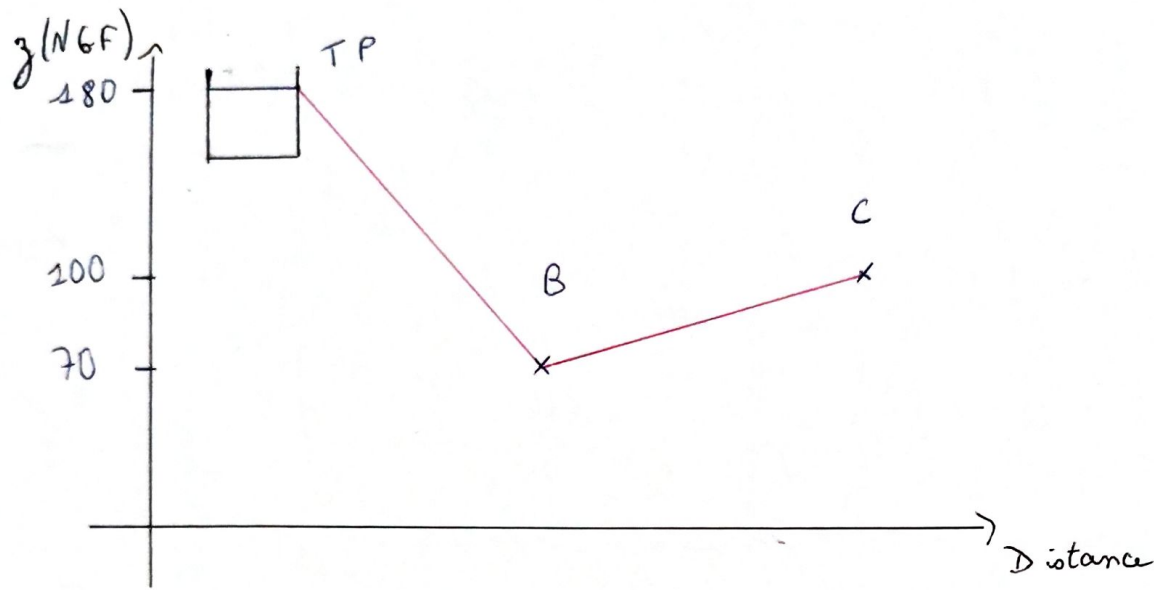


## Exercice 9

### 1) Profil altimétrique



### 2) Point A au radier du réservoir

$$\text{Volume} = \text{Surface} \times \text{hauteur}$$

$$h = \frac{V}{S}$$

$$z_A = z_{TP} - h$$

### 3) Diamètre minimum BC

$$\rightarrow NPZ_A = 180 \text{ NGF}$$

$$\rightarrow NPZ_B = NPZ_A - Pdc_{A \rightarrow B}$$

$$\rightarrow NPZ_C = NPZ_B - Pdc_{B \rightarrow C}$$

$$\frac{P_c}{\rho g} + z_c = NPZ_A - Pdc_{A \rightarrow B} - Pdc_{B \rightarrow C}$$

$$- Pdc_{B \rightarrow C} = \frac{P_c}{\rho g} + z_c - NPZ_A + Pdc_{A \rightarrow B}$$

$$Pdc_{B \rightarrow C} = NPZ_A - \frac{P_c}{\rho g} - z_c - Pdc_{A \rightarrow B}$$

D'après la formule de Lechapt & Calmon :  $P_{dc_{B \rightarrow C}} = L Q_B^M D_{BC}^{-N} l_{BC}$

$$L Q_B^M D_{BC}^{-N} l_{BC} = NPZ_A - \frac{P_c}{\rho g} - z_c - P_{dc_{A \rightarrow B}}$$

$$D_{BC}^{-N} = \frac{1}{L Q_B^M l_{BC}} \left( NPZ_A - \frac{P_c}{\rho g} - z_c - P_{dc_{A \rightarrow B}} \right)$$

$$D_{BC}^N = L Q_B^M l_{BC} \left( NPZ_A - \frac{P_c}{\rho g} - z_c - P_{dc_{A \rightarrow B}} \right)^{-2}$$

$$D_{BC} = \left[ L Q_B^M l_{BC} \left( NPZ_A - \frac{P_c}{\rho g} - z_c - P_{dc_{A \rightarrow B}} \right)^{-2} \right]^{\frac{1}{N}}$$

↳ Avec  $P_{dc_{A \rightarrow B}} = L Q^2$  (à partir de NZKURADSE)

4)  $NPZ(C) = NPZ(B) - P_{dc_{B \rightarrow C}}$

$$\frac{P_c}{\rho g} + z_c = NPZ(B) - P_{dc_{B \rightarrow C}}$$

$$\frac{P_c}{\rho g} = NPZ(B) - P_{dc_{B \rightarrow C}} - z_c > 1,5 \times 10,2 \text{ mCE ?}$$

