



This memo has been cleared for submission to the Board by Senior Inspector, Dr Karen Creed  
 Signed: Suzanne Wylde Date: 21/06/2013

**RESOURCE USE.**

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

|       |  |                                   |
|-------|--|-----------------------------------|
| To:   | Dara Lynott, Director  |                                   |
| From: | Suzanne Wylde, Yvonne English,<br>Gavin Clabby, Éimer Godsil,<br>Ciara Maxwell & Simon Hussey  | Environmental Licensing Programme |
| Date: | 21 <sup>st</sup> June 2013   |                                   |
| RE:   | Application for a Waste Water Discharge Licence from Cork County Council, for the agglomeration named <b>Dromahane and Environs</b> , Reg. No. D0302-01. |                                   |

**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   |
| Notices under Regulation 18(3)(b) issued:       | 22/12/09, 15/07/10, 11/04/13, 18/4/13  |
| Information under Regulation 18(3)(b) received: | 01/06/10, 14/07/11, 26/04/13 15/5/13   |
| Site notice check:                              | 20/03/2009   |
| Site Visit:                                     | 27/03/2013   |
| Submission(s) Received:                         | None   |

**1. Agglomeration**

This application relates to the agglomeration named Dromahane in Co. Cork (See map in Appendix 1).

The wastewater treatment plant (WWTP) was designed to cater for a population equivalent (p.e.) of 1,000 and was commissioned in 1998. The existing p.e. served by the wastewater works is 1,244. However, the plant is operating to specification. There is currently no uncompleted development in the agglomeration. The applicant has stated that it is not expected that there will be any additional p.e. contributed to the wastewater works in the next 6 years. The influent to the wastewater treatment plant is primarily domestic wastewater. The sewage system in Dromahane is a partially combined system.

The WWTP provides secondary treatment comprising of an activated sludge system. The plant consists of inlet works, forward feed sump, aeration tank, settling tank, storm tank and sludge holding tank.

## 2. Discharges to waters

The final treated effluent discharges through the primary discharge point (SW001) to the Clyda River. The normal flow from the WWTP is 280m<sup>3</sup>/day, while the maximum discharge from the WWTP is 934m<sup>3</sup>/day. The final treated effluent quality from the WWTP in 2011 was within the limits prescribed in the Urban Wastewater Treatment Regulations (BOD 25mg/l, COD 125mg/l and suspended solids 35mg/l). The effluent monitoring results for 2011 for BOD, COD and suspended solids were in the range 7-35mg/l, 22-125mg/l and 8-67mg/l, respectively. The population equivalent of the agglomeration is below the 2,000 p.e. threshold at which the ELVs specified in Part 1 of the second schedule of the UWWT Regulations (2001, as amended) apply.

For agglomerations under this threshold, "*appropriate treatment*" is required. The term appropriate treatment is defined in the Regulations in terms of the level of treatment necessary to protect water quality. It is considered that the treatment currently provided in this agglomeration is appropriate.

There are no secondary discharge points, emergency overflows or pump stations within the agglomeration.

There is one stormwater overflow within the agglomeration. It is located at the inlet works to the WWTP. During storm events effluent overflows from the sump at the inlet works to a storm holding tank. The holding tank has a capacity of 4,000 gallons (15m<sup>3</sup>). In the event of high storm events, exceeding the capacity of the holding tank, the effluent overflows to the outlet pipe.

The licence, as drafted, requires that the stormwater overflow must conform with the criteria as set out in the DoECLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency. The programme of infrastructural improvements required under Condition 5.1 of the RL requires an assessment of all storm water overflows (Condition 5.2.3) and preparation of an implementation plan as necessary (Condition 5.3).

*Schedule A: Discharges & Discharge Monitoring* of the recommended licence (RL) specifies the Emission Limit Values (ELVs) to which the discharge(s) from the Dromahane agglomeration must conform. The ELVs are aimed at providing a high degree of protection to the receiving water body. Monitoring of the discharges will take place as per this schedule of the RL.

### 3. Receiving waters and impact

The following table summarises the main considerations in relation to the Clyda River downstream of the primary discharge.

