



WxSoln User Manual

Guide to installing and using the
WxSoln weather application

June 1, 2012

Overview

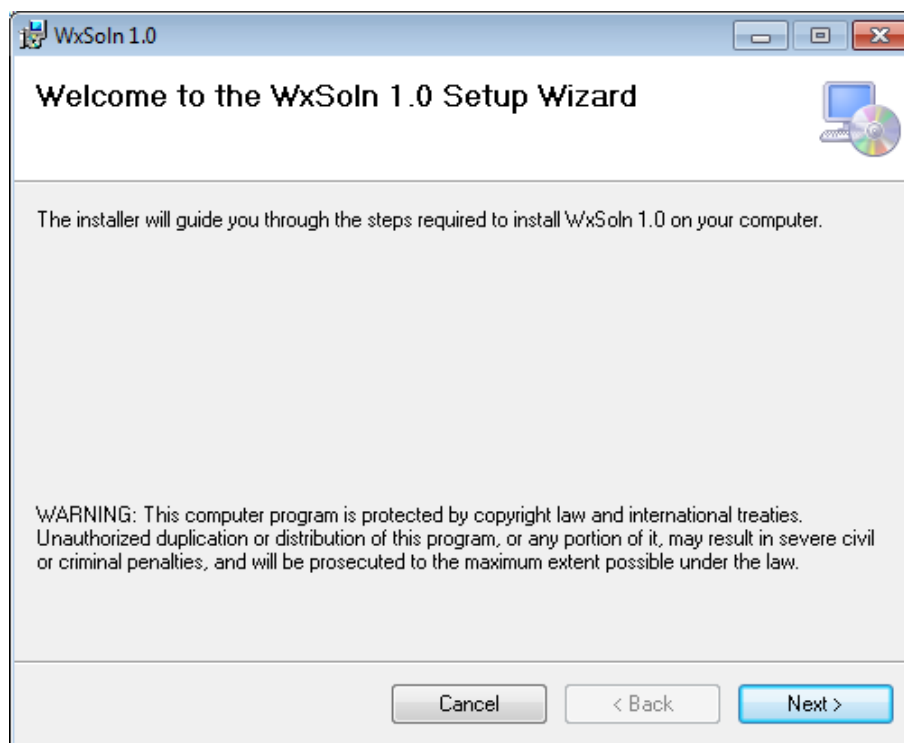
The WxSoln weather application works in conjunction with both ET Basic ET Standard software versions from Gwytech Systems Inc. Its purpose is to retrieve daily evapotranspiration (ET) and rainfall data from hourly data file that is generated by WxSolution weather software from Thunderhead Technologies. This data can then be used with ET Basic or Standard which in turns tracks moisture losses from evaporation and transpiration as well as gains in soil moisture from rainfall and irrigation. This like all of our weather applications are to be used only with products (hardware and software) by Gwytech Systems Inc or those that are licensed by Gwytech Systems Inc.

NOTE: In order to use ET data you will need to have a solar radiation sensor on your weather station.

