**37.28 Saturated liquid water at $50 psia$ is cooled to $80°F$ at constant pressure. What is the change in enthalpy during cooling?**

A. $50 \frac{Btu}{lb_m}$

B. $200 \frac{Btu}{lb_m}$

C. $660 \frac{Btu}{lb_m}$

D. $920 \frac{Btu}{lb_m}$

Use the Properties of Saturated Water and Steam table to find the temperature of saturated liquid water at $50 psia$: $T_1 = 281°F$

Equate the change in enthalpy to the quantity of heat removed:

$$q = \frac{Q}{m} = \Delta h = c_p \Delta T$$

Substitute and solve using the the specific heat capacity of liquid water, $c_p = 1 \frac{Btu}{lb_m° F}$:

$$\Delta h = c_p \Delta T = \left(1 \frac{Btu}{lb_m° F}\right)(281°F - 80°F) = 201 \frac{Btu}{lb_m}$$

**Answer B**