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Chris Haslego
President
Cheresources, Inc.
**WEIR FLOW - Rectangular & Triangular Pattern**

**BASIS:** PERRY'S CHEMICAL ENGINEERS HANDBOOK (Francis formula)

**LIMITS:** The formulas are based on water and should only be used for "WATER-LIKE" fluids. Error should be less than 10% (low) for viscosities up to 100 cp. Do not use for viscous liquids or high surface tension liquids.

**NOTE:** Always begin a new case by retrieving the original file. Direct entry of data in cells that originally contain table lookups could cause functions to be lost, or incorrect calculations. I format cells requiring entry colored RED, calculated values are black.

Weir - Rectangular Notch

1.) Enter identification at [C4].
2.) Enter fluid name at [C5].
3.) Enter specific gravity at [C6].
4.) Enter fluid height at [E8].
5.) Enter weir length at [E9].

Flow `Q' is calculated and shown at [E15].

Weir - 90 deg Triangular Notch

1.) Enter identification at [C4].
2.) Enter fluid name at [C5].
3.) Enter specific gravity at [C6].
4.) Enter fluid height at [E8].

Flow `Q' is calculated and shown at [E14].

*Print out using direct Excel commands. This application is provided by Chemical Engineers Resource Website, visit [chereresources.com](http://chereresources.com) for additional selections.*

Print out using direct EXCEL commands.

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<<<<<<<<< Psafety © January 2001, by Don Coffman >>>>>>>>>

The originator of these spreadsheet(s) specifically excludes all warranties, expressed or implied, as to the accuracy of the data and other information set forth and assumes NO liability for any losses or damage resulting from the use of the materials or application of the data. Consistent with GOOD ENGINEERING PRACTICE, the burden rests with the USER of these spreadsheets to review ALL calculations, and assumptions. The USER IS FULLY RESPONSIBLE for the results or decisions based on calculations. This Spreadsheet Requires MACROS to be ENABLED to ASSURE proper operation. See the Workbook Help Sheet for Additional Instructions on Use.

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```
WEIR: Overflow - New Storage Tank  11-1876
Fluid:  WATER
Specific Gravity:  1.00

Height, H :  1.10 in. = 0.09 ft., ... fluid height
Length, L :  39.30 in. = 3.28 ft., ... weir width

\[ Q = 3.33 \cdot (L - 0.2 \cdot H) \cdot H^{1.5} \]

\[ = 0.301 \text{ cu. ft./sec.} \]
\[ = 135 \text{ gal/min} \]
\[ = 67539 \text{ lb/hr} \]
WEIR: Overflow - New Storage Tank 11-1876
Fluid: WATER
Specific Gravity: 1.00

Height, H: 27.94 mm, ... fluid height
Length, L: 998.22 mm, ... weir width

\[ Q = \frac{3.33 \cdot (L - 0.2 \cdot H) \cdot H^{1.5}}{35.315} \]

= 0.0085227 m³/sec
= 8.5227468 kg/sec
Weir Flow - 90 Degree Triangular Notch

WEIR : Process Sewer Outlet
Fluid : WATER
Specific Gravity : 1.00

Height, H : 12.00 in. = 1.00 ft., ... fluid height

\[ Q = 2.49 \cdot H^{2.5} \]

\[ = 2.49 \text{ cu. ft./sec.} \]
\[ = 1118 \text{ gal/min} \]
\[ = 558756 \text{ lb/hr} \]
WEIR: Process Sewer Outlet
Fluid: WATER
Specific Gravity: 1.00

Height, \( H \): 304.80 mm, ... fluid height

\[
Q = \left( \frac{2.49 \cdot H^{2.5}}{35.315} \right)
\]

\[
= 0.07050895 \text{ m}^3/\text{sec}
\]

\[
= 70.5089475 \text{ kg/sec}
\]