This paper highlights the multiple water quality issues in the Dubbo reservoirs and distribution network and how they have been achieved using the trial carried in few reservoirs using the AQUAJETTA mixing system.

The City of Dubbo is located in the Orana Region of NSW, with an estimated population of 41,000. The water treated from Dubbo City Council’s John Gilbert Water Treatment Plant has good Chlorine residual but can’t sustain the residual in some of the distribution network and reservoirs, located outside the town.

Some of the challenging issues are as follows;

- Water needs to be moved around within a tank to promote blending of new and old product.
- Addition of Chlorine to boost the residual

All of these issues can be overcome by installing simple cost effective mixers in the reservoirs and also a chlorination dosing unit.

**DCC Water Supply Services:**

- 9 Water Supply Reservoirs,
- 7 Water Supply Pumping Stations
- 3 Rural Village water supply schemes.

**OBJECTIVE**

- Long detention times in network mains and reservoirs
- Difficulty in reliably maintaining DO & Chlorine residual
- Poor circulation problem in reservoirs causing Dead spots.

**3 Methods have been used to boost chlorine disinfectant residuals,**

1. Booster Chlorination system in the pump stations
2. Manual dosing of Chlorine in the reservoirs]
3. Fire hose nozzle jet to provide continuous mixing energy with Chlorine dosing system

1 & 2 have been used in the past and the new Method - The new Aqua Jetta system have been installed at 3 Reservoirs on November 2015 by Aqualift Project Delivery team.

**RESULTS**

The Chlorine Residuals obtained after installation of the mixing & booster Chlorine system are as follows;

**CONCLUSIONS**

Benefits using this mixing and dosing system

1. An effective and controlled Chlorine dosing system.
2. Ability to circulate the water flow inside the reservoir.
4. Elimination of working at height risk involving manual chemical handling.
5. Elimination of corrosion issues related to slug chlorine dosing in the reservoir.
7. Reduced Labour cost.
8. Accurate Sampling point to ensure the quality checks are done easily.
9. Ability to introduce CO2 dosing if required to lower water supply PH levels.

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