



**OFFICE OF CLIMATE,  
LICENSING & RESOURCE USE.**

**INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE  
APPLICATION**

<b>To:</b>	Dara Lynott, Director	
<b>From:</b>	Loretta Joyce	Environmental Licensing Programme
<b>Date:</b>	27 <sup>th</sup> June 2014	
<b>RE:</b>	Application for a Waste Water Discharge Licence from Irish Water for the <b>Castletownroche &amp; Environs</b> agglomeration, Co. Cork, Reg. No. D0293-01.	

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 1,001 to 2,000
Licence application received:	27/02/2009
Notice under Regulation 18(3)(b) issued:	22/12/2009, 30/04/2010, 09/08/2010
Information under Reg.18(3)(b) received:	01/06/2010, 04/07/2011, 16/04/2014
Site notice check:	20/03/2009
Site visit:	05/02/2014
Submissions Received:	None

## 1. Agglomeration

This application relates to the Castletownroche & Environs agglomeration in County Cork. The application was originally made by Cork County Council and subsequently transferred to Irish Water on 1<sup>st</sup> January 2014 under the Water Services (No. 2) Act 2013.

The Castletownroche & Environs agglomeration had a population equivalent (p.e.) of 950 in 2012. A projected increase of 20% is used in the mass balance below. There are no identified sources of industrial waste water in the agglomeration.

The agglomeration is served by a secondary level WWTP, commissioned in 1999 with a design capacity of 1,000 p.e. The WWTP consists of inlet works, grit trap, muncher, steel circular aeration tank, settling tank, storm water tank and sludge holding tank. There is no chemical dosing for phosphorus removal. There is a flow meter and final effluent composite sampler in place at the WWTP.

## 2. Discharges to waters

### Primary Discharge

The primary discharge (SW001) is the piped outfall from the WWTP to the Awbeg River, 180m from the WWTP. At 95<sup>th</sup>ile flow of the Awbeg River (1.3m<sup>3</sup>/sec), there

are approximately 387 dilutions available for the projected normal waste water discharge (0.0034m<sup>3</sup>/day). The estimated 95%ile river flow was provided by the Office of Environmental Assessment. The applicant's 2012 treated effluent monitoring results are shown in Table 1, along with the WWTP design standards.

**Table 1. WWTP monitoring results 2012 (average based on 6 samples)**

Parameter	BOD (mg/l)	COD (mg/l)	Suspended solids (mg/l)	Ammonia (mg/l)	Orthophosphate (mg/l)
Average effluent	11	50	22	-	-
WWTP Design standards	25	35	-	-	-

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There is one storm water overflow, SW002, at the inlet to the WWTP which discharges via the primary discharge, SW001.

Emergency overflows

There are no emergency overflows from the agglomeration.

**3. Receiving waters and impact**

The receiving water is the Awbeg River which is located in the South Western River Basin District. The following table summarises the main considerations in relation to the receiving waters.

**Table 2. Receiving waters**

Characteristic	Description	Comment
Receiving water name and type	Awbeg River IE_SW_18_2677	
Relevant designations within 10km	SAC Site Code: 002170 Blackwater River (Cork/Waterford)  Blackwater River is a Salmonid River and is Nutrient Sensitive.  SW001 is in a Margaritifera catchment. There are Pearl Mussel locations on the Blackwater (Munster) River.  D0432-01 Ballyhooley and Environs (500 to 1,000 p.e.)	SW001 discharges directly into SAC  3.2km downstream of SW001  8km downstream of SW001  7.7km downstream of SW001

	A0331-01 Shanballymore (<500 p.e.)	5.8km upstream of SW001
Drinking water abstraction within 10 km d/s	None.	
EPA monitoring stations & Biological quality rating (Q value)	U/s station RS18A051100 7.9km u/s of SW001  D/s station RS18A051300 2.6km d/s of SW001	Q4-5 in 2012  Q4-5 in 2012
WFD status	Moderate	2011
WFD Risk Category	1a, water body at significant risk of failing objectives	2008
WFD Objective	Restore good status	2021
WFD protected areas	RPA drinking water groundwater	

Ambient water quality monitoring data for the Awbeg River supplied by the applicant as part of the licence application and in accordance with the Water Framework Directive is summarised in Table 3 below. The results show that BOD and Ammonia levels downstream of the primary discharge comply with the high status water quality standards in the Environmental Objectives Regulations 2009, as amended.

**Table 3. Water Quality in the Awbeg River**

Parameter (mg/l)	aSW-1u 300m u/s of SW001 3-6 samples, 2008-2009	RS18A051300 2.6km d/s of SW001 12 samples, 2013	Water Quality Standards <sup>Note 1</sup>
BOD	1	0.75	≤ 1.3 mg/l (mean)
Orthophosphate (as P)	<0.05	0.020	≤ 0.025 mg/l (mean)
Ammonia (as N)	<0.05	0.036	≤ 0.04 mg/l (mean)

**Note 1:** High status under the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

Table 4 below summarises the mass balance calculations which show the impact of the primary discharge on the receiving water at a projected loading of 1,140p.e. (950p.e. plus 20%). The calculations use the 'notionally clean river' approach (a hypothetically clean stretch of river) provided by the Office of Environmental Assessment.