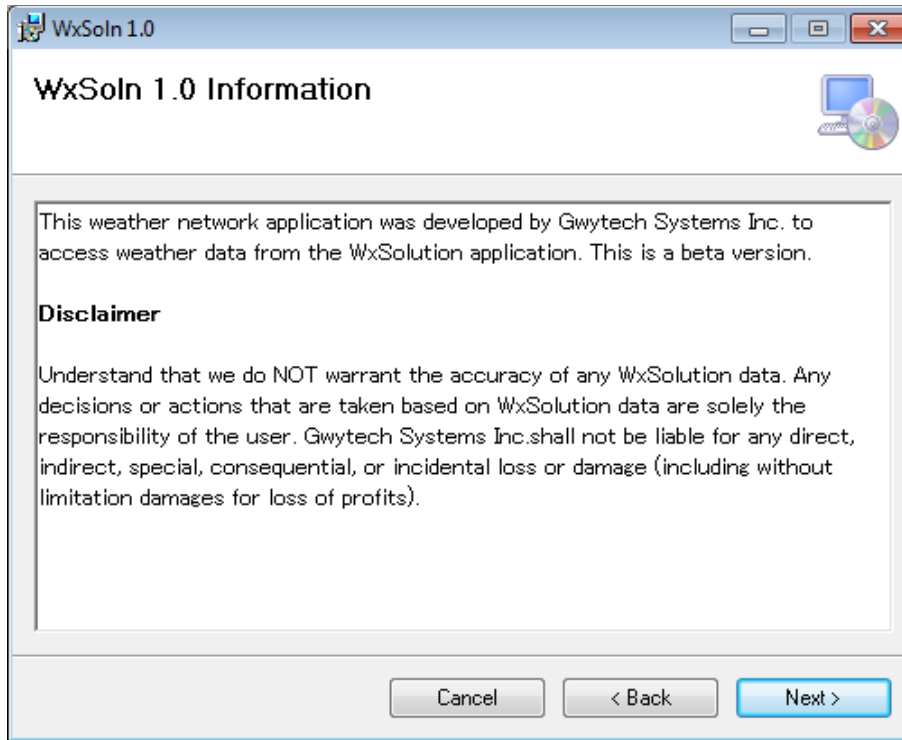
Installation

It is assumed that the ET Basic or Standard software has already been installed on your computer. Below are shown the steps necessary to install this weather application once it has been downloaded from our website at <http://www.gwytech.com/downloads.aspx> or from the accompanying CD ROM.

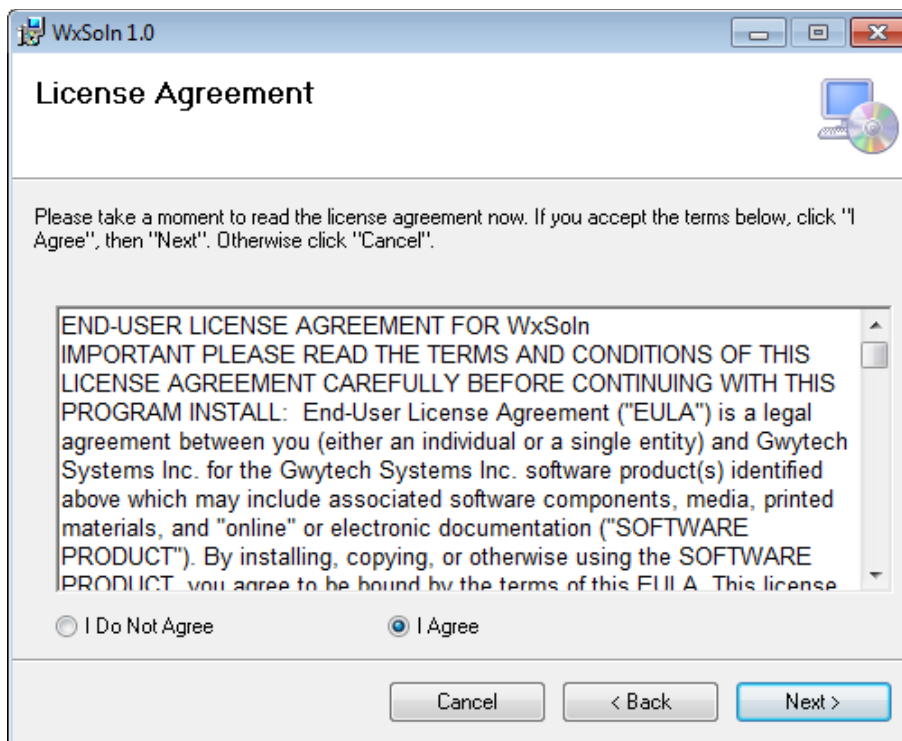
Find the location that this weather application was downloaded to, then double click on it to open up the compressed folder. Inside the folder you will find the WxSoln Setup file. Double click it to start the installation process. You may need to give this application elevated permissions in order to install it on your computer.



