



**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/ Aoife Loughnane	Environmental Licensing Programme
<b>Date:</b>	15 January 2015	
<b>RE:</b>	Application for a Waste Water Discharge Licence from Irish Water for the Lixnaw agglomeration, Co. Kerry, Reg. No. D0462-01.	

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 18(3)(b) issued:	4/02/2010, 30/10/2013
Information under Regulation 18(3)(b) received:	16/03/2011, 12/08/2014
Site notice check:	15/07/2009 (Ann Marie Donlon)
Site visit:	24/10/2013 (Aoife Loughnane)
Submissions Received:	None

## 1. Agglomeration

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 The application was originally made by Kerry County Council and subsequently transferred to Irish Water on 1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

The Lixnaw agglomeration had a population equivalent (p.e.) of 811 in 2011 and the design capacity of the plant is 300 p.e. A projected increase to 826 p.e. by 2020, provided by the applicant is used in the mass balance calculation below. There are no identified sources of industrial waste water in the agglomeration.

The Lixnaw agglomeration is served by a primary waste water treatment plant (WWTP). The plant consists of an inlet screen and an Imhoff tank. There is no flow meter or final effluent composite sampler at the plant. The WWTP discharges a very poor quality effluent to the River Brick.

A Preliminary Report on Lixnaw Sewerage Scheme prepared in 2007 identified the inadequacies in the existing scheme and made recommendations for its improvement and expansion. Lixnaw is not listed on the Irish Water Capital Investment Programme 2014-2016.

## 2. Discharges to waters

### Primary Discharge

The primary discharge (SW001) is the outfall from the WWTP to the River Brick, adjacent to the WWTP. This stretch of the river is called the Lixnaw Canal and is tidal. At 95%ile flow in the river (0.2 m<sup>3</sup>/sec is the estimated freshwater inflow at this location), there are approximately 100 dilutions available for the projected normal waste water discharge (0.002 m<sup>3</sup>/day). The 95%ile river flow was provided by the Office of Environmental Assessment. The applicant's treated effluent monitoring results for 2011 and 2012 are shown in Table 1. The results show that the WWTP performs to an extremely poor standard.

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

Parameter	BOD (mg/l)	COD (mg/l)	Suspended solids (mg/l)	Ammonia (mg N/l)	Orthophosphate (mg P/l)
Average effluent in 2011	173	258	95	--	--
Average effluent in 2012	101	197	131	--	--

### Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

### Storm water overflows

There is one storm water overflow (SW002) from the pumping station located near the WWTP which discharges to the Lixnaw Canal. The RL (Condition 4.19) requires the licensee to submit the discharge location (6E, 6N grid reference) of SW002 to the Agency within three months of date of grant of the licence. Condition 4 of the RL requires the SWO to comply with DoECLG criteria for SWOs.

### Emergency overflows

The applicant has not identified any emergency overflows from the agglomeration.

## 3. Receiving waters and impact

The receiving water is the River Brick / Lixnaw Canal which is located in the Shannon 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 Brick / Lixnaw Canal IE_SH_23_2945	The River Brick / Lixnaw Canal meets the Crompaun River 3.5 km d/s of SW001 before flowing into the Cashen/Feale Estuary a further 2.4 km d/s.
Relevant designations within 10km	Lower River Shannon SAC (002165)	SW001 discharges directly into the SAC
	Nutrient sensitive area	Cashen/Feale Estuary, 6km d/s of SW001
Drinking water abstraction within 10 km d/s	None identified	
EPA monitoring stations & Biological quality rating (Q value)	RS23B030400 Br W of Garrynagore located 5 km u/s	Upstream Q4 in 2011
	RS23B030700 Ballinagare	Not monitored (tidal)

	Bridge located 3.9 km d/s	
WFD status	Moderate (2009)	Feale Water Management Unit Action Plan
WFD Risk Category	1a – at risk	
WFD Objective	Restore good status by 2021	
WFD protected areas	RPA drinking water groundwater	Ballybunnion groundwater body
	RPA nutrient sensitive area	Cashen/Feale Estuary, 6km d/s of SW001

Lixnaw WWTP is identified as a point pressure in the Feale Water Management Unit Action Plan. The measures (capital works) identified in the plan are:

- (i) increase capacity of WWTP (assigned level 1 priority),
- (ii) provide tertiary treatment or relocate outfall (assigned level 1 priority).

Ambient water quality monitoring data for the River Brick provided by the Local Authority in accordance with the Water Framework Directive is summarised in Table 3 below. The results show that BOD, orthophosphate and ammonia levels upstream and downstream of the primary discharge do not comply with the good status water quality standards in the Environmental Objectives Regulations 2009, as amended.

