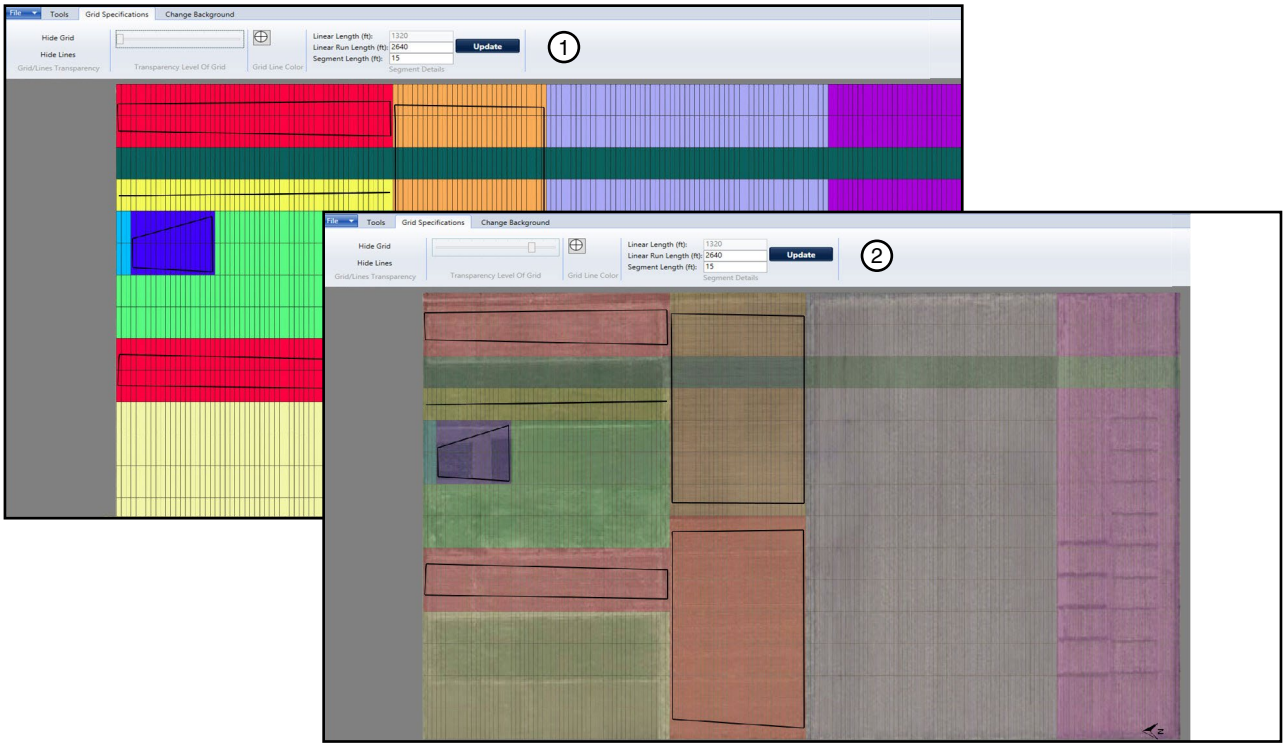


Figure 26-2 1. Image Before Increased Transparency 2. Image After Increased Transparency

Building a Prescription (continued)

Grid Line Color

There may be times when the color of the grid lines needs to be changed to provide more clarity. To do this, click on the **Grid Line Color** icon, and choose the desired color. See Figures 27-1 and 27-2. Note: The **More Colors** option can also be selected Figure 27-3.

Figure 27-1

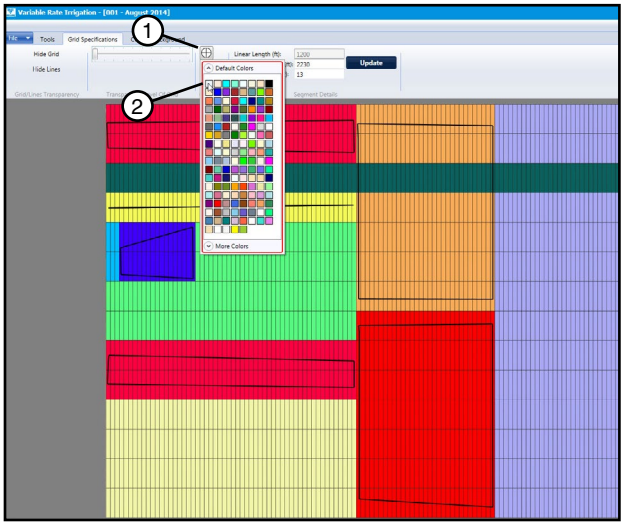


Figure 27-2 1. Grid Color Icon 2. Color Selection

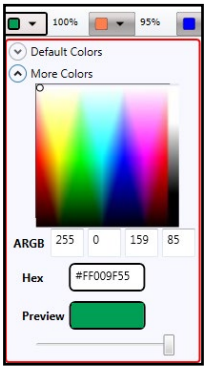


Figure 27-3

The grid lines automatically change to the newly selected color. See Figure 27-4.

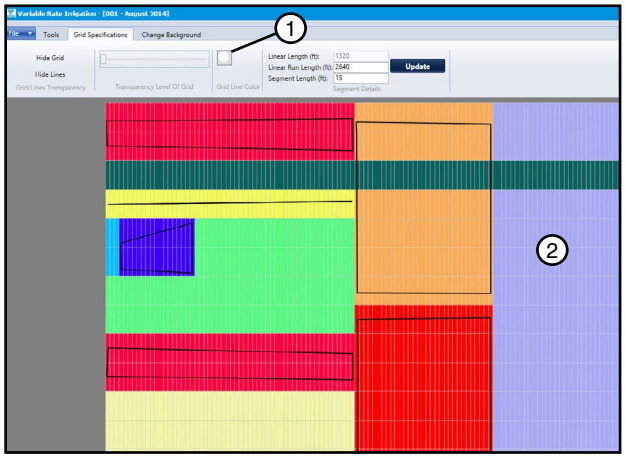


Figure 27-4 1. Line Color Indicator 2. Changed Line Color

Create a Project and Prescription

Building a Prescription (continued)

Segment Details

If you change either the linear run length or the segment length in the Segment Details section of the **Grid Specifications** tab, you will be asked if you want to start a new project when you click the **Update** button. See Figure 28-1. A popup will appear stating “Do you want to save the current project and create New Project?” Note: This action will start a new blank Prescription. See Figure 28-2 If you choose **Yes**, you will be asked for a new prescription name and a new grid is displayed. You will also have to add your background. If you choose **No**, nothing is changed.

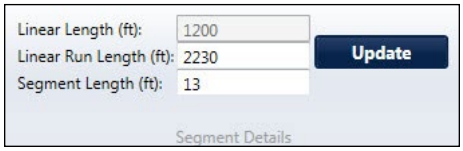


Figure 28-1

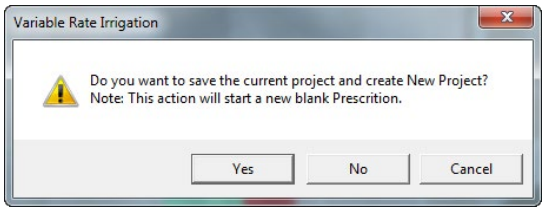


Figure 28-2

Working With Projects and Prescriptions

After you have created and saved a prescription, there are several things you can do with it, such as:

- Open
- Save As
- Edit
- Reload
- Copy
- Export
- Delete
- Save
- E-mail

Opening a Project

In order to work with a prescription after it has been created and saved, you first need to open it. To do this, click on the **File** VRI drop-down menu and do one of the following. See Figure 29-1.

1. Locate the project in the **Recent Projects** list, and click on its name to open it.
2. Click on **Open Project**, locate it in the appropriate project folder, and click on it to open it.

   The project prescription opens on the **Tools** screen.

