

Wastewater Experts, Inc.



Client: International Consulting Firm

Services Requested:

- **Forensic Engineering - Identify Cause of WWTP Failures**
- **Assign Liability**
- **Support Legal Team**

Type of Treatment in WWTP:

1. Physical – Primary Clarification
2. Biological – Stacked Sequencing Batch Reactors

Dublin, Ireland – Very Large WWTP (One Million m³/d) - Failure and Lawsuit

The huge Dublin wastewater treatment plant (WWTP) suffered from critical performance problems in a highly technical plant. As usual, fingers pointed in all directions as each party assigned responsibility. Eventually, a team of technical experts was called in to untangle the facts, identify limitations, and establish the real capabilities of the facility. *Wastewater Experts* was hired to participate in this assessment of the entire plant design/operation including:

- Inlet Pretreatment Works
- Primary Clarification
- Biological Wastewater Treatment System (Activated Sludge Type)
- Waste Sludge Thickening
- Sludge Digestion and Stabilization
- Sludge Dewatering
- Biosolids Pelletization

Wastewater Experts assumed particular responsibility for the activated sludge portion of the plant. Every unit process step





had been designed with a high degree of advanced technology and innovation that sometimes led to real operational challenges.

Local conditions exacerbated the design and performance issues as particular weather patterns, water characteristics, tidal and flow variations each exerted their own influence on the dynamic balance of the system. In addition, an innovative contractual arrangement meant that traditional lines of responsibility and information flow were rearranged; this necessitated a rethinking of the flow of liabilities. These complicating issues required extensive cooperation among the technical team as there were large cost and liability implications.

Original plant design models were analyzed exhaustively; computerized dynamic models were interrogated and reinterpreted; massive amounts of plant operating data were collated to identify patterns; weather and groundwater data were interrogated to add consistency to the analytical data; and all of this was run through the machinations of the contractual flow of responsibility. In the end it was necessary to identify both the technical limits of the plant, and the efficacy of both the original design effort and the ongoing remedial efforts.



Final litigation results were sealed and cannot be discussed.