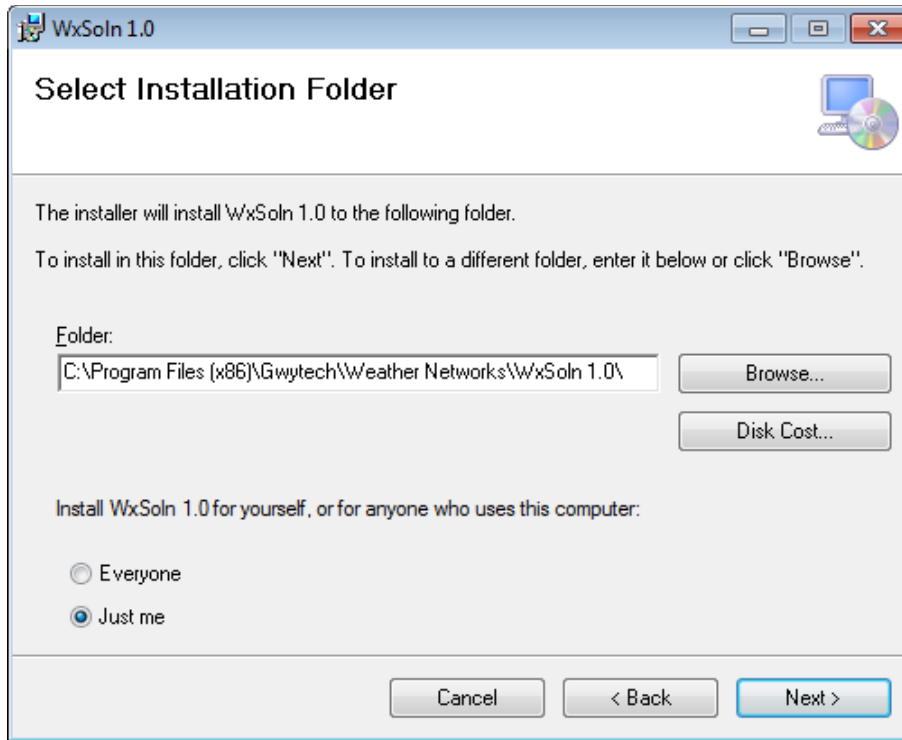
This is the Setup Wizard that needs to be followed in order to install this software.



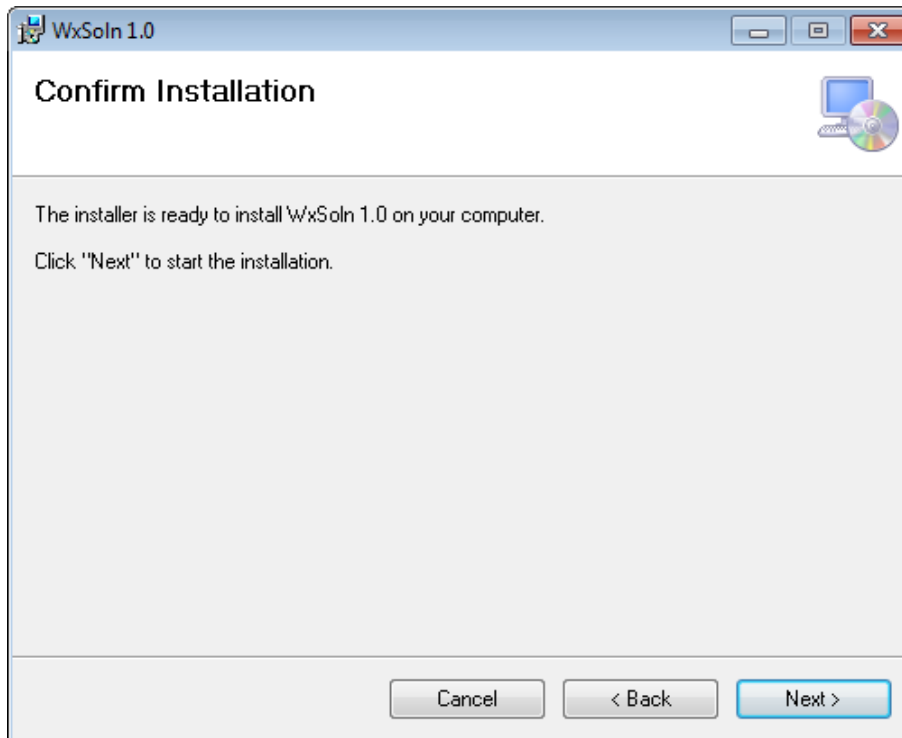
Next screen is some basic information about this weather application. Select Next to continue.



