ADD FRICTION from system flow resistance TO "A.H." figure

Also known as "Viscous drag" "Scrubbing action" "Rotary flow" "Reynolds effect".

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1. INPUT DATA

			Example	
GPM Steady state	Q gpm	:=	41	Volumetric flow rate
mm	D	:=	38	Inside diam of the pipe
m^2/sec	ν	:=	$1{,}9\times10^{-6}$	Kinematic viscosity —— (Approximation cP "centiPoise" to m^2/sec, multiply by 1 million (for water))
m	L	:=	218	Length of the pipe
kg/m^3	ρ	:=	980	Density (SG, [Where 1Gram is 1ml SG=1] Specific Gravity x 1000)

Pipe Fitting Component	Fittings	
Round the corner of a Tee	T1 :=	1
Past a side opening of a Tee	T2 :=	3
Back into line from a side opening in a Tee	T3 :=	1
Rounded corner 90° elbow (Long Rad. or L.R. 90)	E1 :=	2
Abrupt 90° elbow ("Hard" 90 or Machined "L")	E2 :=	9
Gentle 45° elbow (Bends & or "5D" 90)	E3 :=	2

Estimating :
dP @ peak of Flow Fluctuations

To find the increase in pulsation from flow fluctuation, assume max. fluctuation from simplex pump is 3.25 x steady state Q. Divide 3.25 Q by "F" nbr. for your pump type. Add the result to your steady state Q. Run the formula with your increased Q. Deduct steady state dP from this new dP. The difference is pulsation dP.

Effective Length of Pipe System

$$L_{eff} := L+(0.0667xDxT1)+(0.0209xDxT2)+(0.0667xDxT3)+(0.0327xDxE1)+(0.0681xDxE2)+(0.0144xDxE3)$$

figures applied for E and T are averages from tests

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