Licensing & Treatment variability among WWTPs in the Monitoring Criteria for Priority Chemicals Leading to Emission Factors Project

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Licensing Requirements

A system for the licensing of waste water discharges from areas served by local authority sewer networks was introduced in 2007 and will require all WWTP to obtain a waste water discharge licence from the EPA by set dates depending on the population equivalent (PE) of the area served by the sewer network. The licensing gives effect to a number of EU Directives, imposing restrictions or prohibitions on the discharge of dangerous substances to receiving water bodies.

Table 1. Current licensing status of WWTPs monitored during the project

	Reg. No.	Licence Application Date	Status	Licence Approval Date
Bandon	D0136-01	22/09/2008	Applied - Assessment	n/a
Ballincollig	D0049-01	14/12/2007	Licensed	13/11/2008
Charleville	D0204-01	06/10/2008	Licensed	14/03/2011
Clonakilty	D0051-01	14/12/2007	Applied - Assessment	n/a
Fermoy	D0058-01	14/12/2007	Applied - Assessment	n/a
Mallow	D0052-01	14/12/2007	Applied - Assessment	n/a
Ringsakiddy	D0057-01	14/12/2007	Licensed	20/07/2010
Ringsend	D0034-01	14/12/2007	Licensed	27/07/2010
Swords	D0024-01	14/12/2007	Applied – FD Due	n/a

Ringsend, Co. Dublin

Ringsend WWTP has a capacity to treat effluent for a population equivalent (PE) of 1,640,000 from domestic, industrial and commercial premises in the Dublin city area, as well as rainwater. Initially, after screening grit, fats, oil and grease are removed. 12 primary treatment lamellae tanks allow 40% - 50% of the pollutants in the wastewater to settle. The settled wastewater is then pumped into 24 Sequencing Batch Reactors (SBR's) for secondary treatment. The SBR's at Ringsend are the largest in the world and, uniquely, are contained in a two storey structure, owing to site limitations. The 24 SBR's are divided into 6 units, built three on top of three. Each unit consists of 4 tanks, operating in sequence. While one tank is filling with wastewater, a second is aerating wastewater with oxygen to accelerate the natural biological secondary treatment. The third tank is settling wastewater and the fourth tank is decanting treated wastewater to the next treatment stage. The treated water receives tertiary treatment during the bathing season in the form of ultraviolet disinfection, before being discharged into the Dublin Bay.

Fig 1. Overview of Ringsend WWTP, Dublin

Fermoy, Co. Cork

The population of Fermoy has grown with the most recent census figures showing that Fermoy has a population in excess of 5,800. The WWTP is designed for a PE of 20,000 and BOD loading of 1,200 Kg/day. The wastewater is collected in a partially combined foul and separated foul sewage drainage network. In order to cope with flows above 2.3 DWF, storm storage has been provided at the WWTP. In the event that the storm water holding tanks are filled, the storm water tanks are operated as a pre-clarification tank without sludge removal. The overflow from the storm water storage tank is connected to the final effluent outlet pipe, which discharges into the Blackwater River.

Fig 2. Overview of Fermoy WWTP

Charleville, Co. Cork

Charleville WWTP was initially designed to take effluent from a nearby industrial plant and its current capacity PE is 15,000 with an agglomeration population of 2,984. Following screening effluent passes through to a splitting chamber, which is divided into two oxidation ditches allowing two separate process streams. This enables each stream to be operated in isolation allowing continuous treatment of wastewater. As there is currently no industrial loading to the WWTP only one stream operates at a given time. In each oxidation ditch 7 m rotors are used to ensure sludge remains suspended at all times. From these ditches the flow passes to two clarifiers to settle the sludge. The sludge phase is passed to a sludge storage blend tank, picket fence thickener and dewatering plant with the sludge removed weekly.

Fig 3. Overview of oxidation ditches at Charleville WWTP

Bandon, Co. Cork

Bandon WWTP is located southwest of Cork City. The WWTP was upgraded in 1993 and designed to treat a PE of 20,000. Inlet flows at the WWTP receive primary treatment consisting of settlement. Lower flows receive secondary treatment, which is carried out in an activated sludge treatment process that operates in parallel with an upgraded percolating filter system. The treated effluent discharged to the River Bandon.

Fig 4. Overview of Bandon WWTP, Co. Cork

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