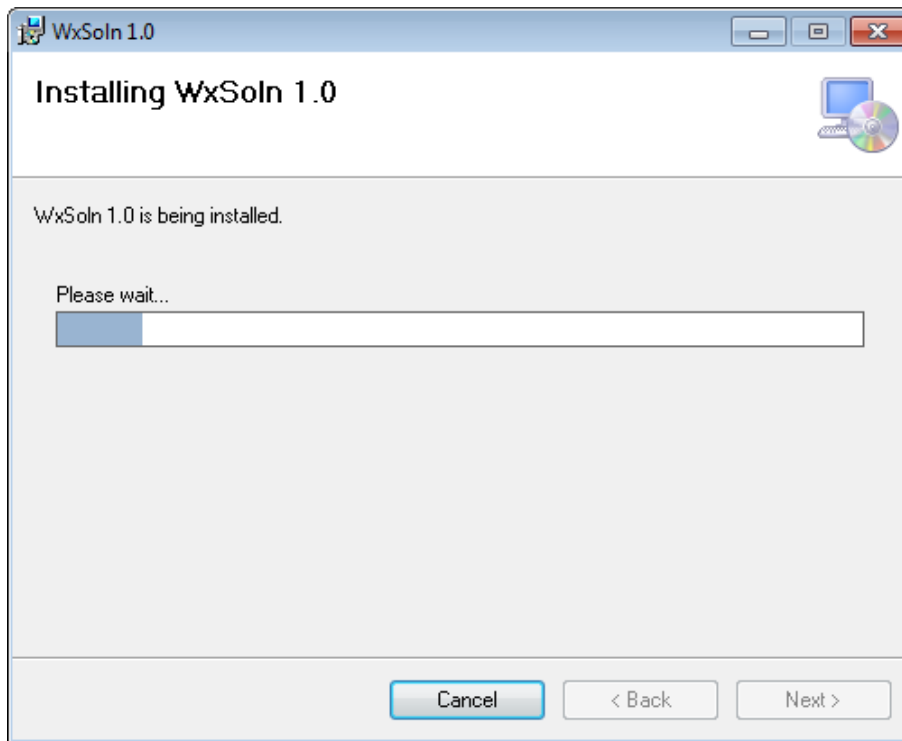
Now the license agreement, select I agree then next to continue.



