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Installation

Microsoft Excel add-ins can be installed in either a default location or a user defined location. The default location is the directory where your version of Excel looks for .xla or .xlma add-ins. For Windows XP, the default location is “C:\Documents and Settings\**[UserName]**\Application Data\Microsoft\AddIns”. For Windows 7, the add-in location is “C:\Users\**[UserName]**\AppData\Roaming\Microsoft\AddIns”. To install the add-in for Office 2007:

1. Click the **Microsoft Office Button** Button image, and then click **Excel Options**.
2. Click the **Add-Ins** category.
3. In the **Manage** box, click **Excel Add-ins**, and then click **Go**.
4. To load an Excel add-in, do the following:
   1. In the **Add-Ins available** box, select the check box next to the add-in that you want to load, and then click **OK**.
   2. If the Add-In doesn’t appear in the list, click Browse then select the add-in.
5. To unload an Excel add-in, do the following:
   1. In the **Add-Ins available** box, clear the check box next to the add-in that you want to unload, and then click **OK**.
   2. To remove the add-in from the Office Fluent Ribbon, restart Excel.

CE-QUAL-W2 Microsoft Excel Toolbar, w2tools.xlam

The current version has three main categories, Modify Selection, Export Selection and RUN EXE. Modify Selection contains five options that are not specific to W2 input file formatting but have been provided to aid in data manipulation. Export Selection is the main category for W2 input file creation. RUN EXE provides the user with a dialog box to run a selected executable. All data manipulation and export functions work on the user defined selection range. When exporting, files are created based on the active workbook location and active worksheet tab name.

All functions reference the active workbook’s pathname and tabs during export use the active sheet name. Export functions assume standard W2 formatting (F8.0). If computed values’ precision exceeds allowable formatting, export formatting may result in unacceptable values (e.g. 2.7E+00 for Julian Day). This is one of the main reasons the rounding option was written. The following paragraphs will detail each function with examples. The user should have a basic understanding of W2 input file format, because this tool is not intended to do everything for the modeler.

Modify Selection: Multiply and Round

1. Select desired range of cells
2. Click Modify Selection -> …by multiplying
3. Enter desired value to multiply the select by
4. Enter desired value to round values by

Selected values will be replaced with resulting calculation and can’t be undone.

Modify Selection: Round

1. Select desired range of cells
2. Click Modify Selection -> …by rounding
3. Enter desired value to round values by

Selected values will be replaced with resulting calculation and can’t be undone.

Modify Selection: Invert Rows or Columns

1. Select desired range of cells
2. Click Modify Selection -> …by inverting selection, rows or columns
3. Click ‘Yes’ to invert selected cells by rows
4. Click ‘No’ to invert selected cells by columns
5. Click ‘Cancel’ to cancel the operation without making any changes

Selected values will be inverted and the values are not modified. This operation is similar to sorting by ascending or descending order.

Export Selection: Time Series (xF8.0)

Modify Selection: Round

1. Select desired range of cells
2. Click Export Selection -> Time Series (xF8.0)
3. Values are saved to a file based on the active workbook location and names the file based on the active worksheet tab name

The user must be familiar with W2’s input file format and requirements to correctly use this utility. This tool can be use to create time series files for inflows, outflows and constituents. The shading file is not a time series but this utility can be used to create this file, because the format mimics a time series.

Table 1. Example time series dam discharge data and branch inflow. The shaded are represents the selection area.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TEXT | TIME SERIES DATA | | |  |  | TIME SERIES DATA | |
| TEXT | JDAY | TURB | SPILL | SLUICE |  | JDAY | FLOW |
| TEXT | ---- | ---- | ---- | ---- |  | ---- | ---- |
| VALUES | 1.000 | 98.12 | 0.00 | 0.00 |  | 1.000 | 98.12 |
| VALUES | 1.042 | 0.00 | 0.00 | 0.00 |  | 1.042 | 0.00 |
| VALUES | 1.083 | 0.00 | 0.00 | 0.00 |  | 1.083 | 0.00 |
| VALUES | 1.125 | 98.12 | 0.00 | 0.00 |  | 1.125 | 98.12 |
| VALUES | . | . | . | . |  | . | 98.12 |
| VALUES | . | . | . | . |  | . | 98.12 |
| VALUES | . | . | . | . |  | . | 98.12 |
| VALUES | 365 | 98.12 | 0.00 | 0.00 |  | 365 | 98.12 |

Time Varying: Time varying input files follow the ten fields of eight characters (10F8.0) file format. This option is typically used to create wind sheltering, boundary, or withdrawal files. Spreadsheet format follows the W2 file format with the first three rows being text in the input file. The time varying is created by adding columns with a Julian day describing that column’s date. The user must understand file requirements for each of the files listed above to format the spreadsheet correctly. The tool doesn’t check the control file making sure the correct number of layers or segments has been selected.

Table 2. Wind sheltering coefficient spreadsheet format and selection area. The text row is reserved for a title, header should stay the same as the example and JDAY row describes the column’s date.

|  |  |  |  |
| --- | --- | --- | --- |
| TEXT | WIND SHELTERING | | |
| HEADER | WSC | WSC | WSC |
| JDAY | 1 | 210.5 | 365 |
| SEG 1 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 2 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 3 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 4 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 5 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 6 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 7 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 8 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 9 VALUE | 0.70 | 0.65 | 1.00 |
| SEG 10 VALUE | 0.70 | 0.65 | 1.00 |
| . | . | . | . |
| . | . | . | . |
| . | . | . | . |
| IMX VALUE | 0.70 | 0.65 | 1.00 |