**Table 3. Water Quality in River Brick**

Parameter (mg/l)	RS23B030400 5 km u/s of SW001	RS23B030700 3.9 km d/s of SW001	Water Quality Standards <sup>Note 1</sup>
BOD	<b>2.2</b> <sup>Note 2</sup>	<b>1.52</b> <sup>Note 4</sup>	≤ 1.5 mg/l (mean)
Orthophosphate (as P)	<b>0.058</b> <sup>Note 3</sup>	<b>0.047</b> <sup>Note 4</sup>	≤ 0.035 mg/l (mean)
Ammonia (as N)	<b>0.07</b> <sup>Note 2</sup>	<b>0.175</b> <sup>Note 4</sup>	≤ 0.065 mg/l (mean)

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

**Note 2:** Average based on 2 samples in 2002.

**Note 3:** Average based on 10 samples in 2002.

**Note 4:** Average based on 4 samples in 2012.

Table 4 below summarises the mass balance calculations which show the impact of the primary discharge on the receiving water. The calculations use the 'notionally clean river' approach (a hypothetically clean stretch of river) and 95%ile freshwater river flow (tidal effect is not considered) 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	0.25	0.26	0.51	≤ 2.6
Orthophosphate (as P)	3	0.03	0.005	0.035	≤ 0.075
Ammonia (as N)	5	0.05	0.008	0.058	≤ 0.14

**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.

Given that 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, from date of grant of licence.

The RL proposes ELVs of 25 mg/l BOD, 3mg/l orthophosphate (as P) and 5 mg/l ammonia (as N) from 31<sup>st</sup> December 2019. A major upgrade of Lixnaw WWTP would be required to achieve the specified ELVs. The mass balance calculations show that the predicted downstream concentrations of BOD, orthophosphate and ammonia will comply with the good status standards in the Environmental Objectives Regulations 2009, as amended, when the proposed ELVs are applied.

The UWWT Directive standards for primary treatment (20% BOD removal and 50% suspended solids removal) are included in the RD and apply until 31<sup>st</sup> December 2019.

#### **4. Site Visit**

Aoife Loughnane visited the Lixnaw agglomeration on 24<sup>th</sup> October 2013 and met with a representative of Kerry County Council. A full tour of the WWTP was conducted and the River Brick / Lixnaw Canal and location of the primary discharge was observed.

#### **5. Ambient Monitoring**

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

- Upstream: The location identified by Kerry County Council is aSW-1u (grid ref. 88997E, 129199N) approximately 160m upstream of SW001 and has been included in the RL as a new National Monitoring Station (RS23B030570).
- Downstream: The location identified by Kerry County Council is aSW-1d (grid ref. 88701E, 132404N) approximately 3.8m downstream of SW001 and is already a National Monitoring Station (RS23B030700)

#### **6. Programme of Improvements**

A Preliminary Report on the upgrade needs for Lixnaw Sewerage Scheme was prepared in 2007. The proposed scheme involves the construction of a new 1,760 p.e. WWTP adjacent to the site of the existing plant. Lixnaw is not listed on the Irish Water Capital Investment Programme 2014-2016.

*Schedule A.1* of the RL sets emission limits for the primary discharge. The UWWT Directive standards for primary treatment (20% BOD removal and 50% suspended solids removal) apply until 31<sup>st</sup> December 2019. The RL requires a major upgrade of Lixnaw WWTP to be completed and ELVs of 25 mg/l BOD, 3 mg/l orthophosphate and 5 mg/l ammonia will apply from 31<sup>st</sup> December 2019. These limits are set with the aim of achieving appropriate treatment and restoring good water quality status in the receiving water.

#### **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**

<b>Compliance with Directives/Regulations</b>	<b>Description and Conditions in RL</b>
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Urban Waste Water Treatment Directive [91/271/EEC]	Lixnaw WWTP provides only primary treatment and is significantly overloaded. The RL requires the WWTP to be upgraded by 31 <sup>st</sup> December 2019.
Water Framework Directive [2000/60/EC]	Good status to be achieved by 2021. No designated salmonid or 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
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 Lixnaw 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 the Lower River Shannon SAC (site code 002165).

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 cannot be excluded, on the basis of objective scientific information following screening under this Regulation, that the activity, individually or in combination with other plans or projects, will have a significant effect on a European site and accordingly determined that an Appropriate Assessment of the activity is required. It has been determined that the activity has the potential for significant effects on a European site due to poor effluent quality and the direct hydrological connectivity of the discharge to a European Site.

An Appropriate Assessment has been completed and has determined based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 and 2013, pursuant to Article 6(3) of the Habitats Directive, that the activity individually or in combination with other plans or projects, will not adversely affect the integrity of a European Site(s) in particular Lower River Shannon SAC (site code 002165), having regard to its conservation objectives and will not affect the preservation of that site at favourable conservation status if carried out in accordance with this RL and the conditions attached hereto for the following reasons: the RL requires a significant upgrade of Lixnaw WWTP and sets stringent ELVs which are applicable from 31<sup>st</sup> December 2019 to contribute towards achieving good status in the River Brick by 2021; the RL requires quarterly ambient water quality monitoring; the limited volume of the discharge; and the significant number of dilutions available in the receiving water.

In light of the foregoing reasons, no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of the Lower River Shannon SAC (site code 002165).

## **9. Submissions**

No submissions were received in relation to this application.

## **10. Charges**

The RL sets an annual charge for the agglomeration at €2,962.77 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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Aoife Loughnane

Inspectors

Environmental Licensing Programme