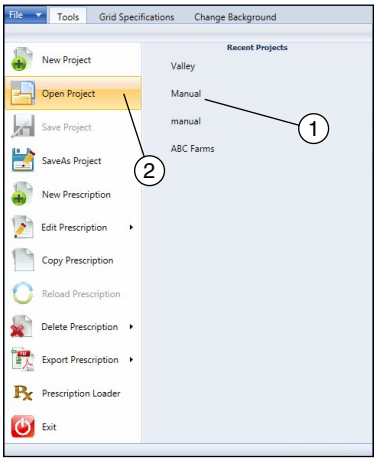


Figure 29-1 1. Recent Projects
2. Open Project

Copying a Prescription

Once the project prescription has been opened, you can copy it and save it under another prescription name.

1. Open the project and select **Copy Prescription** in the VRI drop-down menu. See Figure 29-2.

   The Prescription Name Entry Screen appears. See Figure 29-3.

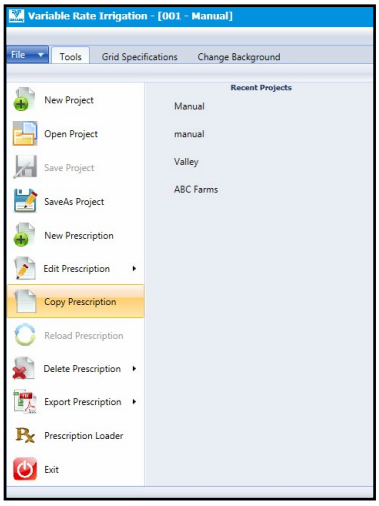


Figure 29-2 1. Copy Prescription

2. Highlight the “Copy of...” prescription name and cut it, if you want.
3. Enter the new prescription name and click **OK**.

   A pop-up screen appears verifying that the prescription has been successfully copied. See Figure 29-4.

4. Click **OK**.

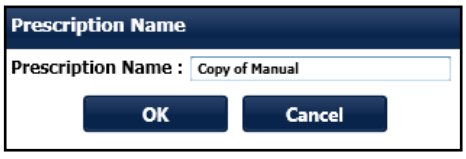


Figure 29-3

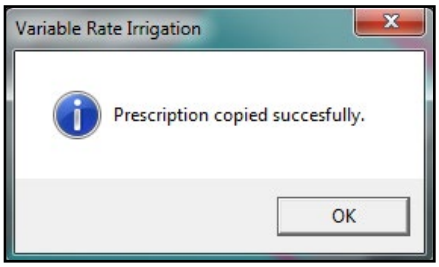


Figure 29-4

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Save As Project

You may want to save the project under a different name or in a different location. To do this, open the project and do the following:

1. Click on the **File** VRI drop-down menu, and select **Save As Project**. See Figure 30-1.

   The Save As screen appears.

2. Locate the folder in which you want to save the new project, enter the new project name in the **File name** field, and click **Save**. See Figure 30-2.

   A pop-up screen appears verifying that the project has been successfully saved. See Figure 30-3.

3. Click **OK**.

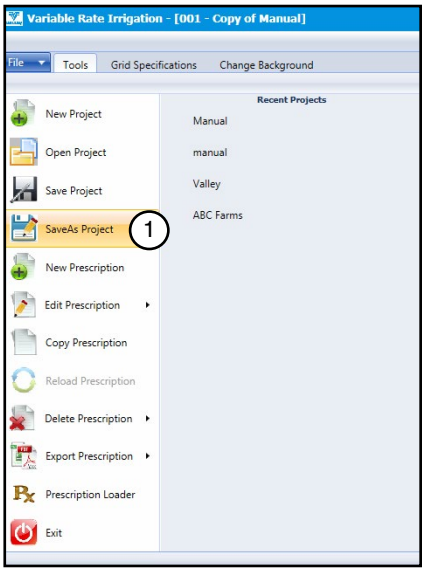


Figure 30-1 1. Save As Project

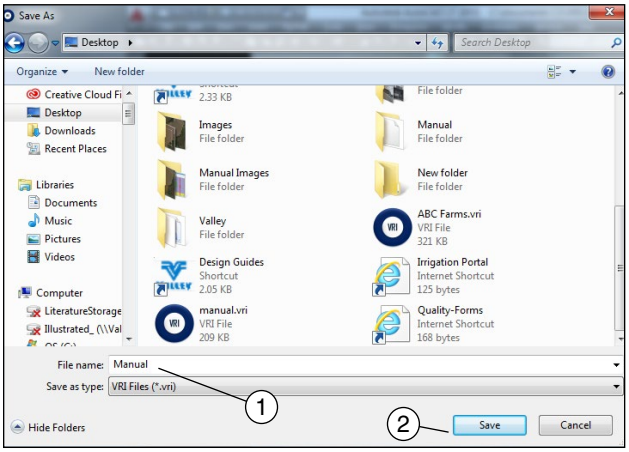


Figure 30-2 1. New File Name 2. Save Button

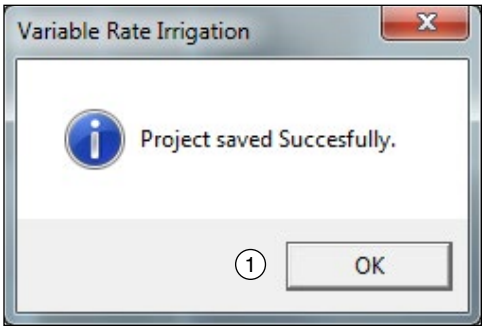


Figure 30-3 1. OK Button

Working With Projects and Prescriptions (continued)

Editing a Prescription

Once the project prescription has been opened, the watering rates for sectors can be changed through the use of the **Drawing Tools** and **Watering Rate** buttons on the **Tools** screen. Any text added to the grid can also be changed or deleted. The background image can be changed using the **Change Background** screen.

To view or edit a specific prescription when multiple prescriptions exist:

1. Select **Edit Prescription** in the VRI drop-down menu. See Figure 31-1.
2. Select the name of the prescription in the right column. See Figure 31-1.
3. Once you have selected a prescription it will load. Check the name in the top menu bar to confirm the selected prescription has loaded. See Figure 31-1.

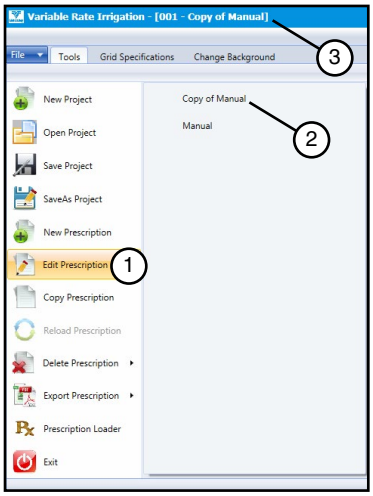


Figure 31-1 1. Edit Prescription
2. Name of Prescription
3. Prescription Name in menu bar

Reloading a Prescription

If, while editing a prescription but before the changes have been saved, a mistake has been made or an edit needs to be changed, the prescription can be reloaded and started over. To do this:

1. Select **Reload Prescription** in the VRI drop-down menu. See Figure 31-2.

   A pop-up warning screen appears. See Figure 31-3.
2. Click **Yes** to discard changes, or **No** keep changes.
3. If you select **No**, you are returned to the grid with the changes made.
4. If you select **Yes**, the prescription is reloaded without the changes.

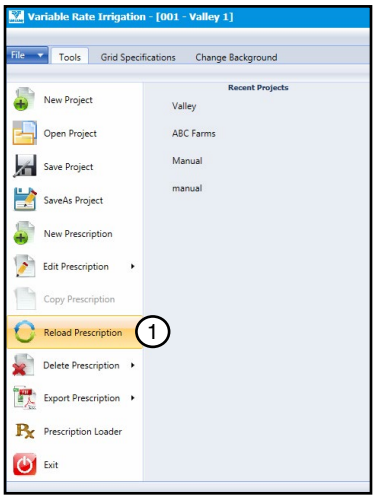


Figure 31-2 1. Reload

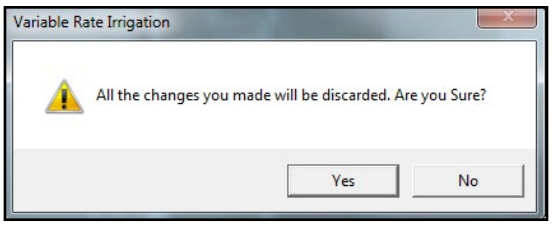


Figure 31-3

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Exporting a Prescription

Within the VRI application, you can export a prescription to both a PDF (Portable Document Format) file and to a CSV (Comma-Separated Values) file.