Table 1: Receiving waters

| Characteristic                      | Classification                                       | Comment                              |
|-------------------------------------|--|--------------------------------------|
| Receiving water name and type       | Clyda River  | WFD Code: IE_SW_18_2541              |
| Applicable Regulations              | UWWT Regulations <sup>Note 1</sup>                   | In compliance                        |
|                                     | Surface Water Regulations <sup>Note 2</sup>          | Not in compliance                    |
| Designations                        | Blackwater River (Cork/Waterford) SAC                | SAC Site code: 002170                |
| EPA monitoring stations             | Br u/s Blackwater R Confl (EPA RS Code: RS18C020300) | 1.6km d/s of SW001 on River Clyda    |
| Biological quality rating (Q value) | Q4 (2012)  | D/s of WWTP on River Clyda           |
| WFD status                          | Good (2011)  | Restore (2009)                       |
| WFD Risk Category                   | 1a (2008)  | At risk of not achieving good status |

Note 1: Urban Wastewater Treatment Regulations, as amended, 2001.

Note 2: European Communities Environmental Objectives (Surface Water) Regulations 2009 (as amended).

The primary discharge point (SW001) is located within the Blackwater River (Cork/Waterford) SAC (site code: 002170), which has been designated partly on the basis that the fresh water pearl mussel, *Margaritifera margaritifera* is a qualifying interest. The first schedule of the *European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations S.I No. 296 of 2009 (Pearl Mussel Regulations 2009)* lists the 27 designated Freshwater Pearl Mussel sites. The Clyda is one of these designated freshwater pearl mussel sites.

The Blackwater Water Management Unit Action Plan (WMUAP) identifies the WWTP in Dromahane as a point pressure on the Blackwater catchment.

The Local Authority carried out upstream and downstream ambient monitoring for 2008. The monitoring results indicate that the receiving water is not in compliance with the High Status standards set out in the European Communities Environmental Objectives (Surface Water) Regulations 2009, as amended.

The Clyda is required to support the freshwater pearl mussel (*Margaritifera margaritifera*) both under the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations (2009) and the '*Freshwater Pearl Mussel Munster Blackwater Sub-Basin Management Plan*'. The proposed emission limit values (ELVs) for the RL, as drafted, are therefore based on the high status standards as laid down in the European Communities Environmental Objectives (Surface Water) Regulations (2009). The high status limits (95%ile) for BOD, ammonia and orthophosphate are 2.2mg/l, 0.090mg/l and 0.045mg/l, respectively.

Table 2: Mass Balance Calculations.

| Parameter      | Notional Clean River Values <sup>Note 1</sup> | Proposed ELVs for discharge from SW001 (mg/l) | Contribution from primary discharge (mg/l) | Predicted downstream concentration (mg/l) | Relevant standard (mg/l) |
|----------------|---|---|--|---|--------------------------|
| BOD            | 0.26  | 15  | 0.1455                                     | 0.4055                                    | 2.2 <sup>Note 2</sup>    |
| Orthophosphate | 0.005   | 1   | 0.0098                                     | 0.0148                                    | 0.045 <sup>Note 2</sup>  |
| Total Ammonia  | 0.008   | 3   | 0.0295                                     | 0.0375                                    | 0.090 <sup>Note 2</sup>  |

Note 1: Notional clean river values for AC based on 1/5<sup>th</sup> of the mean "High Status" standard in the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

Note 2: European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

The 'notional clean river' approach (formulated by the Office of Environmental Assessment) has been used, whereby other sources of upstream pollution will be dealt with separately. The purpose of the mass balance calculations is to show the impact of the discharge with respect to water quality standards. The sources which give rise to the background concentrations are outside the control of this licence. The South Western River Basin Management Plan provides details of recommendations and planned measures to reduce pollution in water courses such as control of unsewered waste water discharges, control of agricultural sources of pollution and control of environmental impacts from forestry. The mass balance calculations are based on the 95<sup>th</sup> percentile flow in the receiving water, the notional clean river background concentrations, the normal effluent discharge rate and the maximum concentration of the parameter in the effluent (Table 2). The 95<sup>th</sup> percentile flow in the river at the primary discharge point is 0.325m<sup>3</sup>/s.

