



WatSIM
municipal and blending

hyd-RO-dose
reverse osmosis

DownHole SAT
injection wells & mixtures

WaterCycle
cooling water

Version 7

Suite Supplement

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Introduction to Version 7

Version 7 is the latest software release from French Creek Software. Version 7 is now available in each product line, including:

- **WaterCycle Rx[®]** - for cooling water chemistry
- **hyd-RO-dose[™]** - for reverse osmosis chemistry
- **DownHole SAT[™]** - for oilfield brines and mixtures
- **WatSIM[™]** - for municipal and blending
- **MineSAT[™]** - for mining, process waters and blending

Version 7 allows a user to optimize a plant using existing French Creek tools in a mixing environment. Using new copy/paste features, a chemist can move concentrated streams from program-to-program, for the purpose of making streams compatible for reuse.

Licensing

French Creek offers Version 7 software as single program licenses or as Suites. Single program licenses include one program, Suite Licenses include WaterCycle, hyd-RO-dose and a mixing program (WatSIM, DownHole SAT, or MineSAT).

Some discounts apply for Suite Licensing, see website: www.frenchcreeksoftware.com/version7



Compatibility

Version 7 Software will run on Microsoft Windows XP, Windows Vista and Windows 7 machines - with typical operating system, minimum machine requirements. Two gigabytes (2GB) of memory or more is recommended.

Program Compatibility

All French Creek Version 7 programs are compatible for copy/paste and mix features.

Copy any water analysis from any point/parameter in any French Creek program (points in tables, input forms, and bar tops in 2D & 3D graphs), into another program for mixing or straight reuse.

Water analysis are seamlessly transferred; analytical units are automatically converted to the units currently being used within the destination program.

Note: Version 7 Licenses of DownHole SAT, WatSIM or MineSAT are required for mixing purposes.



New Features

Scales Added

Strontium & Barium compounds added to WaterCycle to accommodate reuse and increased cycles of concentration.

Single Page Summary Printouts

All editions come with gorgeous, proposal ready single page summary printouts –ready to be printed or turned to PDF and distributed digitally.

Treatment Limits Summary

Find a treatment's limits at a specific point in your operating range by clicking on a bar in a 2D or 3D graph. The treatment limits summary shows allows a user to quickly find a treatment's limits for each scale within the inhibitor model.

Copy/Paste, Mix & Reuse

Each program has new copy/paste features for moving a new, concentrated or mixed analysis from application-to-application, simulating water reuse.



Examples

Single Page Summary Printouts

Now available under most Modules in the WHAT-IF Menu are various Summary Printouts. Ranges and Graphs are selectable from the PARAMETERS selection in the WHAT-IF Menu or on the One-Page Summary toolbar, by clicking CHANGE RANGE (below).

FILES INPUT VIEW WHAT-IF REPORTS FORMULARY LABORATORY PREFERENCES HELP

↓

SYSTEM CHEMISTRY AT 6.0 CYCLES

OPTIONS NEW TREATMENT CHANGE RANGE CHECK LIMITS

WaterCycle Cooling Water System Evaluation

WaterCycle WATER CHEMISTRY SUMMARY AT 6.0 CYCLES

<p>WATER CHEMISTRY</p> <p>CATIONS</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;">Raw</td> <td style="width: 15%;">Make-up</td> <td style="width: 15%;">Theoretical</td> </tr> <tr> <td>Calcium (as CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Magnesium (as CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sodium (as CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Potassium (as K)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ammonia (as NH3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Aluminum (as Al)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Zinc (as Zn)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Boron (as B)</td> <td></td> <td></td> <td></td> </tr> </table> <p>ANIONS</p> <table border="0" style="width: 100%;"> <tr> <td>Chloride (as CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sulfate (as CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>"P" Alkalinity (as CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Oxalic acid (moles/L)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cyanide (as HCN)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Phosphate (as PO4)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pyrophosphate(as PO4)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Fluoride (as F)</td> <td></td> <td></td> <td></td> </tr> </table> <p>PARAMETERS</p> <table border="0" style="width: 100%;"> <tr> <td>pH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Temperature (°F)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Calculated T.D.S.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Calculated Cond.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Suspended Solids</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Suspended Solids</td> <td></td> <td></td> <td></td> </tr> </table>		Raw	Make-up	Theoretical	Calcium (as CaCO3)				Magnesium (as CaCO3)				Sodium (as CaCO3)				Potassium (as K)				Ammonia (as NH3)				Aluminum (as Al)				Zinc (as Zn)				Boron (as B)				Chloride (as CaCO3)				Sulfate (as CaCO3)				"P" Alkalinity (as CaCO3)				Oxalic acid (moles/L)				Cyanide (as HCN)				Phosphate (as PO4)				Pyrophosphate(as PO4)				Fluoride (as F)				pH				Temperature (°F)				Calculated T.D.S.				Calculated Cond.				Suspended Solids				Suspended Solids				<p>SCALE POTENTIAL AND CONTROL</p> <p>SATURATION LEVEL</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;">Raw</td> <td style="width: 15%;">Make-up</td> <td style="width: 15%;">Theoretical</td> </tr> <tr> <td>Calcite (CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Aragonite (CaCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Anhydrite (CaSO4)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Gypsum (CaSO4*2H2O)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Calcium phosphate</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Hydroxyapatite</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Fluorite (CaF2)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Silica (SiO2)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Brucite (Mg(OH)2)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Magnesium silicate</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Iron hydroxide (Fe(OH)3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Siderite (FeCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Strengite (FePO4*2H2O)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Calcium oxalate (CaC2O4)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ca pyrophosphate (CaP2O7)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Zinc hydroxide (Zn(OH)2)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Zinc carbonate (ZnCO3)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Zinc phosphate (Zn3(PO4)2)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Zinc pyrophosphate (ZnP2O7)</td> <td></td> <td></td> <td></td> </tr> </table> <p>SIMPLE INDICES</p> <table border="0" style="width: 100%;"> <tr> <td>Langelier</td> <td></td> </tr> <tr> <td>Ryznar</td> <td></td> </tr> <tr> <td>Practical</td> <td></td> </tr> <tr> <td>Larson-Skold Index</td> <td></td> </tr> <tr> <td>Zinc solubility:</td> <td></td> </tr> </table>		Raw	Make-up	Theoretical	Calcite (CaCO3)				Aragonite (CaCO3)				Anhydrite (CaSO4)				Gypsum (CaSO4*2H2O)				Calcium phosphate				Hydroxyapatite				Fluorite (CaF2)				Silica (SiO2)				Brucite (Mg(OH)2)				Magnesium silicate				Iron hydroxide (Fe(OH)3)				Siderite (FeCO3)				Strengite (FePO4*2H2O)				Calcium oxalate (CaC2O4)				Ca pyrophosphate (CaP2O7)				Zinc hydroxide (Zn(OH)2)				Zinc carbonate (ZnCO3)				Zinc phosphate (Zn3(PO4)2)				Zinc pyrophosphate (ZnP2O7)				Langelier		Ryznar		Practical		Larson-Skold Index		Zinc solubility:	
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Treatment Limits Summary