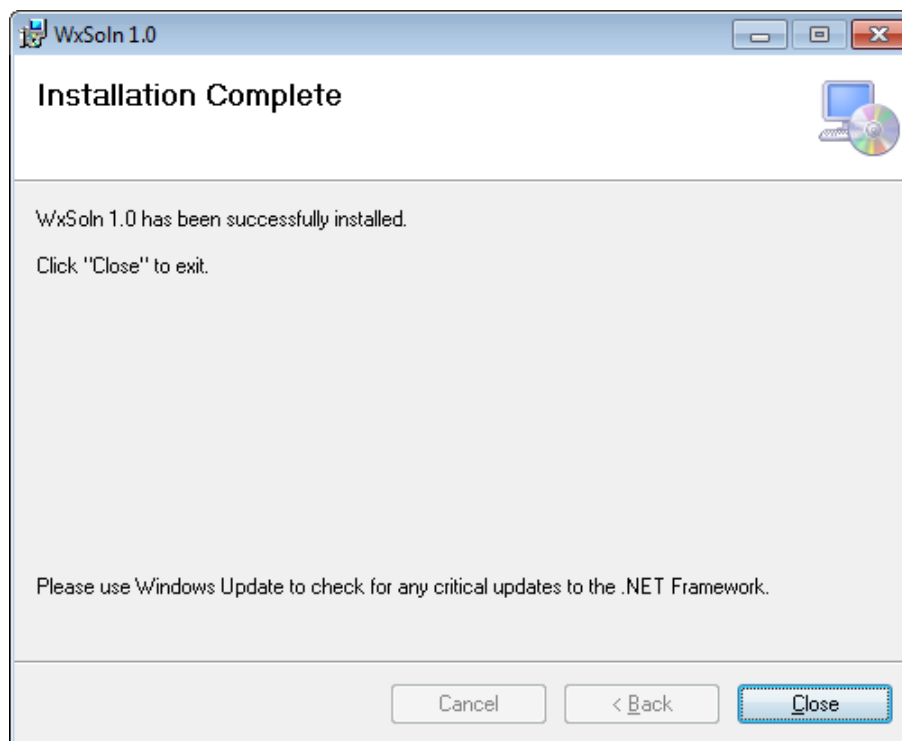
This screen show you the process of the installation. It should not take long unless your firewall is preventing it from installing.



This step is just to confirm that you do want to install this weather application. Select Next to continue.



This screen show you the process of the installation. It should not take long unless your firewall is preventing it from installing.

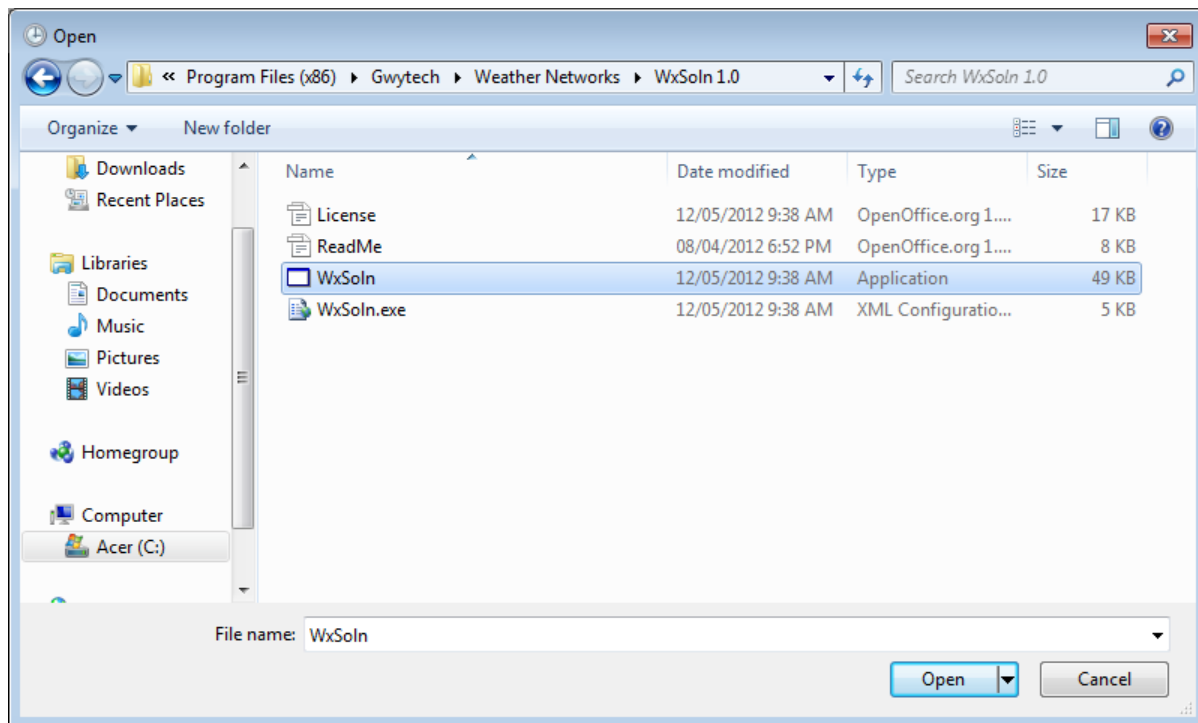


Once the installation has finished this is the screen that you will see.

