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EX3 7EX

WR346 – Application for a water resources licence – part B – Continuation Sheet

Section B6.2.

As stated within the application form, the values for this abstraction have been estimated following the guidance included within the 'volume estimation and guidance' document listed on the citizen space website. I have measured the breadth (0.5m), depth (0.25m) and height of orifice in relation to the top of the water level (0.2m). These values are shown below along with the other elements of the equation listed in your guidance.

Breadth (B) = 0.5 metres

Depth (D) = 0.25 metres

Cd = 0.61 (this value was given in your example equations)

G = acceleration = 9.81 m³/second (this value was given in your example equations)

Height from upstream water surface to centre of orifice (H) = 0.2 metres

Calculation as included within your volume estimation guidance:

$$Q = B * D * Cd * \sqrt{2GH}$$

Therefore using the values above and the equations provided I have calculated the instantaneous rate based on the following:

$$Q = (0.5 * 0.25) * (0.61 * (\sqrt{2 * 9.81 * 0.2}))$$

$$Q = 0.149 \text{ m}^3/\text{s} \text{ (149 litres/second)}$$

These values have been input into the volume validation tool for the instantaneous rate, along with the number of hours and days abstracted. For reference, I have shown a picture of the board with rectangular orifice which we use at this site. The measurements of the parameters used in the equation are shown in the adjacent diagram. When we don't want to abstract, we will block up the orifice with a second board. As highlighted in our application forms, we estimate the maximum number of days we have kept the second board removed to allow abstraction is 60 days, although in some years the number of days will be lower.

