

This memo has been cleared for submission to the Board by Senior Inspector, Mr Patrick Byrne

Signed: *Patrick Byrne* Date: 12/08/2013



OFFICE OF CLIMATE,  
LICENSING & RESOURCE USE.

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

**To:** Dara Lynott, Director

**From:** Loretta Joyce Environmental Licensing Programme

**Date:** 12<sup>th</sup> August 2013

**RE:** Application for a Waste Water Discharge Licence from Cork County Council for the **Innishannon** agglomeration, **Reg. No. D429-01.**

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 500 to 1000
Licence application received:	22/06/2009
Notices under Regulation 12 issued:	17/07/2009
Information under Regulation 12 received:	28/07/2009
Notices under Regulation 18(3)(b) issued:	22/09/2010
Information under Regulation 18(3)(b) received:	04/01/2012
Site notice check:	28/07/2009
Site visit:	13/05/2013
Submissions Received:	None

### 1. Agglomeration

This application relates to the Innishannon agglomeration in County Cork. The agglomeration had a population equivalent (p.e.) of 887 in 2012 and the design capacity of the WWTP is 833 p.e. The p.e. is projected to increase to 965 by 2015. There are no identified sources of industrial waste water in the agglomeration.

The WWTP has primary treatment only and consists of two septic tanks, dating from the 1960s and the 1970s. The applicant has stated that the WWTP is overloaded and the waste water is not receiving appropriate treatment.

The applicant has prepared a proposal for a new WWTP on the opposite bank of the Bandon River but the scheme requires compulsory acquisition of the WWTP site and this has not yet progressed. Innishannon WWTP upgrade is listed on the Water Services Investment Programme as a contract to start 2010 – 2012.

The proposed WWTP scheme would consist of a new WWTP with a design capacity of 1,700p.e. with provision to increase capacity to 2,300p.e., primary discharge outfall to the River Bandon and extension and upgrading of the existing collection system. The proposed WWTP would consist of inlet works, screening, aeration basin, clarifier, picket fence thickener, storm water tank and chemical dosing for phosphorus removal and the primary discharge outfall would be in approximately the same location but on the opposite bank of the Bandon River. Condition 4.20 of the RL requires the licensee to submit the location of all discharges from the new WWTP, including primary discharge and storm water overflow, (6E, 6N grid reference) to the Agency prior to commencement of operation of the new WWTP.

## 2. Discharges to waters

### Primary Discharge

The primary discharge (SW-1) is the gravity outfall from the WWTP to the Bandon River, adjacent to the WWTP. At 95%ile flow in the river (1.79m<sup>3</sup>/sec), there are approximately 624 dilutions available for the projected normal waste water discharge (0.0029m<sup>3</sup>/sec). The 95%ile river flow was provided by the Office of Environmental Assessment. The applicant's 2009 treated effluent monitoring results (only 2 samples) are shown in Table 1. The proposed WWTP has design treatment standards of 25mg/l BOD, 35mg/l SS and 2mg/l Orthophosphate.

There are no recent treated effluent monitoring results available because of difficulties with access to the WWTP which is provided through private property with a locked gate.

**Table 1. WWTP monitoring results 2009 (only 2 samples)**

Parameter	BOD (mg/l)	COD (mg/l)	Suspended solids (mg/l)	Ammonia (mg/l)	Orthophosphate (mg/l)
Average effluent	49	104	44	13	1.26

### Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

### Storm water overflows

There are no storm water overflows from the agglomeration.

### Emergency overflows

There are no emergency overflows from the agglomeration.

## 3. Receiving waters and impact

The River Bandon forms part of 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	River Bandon IE_SW_080_0300	Transitional Water Kinsale Harbour 17km d/s
Relevant designations within 10km	Nutrient Sensitive water  Kinsale Shellfish area	Bandon Estuary Upper  12.2km d/s

	Live Bivalve Molluscs (Production Area) Class B	
Drinking water abstraction within 10 km d/s	None	
EPA monitoring stations & Biological quality rating (Q value)	U/s station RS20B020900 located 800m u/s  There are no d/s Q monitoring stations	Q4 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 deadline
WFD protected areas	RPA drinking water groundwater	

Ambient water quality monitoring data for the River Bandon provided by the Local Authority, based on only two samples, is presented in Table 3 below. The results show that orthophosphate and ammonia levels upstream and downstream of the primary discharge do not comply with the good status water quality standards specified in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended.