Exporting to a PDF File

Exporting the prescription to a PDF file provides the ability to view details online, to print a hardcopy, and to electronically share it with others.

To export a prescription to a PDF file:

1. Select **Export Prescription** in the VRI drop-down menu and click on **PDF**. See Figure 32-1.

   The Select Images to Export screen appears. See Figure 32-2.

2. Select the images to export by clicking in the appropriate checkboxes, and click **Export**.

   The Export screen appears.

3. Locate the folder in which you want to store the PDF file, and click **Save**. See Figure 32-3.

   A pop-up screen appears verifying that the prescription details have been successfully exported.

4. Click **OK**. See Figure 32-4.

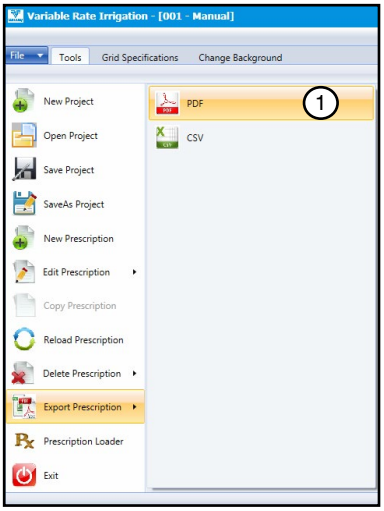


Figure 32-1 1. Export to PDF

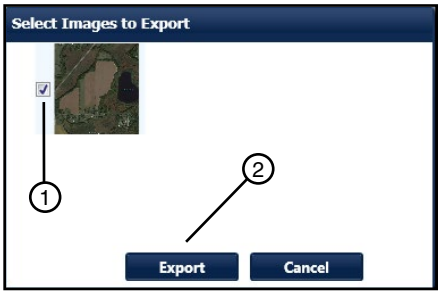


Figure 32-2 1. Checkbox 2. Export

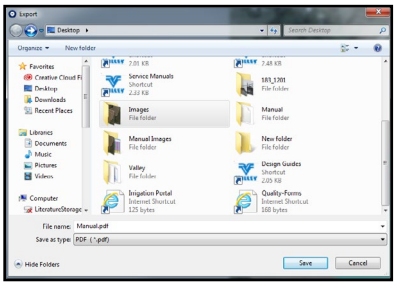


Figure 32-3

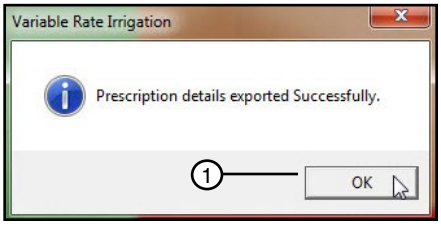


Figure 32-4 1. OK Button

Working With Projects and Prescriptions (continued)

Exporting a Prescription (continued)

Exporting to a PDF File (continued)

5. Open the PDF (from saved location) The following information will be available:

   a. **Cover Sheet** - Includes Farm Name, Date the PDF was created, Prescription Name, RTU ID, number of zones, the linear length, the linear run length, the segment length, and a colored picture of the grid. See Figure 33-1.

   b. **Image Page** - Includes the Farm Name, Prescription Name, and a colored copy of the image used in the prescription. See Figure 33-1.

   c. **Sector Information** - Includes the Farm Name, Prescription Name, Zone Settings for Length, and Segments and Sectors. Each Sector is filled in with its Watering Rate Percentage. See Figure 33-1.

Figure 33-1 1. Cover Sheet 2. Image Page 3. Sector Information

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Exporting a Prescription (continued)

Exporting to a CSV File

Exporting the prescription to a CSV file provides the ability to import the prescription into other data collecting programs, such as spreadsheets and databases, for reporting purposes. It can also be used for graphing and other such applications.

To export a prescription to a CSV file:

1. Select **Export Prescription** in the VRI drop-down menu and click on **CSV**. See Figure 34-1.

   The Export screen appears.

2. Locate the folder in which you want to store the CSV file, and click **Save**. See Figure 34-2.

   A pop-up screen appears verifying that the prescription details have been successfully exported.

3. Click **OK**. See Figure 34-3.

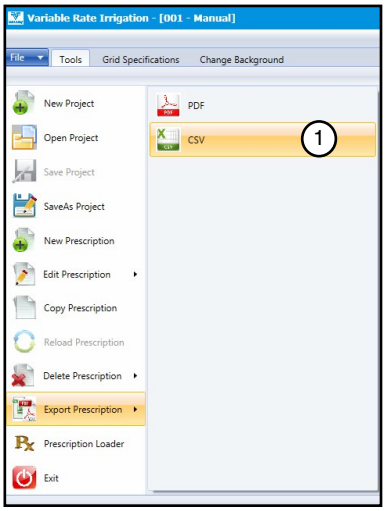


Figure 34-1 1. Export to CSV

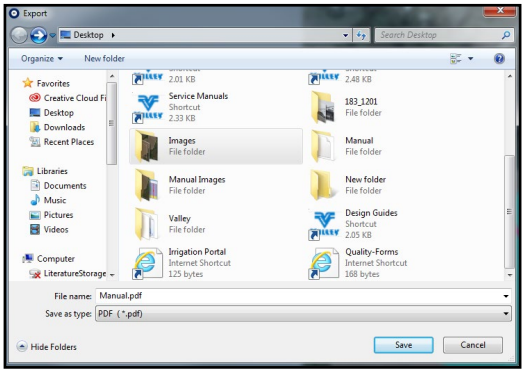


Figure 34-2

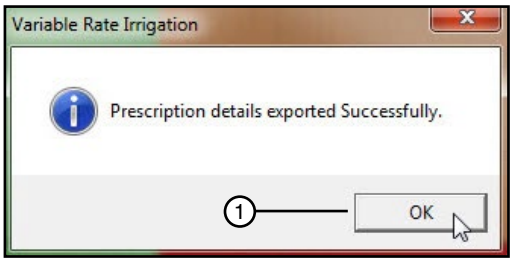


Figure 34-3 1. OK Button

Working With Projects and Prescriptions (continued)

Exporting a Prescription (continued)

Exporting to a CSV File (continued)

4. Open the CSV file (from saved location).

   The file will be opened by a spreadsheet application. See Figure 35-1.

   The file can also be imported into other data-gathering applications.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Farm Name	Valley Farms	①													
2	Prescription Name	Aug-14		②												
3	RTU ID	1	③													
4	Number of Zones	14		④												
5	Linear Length (ft)	1200	⑤													
6	Segment Length (ft)	13		⑥												
7	Linear Run Length (ft)	2230	⑦													
8	SEGMENT	Zone - 1	Zone - 2	Zone - 3	Zone - 4	Zone - 5	Zone - 6	Zone - 7	Zone - 8	Zone - 9	Zone - 10	Zone - 11	Zone - 12	Zone - 13	Zone - 14	⑧
9	⑨ 1	90	95	55	25	70	70	45	45	95	95	0	0	0	0	
10	2	90	95	55	25	70	70	45	45	95	95	0	0	0	0	
11	3	90	95	55	25	70	70	45	45	95	95	0	0	0	0	
12	4	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
13	5	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
14	6	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
15	7	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
16	8	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
17	9	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
18	10	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
19	11	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
20	12	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
21	13	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
22	14	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
23	15	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
24	16	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
25	17	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
26	18	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
27	19	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
28	20	90	95	55	25	75	75	45	45	95	95	0	0	0	0	
29	21	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
30	22	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
31	23	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
32	24	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
33	25	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
34	26	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
35	27	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
36	28	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
37	29	90	95	55	25	45	45	45	45	95	95	0	⑩ 0	0	0	
38	30	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
39	31	90	95	55	25	45	45	45	45	95	95	0	0	0	0	
40	32	90	95	55	25	45	45	45	45	95	95	0	0	0	0	

Figure 35-1

1. Farm Name
2. Prescription Name
3. RTU ID
4. Number of Zones
5. Linear Length
6. Segment Length
7. Linear Run Length
8. Zone Numbers
9. Segments
10. Sector / Watering Rate

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

Deleting a Prescription

Individual prescriptions for linear projects can be deleted without deleting the project. To delete a prescription, do the following.

