Université de Batna 2
Faculté de technologie
Département d'hydraulique

Module : (ouvrage de prise d'eau et ses dérivations)

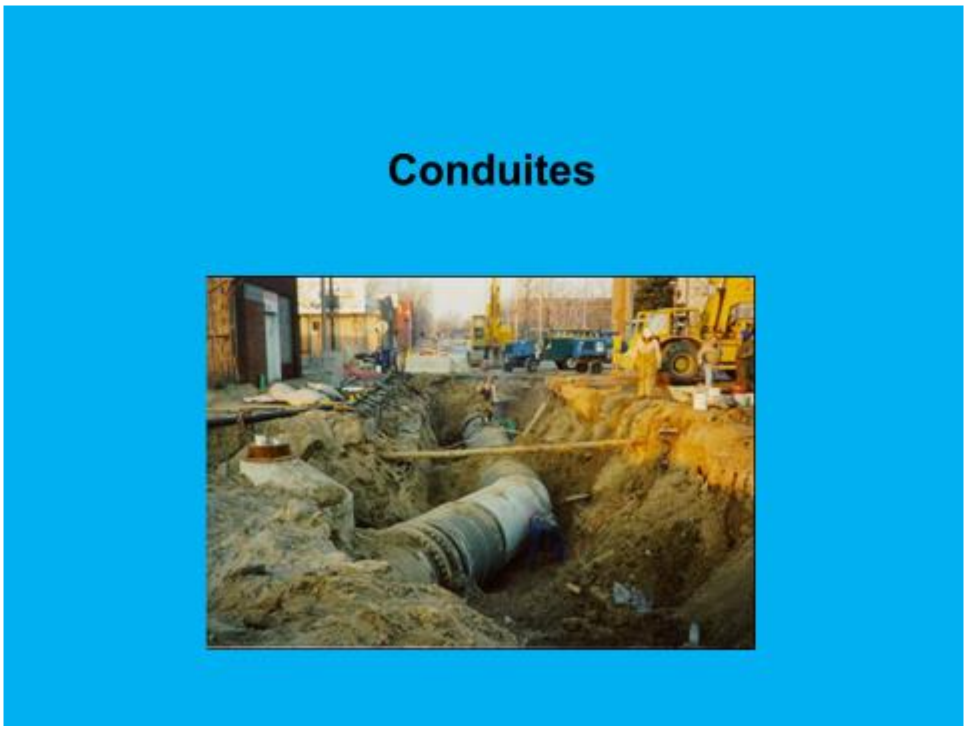
Charge de module Takkouk Saddok

Master 1 option Ouvrage Hydraulique (OH)