**Table 3. Water Quality in River Bandon in 2009 (only 2 samples)**

Parameter	aSW1-u 800m u/s of SW001	aSW1-d 650m d/s of SW001	Water Quality Standards Note 1
<b>BOD</b>	<b>2</b>	0.75	≤ 1.5 mg/l (mean)
<b>Orthophosphate (as P)</b>	<b>0.05</b>	<b>0.047</b>	≤ 0.035 mg/l (mean)
<b>Ammonia (as N)</b>	<b>0.1</b>	<b>0.1</b>	≤ 0.065 mg/l (mean)

Note 1: Good status under European Communities Environmental Objectives (Surface Waters) Regulations 2009 as amended;

Table 4 below summarises the mass balance calculations which show the contribution from the primary discharge on the receiving water at a projected, loading of 965 p.e. 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 Note 1	Predicted Downstream concentration	Water Quality Standards Note 2

BOD	20% (interim)	-	-	-	≤ 2.6
	25 (from 2019)	0.04	0.26	0.3	
Orthophosphate (as P)	2 (from 2019)	0.0032	0.005	0.0082	≤ 0.075
Ammonia (as N)	5 (from 2019)	0.008	0.008	0.016	N/A in transitional waters ≤ 0.14 in river waters

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

The calculations show that the predicted downstream concentrations of BOD and Orthophosphate as P, based on the ELVs included in the RL from 31<sup>st</sup> December 2019, would comply with the good status standards in the Environmental Objectives Regulations 2009, as amended. However, WWTP upgrade is required to meet these ELVs, as identified above a new WWTP has been proposed by the applicant. Interim emission limit values for Orthophosphate, Ammonia and Total Nitrogen prior to 31<sup>st</sup> December 2019 are not specified in the RL as there is only primary treatment at the existing WWTP.

The RL proposes an interim percentage reduction of at least a 20% reduction of the BOD in the incoming waste water and of at least a 50% reduction of the Suspended Solids in the incoming waste water. The RL requires ELVs of 25mg/l BOD, 35mg/l Suspended Solids and, 2mg/l Orthophosphate as P, from 31<sup>st</sup> December 2019, which are design standards for the proposed new WWTP. There are no water quality standards set for Total Ammonia or Total Nitrogen in transitional waters in Environmental Objectives Regulations 2009, as amended. The RL requires ELVs of 40mg/l Total Nitrogen and 5mg/l Ammonia as N, by 31<sup>st</sup> December 2019, which are achievable in a conventional activated sludge plant.

Innishannon WWTP is listed as a point pressure in the Bandon/Stick Water Management Unit Action Plan with risks related to insufficient existing capacity.

#### 4. Site Visit

I visited the Innishannon agglomeration on 13/05/2013 and met with a representative of Cork County Council. I was unable to visit the WWTP or observe the primary discharge point due to difficulties with access to the WWTP which also restrict access for sampling as discussed above. I observed the receiving waters.

#### 5. Ambient Monitoring

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

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 154115E 57087N) approximately 800m upstream of SW001 is a National

Monitoring Station (Station Code: RS20B020900) and this has been included in *Schedule B.2* of the RL

- Downstream: The location provided by Cork County Council aSW-1d, (grid ref. 155263E 56470N) is approximately 650m downstream of SW001 and is not suitable as a significant tributary converges with the River Bandon upstream of this location. There are no suitable National Monitoring Stations downstream of SW001. Condition 4.19 of the RL requires the licensee to submit a proposal for a suitable ambient downstream monitoring points to the Agency for agreement within three months of date of grant of licence.

## 6. Programme of Improvements

The applicant has prepared a proposal for a new WWTP as discussed above. Plant upgrade will be required to achieve ELVs of 25mg/l BOD, 125mg/l COD, 35mg/l Suspended Solids, 2mg/l Orthophosphate as P and 5mg/l Ammonia as N by 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 4. 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. Nutrient Sensitive Water, 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.
EC Environmental Objectives (Surface Water) Regulations 2009, S.I. No. 272 of 2009, as amended	Schedule A of RL sets ELVs to contribute towards good status water quality standards.
Drinking Water Abstraction Regulations	No drinking water abstractions d/s
EC Freshwater Fish Directive [2006/44/EC]	Not a designated salmonid river.
Bathing Water Directive [2006/7/EC]	No bathing waters present.
Shellfish Waters Directive [2006/113/EC]	Kinsale Shellfish Waters 12.2km d/s Innishannon WWTP is not listed as a pressure in the Kinsale PRP.
Dangerous Substances Directive [2006/11/EC]	Condition 4 requires screening for priority substances.
Birds Directive [79/409/EEC] & Habitats Directive [92/43/EEC]	Screening for Appropriate Assessment (AA) demonstrates that the discharges, individually or in combination with other plans or projects, are not likely to have significant effects on a European site, due to the lack of hydrological connectivity

Environmental Impact Assessment Directive [85/337/EEC]	An EIS was not required for Innishannon WWTP.
Environmental Liability Directive [2004/35/CE]	Condition 7.2 of RL satisfies the requirements of the Directive.

## 8. Submissions

No submissions were received in relation to this licence application.

## 9. 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.

## 10. 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 Innishannon Agglomeration D0429-01