Using the notional clean river approach the mass balance calculations indicate that the predicted downstream concentrations for BOD, orthophosphate and ammonia are within the standards set in the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended).

The limit of 0.045mg/l for orthophosphate, 0.090mg/l for ammonia and 2.2mg/l for BOD in the receiving water are statutory limits set in the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended), to achieve high status in the surface water. An emission limit value of 1mg/l is recommended for orthophosphate, 3mg/l for ammonia and 15mg/l for BOD in the RL. The limits are set based on the mass balance calculations. The WWTP consists of activated sludge treatment which can achieve standards of 2-5mg/l for ammonia in the discharge. Cork County Council will be required to install phosphorus removal at the WWTP. Following discussions with the Department of Environment, Community and Local Government (DECLG) inspector the Programme of Improvements stipulates that chemical dosing to remove phosphorus could be commenced by 31<sup>st</sup> December 2013. The RL also stipulates an ELV of 25 mg/l for suspended solids.

Condition 4.21 of the RD, as drafted, requires the licensee to review the finalised version of the Freshwater Pearl Mussel Munster Blackwater Sub Basin Management Plan for the Blackwater Catchment on an annual basis, implement applicable measures and submit a report of the measures implemented as part of the AER.

#### 4. Ambient Monitoring

*Schedule B.2: Receiving Water Monitoring* of the RL specifies the parameters, analysis method and frequency for which ambient monitoring of the primary discharge shall be carried out. The requirements for ambient monitoring in *Schedule*

*B.2: Receiving Water Monitoring* are sufficient to ensure that there will be no deterioration in the status of the receiving water as a result of the discharge.

## **5. Combined Approach**

The Wastewater Discharge (Authorisation) Regulations (2007, as amended) specify that a 'combined approach' in relation to licensing of waste water works must be taken, whereby the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Treatment Regulations (2001, as amended) and the limits determined under statute or Directive for the purpose of achieving the environmental objectives established for surface waters, groundwater or protected areas for the water body into which the discharge is made. The RL as drafted gives effect to the principle of the Combined Approach as defined in Wastewater Discharge (Authorisation) Regulations (2007, as amended).

## **6. Programme of Improvements**

The WWTP in Dromahane provides secondary treatment for wastewater from the Dromahane agglomeration. The RL, as drafted, requires the local authority to install phosphorous removal by 31<sup>st</sup> December 2013 to ensure that the receiving water can achieve the high status requirements of the European Communities Environmental Objectives (Surface Water) Regulations (2009).

Condition 5.1 of the RL requires the licensee to prepare and submit to the Agency a programme of infrastructural improvements to maximise the effectiveness and efficiency of the waste water works. The conditions and emission limit values specified in the RL will ensure no deterioration in the quality of the receiving waters as a result of the discharge.

## **7. Compliance with EU Directives**

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

### Drinking Water Abstraction Regulations

There are no drinking water abstractions downstream of the discharge from the Dromahane WWTP.

### Sensitive Waters

The Clyda River is not designated as a sensitive water under the Urban Wastewater Treatment Regulations.

### Water Framework Directive [2000/60/EC]

The RL, as drafted, transposes the requirements of the Water Framework Directive. In particular, *Condition 3: Discharges* provides conditions regulating discharges to waters. *Schedule A: Discharges & Discharge Monitoring* specifies limit values for those substances contained within the waste water discharge. Those limits specified in the RL are determined with the aim of achieving good water quality status by 2015.

### European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended)

The ambient monitoring data supplied by Cork County Council demonstrates non-compliance in respect of orthophosphate, upstream of the primary discharge, for high status in the receiving water with the European Communities Environmental

Objectives (Surface Water) Regulations 2009, (as amended). The RL, as drafted, includes emission limit values to ensure that the treatment provided by the plant is sufficient to satisfy the European Communities Environmental Objectives (Surface Water) Regulations 2009, (as amended).