Semestre S2

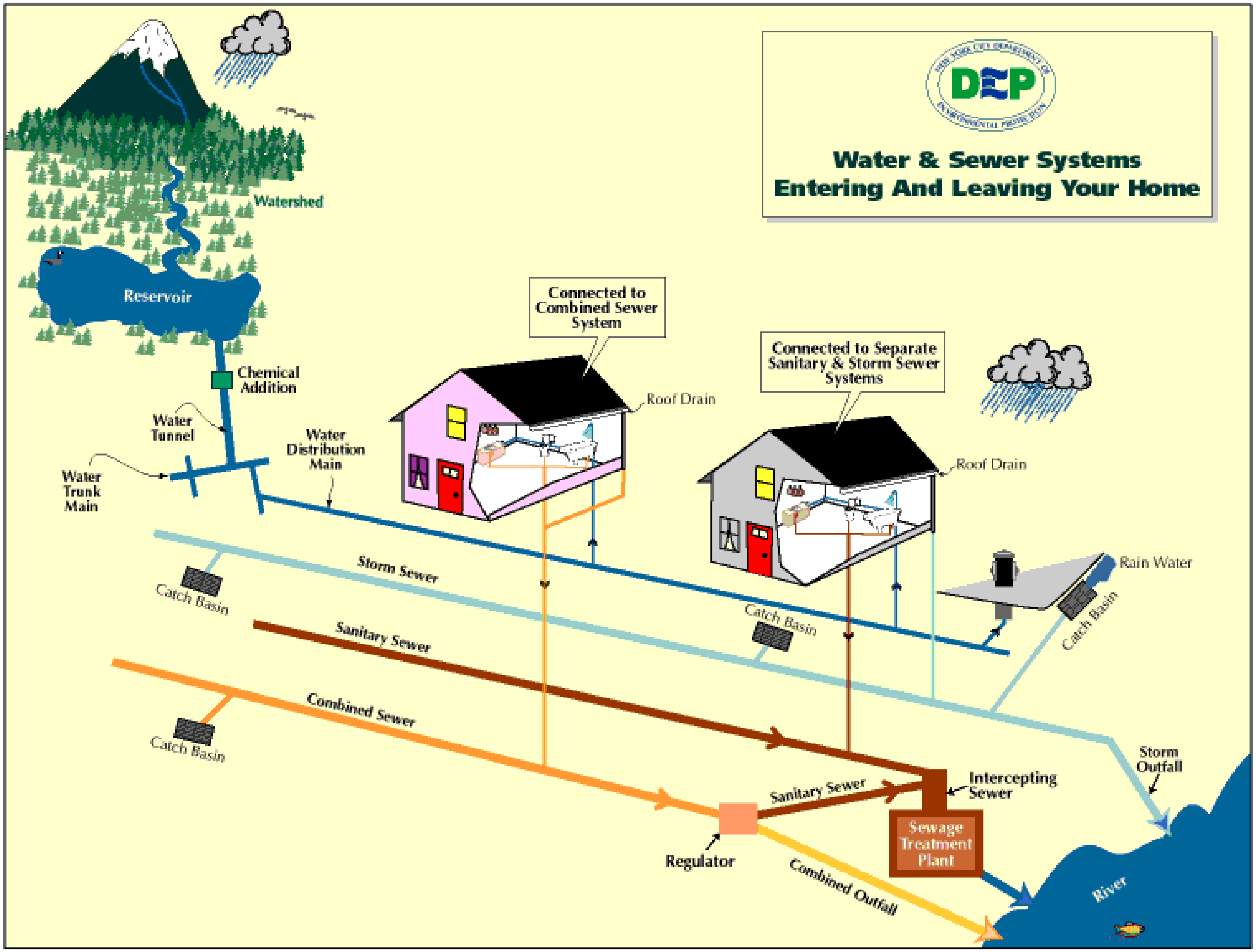
Chapitre 3

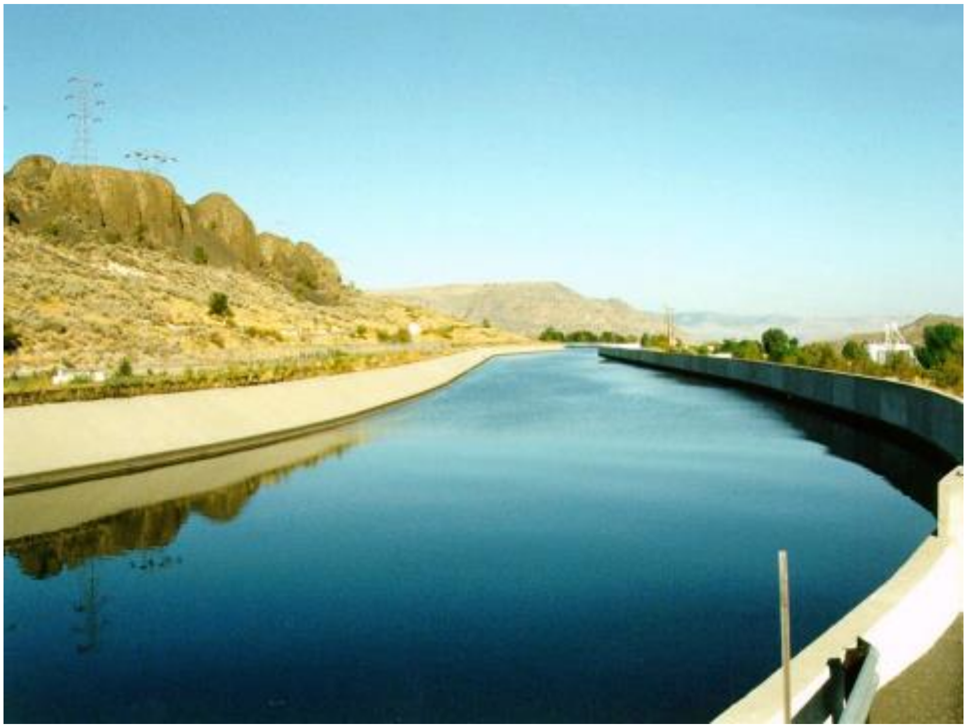
Organes accessoires (pièces spéciales, sectionnement, régulation de débit et de pression etc.…)

