

# 2M



AUTOMATION LTD

# Water Distribution System

## Project Brief

### Key 2M Services Supplied:

- PLC sequence handling and HMI interfaces for both installation at Coldfell and Wormgill Stations
  - MiChrosat Satellite communication between the Coldfell and Wormgill installations in order to monitor water turbidity at Wormgill River
  - Radio Links communication between the Coldfell and SR Wilton installations for the purpose of monitoring and controlling the equipment at SR Wilton
- PSTN Modem communication at Coldfell for remote monitoring, diagnostics and software modifications

The supply of clean and safe water has always been one of United Utilities' main priorities. This can prove to be a challenge in remote areas in which the task of monitoring and delivering water cannot be easily achieved by conventional methods. Indeed, in such circumstances radio links and GSM/Satellite Modems are frequently used to serve the purpose and aid the maintenance of standards.

The Coldfell Water Treatment Project involved the Local Station at Coldfell Filter House, Remote Station 1 at SR Wilton Reservoir, and Remote Station 2 at Wormgill River.

It is the combined quality control measures carried out at these stations which ensures the safety of drinking water for the North West region.



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The control system was designed and installed by DW Control Systems who invited 2M on board.

We used our expertise in satellite communication in order to provide a full software solution for both Local and

Remote Stations.

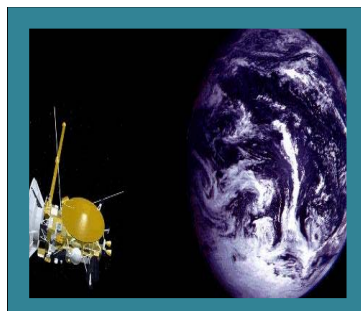
Furthermore, Radio and Satellite communications were established between the three Stations in order to ensure efficient monitoring and data transference capabilities.

### Key Components Used:

- Mitsubishi FX2N PLCs
- Mitsubishi E-Series HMIs (E200 & E300)
- MiChrosat Low Earth Orbit Satellite Modems
  - Churchill Radio Links
- Mitsubishi A2S Modem

## Design Philosophy

The challenge posed by this project was twofold. Firstly, the project team rigorously selected the best suited components for the purposes of monitoring and transferring of data between stations. Secondly, they proceeded to integrate the



chosen components into the proposed Mitsubishi PLCs and E-Series HMIs.

The standalone and solar battery powered PLC and HMI unit at Wormgill River Station measures water turbidity and transfers information to Coldfell Filter House using MichroSat Low Earth Orbit Modems to communicate.

Both Colfell and Wormgill Stations have individual PLCs that are in charge of controlling their local equipment, whilst the machinery at SR Wilton is monitored and controlled by the Coldfell PLC via the use of

Radio Links signals. This was achieved by installing Churchill Radio links at both ends.

The Local Station is equipped with an E300 HMI which is used to set up parameters, diagnostics, engineering diagnostics, engineering functions, as well as the handling of Alarm situations.

Furthermore, the Local Station is equipped with an A2S Mitsubishi modem in order to allow remote monitoring and software modifications over the PSTN line if and when required.