

SECTION A: NON-TECHNICAL SUMMARY

The Waste Water Works and the Activities Carried Out Therein

Kilbrittain is located in south Cork approximately 10km south of Bandon on the Regional Road R603.

The waste water collection system for Kilbrittain is a partially combined system. There are a number of separate storm drains in the village. Surface water is collected and discharged to local watercourses; foul sewerage is collected and discharged to the WWTP. The Waste water Treatment Plant is located to the west of the village, just off the R603 road to Ballinspittle.

Waste water flows by gravity from the village to the WWTP. The treatment plant was commissioned in 2006 with a design capacity of 800 PE and currently serves 598 PE.

On entering the WWTP the waste water is directed through the forward feed pump station upstream of the spiral screen. The flow then enters the screw conveyor screen where screenings above 6mm are removed from the waste water. A manual by-pass screen is provided as back-up during screen breakdown or servicing. The waste water then enters forward feed pump station 2 downstream of the inlet screen. Both forward feed pump stations are fitted with high level overflows and two submersible pumps.

The secondary treatment consists of an aeration tank and a clarifier which are partially buried concrete tanks with a half bridge scrapper and 2 RAS/WAS pumps. Flow enters the aeration tank from the forward feed pump station 2. Air is then dispersed in the aeration tank via a series of air diffusers punted on the floor of the tank. Air is supplied to the diffusers from air blowers adjacent to the aeration tank. Ferric dosing is directly into the aeration tank before the clarifier. It runs when the forward pumps are running and mixes directly with the flow into the tank. The dosage depends on tests results taken from the plant.

Flows gravitate from the aeration tank to the clarifier tank. The flow enters the clarifier and overflows a bellmouth into the diffusion drum. The sludge on the floor of the tank is directed into a central hopper by a 75-degree slope on the floor and a rotating scraper mechanism. Under normal operation the sludge pumps recycle the sludge to the aeration tank. As the concentration of the sludge increases the operator will manually direct waste sludge to the sludge holding tank.

Flow directed from the sludge pumps by the operator enters the sludge holding tank. The contents are allowed to settle with heavy solids sinking to the bottom of the tank and supernatant rising to the surface. The supernatant then gravitates back to the forward feed pumping station. The sludge collection at the bottom of the tank can be drawn off via a vacuum tanker connected to a bauer coupling on the sludge holding tank. Scum in the clarifier is directed to a scum collection box by a rotating scum skimmer and flows by gravity to the sludge holding tank.

The effluent from the clarifier overflows through a V-notched weir and flows to the outlet flume. This treated effluent exits the plant through the outlet flume to the Kilbrittain River.

Currently, according to Response Engineering results (see attachment F1), the

WWTP is receiving flows of approximately 88m³/d, giving an average population equivalent of 390 (based on an a contributing 225l/PE/d), however, a house count of the area shows a PE of 598, with the recent census showing similar figures of 559.

The sources of emissions from the waste water works

The pollution load for the Kilbriain agglomeration arises from the following areas:

- Domestic population
- Commercial premises
- Infiltration

The sewerage from all commercial activities is collected via the public sewer and treated in conjunction with the domestic waste at the WWTP.

The nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment

The current design capacity of Kilbriain WWTP is 800 PE based on 225l/head/day.

Final effluent is being discharged into the Kilbriain River, analysis of the discharge has shown that the effluent discharge is up to standards and does not have negative impacts on the river. There had been a some issues with phosphorus levels but ferric dosing was introduced to combat this.

The proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works

Technology

The WWTP has a sufficient number of standby pumps, automatic sample facilities, etc is provided to ensure continuation of the wastewater treatment.

The treatment plant includes the following elements:

- Screw Conveyor Inlet Screening
- Forward Feed Pumping Stations
- Aeration tank
- Chemical dosing using Phosphorus (See drawing C1_DWG01_A)
- Sludge Holding Tank
- A secondary settlement tank (clarifier) with sludge return-pump

Techniques

The WWTP shall be operated and managed in accordance with the Performance Management System, developed by the Water Service National Training Group (WSNTG).

Further measures planned to comply with the general principle of the basic obligations of the operator i.e. that no significant pollution is caused.

The treatment plant in Kilbriain is a relatively new plant it was commissioned in 2006. There had been problems with phosphorus levels being emitted from the plant, however, ferric dosing was commenced in August 2010 to combat this. (Attachment A1_Map4). There is an instrumentation and control system together with on site monitoring and sampling provided to ensure satisfactory operation of the plant. The plant is operated by Response Engineering on behalf of the Cork Co. Council. It is visited three times a week. Operation and maintenance duties are carried out inc. wasting of sludge and dewatering. Samples are also taken.