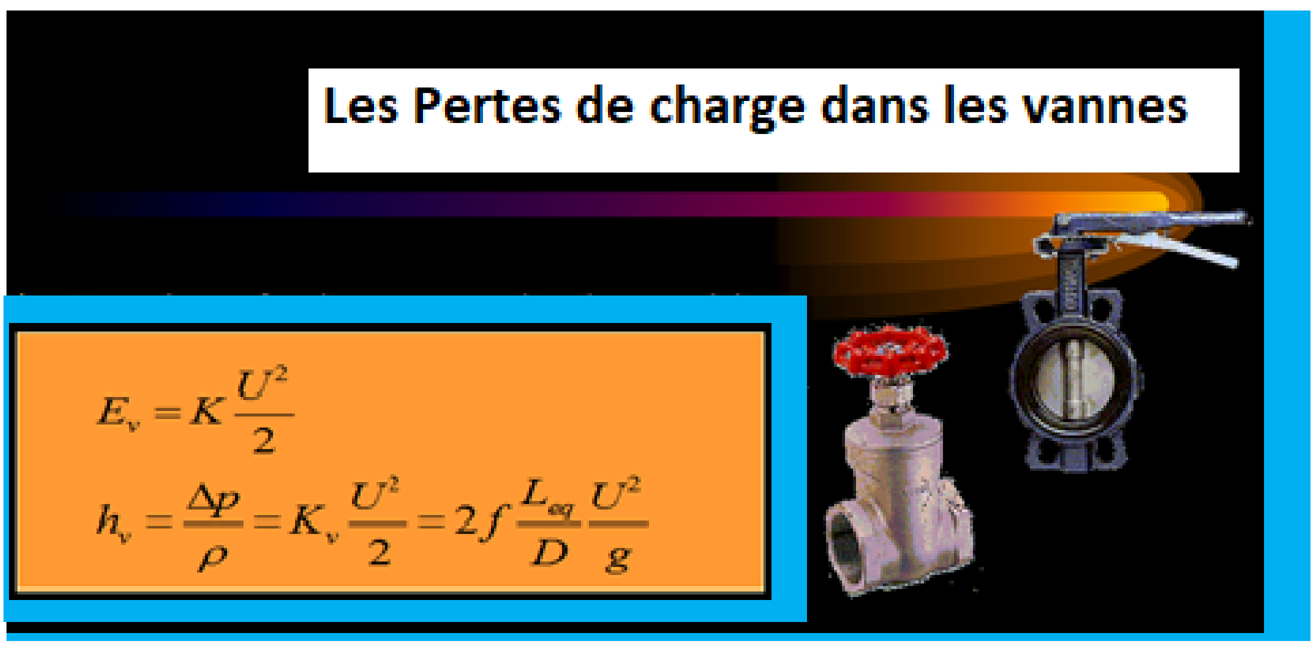


Technologie des conduits (conduites, galeries et tunnels)

(a) (b)


DEP
Water & Sewer Systems
Entering And Leaving Your Home
Watershed
Reservoir
Chemical Addition
Water Tunnel
Water Trunk Main
Water Distribution Main
Connected to Combined Sewer System
Roof Drain
Connected to Separate Sanitary & Storm Sewer Systems
Roof Drain
Rain Water
Storm Sewer
Catch Basin
Catch Basin
Catch Basin
Sanitary Sewer
Combined Sewer
Catch Basin
Sanitary Sewer
Intercepting Sewer
Storm Outfall
Sewage Treatment Plant
Regulator
Combined Outfall
River

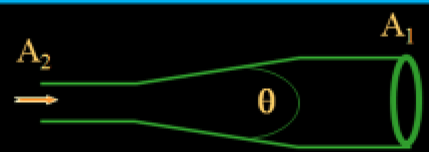


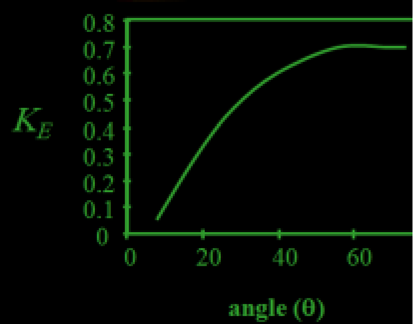

Les Pertes de charge dans les vannes
$E_v = K \frac{U^2}{2}$
$h_v = \frac{\Delta p}{\rho} = K_v \frac{U^2}{2} = 2f \frac{L_{eq}}{D} \frac{U^2}{g}$

Friction Loss Factors for valves

Valve	K	L_{eq}/D
Gate valve, wide open	0.15	7
Gate valve, 3/4 open	0.85	40
Gate valve, 1/2 open	4.4	200
Gate valve, 1/4 open	20	900
Globe valve, wide open	7.5	350