1. Open the project containing prescription you want to delete.
2. Select **Delete Prescription** in the VRI drop-down menu, and click on the name of the prescription in the right-hand column. See Figure 36-1.

   A pop-up decision screen appears asking if you are sure you want to delete the prescription.
3. Click **Yes**. See Figure 36-2.

   You can click **No** if you have changed your mind.

   A second pop-up screen appears confirming that the prescription was successfully deleted.
4. Click **OK**. See Figure 36-3.

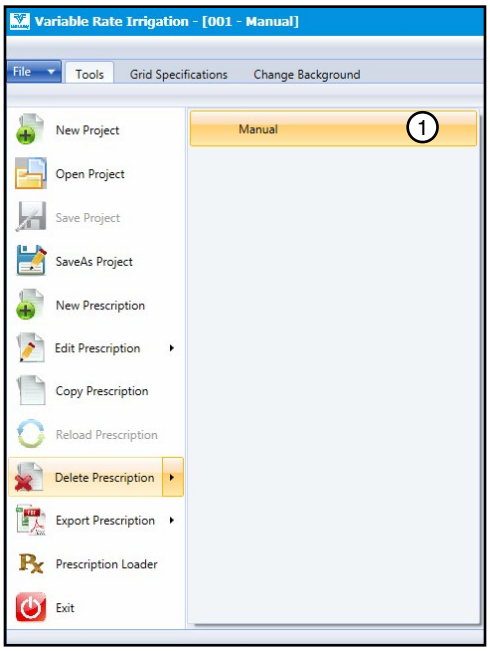


Figure 36-1 1. Prescription

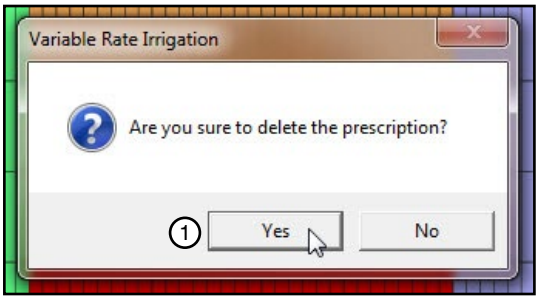


Figure 36-2 1. Yes Button

Figure 36-3 1. OK Button

Working With Projects and Prescriptions (continued)

Saving a Linear Project

In order to save a project

1. Select **Save Project** in the **File** VRI drop-down menu. See Figure 37-1.

   The Save As screen appears.

2. Locate the folder in which you want to save the project, give the file a name, and click Save. See Figure 37-2.

   A pop-up screen appears stating that the project has been successfully saved. See Figure 37-3.

3. Click **OK**.

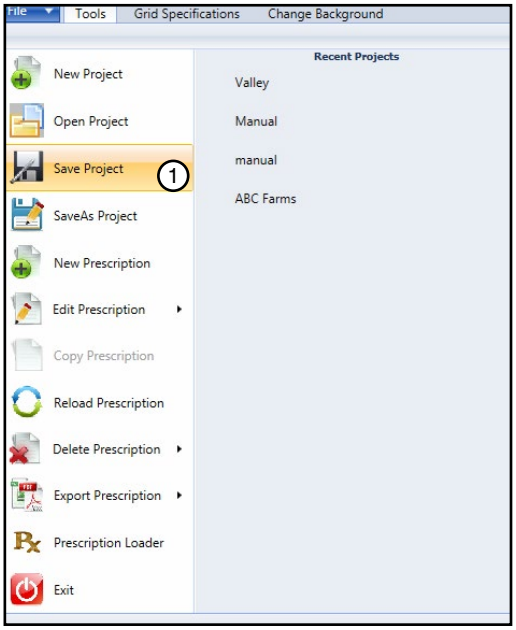


Figure 37-1 1. Save Project

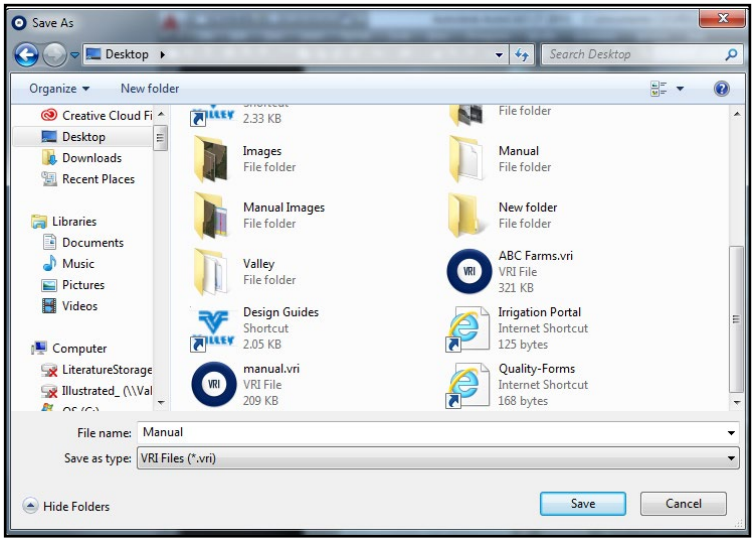


Figure 37-2 Project Saved

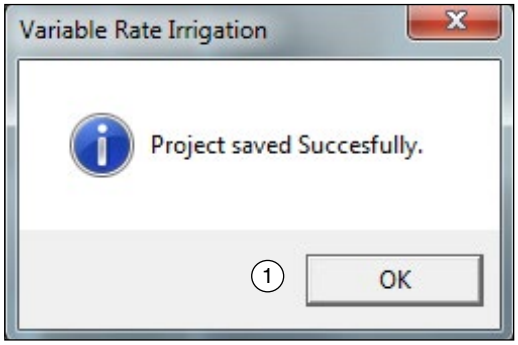


Figure 37-3 1. OK Button

Create a Project and Prescription

Working With Projects and Prescriptions (continued)

E-mailing or Exchanging a Prescription

Prescriptions can be e-mailed or exchanged from one user to another.

To e-mail the files properly, there must be an understanding of the file structure of a VRI Project file.

When a VRI Project is saved the program creates a Project folder inside of the folder in which it was placed.

In Figure 38-1 the prescription ABC Farms was saved in the Linear-Projects Folder. The program created the ABC Farms folder and inside of that folder it created an Image folder (which contains the image/ images if any used in the programs prescription) and the actual VRI file.

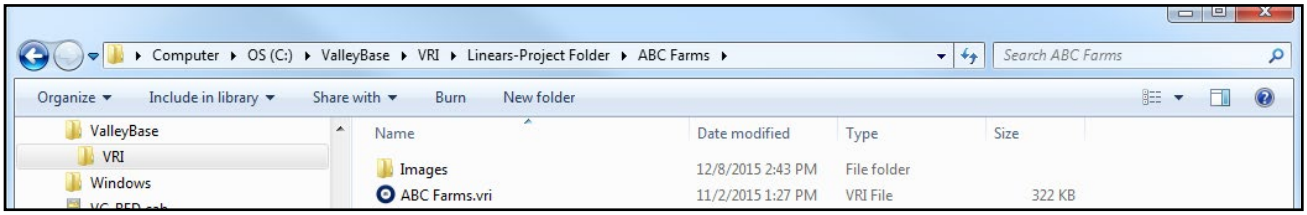


Figure 38-1

Additional information about these files:

1. The VRI file is all that is needed to load into a Panel. (Example: ABC Farms.vri) If the file is only going to be loaded with the RxLoader program only this file needs to be sent. Note: Sending only this file will not open properly in the VRI Program.

