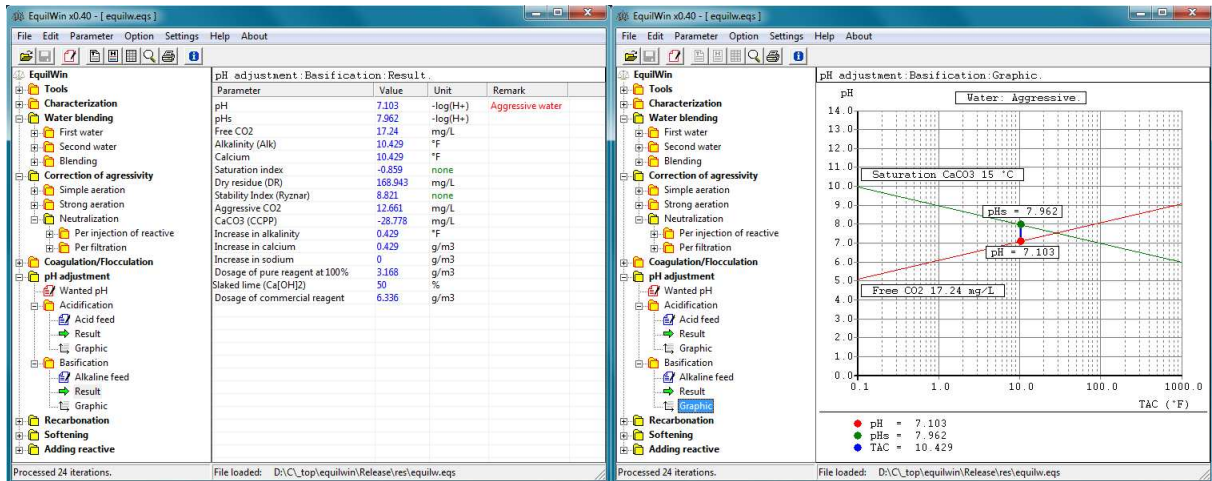


# EquilWin

EquilWin is a software that implements the calculus of chemical calcium-carbonic equilibrium for natural and industrial water, designed from the methods developed by Hallopeau - Dubin - Ravarini. EquilWin is developed by Mr Ravarini Pierre.

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EquilWin enables to define water basic characteristics and run any processing :

- Water characterization.
- Water blending.
- Correction of aggressivity : Simple aeration.
- Correction of aggressivity : Strong aeration.
- Correction of aggressivity : Neutralization per injection.
- Correction of aggressivity : Neutralisation per filtration.
- Coagulation/flocculation.
- pH adjustment : Acidification.
- pH adjustment : Basification.
- Recarbonation : Partial.
- Recarbonation : Total.
- Softening : Reagents injection.
- Softening : Ion exchange resins.
- Adding réactives : Calcium injection.
- Adding réactives : Acidification.
- Adding réactives : Basification.
- Adding réactives : Chlorine injection.

Using EquilWin is quite straightforward and intuitive :

- Entry of water characterization parameters.
- Selection of a process.
- Entry of the selected process parameters.
- Calculus and display of the process results.
- Calculus and display of the related graphics.

All tables and graphics are exportable to text and HTML format and spreadsheets. EquilWin is written in C for PC/Windows and can be customized for your application by contacting the author via the email address given at the top of this page.

Ravarini Pierre - 2014 - [www.hydro-land.com/e/](http://www.hydro-land.com/e/)

As an illustration, below is a short preview of a water characterization.

### Entry of water characteristics

Value	Unit	Parameter	Min	Max	Remark
15	°C	Temperature	0	80	
7	-log(H+)	pH	0	14	
10	°F	Alcalinity(1)	0.1	1000	
122	HCO3 mg/L	Alcalinity(2)	1.22	12202	
100	CaCO3 mg/L	Alcalinity(3)	1	10000	
10	°F	Calcium(1)	0.1	1000	
40	Ca2+ mg/L	Calcium(2)	0.4	4000	
2	Ca2+ meq/L	Calcium(3)	0.02	200	
100	CaCO3 mg/L	Calcium(4)	1	10000	
162	mg/L	Dry residue	162	100000	
4750.457	Ohm.cm	Resistivity	4750.457	999999	
210.506	uS/cm	Conductivity	210.506	999999	

Processed 8 iterations. File loaded: D:\C\_top\equilwin\Release\res\equilw.eqs

### Calculus and display of the results

Parameter	Unit	Remark
pHs	-log(H+)	7.997
Free CO2	mg/L	21.011
Saturation index	none	-0.997
Water	none	Aggressive
Alk/CaO	CaO	1
Aggressive CO2	mg/L	16.086
CaCO3 (CCPP)	mg/L	-36.564
Ryznar stability index	none	8.994
Ryznar's remark	none	Very important corrosion

Processed 8 iterations. File loaded: D:\C\_top\equilwin\Release\res\equilw.eqs

### Display of the graphics

The graphic is a Langelier Saturation Index (LSI) diagram. The y-axis represents pH (ranging from 4.0 to 14.0) and the x-axis represents Total Alkalinity (TAC) in °F (ranging from 0.1 to 1000.0 on a logarithmic scale). A green line represents the saturation curve for CaCO3 at 15 °C. A red line represents the pH = 7 line. A blue dot indicates the current water condition at pH = 7.997 and TAC = 10.0. A legend at the bottom identifies the data points: a red dot for pH = 7, a blue dot for pHs = 7.997, and a green dot for TAC = 10.0. The text 'Water: Aggressive' is displayed at the top of the graph area.

Processed 8 iterations. File loaded: D:\C\_top\equilwin\Release\res\equilw.eqs