Pertes de charge due an élargissement



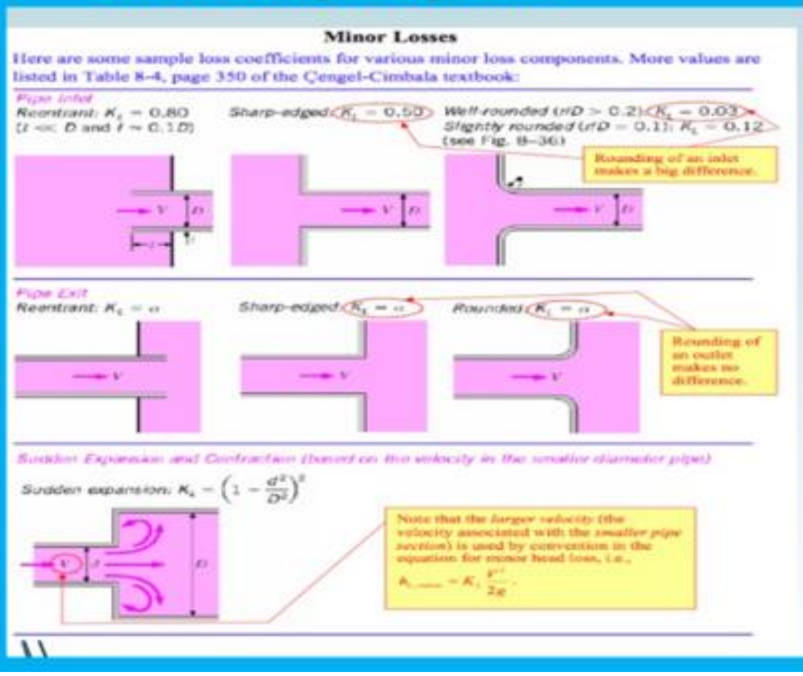


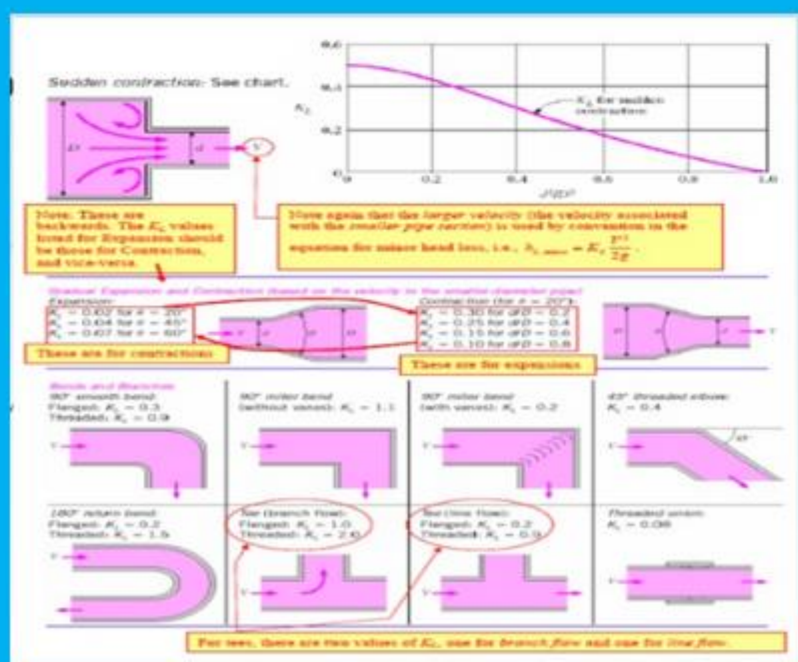
$$E_E = K_E \frac{(U_1 - U_2)^2}{2}$$

$$E_E = K_E \frac{U_2^2}{2}(\beta - 1)^2$$

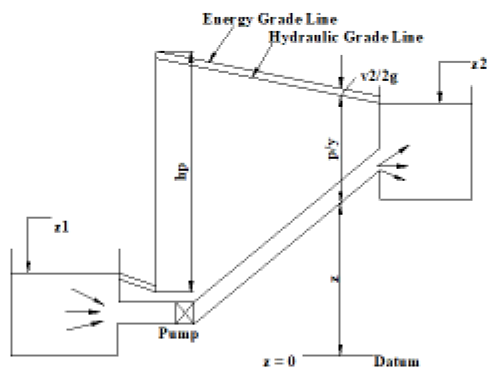
$$\beta = \frac{A_2}{A_1}$$

Pertes de Charges singulieres





Le schéma représente l'equation d'energie



The Schematic representation of the energy equation