2. The second and preferred method for transfer is to exchange the entire ABC Farms folder. An easy way to do that is to Zip the folder with a zip program (most computers are equipped with the need program). Right click on the file and a drop-down menu will appear select **Send to**, then choose **Compressed (zipped) Folder.** Figure 38-2

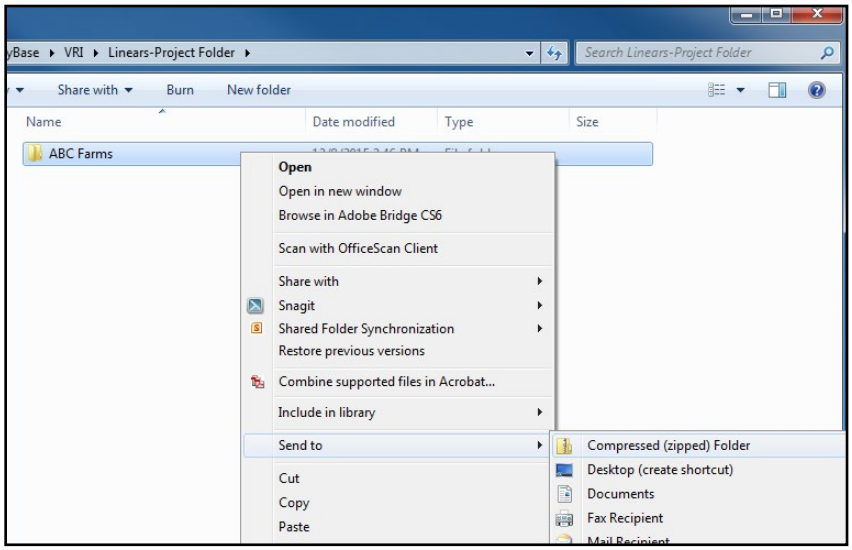


Figure 38-2

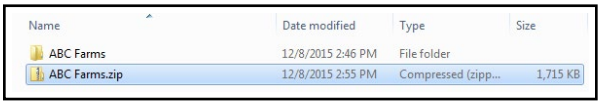


Figure 38-3 1. Save Project

You now have a Zipped file. Figure 38-3

This gives the recipient the entire project with the imagery and VRI prescription. They will need all of it to properly view the prescription.

VRI Prescription Loader Version 4.0.1

The VRI Prescription Loader application is used to convert the user-entered VRI prescription details into a format that can be read by a control panel in the field.

Hardware and Software Requirements

- AutoPilot control panel software v. 2.01

Prescription Upload Methods

- Prescription loader: Upload or save a prescription created with the VRI prescription map program.
  - » Upload a prescription directly to the AutoPilot control panel through a serial cable connection with a personal computer. A null modem cable or a null modem adapter is needed for the upload.
  - » Save a prescription for use with BaseStation3, AgSense, or other remote loading methods.

Uploading a Prescription

Loading Prescriptions

To load a VRI prescription:

1. Open the pivot project.
2. Select **Prescription Loader** in the VRI drop-down menu. See Figure 40-1.

   The Prescription Loader screen appears. See Figure 40-2.
3. In the Data Source File Selection section of the screen, select one of the following to identify the prescription's source:
   - **Use Valley VRI program Generated XML** (default)
   - **Use Third Party program Generate XML**
4. Select the prescription that is to be loaded or saved by clicking the appropriate checkbox.

   NOTE: In the file selection window the names of the prescriptions inside the project selected are displayed with the prescription Type, RTU ID, Map, and prescription name.

   There are 4 different Types: Pivot (Pivot Zone), SC Pivot (Pivot Speed), Linear (Linear Zone) and Next Gen (Pivot VRI iS).

   The RTU ID is the number created in the software.
5. Select the Panel Type. ICON Series or PRO 2 Panel (including Select 2 and AutoPilot). This ensures the correct protocol type is sent to the panel.

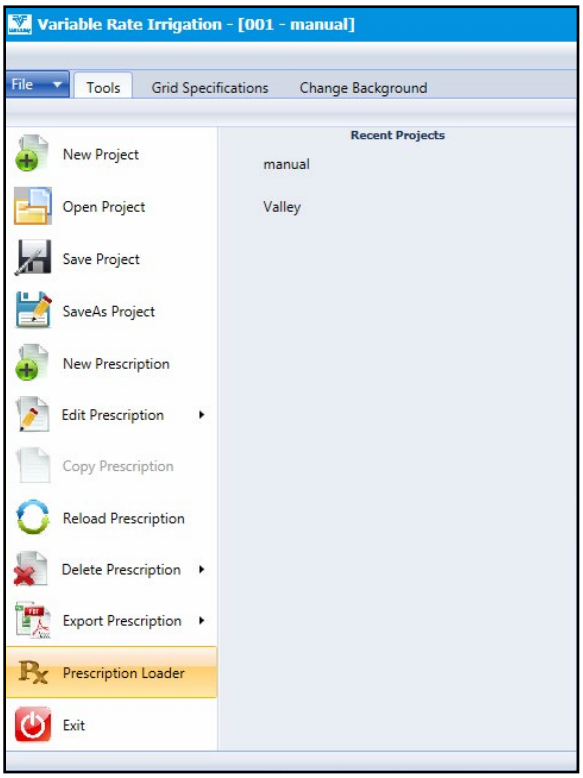


Figure 40-1 Select Prescription Loader

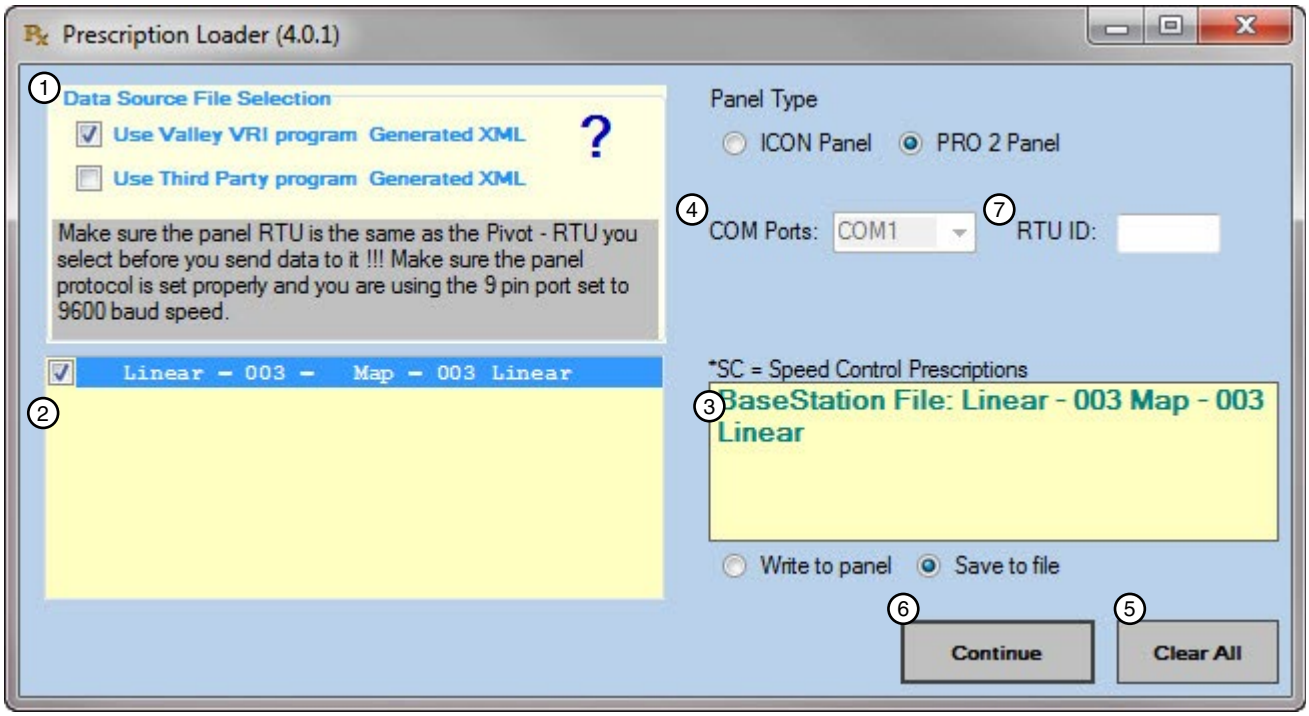


Figure 40-2 1. Data Source File Selection 2. Prescription Selection Section 3. Prescription Disposition Area 4. COM Ports Drop-down Menu 5. Clear All Button 6. Continue Button 7. RTU ID

Loading Prescriptions (continued)

6. Enter the RTU ID of the panel. This will be used instead of the number created prescription software. See Figure 41-1.