#### Urban Waste Water Treatment Directive [91/271/EEC]

Dromahane WWTP complies with the requirements of the Urban Waste Water Treatment Directive, in terms of the level of treatment provided. The RL, as drafted, has regard to the requirements of the Urban Waste Water Treatment Directive.

#### Dangerous Substances Directive [2006/11/EC]

The applicant has provided once-off sampling results for 18 of the 19 dangerous substances in the primary discharge for the purposes of the licence application. The measured concentrations are not considered significant when compared to the Dangerous Substances Directive limits, which are for ambient water. The measured concentrations were not considered significant.

Condition 4.21 of the RL, as drafted, requires the licensee to identify the priority substances for monitoring by undertaking a risk-based assessment in accordance with "*Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*" issued by the Agency. Monitoring for any identified priority substance shall be carried out as required by the Agency.

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

Dromahane WWTP discharges to the Clyda River, which is part of the Blackwater River (Cork/Waterford) SAC<sup>1</sup> (Site code: 002170). The site is protected for priority habitats listed under Annex 1 of the *Habitats Directive*. The qualifying habitats are: Estuaries; Mudflats and sandflats not covered by seawater at low tide; Perennial vegetation of stony banks; *Salicornia* and other annuals colonizing mud and sand; Atlantic salt meadows; Mediterranean salt meadows; Water courses of plain to montane levels with the *Ranunculon fluitantis* and *Callitricho-Batrachion* vegetation; Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles; \*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* and \**Taxus baccata* woods of the British Isles<sup>2</sup>.

The SAC is also selected for protection of species listed under Annex II of the *Habitats Directive*. The qualifying species of the SAC are: Freshwater Pearl Mussel; White-clawed Crayfish; Sea Lamprey; Brook Lamprey; River Lamprey; Twaite Shad; Atlantic Salmon; Otter and the Killarney Fern.

This SAC overlaps with a number of SPAs<sup>3</sup>, designated under the *Birds Directive*: Blackwater Estuary SPA (004028), Blackwater Callows SPA (004094) and Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161). It is also adjacent to Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (000365).

A screening (Stage 1) for Appropriate Assessment of the discharge(s) from the agglomeration was undertaken to assess, in view of best scientific knowledge and

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<sup>1</sup> SAC: Special Area of Conservation designated under the *Habitats Directive*, Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

<sup>2</sup> \* indicates a priority habitat under the *Habitats Directive*.

<sup>3</sup> SPA: Special Protection Area designated under the *Birds Directive*, Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

the conservation objectives of the site, if the discharge(s), individually or in combination with other plans or projects, is likely to have a significant effect on the European Sites.

Dromahane WWTP is listed on the Freshwater Pearl Mussel Munster Blackwater Sub-Basin Management Plan (Second Draft) as a plant potentially having an adverse effect on the pearl mussel - *"This plant is located near to the mussel population. The load is above the plant capacity, requires investigation and upgrade with the overall aim of reducing overall sediment, organic and nutrient load"*.

Following screening it was determined that an Appropriate Assessment was required to assess the impact of the discharge(s) on the Blackwater River (Cork/Waterford) SAC and the applicant submitted a Natura Impact Statement, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

The Appropriate Assessment (AA) assessed the impact of the discharge(s) on the Blackwater River (Cork/Waterford) SAC, in combination with other pressures including discharges from Bweeng WWTP<sup>4</sup>, which also discharges to the Clyda sub-catchment, and discharges to the Blackwater (Munster) River, downstream of the confluence with the Clyda River, such as Lombardstown<sup>5</sup>, Cecilstown<sup>6</sup> and Ballyclough<sup>7</sup> WWTPs, as well as agricultural and afforestation pressures in the area.

The pearl mussel is highly sensitive to water and (riverbed) substrate quality. An elevation in suspended solids from effluent discharges also poses a risk to salmon and lamprey recruitment where settlement on spawning gravels and /or redds may occur. Nutrient enrichment would lead to accelerated algal and plant growth with implications for pearl mussel, lamprey and salmon stocks. A reduction in salmonids as prey species may negatively affect otter populations in the catchment.

