



Remote Control Truck Fill Pump Stations

Location: Chinchilla, QLD

Case Study ID: CS-128

Date: April 2019

Overview

The customer has several remote dam sites as part of a gas harvesting process. Water is used for construction and dust suppression. An off-the-shelf solution is not available, so Dowdens was tasked with designing and building a solution. In addition, Dowdens included water sampling and testing to the process.

The Problem

The diesel pump plants can be hazardous, so the preference was remote access to start and stop pumps that deliver water to delivery trucks. These dam sites are also very remote, so access to power was not an option.

Water quality results were mandatory daily as part of the process, which required a person to manually take a sample from the dam and bring it back for testing.

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Our Solution

The final product is a standalone structure powered by a solar panel and batteries. The unit is fully self-contained and vandal proof. Access to all controls requires using a swipe card that is specific to the individual driver. Over 200 unique cards were supplied for the project.

The solution Dowdens supplied provides monitoring and control of pump stations in the field. Each Truck Fill Station allows the water truck drivers to fill their tanks with water using an RFID (Radio-frequency identification) swipe card to activate the system and simple start/stop buttons to control the tank filling process.

A website allows administrators to monitor and control the platform from anywhere with internet access including the ability to review historical pumping data and edit driver information. This website is backed by a Microsoft Azure application that receives real-time data from each Truckfill Station, including overall status and flow updates.

Key Components

- Solar panel
- Battery
- Control box
- Water meter
- Ph. and conductivity testing
- SS frame

Project Design Philosophy

The process is simple, the truck driver will park under the truck fill water point and access the system with an individualised swipe card and push start. The control box will start the diesel unit from over 20 metres away. The system has a built-in water meter to measure the volume going into the tank. This accumulated volume is calculated to understand the usage and assist management in relocating truck operation areas either on a daily, weekly or monthly basis.

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The units are GPS locatable, and all of the information is sent to a website for viewing. The water is automatically tested for PH and conductivity, and the results are viewable via the website. In addition to the swipe card system, we have incorporated solar powered sump pumps to capture any runoff during the process and return it to the dams.



Brands used in this project

Tsurumi Sump Pumps
Rover Control Panel
Springers Solar
Convergent
AVFI meter
Bermad Control Valves



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