   NOTE: ICON Panels need a 4 digit ID entered and can be 0-9 and/or A-F combination.

   *make sure it matches the RTU ID in the Panel.

7. Select one of the following by clicking on the appropriate checkbox: See Figure 41-1.
   - **Write to panel** - will cause the prescription to be sent directly to the control panel
   - **Save to file** - will save the prescription to the location you select.
8. If writing to the panel, select the COM port to be used in the drop-down menu. See Figure 41-1.

   NOTE: Use the 9-pin COM port on the control panel with constants set at Remote Control and baud rate at 9600.

9. Click **Continue** to be taken to the next screen. See Figure 41-1.

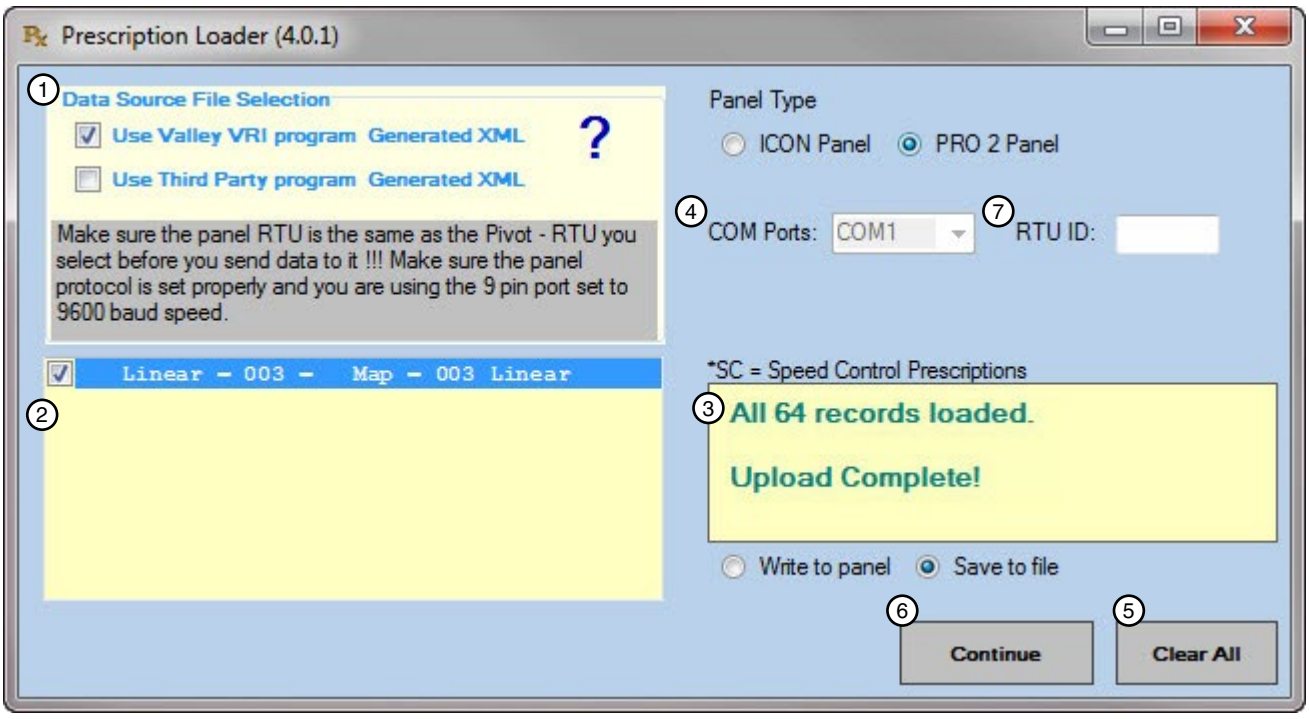


Figure 41-1 1. Data Source File Selection 2. Prescription Selection Section 3. Prescription Disposition Area 4. COM Ports Drop-down Menu 5. Clear All Button 6. Continue Button 7. RTU ID

Uploading a Prescription

Loading Prescriptions (continued)

- If you selected **Write to panel** and clicked **Continue**, the file is sent to the control panel and the Prescription Loader screen is updated with the status of the data transmission. See Figure 42-1.

  NOTE: "All 64 records loaded" defines the sector details. This particular prescription has 16 zones, and the grid is divided into 4 quarters by the system. The prescription records are therefore calculated as 4 x 16 = 64.

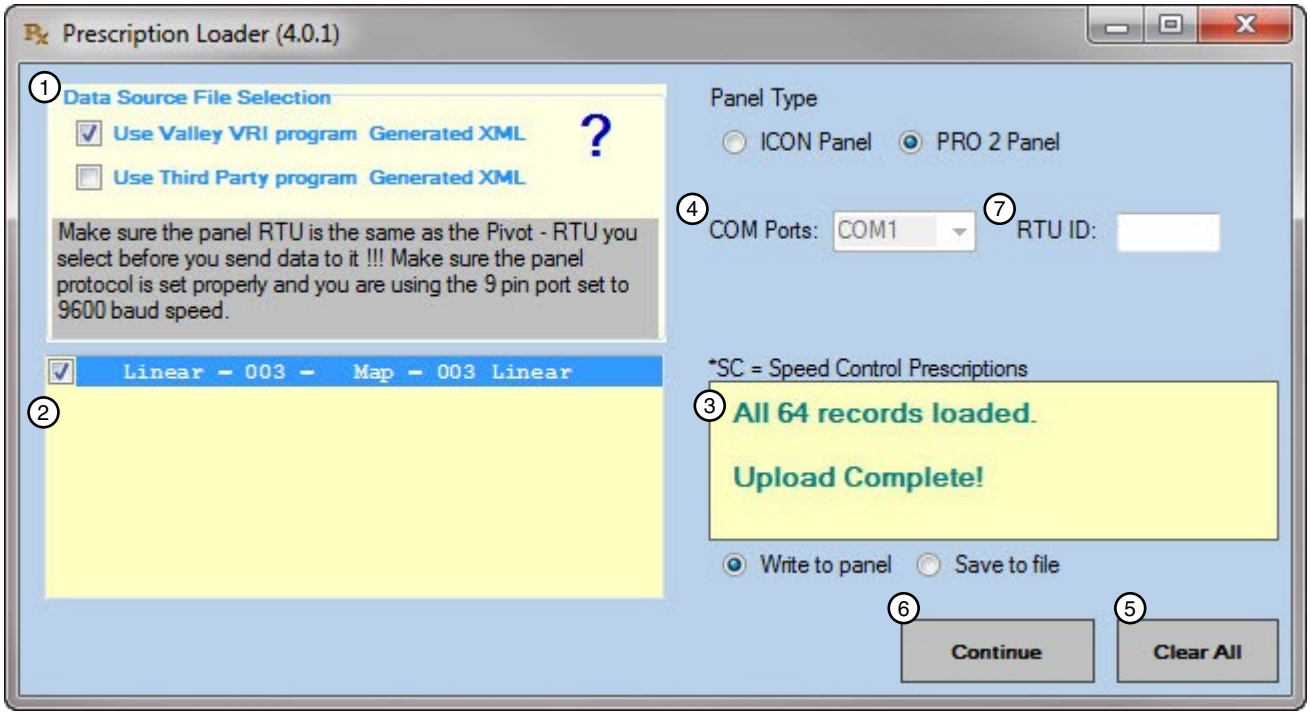


Figure 42-1 1. Data Transmission Status

- If you selected **Save to file** and clicked **Continue**, the Browse For Folder pop-up screen appears. See Figure 42-2.

