RO Membrane

$J = K(\Delta p - \Delta \pi)$ 18.5 gfd / 800 psi

$$800\ psi \left(\frac{6894.76\ Pa}{1\ psi}\right) = 5{,}515{,}808\ Pa$$

$$\frac{18.5\ gal}{ft^2 - day} \cdot \left(\frac{1\ ft}{0.3048\ m}\right)^2 \cdot \left(\frac{1\ day}{86400\ sec}\right) \left(\frac{0.00378541\ m^3}{1\ gal}\right) = 8.72451e\text{-}6\ \ m/s$$

$$K = \frac{J}{\Delta p} = \frac{8.72451e\text{-}6}{5515808} \simeq 1.5817e\text{-}12\ \frac{m}{Pa\text{-}s}$$

$$J = \frac{-k}{\mu}\frac{dp}{dz} \qquad k = \frac{J\mu\,\Delta z}{\Delta p} = K\mu\,\Delta z \quad \left(\frac{m}{Pa\text{-}s} \cdot Pa\text{-}s \cdot m\right)$$