Populations of pearl mussel are located approximately 2.4 kilometers downstream of the discharge from Dromahane WWTP, where the Clyda outfalls to the Blackwater River. EPA monitoring undertaken in 2012 rated the water quality of the Clyda River at Q4 approximately 2km downstream of the discharge from Dromahane WWTP (RS18C020300 Br u/s Blackwater R. confluence). While some macrophytes are present in the Clyda River, these are not considered to be a result of significant river eutrophication.

The AA concluded that no significant impacts are likely on the Blackwater River (Cork/Waterford) SAC from the Dromahane WWTP subject to the commencement of phosphorous removal (by chemical dosing) at the WWTP. The Water Services Authority are required to commence phosphorus removal by chemical dosing to avoid impacts from the discharge on the European Site. *Schedule C.1: Specified Improvement Programme* requires the commencement of chemical dosing for phosphorus removal at the WWTP by 31<sup>st</sup> December 2013.

An emission limit value of 25 mg/l has been set for suspended solids in the Recommended Licence to provide protection for the relevant qualifying species. A limit of 3 mg/l has been set for ammonia and a limit of 1 mg/l for orthophosphate. The limits set for BOD, orthophosphate and total ammonia will assist in the

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<sup>4</sup> Bweeng Waste Water Discharge Licence Application Reg. No. D0438-01, application under assessment.

<sup>5</sup> Lombardstown & Environs, Certificate of Authorisation Reg. No. A0327-01 certified 22/06/2011.

<sup>6</sup> Cecilstown & Environs, Certificate of Authorisation Reg. No. A0319-01, certified 22/06/2011.

<sup>7</sup> Ballyclough Waste Water Discharge Licence Application Reg. No D0441-01, application under assessment.

achievement of High Status for the water body, in accordance with the Water Framework Directive.

The Appropriate Assessment demonstrates that the discharge will not adversely affect the integrity of the European Site subject to the mitigation measures of phosphorus removal by means of chemical dosing at the treatment plant and adherence to appropriate emission limit values in the discharge. In accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), pursuant to Article 6(3) of the *Habitats Directive*, the discharge will not adversely affect the integrity, in terms of maintaining favourable conservation status of the qualifying interests of the European Site, having regard to its conservation objectives.

*Schedule C.1: Specified Improvement Programme* requires the commencement of phosphorus removal by chemical dosing at the WWTP by 31<sup>st</sup> December 2013.

#### Environmental Impact Assessment Directive [85/337/EEC]

An EIS was not required and should one be required as part of any programme of improvements, it will be dealt with as per Condition 1.8 of the RL.

#### Environmental Liabilities Directive [2004/35/EC]

Condition 7.2 of the RL satisfies the requirements of the Environmental Liabilities Directive in particular those requirements outlined in Article 3(1) and Annex II of 2004/35/EC.

### **8. Cross Office Liaison**

Advice and guidance issued by the Technical Working Group (TWG) was followed in my assessment of this application. Advice and guidance issued by the TWG is prepared through a detailed cross-office co-operative process, with the concerns of all sides taken into account. The Board of the Agency has endorsed the advice and guidance issued by the TWG for use by licensing inspectors in the assessment of wastewater discharge licence applications.

### **9. Site Visit**

A site visit was carried out by Mr Gavin Clabby, and Mr Simon Hussey, Inspectors, both from the Environmental Licensing Programme, on 27<sup>th</sup> March 2013. The site visit encompassed a walk through the workings of the WWTP and inspection of the discharge location.

### **10. Submissions**

No submissions were received in relation to this application.

### **11. Charges**

The RL sets an annual charge for the agglomeration at €5,530.68 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

### **12. 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,



Éimer Godsil

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**Suzanne Wylde, Yvonne English, Gavin Clabby, Éimer Godsil,  
Ciara Maxwell & Simon Hussey**

Environmental Licensing Programme



Annex 1: Map showing location of Dromahane WWTP and associated primary discharge point.