Table 3. Branch external US/DS head temperature spreadsheet format. The text row is reserved for a title, header should stay the same as the example and JDAY row describes the column’s date.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TEXT | TEMPERATURE US/DS HEAD BOUNDARY | | |  |
| HEADER | TUH | TUH | TUH | TUH |
| JDAY | 1 | 110.5 | 210.5 | 365 |
| LAYER VALUE | 19.30 | 20.30 | 21.30 | 22.30 |
| LAYER VALUE | 19.30 | 20.30 | 21.30 | 22.30 |
| LAYER VALUE | 18.80 | 19.80 | 20.80 | 21.80 |
| LAYER VALUE | 18.70 | 19.70 | 20.70 | 21.70 |
| LAYER VALUE | 18.60 | 19.60 | 20.60 | 21.60 |
| LAYER VALUE | 18.40 | 19.40 | 20.40 | 21.40 |
| LAYER VALUE | 18.00 | 19.00 | 20.00 | 21.00 |
| LAYER VALUE | 17.00 | 18.00 | 19.00 | 20.00 |
| LAYER VALUE | 15.00 | 16.00 | 17.00 | 18.00 |
| . | . | . | . | . |
| . | . | . | . | . |
| . | . | . | . | . |
| KMX VALUE | 12.8 | 13.8 | 14.8 | 15.8 |

Table 4. Branch external US/DS head constituent spreadsheet format. The text row is reserved for a title, header should stay the same as the example and JDAY row describes the column’s date.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | TDS | | DO | | TDS | | DO |
| TEXT | TEMPERATURE US/DS HEAD BOUNDARY | | | | |  | |
| HEADER | TUH | TUH | | TUH | | TUH | |
| JDAY | 1 | 110.5 | | 210.5 | | 365 | |
| LAYER VALUE | 23.50 | 9.00 | | 23.50 | | 9.00 | |
| LAYER VALUE | 23.50 | 9.00 | | 23.50 | | 9.00 | |
| LAYER VALUE | 23.50 | 9.00 | | 23.50 | | 9.00 | |
| LAYER VALUE | 23.90 | 9.00 | | 23.90 | | 9.00 | |
| LAYER VALUE | 24.50 | 9.00 | | 24.50 | | 9.00 | |
| LAYER VALUE | 25.00 | 8.80 | | 25.00 | | 8.80 | |
| LAYER VALUE | 26.00 | 8.70 | | 26.00 | | 8.70 | |
| LAYER VALUE | 27.00 | 8.60 | | 27.00 | | 8.60 | |
| LAYER VALUE | 28.00 | 8.40 | | 28.00 | | 8.40 | |
| . | . | . | | . | | . | |
| . | . | . | | . | | . | |
| . | . | . | | . | | . | |
| KMX VALUE | 28.00 | 8.40 | | 28.00 | | 8.40 | |

Table 5. Withdrawal segment and elevation outflow spreadsheet format. The text row is reserved for a title, header should stay the same as the example and JDAY row describes the column’s date.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | TDS | | DO | | TDS | | DO |
| TEXT | TEMPERATURE US/DS HEAD BOUNDARY | | | | |  | |
| HEADER | TUH | TUH | | TUH | | TUH | |
| JDAY | 1 | 110.5 | | 210.5 | | 365 | |
| SEGMENT 1/ELEV | 23.50 | 9.00 | | 23.50 | | 9.00 | |
| SEGMENT 2/ELEV | 23.50 | 9.00 | | 23.50 | | 9.00 | |
| SEGMENT 3/ELEV | 23.50 | 9.00 | | 23.50 | | 9.00 | |
| SEGMENT 4/ELEV | 23.90 | 9.00 | | 23.90 | | 9.00 | |
| SEGMENT 5/ELEV | 24.50 | 9.00 | | 24.50 | | 9.00 | |
| SEGMENT 6/ELEV | 25.00 | 8.80 | | 25.00 | | 8.80 | |
| SEGMENT 7/ELEV | 26.00 | 8.70 | | 26.00 | | 8.70 | |
| SEGMENT 8/ELEV | 27.00 | 8.60 | | 27.00 | | 8.60 | |
| SEGMENT 9/ELEV | 28.00 | 8.40 | | 28.00 | | 8.40 | |
| . | . | . | | . | | . | |
| . | . | . | | . | | . | |
| . | . | . | | . | | . | |
| SEGMENT n/ELEV | 28.00 | 8.40 | | 28.00 | | 8.40 | |

Table 6. Vertical profile spreadsheet format for initial conditions. Values for the vertical profile start at the surface layer [KT] and stop at the bottom layer. The text row is reserved for a title description. The label row describes the profile data and is limited to eight characters.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TEXT | VERTICAL PROFILE | |  | |
| LABEL | TEMP VPR | DO VPR | CON1 VPR | CON2 VPR |
| LAYER VALUE | 21 | 11.2 | 234 | 0.34 |
| LAYER VALUE | 20.3 | 10.9 | 230 | 0.35 |
| LAYER VALUE | 19.4 | 12.0 | 224 | 0.34 |
| LAYER VALUE | 18.8 | 12.4 | 222 | 0.33 |
| LAYER VALUE | 18.2 | 10.5 | 200 | 0.28 |
| LAYER VALUE | 16 | 4.7 | 198 | 0.25 |
| LAYER VALUE | 16 | 3.4 | 198 | 0.22 |
| LAYER VALUE | 15 | 3.2 | 198 | 0.18 |
| LAYER VALUE | 15 | 3.1 | 198 | 0.18 |
| LAYER VALUE | 15 | 2.6 | 198 | 0.18 |
| LAYER VALUE | 15 | 1.9 | 198 | 0.18 |
| LAYER VALUE | 15 | 0.4 | 198 | 0.18 |
| LAYER VALUE | 15 | 0.4 | 198 | 0.18 |
| LAYER VALUE | 15 | 0.4 | 198 | 0.18 |

Table 7.