The Treatment Limits Summary works with inhibitor files. The summary compares the current water's saturation levels with the limits set in the inhibitor model selected.

The screenshot shows a dialog box titled "Treatment Limits Summary". Inside the dialog, there is a section labeled "Your Product! (CaCO3 Inhibitor)". Below this, a table displays the current values and upper limits for two parameters: Calcite x Sat. and Gypsum x Sat. The status for both is "OK". An "OK" button is located at the bottom right of the dialog box.

Parameter	Current Value	Upper Limit	Status
Calcite x Sat.	4.9978	150.	OK
Gypsum x Sat.	0.17956	2.5	OK

Set Limits

Using a Product Manager/Formulator Edition, or a Laboratory Edition, open the INPUT PRODUCT Module from the FORMULARY Menu on the main toolbar).

1. Open your PRODUCT file (click the gray box next to the 'Product File Name' input box, select a previous product to edit).
2. Once your file is open, click the SET LIMITS button in the bottom left of the form.
3. You can manually input UPPER LIMIT, or click SCAN INHIBITORS to use the default limits from the INHIBITOR FILES.



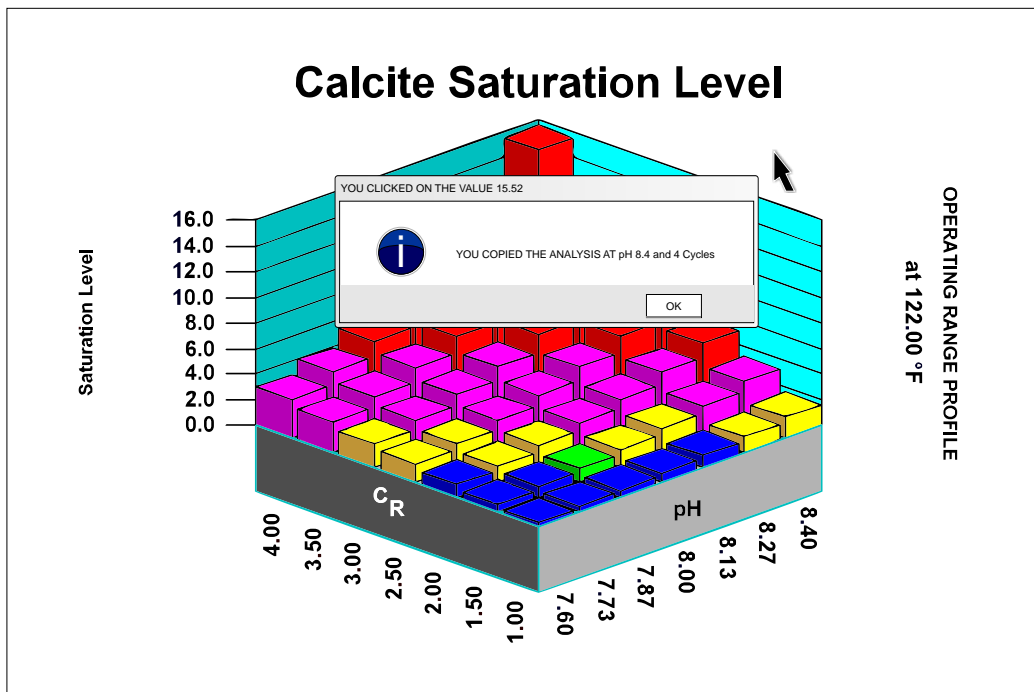
Copy/Paste, Mix & Reuse

Each program has new copy/paste features for moving a new, concentrated or mixed analysis from application-to-application, simulating water reuse.

There are three ways to move the water analysis of an input or concentrated water:

1. Press “COPY” from an analysis input form.
2. Right click the top of any 2D or 3D graph, to grab that exact water analysis of that given point.
3. Right click any column in a table.

Once the analysis is copied, simply press the PASTE button in an input or mixture form.





Resources

Numerous resources are available to learn about the chemistry and use of French Creek Software products:

1. Online Technical Library

www.frenchcreeksoftware.com/online-library/

2. Mr. French Creek - The Official French Creek Blog

www.mrfrenchcreek.blogspot.com

3. French Creek Software - Online Community

www.frenchcreeksoftware.com/forum/