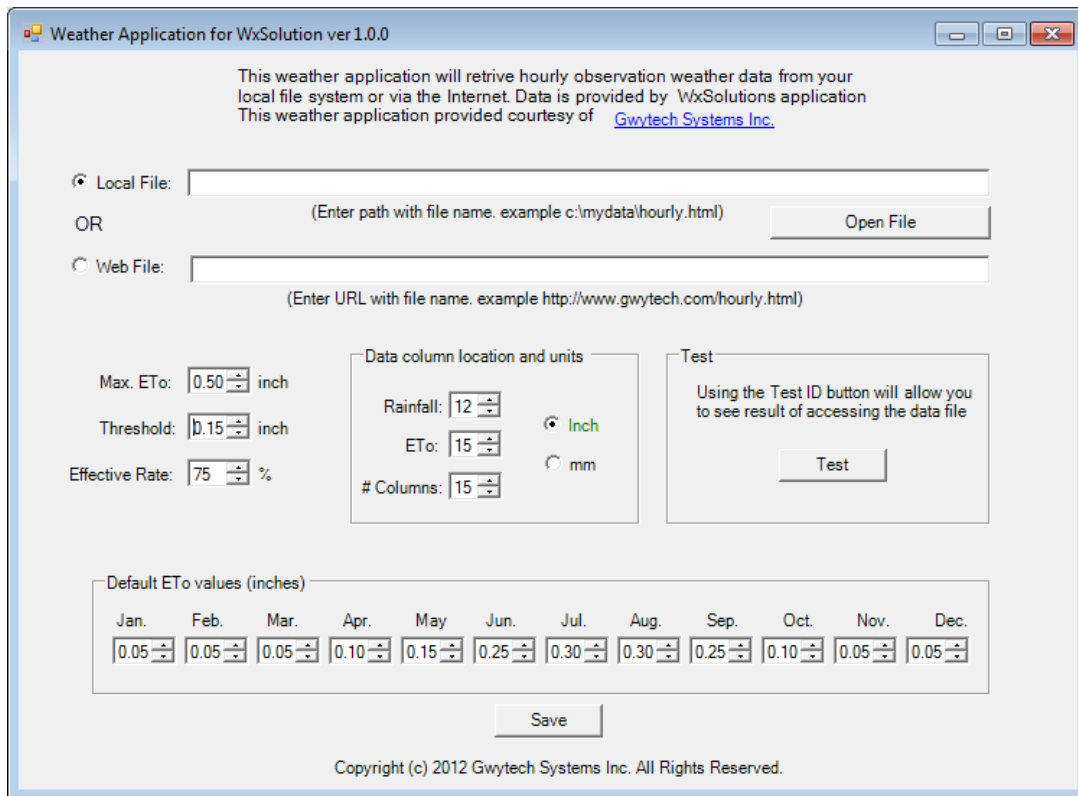
The weather application will not have an icon on the desktop or be accessible from the start menu. These applications are executed (run) by the ET Basic or Standard applications as a console application. Their purpose is to retrieve weather data for ET Basic or ET Standard via the local computer or the Internet. You will need to have a Internet connection that is always on if the weather data file is located on the Internet.

Configure and Using Weather Application

In order to use and configure this weather application it must be loaded from the ET Basic or ET Standard software application. One of our ET Based application should have already been installed. Open the ET Basic application. Click the Irrigation Setup button and then the Open File button (see screen below). This brings up a window to allow you to select your weather application. You will need to go to the directory that has the weather application that you just installed. If you left the default settings it will be at ...Gwytech\Weather Networks\WxSoln 1.0\ from here select the name of the weather application you installed. See ET Basic User or ET Standard Manual if you need more information.