10. Locate the folder in which you want to store the file and click **OK**.

    - If you want to store it in a new folder, click **Make New Folder** and place it there.

    Note: The stored files that are made from "Save to file" have different file extensions based on the Panel type and the prescription type.

    Files will start with the Type, RTU, Map, Prescriptions name and have an extension at the end.

    There are 2 different output Types: Pivot & Linear

    There are 6 different file extensions: Zone, iZone, Speed, iSpeed, Vis, and iVis.

    The i in front of Zone, Speed and Vis indicates those files are for ICON panels. The ICON panels use a new protocol so the files are different in order to load properly

    Example: Pivot - 011 Map - Potatoes.Zone

    .Zone is the extension.

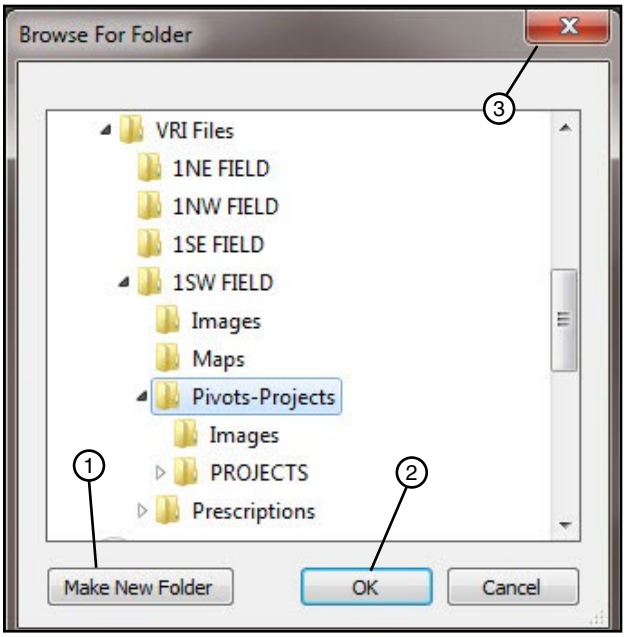


Figure 42-2 1. Make New Folder Button
2. OK Button
3. Close Button

Loading Prescriptions (continued)

- The Upload pop-up screen is updated to indicate that the file has been uploaded correctly. See Figure 43-1.

11. Click **OK**.
12. Clicking Clear All removes all selections you have made on the screen. See Figure 43-2.
13. Click the **Close** button on the Prescription Loader screen to exit the Prescription Loader application. See Figure 43-2.

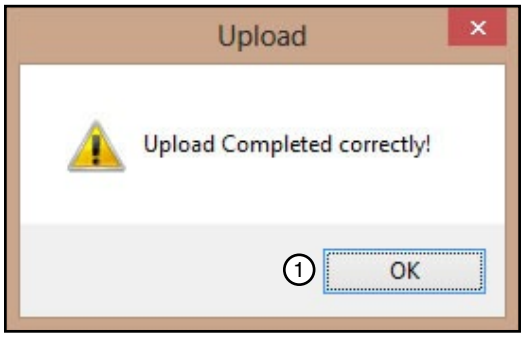


Figure 43-1 1. OK Button

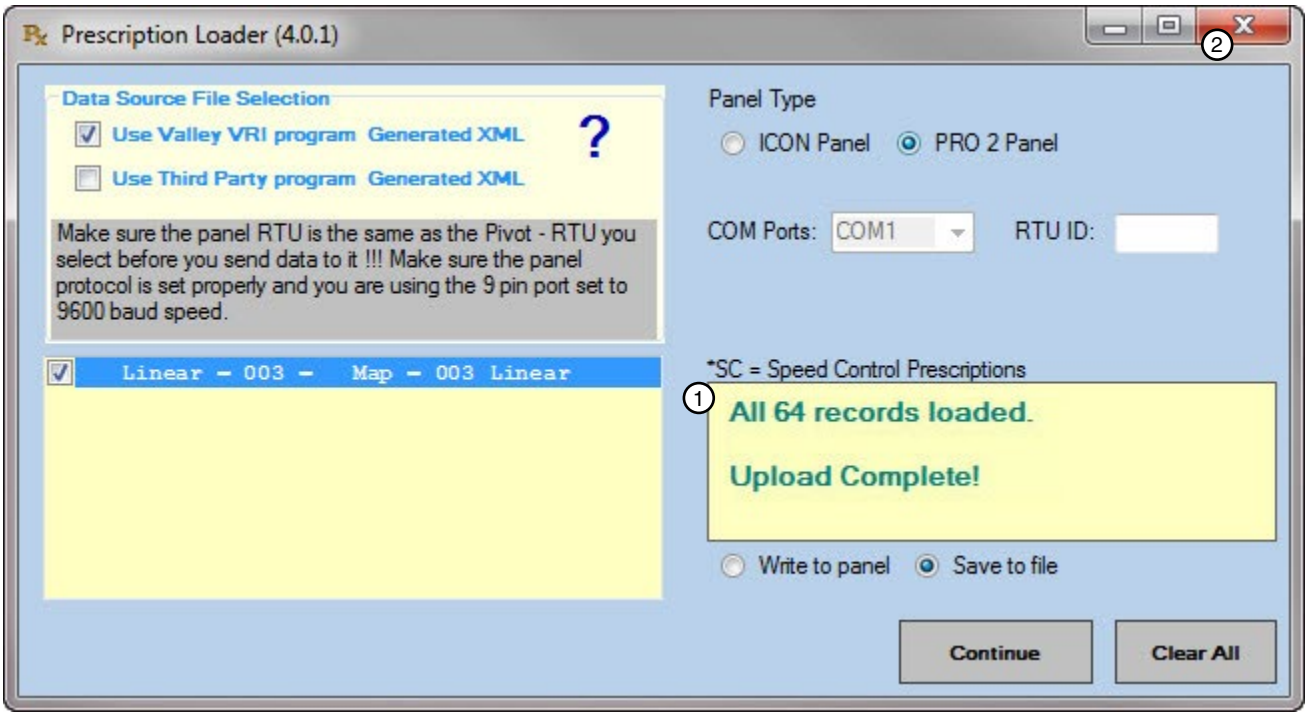


Figure 43-2 1. File Stored Indicator
2. Close Button

Uploading a Prescription

Loading Prescriptions (continued)

Note: If a USB to serial adapter is not connected or a serial port is not available when the RxLoader program is opened a warning screen will appear. See Figure 44-1.

- Select OK to continue. See Figure 44-1.

