



Site Management Solution

CEABC now reliably supplies water to two million people in Northern Mexico without impacting irrigation

Situation

The Baja California State Water Commission (CEABC) manages the headgates of the Colorado River – Tijuana Aqueduct, locally referred to as ARCT. The ARCT is the primary water supply for nearly two million people on the Pacific coast of Northern Mexico. The ARCT spans over 120 km before providing water to the cities of Tecate, Tijuana and Playas de Rosarito.

CEABC diverts up to 520 ML/day from the Canal Reforma irrigation channel to supply the ARCT. The upstream supply of water in the Canal Reforma is adjusted frequently to meet the needs of the

downstream irrigation district, causing the water level in the Canal Reforma to vary dramatically. In order to maintain a constant flow through the ARCT headgates, CEABC operators needed to make frequent site visits to adjust the radial headgates until the correct flow rate was restored. If these adjustments were not made, the irrigation district further downstream on the Canal Reforma suffered from overtopping or undersupply.

CEABC wanted to measure and control flow into the Tijuana aqueduct without the risks and delays of manual operation. Ideally they also wanted the ability to remotely monitor and control the headgates.



Solution

The solution was to replace the manual radial gates with two remotely managed Rubicon FlumeGates®. The FlumeGates were sized to check an upstream water level depth of 2.3 metres, meeting the maximum flow requirements of the site (520 ML/day)

while fitting within the existing concrete structure so that minimal civil works were required. Since the ARCT is the primary source of drinking water for millions of people, the new solution had to be installed quickly to minimise any supply disruption.



Mexico
Mexicali, Baja California



Customer profile

The Baja California State Water Commission (Comisión Estatal del Agua de Baja California or CEABC) is a state agency that is responsible for urban water management, quality and distribution throughout the Baja California state.

Solution components

Software



SCADAConnect

Hardware



FlumeGate

- FlumeGate x2

Remote monitoring and management

The FlumeGates are remotely managed using a cloud deployment of Rubicon's SCADAConnect® software. The gates connect to the internet via a cellular network and CEABC monitor and adjust flow rates using a standard web browser, avoiding the need to install costly servers and specialist communications infrastructure.

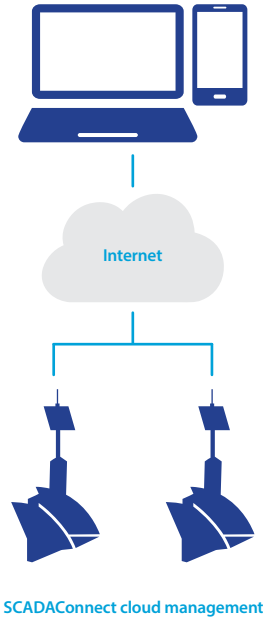
Monitoring of the site is simplified through the use of SCADAConnect's on-screen and SMS alerts which indicate if there are operational problems.

Automatic flow control

The CEABC operator is now able to remotely set a desired flow rate. Using their integrated sensors, the FlumeGates automatically make opening and closing adjustments to maintain the desired flow rate, responding immediately to any level variation in the Canal Reforma.

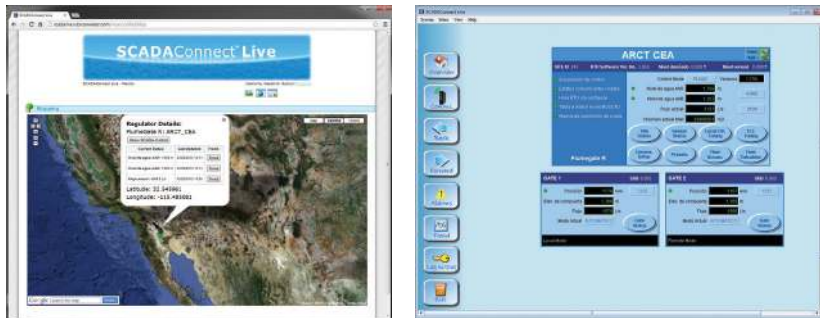
Accurate flow measurement

The FlumeGates provide CEABC with instantaneous flow measurement and accumulated volume data. This information can be viewed on each gate's display screen and remotely via SCADAConnect as shown below.



“Rubicon’s gate and SCADA solution provides automatic flow control and has stabilised our water intake from the Canal Reforma. The FlumeGates have simplified operations; our operators no longer need to make site visits to make flow adjustments.”

Ing. J. Guadalupe Salazar, Operations Manager



SCADAConnect screens used to manage the ARCT headgates

Results

CEABC used to be contacted by the irrigation district on the Canal Reforma downstream of the ARCT headgates every two weeks with complaints about channel overtopping or undersupply. After implementation of Rubicon's Site Management Solution, CEABC has not received a complaint in over a year. CEABC can be sure of meeting the water supply needs of nearly two million people without affecting the downstream district. Changes in water level in the Canal Reforma no longer adversely affect supply to the ARCT and changes in demand can be met rapidly by remote control. The reduction in site visits has had the additional benefit of savings in personnel costs and vehicle maintenance.

About Rubicon Water

Rubicon Water delivers advanced technology that optimises gravity-fed irrigation, providing unprecedented levels of operational efficiency and control, increasing water availability and improving farmers' lives.

Founded in 1995, Rubicon has more than 30,000 gates installed in TCC systems in 15 countries.