Select the name of your weather application (WxSoln). **Note:** select the Type application not the XML configuration File. Then select Open. Now save setting in the ET Basic application. To configure this weather application click on the Setup Weather Network button. You should see a screen similar to below.



You will need to either select a local file and location of the hourly data file that WxSolution generates or the web file location. This can be on your hard drive or from the Internet if you upload your data to the Internet. By having it on the Internet you can allow others to use this file too.

Once you have located the file and check whether it's a local file or on the Internet. Then you will have to determine the structure of the file so the WxSolun weather application knows where to look for the data. You will need to know the number of columns in the data file and the location of the rainfall and ET data. These will vary for each user and depend on the structure of the data file. See below for an example of how to find the correct columns.

Hourly observations for the last 72 hours

Date	Time	Temperature (°F)				Humidity (%)	Wind (mph)	Pressure		Rain (in)				Sun (W/m ²)	UV	ET (in)
		Air	Dew	6 Hour				Alt (in)	Sea Level (mb)	1 Hr	3 Hr	6 Hr	Day			
				Max	Min											
19	17:00	76.3	45.9			34	NE 4 G 10	30.04	1017.2				0.26	543	2.7	0.160
19	16:00	77.0	49.5			38	NNE 3 G 13	30.05	1017.5				0.00	773	5.0	0.139
19	15:00	76.4	47.5			36	NE 5 G 15	30.06	1018.0				0.00	717	5.9	0.118
19	14:00	75.6	45.3	76.0	58.9	34	N 5 G 9	30.07	1018.4				0.00	930	8.2	0.096
19	13:00	74.3	45.6			36	ENE 3 G 12	30.09	1018.9				0.00	766	7.4	0.074
19	12:00	72.3	47.9			42	NNW 3 G 11	30.09	1019.0				0.00	872	7.9	0.051

Here we start with 0 for the first column after the date not 1. Starting at the first column count the number of total columns in data file. Then count to find the position for rainfall and ET. Now, enter these values into their respective locations under Data column location and units. Now check whether the file units are inches or mm.

There is a threshold and effective rate that are used to calculate effective rainfall. Not all rainfall gets to the root of the plants so there needs to be a minimum value that must be set before the rainfall is considered having any benefit. This minimum is the threshold and unless the rainfall is above this amount then it is assumed that there was no effective rainfall. Now any amount over the threshold is effective rainfall but, only a percentage of this amount is used. Since some rain is runoff and some soaks in past the root zone of the plants not all of the rain is counted. So typically only 75% is used, and its this amount that will be used in the ET Basic software to adjust the moisture levels.

Now if there is a problem with accessing the data from the hourly weather file this WxSoln weather application will use default ETo data instead. These values must be historical data based on previous years. Set the Max. ETo that the weather application will accept. It's just a additional check that is used to limit the maximum amount of ETo that can be use in the software.

The last thing to do is Test ID. This will get the latest weather data and display the results for ETo and rainfall from the weather station. This will allow you to see if everything is working okay.

With this WxSoln weather application the ET data is up to midnight and the rainfall is up to midnight plus any additional rainfall up to the last hour. Any rainfall after midnight and up to the last hour of data will be saved and used the next day to adjust for additional rainfall between the last hour and midnight for the next day. Both rainfall and ET are running totals and are reset after midnight (01:00) hours in the hourly observation file that is generated by the WxSolution software.

NOTE: set the Vantage Pro clock 30 secs ahead of PC clock. This is to ensure the times on the hourly observation file are correct. Also make sure that when ET Basic or ET Standard accesses this file, its after the file has been updated and not while WxSolution is updating the file. This is normally after the hour. A few minutes after the hour would be good when setting the event schedule.