

Pump design...



- **NPSH**

$$\text{NPSH}_a = (P_{\text{abs}} - P_{\text{vp}}) / \rho g + H_{\text{static}} - h_{\text{sf}}$$

Where (in SI units)

- NPSHa = available NPSH (m)
- P_{abs} = absolute pressure at source
- P_{v} = vapor pressure at pumping temperature
- H_{static} = static head (m)
- h_{sf} = frictional losses (m)
- NPSHr = required NPSH
- $\text{NPSHa} > \text{NPSHr} + 0.5\text{m}$