**Table 4. Mass Balance Calculations**

Parameter (mg/l)	Proposed ELVs for Primary discharge	Contribution from primary discharge	Contribution from notionally clean background <sup>Note 1</sup>	Predicted Downstream concentration	Water Quality Standards <sup>Note 2</sup>
BOD	25	0.06	0.26	0.32	≤ 2.2
Orthophosphate (as P)	3 (from 2019)	0.008	0.005	0.013	≤ 0.045

Ammonia (as N)	5 (from 2019)	0.013	0.008	0.021	≤ 0.09
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**Note 1:** The notionally clean background concentrations are 0.26 mg/l BOD, 0.005 mg/l ortho-phosphate (as P) and 0.008 mg/l ammonia (as N).

**Note 2:** High status under the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

High status standards from the Environmental Objectives Regulations 2009, as amended, were used in the mass balance calculations due to the pearl mussel populations 8km downstream of SW001. Castletownroche WWTP is not listed among the 18 WWTPs deemed to have a significant adverse effect on the Pearl Mussel or its habitat in the Freshwater Pearl Mussel Munster Blackwater Sub Basin Management Plan. The calculations show that the predicted downstream concentrations of BOD, Orthophosphate as P and Ammonia as N, based on the ELVs included in the RL from 31/12/2019 would comply with the high status standards in the Environmental Objectives Regulations 2009, as amended.

The RL proposes an ELV of 25mg/l BOD, 125mg/l and 35mg/l Suspended Solids from date of grant of licence and proposes 3mg/l Orthophosphate as P and 5mg/l Ammonia-Total as N from 31<sup>st</sup> December 2019. The significant dilution available for the discharge in the River Blackwater, a salmonid water, will ensure that the downstream concentration is less than 25mg/l Suspended Solids. There is no chemical dosing for phosphorus removal in Castletownroche WWTP. Plants with chemical dosing for phosphorus removal can achieve 0.5 to 0.8mg/l Orthophosphate as P. Conventional activated sludge plants can achieve 2 to 5 mg/l Ammonia.

#### 4. Site Visit

I visited the Castletownroche agglomeration on 05/02/2014 and met with a representative of Irish Water. I visited the WWTP and observed the primary discharge point and receiving waters.

#### 5. Ambient Monitoring

*Schedule B.2 Receiving Water Monitoring* of the RL specifies quarterly monitoring of the Awbeg River for a number of specified parameters.

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 168560E 102414N) located approximately 300m upstream of SW001, is a National Monitoring Station (Station Code: RS18A051250) and has been included in *Schedule B.2* of the RL.
- Downstream: The location identified by Cork County Council is aSW-1d (grid ref. 169103E 100489N) approximately 2.6km downstream of SW001, is a National Monitoring Station (Station Code: RS18A051300) and has been included in *Schedule B.2* of the RL.

#### 6. Programme of Improvements

There are no planned improvements proposed by the applicant for Castletownroche WWTP. Plant upgrade or improvement will be required to achieve ELVs of 3mg/l Orthophosphate as P and 5mg/L Ammonia-Total as N from 31<sup>st</sup> December 2019.

## 7. Compliance with EU Directives

In considering the application, regard was had to the requirements of Regulation 6(2) of the Waste Water (Discharge) Authorisation, Regulations 2007 as amended, notably:

**Table 5. Compliance with EU Directives / Regulations**

Compliance with Directives/Regulations	Description and Conditions in RL
Urban Waste Water Treatment Directive [91/271/EEC]	Appropriate treatment was required by 31st December 2005.  Conditions 5.1.4 and 5.1.5 require total Phosphorus loadings and total Nitrogen loadings, respectively, in the discharge to be reduced to the maximum practicable extent.
Water Framework Directive [2000/60/EC]	Restore Good Status Salmonid water 3.2km d/s. Schedule A of RL sets ELV for SS to comply with S.I. No. 293/1988. No shellfish waters present.
EC Environmental Objectives (Surface Water) Regulations 2009 (S.I. No. 272 of 2009), as amended	Schedule A of RL sets ELVs to contribute towards achieving good status water quality standards.
EC Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009 (S.I. No. 296 of 2009)	Condition 4 of RL requires Freshwater Pearl Mussel Munster Blackwater Sub Basin Management Plan to be reviewed annually and measures identified in the plan implemented by the licensee as part of AER.
Drinking Water Abstraction Regulations	No drinking water abstractions present.
Bathing Water Directive [2006/7/EC]	No bathing waters present
Dangerous Substances Directive [2006/11/EC]	Condition 4 requires screening for priority substances.
Environmental Impact Assessment Directive [85/337/EEC]	An EIS was not required for Castletownroche WWTP.
Environmental Liability Directive	Condition 7.2 of RL

## 8. Habitats Directive [92/43/EEC] & Birds Directive [79/409/EEC]

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on a European Site(s). In this context, particular attention was paid to the European site at Blackwater River (Cork/Waterford) (SAC Site Code: 002170) and the Agency considered, for the reasons set out below, that the activity is not directly connected with or necessary to the management of the site as a European Site and that it can be excluded on the basis of objective scientific information, that the activity, individually or in combination with other plans or projects, will have a significant effect on a European site, and accordingly the Agency determined that an Appropriate Assessment of the activity is not required.

It has been determined that the activity does not have the potential for significant

effects on a European Site due to the significant dilution available in the receiving water and the volume and quality of the effluent discharge.

### **9. Submissions**

No submissions were received in relation to this licence application.

### **10. Charges**

The RL sets an annual charge for the agglomeration at €7,113.78 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

### **11. Recommendation**

I recommend that a Final Licence be issued subject to the conditions and for the reasons as set out in the attached Recommended Licence.

Signed



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Loretta Joyce  
Inspector  
Environmental Licensing Programme

**Figure 1.0. Castletownroche & Environs Agglomeration D0293-01**