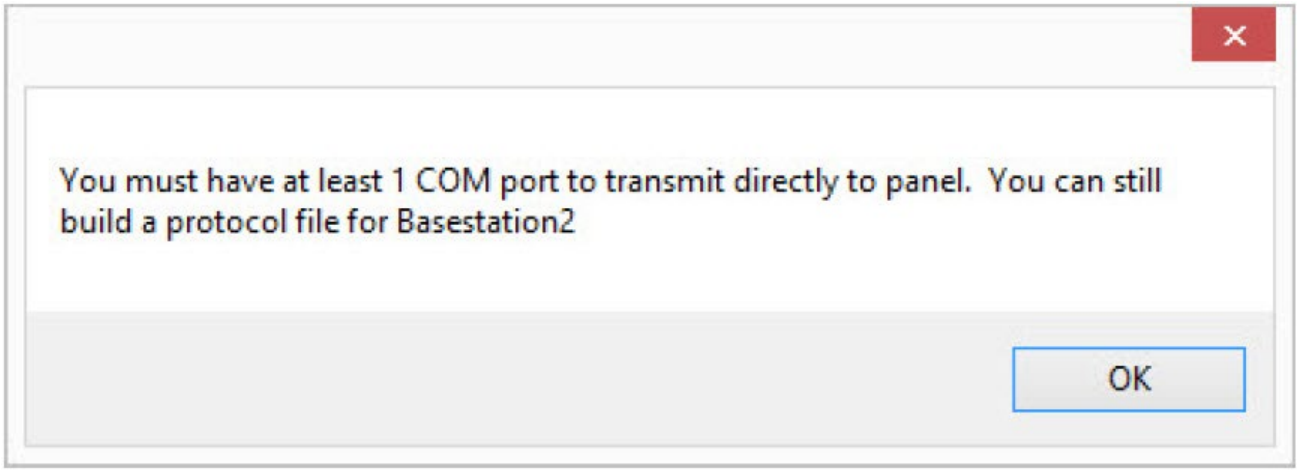


Figure 44-1

Without a serial cable connected you will not be able to “Write to panel” but you will be able to “Save to file”. You will also notice that the “Continue” button is now a “Build protocol file” button. See Figure 44-2

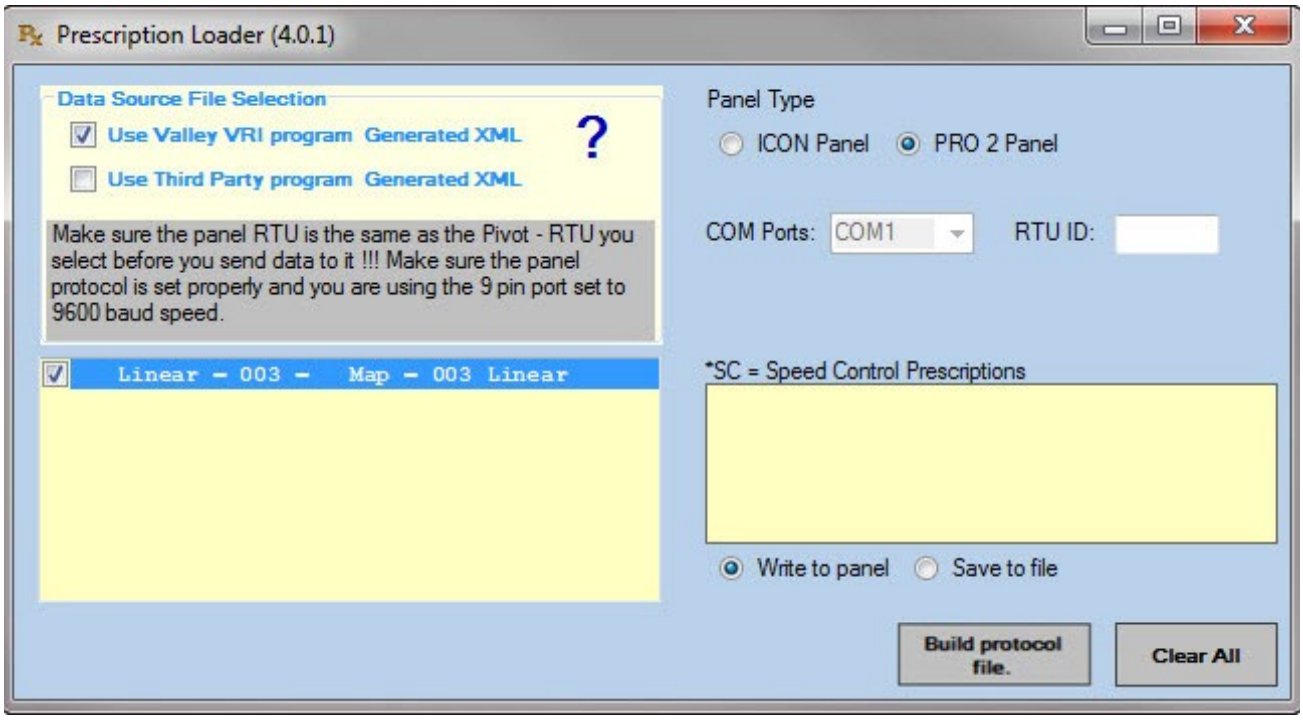


Figure 44-2

Loading Prescriptions (continued)

If a COM failure is detected a popup window will appear. See Figure 45-1.

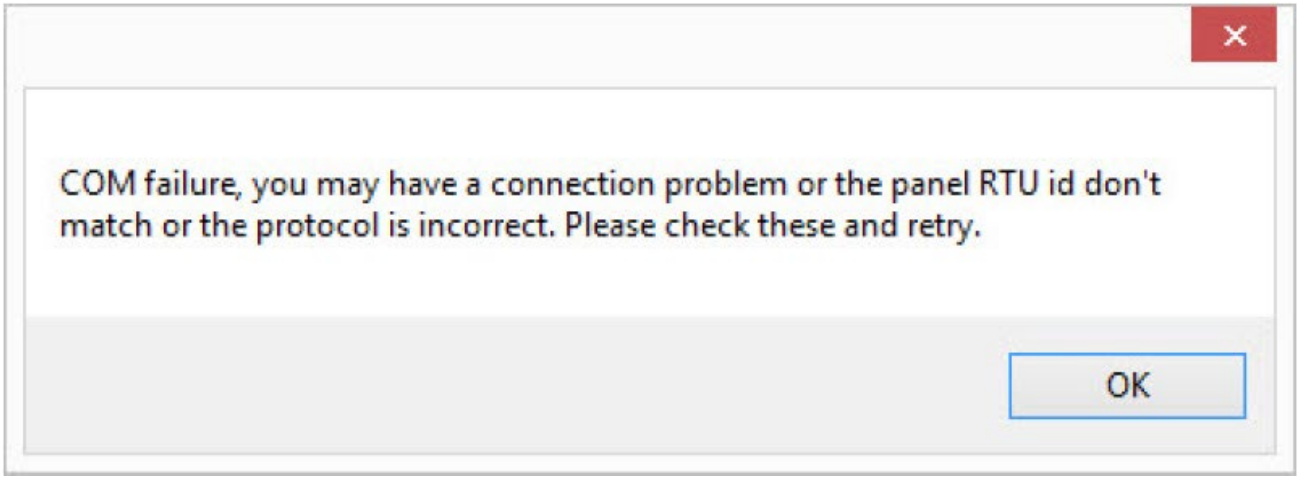


Figure 45-1

Uploading a Prescription

Irrigation Zones

Number of Sprinkler Zones

The **Number of Zones** setting controls the number of zones shown on the map. Selection is made from the **Number of Zones** drop down list depending on the Variable Rate Irrigation (VRI) Control being used.

- VRI Zone Control, The range is from 1 to 30 zones. Example: If the number of sprinkler banks is set to 16 there will be 16 zones shown on the map from the cart to the edge of the field.

Sprinkler Zone Length

Sprinkler zone length controls the length for each zone shown on the map.

- When fixed value is selected, the zone lengths are equal to the linear length entered in the linear description divided by the number of sprinkler zones.
- When variable length is selected, the zone length on the map can be customized to represent the actual length of the sprinkler group on the machine.
- One Valley VRI tower box controls two sprinkler zone solenoids. One sprinkler zone solenoid can control multiple sprinklers.
- Sprinkler zone number 1 in the list box is the sprinkler group next to the cart point.
- Sprinkler zone length is an approximate measurement from the first sprinkler to the last sprinkler controlled by one solenoid.

If variable length is selected, enter the individual lengths for each sprinkler zone shown in the list box beginning with sprinkler zone number 1 and proceeding numerically. As each sprinkler zone length is entered it is deducted from the total linear length. Lengths cannot be a negative number.

Appendix